Boring

F1~F92

F

Product Introduction		**F2~F5**
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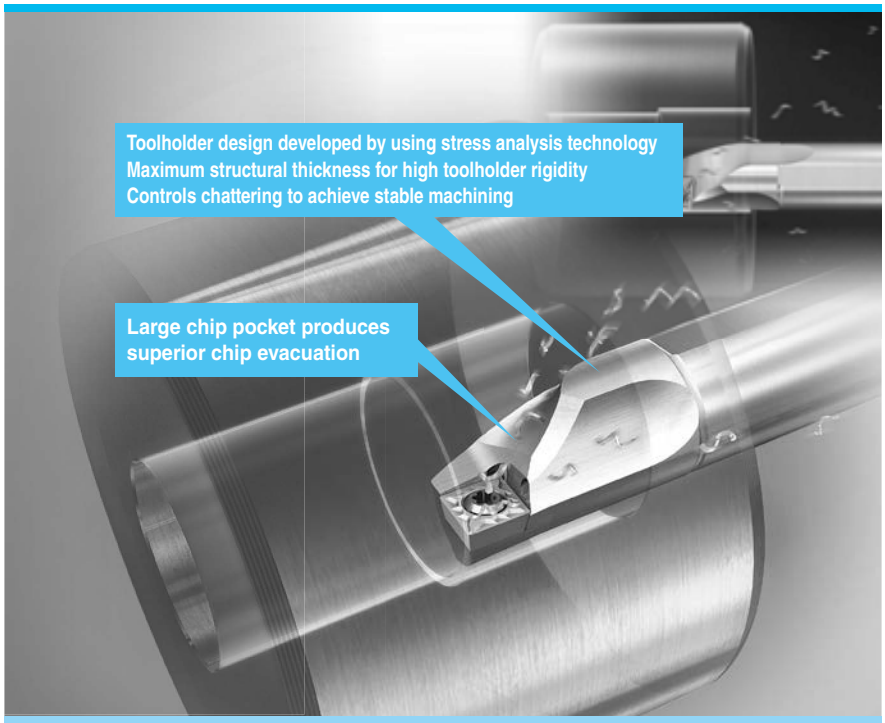
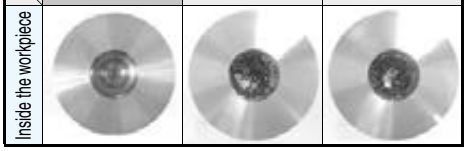
Alternative Toolholder Reference Table for Boring Bar		**F86~F89**
Recommended Cutting Conditions		**F90~F92**
Parts Compatibility of Lever Lock Toolholders		**R42**

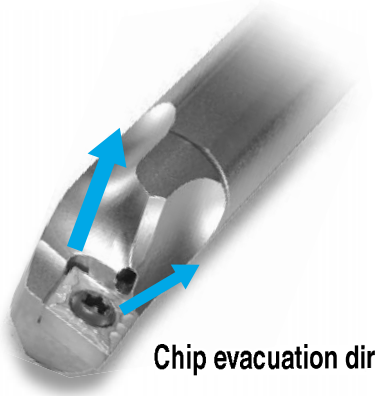


Dynamic design by using the latest computer simulation technology

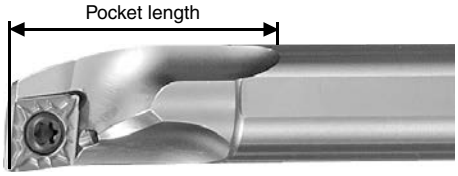
Superior chip evacuation (External coolant)

	Dynamic Bar	Competitor A	Competitor B
Inside the workpiece			

In the products of competitor A and B chips remain inside the workpiece, but chips from the Dynamic Bar are all evacuated from the workpiece.

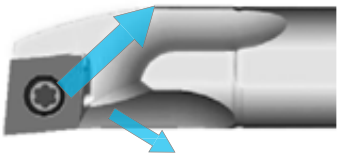
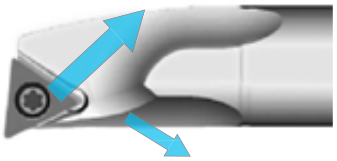


Comparison of pocket length



Description	Pocket length (mm)	
	Dynamic Bar	Competitor A
A16-SCLPR09-18 type	37	29
A20-SCLCR09-22 type	48	32

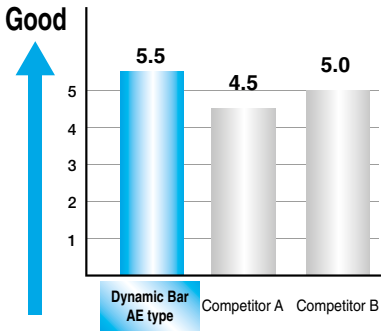
Chip evacuation direction

SCLC(P) type	STLB(P) type
	
Better evacuation by backward chip flow	

The Dynamic Bar achieves superior chip evacuation

High rigidity and chattering resistance are ensured by using a special alloy and with help of stress analysis technology.
Previously unattained surface finish and dimensional accuracy are now achieved.

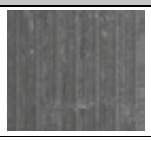
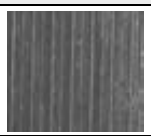
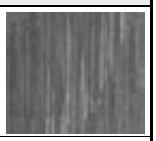
Comparison of vibration tendency



<Cutting Conditions>
15CrMo4
Vc=150m/min
ap=0.5mm
f=0.1mm/rev
S16-SCLPR09 type
CPMH090304L-Y

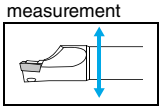
Comparison of surface finish

Vibration of the Dynamic Bar was minimal even at high cutting speeds, enabling stable machining.

	Dynamic Bar	Competitor A	Competitor B
Surface wall			
Surface Roughness	Ra=0.4μm Rz=2.3μm	Ra=0.6μm Rz=3.6μm	 Ra=3.4μm Rz=14.0μm
Oscillatory waveform			

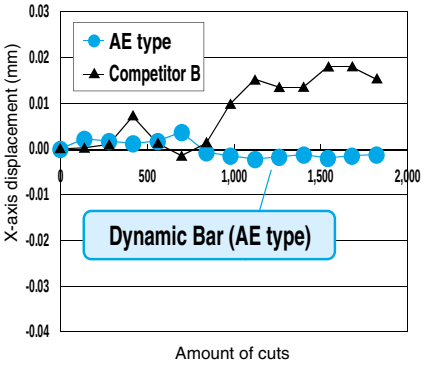
<Cutting Conditions>
15CrMo4
Vc=210m/min
ap=0.5mm
f=0.1mm/rev
A16Q-SCLPR09-18 type
CPMT090304XP(PV7020)
L/D=4
External Coolant

Direction of vibration measurement



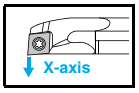
Cutting Point Precision

The AE Dynamic Bar maintains precise cutting edge positional accuracy through the use of a special alloy, thereby achieving high precision machining.



<Cutting Conditions>
34CrMo4
Vc=180m/min
ap=2mm
f=0.2mm/rev
S/A16Q-SCLPR09-18 type
CPMH090308(CA5525)
L/D=4
External Coolant

Direction of measurement



Toolholder Lineup

· Excellent Bar (AE Type)

Excellent Bar with coolant hole (internal coolant) (A···AE) enables better chip evacuation.

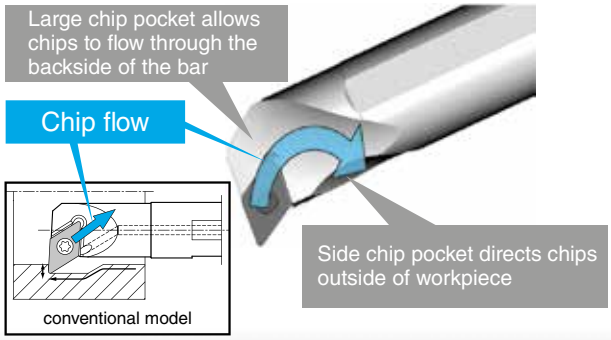
· Steel Bar

The steel shank bar (without coolant hole) provides superior cost performance

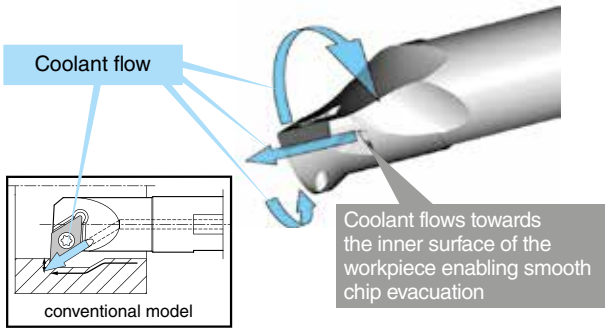
Advantages of Dynamic Bar SDUC

New design and concept focusing on chip evacuation

New design Streamlined pocket enables an effective chip evacuation

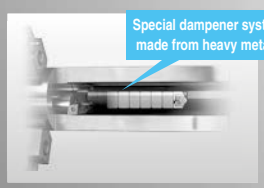


New concept Coolant flows toward the workpiece's inner surface



AD Bars Interchangeable Head Boring Bars with Anti-vibration Dampener System

- The AD (Advanced Dampener) system enables a maximum overhang of 6 times L/D.
- Highly efficient machining: The anti-vibration dampener effect enables large cutting-depths and high feed rates.
- Applicable for a variety of machining conditions due to the interchangeable head design.

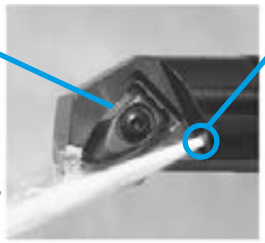


Double Clamp Boring Bars for Negative Inserts

Stable machining is realized in Double Clamp and Direction adjustment mechanism coolant hole.

- **Improved Clamping Rigidity**

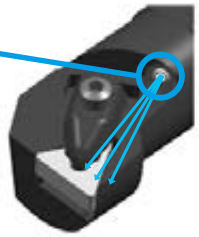
Firmly clamp the insert in two directions with one action. Along with improving the accuracy of the insert position, long tool life can be achieved.



- **Direction adjustment mechanism coolant hole**

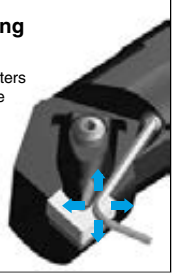
Discharge direction of coolant is adjustment flexible focusing on Coolant to Edge reliably builds up

*Not applicable to high-pressure coolant



Nozzle setting

Wrench etc. that enters 2.5 or less holes are used, and adjust.



Kyocera's original EZ adjust structure

- Easy adjustment and high precision
- EZ Bars prevent deviation with high-rigidity clamping

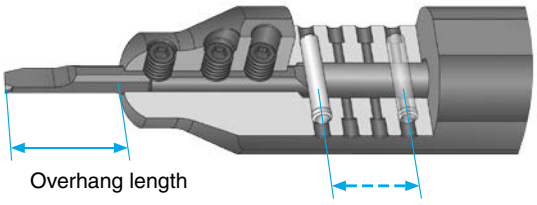
Wide range of items applicable to various applications

MEGACOAT PR1225 for stable machining and extended tool life

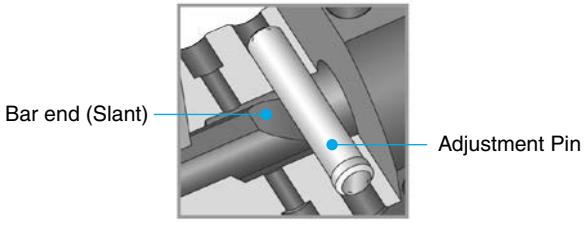
EZ adjust structure

Bar overhang is adjustable by replacing adjustment pin. Internal coolant sleeve (EZH-CT) is available.

1 Easy adjustment and high precision



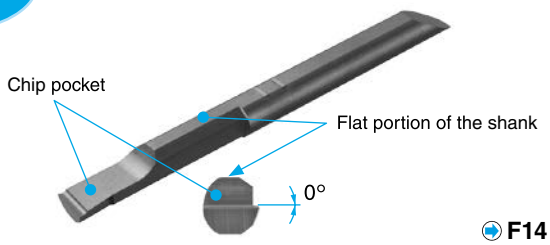
Excellent clamping force



Bar is firmly clamped on the slanted end by the Adjustment Pin

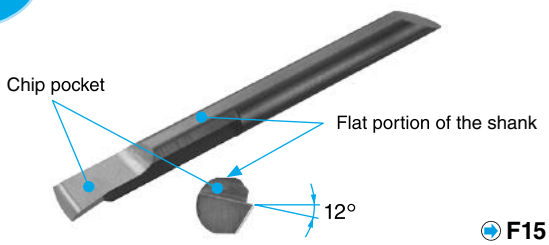
2 2 types of bars

Precision-oriented — HP type (High precision)



F14

Cost-oriented — ST type (standard)

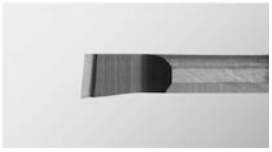


F15

* Chip pocket angles are different.
* Even when using a same sleeve, the Min, Bore Dia. can be different depending on which bar to attach.

3 2 Chipbreakers for various applications

H Chipbreaker (Without lead angle)



Tough edge (General purpose)

F Chipbreaker (With lead angle)

Sharp cutting (For finishing)

· 2 types of corner-R for each chipbreaker

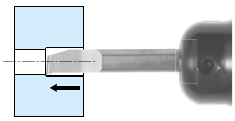
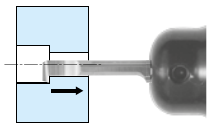
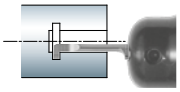
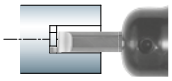
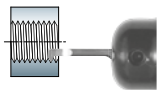
H Chipbreaker: 0.08mm, 0.15mm
F Chipbreaker: 0.05mm, 0.15mm

* Lineup depend on description

Along with the solid type, EZVB (for Boring , Internal Facing and Copying) and indexable type "EZ Bar PLUS" are added to the lineup

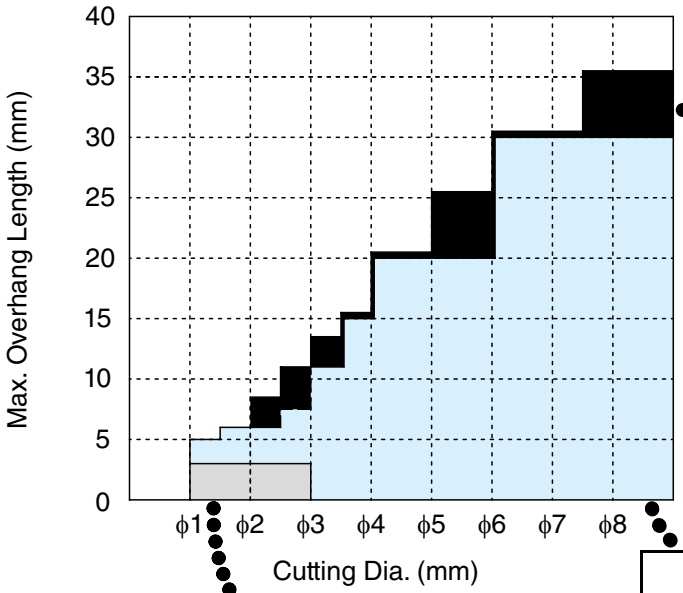
HP Type 2-Edge Tip-Bars for Micro Boring

- Economically excellent 2-Edge
- Min. Bore Dia. Line Up from ϕ2.0 to Up
- Easy-to-Use Adjustable Overhang Length
- Integrated shank enables installation with standard sleeves
- Special sleeves for various machine types

Boring	Back boring	Grooving	Face Grooving	Threading
				
HPB ➡ F34	**HPBT** ➡ F34	**HPG** ➡ G44	**HPFG** ➡ G67	**HPT** ➡ J28
Min. Bore Dia.: ϕ2~ϕ7 Corner-R (rε): 0.05	Min. Bore Dia.: ϕ4~ϕ5 Corner-R (rε): 0.05	Min. Bore Dia.: ϕ4~ϕ7 Edge Width: 1.0~2.0mm Depth: 1.0~2.0mm	Min. Face Groove Dia.: ϕ8 Edge Width: 1.0~3.0mm Depth: 2.0~3.0mm	Min. Pilot Hole Dia.: ϕ4.5~ϕ8 M : 0.75~1.5mm UN : 28~16 TPI W : 24~18 TPI Rc : 28~19 TPI

● Guide for usage (Adjustable overhang type)

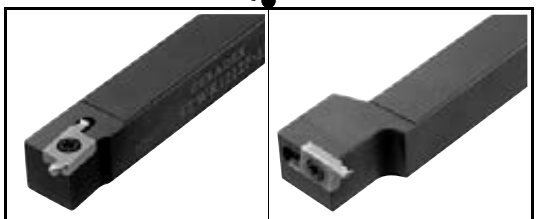
Solid Bars Type: Min. Bore Dia. ϕ1~



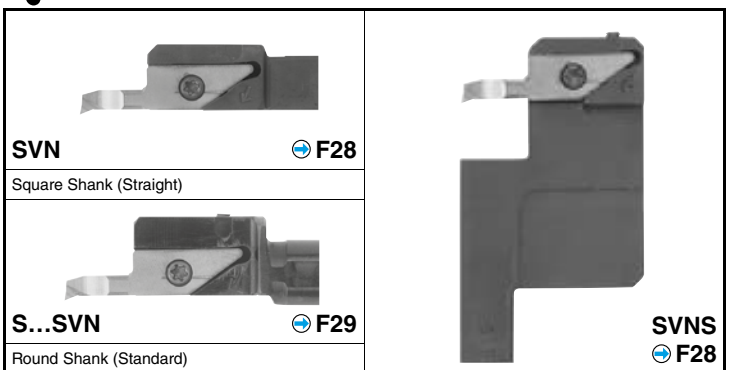
Easy adjustment and high precision

EZ Bars

➡ F12



Twin-Bars ➡ F32~F33



SVN ➡ F28

Square Shank (Straight)

S...SVN ➡ F29

Round Shank (Standard)

SVNS ➡ F28

System Tip-Bars ➡ F26

Boring Bar Identification System (Round Shank)

Shank Type

S	Steel
A	Steel (with Coolant Hole)
C	Carbide
E	Carbide (with Coolant Hole)

Bar Length

F : 80	Q : 180
G : 90	R : 200
H : 100	S : 250
J : 110	T : 300
K : 125	U : 350
L : 140	V : 400
M : 150	W : 450
N : 160	Y : 500
P : 170	X : Special

Clamping System

- C : Top Clamp
- M : Multi Lock
- P : Lock Pin Only or Lever Lock
- S : Screw Clamp
- W : Wedge Lock

Insert Shape

- C : 80˚ Rhombic
- D : 55˚ Rhombic
- J : 70˚ Rhombic
- R : Round
- S : 90˚ Square
- T : 60˚ Triangle
- V : 35˚ Rhombic
- W : 80˚ Trigon

Hand of Tool

- R: Right-hand
- L: Left-hand

Others

Manufacture's Option

Optional Mark or Number

Example

- A : Dynamic Bar
- AE : Excellent Bar which is Dynamic Bar type
- E : Excellent Bar

S 12 M – S C L P R 09 – 16

Bar Diameter

F	K	L	P
90˚	75˚	95˚, 95˚	117.5˚
Q	**S**	**U**	**W**
107.5˚	45˚	93˚	60˚
Y	**X**	**Z**	
85˚	110˚	93˚(95˚)	

Cutting Edge Angle

Insert Relief Angle

α

- B : 5° Positive
- C : 7° Positive
- D : 15° Positive
- E : 20° Positive
- N : 0° Negative
- P : 11° Positive

Insert Size

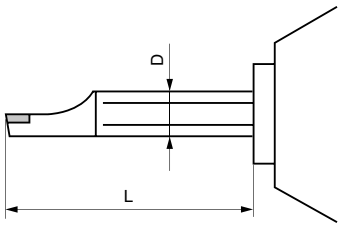
C, D,J,Y, S, T, R, V — L

Min. Bore Dia.

- **Anti-vibration interchangeable head mechanism Boring Bar "AD Bar"**
  For the identification system for boring bars with interchangeable head, Ref. to page F61

Guide Line for Overhang Length of Boring Bar (Workpiece material : S45C)

Overhang Length (L / D)	Shank Material
3	Steel
4	Steel (Dynamic Bar)
5	Excellent
5.5	Excellent (Dynamic Bar)
6	AD Bars (with Anti-vibration Dampener System)
7	Carbide



Carbide Shank Boring Bar

Short Shank Series

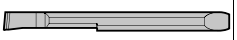
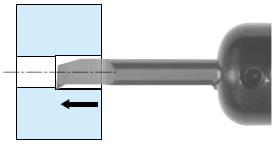
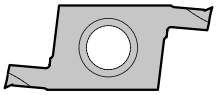
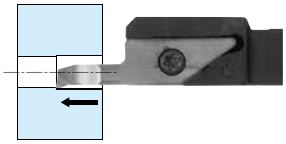
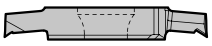
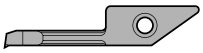
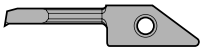
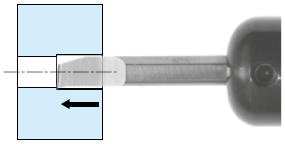
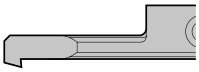
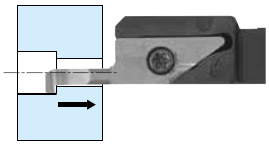
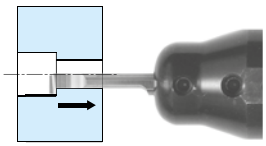
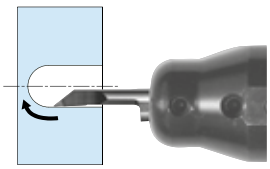
Short Shank Types with length of 1/2 and 2/3 of standard type are available. (-1/2 or -2/3 is shown at the end of the description)
When installing on machines, no additional machining (to change toolholder length) is required.


Standard Size

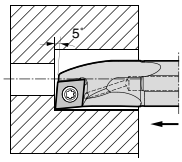
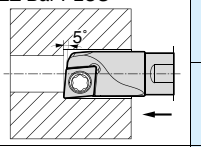
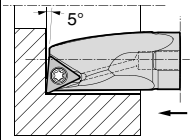
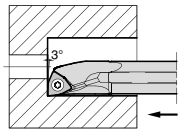

2/3 Size


1/2 Size

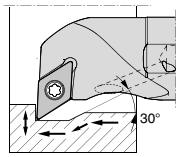
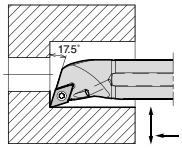
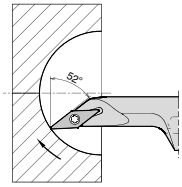
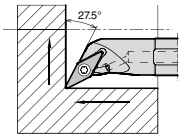
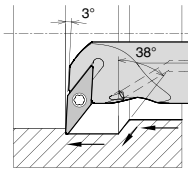
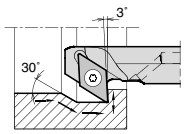
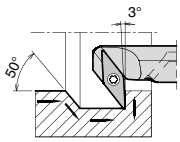
Solid Tip-Bars for Micro Boring

Applications	Solid Tip-Bars Type	Shape	Shank Type Max. Overhang Length (L/D)	Min. Bore Dia. ϕA 1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	6.5	7	7.5	Ref. to Page for Toolholders	Summary
Boring	**EZB-HP** EZ Bars F14		Solid L/D=~5			●	●	●	●	●		●		●				F20~ F25	
	EZB-ST EZ Bars F15		Solid L/D=~5			●	●	●	●	●	●		●		●		●		
	EZB-NB EZ Bars (MEGACOAT) F16		Solid L/D=~5			●	●	●	●	●	●		●		●		●		
	CBN **EZB-NB** EZ Bars PCD F16		Solid L/D=~5					●		●		●		●		●			
										●		●		●		●			
	TWB Twin-Bars F32		Solid	●	●	●	●	●										F32	
	TWBT Twin-Bars F33		Solid	●	●	●	●	●										F33	
	VNB-S System Tip-Bars F26		Solid	●	●	●	●	●	●	●								F28 F29	
	VNB System Tip-Bars F26		Solid			●		●		●		●		●		●			
	VNBX-S System Tip-Bars F30		Solid	●	●	●		●	●	●								F31	
	HPB 2-Edge Tip-Bars F34		Solid L/D=~5			●		●		●		●		●		●		F24 F25	
	PSB-S Tip-Bars F35		Solid L/D=~5			●		●		●		●		●		●		F82	
Back Boring	**VNBT** System Tip-Bars F26		Solid							●		●						F28 F29	
	HPBT 2-Edge Tip-Bars F34		Solid L/D=~5							●		●						F24 F25	
	PSBT-S Tip-Bars F35		Solid L/D=~5							●		●						F82	
Copying	NEW **EZVB** EZ Bars F19		Solid						●		●		●		●			F21~ F25	

Dynamic Bar / EZ Bar PLUS

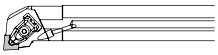
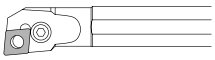
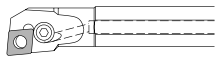
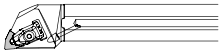
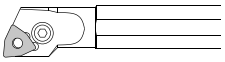
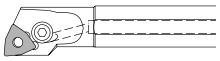
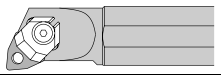
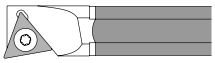
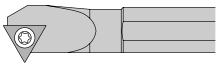
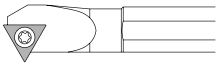
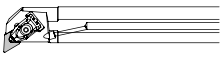
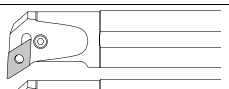
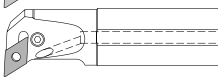
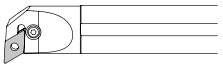
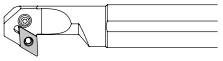
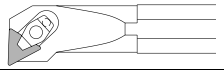
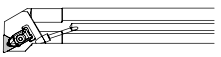
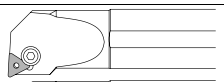
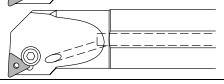
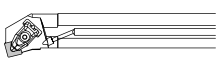
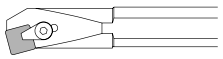
Applications	Overview Shape	Boring Bar Type	Shank Type Max. Overhang Length (L/D)	Coolant Hole Yes	Coolant Hole No	5	6	7	8	10	12	13	14	16	18	20	22	23	25	26	27	30	31	32	34	40	50	Ref. to Page for Toolholders
Boring / Internal Facing		A...SCLC-AE	Excellent L/D = ~5.5	●						●	●		●		●		●				●							F37
		S...SCLC-AE	Excellent L/D = ~5.5		○	●	●	●	●																			
		S...SCLC-A	Steel L/D = ~4		○					●	●		●		●		●				●							
		C...SCLC-A	Carbide L/D = ~7		○	●	●	●	●																			
		E...SCLC-A	Carbide L/D = ~7	●						●	●		●		●		●				●							
		A...SCLP-AE	Excellent L/D = ~5.5	●							●		●	●	●		●				●							F39
		S...SCLP-A	Steel L/D = ~4		○						●		●	●	●		●				●							
		E...SCLP-A	Carbide L/D = ~7	●							●		●	●	●		●				●							
	EZ Bar PLUS 	S...SCLC-EZ	Steel L/D = ~3		○	●		●																				F18
		C...SCLC-EZ	Carbide L/D = ~5		○	●		●																				
		A...STLP-AE	Excellent L/D = ~5.5	●						●	●		●	●	●		●		●		●							F47
		S...STLB-AE			○				●																			
		S...STLB(P)-A	Steel L/D = ~4		○				●	●	●		●	●	●		●				●							
		E...STLP-A	Carbide L/D = ~7	●						●	●		●	●	●		●		●		●							
		C...STLB-A			○				●																			
		A...STLC-AE	Excellent L/D = ~5.5	●						●	●		●		●		●											F45
		S...STLC-A	Steel L/D = ~4		○					●	●		●		●		●											
Boring		S...SWUB-AE	Excellent L/D = ~5.5		○		●	●	●																			F57
		A...SWUB(P)-AE	Excellent L/D = ~5.5	●						●	●		●		●		●											
		S...SWUB(P)-A	Steel L/D = ~4		○		●	●	●	●	●		●		●		●											
		C...SWUB-A	Carbide L/D = ~7		○		●	●	●																			
		E...SWUB(P)-A	Carbide L/D = ~7	●						●	●		●		●		●											

Dynamic Bar

Applications	Overview Shape	Boring Bar Type	Shank Type Max. Overhang Length (L/D)	Coolant Hole Yes	Coolant Hole No	5	6	7	8	10	12	13	14	16	18	20	22	23	25	26	27	30	31	32	34	40	50	Ref. to Page for Toolholders
Copying		A...SDUC-AE	Excellent L/D = ~5.5	●									●	●		●		●			●			●				F41
		S...SDUC-A	Steel L/D = ~4		○								●	●		●		●			●			●				
		E...SDUC-A	Carbide L/D = ~7	●									●	●		●		●			●			●				
		A...SDQC-AE	Excellent L/D = ~5.5	●								●		●		●			●			●						F42
		S...SDQC-A	Steel L/D = ~4		○							●		●		●			●			●						
		E...SDQC-A	Carbide L/D = ~7	●								●		●		●			●			●						
		A...SVJB(C)-AE	Excellent L/D = ~5.5	●										●		●			●			●				●	●	F50
		A...SVJP-AE		●										●														
		S...SVJB(C)-A	Steel L/D = ~4		○									●		●			●			●				●	●	
		S...SVJP-A			○									●														
		A...SVPB(C)-AE	Excellent L/D = ~5.5	●									●		●		●			●			●			●		F52
		S...SVPB(C)-A	Steel L/D = ~4		○								●		●		●			●			●			●		
		E...SVPB(C)-A	Carbide L/D = ~7	●									●		●		●			●			●					
		A...SVUB(C)-AE	Excellent L/D = ~5.5	●										●		●			●						●	●		F55
		S...SVUB(C)-A	Steel L/D = ~4		○									●		●			●						●	●		
		E...SVUB(C)-A	Carbide L/D = ~7	●											●				●			● 29			●			
Back Copying		A...SDZC-AE	Excellent L/D = ~5.5	●									●	●		●		●			●			●				F43
		S...SDZC-A	Steel L/D = ~4		○								●	●		●		●			●			●				
		E...SDZC-A	Carbide L/D = ~7	●									●	●		●		●			●							
		A...SVZB(C)-AE	Excellent L/D = ~5.5	●										●		●			●						●	●		F55
		S...SVZB(C)-A	Steel L/D = ~4		○									●		●			●						●	●		

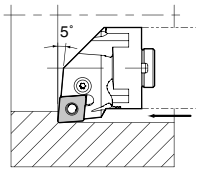
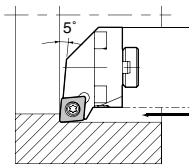
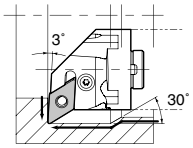
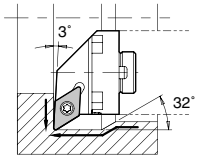
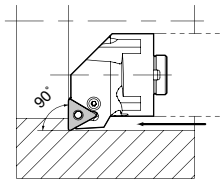
For Min. Bore Dia. ϕA, the figure under ● may be applied depending on the toolholder type.

Boring Bars for General Purpose

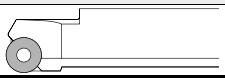
Applications	Boring Bar Type	Shape	Shank Type Max. Overhang Length (L/D)	Coolant Hole Yes	Coolant Hole No	Insert Type	Min. Bore Dia. ϕA 5	6	7	8	10	12	14	16	18	20	25	30	32	40	50	63	Ref. to Page for Toolholders
Boring / Internal Facing	NEW A···DCLN12		Steel L/D=~3	●		Negative													●	●	●		F65
	S···PCLN○○		Steel L/D=~3		○	Negative										●	● 27		●	●	●		F66
	A···PCLN09		Steel L/D=~3	●		Negative										●	● 27		●				
	NEW A···DWLN08		Steel L/D=~3	●		Negative													●	●	●		F75
	S···PWLN○○		Steel L/D=~3		○	Negative										●	● 27		●	●	●		F74 F76
	A···PWLN06		Steel L/D=~3	●		Negative										●	● 27		●				F74
	S···WWLN08-E		Excellent L/D=~5		○	Negative											● 28		● 34	●			F76
	C···STXP(B)		Carbide L/D=~7		○	Positive			● 7.5	● 9	● 11												F49
	C···SJLC		Carbide L/D=~7		○	Positive	● 5.5																F44
Copying	S···STWP-E		Excellent L/D=~5		○	Positive						●		●		●	●		●				F48
	S···STWP		Steel L/D=~3		○	Positive						●		●		●	●						
	NEW A···DDUN15		Steel L/D=~3	●		Negative														●	●	●	F68
	S···PDUN11		Steel L/D=~3		○	Negative											● 27		●	●			F67
	A···PDUN11		Steel L/D=~3	●		Negative											● 27		●	●			
	S···PDUN15		Steel L/D=~3		○	Negative													●	● 44	● 54		F69
	S···PDQN15		Steel L/D=~3		○	Negative													●	● 44	● 54		F69
Back Copying	C···STZB		Carbide L/D=~7		○	Positive				● 8.5													F49
	C···SJZC		Carbide L/D=~7		○	Positive		● 6.5															F44
	S···PDZN15		Steel L/D=~3		○	Negative													●	● 44	● 54		F69
Boring	S···CTUP		Steel L/D=~3		○	Positive								●		●	● 27		● 34	● 43	●		F59
	NEW A···DTFN○○		Steel L/D=~3	●		Negative													●	●	●		F72
	S···PTUN○○		Steel L/D=~3		○	Negative										●	●	●	●	●	●		F73
	A···PTUN11		Steel L/D=~3	●		Negative										●	●		●				
	NEW A···DSKN12		Steel L/D=~3	●		Negative													●	●	●		F71
	S···SSKP		Steel L/D=~3		○	Positive										●	●						F58
	S···CSKP		Steel L/D=~3		○	Positive										●	● 27		● 34	● 43			

For Min. Bore Dia. ϕA, the figure under ● may be applied depending on the toolholder type.

AD Bars Interchangeable Head Boring Bars with Anti-vibration Dampener System

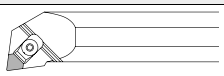
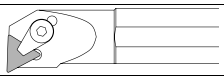
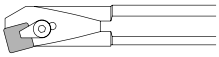
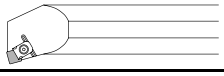
Applications	Boring Bar Type	Shape	Shank Type Max. Overhang Length (L/D)	Coolant Hole Yes	Coolant Hole No	Insert Type	Min. Bore Dia. ϕA 7	8	10	12	14	16	18	20	25	30	32	40	43	50	63	Ref. to Page for Toolholders
Boring / Internal Facing	HA···PCLN12		Anti-Vibration Dampener L/D=~5.5	●		Negative												●		●	●	F61
Boring / Internal Facing	HA···SCLC09		Anti-Vibration Dampener L/D=~6	●		Positive												●				F63
Copying	HA···PDUN15		Anti-Vibration Dampener L/D=~6	●		Negative													●	●	●	F62
Copying	HA···SDUC11		Anti-Vibration Dampener L/D=~6	●		Positive												●				F63
Boring	HA···PTFN16		Anti-Vibration Dampener L/D=~6	●		Negative												●		●	●	F62

Toolholders for Bearing Machining (Square Shank)

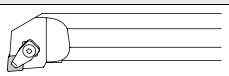
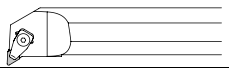
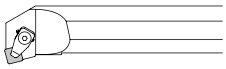
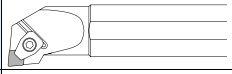
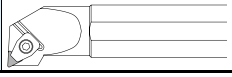
Applications	Boring Bar Type	Shape	Min. Bore Dia.ϕA 20	25	30	32	40	50	Ref. to Page for Toolholders
Boring	SRCP-B		●			●			F60

Applications	Boring Bar Type	Shape	Min. Bore Dia. ϕA 20	25	30	32	40	50	Ref. to Page for Toolholders
Round-Chamfering	CBSN-B		●						F60

Boring Bars for Ceramic / Solid CBN Tools (L/D=~3)

Applications	Boring Bar Type	Shape	Min. Bore Dia. ϕA 16	18	20	25	30	32	40	50	Ref. to Page for Toolholders
Boring / Internal Facing	S···CELN									●	F77
Boring	S···CTUP		●		●	● 27		● 34	● 43	●	F59
Boring	S···CSKP				●	● 27		● 34	● 43		F58
Boring	S···CSKN									●	F77

For Min. Bore Dia. ϕA, the figure under ● may be applied depending on the toolholder type.

Applications	Boring Bar Type	Shape	Min. Bore Dia. ϕA 20	25	30	32	40	50	Ref. to Page for Toolholders
Boring / Internal Facing	S···CCLN-GX						●	●	F78
Boring / Copying	S···CDUN-GX						●	●	F78
Boring	S···CSKN-GX						●	●	F78
Boring / Internal Facing	S···CCLN-A						●		F79
Boring	S···CTUN-A				●				F79

F

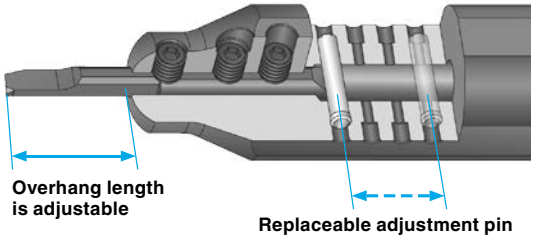
Boring

Kyocera's original EZ adjust structure

- Easy adjustment and high precision
- EZ Bars prevent deviation with high-rigidity clamping

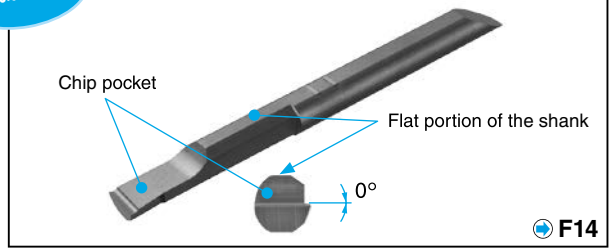
Wide range of items applicable to various applications

Kyocera's original EZ adjust structure



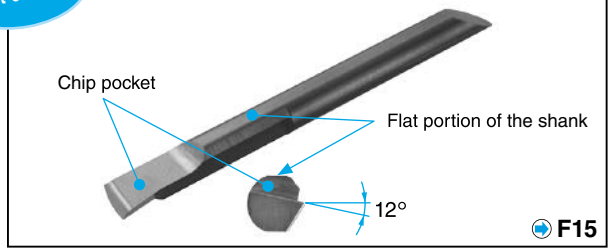
2 types of bars

Precision-oriented — **HP type (High precision)**



F14

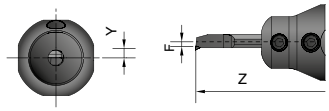
Cost-oriented — **ST type (standard)**



F15

● Insert Tolerance

Insert setting image



Y = Edge Height
F = Offset
Z = Insert length

Insert Tolerance	Offset (F)	Overall length (Z)	Edge Height (Y)	Min. Bore Dia.
Precision-oriented HP type (High precision)	±0.025mm	±0.05mm	+0.05/0mm	Same as Shank Dia.
Cost-oriented ST type (standard)	±0.06mm	±0.1mm	+0.06/0mm	Not same as Shank Dia.

* Ref. to page of "Dimension" for details.

Lineup expansion Along with the solid type, indexable type "EZ Bar PLUS" is newly added

3 types of sleeve (EZH-CT , EZH-HP , EZH-ST)

NEW **EZH-CT**

High precision , with coolant hole (Adjustable)

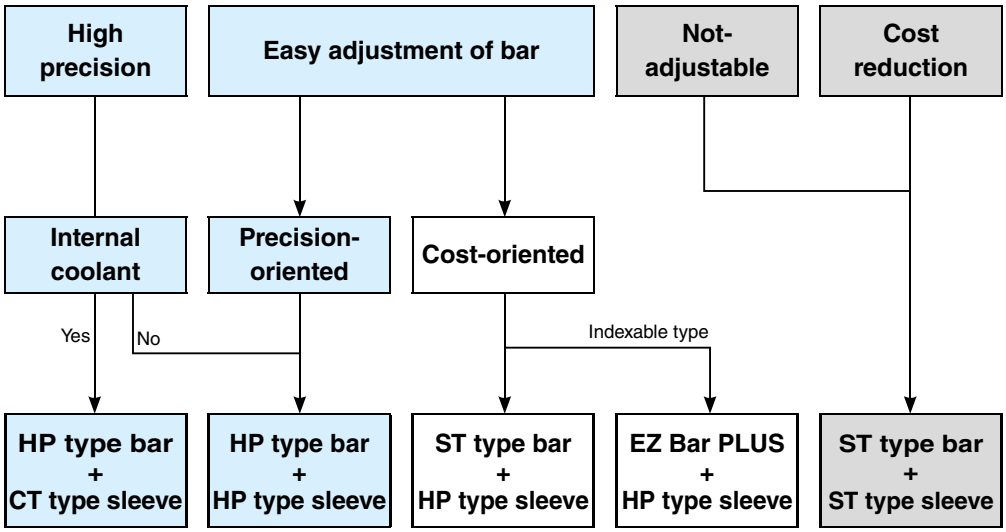
EZH-HP

Overhang length is adjustable (Adjustable)

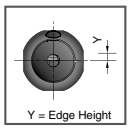
EZ-ST

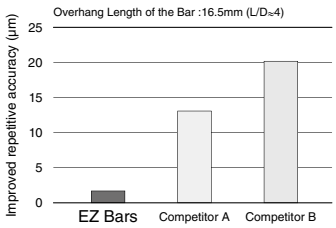
Not-adjustable

How to select bars and sleeves for each application



· Excellent repeat accuracy by the combination of HP bar + CT / HP sleeve

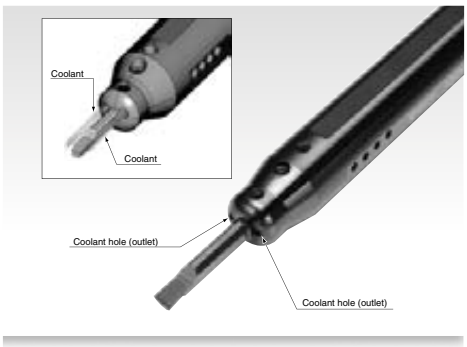




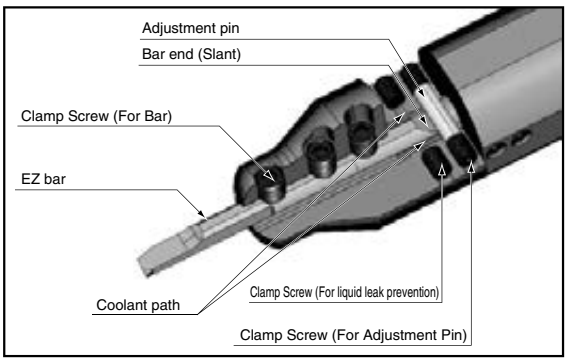
EZH-CT type (high precision / with coolant hole) is added in the EZH sleeve lineup!

Kyocera's unique EZ adjust structure and internal coolant system improve dimensional accuracy and surface roughness

Coolant discharge system of EZH-CT



Structure of EZH-CT



How to fix EZ-Bars (EZH-CT sleeve)

●How to use adjustment pin and prevent liquid leak (Fig.1)

(1) Put the adjustment pin into the hole according to the overhang length. Push it into the sleeve, using the wrench (LW-1.5).
(2) Tighten the clamp screw for the adjustment pin "HS3x4P" using the wrench "LW-1.5" from the both sides of the sleeve.
(3) Put the clamp screws "HS3x4P" into the holes for liquid leak prevention, using the wrench "LW-1.5" and fix them from the both sides of the sleeve.

●How to fix bar (Fig.2)

(1) With the chip pocket upward, set the bar into the sleeve.
Press the slant of the end of the bar with the adjustment pin.
Make sure that the bar does not move (Fig.3)
(2) Tighten the clamp screw with wrench (LW-2) and fix the bar.
(Use LW-1.5 if shank dia. is 3mm or less)

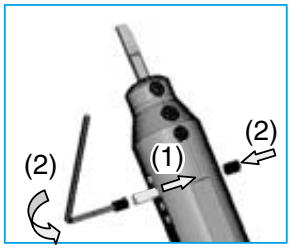


Fig.1 How to use adjustment pin

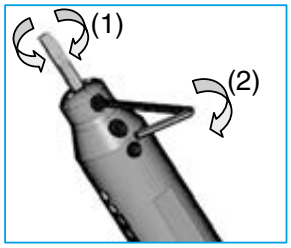


Fig.2 How to fix bar

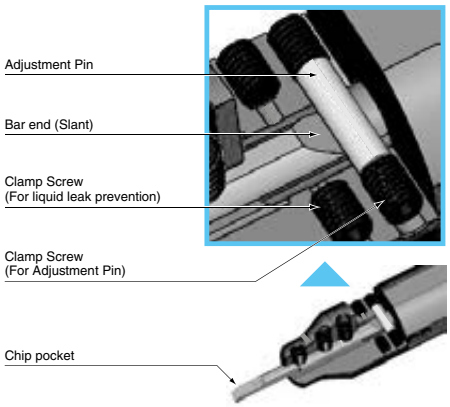
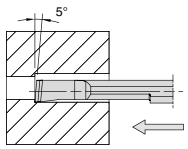
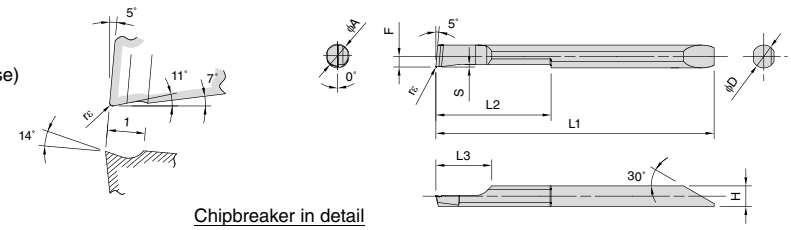


Fig.3 Fixed bar

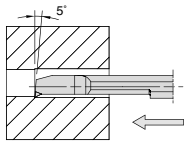
EZB-HP (Boring)



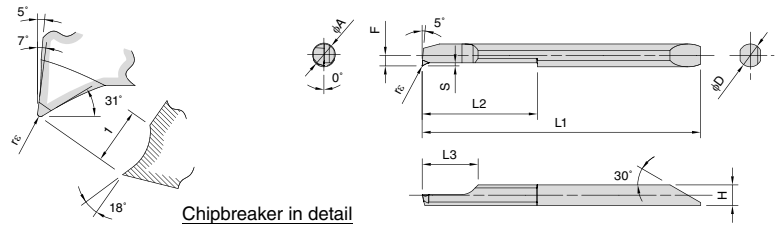
H Chipbreaker
- Without lead angle
- Tough edge (General purpose)
- Right-hand shown



Chipbreaker in detail



F Chipbreaker
- With lead angle
- Sharp cutting (For finishing)
- Right-hand shown



Chipbreaker in detail

EZ Bars Dimensions

Description		Min. Bore Dia.	Dimension (mm)								Grades		Applicable Sleeves
											MEGACOAT	Carbide NEW	
		ϕA	ϕD	H	L1	L2	L3	F	S	rε	PR1225	GW05	F20~F25
EZBR	020020HP-008H	2	2	1.8	32	8	4.9	0.85	0.25	0.08 ±0.015	●	●	EZH020…
	025025HP-008H	2.5	2.5	2.3	35	10.5	4.9	1.1	0.25	0.08 ±0.015	●		EZH025…
	025025HP-015H									0.15 ±0.02	●		
	030030HP-008H	3	3	2.7	38.9	13	6.9	1.35	0.3	0.08 ±0.015	●	●	EZH030…
	030030HP-015H									0.15 ±0.02	●		
	035035HP-008H	3.5	3.5	3.2	41.9	15	6.9	1.6	0.4	0.08 ±0.015	●		EZH035…
	035035HP-015H									0.15 ±0.02	●		
	040040HP-008H	4	4	3.6	48.8	20	9.8	1.85	0.4	0.08 ±0.015	●	●	EZH040…
	040040HP-015H									0.15 ±0.02	●		
	050050HP-008H	5	5	4.6	58.1	25	9.8	2.35	0.5	0.08 ±0.015	●	●	EZH050…
	050050HP-015H									0.15 ±0.02	●		
	060060HP-008H	6	6	5.6	66.1	30	11.8	2.85	0.6	0.08 ±0.015	●	●	EZH060…
	060060HP-015H									0.15 ±0.02	●		
EZBR	020020HP-005F	2	2	1.8	32	8	4.9	0.85	0.25	0.05 ±0.01	●		EZH020…
	025025HP-005F	2.5	2.5	2.3	35	10.5	4.9	1.1	0.3	0.05 ±0.01	●		EZH025…
	025025HP-015F									0.15 ±0.02	●		
	030030HP-005F	3	3	2.7	38.9	13	6.9	1.35	0.4	0.05 ±0.01	●		EZH030…
	030030HP-015F									0.15 ±0.02	●		
	035035HP-005F	3.5	3.5	3.2	41.9	15	6.9	1.6	0.5	0.05 ±0.01	●		EZH035…
	035035HP-015F									0.15 ±0.02	●		
	040040HP-005F	4	4	3.6	48.8	20	9.8	1.85	0.5	0.05 ±0.01	●		EZH040…
	040040HP-015F									0.15 ±0.02	●		
	050050HP-005F	5	5	4.6	58.1	25	9.8	2.35	0.7	0.05 ±0.01	●		EZH050…
	050050HP-015F									0.15 ±0.02	●		
	060060HP-005F	6	6	5.6	66.1	30	11.8	2.85	0.9	0.05 ±0.01	●		EZH060…
	060060HP-015F									0.15 ±0.02	●		

Tolerance: Offset ±0.025mm (of the reference pin), overall length ±0.05mm, edge height +0.05/0mm

Recommended Cutting Conditions ➡F17

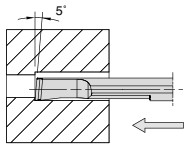
EZ Bars Identification System

EZ	B	R	020	020	HP	-	008	H
Symbol of EZ Bars	Applications	Insert Hand	Min. Bore Dia.	Shank Dia.	Symbol of Precision		Corner-R(rε)	Name of Chipbreaker
	B: Boring Bar	R: Right-hand	020: 2mm 025: 2.5mm ⋮	020: 2mm 025: 2.5mm ⋮	HP: High Precision ST: Standard		008: 0.08mm 015: 0.15mm ⋮	H: Without lead angle F: With lead angle NB: Without chipbreaker

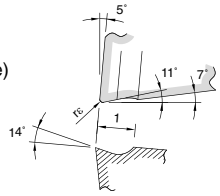
● : Std. Item

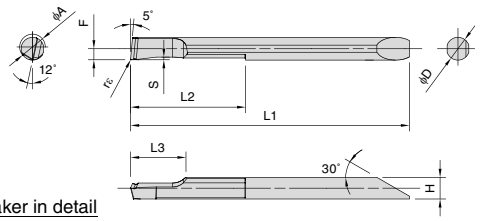
EZ Bars are sold in 1 piece boxes

EZB-ST (Boring)



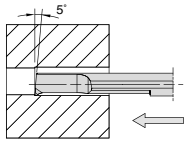
H Chipbreaker
- Without lead angle
- Tough edge (General purpose)



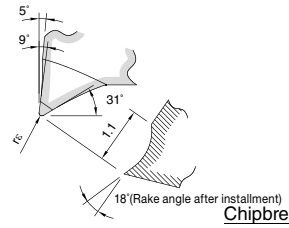


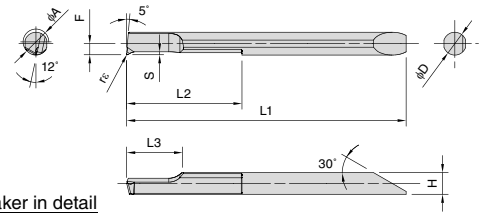
- Right-hand shown

Chipbreaker in detail



F Chipbreaker
- With lead angle
- Sharp cutting (For finishing)





