



# F

### Product Introduction F2~F5

### Identification System / Product Lineup F6~F11

### Solid Tip-Bars for Micro Boring F12~F37

<b>EZ Bars</b>	EZB-HP / EZB-ST / EZB-NB	<b>F14</b>
<b>EZ Bars PLUS</b>	S-SCLC / C-SCLC	<b>F19</b>
<b>EZ Bars (Copying)</b>	EZVB	<b>F20</b>
<b>System Tip-Bars</b>	VNB-S / VNB / VNB-T / VNBX-S	<b>F28</b>
<b>Twin-Bars</b>	TWB / TWBT	<b>F34</b>
<b>2-Edge Tip-Bars</b>	HPB / HPBT	<b>F36</b>
<b>Tip-Bars</b>	PSB-S / PSBT-S → will be switched to EZB / HPBT	<b>F37</b>

### Boring Bars for Positive Inserts F38~F53

<b>CC□□ Insert</b>	<b>F38</b>
<b>CP□□ Insert</b>	<b>F40</b>
<b>DC□□ Insert</b>	<b>F42</b>
<b>JC□□ Insert</b>	<b>F46</b>
<b>TC□□ Insert</b>	<b>F47</b>
<b>TB / TP□□ Insert</b>	<b>F48</b>
<b>VB / VC / VP□□ Insert</b>	<b>F52</b>
<b>WB / WP□□ Insert</b>	<b>F58</b>
<b>SP□□ Insert</b>	<b>F60</b>
<b>TP□□ Insert (without Hole)</b>	<b>F61</b>

### Boring Toolholders for Bearing Machining (Square Shank) F62

### AD Bars F63~F66

<b>CN□□ Insert</b>	<b>F63</b>
<b>DN□□ Insert</b>	<b>F64</b>
<b>TN□□ Insert</b>	<b>F64</b>
<b>CC□□ Insert</b>	<b>F65</b>
<b>DC□□ Insert</b>	<b>F65</b>
<b>Boring Adapter</b> (with coolant hole / anti-vibration damper system)	<b>F66</b>

### Boring Bars for Negative Inserts F67~F78

<b>CN□□ Insert</b>	<b>F67</b>
<b>DN□□ Insert</b>	<b>F69</b>
<b>SN□□ Insert</b>	<b>F73</b>
<b>TN□□ Insert</b>	<b>F74</b>
<b>WN□□ Insert</b>	<b>F76</b>

### Boring Bars for Ceramic Tools F79~F80

### Boring Bars for Solid CBN Tools F81

### Sleeves F82~F86

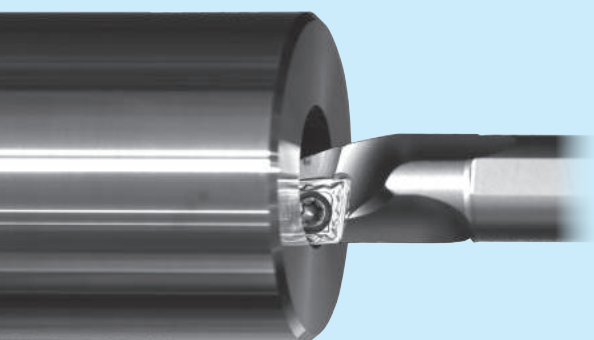
<b>EZH-CT / EZH-HP / EZH-ST</b>	<b>F82</b>
<b>PH</b>	<b>F84</b>
<b>SHA / SH / SHC / SJS</b>	<b>F84</b>

### Assembly (AS) List / Former Parts List

### Alternative Toolholder Reference Table for Boring Bar F88~F91

### Recommended Cutting Conditions F92~F94

### Parts Compatibility of Lever Lock Toolholders Ⓞ R44

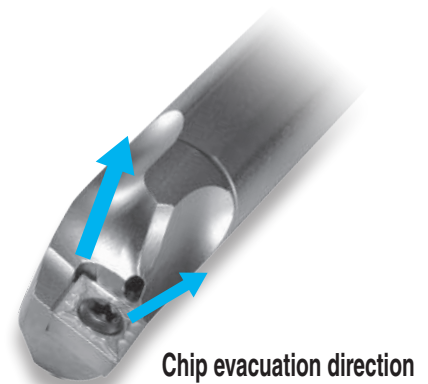


# Dynamic Bar

## 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.



Toolholder design developed by using stress analysis technology  
Maximum structural thickness for high toolholder rigidity  
Controls chattering to achieve stable machining

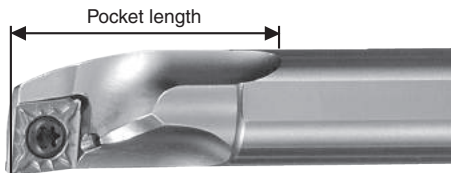
Large chip pocket produces superior chip evacuation

Dynamic design by using the latest computer simulation technology

F

Boring

## Comparison of pocket length



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

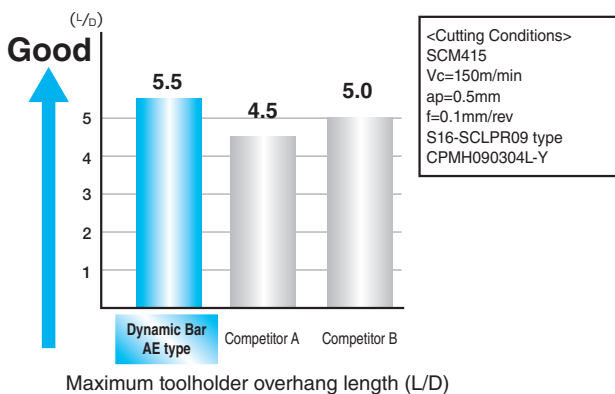
## Chip evacuation direction

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.

## Comparison of vibration tendency



## Comparison of surface finish

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

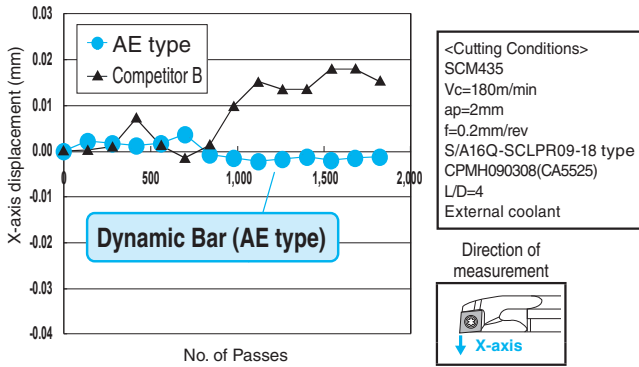
	Dynamic Bar	Competitor A	Competitor B
Surface wall			
Surface Roughness			
Oscillatory waveform			

<Cutting Conditions>  
SCM415  
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.



## Toolholder Lineup

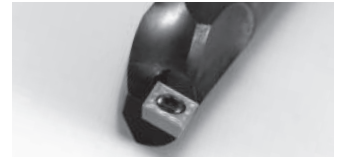
### Excellent Bar (AE type)

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



### Steel Shank Bar

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



## Advantages of Dynamic Bar SDUC

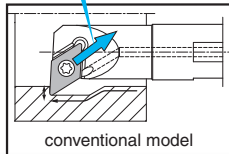
### New design and concept focusing on chip evacuation

**New design**

Streamlined pocket enables an effective chip evacuation

Large chip pocket allows chips to flow through the backside of the bar

Chip flow

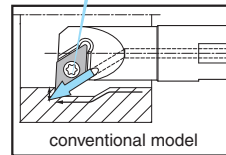


Side chip pocket directs chips outside of workpiece

**New concept**

Coolant flows toward the workpiece's inner surface

Coolant flow



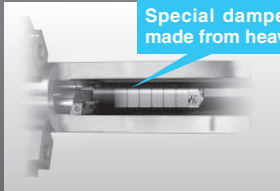
Coolant flows towards the inner surface of the workpiece enabling smooth chip evacuation

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

F63

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.

Special dampener system made from heavy metal



## Double Clamp Boring Bars for Negative Inserts

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

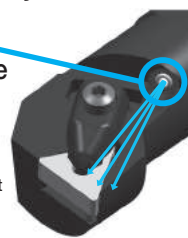
### Improved Clamping Rigidity

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.



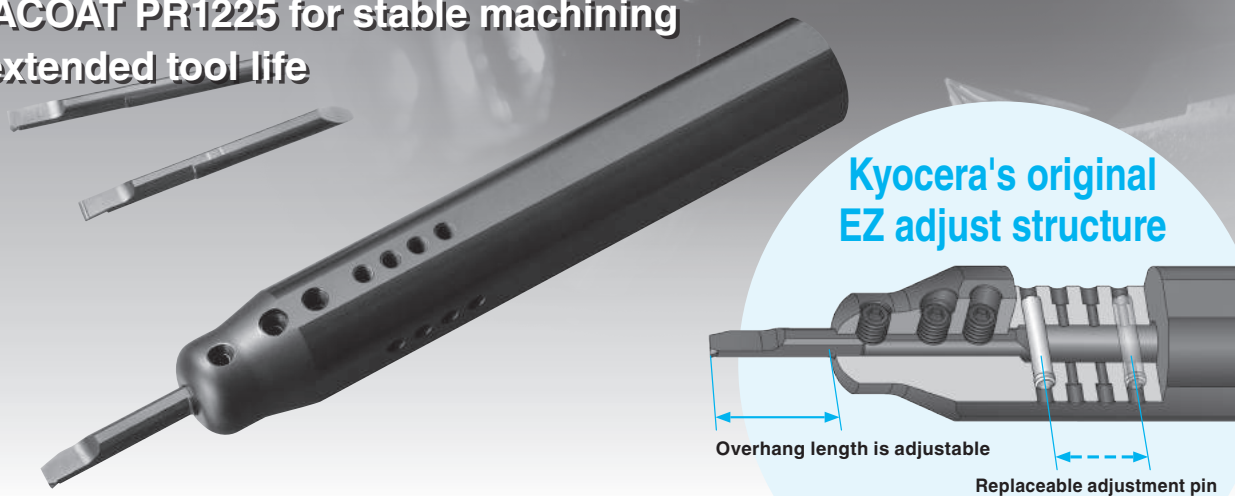
# Easy adjustment and high precision EZ Bars

## 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

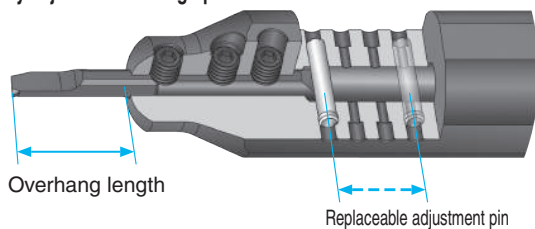
MEGACOAT PR1225 for stable machining and extended tool life



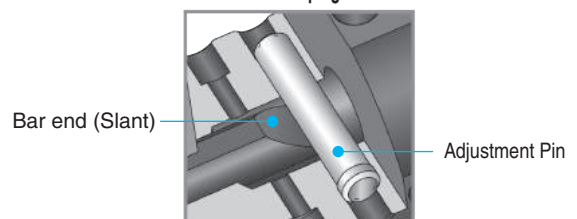
## EZ adjust structure

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

### 1 Easy adjustment and high precision

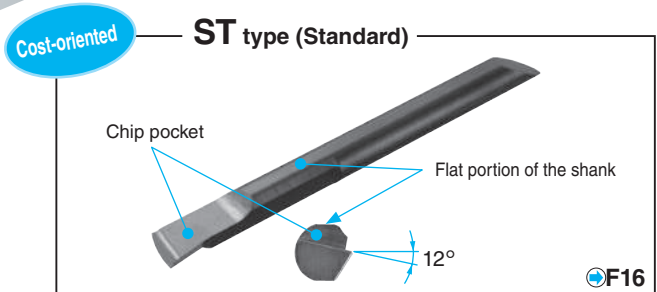
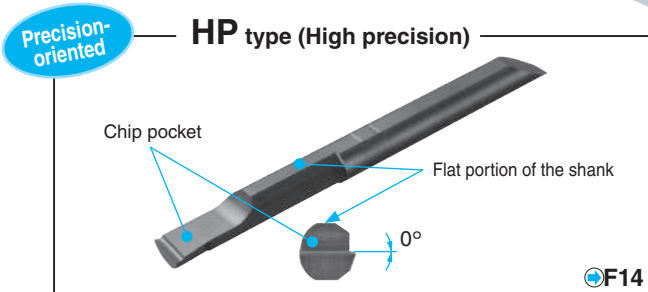


Excellent clamping force

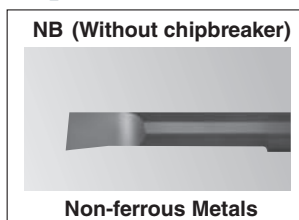
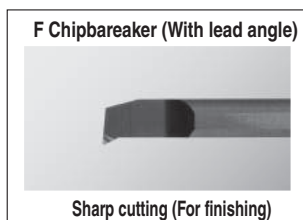
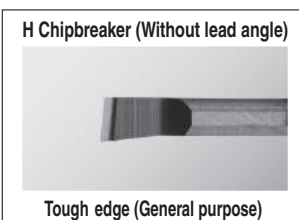


Bar is firmly clamped on the slanted end by the Adjustment Pin

### 2 2 types of bars



### 3 Chipbreakers for various applications



-2 types of corner-R for each chipbreaker  
**H Chipbreaker: 0.08mm, 0.15mm**  
**F Chipbreaker: 0.05mm, 0.15mm**  
**NB (Without Chipbreaker): 0.05mm(PR1225)**  
**0.035mm(PCD-CBN)**

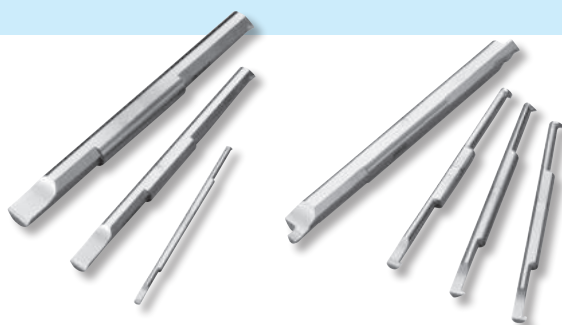
\* Lineup depend on description

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

- Economically excellent 2-Edge
- Min. Bore Dia. Line Up from  $\phi 2.0$  to Up
- Easy-to-Use Adjustable Overhang Length
- Integrated shank enables installation with standard sleeves
- Special sleeves for various machine types

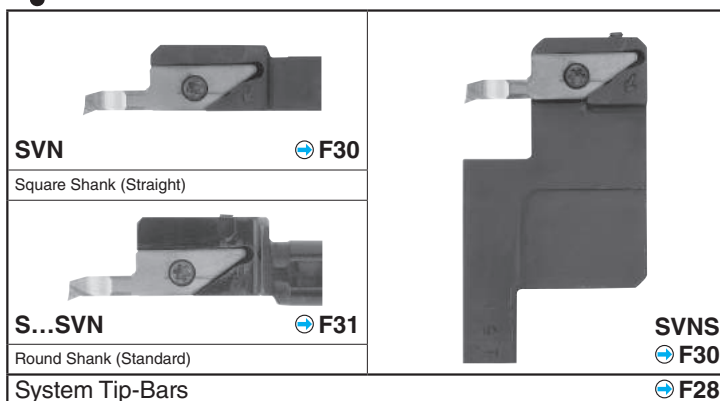
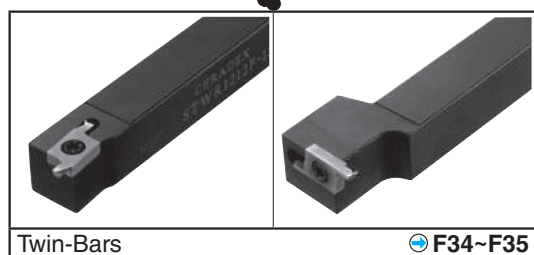
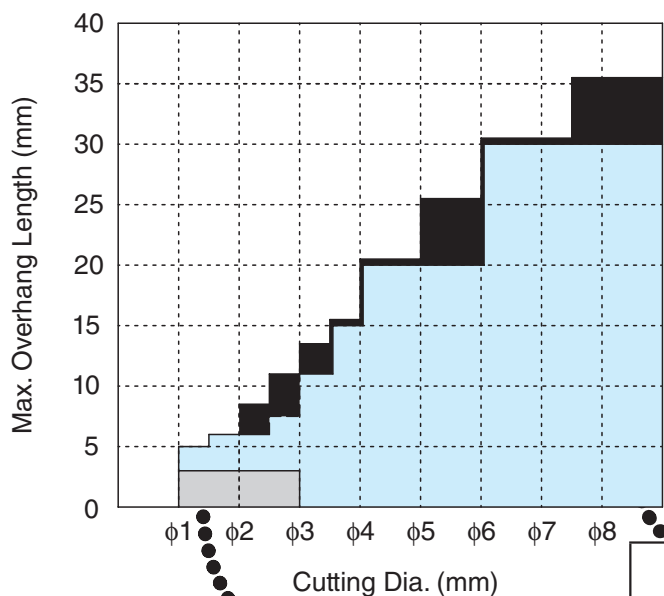


Boring	Back Boring	Grooving	Face Grooving	Threading
<b>HPB</b> Ⓢ F36	<b>HPBT</b> Ⓢ F36	<b>HPG</b> Ⓢ G46	<b>HPFG</b> Ⓢ G71	<b>HPT</b> Ⓢ J28
Min. Bore Dia.: $\phi 2\sim\phi 7$ Corner-R( $r_e$ ): 0.05	Min. Bore Dia.: $\phi 4\sim\phi 5$ Corner-R( $r_e$ ): 0.05	Min. Bore Dia.: $\phi 4\sim\phi 7$ Edge Width: 1.0~2.0mm Depth: 1.0~2.0mm	Min. Face Groove Dia.: $\phi 8$ Edge Width: 1.0~3.0mm Depth: 2.0~3.0mm	Min. Pilot Hole Dia.: $\phi 4.5\sim\phi 8$ M : 0.75~1.5mm UN : 28~16TPI W : 24~18TPI Rc : 28~19TPI



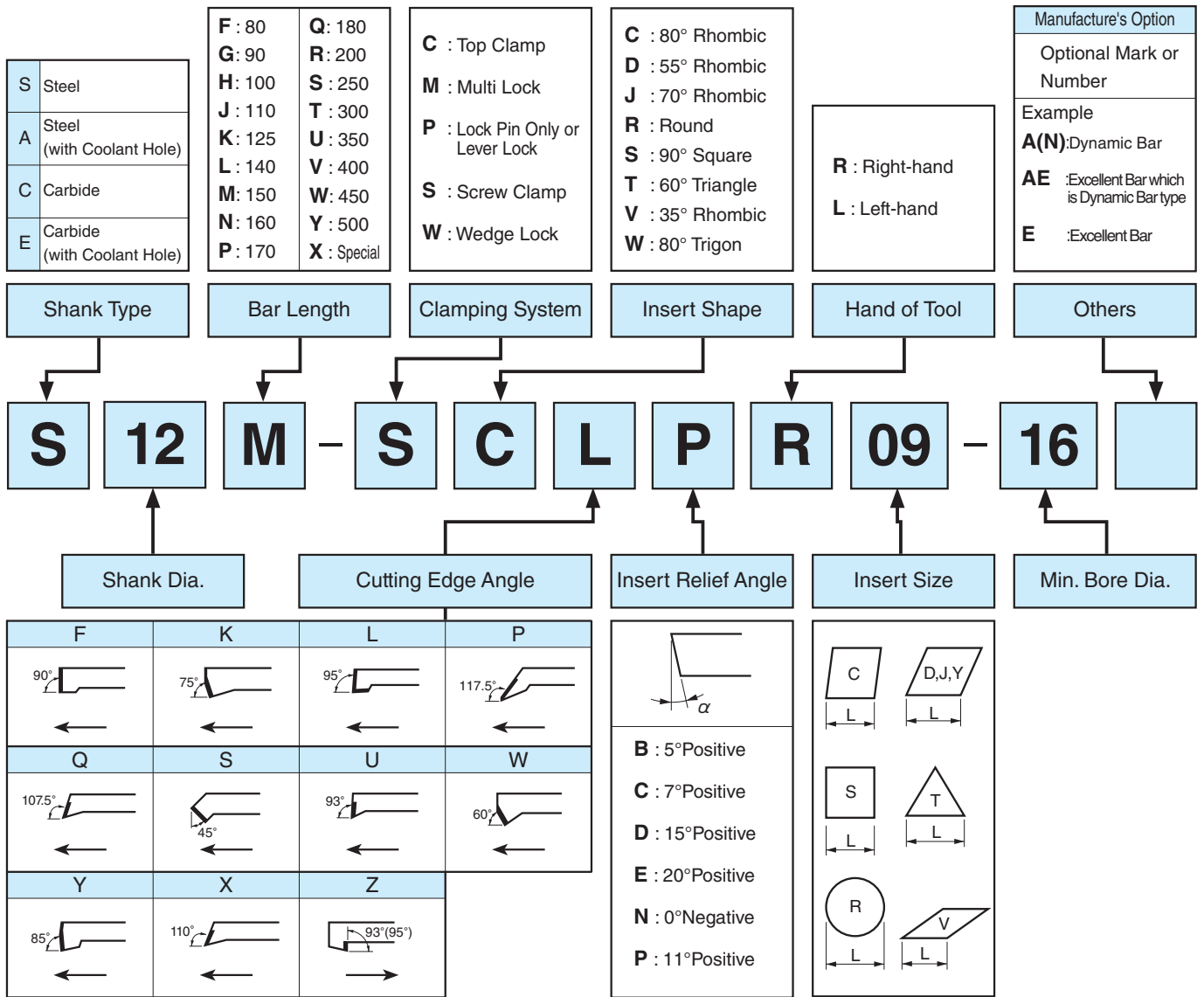
### ● Guide for usage (Adjustable overhang type)

Solid Tip-Bars Type: Min. Bore Dia.  $\phi 1\sim$



# Product Lineup

## ■ Boring Bar Identification System (Round Shank)

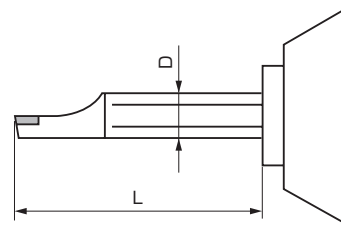


### ● Anti-vibration interchangeable head mechanism Boring Bar "AD Bars"

For the identification system for boring bars with interchangeable head, Ref. to page F63

### ■ 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.



## Solid Tip-Bars for Micro Boring

Applications	Solid Tip-Bars Type	Shape	Shank Type Max. Overhang Length (L/D)	Min. Bore Dia. φA													Ref. to Page for Toolholders	Summary			
				1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	6.5	7			7.5		
Boring	<b>EZB-HP</b> EZ Bars ➔ F14		Solid L/D=-5	•	•	•	•	•	•	•	•	•	•	•	•	•					
	<b>EZB-HP-LT</b> EZ Bars (Long Type) ➔ F15		Solid	•	•	•	•	•	•	•	•	•	•	•	•	•					
	<b>EZB-ST</b> EZ Bars ➔ F16	Solid L/D=-5	•	•	•	•	•	•	•	•	•	•	•	•	•	•		F22-F27			
	<b>EZB-NB</b> EZ Bars (MEGACOAT) ➔ F17	Solid L/D=-5	•	•	•	•	•	•	•	•	•	•	•	•	•	•					
	<b>EZB-NB</b> EZ Bars PCD ➔ F17		Solid						•	•	•	•	•	•	•	•					
	CBN		Solid						•	•	•	•	•	•	•	•					
	<b>TWB</b> Twin-Bars ➔ F34		Solid	•	•	•	•	•											F34		
	<b>TWBT</b> Twin-Bars ➔ F35		Solid	•	•	•	•	•											F35		
	<b>VNB-S</b> System Tip-Bars ➔ F28		Solid	•	•	•	•	•	•											F30 F31	
	<b>VNB</b> System Tip-Bars ➔ F29		Solid			•	•	•	•	•	•	•	•	•	•	•					
<b>VNBX-S</b> System Tip-Bars ➔ F32		Solid	•	•	•	•	•	•											F33		
<b>HPB</b> 2-Edge Tip-Bars ➔ F36		Solid L/D=-5			•	•	•	•	•	•	•	•	•	•	•	•			F26 F27		
<b>PSB-S</b> Tip-Bars ➔ F37		Solid L/D=-5			•	•	•	•	•	•	•	•	•	•	•	•			F84		
Back Boring	<b>VNBT</b> System Tip-Bars ➔ F29		Solid							•	•								F30 F31		
	<b>HPBT</b> 2-Edge Tip-Bars ➔ F36		Solid L/D=-5							•	•								F26 F27		
	<b>PSBT-S</b> Tip-Bars ➔ F37		Solid L/D=-5							•	•								F84		
Copying	<b>EZVB</b> EZ Bars ➔ F20		Solid							•	•	•	•						F23-F27		

# Product Lineup

## Dynamic Bar / EZ Bar PLUS



Applications	Overview Shape	Boring Bar Type	Shank Type Max. Overhang Length (L/D)	Coolant Hole		Min. Bore Dia. $\phi$ A																			Ref. to Page for Toolholders							
				Yes	No	5	6	7	8	10	12	13	14	16	18	20	22	23	25	26	27	30	31	32		34	40	50				
Boring / Internal Facing		A...SCLC-AE	Excellent L/D=-5.5	●						●	●		●	●	●				●											F39		
		S...SCLC-AE	Excellent L/D=-5.5	○	●	●	●	●																								
		S...SCLC-A	Steel L/D=-4	○							●	●		●	●	●					●											
		C...SCLC-A(N)	Carbide L/D=-7	○	●	●	●	●																								
		E...SCLC-A(N)	Carbide L/D=-7	●							●	●		●	●	●							●									
		A...SCLP-AE	Excellent L/D=-5.5	●										●	●	●	●					●										F41
		S...SCLP-A	Steel L/D=-4	○										●	●	●	●						●									
		E...SCLP-A(N)	Carbide L/D=-7	●										●	●	●	●						●									
		EZ Bar PLUS		S...SCLC-EZ	Steel L/D=-3	○	●		●																							F19
		C...SCLC-EZ		Carbide L/D=-5	○	●		●																								
		A...STLP-AE	Excellent	●							●	●		●	●	●					●	●	●								F49	
		S...STLB-AE	L/D=-5.5	○								●																				
		S...STLB(P)-A	Steel L/D=-4	○								●	●	●	●	●	●						●									
		E...STLP-A(N)	Carbide	●									●	●	●	●	●						●	●	●							
		C...STLB-A(N)	L/D=-7	○								●																				
		A...STLC-AE	Excellent L/D=-5.5	●									●	●		●	●	●														F47
		S...STLC-A	Steel L/D=-4	○										●	●		●	●	●													
		S...SWUB-AE	Excellent L/D=-5.5	○		●	●	●																							F59	
		A...SWUB(P)-AE	Excellent L/D=-5.5	●								●	●		●	●	●															
		S...SWUB(P)-A	Steel L/D=-4	○			●	●	●	●	●			●	●	●																
C...SWUB-A(N)		Carbide L/D=-7	○			●	●	●																								
E...SWUB(P)-A(N)		Carbide L/D=-7	●									●	●		●	●	●															



## Dynamic Bar

Applications	Overview Shape	Boring Bar Type	Shank Type Max. Overhang Length (L/D)	Coolant Hole		Min. Bore Dia. $\phi A$																	Ref. to Page for Toolholders				
				Yes	No	5	6	7	8	10	12	13	14	16	18	20	22	23	25	26	27	30		31	32	34	40
Copying		A...SDUC-AE	Excellent L/D=-5.5	●									●	●		●	●		●		●						F43
		S...SDUC-A	Steel L/D=-4	○									●	●		●	●		●		●						
		E...SDUC-A	Carbide L/D=-7	●									●	●		●	●		●		●						
		A...SDQC-AE	Excellent L/D=-5.5	●										●	●		●		●		●						F44
		S...SDQC-A	Steel L/D=-4	○										●	●		●	●		●		●					
		E...SDQC-A	Carbide L/D=-7	●										●	●		●	●		●		●					
		A...SVJB(C)-AE	Excellent L/D=-5.5	●											●	●		●		●					●	●	F52
		A...SVJP-AE	Steel L/D=-4	○												●	●		●		●				●	●	
		S...SVJB(C)-A	Steel L/D=-4	○												●	●		●		●				●	●	
		S...SVJP-A	Carbide L/D=-4	○												●	●		●		●				●	●	
		A...SVPC(B)-AE	Excellent L/D=-5.5	●											●	●		●		●					●	●	F54
		S...SVPC(B)-A	Steel L/D=-4	○												●	●		●		●				●	●	
E...SVPC(B)-A		Carbide L/D=-7	●												●	●		●		●				●	●		
	A...SVUB(C)-AE	Excellent L/D=-5.5	●												●	●		●					●	●	F57		
	S...SVUB(C)-A	Steel L/D=-4	○													●	●		●				●	●			
	E...SVUB(C)-A	Carbide L/D=-7	●													●	●		●				●	●			
Back Copying		A...SDZC-AE	Excellent L/D=-5.5	●											●	●		●		●				●	●	F45	
		S...SDZC-A	Steel L/D=-4	○												●	●		●		●			●	●		
		E...SDZC-A	Carbide L/D=-7	●												●	●		●		●			●	●		
		A...SVZB(C)-AE	Excellent L/D=-5.5	●												●	●		●					●	●	F57	
		S...SVZB(C)-A	Steel L/D=-4	○												●	●		●		●			●	●		

For Min. Bore Dia.  $\phi A$ , the figure under ● may be applied depending on the toolholder type.



Boring

# Product Lineup

## Boring Bars

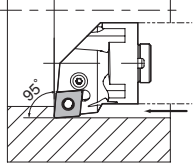
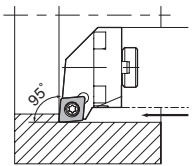
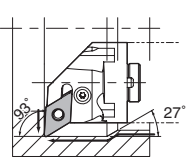
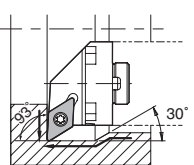
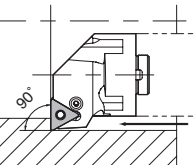
Applications	Boring Bar Type	Shape	Shank Type Max. Overhang Length (L/D)	Coolant Hole		Insert Type	Min. Bore Dia. φA																	Refer to Page for Toolholders	
				Yes	No		5	6	7	8	10	12	14	16	18	20	25	30	32	40	50	63			
Boring / Internal Facing	<b>NEW</b> A...DCLN12		Steel L/D=-3	●		Negative														●	●	●	F67		
	S...PCLN○○		Steel L/D=-3		○	Negative														●	●	●	F68		
	A...PCLN09		Steel L/D=-3	●		Negative														●	●	●	F68		
	<b>NEW</b> A...DWLN08		Steel L/D=-3	●		Negative															●	●	●	F77	
	S...PWLN○○		Steel L/D=-3		○	Negative															●	●	●	F76 F78	
	A...PWLN06		Steel L/D=-3	●		Negative															●	●	●	F76	
	S...WWLN08-E		Excellent L/D=-5		○	Negative															●	●	●	F78	
	C...STXP(B)		Carbide L/D=-7		○	Positive			●	●	●													F51	
	C...SJLC		Carbide L/D=-7		○	Positive	●																	F46	
	Copying	S...STWP-E		Excellent L/D=-5		○	Positive					●		●		●	●				●			F50	
S...STWP			Steel L/D=-3		○	Positive					●		●		●	●							F50		
<b>NEW</b> A...DDUN15			Steel L/D=-3	●		Negative															●	●	●	F70	
S...PDUN11			Steel L/D=-3		○	Negative															●	●	●	F69	
A...PDUN11			Steel L/D=-3	●		Negative															●	●	●	F69	
S...PDUN15			Steel L/D=-3		○	Negative																●	●	●	F71
Back Copying	S...PDQN15		Steel L/D=-3		○	Negative															●	●	●	F71	
	C...STZB		Carbide L/D=-7		○	Positive				●														F51	
	C...SJZC		Carbide L/D=-7		○	Positive	●																	F46	
Boring	S...PDZN15		Steel L/D=-3		○	Negative															●	●	●	F71	
	S...CTUP		Steel L/D=-3		○	Positive								●		●	●				●	●	●	F61	
	<b>NEW</b> A...DTFN○○		Steel L/D=-3	●		Negative																●	●	●	F74
	S...PTUN○○		Steel L/D=-3		○	Negative															●	●	●	F75	
	A...PTUN11		Steel L/D=-3	●		Negative															●	●	●	F75	
	<b>NEW</b> A...DSKN12		Steel L/D=-3	●		Negative																●	●	●	F73
	S...SSKP		Steel L/D=-3		○	Positive															●	●	●	F60	
S...CSKP		Steel L/D=-3		○	Positive															●	●	●	F60		

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



Boring

## 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		Insert Type	Min. Bore Dia. φA											Ref. to Page for Toolholders					
				Yes	No		7	8	10	12	14	16	18	20	25	30	32		40	43	50	63	
Boring / Internal Facing	HA...PCLN12		Anti-vibration Dampener System L/D=~-5.5	●		Negative												●		●	●	F63	
	HA...SCLC09		Anti-vibration Dampener System L/D=~-6	●		Positive													●				F65
Copying	HA...PDUN15		Anti-vibration Dampener System L/D=~-6	●		Negative														●	●	●	F64
	HA...SDUC11		Anti-vibration Dampener System L/D=~-6	●		Positive														●			F65
Boring	HA...PTFN16		Anti-vibration Dampener System L/D=~-6	●		Negative														●	●	●	F64

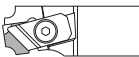
F







Boring

## Boring Toolholders for Bearing Machining (Square Shank)

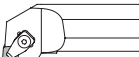
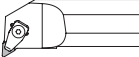



Applications	Boring Bar Type	Shape	Min. Bore Dia. φA						Ref. to Page for Toolholders	
			20	25	30	32	40	50		
Boring	SRCP-B		●			●				F62

Applications	Boring Bar Type	Shape	Min. Bore Dia. φA						Ref. to Page for Toolholders	
			20	25	30	32	40	50		
Round-Chamfering	CBSN-B		●							F62

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

Applications	Boring Bar Type	Shape	Min. Bore Dia. φA								Ref. to Page for Toolholders	
			16	18	20	25	30	32	40	50		
Boring / Internal Facing	S...CELN										●	F79
Boring	S...CTUP		●		●	●	●	●	●	●	●	F61
	S...CSKP				●	●	●	●	●	●	●	F60
	S...CSKN										●	F79

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								Ref. to Page for Toolholders		
			20	25	30	32	40	50					
Boring / Internal Facing	S...CCLN-GX										●	●	F80
Boring / Copying	S...CDUN-GX										●	●	F80
Boring	S...CSKN-GX										●	●	F80
Boring / Internal Facing	S...CCLN-A										●		F81
Boring	S...CTUN-A										●		F81

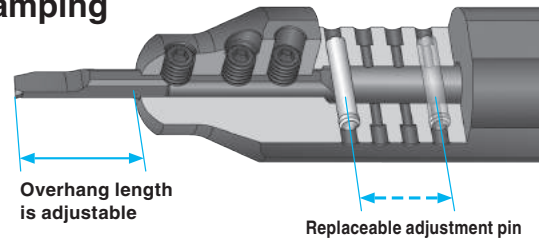
# Easy adjustment and high precision EZ Bars

## Kyocera's original EZ adjust structure

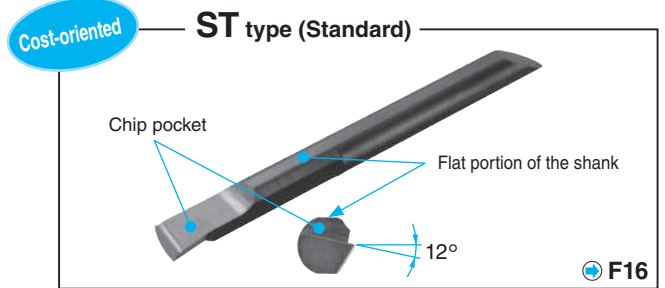
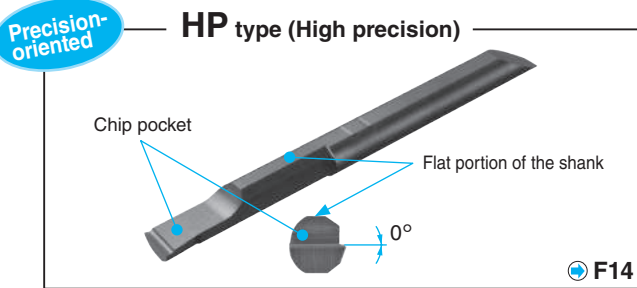
- Easy adjustment and high precision
- EZ Bars prevent deviation with high-rigidity clamping

Wide range of items applicable to various applications

## Kyocera's original EZ adjust structure



### 2 types of bars



### Bar Tolerance

Bar setting image	Bar Tolerance	Offset (F)	Overall length (Z)	Edge Height (Y)	Min. Bore Dia.
<p>Y = Edge Height</p> <p>F = Offset</p> <p>Z = Bar length</p>	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)

EZH-CT



High precision, with coolant hole (Adjustable)

EZH-HP



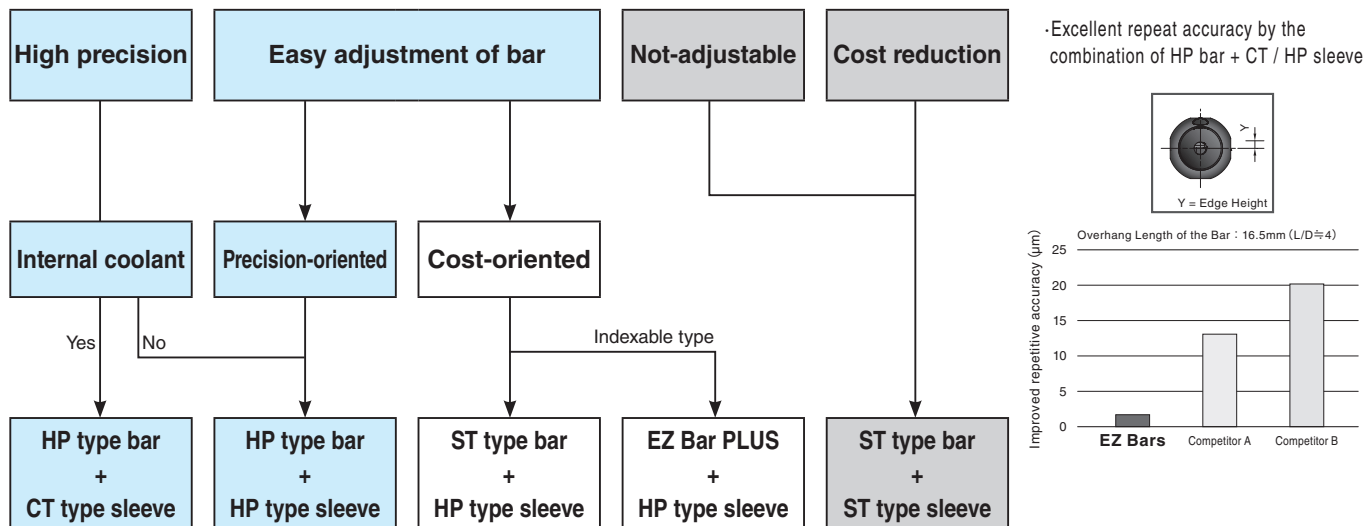
Overhang length is adjustable (Adjustable)

EZH-ST



Not-adjustable

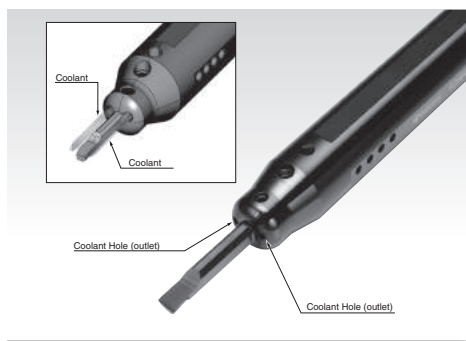
## How to select bars and sleeves for each application



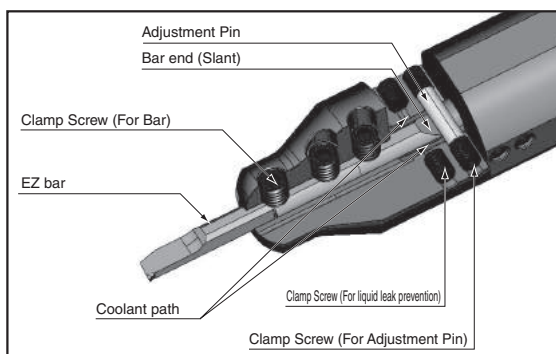
## EZH-CT type (high precision / with coolant hole) is added in the EZH sleeve lineup

