Boring

F

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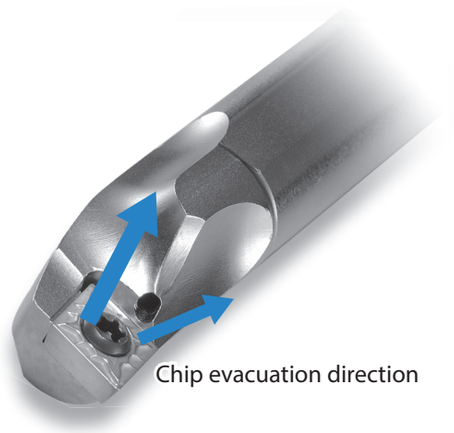
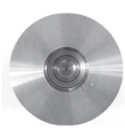
Dynamic Bar

The Dynamic Bar achieves superior chip evacuation

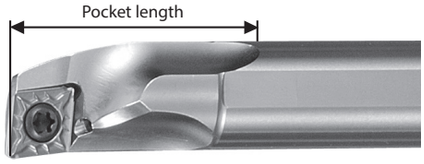


Superior chip evacuation (External coolant)

	Dynamic Bar	Competitor A	Competitor B
Inside the workpiece			

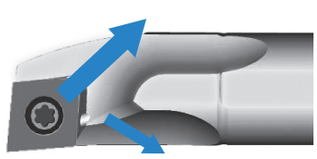
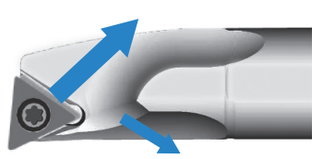
In the products of competitor A and B chips remain inside the workpiece, but chips from the Dynamic Bar are all evacuated from the workpiece.

Comparison of pocket length



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

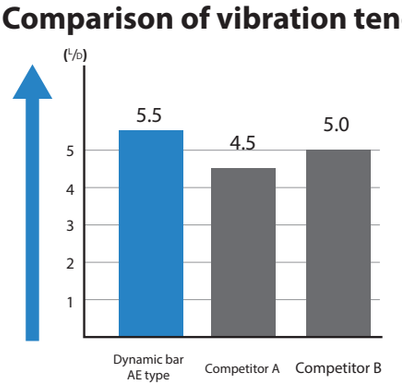
Chip evacuation direction

SCLC(P) type	STLB(P) type
	

Better evacuation by backward chip flow

High rigidity and chattering resistance are ensured by using a special alloy and with help of stress analysis technology.

Comparison of vibration tendency



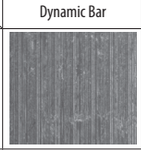
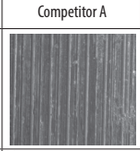
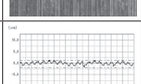
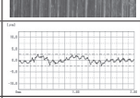
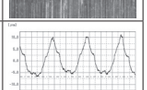
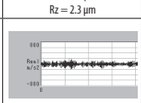
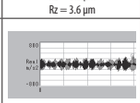
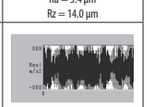
Maximum toolholder overhang length (L/D)

Cutting conditions

SCM415	f = 0.1 mm/rev
Vc = 150 m/min	S16-SCLPR09 type
ap = 0.5 mm	CPMH090304L-Y

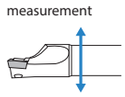
Comparison of surface finish

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

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

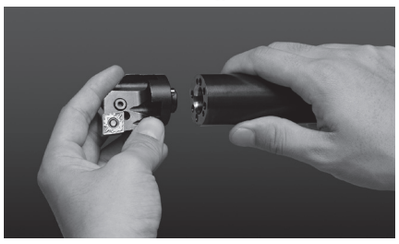
Direction of vibration measurement



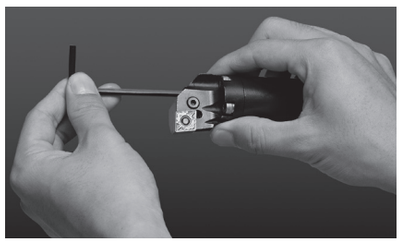
AD Bars interchangeable head boring bars with anti-vibration dampener system

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

How to exchange heads



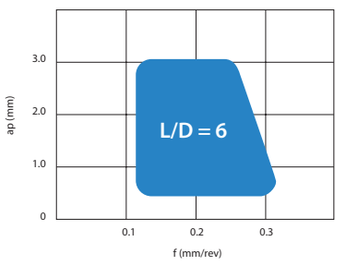
1. Align hole positions



2. 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$^{R}/_{L}$09-40 and HA32 SDUC$^{R}/_{L}$11-40 use HH5X20 for all 3 bolts.

Possible machining area: Guide-Line for overhang length of AD Bars



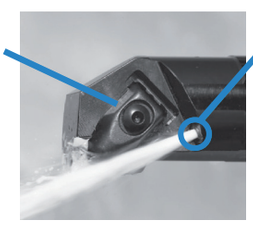
SCM435
Vc = 150 m/min
ap = 0.5~3 mm
f = 0.1~0.3 mm/rev
TNMG160408

Double clamp boring bars for negative inserts

Stable machining is realized in double clamp and direction adjustment mechanism coolant hole.

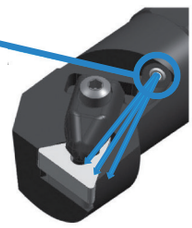
Improved clamping rigidity

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.

Small Internal Machining

EZ Bar Series

Selecting the proper tool in a simple step. Easy adjustment and high precision
Four chipbreakers for a wide range of machining applications

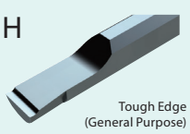
1 Large Tooling Lineup. Select the proper tool in a simple step

Internal Turning

Supports wide range of Internal Machining Applications

Boring	EZB

Chipbreakers

H

Tough Edge (General Purpose)

1st Recommendation / General Purpose Extended reach type available

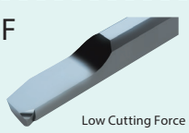
PR1725

G NEW

Chip Control Oriented

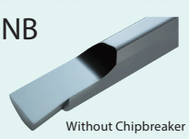
Excellent Chip Control Performance

PR1725

F

Low Cutting Force

Finishing / Sharpness Oriented

PR1725

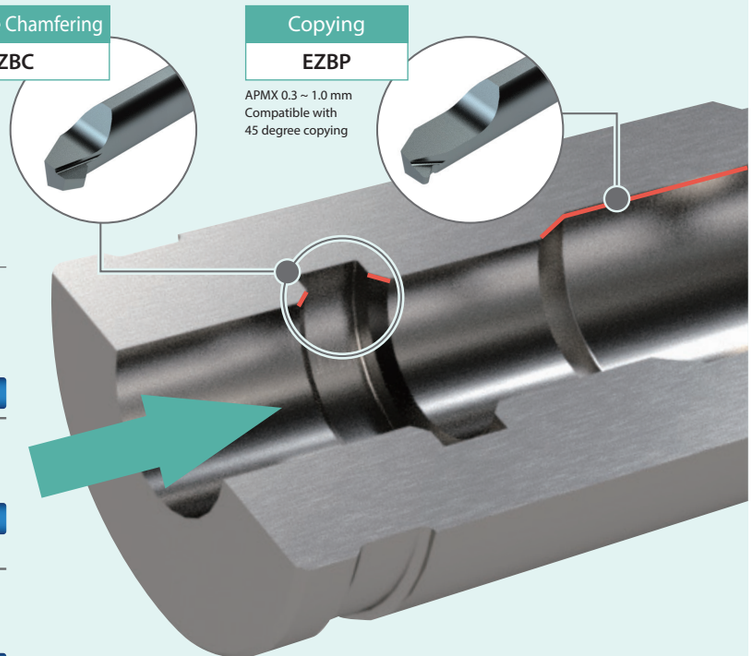
NB

Without Chipbreaker

GW05 Insert Grade for Aluminum Machining Available

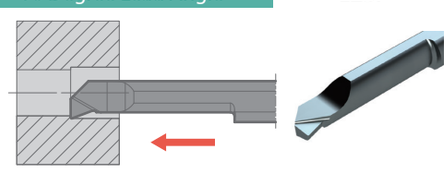
45 Degree Chamfering — **EZBC**

Copying — **EZBP**

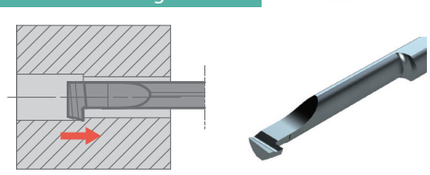
APMX 0.3 ~ 1.0 mm
Compatible with
45 degree copying



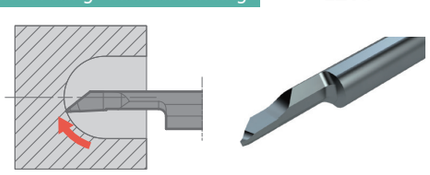
90 Degree Lead Angle — **EZBF**



Back Boring — **EZBT**



Internal Facing • Internal Profiling — **EZVB**



1

2 Easy Adjustment and High Precision

For CT sleeves with coolant holes and HP sleeves with positioning function, the overhang length can be set by moving adjustment pins

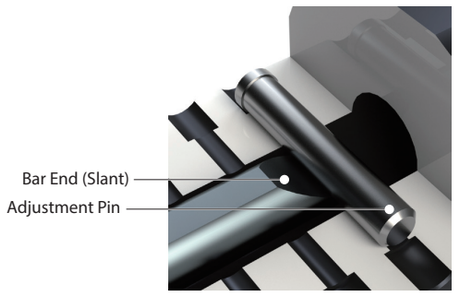
Check

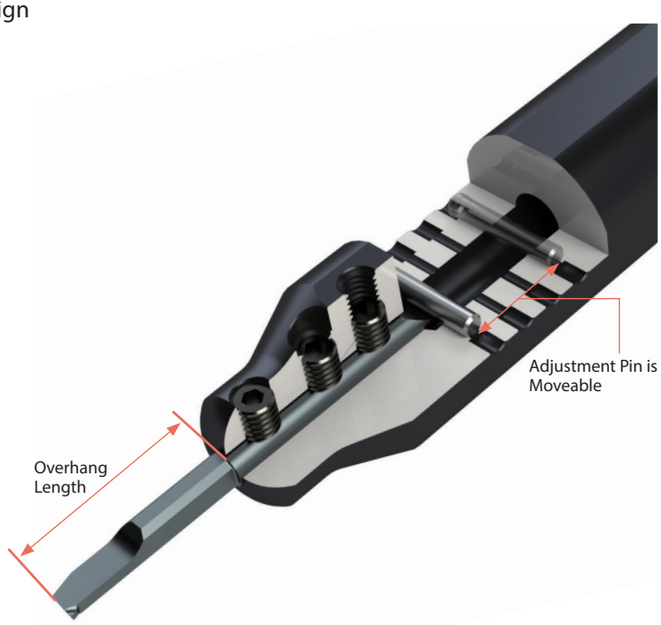
Smooth coolant flow due to special head design

Coolant-Through : EZH-CT

Check

High precision design by contacting the bar end (Slant) with the adjustment pin

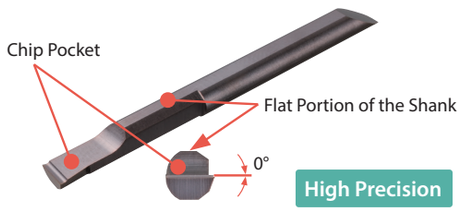




With EZ Adjust Structure : EZH-CT, EZH-HP

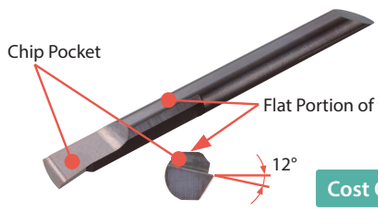
3 Select the HP bar for high presision and the ST bar for cost reduction for Boring (tolerances are different)

HP (EZB-HP)



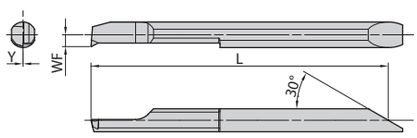
High Precision

ST (EZB-ST)



Cost Oriented

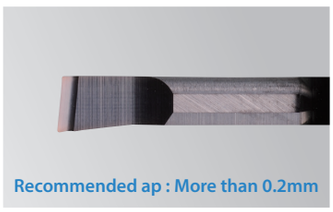
Bar Tolerance



Bar Tolerance	Offset (WF)	Longitudinal Direction (L)	Cutting Edge Height (Y)	Min. Bore Dia.
HP	± 0.025 mm	± 0.05 mm	+ 0.05 mm / 0 mm	Same as Shank Dia.
ST	± 0.06 mm	± 0.1 mm	+ 0.06 mm / 0 mm	Different from Shank Dia.

4 4 Chipbreakers and New PVD Coating PR 1725 for a Wide Range of Machining Processes

H Chipbreaker (Without Lead Angle)
1st Recommendation / General Purpose



PR1725 Available

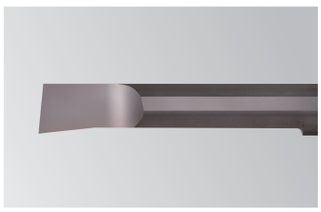
GW05 Insert Grade for Aluminum Machining Available

Left-hand Available (HP Type)

F Chipbreaker (With Lead Angle)
Finishing / Sharpness Oriented

PR1725 Available

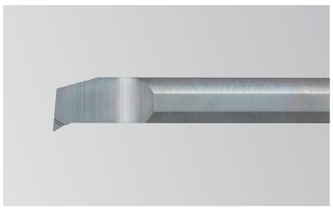
NB Chipbreaker (without Chipbreaker)
Non-ferrous Metal Machining



PCD.CBN Inserts Available

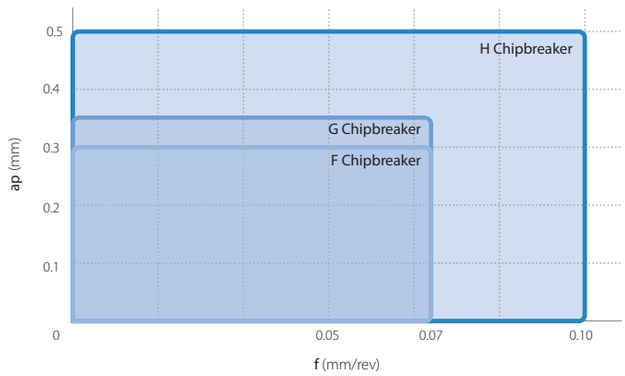
GW05 Insert Grade for Aluminum Machining Available

NEW G Chipbreaker (With Lead Angle)
Chip Control Oriented



PR1725 Available

Applicable Chipbreaker Range

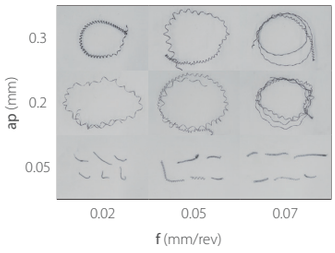


Check Cutting Performance Comparison

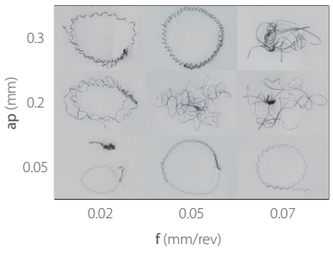
Chip Control Comparison

Stable Chip Curls and Good Chip Breaking

G Chipbreaker



Competitor (With Lead Angle)

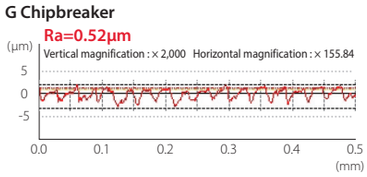


Cutting Conditions: Vc = 80 m/min, Wet Workpiece material: S45C (Internal evaluation)

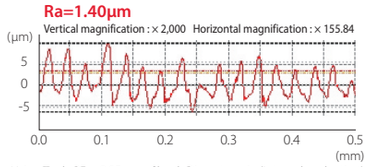
Surface Finish Comparison

Excellent Surface Finish

G Chipbreaker



Competitor (With Lead Angle)



Using Tool : RE = 0.05 mm, Shank Diameter ø4 (Internal evaluation)

Sleeve

Point Large Tooling Lineup that can be Customized for Your Machining Demands

How to select sleeves

Select between three types of sleeves

EZH-CT
With EZ Adjust Structure
Coolant-Through

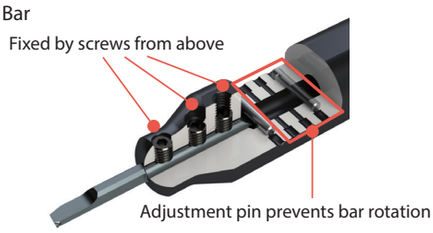
EZH-HP
With EZ Adjust Structure

EZH-ST
Without EZ Adjust Structure

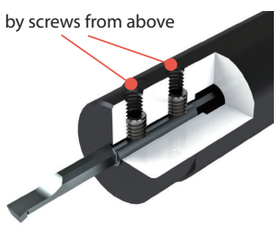
Point The EZ Bar prevents deviation with high-rigidity clamping

The adjustment pin prevents the bar from rotating during machining

EZ Bar

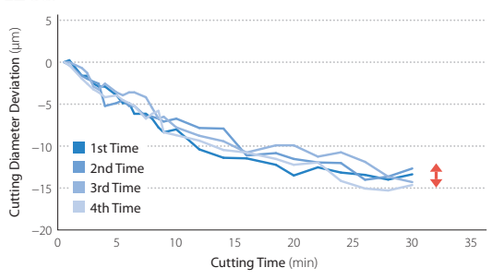


Competitor

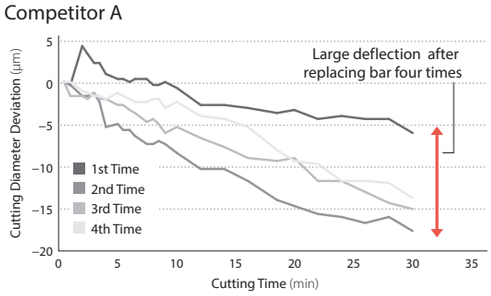


Cutting Diameter Deviation Comparison (Internal Evaluation)

EZ Bar



Competitor A



Cutting conditions : Vc = 66 m/min, ap = 0.1 mm, f = 0.02 mm/rev, Wet (Oil-based) Workpiece material : SK4

EZ Bar PLUS

High Precision Solid Bar with Convenience of Indexable Inserts Reduce Machining Costs

Indexable EZ Bar
Minimum Bore Diameter 5 mm

Point Minimum Bore Diameter 5 mm

Carbide or steel bars can be selected depending on the machining purpose

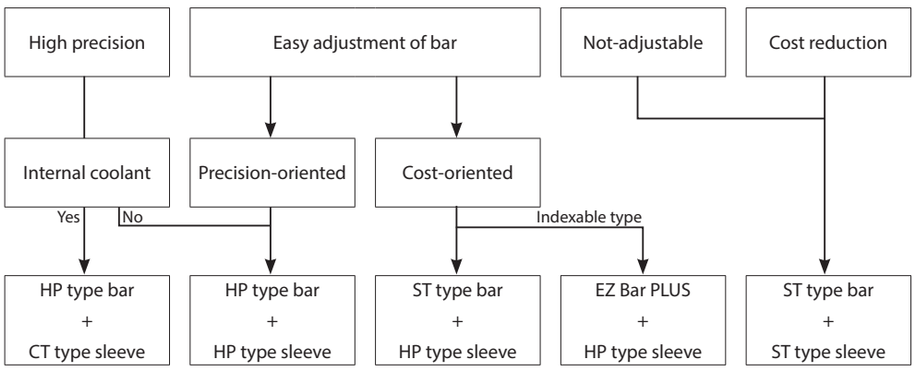
Point Reduces Installing Times by 1/3

The EZ adjust structure features much lower mounting times compared to conventional boring bars

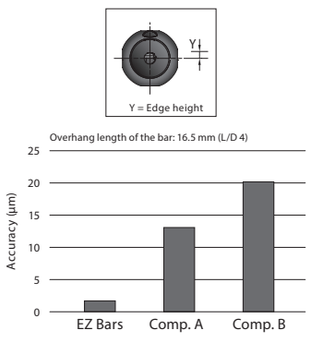
F

Boring

How to select bars and sleeves for each application



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



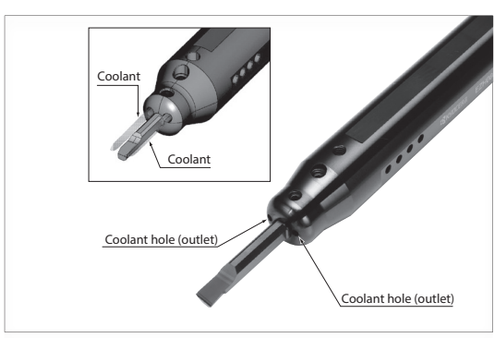
F

Boring

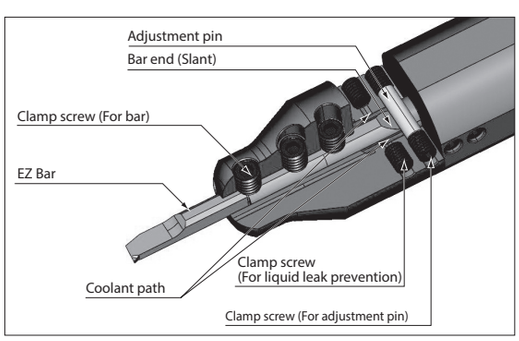
EZH-CT type sleeve (high precision / with coolant hole)

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 mount EZ Bars (EZH-CT sleeve)

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

- Put the adjustment pin into the hole according to the overhang length. Push it into the sleeve, using the wrench (LW-1.5).
- Tighten the clamp screw for the adjustment pin "HS3x3P" or "HS3x4P" using the wrench "LW-1.5" from the both sides of the sleeve.
- Put the clamp screws "HS3x3P" or "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)

- 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)
- Tighten the clamp screw with wrench (LW-2) and fix the bar. Use LW-1.5 if shank dia. is 3 mm or less

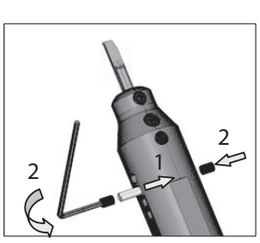


Fig. 1: How to use adjustment pin

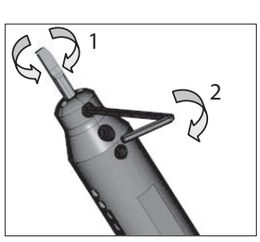


Fig. 2: How to fix bar

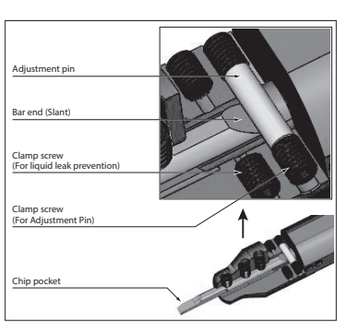
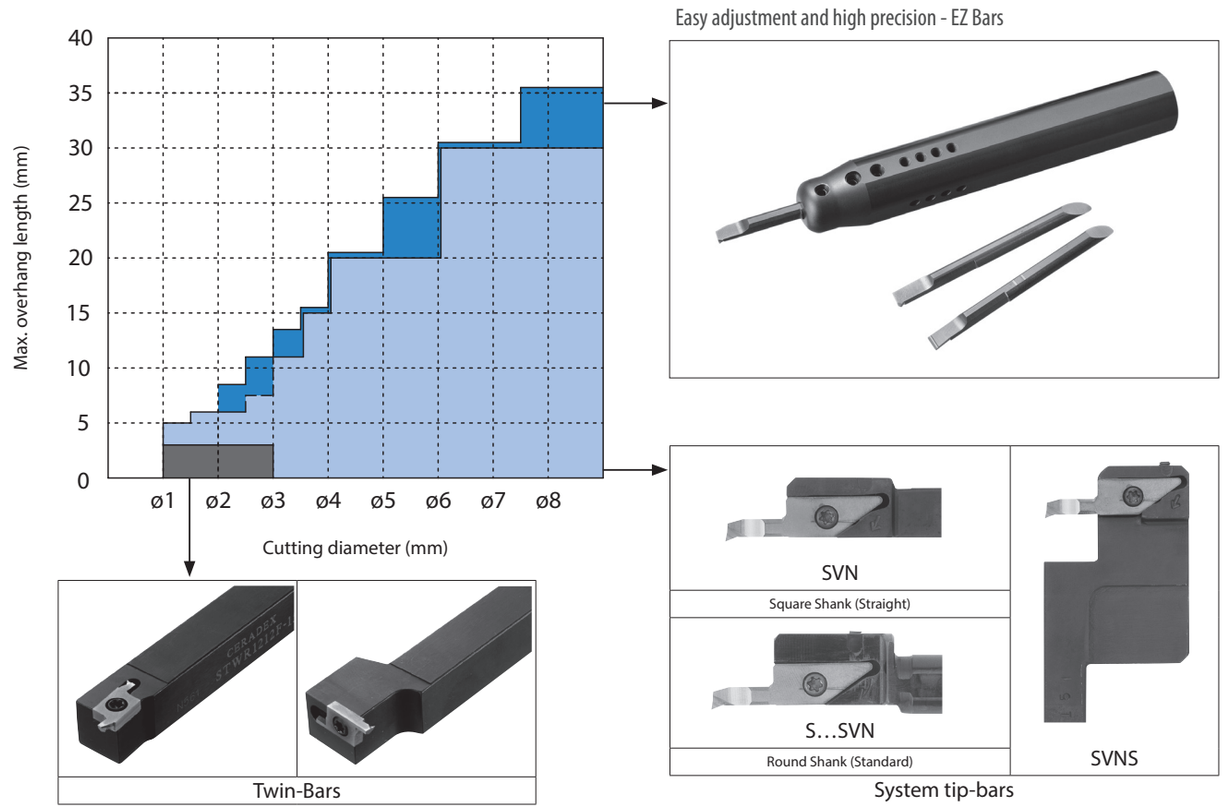


Fig. 3: Fixed bar

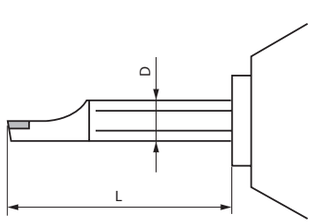
Guide for usage (Adjustable overhang type)

Solid tip-bars type: Min. bore diameter ø1~



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

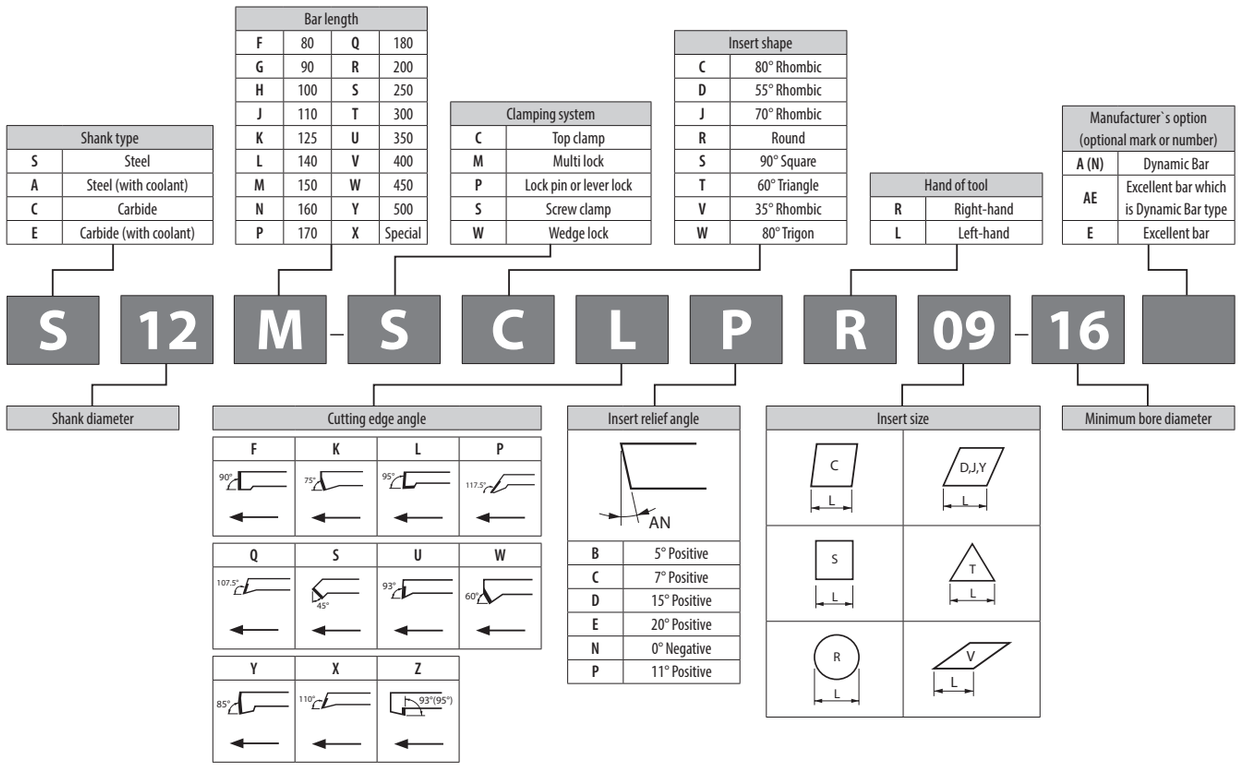


Carbide shank boring bar

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.