- Right-hand shown

Chipbreaker in detail

EZ Bars Dimensions

Description		Min. Bore Dia.	Dimension (mm)								Grades MEGACOAT	Applicable Sleeves
		ϕA	ϕD	H	L1	L2	L3	F	S	rε	PR1225	F20~F25
EZBR	020017ST-008H	2	1.7	1.5	27.3	7	4.7	0.79	0.19	0.08 ±0.015	●	EZH017…
	025020ST-008H	2.5	2	1.82	32	8	4.8	0.94	0.16	0.08 ±0.015	●	EZH020…
	025020ST-015H									0.15 ±0.02	●	
	030025ST-008H	3	2.5	2.3	35	10.5	4.8	1.19	0.15	0.08 ±0.015	●	EZH025…
	030025ST-015H									0.15 ±0.02	●	
	035030ST-008H	3.5	3	2.8	39	13	6.8	1.44	0.18	0.08 ±0.015	●	EZH030…
	035030ST-015H									0.15 ±0.02	●	
	040035ST-008H	4	3.5	3.3	42	15	6.7	1.69	0.24	0.08 ±0.015	●	EZH035…
	040035ST-015H									0.15 ±0.02	●	
	045040ST-008H	4.5	4	3.8	49	20	9.7	1.94	0.27	0.08 ±0.015	●	EZH040…
	045040ST-015H									0.15 ±0.02	●	
	055050ST-008H	5.5	5	4.8	58.2	25	9.7	2.44	0.33	0.08 ±0.015	●	EZH050…
	055050ST-015H									0.15 ±0.02	●	
	065060ST-008H	6.5	6	5.8	66.2	30	11.8	2.94	0.38	0.08 ±0.015	●	EZH060…
	065060ST-015H									0.15 ±0.02	●	
	075070ST-008H	7.5	7	6.8	74.2	35	11.7	3.44	0.44	0.08 ±0.015	●	EZH070…
	075070ST-015H									0.15 ±0.02	●	
EZBR	020017ST-005F	2	1.7	1.5	27.3	7	4.7	0.79	0.2	0.05 ±0.01	●	EZH017…
	025020ST-005F	2.5	2	1.82	32	8	4.8	0.94	0.16	0.05 ±0.01	●	EZH020…
	025020ST-015F									0.15 ±0.02	●	
	030025ST-005F	3	2.5	2.3	35	10.5	4.8	1.19	0.2	0.05 ±0.01	●	EZH025…
	030025ST-015F									0.15 ±0.02	●	
	035030ST-005F	3.5	3	2.8	39	13	6.8	1.44	0.26	0.05 ±0.01	●	EZH030…
	035030ST-015F									0.15 ±0.02	●	
	040035ST-005F	4	3.5	3.3	42	15	6.7	1.69	0.33	0.05 ±0.01	●	EZH035…
	040035ST-015F									0.15 ±0.02	●	
	045040ST-005F	4.5	4	3.8	49	20	9.7	1.94	0.31	0.05 ±0.01	●	EZH040…
	045040ST-015F									0.15 ±0.02	●	
	055050ST-005F	5.5	5	4.8	58.2	25	9.7	2.44	0.45	0.05 ±0.01	●	EZH050…
	055050ST-015F									0.15 ±0.02	●	
	065060ST-005F	6.5	6	5.8	66.2	30	11.7	2.94	0.59	0.05 ±0.01	●	EZH060…
	065060ST-015F									0.15 ±0.02	●	
	075070ST-005F	7.5	7	6.8	74.2	35	11.7	3.44	0.65	0.05 ±0.01	●	EZH070…
	075070ST-015F									0.15 ±0.02	●	

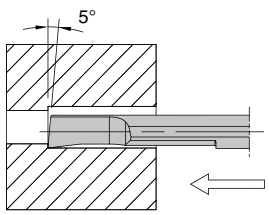
Tolerance: Offset ±0.06mm, overall length ±0.1mm, edge height +0.06/0mm

Recommended Cutting Conditions ➡F17

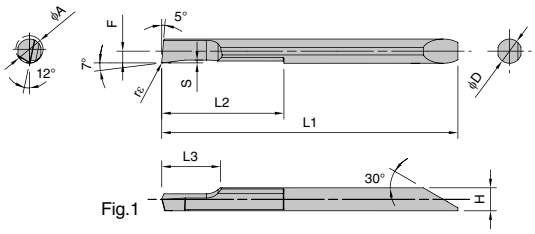
● : Std. Item

EZ Bars are sold in 1 piece boxes

EZB-NB (Boring)

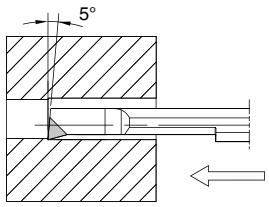


<PR1225>



• Right-hand shown

Fig.1



<KBN,KPD>

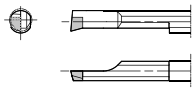
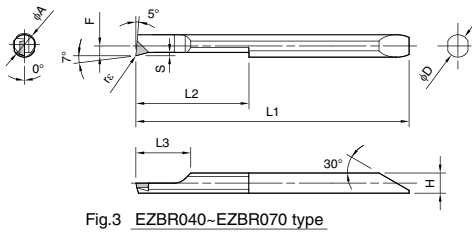


Fig.2 EZBR030 type



• Right-hand shown

Fig.3 EZBR040~EZBR070 type

EZ Bars Dimensions

Description		Min. Bore Dia.	Dimension (mm)								Drawing	Grades			Applicable Sleeves
												MEGA COAT	MEGA COAT CBN	PCD	
		φA	φD	H	L1	L2	L3	F	S	rε		PR1225	KBN05M	KPD001	F20~F25
EZBR	020017-005NB	2	1.7	1.5	27.3	7	4.7	0.79	0.2	±0.015 0.05	Fig.1	●			EZH017…
	025020-005NB	2.5	2	1.82	32	8	4.8	0.94	0.16			●			EZH020…
	030025-005NB	3	2.5	2.3	35	10.5	4.8	1.19	0.16			●			EZH025…
	035030-005NB	3.5	3	2.8	39	13	6.8	1.44	0.19			●			EZH030…
	040035-005NB	4	3.5	3.3	42	15	6.7	1.69	0.25			●			EZH035…
	045040-005NB	4.5	4	3.8	49	20	9.7	1.94	0.28			●			EZH040…
	055050-005NB	5.5	5	4.8	58.2	25	9.7	2.44	0.33			●			EZH050…
	065060-005NB	6.5	6	5.8	66.2	30	11.7	2.94	0.39			●			EZH060…
	075070-005NB	7.5	7	6.8	74.2	35	11.7	3.44	0.45			●			EZH070…
EZBR	030030-003NB	3	3	2.6	38.8	13	6.8	1.25	0.3	±0.015 0.035	Fig.2		●		EZH030…
	040040-003NB	4	4	3.6	48.8	20	9.8	1.75	0.5		Fig.3		●		EZH040…
	050050-003NB	5	5	4.6	58.1	25	9.8	2.25					●		EZH050…
	060060-003NB	6	6	5.6	66.1	30	11.8	2.75					●		EZH060…
	070070-003NB	7	7	6.6	74.1	35	11.8	3.25					●		EZH070…
EZBR	040040-003NB	4	4	3.6	48.8	20	9.8	1.75	0.5	±0.015 0.035	Fig.3			●	EZH040…
	050050-003NB	5	5	4.6	58.1	25	9.8	2.25						●	EZH050…
	060060-003NB	6	6	5.6	66.1	30	11.8	2.75						●	EZH060…
	070070-003NB	7	7	6.6	74.1	35	11.8	3.25						●	EZH070…

Recommended Cutting Conditions ➡F17

Edge Preparation

Grades	Edge Prep.	Remarks
PR1225	Sharp Edge	-
KBN05M	T00815	0.08mm x 15°Chamfered Cutting Edge
KPD001	Sharp Edge	-

● : Std. Item

EZ Bars are sold in 1 piece boxes

◆Recommended Cutting Conditions

● **H Chipbreaker (EZB-HP··H type EZB-ST··H type)**

Workpiece Material	Insert Grades (Cutting Speed Vc: m/min)		EZB020/025 type		EZB030/035 type		EZB040/045 type		EZB050/055/060/065/075 type		Remarks
	MEGACOAT	Carbide	ap (mm), f (mm/rev)								
	PR1225	**GW05**	ap	f	ap	f	ap	f	ap	f	
Carbon steel / Alloy steel	30~100	-	~0.3	~0.03	~0.4	~0.04	~0.45	~0.07	~0.5	~0.1	Coolant
Stainless Steel	30~80	-	~0.2	~0.02	~0.3	~0.03	~0.35	~0.05	~0.4	~0.07	
Non-ferrous Metals	-	~100	~0.3	~0.05	~0.4	~0.06	~0.45	~0.1	~0.5	~0.15	

● **F Chipbreaker (EZB-HP··F type EZB-ST··F type)**

Workpiece Material	Insert Grades (Cutting Speed Vc: m/min)	EZB020/025 type		EZB030/035 type		EZB040/045 type		EZB050/055/060/065/075 type		Remarks
	MEGACOAT	ap (mm), f (mm/rev)								
	PR1225	ap	f	ap	f	ap	f	ap	f	
Carbon steel / Alloy steel	30~100	~0.2	~0.03	~0.2	~0.05	~0.3	~0.07	~0.3	~0.07	Coolant
Stainless Steel	30~80	~0.2	~0.02	~0.2	~0.03	~0.25	~0.05	~0.25	~0.05	

● **NB (Without chipbreaker)**

Workpiece Material	Insert Grades (Cutting Speed Vc: m/min)	EZB020/025 type		EZB030/035 type		EZB040/045 type		EZB050/055/060/065/075 type		Remarks
	MEGACOAT	ap (mm), f (mm/rev)								
	PR1225	ap	f	ap	f	ap	f	ap	f	
Carbon steel / Alloy steel	30~100	~0.3	~0.03	~0.4	~0.04	~0.45	~0.07	~0.5	~0.1	Coolant
Stainless Steel	30~80	~0.2	~0.02	~0.3	~0.03	~0.35	~0.05	~0.4	~0.07	
Non-ferrous Metals	60~100	~0.3	~0.05	~0.4	~0.06	~0.45	~0.07	~0.5	~0.1	

Workpiece Material	Insert Grades (Cutting Speed Vc: m/min)		EZB030 type		EZB040/045 type		EZB050/060/070 type		Remarks
	MEGACOAT CBN	PCD	ap (mm), f (mm/rev)						
	KBN05M	**KPD001**	ap	f	ap	f	ap	f	
Non-ferrous Metals	-	~300	-	-	~0.45	~0.1	~0.5	~0.15	Coolant
Hard Materials	~100	-	~0.07	~0.03	~0.10	~0.05	~0.15	~0.07	

■ Compatibility of EZ Bars

EZ Bars are compatible with conventional Tip-Bars.

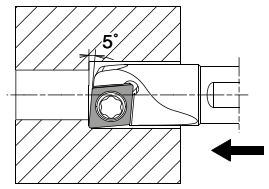
Sleeve \ Insert	**EZB···HP**	**EZB···ST/NB**	**HPB···**(Conventional)
EZH···CT/HP	✓	✓	*1 *2 ✓ (Compatible)
EZH···ST	✓	✓	*1 ✓ (Compatible)
PSH··· (Discontinued Description)	*1 ✓ (Compatible)	*1 ✓ (Compatible)	✓

*1 Some diameter types of conventional Tip-Bars are incompatible.
*2 Use them without Adjustment Pins. Overhang length of bar is not adjustable.

EZ Bar PLUS (Indexable boring bar)

S-SCLC-EZ

Max. Overhang Length L/D=~3



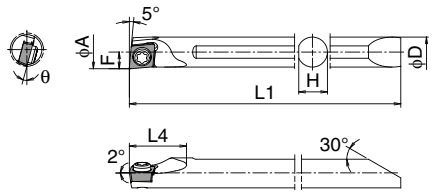


Fig.1

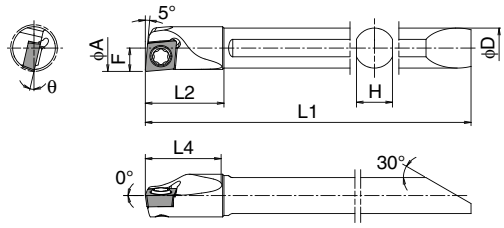


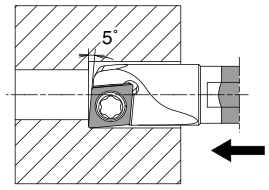
Fig.2

• Right-hand shown

Left-hand Insert for Right-hand Toolholder.

C-SCLC-EZ

Max. Overhang Length L/D=~5



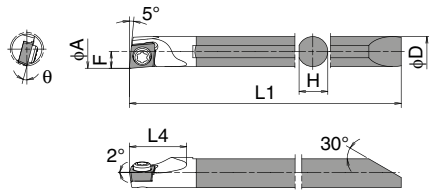


Fig.3

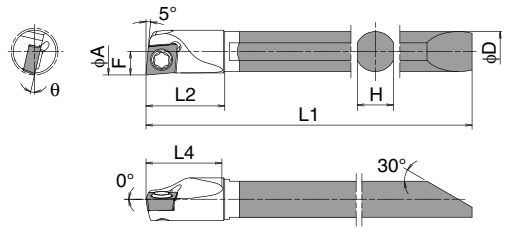


Fig.4

• Right-hand shown

Left-hand Insert for Right-hand Toolholder.

Toolholder Dimensions

Description		Std.	Min. Bore Dia.	Dimension (mm)							θ	Standard Corner-R(rε)	Coolant Hole	Drawing	Spare Parts: Clamp Screw	Spare Parts: Wrench	Applicable Sleeves ➡F23
		R	ϕA	ϕD	H	L1	L2	L3	L4	F							
Steel	S045X-SCLCR03-050EZ	●	5	4.5	4.3	42.4	-	-	8.5	2.5	15°	0.2	No	Fig.1	SB-1635TR	FT-6	EZH045…
Steel	S060X-SCLCR04-070EZ	●	7	6	5.4	53.9	11.8		11.5	3.5	13°			Fig.2	SB-2035TR		EZH060…
Carbide	C045X-SCLCR03-050EZ	●	5	4.5	4.3	51.4	-		8.5	2.5	15°			Fig.3	SB-1635TR		EZH045…
Carbide	C060X-SCLCR04-070EZ	●	7	6	5.4	65.9	11.8		11.5	3.5	13°			Fig.4	SB-2035TR		EZH060…

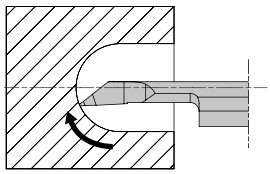
Applicable Inserts

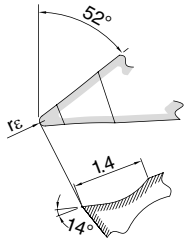
Applications	Minute ap	Finishing	Finishing / Precision	Non-ferrous Metals	Hard Materials
Ref. to Page	B48	B50, B51	B50	C24	C14
Insert / Toolholder Description	CF	L-F	L-FSF	PCD	CBN
----SCLCR03----	CCGT0301..	CCGT0301..	CCET0301..	-	CCMW0301..
----SCLCR04----	CCGT0401..	CCGT0401..	CCET0401..	CCGW0401..	CCMW0401..

Recommended Cutting Conditions ➡F91~F92

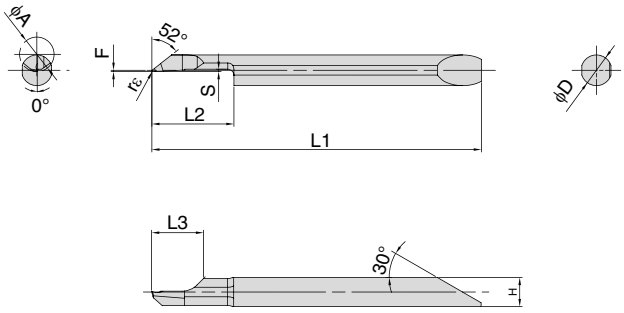
● : Std. Item

EZVB (Boring / Internal Facing / Copying) NEW





Chipbreaker in detail



• Right-hand shown

● EZ Bars Dimensions

Description		Min. Bore Dia.	Dimension (mm)								Grades MEGACOAT	Applicable Sleeves ➡F21~F25
		φA	φD	H	L1	L2	L3	F	S	rε	PR1225	
EZVBR	035030-010	3.5	3	2.8	38	8	5.8	0.17	0.22	0.1 ±0.015	●	EZH030…
	045040-010	4.5	4	3.8	43	10	6.8	0.17	0.26	0.1 ±0.015	●	EZH040…
	055050-010	5.5	5	4.8	50.2	12	7.7	0.17	0.29	0.1 ±0.015	●	EZH050…
	065060-010	6.5	6	5.8	55.2	14	8.6	0.17	0.32	0.1 ±0.015	●	EZH060…

◆Recommended Cutting Conditions

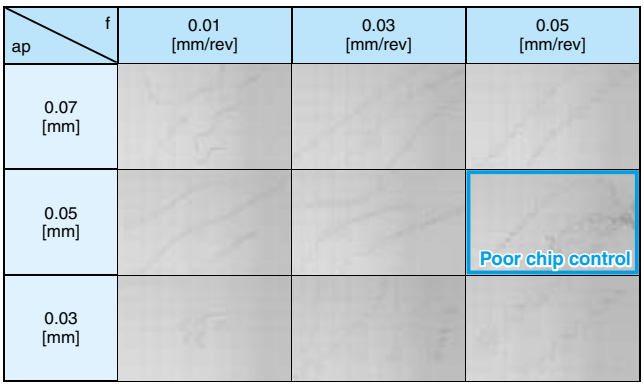
Workpiece Material	Insert Grades (Cutting Speed Vc: m/min)	EZVB035 type		EZVB045 type		EZVB055/065 type		Remarks
	MEGACOAT	ap (mm), f (mm/rev)						
	PR1225	ap	f	ap	f	ap	f	
Carbon steel / Alloy steel	30~100	~0.05	~0.04	~0.07	~0.07	~0.1	~0.07	Coolant
Stainless Steel	30~80	~0.03	~0.03	~0.05	~0.05	~0.07	~0.05	

EZVB Spherical Machining Comparison of Chip Control

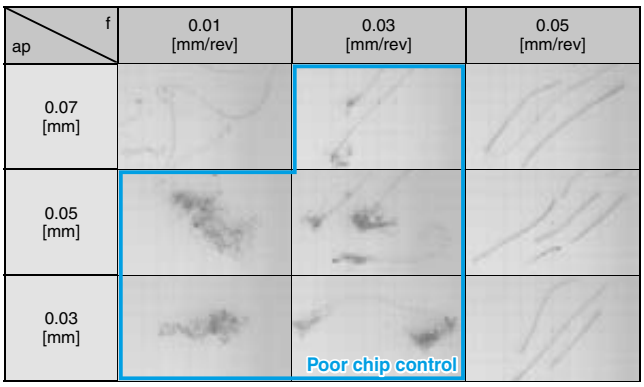
Stable machining with chip control-oriented chipbreaker

Spherical Machining

EZVBR045040-010



Competitor



Cutting Conditions: Vc=100m/min Workpiece Material: SUS304 Wet

● : Std. Item

EZH-CT sleeve NEW

Adjustable with Coolant Hole

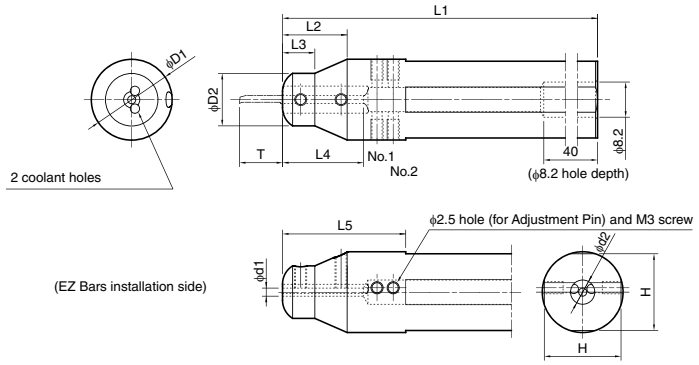


Fig.1

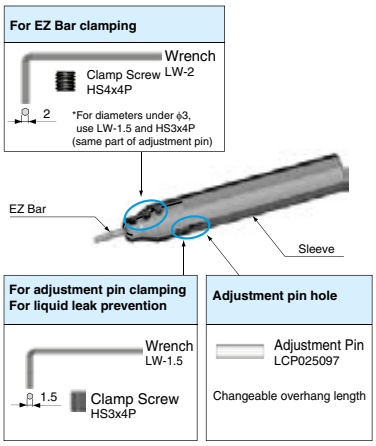
Sleeve Dimensions

Description		Std.	Dimension (mm) ϕd1	ϕD1	ϕD2	ϕd2	H	L1	L2	L3	*1L4	L5	Overhang Length of the Bar *2T (mm) Adjustment Pin Setting Position No.1	No.2	No.3	No.4	Drawing	Applicable EZ Bars F14~F16 J24
EZH	01719CT-120	●	1.7	19.05	13	6	18	120	16	8	16	30.5	7.5	3.5	-	-	Fig.1	EZBR…017…
	01720CT-120	●		20			19	120										
	01722CT-135	●		22			21	135				41.5						
	01725.0CT-135	●		25			24	135				30.5						
	01725.4CT-120	●		25.4			24.4	120										
EZH	02019CT-120	●	2	19.05	13	6	18	120	16	8	20	30.5	8.5	4.5	-	-	Fig.1	EZBR…020… *3 HPB R/L0202-…
	02020CT-120	●		20			19	120										
	02022CT-135	●		22			21	135				41.5						
	02025.0CT-135	●		25			24	135				30.5						
	02025.4CT-120	●		25.4			24.4	120										
EZH	02519CT-120	●	2.5	19.05	13	6	18	120	16	8	20	30.5	11	7	-	-	Fig.1	EZBR…025… EZTR…025-…
	02520CT-120	●		20			19	120										
	02522CT-135	●		22			21	135				41.5						
	02525.0CT-135	●		25			24	135				30.5						
	02525.4CT-120	●		25.4			24.4	120										

*1. L4 shows ϕd1 length.
*2. Dimension T shows Overhang length of the EZB Bar when attached to sleeve.
*3. Use them without Adjustment Pins. Overhang length of bar is not adjustable.
· Choose sleeves (ϕd1) to meet with ϕD dimension of bar.
· ϕ8.2 hole on the sleeve end is prepared hole for Rc1/8 threading. Please modify by additional processing if necessary. The body hardness is 42HRC.

Spare Parts Description (for EZH-CT Sleeves)

Description		Spare Parts: Clamp Screw	Wrench	Clamp Screw	Wrench	Adjustment Pin
EZH	017...CT-..	HS3×4P (for adjustment pin, liquid leak prevention and bar)	LW-1.5 Tightening Torque 1N·m	-	-	LCP025097
	020...CT-..					
	025...CT-..					
	030...CT-..					
EZH	035...CT-..	HS3×4P (for adjustment pin and liquid leak prevention)	LW-1.5 Tightening Torque 1N·m	HS4×4P (for bar)	LW-2 Tightening Torque 2N·m	LCP025097
	040...CT-..					
	050...CT-..					
	060...CT-..					
	070...CT-..					



1) If shank dia. is ϕ2.5mm or less, Use clamp screw (HS3x4P)
For adjustment pin 2 pcs
For liquid leak prevention 2 pcs
For bar 2 pcs

2) If shank dia. is ϕ3mm, Use clamp screw (HS3x4P)
For adjustment pin 2 pcs
For liquid leak prevention 4 pcs
For bar 3 pcs

● : Std. Item

EZH-CT sleeve NEW

Adjustable with Coolant Hole

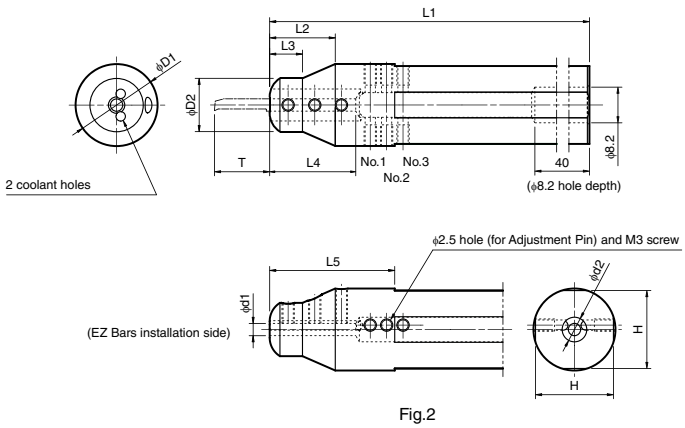
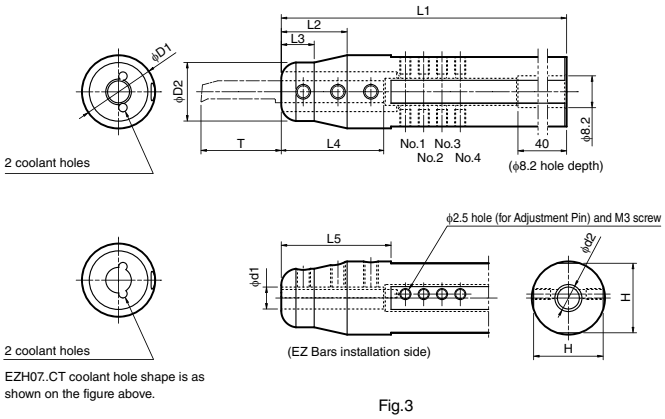


Fig.2



EZH07..CT coolant hole shape is as shown on the figure above.

Fig.3

Sleeve Dimensions

Description		Std.	Dimension (mm) ϕd1	ϕD1	ϕD2	ϕd2	H	L1	L2	L3	*1L4	L5	Overhang Length of the Bar *2T (mm) Adjustment Pin Setting Position No.1	No.2	No.3	No.4	Drawing	Applicable EZ Bars / EZ Bar PLUS ➡ F14~F16 F18, F19 ➡ G41, G64 ➡ J24
EZH	03019CT-120	●		19.05			18	120				30.5						EZBR...030...
	03020CT-120	●		20			19	120										EZVBR035030-...
	03022CT-135	●	3	22	13	6	21	135	16	8	21	41.5	13.5	9.5	5.5	-	Fig.2	EZGR...030-...
	03025.0CT-135	●		25			24	135				30.5						EZTR...030-...
	03025.4CT-120	●		25.4			24.4	120										*3 HPB5/L0303-...
EZH	03519CT-120	●		19.05			18	120				31.1						
	03520CT-120	●		20			19	120										
	03522CT-135	●	3.5	22	13	6	21	135	16	8	21	41.5	15.5	11.5	7.5	-	Fig.2	EZBR...035...
	03525.0CT-135	●		25			24	135				31.1						EZTR...035-...
	03525.4CT-120	●		25.4			24.4	120										
EZH	04019CT-120	●		19.05			18	120				32.7						EZBR...040...
	04020CT-120	●		20			19	120										EZVBR045040-...
	04022CT-135	●	4	22	13	6	21	135	16	8	22	41.5	20.5	16.5	12.5	8.5	Fig.3	EZGR...040-...
	04025.0CT-135	●		25			24	135				32.7						EZFGR...040-...
	04025.4CT-120	●		25.4			24.4	120										EZTR...040-...
																		*3 HP...04-...
EZH	05019CT-120	●		19.05			18	120				30.0						EZBR...050...
	05020CT-120	●		20			19	120										EZVBR055050-...
	05022CT-135	●	5	22	16	6	21	135	18	9	26	44.0	25.5	20.5	15.5	10.5	Fig.3	EZGR...050-...
	05025.0CT-135	●		25			24	135				30.0						EZFGR...050-...
	05025.4CT-120	●		25.4			24.4	120										EZTR...050-...
																		*3 HP...05-...
EZH	06019CT-120	●		19.05			18	120				30.0						EZBR...060...
	06020CT-120	●		20			19	120										EZVBR065060-...
	06022CT-135	●	6	22	16	7.4	21	135	18	9	28	41.5	30.5 (18.5)	25.5 (13.5)	20.5 (–)	15.5 (–)	Fig.3	EZGR...060-...
	06025.0CT-135	●		25			24	135				30.0						EZTR...060-...
	06025.4CT-120	●		25.4			24.4	120										_060X-...-070EZ
																		*3 HP...0606-...
EZH	07019CT-120	●		19.05			18	120				30.0						EZBR...070...
	07020CT-120	●		20			19	120										EZGR...070-...
	07022CT-135	●	7	22	16	7.4	21	135	18	9	29	44.0	35.5	30.5	25.5	20.5	Fig.3	EZFGR...070-...
	07025.0CT-135	●		25			24	135				30.0						EZTR...070-...
	07025.4CT-120	●		25.4			24.4	120										*3 HP...07-...

*1. L4 shows ϕd1 length.
*2. Dimension T shows Overhang length of the EZB Bar when attached to sleeve. ( ) value indicates the overhang length when installed the steel boring bar (EZ Bar PLUS).
*3. Use them without Adjustment Pins. Overhang length of bar is not adjustable.
· Choose sleeves (ϕd1) to meet with ϕD dimension of bar.
· ϕ8.2 hole on the sleeve end is prepared hole for Rc1/8 threading. Please modify by additional processing if necessary. The body hardness is 42HRC.

◆ For how to fix EZ Bars (EZH-CT sleeve), please refer to F13.

● : Std. Item

EZH-HP sleeve

Adjustable

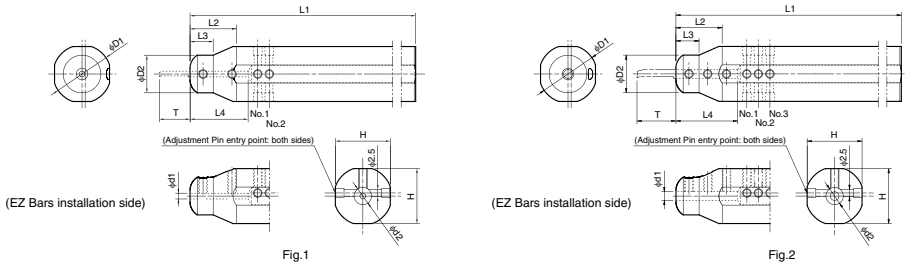


Fig.1 Fig.2

Description		Std.	Dimension (mm) ϕd1	ϕD1	ϕD2	ϕd2	H	L1	L2	L3	*1L4	Overhang Length of the Bar *2T (mm) Adjustment Pin Setting Position No.1	No.2	No.3	No.4	Drawing	Applicable EZ Bars / EZ Bar PLUS ➡ F14~F16, F19 ➡ G41, G64 ➡ J24
EZH	01716HP-100	●	1.7	16	13	6	15	100	16	8	16	7.5	3.5	-	-	Fig.1	EZBR…017…
	01719HP-120	●		19.05			18	120									
	01720HP-120	●		20			19	120									
	01722HP-135	●		22			21	135									
	01725.0HP-135	●		25			24	135									
	01725.4HP-120	●		25.4			24.4	120									
EZH	02016HP-100	●	2	16	13	6	15	100	16	8	20	8.5	4.5	-	-	Fig.1	EZBR…020… *3 HPB®0202-…
	02019HP-120	●		19.05			18	120									
	02020HP-120	●		20			19	120									
	02022HP-135	●		22			21	135									
	02025.0HP-135	●		25			24	135									
	02025.4HP-120	●		25.4			24.4	120									
EZH	02516HP-100	●	2.5	16	13	6	15	100	16	8	20	11	7	-	-	Fig.1	EZBR…025… EZTR…025-…
	02519HP-120	●		19.05			18	120									
	02520HP-120	●		20			19	120									
	02522HP-135	●		22			21	135									
	02525.0HP-135	●		25			24	135									
	02525.4HP-120	●		25.4			24.4	120									
EZH	03016HP-100	●	3	16	13	6	15	100	16	8	21	13.5	9.5	5.5	-	Fig.2	EZBR…030… EZVBR035030-… EZGR…030-… EZTR…030-… *3 HPB®0303-…
	03019HP-120	●		19.05			18	120									
	03020HP-120	●		20			19	120									
	03022HP-135	●		22			21	135									
	03025.0HP-135	●		25			24	135									
	03025.4HP-120	●		25.4			24.4	120									
EZH	03516HP-100	●	3.5	16	13	6	15	100	16	8	22	15.5	11.5	7.5	-	Fig.2	EZBR…035… EZTR…035-…
	03519HP-120	●		19.05			18	120									
	03520HP-120	●		20			19	120									
	03522HP-135	●		22			21	135									
	03525.0HP-135	●		25			24	135									
	03525.4HP-120	●		25.4			24.4	120									
EZH	04016HP-100	●	4	16	13	6	15	100	16	8	24	20.5	16.5	12.5	8.5	Fig.4	EZBR…040… EZVBR045040-… EZGR…040-… EZFGR…040-… EZTR…040-… *3 HP…04-…
	04019HP-120	●		19.05			18	120									
	04020HP-120	●		20			19	120									
	04022HP-135	●		22			21	135									
	04025.0HP-135	●		25			24	135									
	04025.4HP-120	●		25.4			24.4	120									

*1. L4 shows ϕd1 length.
*2. Dimension T shows Overhang length of the EZB Bar when attached to sleeve.
*3. Use them without Adjustment Pins. Overhang length of bar is not adjustable.
· Choose sleeves (ϕd1) to meet with ϕD dimension of bar.

● Spare Parts Description (for EZH-HP Sleeves)

Description		Spare Parts: Clamp Screw	Wrench	Clamp Screw	Wrench	Adjustment Pin	Applicable EZ Bars / EZ Bar PLUS	
EZH	017...HP-..	HS3×4P (for both Adjustment Pin and Bar)	LW-1.5 Tightening Torque 1N·m	-	-	LCP025140	EZBR…017…	
	020...HP-..						EZBR…020…	
	025...HP-..						EZBR…025…	EZ_R…025-…
	030...HP-..						EZBR…030…	EZ_R…030-…
EZH	035...HP-..	HS3×4P (only for Adjustment Pin)	LW-1.5 Tightening Torque 1N·m	HS4×4P (for bar)	LW-2 Tightening Torque 2N·m	LCP025140	EZBR…035…	EZ_R…035-…
	040...HP-..						EZBR…040…	EZ_R…040-…
	045...HP-..						_045X-…-050EZ	
	050...HP-..						EZBR…050…	EZ_R…050-…
	060...HP-..						EZBR…060… _060X-…-070EZ	EZ_R…060-…
	070...HP-..						EZBR…070…	EZ_R…070-…

● : Std. Item

EZH-HP sleeve

Adjustable

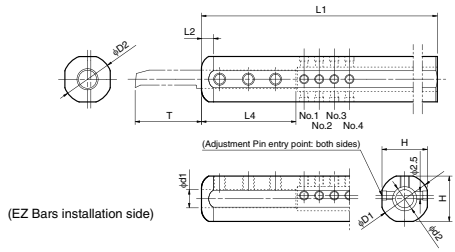


Fig.3

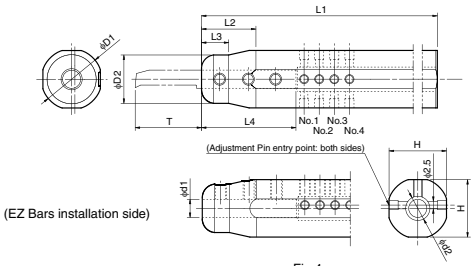


Fig.4

Description		Std.	Dimension (mm)									Overhang Length of the Bar *2T (mm) Adjustment Pin Setting Position				Drawing	Applicable EZ Bars / EZ Bar PLUS ➡ F14~F16 F18, F19 ➡ G41, G64 ➡ J24
			φd1	φD1	φD2	φd2	H	L1	L2	L3	*1L4	No.1	No.2	No.3	No.4		
EZH	04516HP-100	●	4.5	16	16	6	15	100	4	-	25.3	23 (14)	18.5 (9.5)	14 (-)	9.5 (-)	Fig.3	_045X-...050EZ
	04519HP-120	●		19.05			18	120	18	9						Fig.4	
	04520HP-120	●		20			19	120									
	04522HP-135	●		22			21	135									
	04525.0HP-135	●		25			24	135									
	04525.4HP-120	●		25.4			24.4	120									
EZH	05016HP-100	●	5	16	16	6	15	100	4	-	29	25.5	20.5	15.5	10.5	Fig.3	EZBR…050…
	05019HP-120	●		19.05			18	120	18	9						Fig.4	EZVBR055050-…
	05020HP-120	●		20			19	120									EZGR…050-…
	05022HP-135	●		22			21	135									EZFGR…050-…
	05025.0HP-135	●		25			24	135									EZTR…050-…
	05025.4HP-120	●		25.4			24.4	120									*3 HP…05-…
EZH	06016HP-100	●	6	16	16	8	15	100	4	-	31	30.5 (18.5)	25.5 (13.5)	20.5 (-)	15.5 (-)	Fig.3	EZBR…060…
	06019HP-120	●		19.05			18	120	18	9						Fig.4	EZVBR065060-…
	06020HP-120	●		20			19	120									EZGR…060-…
	06022HP-135	●		22			21	135									EZTR…060-…
	06025.0HP-135	●		25			24	135									_060X-…-070EZ
	06025.4HP-120	●		25.4			24.4	120									*3 HP…0606-…
EZH	07016HP-100	●	7	16	16	8	15	100	4	-	33	35.5	30.5	25.5	20.5	Fig.3	EZBR…070…
	07019HP-120	●		19.05			18	120	18	9						Fig.4	EZGR…070-…
	07020HP-120	●		20			19	120									EZFGR…070-…
	07022HP-135	●		22			21	135									EZTR…070-…
	07025.0HP-135	●		25			24	135									*3 HP…07-…
	07025.4HP-120	●		25.4			24.4	120									

*1. L4 shows φd1 length.
*2. Dimension T shows Overhang length of the EZB Bar when attached to sleeve. ( ) value indicates the overhang length when installed the steel boring bar (EZ Bar PLUS).
*3. Use them without Adjustment Pins. Overhang length of bar is not adjustable.
· Choose sleeves (φd1) to meet withφD dimension of bar.

Sleeve Identification System

EZ	H	017	16	HP	-	100
Symbol of EZ Bars	Applications	Shank Dia. of EZ Bars	Sleeve Shank Dia.	Symbol of Precision		Overall length of sleeve
	H: Sleeve	017: 1.7mm, 025: 2.5mm···	16: 16mm, 25.4: 25.4mm···	CT: High precision, with coolant hole		100: 100mm, 120: 120mm···
				HP: High Precision	ST: Standard	

How to attach bar to sleeve

■ How to use adjustment pin (Fig.5)
(1) Put the adjustment pin into the hole.
(2) Push it into the sleeve, using the wrench (LW-1.5).
(3) Tightening the clamp screw (HS3X4P) with wrench (LW-1.5) to fix the adjustment screw.

■ How to fix bar (Fig.6)
(1) With the chip pocket upward, set the bar in sleeve. Press the slant of the end of the bar with the adjustment pin. Make sure that the bar does not move (Fig.7)
(2) Tighten the clamp screw with wrench (LW-2) and fix the bar.
(Use LW-1.5 if shank dia. is 3mm or less)

Fig.5
How to use adjustment pin

Fig.6
How to fix bar

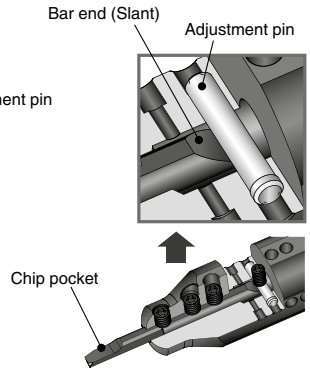
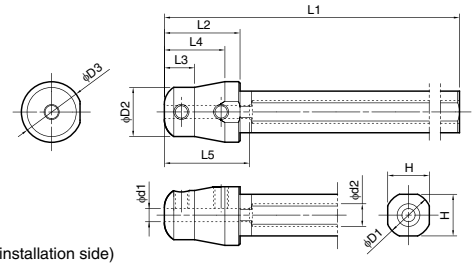


Fig.7: Fixed bar

● : Std. Item

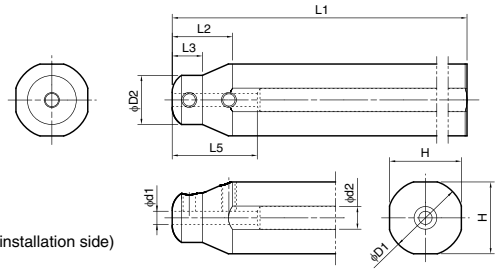
EZH-ST sleeve

Not-adjustable



(EZ Bars installation side)

Fig.1



(EZ Bars installation side)

Fig.2

Description		Std.	Dimension (mm) ϕd1	ϕD1	ϕD2	ϕD3	ϕd2	H	L1	L2	L3	L4	*L5	Drawing	Applicable Bars ➡ F14~F16, F19, F34 ➡ G41, G44, G64, G67 ➡ J24, J28
EZH	01712ST-80	●	1.7	12	13	16	6	11	80	20	8	16	16	Fig.1	EZBR…017…
	01716ST-100	●		16		-		15	100	16		-		Fig.2	
	01719ST-120	●		19.05				18	120						
	01720ST-120	●		20				19	120						
	01722ST-135	●		22				21	135						
	01725.0ST-135	●		25				24	135						
	01725.4ST-120	●		25.4				24.4	120						
EZH	02012ST-80	●	2	12	13	16	6	11	80	20	8	16	20	Fig.1	EZBR…020… HPB R/L0202-…
	02016ST-100	●		16		-		15	100	16		-		Fig.2	
	02019ST-120	●		19.05				18	120						
	02020ST-120	●		20				19	120						
	02022ST-135	●		22				21	135						
	02025.0ST-135	●		25				24	135						
	02025.4ST-120	●		25.4				24.4	120						
EZH	02512ST-80	●	2.5	12	13	16	6	11	80	20	8	16	20	Fig.1	EZBR…025… EZTR…025-…
	02516ST-100	●		16		-		15	100	16		-		Fig.2	
	02519ST-120	●		19.05				18	120						
	02520ST-120	●		20				19	120						
	02522ST-135	●		22				21	135						
	02525.0ST-135	●		25				24	135						
	02525.4ST-120	●		25.4				24.4	120						
EZH	03012ST-80	●	3	12	13	16	6	11	80	20	8	16	21	Fig.1	EZBR…030… EZVBR035030-… EZGR…030-… EZTR…030-… HPB R/L0303-…
	03016ST-100	●		16		-		15	100	16		-		Fig.2	
	03019ST-120	●		19.05				18	120						
	03020ST-120	●		20				19	120						
	03022ST-135	●		22				21	135						
	03025.0ST-135	●		25				24	135						
	03025.4ST-120	●		25.4				24.4	120						
EZH	03512ST-80	●	3.5	12	13	16	6	11	80	20	8	16	22	Fig.1	EZBR…035… EZTR…035-…
	03516ST-100	●		16		-		15	100	16		-		Fig.2	
	03519ST-120	●		19.05				18	120						
	03520ST-120	●		20				19	120						
	03522ST-135	●		22				21	135						
	03525.0ST-135	●		25				24	135						
	03525.4ST-120	●		25.4				24.4	120						
EZH	04012ST-80	●	4	12	13	16	6	11	80	20	8	16	24	Fig.1	EZBR…040… EZVBR045040-… EZGR…040-… EZFGR…040-… EZTR…040-… HP…04-…
	04016ST-100	●		16		-		15	100	16		-		Fig.2	
	04019ST-120	●		19.05				18	120						
	04020ST-120	●		20				19	120						
	04022ST-135	●		22				21	135						
	04025.0ST-135	●		25				24	135						
	04025.4ST-120	●		25.4				24.4	120						

*L5 shows ϕd1 length
· Choose sleeves (ϕd1) to meet with ϕD dimension of bar.
· Adjustment Pin cannot be installed to EZH-ST sleeves. To adjust overhang of the bar, please use EZH-CT / HP sleeves.

● : Std. Item

EZH-ST sleeve

Not-adjustable

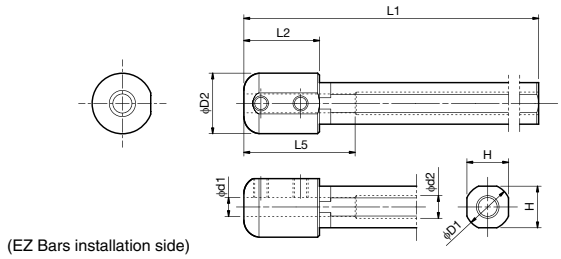


Fig.3

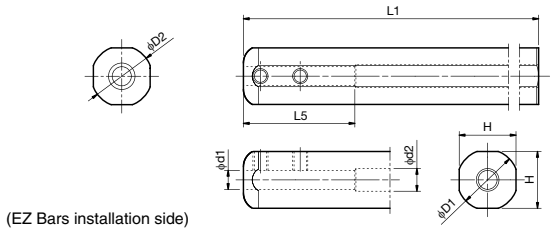


Fig.4

Description		Std.	Dimension (mm) ϕd1	ϕD1	ϕD2	ϕD3	ϕd2	H	L1	L2	L3	L4	*L5	Drawing	Applicable Bars F14~F16, F18, F19, F34 / G41, G44, G64, G67 / J24, J28
EZH	05012ST-80	●	5	12	16	-	6	11	80	20	-	-	29	Fig.3	EZBR…050…
	05016ST-100	●		16				15	100	-				Fig.4	EZVBR055050-…
	05019ST-120	●		19.05				18	120	18	9			Fig.2	EZGR…050-…
	05020ST-120	●		20				19	120						EZFGR…050-…
	05022ST-135	●		22				21	135						EZTR…050-…
	05025.0ST-135	●		25				24	135						HP…05-…
	05025.4ST-120	●		25.4				24.4	120						
EZH	06012ST-80	●	6	12	16	-	8	11	80	20	-	-	31	Fig.3	EZBR…060…
	06016ST-100	●		16				15	100	-				Fig.4	EZVBR065060-…
	06019ST-120	●		19.05				18	120	18	9			Fig.2	EZGR…060-…
	06020ST-120	●		20				19	120						EZTR…060-…
	06022ST-135	●		22				21	135						_060X-…-070EZ
	06025.0ST-135	●		25				24	135						HP…0606-…
	06025.4ST-120	●		25.4				24.4	120						
EZH	07012ST-80	●	7	12	16	-	8	11	80	20	-	-	33	Fig.3	EZBR…070…
	07016ST-100	●		16				15	100	-				Fig.4	EZGR…070-…
	07019ST-120	●		19.05				18	120	18	9			Fig.2	EZFGR…070-…
	07020ST-120	●		20				19	120						EZTR…070-…
	07022ST-135	●		22				21	135						HP…07-…
	07025.0ST-135	●		25				24	135						
	07025.4ST-120	●		25.4				24.4	120						

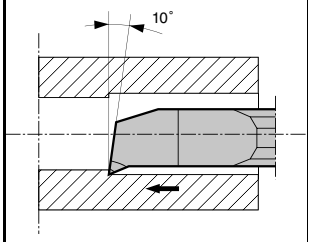
*L5 shows ϕd1 length
· Choose sleeves (ϕd1) to meet with ϕD dimension of bar.
· Adjustment Pin cannot be installed to EZH-ST sleeves. To adjust overhang of the bar, please use EZH-CT / HP sleeves.

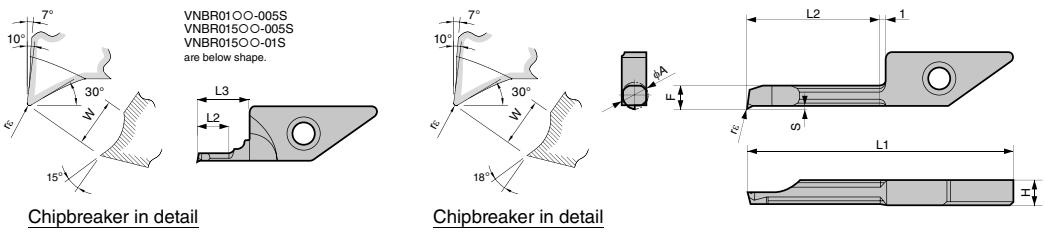
● Spare Parts Description (for EZH-ST Sleeves)

Description		Spare Parts: Clamp Screw	Spare Parts: Wrench	Applicable EZ Bars: EZB-HP / EZB-ST / EZB-NB	Applicable EZ Bars: EZG / EZFG / EZT / EZVB	EZ Bar PLUS: S-SCLC / C-SCLC	2-Edge Tip-Bars: HP
EZH	017...ST-..	HS3×4P	LW-1.5 Tightening Torque 1N·m	EZBR…017…	-	-	-
	020...ST-..			EZBR…020…			HPB R/L0202-…
	025...ST-..			EZBR…025…	EZTR…025-…	-	-
	030...ST-..			EZBR…030…	EZ_R…030-…	-	HPB R/L0303-…
EZH	035...ST-..	HS4×4P	LW-2 Tightening Torque 2N·m	EZBR…035…	EZTR…035-…	-	-
	040...ST-..			EZBR…040…	EZ_R…040-…	-	HP…04-…
	050...ST-..			EZBR…050…	EZ_R…050-…	-	HP…05-…
	060...ST-..			EZBR…060…	EZ_R…060-…	_060X-…-070EZ	HP…0606-…
	070...ST-..			EZBR…070…	EZ_R…070-…	-	HP…07-…

● : Std. Item

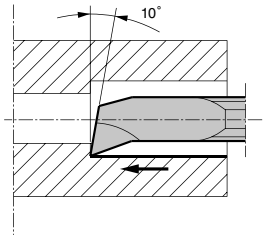
VNB-S (Boring) [Corner-R(rε) :Minus tolerance]

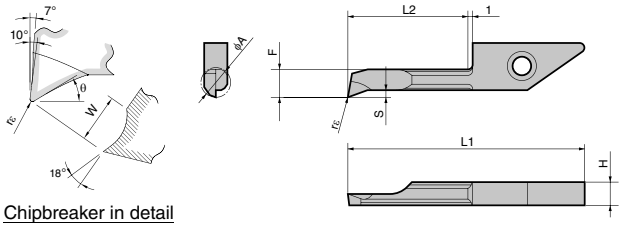




• Right-hand shown

VNB (Boring)



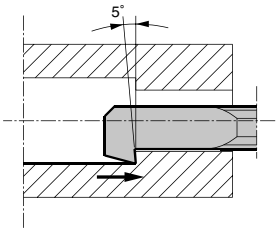


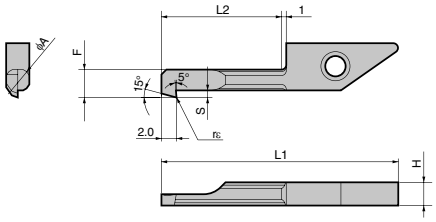
• Right-hand shown

–NB Type (without Chipbreaker) Top Shape

Top Shape	Grades
	Coated Carbide Carbide
	PCD

VNBT (Back Boring)





• Right-hand shown

● Insert Dimensions (VNB-S)

Description		Min. Bore Dia.	Dimension (mm)								Grades				
											MEGA COAT	PVD	Carbide	PCD	
		ϕA	H	L1	L2	L3	F	S	rε	W	PR1225	PR930	KW10	KPD001	KPD010
VNBR	0103-005S	1.0	3.9	26.5	3	7	0.85	0.2	0.05 (+0 -0.02)	0.7	●	●			
	0105-005S				5						●	●			
	01503-005S	1.5			3		1.3				●	●			
	01505-005S				5						●	●			
	0206-005S	2.0			6	-	1.8	0.25		0.8	●	●			
	025075-005S	2.5		28.1	7.5		2.1	0.4			●	●			
	0311-005S	3.0		30.8	11		2.6	0.4			●	●			
	03515-005S	3.5		34.8	15		3.0	0.5			●	●			
	0411-005S	4.0		30.8	11		3.5	0.5			●	●			
	0420-005S			39.8	20						●	●			
VNBR	01503-01S	1.5	3.9	26.5	3	7	1.3	0.2	0.1 (+0 -0.03)	0.7	●	●			
	01505-01S				5						●	●			
	0206-01S	2.0			6	-	1.8	0.25		0.8	●	●			
	025075-01S	2.5		28.1	7.5		2.1	0.4			●	●			
	0311-01S	3.0		30.8	11		2.6	0.4			●	●			
	03515-01S	3.5		34.8	15		3.0	0.5			●	●			
	0411-01S	4.0		30.8	11		3.5	0.5			●	●			
	0420-01S			39.8	20						●	●			
VNBR	0411-02S	4.0	3.9	30.8	11	-	3.5	0.5	0.2 (+0 -0.04)	0.8	●	●			
	0420-02S			39.8	20						●	●			

Recommended Cutting Conditions ➡ F90

● : Std. Item

System Tip-Bars are sold in 5 piece boxes

● **Insert Dimensions (VNB / VNB-NB / VNBT)**

Description		Min. Bore Dia.	Dimension (mm)								Grades				
											MEGA COAT	PVD	Carbide	PCD	
		φA	H	L1	L2	F	S	rε	W	θ	PR1225	PR930	KW10	KPD001	KPD010
VNBR	0206-003	2	3.9	26.5	6	1.8	0.25	0.03	1.2	24°	●	●	●		
	0311-003	3		30.8	11	2.6	0.4		1.8		●	●	●		
	0411-003	4				3.5	0.5		2.7	23°	●	●	●		
	0420-003			39.8	20						●	●	●		
	0511-003	5		30.8	11	4.5	0.7		3.0		●	●	●		
	0520-003			39.8	20						●	●	●		
	0620-003	6				5.3	1.0			24°	●	●	●		
	0630-003			49.8	30						●	●	●		
	0720-003	7		39.8	20	6.2	1.0					●	●		
	0730-003			49.8	30							●	●		
VNBR	0206-01	2	3.9	26.5	6	1.8	0.25	0.1	1.2	24°	●	●	●		
	0311-01	3		30.8	11	2.6	0.4		1.8		●	●	●		
	0411-01	4				3.5	0.5		2.7	23°	●	●	●		
	0420-01			39.8	20						●	●	●		
	0511-01	5		30.8	11	4.5	0.7		3.0		●	●	●		
	0520-01			39.8	20						●	●	●		
	0620-01	6				5.3	1.0			24°	●	●	●		
	0630-01			49.8	30						●	●			
	0720-01	7		39.8	20	6.2	1.0					●	●		
	0730-01			49.8	30							●			
VNBR	0206-02	2	3.9	26.5	6	1.8	0.25	0.2	1.2	24°	●	●	●		
	0311-02	3		30.8	11	2.6	0.4		1.8		●	●	●		
	0411-02	4				3.5	0.5		2.7	23°	●	●	●		
	0420-02			39.8	20						●	●	●		
	0511-02	5		30.8	11	4.5	0.7		3.0		●	●	●		
	0520-02			39.8	20						●	●	●		
	0620-02	6				5.3	1.0			24°	●	●	●		
	0630-02			49.8	30						●	●	●		
	0720-02	7		39.8	20	6.2	1.0				●	●	●		
	0730-02			49.8	30						●	●	●		
VNBR	0206-003NB	2	3.9	26.5	6	1.8	0.25	0.03	-	15°		●	●		
	0311-003NB	3		30.8	11	2.6	0.4					●	●		
	0411-003NB	4				3.5	0.5					●	●		
	0420-003NB			39.8	20							●	●		
	0511-003NB	5		30.8	11	4.5	0.7					●	●		
	0520-003NB			39.8	20							●	●		
	0620-003NB	6				5.3	1.0					●	●		
	0630-003NB			49.8	30							●	●		
	0720-003NB	7		39.8	20	6.2	1.0					●	●		
	0730-003NB			49.8	30							●	●		
VNBR	0206-02NB	2	3.9	26.5	6	1.8	0.25	0.2	-	15°			●		
	0311-02NB	3		30.8	11	2.6	0.4						●		
	0411-02NB	4				3.5	0.5						●	●	●
	0420-02NB			39.8	20								●	●	●
	0511-02NB	5		30.8	11	4.5	0.7						●	●	●
	0520-02NB			39.8	20								●	●	●
	0620-02NB	6				5.3	1.0						●	●	●
	0630-02NB			49.8	30								●	●	●
	0720-02NB	7		39.8	20	6.2	1.0						●	●	●
	0730-02NB			49.8	30								●	●	●
VNBTR	0411-003	4	3.9	30.8	11	3.6	1.0	0.03	-	-		●	●		
	0420-003			39.8	20							●			
	0511-003	5		30.8	11	4.6	1.3					●	●		
	0520-003			39.8	20							●			
VNBTR	0411-01	4	3.9	30.8	11	3.6	1.0	0.1	-	-	●	●	●		
	0420-01			39.8	20						●	●			
	0511-01	5		30.8	11	4.6	1.3				●	●	●		
	0520-01			39.8	20						●	●			

Recommended Cutting Conditions ➡ F90

F

Boring

● : Std. Item

System Tip-Bars are sold in 5 piece boxes

SVN-N (without side stopper)

SVNS-N (without side stopper / without setscrew)

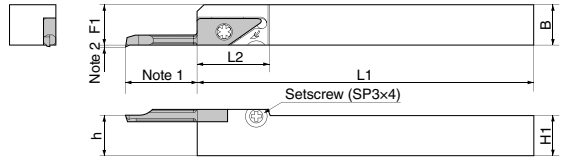


Fig.1 (SVN-N)

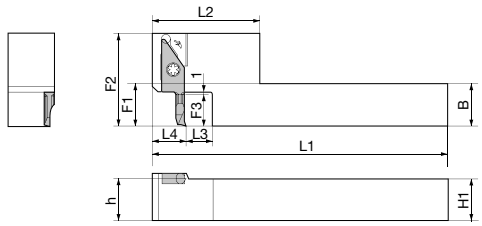


Fig.2 (SVNS-N)

• Right-hand shown

Right-hand Insert for Right-hand Toolholder.