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

### 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)

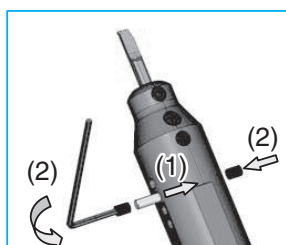


Fig.1 How to use adjustment pin

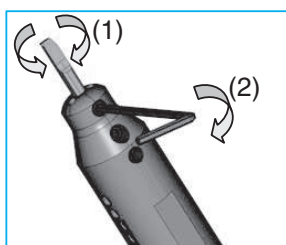


Fig.2 How to fix bar

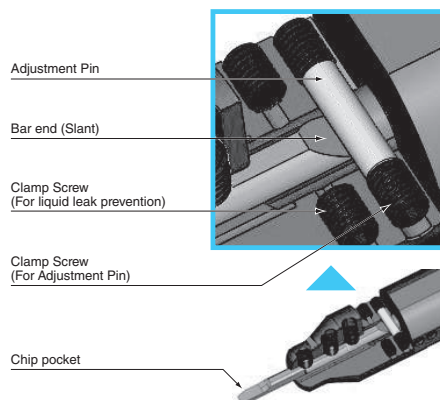
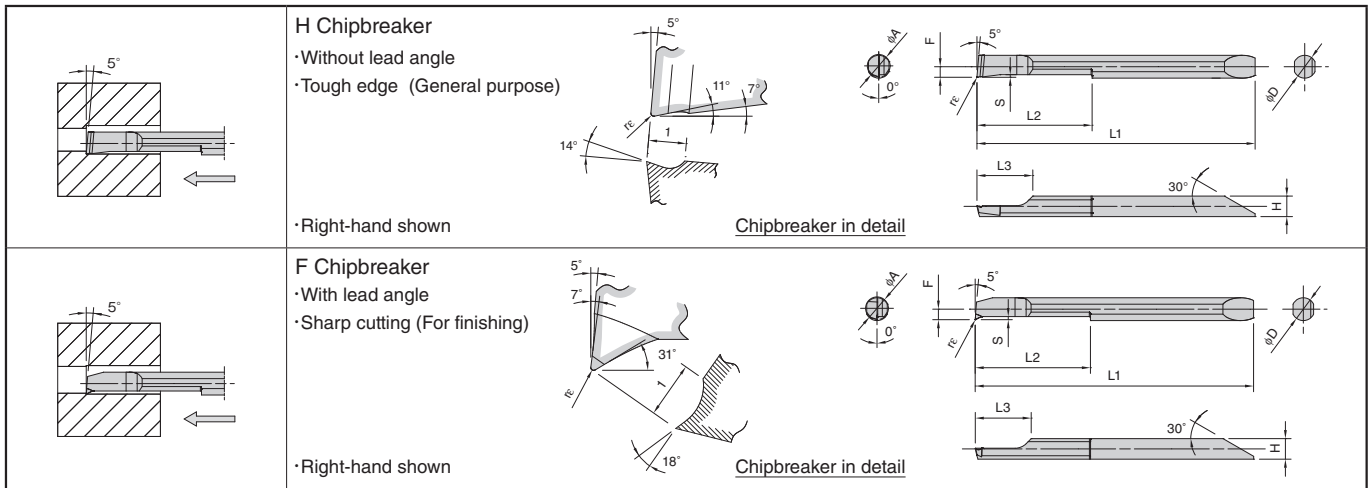


Fig.3 Fixed bar



# EZ Bars

## EZB-HP (Boring)



### EZ Bars Dimensions

Description	Min. Bore Dia.	Dimension (mm)								Grades		Applicable Sleeves ● F22~F27	
		φA	φD	H	L1	L2	L3	F	S	rε	MEGACOAT		Carbide
											PR1225		NEW GW05
EZBR 020020HP-008H	2	2	1.8	32	8	4.9	0.85	0.25	0.08±0.015	●	●	EZH020...	
	2.5	2.5	2.3	35	10.5	4.9	1.1	0.25	0.08±0.015	●		EZH025...	
									0.15±0.02	●			
	3	3	2.7	38.9	13	6.9	1.35	0.3	0.08±0.015	●	●	EZH030...	
									0.15±0.02	●			
	3.5	3.5	3.2	41.9	15	6.9	1.6	0.4	0.08±0.015	●		EZH035...	
									0.15±0.02	●			
	4	4	3.6	48.8	20	9.8	1.85	0.4	0.08±0.015	●	●	EZH040...	
									0.15±0.02	●			
	5	5	4.6	58.1	25	9.8	2.35	0.5	0.08±0.015	●	●	EZH050...	
0.15±0.02									●				
6	6	5.6	66.1	30	11.8	2.85	0.6	0.08±0.015	●	●	EZH060...		
								0.15±0.02	●				
EZBR 020020HP-005F	2	2	1.8	32	8	4.9	0.85	0.25	0.05±0.01	●		EZH020...	
	2.5	2.5	2.3	35	10.5	4.9	1.1	0.3	0.05±0.01	●		EZH025...	
									0.15±0.02	●			
	3	3	2.7	38.9	13	6.9	1.35	0.4	0.05±0.01	●		EZH030...	
									0.15±0.02	●			
	3.5	3.5	3.2	41.9	15	6.9	1.6	0.5	0.05±0.01	●		EZH035...	
									0.15±0.02	●			
	4	4	3.6	48.8	20	9.8	1.85	0.5	0.05±0.01	●		EZH040...	
									0.15±0.02	●			
	5	5	4.6	58.1	25	9.8	2.35	0.7	0.05±0.01	●		EZH050...	
0.15±0.02									●				
6	6	5.6	66.1	30	11.8	2.85	0.9	0.05±0.01	●		EZH060...		
								0.15±0.02	●				

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

Recommended Cutting Conditions **F18**

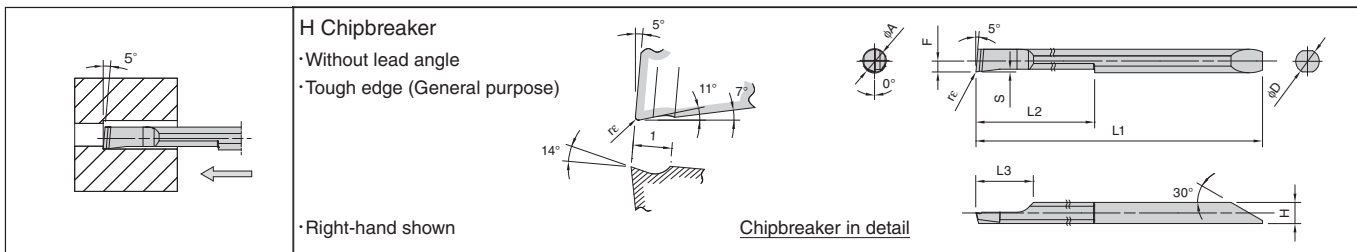
### EZ Bars Identification System

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

● : Std. Item

EZ Bars are sold in 1 piece boxes

**EZB-HP (Boring, Long Type)**



**EZ Bars Dimensions**

Description	Min. Bore Dia.	Dimension (mm)											Grades	Applicable Sleeves ● F22-F27		
		φA	φD	H	L1	L2	L3	*Overhang Length				F			S	rε
								No.1	No.2	No.3	No.4					
<b>EZBR 020020HP-008H-LT</b>	2	2	1.8	36	12	4.9	12.5	8.5	-	-	0.85	0.25	0.08±0.015	●	EZH020...	
<b>025025HP-008H-LT</b>	2.5	2.5	2.3	39.5	15		15.5	11.5	-	-	1.1			0.25	●	EZH025...
<b>030030HP-008H-LT</b>	3	3	2.7	47.9	18	6.9	<i>22.5</i>	<i>18.5</i>	<i>14.5</i>	-	1.35	0.3		●	EZH030...	
<b>035035HP-008H-LT</b>	3.5	3.5	3.2	51.9	21		<i>25.5</i>	<i>21.5</i>	<i>17.5</i>	-	1.6			0.3	●	EZH035...
<b>040040HP-008H-LT</b>	4	4	3.6	60.8	28	9.8	<i>32.5</i>	<i>28.5</i>	<i>24.5</i>	<i>20.5</i>	1.85	0.4		●	EZH040...	
<b>050050HP-008H-LT</b>	5	5	4.6	73.1	35		<i>40.5</i>	<i>35.5</i>	<i>30.5</i>	<i>25.5</i>	2.35			0.5	●	EZH050...
<b>060060HP-008H-LT</b>	6	6	5.6	83.1	42	11.8	<i>47.5</i>	<i>42.5</i>	<i>37.5</i>	<i>32.5</i>	2.85	0.6		●	EZH060...	

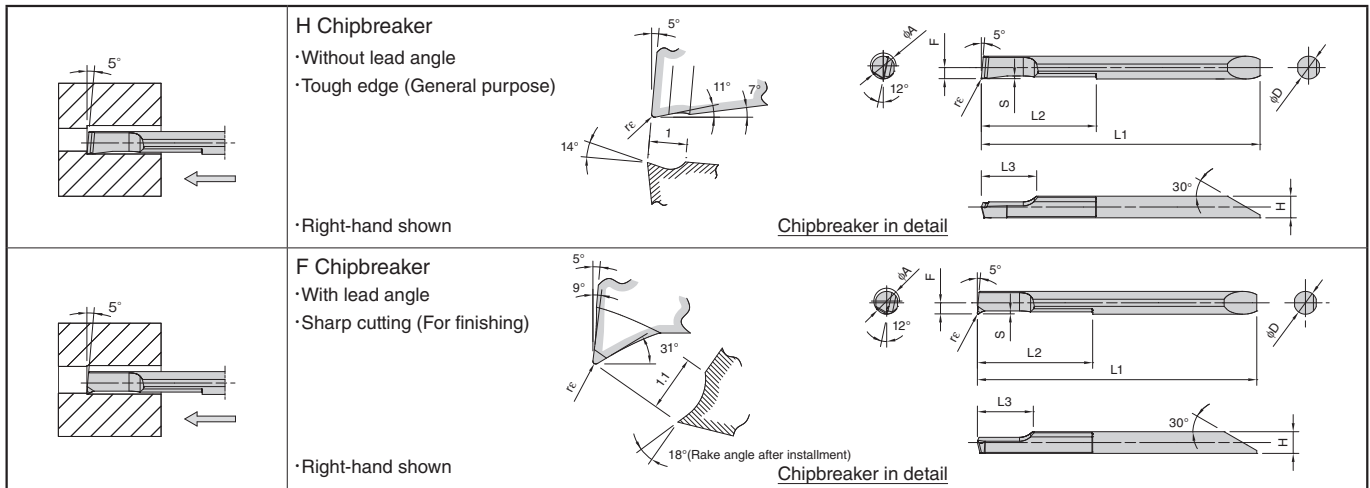
\*In case of overhang length mentioned in italics, modified insert is required

Recommended Cutting Conditions **F18**



# EZ Bars

## EZB-ST (Boring)



### EZ Bars Dimensions

Description	Min. Bore Dia.	Dimension (mm)								Grades		Applicable Sleeves ● F22~F27
		φA	φD	H	L1	L2	L3	F	S	re	MEGACOAT	
											PR1225	
<b>EZBR 020017ST-008H</b>	2	1.7	1.5	27.3	7	4.7	0.79	0.19	0.08±0.015	●	EZH017...	
<b>025020ST-008H</b>	2.5	2	1.82	32	8	4.8	0.94	0.16	0.08±0.015	●	EZH020...	
<b>025020ST-015H</b>									0.15±0.02	●		
<b>030025ST-008H</b>	3	2.5	2.3	35	10.5	4.8	1.19	0.15	0.08±0.015	●	EZH025...	
<b>030025ST-015H</b>									0.15±0.02	●		
<b>035030ST-008H</b>	3.5	3	2.8	39	13	6.8	1.44	0.18	0.08±0.015	●	EZH030...	
<b>035030ST-015H</b>									0.15±0.02	●		
<b>040035ST-008H</b>	4	3.5	3.3	42	15	6.7	1.69	0.24	0.08±0.015	●	EZH035...	
<b>040035ST-015H</b>									0.15±0.02	●		
<b>045040ST-008H</b>	4.5	4	3.8	49	20	9.7	1.94	0.27	0.08±0.015	●	EZH040...	
<b>045040ST-015H</b>									0.15±0.02	●		
<b>055050ST-008H</b>	5.5	5	4.8	58.2	25	9.7	2.44	0.33	0.08±0.015	●	EZH050...	
<b>055050ST-015H</b>									0.15±0.02	●		
<b>065060ST-008H</b>	6.5	6	5.8	66.2	30	11.8	2.94	0.38	0.08±0.015	●	EZH060...	
<b>065060ST-015H</b>									0.15±0.02	●		
<b>075070ST-008H</b>	7.5	7	6.8	74.2	35	11.7	3.44	0.44	0.08±0.015	●	EZH070...	
<b>075070ST-015H</b>									0.15±0.02	●		
<b>EZBR 020017ST-005F</b>	2	1.7	1.5	27.3	7	4.7	0.79	0.2	0.05±0.01	●	EZH017...	
<b>025020ST-005F</b>	2.5	2	1.82	32	8	4.8	0.94	0.16	0.05±0.01	●	EZH020...	
<b>025020ST-015F</b>									0.15±0.02	●		
<b>030025ST-005F</b>	3	2.5	2.3	35	10.5	4.8	1.19	0.2	0.05±0.01	●	EZH025...	
<b>030025ST-015F</b>									0.15±0.02	●		
<b>035030ST-005F</b>	3.5	3	2.8	39	13	6.8	1.44	0.26	0.05±0.01	●	EZH030...	
<b>035030ST-015F</b>									0.15±0.02	●		
<b>040035ST-005F</b>	4	3.5	3.3	42	15	6.7	1.69	0.33	0.05±0.01	●	EZH035...	
<b>040035ST-015F</b>									0.15±0.02	●		
<b>045040ST-005F</b>	4.5	4	3.8	49	20	9.7	1.94	0.31	0.05±0.01	●	EZH040...	
<b>045040ST-015F</b>									0.15±0.02	●		
<b>055050ST-005F</b>	5.5	5	4.8	58.2	25	9.7	2.44	0.45	0.05±0.01	●	EZH050...	
<b>055050ST-015F</b>									0.15±0.02	●		
<b>065060ST-005F</b>	6.5	6	5.8	66.2	30	11.7	2.94	0.59	0.05±0.01	●	EZH060...	
<b>065060ST-015F</b>									0.15±0.02	●		
<b>075070ST-005F</b>	7.5	7	6.8	74.2	35	11.7	3.44	0.65	0.05±0.01	●	EZH070...	
<b>075070ST-015F</b>									0.15±0.02	●		

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

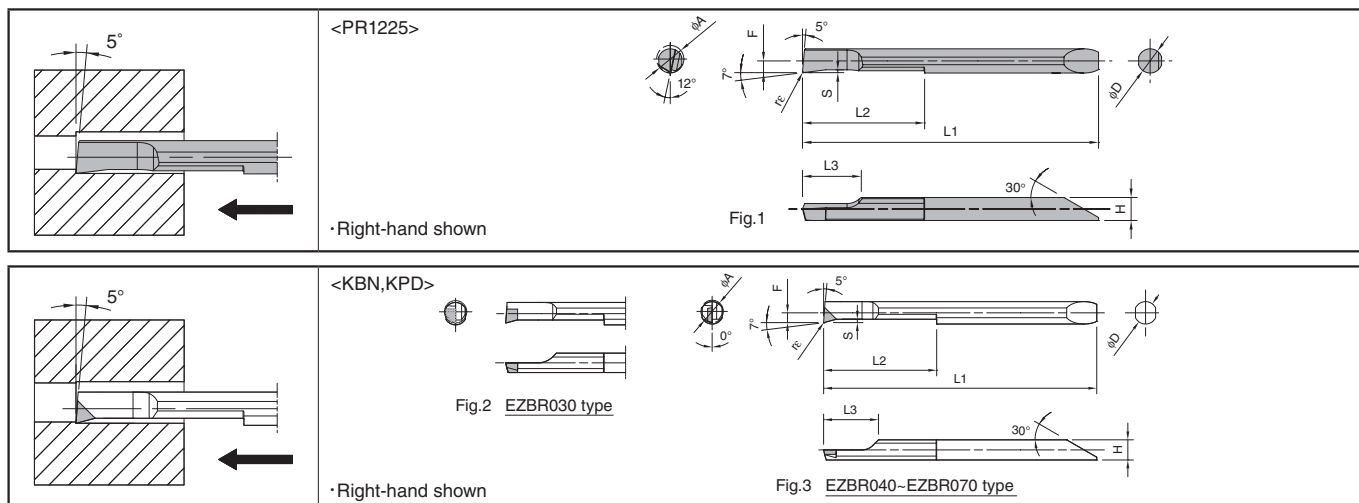
Recommended Cutting Conditions ● F18

● : Std. Item

EZ Bars are sold in 1 piece boxes



**EZB-NB (Boring)**



**EZ Bars Dimensions**

Description	Min. Bore Dia.	Dimension (mm)								Drawing	Grades			Applicable Sleeves F22-F27	
		φA	φD	H	L1	L2	L3	F	S		re	MEGACOAT	MEGA CBN		PCD
												PR1225	KBN05M		KPD001
<b>EZBR</b> 020017-005NB 025020-005NB 030025-005NB 035030-005NB 040035-005NB 045040-005NB 055050-005NB 065060-005NB 075070-005NB	2	1.7	1.5	27.3	7	4.7	0.79	0.2	±0.015 0.05	Fig.1	●			EZH017...	
	2.5	2	1.82	32	8	4.8	0.94	0.16			●			EZH020...	
	3	2.5	2.3	35	10.5	4.8	1.19	0.16			●			EZH025...	
	3.5	3	2.8	39	13	6.8	1.44	0.19			●			EZH030...	
	4	3.5	3.3	42	15	6.7	1.69	0.25			●			EZH035...	
	4.5	4	3.8	49	20	9.7	1.94	0.28			●			EZH040...	
	5.5	5	4.8	58.2	25	9.7	2.44	0.33			●			EZH050...	
	6.5	6	5.8	66.2	30	11.7	2.94	0.39			●			EZH060...	
	7.5	7	6.8	74.2	35	11.7	3.44	0.45			●			EZH070...	
<b>EZBR</b> 030030-003NB 040040-003NB 050050-003NB 060060-003NB 070070-003NB	3	3	2.6	38.8	13	6.8	1.25	0.3	±0.015 0.035	Fig.2		●		EZH030...	
	4	4	3.6	48.8	20	9.8	1.75	0.5			Fig.3		●		EZH040...
	5	5	4.6	58.1	25	9.8	2.25						●		EZH050...
	6	6	5.6	66.1	30	11.8	2.75						●		EZH060...
	7	7	6.6	74.1	35	11.8	3.25						●		EZH070...
<b>EZBR</b> 040040-003NB 050050-003NB 060060-003NB 070070-003NB	4	4	3.6	48.8	20	9.8	1.75		±0.015 0.035	Fig.3				●	EZH040...
	5	5	4.6	58.1	25	9.8	2.25					●	EZH050...		
	6	6	5.6	66.1	30	11.8	2.75					●	EZH060...		
	7	7	6.6	74.1	35	11.8	3.25					●	EZH070...		

Recommended Cutting Conditions **F18**

**Edge Preparation**

Grades	Edge Preparation	Remarks
PR1225	Sharp Edge	-
KBN05M	T00815	0.08mmx15° Chamfered Cutting Edge
KPD001	Sharp Edge	-



# EZ Bars

## ◆ 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	

### ● H Chipbreaker [EZB-HP..H-LT type (Long type)]

Workpiece Material	Insert Grades (Cutting Speed Vc: m/min)		EZB020/025/030/035 type				EZB040/050/060 type				Remarks
	MEGACOAT	ap(mm), f(mm/rev)									
	PR1225	ap	f	ap	f	ap	f	ap	f		
Carbon Steel / Alloy Steel	30~60	~0.3	~0.05	~0.4	~0.1						Coolant
Stainless Steel	20~40	~0.25	~0.05	~0.3	~0.07						

### ● 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.

Sleeves	Insert	EZB...HP	EZB...ST/NB	HPB...(Conventional)
EZH...CT/HP		✓	✓	✓ <sup>*1</sup> ✓ <sup>*2</sup> (Compatible)
EZH...ST		✓	✓	✓ <sup>*1</sup> (Compatible)
PSH... (Discontinued Description)		✓ <sup>*1</sup> (Compatible)	✓ <sup>*1</sup> (Compatible)	✓

\*1 Some diameter types of conventional Tip-Bars are incompatible.

\*2 Use them without Adjustment Pins. Overhang length of bar is not adjustable.

F



Boring

Solid

Positive

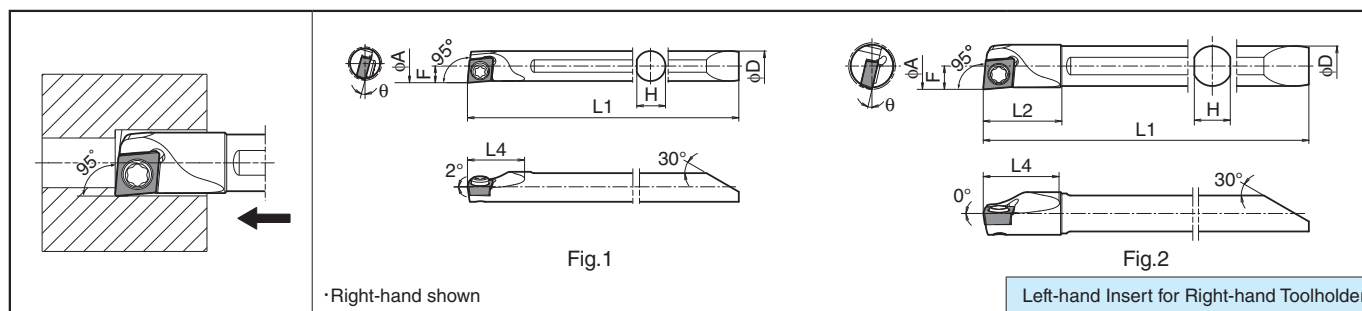
AD Bars

Negative

## EZ Bar PLUS (Indexable boring bar)

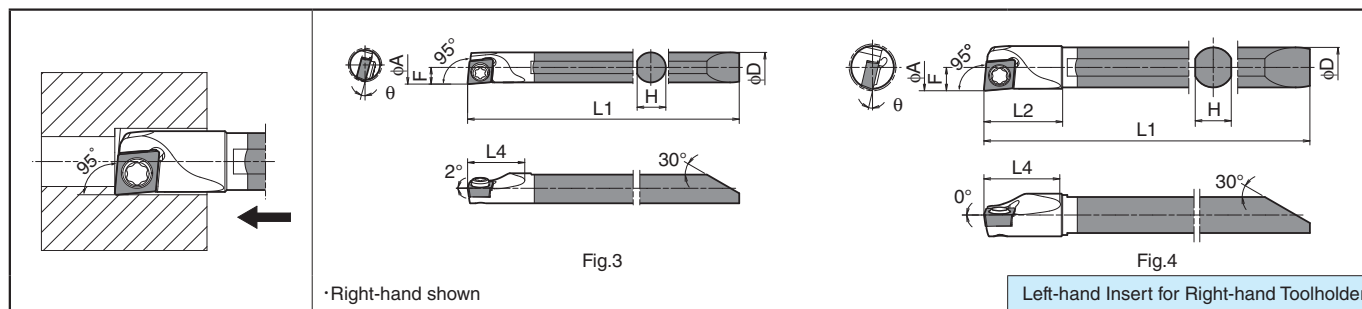
### S-SCLC-EZ

Max. Overhang Length L/D≈~3



### C-SCLC-EZ

Max. Overhang Length L/D≈~5



### Toolholder Dimensions

Description	Std.	Min. Bore Dia.	Dimension (mm)							θ	Std. Corner-R(°)	Coolant Hole	Drawing	Spare Parts		Applicable Sleeves ➡ F25	
			R	φA	φD	H	L1	L2	L3					L4	F		Clamp Screw
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...
	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...
	C060X-SCLCR04-070EZ	●	7	6	5.4	65.9	11.8	-	11.5	3.5	13°			Fig.4	SB-2035TR		EZH060...

### Applicable Inserts

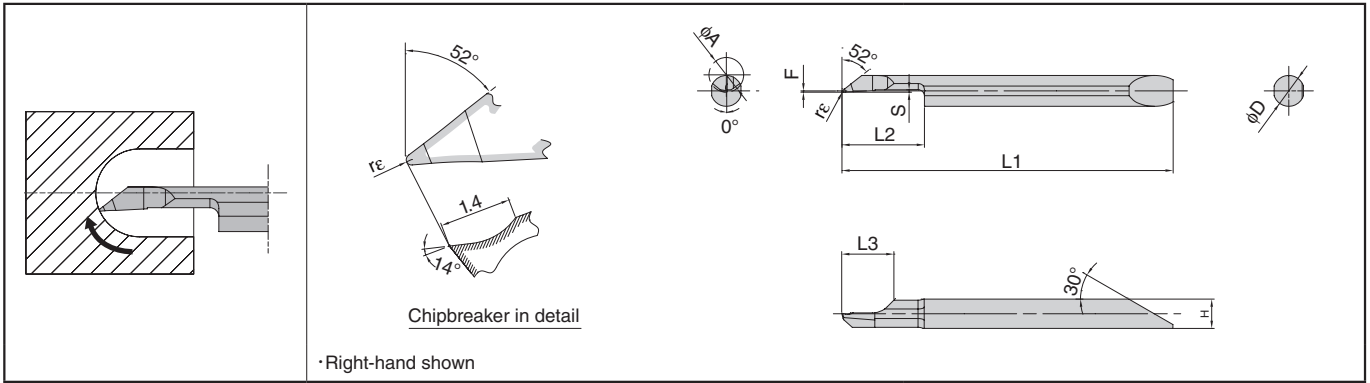
Applications	Minute ap	Finishing	Finishing / Precision	Non-ferrous Metals	Hard Materials
Ref. to Page	B49	B52	B51	C24	C14
Insert	CF	L-F	L-FSF	PCD	CBN
Toolholder Description					
....SCLCR03....	CCGT0301..	CCGT0301..	CCET0301..	-	CCMW0301..
....SCLCR04....	CCGT0401..	CCGT0401..	CCET0401..	CCGW0401..	CCMW0401..

Recommended Cutting Conditions ➡ F93~F94



# EZ Bars

## EZVB (Boring / Internal Facing / Copying) NEW



F

### EZ Bars Dimensions

Description	Min. Bore Dia.	Dimension (mm)								Grades	Applicable Sleeves ● F23~F27	
		$\phi A$	$\phi D$	H	L1	L2	L3	F	S	$r_e$		MEGACOAT PR1225
<b>EZVBR</b>	<b>035030-010</b>	3.5	3	2.8	38	8	5.8	0.17	0.22	$0.1 \pm 0.015$	●	EZH030...
	<b>045040-010</b>	4.5	4	3.8	43	10	6.8	0.17	0.26	$0.1 \pm 0.015$	●	EZH040...
	<b>055050-010</b>	5.5	5	4.8	50.2	12	7.7	0.17	0.29	$0.1 \pm 0.015$	●	EZH050...
	<b>065060-010</b>	6.5	6	5.8	55.2	14	8.6	0.17	0.32	$0.1 \pm 0.015$	●	EZH060...

Boring

Solid

Positive

AD Bars

Negative

### Recommended Cutting Conditions

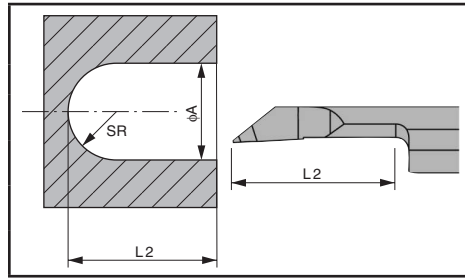
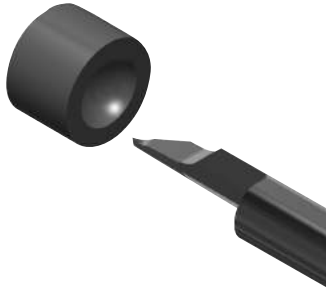
Workpiece Material	Insert Grades (Cutting Speed $V_c$ : m/min)	EZVB035 type		EZVB045 type		EZVB055/065 type		Remarks
	MEGACOAT	ap (mm), f (mm/rev)						
	PR1225	ap	f	ap	f	ap	f	
Carbon Steel / Alloy Steel	30~100	~0.05	~0.04	~0.07	~0.07	~0.1	~0.07	Coolant
Stainless Steel	30~80	~0.03	~0.03	~0.05	~0.05	~0.07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

EZ Bars are sold in 1 piece boxes

● : Std. Item

## Application of EZVB

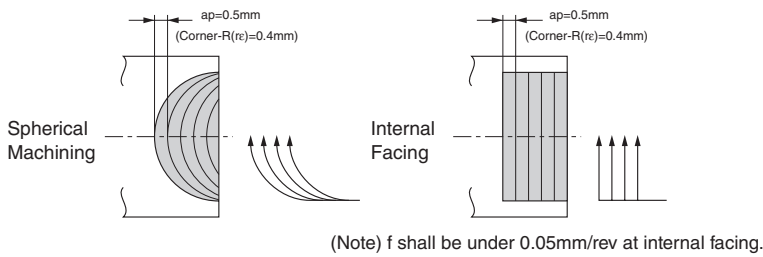
### 1. Application Range



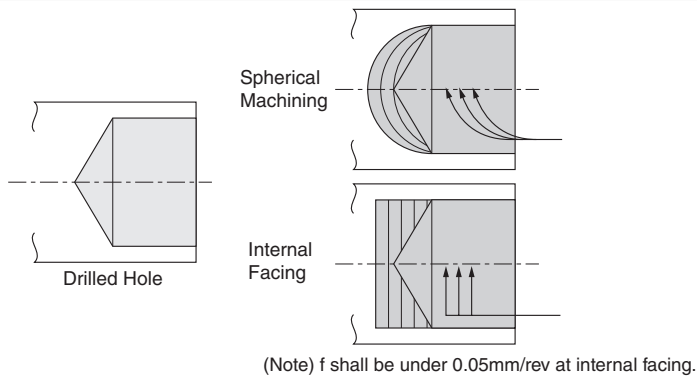
		(mm)		
Description	Min. Bore Dia.	SR	L2	φA
				<b>EZVBR</b>
	<b>045040-010</b>	4.5	2.25	10
	<b>055050-010</b>	5.5	2.75	12
	<b>065060-010</b>	6.5	3.25	14

### 2. Application

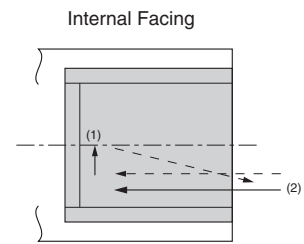
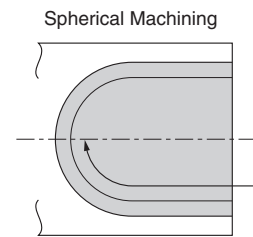
#### Case with No Existing Hole



#### Case with Drilled Hole

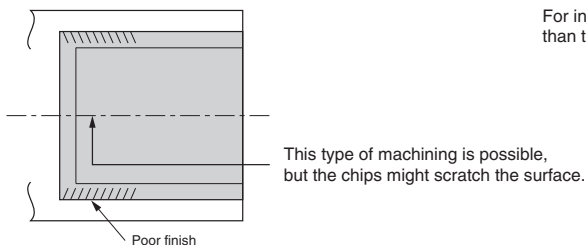
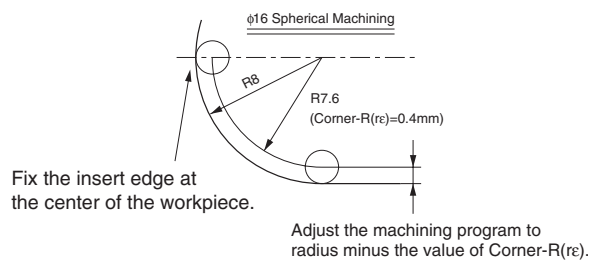
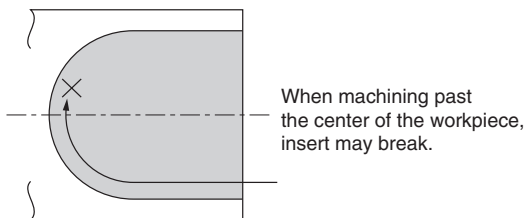


#### Finishing

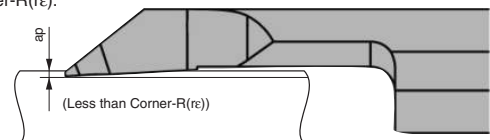


**Machining Process**  
 (1) Finish the internal face first.  
 (2) Next, finish the internal diameter.

### 3. Caution



For internal profiling,  $a_p$  should be less than the value of Corner-R(re).



## EZH-CT sleeve

Adjustable with Coolant Hole

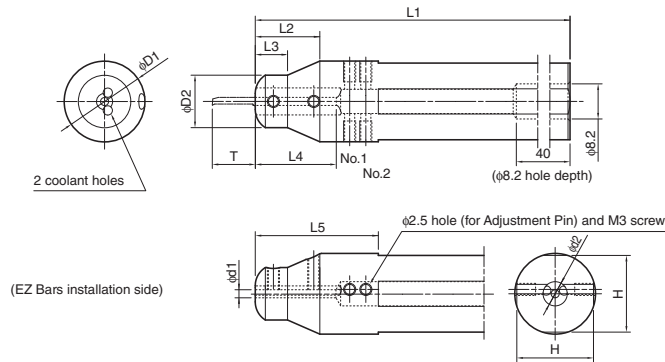


Fig.1

### Sleeve Dimensions

Description	Std.	Dimension (mm)										Overhang Length of the Bar* <sup>2</sup> T (mm) Adjustment Pin Setting Position				Drawing	Applicable EZ Bars ● F14-F17 ● J24
		φd1	φD1	φD2	φd2	H	L1	L2	L3	*L4	L5	No.1	No.2	No.3	No.4		
EZH 01719CT-120 01720CT-120 01722CT-135 01725.0CT-135 01725.4CT-120	●	1.7	19.05	13	6	18	120	16	8	16	30.5	7.5	3.5	-	-	Fig.1	EZBR...017...
	●		20			19	120				41.5						
	●		22			21	135				30.5						
	●		25			24	135				41.5						
	●		25.4			24.4	120				30.5						
EZH 02019CT-120 02020CT-120 02022CT-135 02025.0CT-135 02025.4CT-120	●	2	19.05	13	6	18	120	16	8	20	30.5	8.5	4.5	-	-	Fig.1	EZBR...020... * <sup>3</sup> HPB <sup>®</sup> /0202-...
	●		20			19	120				41.5						
	●		22			21	135				30.5						
	●		25			24	135				41.5						
	●		25.4			24.4	120				30.5						
EZH 02519CT-120 02520CT-120 02522CT-135 02525.0CT-135 02525.4CT-120	●	2.5	19.05	13	6	18	120	16	8	20	30.5	11	7	-	-	Fig.1	EZBR...025... EZTR...025-...
	●		20			19	120				41.5						
	●		22			21	135				30.5						
	●		25			24	135				41.5						
	●		25.4			24.4	120				30.5						

\*1. L4 shows φd1 length.

\*2. Dimension T shows Overhang length of the EZB Bar when attached to sleeve.

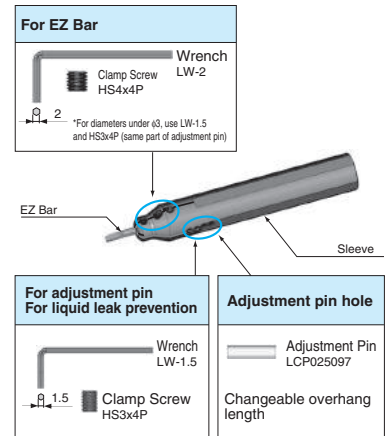
\*3. Use them without Adjustment Pins. Overhang length of bar is not adjustable.

- 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 (EZH-CTSleeves)

Description	Spare Parts				
	Adjustment Pin	Clamp Screw (for adjustment pin)	Wrench	Clamp Screw (for bar)	Wrench
EZH 017...CT-.. 020...CT-.. 025...CT-.. 030...CT-..	LCP025097	HS3x4P (for adjustment pin and liquid leak prevention)	LW-1.5 Tightening Torque 1N-m	HS3x4P	LW-1.5 Tightening Torque 1N-m
EZH 035...CT-.. 040...CT-.. 050...CT-.. 060...CT-.. 070...CT-..	LCP025097	HS3x4P (for adjustment pin and liquid leak prevention)	LW-1.5 Tightening Torque 1N-m	HS4x4P (for bar)	LW-2 Tightening Torque 2N-m



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 EZ Bar 2 pcs

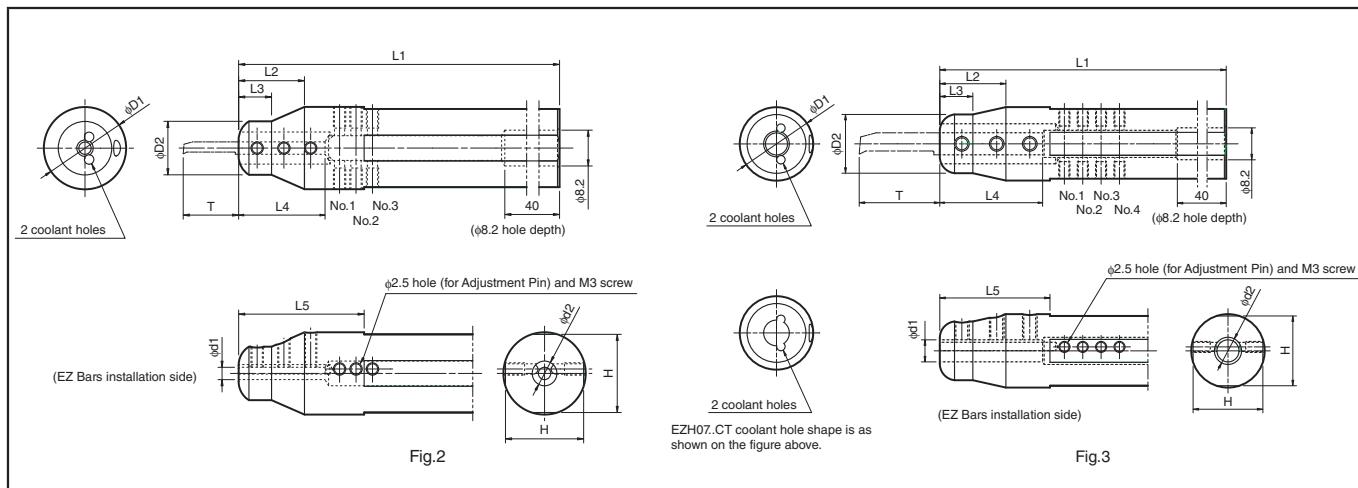
2) If shank dia. is φ3mm, Use clamp screw (HS3x4P)

For adjustment pin 2 pcs  
For liquid leak prevention 4 pcs  
For EZ Bar 3 pcs

● : Std. Item

**EZH-CT sleeve**

Adjustable with Coolant Hole



**Sleeve Dimensions**

Description	Std.	Dimension (mm)										Overhang Length of the Bar*2T (mm) Adjustment Pin Setting Position				Drawing	Applicable EZ Bar Plus / EZ Bar PLUS ● F14~F17 ● F19,F20 ● G43,G68 ● J24
		φd1	φD1	φD2	φd2	H	L1	L2	L3	*1L4	L5	No.1	No.2	No.3	No.4		
		<p>*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.</p>															
<b>EZH 03019CT-120</b>	●	3	19.05	13	6	18	120	16	8	21	30.5	13.5	9.5	5.5	-	Fig.2	EZBR...030... EZVBR035030-... EZGR...030-... EZTR...030-... *3HP%0303-...
<b>03020CT-120</b>	●		20			19	120										
<b>03022CT-135</b>	●		22			21	135										
<b>03025.0CT-135</b>	●		25			24	135										
<b>03025.4CT-120</b>	●		25.4			24.4	120										
<b>EZH 03519CT-120</b>	●	3.5	19.05	13	6	18	120	16	8	21	31.1	15.5	11.5	7.5	-	Fig.2	EZBR...035... EZTR...035-...
<b>03520CT-120</b>	●		20			19	120										
<b>03522CT-135</b>	●		22			21	135										
<b>03525.0CT-135</b>	●		25			24	135										
<b>03525.4CT-120</b>	●		25.4			24.4	120										
<b>EZH 04019CT-120</b>	●	4	19.05	13	6	18	120	16	8	22	32.7	20.5	16.5	12.5	8.5	Fig.3	EZBR...040... EZVBR045040-... EZGR...040-... EZFG...040-... EZTR...040-... *3HP...04-...
<b>04020CT-120</b>	●		20			19	120										
<b>04022CT-135</b>	●		22			21	135										
<b>04025.0CT-135</b>	●		25			24	135										
<b>04025.4CT-120</b>	●		25.4			24.4	120										
<b>EZH 05019CT-120</b>	●	5	19.05	16	6	18	120	18	9	26	30.0	25.5	20.5	15.5	10.5	Fig.3	EZBR...050... EZVBR055050-... EZGR...050-... EZFG...050-... EZTR...050-... *3HP...05-...
<b>05020CT-120</b>	●		20			19	120										
<b>05022CT-135</b>	●		22			21	135										
<b>05025.0CT-135</b>	●		25			24	135										
<b>05025.4CT-120</b>	●		25.4			24.4	120										
<b>EZH 06019CT-120</b>	●	6	19.05	16	7.4	18	120	18	9	28	30.0	30.5 (18.5)	25.5 (13.5)	20.5 (-)	15.5 (-)	Fig.3	EZBR...060... EZVBR065060-... EZGR...060-... EZTR...060-... _060X-...-070EZ *3HP...0606-...
<b>06020CT-120</b>	●		20			19	120										
<b>06022CT-135</b>	●		22			21	135										
<b>06025.0CT-135</b>	●		25			24	135										
<b>06025.4CT-120</b>	●		25.4			24.4	120										
<b>EZH 07019CT-120</b>	●	7	19.05	16	7.4	18	120	18	9	29	30.0	35.5	30.5	25.5	20.5	Fig.3	EZBR...070... EZGR...070-... EZFG...070-... EZTR...070-... *3HP...07-...
<b>07020CT-120</b>	●		20			19	120										
<b>07022CT-135</b>	●		22			21	135										
<b>07025.0CT-135</b>	●		25			24	135										
<b>07025.4CT-120</b>	●		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 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

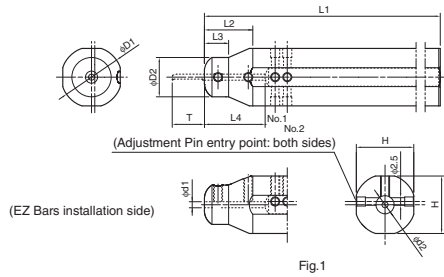


Fig.1

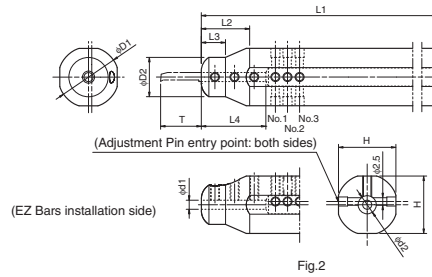


Fig.2

Description	Std.	Dimension (mm)									Overhang Length of the Bar*2T (mm)				Drawing	Applicable EZ Bars ● F14-F17,F20 ● G43,G68 ● J24	
		φd1	φD1	φD2	φd2	H	L1	L2	L3	L4	Adjustment Pin Setting Position						
											No.1	No.2	No.3	No.4			
<b>EZH</b> 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
<b>EZH</b> 02016HP-100	●	2	16	13	6	15	100	16	8	20	8.5	4.5	-	-	Fig.1	EZBR...020... *3 HPB%L0202-...	
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
<b>EZH</b> 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
<b>EZH</b> 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%L0303-...	
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
<b>EZH</b> 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
<b>EZH</b> 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)

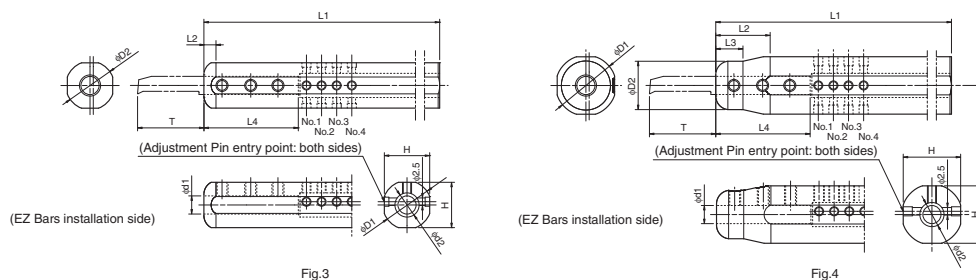
Description	Spare Parts					Applicable EZ Bars EZ Bar PLUS
	Adjustment Pin	Clamp Screw (for adjustment pin)	Wrench	Clamp Screw (for bar)	Wrench	
<b>EZH</b> 017...HP-... 020...HP-... 025...HP-... 030...HP-...	LCP025140	HS3x4P (for both Adjustment Pin and Bar)	LW-1.5 Tightening Torque 1N-m	HS3x4P	LW-1.5 Tightening Torque 1N-m	EZBR...017... EZBR...020... EZBR...025... EZ_R...025-... EZBR...030... EZ_R...030-... EZBR...035... EZ_R...035-... EZBR...040... EZ_R...040-...
<b>EZH</b> 035...HP-... 040...HP-... 045...HP-... 050...HP-... 060...HP-... 070...HP-...	LCP025140	HS3x4P	LW-1.5 Tightening Torque 1N-m	HS4x4P	LW-2 Tightening Torque 2N-m	_045X-...-050EZ EZBR...050... EZ_R...050-... EZBR...060... EZ_R...060-... _060X-...-070EZ EZBR...070... EZ_R...070-...