Boring bar identification system (round shank)



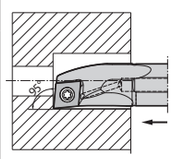
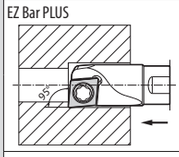
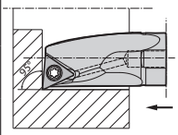
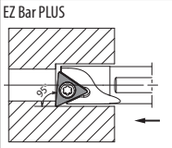
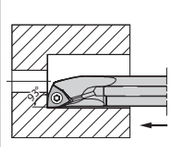
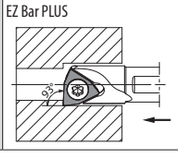
F

Boring

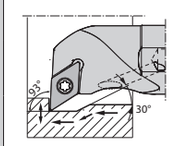
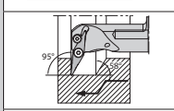
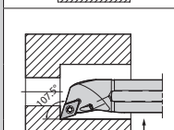
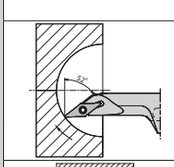
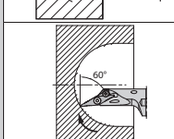
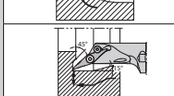
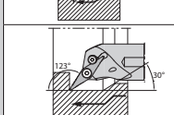
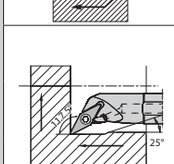
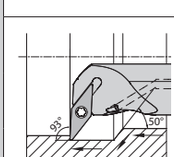
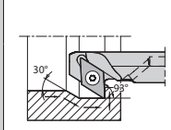
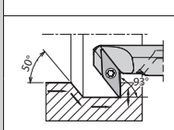
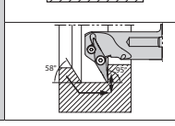
Solid Tip-Bars for Micro Boring

Applications	Solid Tip-Bars Type	Shape	Shank Type / Max. Overhang Length (L/D)	Min. Bore Dia. DMIN 1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	6.5	7	7.5	8	See Page for Toolholders	Summary
Boring	EZB-HP EZ Bars ⇒ F16~F19		Solid L/D=~5			●	●	●	●	●	●	●		●		●		●	F38~F43	
	EZB-HP-LT EZ Bars (Long Type) ⇒ F17		Solid			●	●	●	●	●		●		●						
	EZB-ST EZ Bars ⇒ F20, F21		Solid L/D=~5			●	●	●	●	●	●		●		●		●			
	EZB-NB EZ Bars (PR1225 / GW05) ⇒ F22		Solid L/D=~5			●	●	●	●	●	●		●		●		●			
	CBN EZB-NB EZ Bars PCD ⇒ F22		Solid L/D=~5					●		●		●		●		●				
										●		●		●		●				
	TWB Twin-Bars ⇒ F56		Solid	●	●	●	●	●											F56, F57	
	TWBT Twin-Bars ⇒ F58		Solid	●	●	●	●	●											F59	
	VNB-S System Tip-Bars ⇒ F44		Solid	●	●	●	●	●	●	●									F48~F51	
	VNB System Tip-Bars ⇒ F45, F46		Solid			●		●		●		●		●		●				
	VNBX-S System Tip-Bars ⇒ F52		Solid	●	●	●		●	●	●									F53~F55	
90° Lead Angle	EZBF ⇒ F24		Solid					●		●		●		●					F38~F43	
Copying	EZBP ⇒ F26		Solid			●		●		●		●		●					F38~F43	
	EZVB EZ Bars ⇒ F28		Solid						●		●		●		●				F38~F43	
Back Boring	EZBT EZ Bars ⇒ F30		Solid							●		●							F39 F41 F43	
	VNBT System Tip-Bars ⇒ F47		Solid							●		●							F48~F51	
45° Chamfering	EZBC ⇒ F27		Solid									●		●		●			F39 F41 F43	

Dynamic Bar / EZ Bar PLUS

Applications	Shape	Boring Bar Type	Shank Type Max. Overhang Length (L/D)	Coolant Hole Yes	Coolant Hole No	Min. Bore Dia. DMIN 5	6	7	8	10	12	13	14	16	18	20	22	23	25	26	27	30	31	32	34	40	50	See Page for Toolholders
Boring / Internal Facing		A…SCLC-AE	Excellent L/D=~5.5	●						●	●		●		●		●				●							F60 F61 F62
		S…SCLC-AE	Excellent L/D=~5.5		○	●	●	●	●																			
		S…SCLC-A	Steel L/D=~4		○					●	●		●		●		●				●							
		C…SCLC-AN	Carbide L/D=~7		○	●	●	●	●																			
		E…SCLC-A(N)	Carbide L/D=~7	●						●	●		●		●		●				●							
		A…SCLP-AE	Excellent L/D=~5.5	●							●		●	●	●		●				●							F64 F65
		S…SCLP-A	Steel L/D=~4		○						●		●	●	●		●				●							
		E…SCLP-A(N)	Carbide L/D=~7	●							●		●	●	●		●				●							
	EZ Bar PLUS 	S…SCLC-EZ(P)	Steel L/D=~3		○	●	●	●	●	●																	F31 F32
		C…SCLC-EZ(P)	Carbide L/D=~5		○	●	●	●	●	●																		
		A…STLP-AE	Excellent	●						●	●		●	●	●		●		●		●							F80 F81 F82
		S…STLB-AE	L/D=~5.5		○				●																			
		S…STLB(P)-A	Steel L/D=~4		○				●	●	●		●	●	●		●				●							
		E…STLP-A(N)	Carbide	●						●	●		●	●	●		●		●		●							
		C…STLB-AN	L/D=~7		○				●																			
		A…STLC-AE	Excellent L/D=~5.5	●						●	●		●		●		●											F88 F89
		S…STLC-A	Steel L/D=~4		○					●	●		●		●		●											
	EZ Bar PLUS 	S…STLB(P)-EZP	Steel L/D=~3		○				●	●																	F33 F34
		C…STLB(P)-EZP	Carbide L/D=~5		○				●	●																		
Boring		S…SWUB-AE	Excellent L/D=~5.5		○		●	●	●																			
		A…SWUB(P)-AE	Excellent L/D=~5.5	●						●	●		●		●		●											F100 F101 F102
		S…SWUB(P)-A	Steel L/D=~4		○		●	●	●	●	●		●		●		●											
		C…SWUB-AN	Carbide L/D=~7		○		●	●	●																			
		E…SWUB(P)-A(N)	Carbide L/D=~7	●						●	●		●		●		●											
	EZ Bar PLUS 	S…SWUB-EZP	Steel L/D=~3		○		●	●	●																		F36
		C…SWUB-EZP	Carbide L/D=~5		○		●	●	●																			

Dynamic Bar

Applications	Shape	Boring Bar Type	Shank Type / Max. Overhang Length (L/D)	Coolant Hole Yes	Coolant Hole No	Min. Bore Dia. DMIN 5	6	7	8	10	12	13	14	16	18	20	22	23	25	26	27	30	31	32	34	40	50	See Page for Toolholders
Copying		A…SDUC-AE	Excellent L/D=~5.5	●									●	●		●		●			●			●				F66 F67 F68
		S…SDUC-A	Steel L/D=~4		○								●	●		●		●			●			●				
		E…SDUC-A	Carbide L/D=~7	●									●	●		●		●			●			●				
		A…SZLB-AE	Excellent L/D=~5.5	●																		●			●	●		F109
		A…SDQC-AE	Excellent L/D=~5.5	●							●		●			●			●			●						F70 F71 F72
		S…SDQC-A	Steel L/D=~4		○						●		●			●			●			●						
		E…SDQC-A	Carbide L/D=~7	●							●		●			●			●			●						
		A…SVJB(C)-AE	Excellent L/D=~5.5	●										●		●			●			●				●	●	F90 F91
		A…SVJP-AE		●										●														
		S…SVJB(C)-A	Steel L/D=~4		○									●		●			●			●				●	●	
		S…SVJP-A			○									●														
		A…SZJB-AE	Excellent L/D=~5.5	●																	● 28	●				●		F106
		A…SZXB-AE	Excellent L/D=~5.5	●															●			●				●		F107
		A…SZQB-AE	Excellent L/D=~5.5	●																	●			●		●		F108
		A…SVPC(B)-AE	Excellent L/D=~5.5	●									●		●		●			●			●			●		F94 F95
		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	●										●		●			●						●	●		F96 F97
		S…SVUB(C)-A	Steel L/D=~4		○									●		●			●						●	●		
		E…SVUB(C)-A	Carbide L/D=~7	●											●				●			● 29			●			
Back copying		A…SDZC-AE	Excellent L/D=~5.5	●									●	●		●		●			●			●				F74 F75 F76
		S…SDZC-A	Steel L/D=~4		○								●	●		●		●			●			●				
		E…SDZC-A	Carbide L/D=~7	●									●	●		●		●			●							
		A…SVZB(C)-AE	Excellent L/D=~5.5	●										●		●			●						●	●		F98 F99
		S…SVZB(C)-A	Steel L/D=~4		○									●		●			●						●	●		
		A…SZZB-AE	Excellent L/D=~5.5	●																		●			●	●		F110

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

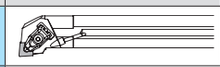
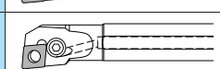
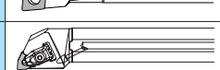
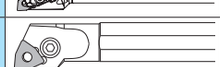
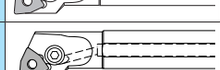
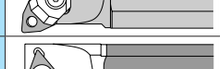
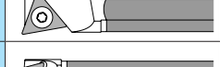
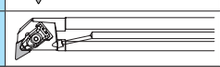
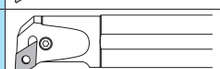
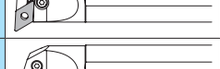
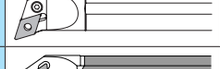
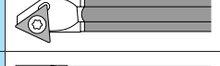
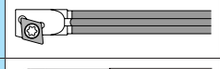
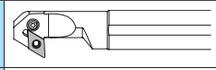
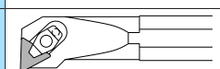
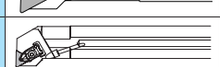
F

Boring

F

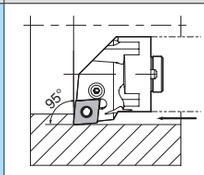
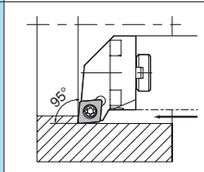
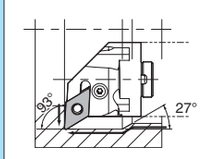
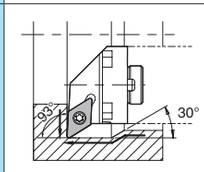
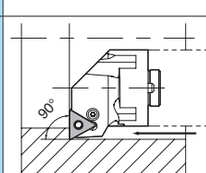
Boring

Boring Bars

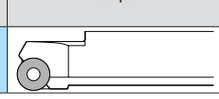
Applications	Boring Bar Type	Shape	Shank Type / Max. Overhang Length (L/D)	Coolant Hole Yes	Coolant Hole No	Insert Type	Min. Bore Dia. DMIN 5	6	7	8	10	12	14	16	18	20	25	30	32	40	50	63	See Page for Toolholders
Boring / Internal Facing	A…DCLN12		Steel L/D=~3	●	○	Negative													●	●	●		F125
	S…PCLN○○		Steel L/D=~3		○	Negative										●	● 27		●	●	●		F126
	A…PCLN09		Steel L/D=~3	●		Negative										●	● 27		●				
	A…DWLN08		Steel L/D=~3	●		Negative													●	●	●		F142
	S…PWLN○○		Steel L/D=~3		○	Negative										●	● 27		●	●	●		F140
	A…PWLN06		Steel L/D=~3	●		Negative										●	● 27		●				
	S…WWLN08-E		Excellent L/D=~5		○	Negative											● 28		● 34	●			F143
	C…STXP(B)		Carbide L/D=~7		○	Positive			● 7.5	● 9	● 11												F86
	C…SJLC		Carbide L/D=~7		○	Positive	● 5.5																F78
Copying	S…STWP-E		Excellent L/D=~5		○	Positive						●		●		●	●		●				F84
	S…STWP		Steel L/D=~3		○	Positive						●		●		●	●						F85
	A…DDUN15		Steel L/D=~3	●		Negative														●	●	●	F130
	S…PDUN11		Steel L/D=~3		○	Negative											● 27		●	●			F128
	A…PDUN11		Steel L/D=~3	●		Negative											● 27		●	●			
	S…PDUN15		Steel L/D=~3		○	Negative													●	● 44	● 54		F132
	S…PDQN15		Steel L/D=~3		○	Negative													●	● 44	● 54		F133
Back copying	C…STZB		Carbide L/D=~7		○	Positive				● 8.5													F87
	C…SJZC		Carbide L/D=~7		○	Positive		● 6.5															F79
	S…PDZN15		Steel L/D=~3		○	Negative													●	● 44	● 54		F134
Boring	S…CTUP		Steel L/D=~3		○	Positive								●		●	● 27		● 34	● 43	●		F113
	A…DTFN○○		Steel L/D=~3	●		Negative													●	●	●		F137
	S…PTUN○○		Steel L/D=~3		○	Negative										●	●	●	●	●	●		F138
	A…PTUN11		Steel L/D=~3	●		Negative										●	●		●				
	A…DSKN12		Steel L/D=~3	●		Negative													●	●	●		F136
	S…SSKP		Steel L/D=~3		○	Positive										●							F111
	S…CSKP		Steel L/D=~3		○	Positive										●	● 27		● 34				F112

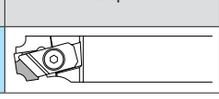
For Min. Bore Dia. DMIN, the figure under ● may be applied depending on the toolholder type.

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

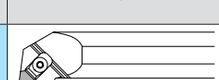
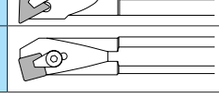
Applications	Boring Bar Type	Shape	Shank Type Max. Overhang Length (L/D)	Coolant Hole Yes	Coolant Hole No	Insert Type	Min. Bore Dia. DMIN 7	8	10	12	14	16	18	20	25	30	32	40	43	50	63	See Page for Toolholders
Boring / Internal facing	HA-PCLN12		Anti-vibration Dampener System L/D=~5.5	●		Negative												●		●	●	F116
Boring / Internal facing	HA-SCLC09		Anti-vibration Dampener System L/D=~6	●		Positive												●				F122
Copying	HA-PDUN15		Anti-vibration Dampener System L/D=~6	●		Negative													●	●	●	F118
Copying	HA-SDUC11		Anti-vibration Dampener System L/D=~6	●		Positive												●				F123
Boring	HA-PTFN16		Anti-vibration Dampener System L/D=~6	●		Negative												●		●	●	F120

Boring Toolholders for Bearing Machining (Square Shank)

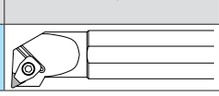
Applications	Boring Bar Type	Shape	Min. Bore Dia. DMIN 20	25	30	32	40	50	See Page for Toolholders
Boring	SRCP-B		●			●			F114

Applications	Boring Bar Type	Shape	Min. Bore Dia. DMIN 20	25	30	32	40	50	See Page for Toolholders
Round-Chamfering	CBSN-B		●						F115

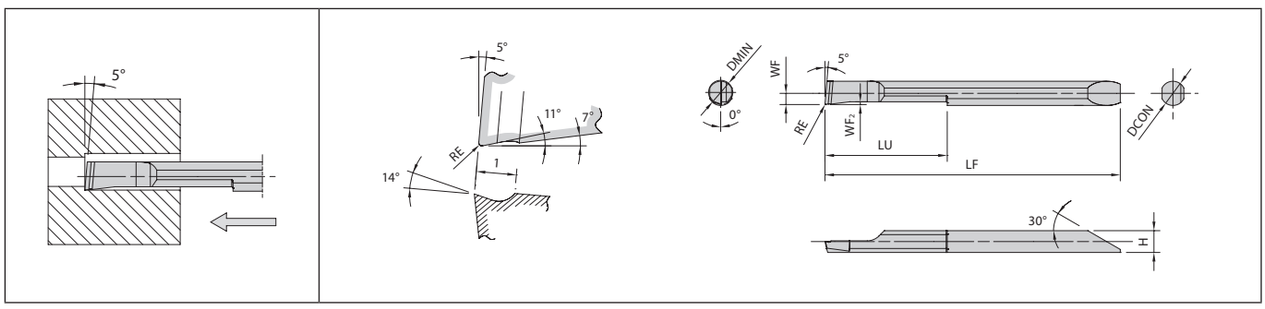
Boring Bars for Ceramic / Solid CBN Tools (L/D=~3)

Applications	Boring Bar Type	Shape	Min. Bore Dia. DMIN 16	18	20	25	30	32	40	50	See Page for Toolholders
Boring / Internal facing	S-CELN									●	F145
Boring	S-CTUP		●		●	● 27		● 34	● 43	●	F113
Boring	S-CSKP				●	● 27		● 34			F112

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

Applications	Boring Bar Type	Shape	Min. Bore Dia. DMIN 20	25	30	32	40	50	See Page for Toolholders
Boring	S-CTUN-A				●				F146

EZB-HP (H Chipbreaker) (Boring)



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

F

Boring

Solid

Positive

AD bars

Negative

Dimensions

Description	No. of edges	Dimension (mm)								Tolerance (mm)		Carbide				Applicable sleeve ➡ F38~F43
		DMIN	DCON	H	LF	LU	WF	WF_2	RE	RE min.	RE max.	PVD			-	
												PR1225		PR1725	GW05	
												R	L	R	R	
EZB□L 020020HP-008H	1	2	2	1.8	32	8	0.85	0.25	0.08	-0.015	+0.015	●	●	●	●	EZH020...
EZB□L 025025HP-008H	1	2.5	2.5	2.3	35	10.5	1.1	0.25	0.08	-0.015	+0.015	●	●	●	●	EZH025...
025025HP-015H									0.15	-0.02	+0.02	●		●		
EZB□L 030030HP-008H	1	3	3	2.7	38.9	13	1.35	0.3	0.08	-0.015	+0.015	●	●	●	●	EZH030...
030030HP-015H									0.15	-0.02	+0.02	●		●		
EZB□L 035035HP-008H	1	3.5	3.5	3.2	41.9	15	1.6	0.4	0.08	-0.015	+0.015	●	●	●	●	EZH035...
035035HP-015H									0.15	-0.02	+0.02	●		●		
EZB□L 040040HP-008H	1	4	4	3.6	48.8	20	1.85	0.4	0.08	-0.015	+0.015	●	●	●	●	EZH040...
040040HP-015H									0.15	-0.02	+0.02	●		●		
EZB□L 045045HP-008H	1	4.5	4.5	4.1	51.1	22.5	2.1	0.5	0.08	-0.015	+0.015	●	●	●	●	EZH045...
045045HP-015H									0.15	-0.02	+0.02	●		●		
EZB□L 050050HP-008H	1	5	5	4.6	58.1	25	2.35	0.5	0.08	-0.015	+0.015	●	●	●	●	EZH050...
050050HP-015H									0.15	-0.02	+0.02	●		●		
EZB□L 060060HP-008H	1	6	6	5.6	66.1	30	2.85	0.6	0.08	-0.015	+0.015	●	●	●	●	EZH060...
060060HP-015H									0.15	-0.02	+0.02	●		●		
EZB□L 070070HP-008H	1	7	7	6.3	73.8	35	3.3	0.7	0.08	-0.015	+0.015	●	●	●	●	EZH070...
070070HP-015H									0.15	-0.02	+0.02	●		●		
EZB□L 080080HP-008H	1	8	8	7.2	84.8	40	3.75	0.8	0.08	-0.015	+0.015	●	●	●	●	EZH080...
080080HP-015H									0.15	-0.02	+0.02	●		●		

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

Recommended cutting conditions ➡ F23

EZ Bars Identification System

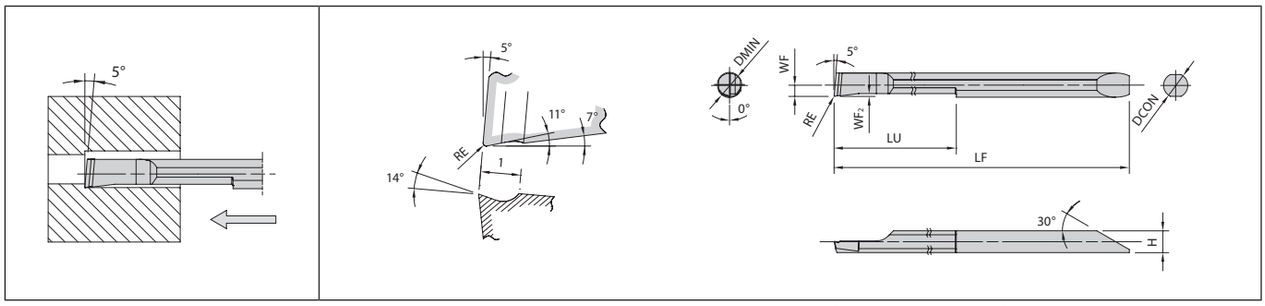
EZ | B | R | 020 | 020 | HP | - | 008 | H

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

● : Standard item

EZ bars are sold in 1 piece boxes

EZB-HP-LT (H Chipbreaker) (Boring)



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

F

Boring

Dimensions

Description		No. of edges	Dimension (mm)								Overhang length (mm)				Tolerance (mm)		Carbide		Applicable sleeve ➡ F38~F43
			DMIN	DCON	H	LF	LU	WF	WF_2	RE	#1	#2	#3	#4	RE min.	RE max.	PVD	PR1225	
EZBR	020020HP-008H-LT	1	2	2	1.8	36	12	0.85	0.25	0.08	12.5	8.5	-	-	-0.015	+0.015	●		EZH020...
	025025HP-008H-LT	1	2.5	2.5	2.3	39.5	15	1.1			15.5	11.5	-	-			●		EZH025...
	030030HP-008H-LT	1	3	3	2.7	47.9	18	1.35	0.3		*22.5*	18.5	14.5	-			●		EZH030...
	035035HP-008H-LT	1	3.5	3.5	3.2	51.9	21	1.6	0.4		*25.5*	21.5	17.5	-			●		EZH035...
	040040HP-008H-LT	1	4	4	3.6	60.8	28	1.85			*32.5*	28.5	24.5	20.5			●		EZH040...
	050050HP-008H-LT	1	5	5	4.6	73.1	35	2.35	0.5		*40.5*	35.5	30.5	25.5			●		EZH050...
	060060HP-008H-LT	1	6	6	5.6	83.1	42	2.85	0.6		*47.5*	42.5	37.5	32.5			●		EZH060...

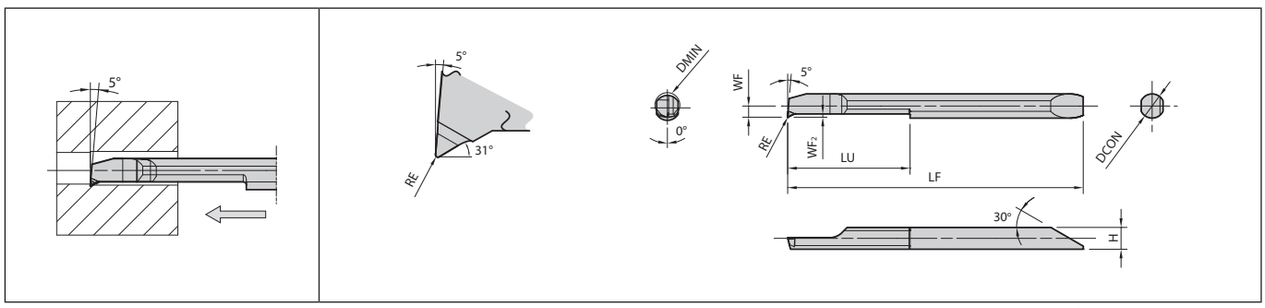
Tolerance : Offset ±0.025 mm (of the reference pin), overall length ±0.05 mm, edge height +0.05/0 mm
EZBR..H-LT : Inserts need to be modified for overhang length #1 in italics (DCON = 3 - 6 mm).