Note 1 & Note 2: For insert dimensions, ref. to page **F26~F27**

Toolholder Dimensions

Description		Std.	Dimension (mm) H1=h	B	L1	L2	L3	L4	F1	F2	F3	Drawing	Spare Parts: Clamp Screw	Wrench	Setscrew	Applicable Inserts (F26~F27, G43, G66, J30)
SVNR	1010H-12N	●	10	10	100	22	-	-	10	-	-	Fig.1	SB-3080TR	FT-10	SP3×4	VNBR....-...
	1212K-12N	●	12	12	125				12							VNBTR....-...
	1616K-12N	●	16	16					16							VNGR....-..
	2020K-12N	●	20	20					20							VNFGR....-..
	2525M-12N	●	25	25	150				25							VNTR...-..
SVNSR	1010K-12-06N	●	10	10	125	45	10	12	10	29	6	Fig.2	SB-3080TR	LTW-10S	-	(VNBR..06-...)*
	1010K-12-11N	●	10	10	125		10	12	10	33	11					(VNBR..11-...)* (VNBTR..11-...)* (VNGR....-11)* (VNTR...-11)*
	1212M-12-06N	●	12	12	150		10	12	12	29	6					(VNBR..06-...)*
	1212M-12-11N	●	12	12	150		10	12	12	33	11					(VNBR..11-...)* (VNBTR..11-...)* (VNGR....-11)* (VNTR...-11)*
	1212M-12-20N	●	12	12	150		10	13	12	42	20					(VNBR..20-...)* (VNBTR..20-...)* (VNGR....-20)*
	1616M-12-06N	●	16	16	150		16	12	16	29	6					(VNBR..06-...)*
	1616M-12-11N	●	16	16	150		16	12	16	33	11					(VNBR..11-...)* (VNBTR..11-...)* (VNGR....-11)* (VNTR...-11)*
	1616M-12-20N	●	16	16	150		16	13	16	42	20					(VNBR..20-...)* (VNBTR..20-...)* (VNGR....-20)*

1. SVN-N / S···SVN-N / S···SVN-SN (without side stopper) retains high index accuracy by simple restraint.
2. SVN-N (without side stopper) has a setscrew SP3X4. Changing the setscrew SP3X4 to a screw HS3x4 (sold separately) enables the toolholder to be used as a binding effect toolholder similar to the side stopper toolholder.

* All system Tip-Bars Inserts are used with a SVNSR-N Toolholders. However, when setting the cutting edge at the face level of the toolholder as shown in Fig. 2, use the insert shown in ( ).
In these cases, the F3 dimension of the toolholders corresponds to the L2 dimension of the insert.

Spare Parts (Optional)

Screw (Side Stopper)	Wrench
HS3×4	LW-1.5

● : Std. Item

S···SVN-N Round Shank (Standard, without side stopper)

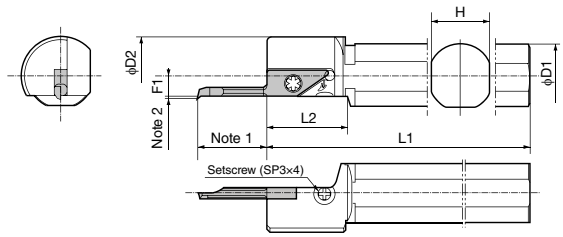


Fig.1 (S···SVN-N)

S···SVN-SN Round Shank (Straight, without side stopper)

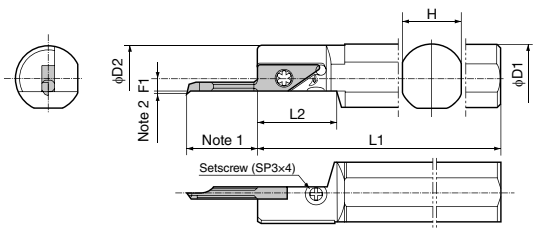


Fig.2 (S···SVN-SN)

• Right-hand shown

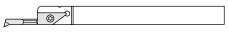
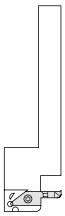
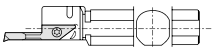
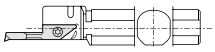
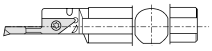
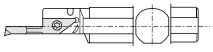
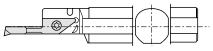
Right-hand Insert for Right-hand Toolholder.

Note 1 & Note 2: For insert dimensions, ref. to page **F26~F27**

Toolholder Dimensions

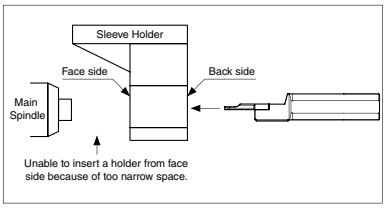
Description	Std.	Dimension (mm) φD1	φD2	H	L1	L2	F1		Drawing	Spare Parts: Clamp Screw	Wrench	Screw Side Stopper	Setscrew	Wrench	Applicable Inserts
S12F-SVNR12N	●	12	20	11	80	23	4		Fig.1	SB-3080TR	FT-10	-	SP3×4	-	**F26~F27** **G43** **G66** **J30**
S14G-SVNR12N	●	14	20	13	90										**VNBR....-..** **VNBTR....-...** **VNGR....-..** **VNFGR....-..** **VNTR....-..**
S16H-SVNR12N	●	16	24	15	100		6								
S19H-SVNR12N	●	19.05	24	17	100	24									
S19N-SVNR12N	●				160										
S20H-SVNR12N	●	20	24	18	100										
S25H-SVNR12N	●	25.4	30	23	100										
S25Q-SVNR12N	●				180										
S19H-SVNR12SN	●	19.05	18.5	17	100	23	4		Fig.2	SB-3080TR	FT-10	-	SP3×4	-	
S20H-SVNR12SN	●	20	19.5	18											
S22K-SVNR12SN	●	22	21.5	20	125										
S25.0G-SVNR12SN	●	25	24.5	23	90										

Selection of System Tip-Bars

Gang-Type (Horizontal)	Gang-Type	Gang-Type (Front Loading Sleeve Type)	Gang-Type (Back Loading Sleeve Type)
			
Square Shank (Straight) 	Square Shank (L-shape) 	Square Shank —	Square Shank —
Round Shank (Standard) 		Round Shank (Standard) 	Round Shank (Standard) —
Round Shank (Straight) 		Round Shank (Straight) 	Round Shank (Straight) 

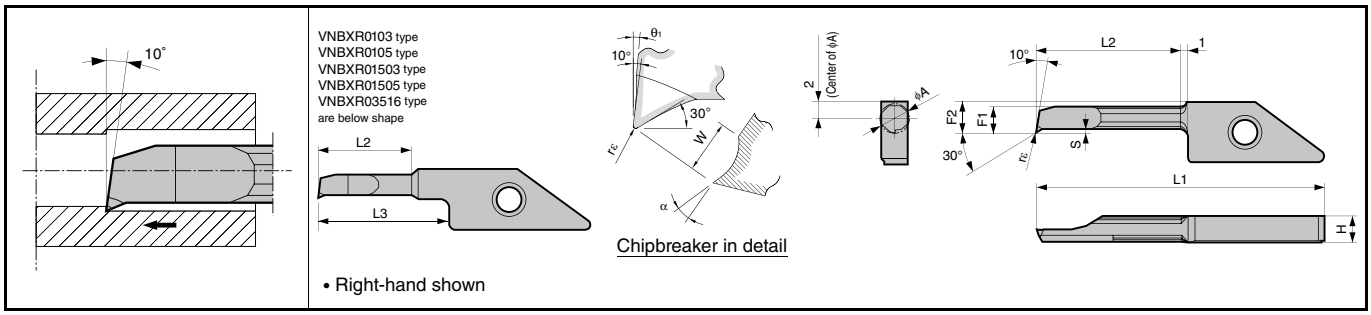
Q: There are standard types (head dia. is larger than shank) and straight types for round shanks. What is each one used for?

A: The straight type is used when it cannot be inserted from the face side of the sleeve holder and can be inserted only from the back side due to space limitation (Refer to Fig. below). On the other hand, the standard type should be installed when it can be inserted from the face side, and the head end is used for positioning as stopper.



● : Std. Item

VNBX-S (Boring) [Corner-R (rε): Minus tolerance]



• Right-hand shown

Insert Dimensions (VNBX-S)

Description		Min. Bore Dia.	Dimension (mm)												Grades PVD Coated Carbide		
		φA	H	L1	L2	L3	F1	F2	S	rε	W	θ1	α		PR930		
VNBXR	0103-005S	1.0	3.9	26.5	3	7	0.85	2.95	0.2	+0 -0.02 0.05	0.7	7°	15°		●		
	0105-005S				5										●		
	01503-005S	1.5			3		1.3								●		
	01505-005S				5										●		
	0206-005S	2.0			6	-	1.8	3	0.25		0.8	8°	18°		●		
	0311-005S	3.0		30.8	11		2.6	3.5	0.4						●		
	03511-005S	3.5					3.1	3.75	0.45						●		
	03516-005S			39.8	16	21									●		
	0411-005S	4.0		30.8	11	-	3.5	4	0.5						●		
	0420-005S			39.8	20										●		
VNBXR	01503-01S	1.5	3.9	26.5	3	7	1.3	2.95	0.2	+0 -0.03 0.1	0.7	7°	15°		●		
	01505-01S				5										●		
	0206-01S	2.0			6	-	1.8	3	0.25		0.8	8°	18°		●		
	0311-01S	3.0		30.8	11		2.6	3.5	0.4						●		
	03511-01S	3.5					3.1	3.75	0.45						●		
	03516-01S			39.8	16	21									●		
	0411-01S	4.0		30.8	11	-	3.5	4	0.5						●		
	0420-01S			39.8	20										●		
VNBXR	0411-02S	4.0	3.9	30.8	11	-	3.5	4	0.5	+0 -0.04 0.2					●		
	0420-02S			39.8	20										●		

Recommended Cutting Conditions ➡ F90

Attachment toolholder for VNBX-S System Tip-Bars

1. There are three different types of attachment toolholder for the VNBX-S System Tip-Bars (Ref. to Page **F31**).
   (1) SVNS-XN Type (without Side Stopper)
   (2) S···SVN-XN Type (without Side Stopper)
   (3) S···SVN-SXN Type (without Side Stopper)
2. Above toolholders assure high index accuracy by easy restraint.
3. Setscrews (SP3x4) are attached. Toolholders without Side Stopper can be used as a binding effect toolholder when removing the clamp screws and inserting screws (HS3x4: sold separately) with a wrench (LW-1.5: sold separately).

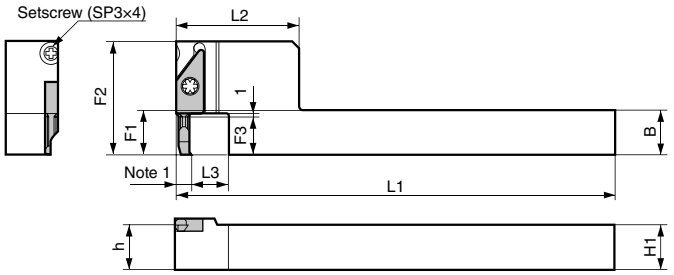
Spare Parts (Optional)

Screw (Side Stopper)	Wrench
	
HS3×4	LW-1.5

● : Std. Item

System Tip-Bars are sold in 5 piece boxes

SVNS-XN (Square Shank: L-shape)



• Right-hand shown

Right-hand Insert for Right-hand Toolholder.

Note 1: The dimension of Note 1 is same size as the applicable insert (VNBX) F2 dimension.

Toolholder Dimensions (L-shape square shank applicable to gang tool post)

Description		Std.	Dimension (mm)										Spare Parts			*Applicable Inserts ➡ F30
			H1=h	B	L1	L2	L3	F1	F2	F3			Clamp Screw	Wrench	Setscrew	
SVNSR	1010K-12-06XN	●	10	10	125	45	10	10	29	6			SB-3080TR	LTW-10S	SP3×4	(VNBXR02..)
	1010K-12-11XN	●							33	11						(VNBXR..11..)
	1212M-12-06XN	●	12	12	150			12	29	6						(VNBXR02..)
	1212M-12-11XN	●							33	11						(VNBXR..11..)
	1212M-12-20XN	●							42	20						(VNBXR0420..)
	1616M-12-06XN	●	16	16			16	16	29	6						(VNBXR02..)
	1616M-12-11XN	●							33	11						(VNBXR..11..)
	1616M-12-20XN	●							42	20						(VNBXR0420..)

* All VNBXR Inserts can be attached to a SVNS-XN Toolholder. However, when setting the cutting edge at the face level of the toolholder as shown in Fig., use the insert shown in ( ).

S···SVN-XN (Round Shank: Standard type)

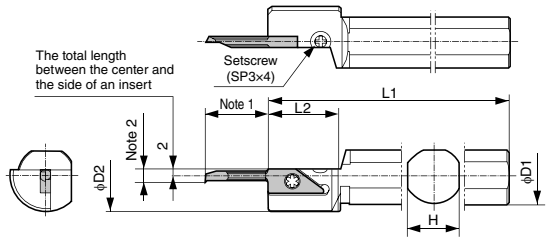


Fig.1 (S···SVN-XN)

S···SVN-SXN (Round Shank: Straight type)

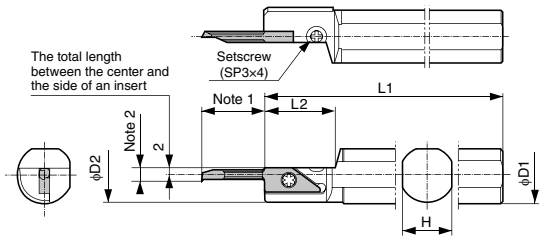


Fig.2 (S···SVN-SXN)

• Right-hand shown

Right-hand Insert for Right-hand Toolholder.

Note 1: The dimension of Note 1 shows the applicable insert (VNBX) L2 dimension +1 mm.
Note 2: The dimension of Note 1 is same size as the applicable insert (VNBX) F2 dimension.

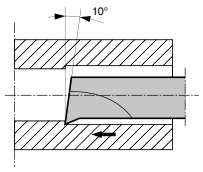
Toolholder Dimensions (Holder center axis core and insert center are coaxial type)

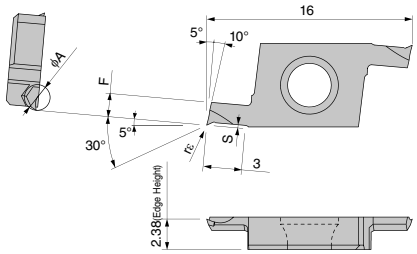
Description		Std.	Dimension (mm)								Drawing	Spare Parts			Applicable Inserts ➡ F30
			φD1	φD2	H	L1	L2					Clamp Screw	Wrench	Setscrew	
S12F	-SVNR12XN	●	12	20	11	80	23				Fig.1	SB-3080TR	FT-10	SP3×4	VNBXR...
S14G	-SVNR12XN	●	14		13	90									
S16H	-SVNR12XN	●	16	24	15	100									
S19H	-SVNR12XN	●	19.05		17		24								
S19N	-SVNR12XN	○				160									
S20H	-SVNR12XN	●	20		18	100									
S25H	-SVNR12XN	●	25.4	30	23										
S25Q	-SVNR12XN	●				180									
S19H	-SVNR12SXN	●	19.05	18.5	17	100	23				Fig.2	SB-3080TR	FT-10	SP3×4	VNBXR...
S20H	-SVNR12SXN	●	20	19.5	18										
S22K	-SVNR12SXN	●	22	21.5	20	125									
S25.0G	-SVNR12SXN	●	25	24.5	23	90									

*Reminder of applicable insert.

● : Std. Item ○ : Check Availability

TWB (Micro Boring: Horizontal type) [Corner-R (rε) Tolerance: +0/–0.02mm, +0/–0.03mm]





• Right-hand shown

Description		Min. Bore Dia. φA	Dimension (mm) F	S	rε	Grades PVD Coated Carbide PR1025	
TWBR	01003-005	1.0	0.85	0.2	0.05 +0 -0.02	●	
	01503-005	1.5	1.30			●	
	02003-005	2.0	1.75	0.25		●	
	02503-005	2.5	2.10	0.3		●	
	03003-005	3.0	2.40	0.4		●	
TWBR	01503-010	1.5	1.30	0.2	0.1 +0 -0.03	●	
	02003-010	2.0	1.75	0.25		●	
	02503-010	2.5	2.10	0.3		●	
	03003-010	3.0	2.40	0.4		●	

F

Boring

STW (Square Shank for Horizontal type insert)

(For Left-hand toolholders for grooving,please ref. to page **G68**.)

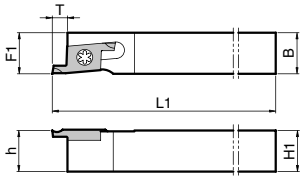


Fig.1

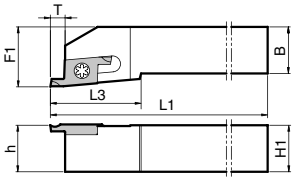


Fig.2

• Right-hand shown

Right-hand Insert for Right-hand Toolholder, (Left-hand Insert for Left-hand Toolholder.)

● Toolholder Dimensions

Description		Std.	Dimension (mm) H1=h	B	L1	L2	L3	F1	F2	T		Drawing	Spare Parts Clamp Screw	Wrench	Applicable Inserts ➡ F32
STWR	1212F-15	●	12	12	85	-	-	12	-	3		Fig.1	SB-3080TR	LTW-10S	TWBROOOOO-OOO
	1212K-15	●	12	12	125			12							
	1616K-15	●	16	16				16							
	2020K-15	●	20	20			25	25				Fig.2			
	2525M-15	●	25	25	150			32							

S..-STW (Round Shank for Horizontal type insert)

(For Left-hand toolholders for grooving,please ref. to page **G68**.)

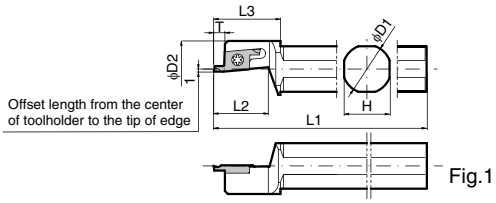


Fig.1

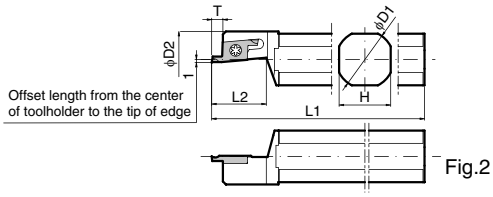


Fig.2

• Right-hand shown

Right-hand Insert for Right-hand Toolholder, (Left-hand Insert for Left-hand Toolholder.)

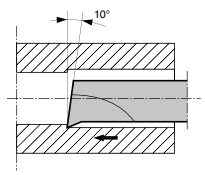
● Toolholder Dimensions

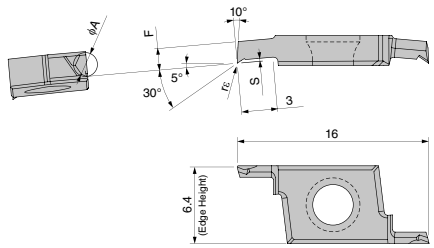
Description		Std.	Dimension (mm) φD1	φD2	H	L1	L2	L3	T	Drawing	Spare Parts Clamp Screw	Wrench	Applicable Inserts ➡ F32
S12F-	STWR15	●	12	20	11	80	18	22	3	Fig.1	SB-3080TR	LTW-10S	TWBROOOOO-OOO
S14H-	STWR15	●	14		13	100							
S15F-	STWR15	●	15.875		15	85							
S16F-	STWR15	●	16										
S19G-	STWR15	●	19.05	18.5	17	90		-	3	Fig.2			
S19K-	STWR15	●				120							
S20G-	STWR15	●	20	19.5	18	90							
S20K-	STWR15	●				120							
S22K-	STWR15	●	22	21.5	20	125	22						
S25.0J-	STWR15	●	25	24.5	23	110							
S25K-	STWR15	●	25.4	25	23	120							

● : Std. Item

Twin-Bars are sold in 5 piece boxes

TWBT (Micro Boring: Vertical type) [Corner-R (rε) Tolerance: +0/–0.02mm, +0/–0.03mm]

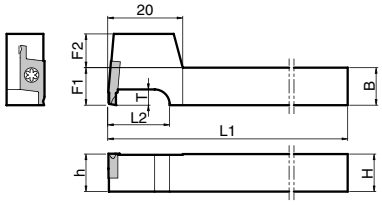




• Right-hand shown

Description		Min. Bore Dia. ϕA	Dimension (mm) F	S	rε	Grades PVD Coated Carbide PR1025	
TWBTR	01003-005	1.0	0.85	0.2	0.05 +0 -0.02	●	
	01503-005	1.5	1.30			●	
	02003-005	2.0	1.75	0.25		●	
	02503-005	2.5	2.10	0.3		●	
	03003-005	3.0	2.30	0.4		●	
TWBTR	01503-010	1.5	1.30	0.2	0.1 +0 -0.03	●	
	02003-010	2.0	1.75	0.25		●	
	02503-010	2.5	2.10	0.3		●	
	03003-010	3.0	2.30	0.4		●	

STWS (Square shank for Vertical type insert: L-shape type)



• Right-hand shown

Toolholder Dimensions

Description		Std.	Dimension (mm) H1=h	B	L1	L2	L3	F1	F2	T		Drawing	Spare Parts Clamp Screw	Wrench	Applicable Inserts
STWSR	1010JX-15T	●	10	10	120	16	-	10	9	3		-	SB-3080TR	LTW-10S	➡ F33 ➡ G69
	1212JX-15T	●	12	12				12	7						TWBTROOOOO-OOO TWFGTROOO
	1616JX-15T	●	16	16		20		16	3						
STWSR	1010F-15T	●	10	10	85	16	-	10	9						
	1212F-15T	●	12	12				12	7						

Recommended Cutting Conditions (TWB / TWBT)

Workpiece Material	Recommended Insert Grades (Cutting Speed Vc: m/min) PVD Coated Carbide PR1025	TWBR01003 type TWBR01503 type TWBTR01003 type TWBTR01503 type		TWBR02003 type TWBR02503 type TWBR03003 type TWBTR02003 type TWBTR02503 type TWBTR03003 type		Remarks
		ap (mm), f (mm/rev)				
		ap	f	ap	f	
Carbon steel Alloy steel	★ 30~100	~0.1	~0.01	~0.2	~0.03	Coolant
Stainless Steel	★ 30~80	~0.1	~0.01	~0.2	~0.02	

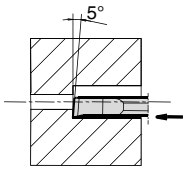
★: 1st Recommendation

● : Std. Item

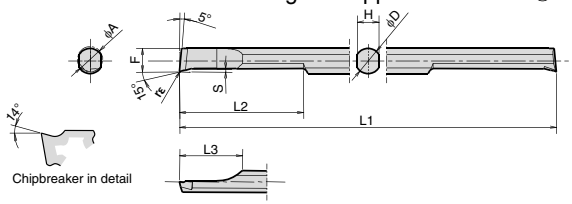
Twin-Bars are sold in 5 piece boxes

2-Edge Tip-Bars HPB / HPBT

HPB (Boring)

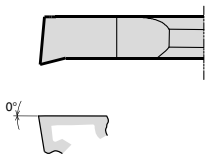


Ref. to Page for Applicable Sleeve ➡ **F24, F25**

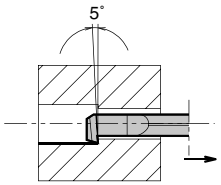


• Right-hand shown

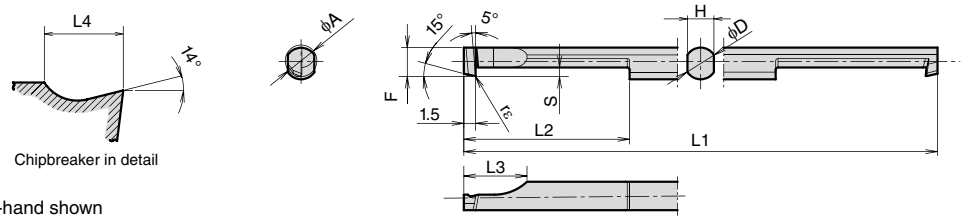
NB Type Top Shape
(without Chipbreaker)



HPBT (Back Boring)



Ref. to Page for Applicable Sleeve ➡ **F24, F25**



• Right-hand shown

● Tip-Bars Dimensions

Description		Min. Bore Dia.	Dimension (mm)								Grades			
											PVD Coated Carbide		Carbide	
											PR930		KW10	
		ϕA	ϕD	H	L1	L2	L3	F	S	rε	R	L	R	L
HPB R/L	0202-005	2	2	1.7	50	10	5	1.75	0.25	0.05 +0 -0.02	●	●	●	
	0303-005	3	3	2.5		15	7	2.7	0.3		●	●	●	
	0404-005	4	4	3.35	60	20	10	3.65	0.5		●	●	●	
	0505-005	5	5	4.3	70	25	12	4.55			●	●	●	
	0606-005	6	6	5.2				5.5			●	●	●	
	0707-005	7	7	6.2	80			6.45			●	●	●	
HPBR	0202-005NB	2	2	1.7	50	10	5	1.75	0.25	0.05 +0 -0.02	●		●	
	0303-005NB	3	3	2.5		15	7	2.7	0.3		●		●	
	0404-005NB	4	4	3.35	60	20	10	3.65	0.5		●		●	
	0505-005NB	5	5	4.3	70	25	12	4.55			●		●	
	0606-005NB	6	6	5.2				5.5			●		●	
	0707-005NB	7	7	6.2	80			6.45			●		●	
HPBT R/L	0404-005	4	4	3.35	60	21	8	3.65	1.0	0.05 +0 -0.02	●	○	●	
	0505-005	5	5	4.3	70	26		4.55	1.3		●	●	●	

◆ Description Table for Tip-Bars and Applicable Sleeves

Tip-Bars Description		Applicable Sleeves ➡ F24,F25	
HPB R/L	0202-···	EZH	02…
	0303-···		03…
	0404-···		04…
	0505-···		05…
	0606-···		06…
	0707-···		07…
HPBT R/L	0404-···	EZH	04…
	0505-···		05…

◆ Recommended Cutting Conditions

Workpiece Material	Recommended Insert Grades (Cutting Speed Vc: m/min)		HPB02 type		HPB03 type		HPB04 type HPBT04 type		HPB05/06/07 type HPBT05 type		Remarks
	PVD Coated Carbide	Carbide	ap (mm), f (mm/rev)								
	PR930	KW10	ap	f	ap	f	ap	f	ap	f	
Carbon steel / Alloy steel	★ 30~100	-	~0.3	~0.03	~0.4	~0.04	~0.45	~0.07	~0.5	~0.1	Coolant
Stainless Steel	★ 30~80	-	~0.3	~0.02	~0.4	~0.03	~0.45	~0.05	~0.5	~0.07	
Non-ferrous Metals	-	★ 30~100	~0.3	~0.05	~0.4	~0.06	~0.45	~0.1	~0.5	~0.15	

★: 1st Recommendation

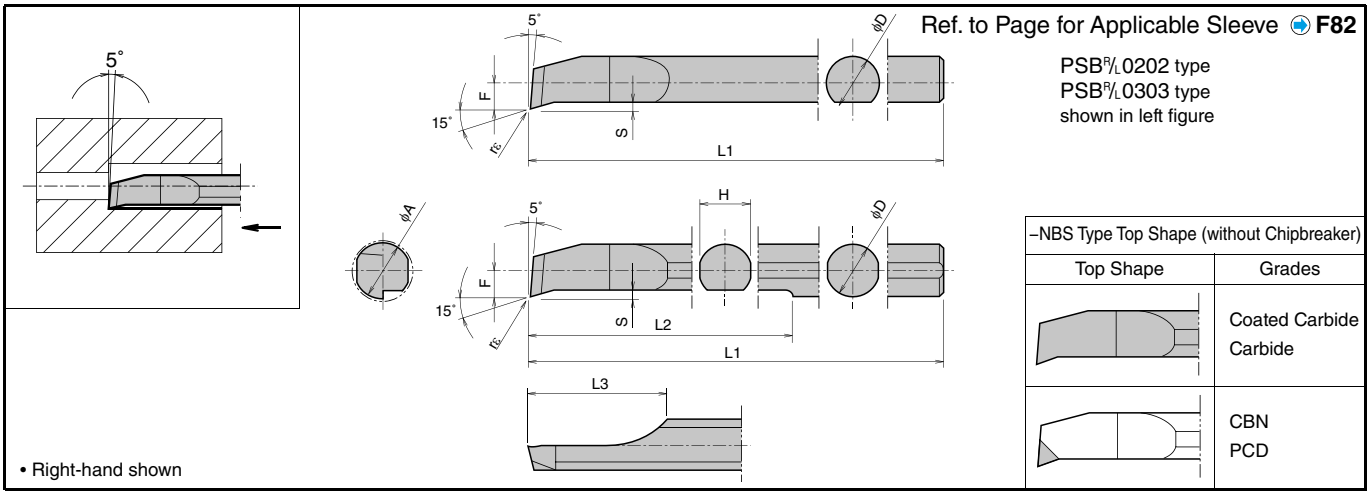
● : Std. Item ○ : Check Availability

Tip-Bars are sold in 1 piece boxes.

Tip-Bars for Micro Boring

PSB-S (Boring) <Adjustable Overhang Length>

This insert will be switched to **EZB** type (EZ Bars, ref. to page **F14**)



Ref. to Page for Applicable Sleeve **F82**

PSB R/L 0202 type
PSB R/L 0303 type
shown in left figure

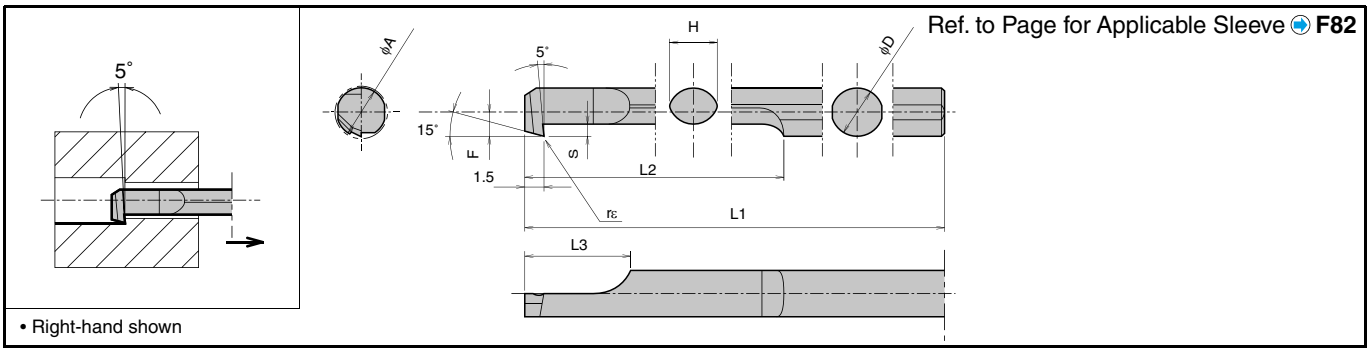
–NBS Type Top Shape (without Chipbreaker)

Top Shape	Grades
	Coated Carbide Carbide
	CBN PCD

• Right-hand shown

PSBT-S (Back Boring) <Adjustable Overhang Length>

This insert will be switched to **HPBT** type (2-Edge, ref. to page **F34**).



Ref. to Page for Applicable Sleeve **F82**

• Right-hand shown

Tip-Bars Dimensions

Description		Min. Bore Dia.	Dimension (mm)									Grades						
												PVD Coated Carbide		Carbide	CBN		PCD	
		φA	φD	H	L1	L2	L3	F	S	rε		PR915	PR930	KW10	KBN510	KBN525	KPD001	KPD010
PSB R/L	0202-50S	2	1.8	-	50	-	5	0.9	0.25	0.05			△	△				
	0303-50S	3	2.8				7	1.4	0.3				△	△				
	0404-60S	4	3.8	3.6	60	30	10	1.9	0.5				△	△				
	0505-70S	5	4.8	4.4	70	40	12	2.4					△	△				
	0606-70S	6	5.8	5.2		45		2.9					△	△				
	0707-80S	7	6.8	6.2	80	50		3.4					△	△				
PSB R/L	0202-50NBS	2	1.8	-	50	-	5	0.9	0.25	0.05								
	0303-50NBS	3	2.8				7	1.4	0.3						R	R		
	0404-60NBS	4	3.8	3.6	60	30	10	1.9	0.5						R	R	R	R
	0505-70NBS	5	4.8	4.4	70	40	12	2.4							R	R	R	●
	0606-70NBS	6	5.8	5.2		45		2.9							R	R	R	R
	0707-80NBS	7	6.8	6.2	80	50		3.4							R	R	R	R
PSBT R/L	0415-60S	4	3.8	3.6	60	20	8	1.9	1.0	0.05			△					
	0515-70S	5	4.8	4.6	70			2.4	1.3				△					

Recommended Cutting Conditions

Workpiece Material	Recommended Insert Grades (Cutting Speed Vc: m/min)						PSB02 type		PSB03 type		PSB04 PSBT04 type		PSB05 PSB06 PSB07 PSBT05 type		Remarks
	PVD Coated Carbide		Carbide	CBN	PCD										
	PR915	PR930	KW10	KBN510 KBN525	KPD001	KPD010	ap (mm), f (mm/rev)								
							ap	f	ap	f	ap	f	ap	f	
Carbon Steel / Alloy Steel		★ 30~100					~0.3	~0.03	~0.4	~0.04	~0.45	~0.07	~0.5	~0.1	Coolant
Stainless Steel		★ 30~80					~0.3	~0.02	~0.4	~0.03	~0.45	~0.05	~0.5	~0.07	
Non-ferrous Metals			☆ ~100		★ ~300	☆ ~300	~0.3	~0.05	~0.4	~0.06	~0.45	~0.1	~0.5	~0.15	
Hard Materials				★ ~100			-	-	~0.07	~0.03	~0.10	~0.05	~0.15	~0.07	

★: 1st Recommendation ☆: 2nd Recommendation

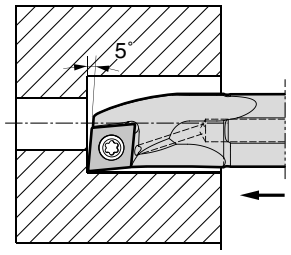
● : Std. Item
R : Std. Item (R-hand Only)
△ : Will be switched to new item (Check Availability)

Tip-Bars are sold in 1 piece boxes.

Dynamic Bar [CC□□Insert]

A / S-SCLC-AE Excellent Bar (Boring / Internal Facing)

Max. Overhang Length L/D=~5.5



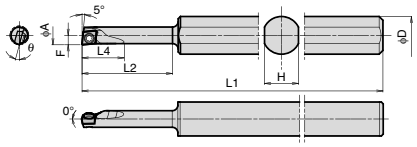


Fig.1

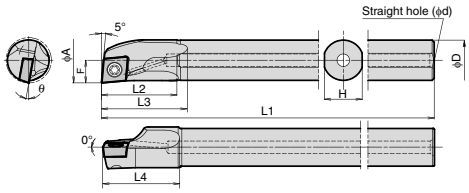


Fig.2

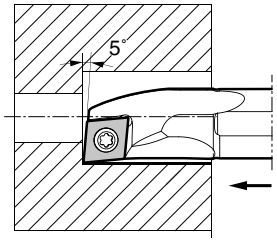
Shank Dia. ϕD	Straight hole Dia. ϕd
ϕ8	ϕ2.5
ϕ10	ϕ3
ϕ12	ϕ4
ϕ16	ϕ5
ϕ20	
ϕ25	

• Right-hand shown

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

S-SCLC-A Steel Bar (Boring / Internal Facing)

Max. Overhang Length L/D=~4



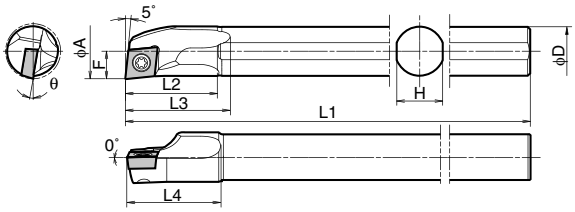


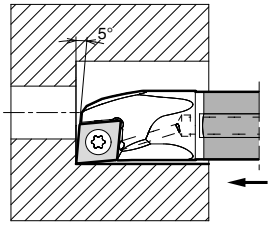
Fig.3

• Right-hand shown

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

C / E-SCLC-A Carbide Shank Bar (Boring / Internal Facing)

Max. Overhang Length L/D=~7



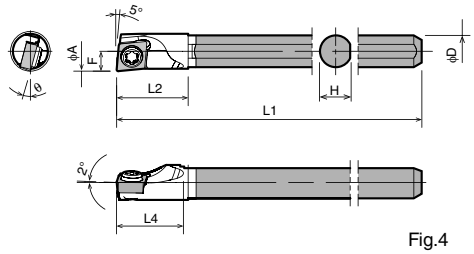


Fig.4

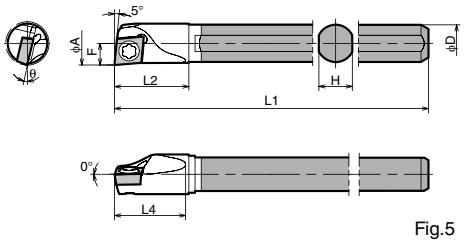


Fig.5

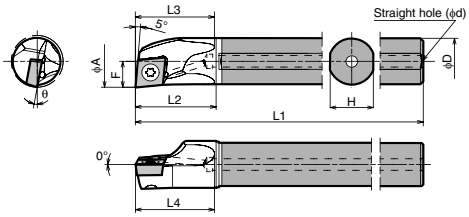


Fig.6

Shank Dia. ϕD	Straight hole Dia. ϕd
ϕ8	ϕ3
ϕ10	
ϕ12	ϕ4
ϕ16	
ϕ20	ϕ6
ϕ25	

• Right-hand shown

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

Toolholder Dimensions

	Description	Std. R	Std. L	Min. Bore Dia. φA	Dimension (mm) φD	H	L1	L2	L3	L4	F	θ	Standard Corner-R(rε)	Coolant Hole	Drawing	Spare Parts: Clamp Screw	Spare Parts: Wrench
Excellent Bar	S10H-SCLCR/L03-05AE	●	●	5	10	9	100	24	-	11	2.5	15°	0.2	No	Fig.1	SB-1635TR	FT-6
	S10H-SCLCR/L03-06AE	●	●	6				28		13	3	13°					
	S10H-SCLCR/L04-07AE	●	●	7				32		15	3.5					SB-2035TR	
	S10H-SCLCR/L04-08AE	●	●	8				37		15	4	11°					
	A08X-SCLCR/L06-10AE	●	●	10	8	7	120	16	20	17	5	14°	0.4	Yes	Fig.2	SB-2545TR	FT-8
	A10L-SCLCR/L06-12AE	●	●	12	10	9	140	20	25	21	6	12°					
	A12M-SCLCR/L06-14AE	●	●	14	12	11	150	24	30	25	7	10°					
	A16Q-SCLCR/L09-18AE	●	●	18	16	15	180	30	34	31	9					SB-4065TR	FT-15
	A20R-SCLCR/L09-22AE	●	●	22	20	19	200	36	49	37	11	8°					
	A25S-SCLCR/L09-27AE	●	●	27	25	24	250	46	55	46	13.5	6°					
Steel	S08X-SCLCR/L06-10A	●	●	10	8	7	120	16	20	17	5	14°	0.4	No	Fig.3	SB-2545TR	FT-8
	S10L-SCLCR/L06-12A	●	●	12	10	9	140	20	25	21	6	12°					
	S12M-SCLCR/L06-14A	●	●	14	12	11	150	24	30	25	7	10°					
	S16Q-SCLCR/L09-18A	●	●	18	16	15	180	30	34	31	9					SB-4065TR	FT-15
	S20R-SCLCR/L09-22A	●	●	22	20	19	200	36	49	37	11	8°					
	S25S-SCLCR/L09-27A	●	●	27	25	24	250	46	55	46	13.5	6°					
Carbide	C04G-SCLCR/L03-05A	●	●	5	4	3.8	90	9	-	8	2.5	15°	0.2	No	Fig.4	SB-1635TR	FT-6
	C05H-SCLCR/L03-06A	●	●	6	5	4.4	100	11		11	3	13°			Fig.5		
	C06J-SCLCR/L04-07A	●	●	7	6	5.4	110	12		12	3.5					SB-2035TR	
	C07K-SCLCR/L04-08A	●	●	8	7	6.4	125	13		13	4	11°					
	E08L-SCLCR/L 06-10A	●	●	10	8	7	140	16	15	15	5	14°	0.4	Yes	Fig.6	SB-2545TR	FT-8
	E08L-SCLCR 06-10A-2/3	●					90										
	E10N-SCLCR/L06-12A	●	●	12	10	9	160	20	19	19	6	12°					
	E10N-SCLCR 06-12A-2/3	●					105										
	E12Q-SCLCR/L06-14A	●	●	14	12	11	180	23	22	22	7	10°					
	E12Q-SCLCR 06-14A-2/3	●					120										
	E16X-SCLCR/L 09-18A	●	●	18	16	15	220	28	27	27	9					SB-4065TR	FT-15
	E16X-SCLCR 09-18A-2/3	●					145										
	E20S-SCLCR/L 09-22A	●	●	22	20	19	250	32	31	31	11	8°					
	E20S-SCLCR 09-22A-2/3	●					165										
	E25T-SCLCR/L 09-27A	●	●	27	25	24	300	38	37	37	13.5	6°					
	E25T-SCLCR 09-27A-2/3	●					200										

Applicable Inserts

Applications	Minute ap	Finishing	Finishing	Finishing-Medium	Finishing-Medium	Medium	Finishing-Medium	Finishing	Finishing / Precision	Low Feed
Ref. to Page	B48	B48	B49	B49	B49	B49, B50	B48, B49	B50, B51	B50	B51, B52
Ine rt / Toolholder Des iption	CF	GF	PP	GK	HQ	Standard	GQ	R/L-F	R/L-FSF	(E/F) R/L-U
----SCLCR/L03----	CCGT0301..	-	-	-	-	-	-	CCGT0301..	CCET0301..	-
----SCLCR/L04----	CCGT0401..	-	-	-	-	-	-	CCGT0401..	CCET0401..	-
----SCLCR/L06----	-	CCGT0602..	CCMT0602..	CCMT0602..	CCMT0602..	CCGT0602..	CCGT0602..	-	-	CCGT0602..
----SCLCR/L09----	-	CCGT09T3..	CCMT09T3..	CCMT09T3..	CCMT09T3..	CCGT09T3.. CCMT09T3..	CCGT09T3..	-	-	CCGT09T3..
Applications	Low Feed / Precision	Stainless Steel	Cast Iron	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Hard Materials			
Ref. to Page	B51	B50	B53	B52	B53	C24	C14			
Ine rt / Toolholder Des iption	F R/L-USF	MQ	Without Chipbreaker	AH	A3	PCD	CBN			
----SCLCR/L03----	-	-	-	-	-	-	CCMW0301..			
----SCLCR/L04----	-	-	-	-	-	CCGW0401..	CCMW0401..			
----SCLCR/L06----	CCET0602..	-	CCGW0602..	-	-	CCMT0602.. CCGW0602..	CCMW0602..			
----SCLCR/L09----	CCET09T3..	CCMT09T3..	CCGW09T3..	CCGT09T3..	CCGT09T3..	CCMT09T3.. CCGW09T3..	CCMW09T3..			

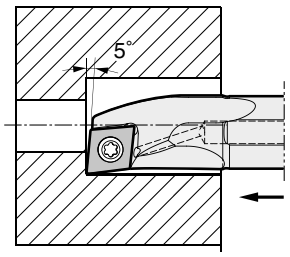
Recommended Cutting Conditions ➔ F91~F92
Applicable Sleeve ➔ F81~F84

● : Std. Item

Dynamic Bar [CP□□Insert]

A-SCLP-AE Excellent Bar (Boring / Internal Facing)

Max. Overhang Length L/D=~5.5



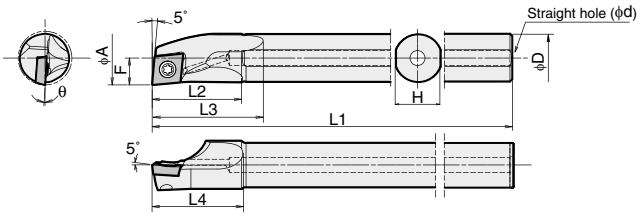


Fig.1

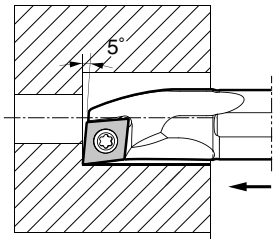
Shank Dia. ϕD	Straight hole Dia. ϕd
ϕ10	ϕ3
ϕ12	ϕ4
ϕ16	ϕ5
ϕ20	
ϕ25	

• Right-hand shown

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

S-SCLP-A Steel Bar (Boring / Internal Facing)

Max. Overhang Length L/D=~4



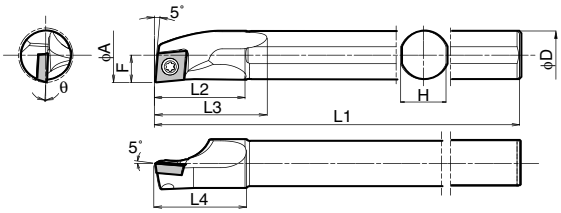


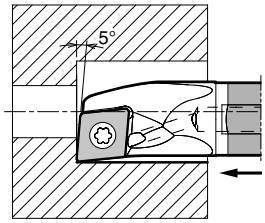
Fig.2

• Right-hand shown

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

E-SCLP-A Carbide Shank Bar (Boring / Internal Facing)

Max. Overhang Length L/D=~7



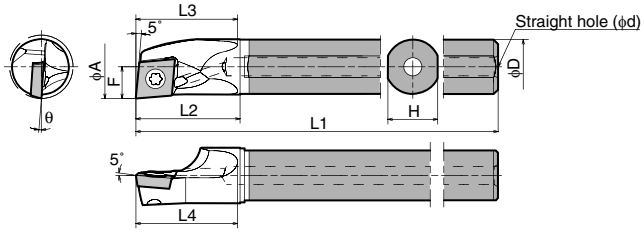


Fig.3

Shank Dia. ϕD	Straight hole Dia. ϕd
ϕ10	ϕ3
ϕ12	ϕ4
ϕ16	
ϕ20	ϕ6
ϕ25	

• Right-hand shown

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

Toolholder Dimensions

	Description	Std. R	Std. L	Min. Bore Dia. φA	Dimension (mm) φD	H	L1	L2	L3	L4	F	θ	Standard Corner-R(rε)	Coolant Hole	Drawing	Spare Parts: Clamp Screw	Spare Parts: Wrench
Excellent Bar	A10L-SCLP R/L 08-12AE	●	●	12	10	9	140	20	25	20	6	5°	0.4	Yes	Fig.1	SB-3060TR	FT-10
	A12M-SCLP R/L 08-14AE	●	●	14	12	11	150	24	29	24	7	4°					
	A12M-SCLP R/L 09-16AE	●	●	16					31		8					SB-4065TR	FT-15
	A16Q-SCLP R/L 09-18AE	●	●	18	16	15	180	30	37	30	9	3.5°					
	A20R-SCLP R/L 09-22AE	●	●	22	20	19	200	36	47	37	11	2°					
	A25S-SCLP R/L 09-27AE	●	●	27	25	24	250	46	55	46	13.5	0°					
Steel	S10L-SCLP R/L 08-12A	●	●	12	10	9	140	20	25	20	6	5°	0.4	No	Fig.2	SB-3060TR	FT-10
	S12M-SCLP R/L 08-14A	●	●	14	12	11	150	24	29	24	7	4°					
	S12M-SCLP R/L 09-16A	●	●	16					31		8					SB-4065TR	FT-15
	S16Q-SCLP R/L 09-18A	●	●	18	16	15	180	30	37	30	9	3.5°					
	S20R-SCLP R/L 09-22A	●	●	22	20	19	200	36	47	37	11	2°					
	S25S-SCLP R/L 09-27A	●	●	27	25	24	250	46	55	46	13.5	0°					
Carbide	E10N-SCLP R/L 08-12A	●	●	12	10	9	160	20	19	19	6	5°	0.4	Yes	Fig.3	SB-3060TR	FT-10
	E10N-SCLPR 08-12A-2/3	●					105										
	E10N-SCLPR 08-12A-1/2	●					80										
	E12Q-SCLP R/L 08-14A	●	●	14	12	11	180	23	22	22	7	4°					
	E12Q-SCLPR 08-14A-2/3	●					120										
	E12Q-SCLPR 08-14A-1/2	●					90										
	NEW E12Q-SCLP R/L 09-16A	●	●	16	12	11	180	23	22	22	8	5°				SB-4065TR	FT-15
	E12Q-SCLPR 09-16A-2/3	●					120										
	E12Q-SCLPR 09-16A-1/2	●					90										
	E16X-SCLP R/L 09-18A	●	●	18	16	15	220	28	27	27	9	3.5°					
	E16X-SCLPR 09-18A-2/3	●					145										
	E16X-SCLPR 09-18A-1/2	●					110										
	E20S-SCLP R/L 09-22A	●	●	22	20	19	250	32	31	31	11	2°					
	E20S-SCLPR 09-22A-2/3	●					165										
	E20S-SCLPR 09-22A-1/2	●					125										
	E25T-SCLP R/L 09-27A	●	●	27	25	24	300	38	37	37	13.5	0°					
	E25T-SCLPR 09-27A-2/3	●					200										

Applicable Inserts

Applications	Finishing	Finishing	Finishing-Medium	Medium	Finishing-Medium	Soft Steel / Finishing	Soft Steel / Finishing-Medium	Cast Iron	Non-ferrous Metals	Hard Materials
Ref. to Page	B54	B54	B54	B54	B54	B54	B54	B54	C25	C14
Insert / Toolholder Description	PP	GP	HQ	Standard	R/L-Y	XP	XQ	Without Chipbreaker	PCD	CBN
----SCLP R/L 08----	CPMT0802..	CPMT0802..	CPMH0802..	CPMH0802..	CPMH0802..	CPMT0802..	-	CPMB0802..	CPMH0802..	CPGB0802..
----SCLP R/L 09----	CPMT0903..	CPMT0903..	CPMH0903..	CPMH0903..	CPMH0903..	CPMT0903..	CPMT0903..	CPMB0903..	CPMH0903..	CPGB0903..