● : Std. Item



# EZH-HP sleeve

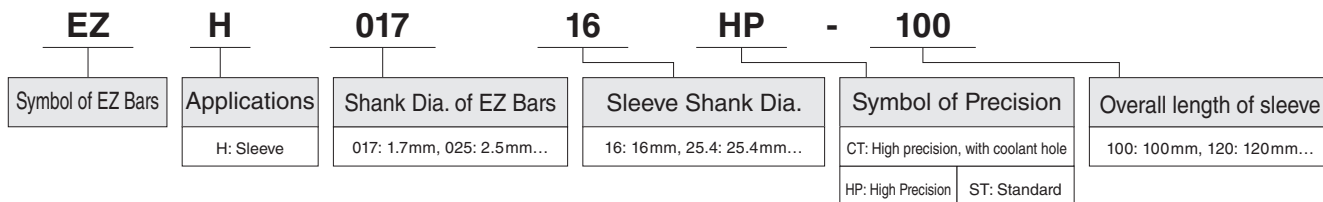
Adjustable



Description	Std.	Dimension (mm)											Drawing	Applicable EZ Bars EZ Bar PLUS ● F14-F17 ● F19,F20 ● G43,G68 ● J24	
		φd1	φD1	φD2	φd2	H	L1	L2	L3	*L4	No.1	No.2			No.3
EZH 04516HP-100 04519HP-120 04520HP-120 04522HP-135 04525.0HP-135 04525.4HP-120	●	4.5	16	6	15	100	4	-	25.3	23	18.5	14	9.5	Fig.3	_045X-...050EZ
	●				18	120									
	●				19	120									
	●				21	135									
	●				24	135									
	●				24.4	120									
EZH 05016HP-100 05019HP-120 05020HP-120 05022HP-135 05025.0HP-135 05025.4HP-120	●	5	16	6	15	100	4	-	29	25.5	20.5	15.5	10.5	Fig.3	EZBR...050... EZVBR055050-... EZGR...050-... EZFRGR...050-... EZTR...050-... * <sup>3</sup> HP...05-...
	●				18	120									
	●				19	120									
	●				21	135									
	●				24	135									
	●				24.4	120									
EZH 06016HP-100 06019HP-120 06020HP-120 06022HP-135 06025.0HP-135 06025.4HP-120	●	6	16	8	15	100	4	-	31	30.5	25.5	20.5	15.5	Fig.3	EZBR...060... EZVBR065060-... EZGR...060-... EZTR...060-... _060X-...070EZ * <sup>3</sup> HP...0606-...
	●				18	120									
	●				19	120									
	●				21	135									
	●				24	135									
	●				24.4	120									
EZH 07016HP-100 07019HP-120 07020HP-120 07022HP-135 07025.0HP-135 07025.4HP-120	●	7	16	8	15	100	4	-	33	35.5	30.5	25.5	20.5	Fig.3	EZBR...070... EZGR...070-... EZFRGR...070-... EZTR...070-... * <sup>3</sup> HP...07-...
	●				18	120									
	●				19	120									
	●				21	135									
	●				24	135									
	●				24.4	120									

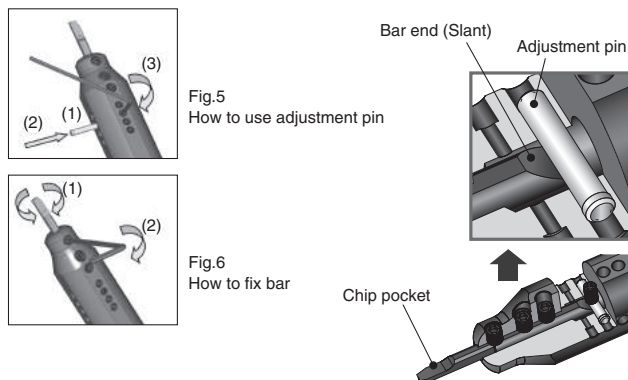
\*1. L4 shows φd1 length.  
 \*2. Dimension T shows Overhang length of the EZB Bar when attached to sleeve. ( ) value indicates the overhang length when installed the steel boring bar (EZ Bar PLUS).  
 \*3. Use them without Adjustment Pins. Overhang length of bar is not adjustable.  
 · Choose sleeves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

## Sleeve Identification System



## How to fix EZ Bars

- 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 pin.
- How to fix bar (Fig.6)
  - (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.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)



● : Std. Item

Fig. 7: Fixed bar



# EZ Bars

## EZH-ST sleeve

Not-adjustable

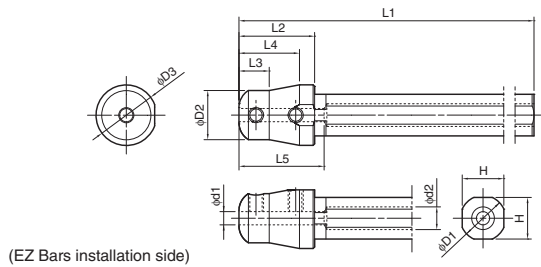


Fig.1

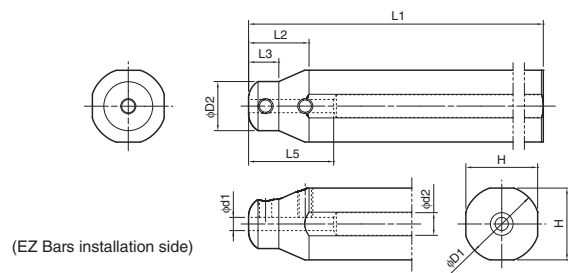


Fig.2

Description	Std.	Dimension (mm)											Drawing	Applicable Bars ● F14-F17,F20,F36 ● G43,G46,G68,G71 ● J24,J28	
		φd1	φD1	φD2	φD3	φd2	H	L1	L2	L3	L4	*L5			
<b>EZH</b> 01712ST-80 01716ST-100 01719ST-120 01720ST-120 01722ST-135 01725.0ST-135 01725.4ST-120	●	1.7	12	13	-	6	11	80	16	8	-	16	16	Fig.1	EZBR...017...
	●		16				15	100							
	●		19.05				18	120							
	●		20				19	120							
	●		22				21	135							
	●		25				24	135							
	●		25.4				24.4	120							
<b>EZH</b> 02012ST-80 02016ST-100 02019ST-120 02020ST-120 02022ST-135 02025.0ST-135 02025.4ST-120	●	2	12	13	-	6	11	80	16	8	-	16	20	Fig.1	EZBR...020... HPB <sup>®</sup> /0202-...
	●		16				15	100							
	●		19.05				18	120							
	●		20				19	120							
	●		22				21	135							
	●		25				24	135							
	●		25.4				24.4	120							
<b>EZH</b> 02512ST-80 02516ST-100 02519ST-120 02520ST-120 02522ST-135 02525.0ST-135 02525.4ST-120	●	2.5	12	13	-	6	11	80	16	8	-	16	20	Fig.1	EZBR...025... EZTR...025-...
	●		16				15	100							
	●		19.05				18	120							
	●		20				19	120							
	●		22				21	135							
	●		25				24	135							
	●		25.4				24.4	120							
<b>EZH</b> 03012ST-80 03016ST-100 03019ST-120 03020ST-120 03022ST-135 03025.0ST-135 03025.4ST-120	●	3	12	13	-	6	11	80	16	8	-	16	21	Fig.1	EZBR...030... EZVBR035030-... EZGR...030-... EZTR...030-... HPB <sup>®</sup> /0303-...
	●		16				15	100							
	●		19.05				18	120							
	●		20				19	120							
	●		22				21	135							
	●		25				24	135							
	●		25.4				24.4	120							
<b>EZH</b> 03512ST-80 03516ST-100 03519ST-120 03520ST-120 03522ST-135 03525.0ST-135 03525.4ST-120	●	3.5	12	13	-	6	11	80	16	8	-	16	22	Fig.1	EZBR...035... EZTR...035-...
	●		16				15	100							
	●		19.05				18	120							
	●		20				19	120							
	●		22				21	135							
	●		25				24	135							
	●		25.4				24.4	120							
<b>EZH</b> 04012ST-80 04016ST-100 04019ST-120 04020ST-120 04022ST-135 04025.0ST-135 04025.4ST-120	●	4	12	13	-	6	11	80	16	8	-	16	24	Fig.1	EZBR...040... EZVBR045040-... EZGR...040-... EZFG...040-... EZTR...040-... HP...04-...
	●		16				15	100							
	●		19.05				18	120							
	●		20				19	120							
	●		22				21	135							
	●		25				24	135							
	●		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

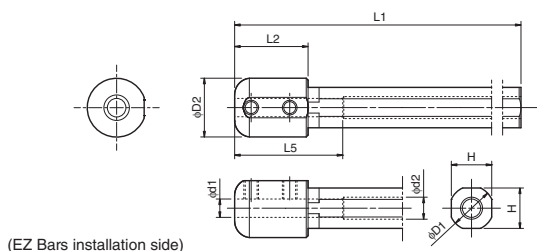


Fig.3

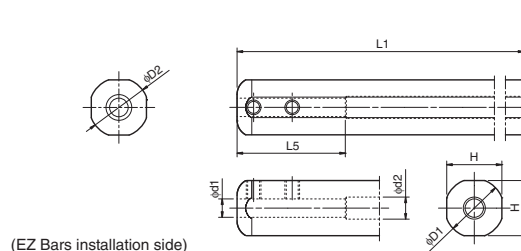


Fig.4

Description	Std.	Dimension (mm)										Drawing	Applicable Bars ● F14-F17,F19,F20,F36 ● G43,G46,G68,G71 ● J24,J28	
		φd1	φD1	φD2	φD3	φd2	H	L1	L2	L3	L4			*L5
<b>EZH</b> 05012ST-80	●	5	12	16	-	6	11	80	20	-	-	29	Fig.3	EZBR...050... EZVBR055050-... EZGR...050-... EZFRGR...050-... EZTR...050-... HP...05-...
05016ST-100	●						15	100	-	-	Fig.4			
05019ST-120	●						18	120	-	-	Fig.2			
05020ST-120	●						19	120	-	-				
05022ST-135	●						21	135	18	9				
05025.0ST-135	●						24	135	-	-				
05025.4ST-120	●						24.4	120	-	-				
<b>EZH</b> 06012ST-80	●	6	12	16	-	8	11	80	20	-	-	31	Fig.3	EZBR...060... EZVBR065060-... EZGR...060-... EZTR...060-... _060X-...-070EZ HP...0606-...
06016ST-100	●						15	100	-	-	Fig.4			
06019ST-120	●						18	120	-	-	Fig.2			
06020ST-120	●						19	120	-	-				
06022ST-135	●						21	135	18	9				
06025.0ST-135	●						24	135	-	-				
06025.4ST-120	●						24.4	120	-	-				
<b>EZH</b> 07012ST-80	●	7	12	16	-	8	11	80	20	-	-	33	Fig.3	EZBR...070... EZGR...070-... EZFRGR...070-... EZTR...070-... HP...07-...
07016ST-100	●						15	100	-	-	Fig.4			
07019ST-120	●						18	120	-	-	Fig.2			
07020ST-120	●						19	120	-	-				
07022ST-135	●						21	135	18	9				
07025.0ST-135	●						24	135	-	-				
07025.4ST-120	●						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)**

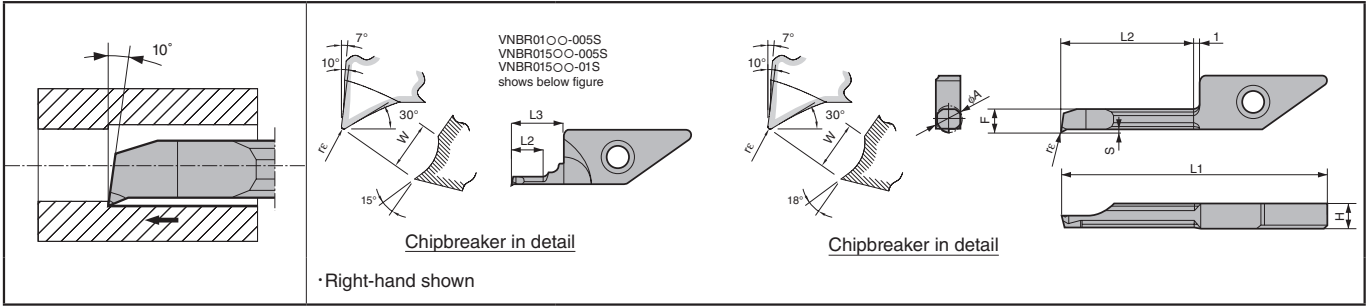
Description	Spare Parts		Applicable EZ Bars		EZ Bar PLUS	2-Edge Tip-Bars
	Clamp Screw	Wrench	EZB-HP EZB-HP-LT EZB-ST EZB-NB	EZG EZFG EZT EZVB	S-SCLC C-SCLC	HP
<b>EZH</b> 017...ST-.. 020...ST-.. 025...ST-.. 030...ST-..	HS3×4P	LW-1.5 Tightening Torque 1N·m	EZBR...017...	-	-	-
EZBR...020...			-	-	HPB%/0202-...	
EZBR...025...			EZTR...025-...	-	-	
EZBR...030...			EZ_R...030-...	-	HPB%/0303-...	
<b>EZH</b> 035...ST-.. 040...ST-.. 050...ST-.. 060...ST-.. 070...ST-..	HS4×4P	LW-2 Tightening Torque 2N·m	EZBR...035...	EZTR...035-...	-	-
EZBR...040...			EZ_R...040-...	-	HP...04-...	
EZBR...050...			EZ_R...050-...	-	HP...05-...	
EZBR...060...			EZ_R...060-...	_060X-...-070EZ	HP...0606-...	
EZBR...070...			EZ_R...070-...	-	HP...07-...	

● : Std. Item

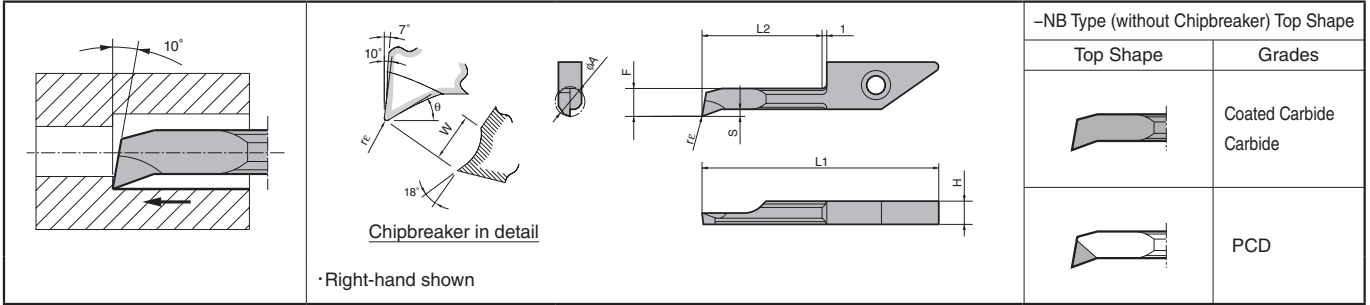


# System Tip-Bars

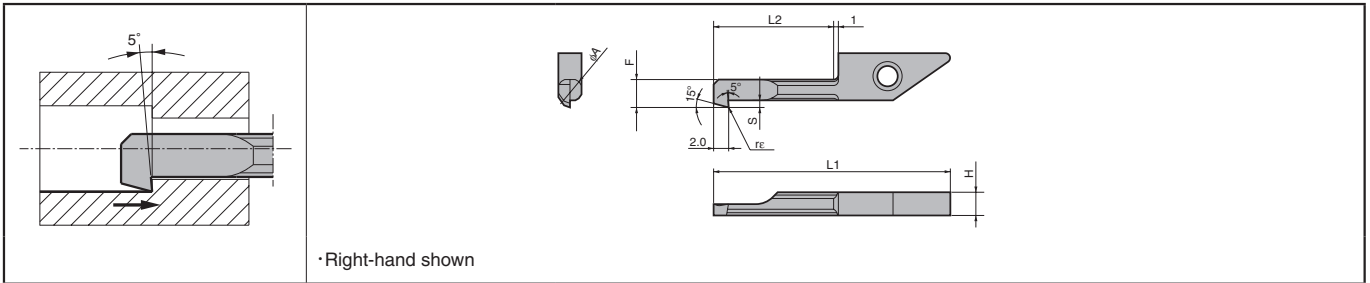
## VNB-S (Boring) [Corner-R( $r_{\epsilon}$ ) :Minus tolerance]



## VNB (Boring)



## VNBT (Back Boring)



## Insert Dimensions (VNB-S)

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

Recommended Cutting Conditions **F92**

● : Std. Item

● Insert Dimensions (VNB / VNB-NB / VNBTR)

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

Recommended Cutting Conditions F92



# System Tip-Bars

## SVN-N (without side stopper)

## SVNS-N (without side stopper / without setscrew)

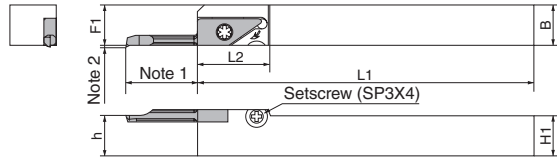


Fig.1 (SVN-N)

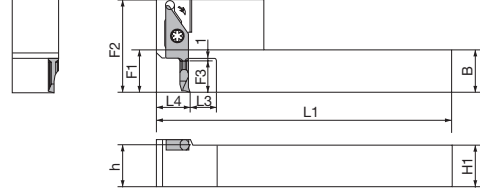


Fig.2 (SVNS-N)

Right-hand shown

Right-hand Insert for Right-hand Toolholder.

Note 1 & Note 2: For insert dimensions, ref. to page F28-F29

### Toolholder Dimensions

Description	Std.	Dimension (mm)										Drawing	Spare Parts			Applicable Inserts
		H1=h	B	L1	L2	L3	L4	F1	F2	F3	Clamp Screw		Wrench	Setscrew		
<b>SVNR</b> 1010H-12N	●	10	10	100					10			Fig.1	SB-3080TR	FT-10	SP3X4	VNBR...-... VNBTR...-... VNGR...-.. VNFR...-.. VNTR...-..
1212K-12N	●	12	12					12								
1616K-12N	●	16	16	125	22	-	-	16	-	-						
2020K-12N	●	20	20					20								
2525M-12N	●	25	25	150				25								
<b>SVNSR</b> 1010K-12-06N	●	10	10	125		10	12	10	29	6	Fig.2	SB-3080TR	LTW-10S	-	(VNBR..06-...)* (VNBR..11-...)* (VNBTR..11-...)* (VNGR....-11)* (VNTR...-11)* (VNBR..06-...)* (VNBR..11-...)* (VNBTR..11-...)* (VNGR....-11)* (VNTR...-11)* (VNBR..20-...)* (VNBTR..20-...)* (VNGR....-20)* (VNBR..06-...)* (VNBR..11-...)* (VNBTR..11-...)* (VNGR....-11)* (VNTR...-11)* (VNBR..20-...)* (VNBTR..20-...)* (VNGR....-20)*	
1010K-12-11N	●	10	10	125		10	12	10	33	11						
1212M-12-06N	●	12	12	150		10	12	12	29	6						
1212M-12-11N	●	12	12	150		10	12	12	33	11						
1212M-12-20N	●	12	12	150	45	10	13	12	42	20						
1616M-12-06N	●	16	16	150		16	12	16	29	6						
1616M-12-11N	●	16	16	150		16	12	16	33	11						
1616M-12-20N	●	16	16	150		16	13	16	42	20						

1. SVN-N / S...SVN-N / S...SVN-SN (without side stopper) retains high index accuracy by easy 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.

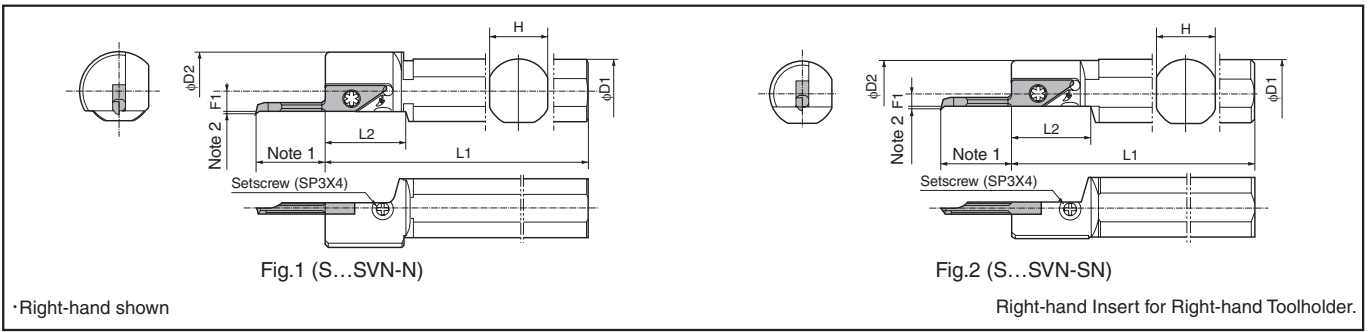
\* All system Tip-Bars Inserts are used with a SVNSR-N Toolholders. However, when setting the cutting edge at the face level of the toolholder as shown in Fig. 2, use the insert shown in ( ). In these cases, the F3 dimension of the toolholders corresponds to the L2 dimension of the insert.

### Spare Parts (Optional)

Screw side stopper	Wrench
HS3x4	LW-1.5

● : Std. Item

**S...SVN-N Round Shank (Straight, without side stopper)**    **S...SVN-SN Round Shank (Straight, without side stopper)**



Note 1 & Note 2: For insert dimensions, ref. to page **F28-F29**

**Toolholder Dimensions**

Description	Std.	Dimension (mm)						Drawing	Spare Parts					Applicable Inserts
		φD1	φD2	H	L1	L2	F1		Clamp Screw	Wrench	Screw side stopper	Setscrew	Wrench	
<b>S12F-SVNR12N</b>	●	12	20	11	80	23	4	Fig.1	SB-3080TR	FT-10	-	SP3X4	-	<b>FN28-F29</b> <b>G45</b> <b>G70</b> <b>J30</b>  <b>VNBR.....-</b> <b>VNBTR.....-</b> <b>VNGR.....-</b> <b>VNFR.....-</b> <b>VNTR.....-</b>
<b>S14G-SVNR12N</b>	●	14	20	13	90									
<b>S16H-SVNR12N</b>	●	16	24	15	100									
<b>S19H-SVNR12N</b>	●	19.05	24	17	100									
<b>S19N-SVNR12N</b>	●			160										
<b>S20H-SVNR12N</b>	●	20	24	18	100	24	6							
<b>S25H-SVNR12N</b>	●	25.4	30	23	100									
<b>S25Q-SVNR12N</b>	●			180										
<b>S19H-SVNR12SN</b>	●	19.05	18.5	17	100	23	4	Fig.2	SB-3080TR	FT-10	-	SP3X4	-	
<b>S20H-SVNR12SN</b>	●	20	19.5	18										
<b>S22K-SVNR12SN</b>	●	22	21.5	20	125									
<b>S25.0G-SVNR12SN</b>	●	25	24.5	23	90									

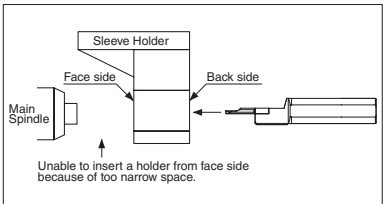


**Selection of System Tip-Bars**

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?

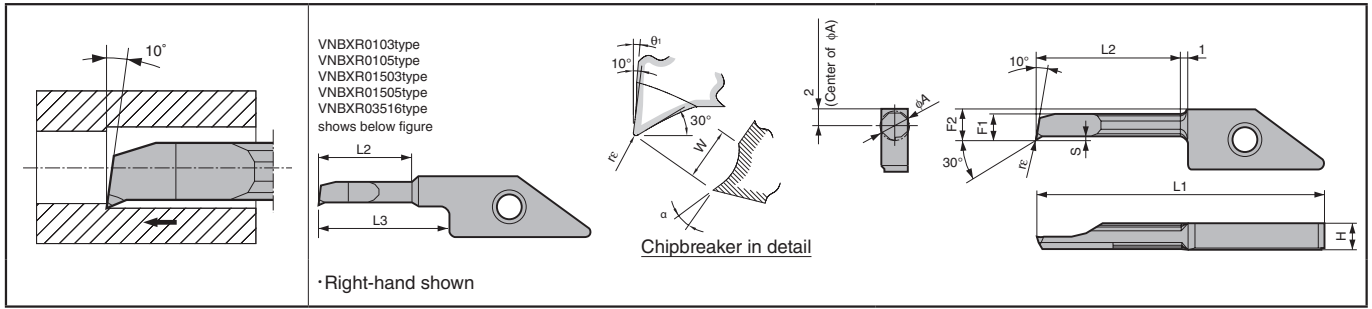
**A:** The straight type is used when it cannot be inserted from the face side of the sleeve holder and can be inserted only from the back side due to space limitation (Refer to Fig. below). On the other hand, the standard type should be installed when it can be inserted from the face side, and the head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



● : Std. Item

# System Tip-Bars

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



### Insert Dimensions (VNBX-S)

Description	Min. Bore Dia.	Dimension (mm)											Grades		
		$\phi A$	H	L1	L2	L3	F1	F2	S	$r\epsilon$	W	$\theta_1$	$\alpha$	PR930	
VNBXR 0103-005S 0105-005S 01503-005S 01505-005S 0206-005S 0311-005S 03511-005S 03516-005S 0411-005S 0420-005S	1.0	3.9	26.5	3	7	0.85	2.95	0.2	0.05	0.7	7°	15°	●		
				5									●		
				3									●		
	5		●												
	6		●												
	1.5		30.8	11	-	2.6	3.5	0.4		●					
	2.0	30.8	11	-	3.1	3.75	0.45	●							
	3.0	30.8	11	-	3.5	4	0.5	●							
	4.0	39.8	20	-	3.5	4	0.5	●							
VNBXR 01503-01S 01505-01S 0206-01S 0311-01S 03511-01S 03516-01S 0411-01S 0420-01S	1.5	3.9	26.5	3	7	1.3	2.95	0.2	0.1	0.7	7°	15°	●		
				5									●		
				6									●		
	2.0		30.8	11	-	2.6	3.5	0.4		●					
	3.0		30.8	11	-	3.1	3.75	0.45		●					
	3.5		30.8	11	-	3.5	4	0.5		●					
	4.0		39.8	20	-	3.5	4	0.5		●					
VNBXR 0411-02S 0420-02S	4.0	3.9	30.8	11	-	3.5	4	0.5	0.2	0.8	8°	18°	●		
			39.8	20	-	3.5	4	0.5	0.2	0.8	8°	18°	●		

Recommended Cutting Conditions **F92**

### Attachment toolholder for VNBX-S System Tip-Bars

- There are three different types of attachment toolholder for the VNBX-S System Tip-Bars (Ref. to Page F33).
  - SVNS-XN Type (without Side Stopper)
  - S...SVN-XN Type (without Side Stopper)
  - S...SVN-SXN Type (without Side Stopper)
- Above toolholders assure high index accuracy by easy restraint.
- 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)

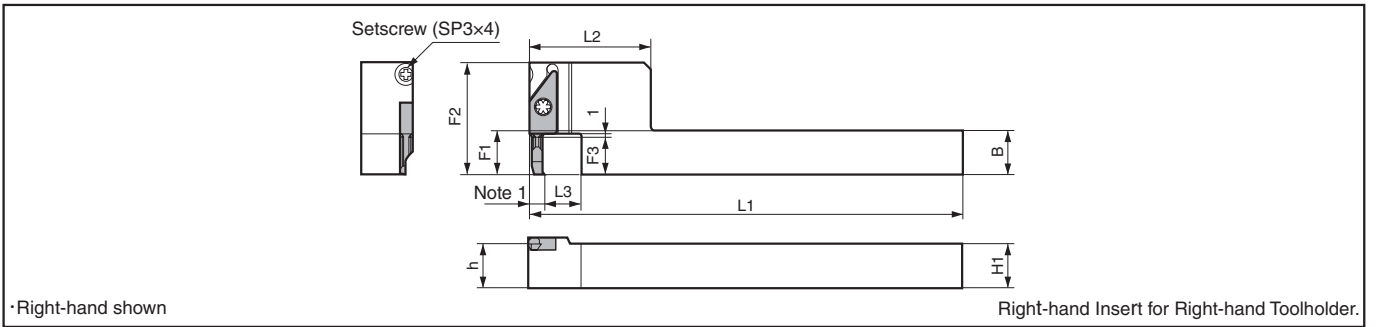
Screw (Side Stopper)	Wrench
HS3x4	LW-1.5

System Tip-Bars are sold in 5 piece boxes

● : Std. Item



## SVNS-XN (Square Shank: L-shape)



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

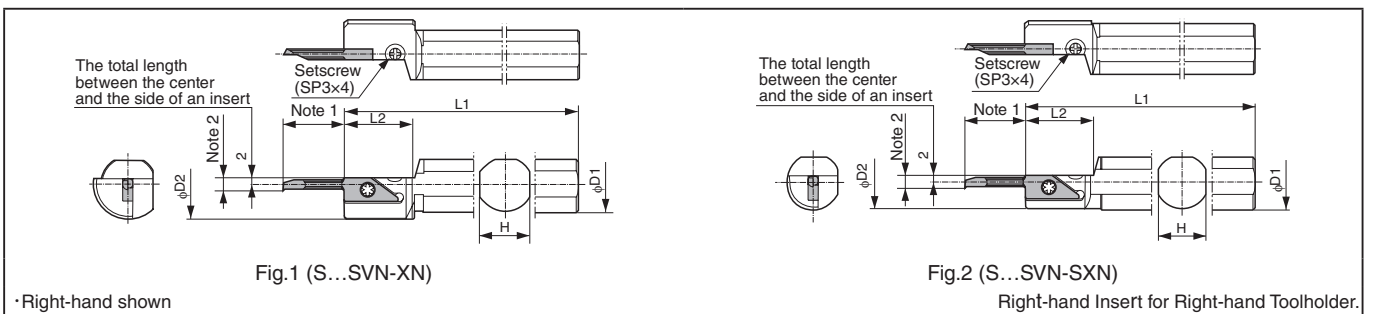
### Toolholder Dimensions (L-shape square shank applicable to gang tool post)

Description	Std.	Dimension (mm)									Spare Parts			*Applicable Inserts F32
		H1-h	B	L1	L2	L3	F1	F2	F3	Clamp Screw	Wrench	Setscrew		
SVNSR 1010K-12-06XN	●	10	10	125	45	10	29	6	SB-3080TR	LTW-10S	SP3X4	(VNBXR02..)		
1010K-12-11XN	●						33	11				(VNBXR..11..)		
1212M-12-06XN	●	12	12	150	16	16	29	6	SB-3080TR	LTW-10S	SP3X4	(VNBXR02..)		
1212M-12-11XN	●						33	11				(VNBXR..11..)		
1212M-12-20XN	●	16	16	150	16	16	42	20	SB-3080TR	LTW-10S	SP3X4	(VNBXR0420..)		
1616M-12-06XN	●						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)

## S...SVN-SXN (Round Shank: Straight type)



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 F32
		φD1	φD2	H	L1	L2	Clamp Screw		Wrench	Setscrew		
S12F -SVNR12XN	●	12	20	11	80	23	Fig.1	SB-3080TR	FT-10	SP3X4	VNBXR...	
S14G -SVNR12XN	●	14		13	90							
S16H -SVNR12XN	●	16	15	100								
S19H -SVNR12XN	●	19.05	17	160								
S19N -SVNR12XN	●	19.05	17	160								
S20H -SVNR12XN	●	20	18	100								
S25H -SVNR12XN	●	25.4	18	100								
S25Q -SVNR12XN	●	25.4	23	180								
S19H -SVNR12SXN	●	19.05	18.5	17	100	Fig.2	SB-3080TR	FT-10	SP3X4	VNBXR...		
S20H -SVNR12SXN	●	20	19.5	18								
S22K -SVNR12SXN	●	22	21.5	20	125							
S25.0G -SVNR12SXN	●	25	24.5	23	90							

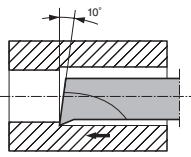
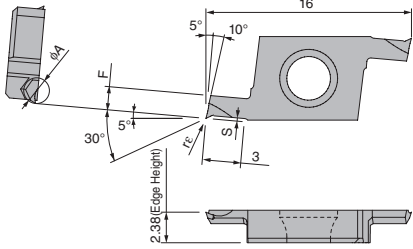
\*Reminder of applicable insert.

● : Std. Item



# Twin-Bars


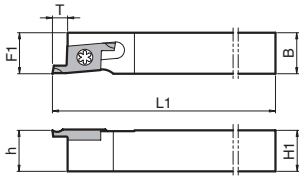
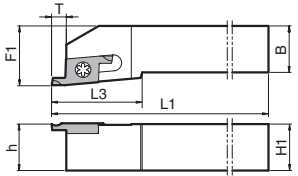
## TWB (Micro Boring: Horizontal type) [Corner-R(re) Tolerance: +0/-0.02mm, +0/-0.03mm]

		Description	Min. Bore Dia.	Dimension (mm)			Grades	
			$\phi A$	F	S	$r\epsilon$	PR1025	PVD Coated Carbide
		TWBR 01003-005	1.0	0.85	0.2	0.05	●	
		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	●	
		02003-010	2.0	1.75	0.25		●	
		02503-010	2.5	2.10	0.3		●	
		03003-010	3.0	2.40	0.4		●	

·Right-hand shown

## STW (Square Shank for Horizontal type insert)

(For Left-hand toolholders for grooving, please ref. to page G72.)

		
	Fig.1	Fig.2

·Right-hand shown


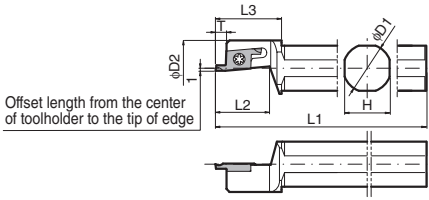
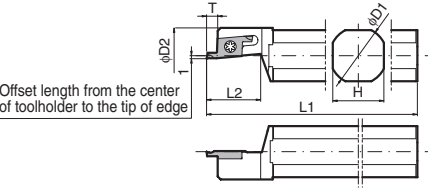
Right-hand Insert for Right-hand Toolholder, (Left-hand Insert for Left-hand Toolholder.)

### Toolholder Dimensions

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

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

(For Left-hand toolholders for grooving, please ref. to page G72.)

		
	Fig.1	Fig.2

·Right-hand shown

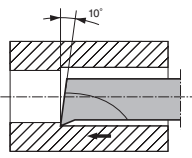
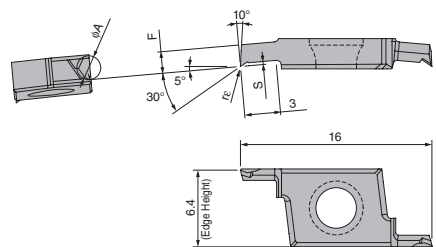
Right-hand Insert for Right-hand Toolholder, (Left-hand Insert for Left-hand Toolholder.)