Recommended cutting conditions ➡ F23

● : Standard item

EZ bars are sold in 1 piece boxes

EZB-HP (G Chipbreaker) (Boring)



Right-hand shown | With lead angle | Chip control oriented

F

Boring

Solid

Positive

AD bars

Negative

Dimensions

Description		No. of edges	Dimension (mm)								Tolerance (mm)		Carbide		Applicable sleeve ➡ F38~F43
			DMIN	DCON	H	LF	LU	WF	WF_2	RE	RE min.	RE max.	PVD PR1725	R	
EZBR	020020HP-005G	1	2	2	1.65	31.8	8	0.55	0.25	0.05	-0.01	+0.01	●		EZH020...
EZBR	025025HP-005G	1	2.5	2.5	2.15	34.8	10.5	0.8	0.3	0.05	-0.01	+0.01	●		EZH025...
EZBR	025025HP-015G									0.15	-0.02	+0.02	●		
EZBR	030030HP-005G	1	3	3	2.5	38.7	13	1.05	0.4	0.05	-0.01	+0.01	●		EZH030...
EZBR	030030HP-015G									0.15	-0.02	+0.02	●		
EZBR	035035HP-005G	1	3.5	3.5	3	41.7	15	1.3	0.5	0.05	-0.01	+0.01	●		EZH035...
EZBR	035035HP-015G									0.15	-0.02	+0.02	●		
EZBR	040040HP-005G	1	4	4	3.45	48.7	20	1.55	0.5	0.05	-0.01	+0.01	●		EZH040...
EZBR	040040HP-015G									0.15	-0.02	+0.02	●		
EZBR	045045HP-005G	1	4.5	4.5	3.95	50.9	22.5	1.8	0.7	0.05	-0.01	+0.01	●		EZH045...
EZBR	045045HP-015G									0.15	-0.02	+0.02	●		
EZBR	050050HP-005G	1	5	5	4.3	57.8	25	2.05	0.7	0.05	-0.01	+0.01	●		EZH050...
EZBR	050050HP-015G									0.15	-0.02	+0.02	●		
EZBR	060060HP-005G	1	6	6	5.15	65.7	30	2.55	0.9	0.05	-0.01	+0.01	●		EZH060...
EZBR	060060HP-015G									0.15	-0.02	+0.02	●		
EZBR	070070HP-005G	1	7	7	6.15	73.7	35	3.05	1	0.05	-0.01	+0.01	●		EZH070...
EZBR	070070HP-015G									0.15	-0.02	+0.02	●		
EZBR	080080HP-005G	1	8	8	7.1	84.8	40	3.55	1	0.05	-0.01	+0.01	●		EZH080...
EZBR	080080HP-015G									0.15	-0.02	+0.02	●		

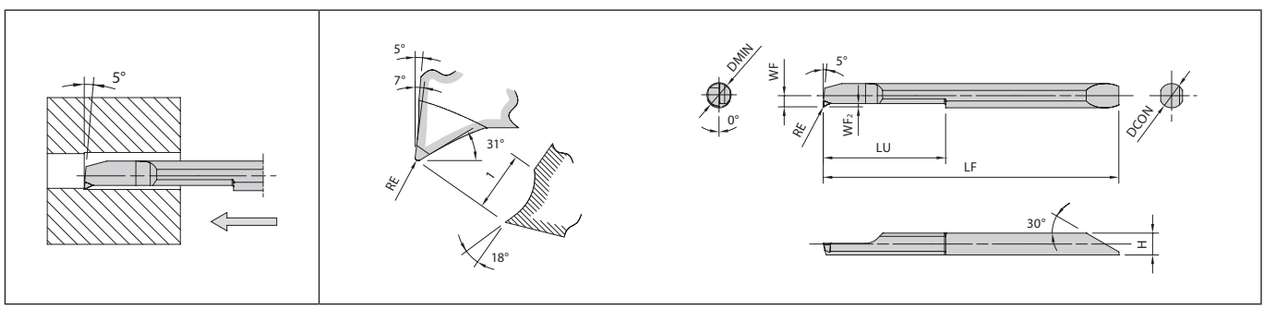
Tolerance : Offset ±0.025 mm (of the reference pin), overall length ±0.05 mm, edge height +0.05/0 mm

Recommended cutting conditions ➡ F23

● : Standard item

EZ bars are sold in 1 piece boxes

EZB-HP (F Chipbreaker) (Boring)



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

F

Boring

Dimensions

Description		No. of edges	Dimension (mm)								Tolerance (mm)		Carbide		Applicable sleeve ➡ F38~F43
			DMIN	DCON	H	LF	LU	WF	WF_2	RE	RE min.	RE max.	PVD PR1225 R	PVD PR1725 R	
EZBR	020020HP-005F	1	2	2	1.8	32	8	0.85	0.25	0.05	-0.01	+0.01	●	●	EZH020...
EZBR	025025HP-005F	1	2.5	2.5	2.3	35	10.5	1.1	0.3	0.05	-0.01	+0.01	●	●	EZH025...
	025025HP-015F									0.15	-0.02	+0.02	●	●	
EZBR	030030HP-005F	1	3	3	2.7	38.9	13	1.35	0.4	0.05	-0.01	+0.01	●	●	EZH030...
	030030HP-015F									0.15	-0.02	+0.02	●	●	
EZBR	035035HP-005F	1	3.5	3.5	3.2	41.9	15	1.6	0.5	0.05	-0.01	+0.01	●	●	EZH035...
	035035HP-015F									0.15	-0.02	+0.02	●	●	
EZBR	040040HP-005F	1	4	4	3.6	48.8	20	1.85	0.5	0.05	-0.01	+0.01	●	●	EZH040...
	040040HP-015F									0.15	-0.02	+0.02	●	●	
EZBR	045045HP-005F	1	4.5	4.5	4.1	51.1	22.5	2.1	0.7	0.05	-0.01	+0.01	●	●	EZH045...
	045045HP-015F									0.15	-0.02	+0.02	●	●	
EZBR	050050HP-005F	1	5	5	4.6	58.1	25	2.35	0.7	0.05	-0.01	+0.01	●	●	EZH050...
	050050HP-015F									0.15	-0.02	+0.02	●	●	
EZBR	060060HP-005F	1	6	6	5.6	66.1	30	2.85	0.9	0.05	-0.01	+0.01	●	●	EZH060...
	060060HP-015F									0.15	-0.02	+0.02	●	●	
EZBR	070070HP-005F	1	7	7	6.3	73.8	35	3.3	1	0.05	-0.01	+0.01	●	●	EZH070...
	070070HP-015F									0.15	-0.02	+0.02	●	●	
EZBR	080080HP-005F	1	8	8	7.2	84.8	40	3.75	1	0.05	-0.01	+0.01	●	●	EZH080...
	080080HP-015F									0.15	-0.02	+0.02	●	●	

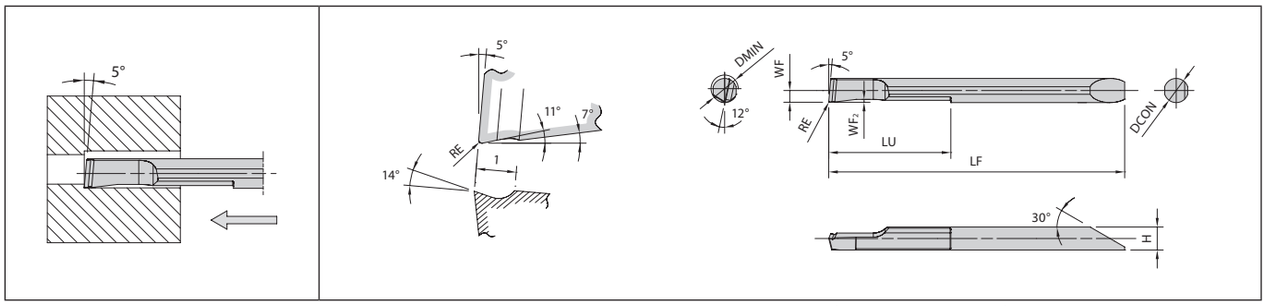
Tolerance : Offset ±0.025 mm (of the reference pin), overall length ±0.05 mm, edge height +0.05/0 mm

Recommended cutting conditions ➡ F23

● : Standard item

EZ bars are sold in 1 piece boxes

EZB-ST (H Chipbreaker) (Boring)



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

F

Boring

Solid

Positive

AD bars

Negative

Dimensions

Description		No. of edges	Dimension (mm)								Tolerance (mm)		Carbide		Applicable sleeve ➡ F38~F43
			DMIN	DCON	H	LF	LU	WF	WF_2	RE	RE min.	RE max.	PVD		
													PR1225	PR1725	
													R	R	
EZBR	020017ST-008H	1	2	1.7	1.5	27.3	7	0.79	0.19	0.08	-0.015	+0.015	●	●	EZH017...
EZBR	025020ST-008H	1	2.5	2	1.82	32	8	0.94	0.16	0.08	-0.015	+0.015	●	●	EZH020...
	025020ST-015H									0.15	-0.02	+0.02	●	●	
EZBR	030025ST-008H	1	3	2.5	2.3	35	10.5	1.19	0.15	0.08	-0.015	+0.015	●	●	EZH025...
	030025ST-015H									0.15	-0.02	+0.02	●	●	
EZBR	035030ST-008H	1	3.5	3	2.8	39	13	1.44	0.18	0.08	-0.015	+0.015	●	●	EZH030...
	035030ST-015H									0.15	-0.02	+0.02	●	●	
EZBR	040035ST-008H	1	4	3.5	3.3	42	15	1.69	0.24	0.08	-0.015	+0.015	●	●	EZH035...
	040035ST-015H									0.15	-0.02	+0.02	●	●	
EZBR	045040ST-008H	1	4.5	4	3.8	49	20	1.94	0.27	0.08	-0.015	+0.015	●	●	EZH040...
	045040ST-015H									0.15	-0.02	+0.02	●	●	
EZBR	055050ST-008H	1	5.5	5	4.8	58.2	25	2.44	0.33	0.08	-0.015	+0.015	●	●	EZH050...
	055050ST-015H									0.15	-0.02	+0.02	●	●	
EZBR	065060ST-008H	1	6.5	6	5.8	66.2	30	2.94	0.38	0.08	-0.015	+0.015	●	●	EZH060...
	065060ST-015H									0.15	-0.02	+0.02	●	●	
EZBR	075070ST-008H	1	7.5	7	6.8	74.2	35	3.44	0.44	0.08	-0.015	+0.015	●	●	EZH070...
	075070ST-015H									0.15	-0.02	+0.02	●	●	

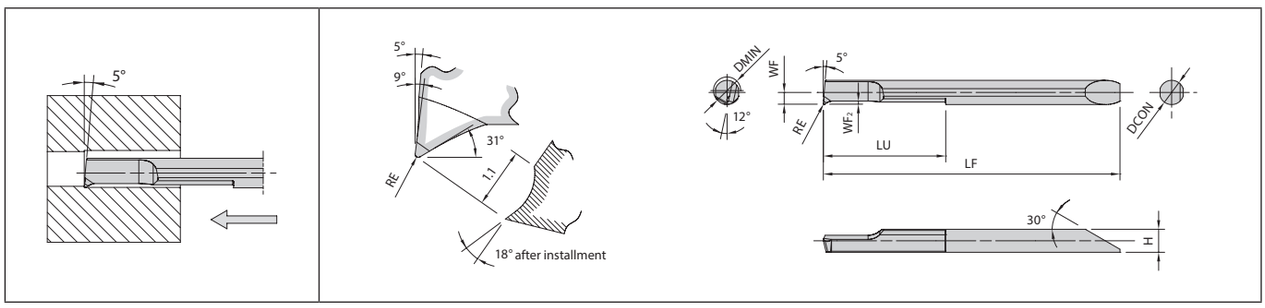
Tolerance : Offset ±0.06 mm , overall length ±0.1 mm, edge height +0.06/0 mm

Recommended cutting conditions ➡ F23

● : Standard item

EZ bars are sold in 1 piece boxes

EZB-ST (F Chipbreaker) (Boring)



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

F

Boring

Dimensions

Description		No. of edges	Dimension (mm)								Tolerance (mm)		Carbide		Applicable sleeve F38~F43
			DMIN	DCON	H	LF	LU	WF	WF_2	RE	RE min.	RE max.	PVD		
													PR1225	PR1725	
													R	R	
EZBR	020017ST-005F	1	2	1.7	1.5	27.3	7	0.79	0.2	0.05	-0.01	+0.01	●	●	EZH017...
EZBR	025020ST-005F	1	2.5	2	1.82	32	8	0.94	0.16	0.05	-0.01	+0.01	●	●	EZH020...
	025020ST-015F									0.15	-0.02	+0.02	●	●	
EZBR	030025ST-005F	1	3	2.5	2.3	35	10.5	1.19	0.2	0.05	-0.01	+0.01	●	●	EZH025...
	030025ST-015F									0.15	-0.02	+0.02	●	●	
EZBR	035030ST-005F	1	3.5	3	2.8	39	13	1.44	0.26	0.05	-0.01	+0.01	●	●	EZH030...
	035030ST-015F									0.15	-0.02	+0.02	●	●	
EZBR	040035ST-005F	1	4	3.5	3.3	42	15	1.69	0.33	0.05	-0.01	+0.01	●	●	EZH035...
	040035ST-015F									0.15	-0.02	+0.02	●	●	
EZBR	045040ST-005F	1	4.5	4	3.8	49	20	1.94	0.31	0.05	-0.01	+0.01	●	●	EZH040...
	045040ST-015F									0.15	-0.02	+0.02	●	●	
EZBR	055050ST-005F	1	5.5	5	4.8	58.2	25	2.44	0.45	0.05	-0.01	+0.01	●	●	EZH050...
	055050ST-015F									0.15	-0.02	+0.02	●	●	
EZBR	065060ST-005F	1	6.5	6	5.8	66.2	30	2.94	0.59	0.05	-0.01	+0.01	●	●	EZH060...
	065060ST-015F									0.15	-0.02	+0.02	●	●	
EZBR	075070ST-005F	1	7.5	7	6.8	74.2	35	3.44	0.65	0.05	-0.01	+0.01	●	●	EZH070...
	075070ST-015F									0.15	-0.02	+0.02	●	●	

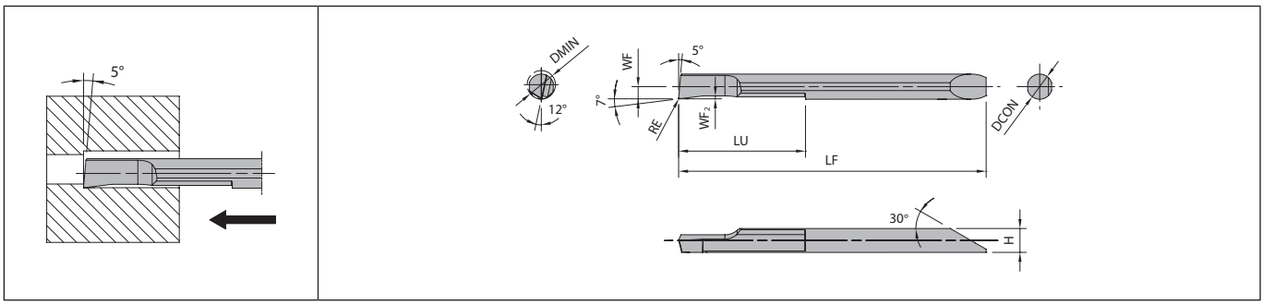
Tolerance : Offset ±0.06 mm , overall length ±0.1 mm, edge height +0.06/0 mm

Recommended cutting conditions F23

● : Standard item

EZ bars are sold in 1 piece boxes

EZB-NB (Boring)



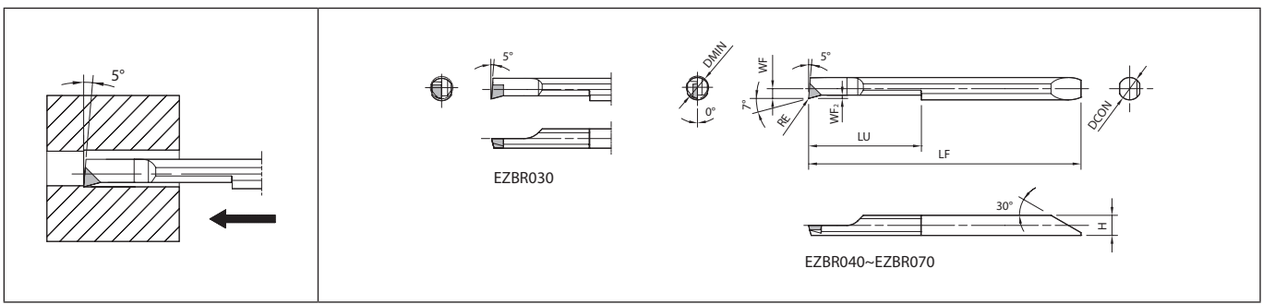
Right-hand shown

Dimensions

Description		No. of edges	Dimension (mm)								Tolerance (mm)		Carbide		Applicable sleeve ➡ F38~F43
			DMIN	DCON	H	LF	LU	WF	WF_2	RE	RE min.	RE max.	PVD	-	
													PR1225	GW05	
													R	R	
EZBR	020017-005NB	1	2	1.7	1.5	27.3	7	0.79	0.2	0.05	-0.015	+0.015	●	●	EZH017...
EZBR	025020-005NB	1	2.5	2	1.82	32	8	0.94	0.16	0.05	-0.015	+0.015	●	●	EZH020...
EZBR	030025-005NB	1	3	2.5	2.3	35	10.5	1.19	0.16	0.05	-0.015	+0.015	●	●	EZH025...
EZBR	035030-005NB	1	3.5	3	2.8	39	13	1.44	0.19	0.05	-0.015	+0.015	●	●	EZH030...
EZBR	040035-005NB	1	4	3.5	3.3	42	15	1.69	0.25	0.05	-0.015	+0.015	●	●	EZH035...
EZBR	045040-005NB	1	4.5	4	3.8	49	20	1.94	0.28	0.05	-0.015	+0.015	●	●	EZH040...
EZBR	055050-005NB	1	5.5	5	4.8	58.2	25	2.44	0.33	0.05	-0.015	+0.015	●	●	EZH050...
EZBR	065060-005NB	1	6.5	6	5.8	66.2	30	2.94	0.39	0.05	-0.015	+0.015	●	●	EZH060...
EZBR	075070-005NB	1	7.5	7	6.8	74.2	35	3.44	0.45	0.05	-0.015	+0.015	●	●	EZH070...

Recommended cutting conditions ➡ F23

EZB-NB (Boring)



Right-hand shown

Dimensions

Description		No. of edges	Dimension (mm)								Tolerance (mm)		CBN	PCD	Applicable sleeve ➡ F38~F43
			DMIN	DCON	H	LF	LU	WF	WF_2	RE	RE min.	RE max.	PVD	-	
													KBN05M	KPD001	
													R	R	
EZBR	030030-003NB	1	3	3	2.6	38.8	13	1.25	0.3	0.035	-0.015	+0.015	●		EZH030...
EZBR	040040-003NB	1	4	4	3.6	48.8	20	1.75	0.5	0.035	-0.015	+0.015	●	●	EZH040...
EZBR	050050-003NB	1	5	5	4.6	58.1	25	2.25	0.5	0.035	-0.015	+0.015	●	●	EZH050...
EZBR	060060-003NB	1	6	6	5.6	66.1	30	2.75	0.5	0.035	-0.015	+0.015	●	●	EZH060...
EZBR	070070-003NB	1	7	7	6.6	74.1	35	3.25	0.5	0.035	-0.015	+0.015	●	●	EZH070...

KBN05M edge preparation : T00815 (0.08mm x 15° Chamfered cutting edge)
KPD001 edge preparation : F (Sharp edge)

Recommended cutting conditions ➡ F23

● : Standard item

EZ bars are sold in 1 piece boxes

Recommended cutting conditions

H chipbreaker (EZB-HP··H type / EZB-ST··H type)

Workpiece material	Insert grades Vc: m/min			EZB020/025		EZB030/035		EZB040/045		EZB050/055/ 060/065/070/075/080		Remarks
	MEGACOAT NANO PLUS	MEGACOAT	Carbide	ap (mm), f (mm/rev)								
	PR1725	PR1225	GW05	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	-	~0.2	~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 Vc: m/min	EZB020/025/030/035		EZB040/050/060		Remarks
	MEGACOAT	ap (mm), f (mm/rev)				
	PR1225	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	

G chipbreaker

Workpiece material	Insert grades Vc: m/min	EZB020/025		EZB030/035		EZB040/045/050/060/070/080		Remarks
	MEGACOAT NANO PLUS	ap (mm), f (mm/rev)						
	PR1725	ap	f	ap	f	ap	f	
Carbon steel / Alloy steel	30~120	~0.25	~0.03	~0.3	~0.05	~0.35	~0.07	Coolant
Stainless steel	30~100	~0.2	~0.02	~0.25	~0.03	~0.3	~0.05	

F chipbreaker (EZB-HP··F type / EZB-ST··F type)

Workpiece material	Insert grades Vc: m/min		EZB020/025		EZB030/035		EZB040/045		EZB050/055/060/ 065/070/075/080		Remarks
	MEGACOAT NANO PLUS	MEGACOAT	ap (mm), f (mm/rev)								
	PR1725	PR1225	ap	f	ap	f	ap	f	ap	f	
Carbon steel / Alloy steel	30~120	30~100	~0.2	~0.03	~0.2	~0.05	~0.3	~0.07	~0.3	~0.07	Coolant
Stainless steel	30~100	30~80	~0.2	~0.02	~0.2	~0.03	~0.25	~0.05	~0.25	~0.05	

NB (Without chipbreaker)

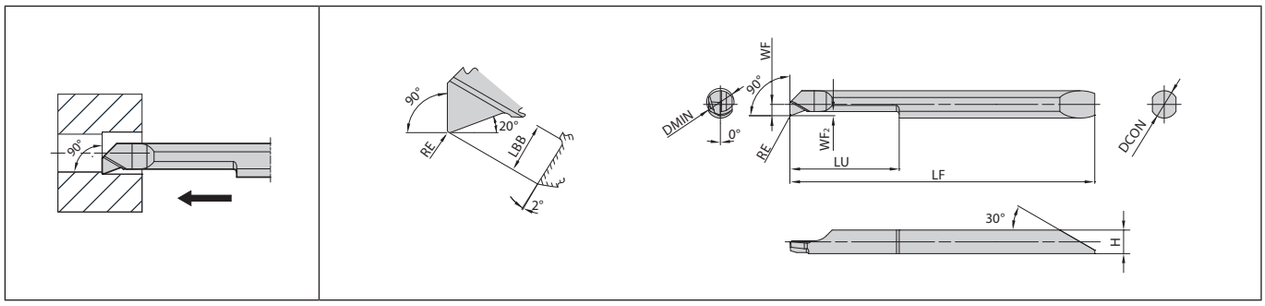
Workpiece material	Insert grades Vc: m/min		EZB020/025		EZB030/035		EZB040/045		EZB055/ 065/075		Remarks
	MEGACOAT	Carbide	ap (mm), f (mm/rev)								
	PR1225	GW05	ap	f	ap	f	ap	f	ap	f	
Carbon steel / Alloy steel	30~100	-	~0.3	~0.03	~0.4	~0.04	~0.45	~0.07	~0.5	~0.1	Coolant
Stainless steel	30~80	-	~0.2	~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	~0.07	~0.5	~0.1	

Workpiece material	Insert grades Vc: m/min		EZB030		EZB040/045		EZB050/060/070		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	

F

Boring

EZBF (Boring, 90° Lead angle)



Right-hand shown

F

Boring

Solid

Positive

AD bars

Negative

Dimensions

Description		No. of edges	Dimension (mm)									Tolerance (mm)		Carbide	Applicable sleeve ➡ F38~F43
			DMIN	DCON	H	LBB	LF	LU	WF	WF_2	RE	RE min.	RE max.	PVD PR1225	
														R	
EZBFR	030030-008	1	3	3	2.5	1.5	37.7	12	1.2	0.45	0.08	-0.015	+0.015	●	EZH030...
EZBFR	040040-008	1	4	4	3.45	2	44.6	16	1.65	0.55	0.08	-0.015	+0.015	●	EZH040...
EZBFR	050050-015	1	5	5	4.3	2.4	52.7	20	2.15	0.7	0.15	-0.02	+0.02	●	EZH050...
EZBFR	060060-015	1	6	6	5.15	2.8	59.6	24	2.55	0.85	0.15	-0.02	+0.02	●	EZH060...

Recommended cutting conditions

Workpiece material	Insert grades (Cutting Speed Vc : m/min)	EZBFR030030-008		EZBFR040040-008		EZBFR050050/ 060060-015		Remarks
	MEGACOAT	ap (mm), f (mm/rev)						
	PR1225	ap	f	ap	f	ap	f	
Carbon steel / Alloy steel	30~100	~0.2	~0.05	~0.3	~0.05	~0.5	~0.05	Coolant
Stainless steel	30~80	~0.2	~0.05	~0.3	~0.05	~0.5	~0.05	

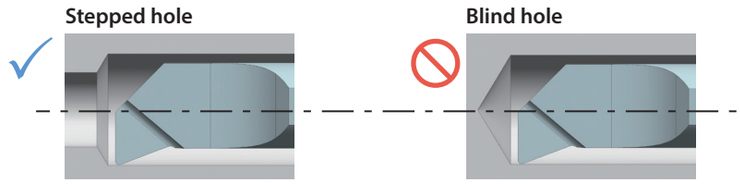
● : Standard item

EZ bars are sold in 1 piece boxes

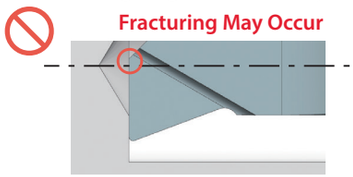
Precautions

✓ Recommended ⃠ Not Recommended

1. Machining in blind hole is not recommended



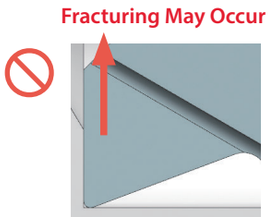
2. If front cutting edge exceeds beyond workpiece center line, fracturing may occur



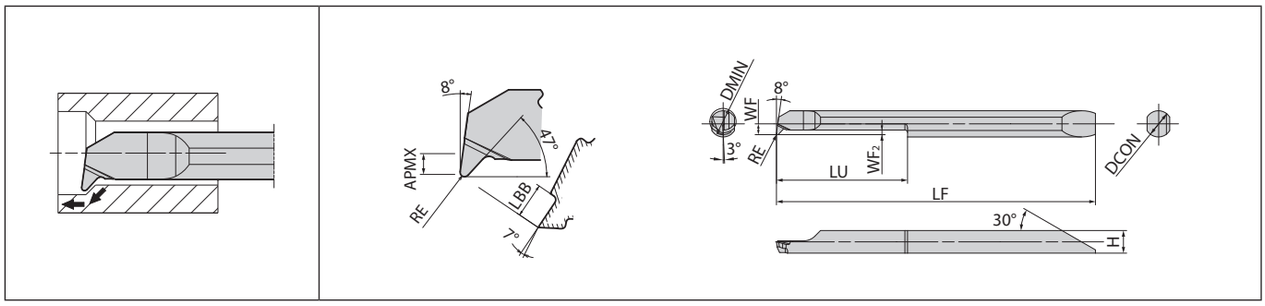
Min boring diameter of ø 4 : 1.9 mm front cutting edge length

Off-center Boring

3. Up facing is not recommended



EZBP (Internal copying)



Right-hand shown

Dimensions

Description		No. of edges	Dimension (mm)										Tolerance (mm)		Carbide	Applicable sleeve ➡ F38~F43
			DMIN	DCON	H	LBB	LF	LU	WF	WF_2	APMX	RE	RE min.	RE max.	PVD PR1225 R	
EZBPR	020020-005-08	1	2	2	1.65	1	31.8	8	0.55	0.35	0.3	0.05	-0.01	+0.01	●	EZH020...
	020020-005-10						33.8	10							●	
	020020-005-12						35.8	12							●	
EZBPR	030030-005-12	1	3	3	2.5	1.2	37.7	12	1.05	0.45	0.4	0.05	-0.01	+0.01	●	EZH030...
	030030-005-15						40.7	15							●	
EZBPR	040040-015	1	4	4	3.45	1.5	48.7	20	1.65	0.65	0.6	0.15	-0.02	+0.02	●	EZH040...
EZBPR	050050-015	1	5	5	4.3	2.2	57.8	25	2	1.1	0.8	0.15	-0.02	+0.02	●	EZH050...
EZBPR	060060-015	1	6	6	5.15	2.5	65.7	30	2.45	1.35	1	0.15	-0.02	+0.02	●	EZH060...