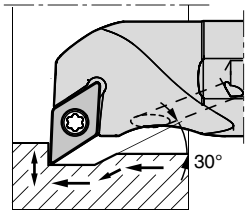
Recommended Cutting Conditions ➔ F91~F92
Applicable Sleeve ➔ F82~F84

● : Std. Item

Dynamic Bar [DC□□Insert]

A-SDUC-AE Excellent Bar (Copying)

Max. Overhang Length L/D=~5.5



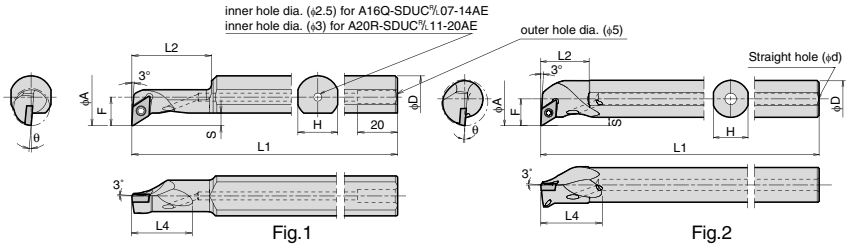


Fig.1 Fig.2

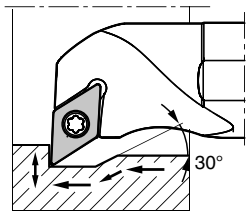
Shank Dia. ϕD	Straight hole Dia. ϕd
ϕ10	ϕ3
ϕ12	ϕ4
ϕ16	ϕ5
ϕ20	
ϕ25	

• Right-hand shown

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

S-SDUC-A Steel Bar (Copying)

Max. Overhang Length L/D=~4



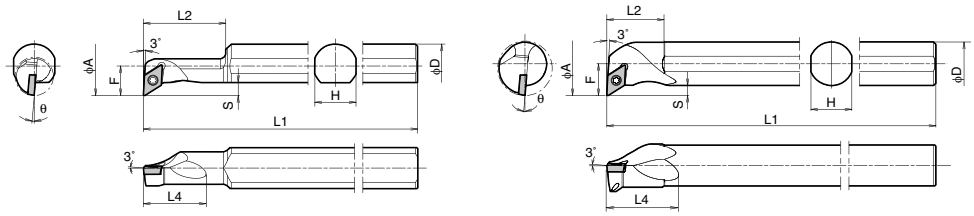


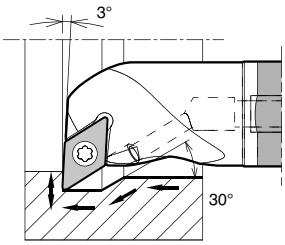
Fig.3 Fig.4

• Right-hand shown

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

E-SDUC-A Carbide Shank Bar (Copying)

Max. Overhang Length L/D=~7



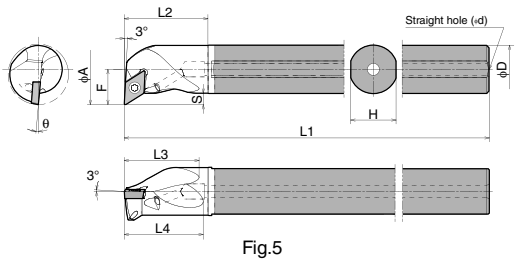


Fig.5

Shank Dia. ϕD	Straight hole Dia. ϕd
ϕ10	ϕ3
ϕ12	ϕ4
ϕ16	
ϕ20	ϕ6
ϕ25	

• Right-hand shown

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

F

Boring

Toolholder Dimensions

	Description	Std. R	Std. L	Min. Bore Dia. φA	Dimension (mm) φD	H	L1	L2	L3	L4	F	S	θ	Standard Corner-R(rε)	Coolant Hole	Drawing	Spare Parts: Clamp Screw	Spare Parts: Wrench
Excellent Bar	A10L-SDUC R/L 07-14AE	●	●	14	10	9	140	19	-	20	8.7	3.3	5°	0.4	Yes	Fig.2	SB-2560TR	FT-8
	A16Q-SDUC R/L 07-14AE	●	●		16	15	180	28		23	10.8	4.4				Fig.1		
	A12M-SDUC R/L 07-16AE	●	●	16	12	11	150	21		24	9.7	3.3				Fig.2		
	A16Q-SDUC R/L 07-20AE	●	●	20	16	15	180			26	11.7							
	A20R-SDUC R/L 11-20AE	●	●		20	19	200	48		30	15.6	6.1				Fig.1	SB-4065TR	FT-15
	A16Q-SDUC R/L 11-23AE	●	●	23	16	15	180	21		31	14.5					Fig.2		
	A20R-SDUC R/L 11-27AE	●	●	27	20	19	200	23		36	16.5							
	A25S-SDUC R/L 11-32AE	●	●	32	25	24	250	24		39	19							
Steel	S10L-SDUC R/L 07-14A	●	●	14	10	9	140	19	-	20	8.7	3.3	5°	0.4	No	Fig.4	SB-2560TR	FT-8
	S16Q-SDUC R/L 07-14A	●	●		16	15	180	28		23	10.8	4.4				Fig.3		
	S12M-SDUC R/L 07-16A	●	●	16	12	11	150	21		24	9.7	3.3				Fig.4		
	S16Q-SDUC R/L 07-20A	●	●	20	16	15	180			26	11.7							
	S20R-SDUC R/L 11-20A	●	●		20	19	200	48		30	15.6	6.1				Fig.3	SB-4065TR	FT-15
	S16Q-SDUC R/L 11-23A	●	●	23	16	15	180	21		31	14.5					Fig.4		
	S20R-SDUC R/L 11-27A	●	●	27	20	19	200	23		36	16.5							
	S25S-SDUC R/L 11-32A	●	●	32	25	24	250	24		39	19							
Carbide	E10N-SDUC R/L 07-14A	●	●	14	10	9	160	20	-	19	8.7	3.3	5°	0.4	Yes	Fig.5	SB-2560TR	FT-8
	E10N-SDUCR 07-14A-2/3	●					105											
	E12Q-SDUC R/L 07-16A	●	●	16	12	11	180	23		22	9.7							
	E12Q-SDUCR 07-16A-2/3	●					120											
	E16X-SDUC R/L 07-20A	●	●	20	16	15	220	28		26	11.7							
	E16X-SDUCR 07-20A-2/3	●					145											
	E16X-SDUC R/L 11-23A	●	●	23			220			27	14.5	6.1					SB-4065TR	FT-15
	E16X-SDUCR 11-23A-2/3	●					145											
	E20S-SDUC R/L 11-27A	●	●	27	20	19	250	32		31	16.5							
	E20S-SDUCR 11-27A-2/3	●					165											
	E25T-SDUC R/L 11-32A	●	●	32	25	24	300	38		37	19							
	E25T-SDUCR 11-32A-2/3	●					200											

Applicable Inserts

Applications	Minute ap	Finishing	Finishing	Finishing-Medium	Finishing-Medium	Medium - Roughing	Finishing	Finishing / Precision	Low Feed	Low Feed / Precision
Ref. to Page	B55	B55, B56	B56	B56	B56	B57	B58	B58	B59, B60	B59
Insert / Toolholder Description	CF	CK	PP	GK	HQ	Standard	R/L -F	R/L-FSF	(E/F)R/L-U	FR/L-USF
----SDUC R/L 07----	DCGT0702..	DCGT0702..	DCMT0702..	DCMT0702..	DCMT0702..	DCGT0702..	DCGT0702..	DCET0702..	DCGT0702..	DCET0702..
----SDQC R/L 07----										
----SDZC R/L 07----										
----SDUC R/L 11----	DCGT11T3..	DCGT11T3..	DCMT11T3..	DCMT11T3..	DCMT11T3..	DCMT11T3.. DCGT11T3..	DCGT11T3..	DCET11T3..	DCGT11T3..	DCET11T3..
----SDQC R/L 11----										
----SDZC R/L 11----										

Applications	Low Feed	Low Feed / Precision	Soft Steel / Finishing	Soft Steel / Finishing-Medium	Stainless Steel	Cast Iron	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Hard Materials
Ref. to Page	B60	B60	B57	B57	B57	B61	B61	B61	C25	C15
Insert / Toolholder Description	(E/F)R/L-J	FR/L-JSF	XP	XQ	MQ	Without Chipbreaker	AH	R/L-A3	PCD	CBN
----SDUC R/L 07----	DCET0702..	-	DCMT0702..	-	DCMT0702..	DCGW0702..	-	-	DCMT0702..	DCMW0702..
----SDQC R/L 07----										
----SDZC R/L 07----										
----SDUC R/L 11----	DC_T11T3..	DCET11T3..	DCMT11T3..	DCMT11T3..	DCMT11T3..	DCGW11T3..	DCGT11T3..	DCGT11T3..	DCMT11T3..	DCMW11T3..
----SDQC R/L 11----										
----SDZC R/L 11----										

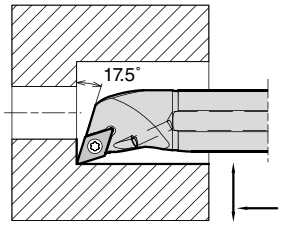
Recommended Cutting Conditions ➔ F91~F92
Applicable Sleeve ➔ F82~F84

● : Std. Item

Dynamic Bar [DC□□Insert]

A-SDQC-AE Excellent Bar (Copying)

Max. Overhang Length L/D=~5.5



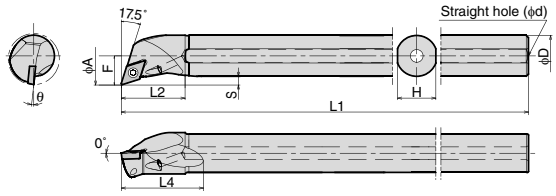


Fig.1

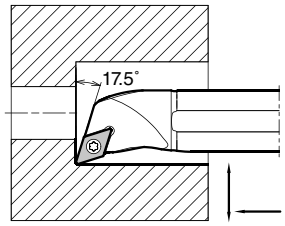
Shank Dia. ϕD	Straight hole Dia. ϕd
ϕ10	ϕ3
ϕ12	ϕ4
ϕ16	ϕ5
ϕ20	
ϕ25	

• Right-hand shown

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

S-SDQC-A Steel Bar (Copying)

Max. Overhang Length L/D=~4



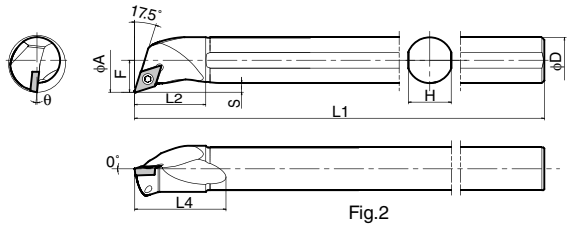


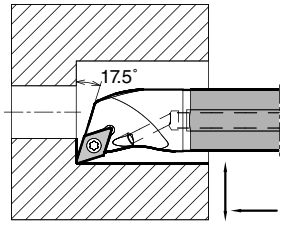
Fig.2

• Right-hand shown

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

E-SDQC-A Carbide Shank Bar (Copying)

Max. Overhang Length L/D=~7



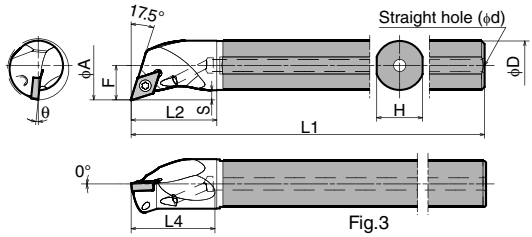


Fig.3

Shank Dia. ϕD	Straight hole Dia. ϕd
ϕ10	ϕ3
ϕ12	ϕ4
ϕ16	
ϕ20	ϕ6
ϕ25	

• Right-hand shown

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

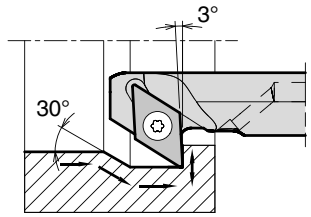
Toolholder Dimensions

	Description	Std. R	Std. L	Min. Bore Dia. ϕA	Dimension (mm) ϕD	H	L1	L2	L3	L4	F	S	θ	Standard Corner-R(r_ε)	Coolant Hole	Drawing	Spare Parts: Clamp Screw	Spare Parts: Wrench
Excellent Bar	A10L -SDQC R/L 07-13AE	●	●	13	10	9	140	19	-	21	7.5	2.1	10°	0.4	Yes	Fig.1	SB-2560TR	FT-8
	A12M-SDQC R/L 07-16AE	●	●	16	12	11	150	22		25	9.25	2.6	8°					
	A16Q-SDQC R/L 07-20AE	●	●	20	16	15	180	25		32	11.3		6°					
	A20R-SDQC R/L 11-25AE	●	●	25	20	19	200	31		37	14.4	3.7	5°				SB-4065TR	FT-15
	A25S-SDQC R/L 11-30AE	●	●	30	25	24	250	38		45	16.9		4°					
Steel	S10L-SDQC R/L 07-13A	●	●	13	10	9	140	19	-	21	7.5	2.1	10°	0.4	No	Fig.2	SB-2560TR	FT-8
	S12M-SDQC R/L 07-16A	●	●	16	12	11	150	22		25	9.25	2.6	8°					
	S16Q-SDQC R/L 07-20A	●	●	20	16	15	180	25		32	11.3		6°					
	S20R-SDQC R/L 11-25A	●	●	25	20	19	200	31		37	14.4	3.7	5°				SB-4065TR	FT-15
	S25S-SDQC R/L 11-30A	●	●	30	25	24	250	38		45	16.9		4°					
Carbide	E10N-SDQC R/L 07-13A	●	●	13	10	9	160	20	-	19	7.5	2.1	10°	0.4	Yes	Fig.3	SB-2560TR	FT-8
	E10N-SDQCR 07-13A-2/3	●					105											
	E12Q-SDQC R/L 07-16A	●	●	16	12	11	180	23	-	22	9.25	2.6	8°					
	E12Q-SDQCR 07-16A-2/3	●					120											
	E16X-SDQC R/L 07-20A	●	●	20	16	15	220	28	-	27	11.3	2.6	6°					
	E16X-SDQCR 07-20A-2/3	●					145											
	E20S-SDQC R/L 11-25A	●	●	25	20	19	250	32	-	31	14.4	3.7	5°				SB-4065TR	FT-15
	E20S-SDQCR 11-25A-2/3	●					165											
	E25T-SDQC R/L 11-30A	●	●	30	25	24	300	38	-	37	16.9	3.7	4°					
	E25T-SDQCR 11-30A-2/3	●					200											

● : Std. Item

A-SDZC-AE Excellent Bar (Back Boring)

Max. Overhang Length L/D=~5.5



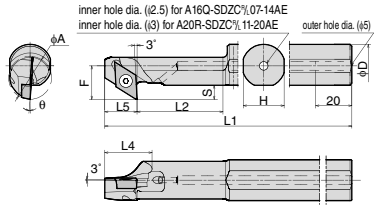


Fig.1

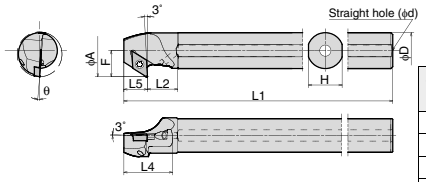


Fig.2

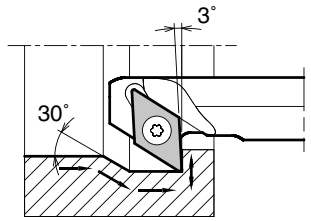
Shank Dia. φD	Straight hole Dia. φd
φ10	φ3
φ12	φ4
φ16	φ5
φ20	
φ25	

• Right-hand shown

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

S-SDZC-A Steel Bar (Back Boring)

Max. Overhang Length L/D=~4



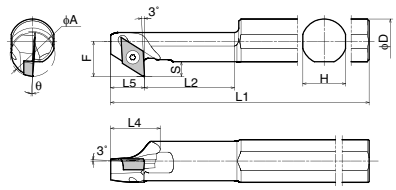


Fig.3

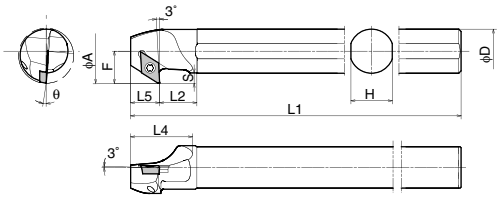


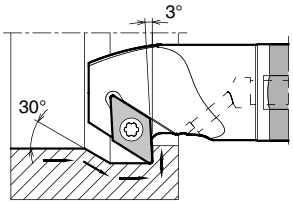
Fig.4

• Right-hand shown

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

E-SDZC-A Carbide Shank Bar (Back Boring)

Max. Overhang Length L/D=~7



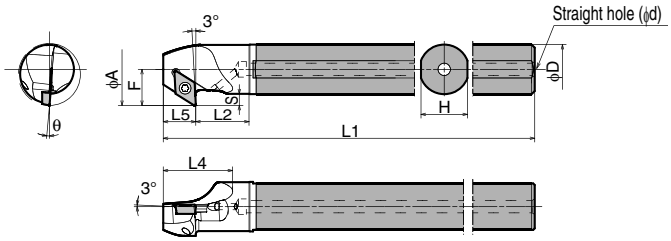


Fig.5

Shank Dia. φD	Straight hole Dia. φd
φ10	φ3
φ12	φ4
φ16	
φ20	φ6

• Right-hand shown

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

Toolholder Dimensions

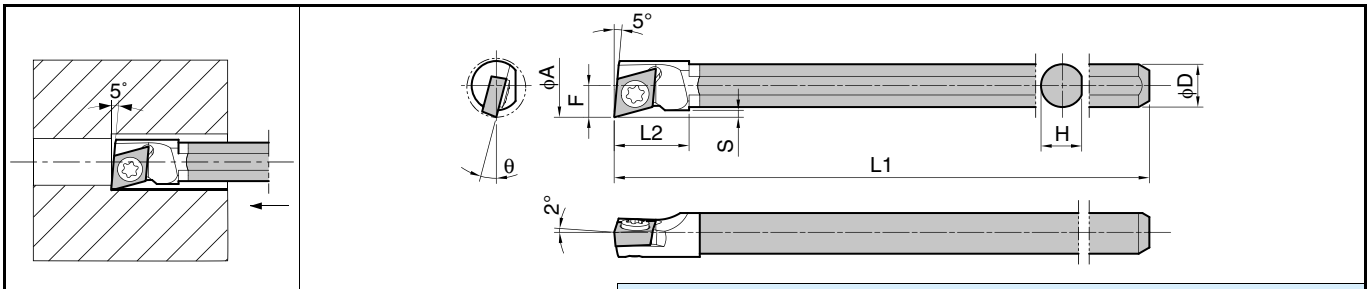
	Description	Std. R	Std. L	Min. Bore Dia. φA	Dimension (mm) φD	H	L1	L2	L4	L5	F	S	θ	Standard Corner-R(rε)	Coolant Hole	Drawing	Spare Parts: Clamp Screw	Spare Parts: Wrench
Excellent Bar	A10L-SDZC R/L 07-14AE	●	●	14	10	9	140	14	16	9.5	8.7	3.3	5°	0.4	Yes	Fig.2	SB-2545TR	FT-8
	A16Q-SDZC R/L 07-14AE	●	●		16	15	180	30	17	10	10.8	4.4				Fig.1		
	A12M-SDZC R/L 07-16AE	●	●	16	12	11	150	14	20	10.5	9.7	3.3				Fig.2	SB-2560TR	
	A16Q-SDZC R/L 07-20AE	●	●	20	16	15	180		22		11.7							
	A20R-SDZC R/L 11-20AE	●	●		20	19	200	40	24	15	15.6	6.1				Fig.1	SB-4065TR	FT-15
	A16Q-SDZC R/L 11-23AE	●	●	23	16	15	180	15	22		14.5					Fig.2		
	A20R-SDZC R/L 11-27AE	●	●	27	20	19	200		25		16.5							
	A25S-SDZC R/L 11-32AE	●	●	32	25	24	250		26		19							
Steel	S10L-SDZC R/L 07-14A	●	●	14	10	9	140	14	16	9.5	8.7	3.3	5°	0.4	No	Fig.4	SB-2545TR	FT-8
	S16Q-SDZC R/L 07-14A	●	●		16	15	180	30	17	10	10.8	4.4				Fig.3		
	S12M-SDZC R/L 07-16A	●	●	16	12	11	150	14	20	10.5	9.7	3.3				Fig.4	SB-2560TR	
	S16Q-SDZC R/L 07-20A	●	●	20	16	15	180		22		11.7							
	S20R-SDZC R/L 11-20A	●	●		20	19	200	40	24	15	15.6	6.1				Fig.3	SB-4065TR	FT-15
	S16Q-SDZC R/L 11-23A	●	●	23	16	15	180	15	22		14.5					Fig.4		
	S20R-SDZC R/L 11-27A	●	●	27	20	19	200		25		16.5							
	S25S-SDZC R/L 11-32A	●	●	32	25	24	250		26		19							
Carbide	E10N-SDZCR07-14A	●		14	10	9	160	10.5	16	9.5	8.7	3.3	5°	0.4	Yes	Fig.5	SB-2545TR	FT-8
	E12Q-SDZCR07-16A	●		16	12	11	180	12.5	20	10.5	9.7						SB-2560TR	
	E16X-SDZCR07-20A	●		20	16	15	220	17.5	22		11.7							
	E16X-SDZCR11-23A	●		23				13		15	14.5	6.1					SB-4065TR	FT-15
	E20S-SDZCR11-27A	●		27	20	19	250	17	25		16.5							

● : Std. Item

Boring Bar [JC □□Insert]

C···SJLC Carbide Shank Bar (Boring / Internal Facing)

Max. Overhang Length L/D=~7

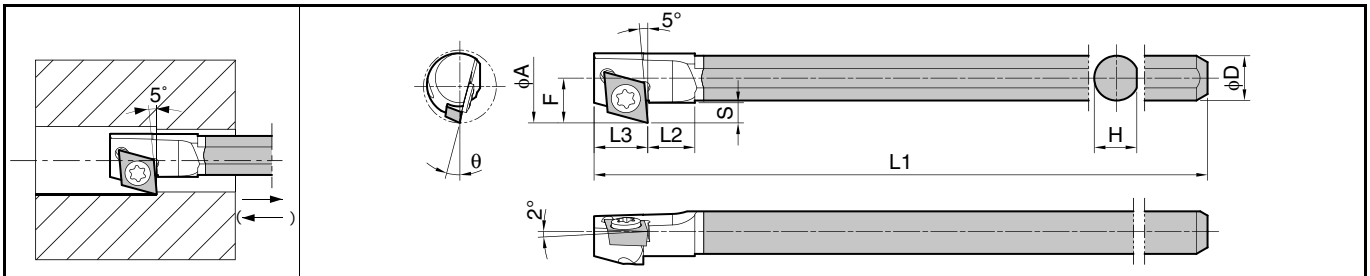


• Right-hand shown

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

C···SJZC Carbide Shank Bar (Back Boring)

Max. Overhang Length L/D=~7



• Right-hand shown

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

* When using Right-hand Toolholder, use Right-hand insert if machining from back to front in this direction (→).
Use Left-hand insert if machining from front to back in this direction (←).

● Toolholder Dimensions

Description	(Previous Description)	Std. R	Std. L	Min. Bore Dia. φA	Dimension (mm) φD	H	L1	L2	L3	F	S		θ	Standard Corner-R(rε)	Spare Parts: Clamp Screw	Spare Parts: Wrench
C04X-SJLC R/L 03-055	SJLC R/L 05504B-03W	●	●	5.5	4	3.8	91	7	-	2.95	0.65		15°	0.03	SB-1635TR	FT-6
C04X-SJZC R/L 03-065	SJZC R/L 06504B-03W	●	●	6.5			93	4	4.8	4.0	1.8					

● Applicable Inserts

Applications	Finishing	Finishing / Precision
Ref. to Page	B62	B62
Insert / Toolholder Description	R/L-F 	R/L-FSF 
----SJLC R/L 03----	JCGT0301..	JCET0301..
----SJZC R/L 03----	JCGT0301..	JCET0301..

Recommended Cutting Conditions ➡ F91~F92
Applicable Sleeve ➡ F81,F83,F84

• Features of C···SJLC

1. Specially designed for minimized bore dia.
2. A relief angle of 15°ensures high flexibility of the tool pass during necking.
3. Retaining front relief angle 5° and good surface roughness during internal facing.

• Features of C···SJZC

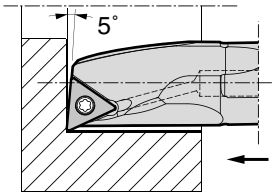
1. Back boring bars for workpiece that require high concentric circle accuracy and when a change of chuck is not possible.
2. Available for back boring and necking.
3. Despite the small size of minimum boring dia. as φ6.5, the edge gap is retained as large as 1.8 mm.

● : Std. Item

Dynamic Bar [TC□□Insert]

A-STLC-AE Excellent Bar (Boring / Internal Facing)

Max. Overhang Length L/D=~5.5



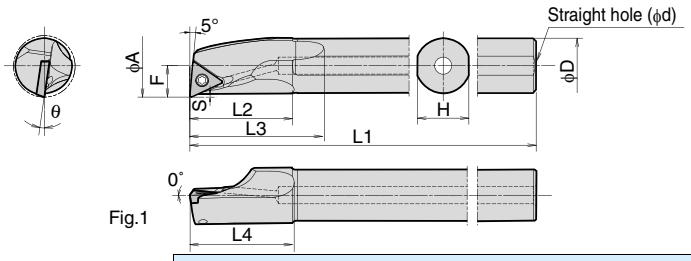


Fig.1

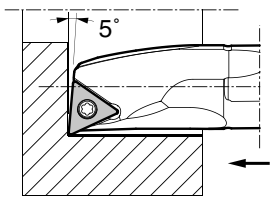
Shank Dia. ϕD	Straight hole Dia. ϕd
ϕ8	ϕ2.5
ϕ10	ϕ3
ϕ12	ϕ4
ϕ16	ϕ5
ϕ20	

• Right-hand shown

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

S-STLC-A Steel Bar (Boring / Internal Facing)

Max. Overhang Length L/D=~4



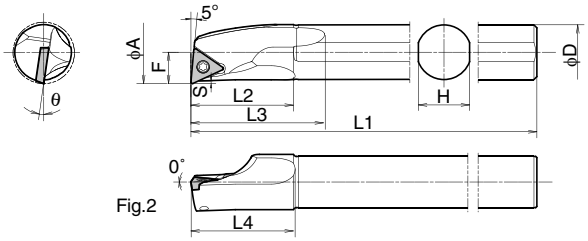


Fig.2

• Right-hand shown

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

Toolholder Dimensions

Description		Std. R	Std. L	Min. Bore Dia. ϕA	Dimension (mm) ϕD	H	L1	L2	L3	L4	F	S	θ	Standard Corner-R(rε)	Coolant Hole	Drawing	Spare Parts: Clamp Screw	Spare Parts: Wrench
Excellent Bar	A08X-STLC R/L09-10AE	●	●	10	8	7	120	16	22	16	5	0.5	14°	0.4	Yes	Fig.1	SB-2250TR	FT-7
	A10L-STLC R/L09-12AE	●	●	12	10	9	140	20	26	20	6.2	0.9	12°					
	A10L-STLC R/L11-12AE	●	●														SB-2560TR	FT-8
	A12M-STLC R/L11-14AE	●	●	14	12	11	150	24	30	25	7.2	0.7	10°					
	A16Q-STLC R/L11-18AE	●	●	18	16	15	180	30	39	31	9.2		8°					
	A20R-STLC R/L11-22AE	●	●	22	20	19	200	36	44	36	11.2		6°					
Steel	S08X-STLC R/L09-10A	●	●	10	8	7	120	16	22	16	5	0.5	14°	0.4	No	Fig.2	SB-2250TR	FT-7
	S10L-STLC R/L09-12A	●	●	12	10	9	140	20	26	20	6.2	0.9	12°					
	S10L-STLC R/L11-12A	●	●														SB-2560TR	FT-8
	S12M-STLC R/L11-14A	●	●	14	12	11	150	24	30	25	7.2	0.7	10°					
	S16Q-STLC R/L11-18A	●	●	18	16	15	180	30	39	31	9.2		8°					
	S20R-STLC R/L11-22A	●	●	22	20	19	200	36	44	36	11.2		6°					

Applicable Inserts

Applications	Finishing-Medium									
Ref. to Page	B64									
Insert / Toolholder Description	HQ 									
...-STLC R/L09-...	TCMT0902..									
...-STLC R/L11-...	TCMT1102..									

Recommended Cutting Conditions ➡ F91~F92
Applicable Sleeve ➡ F82~F84

● : Std. Item

Dynamic Bar [TB□□, TP□□Insert]

A / S-STLB(P)-AE Excellent Bar (Boring / Internal Facing)

Max. Overhang Length L/D=~5.5

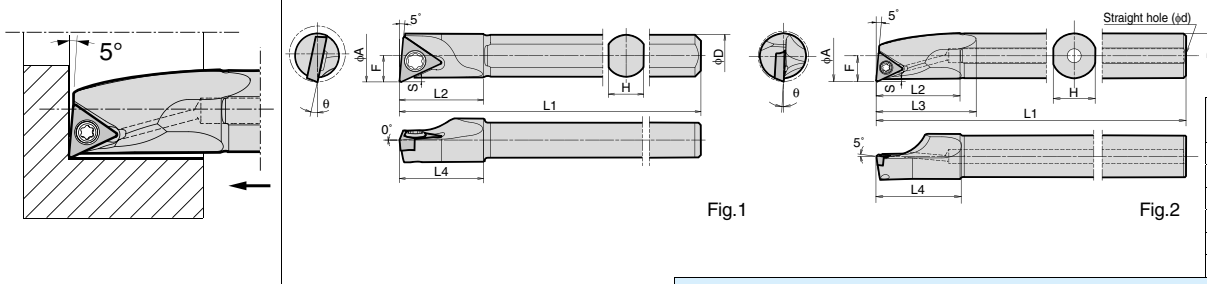


Fig.1 Fig.2

Shank Dia. φD	Straight hole Dia. φd
φ8	φ2.5
φ10	φ3
φ12	φ4
φ16	φ5
φ20	
φ25	

• Right-hand shown

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

S-STLB(P)-A Steel Bar (Boring / Internal Facing)

Max. Overhang Length L/D=~4

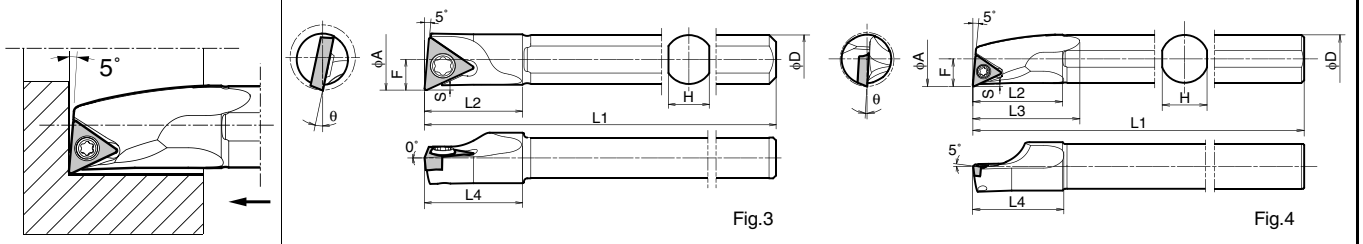


Fig.3 Fig.4

• Right-hand shown

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

E(C)-STLB(P)-A Carbide Shank Bar (Boring / Internal Facing)

Max. Overhang Length L/D=~7

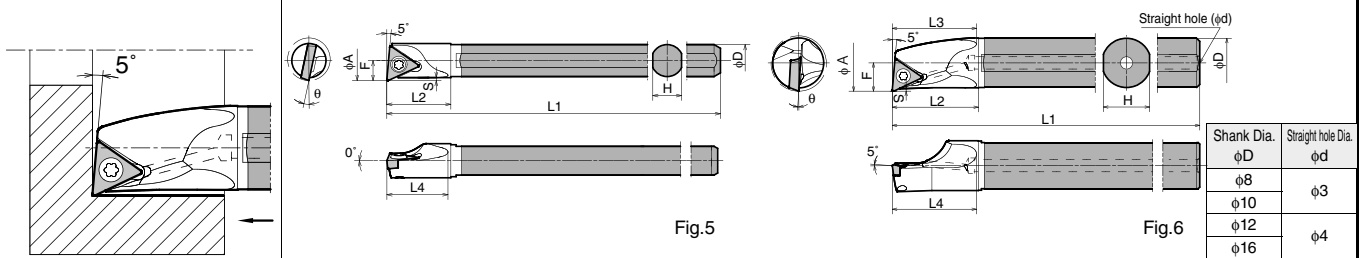


Fig.5 Fig.6

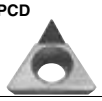
Shank Dia. φD	Straight hole Dia. φd
φ8	φ3
φ10	
φ12	φ4
φ16	
φ20	φ6
φ25	

• Right-hand shown

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

Applicable Inserts

Applications	Minute ap	Finishing	Finishing	Finishing	Finishing-Medium	Finishing	Finishing / Precision	Medium	Low Feed / Precision	Soft Steel / Finishing
Ref. to Page	**B64, B67**	**B67**	**B67**	**B64**	**B67**	**B64, B68**	**B69**	**B69**	**B69**	**B67**
Insert / Toolholder Description	**CF** 	**PP** 	**GP** 	**DP** 	**HQ** 	**R/L** 	**R/L-FSF** 	**R/L-H** 	**FR/L-USF** 	**XP** 
...-STLBR/L06-...	TBGT0601..	–	–	TBMT0601..	–	TBGT0601..	–	–	–	–
...-STLPR/L08-...	TPGT0802..	–	–	–	–	TPGH0802..	TPET0802..	–	TPET0802..	–
...-STLPR/L09-...	TPGT0902..	TPMT0902..	TPMT0902..	–	TPMT0902..	TPGH0902..	–	–	–	TPMT0902..
...-STLPR/L11-...	–	TPMT1103..	TPMT1103..	–	TPMT1103..	TPGH1103..	TPET1103..	TPGH1103..	TPET1103..	TPMT1103..
...-STLPR/L16-...	–	–	TPMT1603..	–	TPMT1603..	TPGH1603..	–	TPGH1603..	–	TPMT1603..

Applications	Soft Steel / Finishing-Medium	Cast Iron	Non-ferrous Metals	Hard Materials						
Ref. to Page	**B68**	**B64, B70**	**C26~C28**	**C16**						
Insert / Toolholder Description	**XQ** 	**Without Chipbreaker** 	**PCD** 	**CBN** 						
...-STLBR/L06-...	–	TBGW0601..	TBMT0601.. TBGW0601..	–						
...-STLPR/L08-...	–	TPGB0802..	TPMH0802.. TPGB0802..	TPGB0802..						
...-STLPR/L09-...	–	TPGB0902..	TPMH0902.. TPGB0902..	TPGB0902..						
...-STLPR/L11-...	TPMT1103..	TPGB1103..	TPMH1103.. TPGB1103..	TPGB1103..						
...-STLPR/L16-...	TPMT1603..	TPGB1603..	TPMH1603.. TPGB1603..	TPGB1603..						

Recommended Cutting Conditions ➔ **F91~F92**
Applicable Sleeve ➔ **F82~F84**

● **Toolholder Dimensions**

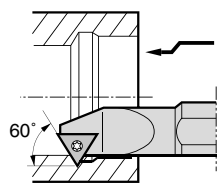
	Description	Std. R	Std. L	Min. Bore Dia. φA	Dimension (mm) φD	H	L1	L2	L3	L4	F	S	θ	Standard Corner-R(rε)	Coolant Hole	Drawing	Spare Parts: Clamp Screw	Spare Parts: Wrench
Excellent Bar	S06H-STLB R/L 06-08AE	●	●	8	6	5	100	12	-	12	3.8	0.5	12°	0.2	No	Fig.1	SB-2035TR	FT-6
	NEW A08X-STLP R/L 08-10AE	●	●	10	8	7	120	16	22	16	5	0.5	10°	0.4	Yes	Fig.2	SB-1TR	
	A08X-STLP R/L 09-10AE	●	●														SB-2545TR	FT-8
	A10L-STLP R/L 09-12AE	●	●	12	10	9	140	20	25	20	6.2	0.9	8°					
	A10L-STLP R/L 11-12AE	●	●						26		6	0.7	10°				SB-3060TR	FT-10
	A12M-STLP R/L 11-14AE	●	●	14	12	11	150	24	30	24	7.2	0.8	7°					
	NEW A12M-STLP R/L 09-16AE	●	●	16							8	0.6	5°				SB-2545TR	FT-8
	A16Q-STLP R/L 11-18AE	●	●	18	16	15	180	30	36	30	9.2	0.7	3.5°				SB-3060TR	FT-10
	A20R-STLP R/L 11-22AE	●	●	22	20	19	200	36	46	37	11.2		2°					
	NEW A20R-STLP R/L 16-25AE	●	●	25							13		0°				SB-4065TR	FT-15
	A25S-STLP R/L 16-27AE	●	●	27	25	24	250	46	55	46	13.7							
Steel	S06H-STLB R/L 06-08A	●	●	8	6	5	100	12	-	12	3.8	0.5	12°	0.2	No	Fig.3	SB-2035TR	FT-6
	NEW S08X-STLP R/L 08-10A	●	●	10	8	7	120	16	22	16	5	0.5	10°	0.4		Fig.4	SB-1TR	
	S08X-STLP R/L 09-10A	●	●														SB-2545TR	FT-8
	S10L-STLP R/L 09-12A	●	●	12	10	9	140	20	25	20	6.2	0.9	8°					
	S10L-STLP R/L 11-12A	●	●						26		6	0.7	10°				SB-3060TR	FT-10
	S12M-STLP R/L 11-14A	●	●	14	12	11	150	24	30	24	7.2	0.8	7°					
	NEW S12M-STLP R/L 09-16A	●	●	16							8	0.6	5°				SB-2545TR	FT-8
	S16Q-STLP R/L 11-18A	●	●	18	16	15	180	30	36	30	9.2	0.7	3.5°				SB-3060TR	FT-10
	S20R-STLP R/L 11-22A	●	●	22	20	19	200	36	46	37	11.2		2°					
	S25S-STLP R/L 16-27A	●	●	27	25	24	250	46	55	46	13.7						SB-4065TR	FT-15
Carbide	C06J-STLB R/L 06-08A	●	●	8	6	5.4	110	12	-	12	3.8	0.5	12°	0.2	No	Fig.5	SB-2035TR	FT-6
	NEW E08L-STLP R/L 08-10A	●	●	10	8	7	140	16	15	15	5	0.5	10°	0.4	Yes	Fig.6	SB-1TR	
	E08L-STLP R/L 09-10A	●	●														SB-2545TR	FT-8
	E10N-STLP R/L 09-12A	●	●	12	10	9	160	20	19	19	6.2	0.9	8°					
	E10N-STLPR 09-12A-2/3	●					105											
	E10N-STLPR 09-12A-1/2	●					80											
	E10N-STLP R/L 11-12A	●	●				160				6	0.7	10°				SB-3060TR	FT-10
	E10N-STLPR 11-12A-2/3	●					105											
	E10N-STLPR 11-12A-1/2	●					80											
	E12Q-STLP R/L 11-14A	●	●	14	12	11	180	23	22	22	7.2	0.8	7°					
	E12Q-STLPR 11-14A-2/3	●					120											
	E12Q-STLPR 11-14A-1/2	●					90											
	NEW E12Q-STLP R/L 09-16A	●	●	16			180				8	0.6	5°				SB-2545TR	FT-8
	E12Q-STLPR 09-16A-2/3	●					120											
	E12Q-STLPR 09-16A-1/2	●					90											
	E16X-STLP R/L 11-18A	●	●	18	16	15	220	28	27	27	9.2	0.7	3.5°					
	E16X-STLPR 11-18A-2/3	●					145											
	E16X-STLPR 11-18A-1/2	●					110										SB-3060TR	FT-10
	E20S-STLP R/L 11-22A	●	●	22	20	19	250	32	31	31	11.2		2°					
	E20S-STLPR 11-22A-2/3	●					165											
	E20S-STLPR 11-22A-1/2	●					125											
	NEW E20S-STLP R/L 16-25A	●	●	25			250				13		0°					
	E20S-STLPR 16-25A-2/3	●					165											
	E20S-STLPR 16-25A-1/2	●					125										SB-4065TR	FT-15
	E25T-STLP R/L 16-27A	●	●	27	25	24	300	38	37	37	13.7							
	E25T-STLPR 16-27A-2/3	●					200											

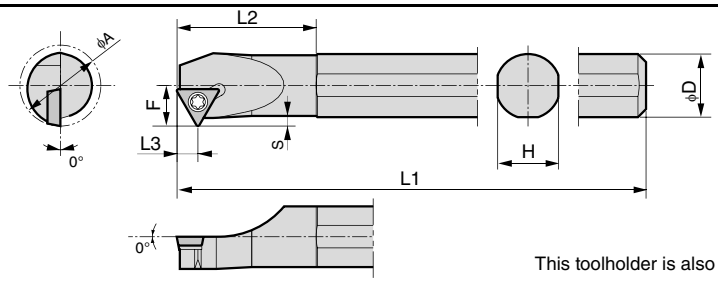
● : Std. Item

Boring Bar [TB□□, TP□□Insert]

S···STWP-E Excellent Bar (Copying)

Max. Overhang Length L/D=~5





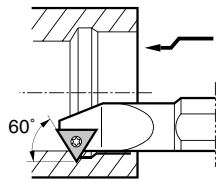
(➡ J31)
This toolholder is also available for threading.

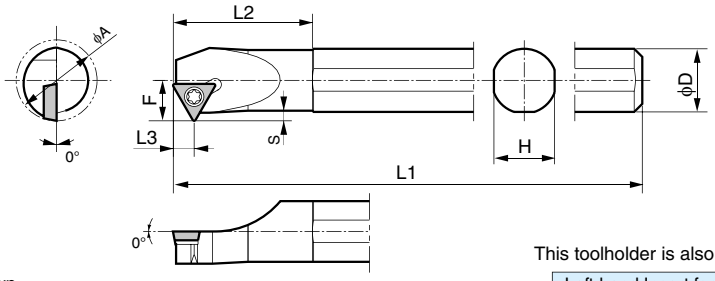
• Right-hand shown

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

S···STWP Steel Bar (Copying)

Max. Overhang Length L/D=~3





(➡ J31)
This toolholder is also available for threading.

• Right-hand shown

Left-hand Insert for Right-hand Toolholder.

Toolholder Dimensions

Description	(Previous Description)	Std. R	Std. L	Min. Bore Dia. φA	Dimension (mm) φD	H	L1	L2	L3	F	S		θ	Standard Corner-R(rε)	Spare Parts: Clamp Screw	Spare Parts: Wrench
S10M-STWP R/L 11 -12E	-	●	●	12	10	9.2	150	23	5.5	6	1.0		0°	0.1	SB-3STR	FT-10
S12M-STWP R/L 11 -16E		●	●	16	12	11	150	30		8	1.5					
S16R-STWP R/L 11 -20E		●	●	20	16	15	200	35		10	2.0				SB-3TR	
S20X-STWP R/L 11 -25E		●	●	25	20	19	220	40		12.5	2.5					
S20X-STWP R/L 16 -25E		●	●	25	20	19	220	40	7.7	14	4.0		0°	0.8	SB-4TR	FT-15
S25X-STWP R/L 16 -32E		●	●	32	25	23	270	42		16.5						
S10M-STWPR11 -12	SITR 1210-11	●		12	10	9.2	150	23	5.5	6	1.0		0°	0.1	SB-3STR	FT-10
S12M-STWPR11 -16	SITR 1612-11	●		16	12	11	150	30		8	1.5					
S16Q-STWPR11 -20	2016-11	●		20	16	15	180	35		10	2.0				SB-3TR	
S20R-STWPR11 -25	2520-11	●		25	20	19	200	40		12.5	2.5					

Applicable Inserts

Applications	Finishing	Finishing	Finishing-Medium	Finishing	Finishing / Precision	Medium	Low Feed / Precision	Soft Steel / Finishing	Soft Steel / Finishing-Medium
Ref. to Page	B67	B67	B67	B68	B69	B69	B69	B67	B68
Insert / Toolholder Description	PP	GP	HQ	R/L	R/L-FSF	R/L-H	F R/L-USF	XP	XQ
S10M-STWP R/L 11-12(E)	-	-	-	TPGH1102..	-	-	-	-	-
...-STWP R/L 11-16~25(E)	TPMT1103..	TPMT1103..	TPMT1103..	TPGH1103..	TPET1103..	TPGH1103..	TPET1103..	TPMT1103..	TPMT1103..
...-STWP R/L 16-...	-	TPMT1603..	TPMT1603..	TPGH1603..	-	TPGH1603..	-	TPMT1603..	TPMT1603..

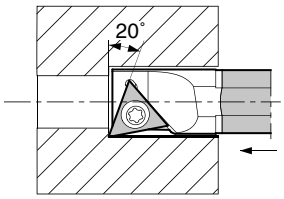
Applications	Cast Iron	Non-ferrous Metals	Hard Materials
Ref. to Page	B70	C26~C28	C16
Insert / Toolholder Description	Without Chipbreaker	PCD	CBN
S10M-STWP R/L 11-12(E)	TPGB1102..	-	-
...-STWP R/L 11-16~25(E)	TPGB1103..	TPMH1103.. TPGB1103..	TPGB1103..
...-STWP R/L 16-...	TPGB1603..	TPMH1603.. TPGB1603..	TPGB1603..

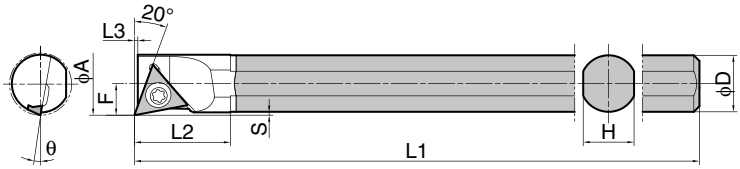
Recommended Cutting Conditions ➡ F91~F92
Applicable Sleeve ➡ F82~F84

● : Std. Item

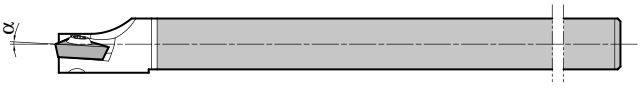
C···STXP(B) Carbide Shank Bar (Boring / Internal Facing)

Max. Overhang Length L/D=~7





C···STXB R/L type···α=0°
C···STXP R/L type···α=5°

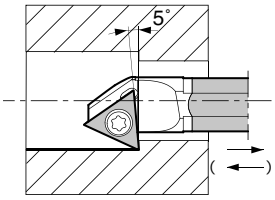


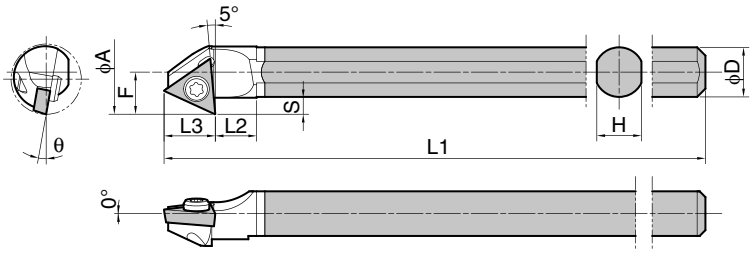
• Right-hand shown

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

C···STZB Carbide Shank Bar (Back Boring)

Max. Overhang Length L/D=~7





• Right-hand shown

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

* When using Right-hand Toolholder, use Right-hand insert if machining from back to front in this direction (→).
Use Left-hand insert if machining from front to back in this direction (←).

Toolholder Dimensions

Description	(Previous Description)	Std. R	Std. L	Min. Bore Dia. φA	Dimension (mm) φD	H	L1	L2	L3	F	S		θ	Standard Corner-R(rε)	Spare Parts: Clamp Screw	Spare Parts: Wrench
C06J-STXB R/L06-075	STXB R/L 07506B-06W	●	●	7.5	6	5.4	110	11	0.5	3.75	0.5		10°	0.03	SB-1STR	FT-6
C08X-STXP R/L08-09	STXP R/L 09008B-08W	●	●	9.0	8	7.0	143	14	0.6	4.6					SB-1TR	
C10X-STXP R/L09-11	11010B-09W	●	●	11.0	10	9.0	164	17		5.6					SB-2TR	FT-8
C06J-STZB R/L06-085	STZB R/L 08506B-06W	●	●	8.5	6	5.4	110	5	5.7	5.1	2.0				SB-1STR	FT-6

Applicable Inserts

Applications	Minute ap	Finishing	Finishing	Finishing	Finishing-Medium	Finishing	Finishing / Precision	Low Feed / Precision	Soft Steel / Finishing	Cast Iron
Ref. to Page	B64, B67	B67	B67	B64	B67	B64, B68	B69	B69	B67	B64, B70
Insert / Toolholder Description	CF	PP	GP	DP	HQ	R/L	R/L-FSF	F R/L-USF	XP	Without Chipbreaker
...-STXB R/L06-...	TBGT0601..	-	-	TBMT0601..	-	TBGT0601..	-	-	-	TBGW0601..
...-STXP R/L08-...	TPGT0802..	-	-	-	-	TPGH0802..	TPET0802..	TPET0802..	-	TPGB0802..
...-STXP R/L09-...	TPGT0902..	TPMT0902..	TPMT0902..	-	TPMT0902..	TPGH0902..	-	-	TPMT0902..	TPGB0902..
...-STZB R/L06-...	TBGT0601..	-	-	TBMT0601..	-	TBGT0601..	-	-	-	TBGW0601..

Applications	Non-ferrous Metals	Hard Materials
Ref. to Page	C26, C27	C16
Insert / Toolholder Description	PCD	CBN
...-STXB R/L06-...	TBMT0601..	-
...-STXP R/L08-...	TPMH0802.. TPGB0802..	TPGB0802..
...-STXP R/L09-...	TPMH0902.. TPGB0902..	TPGB0902..
...-STZB R/L06-...	TBMT0601..	-

◆ C···STXP(B) Type Boring Bar Cutting Conditions

Recommended Cutting Conditions ➡ F91~F92
Applicable Sleeve ➡ F81~F84

Toolholder Description	Insert Description (Grades)	Vc (m/min)	ap (mm)	f (mm/rev)	Coolant
C06J-STXB R/L06-075	TBGT0601003 L/R (PR930)	30~100	0.02~0.1	0.02~0.04	Yes
C08X-STXP R/L08-09	TPGH080201 L/R (PR930)	30~100	0.05~0.15	0.03~0.08	Yes
C10X-STXP R/L09-11	TPGH090201 L/R (PR930)	30~100	0.05~0.15	0.03~0.08	Yes

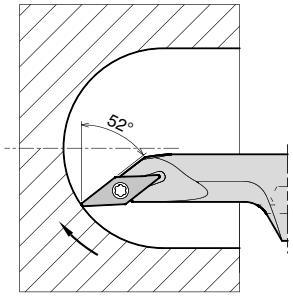
(Workpiece Material: Alloy Steel)

● : Std. Item

Dynamic Bar [VB□□, VC□□, VP□□Insert]

A-SVJP(C)(B)-AE Excellent Bar (Internal Spherical Machining / Internal Facing / Copying)

Max. Overhang Length L/D=~5.5



For applications, ref. to page **F51**

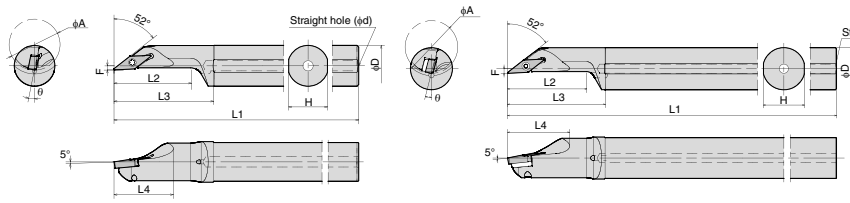


Fig.1 Fig.2

Shank Dia. ϕD	Straight hole Dia. ϕd
ϕ12	ϕ4
ϕ16	
ϕ20	ϕ5
ϕ25	
ϕ32	ϕ7
ϕ40	ϕ9

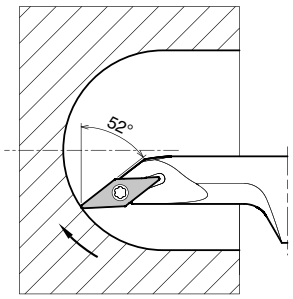
* No shim for SVJP(C)R/L08 / SVJBR/L11.

• Right-hand shown

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

S-SVJP(C)(B)-A Steel Bar(Internal Spherical Machining / Internal Facing / Copying)

Max. Overhang Length L/D=~4



For applications, ref. to page **F51**

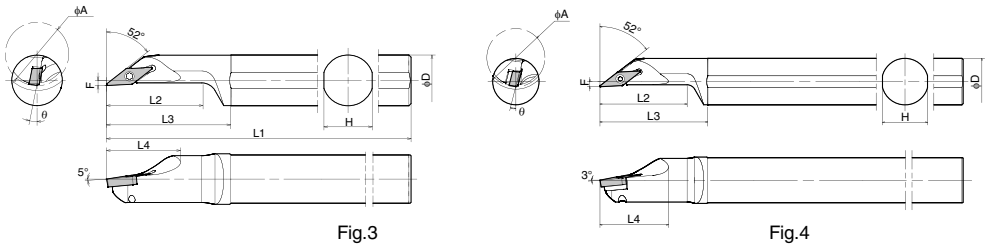


Fig.3 Fig.4

* No shim for SVJP(C)R/L08 / SVJBR/L11.