### Toolholder Dimensions


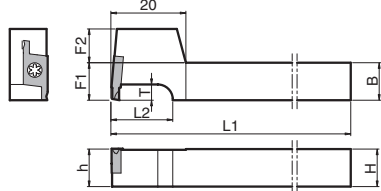
Description	Std.	Dimension (mm)							Drawing	Spare Parts		Applicable Inserts
		$\phi D1$	$\phi D2$	H	L1	L2	L3	T		Clamp Screw	Wrench	
S12F- STWR15	●	12	20	11	80	18	22	3	Fig.1	SB-3080TR	LTW-10S	TWBR○○○○○-○○○
S14H- STWR15	●	14		13	100							
S15F- STWR15	●	15.875		15	85							
S16F- STWR15	●	16		17	90							
S19G- STWR15	●	19.05	18.5	120	22	3	Fig.2	SB-3080TR	LTW-10S	TWBR○○○○○-○○○		
S19K- STWR15	●	19.05	18	120								
S20G- STWR15	●	20	19.5	120								
S20K- STWR15	●	20	18	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

## TWBT (Micro Boring: Vertical type) [Corner-R( $r\epsilon$ ) Tolerance: +0/-0.02mm, +0/-0.03mm]

	 <p>·Right-hand shown</p>	Description	Min. Bore Dia.	Dimension (mm)			Grades
			$\phi A$	F	S	$r\epsilon$	PVD Coated Carbide
		<b>TWBTR 01003-005</b>	1.0	0.85	0.2	0.05	●
		<b>01503-005</b>	1.5	1.30	0.2		●
		<b>02003-005</b>	2.0	1.75	0.25		●
		<b>02503-005</b>	2.5	2.10	0.3		●
		<b>03003-005</b>	3.0	2.30	0.4	0.1	●
		<b>TWBTR 01503-010</b>	1.5	1.30	0.2		●
		<b>02003-010</b>	2.0	1.75	0.25		●
		<b>02503-010</b>	2.5	2.10	0.3		●
		<b>03003-010</b>	3.0	2.30	0.4	●	●

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

	 <p>·Right-hand shown</p>
---	---

### Toolholder Dimensions

Description	Std.	Dimension (mm)								Drawing	Spare Parts		Applicable Inserts
		H1=h	B	L1	L2	L3	F1	F2	T		Clamp Screw	Wrench	
<b>STWSR 1010JX-15T</b>	●	10	10	120	16	-	10	9	3	-	SB-3080TR	LTW-10S	TWBTR○○○○○-○○○ TWFGTR○○○
<b>1212JX-15T</b>	●	12	12				12	7					
<b>1616JX-15T</b>	●	16	16				20	3					
<b>STWSR 1010F-15T</b>	●	10	10	85	16	-	10	9	-	-	-	-	-
<b>1212F-15T</b>	●	12	12				12	7					

### Recommended Cutting Conditions (TWB / TWBT)

Workpiece Material	Recommended Insert Grades (Cutting Speed Vc: m/min)	TWBR01003 type TWBR01503 type TWBTR01003 type TWBTR01503 type		TWBR02003 type TWBR02503 type TWBR03003 type TWBTR02003 type TWBTR02503 type TWBTR03003 type		Remarks
	PVD Coated Carbide	ap(mm), f(mm/rev)				
	<b>PR1025</b>	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

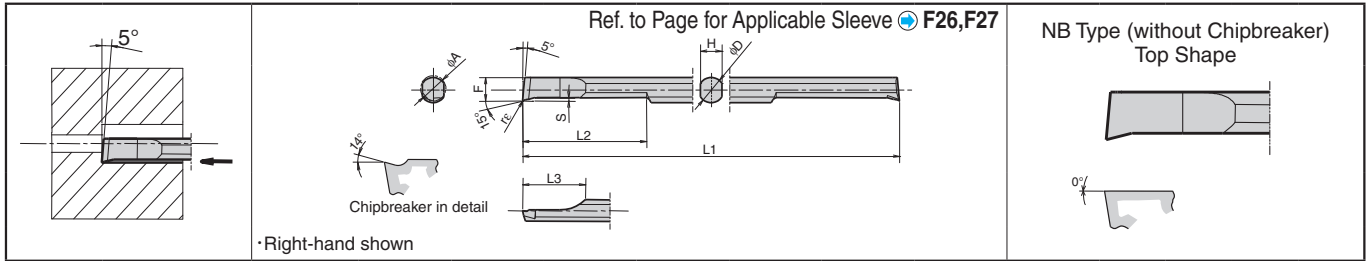
Twin-Bars are sold in 5 piece boxes

F35

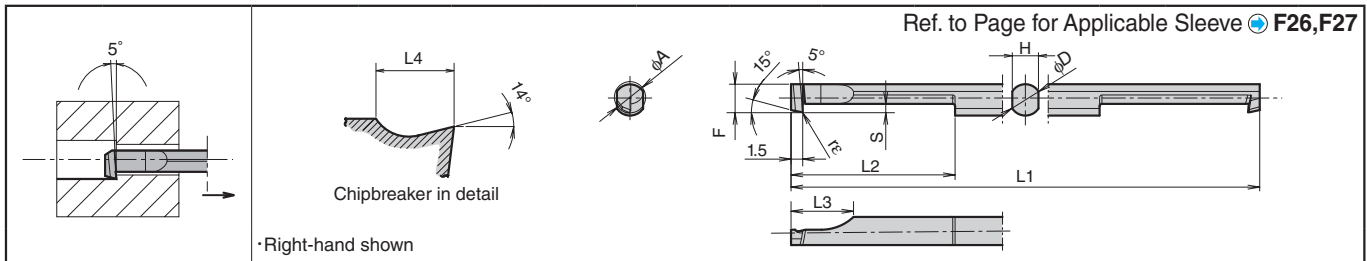


# 2-Edge Tip-Bars HPB / HPBT

## HPB (Boring)



## HPBT (Back Boring)



### Tip-Bars Dimensions

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

### Description Table for Tip-Bars and Applicable Sleeves

Tip-Bars Description	Applicable Sleeves F26, F27
<b>HPB<sup>R/L</sup></b>	<b>EZH</b>
<b>0202-...</b>	<b>02...</b>
<b>0303-...</b>	<b>03...</b>
<b>0404-...</b>	<b>04...</b>
<b>0505-...</b>	<b>05...</b>
<b>0606-...</b>	<b>06...</b>
<b>0707-...</b>	<b>07...</b>
<b>HPBT<sup>R/L</sup></b>	<b>EZH</b>
<b>0404-...</b>	<b>04...</b>
<b>0505-...</b>	<b>05...</b>

### 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. □ : Deleted from the next catalogue

Tip-Bars are sold in 1 piece boxes

# Tip-Bars

## PSB-S (Boring) <Adjustable Overhang Length>

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

• Right-hand shown

Ref. to Page for Applicable Sleeve [F84](#)

PSB<sup>3/4</sup>L 0202 type  
PSB<sup>3/4</sup>L 0303 type  
shows left figure

-NBS Type (without Chipbreaker) Top Shape	
Top Shape	Grades
	Coated Carbide Carbide
	CBN PCD

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

This insert will be switched to **HPBT** type (2-Edge, ref. to page [F36](#))

• Right-hand shown

Ref. to Page for Applicable Sleeve [F84](#)

### Tip-Bars Dimensions

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

### Recommended Cutting Conditions

Workpiece Material	Recommended Insert Grades (Cutting Speed Vc: m/min)						PSB02 type	PSB03 type	PSB04 PSBT04 type	PSB05 PSB06 PSB07 type PSBT05	Remarks				
	PVD Coated Carbide		Carbide	CBN		PCD									
	PR915	PR930		KBN510 KBN525	KPD001 KPD010										
	ap(mm), f(mm/rev)														
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	~.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

○ : Check Availability  
□ : Deleted from the next catalogue

Tip-Bars are sold in 1 piece boxes

F



Boring

# Dynamic Bar [CC □ □ Insert]

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

Max. Overhang Length L/D~5.5

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

Fig.1 Fig.2

·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(N) Carbide Shank Bar (Boring / Internal Facing)

Max. Overhang Length L/D~7

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

Fig.4 Fig.5 Fig.6


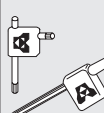
·Right-hand shown Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

### ● Applicable Inserts

Applications	Minute ap	Finishing	Finishing	Finishing	Finishing-Medium	Finishing-Medium	Medium	Finishing-Medium	Finishing	Finishing / Precision
Ref. to Page	B49	B49	B50	B50	B50	B50	B50,B51	B49,B50	B52	B51
Insert	CF	GF	WP(Wiper)	PP	GK	HQ	Standard	GQ	%/F	%/FSF
Toolholder Description										
....SCLC <sup>R/L</sup> 03....	CCGT0301..	-	-	-	-	-	-	-	CCGT0301..	CCET0301..
....SCLC <sup>R/L</sup> 04....	CCGT0401..	-	-	-	-	-	-	-	CCGT0401..	CCET0401..
....SCLC <sup>R/L</sup> 06....	-	CCGT0602..	CCMT0602..	CCMT0602..	CCMT0602..	CCMT0602..	CCGT0602..	CCGT0602..	-	-
....SCLC <sup>R/L</sup> 09....	-	CCGT09T3..	CCMT09T3..	CCMT09T3..	CCMT09T3..	CCMT09T3..	CCGT09T3..	CCGT09T3..	-	-
Applications	Low Feed	Low Feed / Precision	Stainless Steel	Cast Iron	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Hard Materials		
Ref. to Page	B53,B54	B53	B51	B55	B55	B55	C24	C14		
Insert	(E/F) <sup>R/L</sup> -U	F <sup>R/L</sup> -USF	MQ	Without chipbreaker	AH	A3	PCD	CBN		
Toolholder Description										
....SCLC <sup>R/L</sup> 03....	-	-	-	-	-	-	-	CCMW0301..		
....SCLC <sup>R/L</sup> 04....	-	-	-	-	-	-	CCGW0401..	CCMW0401..		
....SCLC <sup>R/L</sup> 06....	CCGT0602..	CCET0602..	-	CCGW0602..	-	-	CCMT0602..	CCMW0602..		
....SCLC <sup>R/L</sup> 09....	CCGT09T3..	CCET09T3..	CCMT09T3..	CCGW09T3..	CCGT09T3..	CCGT09T3..	CCMT09T3..	CCMW09T3..		

Recommended Cutting Conditions ● F93~F94  
Applicable Sleeves ● F83~F86

● Toolholder Dimensions

Description	Std.		Min. Bore Dia.	Dimension (mm)								θ	Std. Corner-R(°)	Coolant Hole	Drawing	Spare Parts				
	R	L	φA	φD	H	L1	L2	L3	L4	F	Clamp Screw					Wrench				
																				
Excellent Bar	S10H-SCLC <sup>φ</sup> <sub>L</sub> 03-05AE	●	●	5	10	9	100	24	-	11	2.5	15°	0.2	No	Fig.1	SB-1635TR	FT-6			
	S10H-SCLC <sup>φ</sup> <sub>L</sub> 03-06AE	●	●	6				28		13	3	13°								
	S10H-SCLC <sup>φ</sup> <sub>L</sub> 04-07AE	●	●	7				32		15	3.5	11°								
	S10H-SCLC <sup>φ</sup> <sub>L</sub> 04-08AE	●	●	8				37			4	11°								
	A08X-SCLC <sup>φ</sup> <sub>L</sub> 06-10AE	●	●	10	8	7	120	16	20	17	5	14°	0.4	Yes	Fig.2	SB-2545TR	FT-8			
	A10L-SCLC <sup>φ</sup> <sub>L</sub> 06-12AE	●	●	12	10	9	140	20	25	21	6	12°								
	A12M-SCLC <sup>φ</sup> <sub>L</sub> 06-14AE	●	●	14	12	11	150	24	30	25	7	10°								
	A16Q-SCLC <sup>φ</sup> <sub>L</sub> 09-18AE	●	●	18	16	15	180	30	34	31	9	10°								
	A20R-SCLC <sup>φ</sup> <sub>L</sub> 09-22AE	●	●	22	20	19	200	36	49	37	11	8°								
A25S-SCLC <sup>φ</sup> <sub>L</sub> 09-27AE	●	●	27	25	24	250	46	55	46	13.5	6°									
S08X-SCLC <sup>φ</sup> <sub>L</sub> 06-10A	●	●	10	8	7	120	16	20	17	5	14°	0.4				No		Fig.3	SB-2545TR	FT-8
S10L-SCLC <sup>φ</sup> <sub>L</sub> 06-12A	●	●	12	10	9	140	20	25	21	6	12°									
S12M-SCLC <sup>φ</sup> <sub>L</sub> 06-14A	●	●	14	12	11	150	24	30	25	7	10°									
S16Q-SCLC <sup>φ</sup> <sub>L</sub> 09-18A	●	●	18	16	15	180	30	34	31	9	10°									
S20R-SCLC <sup>φ</sup> <sub>L</sub> 09-22A	●	●	22	20	19	200	36	49	37	11	8°									
S25S-SCLC <sup>φ</sup> <sub>L</sub> 09-27A	●	●	27	25	24	250	46	55	46	13.5	6°									
Steel	C04G-SCLC <sup>φ</sup> <sub>L</sub> 03-05AN	●	●	5	4	3.8	90	7	-	7	2.5	15°	0.2	No	Fig.4	SB-1635TR	FT-6			
	C05H-SCLC <sup>φ</sup> <sub>L</sub> 03-06AN	●	●	6	5	4.4	100	9		10	3	13°								
	C06J-SCLC <sup>φ</sup> <sub>L</sub> 04-07AN	●	●	7	6	5.4	110	10		11	3.5	11°								
	C07K-SCLC <sup>φ</sup> <sub>L</sub> 04-08AN	●	●	8	7	6.4	125	11		12	4	11°								
	C04G-SCLC <sup>φ</sup> <sub>L</sub> 03-05A	□	□	5	4	3.8	90	9	-	8	2.5	15°	0.2	No	Fig.4	SB-1635TR		FT-6		
	C05H-SCLC <sup>φ</sup> <sub>L</sub> 03-06A	□	□	6	5	4.4	100	11		11	3	13°								
	C06J-SCLC <sup>φ</sup> <sub>L</sub> 04-07A	□	□	7	6	5.4	110	12		12	3.5	11°								
	C07K-SCLC <sup>φ</sup> <sub>L</sub> 04-08A	□	□	8	7	6.4	125	13		13	4	11°								
Carbide	E08L-SCLC <sup>φ</sup> <sub>L</sub> 06-10AN	●	●	10	8	7	140	14	15	15	5	14°	0.4	Yes	Fig.6	SB-2545TR	FT-8			
	E08L-SCLCR06-10AN2/3	●					90													
	E10N-SCLC <sup>φ</sup> <sub>L</sub> 06-12AN	●	●	12	10	9	160	18	19	19	6	12°	0.4	Yes	Fig.6	SB-2545TR				
	E10N-SCLCR06-12AN2/3	●					105													
	E08L-SCLC <sup>φ</sup> <sub>L</sub> 06-10A	□	□	10	8	7	140	16	15	15	5	14°	0.4	Yes	Fig.6	SB-2545TR				
	E08L-SCLCR06-10A-2/3	□					90													
	E10N-SCLC <sup>φ</sup> <sub>L</sub> 06-12A	□	□	12	10	9	160	20	19	19	6	12°	0.4	Yes	Fig.6	SB-2545TR				
	E10N-SCLCR06-12A-2/3	□					105													
	E12Q-SCLC <sup>φ</sup> <sub>L</sub> 06-14A	●	●	14	12	11	180	23	22	22	7	10°	0.4	Yes	Fig.6	SB-4065TR				
	E12Q-SCLCR06-14A-2/3	●					120													
	E16X-SCLC <sup>φ</sup> <sub>L</sub> 09-18A	●	●	18	16	15	220	28	27	27	9	8°	0.4	Yes	Fig.6	SB-4065TR				
	E16X-SCLCR09-18A-2/3	●					145													
	E20S-SCLC <sup>φ</sup> <sub>L</sub> 09-22A	●	●	22	20	19	250	32	31	31	11	8°	0.4	Yes	Fig.6	SB-4065TR				
	E20S-SCLCR09-22A-2/3	●					165													
E25T-SCLC <sup>φ</sup> <sub>L</sub> 09-27A	●	●	27	25	24	300	38	37	37	13.5	6°	0.4	Yes	Fig.6	SB-4065TR					
E25T-SCLCR09-27A-2/3	●					200														



● : Std. Item  
 □ : Deleted from the next catalogue

# Dynamic Bar [CP □ □ Insert]

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

Max. Overhang Length L/D≈5.5

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

Fig.1

·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(N) Carbide Shank Bar (Boring / Internal Facing)

Max. Overhang Length L/D≈7

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

Fig.3

·Right-hand shown

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

F

Boring

Solid







Positive

AD Bars

Negative













● Toolholder Dimensions

Description	Std.		Min. Bore Dia.	Dimension (mm)								θ	Std. Corner-R(°)	Coolant Hole	Drawing	Spare Parts	
	R	L		φA	φD	H	L1	L2	L3	L4	F					Clamp Screw	Wrench
Excellent Bar	●	●	12	10	9	140	20	25	20	6	5°	0.4	Yes	Fig.1			
	●	●	14	12	11	150	24	29	24	7	4°						
	●	●	16					31	8								
	●	●	18	16	15	180	30	37	30	9	3.5°						
	●	●	22	20	19	200	36	47	37	11	2°						
	●	●	27	25	24	250	46	55	46	13.5	0°						
Steel	●	●	12	10	9	140	20	25	20	6	5°	0.4	No	Fig.2			
	●	●	14	12	11	150	24	29	24	7	4°						
	●	●	16					31	8								
	●	●	18	16	15	180	30	37	30	9	3.5°						
	●	●	22	20	19	200	36	47	37	11	2°						
	●	●	27	25	24	250	46	55	46	13.5	0°						
Carbide	●	●	12	10	9	160	19	19	6	5°	0.4	Yes	Fig.3				
	●					105										18	
	●					80											
	□	□				160										20	
	□					105											
	□					80											
	●	●	14	12	11	180	23	22	22	7						4°	
	●					120											
	●					90											
	●	●	16	12	11	180	23	22	22	8						5°	
	●					120											
	●					90											
	●	●	18	16	15	220	28	27	27	9						3.5°	
	●					145											
	●					110											
	●	●	22	20	19	250	32	31	31	11						2°	
	●					165											
	●					125											
●	●	27	25	24	300	38	37	37	13.5	0°							
●					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	B56	B56	B56	B56	B56	B56	B56	B56	C25	C14
Insert	PP 	GP 	HQ 	Standard 	Y-Y 	XP 	XQ 	Without chipbreaker 	PCD 	CBN 
Toolholder Description	CPMT0802..	CPMT0802..	CPMH0802..	CPMH0802..	CPMH0802..	CPMT0802..	-	CPMB0802..	CPMH0802..	CPGB0802..
.....SCLP <sup>R/L</sup> 08.....	CPMT0903..	CPMT0903..	CPMH0903..	CPMH0903..	CPMH0903..	CPMT0903..	CPMT0903..	CPMB0903..	CPMH0903..	CPGB0903..
.....SCLP <sup>R/L</sup> 09.....										

Recommended Cutting Conditions ● F93-F94  
Applicable Sleeves ● F84-F86

● : Std. Item  
□ : Deleted from the next catalogue

# Dynamic Bar [DC Insert]

## A-SDUC-AE Excellent Bar (Copying)

Max. Overhang Length L/D≈5

inner hole dia. (φ2.5) for A16Q-SDUC%.07-14AE  
inner hole dia. (φ3) for A20R-SDUC%.11-20AE

Outer hole dia. (φ5)

Straight hole (φd)

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

Fig.1 Fig.2

·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

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

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

### WP Chipbreaker Edge Position Offset Adjustment

For D type and T type, cutting edge offsets are required.

	D type	T type
Z-direction Correction Amount(mm)	0.01	0.02

	D type	T type
X-direction Correction Amount(mm)	0.11	0.08

--- Standard Insert Edge Line  
— Wiper Insert Edge Line

For D type and T type, program corrections are required for ramping and profiling.



Ramping Angle θ	0°	5°	10°	15°	20°	25°
Z-direction Correction Amount(mm) D type	0	-0.14	-0.15	-0.16	-0.16	-0.17

Profiling Angle θ	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
Z-direction Correction Amount(mm) D type	0.00	0.07	0.06	0.04	0.03	0.02	0.01	0.00	-	-	-
Z-direction Correction Amount(mm) T type	0.00	0.07	0.06	0.05	0.05	0.04	0.03	0.02	0.01	0.01	0.00





















Profiling Angle θ	40°	45°	50°	55°	60°	65°	70°	75°	80°	85°	90°
Z-direction Correction Amount(mm) D type	-0.01	-0.02	-0.03	-0.04	-0.05	-0.05	-0.04	-0.03	-0.02	-0.01	0.00
Z-direction Correction Amount(mm) T type	-	-	-	-0.01	-0.02	-0.03	-0.04	-0.03	-0.02	-0.01	0.00

● Toolholder Dimensions

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



● Applicable Inserts

Applications	Minute ap	Finishing	Finishing	Finishing	Finishing-Medium	Finishing-Medium	Medium-Roughing	Finishing	Finishing / Precision	Low Feed
Ref. to Page	B57	B57,B58	B58	B58	B58	B59	B59	B61	B60	B62,B63
Insert	CF	CK	WP(Wiper)	PP	GK	HQ	Standard	β/-F	β/-FSF	(E/F)β/-U
Toolholder Description										
---SDUC <sup>β</sup> / <sub>L</sub> 07----	DCGT0702..	DCGT0702..	DCMX0702..	DCMT0702..	DCMT0702..	DCMT0702..	DCGT0702..	DCGT0702..	DCET0702..	DCGT0702..
---SDQC <sup>β</sup> / <sub>L</sub> 07----										
---SDZC <sup>β</sup> / <sub>L</sub> 07----										
---SDUC <sup>β</sup> / <sub>L</sub> 11----	DCGT11T3..	DCGT11T3..	DCMX11T3..	DCMT11T3..	DCMT11T3..	DCMT11T3..	DCMT11T3.. DCGT11T3..	DCGT11T3..	DCET11T3..	DCGT11T3..
---SDQC <sup>β</sup> / <sub>L</sub> 11----										
---SDZC <sup>β</sup> / <sub>L</sub> 11----										
Applications	Low Feed / Precision	Low Feed	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	B62	B64,B65	B59	B59	B60	B65	B65	B65	C25	C15
Insert	Fβ/-USF	(E/F)β/-J	XP	XQ	MQ	Without chipbreaker	AH	β/-A3	PCD	CBN
Toolholder Description										
---SDUC <sup>β</sup> / <sub>L</sub> 07----										
---SDQC <sup>β</sup> / <sub>L</sub> 07----	DCET0702..	DCET0702..	DCMT0702..	-	DCMT0702..	DCGW0702..	-	-	DCMT0702..	DCMW0702..
---SDZC <sup>β</sup> / <sub>L</sub> 07----										
---SDUC <sup>β</sup> / <sub>L</sub> 11----										
---SDQC <sup>β</sup> / <sub>L</sub> 11----	DCET11T3..	DC_T11T3..	DCMT11T3..	DCMT11T3..	DCMT11T3..	DCGW11T3..	DCGT11T3..	DCGT11T3..	DCMT11T3..	DCMW11T3..
---SDZC <sup>β</sup> / <sub>L</sub> 11----										

\* For WP chipbreaker, cutting edge offsets or program corrections are required. ● F42

Recommended Cutting Conditions ● F93~F94  
Applicable Sleeves ● F84~F86

# 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
φ20	φ6
φ25	

•Right-hand shown

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

### Toolholder Dimensions

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

\* WP chipbreaker (DCMX-WP : Wiper insert) is not applicable to A-SDQC-AE type, S-SDQC-A type and E-SDQC-A type Toolholders.

● : Std. Item

**A-SDZC-AE Excellent Bar (Back Boring)**

Max. Overhang Length L/D≈~5.5

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

Fig. 1 Fig. 2  
 · 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

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

Fig. 5  
 · Right-hand shown Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder.

**Toolholder Dimensions**

Description	Std.		Min. Bore Dia. φA	Dimension (mm)									θ	Std. Corner-R (°)	Coolant Hole	Drawing	Spare Parts		
	R	L		φD	H	L1	L2	L4	L5	F	S	Clamp Screw					Wrench		
Excellent Bar	●	●	14	10	9	140	14	16	9.5	8.7	3.3	5°	0.4	Yes	Fig.2	SB-2545TR	FT-8		
	●	●		16	15	180	30	17	10	10.8	4.4								
	●	●	16	12	11	150	14	20	10.5	9.7	3.3				Fig.2	SB-2560TR			
	●	●		16	15	180		22		11.7									
	●	●	20	20	19	200	40	24	15	15.6	6.1				Fig.1	SB-4065TR		FT-15	
	●	●		20	19	200	15	25		16.5									
	●	●	23	16	15	180	15	22	15	14.5	6.1				Fig.2	SB-4065TR		FT-15	
	●	●		20	19	200		25		16.5									
●	●	32	25	24	250	15	26	15	19	6.1	Fig.2	SB-4065TR	FT-15						
●	●		20	19	200		25		16.5										
Steel	●	●	14	10	9	140	14	16	9.5	8.7	3.3	5°	0.4	No	Fig.4	SB-2545TR	FT-8		
	●	●		16	15	180	30	17	10	10.8	4.4								
	●	●	16	12	11	150	14	20	10.5	9.7	3.3				Fig.4	SB-2560TR			
	●	●		16	15	180		22		11.7									
	●	●	20	20	19	200	40	24	15	15.6	6.1				Fig.3	SB-4065TR		FT-15	
	●	●		20	19	200	15	25		16.5									
	●	●	23	16	15	180	15	22	15	14.5	6.1				Fig.4	SB-4065TR		FT-15	
	●	●		20	19	200		25		16.5									
●	●	32	25	24	250	15	26	15	19	6.1	Fig.4	SB-4065TR	FT-15						
●	●		20	19	200		25		16.5										
Carbide	●		14	10	9	160	10.5	16	9.5	8.7	3.3	5°	0.4	Yes	Fig.5	SB-2545TR	FT-8		
	●		16	12	11	180	12.5	20	10.5	9.7									
	●		20	16	15	220	17.5	22	10.5	11.7						6.1		Fig.5	SB-2560TR
	●									13									
	●		27	20	19	250	17	25	15	16.5						6.1		Fig.5	SB-4065TR

\* For WP chipbreaker, cutting edge offsets or program corrections are required. F42

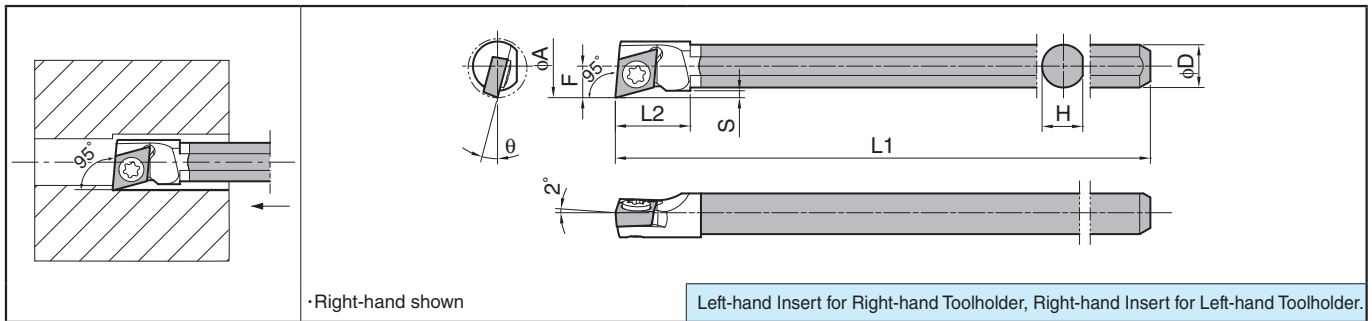
● : Std. Item



## Boring Bar [JC□□ Insert]

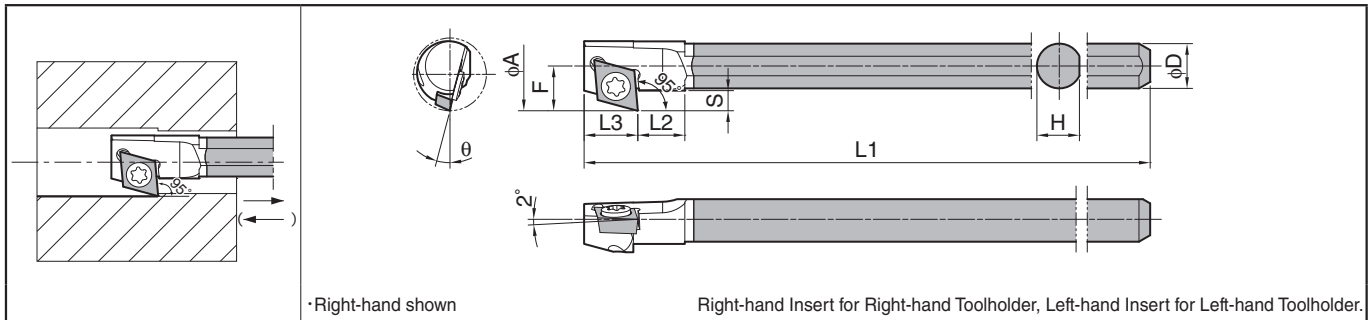
## C...SJLC Carbide Shank Bar (Boring / Internal Facing)

Max. Overhang Length L/D≈7



## C...SJZC Carbide Shank Bar (Back Boring)

Max. Overhang Length L/D≈7



\* 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	Std.		Min. Bore Dia.	Dimension (mm)							θ	Std. Corner-R(re)	Spare Parts	
	R	L		φA	φD	H	L1	L2	L3	F			S	Clamp Screw
	C04X-SJLC <sup>R/L</sup> 03-055	●	●	5.5	4	3.8	91	7	-	2.95	0.65	15°	0.03	SB-1635TR
C04X-SJZC <sup>R/L</sup> 03-065	●	●	6.5	93			4	4.8	4.0	1.8				

## Applicable Inserts

Applications	Finishing	Finishing / Precision												
Ref. to Page	B67	B67												
Insert	<sup>R/L</sup> -F	<sup>R/L</sup> -FSF												
Toolholder Description														
...SJLC <sup>R/L</sup> 03...	JCGT0301..	JCET0301..												
...SJZC <sup>R/L</sup> 03...	JCGT0301..	JCET0301..												

Recommended Cutting Conditions [F93~F94](#)  
Applicable Sleeves [F83,F85,F86](#)

## 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.

# Dynamic Bar [TC□□ Insert]

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

Max. Overhang Length L/D≈5.5

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

Fig.1  
 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  
 Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.



### Toolholder Dimensions

Description	Std.		Min. Bore Dia. φA	Dimension (mm)								θ	Std. Corner-R(rε)	Coolant Hole	Drawing	Spare Parts	
	R	L		φD	H	L1	L2	L3	L4	F	S					Clamp Screw	Wrench
Excellent Bar	●	●	10	8	7	120	16	22	16	5	0.5	14°	0.4	Yes	Fig.1	SB-2250TR	FT-7
	●	●	12	10	9	140	20	26	20	6.2	0.9	12°					
	●	●	14	12	11	150	24	30	25	7.2	0.7	10°					
	●	●	18	16	15	180	30	39	31	9.2	0.7	8°				SB-2560TR	FT-8
	●	●	22	20	19	200	36	44	36	11.2	0.7	6°					
	●	●	10	8	7	120	16	22	16	5	0.5	14°					
●	●	12	10	9	140	20	26	20	6.2	0.9	12°						
●	●	14	12	11	150	24	30	25	7.2	0.7	10°						
●	●	18	16	15	180	30	39	31	9.2	0.7	8°	SB-2560TR	FT-8				
●	●	22	20	19	200	36	44	36	11.2	0.7	6°						
●	●	10	8	7	120	16	22	16	5	0.5	14°						

### Applicable Inserts

Applications	*Finishing	Finishing-Medium															
Ref. to Page	B71	B71															
Insert	WP(Wiper)	HQ															
Toolholder Description																	
...-STLC <sup>R</sup> /L 09-...	TCMX0902..	TCMT0902..															
...-STLC <sup>R</sup> /L 11-...	TCMX1102..	TCMT1102..															

\* For WP chipbreaker, cutting edge offsets or program corrections are required. F42

Recommended Cutting Conditions F93~F94  
 Applicable Sleeves F84~F86

# Dynamic Bar [TB□□, TP□□ Insert]

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

Max. Overhang Length L/D≈~5.5

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

•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

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

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

Max. Overhang Length L/D≈~7

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

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



### ● Applicable Inserts

Applications Ref. to Page	Minute ap B70,B74	*Finishing B74	Finishing B74	Finishing B74	Finishing B70	Finishing-Medium B75	Finishing B70,B75,B76	Finishing / Precision B78	Medium B77	Low Feed / Precision B78
Insert	CF	WP(Wiper)	PP	GP	DP	HQ	F/L	F/L-FSF	F/L-H	F <sup>2</sup> /L-USF
Toolholder Description										
...	TBGT0601..	-	-	-	TBMT0601..	-	TBGT0601..	-	-	-
...	TPGT0802..	-	-	-	-	-	TPGH0802..	TPET0802..	-	TPET0802..
...	TPGT0902..	TPMX0902..	TPMT0902..	TPMT0902..	-	TPMT0902..	TPGH0902..	-	TPGH0902..	-
...	-	TPMX1103..	TPMT1103..	TPMT1103..	-	TPMT1103..	TPGH1103..	TPET1103..	TPGH1103..	TPET1103..
...	-	-	-	TPMT1603..	-	TPMT1603..	TPGH1603..	-	TPGH1603..	-
Applications Ref. to Page	Soft Steel / Finishing B75	Soft Steel / Finishing-Medium B75	Cast Iron B70,B79	Non-ferrous Metals C26-C28	Hard Materials C16					
Insert	XP	XQ	Without chipbreaker	PCD	CBN					
Toolholder Description										
...	-	-	TBGW0601..	TBMT0601.. TBGW0601..	-					
...	-	-	TPGB0802..	TPMH0802.. TPGB0802..	TPGB0802..					
...	TPMT0902..	-	TPGB0902..	TPMH0902.. TPGB0902..	TPGB0902..					
...	TPMT1103..	TPMT1103..	TPGB1103..	TPMH1103.. TPGB1103..	TPGB1103..					
...	TPMT1603..	TPMT1603..	TPGB1603..	TPMH1603.. TPGB1603..	TPGB1603..					

\* For WP chipbreaker, cutting edge offsets or program corrections are required. ● F42



● Toolholder Dimensions

Description		Std.		Min. Bore Dia.	Dimension (mm)								θ	Std. Corner-R(ℓ <sub>c</sub> )	Coolant Hole	Drawing	Spare Parts			
		R	L		φA	φD	H	L1	L2	L3	L4	F					S	Clamp Screw	Wrench	
																				
Excellent Bar	S06H-STLB <sup>φ</sup> / <sub>L</sub> 06-08AE	●	●	8	6	5	100	12	-	12	3.8	0.5	12°	0.2	No	Fig.1	SB-2035TR	FT-6		
	A08X-STLP <sup>φ</sup> / <sub>L</sub> 08-10AE	●	●	10	8	7	120	16	22	16	5	0.5	10°	0.4	Yes	Fig.2	SB-1TR			
	A08X-STLP <sup>φ</sup> / <sub>L</sub> 09-10AE	●	●	12	10	9	140	20	25	20	6.2	0.9	8°				SB-2545TR			
	A10L-STLP <sup>φ</sup> / <sub>L</sub> 09-12AE	●	●						26		6	0.7	10°				SB-3060TR			
	A10L-STLP <sup>φ</sup> / <sub>L</sub> 11-12AE	●	●	14	12	11	150	24	30	24	7.2	0.8	7°				SB-2545TR			
	A12M-STLP <sup>φ</sup> / <sub>L</sub> 11-14AE	●	●								16	8	0.6				5°		FT-8	
	A12M-STLP <sup>φ</sup> / <sub>L</sub> 09-16AE	●	●	18	16	15	180	30	36	30	9.2	0.7	3.5°				SB-3060TR			
	A16Q-STLP <sup>φ</sup> / <sub>L</sub> 11-18AE	●	●										22				11.2		2°	FT-10
	A20R-STLP <sup>φ</sup> / <sub>L</sub> 11-22AE	●	●	25	20	19	200	36	46	37	11.2	13	0°				SB-4065TR			
	A20R-STLP <sup>φ</sup> / <sub>L</sub> 16-25AE	●	●	27	25	24	250	46	55	46	13.7	0.7	0°				FT-15			
A25S-STLP <sup>φ</sup> / <sub>L</sub> 16-27AE	●	●																		
Steel	S06H-STLB <sup>φ</sup> / <sub>L</sub> 06-08A	●	●	8	6	5	100	12	-	12	3.8	0.5	12°	0.2	No	Fig.3	SB-2035TR	FT-6		
	S08X-STLP <sup>φ</sup> / <sub>L</sub> 08-10A	●	●	10	8	7	120	16	22	16	5	0.5	10°	0.4			No		Fig.4	SB-1TR
	S08X-STLP <sup>φ</sup> / <sub>L</sub> 09-10A	●	●																	12
	S10L-STLP <sup>φ</sup> / <sub>L</sub> 09-12A	●	●	26	6	0.7	10°	FT-8												
	S10L-STLP <sup>φ</sup> / <sub>L</sub> 11-12A	●	●	14	12	11	150	24	30	24	7.2	0.8	7°	SB-3060TR						
	S12M-STLP <sup>φ</sup> / <sub>L</sub> 11-14A	●	●								16	8	0.6	5°			FT-10			
	S12M-STLP <sup>φ</sup> / <sub>L</sub> 09-16A	●	●	18	16	15	180	30	36	30	9.2	0.7	3.5°	SB-2545TR						
	S16Q-STLP <sup>φ</sup> / <sub>L</sub> 11-18A	●	●										22	11.2			2°		FT-8	
	S20R-STLP <sup>φ</sup> / <sub>L</sub> 11-22A	●	●	25	20	19	200	36	46	37	11.2	13	0°	SB-3060TR						
	S25S-STLP <sup>φ</sup> / <sub>L</sub> 16-27A	●	●	27	25	24	250	46	55	46	13.7	0.7	0°	FT-10						
	Carbide	C06J-STLB <sup>φ</sup> / <sub>L</sub> 06-08AN	●	●	8	6	5.4	110	10	-	11	3.8	0.5	12°			0.2		No	Fig.5
C06J-STLB <sup>φ</sup> / <sub>L</sub> 06-08A		□	□	12																
E08L-STLP <sup>φ</sup> / <sub>L</sub> 08-10AN		●	●	10	8	7	140	14	15	15	5	0.5	10°	0.4	Yes	Fig.6	SB-1TR	FT-6		
E08L-STLP <sup>φ</sup> / <sub>L</sub> 09-10AN		●	●																	
E10N-STLP <sup>φ</sup> / <sub>L</sub> 09-12AN		●	●	12	10	9	160	18	19	19	6.2	0.9	8°	0.4	Yes	Fig.6	SB-2545TR	FT-8		
E10N-STLPR09-12AN2/3		●																	105	
E10N-STLPR09-12AN1/2		●																	80	
E10N-STLP <sup>φ</sup> / <sub>L</sub> 11-12AN		●	●																160	
E10N-STLPR11-12AN2/3		●																	105	
E10N-STLPR11-12AN1/2		●																	80	
E08L-STLP <sup>φ</sup> / <sub>L</sub> 08-10A		□	□	10	8	7	140	16	15	15	5	0.5	10°	0.4	Yes	Fig.6	SB-1TR	FT-6		
E08L-STLP <sup>φ</sup> / <sub>L</sub> 09-10A		□	□																	
E10N-STLP <sup>φ</sup> / <sub>L</sub> 09-12A		□	□	12	10	9	160	20	19	19	6.2	0.9	8°	0.4	Yes	Fig.6	SB-2545TR	FT-8		
E10N-STLPR09-12A-2/3		□																	105	
E10N-STLPR09-12A-1/2		□																	80	
E10N-STLP <sup>φ</sup> / <sub>L</sub> 11-12A		□	□																160	
E10N-STLPR11-12A-2/3		□																	105	
E10N-STLPR11-12A-1/2		□																	80	
E12Q-STLP <sup>φ</sup> / <sub>L</sub> 11-14A		●	●	14	12	11	180	23	22	22	7.2	0.8	7°	0.4	Yes	Fig.6	SB-3060TR	FT-10		
E12Q-STLPR 11-14A-2/3		●																	120	
E12Q-STLPR 11-14A-1/2		●		16	12	11	180	23	22	22	8	0.6	5°	0.4	Yes	Fig.6	SB-2545TR	FT-8		
E12Q-STLP <sup>φ</sup> / <sub>L</sub> 09-16A		●	●																90	
E12Q-STLPR 09-16A-2/3		●		18	16	15	220	28	27	27	9.2	0.7	3.5°	0.4	Yes	Fig.6	SB-3060TR	FT-10		
E12Q-STLPR 09-16A-1/2		●																	180	
E16X-STLP <sup>φ</sup> / <sub>L</sub> 11-18A		●	●	22	20	19	250	32	31	31	11.2	13	2°	0.4	Yes	Fig.6	SB-4065TR	FT-15		
E16X-STLPR 11-18A-2/3		●																	165	
E16X-STLPR 11-18A-1/2	●		25	20	19	250	32	31	31	11.2	13	2°	0.4	Yes	Fig.6	SB-4065TR	FT-15			
E20S-STLP <sup>φ</sup> / <sub>L</sub> 11-22A	●	●																125		
E20S-STLPR 11-22A-2/3	●		27	25	24	300	38	37	37	13.7	0.7	0°	0.4	Yes	Fig.6	SB-4065TR	FT-15			
E20S-STLPR 11-22A-1/2	●																	165		
E20S-STLP <sup>φ</sup> / <sub>L</sub> 16-25A	●	●	27	25	24	300	38	37	37	13.7	0.7	0°	0.4	Yes	Fig.6	SB-4065TR	FT-15			
E20S-STLPR 16-25A-2/3	●																	125		
E20S-STLPR 16-25A-1/2	●		27	25	24	300	38	37	37	13.7	0.7	0°	0.4	Yes	Fig.6	SB-4065TR	FT-15			
E25T-STLP <sup>φ</sup> / <sub>L</sub> 16-27A	●	●																200		
E25T-STLPR 16-27A-2/3	●																			

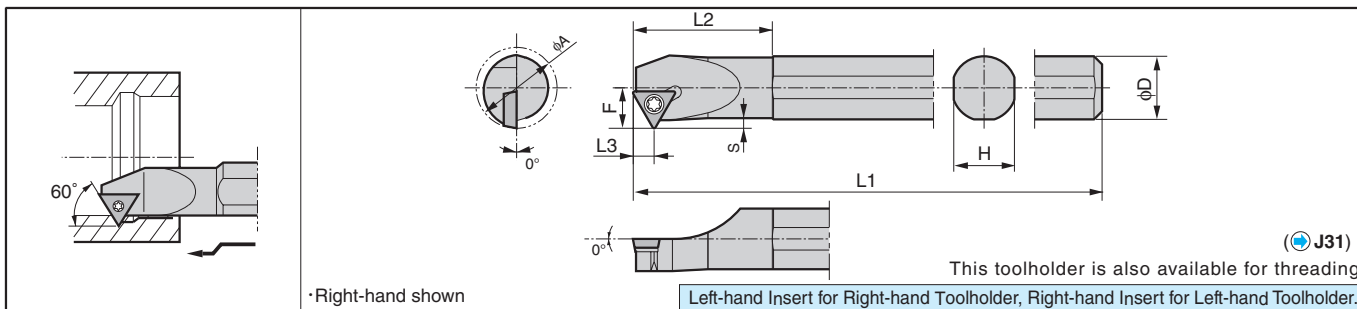
● : Std. Item  
 □ : Deleted from the next catalogue



# Boring Bar [TB□□, TP□□ Insert]

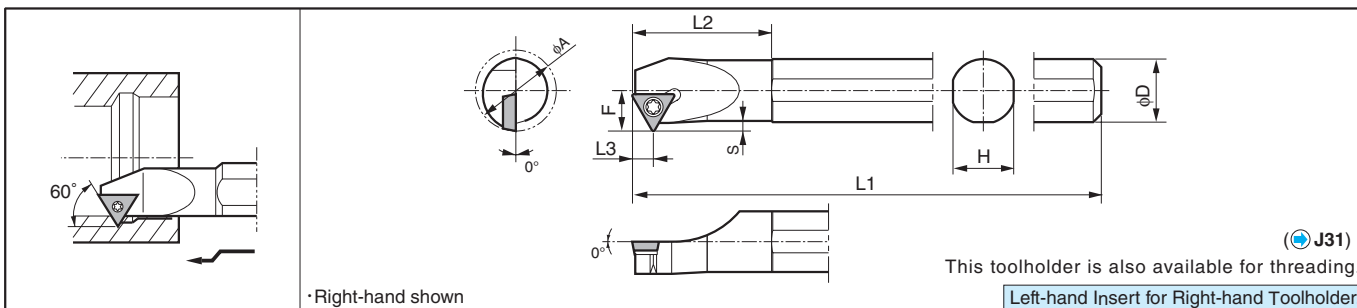
## S...STWP-E Excellent Bar (Copying)

Max. Overhang Length L/D~5



## S...STWP Steel Bar (Copying)

Max. Overhang Length L/D~3



F  
Boring

### Toolholder Dimensions

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

### Applicable Inserts

Applications Ref. to Page	Finishing B74	Finishing B74	Finishing-Medium B75	Finishing B75,B76	Finishing / Precision B78	Medium B77	Low Feed / Precision B78	Soft Steel / Finishing B75	Soft Steel / Finishing-Medium B75
Insert	PP	GP	HQ	W	W-FSF	W-H	F <sup>R/L</sup> -USF	XP	XQ
Toolholder Description									
<b>S10M-STWP<sup>R/L</sup> 11-12(E)</b>	-	-	-	TPGH1102..	-	-	-	-	-
<b>...-STWP<sup>R/L</sup> 11-16~25(E)</b>	TPMT1103..	TPMT1103..	TPMT1103..	TPGH1103..	TPET1103..	TPGH1103..	TPET1103..	TPMT1103..	TPMT1103..
<b>...-STWP<sup>R/L</sup> 16-...</b>	-	TPMT1603..	TPMT1603..	TPGH1603..	-	TPGH1603..	-	TPMT1603..	TPMT1603..
Applications Ref. to Page	Cast Iron B79	Non-ferrous Metals C26~C28	Hard Materials C16						
Insert	Without chipbreaker	PCD	CBN						
Toolholder Description									
<b>S10M-STWP<sup>R/L</sup> 11-12(E)</b>	TPGB1102..	-	-						
<b>...-STWP<sup>R/L</sup> 11-16~25(E)</b>	TPGB1103..	TPMH1103.. TPGB1103..	TPGB1103..						
<b>...-STWP<sup>R/L</sup> 16-...</b>	TPGB1603..	TPMH1603.. TPGB1603..	TPGB1603..						