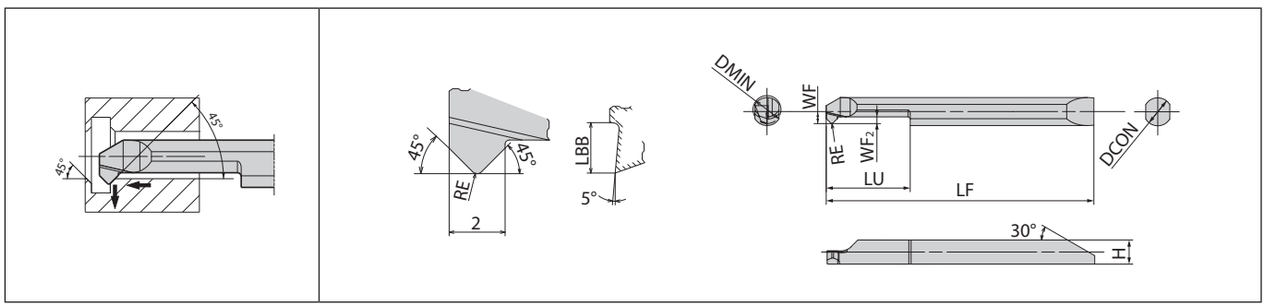
Recommended cutting conditions

Workpiece material	Insert grades (Cutting Speed Vc : m/min)	EZBPR020		EZBPR030		EZBPR040		EZBPR050		EZBPR060		Remarks
	MEGACOAT	ap (mm), f (mm/rev)										
	PR1225	ap	f	ap	f	ap	f	ap	f	ap	f	
Carbon steel / Alloy steel	30~100	~0.3	~0.05	~0.4	~0.05	~0.6	~0.05	~0.8	~0.05	~1.0	~0.05	Coolant
Stainless steel	30~80	~0.3	~0.05	~0.4	~0.05	~0.6	~0.05	~0.8	~0.05	~1.0	~0.05	

● : Standard item

EZ bars are sold in 1 piece boxes

EZBC (Internal chamfering)



Right-hand shown

Dimensions

Description		No. of edges	Dimension (mm)									Tolerance (mm)		Carbide			Applicable sleeve ➡ F39 F41 F43
			DMIN	DCON	H	LBB	LF	LU	WF	WF_2	RE	RE min.	RE max.	PVD	PR1225	R	
EZBCR	050050-020-15	1	5	5	4.3	1.8	47.8	15	2.15	1.2	0.2	-0.02	+0.02	●			EZH050...
	050050-020-20						52.8	20							●		
EZBCR	060060-020-18	1	6	6	5.15	2.5	53.7	18	2.65	1.9	0.2	-0.02	+0.02	●			EZH060...
	060060-020-24						59.7	24							●		
EZBCR	070070-020-21	1	7	7	6.2	3.1	59.7	21	3	2.5	0.2	-0.02	+0.02	●			EZH070...
	070070-020-42						80.7	42							●		

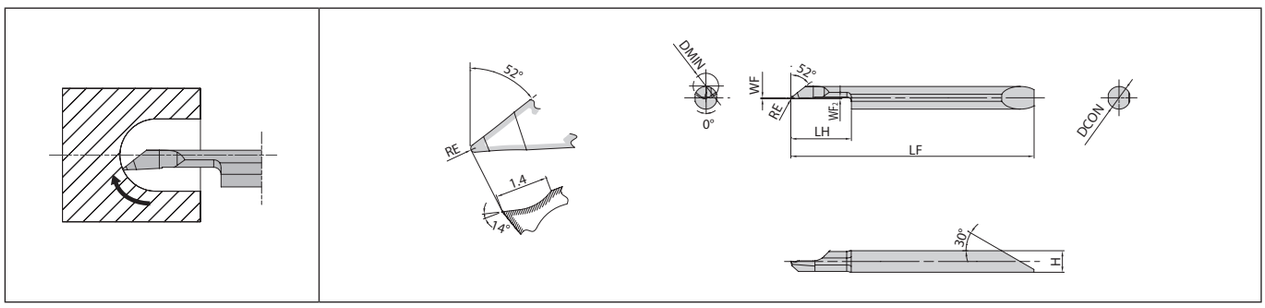
Recommended cutting conditions

Workpiece material	Insert grades (Cutting Speed Vc : m/min)	EZBC050		EZBC060		EZBC070		Remarks
	MEGACOAT	ap (mm), f (mm/rev)						
	PR1225	ap	f	ap	f	ap	f	
Carbon steel / Alloy steel	30~100	~0.7	~0.06	~0.7	~0.06	~0.7	~0.06	Coolant
Stainless steel	30~80	~0.7	~0.06	~0.7	~0.06	~0.7	~0.06	

● : Standard item

EZ bars are sold in 1 piece boxes

EZVB (Boring / Internal facing / Internal copying)



Right-hand shown

Dimensions

Description		No. of edges	Dimension (mm)									Tolerance (mm)		Carbide	Applicable sleeve ➡ F38~F43
			DMIN	DCON	H	LH	H	LF	WF	WF_2	RE	RE min.	RE max.	PVD PR1225 R	
EZVBR	035030-010	1	3.5	3	2.8	8	2.8	38	0.17	0.22	0.1	-0.015	+0.015	●	EZH030...
EZVBR	045040-010	1	4.5	4	3.8	10	3.8	43		0.26				●	EZH040...
EZVBR	055050-010	1	5.5	5	4.8	12	4.8	50.2		0.29				●	EZH050...
EZVBR	065060-010	1	6.5	6	5.8	14	5.8	55.2		0.32				●	EZH060...

Recommended cutting conditions

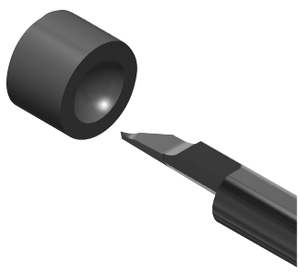
Workpiece material	Insert grades Vc: m/min	EZVB035		EZVB045		EZVB055/065		Remarks
	MEGACOAT	ap (mm), f (mm/rev)						
	PR1225	ap	f	ap	f	ap	f	
Carbon steel / Alloy steel	30~100	~0.05	~0.04	~0.07	~0.07	~0.1	~0.07	Coolant
Stainless steel	30~80	~0.03	~0.03	~0.05	~0.05	~0.07	~0.05	

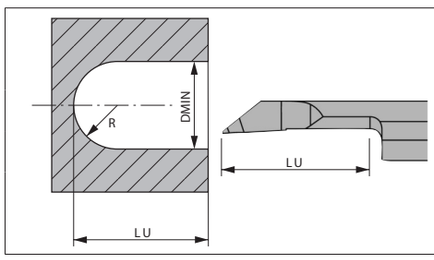
● : Standard item

EZ bars are sold in 1 piece boxes

Application of EZVB

1. Application range



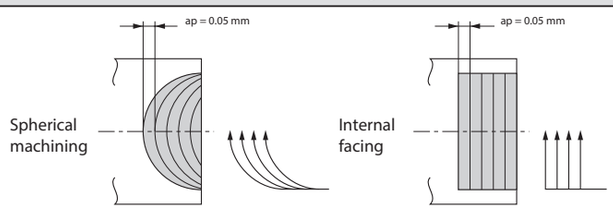


mm

Description		DMIN	R	LU
EZVBR	035030-010	3.5	1.75	8
EZVBR	045040-010	4.5	2.25	10
EZVBR	055050-010	5.5	2.75	12
EZVBR	065060-010	6.5	3.25	14

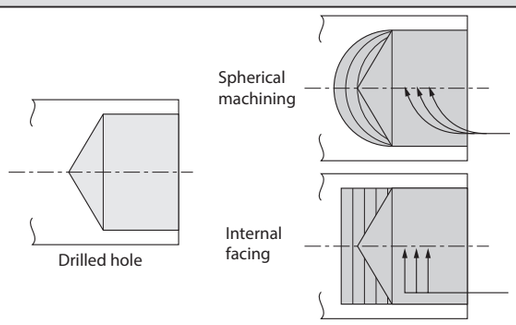
2. Application

Case with no existing hole



Note: f shall be under 0.03 mm/rev at internal facing.

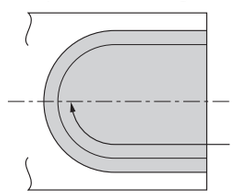
Case with drilled hole



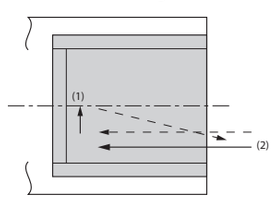
Note: f shall be under 0.03 mm/rev at internal facing.

Finishing

Spherical machining

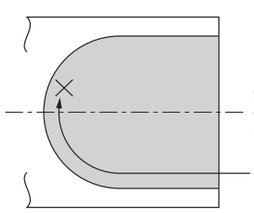


Internal facing

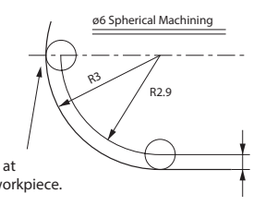


Machining process
1. Finish the internal face first.
2. Next, finish the internal diameter.

3. Caution

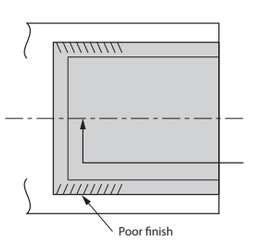


When machining past the center of the workpiece, insert may break.



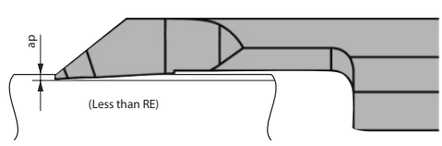
Fix the insert edge at the center of the workpiece.

Adjust the machining program to radius minus the value of RE.



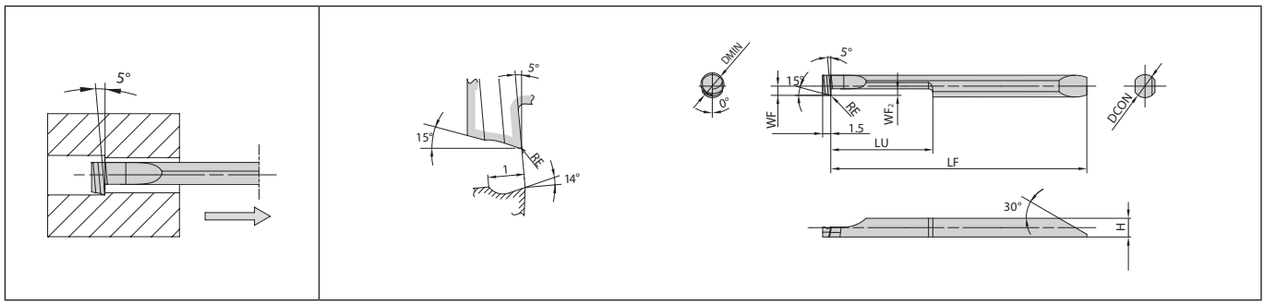
This type of machining is possible, but the chips might scratch the surface.

For internal profiling, ap should be less than the value of RE.



(Burrs may occur, if ap is bigger than RE)

EZBT (Back boring)



Right-hand shown

F

Boring

Solid

Positive

AD bars

Negative

Dimensions

Description	No. of edges	Dimension (mm)								Tolerance (mm)		Carbide		Applicable sleeve ➡ F39 F41 F43
		DMIN	DCON	H	LF	LU	WF	WF_2	RE	RE min.	RE max.	PVD PR1225 R	- GW05 R	
EZBTR 040040-005	1	4	4	3.45	47.2	18.5	1.7	1.2	0.05	-0.02	0	●	●	EZH040...
EZBTR 050050-005	1	5	5	4.3	57.2	23.5	2.15	1.5				●	●	EZH050...

Recommended Cutting Conditions

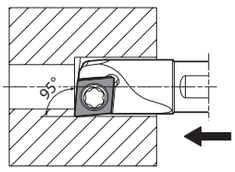
Workpiece material	Insert grades (Cutting Speed Vc: m/min)		EZBTR040040-005		EZBTR050050-005		Remarks
	MEGACOAT	Carbide	ap (mm), f (mm/rev)				
	PR1225	GW05	ap	f	ap	f	
Carbon steel / Alloy steel	★ 30-100	–	~0.45	~0.07	~0.5	~0.1	Coolant
Stainless steel	★ 30-80	–	~0.45	~0.05	~0.5	~0.07	
Non-ferrous metals	–	★ 30-100	~0.45	~0.1	~0.5	~0.15	

★ : 1st Recommendation

● : Standard item

EZ bars are sold in 1 piece boxes

S-SCLC-EZP Steel shank bar (Boring)



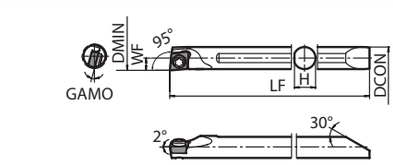


Fig. 1

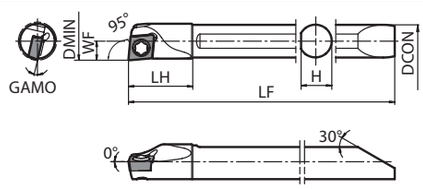


Fig. 2

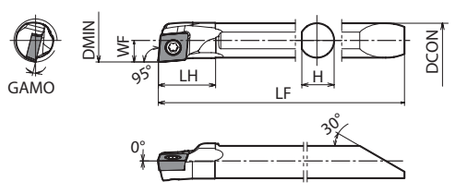


Fig. 3

Right-hand shown | Left-hand Insert for Right-hand Toolholder. | Max. Overhang Length L/D=~3

F

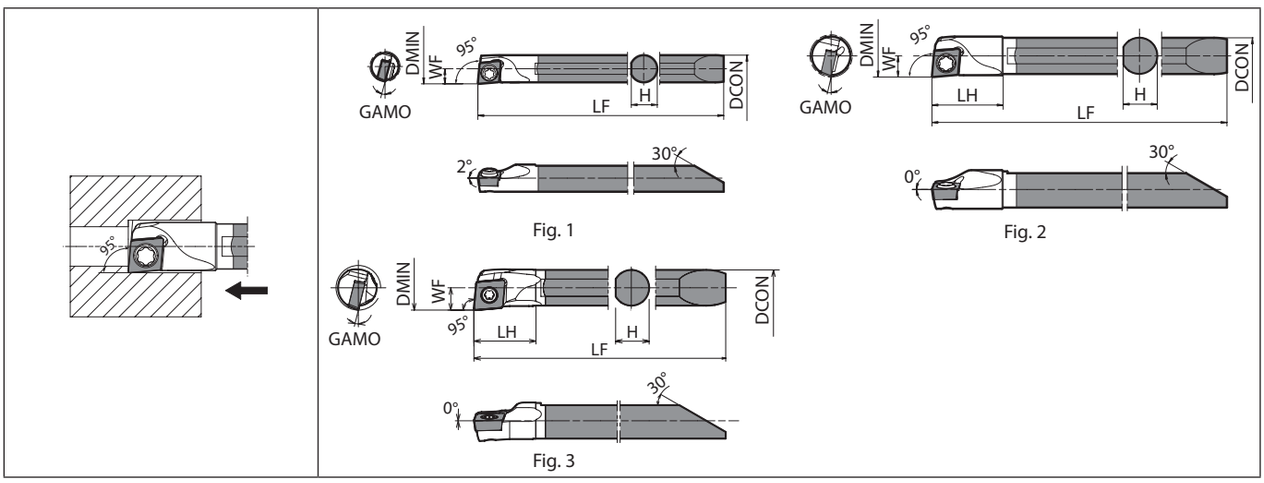
Boring

Toolholder dimensions

Description		Availability	Dimension (mm)						GAMO (°)	Standard corner-R(RE)	Coolant hole	Fig.	Spare parts		Applicable inserts	Applicable sleeves ➡ F39 F41 F43
													Screw	Wrench		
		R	DMIN	DCON	H	LH	LF	WF								
S045X-	SCLCR03-050EZP	●	5	4.5	4.3	-	42.4	2.5	15	0.2	No	1	SB-1635TR	FT-6	CC□T0301... CC□W0301...	EZH045...
S050X-	SCLCR03-060EZP	●	6	5	4.7	9	48.4	3	13			2				EZH050...
S060X-	SCLCR04-070EZP	●	7	6	5.7	10	54.4	3.5	13	0.2	No	2	SB-2035TR	FT-6	CC□T0401... CC□W0401...	EZH060...
S070X-	SCLCR04-080EZP	●	8	7	6.7	10.3	60.4	4	11							EZH070...
S080X-	SCLCR06-100EZP	●	10	8	7.5	13.3	69.5	5	14	0.4	No	3	SB-2545TR	FT-8	CC□T0602..., CC□W0602...	EZH080...

● : Standard item

C-SCLC-EZP Carbide shank bar (Boring)

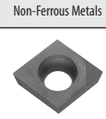
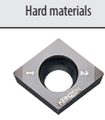


Right-hand shown | Left-hand Insert for Right-hand Toolholder. | Max. Overhang Length L/D=~5

Toolholder dimensions

Description	Availability	Dimension (mm)							GAMO (°)	Standard corner-R(RE)	Coolant hole	Fig.	Spare parts		Applicable inserts	Applicable sleeves ➡ F39 F41 F43
													Screw	Wrench		
	R	DMIN	DCON	H	LH	LF	WF									
C045X- SCLCR03-050EZP	●	5	4.5	4.3	-	51.4	2.5	15	0.2	No	1	SB-1635TR	FT-6	CC□T0301... CC□W0301...	EZH045...
C050X SCLCR03-060EZP	●	6	5	4.7	9	58.4	3	13			2				EZH050...
C060X- SCLCR04-070EZP	●	7	6	5.7	10	66.4	3.5	13	0.2	No	2	SB-2035TR	FT-6	CC□T0401... CC□W0401...	EZH060...
C070X SCLCR04-080EZP	●	8	7	6.7	10.3	74.4	4	11							EZH070...
C080X- SCLCR06-100EZP	●	10	8	7.5	13.3	85.5	5	14	0.4	No	3	SB-2545TR	FT-8	CC□T0602..., CC□W0602...	EZH080...

Applicable inserts (S-SCLC-EZP / C- SCLC-EZP)

Applications	Minute ap	Finishing	Finishing	Finishing	Finishing	Finishing	Finishing - Medium	Finishing
Insert								
Chipbreaker type	CF	PF	GF	SKS	SK	CK	GQ	WP
Page	B58	B58	B58	B59	B59	B59	B59	B60
Applications	Finishing	Finishing - Medium	Finishing - Medium	Medium	Medium	Finishing	Finishing	Low feed
Insert								
Chipbreaker type	PP	GK	HQ	STD	MF	L-F	L-FSF	L-U
Page	B60	B60	B60	B60	B61	B62	B61	B63~B65
Applications	Low feed	Low feed	Cast iron	Non-Ferrous Metals	Non-Ferrous Metals	Hard materials		
Insert								
Chipbreaker type	L-USF	L-J	No CB	AP	PCD	CBN		
Page	B63	B65	B66	B66	C39	C20		

Recommended cutting conditions ➡ **F152, F153**

● : Standard item

S-STLB(P)-EZP Steel shank bar (Boring)

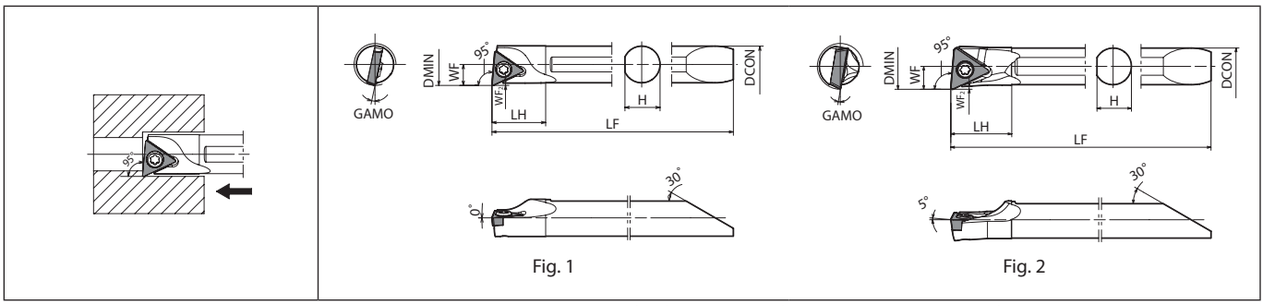


Fig. 1 Fig. 2

Right-hand shown | Left-hand Insert for Right-hand Toolholder. | Max. Overhang Length L/D=~3

F

Boring

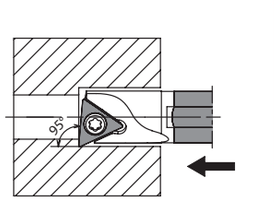
Toolholder dimensions

Description	Availability	Dimension (mm)							GAMO (°)	Standard corner-R(RE)	Coolant hole	Fig.	Spare parts		Applicable inserts	Applicable sleeves ⇒ F39 F41 F43
													Screw	Wrench		
	R	DMIN	DCON	H	LH	LF	WF	WF_2								
S070X- STLBR06-080EZP	●	8	7	6.7	10.3	60.4	4	0.4	12	0.2	No	1	SB-2035TR	FT-6	TB□T0601... TB□W0601...	EZH070...
S080X- STLPR09-100EZP	●	10	8	7.5	13.3	69.5	5	0.5	10	0.4	No	2	SB-2545TR	FT-8	TP□B0902..., TP□H0902... TP□T0902..., TP□X0902...	EZH080...

TB□□060108.. type inserts can not be used.
Use Right-handed P Chipbreaker
For WP chipbreaker, cutting edge offsets or program corrections are required on **R36** and **R37**.

● : Standard item

C-STLB(P)-EZP Carbide shank bar (Boring)



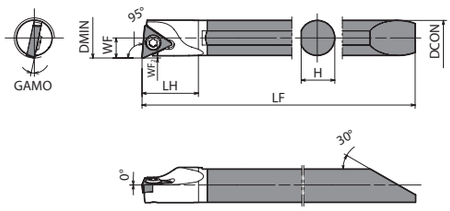


Fig. 1

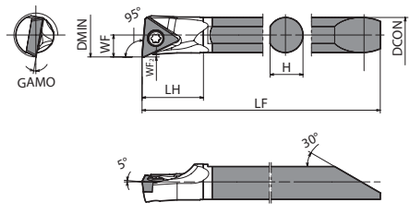


Fig. 2

Right-hand shown | Left-hand Insert for Right-hand Toolholder. | Max. Overhang Length L/D=~5

F

Boring

Solid

Positive

AD bars

Negative

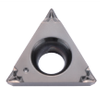
Toolholder dimensions

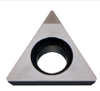
Description	Availability	Dimension (mm)							GAMO (°)	Standard corner-R(RE)	Coolant hole	Fig.	Spare parts		Applicable inserts	Applicable sleeves ➡ F39 F41 F43
													Screw	Wrench		
	R	DMIN	DCON	H	LH	LF	WF	WF_2								
C070X- STLBR06-080EZP	●	8	7	6.7	11	74.4	4	0.4	12	0.2	No	1	SB-2035TR	FT-6	TB□T0601... TB□W0601...	EZH070...
C080X- STLPR09-100EZP	●	10	8	7.5	14	85.5	5	0.5	10	0.4	No	2	SB-2545TR	FT-8	TP□B0902..., TP□H0902... TP□T0902..., TP□X0902...	EZH080...

TB□□060108.. type inserts can not be used.
Use Right-handed P Chipbreaker
For WP chipbreaker, cutting edge offsets or program corrections are required on **R36** and **R37**.

● : Standard item

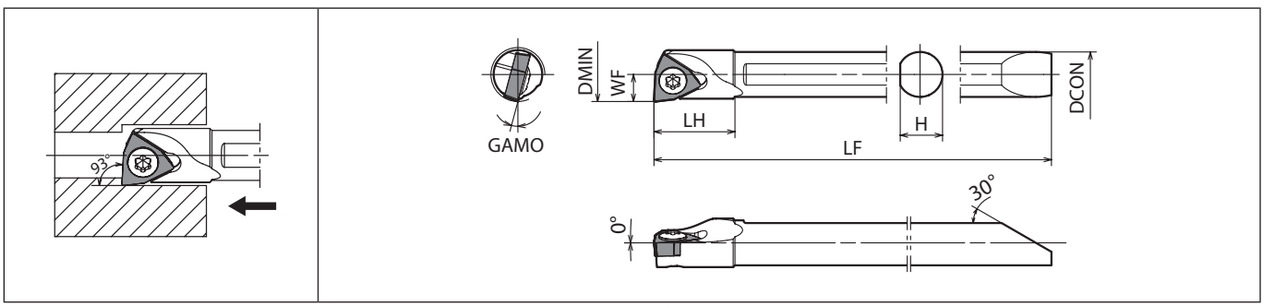
Applicable inserts (S-STLB(P)-EZP / C-STLB(P)-EZP)

Applications	Minute ap	Finishing	Finishing	Finishing	Finishing	Finishing	Finishing	Finishing - Medium
Insert								
Chipbreaker type	CF	PF	WP	PP	R-P	GP	DP	HQ
Page	B84, B88	B84, B88	B88	B88	B92	B89	B84	B89

Applications	Finishing	Medium	Low carbon steel	Cast iron	Non-Ferrous Metals	Non-Ferrous Metals	Hard materials
Insert							
Chipbreaker type	L	L-H	XP	No CB	AP	PCD	CBN
Page	B84, B90, B91	B93	B89	B84, B94	B94	C44, C46,C47	C23

Recommended cutting conditions ➡ **F152, F153**

S-SWUB-EZP Steel shank bar (Boring)

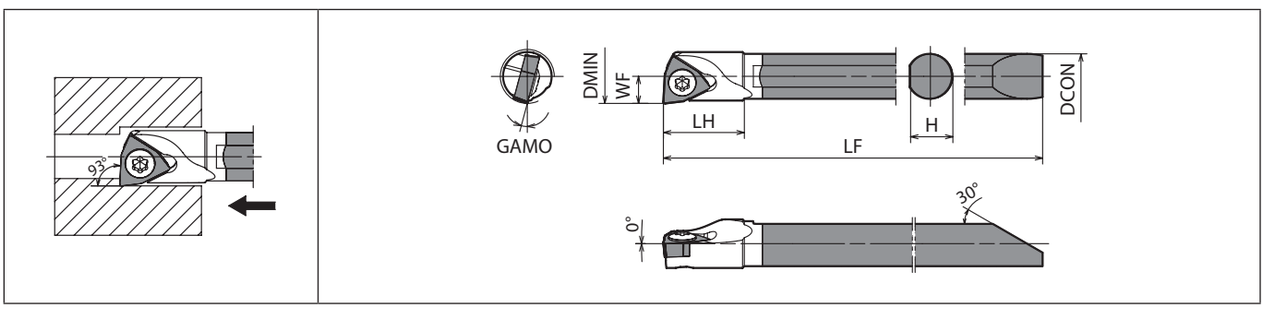


Right-hand shown | Left-hand Insert for Right-hand Toolholder. | Max. Overhang Length L/D=~3

Toolholder dimensions

Description	Availability	Dimension (mm)						GAMO (°)	Standard corner-R(RE)	Coolant hole	Spare parts		Applicable inserts	Applicable sleeves ➡ F39 F41 F43
											Screw	Wrench		
	R	DMIN	DCON	H	LH	LF	WF							
S050X- SWUBR06-060EZP	●	6	5	4.7	9	48.4	3	15	0.2	No	SB-2035TR	FT-6	WB□T0601... WB□W0601...	EZH050...
S060X- SWUBR06-070EZP	●	7	6	5.7	10	54.4	3.5	13						EZH060...
S070X- SWUBR08-080EZP	●	8	7	6.7	10.3	60.4	4	15	0.2	No	SB-2035TR	FT-6	WB□T0802..., WB□W0802...	EZH070...