• Right-hand shown

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

Toolholder Dimensions

	Description	Std. R	Std. L	Min. Bore Dia. ϕA	Dimension (mm) ϕD	H	L1	L2	L3	L4	F	S	θ	Standard Corner-R(rε)	Coolant Hole	Drawing	Spare Parts: Clamp Screw	Spare Parts: Wrench
Excellent Bar	A12M-SVJPR/L08-16AE	●	●	16	12	11	150	26	33	21	2	-	5°	0.2	Yes	Fig.1	SB-2050TR	FT-6
	A12M-SVJCR/L08-16AE	●	●							20				0.4				
	A16Q-SVJCR/L08-20AE	●	●	20	16	15	180	36	43	22								
	A20R-SVJBR/L11-25AE	●	●	25	20	19	200	37.5	48	30							SB-2570TR	FT-8
	A25S-SVJBR/L11-30AE	●	●	30	25	24	250	45	58	33	3.5							
	A32S-SVJBR/L16-40AE	●	●	40	32	31		60	74	45			8°			Fig.2	SB-40125TRN	FT-15
	A40T-SVJBR/L16-50AE	●	●	50	40	39	300	75	91	49	4.5		7°					
Steel	S12M-SVJPR/L08-16A	●	●	16	12	11	150	26	33	21	2	-	5°	0.2	No	Fig.3	SB-2050TR	FT-6
	S12M-SVJCR/L08-16A	●	●							20				0.4				
	S16Q-SVJCR/L08-20A	●	●	20	16	15	180	36	43	22								
	S20R-SVJBR/L11-25A	●	●	25	20	19	200	37.5	48	30							SB-2570TR	FT-8
	S25S-SVJBR/L11-30A	●	●	30	25	24	250	45	58	33	3.5							
	S32S-SVJBR/L16-40A	●	●	40	32	31		60	74	45			8°			Fig.4	SB-40125TRN	FT-15
	S40T-SVJBR/L16-50A	●	●	50	40	39	300	75	91	49	4.5		7°					

Applicable Inserts

Applications	Finishing	Finishing	Finishing	Finishing	Finishing-Medium	Finishing	Finishing / Precision	Low Feed / Precision	Non-ferrous Metals	Non-ferrous Metals
Ref. to Page	B76	B73,B75	B73,B75	B73	B73,B75	B74	B73,B77	B77	B75	B75
Insert / Toolholder Description	CK	VF	PP	GP	HQ	R/L-F	R/L-FSF	FR/L-USF	AH	R/L-A3
...-SVJPR/L08-...	VPGT0802..	-	-	-	-	-	VPET0802..	VPET0802..	-	-
...-SVJCR/L08-...	-	VCMT0802..	VCMT0802..	-	VCMT0802..	-	-	-	-	-
...-SVJBR/L11-...	-	VBMT1103..	VBMT1103..	VBMT1103..	VBMT1103..	VBGT1103..	VBET1103..	-	-	-
...-SVJBR/L16-...	-	VBMT1604..	VBMT1604..	VBMT1604..	VBMT1604..	-	-	-	VCGT1604..	VCGT1604..

Applications	Non-ferrous Metals	Hard Materials
Ref. to Page	C28	C17
Insert / Toolholder Description	PCD	CBN
...-SVJPR/L08-...	-	-
...-SVJCR/L08-...	VCMT0802..	VCGW0802..
...-SVJBR/L11-...	VBMT1103..	VBGW1103..
...-SVJBR/L16-...	VBMT1604..	VBGW1604..

* Use of VBGT1103..-Y / VBGT1604..-Y with A-SVJB-AE / S-SVJB-A is not recommended.

Spare Parts

Description	Spare Parts: Shim	Spare Parts: Shim Screw	Spare Parts: Wrench (for Shim Screw)
□32S-SVJBR/L16-40A□	SVN-32N	SS-4N	LW-4
□40T-SVJBR/L16-50A□			

* See **P24** for spare parts of old products.

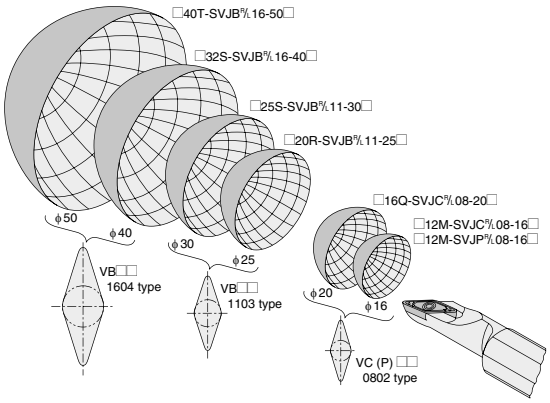
Recommended Cutting Conditions ➡ **F91~F92**
Applicable Sleeves ➡ **F82~F84**

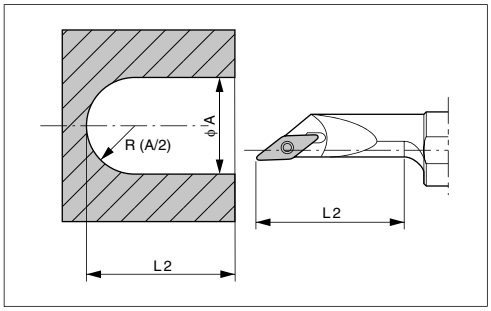
● : Std. Item

Application of □···SVJB(C)-□, S···SVJP-□

Ref. to Page for Toolholders ➡ F50

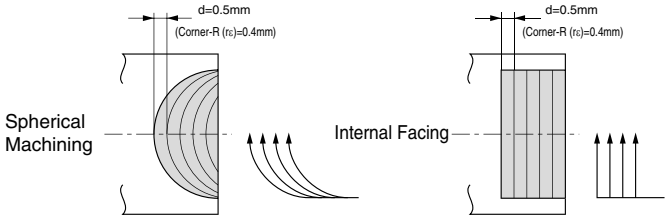
1. Application Range





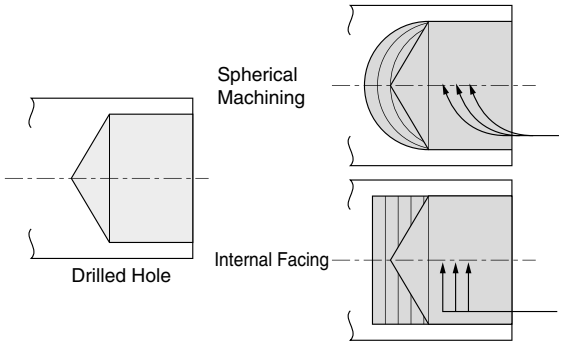
2. Machining method

Case with No Existing Hole



(Note) f shall be under 0.05mm/rev at internal facing.

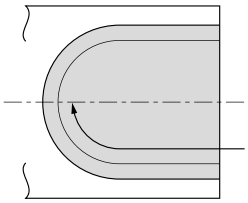
Case with Drilled Hole



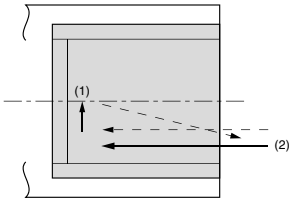
(Note) f shall be under 0.05mm/rev at internal facing.

Finishing

Spherical Machining

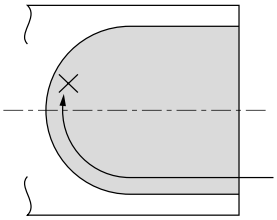


Internal Facing

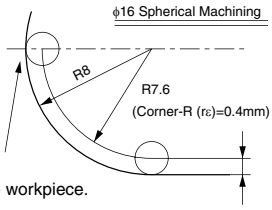


Machining Process
(1) Finish the internal face first.
(2) Next, finish the internal diameter.

3. Caution

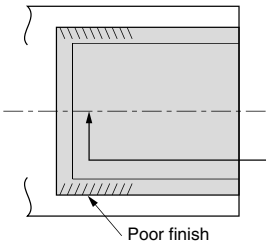


When machining past the center of the workpiece, insert may break.



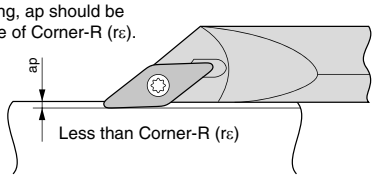
Fix the insert edge at the center of the workpiece.

Adjust the machining program to radius minus the value of Corner-R (rε).



This type of machining is possible, but the chips might scratch the surface.

For internal profiling, ap should be less than the value of Corner-R (rε).



[Burrs may occur, if ap is bigger than Corner-R (rε)]

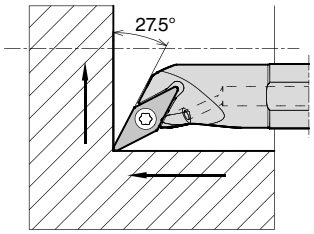
F

Boring

Dynamic Bar [VB□□, VC□□Insert]

A-SVPC(B)-AE Excellent Bar (Copying / Undercutting)

Max. Overhang Length L/D=~5.5



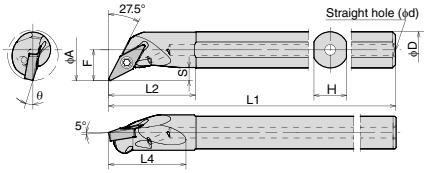


Fig.1

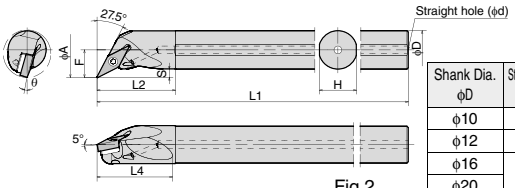


Fig.2

* No shim for SVPC$^{R/L}$08 / SVPB$^{R/L}$11.

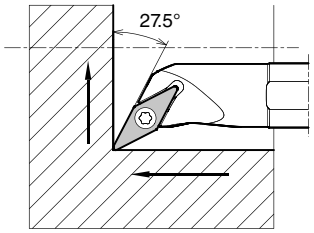
Shank Dia. ϕD	Straight hole Dia. ϕd
ϕ10	ϕ3
ϕ12	ϕ4
ϕ16	ϕ5
ϕ20	
ϕ25	
ϕ32	

• Right-hand shown

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

S-SVPC(B)-A Steel Bar (Copying / Undercutting)

Max. Overhang Length L/D=~4



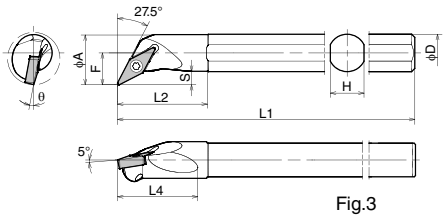


Fig.3

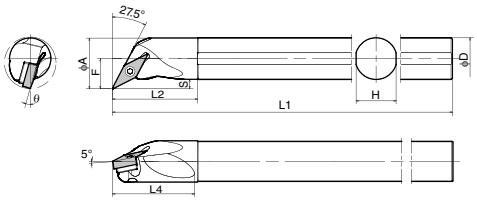


Fig.4

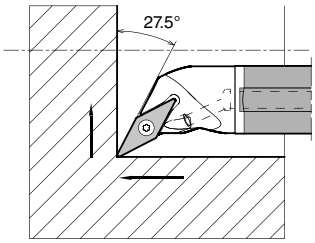
* No shim for SVPC$^{R/L}$08 / SVPB$^{R/L}$11.

• Right-hand shown

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

E-SVPC(B)-A Carbide Shank Bar (Copying / Undercutting)

Max. Overhang Length L/D=~7



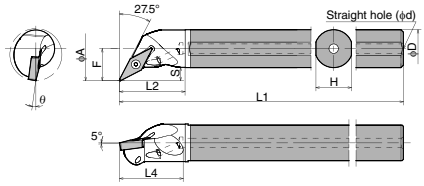


Fig.5

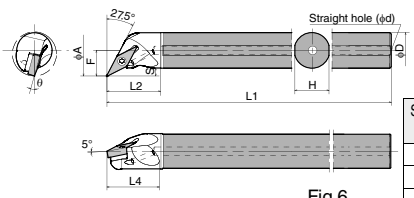


Fig.6

* No shim for SVPC$^{R/L}$08 / SVPB$^{R/L}$11.

Shank Dia. ϕD	Straight hole Dia. ϕd
ϕ10	ϕ3
ϕ12	ϕ4
ϕ16	
ϕ20	ϕ6
ϕ25	

• Right-hand shown

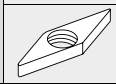
Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

Toolholder Dimensions

	Description	Std. R	Std. L	Min. Bore Dia. ϕA	Dimension (mm) ϕD	H	L1	L2	L3	L4	F	S	θ	Standard Corner-R(rε)	Coolant Hole	Drawing	Spare Parts: Clamp Screw	Spare Parts: Wrench
Excellent Bar	A10L-SVPC$^{R/L}$08-14AE	●	●	14	10	9	140	24	-	21	8.5	3	8°	0.4	Yes	Fig.1	SB-2050TR	FT-6
	A12M-SVPB$^{R/L}$11-18AE	●	●	18	12	11	150	29		26	11	4.5					SB-2570TR	FT-8
	A16Q-SVPB$^{R/L}$11-22AE	●	●	22	16	15	180	35		33	13.5	5	5°					
	A20R-SVPB$^{R/L}$11-26AE	●	●	26	20	19	200	41		39	15.5							
	A25S-SVPB$^{R/L}$16-31AE	●	●	31	25	24	250	51		49	18		13°			Fig.2	SB-40125TRN	FT-15
	A32S-SVPB$^{R/L}$16-40AE	●	●	40	32	31		54		53	23	6.5	9°					
Steel	S10L-SVPC$^{R/L}$08-14A	●	●	14	10	9	140	24	-	21	8.5	3	8°	0.4	No	Fig.3	SB-2050TR	FT-6
	S12M-SVPB$^{R/L}$11-18A	●	●	18	12	11	150	29		26	11	4.5					SB-2570TR	FT-8
	S16Q-SVPB$^{R/L}$11-22A	●	●	22	16	15	180	35		33	13.5	5	5°					
	S20R-SVPB$^{R/L}$11-26A	●	●	26	20	19	200	41		39	15.5							
	S25S-SVPB$^{R/L}$16-31A	●	●	31	25	24	250	51		49	18		13°			Fig.4	SB-40125TRN	FT-15
	S32S-SVPB$^{R/L}$16-40A	●	●	40	32	31		54		53	23	6.5	9°					
Carbide	E10N-SVPCR08-14A	●		14	10	9	160	20	-	18.5	8.5	3	8°	0.4	Yes	Fig.5	SB-2050TR	FT-6
	E12Q-SVPBR11-18A	●		18	12	11	180	23		22	11	4.5					SB-2570TR	FT-8
	E16X-SVPBR11-22A	●		22	16	15	220	28		27	13.5	5	5°					
	E20S-SVPBR11-26A	●		26	20	19	250	32		31	15.5							
	E25T-SVPBR 16-31A	●		31	25	24	300	38		37	18		13°			Fig.6	SB-40125TRN	FT-15

● : Std. Item

Spare Parts

Description	Spare Parts		
	Shim	Shim Screw	Wrench (for Shim Screw)
			
□25□-SVPB$^{R}/_{L}$16-31A□ □32S-SVPB$^{R}/_{L}$16-40A□	SVN-32N	SS-4N	LW-4

* See **P24** for spare parts of old products.

Applicable Inserts

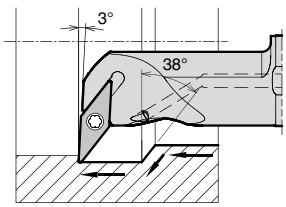
Applications	Finishing	Finishing	Finishing	Finishing	Finishing-Medium	Finishing	Finishing / Precision	Finishing-Medium	Low Feed / Precision	Non-ferrous Metals
Ref. to Page	-	**B73, B75**	**B73, B75**	**B73**	**B73, B75**	**B74**	**B73, B77**	**B74**	-	**B75**
Insert / Toolholder Description	**CK** 	**VF** 	**PP** 	**GP** 	**HQ** 	$^{R}/_{L}$**-F** 	$^{R}/_{L}$**-FSF** 	$^{R}/_{L}$**-Y** 	**F**$^{R}/_{L}$**-USF** 	**AH** 
...-SVPC$^{R}/_{L}$08-...	-	VCMT0802..	VCMT0802..	-	VCMT0802..	-	-	-	-	-
...-SVPB$^{R}/_{L}$11-...	-	VBMT1103..	VBMT1103..	VBMT1103..	VBMT1103..	VBGT1103..	VBET1103..	VBGT1103..	-	-
...-SVPB$^{R}/_{L}$16-...	-	VBMT1604..	VBMT1604..	VBMT1604..	VBMT1604..	-	-	VBGT1604..	-	VCGT1604..

Applications	Non-ferrous Metals	Non-ferrous Metals	Hard Materials
Ref. to Page	**B75**	**C28**	**C17**
Insert / Toolholder Description	$^{R}/_{L}$**-A3** 	**PCD** 	**CBN** 
...-SVPC$^{R}/_{L}$08-...	-	VCMT0802..	VCGW0802..
...-SVPB$^{R}/_{L}$11-...	-	VBMT1103..	VBGW1103..
...-SVPB$^{R}/_{L}$16-...	VCGT1604..	VBMT1604..	VBGW1604..

Recommended Cutting Conditions ➡ **F91~F92**
Applicable Sleeves ➡ **F82~F84**

A-SVUC(B)-AE Excellent Bar (Copying)

Max. Overhang Length L/D=~5.5



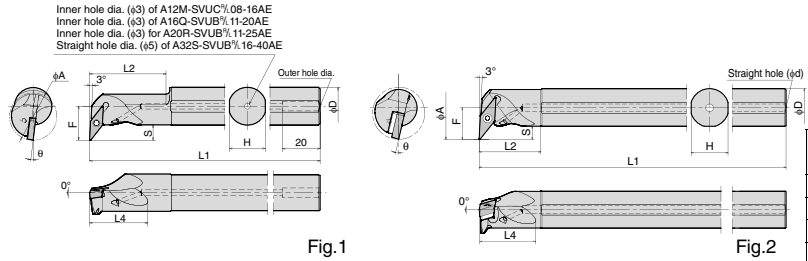


Fig.1 Fig.2

Shank Dia. ϕD	Outer hole dia.	Straight hole Dia. ϕd
ϕ12	ϕ4	-
ϕ16	ϕ5	
ϕ20		
ϕ25	-	ϕ5
ϕ32		

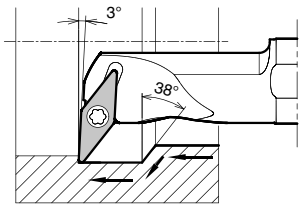
* No shim for SVUC R/L 08 / SVUB R/L 11.

• Right-hand shown

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

S-SVUC(B)-A Steel Bar (Copying)

Max. Overhang Length L/D=~4



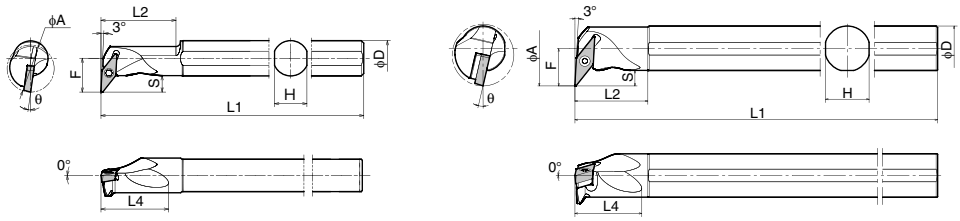


Fig.3 Fig.4

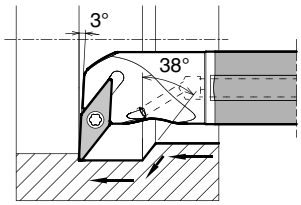
* No shim for SVUC R/L 08 / SVUB R/L 11.

• Right-hand shown

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

E-SVUC(B)-A Carbide Shank Bar (Copying)

Max. Overhang Length L/D=~7



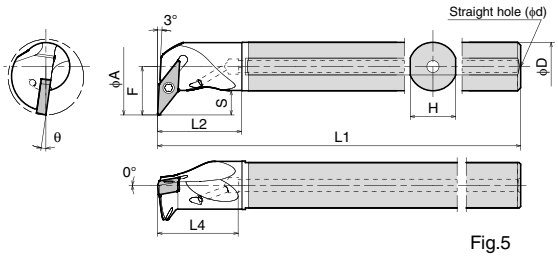


Fig.5

Shank Dia. ϕD	Straight hole Dia. ϕd
ϕ12	ϕ4
ϕ16	
ϕ20	ϕ6
ϕ25	

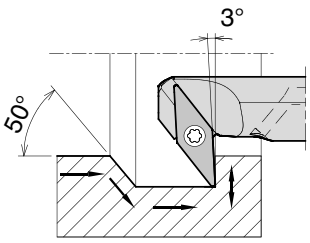
* Shim is attached only for SVUBR16

• Right-hand shown

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

A-SVZC(B)-AE Excellent Bar (Back Boring)

Max. Overhang Length L/D=~5.5



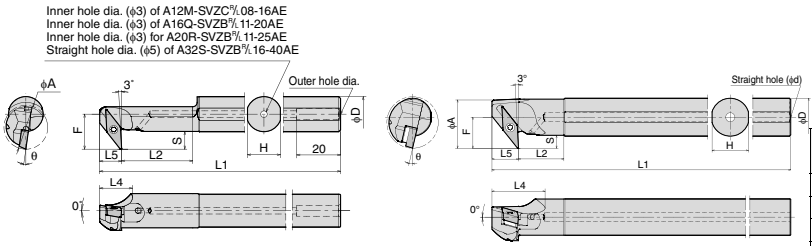


Fig.6 Fig.7

Shank Dia. ϕD	Outer hole dia.	Straight hole Dia. ϕd
ϕ12	ϕ4	-
ϕ16	ϕ5	
ϕ20		
ϕ25	-	ϕ5
ϕ32		

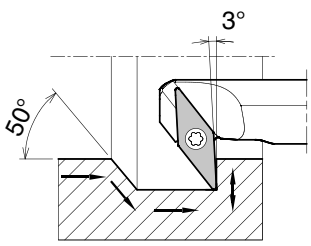
* No shim for SVZC R/L 08 / SVZB R/L 11

• Right-hand shown

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

S-SVZC(B)-A Steel Bar (Back Boring)

Max. Overhang Length L/D=~4



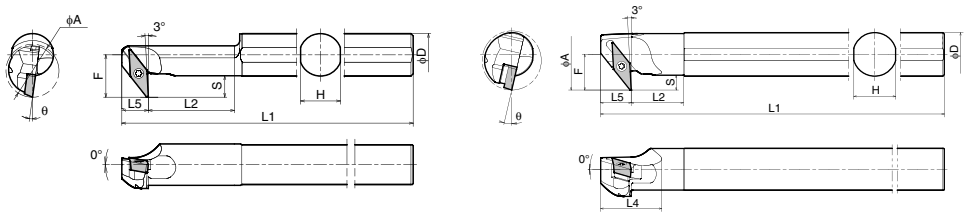


Fig.8 Fig.9

* No shim for SVZC R/L 08 / SVZB R/L 11

• Right-hand shown

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

Toolholder Dimensions

	Description	Std. R	Std. L	Min. Bore Dia. φA	Dimension (mm) φD	H	L1	L2	L4	L5	F	S	θ	Standard Corner-R(rε)	Coolant Hole	Drawing	Spare Parts: Clamp Screw	Spare Parts: Wrench
Excellent Bar	A12M-SVUC R/L 08-16AE	●	●	16	12	11	150	25.5	23	-	11.5	5.5	8°	0.4	Yes	Fig.1	SB-2050TR	FT-6
Excellent Bar	A16Q-SVUB R/L 11-20AE	●	●	20	16	15	180	32.5	27	-	16	8	8°	0.4	Yes	Fig.1	SB-2570TR	FT-8
Excellent Bar	A20R-SVUB R/L 11-25AE	●	●	25	20	19	200	40.5	31	-	18	8	7°	0.4	Yes	Fig.1	SB-2570TR	FT-8
Excellent Bar	A25S-SVUB R/L 16-34AE	●	●	34	25	24	250	40	37	-	20.5	8.5	13°	0.4	Yes	Fig.2	SB-40125TRN	FT-15
Excellent Bar	A32S-SVUB R/L 16-40AE	●	●	40	32	31	250	84	47	-	28	12	9°	0.4	Yes	Fig.1	SB-40125TRN	FT-15
Steel	S12M-SVUC R/L 08-16A	●	●	16	12	11	150	25.5	23	-	11.5	5.5	8°	0.4	No	Fig.3	SB-2050TR	FT-6
Steel	S16Q-SVUB R/L 11-20A	●	●	20	16	15	180	32.5	27	-	16	8	8°	0.4	No	Fig.3	SB-2570TR	FT-8
Steel	S20R-SVUB R/L 11-25A	●	●	25	20	19	200	40.5	31	-	18	8	7°	0.4	No	Fig.3	SB-2570TR	FT-8
Steel	S25S-SVUB R/L 16-34A	●	●	34	25	24	250	40	37	-	20.5	8.5	13°	0.4	No	Fig.4	SB-40125TRN	FT-15
Steel	S32S-SVUB R/L 16-40A	●	●	40	32	31	250	84	47	-	28	12	9°	0.4	No	Fig.3	SB-40125TRN	FT-15
Carbide	E12Q-SVUCR08-18A	●		18	12	11	180	23	22	-	11.5	5.5	8°	0.4	Yes	Fig.5	SB-2050TR	FT-6
Carbide	E16X-SVUBR11-25A	●		25	16	15	220	28	27	-	16	8	8°	0.4	Yes	Fig.5	SB-2570TR	FT-8
Carbide	E20S-SVUBR11-29A	●		29	20	19	250	32	30	-	18	8	7°	0.4	Yes	Fig.5	SB-2570TR	FT-8
Carbide	E25T-SVUBR16-34A	●		34	25	24	300	38	37	-	21	8.5	13°	0.4	Yes	Fig.5	SB-40125TRN	FT-15
Excellent Bar	A12M-SVZC R/L 08-16AE	●	●	16	12	11	150	25.5	14	7.5	11.5	5.5	8°	0.4	Yes	Fig.6	SB-2050TR	FT-6
Excellent Bar	A16Q-SVZB R/L 11-20AE	●	●	20	16	15	180	32.5	20	10	16	8	8°	0.4	Yes	Fig.6	SB-2570TR	FT-8
Excellent Bar	A20R-SVZB R/L 11-25AE	●	●	25	20	19	200	40.5	23	10	18	8	7°	0.4	Yes	Fig.6	SB-2570TR	FT-8
Excellent Bar	A25S-SVZB R/L 16-34AE	●	●	34	25	24	250	30	34	17.5	20.5	8.5	13°	0.4	Yes	Fig.7	SB-40125TRN	FT-15
Excellent Bar	A32S-SVZB R/L 16-40AE	●	●	40	32	31	250	72.5	36	17.5	28	12	9°	0.4	Yes	Fig.6	SB-40125TRN	FT-15
Steel	S12M-SVZC R/L 08-16A	●	●	16	12	11	150	25.5	14	7.5	11.5	5.5	8°	0.4	No	Fig.8	SB-2050TR	FT-6
Steel	S16Q-SVZB R/L 11-20A	●	●	20	16	15	180	32.5	20	10	16	8	8°	0.4	No	Fig.8	SB-2570TR	FT-8
Steel	S20R-SVZB R/L 11-25A	●	●	25	20	19	200	40.5	23	10	18	8	7°	0.4	No	Fig.8	SB-2570TR	FT-8
Steel	S25S-SVZB R/L 16-34A	●	●	34	25	24	250	30	34	17.5	20.5	8.5	13°	0.4	No	Fig.9	SB-40125TRN	FT-15
Steel	S32S-SVZB R/L 16-40A	●	●	40	32	31	250	72.5	36	17.5	28	12	9°	0.4	No	Fig.8	SB-40125TRN	FT-15

Spare Parts

Description	Spare Parts: Shim	Spare Parts: Shim Screw	Spare Parts: Wrench (for Shim Screw)
□25□-SVUB R/L 16-34A□	SVN-32N	SS-4N	LW-4
□32S-SVUB R/L 16-40A□	SVN-32N	SS-4N	LW-4
□25S-SVZB R/L 16-34A□	SVN-32N	SS-4N	LW-4
□32S-SVZB R/L 16-40A□	SVN-32N	SS-4N	LW-4

* See **P24** for spare parts of old products.

Applicable Inserts

Applications	Finishing	Finishing	Finishing	Finishing	Finishing-Medium	Finishing	Finishing / Precision	Finishing-Medium	Low Feed / Precision	Non-ferrous Metals
Ref. to Page	-	B73, B75	B73, B75	B73	B73, B75	B74	B73	B74	-	B75
Insert / Toolholder Description	CK	VF	PP	GP	HQ	R/L-F	R/L-FSF	R/L-Y	F R/L-USF	AH
...-SVUC R/L 08-...	-	VCMT0802..	VCMT0802..	-	VCMT0802..	-	-	-	-	-
...-SVUB R/L 11-...	-	VBMT1103..	VBMT1103..	VBMT1103..	VBMT1103..	VBGT1103..	VBET1103..	VBGT1103..	-	-
...-SVUB R/L 16-...	-	VBMT1604..	VBMT1604..	VBMT1604..	VBMT1604..	-	-	VBGT1604..	-	VCGT1604..
...-SVZC R/L 08-...	-	VCMT0802..	VCMT0802..	-	VCMT0802..	-	-	-	-	-
...-SVZB R/L 11-...	-	VBMT1103..	VBMT1103..	VBMT1103..	VBMT1103..	VBGT1103..	VBET1103..	VBGT1103..	-	-
...-SVZB R/L 16-...	-	VBMT1604..	VBMT1604..	VBMT1604..	VBMT1604..	-	-	VBGT1604..	-	VCGT1604..

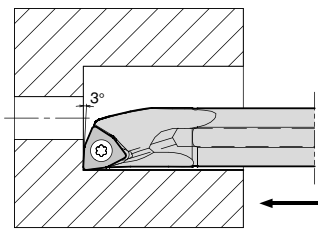
Applications	Non-ferrous Metals	Non-ferrous Metals	Hard Materials
Ref. to Page	B75	C28	C17
Insert / Toolholder Description	R/L-A3	PCD	CBN
...-SVUC R/L 08-...	-	VCMT0802..	VCGW0802..
...-SVUB R/L 11-...	-	VBMT1103..	VBGW1103..
...-SVUB R/L 16-...	VCGT1604..	VBMT1604..	VBGW1604..
...-SVZC R/L 08-...	-	VCMT0802..	VCGW0802..
...-SVZB R/L 11-...	-	VBMT1103..	VBGW1103..
...-SVZB R/L 16-...	VCGT1604..	VBMT1604..	VBGW1604..

Recommended Cutting Conditions ➡ **F91~F92**
Applicable Sleeves ➡ **F82~F84**

● : Std. Item

S / A-SWUB(P)-AE Excellent Bar (Boring)

Max. Overhang Length L/D=~5.5



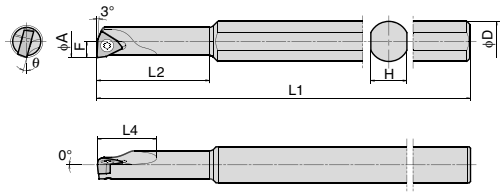


Fig.1

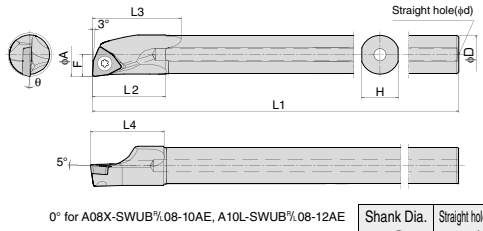


Fig.2

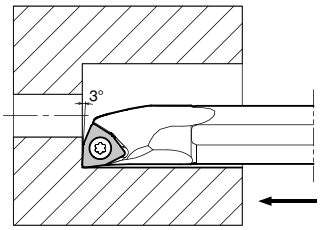
Shank Dia. ϕD	Straight hole Dia. ϕd
ϕ8	ϕ2.5
ϕ10	ϕ3
ϕ12	ϕ4
ϕ16	ϕ5
ϕ20	

• Right-hand shown

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

S-SWUB(P)-A Steel Bar (Boring)

Max. Overhang Length L/D=~4



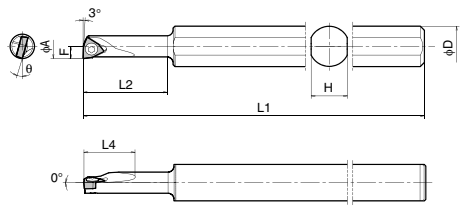


Fig.3

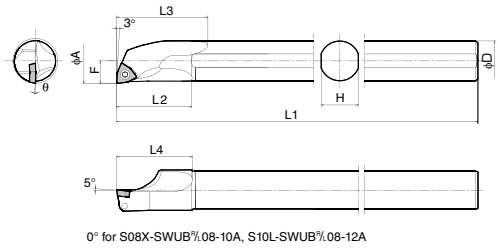


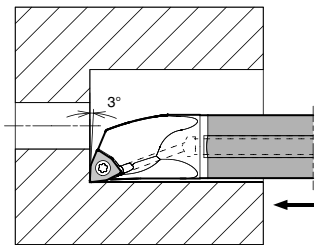
Fig.4

• Right-hand shown

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

E(C)-SWUB(P)-A Carbide Shank Bar (Boring)

Max. Overhang Length L/D=~7



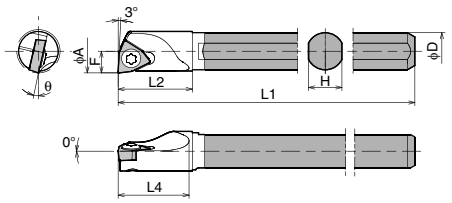


Fig.5

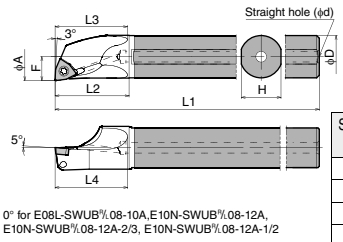


Fig.6

Shank Dia. ϕD	Straight hole Dia. ϕd
ϕ5	-
ϕ6	
ϕ7	
ϕ8	ϕ3
ϕ10	
ϕ12	ϕ4
ϕ16	
ϕ20	ϕ6

• Right-hand shown

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

Toolholder Dimensions

	Description	Std. R	Std. L	Min. Bore Dia. φA	Dimension (mm) φD	H	L1	L2	L3	L4	F	S	θ	Standard Corner-R (rε)	Coolant Hole	Drawing	Spare Parts: Clamp Screw	Spare Parts: Wrench
Excellent Bar	S10H-SWUB R/L 06-06AE	●	●	6	10	9	100	21	-	13	3	-	15°	0.2	No	Fig.1	SB-2035TR	FT-6
	S10H-SWUB R/L 06-07AE	●	●	7				25		15	3.5		13°					
	S10H-SWUB R/L 08-08AE	●	●	8				28			4		15°					
	A08X-SWUB R/L 08-10AE	●	●	10	8	7	120	16	21	16	5		13°		Yes	Fig.2	SB-2050TR	
	A10L-SWUB R/L 08-12AE	●	●	12	10	9	140	20	25	20	6		10°					
	A12M-SWUP R/L 11-14AE	●	●	14	12	11	150	24	30	24	7		4°	0.4			SB-2545TR	FT-8
	A16Q-SWUP R/L 11-18AE	●	●	18	16	15	180	30	37	30	9		1°					
	A16Q-SWUP R/L 16-18AE	●	●										3.5°	0.8			SB-4065TR	FT-15
	A20R-SWUP R/L 16-22AE	●	●	22	20	19	200	36	46	37	11		2°					
Steel	S10H-SWUB R/L 06-06A	●	●	6	10	9	100	21	-	13	3	-	15°	0.2	No	Fig.3	SB-2035TR	FT-6
	S10H-SWUB R/L 06-07A	●	●	7				25		15	3.5		13°					
	S10H-SWUB R/L 08-08A	●	●	8				28			4		15°					
	S08X-SWUB R/L 08-10A	●	●	10	8	7	120	16	21	16	5		13°			Fig.4	SB-2050TR	
	S10L-SWUB R/L 08-12A	●	●	12	10	9	140	20	25	20	6		10°					
	S12M-SWUP R/L 11-14A	●	●	14	12	11	150	24	30	24	7		4°	0.4			SB-2545TR	FT-8
	S16Q-SWUP R/L 11-18A	●	●	18	16	15	180	30	37	30	9		1°					
	S16Q-SWUP R/L 16-18A	●	●										3.5°	0.8			SB-4065TR	FT-15
	S20R-SWUP R/L 16-22A	●	●	22	20	19	200	36	46	37	11		2°					
Carbide	C05H-SWUB R/L 06-06A	●	●	6	5	4.4	100	11	-	11	3	-	15°	0.2	No	Fig.5	SB-2035TR	FT-6
	C06J-SWUB R/L 06-07A	●	●	7	6	5.4	110	12		12	3.5		13°					
	C07K-SWUB R/L 08-08A	●	●	8	7	6.4	125	13		13	4		15°					
	E08L-SWUB R/L 08-10A	●	●	10	8	7	140	16	15	15	5		13°		Yes	Fig.6	SB-2050TR	
	E10N-SWUB R/L 08-12A	●	●	12	10	9	160	20	19	19	6		10°					
	E10N-SWUBR 08-12A-2/3	●					105											
	E10N-SWUBR 08-12A-1/2	●					80											
	E12Q-SWUP R/L 11-14A	●	●	14	12	11	180	23	22	22	7		4°	0.4			SB-2545TR	FT-8
	E12Q-SWUPR 11-14A-2/3	●					120											
	E12Q-SWUPR 11-14A-1/2	●					90											
	E16X-SWUP R/L 11-18A	●	●	18	16	15	220	28	27	27	9		1°					
	E16X-SWUPR 11-18A-2/3	●					145											
	E16X-SWUPR 11-18A-1/2	●					110											
	E16X-SWUP R/L 16-18A	●	●				220						3.5°	0.8			SB-4065TR	FT-15
	E16X-SWUPR 16-18A-2/3	●					145											
	E16X-SWUPR 16-18A-1/2	●					110											
	E20S-SWUP R/L 16-22A	●	●	22	20	19	250	32	31	31	11		2°					
	E20S-SWUPR 16-22A-2/3	●					165											
	E20S-SWUPR 16-22A-1/2	●					125											

Applicable Inserts

Applications	Minute ap	Finishing	Finishing	Finishing-Medium	Finishing	Finishing-Medium	Cast Iron	Non-ferrous Metals	Hard Materials
Ref. to Page	B78	B79	B78	B79	B78	B79	B78, B79	C28, C29	C18
Insert / Toolholder Description	CF 	GP 	R/L-DP 	HQ 	R/L-F 	R/L-Y 	Without Chipbreaker 	PCD 	CBN 
...-SWUB R/L 06-...	WBGT0601..	-	WBMT0601..	-	WBGT0601..	-	WBGW0601..	WBMT0601..	WBGW0601..
...-SWUB R/L 08-...	-	-	WBMT0802..	-	WBGT0802..	-	WBGW0802..	WBMT0802..	WBGW0802..
...-SWUP R/L 11-...	-	WPMT1102..	-	WPMT1102..	-	WPGT1102..	WPGW1102..	WPMT1102..	-
...-SWUP R/L 16-...	-	WPMT1603..	-	WPMT1603..	-	WPGT1603..	WPGW1603..	-	-

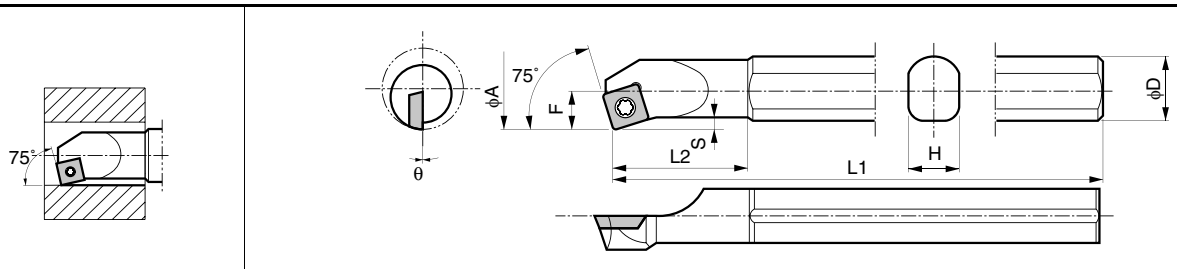
Recommended Cutting Conditions ➔ F91~F92
Applicable Sleeves ➔ F81~F84

● : Std. Item

Boring Bar [SP□□ Insert]

S-SSKP (Boring)

Max. Overhang Length L/D=~3



• Right-hand shown

Left-hand Insert for Right-hand Toolholder.

Toolholder Dimensions

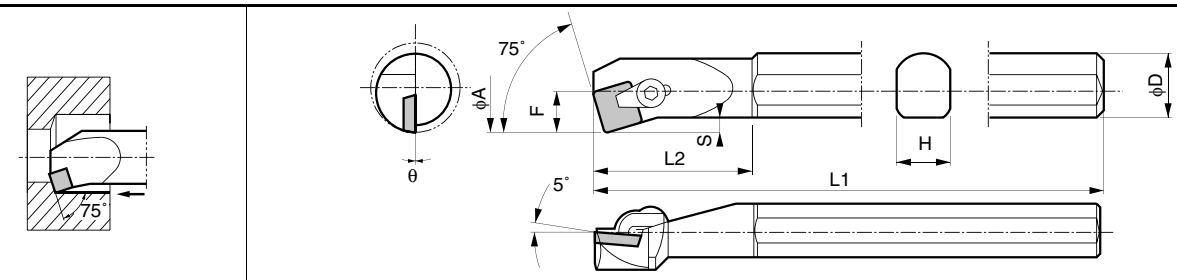
Description	(Previous Description)	Std. R	Std. L	Min. Bore Dia. φA	Dimension (mm) φD	H	L1	L2	F	S	θ	Standard Corner-R(rε)	Spare Parts: Clamp Screw	Spare Parts: Wrench
S16Q-SSKPR09 -20	SSKPR 2016B-09	●		20	16	14	180	30	10	2.0	-3°	0.8	SB-4TR	FT-15
S20R-SSKPR09 -25	2520B-09	●		25	20	18	200	35	12.5	2.5	0°			

Applicable Inserts

Applications	Finishing									
Ref. to Page	B63									
Insert / Toolholder Description	R/L 									
----SSKPR/L09---	SPGH0903..									

S-CSKP (Boring)

Max. Overhang Length L/D=~3



• Right-hand shown

Left-hand Insert for Right-hand Toolholder.

Toolholder Dimensions

Description	(Previous Description)	Std. R	Std. L	Min. Bore Dia. φA	Dimension (mm) φD	H	L1	L2	F	S	θ	Standard Corner-R(rε)	Spare Parts: Clamp Set	Spare Parts: Wrench		Spare Parts: Shim	Spare Parts: Shim Screw
S16N -CSKPR09 -20	CSKPR 2016B-09	●		20	16	14	160	40	10	2.0	0°	0.8	CPS-2	FH-2.5	-	-	-
S20Q -CSKPR09 -27	2720B-09	●		27	20	18	180	45	13.5	3.5							
S25X -CSKPR12 -34	3425B-12	●		34	25	23	220	60	17	4.5	0°	0.8	CPS-3	-	LW-3	-	-
S32S -CSKPR12 -43	4332B-12	●		43	32	30	250	75	21.5	5.5						KPS-42	SP3X10

Applicable Inserts

Applications	Medium	Medium	Finishing-Medium	Cast Iron	Cast Iron	Non-ferrous Metals				
Ref. to Page	B63	B63	B63	B63	B93	C29				
Insert / Toolholder Description	G 	Standard 	R/L 	Without Chipbreaker 	Ceramic 	PCD 				
----CSKPR09---	SPMR0903..	SPMR0903..	SPGR0903..	SPMN0903.. SPGN0903..	SPGN0903..	-				
----CSKPR12---	SPMR1203..	SPMR1203..	SPGR1203..	SPMN1203.. SPGN1203..	SPGN1203..	SPGN1203..				

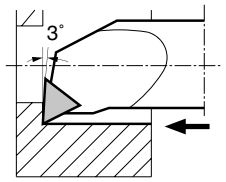
Recommended Cutting Conditions ➔ F91~F92
Applicable Sleeves ➔ F83~F84

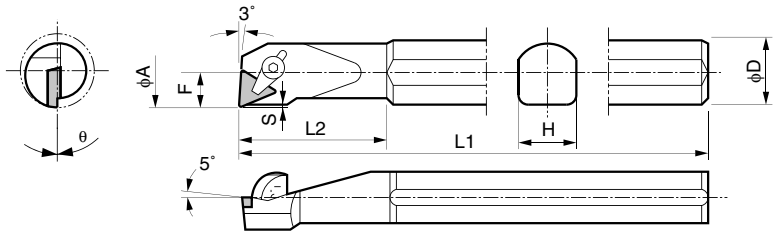
● : Std. Item

Boring Bar [TP□□ Insert]

S-CTUP (Boring)

Max. Overhang Length L/D=~3





• Right-hand shown

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

Toolholder Dimensions

Description	(Previous Description)	Std. R	Std. L	Min. Bore Dia. φA	Dimension (mm) φD	H	L1	L2	F	S	θ	Standard Corner-R(rε)	Spare Parts: Clamp Set		Wrench		Shim	Shim Screw
																		
S12L-CTUPR 09-16	**CTUP R/L 1612B-09**	●		16	12	11	140	32	8	0.5	0°	0.4	CPS-1	-	FH-2	-	-	-
S16N-CTUP R/L 11-20	**2016B-11**	●	●	20	16	14	160	30	10	0.5	0°	0.4	-	CPS-2	FH-2.5	-	-	-
S20Q-CTUP R/L 11-27	**2720B-11**	●	●	27	20	18	180	40	13.5	1.3								
S25X-CTUP R/L 16-34	**3425B-16**	●	●	34	25	23	220	60	17	1.0	0°	0.8	-	CPS-3	-	LW-3	-	-
S32S-CTUP R/L 16-43	**4332B-16**	●	●	43	32	30	250	70	21.5								KPT-32	SP3X10
S40X-CTUP R/L 16-50	**5040B-16**	●	●	50	40	37	315	80	25									

Applicable Inserts

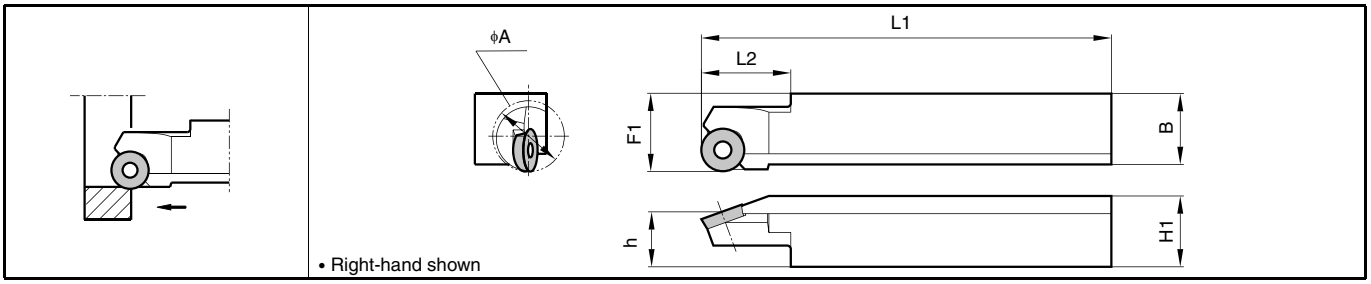
Applications	Finishing	Finishing-Medium	Medium	Medium	Finishing	Finishing-Medium	Cast Iron	Cast Iron	Non-ferrous Metals	Hard Materials
Ref. to Page	**B71**	**B71**	**B71**	**B71**	**B71**	**B72**	**B72**	**B93**	**C29**	**C18**
Insert / Toolholder Description	**GP** 	**HQ** 	**G** 	**Standard** 	**R/L-F** 	**R/L-□** 	**Without Chipbreaker** 	**Ceramic** 	**PCD** 	**CBN** 
----CTUPR09----	-	-	TPMR0902..	-	TPGR0902..	-	TPGN0902..	-	-	-
----CTUP R/L 11----	TPMR1103..	TPMR1103..	TPMR1103..	TPMR1103..	-	TPGR1103..	TPMN1103.. TPGN1103..	TPGN1103..	TPGN1103..	TPGN1103..
----CTUP R/L 16----	TPMR1603..	TPMR1603..	TPMR1603..	TPMR1603..	-	TPGR1603..	TPMN1603.. TPGN1603..	TPGN1603..	TPGN1603..	TPGN1603..

Recommended Cutting Conditions ➡ **F91~F92**
Applicable Sleeves ➡ **F82~F84**

● : Std. Item

Boring Toolholders for Bearing Machining (Square Shank)

SRCP-B (Boring)



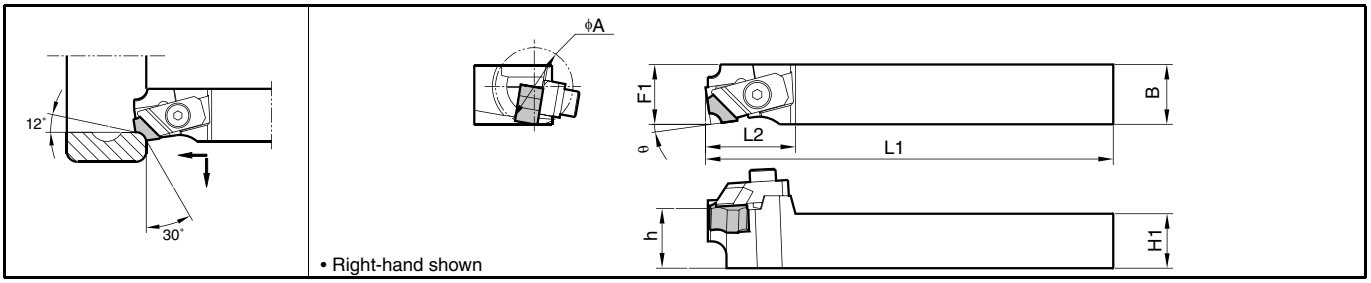
Toolholder Dimensions

Description		Std. R	Std. L	Min. Bore Dia. ϕA	Dimension (mm) H1	h	B	L1	L2	F1		Spare Parts: Clamp Screw	Wrench		Applicable Inserts ➡ B83
SRCP R/L	2020B-12-A20	●	●	20	20	15.5	20	125	25	22		SB-4TR	FT-15	-	RPMT1203M0-BB
	2525B-16-A32	●	●	32	25	20	25	150	31	27		SB-5090TR	-	LTW-20	RPMT1604M0-BB

Applicable Inserts

Insert			Description	Dimension (mm) A	T	ϕd	Angle (°) α
			RPMT 1203M0-BB	12.0	3.18	4.4	11°
			1604M0-BB	16.0	4.76	5.5	

CBSN-B (Internal Round Chamfering)



Toolholder Dimensions

Description		Std. R	Std. L	Min. Bore Dia. ϕA	Dimension (mm) H1	h	B	L1	L2	F1	θ	Spare Parts: Clamp Set	Wrench		Applicable Inserts ➡ B83
CBSN R/L	2020B-12-A20	●	●	20	20	21	20	125	32	20	9°	CP-RC R/L	LW-5		SNMF1204○○-21
	2525B-12-A20	●	●		25	26	25	150		25					

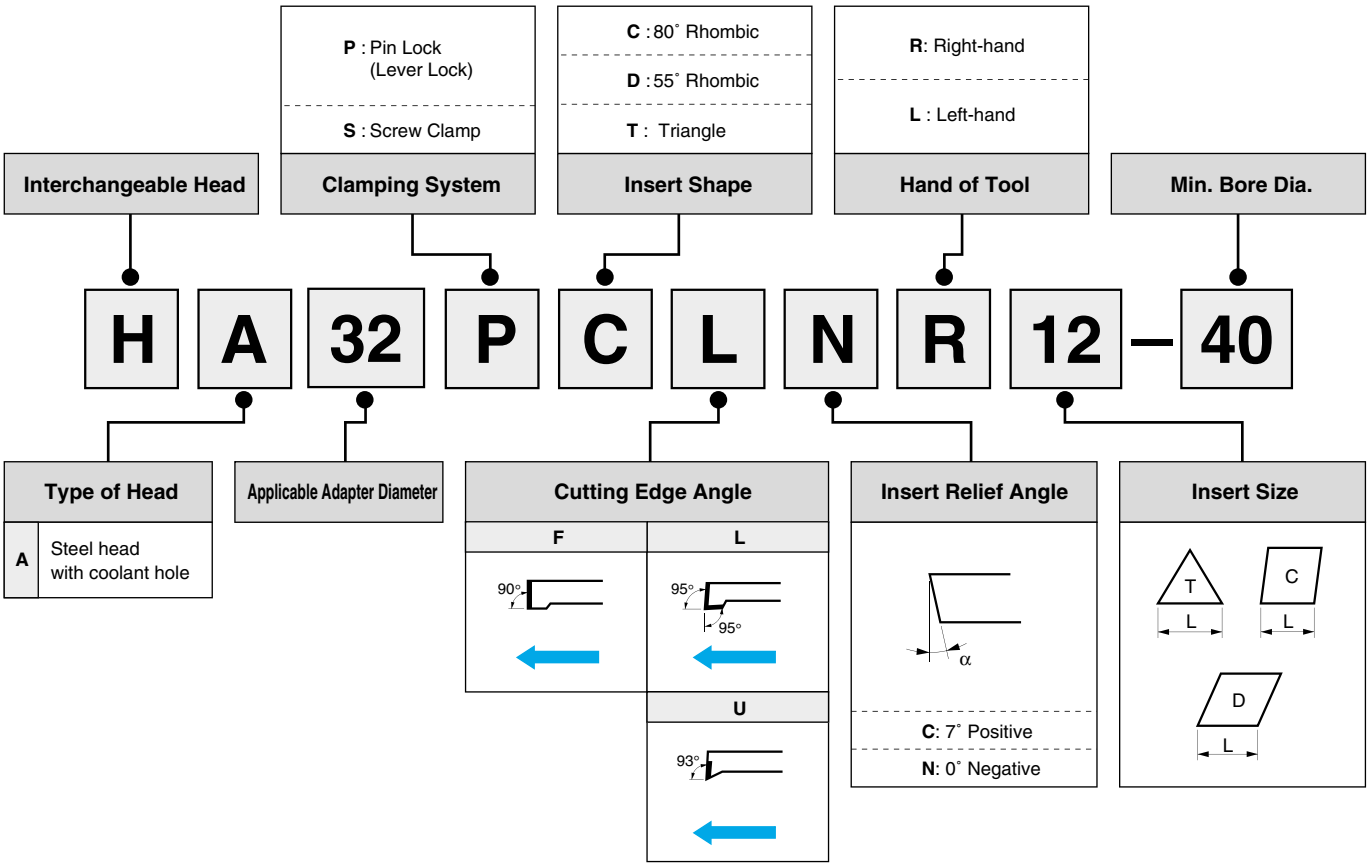
· Clamp Set: CP-RCR for Right-hand Toolholder, and CP-RCL for Left-hand Toolholder.