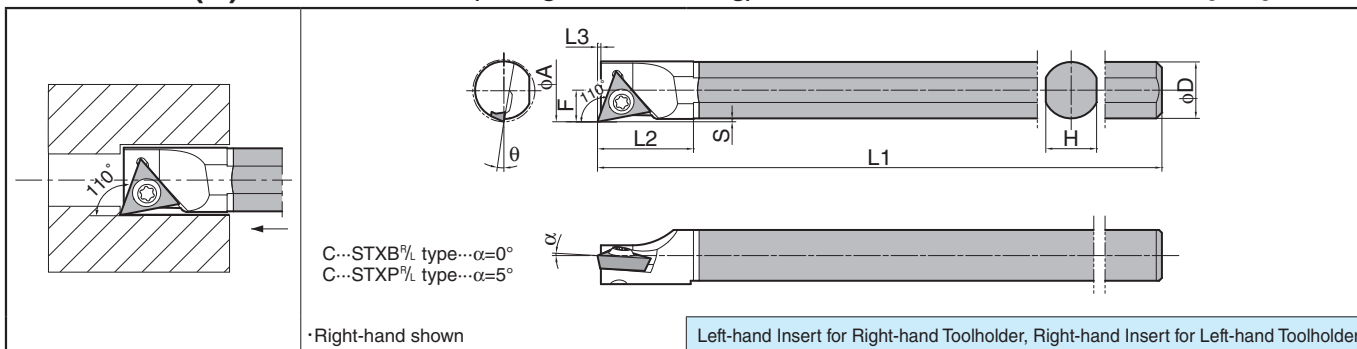
\*WP chipbreaker (TPMX-WP : Wiper insert) is not applicable to S-STWP-E type and S-STWP type Toolholders.

Recommended Cutting Conditions **F93~F94**  
Applicable Sleeves **F84~F86**

● : Std. Item

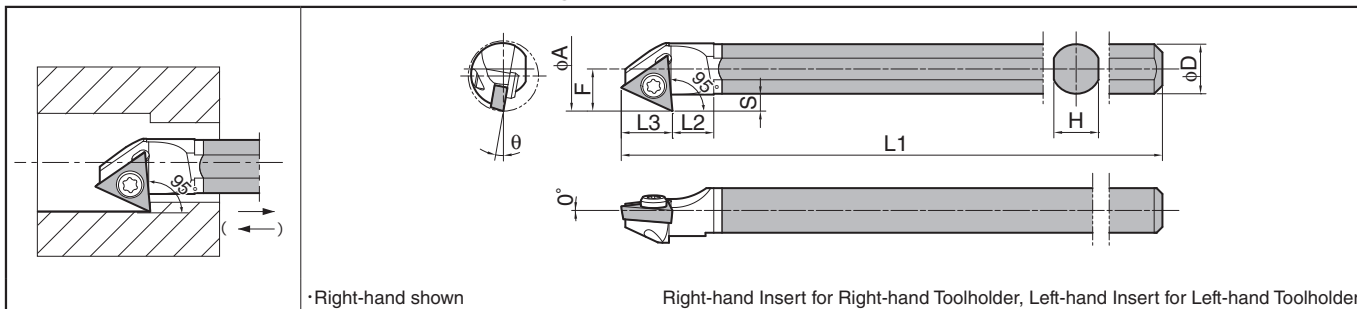
**C...STXP(B) Carbide Shank Bar (Boring / Internal Facing)**

Max. Overhang Length L/D≈~7



**C...STZB Carbide Shank Bar (Back Boring)**

Max. Overhang Length L/D≈~7



\* 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	Std.		Min. Bore Dia.	Dimension (mm)								θ	Std. Corner-R (rε)	Spare Parts	
	R	L		φA	φD	H	L1	L2	L3	F	S			Clamp Screw	Wrench
	<b>C06J -STXB<sup>β</sup>/<sub>L</sub> 06-075</b>	●	●	7.5	6	5.4	110	11	0.5	3.75	0.5	10°	0.03		
<b>C08X -STXP<sup>β</sup>/<sub>L</sub> 08-09</b>	●	●	9.0	8	7.0	143	14	0.6	4.6						
<b>C10X -STXP<sup>β</sup>/<sub>L</sub> 09-11</b>	●	●	11.0	10	9.0	164	17		5.6	2.0					
<b>C06J -STZB<sup>β</sup>/<sub>L</sub> 06-085</b>	●	●	8.5	6	5.4	110	5	5.7	5.1		2.0	SB-1STR	FT-6		

**● Applicable Inserts**

Applications Ref. to Page	Minute ap	Finishing B70, B74	Finishing B74	Finishing B70	Finishing-Medium B75	Finishing B70, B75, B76	Finishing B78	Finishing / Precision B78	Low Feed / Precision B78	Soft Steel / Finishing B75	Cast Iron B70, B79
Insert	CF	PP	GP	DP	HQ	<sup>β</sup> / <sub>L</sub>	<sup>β</sup> / <sub>L</sub> -FSF	<sup>β</sup> / <sub>L</sub> -USF	XP	Without chipbreaker	
Toolholder Description											
...	TBGT0601..	-	-	TBMT0601..	-	TBGT0601..	-	-	-	TBGW0601..	
...	TPGT0802..	-	-	-	-	TPGH0802..	TPET0802..	TPET0802..	-	TPGB0802..	
...	TPGT0902..	TPMT0902..	TPMT0902..	-	TPMT0902..	TPGH0902..	-	-	TPMT0902..	TPGB0902..	
...	TBGT0601..	-	-	TBMT0601..	-	TBGT0601..	-	-	-	TBGW0601..	
Applications Ref. to Page	Non-ferrous Metals C26, C27	Hard Materials C16									
Insert	PCD	CBN									
Toolholder Description											
...	TBMT0601..	-									
...	TPMH0802.. TPGB0802..	TPGB0802..									
...	TPMH0902.. TPGB0902..	TPGB0902..									
...	TBMT0601..	-									

\*WP chipbreaker (TPMX-WP : Wiper insert) is not applicable to C-STXP type Toolholders.

Recommended Cutting Conditions **● F93~F94**

Applicable Sleeves **● F83~F86**

**● C...STXP(B) Type Boring Bar Cutting Conditions**

Toolholder Description	Insert Description (Grades)	Vc (m/min)	ap (mm)	f (mm/rev)	Coolant
<b>C06J-STXB<sup>β</sup>/<sub>L</sub> 06-075</b>	<b>TBGT0601003<sup>1</sup>/<sub>R</sub>(PR930)</b>	30~100	0.02~0.1	0.02~0.04	Yes
<b>C08X-STXP<sup>β</sup>/<sub>L</sub> 08-09</b>	<b>TPGH080201<sup>1</sup>/<sub>R</sub>(PR930)</b>	30~100	0.05~0.15	0.03~0.08	Yes
<b>C10X-STXP<sup>β</sup>/<sub>L</sub> 09-11</b>	<b>TPGH090201<sup>1</sup>/<sub>R</sub>(PR930)</b>	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 F53

·Right-hand shown

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) 1/8 / SVJB 1/11.

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 F53

·Right-hand shown

Fig.3 Fig.4

\* No shim for SVJP(C) 1/8 / SVJB 1/11.

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

### ● Toolholder Dimensions

Description	Std.		Min. Bore Dia. φA	Dimension (mm)								θ	Std. Corner-R(rε)	Coolant Hole	Drawing	Spare Parts	
	R	L		φD	H	L1	L2	L3	L4	F	S					Clamp Screw	Wrench
Excellent Bar	●	●	16	12	11	150	26	33	21	2	-	0.2	Yes	Fig.1	SB-2050TR	FT-6	
	●	●	20	16	15	180	36	43	22								
	●	●	25	20	19	200	37.5	48	30	3.5		8°		Fig.2	SB-40125TRN	FT-15	
	●	●	30	25	24	250	45	58	33								
	●	●	40	32	31	250	60	74	45	7°		Fig.4		SB-40125TRN	FT-15		
	●	●	50	40	39	300	75	91	49								
Steel	●	●	16	12	11	150	26	33	21	2	-	0.2	No	Fig.3	SB-2050TR	FT-6	
	●	●	20	16	15	180	36	43	22								
	●	●	25	20	19	200	37.5	48	30	3.5		8°		Fig.4	SB-2570TR	FT-8	
	●	●	30	25	24	250	45	58	33								
	●	●	40	32	31	250	60	74	45	7°		Fig.4		SB-40125TRN	FT-15		
	●	●	50	40	39	300	75	91	49								

### ● Applicable Inserts

Applications	Finishing	Finishing	Finishing	Finishing	Finishing-Medium	Finishing	Finishing / Precision	Low Feed / Precision	Non-ferrous Metals	Non-ferrous Metals
Ref. to Page	B86	B82,B85	B82,B85	B82	B82,B85	B83	B82,B87	B88	B85	B85
Insert	CK	VF	PP	GP	HQ	1/4-F	1/4-FSF	F 1/4-USF	AH	1/4-A3
Toolholder Description										
...	VPGT0802..	-	-	-	-	-	VPET0802..	VPET0802..	-	-
...	-	VCMT0802..	VCMT0802..	-	VCMT0802..	-	-	-	-	-
...	-	VBMT1103..	VBMT1103..	VBMT1103..	VBMT1103..	VBGT1103..	VBET1103..	-	-	-
...	-	VBMT1604..	VBMT1604..	VBMT1604..	VBMT1604..	-	-	-	VCGT1604..	VCGT1604..
Applications	Non-ferrous Metals	Hard Materials								
Ref. to Page	C28	C17								
Insert	PCD	CBN								
Toolholder Description										
...	-	-								
...	VCMT0802..	VCGW0802..								
...	VBMT1103..	VBGW1103..								
...	VBMT1604..	VBGW1604..								

### ● Spare Parts (See P24 for spare parts of old products.)

Description	Spare Parts		
	Shim	Shim Screw	Wrench (for Shim Screw)
□32S-SVJB 1/16-40A□ □40T-SVJB 1/16-50A□	SVN-32N *(SVN-32S)	SS-4N	LW-4

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

·For insert with corner-R(rε) 0.2 or 0.4, shim of marked \* is recommended (sold separately).

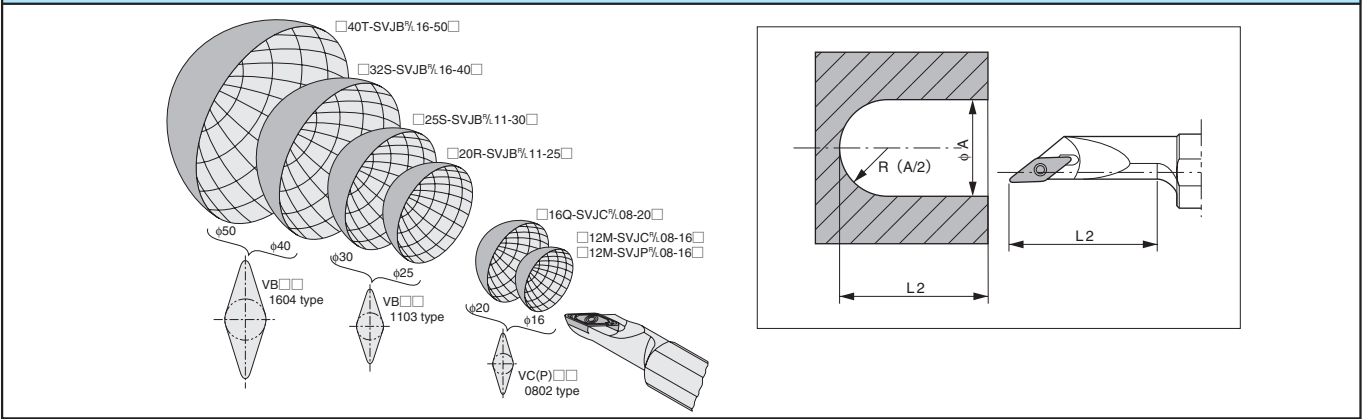
Recommended Cutting Conditions ● F93~F94  
Applicable Sleeves ● F84~F86

● : Std. Item

## Application of □...SVJB(C)-□, S...SVJP-□

Ref. to Page for Toolholders F52

### 1. Application Range



### 2. Application

Case with No Existing Hole		Finishing
<p>Spherical Machining</p>	<p>Internal Facing</p> <p>(Note) f shall be under 0.05mm/rev at internal facing.</p>	<p>Spherical Machining</p>
Case with Drilled Hole		<p>Internal Facing</p> <p>Machining Process                      (1) Finish the internal face first.                      (2) Next, finish the internal diameter.</p>
<p>Drilled Hole</p>	<p>Spherical Machining</p>	
	<p>Internal Facing</p> <p>(Note) f shall be under 0.05mm/rev at internal facing.</p>	

### 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(re).

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

Less than Corner-R(re)

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

Poor finish

# Dynamic Bar [VB□□, VC□□ Insert]

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

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	
φ32	

\* No shim for SVPC%08 / SVPB%11.  
 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%08 / SVPB%11.  
 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

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

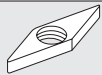


\* No shim for SVPC%08 / SVPB%11.  
 Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

### Toolholder Dimensions

Description	Std.		Min. Bore Dia. φA	Dimension (mm)								θ	Std. Corner-R(ε)	Coolant Hole	Drawing	Spare Parts	
	R	L		φD	H	L1	L2	L3	L4	F	S					Clamp Screw	Wrench
Excellent Bar	●	●	14	10	9	140	24	-	21	8.5	3	8°	0.4	Yes	Fig.1	SB-2050TR	FT-6
	●	●	18	12	11	150	29	-	26	11	4.5					SB-2570TR	FT-8
	●	●	22	16	15	180	35	-	33	13.5	5	13°	Fig.2	SB-40125TRN	FT-15		
	●	●	26	20	19	200	41	-	39	15.5						9°	
	●	●	31	25	24	250	51	-	49	18	6.5	9°	Fig.3	SB-2050TR	FT-6		
	●	●	40	32	31		54	53	23	21						8.5	3
Steel	●	●	14	10	9	140	24	-	21	8.5	3	8°	0.4	No	Fig.3	SB-2050TR	FT-6
	●	●	18	12	11	150	29	-	26	11	4.5						
	●	●	22	16	15	180	35	-	33	13.5	5	13°	Fig.5	SB-2570TR	FT-8		
	●	●	26	20	19	200	41	-	39	15.5						9°	
	●	●	31	25	24	250	51	-	49	18	6.5	9°	Fig.6	SB-2050TR	FT-6		
	●	●	40	32	31		54	53	23	21						8.5	3
Carbide	●	●	14	10	9	160	20	-	18.5	8.5	3	8°	0.4	Yes	Fig.5	SB-2050TR	FT-6
	●	●	18	12	11	180	23	-	22	11	4.5						
	●	●	22	16	15	220	28	-	27	13.5	5	13°	Fig.6	SB-2050TR	FT-6		
	●	●	26	20	19	250	32	-	31	15.5						9°	
	●	●	31	25	24	300	38	-	37	18							




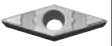






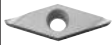


●: Std. Item

● **Spare Parts** (See P24 for spare parts of old products.)

Description	Spare Parts		
	Shim	Shim Screw	Wrench (for Shim Screw)
			
<input type="checkbox"/> <b>25</b> <input type="checkbox"/> <b>-SVPB<sup>R/L</sup> 16-31A</b> <input type="checkbox"/> <input type="checkbox"/> <b>32S-SVPB<sup>R/L</sup> 16-40A</b> <input type="checkbox"/>	SVN-32N *(SVN-32S)	SS-4N	LW-4

-For insert with corner-R(re) 0.2 or 0.4, shim of marked \* is recommended (sold separately).

● **Applicable Inserts**

Applications	Finishing	Finishing	Finishing	Finishing	Finishing-Medium	Finishing	Finishing / Precision	Finishing-Medium	Low Feed / Precision	Non-ferrous Metals
Ref. to Page	-	<b>B82,B85</b>	<b>B82,B85</b>	<b>B82</b>	<b>B82,B85</b>	<b>B83</b>	<b>B82</b>	<b>B84</b>	-	<b>B85</b>
Insert	<b>CK</b>	<b>VF</b>	<b>PP</b>	<b>GP</b>	<b>HQ</b>	<b><sup>R/L</sup>-F</b>	<b><sup>R/L</sup>-FSF</b>	<b><sup>R/L</sup>-Y</b>	<b>F<sup>R/L</sup>-USF</b>	<b>AH</b>
Toolholder Description										
...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...
Applications	Non-ferrous Metals	Non-ferrous Metals	Hard Materials							
Ref. to Page	<b>B85</b>	<b>C28</b>	<b>C17</b>							
Insert	<b><sup>R/L</sup>-A3</b>	<b>PCD</b>	<b>CBN</b>							
Toolholder Description										
...	...	...	...							
...	...	...	...							
...	...	...	...							

Recommended Cutting Conditions ● **F93-F94**  
 Applicable Sleeves ● **F84-F86**



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

Max. Overhang Length L/D≈~5.5

Inner hole dia. (φ3) of A12M-SVUC%08-16AE  
 Inner hole dia. (φ3) of A16Q-SVUB%11-20AE  
 Inner hole dia. (φ3) for A20R-SVUB%11-25AE  
 Straight hole dia. (φ5) of A32S-SVUB%16-40AE

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

\* No shim for SVUC%08 / SVUB%11.  
 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

\* No shim for SVUC%08 / SVUB%11.  
 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

\* Shim is attached only for SVUBR16

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

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

Inner hole dia. (φ3) of A12M-SVUC%08-16AE  
 Inner hole dia. (φ3) of A16Q-SVUB%11-20AE  
 Inner hole dia. (φ3) for A20R-SVUB%11-25AE  
 Straight hole dia. (φ5) of A32S-SVUB%16-40AE

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

\* No shim for SVZC%08 / SVZB%11.  
 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

\* No shim for SVZC%08 / SVZB%11.  
 Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder.

F

Boring

Solid

Positive

AD Bars

Negative



● Toolholder Dimensions

Description	Std.		Min. Bore Dia.	Dimension (mm)										θ	Std. Corner-R(rε)	Coolant Hole	Drawing	Spare Parts	
	R	L		φA	φD	H	L1	L2	L4	L5	F	S	Clamp Screw					Wrench	
Excellent Bar	●	●	16	12	11	150	25.5	23		11.5	5.5	8°	0.4	Yes	Fig.1	SB-2050TR	FT-6		
	●	●	20	16	15	180	32.5	27		16	8	7°				SB-2570TR	FT-8		
	●	●	25	20	19	200	40.5	31	-	18		13°				Fig.2	SB-40125TRN	FT-15	
	●	●	34	25	24	250	40	37		20.5	8.5	9°							
	●	●	40	32	31		84	47		28	12								
Steel	●	●	16	12	11	150	25.5	23		11.5	5.5	8°	0.4	No	Fig.3	SB-2050TR	FT-6		
	●	●	20	16	15	180	32.5	27		16	8	7°				SB-2570TR	FT-8		
	●	●	25	20	19	200	40.5	31	-	18		13°				Fig.4	SB-40125TRN	FT-15	
	●	●	34	25	24	250	40	37		20.5	8.5	9°							
	●	●	40	32	31		84	47		28	12								
Carbide	●		18	12	11	180	23	22		11.5	5.5	8°	0.4	Yes	Fig.5	SB-2050TR	FT-6		
	●		25	16	15	220	28	27		16	8	7°				SB-2570TR	FT-8		
	●		29	20	19	250	32	30	-	18		13°				Fig.6	SB-40125TRN	FT-15	
	●		34	25	24	300	38	37		21	8.5								
Excellent Bar	●	●	16	12	11	150	25.5	14	7.5	11.5	5.5	8°	0.4	Yes	Fig.6	SB-2050TR	FT-6		
	●	●	20	16	15	180	32.5	20	10	16	8	7°				Fig.7	SB-40125TRN	FT-15	
	●	●	25	20	19	200	40.5	23		18		13°							
	●	●	34	25	24	250	30	34	17.5	20.5	8.5	9°							
	●	●	40	32	31		72.5	36		28	12								
Steel	●	●	16	12	11	150	25.5	14	7.5	11.5	5.5	8°	0.4	No	Fig.8	SB-2050TR	FT-6		
	●	●	20	16	15	180	32.5	20	10	16	8	7°				Fig.9	SB-40125TRN	FT-15	
	●	●	25	20	19	200	40.5	23		18		13°							
	●	●	34	25	24	250	30	34	17.5	20.5	8.5	9°							
	●	●	40	32	31		72.5	36		28	12								



● Spare Parts (See P24 for spare parts of old products.)

Description	Spare Parts		
	Shim	Shim Screw	Wrench (for Shim Screw)
<input type="checkbox"/> 25□-SVUB <sup>R/L</sup> 16-34A□ <input type="checkbox"/> 32S-SVUB <sup>R/L</sup> 16-40A□ <input type="checkbox"/> 25S-SVZB <sup>R/L</sup> 16-34A□ <input type="checkbox"/> 32S-SVZB <sup>R/L</sup> 16-40A□	SVN-32N *(SVN-32S)	SS-4N	LW-4

·For insert with corner-R(rε) 0.2 or 0.4, shim of marked \* is recommended (sold separately).

● Applicable Inserts

Applications	Finishing	Finishing	Finishing	Finishing	Finishing-Medium	Finishing	Finishing / Precision	Finishing-Medium	Low Feed / Precision	Non-ferrous Metals
Ref. to Page	-	B82,B85	B82,B85	B82	B82,B85	B83	B82	B84	-	B85
Insert	CK	VF	PP	GP	HQ	<sup>R/L</sup> -F	<sup>R/L</sup> -FSF	<sup>R/L</sup> -Y	F <sup>R/L</sup> -USF	AH
Toolholder Description										
...-SVUC <sup>R/L</sup> 08-...	-	VCMT0802..	VCMT0802..	-	VCMT0802..	-	-	-	-	-
...-SVUB <sup>R/L</sup> 11-...	-	VBMT1103..	VBMT1103..	VBMT1103..	VBMT1103..	VBGT1103..	VBET1103..	VBGT1103..	-	-
...-SVUB <sup>R/L</sup> 16-...	-	VBMT1604..	VBMT1604..	VBMT1604..	VBMT1604..	-	-	VBGT1604..	-	VCGT1604..
...-SVZC <sup>R/L</sup> 08-...	-	VCMT0802..	VCMT0802..	-	VCMT0802..	-	-	-	-	-
...-SVZB <sup>R/L</sup> 11-...	-	VBMT1103..	VBMT1103..	VBMT1103..	VBMT1103..	VBGT1103..	VBET1103..	VBGT1103..	-	-
...-SVZB <sup>R/L</sup> 16-...	-	VBMT1604..	VBMT1604..	VBMT1604..	VBMT1604..	-	-	VBGT1604..	-	VCGT1604..
Applications	Non-ferrous Metals	Non-ferrous Metals	Hard Materials							
Ref. to Page	B85	C28	C17							
Insert	<sup>R/L</sup> -A3	PCD	CBN							
Toolholder Description										
...-SVUC <sup>R/L</sup> 08-...	-	VCMT0802..	VCGW0802..							
...-SVUB <sup>R/L</sup> 11-...	-	VBMT1103..	VBGW1103..							
...-SVUB <sup>R/L</sup> 16-...	VCGT1604..	VBMT1604..	VBGW1604..							
...-SVZC <sup>R/L</sup> 08-...	-	VCMT0802..	VCGW0802..							
...-SVZB <sup>R/L</sup> 11-...	-	VBMT1103..	VBGW1103..							
...-SVZB <sup>R/L</sup> 16-...	VCGT1604..	VBMT1604..	VBGW1604..							

Recommended Cutting Conditions ● F93~F94  
Applicable Sleeves ● F84~F86

● : Std. Item

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

Max. Overhang Length L/D≈~5.5

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

0° for A08X-SWUB%08-10AE, A10L-SWUB%08-12AE

·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

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

0° for S08X-SWUB%08-10A, S10L-SWUB%08-12A

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

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

Max. Overhang Length L/D≈~7

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

0° for E08L-SWUB%08-10A, E10N-SWUB%08-12A, E10N-SWUB%08-12A-2/3, E10N-SWUB%08-12A-1/2



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

### ● Applicable Inserts

Applications Ref. to Page	Minute ap	Finishing	Finishing	Finishing-Medium	Finishing	Finishing-Medium	Cast Iron	Non-ferrous Metals	Hard Materials
Insert	B89	B91	B89	B91	B89,B90	B91	B90,B91	C28,C29	C18
Toolholder Description	CF	GP	1/4-DP	HQ	1/4-F	1/4-Y	Without Chipbreaker	PCD	CBN
...-SWUB <sup>β</sup> /L06-...	WBGW0601..	-	WBMT0601..	-	WBGW0601..	-	WBGW0601..	WBMT0601..	WBGW0601..
...-SWUB <sup>β</sup> /L08-...	-	-	WBMT0802..	-	WBGW0802..	-	WBGW0802..	WBMT0802..	WBGW0802..
...-SWUP <sup>β</sup> /L11-...	-	WPMT1102..	-	WPMT1102..	-	WPGT1102..	WPGW1102..	WPMT1102..	-
...-SWUP <sup>β</sup> /L16-...	-	WPMT1603..	-	WPMT1603..	-	WPGT1603..	WPGW1603..	-	-

Recommended Cutting Conditions ● F93~F94  
Applicable Sleeves ● F83~F86

● Toolholder Dimensions

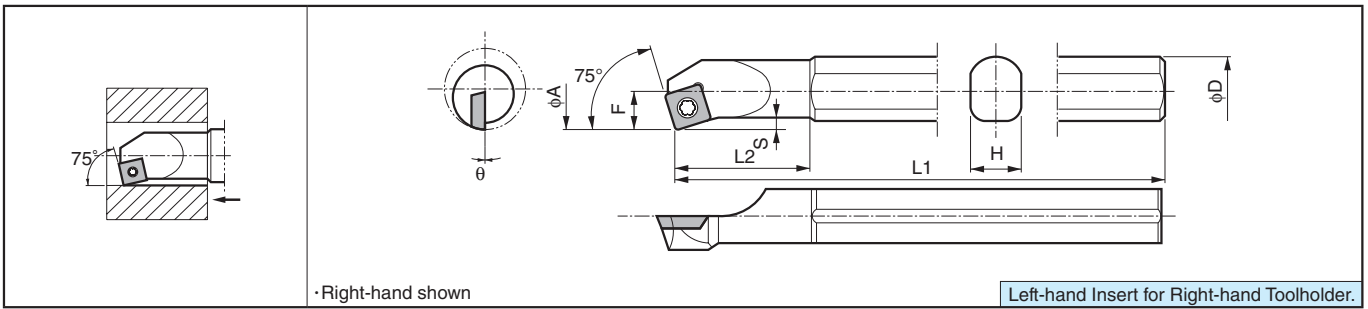
Description	Std.		Min. Bore Dia.	Dimension (mm)									θ	Std. Corner-R(°)	Coolant Hole	Drawing	Spare Parts			
	R	L		φA	φD	H	L1	L2	L3	L4	F	S					Clamp Screw	Wrench		
																				
Excellent Bar	S10H-SWUB <sup>R/L</sup> 06-06AE	●	●	6				21		13	3		15°	0.2	No	Fig.1	SB-2035TR	FT-6		
	S10H-SWUB <sup>R/L</sup> 06-07AE	●	●	7	10	9	100	25	-	15	3.5		13°							
	S10H-SWUB <sup>R/L</sup> 08-08AE	●	●	8				28			4		15°							
	A08X-SWUB <sup>R/L</sup> 08-10AE	●	●	10	8	7	120	16	21	16	5		13°	0.4	Yes	Fig.2	SB-2050TR			
	A10L-SWUB <sup>R/L</sup> 08-12AE	●	●	12	10	9	140	20	25	20	6	-	10°				SB-2545TR	FT-8		
	A12M-SWUP <sup>R/L</sup> 11-14AE	●	●	14	12	11	150	24	30	24	7		4°				SB-4065TR	FT-15		
	A16Q-SWUP <sup>R/L</sup> 11-18AE	●	●	18	16	15	180	30	37	30	9		1°	0.8						
	A16Q-SWUP <sup>R/L</sup> 16-18AE	●	●									3.5°								
	A20R-SWUP <sup>R/L</sup> 16-22AE	●	●	22	20	19	200	36	46	37	11		2°							
Steel	S10H-SWUB <sup>R/L</sup> 06-06A	●	●	6				21		13	3		15°	0.2		Fig.3	SB-2035TR	FT-6		
	S10H-SWUB <sup>R/L</sup> 06-07A	●	●	7	10	9	100	25	-	15	3.5		13°							
	S10H-SWUB <sup>R/L</sup> 08-08A	●	●	8				28			4		15°							
	S08X-SWUB <sup>R/L</sup> 08-10A	●	●	10	8	7	120	16	21	16	5		13°	0.4	No	Fig.4	SB-2050TR			
	S10L-SWUB <sup>R/L</sup> 08-12A	●	●	12	10	9	140	20	25	20	6	-	10°				SB-2545TR	FT-8		
	S12M-SWUP <sup>R/L</sup> 11-14A	●	●	14	12	11	150	24	30	24	7		4°				SB-4065TR	FT-15		
	S16Q-SWUP <sup>R/L</sup> 11-18A	●	●	18	16	15	180	30	37	30	9		1°	0.8						
	S16Q-SWUP <sup>R/L</sup> 16-18A	●	●									3.5°								
	S20R-SWUP <sup>R/L</sup> 16-22A	●	●	22	20	19	200	36	46	37	11		2°							
Carbide	C05H-SWUB <sup>R/L</sup> 06-06AN	●	●	6	5	4.4	100	9		10	3		15°	0.2	No	Fig.5	SB-2035TR	FT-6		
	C06J-SWUB <sup>R/L</sup> 06-07AN	●	●	7	6	5.4	110	10	-	11	3.5		13°							
	C07K-SWUB <sup>R/L</sup> 08-08AN	●	●	8	7	6.4	125	11		12	4		15°							
	C05H-SWUB <sup>R/L</sup> 06-06A	□	□	6	5	4.4	100	11		11	3		15°	0.4	Yes	Fig.6	SB-2050TR	FT-8		
	C06J-SWUB <sup>R/L</sup> 06-07A	□	□	7	6	5.4	110	12	-	12	3.5		13°							
	C07K-SWUB <sup>R/L</sup> 08-08A	□	□	8	7	6.4	125	13		13	4		15°							
	E08L-SWUB <sup>R/L</sup> 08-10AN	●	●	10	8	7	140	14	15	15	5		13°	0.8			SB-2545TR	FT-15		
	E10N-SWUB <sup>R/L</sup> 08-12AN	●	●	12	10	9	160						10°							
	E10N-SWUBR08-12AN2/3	●					105	18	19	19	6									13°
	E10N-SWUBR08-12AN1/2	●					80								10°					
	E08L-SWUB <sup>R/L</sup> 08-10A	□	□	10	8	7	140	16	15	15	5		13°	0.4	Yes	Fig.6	SB-2545TR	FT-8		
	E10N-SWUB <sup>R/L</sup> 08-12A	□	□	12	10	9	160						4°							
	E10N-SWUBR08-12A-2/3	□					105	20	19	19	6									1°
	E10N-SWUBR08-12A-1/2	□					80								3.5°					
	E12Q-SWUP <sup>R/L</sup> 11-14A	●	●	14	12	11	180						4°	0.8			SB-4065TR	FT-15		
	E12Q-SWUPR11-14A-2/3	●					23	22	22	7										2°
	E12Q-SWUPR11-14A-1/2	●					90													
	E16X-SWUP <sup>R/L</sup> 11-18A	●	●	18	16	15	220						1°	0.8			SB-4065TR	FT-15		
E16X-SWUPR11-18A-2/3	●		145																	
E16X-SWUPR11-18A-1/2	●		110																	
E16X-SWUP <sup>R/L</sup> 16-18A	●	●	22	20	19	220	28	27	27	9		3.5°	0.8			SB-4065TR	FT-15			
E16X-SWUPR16-18A-2/3	●					145														
E16X-SWUPR16-18A-1/2	●					110														
E20S-SWUP <sup>R/L</sup> 16-22A	●	●	22	20	19	250						2°	0.8			SB-4065TR	FT-15			
E20S-SWUPR16-22A-2/3	●					165	32	31	31	11										
E20S-SWUPR16-22A-1/2	●					125														



● : Std. Item  
□ : Deleted from the next catalogue

### S-SSKP (Boring)

Max. Overhang Length L/D≈3



#### Toolholder Dimensions

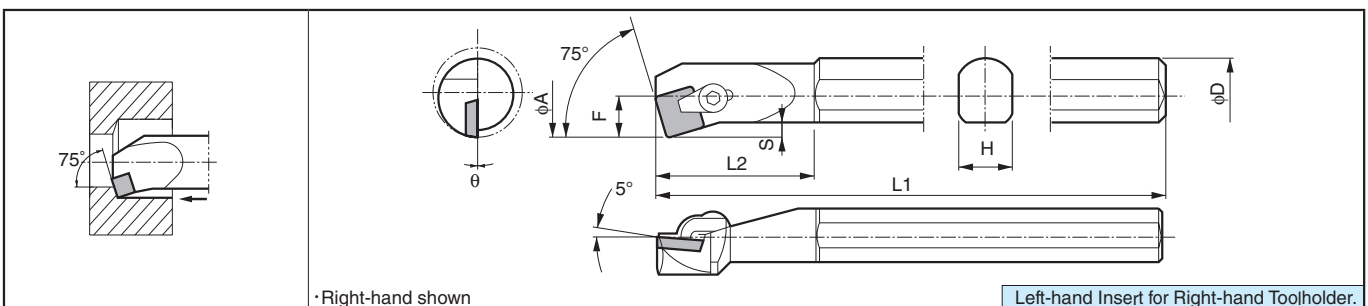
Description	Std.		Min. Bore Dia.	Dimension (mm)						θ	Std. Corner-R(℞)	Spare Parts	
	R	L		φA	φD	H	L1	L2	F			S	Clamp Screw
	S16Q-SSKPR09-20	●		20	16	14	180	30	10	2.0	-3°	0.8	SB-4TR
S20R-SSKPR09-25	●		25	20	18	200	35	12.5	2.5	0°			

#### Applicable Inserts

Applications	Finishing											
Ref. to Page	B69											
Insert												
Toolholder Description	SPGH0903..											

### S-CSKP (Boring)

Max. Overhang Length L/D≈3



#### Toolholder Dimensions

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

#### Applicable Inserts

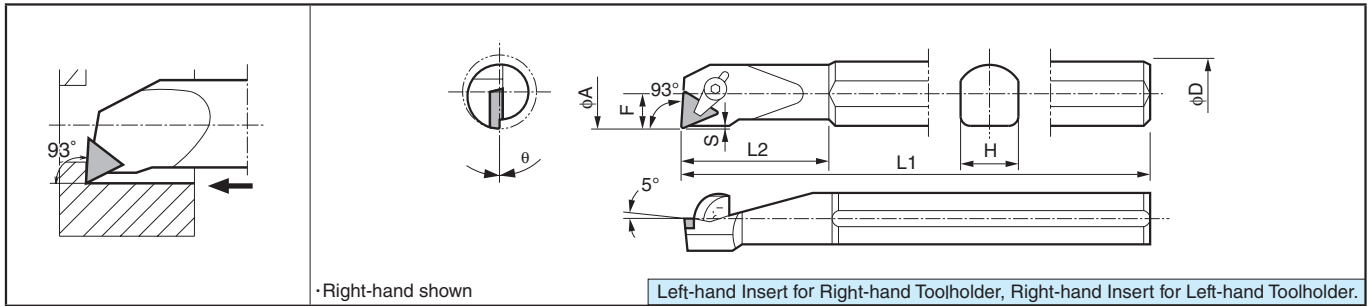
Applications	Medium	Medium	Finishing-Medium	Cast Iron	Cast Iron	Non-ferrous Metals				
Ref. to Page	B69	B69	B69	B69	B105	C29				
Insert		Standard		Without Chipbreaker	Ceramic	PCD				
Toolholder Description	SPMR0903..	SPMR0903..	SPGR0903..	SPMN0903.. SPGN0903..	SPGN0903..	-				
Toolholder Description	SPMR1203..	SPMR1203..	SPGR1203..	SPMN1203.. SPGN1203..	SPGN1203..	SPGN1203..				

Recommended Cutting Conditions **F93~F94**  
Applicable Sleeves **F85~F86**

●: Std. Item

### S-CTUP (Boring)

Max. Overhang Length L/D≈~3



#### Toolholder Dimensions

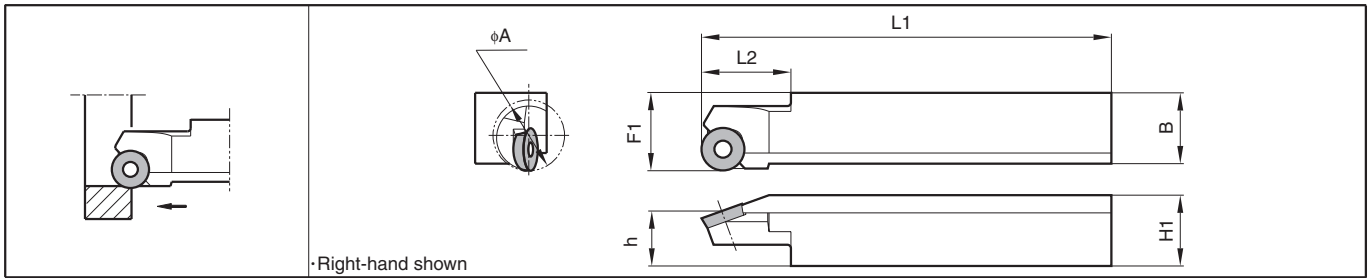
Description	Std.		Min. Bore Dia.	Dimension (mm)						θ	Std. Corner R (rε)	Spare Parts					
	R	L		φA	φD	H	L1	L2	F			S	Clamp Set		Wrench		Shim
<b>S12L-CTUPR 09-16</b>	●		16	12	11	140	32	8	0.5	0°	0.4	CPS-1	-	FH-2	-	-	-
<b>S16N-CTUP<sup>R/L</sup> 11-20</b>	●	●	20	16	14	160	30	10	0.5	0°	0.4	-	CPS-2	FH-2.5	-	-	-
<b>S20Q-CTUP<sup>R/L</sup> 11-27</b>	●	●	27	20	18	180	40	13.5	1.3			-	-	-	-	-	-
<b>S25X-CTUP<sup>R/L</sup> 16-34</b>	●	●	34	25	23	220	60	17	1.0	0°	0.8	-	CPS-3	-	LW-3	-	-
<b>S32S-CTUP<sup>R/L</sup> 16-43</b>	●	●	43	32	30	250	70	21.5				KPT-32	SP3X10				
<b>S40X-CTUP<sup>R/L</sup> 16-50</b>	●	●	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	B80	B80	B80	B80	B80	B81	B81	B105	C29	C18
Insert	GP	HQ	G	Standard	<sup>R/L</sup> -F	<sup>R/L</sup> -□	Without Chipbreaker	Ceramic	PCD	CBN
Toolholder Description										
<b>---CTUPR09---</b>	-	-	TPMR0902..	-	TPGR0902..	-	TPGN0902..	-	-	-
<b>---CTUP<sup>R/L</sup>11---</b>	TPMR1103..	TPMR1103..	TPMR1103..	TPMR1103..	-	TPGR1103..	TPMN1103.. TPGN1103..	TPGN1103..	TPGN1103..	TPGN1103..
<b>---CTUP<sup>R/L</sup>16---</b>	TPMR1603..	TPMR1603..	TPMR1603..	TPMR1603..	-	TPGR1603..	TPMN1603.. TPGN1603..	TPGN1603..	TPGN1603..	TPGN1603..