C-SWUB-EZP Carbide shank bar (Boring)



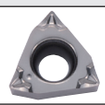
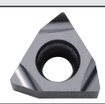
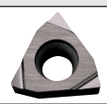
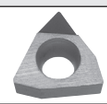
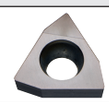
Right-hand shown | Left-hand Insert for Right-hand Toolholder. | Max. Overhang Length L/D=~5

Toolholder dimensions

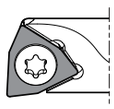
Description	Availability	Dimension (mm)						GAMO (°)	Standard corner-R(RE)	Coolant hole	Spare parts		Applicable inserts	Applicable sleeves ➡ F39 F41 F43
											Screw	Wrench		
	R	DMIN	DCON	H	LH	LF	WF							
C050X- SWUBR06-060EZP	●	6	5	4.7	9	58.4	3	15	0.2	No	SB-2035TR	FT-6	WB□T0601... WB□W0601...	EZH050...
C060X- SWUBR06-070EZP	●	7	6	5.7	10	66.4	3.5	13						EZH060...
C070X- SWUBR08-080EZP	●	8	7	6.7	11	74.4	4	15	0.2	No	SB-2035TR	FT-6	WB□T0802..., WB□W0802...	EZH070...

● : Standard item

Applicable inserts (S-SWUB-EZP / C-SWUB-EZP)

Applications	Minute ap	Finishing	Finishing	Finishing	Finishing	Cast iron	Non-Ferrous Metals	Hard materials
Insert								
Chipbreaker type	L-CF	L-PF	L-DP	L-P	L-F	No CB	PCD	CBN
Page	B105	B105	B105	B106	B106	B106	C51	C28

Recommended cutting conditions F152, F153



----SWUBR06---- Insert mounting side
Right-hand shown

How to mount EZ Bars

How to use adjustment pin (Fig. 1)

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. 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 3 mm or less.

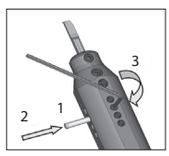


Fig. 1
How to use adjustment pin

Fig. 2
How to fix bar

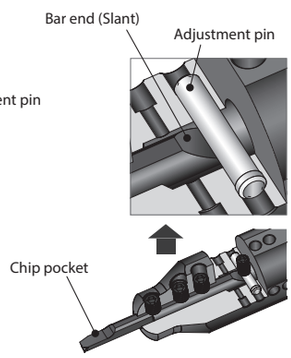


Fig. 3: Fixed bar

EZH-CT (Adjustable with coolant hole)

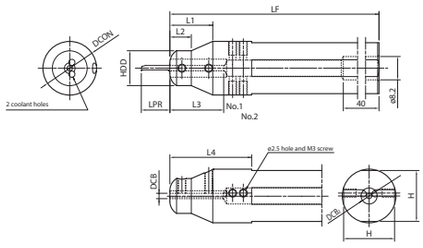


Fig. 1

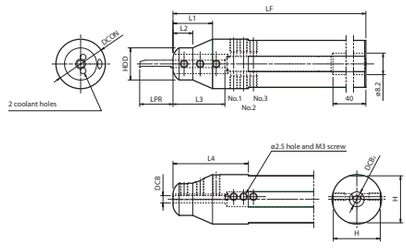


Fig. 2

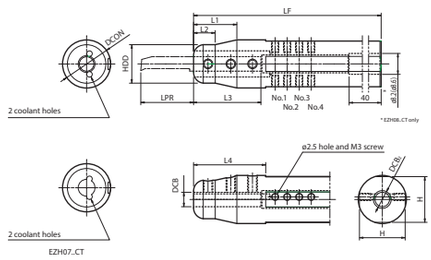


Fig. 3

Sleeve dimensions

Description		Availability	Dimension (mm)													Fig.	Applicable EZ bars → F16~F26, F28 → G71 → J40
			DCB	DCB2	DCON	H	HDD	LF	L1	L2	L3	L4	LPR No.1	LPR No.2	LPR No.3		
EZH	01719CT-120	●	1.7	6	19.05	18	13	120	16	8	16	30.5	7.5	3.5	-	1	EZBR...017...
	01720CT-120	●			20	19											
	01722CT-135	●			22	21		135				41.5					
	01725.0CT-135	●			25	24											
	01725.4CT-120	●			25.4	24.4		120				30.5					
EZH	02019CT-120	●	2	6	19.05	18	13	120	16	8	20	30.5	8.5	4.5	-	1	EZB[R/L]...020... EZBPR...020...
	02020CT-120	●			20	19											
	02022CT-135	●			22	21		135				41.5					
	02025.0CT-135	●			25	24											
	02025.4CT-120	●			25.4	24.4		120				30.5					
EZH	02519CT-120	●	2.5	6	19.05	18	13	120	16	8	20	30.5	11	7	-	1	EZB[R/L]...025... EZTR...025...
	02520CT-120	●			20	19											
	02522CT-135	●			22	21		135				41.5					
	02525.0CT-135	●			25	24											
	02525.4CT-120	●			25.4	24.4		120				30.5					
EZH	03019CT-120	●	3	6	19.05	18	13	120	16	8	21	30.5	13.5	9.5	5.5	2	EZB[R/L]...030... EZBFR...030... EZBPR...030... EZVBR...030... EZGR...030... EZTR...030...
	03020CT-120	●			20	19											
	03022CT-135	●			22	21		135				41.5					
	03025.0CT-135	●			25	24											
	03025.4CT-120	●			25.4	24.4		120				30.5					
EZH	03519CT-120	●	3.5	6	19.05	18	13	120	16	8	21	31.1	15.5	11.5	7.5	2	EZB[R/L]...035... EZTR...035...
	03520CT-120	●			20	19											
	03522CT-135	●			22	21		135				41.5					
	03525.0CT-135	●			25	24											
	03525.4CT-120	●			25.4	24.4		120				31.1					

L3 shows DCB length.
LPR shows overhang length of the EZB Bar when attached to sleeve.
Choose sleeves (DCB) to meet with DCON dimension of bar.
A hole on the rear end of sleeve 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 **F8**.

● : Standard item

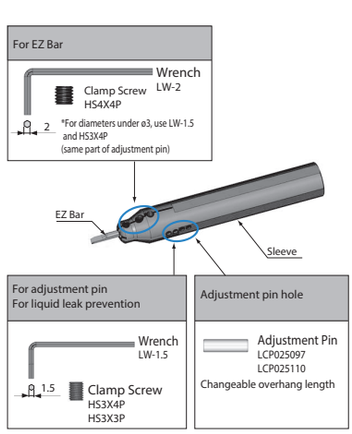
Sleeve dimensions

Description		Availability	Dimension (mm)														Fig.	Applicable EZ bars ➡ F16~F36 ➡ G71, G103 ➡ J40
			DCB	DCB2	DCON	H	HDD	LF	L1	L2	L3	L4	LPR No.1	LPR No.2	LPR No.3	LPR No.4		
EZH	04019CT-120	●	4	6	19.05	18	13	120	16	8	22	32.7	20.5	16.5	12.5	8.5	3	EZB$^{R}_{L}$...040..., EZBFR...040... EZBPR...040..., EZVBR...040... EZBTR...040..., EZG$^{R}_{L}$...040... EZFG$^{R}_{L}$...040..., EZTR...040...
	04020CT-120	●			20	19												
	04022CT-135	●			22	21		135				41.5						
	04025.0CT-135	●			25	24												
	04025.4CT-120	●			25.4	24.4		120				32.7						
EZH	04519CT-120	●	4.5	6	19.05	18	16	120	18	9	23	30	23 (14)	18.5 (9.5)	14 (-)	9.5 (-)	3	EZB$^{R}_{L}$...045... _045X...-050EZP
	04520CT-120	●			20	19												
	04522CT-135	●			22	21		135				44						
	04525.0CT-135	●			25	24												
	04525.4CT-120	●			25.4	24.4		120				30						
EZH	05019CT-120	●	5	6	19.05	18	16	120	18	9	26	30	25.5 (15.5)	20.5 (10.5)	15.5 (-)	10.5 (-)	3	EZB$^{R}_{L}$...050..., EZBFR...050... EZBPR...050..., EZBCR...050... EZVBR...050..., EZBTR...050... _050X...-060EZP, EZG$^{R}_{L}$...050... EZFG$^{R}_{L}$...050..., EZTR...050...
	05020CT-120	●			20	19												
	05022CT-135	●			22	21		135				44						
	05025.0CT-135	●			25	24												
	05025.4CT-120	●			25.4	24.4		120				30						
EZH	06019CT-120	●	6	7.4	19.05	18	16	120	18	9	28	30	30.5 (18.5)	25.5 (13.5)	20.5 (-)	15.5 (-)	3	EZB$^{R}_{L}$...060..., EZBFR...060... EZBPR...060..., EZBCR...060... EZVBR...060..., _060X...-070EZP EZG$^{R}_{L}$...060..., EZTR...060...
	06020CT-120	●			20	19												
	06022CT-135	●			22	21		135				41.5						
	06025.0CT-135	●			25	24												
	06025.4CT-120	●			25.4	24.4		120				30						
EZH	07019CT-120	●	7	7.4	19.05	18	16	120	18	9	29	30	35.5 (21.5)	30.5 (16.5)	25.5 (11.5)	20.5 (-)	3	EZB$^{R}_{L}$...070..., EZBCR...070... _070X...-080EZP, EZG$^{R}_{L}$...070... EZFG$^{R}_{L}$...070..., EZTR...070...
	07020CT-120	●			20	19												
	07022CT-135	●			22	21		135				44						
	07025.0CT-135	●			25	24												
	07025.4CT-120	●			25.4	24.4		120				30						
EZH	08019CT-120	●	8	8.6	19.05	18	16	120	18	9	33	34	40.5 (24.5)	35.5 (19.5)	30.5 (14.5)	25.5 (-)	3	EZB$^{R}_{L}$...080... _080X...-100EZP
	08020CT-120	●			20	19												
	08022CT-135	●			22	21		135				44						
	08025.0CT-135	●			25	24												
	08025.4CT-120	●			25.4	24.4		120				34						

L3 shows DCB length.
LPR 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).
Choose sleeves (DCB) to meet with DCON dimension of bar.
A hole on the rear end of sleeve 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 **F8**.

Spare Parts Description (for EZH-CT Sleeves)

Description		Spare Parts				
		Adjustment Pin	Clamp Screw (for adjustment pin)	Wrench	Clamp Screw (for bar)	Wrench
EZH	017...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
	020...CT-..					
	025...CT-..					
	030...CT-..					
EZH	035...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
	040...CT-..					
	045...CT-..					
	050...CT-..					
	060...CT-..					
	070...CT-..					
	080...CT-..	LCP025110	HS3X3P (for adjustment pin and liquid leak prevention)			



1) If shank dia. is ø2.5mm 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 ø3mm, use clamp screw (HS3X4P)

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

● : Standard item

EZH-HP (Adjustable)

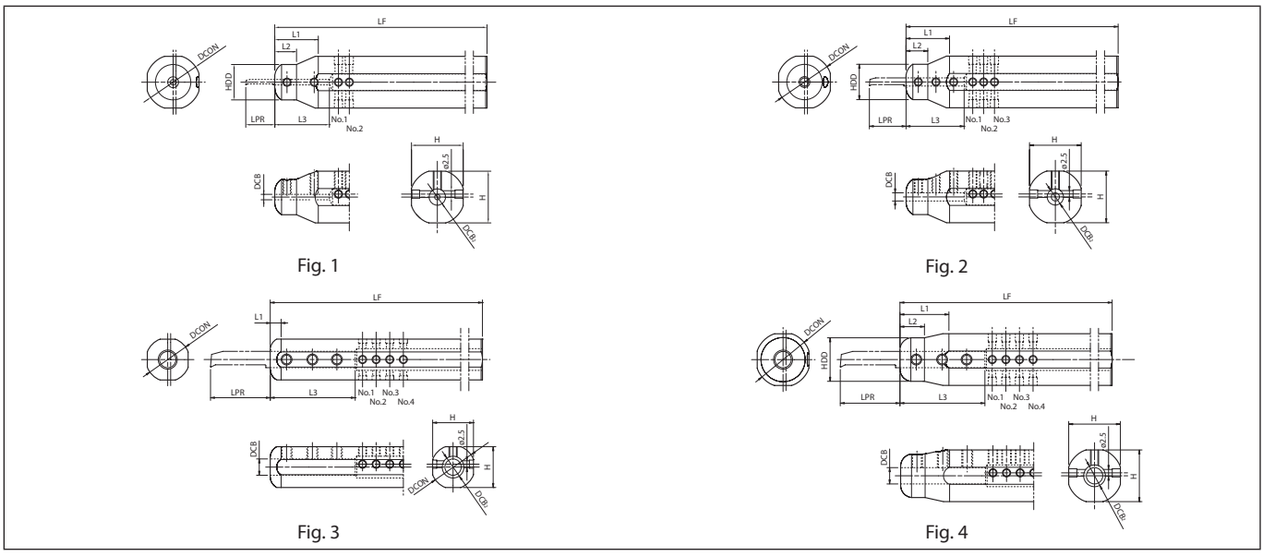


Fig. 1

Fig. 2

Fig. 3

Fig. 4

Sleeve dimensions

Description		Availability	Dimension (mm)													Fig.	Applicable EZ bars ➡ F16~F26, F28 ➡ G71 ➡ J40
			DCB	DCB2	DCON	H	HDD	LF	L1	L2	L3	LPR No.1	LPR No.2	LPR No.3	LPR No.4		
EZH	01716HP-100	●	1.7	6	16	15	13	100	16	8	16	7.5	3.5	-	-	1	EZBR...017...
	01719HP-120	●			19.05	18		120									
	01720HP-120	●			20	19											
	01722HP-135	●			22	21		135									
	01725.0HP-135	●			25	24											
	01725.4HP-120	●			25.4	24.4		120									
EZH	02016HP-100	●	2	6	16	15	13	100	16	8	20	8.5	4.5	-	-	1	EZB®/L...020... EZBPR...020...
	02019HP-120	●			19.05	18		120									
	02020HP-120	●			20	19											
	02022HP-135	●			22	21		135									
	02025.0HP-135	●			25	24											
	02025.4HP-120	●			25.4	24.4		120									
EZH	02516HP-100	●	2.5	6	16	15	13	100	16	8	20	11	7	-	-	1	EZB®/L...025... EZTR...025...
	02519HP-120	●			19.05	18		120									
	02520HP-120	●			20	19											
	02522HP-135	●			22	21		135									
	02525.0HP-135	●			25	24											
	02525.4HP-120	●			25.4	24.4		120									
EZH	03016HP-100	●	3	6	16	15	13	100	16	8	21	13.5	9.5	5.5	-	2	EZB®/L...030... EZBFR...030... EZBPR...030... EZVBR...030... EZGR...030... EZTR...030...
	03019HP-120	●			19.05	18		120									
	03020HP-120	●			20	19											
	03022HP-135	●			22	21		135									
	03025.0HP-135	●			25	24											
	03025.4HP-120	●			25.4	24.4		120									
EZH	03516HP-100	●	3.5	6	16	15	13	100	16	8	22	15.5	11.5	7.5	-	2	EZB®/L...035... EZTR...035...
	03519HP-120	●			19.05	18		120									
	03520HP-120	●			20	19											
	03522HP-135	●			22	21		135									
	03525.0HP-135	●			25	24											
	03525.4HP-120	●			25.4	24.4		120									

L3 shows DCB length.
LPR shows overhang length of the EZB Bar when attached to sleeve.
Choose sleeves (DCB) to meet with DCON dimension of bar.
For how to fix EZ Bars (EZH-HP sleeve), please refer to **F37**.

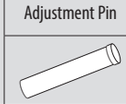
● : Standard item

Sleeve dimensions

Description		Availability	Dimension (mm)													Fig.	Applicable EZ bars F16~F36 G71, G103 J40
			DCB	DCB2	DCON	H	HDD	LF	L1	L2	L3	LPR No.1	LPR No.2	LPR No.3	LPR No.4		
EZH	04016HP-100	●	4	6	16	15	13	100	16	8	24	20.5	16.5	12.5	8.5	4	EZB$^{R}_{L}$...040..., EZBFR...040... EZBPR...040..., EZVBR...040... EZBTR...040..., EZG$^{R}_{L}$...040... EZFG$^{R}_{L}$...040..., EZTR...040...
	04019HP-120	●			19.05	18		120									
	04020HP-120	●			20	19											
	04022HP-135	●			22	21		135									
	04025.0HP-135	●			25	24											
	04025.4HP-120	●			25.4	24.4		120									
EZH	04516HP-100	●	4.5	6	16	15	16	100	4	-	25.3	23 (14)	18.5 (9.5)	14 (-)	9.5 (-)	3	EZB$^{R}_{L}$...045... _045X...-050EZP
	04519HP-120	●			19.05	18		120	18	9						4	
	04520HP-120	●			20	19											
	04522HP-135	●			22	21		135									
	04525.0HP-135	●			25	24											
	04525.4HP-120	●			25.4	24.4		120									
EZH	05016HP-100	●	5	6	16	15	16	100	4	-	29	25.5 (15.5)	20.5 (10.5)	15.5 (-)	10.5 (-)	3	EZB$^{R}_{L}$...050..., EZBFR...050... EZBPR...050..., EZBCR...050... EZVBR...050..., EZBTR...050... _050X...-060EZP, EZG$^{R}_{L}$...050... EZFG$^{R}_{L}$...050..., EZTR...050...
	05019HP-120	●			19.05	18		120	18	9						4	
	05020HP-120	●			20	19											
	05022HP-135	●			22	21		135									
	05025.0HP-135	●			25	24											
	05025.4HP-120	●			25.4	24.4		120									
EZH	06016HP-100	●	6	8	16	15	16	100	4	-	31	30.5 (18.5)	25.5 (13.5)	20.5 (-)	15.5 (-)	3	EZB$^{R}_{L}$...060..., EZBFR...060... EZBPR...060..., EZBCR...060... EZVBR...060..., _060X...-070EZP EZG$^{R}_{L}$...060..., EZTR...060...
	06019HP-120	●			19.05	18		120	18	9						4	
	06020HP-120	●			20	19											
	06022HP-135	●			22	21		135									
	06025.0HP-135	●			25	24											
	06025.4HP-120	●			25.4	24.4		120									
EZH	07016HP-100	●	7	8	16	15	16	100	4	-	33	35.5 (21.5)	30.5 (16.5)	25.5 (11.5)	20.5 (-)	3	EZB$^{R}_{L}$...070..., EZBCR...070... _070X...-080EZP, EZG$^{R}_{L}$...070... EZFG$^{R}_{L}$...070..., EZTR...070...
	07019HP-120	●			19.05	18		120	18	9						4	
	07020HP-120	●			20	19											
	07022HP-135	●			22	21		135									
	07025.0HP-135	●			25	24											
	07025.4HP-120	●			25.4	24.4		120									
EZH	08019HP-120	●	8	8.4	19.05	18	16	120	18	9	37	40.5 (24.5)	35.5 (19.5)	30.5 (14.5)	25.5 (-)	4	EZB$^{R}_{L}$...080... _080X...-100EZP
	08020HP-120	●			20	19											
	08022HP-135	●			22	21		135									
	08025.0HP-135	●			25	24											
	08025.4HP-120	●			25.4	24.4		120									

L3 shows DCB length.
LPR 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).
Choose sleeves (DCB) to meet with DCON dimension of bar.
For how to fix EZ Bars (EZH-HP sleeve), please refer to **F37**.

Spare Parts Description (for EZH-HP Sleeves)

Description		Spare Parts: Adjustment Pin	Clamp Screw (for Adjustment Pin)	Wrench	Clamp Screw (for Bar)	Wrench	Applicable EZ Bars EZ Bar PLUS	
								
EZH	017...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...	
	020...HP-..						EZB$^{R}_{L}$...020...	EZ_R...020-...
	025...HP-..						EZB$^{R}_{L}$...025...	EZ_R...025-...
	030...HP-..						EZB$^{R}_{L}$...030...	EZ_R...030-...
EZH	035...HP-..	LCP025140	HS3X4P	LW-1.5 Tightening Torque 1N-m	HS4X4P	LW-2 Tightening Torque 2N-m	EZB$^{R}_{L}$...035...	EZ_R...035-...
	040...HP-..						EZB$^{R}_{L}$...040...	EZ_$^{R}_{L}$...040-...
	045...HP-..						EZB$^{R}_{L}$...045...	_045X-...-050EZP
	050...HP-..						EZB$^{R}_{L}$...050... _050X-...-060EZP	EZ_$^{R}_{L}$...050-...
	060...HP-..						EZB$^{R}_{L}$...060... _060X-...-070EZP	EZ_$^{R}_{L}$...060-...
	070...HP-..						EZB$^{R}_{L}$...070... _070X-...-080EZP	EZ_$^{R}_{L}$...070-...
	080...HP-..						EZB$^{R}_{L}$...080...	_080X-...-100EZP

● : Standard item

EZH-ST (Not-adjustable)

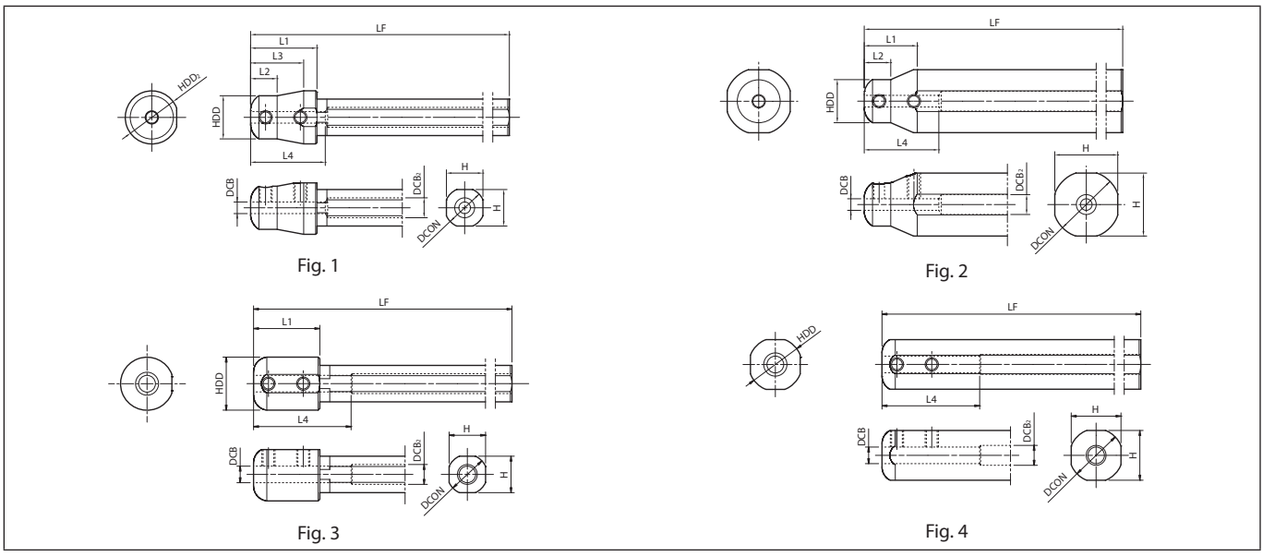


Fig. 1

Fig. 2

Fig. 3

Fig. 4

Sleeve dimensions

Description		Availability	Dimension (mm)											Fig.	Applicable EZ bars F16~F26, F28 G71 J40
			DCB	DCB2	DCON	H	HDD	HDD2	LF	L1	L2	L3	L4		
EZH	01712ST-80	●	1.7	6	12	11	13	16	80	20	8	16	16	1	EZBR...017...
	01716ST-100	●			16	15		-	100	16		-		2	
	01719ST-120	●			19.05	18			120						
	01720ST-120	●			20	19									
	01722ST-135	●			22	21			135						
	01725.0ST-135	●			25	24									
	01725.4ST-120	●			25.4	24.4			120						
EZH	02012ST-80	●	2	6	12	11	13	16	80	20	8	16	20	1	EZB[R/L]...020... EZBPR...020...
	02016ST-100	●			16	15		-	100	16		-		2	
	02019ST-120	●			19.05	18			120						
	02020ST-120	●			20	19									
	02022ST-135	●			22	21			135						
	02025.0ST-135	●			25	24									
	02025.4ST-120	●			25.4	24.4			120						
EZH	02512ST-80	●	2.5	6	12	11	13	16	80	20	8	16	20	1	EZB[R/L]...025... EZTR...025...
	02516ST-100	●			16	15		-	100	16		-		2	
	02519ST-120	●			19.05	18			120						
	02520ST-120	●			20	19									
	02522ST-135	●			22	21			135						
	02525.0ST-135	●			25	24									
	02525.4ST-120	●			25.4	24.4			120						
EZH	03012ST-80	●	3	6	12	11	13	16	80	20	8	16	21	1	EZB[R/L]...030... EZBFR...030... EZBPR...030... EZVBR...030... EZGR...030... EZTR...030...
	03016ST-100	●			16	15		-	100	16		-		2	
	03019ST-120	●			19.05	18			120						
	03020ST-120	●			20	19									
	03022ST-135	●			22	21			135						
	03025.0ST-135	●			25	24									
	03025.4ST-120	●			25.4	24.4			120						

L4 shows DCB length.
Choose sleeves (DCB) to meet with DCON dimension of bar.
Adjustment pin cannot be installed to EZH-ST sleeves. To adjust overhang of the bar, please use EZH-CT / HP sleeves.