Applicable Inserts

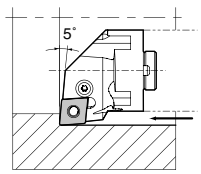
Insert				Description	Dimension (mm) A	T	B	rε	Angle (°) θ
				SNMF 120406-21	12.70	4.76	1.5	0.6	21°
				120410-21			3.0	1.0	
				120416-21			3.1	1.6	
				120421-21			3.2	2.1	
				120426-21			3.3	2.6	

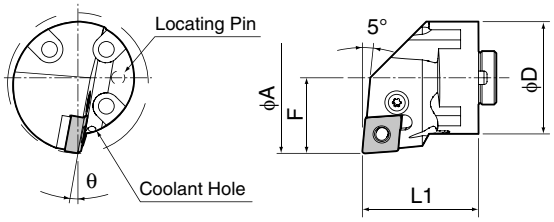
● : Std. Item

Identification System for Interchangeable Heads



HA···PCLN12 (Boring / Internal Facing, with Coolant Hole)





• Right-hand shown

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

Toolholder Dimensions

Description	Std. R	Std. L	Min. Bore Dia. φA	Dimension (mm) φD	L1	F	θ	Standard Corner-R(rε)	Spare Parts: Lever	Lock Screw	Shim	Shim Pin	*Punch	Wrench	Applicable Boring Adapter ➡F64
HA32PCLN R/L 12-40	●	●	40	32	41	22	10°	0.8	LL-2K	LS-2P	LC-4K	LSP-3K	*PC-2K	LTP-15	AD32U
HA40PCLN R/L 12-50	●	●	50	40		27									AD40V
HA50PCLN R/L 12-63	●	●	63	50		35									AD50W

* Punch (*PC-2K): Not included. Purchase separately.

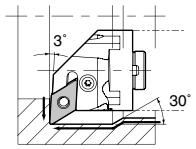
Applicable Inserts

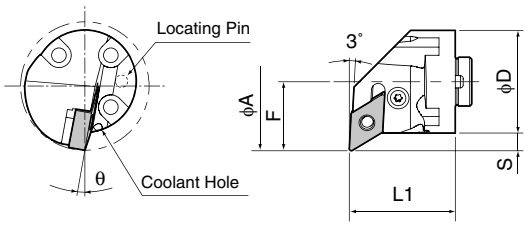
Toolholder Description	Insert Description		Ref. to Page: Cermet / Coated Carbide / Carbide	Ceramic	PCD	CBN
HA32PCLN R/L 12-40	CN□A	1204..	B14~B20	B86	C23	C6,C7
HA40PCLN R/L 12-50	CN□G					
HA50PCLN R/L 12-63	CN□M					

Recommended Cutting Conditions ➡F91~F92

● : Std. Item

HA···PDUN15 (Copying, with Coolant Hole)





• Right-hand shown

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

Toolholder Dimensions

Description	Std. R	Std. L	Min. Bore Dia. φA	Dimension (mm) φD	L1	F	S	θ	Standard Corner-R(rε)	Spare Parts: Lever	Lock Screw	Shim	Shim Pin	*Punch	Wrench	Applicable Boring Adapter ➡F64
HA32PDUN R/L 15-43	●	●	43	32	41	25	9	12°	0.8	LL-3K	LS-3P	LD-4K43 (LD-4K)	LSP-3K	*PC-2K	LTP-15	AD32U
HA40PDUN R/L 15-50	●	●	50	40		27	7	10°								AD40V
HA50PDUN R/L 15-63	●	●	63	50		35	10									AD50W

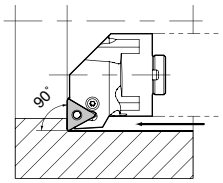
* Punch (*PC-2K): Not included. Purchase separately.
* Shim:LD-4K43 is attached to Toolholder. When using DN□□1506 Insert, purchase LD-4K separately.

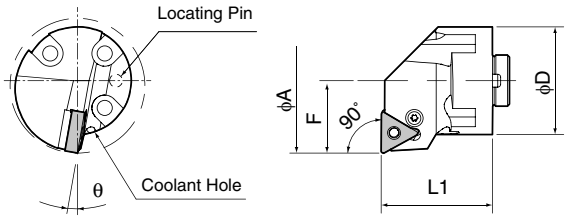
Applicable Inserts

Toolholder Description	Insert Description: Shim: LD-4K43		Shim: LD-4K		Ref. to Page: Cermet / Coated Carbide / Carbide	Ceramic	PCD	CBN
HA32PDUN R/L 15-43	DN□A	1504..	DN□A	1506..	B21~B27	B87	C23	C8,C9
HA40PDUN R/L 15-50	DN□G		DN□G					
HA50PDUN R/L 15-63	DN□M		DN□M					

Recommended Cutting Conditions ➡F91~F92

HA···PTFN16 (Internal, with Coolant Hole)





• Right-hand shown

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

Toolholder Dimensions

Description	Std. R	Std. L	Min. Bore Dia. φA	Dimension (mm) φD	L1	F	θ	Standard Corner-R(rε)	Spare Parts: Lever	Lock Screw	Shim	Shim Pin	*Punch	Wrench	Applicable Boring Adapter ➡F64
HA32PTFN R/L 16-40	●	●	40	32	41	22	10°	0.8	LL-1K	LS-1P	LT-3K	LSP-2K	*PC-2K	LTP-10	AD32U
HA40PTFN R/L 16-50	●	●	50	40		27									AD40V
HA50PTFN R/L 16-63	●	●	63	50		35	8°								AD50W

* Punch (*PC-2K): Not included. Purchase separately.

Applicable Inserts

Toolholder Description	Insert Description		Ref. to Page: Cermet / Coated Carbide / Carbide	Ceramic	PCD	CBN
HA32PTFN R/L 16-40	TN□A	1604..	B33~B38	B91	C23	C11
HA40PTFN R/L 16-50	TN□G					
HA50PTFN R/L 16-63	TN□M					

Recommended Cutting Conditions ➡F91~F92

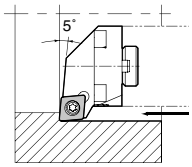
Reference

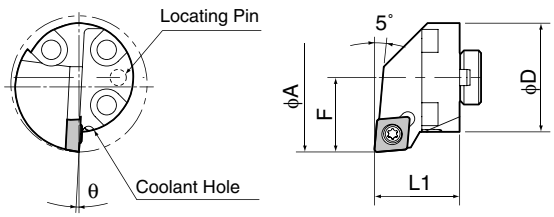
Wrenches (LTP-10, LTP-15) are Torx Plus.
The size of Torx Plus is engraved on the long shaft.

Wrench Description	LTP-10	LTP-15
Engraved Size	10IP	15IP

● : Std. Item

HA···SCLC09 (Boring / Internal Facing, with Coolant Hole)





• Right-hand shown

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

Toolholder Dimensions

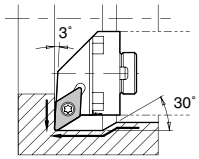
Description	Std. R	Std. L	Min. Bore Dia. φA	Dimension (mm) φD	L1	F	S	θ	Standard Corner-R(rε)	Spare Parts: Clamp Screw	Spare Parts: Wrench	Applicable Boring Adapter ➡F64	Applicable Inserts
HA32SCLC R/L 09-40	●	●	40	32	25	22	-	3˚	0.8	SB-3580TR	FTS-15	AD32U	CC..09T3..

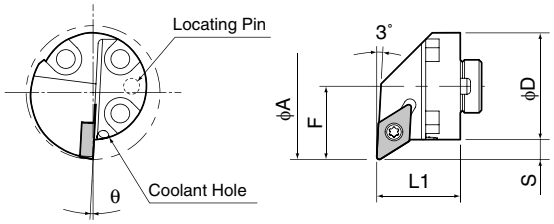
Applicable Inserts

Insert Description	Ref. to Page: Cermet / Coated Carbide / Carbide	PCD	CBN
CC..09T3..	B48~B53	C24	C14

Recommended Cutting Conditions ➡F91~F92

HA···SDUC11 (Copying, with Coolant Hole)





• Right-hand shown

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

Toolholder Dimensions

Description	Std. R	Std. L	Min. Bore Dia. φA	Dimension (mm) φD	L1	F	S	θ	Standard Corner-R(rε)	Spare Parts: Clamp Screw	Spare Parts: Wrench	Applicable Boring Adapter ➡F64	Applicable Inserts
HA32SDUC R/L 11-40	●	●	40	32	25	22	6	3˚	0.8	SB-3580TR	FTS-15	AD32U	DC..11T3..

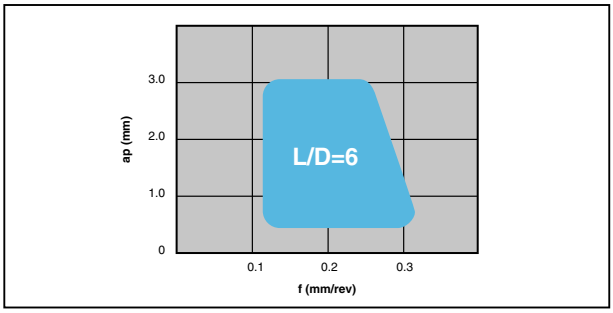
Applicable Inserts

Insert Description	Ref. to Page: Cermet / Coated Carbide / Carbide	PCD	CBN
DC..11T3..	B55~B61	C25	C15

Recommended Cutting Conditions ➡F91~F92

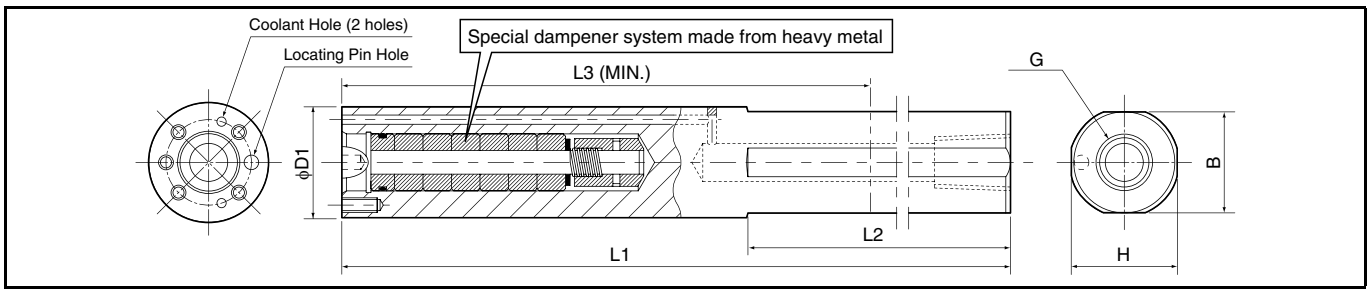
Possible machining area (Guide-Line for Overhang Length of AD Bars)

(SCM435 Vc=150m/min ap=0.5~3mm f=0.1~0.3mm/rev TNMG160408)



● : Std. Item

Boring Adapter (with Coolant Hole / Anti-Vibration Dampener System)



● **Dimensions**

Description	Std.	Dimension (mm)							Spare Parts		
									Clamp Bolt		Wrench
		ϕD1	H	B	L1	L2	L3 (MIN.)	G			
AD 32U	●	32	31	29	310	200	200	Rp3/8	HH5×20 (3 pcs)	HH5×30 (1 pcs)	LW-4
AD 40V	●	40	39	37	360	248	228				
AD 50W	●	50	47	47	410	280	276		HH6×20 (3 pcs)	HH6×30 (1 pcs)	LW-5

Note) L3 (MIN.) dimension indicates the minimum length in case of the back end of boring adapter is cut for use.
Do not shorten it to less than L3 (MIN.).

Combination of Boring Adapter and Interchangeable Head

Interchangeable Head Description		Boring Adapter			
		Base Description	Clamp Bolt		Wrench
HA32	**PCLNR/L 12-40**	AD32U	HH5×20	HH5×30	LW-4
	PDUNR/L 15-43				
	PTFNR/L 16-40				
	SCLCR/L 09-40		HH5×20		
	SDUCR/L 11-40				
HA40	**PCLNR/L 12-50**	AD40V	HH5×20	HH5×30	
	PDUNR/L 15-50				
	PTFNR/L 16-50				
HA50	**PCLNR/L 12-63**	AD50W	HH6×20	HH6×30	LW-5
	PDUNR/L 15-63				
	PTFNR/L 16-63				

How to exchange heads

1. No head attached

2. Align hole positions

3. Tighten 3 bolts to attach the head

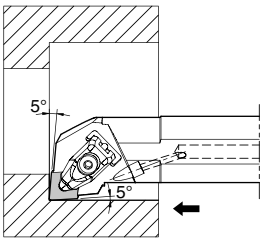
**For lever lock type Interchangeable head, use 2 short bolts for upper side and 1 long bolt for lower side.
HA32 SCLCR/L09-40 and
HA32 SDUCR/L11-40
use HH5 X 20 for all 3 bolts.**

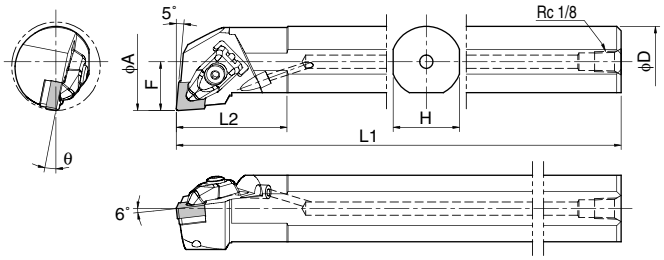
● : Std. Item

Boring Bar [CN□□ Negative Insert]

A-DCLN (Boring / Internal Facing)

Max. Overhang Length L/D=~3

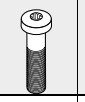




• Right-hand shown

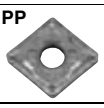
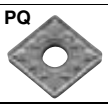
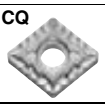
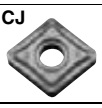
Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

Toolholder Dimensions

Description	Std. R	Std. L	Min. Bore Dia. φA	Dimension (mm) φD	H	L1	L2	F	S	θ	Standard Corner-R(rε)	Spare Parts: Clamp	Screw	Spring	Shim	Shim Screw	Nozzle	Wrench	Wrench (sold separately)
																		 for Clamp	 for Shim
A25R-DCLN R/L 12-32	●	●	32	25	23	200	42	17	-	11°	0.8	CP-3D	CS-3D	SP-3D	DC-42	SB-4085TR	DN10	LW-3	FT-15
A32S-DCLN R/L 12-40	●	●	40	32	30	250	50	22	-	11°									
A40T-DCLN R/L 12-50	●	●	50	40	37	300	60	27	-	11°							DN20		

*When using inserts whose corner-R(rε) is greater than 1.6mm, it will be necessary additional modifications of the shim in order to prevent workpiece and shim from interfering each other.
*Not applicable to high-pressure coolant.

Applicable Inserts

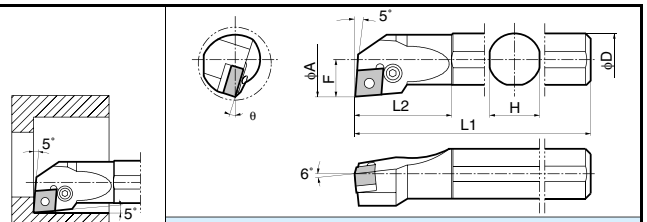
Applications	Finishing	Finishing-Medium	Finishing	Finishing	Finishing-Medium	Finishing-Medium	Finishing-Medium	Finishing-Medium	Medium-Roughing	Medium-Roughing
Ref. to Page	B14	B14	B14	B14	B14	B14	B14	B14	B15	B15
Insert / Toolholder Description	WP (Wiper) 	WQ (Wiper) 	PP 	GP 	PQ 	HQ 	CQ 	CJ 	GS 	PG 
...-DCLN R/L 12-...	CNMG1204..	CNMG1204..	CNMG1204..	CNMG1204..	CNMG1204..	CNMG1204..	CNMG1204..	CNMG1204..	CNMG1204..	CNMG1204..
Applications	Medium-Roughing	Medium-Roughing / High Feed Rate	Roughing	Single Sided / Roughing / High Feed Rate	Medium	Soft Steel / Finishing	Soft Steel / Medium	Soft Steel / Roughing	Stainless Steel / Finishing	Stainless Steel / Medium-Roughing
Ref. to Page	B15	B15	B16	B17	B20	B17	B17	B17	B18	B18
Insert / Toolholder Description	PS 	PT 	Standard 	PX 	R/L 	XP 	XQ 	XS 	MQ 	MS 
...-DCLN R/L 12-...	CNMG1204..	CNMG1204..	CNMG1204..	CNMM1204..	CNGG1204..	CNMG1204..	CNMG1204..	CNMG1204..	CNMG1204..	CNMG1204..
Applications	Stainless Steel / Medium-Roughing	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Hard Materials
Ref. to Page	B18	B19	B19	B19	B19	B86	B19	B19	C23	C6,C7
Insert / Toolholder Description	MU 	C 	ZS 	GC 	Without Chipbreaker 	Ceramic 	AH 	R/L-A3 	PCD 	CBN 
...-DCLN R/L 12-...	CNMG1204..	CNMG1204..	CNMG1204..	CNMG1204..	CNMA1204.. CNGA1204..	CNMA1204.. CNGA1204..	CN_G1204..	CNGG1204..	CNMM1204..	CNGA1204..

Recommended Cutting Conditions ➔ F91~F92

● : Std. Item

Boring Bar [CN□□ Negative Insert]

■ S-PCLN○○ (Boring / Internal Facing)

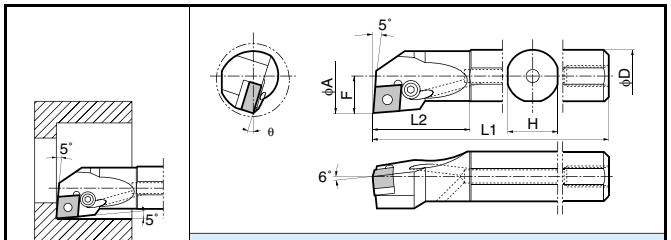


Left-hand Insert for Right-hand Toolholder,
Right-hand Insert for Left-hand Toolholder.

• Right-hand shown Max. Overhang Length L/D=~3

■ A-PCLN09

(Boring / Internal Facing, with Coolant Hole)
Twin-Hole Bar



Left-hand Insert for Right-hand Toolholder.

• Right-hand shown Max. Overhang Length L/D=~3

● Toolholder Dimensions

Description	(Previous Description)	Std. R	Std. L	Min. Bore Dia. φA	Dimension (mm) φD	H	L1	L2	F	θ	Standard Corner-R(rε)	Spare Parts: Lever	Lock Screw	Shim	Shim Pin	Punch	Wrench
S16M-PCLN R/L 09-20	PCLN R/L 2016B-09	●	●	20	16	15	150	34	11	16°	0.8	LL-03SN	LS-03SN	-	P-03S	-	FH-2.5
S20Q-PCLN R/L 09-27	PCLN R/L 2720B-09	●	●	27	20	19	180	37	14.2	17°	0.8	LL-1N	LS-1SN	LC-32N	LSP-1	PC-1	FH-2.5
S25R-PCLN R/L 09-32	3225B-09	●	●	32	25	24	200	42	15.7	15°	0.8	LL-1N	LS-1SN	LC-32N	LSP-1	PC-1	FH-2.5
NEW S25R-PCLN R/L 12-32	-	●	●	32	25	24	200	42	16.3	16°	0.8	LL-2N	LS-2N	LC-42N R/L	LSP-2	PC-2	LW-3
S32S-PCLN R/L 12-40	PCLN R/L 4032B-12	●	●	40	32	30	250	50	21	10°	0.8	LL-2N	LS-2N	LC-42N R/L	LSP-2	PC-2	LW-3
S40T-PCLN R/L 12-50	5040B-12	●	●	50	40	37	300	60	25	10°	0.8	LL-2N	LS-2N	LC-42N R/L	LSP-2	PC-2	LW-3
A16M-PCLN R/L 09-20	PCLN R/L 2016B-09H	●		20	16	15	150	34	11	16°	0.8	LL-03SN	LS-03SN	-	P-03S	-	FH-2.5
A20Q-PCLN R/L 09-27	PCLN R/L 2720B-09H	●		27	20	19	180	37	14.2	17°	0.8	LL-1N	LS-1SN	LC-32N	LSP-1	PC-1	FH-2.5
A25R-PCLN R/L 09-32	3225B-09H	●		32	25	24	200	42	15.7	15°	0.8	LL-1N	LS-1SN	LC-32N	LSP-1	PC-1	FH-2.5

· LC-42NR for Right-hand Toolholder, LC-42NL for Left-hand Toolholder.

● Applicable Inserts

Applications	Finishing	Finishing-Medium	Finishing	Finishing	Finishing-Medium	Finishing-Medium	Finishing-Medium	Finishing-Medium	Medium-Roughing	Medium-Roughing
Ref. to Page	B14	B14	B14	B14	B14	B14	B14	B14	B15	B15
Insert / Toolholder Description	WP (Wiper)	WQ (Wiper)	PP	GP	PQ	HQ	CQ	CJ	GS	PG
...-PCLN R/L 09-...	-	-	-	CNMG0904..	-	CNMG0904..	-	-	CNMG0904..	-
...-PCLN R/L 12-...	CNMG1204..	CNMG1204..	CNMG1204..	CNMG1204..	CNMG1204..	CNMG1204..	CNMG1204..	CNMG1204..	CNMG1204..	CNMG1204..

Applications	Medium-Roughing	Medium-Roughing	Medium-Roughing / High Feed Rate	Roughing	Single Sided / Roughing / High Feed Rate	Finishing	Medium	Soft Steel / Finishing	Soft Steel / Medium	Soft Steel / Roughing
Ref. to Page	B15	B15	B15	B16	B17	B20	B20	B17	B17	B17
Insert / Toolholder Description	PS	HS	PT	Standard	PX	R/L-S	R/L	XP	XQ	XS
...-PCLN R/L 09-...	-	-	-	-	-	CNGG0904..	CNGG0904..	-	-	-
...-PCLN R/L 12-...	CNMG1204..	CNMG1204..	CNMG1204..	CNMG1204..	CNMM1204..	-	CNGG1204..	CNMG1204..	CNMG1204..	CNMG1204..

Applications	Stainless Steel / Finishing	Stainless Steel / Medium-Roughing	Stainless Steel / Medium-Roughing	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Non-ferrous Metals	Non-ferrous Metals
Ref. to Page	B18	B18	B18	B19	B19	B19	B19	B86	B19	B19
Insert / Toolholder Description	MQ	MS	MU	C	ZS	GC	Without Chipbreaker	Ceramic	AH	R/L-A3
...-PCLN R/L 09-...	-	-	-	-	-	-	-	-	-	-
...-PCLN R/L 12-...	CNMG1204..	CNMG1204..	CNMG1204..	CNMG1204..	CNMG1204..	CNMG1204..	CNMA1204.. CNGA1204..	CNMA1204.. CNGA1204..	CN_G1204..	CNGG1204..

Applications	Non-ferrous Metals	Hard Materials
Ref. to Page	C23	C6,C7
Insert / Toolholder Description	PCD	CBN
...-PCLN R/L 09-...	-	-
...-PCLN R/L 12-...	CNMM1204..	CNGA1204..

Recommended Cutting Conditions ➡ F91~F92

● Applicable Coolant Sleeve / Joint

Toolholder Description	Applicable Coolant Sleeve	Applicable Coolant Joint
A16M-PCLN R/L 09-20	SHC1640-70, SHC1650-95	SJS-8
A20Q-PCLN R/L 09-27	SHC2040-70, SHC2050-95	SJS-8
A25R-PCLN R/L 09-32	SHC2540-70, SHC2550-95	SJS-8

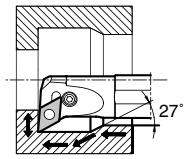
· For Coolant Sleeve, Coolant Joint, ref. to page ➡ F83~F84.

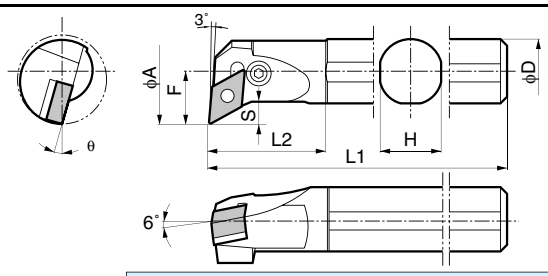
● : Std. Item

Boring Bar [DN11 Small Negative Insert]

S-PDUN11 (Copying)

Max. Overhang Length L/D=~3



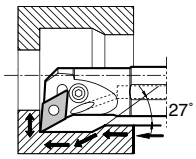


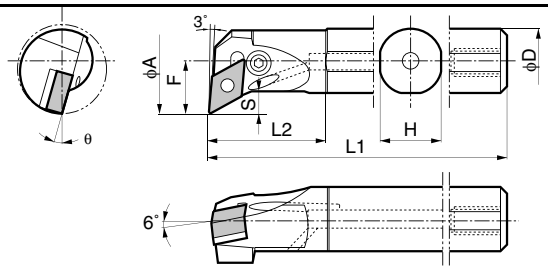
• Right-hand shown

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

A-PDUN11 Twin-Hole Bar (Copying, with Coolant Hole)

Max. Overhang Length L/D=~3





• Right-hand shown

Left-hand Insert for Right-hand Toolholder.

Toolholder Dimensions

Description	(Previous Description)	Std. R	Std. L	Min. Bore Dia. φA	Dimension (mm) φD	H	L1	L2	F	S	θ	Standard Corner-R(rε)	Spare Parts: Lever	Lock Screw	Shim	Shim Pin	Punch	Wrench
S20Q -PDUN R/L 11-27	**PDUN R/L 2720B-11**	●	●	27	20	19	180	35	16	7.6	17°	0.4	LL-1DN	LS-1SN	LD-32N	LSP-1	PC-1	FH-2.5
S25R -PDUN R/L 11-32	**3225B-11**	●	●	32	25	24	200	40	17	7.6	15°							
S32S -PDUN R/L 11-40	**4032B-11**	●	●	40	32	31	250	45	22	8.5	12°							
A20Q -PDUNR11-27	**PDUNR 2720B-11H**	●		27	20	19	180	35	16	7.6	17°	0.4	LL-1DN	LS-1SN	LD-32N	LSP-1	PC-1	FH-2.5
A25R -PDUNR11-32	**3225B-11H**	●		32	25	24	200	40	17	7.6	15°							
A32S -PDUNR11-40	**4032B-11H**	●		40	32	31	250	45	22	8.5	12°							

Applicable Inserts

Applications	Finishing	Finishing-Medium	Medium-Roughing	Finishing	Medium
Ref. to Page	**B21**	**B21**	**B22**	**B27**	**B27**
Insert / Toolholder Description	**GP**	**HQ**	**GS**	**R/L-S**	**R/L**
----PDUN R/L 11----	DNMG1104..	DNMG1104..	DNMG1104..	DNGG1104..	DNGG1104..

Recommended Cutting Conditions ➡ **F91~F92**

Applicable Coolant Sleeve / Joint

Toolholder Description	Applicable Coolant Sleeve	Applicable Coolant Joint
A20Q -PDUNR11-27	SHC2040-70, SHC2050-95	SJS-8
A25R -PDUNR11-32	SHC2540-70, SHC2550-95	
A32S -PDUNR11-40	-	

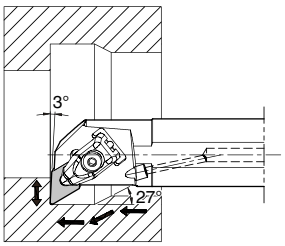
· For Coolant Sleeve, Coolant Joint, ref. to page ➡ **F83~F84**.

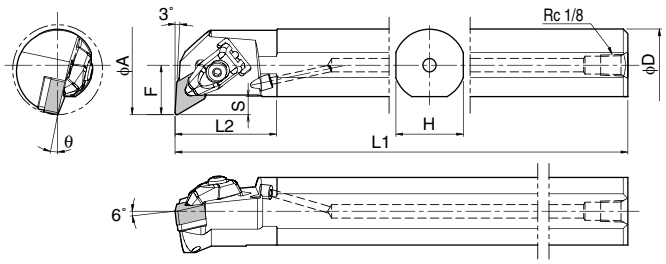
● : Std. Item

Boring Bar [DN15 Negative Insert]

A-DDUN (Boring / Copying)

Max. Overhang Length L/D=~3

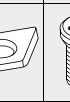




• Right-hand shown

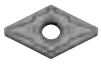
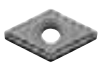
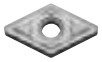
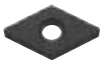
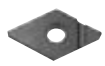
Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

Toolholder Dimensions

Description	Std. R	Std. L	Min. Bore Dia. φA	Dimension (mm) φD	H	L1	L2	F	S	θ	Standard Corner-R(rε)	Spare Parts: Clamp	Screw	Spring	Shim	Shim Screw	Nozzle	Wrench	Wrench (sold separately)
																		 for Clamp	 for Shim
A32S-DDUN$^{R}/_{L}$15-40	●	●	40	32	30	250	45	22	8	12°	0.8	CP-3D	CS-3D	SP-3D	DD-42 *DD-42-16	SB-4085TR	DN10	LW-3	FT-15
A40T- DDUN$^{R}/_{L}$15-50	●	●	50	40	37	300	55	27	8.5										
A50U-DDUN$^{R}/_{L}$15-63	●	●	63	50	47	350	65	35	10.5								DN20		

When using inserts whose corner-R(rε) is greater than 1.6mm, please purchase a shim (DD-42-16) with * mark and use it in order to prevent workpiece and shim from interfering each other.
*Not applicable to high-pressure coolant.

Applicable Inserts

Applications	Finishing	Finishing-Medium	Finishing-Medium	Finishing-Medium	Medium-Roughing	Medium-Roughing	Medium-Roughing	Medium-Roughing / High Feed Rate	Roughing
Ref. to Page	**B21**	**B21**	**B22**	**B22**	**B22**	**B22**	**B23**	**B23**	**B23**
Insert / Toolholder Description	**PP** 	**PQ** 	**CQ** 	**CJ** 	**GS** 	**PG** 	**PS** 	**PT** 	**Standard** 
----DDUN$^{R}/_{L}$15----	DNMG1504..	DNMG1504..	DNMG1504..	DNMG1504..	DNMG1504..	DNMG1504..	DNMG1504..	DNMG1504..	DNMG1504..
Applications	Roughing	Single Sided / Roughing / High Feed Rate	Medium	Soft Steel / Finishing	Soft Steel / Medium	Soft Steel / Roughing	Stainless Steel / Finishing	Stainless Steel / Medium-Roughing	Stainless Steel / Medium-Roughing
Ref. to Page	**B24**	**B24**	**B27**	**B24**	**B24**	**B24**	**B25**	**B25**	**B25**
Insert / Toolholder Description	**PH** 	**PX** 	$^{R}/_{L}$ 	**XP** 	**XQ** 	**XS** 	**MQ** 	**MS** 	**MU** 
----DDUN$^{R}/_{L}$15----	DNMG1504..	DNMM1504..	DNGG1504..	DNMG1504..	DNMG1504..	DNMG1504..	DNMG1504..	DNMG1504..	DNMG1504..
Applications	Stainless Steel / Medium-Roughing	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Hard Materials
Ref. to Page	**B25**	**B26**	**B26**	**B26**	**B87**	**B26**	**B26**	**C23**	**C8,C9**
Insert / Toolholder Description	**TK** 	**C** 	**ZS** 	**GC** 	**Ceramic** 	**AH** 	$^{R}/_{L}$**-A3** 	**PCD** 	**CBN** 
----DDUN$^{R}/_{L}$15----	DNMG1504..	DNMG1504..	DNMG1504..	DNMG1504..	DNGA1504..	DN_G1504..	DNGG1504..	DNMM1504..	DNGA1504..

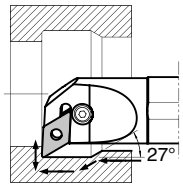
Recommended Cutting Conditions ➔ **F91~F92**

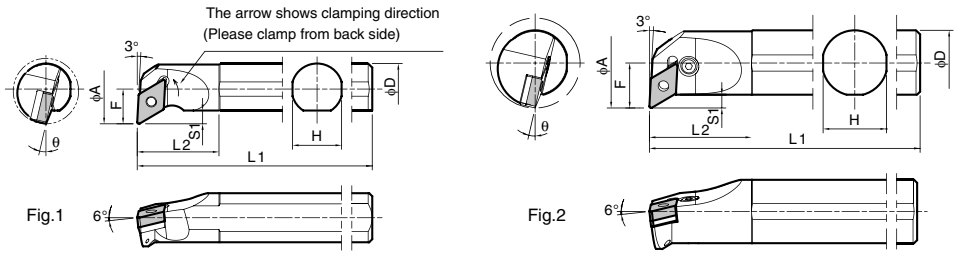
● : Std. Item

Boring Bar [DN15 Negative Insert]

S-PDUN15 (Copying)

Max. Overhang Length L/D=~3



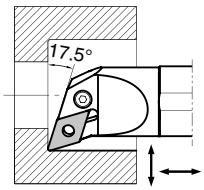


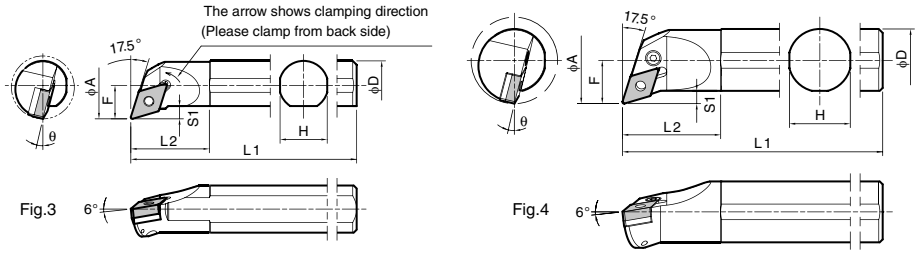
• Right-hand shown

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

S-PDQN15 (Copying)

Max. Overhang Length L/D=~3



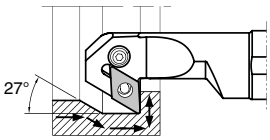


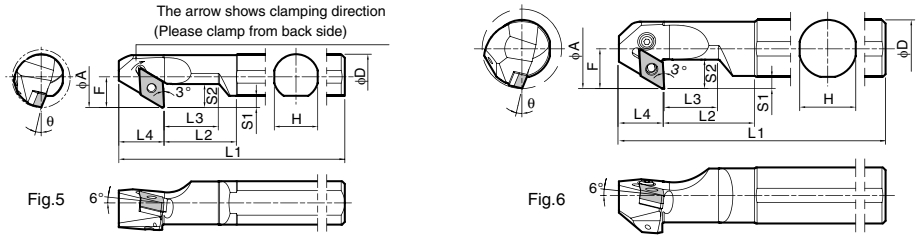
• Right-hand shown

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

S-PDZN15 (Back Boring)

Max. Overhang Length L/D=~3





• Right-hand shown

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

Toolholder Dimensions

Description	Std. R	Std. L	Min. Bore Dia. ϕA	Dimension (mm) ϕD	H	L1	L2	L3	L4	F	S1	S2	θ	Standard Corner-R(rε)	Drawing	Applicable Inserts	
S25R -PDUN R/L 15-32	●	●	32	25	24	200	40	-	-	17	6.5	-	13°	0.8	Fig.1	DN□A	1504..
S32S -PDUN R/L 15-44	●	●	44	32	31	250	50			22					Fig.2	DN□G	
S40T -PDUN R/L 15-54	●	●	54	40	39	300	65			27	7.5		12°			DN□M	
S25R -PDQN R/L 15-32	●	●	32	25	24	200	40	-	-	17	6.5	-	13°	0.8	Fig.3	DN□A	1504..
S32S -PDQN R/L 15-44	●	●	44	32	31	250	50			22					Fig.4	DN□G	
S40T -PDQN R/L 15-54	●	●	54	40	39	300	65			27	7.5		12°			DN□M	
S25R -PDZN R/L 15-32	●	●	32	25	24	225	40	30	25	17	6.5	13	13°	0.8	Fig.5	DN□A	1504..
S32S -PDZN R/L 15-44	●	●	44	32	31	275	50			22		16			Fig.6	DN□G	
S40T -PDZN R/L 15-54	●	●	54	40	39	325	65	50		27	7.5		12°			DN□M	

● : Std. Item

Boring Bar [DN15 Negative Insert]

Spare Parts (Common)

Toolholder Description	Spare Parts									
	Lever	Lock Screw	Shim	Shim Pin	Punch	Wrench	Lock Pin	Shim	Shim Screw	Wrench (for Shim Screw)
S25R - PD□N R/L 15-32	-	-	-	-	-	LW-3	PP-4	PD-42	SB-2050TR	FT-6
S32S - PD□N R/L 15-44	LL-3N	LS-2N	LD-42 *LD-42-20	LSP-2	PC-2		-	-	-	-
S40T - PD□N R/L 15-54										

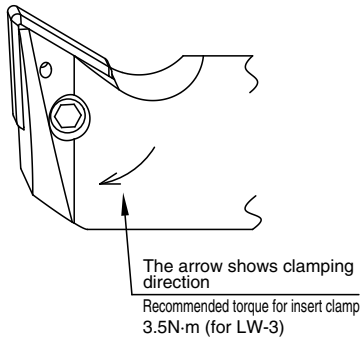
· Shim When using inserts whose corner-R(rε) = 1.6mm or larger for S25R-PD□N R/L 15-32, use shim modified by additional processing to prevent interference between workpiece and shim. When using inserts whose corner-R(rε) = 1.6mm or larger for S32S-PD□N R/L 15-44 and S40T-PD□N R/L 15-54, purchase and use shim with * mark separately to prevent interference between workpiece and shim.

F

Boring

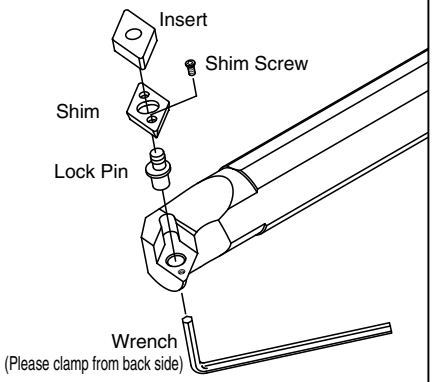
How to change S25R-PD□N R/L 15-32 inserts

· Please replace S25R-PD□N R/L 15-32 insert from the back side

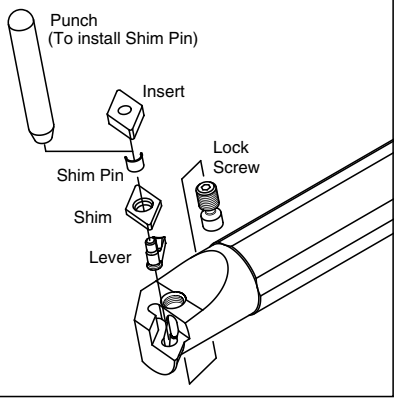


How to assemble spare parts

· S25R-PD□N R/L 15-32 (Pin Lock)



· S32S-PD□N R/L 15-44 (Lever Lock)
· S40T-PD□N R/L 15-54 (Lever Lock)



Applicable Inserts

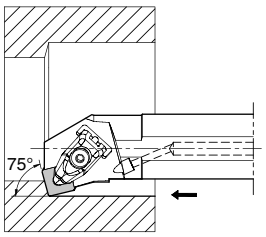
Applications	Finishing	Finishing-Medium	Finishing-Medium	Finishing-Medium	Medium-Roughing	Medium-Roughing	Medium-Roughing	Medium-Roughing / High Feed Rate	Roughing
Ref. to Page	**B21**	**B21**	**B22**	**B22**	**B22**	**B22**	**B23**	**B23**	**B23**
Insert / Toolholder Description	**PP**	**PQ**	**CQ**	**CJ**	**GS**	**PG**	**PS**	**PT**	**Standard**
----PD□N R/L 15-----	DNMG1504..	DNMG1504..	DNMG1504..	DNMG1504..	DNMG1504..	DNMG1504..	DNMG1504..	DNMG1504..	DNMG1504..
Applications	Roughing	Single Sided / Roughing / High Feed Rate	Medium	Soft Steel / Finishing	Soft Steel / Medium	Soft Steel / Roughing	Stainless Steel / Finishing	Stainless Steel / Medium-Roughing	Stainless Steel / Medium-Roughing
Ref. to Page	**B24**	**B24**	**B27**	**B24**	**B24**	**B24**	**B25**	**B25**	**B25**
Insert / Toolholder Description	**PH**	**PX**	**R/L**	**XP**	**XQ**	**XS**	**MQ**	**MS**	**MU**
----PD□N R/L 15-----	DNMG1504..	DNMM1504..	DNGG1504..	DNMG1504..	DNMG1504..	DNMG1504..	DNMG1504..	DNMG1504..	DNMG1504..
Applications	Stainless Steel / Medium-Roughing	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Hard Materials
Ref. to Page	**B25**	**B26**	**B26**	**B26**	**B87**	**B26**	**B26**	**C23**	**C8,C9**
Insert / Toolholder Description	**TK**	**C**	**ZS**	**GC**	**Ceramic**	**AH**	**R/L-A3**	**PCD**	**CBN**
----PD□N R/L 15-----	DNMG1504..	DNMG1504..	DNMG1504..	DNMG1504..	DNGA1504..	DN_G1504..	DNGG1504..	DNMM1504..	DNGA1504..

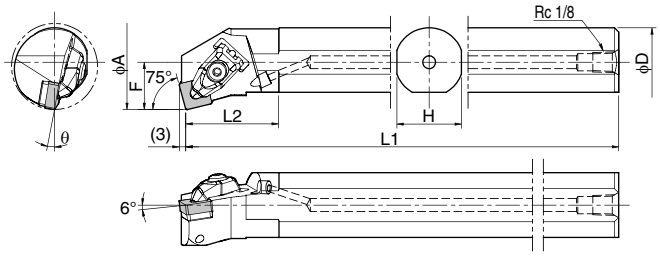
Recommended Cutting Conditions ➡ **F91~F92**

Boring Bar [SN12 Negative Insert]

A-DSKN (Boring)

Max. Overhang Length L/D=~3

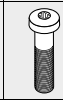




• Right-hand shown

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

Toolholder Dimensions

Description	Std. R	Std. L	Min. Bore Dia. φA	Dimension (mm) φD	H	L1	L2	F	S	θ	Standard Corner-R(rε)	Spare Parts: Clamp	Screw	Spring	Shim	Shim Screw	Nozzle	Wrench	Wrench (sold separately)
																		 for Clamp	 for Shim
A25R-DSKN$^{R}/_{L}$12-32	●	●	32	25	23	200	43	17	-	11°	0.8	CP-3D	CS-3D	SP-3D	DS-42	SB-4085TR	DN10	LW-3	FT-15
A32S-DSKN$^{R}/_{L}$12-40	●	●	40	32	30	250	43	22	-	11°									
A40T- DSKN$^{R}/_{L}$12-50	●	●	50	40	37	300	53	27	-	11°							DN20		

*Not applicable to high-pressure coolant.

Applicable Inserts

Applications	Finishing-Medium	Medium-Roughing	Medium-Roughing	Medium-Roughing	Medium-Roughing / High Feed Rate	Roughing	Roughing	Single Sided / Roughing / High Feed Rate
Ref. to Page	**B29**	**B29**	**B29**	**B29**	**B29**	**B29**	**B30**	**B30**
Insert / Toolholder Description	**PQ** 	**PG** 	**PS** 	**HS** 	**PT** 	**Standard** 	**PH** 	**PX** 
···DSKN$^{R}/_{L}$12···	SNMG1204..	SNMG1204..	SNMG1204..	SNMG1204..	SNMG1204..	SNMG1204..	SNMG1204..	SNMM1204..
Applications	Finishing-Roughing	Medium-Roughing / Low Cutting Force	Soft Steel / Finishing	Soft Steel / Medium	Soft Steel / Roughing	Stainless Steel / Finishing	Stainless Steel / Medium-Roughing	Cast Iron
Ref. to Page	**B32**	**B32**	**B30**	**B30**	**B30**	**B31**	**B31**	**B31**
Insert / Toolholder Description	**$^{R}/_{L}$-□** 	**$^{R}/_{L}$-25R** 	**XP** 	**XQ** 	**XS** 	**MQ** 	**MS** 	**C** 
···DSKN$^{R}/_{L}$12···	SNGG1204..	SNGG1204..	SNMG1204..	SNMG1204..	SNMG1204..	SNMG1204..	SNMG1204..	SNMG1204..
Applications	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Hard Materials			
Ref. to Page	**B31**	**B31**	**B31**	**B89**	**C10**			
Insert / Toolholder Description	**ZS** 	**GC** 	**Without Chipbreaker** 	**Ceramic** 	**CBN** 			
···DSKN$^{R}/_{L}$12···	SNMG1204..	SNMG1204..	SN□A1204..	SN□A1204..	SNGA1204..			

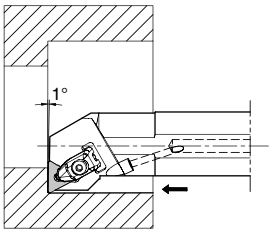
Recommended Cutting Conditions ➡ **F91~F92**

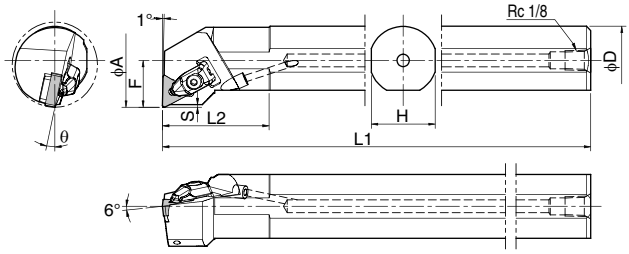
● : Std. Item

Boring Bar [TN16 Negative Insert]

A-DTFN (Boring)

Max. Overhang Length L/D=~3

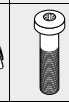




• Right-hand shown

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

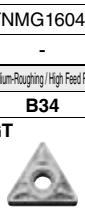
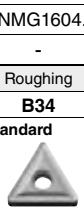
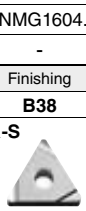
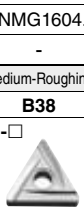
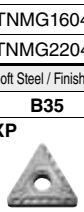
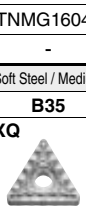
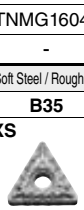
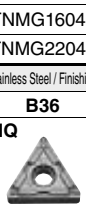
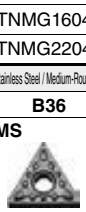
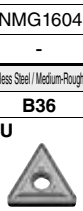
Toolholder Dimensions

Description	Std. R	Std. L	Min. Bore Dia. φA	Dimension (mm) φD	H	L1	L2	F	S	θ	Standard Corner-R(rε)	Spare Parts: Clamp	Screw	Spring	Shim	Shim Screw	Nozzle	Wrench	Wrench (sold separately)
																		 for Clamp	 for Shim
A25R-DTFN$^{R}/_{L}$16-32	●	●	32	25	23	200	42	17	0.8	12°	0.8	CP-2D	CS-2D	SP-3D	DT-32	SB-3080TR	DN10	LW-2.5	FT-10
A32S-DTFN$^{R}/_{L}$16-40	●	●	40	32	30	250	50	22	1.2	12°									
A40T- DTFN$^{R}/_{L}$22-50	●	●	50	40	37	300	60	27	1.5	12°		CP-3D	CS-3D	SP-3D	DT-42	SB-4085TR	DN20	LW-3	FT-15

*Not applicable to high-pressure coolant.

Applicable Inserts

Applications	Finishing	Finishing	Finishing-Medium	Finishing-Medium	Finishing-Medium	Medium-Roughing	Medium-Roughing	Medium-Roughing	Medium-Roughing	Medium-Roughing / High Feed Rate
Ref. to Page	B33	B33	B33	B33	B33	B33	B33	B33	B34	B34
Insert / Toolholder Description	PP 	GP 	PQ 	HQ 	CQ 	GS 	PG 	PS 	HS 	PT 
----DTFN$^{R}/_{L}$16----	TNMG1604..	TNMG1604..	TNMG1604..	TNMG1604..	TNMG1604..	TNMG1604..	TNMG1604..	TNMG1604..	TNMG1604..	TNMG1604..
----DTFN$^{R}/_{L}$22----	-	-	-	-	TNMG2204..	-	-	TNMG2204..	TNMG2204..	-

Applications	Medium-Roughing / High Feed Rate	Roughing	Finishing	Medium-Roughing	Soft Steel / Finishing	Soft Steel / Medium	Soft Steel / Roughing	Stainless Steel / Finishing	Stainless Steel / Medium-Roughing	Stainless Steel / Medium-Roughing
Ref. to Page	B34	B34	B38	B38	B35	B35	B35	B36	B36	B36
Insert / Toolholder Description	GT 	Standard 	$^{R}/_{L}$-S 	$^{R}/_{L}$-□ 	XP 	XQ 	XS 	MQ 	MS 	MU 
----DTFN$^{R}/_{L}$16----	TNMG1604..	TNMG1604..	TNGG1604..	TNGG1604..	TNMG1604..	TNMG1604..	TNMG1604..	TNMG1604..	TNMG1604..	TNMG1604..
----DTFN$^{R}/_{L}$22----	-	TNMG2204..	-	TNGG2204..	-	-	-	-	-	-

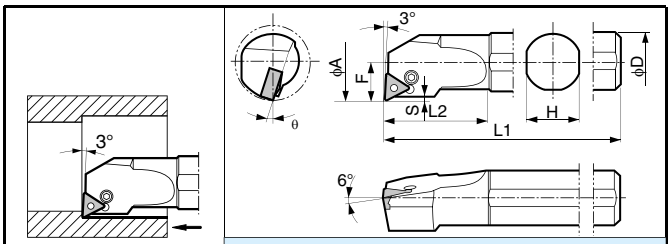
Applications	Stainless Steel / Medium-Roughing	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Hard Materials
Ref. to Page	B36	B37	B37	B37	B37	B91	B37	B37	C23	C11
Insert / Toolholder Description	$^{R}/_{L}$-ST 	C 	ZS 	GC 	Without Chipbreaker 	Ceramic 	AH 	$^{R}/_{L}$-A3 	PCD 	CBN 
----DTFN$^{R}/_{L}$16----	TNMG1604..	TNMG1604..	TNMG1604..	TNMG1604..	TNMA1604.. TNGA1604..	TNGA1604..	TN_G1604..	TNGG1604..	TNMM1604..	TNGA1604..
----DTFN$^{R}/_{L}$22----	-	-	-	-	-	-	-	-	-	-

Recommended Cutting Conditions ➡ F91~F92

● : Std. Item

Boring Bar [TN□□Negative Insert]

S-PTUN○○ (Boring)

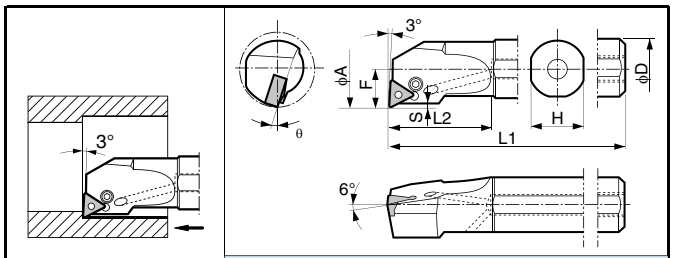


Left-hand Insert for Right-hand Toolholder,
Right-hand Insert for Left-hand Toolholder.

• Right-hand shown Max. Overhang Length L/D=~3

A-PTUN11

(Internal, with Coolant Hole)
Twin-Hole Bar



Left-hand Insert for Right-hand Toolholder.

• Right-hand shown Max. Overhang Length L/D=~3

Toolholder Dimensions

Description	(Previous Description)	Std. R	Std. L	Min. Bore Dia. ϕA	Dimension (mm) ϕD	H	L1	L2	F	S	θ	Standard Corner-R(rε)	Spare Parts: Lever	Lock Screw	Shim	Shim Pin	Punch	Wrench
S16M-PTUN R/L 11-20	PTUN R/L 2016B-11	●	●	20	16	15	150	34	11	0.3	18°	0.8	LL-03TN	LS-03SN	-	P-03S	-	FH-2.5
S20Q-PTUN R/L 11-25	2520B-11	●	●	25	20	19	180	37	13.2	0.2	17°							
S25R-PTUN R/L 11-32	3225B-11	●	●	32	25	24	200	42	15.7	0.3	16°							
S16M-PTUN R/L 16-20	NEW -	●	●	20	16	15	150	34	11	1.3	18°	0.8	LL-03SN	LS-03SN	-	P-03S	-	FH-2.5
S20Q-PTUN R/L 16-25		●	●	25	20	19	180	37	13.2	1.3	17°							
S25R-PTUN R/L 16-30		●	●	30	25	24	200	42	15.5	1.3	13°							
S32S-PTUN R/L 16-40		●	●	40	32	30	250	50	22	0.7	13°		LL-1N	LS-1N	LT-32N *LT-32N-20	LSP-1	PC-1	FH-2.5
S40T-PTUN R/L 16-50		●	●	50	40	37	300	60	27	0.6	11°							
A16M-PTUNR11-20	PTUNR2016B-11H	●		20	16	15	150	34	11	0.3	18°	0.8	LL-03TN	LS-03SN	-	P-03S	-	FH-2.5
A20Q-PTUNR11-25	2520B-11H	●		25	20	19	180	37	13.2	0.2	17°							
A25R-PTUNR11-32	3225B-11H	●		32	25	24	200	42	15.7	0.3	16°							

· When using inserts whose corner-R(rε) = 1.6mm or larger, purchase and use shim with * mark separately to prevent interference between workpiece and shim.