Recommended Cutting Conditions ● F93~F94  
Applicable Sleeves ● F84~F86

### SRCP-B (Boring)



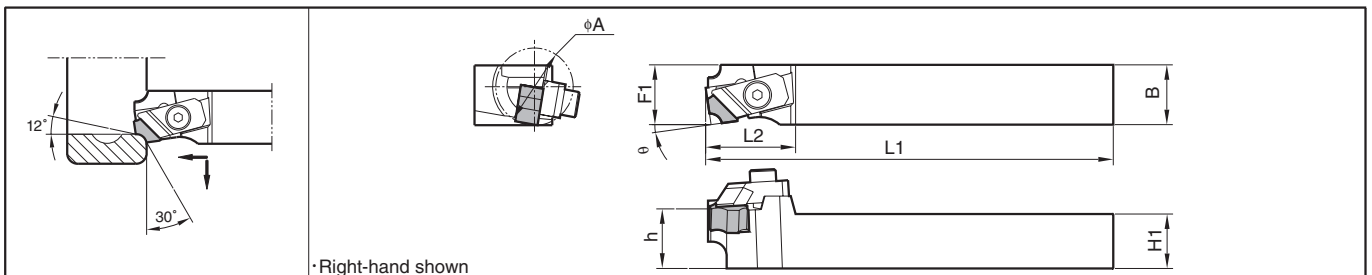
#### Toolholder Dimensions

Description	Std.		Min. Bore Dia.	Dimension (mm)						Spare Parts			Applicable Inserts ● B95
	R	L		$\phi A$	H1	h	B	L1	L2	F1	Clamp Screw	Wrench	
SRCP <sup>R/L</sup>	●	●	20	20	15.5	20	125	25	22	SB-4TR	FT-15	-	RPMT1203M0-BB
	●	●	32	25	20	25	150	31	27	SB-5090TR	-	LTW-20	RPMT1604M0-BB

#### Applicable Inserts

Insert	Description	Dimension (mm)			Angle
		A	T	$\phi d$	$\alpha$
	<b>RPMT 1203M0-BB</b> <b>1604M0-BB</b>	12.0	3.18	4.4	11°
		16.0	4.76	5.5	

### CBSN-B (Internal Round Chamfering)



#### Toolholder Dimensions

Description	Std.		Min. Bore Dia.	Dimension (mm)						$\theta$	Spare Parts		Applicable Inserts ● B95
	R	L		$\phi A$	H1	h	B	L1	L2		F1	Clamp Set	
CBSN <sup>R/L</sup>	●	●	20	20	21	20	125	32	20	9°	CP-RC <sup>R/L</sup>	LW-5	SNMF1204○○-21
	●	●		25	26	25	150		25				

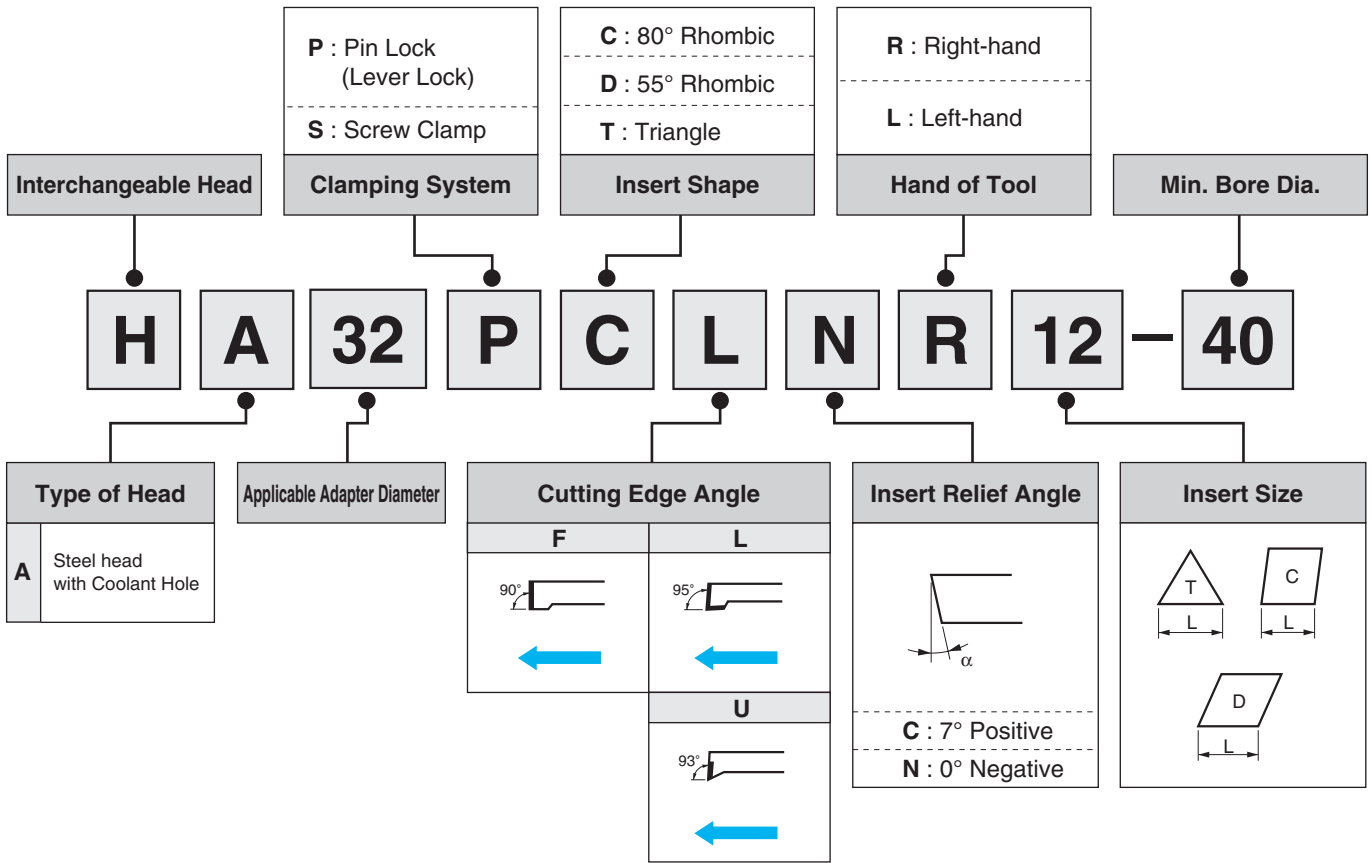
Clamp Set: CP-RCR for Right-hand Toolholder, and CP-RCL for Left-hand Toolholder.

#### Applicable Inserts

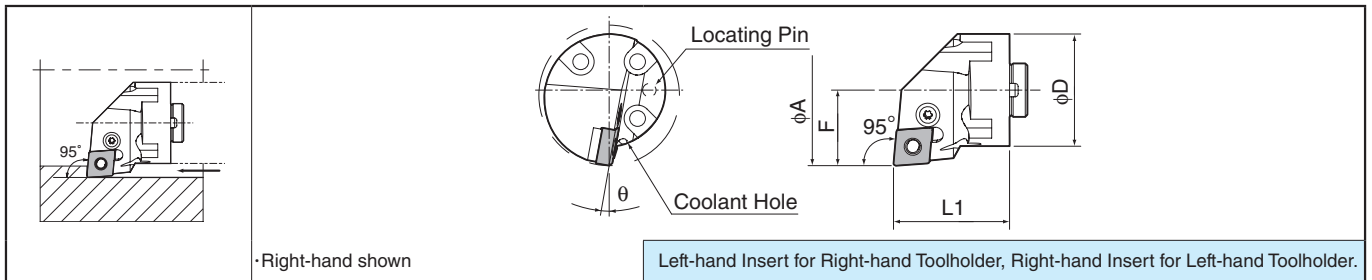
Insert	Description	Dimension (mm)				Angle
		A	T	B	$r\epsilon$	$\theta$
	<b>SNMF 120406-21</b>	12.70	4.76	1.5	0.6	21°
	<b>120410-21</b>			3.0	1.0	
	<b>120416-21</b>			3.1	1.6	
	<b>120421-21</b>			3.2	2.1	
	<b>120426-21</b>			3.3	2.6	

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

## Identification System for Interchangeable Heads



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



### Toolholder Dimensions

Description	Std.		Mi. Bore Dia. φA	Dimension (mm)			θ	Std. Corner-R(re)	Spare Parts						Applicable Boring Adapter F66
	R	L		φD	L1	F			Lever	Lock Screw	Shim	Shim Pin	*Punch	Wrench	
HA32PCLN <sup>9/16</sup> 12-40	●	●	40	32	41	22	10°	0.8	LL-2K	LS-2P	LC-4K	LSP-3K	*PC-2K	LTP-15	AD32U
HA40PCLN <sup>9/16</sup> 12-50	●	●	50	40		27									AD40V
HA50PCLN <sup>9/16</sup> 12-63	●	●	63	50		35									AD50W

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

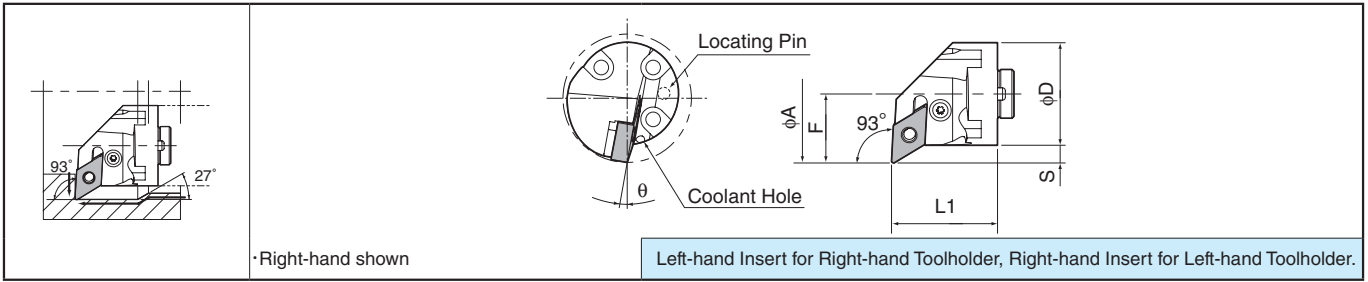
### Applicable Inserts

Toolholder Description	Insert Description		Ref. to Page			
			Cermet / Coated Carbide / Carbide	Ceramic	PCD	CBN
HA32PCLN <sup>9/16</sup> 12-40	CN□A	1204..	B14~B20	B98	C23	C6,C7
HA40PCLN <sup>9/16</sup> 12-50	CN□G					
HA50PCLN <sup>9/16</sup> 12-63	CN□M					

Recommended Cutting Conditions F93~F94

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

## HA...PDUN15 (Copying, with Coolant Hole)



### Toolholder Dimensions

Description	Std.		Min. Bore Dia.	Dimension (mm)				θ	Std. Corner-R (rε)	Spare Parts						Applicable Boring Adapter F66
	R	L		ϕA	ϕD	L1	F			S	Lever	Lock Screw	Shim	Shim Pin	*Punch	
HA32PDUN <sup>®</sup> /L 15-43	●	●	43	32		25	9	12°	0.8	LL-3K	LS-3P	LD-4K43 (LD-4K)	LSP-3K	*PC-2K	LTP-15	AD32U
HA40PDUN <sup>®</sup> /L 15-50	●	●	50	40	41	27	7	10°								AD40V
HA50PDUN <sup>®</sup> /L 15-63	●	●	63	50		35	10	10°								AD50W

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

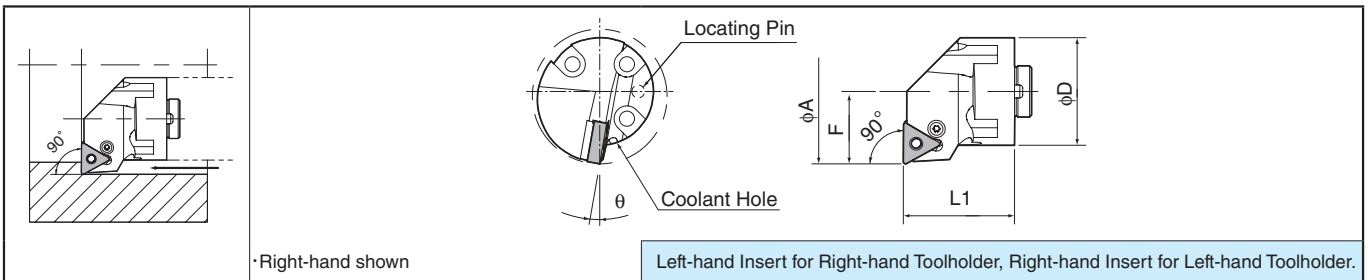
\* Shim: LD-4K43 is attached to Toolholder. When using DN□□ 1506 Insert, purchase LD-4K separately.

### Applicable Inserts

Toolholder Description	Insert Description				Ref. to Page				
	Shim:LD-4K43		Shim:LD-4K		Cermet / Coated Carbide / Carbide		Ceramic	PCD	CBN
HA32PDUN <sup>®</sup> /L 15-43	DN□A		DN□A	1506..	B21~B27		B99	C23	C8,C9
HA40PDUN <sup>®</sup> /L 15-50	DN□G	1504..	DN□G	1506..					
HA50PDUN <sup>®</sup> /L 15-63	DN□M		DN□M						

Recommended Cutting Conditions F93~F94

## HA...PTFN16 (Boring, with Coolant Hole)



### Toolholder Dimensions

Description	Std.		Min. Bore Dia.	Dimension (mm)				θ	Std. Corner-R (rε)	Spare Parts						Applicable Boring Adapter F66
	R	L		ϕA	ϕD	L1	F			Lever	Lock Screw	Shim	Shim Pin	*Punch	Wrench	
HA32PTFN <sup>®</sup> /L 16-40	●	●	40	32		22		10°	0.8	LL-1K	LS-1P	LT-3K	LSP-2K	*PC-2K	LTP-10	AD32U
HA40PTFN <sup>®</sup> /L 16-50	●	●	50	40	41	27		10°								AD40V
HA50PTFN <sup>®</sup> /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 <sup>®</sup> /L 16-40	TN□A		B33~B39		B103	C23	C10,C11
HA40PTFN <sup>®</sup> /L 16-50	TN□G	1604..					
HA50PTFN <sup>®</sup> /L 16-63	TN□M						

Recommended Cutting Conditions F93~F94

## Reference

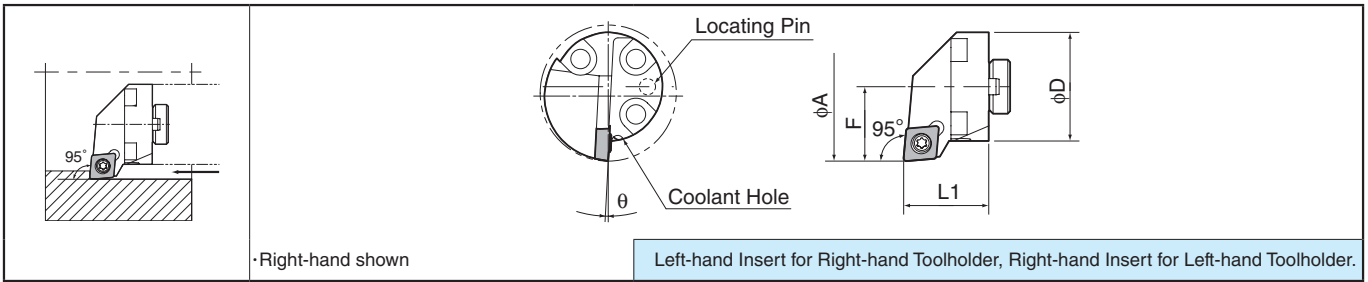
Wrenches (LTP-10, LTP-15) are Torx Plus.  
The size of Torx Plus is engraved on the long shaft.

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

●: Std. Item



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



### Toolholder Dimensions

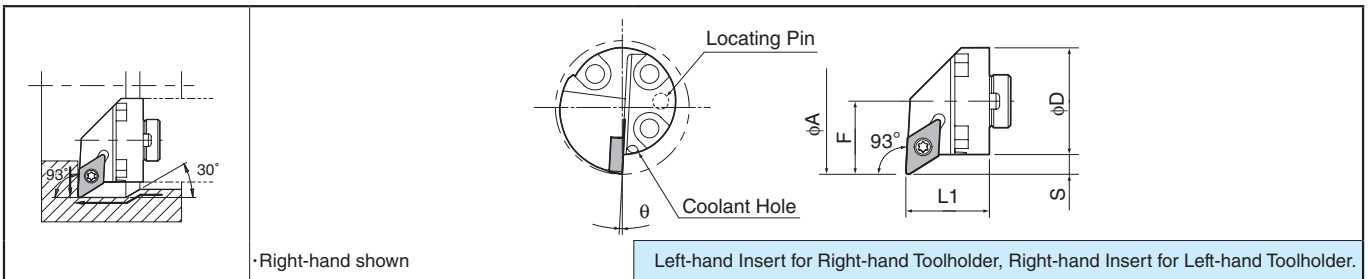
Description	Std.		Min. Bore Dia.	Dimension (mm)				$\theta$	Std. Corner-R(re)	Spare Parts		Applicable Boring Adapter ● F66	Applicable Inserts
	R	L		$\phi A$	$\phi D$	L1	F			S	Clamp Screw		
	HA32SCLC <sup>R/L</sup> 09-40	●	●	40	32	25	22	-	3°	0.8			AD32U

### Applicable Inserts

Insert Description	Ref. to Page		
	Cermet / Coated Carbide / Carbide	PCD	CBN
CC..09T3..	B49~B55	C24	C14

Recommended Cutting Conditions ● F93~F94

## HA...SDUC11 (Copying, with Coolant Hole)



### Toolholder Dimensions

Description	Std.		Min. Bore Dia.	Dimension (mm)				$\theta$	Std. Corner-R(re)	Spare Parts		Applicable Boring Adapter ● F66	Applicable Inserts
	R	L		$\phi A$	$\phi D$	L1	F			S	Clamp Screw		
	HA32SDUC <sup>R/L</sup> 11-40	●	●	40	32	25	22	6	3°	0.8			AD32U

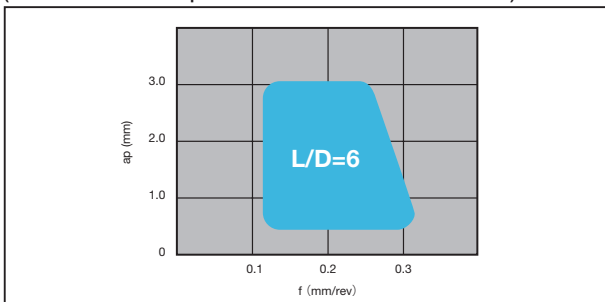
### Applicable Inserts

Insert Description	Ref. to Page		
	Cermet / Coated Carbide / Carbide	PCD	CBN
DC..11T3..	B57~B65	C25	C15

Recommended Cutting Conditions ● F93~F94

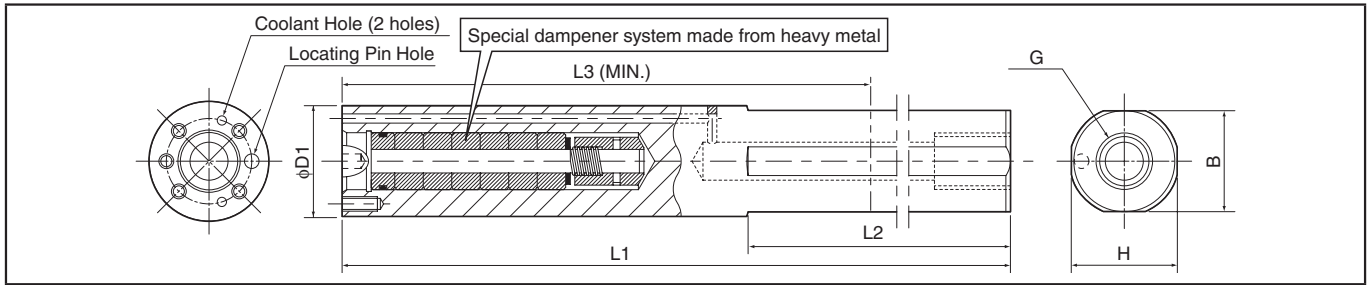
## Possible machining area (Guide-Line for Overhang Length of AD Bars)

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



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

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



### Dimensions

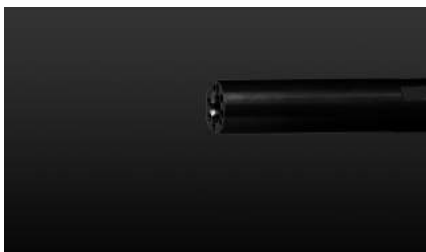
Description	Std.	Dimension (mm)							Spare Parts				
		φD1	H	B	L1	L2	L3 (MIN.)	G	Clamp Bolt	Wrench (sold separately)			
AD32U	●	32	31	29	310	200	200	Rp3/8			LW-4		
AD40V	●	40	39	37	360	248	228					HH5X20 (3 pcs)	HH5X30 (1 pcs)
AD50W	●	50	47	47	410	280	276					HH6X20 (3 pcs)	HH6X30 (1 pcs)

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 PCLN <sup>®</sup> /L 12-40	AD32U	HH5X20	HH5X30	LW-4
PDUN <sup>®</sup> /L 15-43				
PTFN <sup>®</sup> /L 16-40		HH5x20		
SCLC <sup>®</sup> /L 09-40				
SDUC <sup>®</sup> /L 11-40				
HA40 PCLN <sup>®</sup> /L 12-50	AD40V	HH5X20	HH5X30	LW-4
PDUN <sup>®</sup> /L 15-50				
PTFN <sup>®</sup> /L 16-50				
HA50 PCLN <sup>®</sup> /L 12-63	AD50W	HH6X20	HH6X30	LW-5
PDUN <sup>®</sup> /L 15-63				
PTFN <sup>®</sup> /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 SCLC<sup>®</sup>/L 09-40 and HA32 SDUC<sup>®</sup>/L 11-40 use HH5 X 20 for all 3 bolts.

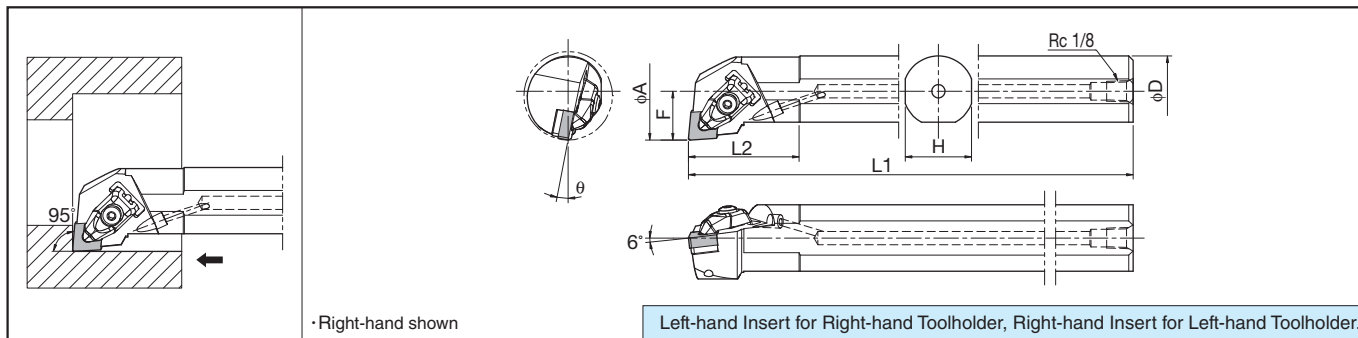
●: Std. Item



# Boring Bar [CN□□ Negative Insert]

## A-DCLN (Boring / Internal Facing)

Max. Overhang Length L/D≈3



### Toolholder Dimensions

Description	Std.		Min. Bore Dia.	Dimension (mm)						θ	Std. Corner-R(rε)	Spare Parts															
	R	L		φA	φD	H	L1	L2	F			S	Clamp	Screw	Spring	Shim	Shim Screw	Nozzle	Wrench for Clamp	Wrench (sold separately) for Shim							
<b>A25R-DCLN<sup>φ</sup>L12-32</b>	●	●	32	25	23	200	42	17	-	11°	0.8																
<b>A32S-DCLN<sup>φ</sup>L12-40</b>	●	●	40	32	30	250	50	22	-	11°										CP-3D	CS-3D	SP-3D	DC-42	SB-4085TR	DN10	LW-3	FT-15
<b>A40T-DCLN<sup>φ</sup>L12-50</b>	●	●	50	40	37	300	60	27	-	14°										DN20							

\*Not applicable to high-pressure coolant.

### Applicable Inserts

Applications	Finishing	Finishing-Medium	Finishing	Finishing	Finishing-Medium	Finishing-Medium	Finishing-Medium	Finishing-Medium	Finishing-Medium	Medium-Roughing	Medium-Roughing
Ref. to Page	<b>B14</b>	<b>B14</b>	<b>B14</b>	<b>B14</b>	<b>B14</b>	<b>B14</b>	<b>B14</b>	<b>B14</b>	<b>B14</b>	<b>B15</b>	<b>B15</b>
Insert											
Toolholder Description	WP (Wiper)	WQ (Wiper)	PP	GP	PQ	HQ	CQ	CJ	GS	PG	
...	CNMG1204..	CNMG1204..	CNMG1204..	CNMG1204..	CNMG1204..	CNMG1204..	CNMG1204..	CNMG1204..	CNMG1204..	CNMG1204..	CNMG1204..
Applications	Medium-Roughing	Medium-Roughing / High Feed Rate	Roughing	Single Steel / Roughing / High Feed Rate	Medium	Soft Steel / Finishing	Soft Steel / Medium	Soft Steel / Roughing	Stainless Steel / Finishing	Stainless Steel / Medium-Roughing	
Ref. to Page	<b>B15</b>	<b>B15</b>	<b>B16</b>	<b>B16</b>	<b>B20</b>	<b>B17</b>	<b>B17</b>	<b>B17</b>	<b>B18</b>	<b>B18</b>	<b>B18</b>
Insert											
Toolholder Description	PS	PT	Standard	PX	P/L	XP	XQ	XS	MQ	MS	
...	CNMG1204..	CNMG1204..	CNMG1204..	CNMM1204..	CNGG1204..	CNMG1204..	CNMG1204..	CNMG1204..	CNMG1204..	CNMG1204..	CNMG1204..
Applications	Stainless Steel / Medium-Roughing	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Non-ferrous Metals	Non-ferrous Metals	Non-ferrous Metals	Hard Materials
Ref. to Page	<b>B18</b>	<b>B19</b>	<b>B19</b>	<b>B19</b>	<b>B19</b>	<b>B98</b>	<b>B19</b>	<b>B19</b>	<b>C23</b>	<b>C6,C7</b>	
Insert											
Toolholder Description	MU	C	ZS	GC	Without Chipbreaker	Ceramic	AH	P/L-A3	PCD	CBN	
...	CNMG1204..	CNMG1204..	CNMG1204..	CNMG1204..	CNMA1204.. CNGA1204..	CNMA1204.. CNGA1204..	CN_G1204..	CNGG1204..	CNMM1204..	CNGA1204..	

Recommended Cutting Conditions F93-F94



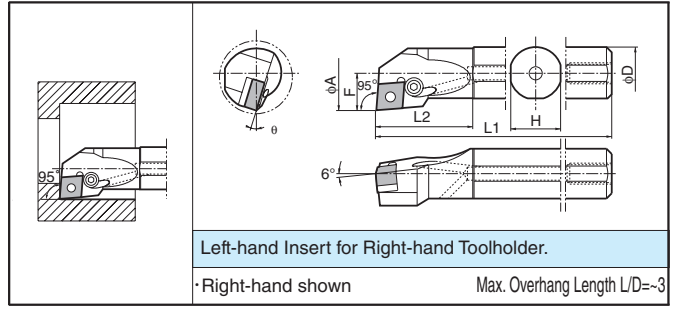
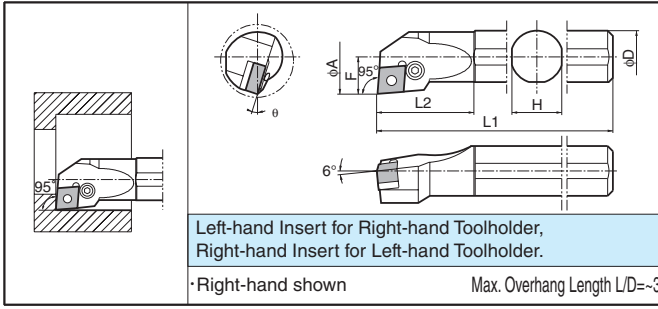
# Boring Bar [CN□□ Negative Insert]

## Lever Lock

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

### S-PCLN○○ (Boring / Internal Facing)

### A-PCLN09



### Toolholder Dimensions

Description	Std.		Min. Bore Dia.	Dimension (mm)					θ	Std. Corner-R(re)	Spare Parts					
	R	L		φA	φD	H	L1	L2			F	Lever	Lock Screw	Shim	Shim Pin	Punch
<b>S16M -PCLN<sup>R/L</sup> 09-20</b>	●	●	20	16	15	150	34	11	16°	0.8	LL-03SN	LS-03SN	-	P-03S	-	FH-2.5
<b>S20Q -PCLN<sup>R/L</sup> 09-27</b>	●	●	27	20	19	180	37	14.2	17°		LL-1N	LS-1SN	LC-32N	LSP-1	PC-1	
<b>S25R -PCLN<sup>R/L</sup> 09-32</b>	●	●	32	25	24	200	42	15.7	15°							
<b>S25R -PCLN<sup>R/L</sup> 12-32</b>	●	●	32	25	24	200	42	16.3	16°	0.8	LL-2N	LS-2N	LC-42N <sup>R/L</sup>	LSP-2	PC-2	LW-3
<b>S32S -PCLN<sup>R/L</sup> 12-40</b>	●	●	40	32	30	250	50	21	10°							
<b>S40T -PCLN<sup>R/L</sup> 12-50</b>	●	●	50	40	37	300	60	25								
<b>A16M -PCLNR09-20</b>	●		20	16	15	150	34	11	16°	0.8	LL-03SN	LS-03SN	-	P-03S	-	FH-2.5
<b>A20Q -PCLNR09-27</b>	●		27	20	19	180	37	14.2	17°		LL-1N	LS-1SN	LC-32N	LSP-1	PC-1	
<b>A25R -PCLNR09-32</b>	●		32	25	24	200	42	15.7	15°							

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	Finishing-Medium	Medium-Roughing	Medium-Roughing
Ref. to Page	B14	B14	B14	B14	B14	B14	B14	B14	B14	B15	B15
Insert	WP (Wiper)	WQ (Wiper)	PP	GP	PQ	HQ	CQ	CJ	GS	PG	
Toolholder Description											
...-PCLN <sup>R/L</sup> 09-...	-	-	-	CNMG0904..	-	CNMG0904..	-	-	CNMG0904..	-	-
...-PCLN <sup>R/L</sup> 12-...	CNMG1204..	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	B16	B20	B20	B17	B17	B17	
Insert	PS	HS	PT	Standard	PX	<sup>R/L</sup> -S	<sup>R/L</sup>	XP	XQ	XS	
Toolholder Description											
...-PCLN <sup>R/L</sup> 09-...	-	-	-	-	-	CNGG0904..	CNGG0904..	-	-	-	
...-PCLN <sup>R/L</sup> 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	Cast Iron	Non-ferrous Metals	Non-ferrous Metals
Ref. to Page	B18	B18	B18	B19	B19	B19	B19	B98	B19	B19	
Insert	MQ	MS	MU	C	ZS	GC	Without Chipbreaker	Ceramic	AH	<sup>R/L</sup> -A3	
Toolholder Description											
...-PCLN <sup>R/L</sup> 09-...	-	-	-	-	-	-	-	-	-	-	
...-PCLN <sup>R/L</sup> 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	PCD	CBN									
Toolholder Description											
...-PCLN <sup>R/L</sup> 09-...	-	-									
...-PCLN <sup>R/L</sup> 12-...	CNMM1204..	CNGA1204..									

Recommended Cutting Conditions ● F93-F94

### Applicable Coolant Sleeve / Joint

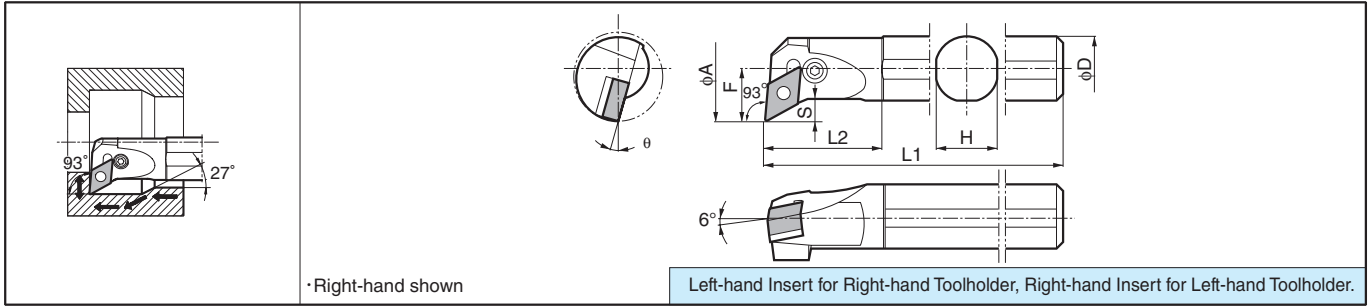
Toolholder Description	Applicable Coolant Sleeve	Applicable Coolant Joint
<b>A16M-PCLN<sup>R/L</sup> 09-20</b>	SHC1640-70,SHC1650-95	SJS-8
<b>A20Q-PCLN<sup>R/L</sup> 09-27</b>	SHC2040-70,SHC2050-95	
<b>A25R-PCLN<sup>R/L</sup> 09-32</b>	SHC2540-70,SHC2550-95	

For Coolant Sleeve, Coolant Joint, ref. to page ● F85-F86.

●: Std. Item

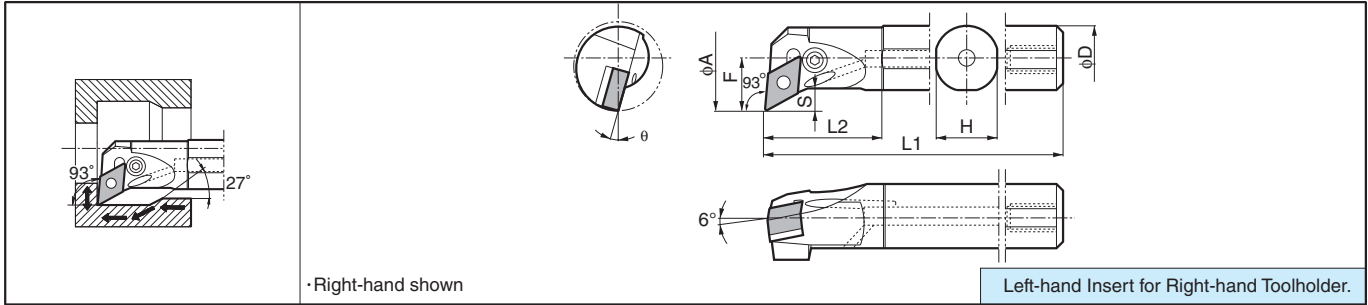
### S-PDUN11 (Copying)

Max. Overhang Length L/D≈~3



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

Max. Overhang Length L/D≈~3



### Toolholder Dimensions

Description	Std.		Min. Bore Dia.	Dimension (mm)						θ	Std. Corner-R(re)	Spare Parts					
	R	L		φA	φD	H	L1	L2	F			S	Lever	Lock Screw	Shim	Shim Pin	Punch
	<b>S20Q -PDUN<sup>φ</sup>/L 11-27</b>	●	●	27	20	19	180	35	16	7.6	17°	0.4					
<b>S25R -PDUN<sup>φ</sup>/L 11-32</b>	●	●	32	25	24	200	40	17	7.6	15°							
<b>S32S -PDUN<sup>φ</sup>/L 11-40</b>	●	●	40	32	31	250	45	22	8.5	12°							
<b>A20Q -PDUNR11-27</b>	●		27	20	19	180	35	16	7.6	17°	0.4						
<b>A25R -PDUNR11-32</b>	●		32	25	24	200	40	17	7.6	15°							
<b>A32S -PDUNR11-40</b>	●		40	32	31	250	45	22	8.5	12°							

### Applicable Inserts

Applications Ref. to Page	Finishing B21	Finishing-Medium B21	Medium-Roughing B22	Finishing B27	Medium B27						
Insert											
ToolholderDescription	DNMG1104..	DNMG1104..	DNMG1104..	DNGG1104..	DNGG1104..						
....PDUN <sup>φ</sup> /L 11....											

Recommended Cutting Conditions F93~F94

### Applicable Coolant Sleeve / Joint

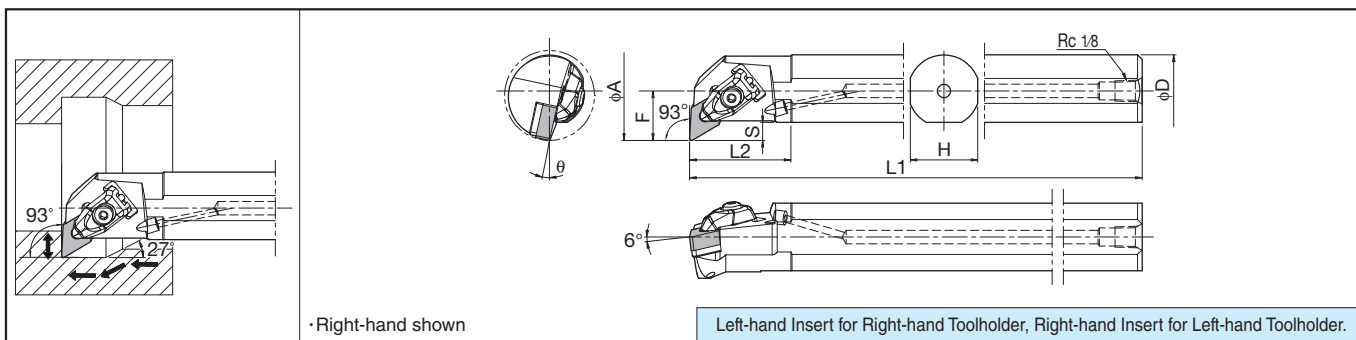
Toolholder Description	Applicable Coolant Sleeve	Applicable Coolant Joint
<b>A20Q -PDUNR11-27</b>	SHC2040-70,SHC2050-95	SJS-8
<b>A25R -PDUNR11-32</b>	SHC2540-70,SHC2550-95	
<b>A32S -PDUNR11-40</b>	-	

For Coolant Sleeve, Coolant Joint, ref. to page F85~F86.

# Boring Bar [DN15 Negative Insert]

## A-DDUN (Boring / Copying)

Max. Overhang Length L/D≈3



### Toolholder Dimensions

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

When using inserts whose corner-R(re) 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

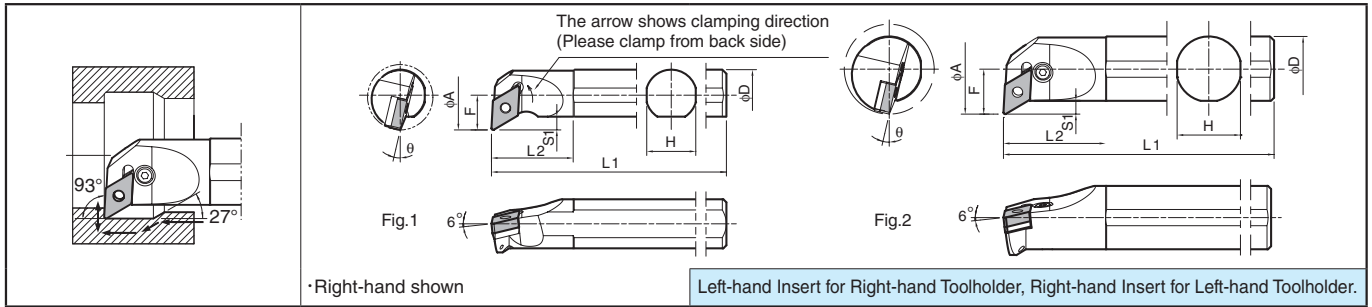
Applications	Finishing	Finishing-Medium	Finishing-Medium	Finishing-Medium	Medium-Roughing	Medium-Roughing	Medium-Roughing	Medium-Roughing / High Feed Rate	Roughing
Ref. to Page	<b>B21</b>	<b>B21</b>	<b>B22</b>	<b>B22</b>	<b>B22</b>	<b>B22</b>	<b>B23</b>	<b>B23</b>	<b>B23</b>
Insert	<b>PP</b>	<b>PQ</b>	<b>CQ</b>	<b>CJ</b>	<b>GS</b>	<b>PG</b>	<b>PS</b>	<b>PT</b>	Standard
Toolholder Description									
<b>....DDUN</b> <sup>φ/L</sup> <b>15....</b>	DNMG1504..	DNMG1504..	DNMG1504..	DNMG1504..	DNMG1504..	DNMG1504..	DNMG1504..	DNMG1504..	DNMG1504..
Applications	Roughing	Single Sided / Roughing / High Feed Rate	Medium	Soft Steel / Medium	Soft Steel / Medium	Soft Steel / Roughing	Stainless Steel / Finishing	Stainless Steel / Medium-Roughing	Stainless Steel / Medium-Roughing
Ref. to Page	<b>B24</b>	<b>B24</b>	<b>B27</b>	<b>B24</b>	<b>B24</b>	<b>B24</b>	<b>B25</b>	<b>B25</b>	<b>B25</b>
Insert	<b>PH</b>	<b>PX</b>	<sup>φ/L</sup>	<b>XP</b>	<b>XQ</b>	<b>XS</b>	<b>MQ</b>	<b>MS</b>	<b>MU</b>
Toolholder Description									
<b>....DDUN</b> <sup>φ/L</sup> <b>15....</b>	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	<b>B25</b>	<b>B26</b>	<b>B26</b>	<b>B26</b>	<b>B99</b>	<b>B27</b>	<b>B27</b>	<b>C23</b>	<b>C8,C9</b>
Insert	<b>TK</b>	<b>C</b>	<b>ZS</b>	<b>GC</b>	Ceramic	<b>AH</b>	<sup>φ/L</sup> -A3	<b>PCD</b>	<b>CBN</b>
Toolholder Description									
<b>....DDUN</b> <sup>φ/L</sup> <b>15....</b>	DNMG1504..	DNMG1504..	DNMG1504..	DNMG1504..	DNGA1504..	DN_G1504..	DNGG1504..	DNMM1504..	DNGA1504..