● : Standard item

Sleeve dimensions

Description		Availability	Dimension (mm)											Fig.	Applicable EZ bars F16~F36 G71, G103 J40
			DCB	DCB2	DCON	H	HDD	HDD2	LF	L1	L2	L3	L4		
EZH	03512ST-80	●	3.5	6	12	11	13	16	80	20	8	16	22	1	EZB$^{R/L}$...035... EZTR...035...
	03516ST-100	●			16	15		-	100	16		-		2	
	03519ST-120	●			19.05	18			120						
	03520ST-120	●			20	19									
	03522ST-135	●			22	21			135						
	03525.0ST-135	●			25	24									
	03525.4ST-120	●			25.4	24.4			120						
EZH	04012ST-80	●	4	6	12	11	13	16	80	20	8	16	24	1	EZB$^{R/L}$...040..., EZBFR...040... EZBPR...040..., EZVBR...040... EZBTR...040..., EZG$^{R/L}$...040... EZFG$^{R/L}$...040..., EZTR...040...
	04016ST-100	●			16	15		-	100	16		-		2	
	04019ST-120	●			19.05	18			120						
	04020ST-120	●			20	19									
	04022ST-135	●			22	21			135						
	04025.0ST-135	●			25	24									
	04025.4ST-120	●			25.4	24.4			120						
EZH	05012ST-80	●	5	6	12	11	16	16	80	20	9	16	29	3	EZB$^{R/L}$...050..., EZBFR...050... EZBPR...050..., EZBCR...050... EZVBR...050..., EZBTR...050... _050X...-060EZP, EZG$^{R/L}$...050... EZFG$^{R/L}$...050..., EZTR...050...
	05016ST-100	●			16	15		-	100	-		-		4	
	05019ST-120	●			19.05	18			120	18				2	
	05020ST-120	●			20	19									
	05022ST-135	●			22	21			135						
	05025.0ST-135	●			25	24									
	05025.4ST-120	●			25.4	24.4			120						
EZH	06012ST-80	●	6	8	12	11	16	16	80	20	9	16	31	3	EZB$^{R/L}$...060..., EZBFR...060... EZBPR...060..., EZBCR...060... EZVBR...060..., _060X...-070EZP EZG$^{R/L}$...060..., EZTR...060...
	06016ST-100	●			16	15		-	100	-		-		4	
	06019ST-120	●			19.05	18			120	18				2	
	06020ST-120	●			20	19									
	06022ST-135	●			22	21			135						
	06025.0ST-135	●			25	24									
	06025.4ST-120	●			25.4	24.4			120						
EZH	07012ST-80	●	7	8	12	11	16	16	80	20	9	16	33	3	EZB$^{R/L}$...070..., EZBCR...070... _070X...-080EZP, EZG$^{R/L}$...070... EZFG$^{R/L}$...070..., EZTR...070...
	07016ST-100	●			16	15		-	100	-		-		4	
	07019ST-120	●			19.05	18			120	18				2	
	07020ST-120	●			20	19									
	07022ST-135	●			22	21			135						
	07025.0ST-135	●			25	24									
	07025.4ST-120	●			25.4	24.4			120						
EZH	08016ST-100	●	8	8.4	16	15	16	16	100	-	9	-	37	4	EZB$^{R/L}$...080... _080X...-100EZP
	08019ST-120	●			19.05	18		-	120	18				2	
	08020ST-120	●			20	19									
	08022ST-135	●			22	21			135						
	08025.0ST-135	●			25	24									
	08025.4ST-120	●			25.4	24.4			120						

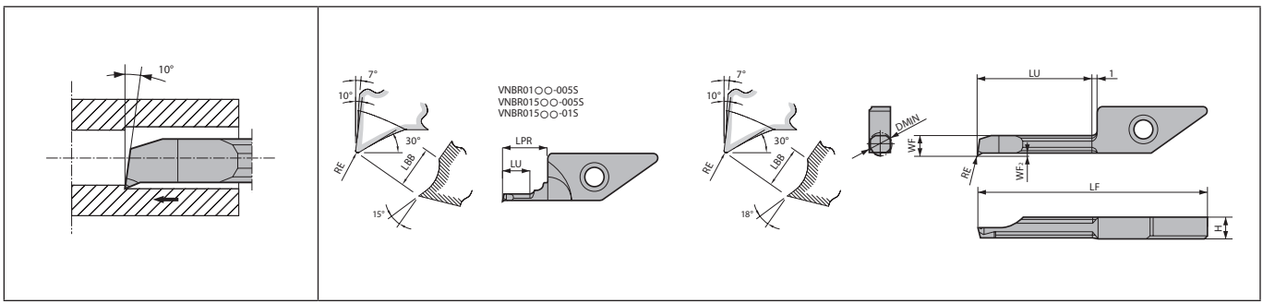
L4 shows DCB length.
Choose sleeves (DCB) to meet with DCON dimension of bar.
Adjustment pin cannot be installed to EZH-ST sleeves. To adjust overhang of the bar, please use EZH-CT / HP sleeves.

Spare Parts Description (for EZH-ST Sleeves)

Description		Spare Parts		Applicable EZ Bars		EZ Bar PLUS
		Clamp Screw	Wrench	EZB-HP EZB-HP-LT EZB-ST EZB-NB	EZBT / EZBF EZBP / EZBC EZVB / EZG EZFG / EZT	S/C-SCLC S/C-STLB(P) S/C-SWUB
						
EZH	017...ST-..	HS3X4P	LW-1.5 Tightening Torque 1N-m	EZBR...017...	-	-
	020...ST-..			EZB$^{R/L}$...020...	EZ_R...020-...	
	025...ST-..			EZB$^{R/L}$...025...	EZTR...025-...	-
	030...ST-..			EZB$^{R/L}$...030...	EZ_R...030-...	-
EZH	035...ST-..	HS4X4P	LW-2 Tightening Torque 2N-m	EZB$^{R/L}$...035...	EZTR...035-...	-
	040...ST-..			EZB$^{R/L}$...040...	EZ_$^{R/L}$...040-...	-
	050...ST-..			EZB$^{R/L}$...050...	EZ_$^{R/L}$...050-...	_050X-...-060EZP
	060...ST-..			EZB$^{R/L}$...060...	EZ_$^{R/L}$...060-...	_060X-...-070EZP
	070...ST-..			EZB$^{R/L}$...070...	EZ_$^{R/L}$...070-...	_070X-...-080EZP
	080...ST-..			EZB$^{R/L}$...080...	-	_080X-...-100EZP

● : Standard item

VNB-S (Boring)



Right-hand shown

Dimensions

Description		No. of edges	Dimension (mm)									Tolerance (mm)		Carbide		Applicable toolholder ➡ F48~F51
			DMIN	H	LPR	LBB	LF	LU	WF	WF_2	RE	RE min.	RE max.	PVD		
														PR1225	PR930	
VNBR	0103-005S	1	1	3.9	7	0.7	26.5	3	0.85	0.2	0.05	- 0.02	0	●	●	SVNR...-12N S...-SVNR12N S...-SVNR12SN
VNBR	0105-005S	1	1	3.9	7	0.7	26.5	5	0.85	0.2	0.05	- 0.02	0	●	●	
VNBR	01503-005S	1	1.5	3.9	7	0.7	26.5	3	1.3	0.2	0.05	- 0.02	0	●	●	
	01503-01S							3			0.1	- 0.03		●	●	
	01505-005S							5			0.05	- 0.02		●	●	
	01505-01S							5			0.1	- 0.03		●	●	
VNBR	0206-005S	1	2	3.9	-	0.8	26.5	6	1.8	0.25	0.05	- 0.02	0	●	●	SVNR...-12N, SVNSR-12-06N
	0206-01S										0.1	- 0.03		●	●	S...-SVNR12N, S...-SVNR12SN
VNBR	025075-005S	1	2.5	3.9	-	0.8	28.1	7.5	2.1	0.4	0.05	- 0.02	0	●	●	SVNR...-12NS..., -SVNR12N
	025075-01S										0.1	- 0.03		●	●	S...-SVNR12SN
VNBR	0311-005S	1	3	3.9	-	0.8	30.8	11	2.6	0.4	0.05	- 0.02	0	●	●	SVNR...-12N, SVNSR-12-11N
	0311-01S										0.1	- 0.03		●	●	S...-SVNR12N, S...-SVNR12SN
VNBR	03515-005S	1	3.5	3.9	-	0.8	34.8	15	3	0.5	0.05	- 0.02	0	●	●	SVNR...-12NS..., -SVNR12N
	03515-01S										0.1	- 0.03		●	●	S...-SVNR12SN
VNBR	0411-005S	1	4	3.66	-	0.8	30.8	11	3.5	0.5	0.05	- 0.02	0	●	●	SVNR...-12N, SVNSR-12-11N
	0411-01S										0.1	- 0.03		●	●	S...-SVNR12N, S...-SVNR12SN
	0411-02S										0.2	- 0.04		●	●	
VNBR	0420-005S	1	4	3.66	-	0.8	39.8	20	3.5	0.5	0.05	- 0.02	0	●	●	SVNR...-12N, SVNSR-12-20N
	0420-01S										0.1	- 0.03		●	●	S...-SVNR12N, S...-SVNR12SN
	0420-02S										0.2	- 0.04		●	●	

Recommended Cutting Conditions (VNB-S)

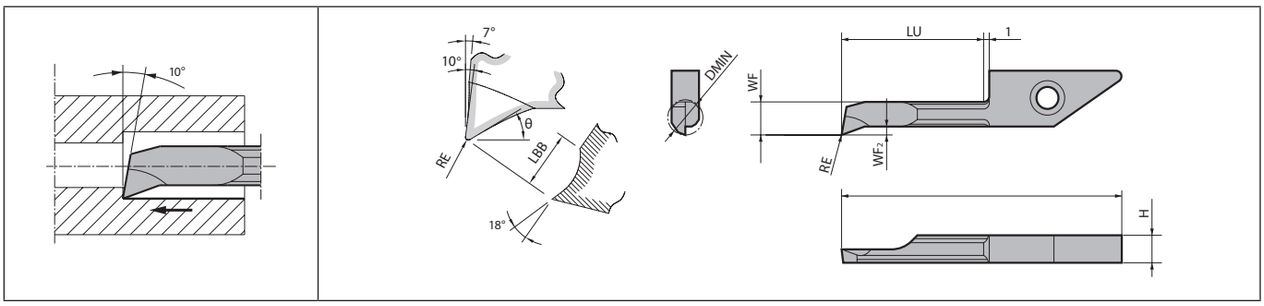
Workpiece material	Insert grades (Vc: m/min)		VNB01-S VNB015-S		VNB02-S ~ VNB04-S		Remarks
	MEGACOAT	PVD coated carbide					
	PR1225	PR930	ap (mm), f (mm/rev)				
			ap	f	ap	f	
Carbon steel / Alloy steel	★ 30~120	☆ 30~100	~0.1	~0.01	~0.2	~0.03	Coolant
Stainless steel	★ 30~100	☆ 30~80	~0.1	~0.01	~0.2	~0.02	

★1st recommendation ☆2nd recommendation

● : Standard item

System tip-bars are 5 piece boxes

VNB (Boring)



Right-hand shown

F

Boring

Dimensions

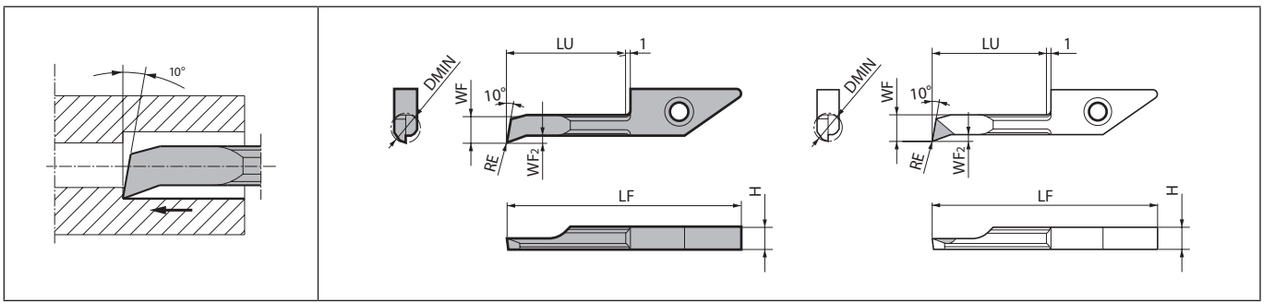
Description	No. of edges	Dimension (mm)								Angle	Carbide			Applicable toolholder ➡ F48~F51
		DMIN	H	LBB	LF	LU	WF	WF_2	RE	θ (°)	PVD PR1225	PVD PR930	- KW10	
VNBR 0206-003	1	2	3.9	1.2	26.5	6	1.8	0.25	0.03	24	●	●	●	SVNR...-12N, SVNSR-12-06N
VNBR 0206-01									0.1		●	●	●	S...-SVNR12N, S...-SVNR12SN
VNBR 0206-02									0.2		●	●	●	
VNBR 0311-003	1	3	3.9	1.8	30.8	11	2.6	0.4	0.03	24	●	●	●	SVNR...-12N, SVNSR-12-11N
VNBR 0311-01									0.1		●	●	●	S...-SVNR12N, S...-SVNR12SN
VNBR 0311-02									0.2		●	●	●	
VNBR 0411-003	1	4	3.66	2.7	30.8	11	3.5	0.5	0.03	23	●	●	●	SVNR...-12N, SVNSR-12-11N
VNBR 0411-01									0.1		●	●	●	S...-SVNR12N, S...-SVNR12SN
VNBR 0411-02									0.2		●	●	●	
VNBR 0420-003	1	4	3.66	2.7	39.8	20	3.5	0.5	0.03	23	●	●	●	SVNR...-12N, SVNSR-12-20N
VNBR 0420-01									0.1		●	●	●	S...-SVNR12N, S...-SVNR12SN
VNBR 0420-02									0.2		●	●	●	
VNBR 0511-003	1	5	3.9	3	30.8	11	4.5	0.7	0.03	23	●	●	●	SVNR...-12N, SVNSR-12-11N
VNBR 0511-01									0.1		●	●	●	S...-SVNR12N, S...-SVNR12SN
VNBR 0511-02									0.2		●	●	●	
VNBR 0520-003	1	5	3.9	3	39.8	20	4.5	0.7	0.03	23	●	●	●	SVNR...-12N, SVNSR-12-20N
VNBR 0520-01									0.1		●	●	●	S...-SVNR12N, S...-SVNR12SN
VNBR 0520-02									0.2		●	●	●	
VNBR 0620-003	1	6	3.9	3	39.8	20	5.3	1	0.03	24	●	●	●	SVNR...-12N, SVNSR-12-20N
VNBR 0620-01									0.1		●	●	●	S...-SVNR12N, S...-SVNR12SN
VNBR 0620-02									0.2		●	●	●	
VNBR 0630-003	1	6	3.9	3	49.8	30	5.3	1	0.03	24	●	●	●	SVNR...-12N
VNBR 0630-01									0.1		●	●		S...-SVNR12N
VNBR 0630-02									0.2		●	●	●	S...-SVNR12SN
VNBR 0720-003	1	7	3.9	3	39.8	20	6.2	1	0.03	24		●	●	SVNR...-12N, SVNSR-12-20N
VNBR 0720-01									0.1			●	●	S...-SVNR12N, S...-SVNR12SN
VNBR 0720-02									0.2		●	●	●	
VNBR 0730-003	1	7	3.9	3	49.8	30	6.2	1	0.03	24		●	●	SVNR...-12N
VNBR 0730-01									0.1			●		S...-SVNR12N
VNBR 0730-02									0.2		●	●	●	S...-SVNR12SN

Recommended cutting conditions ➡ F47

● : Standard item

System tip-bars are sold in 5 piece boxes

VNB-NB (Boring)



Right-hand shown

Dimensions

Description	No. of edges	Dimension (mm)							Angle	Carbide		PCD	Applicable toolholder F48~F51
		DMIN	H	LF	LU	WF	WF_2	RE	θ (°)	PVD PR930	- KW10	- KPD001	
VNBR 0206-003NB 0206-02NB	1	2	3.9	26.5	6	1.8	0.25	0.03 0.2	15	● 	● ●	 	SVNR...-12N, SVNSR-12-06N S...-SVNR12N, S...-SVNR12SN
VNBR 0311-003NB 0311-02NB	1	3	3.9	30.8	11	2.6	0.4	0.03 0.2	15	● 	● ●	 	SVNR...-12N, SVNSR-12-11N S...-SVNR12N, S...-SVNR12SN
VNBR 0411-003NB 0411-02NB	1	4	3.66	30.8	11	3.5	0.5	0.03 0.2	15	● 	● ●	 ●	SVNR...-12N, SVNSR-12-11N S...-SVNR12N, S...-SVNR12SN
VNBR 0420-003NB 0420-02NB	1	4	3.66	39.8	20	3.5	0.5	0.03 0.2	15	● 	● ●	 ●	SVNR...-12N, SVNSR-12-20N S...-SVNR12N, S...-SVNR12SN
VNBR 0511-003NB 0511-02NB	1	5	3.9	30.8	11	4.5	0.7	0.03 0.2	15	● 	● ●	 ●	SVNR...-12N, SVNSR-12-11N S...-SVNR12N, S...-SVNR12SN
VNBR 0520-003NB 0520-02NB	1	5	3.9	39.8	20	4.5	0.7	0.03 0.2	15	● 	● ●	 ●	SVNR...-12N, SVNSR-12-20N S...-SVNR12N, S...-SVNR12SN
VNBR 0620-003NB 0620-02NB	1	6	3.9	39.8	20	5.3	1	0.03 0.2	15	● 	● ●	 ●	SVNR...-12N, SVNSR-12-20N S...-SVNR12N, S...-SVNR12SN
VNBR 0630-003NB 0630-02NB	1	6	3.9	49.8	30	5.3	1	0.03 0.2	15	● 	● ●	 ●	SVNR...-12N, S...-SVNR12N S...-SVNR12SN
VNBR 0720-003NB 0720-02NB	1	7	3.9	39.8	20	6.2	1	0.03 0.2	15	● 	● ●	 ●	SVNR...-12N, SVNSR-12-20N S...-SVNR12N, S...-SVNR12SN
VNBR 0730-003NB 0730-02NB	1	7	3.9	49.8	30	6.2	1	0.03 0.2	15	● 	● ●	 ●	SVNR...-12N, S...-SVNR12N S...-SVNR12SN

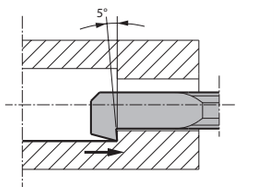
Recommended cutting conditions F47

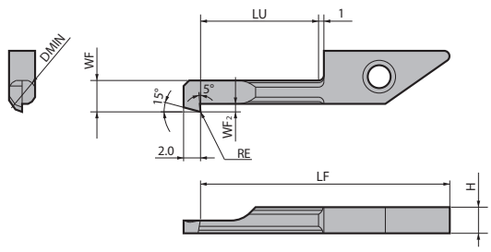
System tip-bars are sold in 5 piece boxes

CBN & PCD Inserts are sold in 1 piece boxes

● : Standard item

VNBT (Back boring)





Right-hand shown

Dimensions

Description	No. of edges	Dimension (mm)							Carbide			Applicable toolholder ➡ F48~F51
									PVD		-	
		DMIN	H	LF	LU	WF	WF_2	RE	PR1225	PR930	KW10	
VNBTR 0411-003	1	4	3.66	28.8	9	3.6	1	0.03		●	●	SVNR...-12N, SVNSR-12-11N
VNBTR 0411-01								0.1	●	●	●	S...-SVNR12N, S...-SVNR12SN
VNBTR 0420-003	1	4	3.66	37.8	18	3.6	1	0.03		●		SVNR...-12N, SVNSR-12-20N
VNBTR 0420-01								0.1	●	●		S...-SVNR12N, S...-SVNR12SN
VNBTR 0511-003	1	5	3.9	28.8	9	4.6	1.3	0.03		●	●	SVNR...-12N, SVNSR-12-11N
VNBTR 0511-01								0.1	●	●	●	S...-SVNR12N, S...-SVNR12SN
VNBTR 0520-003	1	5	3.9	37.8	18	4.6	1.3	0.03		●		SVNR...-12N, SVNSR-12-20N
VNBTR 0520-01								0.1	●	●		S...-SVNR12N, S...-SVNR12SN

Recommended cutting conditions ➡ F47

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

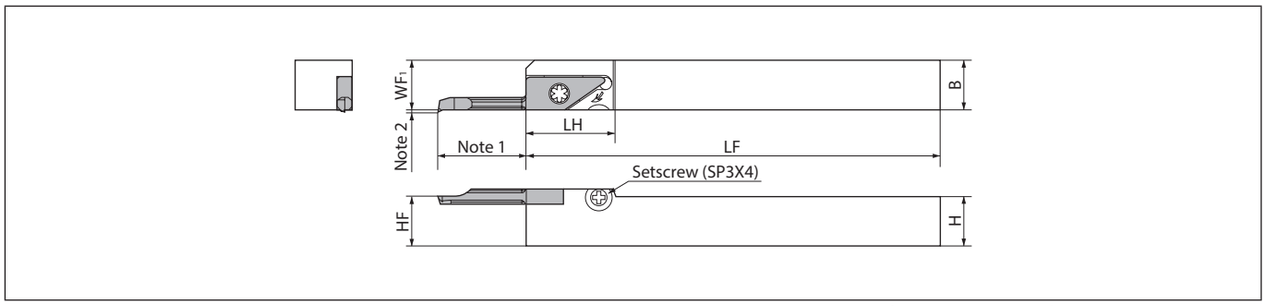
Workpiece material	Insert grades (Vc: m/min)					VNB02		VNB03		VNB04 VNBT04		VNB05 VNB06 VNB07 VNBT05		Remarks
	MEGACOAT	PVD coated carbide	Carbide	PCD										
	PR1225	PR930	KW10	KPD001	KPD010	ap (mm), f (mm/rev)								
						ap	f	ap	f	ap	f	ap	f	
Carbon steel / Alloy steel	★ 30~120	☆ 30~100				~0.3	~0.03	~0.4	~0.04	~0.45	~0.07	~0.5	~0.1	
Stainless steel	★ 30~100	☆ 30~80				~0.3	~0.02	~0.4	~0.03	~0.45	~0.05	~0.5	~0.07	Coolant
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

● : Standard item

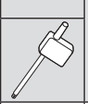
System tip-bars are sold in 5 piece boxes

SVN-N (without side stopper)



Right-hand shown | Right-hand Insert for Right-hand Toolholder.
Note 1 & Note 2 (WF_2) : For insert dimensions, see page (**F44~F47**)

Toolholder dimensions

Description		Availability	Dimension (mm)						Spare parts			Applicable inserts ➔ F44~F47
									Screw	Set screw	Wrench	
		R	H	B	LH	HF	LF	WF_1				
SVNR	1010H-12N	●	10	10	22	10	100	10	SB-3080TR	SP3X4	FT-10	VNBR...-... VNBTR...-... VNGR...-... VNFGR...-... VNTR...-..
	1212K-12N	●	12	12		12	125	12				
	1616K-12N	●	16	16		16		16				
	2020K-12N	●	20	20		20		20				
	2525M-12N	●	25	25		25	150	25				

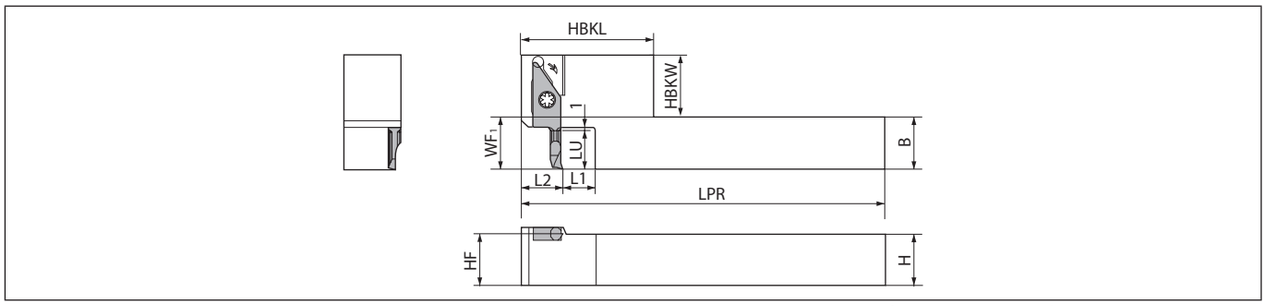
SVN-N (without side stopper) retains high index accuracy by easy restraint.
SVN-N (without side stopper) has a setscrew SP3X4. Changing the setscrew SP3X4 to a screw HS3X4 (sold separately) enables the toolholder to be used as a binding effect toolholder similar to the side stopper toolholder.

Spare Parts (Optional)

Screw (Side Stopper)	Wrench
	
HS3X4	LW-1.5

● : Standard item

SVNS-N (without side stopper / without setscrew)



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

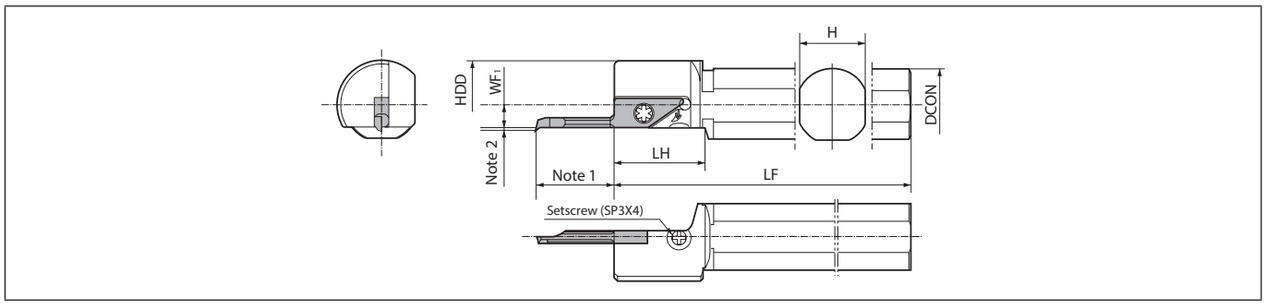
Toolholder dimensions

Description		Availability	Dimension (mm)										Spare parts		Applicable inserts F44~F47
													Screw	Wrench	
		R	H	B	LPR	HF	HBKW	HBKL	LU	WF1	L1	L2			
SVNSR	1010K-12-06N	●	10	10	125	10	19	45	6	10	10	12	SB-3080TR	LTW-10S	VNBR..06...
	1212M-12-06N	●	12	12	150	12	17			12					
	1616M-12-06N	●	16	16		16	13			16	16				
SVNSR	1010K-12-11N	●	10	10	125	10	23	45	11	10	10	12	SB-3080TR	LTW-10S	VNBR..11-..., VNBTR..11-... VNGR...-11, VNTR...-11
	1212M-12-11N	●	12	12	150	12	21			12					
	1616M-12-11N	●	16	16		16	17			16	16				
SVNSR	1212M-12-20N	●	12	12	150	12	30	45	20	12	10	13	SB-3080TR	LTW-10S	VNBR..20-..., VNBTR20-... VNGR...-20
	1616M-12-20N	●	16	16		16	26			16	16				

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 the figure, use the applicable inserts described above.
In these cases, the LU dimension of the toolholders corresponds to the LU dimension of the insert.

● : Standard item

S-SVN-N (Round shank / Standard / without side stopper)



Right-hand shown | Right-hand Insert for Right-hand Toolholder.
Note 1 & Note 2 (WF_2) : For insert dimensions, see page (**F44~F47**)

Toolholder dimensions

Description		Availability	Dimension (mm)						Spare parts			Applicable inserts ➡ F44~F47
									Screw	Set screw	Wrench	
		R	DCON	H	LH	HDD	LF	WF_1				
S12F-	SVNR12N	●	12	11	23	20	80	4	SB-3080TR	SP3X4	FT-10	VNBR...-... VNBTR...-... VNGR...-... VNFGR...-... VNTR...-..
S14G-	SVNR12N	●	14	13			90					
S16H-	SVNR12N	●	16	15		24	100	6				
S19H-	SVNR12N	●	19.05	17	24							
S19N-	SVNR12N	●					160					
S20H-	SVNR12N	●	20	18			100					
S25H-	SVNR12N	●	25.4	23		30						
S25Q-	SVNR12N	●					180					

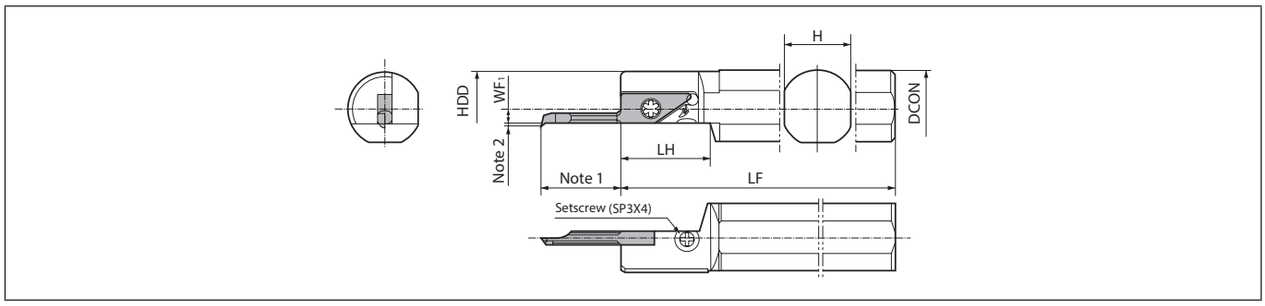
S-SVN-N (without side stopper) retains high index accuracy by easy restraint.
S-SVN-N (without side stopper) has a setscrew SP3X4. Changing the setscrew SP3X4 to a screw HS3X4 (sold separately) enables the toolholder to be used as a binding effect toolholder similar to the side stopper toolholder.