Applicable Inserts

Applications	Finishing	Finishing	Finishing-Medium	Finishing-Medium	Finishing-Medium	Medium-Roughing	Medium-Roughing	Medium-Roughing	Medium-Roughing	Medium-Roughing / High Feed Rate
Ref. to Page	B33	B33	B33	B33	B33	B33	B33	B33	B34	B34
Insert / Toolholder Description	PP	GP	PQ	HQ	CQ	GS	PG	PS	HS	PT
----PTUN R/L 11----	-	TNMG1104..	-	TNMG1104..	-	TNMG1104..	-	-	-	-
----PTUN R/L 16----	TNMG1604..	TNMG1604..	TNMG1604..	TNMG1604..	TNMG1604..	TNMG1604..	TNMG1604..	TNMG1604..	TNMG1604..	TNMG1604..
Applications	Medium-Roughing / High Feed Rate	Roughing	Finishing	Medium-Roughing	Soft Steel / Finishing	Soft Steel / Medium	Soft Steel / Roughing	Stainless Steel / Finishing	Stainless Steel / Medium-Roughing	Stainless Steel / Medium-Roughing
Ref. to Page	B34	B34	B38	B38	B35	B35	B35	B36	B36	B36
Insert / Toolholder Description	GT	Standard	R/L-S	R/L-□	XP	XQ	XS	MQ	MS	MU
----PTUN R/L 11----	-	-	TNGG1104..	TNGG1104..	-	-	-	-	-	-
----PTUN R/L 16----	TNMG1604..	TNMG1604..	TNGG1604..	TNGG1604..	TNMG1604..	TNMG1604..	TNMG1604..	TNMG1604..	TNMG1604..	TNMG1604..
Applications	Stainless Steel / Medium-Roughing	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Hard Materials
Ref. to Page	B36	B37	B37	B37	B37	B91	B37	B37	C23	C11
Insert / Toolholder Description	R/L-ST	C	ZS	GC	Without Chipbreaker	Ceramic	AH	R/L-A3	PCD	CBN
----PTUN R/L 11----	-	-	-	-	-	-	-	-	-	-
----PTUN R/L 16----	TNMG1604..	TNMG1604..	TNMG1604..	TNMG1604..	TNMA1604.. TNGA1604..	TNGA1604..	TN_G1604..	TNGG1604..	TNMM1604..	TNGA1604..

Recommended Cutting Conditions ➡ F91~F92

Applicable Coolant Sleeve / Joint

Toolholder Description	Applicable Coolant Sleeve	Applicable Coolant Joint
A16M-PTUN R/L 11-20	SHC1640-70, SHC1650-95	SJS-8
A20Q-PTUN R/L 11-25	SHC2040-70, SHC2050-95	
A25R-PTUN R/L 11-32	SHC2540-70, SHC2550-95	

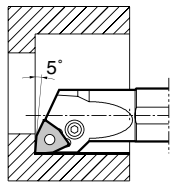
· For Coolant Sleeve, Coolant Joint, ref. to page ➡ F83~F84.

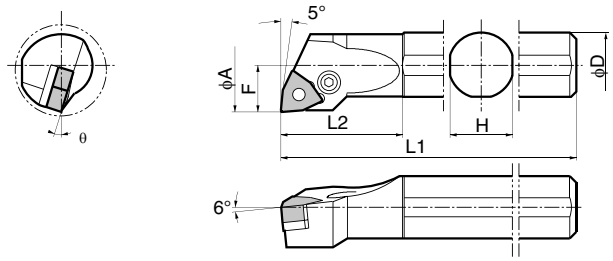
● : Std. Item

Boring Bar [WN06 Small Negative Insert]

S-PWLN06 (Boring / Internal Facing)

Max. Overhang Length L/D=~3



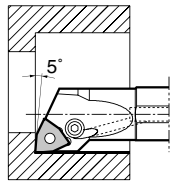


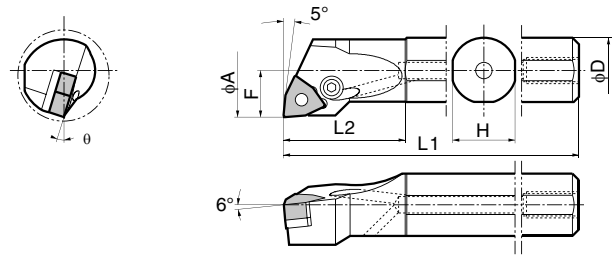
• Right-hand shown

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

A-PWLN06 Twin-Hole Bar (Boring / Internal Facing, with Coolant Hole)

Max. Overhang Length L/D=~3





• Right-hand shown

Left-hand Insert for Right-hand Toolholder.

Toolholder Dimensions

Description	(Previous Description)	Std. R	Std. L	Min. Bore Dia. φA	Dimension (mm) φD	H	L1	L2	F	θ	Standard Corner-R(rε)	Spare Parts: Lever	Lock Screw	Shim	Shim Pin	Punch	Wrench
S16M-PWLN R/L 06-20	PWLN R/L 2016B-06	●	●	20	16	15	150	34	11	16°	0.8	LL-03SN	LS-03SN	-	P-03S	-	FH-2.5
S20Q-PWLN R/L 06-27	PWLN R/L 2720B-06	●	●	27	20	19	180	37	14.2	17°		LL-1N	LS-1SN	LW-32N	LSP-1	PC-1	
S25R-PWLN R/L 06-32	3225B-06	●	●	32	25	24	200	42	15.7	15°							
A16M-PWLNR06-20	PWLNR 2016B-06H	●		20	16	15	150	34	11	16°	0.8	LL-03SN	LS-03SN	-	P-03S	-	FH-2.5
A20Q-PWLNR06-27	PWLNR 2720B-06H	●		27	20	19	180	37	14.2	17°		LL-1N	LS-1SN	LW-32N	LSP-1	PC-1	
A25R-PWLNR06-32	3225B-06H	●		32	25	24	200	42	15.7	15°							

Applicable Inserts

Applications	Finishing	Finishing-Medium	Medium-Roughing	Finishing	Medium
Ref. to Page	B41	B41	B42	B44	B44
Insert / Toolholder Description	GP	HQ	GS	R/L-S	R/L
----PWLN R/L 06----	WNMG0604..	WNMG0604..	WNMG0604..	WNGG0604..	WNGG0604..

Recommended Cutting Conditions ➡ F91~F92

Applicable Coolant Sleeve / Joint

Toolholder Description	Applicable Coolant Sleeve	Applicable Coolant Joint
A16M-PWLNR06-20	SHC1640-70, SHC1650-95	SJS-8
A20M-PWLNR06-27	SHC2040-70, SHC2050-95	
A25R-PWLNR06-32	SHC2540-70, SHC2550-95	

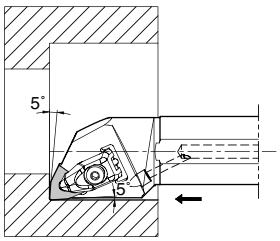
· For Coolant Sleeve, Coolant Joint, ref. to page ➡ F83~F84.

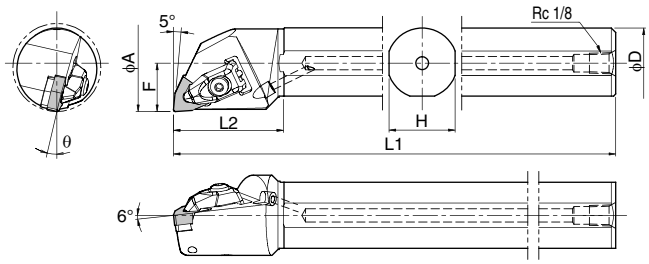
● : Std. Item

Boring Bar [WN08 Negative Insert]

A-DWLN (Boring / Internal Facing)

Max. Overhang Length L/D=~3





• Right-hand shown

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

Toolholder Dimensions

Description	Std. R	Std. L	Min. Bore Dia. φA	Dimension (mm) φD	H	L1	L2	F	S	θ	Standard Corner-R(rε)	Spare Parts: Clamp	Screw	Spring	Shim	Shim Screw	Nozzle	Wrench	Wrench (sold separately)
A25R-DWLN R/L 08-32	●	●	32	25	23	200	50	17	-	13°	0.8	CP-3D	CS-3D	SP-3D	DW-42	SB-4085TR	DN10	LW-3	FT-15
A32S-DWLN R/L 08-40	●	●	40	32	30	250	50	22	-	13°									
A40T- DWLN R/L 08-50	●	●	50	40	37	300	60	27	-	13°							DN20		

*Not applicable to high-pressure coolant.

Applicable Inserts

Applications	Finishing	Finishing-Medium	Finishing	Finishing-Medium	Finishing-Medium	Finishing-Medium	Medium-Roughing	Medium - Roughing	Medium - Roughing	Medium - Roughing / High Feed Rate	Roughing
Ref. to Page	B41	B41	B41	B41	B41	B41	B42	B42	B42	B42	B42
Insert / Toolholder Description	WP (Wiper)	WQ (Wiper)	PP	PQ	CQ	CJ	GS	PG	PS	PT	Standard
...-DWLN R/L 08 -...	WNMG0804..	WNMG0804..	WNMG0804..	WNMG0804..	WNMG0804..	WNMG0804..	WNMG0804..	WNMG0804..	WNMG0804..	WNMG0804..	WNMG0804..
Applications	Soft Steel / Finishing	Soft Steel / Medium	Soft Steel / Roughing	Stainless Steel / Finishing	Stainless Steel / Medium-Roughing	Stainless Steel / Medium-Roughing	Cast Iron	Cast Iron	Non-ferrous Metals	Non-ferrous Metals	Hard Materials
Ref. to Page	B43	B43	B43	B43	B43	B43	B44	B44	B44	C23	C13
Insert / Toolholder Description	XP	XQ	XS	MQ	MS	MU	C(GC)	ZS	AH	PCD	CBN
...-DWLN R/L 08 -...	WNMG0804..	WNMG0804..	WNMG0804..	WNMG0804..	WNMG0804..	WNMG0804..	WNMG0804..	WNMG0804..	WNGG0804..	WNMM0804..	WNGA0804..

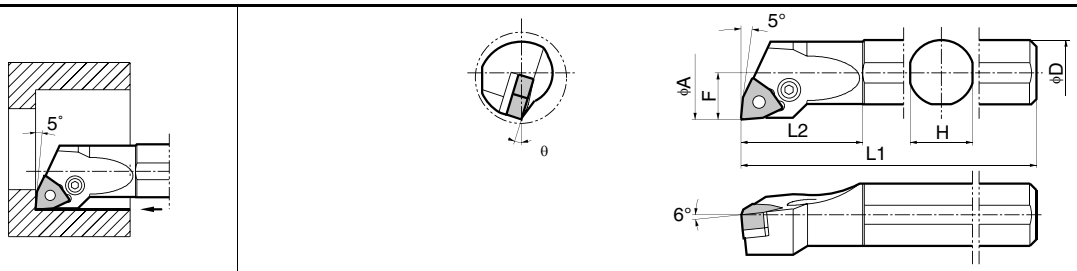
Recommended Cutting Conditions ➔ F91~F92

● : Std. Item

Boring Bar [WN08 Negative Insert]

S-PWLN08 (Boring / Internal Facing)

Max. Overhang Length L/D=~3



• Right-hand shown

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

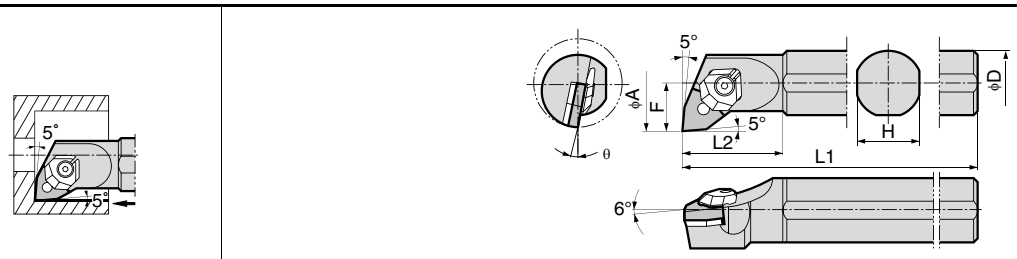
Toolholder Dimensions

Description	(Previous Description)	Std. R	Std. L	Min. Bore Dia. φA	Dimension (mm) φD	H	L1	L2	F	θ	Standard Corner-R(rε)	Spare Parts: Lever	Lock Screw	Shim	Shim Pin	Punch	Wrench
S32S-PWLN R/L 08-40	-	●	●	40	32	30	250	50	22	10°	0.8	LL-2N	LS-2N	LW-42N R/L	LSP-2	PC-2	LW-3
S40T-PWLN R/L 08-50		●	●	50	40	37	300	60	27								

· Shim: LW-42NR for Right-hand Toolholder, LW-42NL for Left-hand Toolholder.

S-WWLN08-E Excellent Bar (Boring / Internal Facing)

Max. Overhang Length L/D=~5



• Right-hand shown

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

Toolholder Dimensions

Description	(Previous Description)	Std. R	Std. L	Min. Bore Dia. φA	Dimension (mm) φD	H	L1	L2	F	θ	Standard Corner-R(rε)	Spare Parts: Clamp Set	Wrench	Shim	Shim Pin	Wrench
S25S-WWLN R/L 08-28E	WWLN R/L 2825B-08E	●	●	28	25	24	250	36	14	13°	1.2	WCS-8	LW-3	WWP-42 *WWP -42-16	WP5X11	LW-2
S25S-WWLN R/L 08-34E	3425B-08E	●	●	34	25	24		40	17	11°						
S32S-WWLN R/L 08-40E	4032B-08E	●	●	40	32	30		50	20	10°						

· When using inserts whose corner-R(rε) = 1.6mm or larger, purchase and use shim with * mark separately to prevent interference between workpiece and shim.

Applicable Inserts

Applications	Finishing	Finishing-Medium	Finishing	Finishing-Medium	Finishing-Medium	Finishing-Medium	Medium-Roughing	Medium-Roughing	Medium-Roughing	Medium-Roughing / High Feed Rate	Roughing
Ref. to Page	B41	B41	B41	B41	B41	B41	B42	B42	B42	B42	B42
Insert / Toolholder Description	WP (Wiper)	WQ (Wiper)	PP	PQ	CQ	CJ	GS	PG	PS	PT	Standard
...-PWLN R/L 08-... / ...-WWLN R/L 08-...	WNMG0804..	WNMG0804..	WNMG0804..	WNMG0804..	WNMG0804..	WNMG0804..	WNMG0804..	WNMG0804..	WNMG0804..	WNMG0804..	WNMG0804..

Applications	Soft Steel / Finishing	Soft Steel / Medium	Soft Steel / Roughing	Stainless Steel / Finishing	Stainless Steel / Medium-Roughing	Stainless Steel / Medium-Roughing	Cast Iron	Cast Iron	Non-ferrous Metals	Non-ferrous Metals	Hard Materials
Ref. to Page	B43	B43	B43	B43	B43	B43	B44	B44	B44	C23	C13
Insert / Toolholder Description	XP	XQ	XS	MQ	MS	MU	C(GC)	ZS	AH	PCD	CBN
...-PWLN R/L 08-... / ...-WWLN R/L 08-...	WNMG0804..	WNMG0804..	WNMG0804..	WNMG0804..	WNMG0804..	WNMG0804..	WNMG0804..	WNMG0804..	WNGG0804..	WNMM0804..	WNGA0804..

· In wedge lock, use of ceramic insert other than silicon nitride insert is not recommended due to strong restraint force.

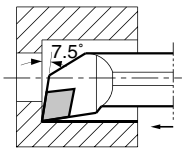
Recommended Cutting Conditions ➡ F91~F92

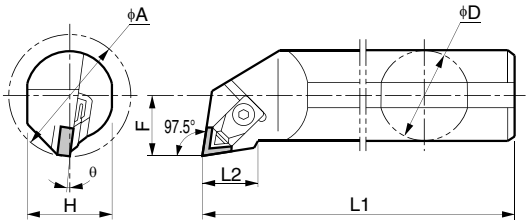
● : Std. Item

Boring Bars for Ceramic Tools [EN□□, SN□□ Insert]

S-CELN (Boring / Internal Facing)

Max. Overhang Length L/D=~3





• Right-hand shown

Applicable Inserts

Cast Iron / Hard Materials
B87
Ceramic 
ENGN1307..

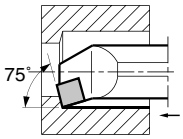
Toolholder Dimensions

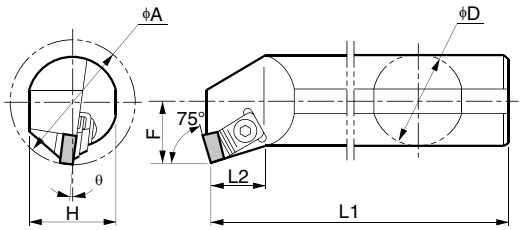
Recommended Cutting Conditions F91~F92

Description	(Previous Description)	Std. R	Std. L	Min. Bore Dia. ϕA	Dimension (mm) ϕD	H	L1	L2	F	θ	Standard Corner-R(rε)	Spare Parts: Chipbreaker	Clamp Set	Wrench	Shim	Shim Screw
																
S40T-CELNR13-50	**CELNR 5040B-13**	●		50	40	37	300	32	27	12°	0.8	CB-16	CE-010	LW-4	SP-341P	M3X8

S-CSKN (Boring)

Max. Overhang Length L/D=~3





• Right-hand shown

Applicable Inserts

Cast Iron / Hard Materials	Cast Iron	Cast Iron / Hard Materials
B89	B31	C19
Ceramic 	Coated Carbide 	CBN (KBN900) 
SNGN1207..(1204..) SNMN1207..	(SNMN1204..)	(SNMN1204..)

Toolholder Dimensions

Recommended Cutting Conditions F91~F92

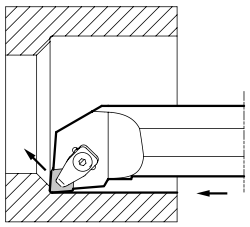
Description	(Previous Description)	Std. R	Std. L	Min. Bore Dia. ϕA	Dimension (mm) ϕD	H	L1	L2	F	θ	Standard Corner-R(rε)	Spare Parts: Chipbreaker	Clamp Set	Wrench	Shim	Shim Screw
																
S40T-CSKN$^{R/L}$12-50	**CSKN$^{R/L}$ 5040B-12**	●	●	50	40	37	300	26	27	10.5°	0.8	CB-13/12	CE-320	LW-4	SP-141P (SP-143P)	M3X8 (M3X12)

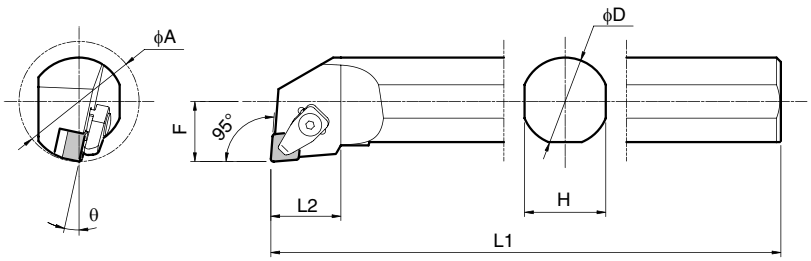
· Chipbreaker: CB-13 for Right-hand Toolholder, CB-12 for Left-hand Toolholder.
· Shim & Shim Screw : When using SN□□1204 Insert, purchase spare parts in ( ) separately.

● : Std. Item

S-CCLN-GX (Boring / Internal Facing)

Max. Overhang Length L/D=~3



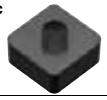


• Right-hand shown

Applicable Inserts

Cast Iron
B86

Ceramic



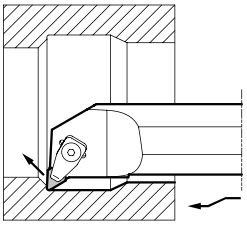
CNGX1207..

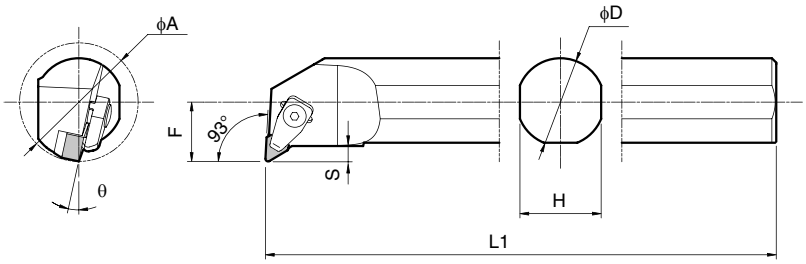
Toolholder Dimensions

Description	Std. R	Std. L	Min. Bore Dia. ϕA	Dimension (mm) ϕD	H	L1	L2	F	θ	Std. Corner-R(rε)	Spare Parts: Clamp Set	Wrench	Shim	Shim Screw	Recommended Cutting Conditions
S32S- CCLN R/L 12-40GX	●	●	40	32	30	250	32	22	14°	1.2	CE-410	LW-4	-	-	F91~F92
S40T- CCLN R/L 12-50GX	●	●	50	40	37	300	32	27	12°	1.2	CE-410	LW-4	SP-441P	M3X8	

S-CDUN-GX (Boring / Copying)

Max. Overhang Length L/D=~3



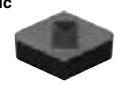


• Right-hand shown

Applicable Inserts

Cast Iron
B87

Ceramic



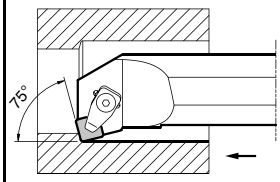
DNGX1207..

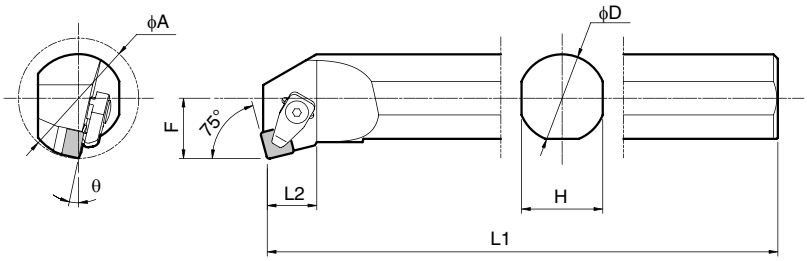
Toolholder Dimensions

Description	Std. R	Std. L	Min. Bore Dia. ϕA	Dimension (mm) ϕD	H	L1	L2	F	θ	Std. Corner-R(rε)	Spare Parts: Clamp Set	Wrench	Shim	Shim Screw	Recommended Cutting Conditions
S32S- CDUN R/L 12-40GX	●	○	40	32	30	250	7.5	22	14°	1.2	CE-410	LW-4	-	-	F91~F92
S40T- CDUN R/L 12-50GX	●	○	50	40	37	300	7.5	27	12°	1.2	CE-410	LW-4	SP-521P	M3X8	

S-CSKN-GX (Boring)

Max. Overhang Length L/D=~3





• Right-hand shown

Applicable Inserts

Cast Iron
B90

Ceramic

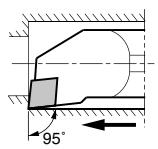
SNGX1207..

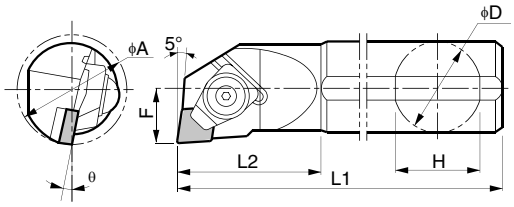
Toolholder Dimensions

Description	Std. R	Std. L	Min. Bore Dia. ϕA	Dimension (mm) ϕD	H	L1	L2	F	θ	Std. Corner-R(rε)	Spare Parts: Clamp Set	Wrench	Shim	Shim Screw	Recommended Cutting Conditions
S32S- CSKN R/L 12-40GX	●	○	40	32	30	250	22.5	22	14°	1.2	CE-410	LW-4	-	-	F91~F92
S40T- CSKN R/L 12-50GX	●	○	50	40	37	300	22.5	27	12°	1.2	CE-410	LW-4	SP-141P	M3X8	

● : Std. Item ○ : Check Availability

S-CCLN-A (Boring / Internal Facing)





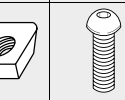
• Right-hand shown

Applicable Inserts

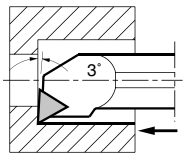
Hard Materials /Cast Iron
C19
CBN(KBN900) 
CNMN0903..

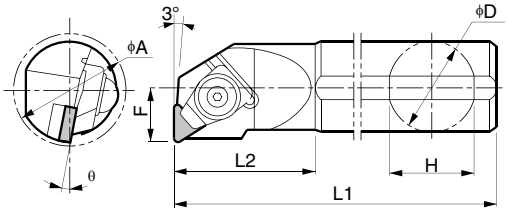
Recommended Cutting Conditions F91~F92

Toolholder Dimensions

Description	(Previous Description)	Std. R	Std. L	Min. Bore Dia. ϕA	Dimension (mm) ϕD	H	L1	L2	F	θ	Std. Corner-R(rε)	Spare Parts: Clamp Set 	Wrench 	Shim 	Shim Screw 
S32S-CCLN R/L 09-40A	CCLN R/L 4032B-09A	●	●	40	32	30	250	50	22	8°	0.8	CE-360S	LW-4	SP-420A	BH3X6

S-CTUN-A (Boring)





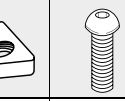
• Right-hand shown

Applicable Inserts

Hard Materials /Cast Iron	Cast Iron / Hard Materials
C19	B91
CBN(KBN900) 	Ceramic 
TNMN1103..	TNGN1103..

Recommended Cutting Conditions F91~F92

Toolholder Dimensions

Description	(Previous Description)	Std. R	Std. L	Min. Bore Dia. ϕA	Dimension (mm) ϕD	H	L1	L2	F	θ	Std. Corner-R(rε)	Spare Parts: Clamp Set 	Wrench 	Shim 	Shim Screw 
S25X-CTUNR11-30A	CTUNR3025B-11A	●		30	25	24	220	40	15	10°	0.8	CE-360S	LW-4	SP-210A	BH3X6

● : Std. Item

EZH Sleeves

Sleeve Description				Applicable Inserts					Applicable Machine Manufacturer
EZH-CT (Adjustable overhang length with coolant hole)	EZH-HP (Adjustable overhang length)	EZH-ST	Sleeve Shank Dia. ϕD1 (mm)	EZB	EZG EZFG EZT EZVB	EZ Bar PLUS	HP	Shank Dia. ϕD (mm)	
-	-	EZH 01712ST-80	12	EZBR ...017...	-	-	-	1.7	(General purpose)
		02012ST-80		EZBR ...020...			HPB R/L 0202-...	2	
		02512ST-80		EZBR ...025...	EZ__ ...025-...		-	2.5	
		03012ST-80		EZBR ...030...	EZ__ ...030-...		HPB R/L 0303-...	3	
		03512ST-80		EZBR ...035...	EZ__ ...035-...		-	3.5	
		04012ST-80		EZBR ...040...	EZ__ ...040-...		HP__ ..04-...	4	
		05012ST-80		EZBR ...050...	EZ__ ...050-...		HP__ ..05-...	5	
		06012ST-80		EZBR ...060...	EZ__ ...060-...		HP__ 0606-...	6	
		07012ST-80		EZBR ...070...	EZ__ ...070-...		HP__ ..07-...	7	
-	EZH 01716HP-100	EZH 01716ST-100	16	EZBR ...017...	-	-	-	1.7	(General purpose)
	02016HP-100	02016ST-100		EZBR ...020...			HPB R/L 0202-...	2	
	02516HP-100	02516ST-100		EZBR ...025...	EZ__ ...025-...		-	2.5	
	03016HP-100	03016ST-100		EZBR ...030...	EZ__ ...030-...		HPB R/L 0303-...	3	
	03516HP-100	03516ST-100		EZBR ...035...	EZ__ ...035-...		-	3.5	
	04016HP-100	04016ST-100		EZBR ...040...	EZ__ ...040-...		HP__ ..04-...	4	
	04516HP-100	-		-	-	_045X- ...-050EZ	-	4.5	
	05016HP-100	05016ST-100		EZBR ...050...	EZ__ ...050-...	-	HP__ ..05-...	5	
	06016HP-100	06016ST-100		EZBR ...060...	EZ__ ...060-...	_060X- ...-070EZ	HP__ 0606-...	6	
	07016HP-100	07016ST-100		EZBR ...070...	EZ__ ...070-...	-	HP__ ..07-...	7	
EZH 01719CT-120	EZH 01719HP-120	EZH 01719ST-120	19.05	EZBR ...017...	-	-	-	1.7	Citizen Machinery
02019CT-120	02019HP-120	02019ST-120		EZBR ...020...			HPB R/L 0202-...	2	
02519CT-120	02519HP-120	02519ST-120		EZBR ...025...	EZ__ ...025-...		-	2.5	
03019CT-120	03019HP-120	03019ST-120		EZBR ...030...	EZ__ ...030-...		HPB R/L 0303-...	3	
03519CT-120	03519HP-120	03519ST-120		EZBR ...035...	EZ__ ...035-...		-	3.5	
04019CT-120	04019HP-120	04019ST-120		EZBR ...040...	EZ__ ...040-...		HP__ ..04-...	4	
-	04519HP-120	-		-	-	_045X- ...-050EZ	-	4.5	
05019CT-120	05019HP-120	05019ST-120		EZBR ...050...	EZ__ ...050-...	-	HP__ ..05-...	5	
06019CT-120	06019HP-120	06019ST-120		EZBR ...060...	EZ__ ...060-...	_060X- ...-070EZ	HP__ 0606-...	6	
07019CT-120	07019HP-120	07019ST-120		EZBR ...070...	EZ__ ...070-...	-	HP__ ..07-...	7	
EZH 01720CT-120	EZH 01720HP-120	EZH 01720ST-120	20	EZBR ...017...	-	-	-	1.7	Amada Machine Tools Eguro Tsugami Citizen Machinery (General purpose)
02020CT-120	02020HP-120	02020ST-120		EZBR ...020...			HPB R/L 0202-...	2	
02520CT-120	02520HP-120	02520ST-120		EZBR ...025...	EZ__ ...025-...		-	2.5	
03020CT-120	03020HP-120	03020ST-120		EZBR ...030...	EZ__ ...030-...		HPB R/L 0303-...	3	
03520CT-120	03520HP-120	03520ST-120		EZBR ...035...	EZ__ ...035-...		-	3.5	
04020CT-120	04020HP-120	04020ST-120		EZBR ...040...	EZ__ ...040-...		HP__ ..04-...	4	
-	04520HP-120	-		-	-	_045X- ...-050EZ	-	4.5	
05020CT-120	05020HP-120	05020ST-120		EZBR ...050...	EZ__ ...050-...	-	HP__ ..05-...	5	
06020CT-120	06020HP-120	06020ST-120		EZBR ...060...	EZ__ ...060-...	_060X- ...-070EZ	HP__ 0606-...	6	
07020CT-120	07020HP-120	07020ST-120		EZBR ...070...	EZ__ ...070-...	-	HP__ ..07-...	7	
EZH 01722CT-135	EZH 01722HP-135	EZH 01722ST-135	22	EZBR ...017...	-	-	-	1.7	Star Micronics Nomura DS Tsugami
02022CT-135	02022HP-135	02022ST-135		EZBR ...020...			HPB R/L 0202-...	2	
02522CT-135	02522HP-135	02522ST-135		EZBR ...025...	EZ__ ...025-...		-	2.5	
03022CT-135	03022HP-135	03022ST-135		EZBR ...030...	EZ__ ...030-...		HPB R/L 0303-...	3	
03522CT-135	03522HP-135	03522ST-135		EZBR ...035...	EZ__ ...035-...		-	3.5	
04022CT-135	04022HP-135	04022ST-135		EZBR ...040...	EZ__ ...040-...		HP__ ..04-...	4	
-	04522HP-135	-		-	-	_045X- ...-050EZ	-	4.5	
05022CT-135	05022HP-135	05022ST-135		EZBR ...050...	EZ__ ...050-...	-	HP__ ..05-...	5	
06022CT-135	06022HP-135	06022ST-135		EZBR ...060...	EZ__ ...060-...	_060X- ...-070EZ	HP__ 0606-...	6	
07022CT-135	07022HP-135	07022ST-135		EZBR ...070...	EZ__ ...070-...	-	HP__ ..07-...	7	
EZH 01725.0CT-135	EZH 01725.0HP-135	EZH 01725.0ST-135	25	EZBR ...017...	-	-	-	1.7	Amada Machine Tools Eguro Tsugami Citizen Machinery (General purpose)
02025.0CT-135	02025.0HP-135	02025.0ST-135		EZBR ...020...			HPB R/L 0202-...	2	
02525.0CT-135	02525.0HP-135	02525.0ST-135		EZBR ...025...	EZ__ ...025-...		-	2.5	
03025.0CT-135	03025.0HP-135	03025.0ST-135		EZBR ...030...	EZ__ ...030-...		HPB R/L 0303-...	3	
03525.0CT-135	03525.0HP-135	03525.0ST-135		EZBR ...035...	EZ__ ...035-...		-	3.5	
04025.0CT-135	04025.0HP-135	04025.0ST-135		EZBR ...040...	EZ__ ...040-...		HP__ ..04-...	4	
-	04525.0HP-135	-		-	-	_045X- ...-050EZ	-	4.5	
05025.0CT-135	05025.0HP-135	05025.0ST-135		EZBR ...050...	EZ__ ...050-...	-	HP__ ..05-...	5	
06025.0CT-135	06025.0HP-135	06025.0ST-135		EZBR ...060...	EZ__ ...060-...	_060X- ...-070EZ	HP__ 0606-...	6	
07025.0CT-135	07025.0HP-135	07025.0ST-135		EZBR ...070...	EZ__ ...070-...	-	HP__ ..07-...	7	
EZH 01725.4CT-120	EZH 01725.4HP-120	EZH 01725.4ST-120	25.4	EZBR ...017...	-	-	-	1.7	Citizen Machinery
02025.4CT-120	02025.4HP-120	02025.4ST-120		EZBR ...020...			HPB R/L 0202-...	2	
02525.4CT-120	02525.4HP-120	02525.4ST-120		EZBR ...025...	EZ__ ...025-...		-	2.5	
03025.4CT-120	03025.4HP-120	03025.4ST-120		EZBR ...030...	EZ__ ...030-...		HPB R/L 0303-...	3	
03525.4CT-120	03525.4HP-120	03525.4ST-120		EZBR ...035...	EZ__ ...035-...		-	3.5	
04025.4CT-120	04025.4HP-120	04025.4ST-120		EZBR ...040...	EZ__ ...040-...		HP__ ..04-...	4	
-	04525.4HP-120	-		-	-	_045X- ...-050EZ	-	4.5	
05025.4CT-120	05025.4HP-120	05025.4ST-120		EZBR ...050...	EZ__ ...050-...	-	HP__ ..05-...	5	
06025.4CT-120	06025.4HP-120	06025.4ST-120		EZBR ...060...	EZ__ ...060-...	_060X- ...-070EZ	HP__ 0606-...	6	
07025.4CT-120	07025.4HP-120	07025.4ST-120		EZBR ...070...	EZ__ ...070-...	-	HP__ ..07-...	7	

· Choose sleeves (ϕd1) to meet with ϕD dimension of bar.
· Adjustment Pin cannot be installed to EZH-ST sleeves. To adjust overhang of the bar, please use EZH-CT/HP sleeves.

EZH Sleeves and Applicable Inserts / Toolholders

Shank Size (Hole Dia.: mm)		017 (1.7mm)	020 (2mm)	025 (2.5mm)	03 (3mm)	035 (3.5mm)
EZH-CT sleeve (Internal coolant) EZH-HP sleeve description (Adjustable overhang length)		EZH 01716HP-100	EZH 02016HP-100	EZH 02516HP-100	EZH 03016HP-100	EZH 03516HP-100
		01719CT/HP-120	02019CT/HP-120	02519CT/HP-120	03019CT/HP-120	03519CT/HP-120
		01720CT/HP-120	02020CT/HP-120	02520CT/HP-120	03020CT/HP-120	03520CT/HP-120
		01722CT/HP-135	02022CT/HP-135	02522CT/HP-135	03022CT/HP-135	03522CT/HP-135
		01725.0CT/HP-135	02025.0CT/HP-135	02525.0CT/HP-135	03025.0CT/HP-135	03525.0CT/HP-135
		01725.4CT/HP-120	02025.4CT/HP-120	02525.4CT/HP-120	03025.4CT/HP-120	03525.4CT/HP-120
EZH-ST sleeve description		EZH 01712ST-80	EZH 02012ST-80	EZH 02512ST-80	EZH 03012ST-80	EZH 03512ST-80
		01716ST-100	02016ST-100	02516ST-100	03016ST-100	03516ST-100
		01719ST-120	02019ST-120	02519ST-120	03019ST-120	03519ST-120
		01720ST-120	02020ST-120	02520ST-120	03020ST-120	03520ST-120
		01722ST-135	02022ST-135	02522ST-135	03022ST-135	03522ST-135
		01725.0ST-135	02025.0ST-135	02525.0ST-135	03025.0ST-135	03525.0ST-135
		01725.4ST-120	02025.4ST-120	02525.4ST-120	03025.4ST-120	03525.4ST-120
EZ Bars	Boring Bars		EZBR 020020HP-	EZBR 025025HP-	EZBR 030030HP-	EZBR 035035HP-
		EZBR 020017ST-	EZBR 025020ST-	EZBR 030025ST-	EZBR 035030ST-	EZBR 040035ST-
		EZBR 020017-···NB	EZBR 025020-···NB	EZBR 030025-···NB	EZBR ···030-···NB	EZBR 040035-···NB
					EZVBR035030-	
	Internal Grooving				EZGR 030030-	
	Face Grooving					
	Internal Threading			EZTR 030025-	EZTR 035030-	EZTR 040035-
EZ Bar PLUS						
2-Edge Tip-Bars	Boring Bars		HPB R/L0202-		HPB R/L0303-	
	Internal Grooving					
	Face Grooving					
	Internal Threading					
Boring Bars						

Shank Size (Hole Dia.: mm)		04 (4mm)	045 (4.5mm)	05 (5mm)	06 (6mm)	07 (7mm)
EZH-CT sleeve (Internal coolant) EZH-HP sleeve description (Adjustable overhang length)		EZH 04016HP-100	EZH 04516HP-100	EZH 05016HP-100	EZH 06016HP-100	EZH 07016HP-100
		04019CT/HP-120	04519HP-120	05019CT/HP-120	06019CT/HP-120	07019CT/HP-120
		04020CT/HP-120	04520HP-120	05020CT/HP-120	06020CT/HP-120	07020CT/HP-120
		04022CT/HP-135	04522HP-135	05022CT/HP-135	06022CT/HP-135	07022CT/HP-135
		04025.0CT/HP-135	04525.0HP-135	05025.0CT/HP-135	06025.0CT/HP-135	07025.0CT/HP-135
		04025.4CT/HP-120	04525.4HP-120	05025.4CT/HP-120	06025.4CT/HP-120	07025.4CT/HP-120
EZH-ST sleeve description		EZH 04012ST-80		EZH 05012ST-80	EZH 06012ST-80	EZH 07012ST-80
		04016ST-100		05016ST-100	06016ST-100	07016ST-100
		04019ST-120		05019ST-120	06019ST-120	07019ST-120
		04020ST-120		05020ST-120	06020ST-120	07020ST-120
		04022ST-135		05022ST-135	06022ST-135	07022ST-135
		04025.0ST-135		05025.0ST-135	06025.0ST-135	07025.0ST-135
		04025.4ST-120		05025.4ST-120	06025.4ST-120	07025.4ST-120
EZ Bars	Boring Bars	EZBR 040040HP-		EZBR 050050HP-	EZBR 060060HP-	
		EZBR 045040ST-		EZBR 055050ST-	EZBR 065060ST-	EZBR 075070ST-
		EZBR ···040-···NB		EZBR ···050-···NB	EZBR ···060-···NB	EZBR ···070-···NB
		EZVBR045040-		EZVBR055050-	EZVBR065060-	
	Internal Grooving	EZGR 040040-		EZGR 050050-	EZGR 060060-	EZGR ···070-···
	Face Grooving	EZFGR050040-		EZFGR060050-		EZFGR080070-
	Internal Threading	EZTR 050040-		EZTR 060050-	EZTR 070060-	EZTR 080070-
EZ Bar PLUS			S045X- SCLCR03-050EZ		S060X- SCLCR04-070EZ	
			C045X- SCLCR03-050EZ		C060X- SCLCR04-070EZ	
2-Edge Tip-Bars	Boring Bars	HPB R/L0404-		HPB R/L0505-	HPB R/L0606-	HPB R/L0707-
		HPBT R/L0404-		HPBT R/L0505-		
	Internal Grooving	HPG R/L0404-		HPG R/L0505-	HPG R/L0606-	HPG R/L0707-
	Face Grooving					HPFG R/L0807-
	Internal Threading	HPT R/L04504-		HPT R/L06005-		HPT R/L07507-
Boring Bars		C04-····		C05-····	C06-····	C07-····
					S06-····	

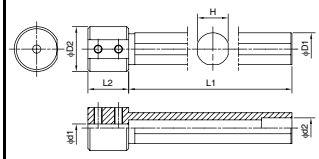
Note 1) When attaching 2-Edge Tip-Bars to EZH-CT/HP Sleeve (Adjustable overhang length), detach Adjustable Pin.
Overhang length of bar is not adjustable.

F

Boring

Sleeves for Boring Bars

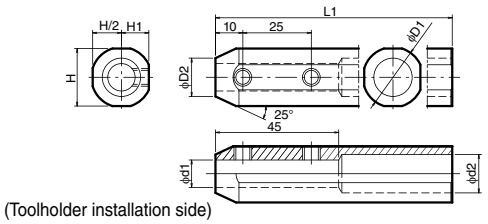
Sleeves for Tip-Bars

Shape	Description	(Previous Description)	Std.	Dimension (mm) φD1	φD2	φd1	φd2	H	L1	L2	Spare Parts Screw	Wrench
 (Tip-Bar installation side)	PH 0212-60	PH -0212	○	12	19	1.8	6	11	60	20	HS3X4	LW-1.5
	0312-60	-0312	○			2.8						
	0412-60	-0412	○			3.8					HS4X4	LW-2
	0512-60	-0512	○			4.8						
	0612-60	-0612	○			5.8	8					
	0712-60	-0712	○			6.8						
	PH 0216-80	PH -0216	○	16	22	1.8	Rp¼ (PS¼)	15	80	20	HS3X4	LW-1.5
	0316-80	-0316	○			2.8						
	0416-80	-0416	○			3.8					HS4X4	LW-2
	0516-80	-0516	○			4.8						
	0616-80	-0616	○			5.8						
	0716-80	-0716	○			6.8						

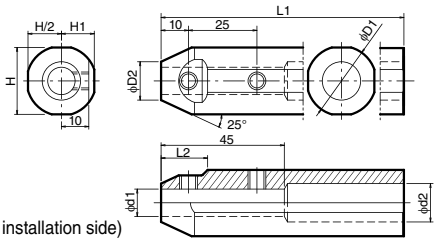
Description Table for PH Sleeves and Applicable Toolholders

Shank Size (Hole Dia.: mm)		02 (1.8mm)	03 (2.8mm)	04 (3.8mm)	05 (4.8mm)	06 (5.8mm)	07 (6.8mm)
PH type sleeve Description		PH0212-60	PH0312-60	PH0412-60	PH0512-60	PH0612-60	PH0712-60
		PH0216-80	PH0316-80	PH0416-80	PH0516-80	PH0616-80	PH0716-80
1-Edge Tip-Bars	Boring Bars	PSB R/L0202-	PSB R/L0303-	PSB R/L0404-	PSB R/L0505-	PSB R/L0606-	PSB R/L0707-
				PSBT R/L0415-	PSBT R/L0515-		
	Internal Grooving			PSG R/L0510-	PSG R/L0610-	PSG R/L0710-	PSG R/L0810-
				PSG R/L0520-	PSG R/L0620-	PSG R/L0720-	PSG R/L0820-
	Face Grooving						PSFG R/L0810-
							PSFG R/L0820-
							PSFG R/L0830-
	Internal Threading			PSTR0604-	PSTR0805-		

SHA sleeves (Applicable Toolholders F84)



(Toolholder installation side)
Fig.1



(Toolholder installation side)
Fig.2

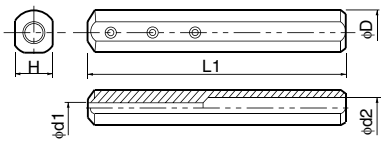
Description		Std.	Dimension (mm) φd1	φD1	φD2	φd2	H	H1	L1	L2	Drawing	Spare Parts Screw	Wrench	Applicable Machine Manufacturer
SHA	0820-120	●	8	20	14	12	19	9.25	120	-	Fig.1	HS6x4P	LW-3	Amada Machine Tools Eguro Tsugami Citizen Machinery
	1020-120	●	10											
SHA	0825.0-135	●	8	25	14	14	24	11.5	135	17	Fig.2			
	1025.0-135	●	10											
	1225.0-135	●	12		16									
SHA	0819-120	●	8	19.05	14	12	18	8.75	120	-	Fig.1	HS6x4P	LW-3	Citizen Machinery
	1019-120	●	10											
SHA	0820-120	●	8	20	14	12	19	9.25	120	-	Fig.1			
	1020-120	●	10											
SHA	0825.4-120	●	8	25.4	14	14	24.4	12	120	17	Fig.2			
	1025.4-120	●	10											
	1225.4-120	●	12		16									
SHA	0822-125	●	8	22	14	14	21	10	125	-	Fig.1	HS6x4P	LW-3	Star Micronics Nomura DS
	1022-125	●	10											
	1222-125	●	12		16									
SHA	0823-120	●	8	23	14	14	22	10.5	120	16	Fig.2	HS6x4P	LW-3	Nomura DS
	1023-120	●	10											
	1223-120	●	12		16									

* Length of φd1···45mm (All of SHA sleeves)
· Choose sleeves(φd1) to meet with φD dimension of toolholder.
· Machine manufacturers in random order.

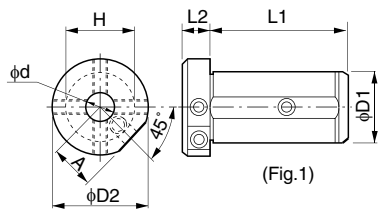
● : Std. Item
○ : Check Availability

Sleeves for Boring Bars

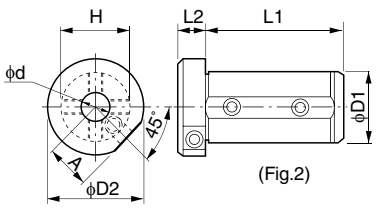
Sleeves for Boring Bars

Shape	Description	(Previous Description)	Std.	Dimension (mm) ϕD	ϕd1	ϕd2	H	L1	Spare Parts Screw	Wrench
 (Toolholder installation side)	SH 0416-100	SH -0516	●	16	4	5	14	100	HS4X4	LW-2
	0516-100	-0616	●		5	6				
	0616-100	-0716	●		6	7				
	0716-100	-0816	●		7	8				
	SH 0820-120	SH -1020	●	20	8	9	18	120	HS4X4	LW-2
	1020-120	-1220	●		10	11				
	1225-150	-1625	●	25	12	13	23	150	HS5X5	LW-2.5
	1632-180	-2032	●	32	16	18	30	180		
	2032-180	-2532	●		20	22				

Coolant Sleeve Dimensions



(Fig.1)



(Fig.2)

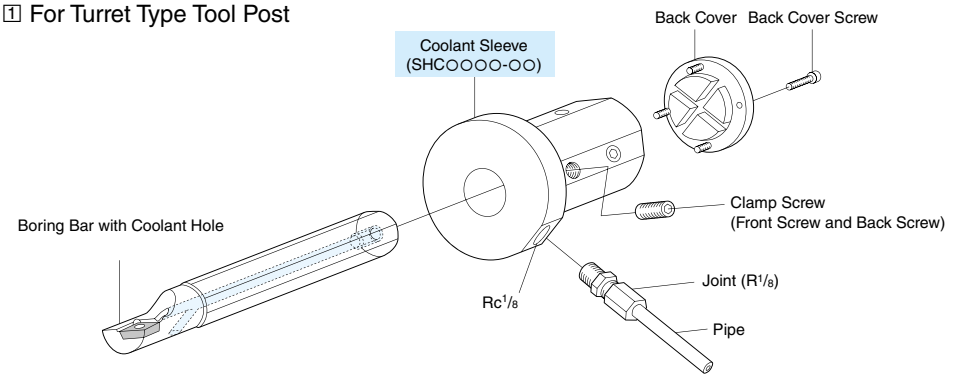
Accessories
- Back Cover / SHL-4···SHC○○40-70
  SHL-5···SHC○○50-95
- Back Cover Screw
- Shank Clamp Screw

(Note) To stabilize the Toolholder and to prevent coolant leaks, tighten all 4 screws of coolant sleeve securely.

Description	(Previous Description)	Std.	Dimension (mm) ϕD1	ϕD2	ϕd	L1	L2	H	A	Drawing	Spare Parts Front Screw	Wrench	Back Screw	Wrench	Back Cover	Back Cover Screw	Wrench
SHC 0840-70	SHC -084070	●	40	56	8	70	16	38	27	Fig.1	HS6X22	LW-3	HS6X14	LW-3	SHL-4	HH3X6	LW-2.5
1040-70	-104070	●			10												
1240-70	-124070	●			12					Fig.2	HS10X10	LW-5	HS10X10	LW-5			
1640-70	-164070	●			16												
2040-70	-204070	●			20					Fig.1	HS10X10	LW-5	HS6X6	LW-3			
2540-70	-254070	●			25												
SHC 0850-95	SHC -085095	●	50	65	8	95	16	47	30.5	Fig.1	HS6X22	LW-3	HS6X14	LW-3	SHL-5	HH3X12	LW-2.5
1050-95	-105095	●			10												
1250-95	-125095	●			12					Fig.2	HS10X10	LW-5	HS10X10	LW-5			
1650-95	-165095	●			16												
2050-95	-205095	●			20												
2550-95	-255095	●			25												

How to Install

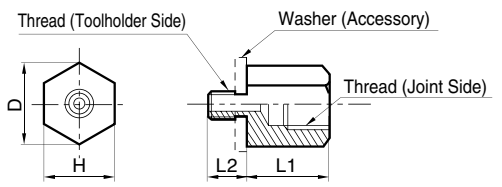
1 For Turret Type Tool Post



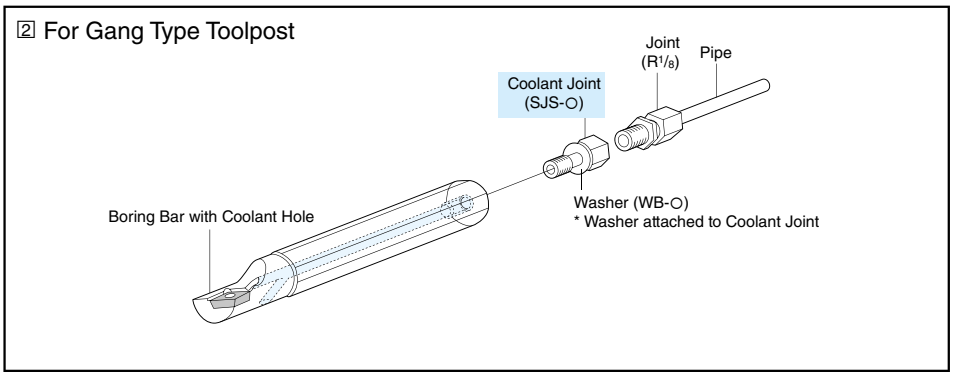
● : Std. Item

Sleeves for Boring Bars

● **Coolant Joint Dimensions** *This Coolant Joint is not applicable for Dynamic Bar



Description	Std.	Dimension (mm) D	L1	L2	H	Thread (Toolholder Side)	Thread (Joint Side)	Spare Parts Washer
SJS-5	●	15	15	7	13	**M5XP0.8**	**Rc1/8 (PT1/8)**	WB-5
SJS-6	●			9		**M6XP1.0**		WB-6
SJS-8	●			13		**M8XP1.25**		WB-8



● **List of toolholders and applicable joints**

Toolholder Description	Applicable Coolant Joint
A08-…-○○E	SJS-5
A10-…-○○E	
A12-…-○○E	SJS-6
A16-…-○○E	SJS-8
A20-…-○○E	
A25-…-○○E	
E08-…-○○	SJS-5
E10-…-○○	
E12-…-○○	SJS-6
E16-…-○○	SJS-8
E20-…-○○	

* This Coolant Joint is not applicable for Dynamic Bar

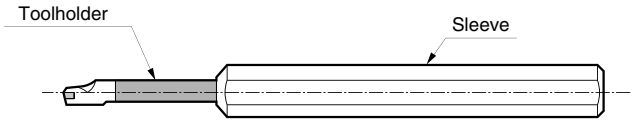
SHA / SH / SHC Sleeves and Applicable Toolholders

Shank Size (Hole Dia.: mm)	04 (4mm)	05 (5mm)	06 (6mm)	07 (7mm)	08 (8mm)	10 (10mm)	12 (12mm)	16 (16mm)	20 (20mm)	25 (25mm)
Sleeve Description	SH0416-100	SH0516-100	SH0616-100	SH0716-100	SH0820-120	SH1020-120	SH1225-150	SH1632-180	SH2032-180	
					SHA0819-120	SHA1019-120				
					SHA0820-120	SHA1020-120				
					SHA0822-125	SHA1022-125	SHA1222-125			
					SHA0823-120	SHA1023-120	SHA1223-120			
					SHA0825.0-135	SHA1025.0-135	SHA1225.0-135			
					SHA0825.4-120	SHA1025.4-120	SHA1225.4-120			
					SHC0840-70	SHC1040-70	SHC1240-70	SHC1640-70	SHC2040-70	SHC2540-70
					SHC0850-95	SHC1050-95	SHC1250-95	SHC1650-95	SHC2050-95	SHC2550-95
Boring Bar Description					A08-···	A10-···	A12-···	A16-···	A20-···	A25-···
	C04-···	C05-···	C06-···	C07-···	C08-···	C10-···	C12-···	C16-···	C20-···	C25-···
					E08-···	E10-···	E12-···	E16-···	E20-···	E25-···
			S06-···		S08-···	S10-···	S12-···	S16-···	S20-···	S25-···
Internal Grooving Toolholder Description					SIGER/L0808A-EH	SIGER/L1010B-EH	SIGER/L1412C-EH	SIGER/L1616C-EH	SIGER/L2020D-EH	SIGER/L2525E-EH
						SIGER/L1210B-EH	SIGER/L1612C-EH			KIGBAR/L3525-16
					SIGER/L0808A-WH	SIGER/L1010B-WH	SIGER/L1412C-WH	KIGMR/L2016B-3V	KIGMR/L2520B-3V	KIGMR/L3225B-4V
						SIGER/L1210B-WH	SIGER/L1612C-WH			KITGR/L3525T-16
					SIGER1008B-WH-90	SIGER1210B-WH-90	SIGER1412C-WH-90			
							GIVR/L1412-1SE	GIVR/L1216-1SS	GIVR/L1420-1S	GIVR/L2025-1B
							GIVR/L1612-1AE	GIVR/L2016-1BE	GIVR/L1620-1A	GIVR/L2025-2B
								GIVR/L2016-2BE	GIVR/L2520-1CE	GIVR/L3225-1CE
								GIVR/L1616-1AW	GIVR/L2720-2CE	GIVR/L3225-2CE
									GIVR/L2020-1BW	GIVR/L2525-1CW
									GIVR/L2020-2BW	GIVR/L2525-2CW
Internal Threading Toolholder Description							SINR0612S-06E	SINR0816S-08E	SINR/L2420S-16	CINR/L3025S-16
								SINR/L1216S-11E	SINR2420S-22	CINR3025S-22
								SINR/L1516S-11		
								SINR/L1616S-16		
								SINR/L2016S-16		

* For SHA sleeves, please ref. to page **F82**.
For SH / SHC sleeves, please ref. to page **F83**.