Recommended Cutting Conditions **F93~F94**

# Boring Bar [DN15 Negative Insert]

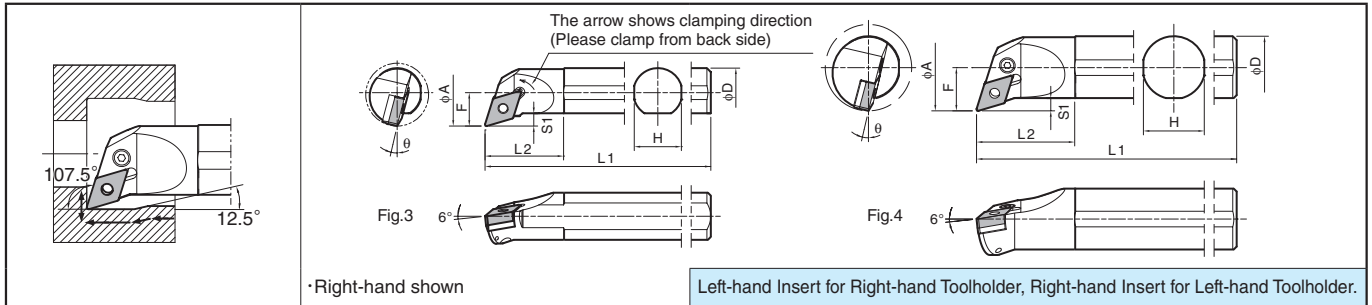
## S-PDUN15 (Copying)

Max. Overhang Length L/D≈~3



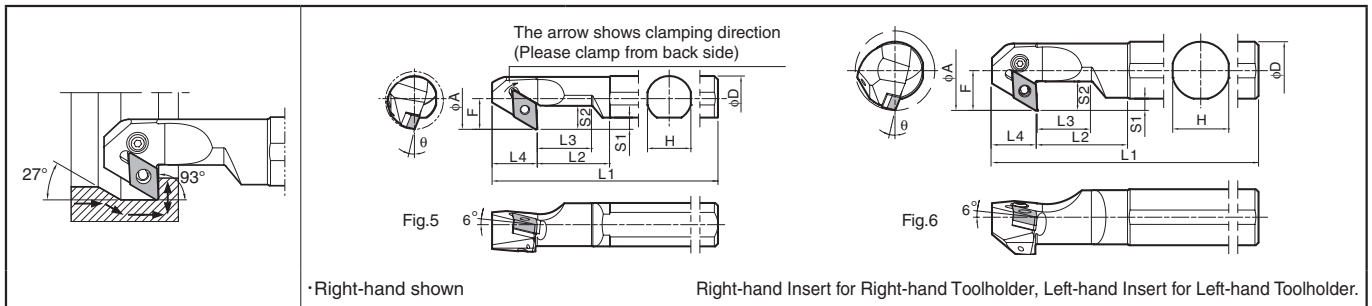
## S-PDQN15 (Copying)

Max. Overhang Length L/D≈~3



## S-PDZN15 (Back Boring)

Max. Overhang Length L/D≈~3



## Toolholder Dimensions

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

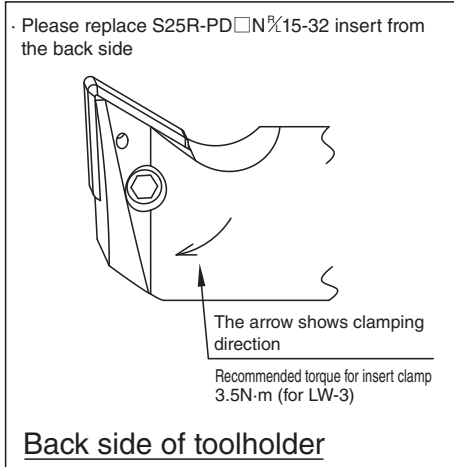
# Boring Bar [DN15 Negative Insert]

● Spare Parts (Common)

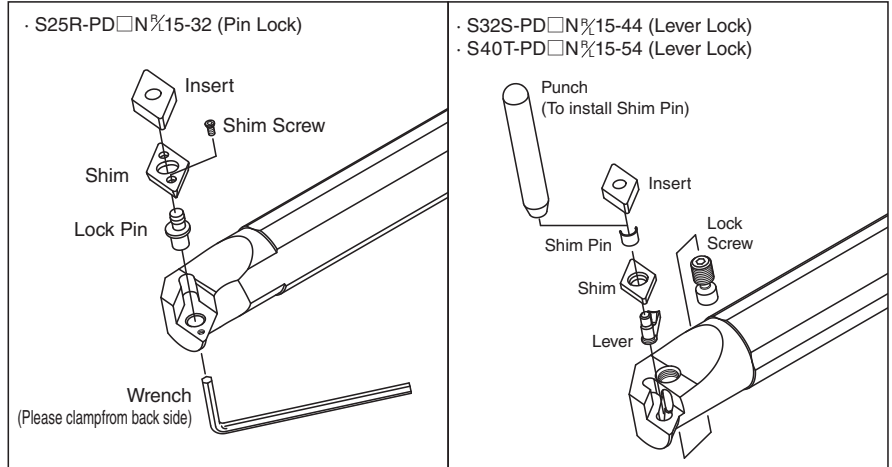
Toolholder Description	Spare Parts									
	Lever	Lock Screw	Shim	Shim Pin	Punch	Wrench	Lock Pin	Shim	Shim Screw	Wrench (for Shim Screw)
S25R-PD□N <sup>°</sup> /L15-32	-	-	-	-	-	-	PP-4	PD-42	SB-2050TR	FT-6
S32S-PD□N <sup>°</sup> /L15-44	LL-3N	LS-2N	LD-42 *LD-42-20	LSP-2	PC-2	LW-3	-	-	-	-
S40T-PD□N <sup>°</sup> /L15-54							-	-	-	-

· Shim When using inserts whose corner-R(r<sub>e</sub>) is greater than 1.6mm for S25R-PD□N<sup>°</sup>/L15-32, use shim modified by additional processing in order to prevent workpiece and shim from interfering each other.  
 When using inserts whose corner-R(r<sub>e</sub>) is greater than 1.6mm for S32S-PD□N<sup>°</sup>/L15-44 and S40T-PD□N<sup>°</sup>/L15-54, please purchase a shim with \* mark and use it in order to prevent workpiece and shim from interfering each other.

● How to change S25R-PD□N<sup>°</sup>/L15-32 inserts



● How to assemble spare parts



● 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	PP	PQ	CQ	CJ	GS	PG	PS	PT	Standard
Toolholder Description	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	PH	PX	<sup>°</sup> /L	XP	XQ	XS	MQ	MS	MU
Toolholder Description	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	B99	B27	B27	C23	C8,C9
Insert	TK	C	ZS	GC	Ceramic	AH	<sup>°</sup> /L-A3	PCD	CBN
Toolholder Description	DNMG1504..	DNMG1504..	DNMG1504..	DNMG1504..	DNGA1504..	DN_G1504..	DNGG1504..	DNMM1504..	DNGA1504..

Recommended Cutting Conditions ● F93-F94

F

Boring

Solid

Positive

AD Bars

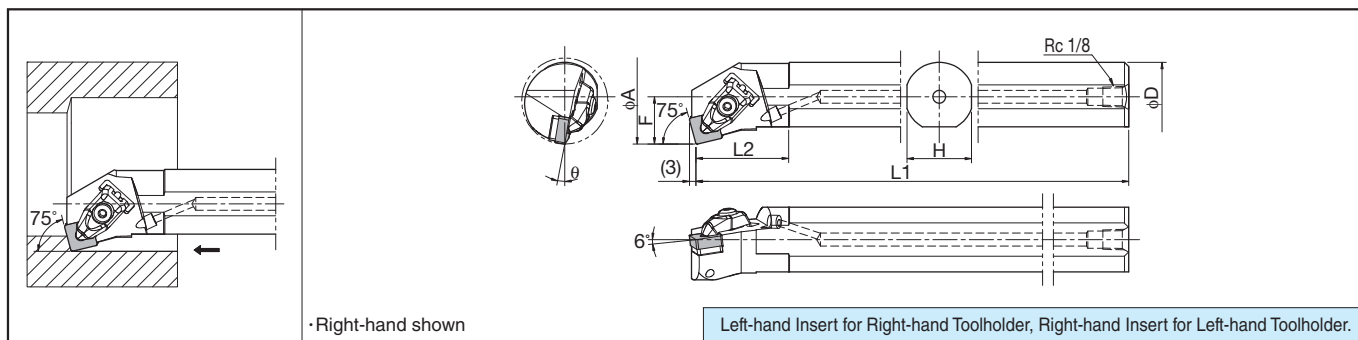
Negative



# Boring Bar [SN12 Negative Insert]

## A-DSKN (Boring)

Max. Overhang Length L/D≈~3



### Toolholder Dimensions

Description	Std.		Min. Bore Dia.	Dimension (mm)						θ	Std. Corner-R (r)	Spare Parts															
	R	L		φA	φD	H	L1	L2	F			S	Clamp	Screw	Spring	Shim	Shim Screw	Nozzle	Wrench for Clamp	Wrench (sold separately) for Shim							
<b>A25R-DSKN</b> <sup>φ</sup> / <sub>L</sub> 12-32	●	●	32	25	23	200	43	17	-	11°	0.8																
<b>A32S-DSKN</b> <sup>φ</sup> / <sub>L</sub> 12-40	●	●	40	32	30	250	43	22	-	11°										CP-3D	CS-3D	SP-3D	DS-42	SB-4085TR	DN10	LW-3	FT-15
<b>A40T-DSKN</b> <sup>φ</sup> / <sub>L</sub> 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	<b>B29</b>	<b>B29</b>	<b>B29</b>	<b>B29</b>	<b>B29</b>	<b>B29</b>	<b>B30</b>	<b>B30</b>
Insert	<b>PQ</b>	<b>PG</b>	<b>PS</b>	<b>HS</b>	<b>PT</b>	<b>Standard</b>	<b>PH</b>	<b>PX</b>
Toolholder Description								
...	<b>DSKN</b> <sup>φ</sup> / <sub>L</sub> 12...	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	<b>B32</b>	<b>B32</b>	<b>B30</b>	<b>B30</b>	<b>B30</b>	<b>B31</b>	<b>B31</b>	<b>B31</b>
Insert	<sup>φ</sup> / <sub>L</sub> -□	<sup>φ</sup> / <sub>L</sub> -25R	<b>XP</b>	<b>XQ</b>	<b>XS</b>	<b>MQ</b>	<b>MS</b>	<b>C</b>
Toolholder Description								
...	<b>DSKN</b> <sup>φ</sup> / <sub>L</sub> 12...	SNGG1204..	SNGG1204..	SNMG1204..	SNMG1204..	SNMG1204..	SNMG1204..	SNMG1204..
Applications	Cast Iron	Cast Iron	Cast Iron	Cast Iron	Hard Materials			
Ref. to Page	<b>B31</b>	<b>B31</b>	<b>B31</b>	<b>B101</b>	<b>C10</b>			
Insert	<b>ZS</b>	<b>GC</b>	Without Chipbreaker	<b>Ceramic</b>	<b>CBN</b>			
Toolholder Description								
...	<b>DSKN</b> <sup>φ</sup> / <sub>L</sub> 12...	SNMG1204..	SNMG1204..	SN□A1204..	SN□A1204..	SNGA1204..		

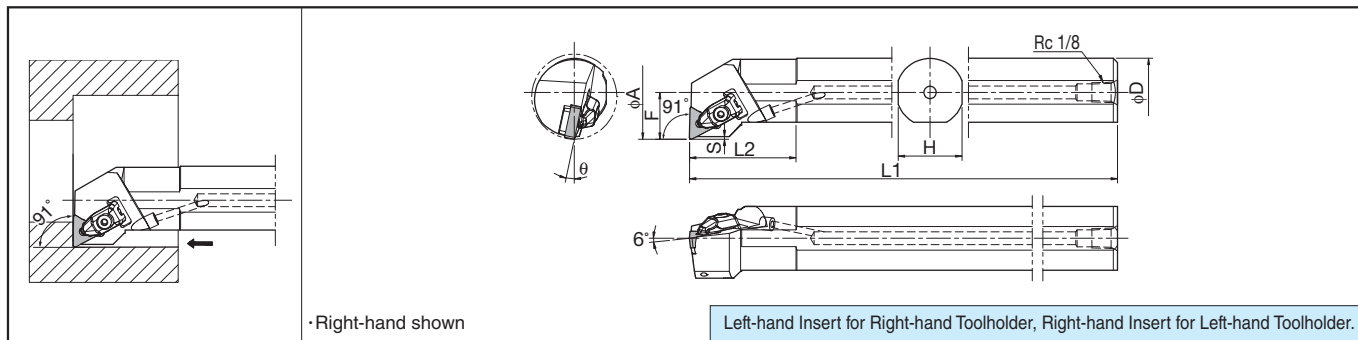
Recommended Cutting Conditions ● **F93-F94**



# Boring Bar [TN□□ Negative Insert]

## A-DTFN (Boring)

Max. Overhang Length L/D≈3



### Toolholder Dimensions

Description	Std.		Min. Bore Dia.	Dimension (mm)						θ	Std. Corner-R(rε)	Spare Parts							
	R	L		φA	φD	H	L1	L2	F			S	Clamp	Screw	Spring	Shim	Shim Screw	Nozzle	Wrench for Clamp
<b>A25R-DTFN<sup>R/L</sup> 16-32</b>	●	●	32	25	23	200	42	17	0.8	12°	0.8								
<b>A32S-DTFN<sup>R/L</sup> 16-40</b>	●	●	40	32	30	250	50	22	1.2	12°		CP-2D	CS-2D	SP-3D	DT-32	SB-3080TR	DN10	LW-2.5	FT-10
<b>A40T-DTFN<sup>R/L</sup> 22-50</b>	●	●	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.

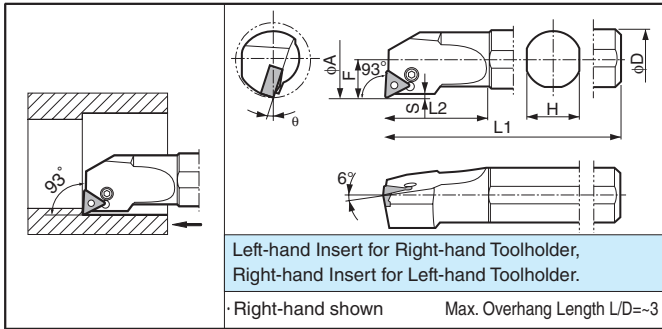
### Applicable Inserts

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	<b>B33</b>	<b>B33</b>	<b>B33</b>	<b>B33</b>	<b>B33</b>	<b>B33</b>	<b>B33</b>	<b>B33</b>	<b>B33</b>	<b>B34</b>
Insert										
Toolholder Description	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	<b>B34</b>	<b>B34</b>	<b>B38</b>	<b>B38,B39</b>	<b>B35</b>	<b>B35</b>	<b>B35</b>	<b>B36</b>	<b>B36</b>	<b>B36</b>
Insert										
Toolholder Description	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	<b>B36</b>	<b>B37</b>	<b>B37</b>	<b>B37</b>	<b>B37</b>	<b>B103</b>	<b>B37</b>	<b>B37</b>	<b>C23</b>	<b>C10,C11</b>
Insert										
Toolholder Description	TNMG1604..	TNMG1604..	TNMG1604..	TNMG1604..	TNMA1604.. TNGA1604..	TNGA1604..	TN_G1604..	TNGG1604..	TNMM1604..	TNGA1604..
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	<b>B36</b>	<b>B37</b>	<b>B37</b>	<b>B37</b>	<b>B37</b>	<b>B103</b>	<b>B37</b>	<b>B37</b>	<b>C23</b>	<b>C10,C11</b>
Insert										
Toolholder Description	TNMG1604..	TNMG1604..	TNMG1604..	TNMG1604..	TNMA1604.. TNGA1604..	TNGA1604..	TN_G1604..	TNGG1604..	TNMM1604..	TNGA1604..

Recommended Cutting Conditions ● F93~F94

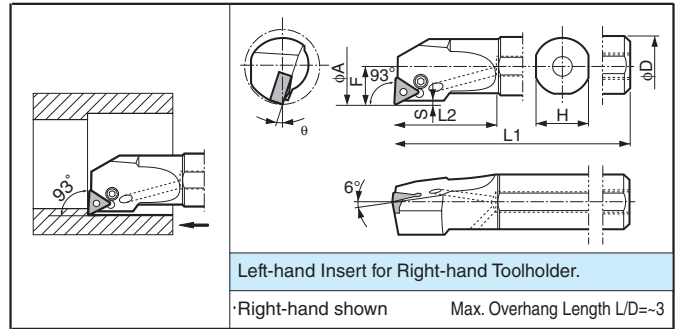
●: Std. Item

### S-PTUN○○ (Boring)



### A-PTUN11

### Twin-Hole Bar (Boring, with Coolant Hole)



### Toolholder Dimensions

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

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

### 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	PP	GP	PQ	HQ	CQ	GS	PG	PS	HS	PT
Toolholder Description										
....PTUN <sup>R/L</sup> 11....	-	TNMG1104..	-	TNMG1104..	-	TNMG1104..	-	-	-	-
....PTUN <sup>R/L</sup> 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,B39	B35	B35	B35	B36	B36	B36
Insert	GT	Standard	<sup>R/L</sup> -S	<sup>R/L</sup> -□	XP	XQ	XS	MQ	MS	MU
Toolholder Description										
....PTUN <sup>R/L</sup> 11....	-	-	TNGG1104..	TNGG1104..	-	-	-	-	-	-
....PTUN <sup>R/L</sup> 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	B103	B37	B37	C23	C10,C11
Insert	<sup>R/L</sup> -ST	C	ZS	GC	Without Chipbreaker	Ceramic	AH	<sup>R/L</sup> -A3	PCD	CBN
Toolholder Description										
....PTUN <sup>R/L</sup> 11....	-	-	-	-	-	-	-	-	-	-
....PTUN <sup>R/L</sup> 16....	TNMG1604..	TNMG1604..	TNMG1604..	TNMG1604..	TNMA1604.. TNGA1604..	TNGA1604..	TN_G1604..	TNGG1604..	TNMM1604..	TNGA1604..

Recommended Cutting Conditions ● F93-F94

### Applicable Coolant Sleeve / Joint

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

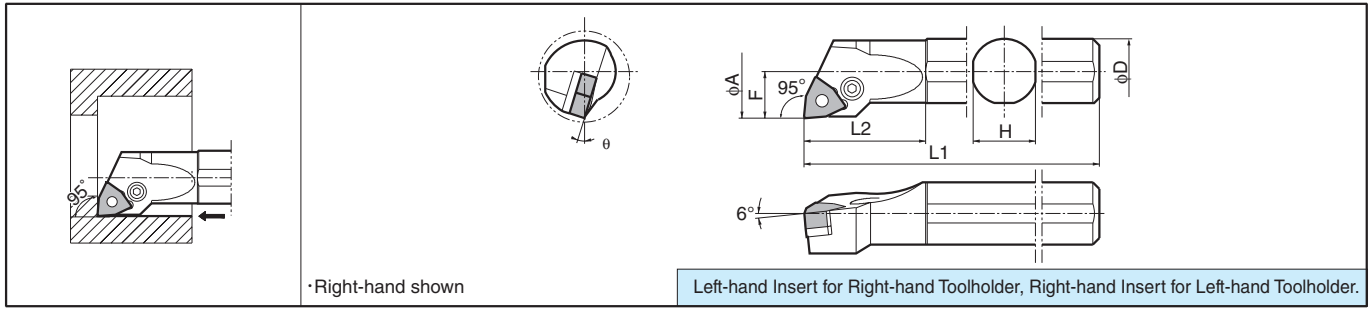
\* For Coolant Sleeve, Coolant Joint, ref. to page ● F85-F86.

●: Std. Item



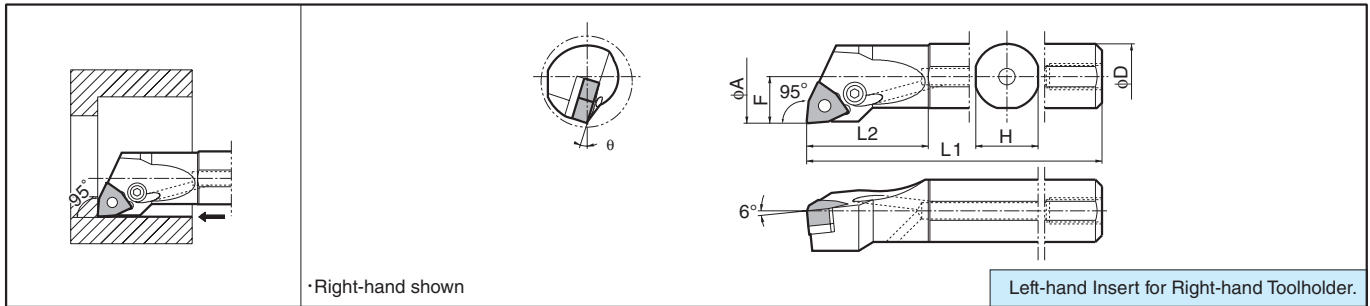
### S-PWLN06 (Boring / Internal Facing)

Max. Overhang Length L/D≈3



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

Max. Overhang Length L/D≈3



F  
Boring  
Solid  
Positive  
AD Bars  
Negative

#### Toolholder Dimensions

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

#### Applicable Inserts

Applications	Finishing	Finishing-Medium	Medium-Roughing	Finishing	Medium					
Ref. to Page	B42	B42	B43	B45	B45					
Insert	GP	HQ	GS	<sup>F/L</sup> -S	<sup>F/L</sup>					
Toolholder Description	WNMG0604..	WNMG0604..	WNMG0604..	WNGG0604..	WNGG0604..					

Recommended Cutting Conditions **F93~F94**

#### Applicable Coolant Sleeve / Joint

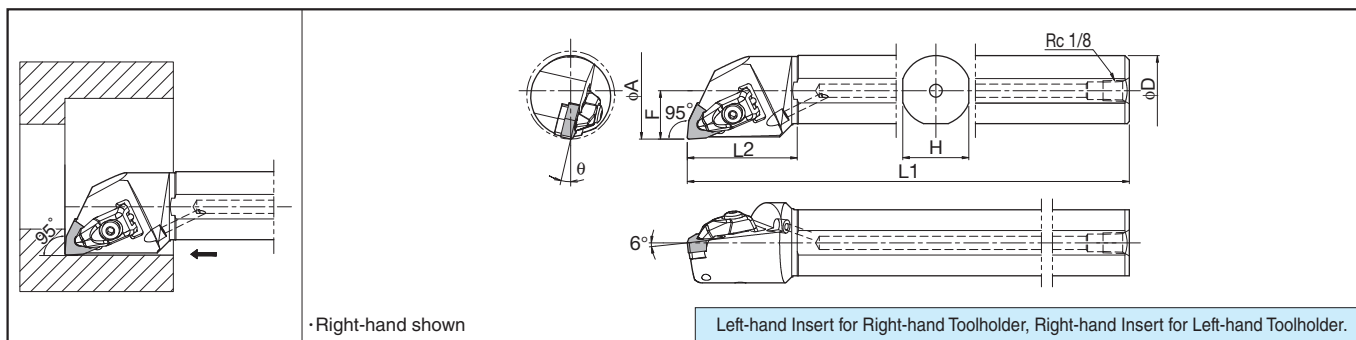
Toolholder Description	Applicable Coolant Sleeve	Applicable Coolant Joint
A16M-PWLNR06-20	SHC1640-70,SHC1650-95	SJS-8
A20M-PWLNR06-27	SHC2040-70,SHC2050-95	
A25R-PWLNR06-32	SHC2540-70,SHC2550-95	

For Coolant Sleeve, Coolant Joint, ref. to page **F85~F86**.

# Boring Bar [WN08 Negative Insert]

## A-DWLN (Boring / Internal Facing)

Max. Overhang Length L/D≈3



### Toolholder Dimensions

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

\*Not applicable to high-pressure coolant.

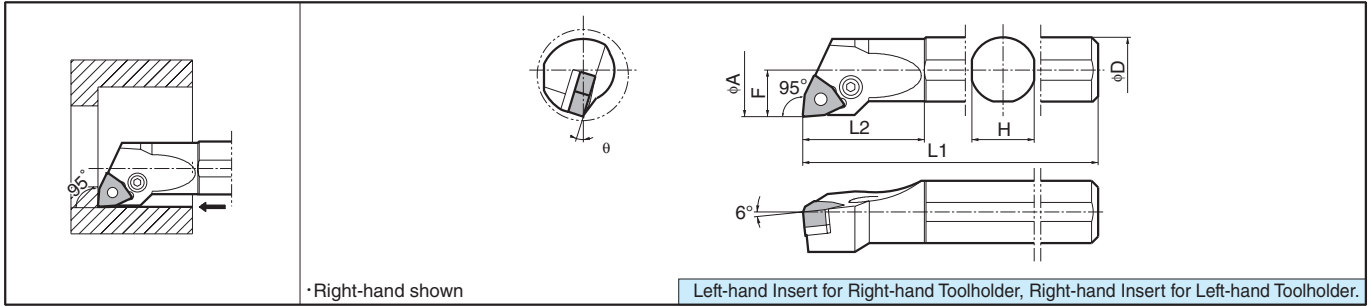
### Applicable Inserts

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	<b>B42</b>	<b>B42</b>	<b>B42</b>	<b>B42</b>	<b>B42</b>	<b>B42</b>	<b>B43</b>	<b>B43</b>	<b>B43</b>	<b>B43</b>	<b>B43</b>
Insert	<b>WP</b> (Wiper)	<b>WQ</b> (Wiper)	<b>PP</b>	<b>PQ</b>	<b>CQ</b>	<b>CJ</b>	<b>GS</b>	<b>PG</b>	<b>PS</b>	<b>PT</b>	<b>Standard</b>
Toolholder Description											
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	<b>B44</b>	<b>B44</b>	<b>B44</b>	<b>B44</b>	<b>B44</b>	<b>B44</b>	<b>B45</b>	<b>B45</b>	<b>B45</b>	<b>C23</b>	<b>C13</b>
Insert	<b>XP</b>	<b>XQ</b>	<b>XS</b>	<b>MQ</b>	<b>MS</b>	<b>MU</b>	<b>C(GC)</b>	<b>ZS</b>	<b>AH</b>	<b>PCD</b>	<b>CBN</b>
Toolholder Description											
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	<b>B44</b>	<b>B44</b>	<b>B44</b>	<b>B44</b>	<b>B44</b>	<b>B44</b>	<b>B45</b>	<b>B45</b>	<b>B45</b>	<b>C23</b>	<b>C13</b>
Toolholder Description											
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	<b>B44</b>	<b>B44</b>	<b>B44</b>	<b>B44</b>	<b>B44</b>	<b>B44</b>	<b>B45</b>	<b>B45</b>	<b>B45</b>	<b>C23</b>	<b>C13</b>
Toolholder Description											

Recommended Cutting Conditions **F93-F94**

### S-PWLN08 (Boring / Internal Facing)

Max. Overhang Length L/D≈3



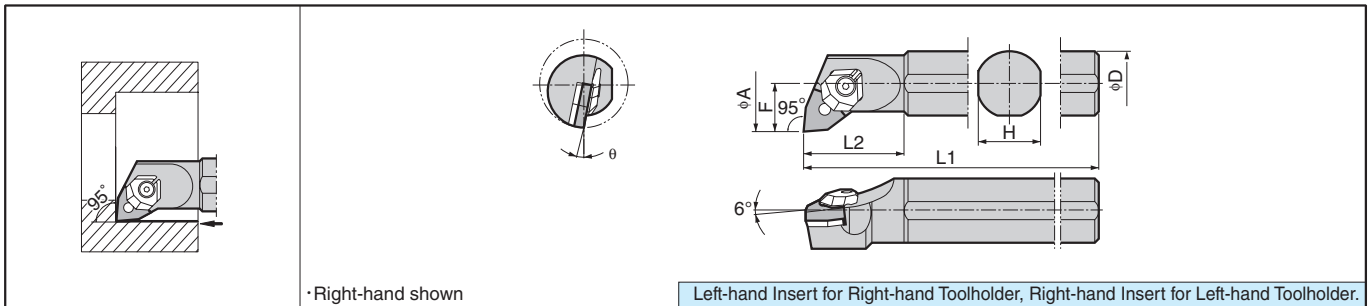
#### Toolholder Dimensions

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

\* 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



#### Toolholder Dimensions

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

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

#### 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	<b>B42</b>	<b>B42</b>	<b>B42</b>	<b>B42</b>	<b>B42</b>	<b>B42</b>	<b>B43</b>	<b>B43</b>	<b>B43</b>	<b>B43</b>	<b>B43</b>
Insert	<b>WP(Wiper)</b>	<b>WQ(Wiper)</b>	<b>PP</b>	<b>PQ</b>	<b>CQ</b>	<b>CJ</b>	<b>GS</b>	<b>PG</b>	<b>PS</b>	<b>PT</b>	<b>Standard</b>
Toolholder Description											
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	<b>B44</b>	<b>B44</b>	<b>B44</b>	<b>B44</b>	<b>B44</b>	<b>B44</b>	<b>B45</b>	<b>B45</b>	<b>B45</b>	<b>C23</b>	<b>C13</b>
Insert	<b>XP</b>	<b>XQ</b>	<b>XS</b>	<b>MQ</b>	<b>MS</b>	<b>MU</b>	<b>C(GC)</b>	<b>ZS</b>	<b>AH</b>	<b>PCD</b>	<b>CBN</b>
Toolholder Description											
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	<b>B44</b>	<b>B44</b>	<b>B44</b>	<b>B44</b>	<b>B44</b>	<b>B44</b>	<b>B45</b>	<b>B45</b>	<b>B45</b>	<b>C23</b>	<b>C13</b>
Insert	<b>XP</b>	<b>XQ</b>	<b>XS</b>	<b>MQ</b>	<b>MS</b>	<b>MU</b>	<b>C(GC)</b>	<b>ZS</b>	<b>AH</b>	<b>PCD</b>	<b>CBN</b>
Toolholder Description											

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

Recommended Cutting Conditions **F93-F94**

●: Std. Item

### S-CELN (Boring / Internal Facing)

Max. Overhang Length L/D≈~3

**Applicable Inserts**

Cast Iron / Hard Materials
<b>B99</b>
Ceramic
ENGN1307..

·Right-hand shown

Recommended Cutting Conditions **F93~F94**

#### Toolholder Dimensions

Description	Std.		Min. Bore Dia.	Dimension (mm)					θ	Std. Corner-R(°)	Spare Parts				
	R	L		φA	φD	H	L1	L2			F	Chipbreaker	Clamp Set	Wrench	Shim
	<b>S40T-CELNR13-50</b>	●		50	40	37	300	32	27	12°	0.8				

### S-CSKN (Boring)

Max. Overhang Length L/D≈~3

**Applicable Inserts**

Cast Iron / Hard Materials	Cast Iron	Hard Materials / Cast Iron
<b>B101</b>	<b>B31</b>	<b>C19</b>
Ceramic	Coated Carbide	CBN(KBN900)
SNGN1207..(1204..) SNMN1207..	(SNMN1204..)	(SNMN1204..)

·Right-hand shown

Recommended Cutting Conditions **F93~F94**

#### Toolholder Dimensions

Description	Std.		Min. Bore Dia.	Dimension (mm)					θ	Std. Corner-R(°)	Spare Parts				
	R	L		φA	φD	H	L1	L2			F	Chipbreaker	Clamp Set	Wrench	Shim
	<b>S40T-CSKN<sup>F</sup>12-50</b>	●	●	50	40	37	300	26	27	10.5°	0.8				

· 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.

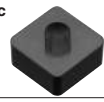


### S-CCLN-GX (Boring / Internal Facing)





Max. Overhang Length L/D≈~3

Right-hand shown

**Applicable Inserts**

Cast Iron	● B98
Ceramic	
CNGX1207..	

#### Toolholder Dimensions

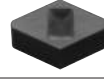
Description	Std.		Min. Bore Dia.	Dimension (mm)						θ	Std. Corner-R(°)	Spare Parts				Recommended Cutting Conditions
	R	L		φA	φD	H	L1	L2	F			Clamp Set	Wrench	Shim	Shim Screw	
	S32S- CCLN <sup>®</sup> /L 12-40GX	●	●	40	32	30	250	32	22	14°	1.2			-	-	
S40T- CCLN <sup>®</sup> /L 12-50GX	●	●	50	40	37	300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

### S-CDUN-GX (Boring / Copying)





Max. Overhang Length L/D≈~3

Right-hand shown

**Applicable Inserts**

Cast Iron	● B99
Ceramic	
DNGX1207..	

#### Toolholder Dimensions


Description	Std.		Min. Bore Dia.	Dimension (mm)						θ	Std. Corner-R(°)	Spare Parts				Recommended Cutting Conditions
	R	L		φA	φD	H	L1	S	F			Clamp Set	Wrench	Shim	Shim Screw	
	S32S- CDUN <sup>®</sup> /L 12-40GX	●	●	40	32	30	250	7.5	22	14°	1.2			-	-	
S40T- CDUN <sup>®</sup> /L 12-50GX	●	●	50	40	37	300	7.5	27	12°	1.2			SP-521P	M3X8		

### S-CSKN-GX (Boring)





Max. Overhang Length L/D≈~3

Right-hand shown

**Applicable Inserts**

Cast Iron	● B102
Ceramic	
SNGX1207..	

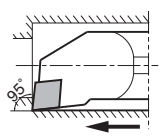
#### Toolholder Dimensions

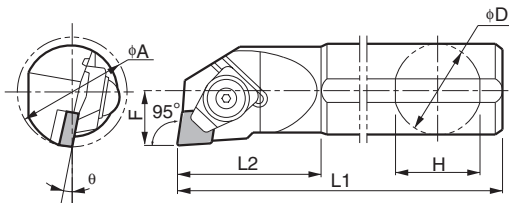
Description	Std.		Min. Bore Dia.	Dimension (mm)						θ	Std. Corner-R(°)	Spare Parts				Recommended Cutting Conditions
	R	L		φA	φD	H	L1	L2	F			Clamp Set	Wrench	Shim	Shim Screw	
	S32S- CSKN <sup>®</sup> /L 12-40GX	●	●	40	32	30	250	22.5	22	14°	1.2			-	-	
S40T- CSKN <sup>®</sup> /L 12-50GX	●	●	50	40	37	300	22.5	27	12°	1.2			SP-141P	M3X8		

● : Std. Item




### S-CCLN-A (Boring / Internal Facing)








● **Applicable Inserts**

Hard Materials / Cast Iron
● C19
<b>CBN (KBN900)</b>

CNMN0903..

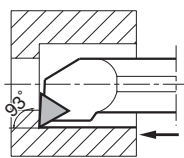
·Right-hand shown

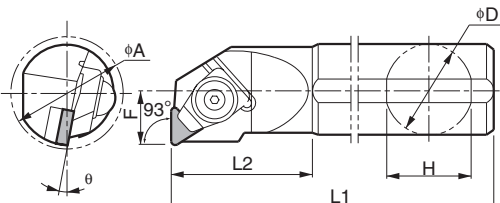
Recommended Cutting Conditions ● F93~F94

#### ● Toolholder Dimensions



Description	Std.		Min. Bore Dia.	Dimension (mm)					θ	Std. Corner-R(ε)	Spare Parts			
	R	L		φA	φD	H	L1	L2			F	Clamp Set	Wrench	Shim
	<b>S32S-CCLN<sup>3</sup>/L09-40A</b>	●	●	40	32	30	250	50	22	8°	0.8			

### S-CTUN-A (Boring)








● **Applicable Inserts**

Hard Materials / Cast Iron	Cast Iron / Hard Materials
● C19	● B103
<b>CBN (KBN900)</b>	<b>Ceramic</b>
	
TNMN1103..	TNGN1103..

·Right-hand shown

Recommended Cutting Conditions ● F93~F94

#### ● Toolholder Dimensions

Description	Std.		Min. Bore Dia.	Dimension (mm)					θ	Std. Corner-R(ε)	Spare Parts			
	R	L		φA	φD	H	L1	L2			F	Clamp Set	Wrench	Shim
	<b>S25X-CTUNR11-30A</b>	●		30	25	24	220	40	15	10°	0.8			



# Sleeves for Boring Bars

## EZH Sleeves

Sleeve Description			Sleeve Shank Dia. φD1(mm)	Applicable Inserts				Shank Dia. φD(mm)	Applicable Machine Manufacturer				
EZH-CT (Adjustable overhang length with coolant hole)	EZH-HP (Adjustable overhang length)	EZH-ST		EZB	EZG EZFG EZT EZVB	EZ Bar PLUS	HP						
-	-	EZH 01712ST-80	12	EZBR ...017...	-	-	-	1.7	(General purpose)				
		02012ST-80		EZBR ...020...	-	-	HPB% 0202-...	2					
		02512ST-80		EZBR ...025...	EZ ...025...	-	-	-		2.5			
		03012ST-80		EZBR ...030...	EZ ...030...	-	-	HPB% 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% 0202-...	2					
	02516HP-100	02516ST-100		EZBR ...025...	EZ ...025...	-	-	2.5					
	03016HP-100	03016ST-100		EZBR ...030...	EZ ...030...	-	-	HPB% 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% 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% 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	Eguro Tsugami Citizen Machinery (General purpose)				
				02020CT-120	02020HP-120	02020ST-120	EZBR ...020...	-		-	HPB% 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% 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% 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% 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	Eguro Tsugami Citizen Machinery (General purpose)				
				02025.0CT-135	02025.0HP-135	02025.0ST-135	EZBR ...020...	-		-	HPB% 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% 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% 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% 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.

- Machine manufacturers in random order.

## 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	
EZH-ST sleeve description	EZH-HP sleeve description (Adjustable overhang length)	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	
EZ Bars	Boring	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	
	Internal Grooving	EZH-HP sleeve description (Adjustable overhang length)	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
	Face Grooving	EZH-HP sleeve description (Adjustable overhang length)	01725.4ST-120	02025.4ST-120	02525.4ST-120	03025.4ST-120	03525.4ST-120
	Internal Threading	EZH-HP sleeve description (Adjustable overhang length)					
EZ Bars PLUS							
2-Edge Tip-Bars	Boring		HPB <sup>®</sup> /L0202-		HPB <sup>®</sup> /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	
EZH-ST sleeve description	EZH-HP sleeve description (Adjustable overhang length)	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	
EZ Bars	Boring	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	
	Internal Grooving	EZH-HP sleeve description (Adjustable overhang length)	04022ST-135		05022ST-135	06022ST-135	07022ST-135
			04025.0ST-135		05025.0ST-135	06025.0ST-135	07025.0ST-135
	Face Grooving	EZH-HP sleeve description (Adjustable overhang length)	04025.4ST-120		05025.4ST-120	06025.4ST-120	07025.4ST-120
	Internal Threading	EZH-HP sleeve description (Adjustable overhang length)					
EZ Bars PLUS			S045X- SCLCR03-050EZ C045X- SCLCR03-050EZ		S060X- SCLCR04-070EZ C060X- SCLCR04-070EZ		
2-Edge Tip-Bars	Boring			HPB <sup>®</sup> /L0505-	HPB <sup>®</sup> /L0606-	HPB <sup>®</sup> /L0707-	
		Internal Grooving		HPBT <sup>®</sup> /L0404-	HPBT <sup>®</sup> /L0505-	HPBT <sup>®</sup> /L0707-	
		Face Grooving		HPG <sup>®</sup> /L0404-	HPG <sup>®</sup> /L0505-	HPG <sup>®</sup> /L0606-	
		Internal Threading		HPT <sup>®</sup> /L04504-	HPT <sup>®</sup> /L06005-	HPT <sup>®</sup> /L07507-	
	Boring Bars			C04-.....	C05-.....	C06-..... S06-.....	C07-.....

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.