Spare Parts (Optional)

Screw (Side Stopper)	Wrench
	
HS3X4	LW-1.5

● : Standard item

S-SVN-SN (Round shank / Straight / without side stopper)



Right-hand shown | Right-hand Insert for Right-hand Toolholder.
Note 1 & Note 2 (WF_2) : For insert dimensions, see page (**F44~F47**)

F

Boring

Toolholder dimensions

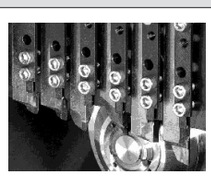
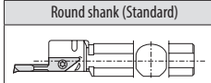
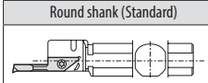
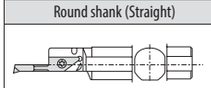
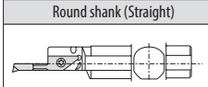
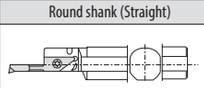
Description		Availability	Dimension (mm)							Spare parts			Applicable inserts ➡ F44~F47
			R	DCON	H	LH	HDD	LF	WF_1	Screw	Set screw	Wrench	
S19H-	SVNR12SN	●	19.05	17	23	18.5	100	4	SB-3080TR	SP3X4	FT-10	VNBR...-..., VNBTR...-... VNGR...-..., VNFGR...-... VNTR...-..
S20H-	SVNR12SN	●	20	18		19.5						
S22K-	SVNR12SN	●	22	20		21.5	125					
S25.0G-	SVNR12SN	●	25	23		24.5	90					

Spare Parts (Optional)

Screw (Side Stopper)	Wrench
HS3X4	LW-1.5

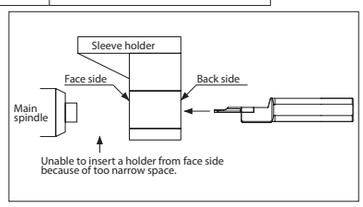
S-SVN-SN (without side stopper) retains high index accuracy by easy restraint.
S-SVN-SN (without side stopper) has a setscrew SP3X4. Changing the setscrew SP3X4 to a screw HS3X4 (sold separately) enables the toolholder to be used as a binding effect toolholder similar to the side stopper toolholder.

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)
			

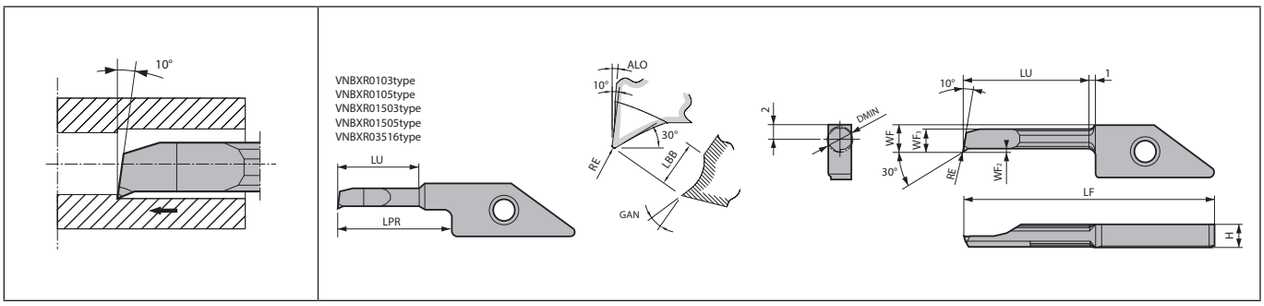
Q: There are standard types (head dia. is larger than shank) and straight types for round shanks. What is each one used for?

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. on the right). 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.



● : Standard item

VNBX-S



Right-hand shown

Dimensions

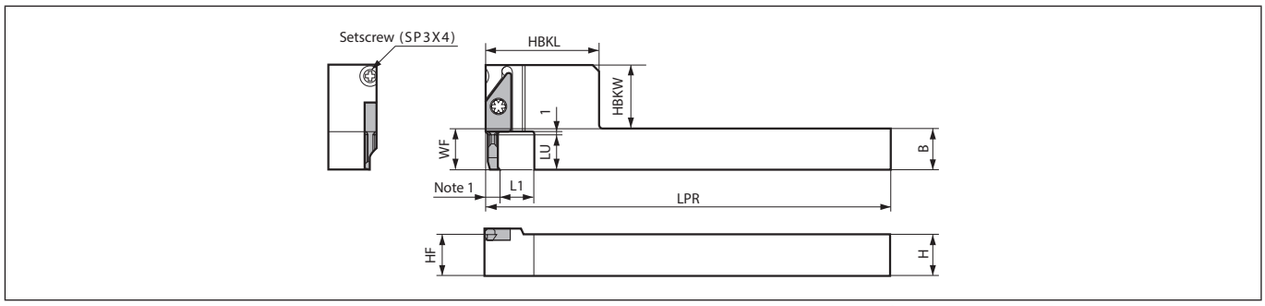
Description	No. of edges	Dimension (mm)										Angle (°)		Tolerance (mm)		Carbide	Applicable toolholder ➡ F53~F55
		DMIN	H	LPR	LBB	LF	LU	WF	WF_2	WF_3	RE	ALO	GAN	RE min.	RE max.	PVD PR930	
VNBXR 0103-005S	1	1	3.9	7	0.7	26.5	3	2.95	0.2	0.85	0.05	7	15	- 0.02	0	●	S...-SVNR12XN S...-SVNR12SXN
VNBXR 0105-005S	1	1	3.9	7	0.7	26.5	5	2.95	0.2	0.85	0.05	7	15	- 0.02	0	●	S...-SVNR12XN S...-SVNR12SXN
VNBXR 01503-005S VNBXR 01503-01S VNBXR 01505-005S VNBXR 01505-01S	1	1.5	3.9	7	0.7	26.5	3 3 5 5	2.95	0.2	1.3	0.05 0.1 0.05 0.1	7	15	- 0.02 - 0.03 - 0.02 - 0.03	0	● ● ● ●	S...-SVNR12XN S...-SVNR12SXN
VNBXR 0206-005S VNBXR 0206-01S	1	2	3.9	-	0.8	26.5	6	3	0.25	1.8	0.05 0.1	8	18	- 0.02 - 0.03	0	● ●	SVNSR...-12-06XN S...-SVNR12XN S...-SVNR12SXN
VNBXR 0311-005S VNBXR 0311-01S	1	3	3.9	-	0.8	30.8	11	3.5	0.4	2.6	0.05 0.1	8	18	- 0.02 - 0.03	0	● ●	SVNSR...-12-11XN S...-SVNR12XN S...-SVNR12SXN
VNBXR 03511-005S VNBXR 03511-01S VNBXR 03516-005S VNBXR 03516-01S	1	3.5	3.9	- - 21 21	0.8	30.8 30.8 39.8 39.8	11 11 16 16	3.75	0.45	3.1	0.05 0.1 0.05 0.1	8	18	- 0.02 - 0.03 - 0.02 - 0.03	0	● ● ● ●	SVNSR...-12-11XN, S...-SVNR12XN S...-SVNR12SXN S...-SVNR12XN S...-SVNR12SXN
VNBXR 0411-005S VNBXR 0411-01S VNBXR 0411-02S	1	4	3.66	-	0.8	30.8	11	4	0.5	3.5	0.05 0.1 0.2	8	18	- 0.02 - 0.03 - 0.04	0	● ● ●	SVNSR...-12-11XN S...-SVNR12XN S...-SVNR12SXN
VNBXR 0420-005S VNBXR 0420-01S VNBXR 0420-02S	1	4	3.66	-	0.8	39.8	20	4	0.5	3.5	0.05 0.1 0.2	8	18	- 0.02 - 0.03 - 0.04	0	● ● ●	SVNSR...-12-20XN S...-SVNR12XN S...-SVNR12SXN

Recommended cutting conditions ➡ F55

● : Standard item

System tip-bars are sold in 5 piece boxes

SVNS-XN (without side stopper)



Right-hand shown | Right-hand Insert for Right-hand Toolholder.
Note 1 : The dimension of Note 1 is same size as the applicable insert (VNBX) WF dimension.

F

Boring

Toolholder dimensions

Description		Availability	Dimension (mm)									Spare parts			Applicable inserts F52
												Screw	Set screw	Wrench	
		R	H	B	LPR	L1	HF	HBKW	HBKL	LU	WF				
SVNSR	1010K-12-06XN	●	10	10	125	10	10	19	45	6	10	SB-3080TR	SP3X4	LTW-10S	VNBXR0206-...
	1212M-12-06XN	●	12	12	150		12	17			12				
	1616M-12-06XN	●	16	16		16	16	13			16				
SVNSR	1010K-12-11XN	●	10	10	125	10	10	23	45	11	10	SB-3080TR	SP3X4	LTW-10S	VNBXR...11-...
	1212M-12-11XN	●	12	12	150		12	21			12				
	1616M-12-11XN	●	16	16		16	16	17			16				
SVNSR	1212M-12-20XN	●	12	12	150	10	12	30	45	20	12	SB-3080TR	SP3X4	LTW-10S	VNBXR0420-...
	1616M-12-20XN	●	16	16		16	16	26			16				

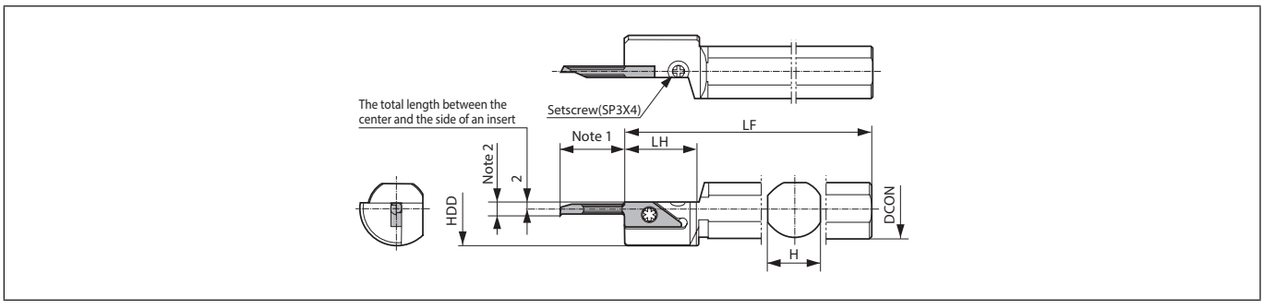
All VNBXR system Tip-Bars Inserts are used with a SVNS-XN Toolholder. However, when setting the cutting edge at the face level of the toolholder as shown in figure, use the applicable inserts described above.
SVNS-XN (without side stopper) retains high index accuracy by easy restraint.
SVNS-XN (without 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.

Spare Parts (Optional)

Screw (Side Stopper)	Wrench
HS3X4	LW-1.5

● : Standard item

S-SVN-XN (Round shank / Standard / without side stopper)



Right-hand shown | Right-hand Insert for Right-hand Toolholder.
Note 1 : The dimension of Note 1 shows the applicable insert (VNBX) LU +1 mm.
Note 2 : The dimension of Note 2 is same size as the applicable insert (VNBX) WF dimension.

Toolholder dimensions

Description		Availability	Dimension (mm)					Spare parts			Applicable inserts F52
								Screw	Set screw	Wrench	
		R	DCON	H	LH	HDD	LF				
S12F-	SVNR12XN	●	12	11	23	20	80	SB-3080TR	SP3X4	FT-10	VNBXR...
S14G-	SVNR12XN	●	14	13			90				
S16H-	SVNR12XN	●	16	15		24	100				
S19H-	SVNR12XN	●	19.05	17	24						
S19N-	SVNR12XN	●					160				
S20H-	SVNR12XN	●	20	18			100				
S25H-	SVNR12XN	●	25.4	23		30					
S25Q-	SVNR12XN	●					180				

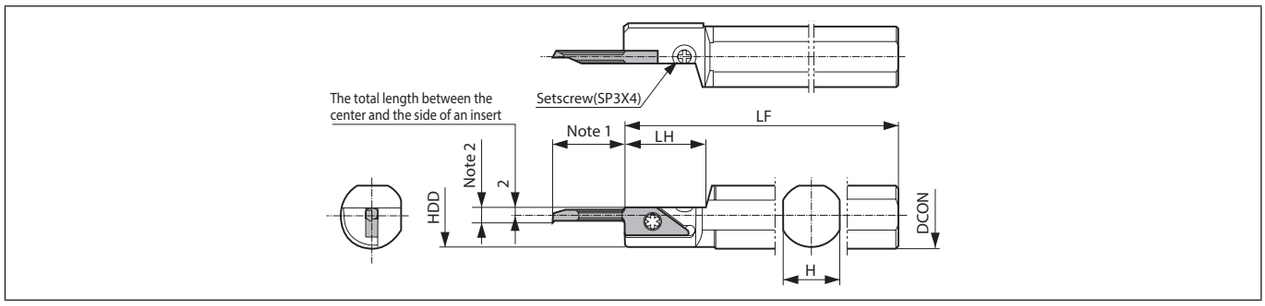
S-SVN-XN (without side stopper) retains high index accuracy by easy restraint.
S-SVN-XN (without side stopper) has a setscrew SP3X4. Changing the setscrew SP3X4 to a screw HS3X4 (sold separately) enables the toolholder to be used as a binding effect toolholder similar to the side stopper toolholder.

Spare Parts (Optional)

Screw (Side Stopper)	Wrench
	
HS3X4	LW-1.5

● : Standard item

S-SVN-SXN (Round shank / Straight / without side stopper)



Right-hand shown | Right-hand Insert for Right-hand Toolholder.
Note 1 : The dimension of Note 1 shows the applicable insert (VNBX) LU +1 mm.
Note 2 : The dimension of Note 2 is same size as the applicable insert (VNBX) WF dimension.

F

Boring

Toolholder dimensions

Description	Availability	Dimension (mm)					Spare parts			Applicable inserts F52
							Screw	Set screw	Wrench	
	R	DCON	H	LH	HDD	LF				
S19H- SVNR12SXN	●	19.05	17	23	18.5	100	SB-3080TR	SP3X4	FT-10	VNBXR...
S20H- SVNR12SXN	●	20	18		19.5					
S22K- SVNR12SXN	●	22	20		21.5	125				
S25.0G- SVNR12SXN	●	25	23		24.5	90				

S-SVN-SXN (without side stopper) retains high index accuracy by easy restraint.
S-SVN-SXN (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.

Spare Parts (Optional)

Screw (Side Stopper)	Wrench
	
HS3X4	LW-1.5

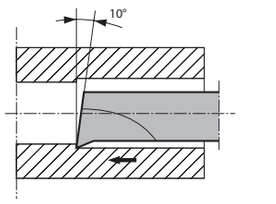
Recommended Cutting Conditions (VNBX-S)

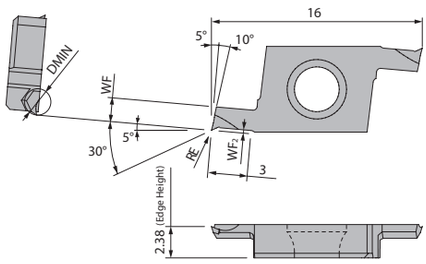
Workpiece material	Insert grades (Vc: m/min) PVD coated carbide PR930	VNBX01-S type VNBX015-S type		VNBX02-S type ~ VNBX04-S type		Remarks
		ap (mm), f (mm/rev)				
		ap	f	ap	f	
Carbon steel / Alloy steel	★ 30~100	~0.1	~0.01	~0.2	~0.03	Coolant
Stainless steel	★ 30~80	~0.1	~0.01	~0.2	~0.02	

★1st recommendation

● : Standard item

TWB (Micro boring, Horizontal type)





Right-hand shown

Dimensions

Description	No. of edges	Dimension (mm)				Tolerance (mm)		Carbide		Applicable toolholder ➡ F56, F57
		DMIN	WF	WF_2	RE	RE min.	RE max.	PVD		
								PR1025	PR1535	
TWBR 01003-005	2	1	0.85	0.2	0.05	- 0.02	0	●	●	STWR...-15 S..-STWR15
TWBR 01503-005	2	1.5	1.3	0.2	0.05	- 0.02	0	●	●	
TWBR 01503-010					0.1	- 0.03		●	●	
TWBR 02003-005	2	2	1.75	0.25	0.05	- 0.02	0	●	●	
TWBR 02003-010					0.1	- 0.03		●	●	
TWBR 02503-005	2	2.5	2.1	0.3	0.05	- 0.02	0		●	
TWBR 02503-010					0.1	- 0.03		●	●	
TWBR 03003-005	2	3	2.4	0.4	0.05	- 0.02	0	●	●	
TWBR 03003-010					0.1	- 0.03		●	●	

Recommended cutting conditions ➡ F59

STW (Micro boring, Square shank for horizontal type insert)

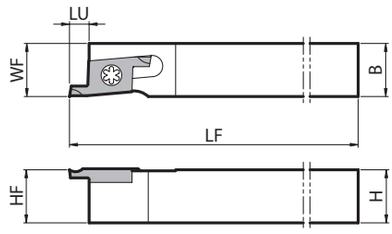


Fig. 1

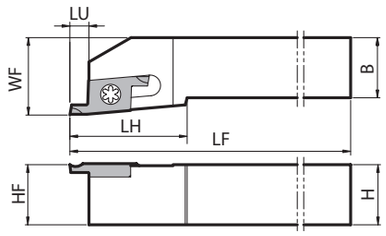


Fig. 2

Right-hand shown | Right-hand Insert for Right-hand Toolholder.
(For Left-hand toolholders for grooving, please see page **G106**.)

Toolholder dimensions

Description	Availability	Dimension (mm)									Coolant hole	Fig.	Spare parts		Applicable inserts ➡ F56
													Screw	Wrench	
	R	CDX	H	B	LH	HF	LF	LU	WF						
STWR 1212F-15	●	3	12	12	-	12	85	3	12		No	1	SB-3080TR	LTW-10S	TWBR...
1212K-15	●						125					1			
1616K-15	●		16	16		16			16			1			
2020K-15	●		20	20	25	20			25			2			
2525M-15	●		25	25		25	150		32			2			

● : Standard item

Twin-bars are sold in 5 piece boxes

S-STW (Micro boring, Round shank for horizontal type insert)

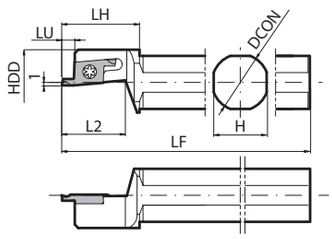


Fig. 1

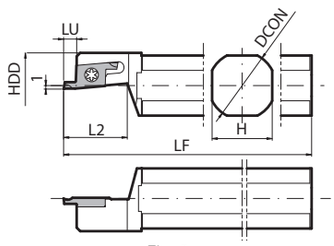


Fig. 2

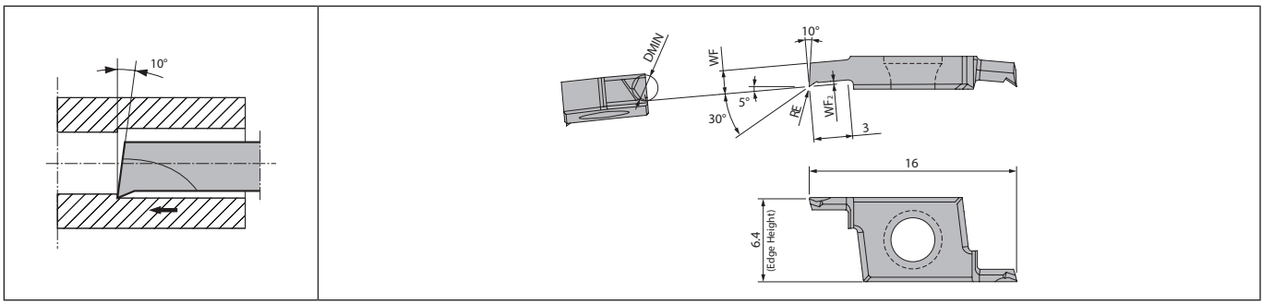
Right-hand shown | Right-hand Insert for Right-hand Toolholder.
(For Left-hand toolholders for grooving, please see page **G107**.)

Toolholder dimensions

Description		Availability	Dimension (mm)							Coolant hole	Fig.	Spare parts		Applicable inserts ➡ F56
												Screw	Wrench	
		R	DCON	H	LH	HDD	L2	LF	LU					
S12F-	STWR15	●	12	11	22	20	18	80	3	No	1	SB-3080TR	LTW-10S	TWBR...
S14H-	STWR15	●	14	13				100			1			
S15F-	STWR15	●	15.875	15				85			1			
S16F-	STWR15	●	16								1			
S19G-	STWR15	●	19.05	17	-	18.5		90			2			
S19K-	STWR15	●						120			2			
S20G-	STWR15	●	20	18		19.5		90			2			
S20K-	STWR15	●						120			2			
S22K-	STWR15	●	22	20		21.5	22	125			2			
S25.0J-	STWR15	●	25	23		24.5		110			2			
S25K-	STWR15	●	25.4			25		120			2			

● : Standard item

TWBT (Micro boring, Vertical type)



Right-hand shown

Dimensions

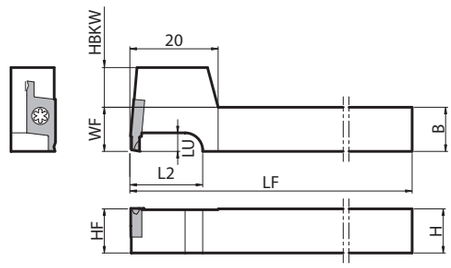
Description	No. of edges	Dimension (mm)				Tolerance (mm)		Carbide		Applicable toolholder ➡ F59
		DMIN	WF	WF_2	RE	RE min.	RE max.	PVD		
								PR1025	PR1535	
TWBTR 01003-005	2	1	0.85	0.2	0.05	- 0.02	0	●	●	STWSR...-15T
TWBTR 01503-005	2	1.5	1.3	0.2	0.05	- 0.02	0	●	●	
TWBTR 01503-010					0.1	- 0.03		●	●	
TWBTR 02003-005	2	2	1.75	0.25	0.05	- 0.02	0		●	
TWBTR 02003-010					0.1	- 0.03		●	●	
TWBTR 02503-005	2	2.5	2.1	0.3	0.05	- 0.02	0	●	●	
TWBTR 02503-010					0.1	- 0.03		●	●	
TWBTR 03003-005	2	3	2.3	0.4	0.05	- 0.02	0	●	●	
TWBTR 03003-010					0.1	- 0.03		●	●	

Recommended cutting conditions ➡ F59

● : Standard item

Twin-bars are sold in 5 piece boxes

STWS (Micro boring, Square shank for vertical type insert)



Right-hand shown

Toolholder dimensions

Description		Availability	Dimension (mm)								Spare parts		Applicable inserts F58
											Screw	Wrench	
		R	H	B	L2	HF	HBKW	LF	LU	WF			
STWSR	1010F-15T	●	10	10	16	10	9	85	3	10	SB-3080TR	LTW-10S	TWBTR...
	1010JX-15T	●						120					
	1212F-15T	●	12	12		12	7	85		12			
	1212JX-15T	●						120					
	1616JX-15T	●	16	16	20	16	3			16			

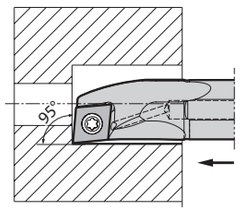
Recommended Cutting Conditions (TWB / TWBT)

Workpiece material	Insert grades Vc: m/min		TWBR01003 TWBR01503 TWBTR01003 TWBTR01503		TWBR02003 TWBR02503 TWBR03003 TWBTR02003 TWBTR02503 TWBTR03003		Remarks
	MEGACOAT NANO	PVD coated carbide					
	PR1535	PR1025	ap (mm), f (mm/rev)				
			ap	f	ap	f	
Carbon steel / Alloy steel	★30~100	☆ 30~100	~0.1	~0.01	~0.2	~0.03	Coolant
Stainless steel	★ 30~80	☆ 30~80	~0.1	~0.01	~0.2	~0.02	

★1st recommendation ☆2nd recommendation

● : Standard item

A/S-SCLC-AE Excellent bar (Boring / Internal facing)



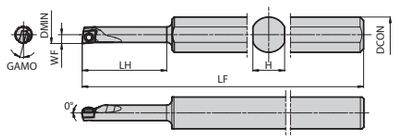


Fig. 1

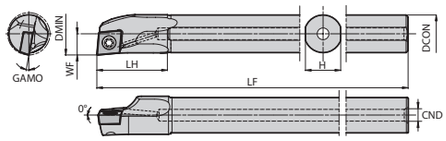


Fig. 2

Max. Overhang Length L/D=~5.5 | Right-hand shown
Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

F

Boring

Solid

Positive

AD bars

Negative

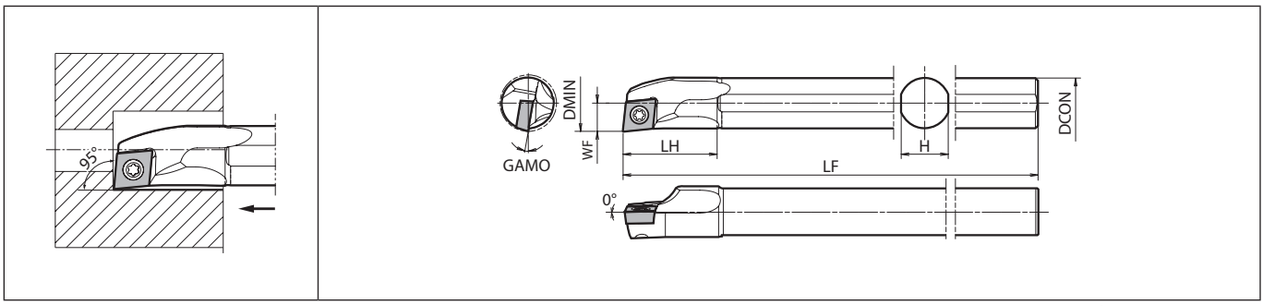
Toolholder dimensions

Description		Availability R	Availability L	Dimension (mm) DMIN	DCON	CND	H	LH	LF	WF	GAMO (°)	Standard corner-R(RE)	Coolant hole	Fig.	Spare parts Screw	Spare parts Wrench	Spare parts Wrench	Applicable inserts
S10H-	SCLC□03-05AE	●	●	5	10	-	9	24	100	2.5	15	0.2	No	1	SB-1635TR	-	FT-6	CC□T0301... CC□W0301...
	SCLC□03-06AE	●	●	6				28		3	13							
S10H-	SCLC□04-07AE	●	●	7	10	-	9	32	100	3.5	13	0.2	No	1	SB-2035TR	-	FT-6	CC□T0401... CC□W0401...
	SCLC□04-08AE	●	●	8				37		4	11							
A08X-	SCLC□06-10AE	●	●	10	8	2.5	7	16	120	5	14	0.4	Yes	2	SB-2545TR	-	FT-8	CC□T0602... CC□W0602...
A10L-	SCLC□06-12AE	●	●	12	10	3	9	20	140	6	12							
A12M-	SCLC□06-14AE	●	●	14	12	4	11	24	150	7	10							
A16Q-	SCLC□09-18AE	●	●	18	16	5	15	30	180	9	10	0.4	Yes	2	SB-4065TR	FT-15	-	CC□T09T3... CC□W09T3...
A20R-	SCLC□09-22AE	●	●	22	20		19	36	200	11	8							
A25S-	SCLC□09-27AE	●	●	27	25		24	46	250	13.5	6							

When using P chipbreaker : Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder.