● : Std. Item

C...-AS (Assembly List)

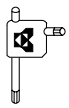
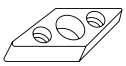
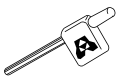


Assembly configuration

Assembly (Discontinued Description)	Toolholder (Discontinued Description)	Alternative Toolholder (Dynamic Bar)	Sleeve Description	Remarks
C04G- SCLCR03-05-AS	C04G- SCLCR03-05	C04G- SCLCR03-05A	SH0416-100	-
SCLCL03-05-AS	SCLCL03-05	SCLCL03-05A		
C05H- SCLCR03-06-AS	C05H- SCLCR03-06	C05H- SCLCR03-06A	SH0516-100	
SCLCL03-06-AS	SCLCL03-06	SCLCL03-06A		
C05H- SWUBR06-06-AS	C05H- SWUBR06-06	C05H- SWUBR06-06A	SH0516-100	
SWUBL06-06-AS	SWUBL06-06	SWUBL06-06A		
C06J- SCLCR04-07-AS	C06J- SCLCR04-07	C06J- SCLCR04-07A	SH0616-100	
SCLCL04-07-AS	SCLCL04-07	SCLCL04-07A		
C06J- SWUBR06-07-AS	C06J- SWUBR06-07	C06J- SWUBR06-07A	SH0616-100	
SWUBL06-07-AS	SWUBL06-07	SWUBL06-07A		
C07K- SCLCR04-08-AS	C07K- SCLCR04-08	C07K- SCLCR04-08A	SH0716-100	
SCLCL04-08-AS	SCLCL04-08	SCLCL04-08A		
C07K- SWUBR08-08-AS	C07K- SWUBR08-08	C07K- SWUBR08-08A	SH0716-100	
SWUBL08-08-AS	SWUBL08-08	SWUBL08-08A		
C08L- STUPR08-10-AS	C08L- STUPR08-10	E08L- STLPR08-10A	SH0820-120	Difference of alternative toolholder No coolant hole → With coolant hole Front cutting edge angle 3° → 5°
C10N- STUPR09-12-AS	C10N- STUPR09-12	E10N- STLPR09-12A	SH1020-120	
C10N- STUPR11-12-AS	C10N- STUPR11-12	E10N- STLPR11-12A		
C12Q- STUPR09-16-AS	C12Q- STUPR09-16	E12Q- STLPR09-16A	SH1225-150	
C12Q- STUPR11-14-AS	C12Q- STUPR11-14	E12Q- STLPR11-14A		
C12Q- STUPR11-16-AS	C12Q- STUPR11-16			
C16X- STUPR11-18-AS	C16X- STUPR11-18	E16X- STLPR11-18A	SH1632-180	
C16X- STUPR11-20-AS	C16X- STUPR11-20			
C20S- STUPR11-25-AS	C20S- STUPR11-25	E20S- STLPR11-22A	SH2032-180	
C20S- STUPR16-25-AS	C20S- STUPR16-25	E20S- STLPR16-25A		

* "**AS**" indicates an assembly of toolholder and sleeve.
You can purchase the toolholder and sleeve and assemble them to make the corresponding assembly part.

Former Parts List (Boring Bar)

Description (Previous Description)	Spare Parts				
	Clamp Screw	Wrench	Shim	Shim Screw	Wrench
					
S32S-SVJB$^{R}/_{L}$16-40E **S40T-SVJB$^{R}/_{L}$16-50E**	SB-40115TR	FT-15	SVN-32	SB-2050TR	FT-6
S25X-SVPB$^{R}/_{L}$16-34E **S32S-SVPB$^{R}/_{L}$16-40E**					
S25X-SVUB$^{R}/_{L}$16-34E **S32S-SVUB$^{R}/_{L}$16-40E**					
S25X-SVZB$^{R}/_{L}$16-34E **S32S-SVZB$^{R}/_{L}$16-40E**					

- S32S-SVJB$^{R}/_{L}$16-40E and S40T-SVJB$^{R}/_{L}$16-50E have been shifted to A32S-SVJB$^{R}/_{L}$16-40AE and A40T-SVJB$^{R}/_{L}$16-50AE respectively. Ref. to page F50
- S25X-SVPB$^{R}/_{L}$16-34E and S32S-SVPB$^{R}/_{L}$16-40E have been shifted to A25S-SVPB$^{R}/_{L}$16-31AE and A32S-SVPB$^{R}/_{L}$16-40AE respectively. Ref. to page F52
- S25X-SVUB$^{R}/_{L}$16-34E and S32S-SVUB$^{R}/_{L}$16-40E have been shifted to A25S-SVUB$^{R}/_{L}$16-34AE and A32S-SVUB$^{R}/_{L}$16-40AE respectively. Ref. to page F55
- S25X-SVZB$^{R}/_{L}$16-34E and S32S-SVZB$^{R}/_{L}$16-40E have been shifted to A25S-SVZB$^{R}/_{L}$16-34AE and A32S-SVZB$^{R}/_{L}$16-40AE respectively. Ref. to page F55

Alternative Toolholder Reference Table for Boring Bar

Boring Bar (Discontinued Description)				Alternative Toolholder					
				Dynamic Bar (1st Recommendation)			Dynamic Bar (2nd Recommendation)		
Shank type	Insert Shape	Coolant hole	Description	Coolant hole	Description	Ref. to Page	Coolant hole	Description	Ref. to Page
Excellent Bar	CC..	No	S08X-SCLC R/L 06-10E	Yes	A08X-SCLC R/L 06-10AE	F37	No	S08X-SCLC R/L 06-10A	F37
			S10H-SCLC R/L 03-05E	No	S10H-SCLC R/L 03-05AE		-	-	-
			S10H-SCLC R/L 03-06E		S10H-SCLC R/L 03-06AE				
			S10J-SCLC R/L 04-07E		S10H-SCLC R/L 04-07AE				
			S10J-SCLC R/L 04-08E		S10H-SCLC R/L 04-08AE				
		Yes	A08H-SCLC R/L 06-10E	Yes	A08X-SCLC R/L 06-10AE		No	S08X-SCLC R/L 06-10A	F37
	CP..	No	S10M-SCLP R/L 08-12E	Yes	A10L-SCLP R/L 08-12AE	F39	No	S10L-SCLP R/L 08-12A	F39
			S12M-SCLP R/L 08-14E		A12M-SCLP R/L 08-14AE			S12M-SCLP R/L 08-14A	
			S12M-SCLP R/L 09-16E		A12M-SCLP R/L 09-16AE			S12M-SCLP R/L 09-16A	
			S16Q-SCLP R/L 09-18E		A16Q-SCLP R/L 09-18AE			S16Q-SCLP R/L 09-18A	
			S16R-SCLP R/L 09-20E						
			S20X-SCLP R/L 09-25E		A20R-SCLP R/L 09-22AE			S20R-SCLP R/L 09-22A	
		Yes	A10X-SCLP R/L 08-12E	Yes	A10L-SCLP R/L 08-12AE	F39	No	S10L-SCLP R/L 08-12A	F39
			A12X-SCLP R/L 08-14E		A12M-SCLP R/L 08-14AE			S12M-SCLP R/L 08-14A	
			A12X-SCLP R/L 09-16E		A12M-SCLP R/L 09-16AE			S12M-SCLP R/L 09-16A	
			A16M-SCLP R/L 09-18E		A16Q-SCLP R/L 09-18AE			S16Q-SCLP R/L 09-18A	
			A16M-SCLP R/L 09-20E						
			A20Q-SCLP R/L 09-25E		A20R-SCLP R/L 09-22AE			S20R-SCLP R/L 09-22A	
	DC..	No	S10M-SDUC R/L 07-14E	Yes	A10L-SDUC R/L 07-14AE	F41	No	S10L-SDUC R/L 07-14A	F41
			S12M-SDUC R/L 07-16E		A12M-SDUC R/L 07-16AE			S12M-SDUC R/L 07-16A	
			S16Q-SDUC R/L 07-20E		A16Q-SDUC R/L 07-20AE			S16Q-SDUC R/L 07-20A	
			S16Q-SDUC R/L 11-25E		A16Q-SDUC R/L 11-23AE			S16Q-SDUC R/L 11-23A	
			S20Q-SDUC R/L 11-32E		A20R-SDUC R/L 11-27AE			S20R-SDUC R/L 11-27A	
		No	S10M-SDZC R/L 07-14E	Yes	A10L-SDZC R/L 07-14AE	F43	No	S10L-SDZC R/L 07-14A	F43
			S12M-SDZC R/L 07-16E		A12M-SDZC R/L 07-16AE			S12M-SDZC R/L 07-16A	
			S16Q-SDZC R/L 07-20E		A16Q-SDZC R/L 07-20AE			S16Q-SDZC R/L 07-20A	
			S16Q-SDZC R/L 11-25E		A16Q-SDZC R/L 11-23AE			S16Q-SDZC R/L 11-23A	
			S20Q-SDZC R/L 11-32E		A20R-SDZC R/L 11-27AE			S20R-SDZC R/L 11-27A	
	TB..	No	S06H-STUB R/L 06-08E	No	S06H-STLB R/L 06-08AE	F47	No	S06H-STLB R/L 06-08A	F47
	TP..	No	S08K-STUP R/L 08-10E	Yes	A08X-STLP R/L 08-10AE	F47	No	S08X-STLP R/L 08-10A	F47
			S10M-STUP R/L 09-12E		A10L-STLP R/L 09-12AE			S10L-STLP R/L 09-12A	
			S10M-STUP R/L 11-12E		A10L-STLP R/L 11-12AE			S10L-STLP R/L 11-12A	
			S12M-STUP R/L 09-16E		A12M-STLP R/L 09-16AE			S12M-STLP R/L 09-16A	
			S12M-STUP R/L 11-14E		A12M-STLP R/L 11-14AE			S12M-STLP R/L 11-14A	
			S12M-STUP R/L 11-16E						
			S16R-STUP R/L 11-18E		A16Q-STLP R/L 11-18AE			S16Q-STLP R/L 11-18A	
			S16R-STUP R/L 11-20E						
			S20X-STUP R/L 11-25E		A20R-STLP R/L 11-22AE			S20R-STLP R/L 11-22A	
			S20X-STUP R/L 16-25E		A20R-STLP R/L 16-25AE		-	-	-
			S25X-STUP R/L 16-32E		A25S-STLP R/L 16-27AE		No	S25S-STLP R/L 16-27A	F47
		Yes	A08H-STUP R/L 08-10E	Yes	A08X-STLP R/L 08-10AE	F47	No	S08X-STLP R/L 08-10A	F47
			A10X-STUP R/L 09-12E		A10L-STLP R/L 09-12AE			S10L-STLP R/L 09-12A	
			A10X-STUP R/L 11-12E		A10L-STLP R/L 11-12AE			S10L-STLP R/L 11-12A	
			A12X-STUPR09-16E		A12M-STLPR09-16AE			S12M-STLPR09-16A	
			A12X-STUP R/L 11-14E		A12M-STLP R/L 11-14AE			S12M-STLP R/L 11-14A	
			A12X-STUPR11-16E		A12M-STLPR11-14AE			S12M-STLPR11-14A	
			A16M-STUP R/L 11-18E		A16Q-STLP R/L 11-18AE			S16Q-STLP R/L 11-18A	
			A16M-STUP R/L 11-20E						
			A20Q-STUP R/L 11-25E		A20R-STLP R/L 11-22AE			S20R-STLP R/L 11-22A	
			A20Q-STUP R/L 16-25E		A20R-STLP R/L 16-25AE		-	-	-
			A25R-STUP R/L 16-32E		A25S-STLP R/L 16-27AE		No	S25S-STLP R/L 16-27A	F47
	VB..	No	S20R-SVJB R/L 11-25E	Yes	A20R-SVJB R/L 11-25AE	F50	No	S20R-SVJB R/L 11-25A	F50
			S25S-SVJB R/L 11-30E		A25S-SVJB R/L 11-30AE			S25S-SVJB R/L 11-30A	
			S32S-SVJB R/L 16-40EN		A32S-SVJB R/L 16-40AE			S32S-SVJB R/L 16-40A	
			S40T-SVJB R/L 16-50EN		A40T-SVJB R/L 16-50AE			S40T-SVJB R/L 16-50A	

Note) The corresponding replacements may be different from the conventional parts in minimum processing diameter or applicable insert size. Make sure of their specifications by referring to the catalog or other documents.

Alternative Toolholder Reference Table for Boring Bar

Boring Bar (Discontinued Description)				Alternative Toolholder					
				Dynamic Bar (1st Recommendation)			Dynamic Bar (2nd Recommendation)		
Shank type	Insert Shape	Coolant hole	Description	Coolant hole	Description	Ref. to Page	Coolant hole	Description	Ref. to Page
Excellent Bar	VB..	No	S12M-SVPB R/L 11-20E	Yes	A12M-SVPB R/L 11-18AE	F52	No	S12M-SVPB R/L 11-18A	F52
			S16Q-SVPB R/L 11-25E		A16Q-SVPB R/L 11-22AE			S16Q-SVPB R/L 11-22A	
			S25X-SVPB R/L 16-34EN		A25S-SVPB R/L 16-31AE			S25S-SVPB R/L 16-31A	
			S32S-SVPB R/L 16-40EN		A32S-SVPB R/L 16-40AE			S32S-SVPB R/L 16-40A	
		No	S16Q-SVUB R/L 11-20E	Yes	A16Q-SVUB R/L 11-20AE	F55	No	S16Q-SVUB R/L 11-20A	F55
			S20R-SVUB R/L 11-25E		A20R-SVUB R/L 11-25AE			S20R-SVUB R/L 11-25A	
			S25X-SVUB R/L 16-34EN		A25S-SVUB R/L 16-34AE			S25S-SVUB R/L 16-34A	
			S32S-SVUB R/L 16-40EN		A32S-SVUB R/L 16-40AE			S32S-SVUB R/L 16-40A	
		No	S16Q-SVZB R/L 11-20E	Yes	A16Q-SVZB R/L 11-20AE	F55	No	S16Q-SVZB R/L 11-20A	F55
			S20R-SVZB R/L 11-25E		A20R-SVZB R/L 11-25AE			S20R-SVZB R/L 11-25A	
			S25X-SVZB R/L 16-34EN		A25S-SVZB R/L 16-34AE			S25S-SVZB R/L 16-34A	
			S32S-SVZB R/L 16-40EN		A32S-SVZB R/L 16-40AE			S32S-SVZB R/L 16-40A	
	VC..	No	S12M-SVJC R/L 08-16E	Yes	A12M-SVJC R/L 08-16AE	F50	No	S12M-SVJC R/L 08-16A	F50
			S16Q-SVJC R/L 08-20E		A16Q-SVJC R/L 08-20AE			S16Q-SVJC R/L 08-20A	
		No	S10M-SVPC R/L 08-16E	Yes	A10L-SVPC R/L 08-14AE	F52	No	S10L-SVPC R/L 08-14A	F52
		No	S12M-SVUC R/L 08-16E	Yes	A12M-SVUC R/L 08-16AE	F55	No	S12M-SVUC R/L 08-16A	F55
		No	S12M-SVZC R/L 08-16E	Yes	A12M-SVZC R/L 08-16AE	F55	No	S12M-SVZC R/L 08-16A	F55
	VP..	No	S12M-SVJP R/L 08-16E	Yes	A12M-SVJP R/L 08-16AE	F50	No	S12M-SVJP R/L 08-16A	F50
	WB..	No	S08K-SWUB R/L 08-10E	Yes	A08X-SWUB R/L 08-10AE	F57	No	S08X-SWUB R/L 08-10A	F57
			S10M-SWUB R/L 08-12E		A10L-SWUB R/L 08-12AE			S10L-SWUB R/L 08-12A	
			S10H-SWUB R/L 06-06E	No	S10H-SWUB R/L 06-06AE			S10H-SWUB R/L 06-06A	
			S10H-SWUB R/L 06-07E		S10H-SWUB R/L 06-07AE			S10H-SWUB R/L 06-07A	
			S10J-SWUB R/L 08-08E		S10H-SWUB R/L 08-08AE			S10H-SWUB R/L 08-08A	
	WP..	No	S12M-SWUP R/L 11-14E	Yes	A12M-SWUP R/L 11-14AE	F57	No	S12M-SWUP R/L 11-14A	F57
			S12M-SWUP R/L 11-16E						
			S16N-SWUP R/L 11-18E		A16Q-SWUP R/L 11-18AE			S16Q-SWUP R/L 11-18A	
			S16Q-SWUP R/L 16-20E		A16Q-SWUP R/L 16-18AE			S16Q-SWUP R/L 16-18A	
			S20R-SWUP R/L 16-25E		A20R-SWUP R/L 16-22AE			S20R-SWUP R/L 16-22A	
Steel Bar	CC..	No	S08X-SCLC R/L 06-10	No	S08X-SCLC R/L 06-10A	F37	-	-	-
	CP..	No	S10M-SCLP R/L 08-12	No	S10L-SCLP R/L 08-12A	F39	-	-	-
			S12M-SCLP R/L 08-14		S12M-SCLP R/L 08-14A				
			S12M-SCLP R/L 09-16		S12M-SCLP R/L 09-16A				
			S16N-SCLP R/L 09-18		S16Q-SCLP R/L 09-18A				
			S16Q-SCLP R/L 09-20						
			S20R-SCLP R/L 09-25		S20R-SCLP R/L 09-22A				
			S25S-SCLP R/L 09-30		S25S-SCLP R/L 09-27A				
	DC..	No	S16Q-SDUC R/L 07-14	No	S16Q-SDUC R/L 07-14A	F41	-	-	-
			S16Q-SDUC R/L 07-16						
			S20R-SDUC R/L 11-20		S20R-SDUC R/L 11-20A				
			S25X-SDUC R/L 11-25		S16Q-SDUC R/L 11-23A		No	S25S-SDUC R/L 11-32A	F41
		No	S16Q-SDZC R/L 07-14	No	S16Q-SDZC R/L 07-14A	F43	-	-	-
			S16Q-SDZC R/L 07-16						
			S20R-SDZC R/L 11-20		S20R-SDZC R/L 11-20A				
			S25X-SDZC R/L 11-25		S16Q-SDZC R/L 11-23A		No	S25S-SDZC R/L 11-32A	F43

Note) The corresponding replacements may be different from the conventional parts in minimum processing diameter or applicable insert size. Make sure of their specifications by referring to the catalog or other documents.

Alternative Toolholder Reference Table for Boring Bar

Boring Bar (Discontinued Description)				Alternative Toolholder					
				Dynamic Bar (1st Recommendation)			Dynamic Bar (2nd Recommendation)		
Shank type	Insert Shape	Coolant hole	Description	Coolant hole	Description	Ref. to Page	Coolant hole	Description	Ref. to Page
Steel Bar	TB..	No	S06H-STUB R/L 06-08	No	S06H-STLB R/L 06-08A	F47	-	-	-
	TP..	No	S08K-STUP R/L 08-10	No	S08X-STLP R/L 08-10A	F47	-	-	-
			S10M-STUP R/L 09-12		S10L-STLP R/L 09-12A				
			S12M-STUP R/L 09-16		S12M-STLP R/L 09-16A				
			S16Q-STUP R/L 11-20		S16Q-STLP R/L 11-18A				
			S20R-STUP R/L 11-25		S20R-STLP R/L 11-22A				
			S25X-STUP R/L 16-32		S25S-STLP R/L 16-27A				
	WB..	No	S10H-SWUB R/L 06-06	No	S10H-SWUB R/L 06-06A	F57	-	-	-
			S10H-SWUB R/L 06-06-15						
			S10H-SWUB R/L 06-07		S10H-SWUB R/L 06-07A				
			S10J-SWUB R/L 08-08		S10H-SWUB R/L 08-08A				
			S10J-SWUB R/L 08-08-20						
Carbide Shank Boring Bar	CC..	No	C04G-SCLC R/L 03-05	No	C04G-SCLC R/L 03-05A	F37	-	-	-
			C05H-SCLC R/L 03-06		C05H-SCLC R/L 03-06A				
			C06J-SCLC R/L 04-07		C06J-SCLC R/L 04-07A				
			C07K-SCLC R/L 04-08		C07K-SCLC R/L 04-08A				
			C08L-SCLC R/L 06-10	Yes	E08L-SCLC R/L 06-10A				
		Yes	E08L-SCLC R/L 06-10						
	CP..	No	C10N-SCLP R/L 08-12	Yes	E10N-SCLP R/L 08-12A	F39	-	-	-
			C10N-SCLPR08-12-1/2		E10N-SCLPR08-12A-1/2				
			C10N-SCLPR08-12-2/3		E10N-SCLPR08-12A-2/3				
			C12Q-SCLP R/L 09-16		E12Q-SCLP R/L 09-16A				
			C12Q-SCLPR09-16-1/2		E12Q-SCLPR09-16A-1/2				
			C12Q-SCLPR09-16-2/3		E12Q-SCLPR09-16A-2/3				
			C16X-SCLP R/L 09-20		E16X-SCLP R/L 09-18A				
			C16X-SCLPR09-20-1/2		E16X-SCLPR09-18A-1/2				
			C16X-SCLPR09-20-2/3		E16X-SCLPR09-18A-2/3				
			C20S-SCLP R/L 09-25		E20S-SCLP R/L 09-22A				
			C20S-SCLPR09-25-1/2		E20S-SCLPR09-22A-1/2				
			C20S-SCLPR09-25-2/3		E20S-SCLPR09-22A-2/3				
		Yes	E10N-SCLP R/L 08-12	Yes	E10N-SCLP R/L 08-12A	F39	-	-	-
			E12Q-SCLP R/L 09-16		E12Q-SCLP R/L 09-16A				
			E16X-SCLP R/L 09-20		E16X-SCLP R/L 09-18A				
			E20S-SCLP R/L 09-25		E20S-SCLP R/L 09-22A				
	DC..	No	C10N-SDUC R/L 07-14	Yes	E10N-SDUC R/L 07-14A	F41	-	-	-
			C12Q-SDUC R/L 07-16		E12Q-SDUC R/L 07-16A				
			C12Q-SDUC R/L 11-20						
			C16X-SDUC R/L 11-25		E16X-SDUC R/L 11-23A				
			C20S-SDUC R/L 11-32		E20S-SDUC R/L 11-27A				
	TB..	No	C10L-STUB R/L 06-08	No	C06J-STLB R/L 06-08A	F47	-	-	-
	TP..	No	C08L-STUP R/L 08-10	Yes	E08L-STLP R/L 08-10A				
			C10N-STUP R/L 09-12		E10N-STLP R/L 09-12A				
			C10N-STUPR09-12-1/2		E10N-STLPR09-12A-1/2				
			C10N-STUPR09-12-2/3		E10N-STLPR09-12A-2/3				
			C10N-STUP R/L 11-12		E10N-STLP R/L 11-12A				
			C10N-STUPR11-12-1/2		E10N-STLPR11-12A-1/2				
			C10N-STUPR11-12-2/3		E10N-STLPR11-12A-2/3				
			C12Q-STUP R/L 09-16		E12Q-STLP R/L 09-16A				
			C12Q-STUPR09-16-1/2		E12Q-STLPR09-16A-1/2				
			C12Q-STUPR09-16-2/3		E12Q-STLPR09-16A-2/3				
			C12Q-STUP R/L 11-14		E12Q-STLP R/L 11-14A				
			C12Q-STUPR11-14-1/2		E12Q-STLPR11-14A-1/2				
			C12Q-STUPR11-14-2/3		E12Q-STLPR11-14A-2/3				
			C12Q-STUP R/L 11-16		E12Q-STLP R/L 11-14A				
			C12Q-STUPR11-16-1/2		E12Q-STLPR11-14A-1/2				
			C12Q-STUPR11-16-2/3		E12Q-STLPR11-14A-2/3				

Note) The corresponding replacements may be different from the conventional parts in minimum processing diameter or applicable insert size. Make sure of their specifications by referring to the catalog or other documents.

Alternative Toolholder Reference Table for Boring Bar

Boring Bar (Discontinued Description)				Alternative Toolholder					
				Dynamic Bar (1st Recommendation)			Dynamic Bar (2nd Recommendation)		
Shank type	Insert Shape	Coolant hole	Description	Coolant hole	Description	Ref. to Page	Coolant hole	Description	Ref. to Page
Carbide Shank Boring Bar	TP..	No	C16X-STUP R/L 11-18	Yes	E16X-STLP R/L 11-18A	F47	-	-	-
			C16X-STUPR11-18-1/2		E16X-STLPR11-18A-1/2				
			C16X-STUPR11-18-2/3		E16X-STLPR11-18A-2/3				
			C16X-STUP R/L 11-20		E16X-STLP R/L 11-18A				
			C16X-STUPR11-20-1/2		E16X-STLPR11-18A-1/2				
			C16X-STUPR11-20-2/3		E16X-STLPR11-18A-2/3				
			C20S-STUP R/L 11-25		E20S-STLP R/L 11-22A				
			C20S-STUPR11-25-1/2		E20S-STLPR11-22A-1/2				
			C20S-STUPR11-25-2/3		E20S-STLPR11-22A-2/3				
			C20S-STUP R/L 16-25		E20S-STLP R/L 16-25A				
			C20S-STUPR16-25-1/2		E20S-STLPR16-25A-1/2				
			C20S-STUPR16-25-2/3		E20S-STLPR16-25A-2/3				
		Yes	E08L-STUP R/L 08-10	Yes	E08L-STLP R/L 08-10A	F47	-	-	-
			E10N-STUP R/L 09-12		E10N-STLP R/L 09-12A				
			E10N-STUP R/L 11-12		E10N-STLP R/L 11-12A				
			E12Q-STUP R/L 09-16		E12Q-STLP R/L 09-16A				
			E12Q-STUP R/L 11-14		E12Q-STLP R/L 11-14A				
			E12Q-STUP R/L 11-16						
			E16X-STUP R/L 11-18		E16X-STLP R/L 11-18A				
			E16X-STUP R/L 11-20						
			E20S-STUPR11-25		E20S-STLPR11-22A				
			E20S-STUPR16-25		E20S-STLPR16-25A				
	WB..	No	C05H-SWUB R/L 06-06	No	C05H-SWUB R/L 06-06A	F57	-	-	-
			C06J-SWUB R/L 06-07		C06J-SWUB R/L 06-07A				
			C07K-SWUB R/L 08-08		C07K-SWUB R/L 08-08A				
			C08L-SWUB R/L 08-10	Yes	E08L-SWUB R/L 08-10A				
			C10N-SWUB R/L 08-12		E10N-SWUB R/L 08-12A				
			C10N-SWUBR08-12-1/2		E10N-SWUBR08-12A-1/2				
			C10N-SWUBR08-12-2/3		E10N-SWUBR08-12A-2/3				
	WP..	No	C12Q-SWUP R/L 11-14	Yes	E12Q-SWUP R/L 11-14A	F57	-	-	-
			C12Q-SWUPR11-14-1/2		E12Q-SWUPR11-14A-1/2				
			C12Q-SWUPR11-14-2/3		E12Q-SWUPR11-14A-2/3				
			C12Q-SWUP R/L 11-16		E12Q-SWUP R/L 11-14A				
			C12Q-SWUPR11-16-1/2		E12Q-SWUPR11-14A-1/2				
			C12Q-SWUPR11-16-2/3		E12Q-SWUPR11-14A-2/3				
			C16X-SWUP R/L 11-18		E16X-SWUP R/L 11-18A				
			C16X-SWUPR11-18-1/2		E16X-SWUPR11-18A-1/2				
			C16X-SWUPR11-18-2/3		E16X-SWUPR11-18A-2/3				
			C16X-SWUP R/L 16-20		E16X-SWUP R/L 16-18A				
			C16X-SWUPR16-20-1/2		E16X-SWUPR16-18A-1/2				
			C16X-SWUPR16-20-2/3		E16X-SWUPR16-18A-2/3				
			C20S-SWUP R/L 16-25		E20S-SWUP R/L 16-22A				
			C20S-SWUPR16-25-1/2		E20S-SWUPR16-22A-1/2				
			C20S-SWUPR16-25-2/3		E20S-SWUPR16-22A-2/3				

Note) The corresponding replacements may be different from the conventional parts in minimum processing diameter or applicable insert size. Make sure of their specifications by referring to the catalog or other documents.

◆ Recommended Cutting Conditions (VNB-S)

Workpiece Material	Recommended Insert Grades (Cutting Speed Vc: m/min)						VNB01-S type VNB015-S type		VNB02-S type ~ VNB04-S type		Remarks
	MEGA COAT	PVD	Carbide	CBN	PCD						
	PR1225	PR930	KW10	KBN510	KPD001	KPD010	ap (mm), f (mm/rev)				
							ap	f	ap	f	
Carbon Steel / Alloy Steel	★ 30~120	☆ 30~100					~0.1	~0.01	~0.2	~0.03	Coolant
Stainless Steel	★ 30~100	☆ 30~80					~0.1	~0.01	~0.2	~0.02	

★: 1st Recommendation ☆: 2nd Recommendation

◆ Recommended Cutting Conditions (VNB / VNB-NB / VNBT)

Workpiece Material	Recommended Insert Grades (Cutting Speed Vc: m/min)						VNB02 type		VNB03 type		VNB04 VNBT04 type		VNB05 VNB06 VNB07 VNBT05 type		Remarks
	MEGA COAT	PVD	Carbide	CBN	PCD										
	PR1225	PR930	KW10	KBN510	KPD001	KPD010	ap (mm), f (mm/rev)								
							ap	f	ap	f	ap	f	ap	f	
Carbon Steel / Alloy Steel	★ 30~120	☆ 30~100					~0.3	~0.03	~0.4	~0.04	~0.45	~0.07	~0.5	~0.1	Coolant
Stainless Steel	★ 30~100	☆ 30~80					~0.3	~0.02	~0.4	~0.03	~0.45	~0.05	~0.5	~0.07	
Non-ferrous Metals			☆ ~100		★ ~300	☆ ~300	~0.3	~0.05	~0.4	~0.06	~0.45	~0.1	~0.5	~0.15	

★: 1st Recommendation ☆: 2nd Recommendation

◆ Recommended Cutting Conditions (VNBX-S)

Workpiece Material	Recommended Insert Grades (Cutting Speed Vc: m/min)							VNBX01-S type VNBX015-S type		VNBX02-S type ~ VNBX04-S type		Remarks
	PVD Coated Carbide			Carbide	CBN	PCD						
	PR630	PR915	PR930	KW10	KBN510	KPD001	KPD010	ap (mm), f (mm/rev)				
								ap	f	ap	f	
Carbon Steel / Alloy Steel			★ 30~100					~0.1	~0.01	~0.2	~0.03	Coolant
Stainless Steel			★ 30~80					~0.1	~0.01	~0.2	~0.02	

★: 1st Recommendation

Recommended Cutting Conditions - Boring (Positive Insert: Cutting Dia. under 10mm) [ap indicates radius]

ISO Classification	Workpiece Material	Hardness	Cutting Range	Applications	Recommended Chipbreaker	Recommended Insert Grade	Corner-R(rε)	Lower Limit - Recommendation - Upper Limit Vc (m/min)	ap (mm)	f (mm/rev)
*P	Low-carbon Steel Low-carbon Alloy	HB ≤ 300	Finishing (Solid type)	Continuous Interruption	EZB-F EZB-H	PR1225	0.05 0.15	30 - 70 - 110 30 - 60 - 90	0.05 - 0.1 - 0.2 0.05 - 0.1 - 0.2	0.01 - 0.04 - 0.07 0.03 - 0.07 - 0.1
			Finishing	Continuous Interruption	F	PR1425	0.1 0.2	40 - 80 - 120 40 - 70 - 100	0.05 - 0.08 - 0.1 0.05 - 0.1 - 0.15	0.03 - 0.05 - 0.07 0.03 - 0.07 - 0.1
			Finishing-Medium	Continuous Interruption	CF	PR1425	0.1 0.2	40 - 80 - 120 40 - 70 - 100	0.05 - 0.15 - 0.25 0.05 - 0.15 - 0.25	0.03 - 0.05 - 0.07 0.03 - 0.07 - 0.1
	Medium-carbon Steel Medium-carbon Alloy	HB ≤ 300	Finishing (Solid type)	Continuous Interruption	EZB-F EZB-H	PR1225	0.05 0.15	30 - 70 - 110 30 - 60 - 90	0.05 - 0.1 - 0.2 0.05 - 0.1 - 0.2	0.01 - 0.04 - 0.07 0.03 - 0.07 - 0.1
			Finishing	Continuous Interruption	F	PR1425	0.1 0.2	40 - 80 - 120 40 - 70 - 120	0.05 - 0.08 - 0.1 0.05 - 0.1 - 0.15	0.03 - 0.05 - 0.07 0.03 - 0.07 - 0.1
			Finishing-Medium	Continuous Interruption	CF	PR1425	0.1 0.2	40 - 80 - 120 40 - 70 - 100	0.05 - 0.15 - 0.25 0.05 - 0.15 - 0.25	0.03 - 0.05 - 0.07 0.03 - 0.07 - 0.1
	High-carbon Alloy	HB ≤ 280	Finishing (Solid type)	Continuous Interruption	EZB-F EZB-H	PR1225	0.05 0.15	30 - 70 - 110 30 - 60 - 90	0.05 - 0.1 - 0.2 0.05 - 0.1 - 0.2	0.01 - 0.04 - 0.07 0.03 - 0.07 - 0.1
			Finishing	Continuous Interruption	F	PR1425	0.1 0.2	40 - 80 - 120 40 - 70 - 100	0.05 - 0.08 - 0.1 0.05 - 0.1 - 0.15	0.03 - 0.05 - 0.07 0.03 - 0.07 - 0.1
			Finishing-Medium	Continuous Interruption	CF	PR1425	0.1 0.2	40 - 80 - 120 40 - 70 - 100	0.05 - 0.15 - 0.25 0.05 - 0.15 - 0.25	0.03 - 0.05 - 0.07 0.03 - 0.07 - 0.1
M	Stainless Steel	HB ≤ 220	Finishing (Solid type)	Continuous Interruption	EZB-F EZB-H	PR1225	0.05 0.15	30 - 60 - 80 30 - 60 - 80	0.05 - 0.1 - 0.2 0.05 - 0.1 - 0.2	0.01 - 0.03 - 0.05 0.02 - 0.05 - 0.07
			Finishing	Continuous Interruption	F	PR1225	0.1 0.2	30 - 60 - 80 30 - 60 - 80	0.05 - 0.08 - 0.1 0.05 - 0.1 - 0.15	0.03 - 0.05 - 0.07 0.03 - 0.07 - 0.1
			Finishing-Medium	Continuous Interruption	CF	PR1225	0.1 0.2	30 - 60 - 80 30 - 60 - 80	0.05 - 0.15 - 0.25 0.05 - 0.15 - 0.25	0.03 - 0.05 - 0.07 0.03 - 0.07 - 0.1
	Stainless Steel	HB ≤ 300	Finishing (Solid type)	Continuous Interruption	EZB-F EZB-H	PR1225	0.05 0.15	30 - 60 - 80 30 - 60 - 80	0.05 - 0.1 - 0.2 0.05 - 0.1 - 0.2	0.01 - 0.03 - 0.05 0.02 - 0.05 - 0.07
			Finishing	Continuous Interruption	F	PR1225	0.1 0.2	30 - 60 - 80 30 - 60 - 80	0.05 - 0.08 - 0.1 0.05 - 0.1 - 0.15	0.03 - 0.05 - 0.07 0.03 - 0.07 - 0.1
			Finishing-Medium	Continuous Interruption	CF	PR1225	0.1 0.2	30 - 60 - 80 30 - 60 - 80	0.05 - 0.15 - 0.25 0.05 - 0.15 - 0.25	0.03 - 0.05 - 0.07 0.03 - 0.07 - 0.1
K	Gray Cast Iron	HB ≤ 250	Finishing (Solid type)	Continuous Interruption	(VNB) (VNB-NB)	KW10	0.03 0.2	30 - 60 - 100 30 - 60 - 100	0.05 - 0.08 - 0.1 0.05 - 0.1 - 0.15	0.03 - 0.05 - 0.07 0.03 - 0.07 - 0.1
			Finishing	Continuous Interruption	F	KW10	0.1 0.2	30 - 60 - 100 30 - 60 - 80	0.05 - 0.08 - 0.1 0.05 - 0.1 - 0.15	0.03 - 0.05 - 0.07 0.03 - 0.07 - 0.1
			Finishing-Medium	Continuous Interruption	Without Chipbreaker	KW10	0.2 0.4	30 - 60 - 100 30 - 60 - 80	0.1 - 0.2 - 0.3 0.1 - 0.2 - 0.3	0.03 - 0.05 - 0.07 0.03 - 0.07 - 0.1
	Nodular Cast Iron	HB ≤ 270	Finishing (Solid type)	Continuous Interruption	(VNB) (VNB-NB)	KW10	0.03 0.2	30 - 60 - 80 30 - 60 - 80	0.05 - 0.08 - 0.1 0.05 - 0.1 - 0.15	0.03 - 0.05 - 0.07 0.03 - 0.07 - 0.1
			Finishing	Continuous Interruption	F, U	KW10	0.1 0.2	30 - 60 - 80 30 - 60 - 80	0.05 - 0.08 - 0.1 0.05 - 0.1 - 0.15	0.03 - 0.05 - 0.07 0.03 - 0.07 - 0.1
			Finishing-Medium	Continuous Interruption	Without Chipbreaker	KW10	0.2 0.4	30 - 60 - 100 30 - 60 - 80	0.1 - 0.2 - 0.3 0.1 - 0.2 - 0.3	0.03 - 0.05 - 0.07 0.03 - 0.07 - 0.1
N	Non-ferrous Metals Copper Alloy Aluminum Aluminum Alloys	HB ≤ 100	High Speed Machining (Rainbow Surface Gloss)	Continuous	Without Chipbreaker	KPD001	0.05	150 - 200 - 300	0.05 - 0.1 - 0.3	0.05 - 0.1 - 0.15
			Finishing	Continuous Interruption	F, U	KW10	0.1 0.2	100 - 150 - 200 100 - 150 - 200	0.05 - 0.3 - 0.5 0.05 - 0.3 - 0.5	0.03 - 0.1 - 0.2 0.03 - 0.1 - 0.2
S	Titanium Alloy	HB ≤ 400	Precision Finishing (Rainbow Surface Gloss)	Continuous Interruption	Without Chipbreaker	KPD001	0.1 0.2	100 - 120 - 150 70 - 100 - 120	0.05 - 0.1 - 0.3 0.05 - 0.1 - 0.3	0.03 - 0.07 - 0.1 0.03 - 0.07 - 0.1
			Finishing	Continuous Interruption	F, U	KW10	0.1 0.2	20 - 40 - 60 20 - 40 - 60	0.05 - 0.2 - 0.5 0.05 - 0.2 - 0.5	0.03 - 0.1 - 0.2 0.03 - 0.1 - 0.2
	Heat-resistant Alloys	HB ≤ 350	Finishing (Solid type)	Continuous Interruption	(VNB)	KW10	0.2 0.2	10 - 30 - 50 10 - 30 - 50	0.05 - 0.1 - 0.3 0.05 - 0.1 - 0.3	0.03 - 0.05 - 0.1 0.03 - 0.05 - 0.08
			Finishing	Continuous Interruption	F, U	KW10	0.2 0.2	10 - 30 - 50 10 - 30 - 50	0.05 - 0.2 - 0.4 0.05 - 0.2 - 0.4	0.03 - 0.05 - 0.1 0.03 - 0.05 - 0.1
H	Hardened Steel Hard Materials	40~50 HRC	Finishing	Continuous Interruption	(VNB)	PR930	0.2 0.2	30 - 50 - 70 30 - 50 - 70	0.05 - 0.1 - 0.4 0.05 - 0.1 - 0.2	0.01 - 0.02 - 0.05 0.01 - 0.02 - 0.03
		45~68 HRC	Finishing	Continuous Interruption	ME MES	KBN05M	0.2 0.4	60 - 100 - 140 60 - 80 - 120	0.05 - 0.1 - 0.2 0.05 - 0.1 - 0.2	0.02 - 0.05 - 0.1 0.02 - 0.05 - 0.1

* Please use it with PR1005 set to Vc=150m/min or below, for machining of free-cutting steel such as small size SUM. For ap and f, refer to specs for low carbon steels.

Recommended Cutting Conditions - Boring (Positive Insert: Cutting Dia. over 10mm)

[ap indicates radius]

ISO Classification	Workpiece Material	Hardness	Cutting Range	Applications	Recommended Chipbreaker	Recommended Insert Grade	Corner-R(rε)	Lower Limit - Recommendation - Upper Limit Vc (m/min)	ap (mm)	f (mm/rev)
*P	Low-carbon Steel Low-carbon Alloy	HB ≤ 300	Precision Finishing	Continuous Interruption	F, U	TN620 PR1425	0.1 0.2	250 - 300 - 350 120 - 170 - 220	0.05 - 0.3 - 0.5 0.05 - 0.3 - 0.5	0.03 - 0.1 - 0.15 0.03 - 0.1 - 0.15
			Finishing	Continuous Interruption	XP	PV7010 CA525	0.4 0.4	200 - 250 - 300 150 - 200 - 250	0.2 - 0.5 - 1.0 0.2 - 0.5 - 1.0	0.05 - 0.1 - 0.2 0.05 - 0.1 - 0.2
			Finishing-Medium	Continuous Interruption	XQ	PV7010 CA525	0.4 0.4	150 - 200 - 250 100 - 150 - 200	0.5 - 1.0 - 2.0 0.5 - 1.0 - 1.5	0.1 - 0.15 - 0.25 0.1 - 0.15 - 0.2
			Medium	Continuous Interruption	Standard	PV720 CA525	0.8 0.8	100 - 150 - 200 80 - 120 - 150	1.0 - 1.5 - 2.5 1.0 - 1.5 - 2.0	0.1 - 0.15 - 0.3 0.1 - 0.15 - 0.2
	Medium-carbon Steel Medium-carbon Alloy	HB ≤ 300	Precision Finishing	Continuous Interruption	F, U	TN620 PR1425	0.2 0.4	150 - 200 - 250 120 - 140 - 170	0.05 - 0.3 - 0.5 0.05 - 0.3 - 0.5	0.03 - 0.1 - 0.15 0.03 - 0.1 - 0.15
			Finishing	Continuous Interruption	PP	PV7010 CA525	0.4 0.4	150 - 200 - 250 120 - 180 - 200	0.2 - 0.5 - 1.0 0.2 - 0.5 - 1.0	0.05 - 0.1 - 0.2 0.05 - 0.1 - 0.2
			Finishing-Medium	Continuous Interruption	HQ	PV7010 CA525	0.4 0.4	120 - 180 - 220 100 - 150 - 200	0.5 - 1.0 - 2.0 0.5 - 1.0 - 1.5	0.1 - 0.15 - 0.25 0.1 - 0.15 - 0.2
			Medium	Continuous Interruption	Standard	PV720 CA525	0.8 0.8	100 - 150 - 200 80 - 120 - 150	1.0 - 1.5 - 2.5 1.0 - 1.5 - 2.0	0.1 - 0.15 - 0.3 0.1 - 0.15 - 0.2
	High-carbon Alloy	HB ≤ 280	Precision Finishing	Continuous Interruption	F, U	TN620 PR1425	0.2 0.4	120 - 150 - 180 110 - 130 - 160	0.05 - 0.3 - 0.5 0.05 - 0.3 - 0.5	0.03 - 0.1 - 0.15 0.03 - 0.1 - 0.15
			Finishing	Continuous Interruption	PP	PV7010 CA525	0.4 0.4	120 - 150 - 180 100 - 120 - 150	0.2 - 0.5 - 1.0 0.2 - 0.5 - 1.0	0.05 - 0.1 - 0.2 0.05 - 0.1 - 0.2
			Finishing-Medium	Continuous Interruption	HQ	PV7010 CA525	0.4 0.4	120 - 150 - 180 100 - 120 - 150	0.5 - 1.0 - 2.0 0.5 - 1.0 - 1.5	0.1 - 0.15 - 0.25 0.1 - 0.15 - 0.2
			Medium	Continuous Interruption	Standard	CA515 CA525	0.8 0.8	100 - 120 - 150 80 - 100 - 120	1.0 - 1.5 - 2.5 1.0 - 1.5 - 2.0	0.1 - 0.15 - 0.3 0.1 - 0.15 - 0.2
M	Stainless Steel	HB ≤ 220	Finishing	Continuous Interruption	MQ	CA6525	0.4 0.8	120 - 150 - 180 100 - 120 - 150	0.2 - 0.5 - 0.8 0.2 - 0.5 - 0.8	0.05 - 0.08 - 0.1 0.05 - 0.08 - 0.1
			Medium	Continuous Interruption	Standard	CA6525	0.4 0.8	120 - 150 - 180 100 - 120 - 150	0.5 - 1.0 - 1.5 0.5 - 1.0 - 1.5	0.05 - 0.1 - 0.2 0.05 - 0.1 - 0.2
	Stainless Steel	HB ≤ 300	Finishing	Continuous Interruption	MQ	CA6525	0.4 0.8	80 - 100 - 120 60 - 80 - 100	0.2 - 0.7 - 1.0 0.2 - 0.7 - 1.0	0.05 - 0.1 - 0.15 0.05 - 0.1 - 0.15
			Medium	Continuous Interruption	Standard	CA6525	0.4 0.8	80 - 100 - 120 60 - 80 - 100	0.5 - 1.0 - 1.5 0.5 - 1.0 - 1.5	0.05 - 0.1 - 0.2 0.05 - 0.1 - 0.2
K	Gray Cast Iron	HB ≤ 250	High Speed Machining	Continuous Interruption	Without Chipbreaker	KBN475 PT600M	0.4 0.8	400 - 500 - 600 200 - 250 - 350	0.05 - 0.2 - 0.5 0.2 - 0.5 - 1.0	0.05 - 0.1 - 0.15 0.05 - 0.1 - 0.15
			Finishing (Gloss Oriented)	Continuous Interruption	Standard	PV7005 TN620	0.8 0.8	200 - 250 - 300 120 - 180 - 230	0.2 - 0.5 - 1.0 0.2 - 0.5 - 1.0	0.05 - 0.1 - 0.2 0.05 - 0.1 - 0.2
			Finishing	Continuous Interruption	Standard	CA4505 CA4515	0.4 0.8	150 - 180 - 200 100 - 150 - 180	0.2 - 0.5 - 1.0 0.2 - 0.5 - 1.0	0.05 - 0.1 - 0.2 0.05 - 0.1 - 0.2
			Medium	Continuous Interruption	Standard Without Chipbreaker	CA4505 CA4515	0.8 0.8	100 - 150 - 200 80 - 120 - 150	0.5 - 1.0 - 2.0 0.5 - 1.0 - 2.0	0.1 - 0.15 - 0.2 0.05 - 0.1 - 0.15
	Nodular Cast Iron	HB ≤ 270	High Speed Machining	Continuous Interruption	Without Chipbreaker	KBN475 PT600M	0.4 0.8	200 - 300 - 400 150 - 200 - 250	0.05 - 0.2 - 0.5 0.2 - 0.5 - 1.0	0.03 - 0.05 - 0.1 0.05 - 0.1 - 0.15
			Finishing (Gloss Oriented)	Continuous Interruption	Standard	PV7005 TN620	0.8 0.8	150 - 200 - 250 120 - 150 - 200	0.2 - 0.5 - 1.0 0.2 - 0.5 - 1.0	0.05 - 0.1 - 0.2 0.05 - 0.1 - 0.2
			Finishing	Continuous Interruption	Standard	CA4505 CA4515	0.4 0.8	120 - 150 - 180 100 - 120 - 150	0.2 - 0.5 - 1.0 0.2 - 0.5 - 1.0	0.05 - 0.1 - 0.2 0.05 - 0.1 - 0.2
			Medium	Continuous Interruption	Standard	CA4505 CA4515	0.8 0.8	100 - 120 - 150 80 - 100 - 120	0.5 - 1.0 - 2.0 0.5 - 1.0 - 2.0	0.05 - 0.1 - 0.2 0.05 - 0.1 - 0.15
N	Non-ferrous Metals Copper Alloy Aluminum Aluminum Alloys	HB ≤ 100	High Speed Machining (Rainbow Surface Gloss)	Continuous	Without Chipbreaker	KPD001	0.2	200 - 400-1,000	0.05 - 0.1 - 0.3	0.05 - 0.1 - 0.15
			Finishing	Continuous Interruption	FSF, USF	KW10	0.4 0.4	100 - 200 - 400 100 - 200 - 400	0.05 - 0.5 - 1.0 0.05 - 0.5 - 1.0	0.03 - 0.1 - 0.2 0.03 - 0.1 - 0.2
S	Titanium Alloy	HB ≤ 400	Precision Finishing (Rainbow Surface Gloss)	Continuous Interruption	Without Chipbreaker	KPD001	0.2 0.4	100 - 120 - 150 70 - 100 - 120	0.05 - 0.1 - 0.3 0.05 - 0.1 - 0.3	0.03 - 0.07 - 0.1 0.03 - 0.07 - 0.1
			Finishing	Continuous Interruption	F, U	KW10	0.2 0.4	30 - 50 - 70 30 - 50 - 70	0.05 - 0.5 - 1.0 0.05 - 0.5 - 1.0	0.03 - 0.1 - 0.2 0.03 - 0.1 - 0.2
	Heat-resistant Alloys	HB ≤ 350	Finishing	Continuous Interruption	F, U	KW10	0.4 0.4	10 - 30 - 50 10 - 30 - 50	0.05 - 0.5 - 1.0 0.05 - 0.5 - 1.0	0.03 - 0.1 - 0.2 0.03 - 0.1 - 0.2
			Finishing	Continuous Interruption	MQ	PR1310	0.4 0.8	40 - 60 - 80 40 - 60 - 80	0.1 - 0.3 - 0.5 0.1 - 0.3 - 0.5	0.03 - 0.05 - 0.1 0.03 - 0.05 - 0.1
H	Hardened Steel Hard Materials	40~50 HRC	Finishing	Continuous Interruption	HQ Standard	CA515	0.8 0.8	60 - 80 - 100 30 - 50 - 70	0.05 - 0.3 - 0.5 0.05 - 0.3 - 0.5	0.05 - 0.08 - 0.1 0.05 - 0.08 - 0.1
		45~68 HRC	Finishing	Continuous Interruption	ME MET	KBN05M	0.4 0.8	100 - 140 - 180 90 - 120 - 160	0.1 - 0.2 - 0.3 0.1 - 0.2 - 0.3	0.02 - 0.07 - 0.1 0.02 - 0.07 - 0.1
			Medium	Continuous	Without Chipbreaker (Negative)	KBN900	0.8	60 - 80 - 100	0.3 - 0.7 - 1.0	0.03 - 0.1 - 0.15

* When machining free-cutting steel such as SUM, please use PR1005 for Vc=200m/min or under and use PV720 / CA515, etc.