# Sleeves for Boring Bars

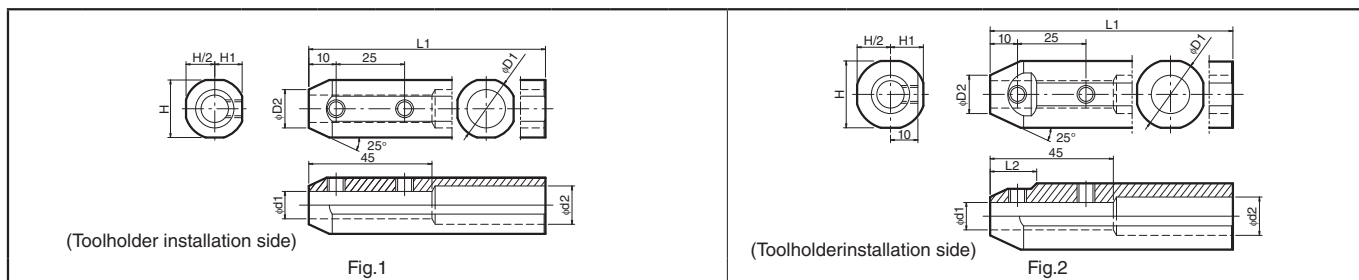
## Sleeves for Tip-Bars

Shape	Description	Std.	Dimension (mm)						Spare Parts		
			φD1	φD2	φd1	φd2	H	L1	L2	Screw	Wrench
<p>(Tip-Bar installation side)</p>	<b>PH 0212-60</b>	○	12	19	1.8	6	11	60	20	HS3X4	LW-1.5
	<b>0312-60</b>	○			2.8						
	<b>0412-60</b>	○			3.8						
	<b>0512-60</b>	○			4.8						
	<b>0612-60</b>	○			5.8						
	<b>0712-60</b>	○			6.8						
	<b>PH 0216-80</b>	○	16	22	1.8	Rp¼ (PS¼)	15	80	20	HS3X4	LW-1.5
	<b>0316-80</b>	○			2.8						
	<b>0416-80</b>	○			3.8						
	<b>0516-80</b>	○			4.8						
	<b>0616-80</b>	○			5.8						
	<b>0716-80</b>	○			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	PH0212-60	PH0312-60	PH0412-60	PH0512-60	PH0612-60	PH0712-60	
Description	PH0216-80	PH0316-80	PH0416-80	PH0516-80	PH0616-80	PH0716-80	
1-Edge Tip-Bars	Boring	PSB%L0202-	PSB%L0303-	PSB%L0404-	PSB%L0505-	PSB%L0606-	
	Internal Grooving			PSBT%L0415-	PSBT%L0515-		
				PSG%L0510-	PSG%L0610-	PSG%L0710-	PSG%L0810-
	Face Grooving			PSG%L0520-	PSG%L0620-	PSG%L0720-	PSG%L0820-
							PSFG%L0810-
Internal Threading			PSTR0604-	PSTR0805-		PSFG%L0820-	

## SHA sleeves (Applicable Toolholders F86)



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

\* 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	Std.	Dimension (mm)					Spare Parts	
			$\phi D$	$\phi d1$	$\phi d2$	H	L1	Screw	Wrench
	SH 0416-100	●	16	4	5	14	100	HS4X4	LW-2
	SH 0516-100	●		5	6				
	SH 0616-100	●		6	7				
	SH 0716-100	●		7	8				
	SH 0820-120	●	20	8	9	18	120	HS4X4	LW-2
	SH 1020-120	●	20	10	11	18	120	HS4X4	LW-2
	SH 1225-150	●	25	12	13	23	150	HS5X5	LW-2.5
	SH 1632-180	●	32	16	18	30	180		
SH 2032-180	●	32	20	22	30	180			

### Coolant Sleeve Dimensions

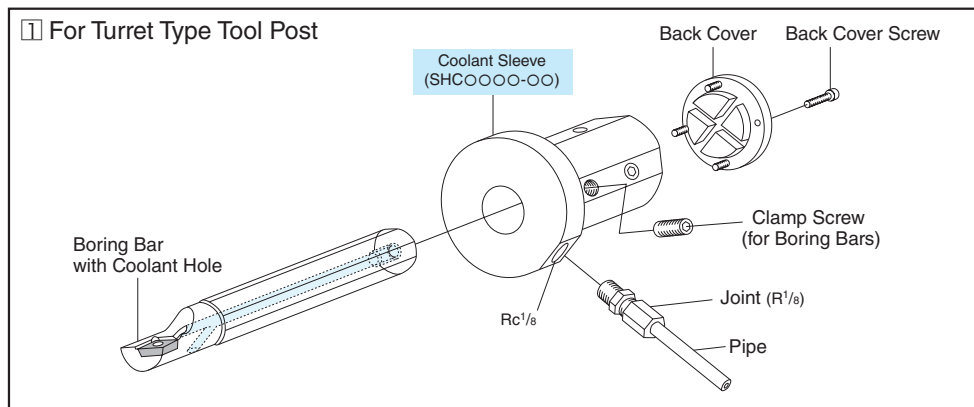
Accessories

- 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	Std.	Dimension (mm)							Drawing	Spare Parts						
		$\phi D1$	$\phi D2$	$\phi d$	L1	L2	H	A		Front Screw	Wrench	Back Screw	Wrench	Back Cover	Back Cover Screw	Wrench
SHC 0840-70	●	40	56	8	70	16	38	27	Fig.1	HS6X22	LW-3	HS6X14	LW-3	SHL-4	HH3X6	LW-2.5
SHC 1040-70	●			10												
SHC 1240-70	●			12												
SHC 1640-70	●			16												
SHC 2040-70	●			20												
SHC 2540-70	●	25														
SHC 0850-95	●	50	65	8	95	16	47	30.5	Fig.1	HS6X22	LW-3	HS6X14	LW-3	SHL-5	HH3X12	LW-2.5
SHC 1050-95	●			10												
SHC 1250-95	●			12												
SHC 1650-95	●			16												
SHC 2050-95	●			20												
SHC 2550-95	●	25														

### How to Install

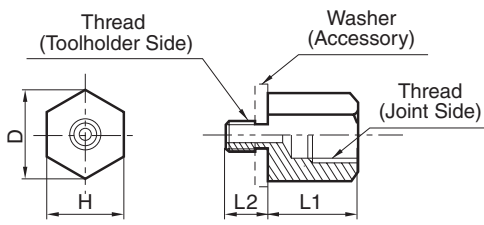


●: Std. Item

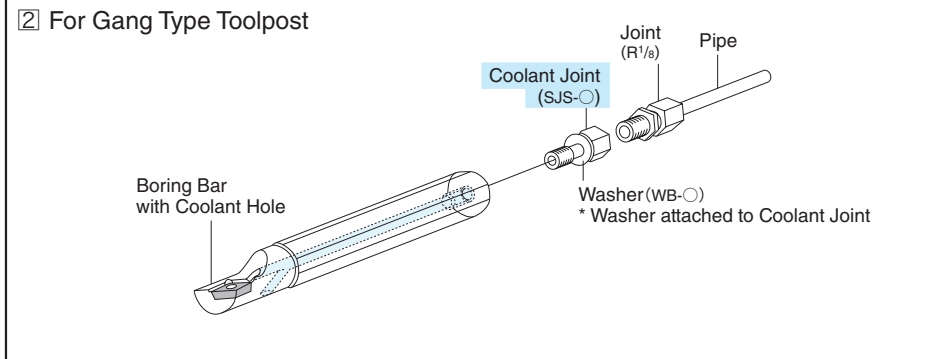
# Sleeves for Boring Bars

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

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



2 For Gang Type Toolpost



● **List of toolholders and applicable joints**

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

\*This Coolant Joint is not applicable for Dynamic Bar

## SHA / SH / SHC Sleeves and Applicable Toolholders

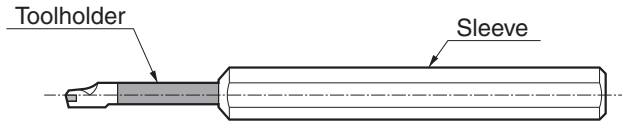
Shank Size (Hole Dia. : mm)	04 (4mm)	05 (5mm)	06 (6mm)	07 (7mm)	08 (8mm)	10 (10mm)	12 (12mm)	16 (16mm)	20 (20mm)	25 (25mm)
Sleeve Description	SH0416-100	SH0516-100	SH0616-100	SH0716-100	SH0820-120	SH1020-120	SH1225-150	SH1632-180	SH2032-180	
					SHA0819-120	SHA1019-120				
					SHA0820-120	SHA1020-120				
					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
Boring Bar Description	C04-....	C05-....	C06-....	C07-....	A08-....	A10-....	A12-....	A16-....	A20-....	A25-....
					E08-....	E10-....	E12-....	E16-....	E20-....	E25-....
Internal Grooving Toolholder Description			S06-....		S08-....	S10-....	S12-....	S16-....	S20-....	S25-....
					SIGE%0808A-EH	SIGE%1010B-EH	SIGE%1412C-EH	SIGE%1616C-EH	SIGE%2020D-EH	SIGE%2525E-EH
						SIGE%1210B-EH	SIGE%1612C-EH			KIGBA%3525-16
					SIGE%0808A-WH	SIGE%1010B-WH	SIGE%1412C-WH	KIGM%2016B-3V	KIGM%2520B-3V	KIGM%3225B-4V
						SIGE%1210B-WH	SIGE%1612C-WH			KITG%3525T-16
					SIGER1008B-WH-90	SIGER1210B-WH-90	SIGER1412C-WH-90			
							GIV%1412-1SE	GIV%1216-1SS	GIV%1420-1S	GIV%2025-1B
							GIV%1612-1AE	GIV%2016-1BE	GIV%1620-1A	GIV%2025-2B
								GIV%2016-2BE	GIV%2520-1CE	GIV%3225-1CE
								GIV%1616-1AW	GIV%2720-2CE	GIV%3225-2CE
Internal Threading Toolholder Description							SINR0612S-06E	SINR0816S-08E	SIN%2420S-16	CIN%3025S-16
								SIN%1216S-11E	SINR2420S-22	CINR3025S-22
								SIN%1516S-11		
								SIN%1616S-16		
							SIN%2016S-16			

\* For SHA sleeves, please ref. to page F84.  
For SH / SHC sleeves, please ref. to page F85.



# C...-AS (Assembly List)

## ■ C...-AS (Assembly List)



Assembly configuration

Assembly (Discontinued Description)	Toolholder (Discontinued Description)	Alternative Toolholder (Dynamic Bar)	Sleeve Description	Remarks
<b>C04G- SCLCR03-05-AS</b>	C04G- SCLCR03-05	C04G- SCLCR03-05AN	SH0416-100	
<b>SCLCL03-05-AS</b>	SCLCL03-05	SCLCL03-05AN		
<b>C05H- SCLCR03-06-AS</b>	C05H- SCLCR03-06	C05H- SCLCR03-06AN	SH0516-100	
<b>SCLCL03-06-AS</b>	SCLCL03-06	SCLCL03-06AN		
<b>C05H- SWUBR06-06-AS</b>	C05H- SWUBR06-06	C05H- SWUBR06-06AN	SH0516-100	
<b>SWUBL06-06-AS</b>	SWUBL06-06	SWUBL06-06AN		
<b>C06J- SCLCR04-07-AS</b>	C06J- SCLCR04-07	C06J- SCLCR04-07AN	SH0616-100	
<b>SCLCL04-07-AS</b>	SCLCL04-07	SCLCL04-07AN		
<b>C06J- SWUBR06-07-AS</b>	C06J- SWUBR06-07	C06J- SWUBR06-07AN	SH0616-100	
<b>SWUBL06-07-AS</b>	SWUBL06-07	SWUBL06-07AN		
<b>C07K- SCLCR04-08-AS</b>	C07K- SCLCR04-08	C07K- SCLCR04-08AN	SH0716-100	
<b>SCLCL04-08-AS</b>	SCLCL04-08	SCLCL04-08AN		
<b>C07K- SWUBR08-08-AS</b>	C07K- SWUBR08-08	C07K- SWUBR08-08AN	SH0716-100	
<b>SWUBL08-08-AS</b>	SWUBL08-08	SWUBL08-08AN		
<b>C08L- STUPR08-10-AS</b>	C08L- STUPR08-10	E08L- STLPR08-10AN	SH0820-120	
<b>C10N- STUPR09-12-AS</b>	C10N- STUPR09-12	E10N- STLPR09-12AN	SH1020-120	
<b>C10N- STUPR11-12-AS</b>	C10N- STUPR11-12	E10N- STLPR11-12AN		
<b>C12Q- STUPR09-16-AS</b>	C12Q- STUPR09-16	E12Q- STLPR09-16A	SH1225-150	
<b>C12Q- STUPR11-14-AS</b>	C12Q- STUPR11-14	E12Q- STLPR11-14A		
<b>C12Q- STUPR11-16-AS</b>	C12Q- STUPR11-16			
<b>C16X- STUPR11-18-AS</b>	C16X- STUPR11-18	E16X- STLPR11-18A	SH1632-180	Difference of alternative toolholder No coolant hole → With coolant hole  Front cutting edge angle 3° → 5°
<b>C16X- STUPR11-20-AS</b>	C16X- STUPR11-20			
<b>C20S- STUPR11-25-AS</b>	C20S- STUPR11-25	E20S- STLPR11-22A	SH2032-180	
<b>C20S- STUPR16-25-AS</b>	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
<b>S32S-SVJB<sup>β</sup>/L 16-40E</b> <b>S40T-SVJB<sup>β</sup>/L 16-50E</b>					
<b>S25X-SVPB<sup>β</sup>/L 16-34E</b> <b>S32S-SVPB<sup>β</sup>/L 16-40E</b>					
<b>S25X-SVUB<sup>β</sup>/L 16-34E</b> <b>S32S-SVUB<sup>β</sup>/L 16-40E</b>					
<b>S25X-SVZB<sup>β</sup>/L 16-34E</b> <b>S32S-SVZB<sup>β</sup>/L 16-40E</b>					
	SB-40115TR	FT-15	SVN-32	SB-2050TR	FT-6

-S32S-SVJB<sup>β</sup>/L 16-40E and S40T-SVJB<sup>β</sup>/L 16-50E have been shifted to A32S-SVJB<sup>β</sup>/L 16-40AE and A40T-SVJB<sup>β</sup>/L 16-50AE respectively. Ref. to page **F52**

-S25X-SVPB<sup>β</sup>/L 16-34E and S32S-SVPB<sup>β</sup>/L 16-40E have been shifted to A25S-SVPB<sup>β</sup>/L 16-31AE and A32S-SVPB<sup>β</sup>/L 16-40AE respectively. Ref. to page **F54**

-S25X-SVUB<sup>β</sup>/L 16-34E and S32S-SVUB<sup>β</sup>/L 16-40E have been shifted to A25S-SVUB<sup>β</sup>/L 16-34AE and A32S-SVUB<sup>β</sup>/L 16-40AE respectively. Ref. to page **F57**

-S25X-SVZB<sup>β</sup>/L 16-34E and S32S-SVZB<sup>β</sup>/L 16-40E have been shifted to A25S-SVZB<sup>β</sup>/L 16-34AE and A32S-SVZB<sup>β</sup>/L 16-40AE respectively. Ref. to page **F57**



# Alternative Toolholder Reference Table for Boring Bar

## Alternative Toolholder Reference Table for Boring Bar

Boring Bar (Discontinued Description)				Alternative Toolholder					
Shank type	Insert Shape	Coolant Hole	Description	Dynamic Bar (1st Recommendation)			Dynamic Bar (2nd Recommendation)		
				Coolant Hole	Description	Ref. to Page	Coolant Hole	Description	Ref. to Page
Excellent Bar	CC..	No	S08X-SCLC <sup>®</sup> /06-10E	Yes	A08X-SCLC <sup>®</sup> /06-10AE	F39	No	S08X-SCLC <sup>®</sup> /06-10A	F39
			S10H-SCLC <sup>®</sup> /03-05E	No	S10H-SCLC <sup>®</sup> /03-05AE		-	-	-
			S10H-SCLC <sup>®</sup> /03-06E		S10H-SCLC <sup>®</sup> /03-06AE				
			S10J-SCLC <sup>®</sup> /04-07E		S10H-SCLC <sup>®</sup> /04-07AE				
			S10J-SCLC <sup>®</sup> /04-08E		S10H-SCLC <sup>®</sup> /04-08AE				
	Yes	A08H-SCLC <sup>®</sup> /06-10E	Yes	A08X-SCLC <sup>®</sup> /06-10AE	No	S08X-SCLC <sup>®</sup> /06-10A	F39		
	CP..	No	S10M-SCLP <sup>®</sup> /08-12E	Yes	A10L-SCLP <sup>®</sup> /08-12AE	F41	No	S10L-SCLP <sup>®</sup> /08-12A	F41
			S12M-SCLP <sup>®</sup> /08-14E		A12M-SCLP <sup>®</sup> /08-14AE			S12M-SCLP <sup>®</sup> /08-14A	
			S12M-SCLP <sup>®</sup> /09-16E		A12M-SCLP <sup>®</sup> /09-16AE			S12M-SCLP <sup>®</sup> /09-16A	
			S16Q-SCLP <sup>®</sup> /09-18E		A16Q-SCLP <sup>®</sup> /09-18AE			S16Q-SCLP <sup>®</sup> /09-18A	
			S16R-SCLP <sup>®</sup> /09-20E		A20R-SCLP <sup>®</sup> /09-22AE			S20R-SCLP <sup>®</sup> /09-22A	
			S20X-SCLP <sup>®</sup> /09-25E						
		Yes	A10X-SCLP <sup>®</sup> /08-12E	Yes	A10L-SCLP <sup>®</sup> /08-12AE	F41	No	S10L-SCLP <sup>®</sup> /08-12A	F41
			A12X-SCLP <sup>®</sup> /08-14E		A12M-SCLP <sup>®</sup> /08-14AE			S12M-SCLP <sup>®</sup> /08-14A	
			A12X-SCLP <sup>®</sup> /09-16E		A12M-SCLP <sup>®</sup> /09-16AE			S12M-SCLP <sup>®</sup> /09-16A	
			A16M-SCLP <sup>®</sup> /09-18E		A16Q-SCLP <sup>®</sup> /09-18AE			S16Q-SCLP <sup>®</sup> /09-18A	
	A16M-SCLP <sup>®</sup> /09-20E	A20R-SCLP <sup>®</sup> /09-22AE	S20R-SCLP <sup>®</sup> /09-22A						
	A20Q-SCLP <sup>®</sup> /09-25E								
	DC..	No	S10M-SDUC <sup>®</sup> /07-14E	Yes	A10L-SDUC <sup>®</sup> /07-14AE	F43	No	S10L-SDUC <sup>®</sup> /07-14A	F43
			S12M-SDUC <sup>®</sup> /07-16E		A12M-SDUC <sup>®</sup> /07-16AE			S12M-SDUC <sup>®</sup> /07-16A	
			S16Q-SDUC <sup>®</sup> /07-20E		A16Q-SDUC <sup>®</sup> /07-20AE			S16Q-SDUC <sup>®</sup> /07-20A	
			S16Q-SDUC <sup>®</sup> /11-25E		A16Q-SDUC <sup>®</sup> /11-23AE			S16Q-SDUC <sup>®</sup> /11-23A	
			S20Q-SDUC <sup>®</sup> /11-32E		A20R-SDUC <sup>®</sup> /11-27AE			S20R-SDUC <sup>®</sup> /11-27A	
		No	S10M-SDZC <sup>®</sup> /07-14E	Yes	A10L-SDZC <sup>®</sup> /07-14AE	F45	No	S10L-SDZC <sup>®</sup> /07-14A	F45
			S12M-SDZC <sup>®</sup> /07-16E		A12M-SDZC <sup>®</sup> /07-16AE			S12M-SDZC <sup>®</sup> /07-16A	
			S16Q-SDZC <sup>®</sup> /07-20E		A16Q-SDZC <sup>®</sup> /07-20AE			S16Q-SDZC <sup>®</sup> /07-20A	
			S16Q-SDZC <sup>®</sup> /11-25E		A16Q-SDZC <sup>®</sup> /11-23AE			S16Q-SDZC <sup>®</sup> /11-23A	
			S20Q-SDZC <sup>®</sup> /11-32E		A20R-SDZC <sup>®</sup> /11-27AE			S20R-SDZC <sup>®</sup> /11-27A	
	TB..	No	S06H-STUB <sup>®</sup> /06-08E	No	S06H-STLB <sup>®</sup> /06-08AE	F49	No	S06H-STLB <sup>®</sup> /06-08A	F49
	TP..	No	S08K-STUP <sup>®</sup> /08-10E	Yes	A08X-STLP <sup>®</sup> /08-10AE	F49	No	S08X-STLP <sup>®</sup> /08-10A	F49
			S10M-STUP <sup>®</sup> /09-12E		A10L-STLP <sup>®</sup> /09-12AE			S10L-STLP <sup>®</sup> /09-12A	
			S10M-STUP <sup>®</sup> /11-12E		A10L-STLP <sup>®</sup> /11-12AE			S10L-STLP <sup>®</sup> /11-12A	
			S12M-STUP <sup>®</sup> /09-16E		A12M-STLP <sup>®</sup> /09-16AE			S12M-STLP <sup>®</sup> /09-16A	
			S12M-STUP <sup>®</sup> /11-14E		A12M-STLP <sup>®</sup> /11-14AE			S12M-STLP <sup>®</sup> /11-14A	
			S12M-STUP <sup>®</sup> /11-16E		A16Q-STLP <sup>®</sup> /11-18AE			S16Q-STLP <sup>®</sup> /11-18A	
			S16R-STUP <sup>®</sup> /11-18E		A20R-STLP <sup>®</sup> /11-22AE			S20R-STLP <sup>®</sup> /11-22A	
			S16R-STUP <sup>®</sup> /11-20E		A20R-STLP <sup>®</sup> /16-25AE			-	
			S20X-STUP <sup>®</sup> /11-25E		A25S-STLP <sup>®</sup> /16-27AE			-	
			S20X-STUP <sup>®</sup> /16-25E		A08X-STLP <sup>®</sup> /08-10AE			No	
		S25X-STUP <sup>®</sup> /16-32E	A10L-STLP <sup>®</sup> /08-10AE	No	S08X-STLP <sup>®</sup> /08-10A	F49			
A08H-STUP <sup>®</sup> /08-10E		A10L-STLP <sup>®</sup> /09-12AE	S10L-STLP <sup>®</sup> /09-12A						
A10X-STUP <sup>®</sup> /09-12E		A10L-STLP <sup>®</sup> /11-12AE	S10L-STLP <sup>®</sup> /11-12A						
A12X-STUPR09-16E		A12M-STLPR09-16AE	S12M-STLPR09-16A						
A12X-STUP <sup>®</sup> /11-14E		A12M-STLP <sup>®</sup> /11-14AE	S12M-STLP <sup>®</sup> /11-14A						
A12X-STUPR11-16E	A12M-STLPR11-14AE	S12M-STLPR11-14A							
A16M-STUP <sup>®</sup> /11-18E	A16Q-STLP <sup>®</sup> /11-18AE	S16Q-STLP <sup>®</sup> /11-18A							
A16M-STUP <sup>®</sup> /11-20E	A20R-STLP <sup>®</sup> /11-22AE	S20R-STLP <sup>®</sup> /11-22A							
A20Q-STUP <sup>®</sup> /11-25E	A20R-STLP <sup>®</sup> /16-25AE	-							
A20Q-STUP <sup>®</sup> /16-25E	A25S-STLP <sup>®</sup> /16-27AE	No	S25S-STLP <sup>®</sup> /16-27A	F49					
A25R-STUP <sup>®</sup> /16-32E	A20R-SVJB <sup>®</sup> /11-25AE	No	S20R-SVJB <sup>®</sup> /11-25A	F52					
S20R-SVJB <sup>®</sup> /11-25E	A25S-SVJB <sup>®</sup> /11-30AE		S25S-SVJB <sup>®</sup> /11-30A						
S25S-SVJB <sup>®</sup> /11-30E	A32S-SVJB <sup>®</sup> /16-40AE		S32S-SVJB <sup>®</sup> /16-40A						
S32S-SVJB <sup>®</sup> /16-40EN	A40T-SVJB <sup>®</sup> /16-50AE		S40T-SVJB <sup>®</sup> /16-50A						
S40T-SVJB <sup>®</sup> /16-50EN									
VB..	No	S20R-SVJB <sup>®</sup> /11-25E	Yes	A20R-SVJB <sup>®</sup> /11-25AE	F52	No	S20R-SVJB <sup>®</sup> /11-25A	F52	
		S25S-SVJB <sup>®</sup> /11-30E		A25S-SVJB <sup>®</sup> /11-30AE			S25S-SVJB <sup>®</sup> /11-30A		
		S32S-SVJB <sup>®</sup> /16-40EN		A32S-SVJB <sup>®</sup> /16-40AE			S32S-SVJB <sup>®</sup> /16-40A		
		S40T-SVJB <sup>®</sup> /16-50EN		A40T-SVJB <sup>®</sup> /16-50AE			S40T-SVJB <sup>®</sup> /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

## Alternative Toolholder Reference Table for Boring Bar

Boring Bar (Discontinued Description)				Alternative Toolholder					
Shank type	Insert Shape	Coolant Hole	Description	Dynamic Bar (1st Recommendation)			Dynamic Bar (2nd Recommendation)		
				Coolant Hole	Description	Ref. to Page	Coolant Hole	Description	Ref. to Page
Excellent Bar	VB..	No	S12M-SVPB <sup>®</sup> /L 11-20E	Yes	A12M-SVPB <sup>®</sup> /L 11-18AE	F54	No	S12M-SVPB <sup>®</sup> /L 11-18A	F54
			S16Q-SVPB <sup>®</sup> /L 11-25E		A16Q-SVPB <sup>®</sup> /L 11-22AE			S16Q-SVPB <sup>®</sup> /L 11-22A	
			S25X-SVPB <sup>®</sup> /L 16-34EN		A25S-SVPB <sup>®</sup> /L 16-31AE			S25S-SVPB <sup>®</sup> /L 16-31A	
			S32S-SVPB <sup>®</sup> /L 16-40EN		A32S-SVPB <sup>®</sup> /L 16-40AE			S32S-SVPB <sup>®</sup> /L 16-40A	
		No	S16Q-SVUB <sup>®</sup> /L 11-20E	Yes	A16Q-SVUB <sup>®</sup> /L 11-20AE	F57	No	S16Q-SVUB <sup>®</sup> /L 11-20A	F57
			S20R-SVUB <sup>®</sup> /L 11-25E		A20R-SVUB <sup>®</sup> /L 11-25AE			S20R-SVUB <sup>®</sup> /L 11-25A	
			S25X-SVUB <sup>®</sup> /L 16-34EN		A25S-SVUB <sup>®</sup> /L 16-34AE			S25S-SVUB <sup>®</sup> /L 16-34A	
			S32S-SVUB <sup>®</sup> /L 16-40EN		A32S-SVUB <sup>®</sup> /L 16-40AE			S32S-SVUB <sup>®</sup> /L 16-40A	
		No	S16Q-SVZB <sup>®</sup> /L 11-20E	Yes	A16Q-SVZB <sup>®</sup> /L 11-20AE	F57	No	S16Q-SVZB <sup>®</sup> /L 11-20A	F57
			S20R-SVZB <sup>®</sup> /L 11-25E		A20R-SVZB <sup>®</sup> /L 11-25AE			S20R-SVZB <sup>®</sup> /L 11-25A	
			S25X-SVZB <sup>®</sup> /L 16-34EN		A25S-SVZB <sup>®</sup> /L 16-34AE			S25S-SVZB <sup>®</sup> /L 16-34A	
			S32S-SVZB <sup>®</sup> /L 16-40EN		A32S-SVZB <sup>®</sup> /L 16-40AE			S32S-SVZB <sup>®</sup> /L 16-40A	
	VC..	No	S12M-SVJC <sup>®</sup> /L 08-16E	Yes	A12M-SVJC <sup>®</sup> /L 08-16AE	F52	No	S12M-SVJC <sup>®</sup> /L 08-16A	F52
			S16Q-SVJC <sup>®</sup> /L 08-20E		A16Q-SVJC <sup>®</sup> /L 08-20AE			S16Q-SVJC <sup>®</sup> /L 08-20A	
		No	S10M-SVPC <sup>®</sup> /L 08-16E	Yes	A10L-SVPC <sup>®</sup> /L 08-14AE	F54	No	S10L-SVPC <sup>®</sup> /L 08-14A	F54
		No	S12M-SVUC <sup>®</sup> /L 08-16E	Yes	A12M-SVUC <sup>®</sup> /L 08-16AE	F57	No	S12M-SVUC <sup>®</sup> /L 08-16A	F57
	No	S12M-SVZC <sup>®</sup> /L 08-16E	Yes	A12M-SVZC <sup>®</sup> /L 08-16AE	F57	No	S12M-SVZC <sup>®</sup> /L 08-16A	F57	
	VP..	No	S12M-SVJP <sup>®</sup> /L 08-16E	Yes	A12M-SVJP <sup>®</sup> /L 08-16AE	F52	No	S12M-SVJP <sup>®</sup> /L 08-16A	F52
	WB..	No	S08X-SWUB <sup>®</sup> /L 08-10E	Yes	A08X-SWUB <sup>®</sup> /L 08-10AE	F59	No	S08X-SWUB <sup>®</sup> /L 08-10A	F59
			S10M-SWUB <sup>®</sup> /L 08-12E		A10L-SWUB <sup>®</sup> /L 08-12AE			S10L-SWUB <sup>®</sup> /L 08-12A	
			S10H-SWUB <sup>®</sup> /L 06-06E	No	S10H-SWUB <sup>®</sup> /L 06-06AE			S10H-SWUB <sup>®</sup> /L 06-06A	
			S10H-SWUB <sup>®</sup> /L 06-07E		S10H-SWUB <sup>®</sup> /L 06-07AE			S10H-SWUB <sup>®</sup> /L 06-07A	
		S10J-SWUB <sup>®</sup> /L 08-08E	S10H-SWUB <sup>®</sup> /L 08-08AE	S10H-SWUB <sup>®</sup> /L 08-08A					
		WP..	No	S12M-SWUP <sup>®</sup> /L 11-14E	Yes	A12M-SWUP <sup>®</sup> /L 11-14AE	F59	No	S12M-SWUP <sup>®</sup> /L 11-14A
S12M-SWUP <sup>®</sup> /L 11-16E	A16Q-SWUP <sup>®</sup> /L 11-18AE			S16Q-SWUP <sup>®</sup> /L 11-18A					
S16N-SWUP <sup>®</sup> /L 11-18E	A16Q-SWUP <sup>®</sup> /L 16-18AE			S16Q-SWUP <sup>®</sup> /L 16-18A					
S16Q-SWUP <sup>®</sup> /L 16-20E	A20R-SWUP <sup>®</sup> /L 16-22AE			S16Q-SWUP <sup>®</sup> /L 16-22A					
S20R-SWUP <sup>®</sup> /L 16-25E		S20R-SWUP <sup>®</sup> /L 16-22A							
Steel Bar	CC..	No	S08X-SCLC <sup>®</sup> /L 06-10	No	S08X-SCLC <sup>®</sup> /L 06-10A	F39	-	-	-
	CP..	No	S10M-SCLP <sup>®</sup> /L 08-12	No	S10L-SCLP <sup>®</sup> /L 08-12A	F41	-	-	-
			S12M-SCLP <sup>®</sup> /L 08-14		S12M-SCLP <sup>®</sup> /L 08-14A				
			S12M-SCLP <sup>®</sup> /L 09-16		S12M-SCLP <sup>®</sup> /L 09-16A				
			S16N-SCLP <sup>®</sup> /L 09-18		S16Q-SCLP <sup>®</sup> /L 09-18A				
			S16Q-SCLP <sup>®</sup> /L 09-20		S20R-SCLP <sup>®</sup> /L 09-22A				
			S20R-SCLP <sup>®</sup> /L 09-25		S25S-SCLP <sup>®</sup> /L 09-27A				
	S25S-SCLP <sup>®</sup> /L 09-30								
	DC..	No	S16Q-SDUC <sup>®</sup> /L 07-14	No	S16Q-SDUC <sup>®</sup> /L 07-14A	F43	-	-	-
			S16Q-SDUC <sup>®</sup> /L 07-16		S20R-SDUC <sup>®</sup> /L 11-20A				
			S20R-SDUC <sup>®</sup> /L 11-20		S16Q-SDUC <sup>®</sup> /L 11-23A				
		S25X-SDUC <sup>®</sup> /L 11-25							
		No	S16Q-SDZC <sup>®</sup> /L 07-14	No	S16Q-SDZC <sup>®</sup> /L 07-14A	F45	-	-	-
			S16Q-SDZC <sup>®</sup> /L 07-16		S20R-SDZC <sup>®</sup> /L 11-20A				
	S20R-SDZC <sup>®</sup> /L 11-20		S16Q-SDZC <sup>®</sup> /L 11-23A		No				
	S25X-SDZC <sup>®</sup> /L 11-25								

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

## Alternative Toolholder Reference Table for Boring Bar

Boring Bar (Discontinued Description)				Alternative Toolholder						
Shank type	Insert Shape	Coolant Hole	Description	Dynamic Bar (1st Recommendation)			Dynamic Bar (2nd Recommendation)			
				Coolant Hole	Description	Ref. to Page	Coolant Hole	Description	Ref. to Page	
Steel Bar	TB..	No	S06H-STUB <sup>®</sup> /06-08	No	S06H-STLB <sup>®</sup> /06-08A	F49	-	-	-	
	TP..	No	S08K-STUP <sup>®</sup> /08-10	No	S08X-STLP <sup>®</sup> /08-10A	F49	-	-	-	
			S10M-STUP <sup>®</sup> /09-12		S10L-STLP <sup>®</sup> /09-12A					
			S12M-STUP <sup>®</sup> /09-16		S12M-STLP <sup>®</sup> /09-16A					
			S16Q-STUP <sup>®</sup> /11-20		S16Q-STLP <sup>®</sup> /11-18A					
			S20R-STUP <sup>®</sup> /11-25		S20R-STLP <sup>®</sup> /11-22A					
			S25X-STUP <sup>®</sup> /16-32		S25S-STLP <sup>®</sup> /16-27A					
	WB..	No	S10H-SWUB <sup>®</sup> /06-06	No	S10H-SWUB <sup>®</sup> /06-06A	F59	-	-	-	
			S10H-SWUB <sup>®</sup> /06-06-15		S10H-SWUB <sup>®</sup> /06-07A					
			S10H-SWUB <sup>®</sup> /06-07		S10H-SWUB <sup>®</sup> /08-08A					
			S10J-SWUB <sup>®</sup> /08-08							
			S10J-SWUB <sup>®</sup> /08-08-20							
	Carbide Shank Boring Bar	CC..	No	C04G-SCLC <sup>®</sup> /03-05	No	C04G-SCLC <sup>®</sup> /03-05AN	F39	-	-	-
				C05H-SCLC <sup>®</sup> /03-06		C05H-SCLC <sup>®</sup> /03-06AN				
				C06J-SCLC <sup>®</sup> /04-07		C06J-SCLC <sup>®</sup> /04-07AN				
C07K-SCLC <sup>®</sup> /04-08				C07K-SCLC <sup>®</sup> /04-08AN						
C08L-SCLC <sup>®</sup> /06-10										
Yes		E08L-SCLC <sup>®</sup> /06-10	Yes	E08L-SCLC <sup>®</sup> /06-10AN						
CP..		No	No	C10N-SCLP <sup>®</sup> /08-12	Yes	E10N-SCLP <sup>®</sup> /08-12AN	F41	-	-	-
				C10N-SCLPR08-12-1/2		E10N-SCLPR08-12AN1/2				
				C10N-SCLPR08-12-2/3		E10N-SCLPR08-12AN2/3				
				C12Q-SCLP <sup>®</sup> /09-16		E12Q-SCLP <sup>®</sup> /09-16A				
	C12Q-SCLPR09-16-1/2			E12Q-SCLPR09-16A-1/2						
	C12Q-SCLPR09-16-2/3			E12Q-SCLPR09-16A-2/3						
	C16X-SCLP <sup>®</sup> /09-20			E16X-SCLP <sup>®</sup> /09-18A						
	C16X-SCLPR09-20-1/2			E16X-SCLPR09-18A-1/2						
	C16X-SCLPR09-20-2/3			E16X-SCLPR09-18A-2/3						
	C20S-SCLP <sup>®</sup> /09-25			E20S-SCLP <sup>®</sup> /09-22A						
	C20S-SCLPR09-25-1/2	E20S-SCLPR09-22A-1/2								
	C20S-SCLPR09-25-2/3	E20S-SCLPR09-22A-2/3								
	Yes	Yes	E10N-SCLP <sup>®</sup> /08-12	E10N-SCLP <sup>®</sup> /08-12AN	F41	-	-	-	-	
			E12Q-SCLP <sup>®</sup> /09-16	E12Q-SCLP <sup>®</sup> /09-16A						
			E16X-SCLP <sup>®</sup> /09-20	E16X-SCLP <sup>®</sup> /09-18A						
E20S-SCLP <sup>®</sup> /09-25			E20S-SCLP <sup>®</sup> /09-22A							
DC..	No	No	C10N-SDUC <sup>®</sup> /07-14	Yes	E10N-SDUC <sup>®</sup> /07-14A	F43	-	-	-	
			C12Q-SDUC <sup>®</sup> /07-16		E12Q-SDUC <sup>®</sup> /07-16A					
			C12Q-SDUC <sup>®</sup> /11-20		E16X-SDUC <sup>®</sup> /11-23A					
			C16X-SDUC <sup>®</sup> /11-25		E20S-SDUC <sup>®</sup> /11-27A					
			C20S-SDUC <sup>®</sup> /11-32							
TB..	No	C10L-STUB <sup>®</sup> /06-08	No	C06J-STLB <sup>®</sup> /06-08AN	F49	-	-	-		
TP..	No	C08L-STUP <sup>®</sup> /08-10	Yes	E08L-STLP <sup>®</sup> /08-10AN						
		C10N-STUP <sup>®</sup> /09-12		E10N-STLP <sup>®</sup> /09-12AN						
		C10N-STUPR09-12-1/2		E10N-STLPR09-12AN1/2						
		C10N-STUPR09-12-2/3		E10N-STLPR09-12AN2/3						
		C10N-STUP <sup>®</sup> /11-12		E10N-STLP <sup>®</sup> /11-12AN						
		C10N-STUPR11-12-1/2		E10N-STLPR11-12AN1/2						
		C10N-STUPR11-12-2/3		E10N-STLPR11-12AN2/3						
		C12Q-STUP <sup>®</sup> /09-16		E12Q-STLP <sup>®</sup> /09-16A						
		C12Q-STUPR09-16-1/2		E12Q-STLPR09-16A-1/2						
		C12Q-STUPR09-16-2/3		E12Q-STLPR09-16A-2/3						
		C12Q-STUP <sup>®</sup> /11-14		E12Q-STLP <sup>®</sup> /11-14A						
		C12Q-STUPR11-14-1/2		E12Q-STLPR11-14A-1/2						
		C12Q-STUPR11-14-2/3		E12Q-STLPR11-14A-2/3						
		C12Q-STUP <sup>®</sup> /11-16		E12Q-STLP <sup>®</sup> /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

## Alternative Toolholder Reference Table for Boring Bar

Boring Bar (Discontinued Description)				Alternative Toolholder												
Shank type	Insert Shape	Coolant Hole	Description	Dynamic Bar (1st Recommendation)			Dynamic Bar (2nd Recommendation)									
				Coolant Hole	Description	Ref. to Page	Coolant Hole	Description	Ref. to Page							
Carbide Shank Boring Bar	TP..	No	C16X-STUP <sup>®</sup> /L11-18	Yes	E16X-STLP <sup>®</sup> /L11-18A	F49	-	-	-							
			C16X-STUPR11-18-1/2		E16X-STLPR11-18A-1/2											
			C16X-STUPR11-18-2/3		E16X-STLPR11-18A-2/3											
			C16X-STUP <sup>®</sup> /L11-20		E16X-STLP <sup>®</sup> /L11-18A											
			C16X-STUPR11-20-1/2		E16X-STLPR11-18A-1/2											
			C16X-STUPR11-20-2/3		E16X-STLPR11-18A-2/3											
			C20S-STUP <sup>®</sup> /L11-25		E20S-STLP <sup>®</sup> /L11-22A											
			C20S-STUPR11-25-1/2		E20S-STLPR11-22A-1/2											
			C20S-STUPR11-25-2/3		E20S-STLPR11-22A-2/3											
		C20S-STUP <sup>®</sup> /L16-25	E20S-STLP <sup>®</sup> /L16-25A													
		C20S-STUPR16-25-1/2	E20S-STLPR16-25A-1/2													
		C20S-STUPR16-25-2/3	E20S-STLPR16-25A-2/3													
		Yes	E08L-STUP <sup>®</sup> /L08-10	Yes	E08L-STLP <sup>®</sup> /L08-10AN	F49				-	-	-				
			E10N-STUP <sup>®</sup> /L09-12		E10N-STLP <sup>®</sup> /L09-12AN											
			E10N-STUP <sup>®</sup> /L11-12		E10N-STLP <sup>®</sup> /L11-12AN											
			E12Q-STUP <sup>®</sup> /L09-16		E12Q-STLP <sup>®</sup> /L09-16A											
			E12Q-STUP <sup>®</sup> /L11-14		E12Q-STLP <sup>®</sup> /L11-14A											
			E12Q-STUP <sup>®</sup> /L11-16													
			E16X-STUP <sup>®</sup> /L11-18		E16X-STLP <sup>®</sup> /L11-18A											
			E16X-STUP <sup>®</sup> /L11-20													
			E20S-STUPR11-25										E20S-STLPR11-22A			
	E20S-STUPR16-25	E20S-STLPR16-25A														
	WB..	No	No	C05H-SWUB <sup>®</sup> /L06-06	No	C05H-SWUB <sup>®</sup> /L06-06AN	F59	-	-				-			
				C06J-SWUB <sup>®</sup> /L06-07		C06J-SWUB <sup>®</sup> /L06-07AN										
				C07K-SWUB <sup>®</sup> /L08-08		C07K-SWUB <sup>®</sup> /L08-08AN										
			Yes	E08L-SWUB <sup>®</sup> /L08-10	Yes	E08L-SWUB <sup>®</sup> /L08-10AN										
				C10N-SWUB <sup>®</sup> /L08-12		E10N-SWUB <sup>®</sup> /L08-12AN										
				C10N-SWUBR08-12-1/2		E10N-SWUBR08-12AN1/2										
				C10N-SWUBR08-12-2/3		E10N-SWUBR08-12AN2/3										
	WP..	No	Yes	C12Q-SWUP <sup>®</sup> /L11-14	Yes	E12Q-SWUP <sup>®</sup> /L11-14A	F59							-	-	-
				C12Q-SWUPR11-14-1/2		E12Q-SWUPR11-14A-1/2										
				C12Q-SWUPR11-14-2/3		E12Q-SWUPR11-14A-2/3										
				C12Q-SWUP <sup>®</sup> /L11-16		E12Q-SWUP <sup>®</sup> /L11-14A										
				C12Q-SWUPR11-16-1/2		E12Q-SWUPR11-14A-1/2										
				C12Q-SWUPR11-16-2/3		E12Q-SWUPR11-14A-2/3										
				C16X-SWUP <sup>®</sup> /L11-18		E16X-SWUP <sup>®</sup> /L11-18A										
				C16X-SWUPR11-18-1/2		E16X-SWUPR11-18A-1/2										
				C16X-SWUPR11-18-2/3		E16X-SWUPR11-18A-2/3										
				C16X-SWUP <sup>®</sup> /L16-20		E16X-SWUP <sup>®</sup> /L16-18A										
				C16X-SWUPR16-20-1/2		E16X-SWUPR16-18A-1/2										
				C16X-SWUPR16-20-2/3		E16X-SWUPR16-18A-2/3										
				C20S-SWUP <sup>®</sup> /L16-25		E20S-SWUP <sup>®</sup> /L16-22A										
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.



# System Tip-Bars Recommended Cutting Conditions

## ◆ 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	PVD	Carbide	CBN	PCD						
	PR1225	PR930	KW10	KBN510	KPD001	KPD010	ap (mm), f (mm/rev)				
	ap	f	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 / VNB-T)

Workpiece Material	Recommended Insert Grades (Cutting Speed Vc: m/min)						VNB02 type		VNB03 type		VNB04 VNB07 type		VNB05 VNB06 VNB07 VNB05 type		Remarks
	MEGA	PVD	Carbide	CBN	PCD										
	PR1225	PR930	KW10	KBN510	KPD001	KPD010	ap (mm), f (mm/rev)								
	ap	f	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	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

F



Boring

# Recommended Cutting Conditions

## 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 Grades	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 PR1535	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 PR1535	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 PR1535	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 PR1535	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 Finishing (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 (Long Tool Life)	Continuous Interruption	F,U	PDL025	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
			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 Alloys	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.



Boring

# Recommended Cutting Conditions

## 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 Grades	Corner-R (r <sub>e</sub> )	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	PV710 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	PV710 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	PV710 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	PV710 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	PV710 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	PV710 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 PR1535	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 PR1535	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 PR1535	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 PR1535	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 Finishing	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	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 Finishing	Continuous Interruption	Without Chipbreaker	KBN60M 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 Finishing (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 (Long Tool Life)	Continuous Interruption	F,U	PDL025	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
			Finishing	Continuous Interruption	F,U	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 Alloys	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
			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.