● : Standard item

S-SCLC-A Steel shank 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.

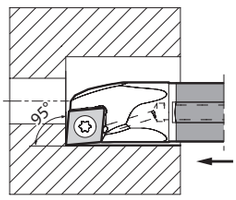
Toolholder dimensions

Description	Availability		Dimension (mm)						GAMO (°)	Standard corner-R(RE)	Coolant hole	Spare parts			Applicable inserts
												Screw	Wrench	Wrench	
	R	L	DMIN	DCON	H	LH	LF	WF							
S08X- SCLC[R/L]06-10A	●	●	10	8	7	16	120	5	14	0.4	No	SB-2545TR	-	FT-8	CC□T0602... CC□W0602...
S10L- SCLC[R/L]06-12A	●	●	12	10	9	20	140	6	12						
S12M- SCLC[R/L]06-14A	●	●	14	12	11	24	150	7	10						
S16Q- SCLC[R/L]09-18A	●	●	18	16	15	30	180	9	10	0.4	No	SB-4065TR	FT-15	-	CC□T09T3... CC□W09T3...
S20R- SCLC[R/L]09-22A	●	●	22	20	19	36	200	11	8						
S25S- SCLC[R/L]09-27A	●	●	27	25	24	46	250	13.5	6						

When using P chipbreaker : Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder.

● : Standard item

C/E-SCLC-A(N) Carbide shank bar (Boring / Internal facing)



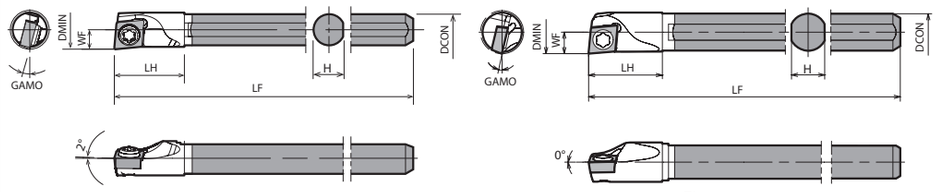


Fig. 1

Fig. 2

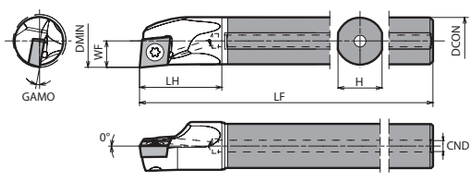


Fig. 3

Max. Overhang Length L/D=~7 | Right-hand shown
Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

F

Boring

Solid
Positive
AD bars
Negative

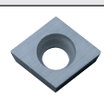
Toolholder dimensions

Description		Availability R	Availability L	Dimension (mm) DMIN	DCON	CND	H	LH	LF	WF	GAMO (°)	Standard corner-R(RE)	Coolant hole	Fig.	Spare parts Screw	Spare parts Wrench	Spare parts Wrench	Applicable inserts
C04G-	SCLC□03-05AN	●	●	5	4	-	3.8	7	90	2.5	15	0.2	No	1	SB-1635TR	-	FT-6	CC□T0301..., CC□W0301...
C05H-	SCLC□03-06AN	●	●	6	5	-	4.4	9	100	3	13	0.2	No	2	SB-1635TR	-	FT-6	CC□T0301..., CC□W0301...
C06J-	SCLC□04-07AN	●	●	7	6	-	5.4	10	110	3.5	13	0.2	No	2	SB-2035TR	-	FT-6	CC□T0401... CC□W0401...
C07K-	SCLC□04-08AN	●	●	8	7	-	6.4	11	125	4	11							
E08L-	SCLC□06-10AN	●	●	10	8	3	7	14	140	5	14	0.4	Yes	3	SB-2545TR	-	FT-8	CC□T0602... CC□W0602...
	SCLCR06-10AN2/3	●							90									
E10N-	SCLC□06-12AN	●	●	12	10		9	18	160	6	12							
	SCLCR06-12AN2/3	●							105									
E12Q-	SCLC□06-14A	●	●	14	12	4	11	23	180	7	10							
	SCLCR06-14A-2/3	●							120									
E16X-	SCLC□09-18A	●	●	18	16	4	15	28	220	9	10	0.4	Yes	3	SB-4065TR	FT-15	-	CC□T09T3... CC□W09T3...
	SCLCR09-18A-2/3	●							145									
E20S-	SCLC□09-22A	●	●	22	20	6	19	32	250	11	8							
	SCLCR09-22A-2/3	●							165									
E25T-	SCLC□09-27A	●	●	27	25		24	38	300	13.5	6							
	SCLCR09-27A-2/3	●							200									

When using P chipbreaker : Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder.

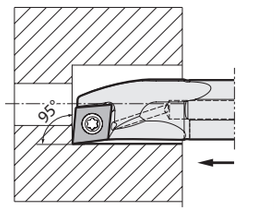
● : Standard item

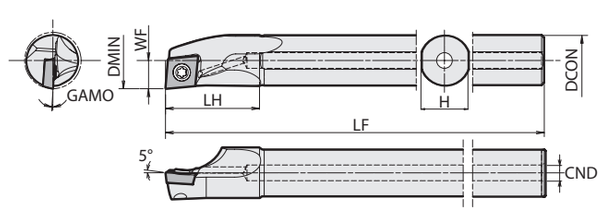
Applicable inserts (A/S-SCLC-AE / S-SCLC-A / C/E-SCLC-A(N))

Applications	Minute ap	Finishing	Finishing	Finishing	Finishing	Finishing	Finishing - Medium	Finishing
Insert								
Chipbreaker type	CF	PF	GF	SKS	SK	CK	GQ	WP
Page	B58	B58	B58	B59	B59	B59	B59	B60
Applications	Finishing	Finishing - Medium	Finishing - Medium	Medium	Medium	Finishing	Finishing	Finishing
Insert								
Chipbreaker type	PP	GK	HQ	STD	MF	R/L-F	R/L-FSF	R/L-P
Page	B60	B60	B60	B60	B61	B62	B61	B63
Applications	Low feed	Low feed	Low feed	Stainless steel / Heat-resistant alloys	Cast iron	Non-Ferrous Metals	Non-Ferrous Metals	Non-Ferrous Metals
Insert								
Chipbreaker type	R/L-U	R/L-USF	R/L-J	MQ	No CB	AP	R/L-A3	AH
Page	B63~B65	B63	B65	B61	B66	B66	B66	B66
Applications	Non-Ferrous Metals	Non-Ferrous Metals	Hard materials					
Insert								
Chipbreaker type	PCD	APD	CBN					
Page	C39	C40	C20					

Recommended cutting conditions ➡ **F152, F153**
Applicable sleeves ➡ **F148~F151**

A-SCLP-AE Excellent bar (Boring / Internal facing)





Max. Overhang Length L/D=~5.5 | Right-hand shown
Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

F

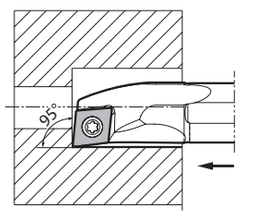
Boring

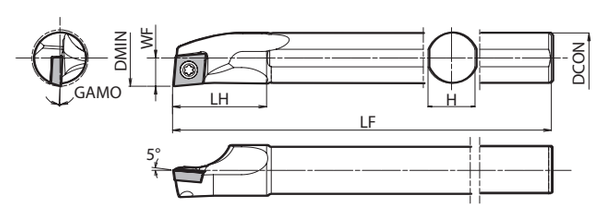
Solid
Positive
AD bars
Negative

Toolholder dimensions

Description		Availability R	Availability L	Dimension (mm) DMIN	DCON	CND	H	LH	LF	WF	GAMO (°)	Standard corner-R(RE)	Coolant hole	Spare parts: Screw	Spare parts: Wrench	Spare parts: Wrench	Applicable inserts
A10L-	SCLP$^{R}_{L}$08-12AE	●	●	12	10	3	9	20	140	6	5	0.4	Yes	SB-3060TR	-	FT-10	CP□B0802..., CP□H0802... CP□T0802...
A12M-	SCLP$^{R}_{L}$08-14AE	●	●	14	12	4	11	24	150	7	4						
A12M-	SCLP$^{R}_{L}$09-16AE	●	●	16	12	4	11	24	150	8	4	0.4	Yes	SB-4065TR	FT-15	-	CP□B0903... CP□H0903... CP□T0903...
A16Q-	SCLP$^{R}_{L}$09-18AE	●	●	18	16		15	30	180	9	3.5						
A20R-	SCLP$^{R}_{L}$09-22AE	●	●	22	20	5	19	36	200	11	2						
A25S-	SCLP$^{R}_{L}$09-27AE	●	●	27	25		24	46	250	13.5	0						

S-SCLP-A Steel shank bar (Boring / Internal facing)





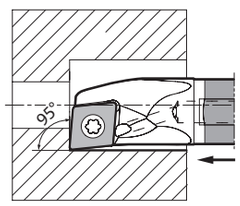
Max. Overhang Length L/D=~4 | Right-hand shown
Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

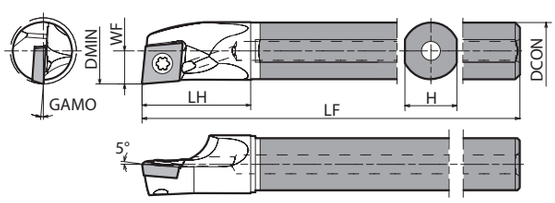
Toolholder dimensions

Description		Availability R	Availability L	Dimension (mm) DMIN	DCON	H	LH	LF	WF	GAMO (°)	Standard corner-R(RE)	Coolant hole	Spare parts: Screw	Spare parts: Wrench	Spare parts: Wrench	Applicable inserts
S10L-	SCLP$^{R}_{L}$08-12A	●	●	12	10	9	20	140	6	5	0.4	No	SB-3060TR	-	FT-10	CP□B0802..., CP□H0802... CP□T0802...
S12M-	SCLP$^{R}_{L}$08-14A	●	●	14	12	11	24	150	7	4						
S12M-	SCLP$^{R}_{L}$09-16A	●	●	16	12	11	24	150	8	4	0.4	No	SB-4065TR	FT-15	-	CP□B0903... CP□H0903... CP□T0903...
S16Q-	SCLP$^{R}_{L}$09-18A	●	●	18	16	15	30	180	9	3.5						
S20R-	SCLP$^{R}_{L}$09-22A	●	●	22	20	19	36	200	11	2						
S25S-	SCLP$^{R}_{L}$09-27A	●	●	27	25	24	46	250	13.5	0						

● : Standard item

E-SCLP-A(N) Carbide shank bar (Boring / Internal facing)





Max. Overhang Length L/D=~7 | Right-hand shown
Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

F

Boring

Toolholder dimensions

Description		Availability R	Availability L	Dimension (mm) DMIN	DCON	CND	H	LH	LF	WF	GAMO (°)	Standard corner-R(RE)	Coolant hole	Spare parts: Screw	Spare parts: Wrench	Spare parts: Wrench	Applicable inserts
E10N-	SCLP$^{R}/_{L}$08-12AN	●	●	12	10	3	9	18	160	6	5	0.4	Yes	SB-3060TR	-	FT-10	CP□B0802... CP□H0802... CP□T0802...
	SCLPR08-12AN2/3	●							105								
	SCLPR08-12AN1/2	●							80								
E12Q-	SCLP$^{R}/_{L}$08-14A	●	●	14	12	4	11	23	180	7	4						
	SCLPR08-14A-2/3	●							120								
	SCLPR08-14A-1/2	●							90								
E12Q-	SCLP$^{R}/_{L}$09-16A	●	●	16	12	4	11	23	180	8	5	0.4	Yes	SB-4065TR	FT-15	-	CP□B0903... CP□H0903... CP□T0903...
	SCLPR09-16A-2/3	●							120								
	SCLPR09-16A-1/2	●							90								
E16X-	SCLP$^{R}/_{L}$09-18A	●	●	18	16		15	28	220	9	3.5						
	SCLPR09-18A-2/3	●							145								
	SCLPR09-18A-1/2	●							110								
E20S-	SCLP$^{R}/_{L}$09-22A	●	●	22	20	6	19	32	250	11	2						
	SCLPR09-22A-2/3	●							165								
	SCLPR09-22A-1/2	●							125								
E25T-	SCLP$^{R}/_{L}$09-27A	●	●	27	25		24	38	300	13.5	0						
	SCLPR09-27A-2/3	●							200								

Applicable inserts (A-SCLP-AE / S-SCLP-A / E-SCLP-A(N))

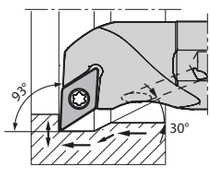
Applications	Finishing	Finishing	Finishing - Medium	Medium	Low carbon steel	Low carbon steel	Finishing - Medium	Cast iron
Insert								
Chipbreaker type	PP	GP	HQ	STD	XP	XQ	$^{R}/_{L}$-Y	No CB
Page	B67	B67	B67	B67	B67	B67	B67	B67

Applications	Non-Ferrous Metals	Hard materials
Insert		
Chipbreaker type	PCD	CBN
Page	C41	C21

Recommended cutting conditions ➡ F152, F153
Applicable sleeves ➡ F149~F151

● : Standard item

A-SDUC-AE Excellent bar (Internal copying)



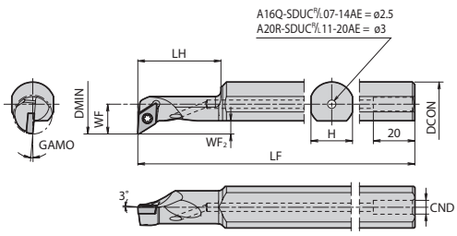


Fig. 1

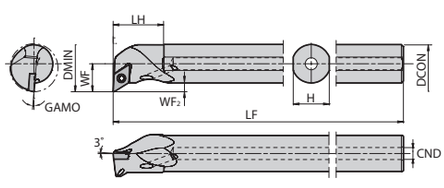


Fig. 2

Max. Overhang Length L/D=~5.5 | Right-hand shown
Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

F

Boring

Solid
Positive
AD bars
Negative

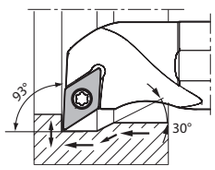
Toolholder dimensions

Description		Availability R	Availability L	Dimension (mm) DMIN	DCON	CND	H	LH	LF	WF	WF_2	GAMO (°)	Standard corner-R(RE)	Coolant hole	Fig.	Spare parts: Screw	Spare parts: Wrench	Spare parts: Wrench	Applicable inserts
A10L-	SDUC$^{R}_{L}$07-14AE	●	●	14	10	3	9	19	140	8.7	3.3	5	0.4	Yes	2	SB-2560TR	-	FT-8	DC□T0702... DC□W0702... DC□X0702...
A12M-	SDUC$^{R}_{L}$07-16AE	●	●	16	12	4	11	21	150	9.7					2				
A16Q-	SDUC$^{R}_{L}$07-14AE	●	●	14	16	5	15	28	180	10.8	4.4				1				
	SDUC$^{R}_{L}$07-20AE	●	●	20				21		11.7	3.3				2				
A16Q-	SDUC$^{R}_{L}$11-23AE	●	●	23	16	5	15	21	180	14.5	6.1	5	0.4	Yes	2	SB-4065TR	FT-15	-	DC□T11T3... DC□W11T3... DC□X11T3...
A20R-	SDUC$^{R}_{L}$11-20AE	●	●	20	20		19	48	200	15.6					1				
	SDUC$^{R}_{L}$11-27AE	●	●	27				23		16.5					2				
A25S-	SDUC$^{R}_{L}$11-32AE	●	●	32	25		24	24	250	19					2				

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

● : Standard item

S-SDUC-A Steel shank bar (Internal copying)



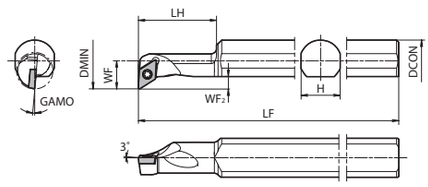


Fig. 1

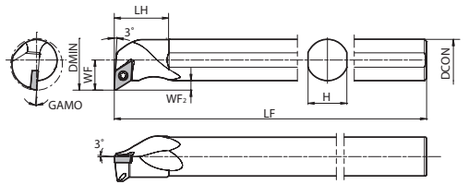


Fig. 2

Max. Overhang Length L/D=~4 | Right-hand shown
Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

F

Boring

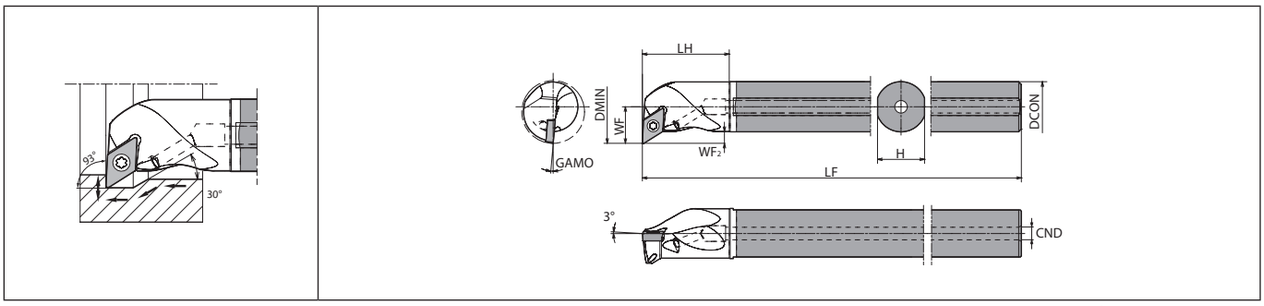
Toolholder dimensions

Description		Availability		Dimension (mm)							GAMO (°)	Standard corner-R(RE)	Coolant hole	Fig.	Spare parts			Applicable inserts
															Screw	Wrench	Wrench	
		R	L	DMIN	DCON	H	LH	LF	WF	WF_2								
S10L-	SDUC[R/L]07-14A	●	●	14	10	9	19	140	8.7	3.3	5	0.4	No	2	SB-2560TR	-	FT-8	DC□T0702... DC□W0702... DC□X0702...
S12M-	SDUC[R/L]07-16A	●	●	16	12	11	21	150	9.7					2				
S16Q-	SDUC[R/L]07-14A	●	●	14	16	15	28	180	10.8	4.4				1				
	SDUC[R/L]07-20A	●	●	20			21		11.7	3.3				2				
S16Q-	SDUC[R/L]11-23A	●	●	23	16	15	21	180	14.5	6.1	5	0.4	No	2	SB-4065TR	FT-15	-	DC□T11T3... DC□W11T3... DC□X11T3...
S20R-	SDUC[R/L]11-20A	●	●	20	20	19	48	200	15.6					1				
	SDUC[R/L]11-27A	●	●	27			23		16.5					2				
S25S-	SDUC[R/L]11-32A	●	●	32	25	24	24	250	19					2				

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

● : Standard item

E-SDUC-A Carbide shank bar (Internal copying)



Max. Overhang Length L/D=~7 | Right-hand shown
Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

F

Boring

Solid
Positive
AD bars
Negative

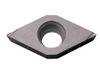
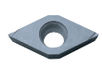
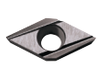
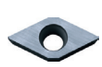
Toolholder dimensions

Description		Availability R	Availability L	Dimension (mm) DMIN	DCON	CND	H	LH	LF	WF	WF_2	GAMO (°)	Standard corner-R(RE)	Coolant hole	Spare parts: Screw	Spare parts: Wrench	Spare parts: Wrench	Applicable inserts
E10N-	SDUC$^{R}_{L}$07-14A	●	●	14	10	3	9	20	160	8.7	3.3	5	0.4	Yes	SB-2560TR	-	FT-8	DC□T0702... DC□W0702... DC□X0702...
	SDUCR07-14A-2/3	●							105									
E12Q-	SDUC$^{R}_{L}$07-16A	●	●	16	12	4	11	23	180	9.7								
	SDUCR07-16A-2/3	●							120									
E16X-	SDUC$^{R}_{L}$07-20A	●	●	20	16		15	28	220	11.7								
	SDUCR07-20A-2/3	●							145									
E16X-	SDUC$^{R}_{L}$11-23A	●	●	23	16	4	15	28	220	14.5	6.1	5	0.4	Yes	SB-4065TR	FT-15	-	DC□T11T3... DC□W11T3... DC□X11T3...
	SDUCR11-23A-2/3	●							145									
E20S-	SDUC$^{R}_{L}$11-27A	●	●	27	20	6	19	32	250	16.5								
	SDUCR11-27A-2/3	●							165									
E25T-	SDUC$^{R}_{L}$11-32A	●	●	32	25		24	38	300	19								
	SDUCR11-32A-2/3	●							200									

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

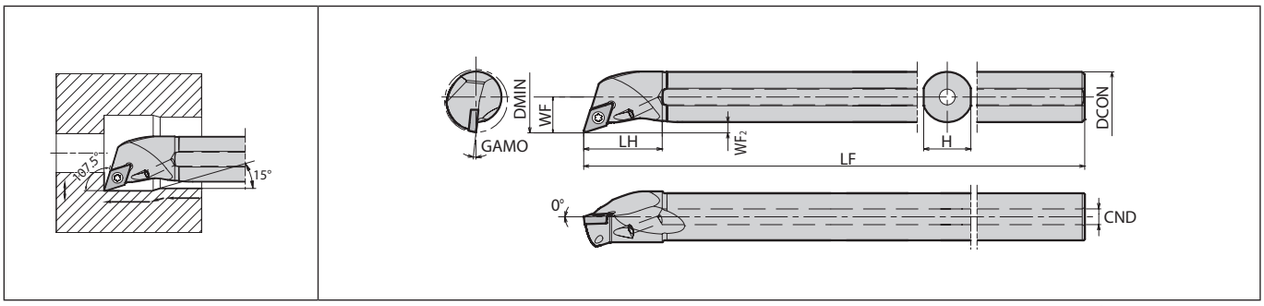
● : Standard item

Applicable inserts (A-SDUC-AE / S-SDUC-A / E-SDUC-A)

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

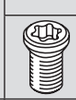
Recommended cutting conditions **F152, F153**
Applicable sleeves **F149~F151**

A-SDQC-AE Excellent bar (Internal copying)



Max. Overhang Length L/D=~5.5 | Right-hand shown
Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

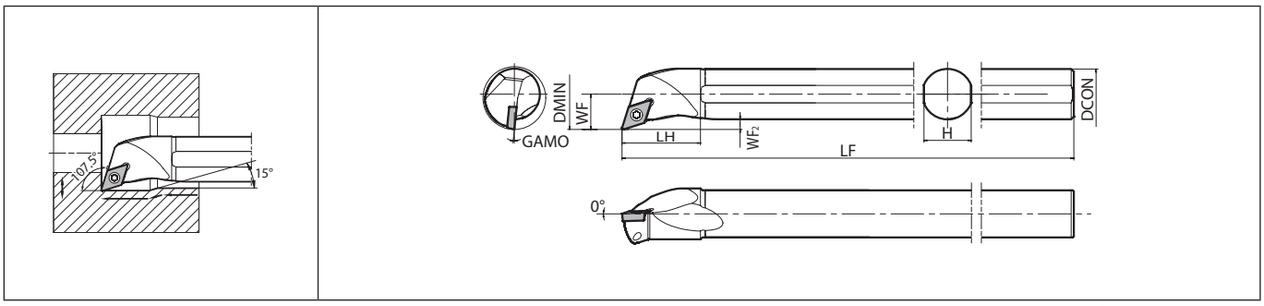
Toolholder dimensions

Description		Availability		Dimension (mm)								GAMO (°)	Standard corner-R(RE)	Coolant hole	Spare parts			Applicable inserts
															Screw	Wrench	Wrench	
		R	L	DMIN	DCON	CND	H	LH	LF	WF	WF_2							
A10L-	SDQC[R/L]07-13AE	●	●	13	10	3	9	19	140	7.5	2.1	10	0.4	Yes	SB-2560TR	-	FT-8	DC□T0702... DC□W0702...
A12M-	SDQC[R/L]07-16AE	●	●	16	12	4	11	22	150	9.25	2.6	8						
A16Q-	SDQC[R/L]07-20AE	●	●	20	16	5	15	25	180	11.3		6						
A20R-	SDQC[R/L]11-25AE	●	●	25	20	5	19	31	200	14.4	3.7	5	0.4	Yes	SB-4065TR	FT-15	-	DC□T11T3... DC□W11T3...
A25S-	SDQC[R/L]11-30AE	●	●	30	25		24	38	250	16.9		4						

WP chipbreaker (DCMX-WP : Wiper insert) is not applicable to A-SDQC-AE Toolholders.

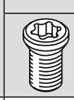
● : Standard item

S-SDQC-A Steel shank bar (Internal copying)



Max. Overhang Length L/D=~4 | Right-hand shown
Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

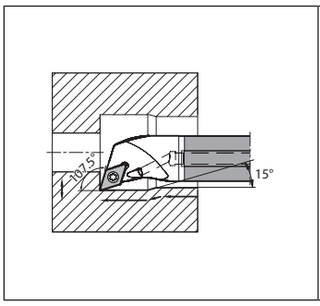
Toolholder dimensions

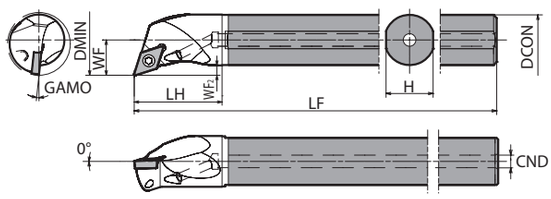
Description		Availability		Dimension (mm)							GAMO (°)	Standard corner-R(RE)	Coolant hole	Spare parts			Applicable inserts
		R	L	DMIN	DCON	H	LH	LF	WF	WF2				Screw	Wrench	Wrench	
																	
S10L-	SDQC[R/L]07-13A	●	●	13	10	9	19	140	7.5	2.1	10	0.4	No	SB-2560TR	-	FT-8	DC□T0702... DC□W0702...
S12M-	SDQC[R/L]07-16A	●	●	16	12	11	22	150	9.25	2.6	8						
S16Q-	SDQC[R/L]07-20A	●	●	20	16	15	25	180	11.3		6						
S20R-	SDQC[R/L]11-25A	●	●	25	20	19	31	200	14.4	3.7	5	0.4	No	SB-4065TR	FT-15	-	DC□T11T3... DC□W11T3...
S25S-	SDQC[R/L]11-30A	●	●	30	25	24	38	250	16.9		4						

WP chipbreaker (DCMX-WP : Wiper insert) is not applicable to S-SDQC-A Toolholders.

● : Standard item

E-SDQC-A Carbide shank bar (Internal copying)





Max. Overhang Length L/D=~7 | Right-hand shown
Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

F

Boring

Solid
Positive
AD bars
Negative

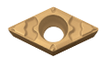
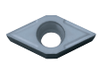
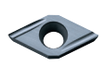
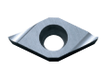
Toolholder dimensions

Description		Availability R	Availability L	Dimension (mm) DMIN	DCON	CND	H	LH	LF	WF	WF_2	GAMO (°)	Standard corner-R(RE)	Coolant hole	Spare parts: Screw	Spare parts: Wrench	Spare parts: Wrench	Applicable inserts
E10N-	SDQC[R]/L07-13A	●	●	13	10	3	9	20	160	7.5	2.1	10	0.4	Yes	SB-2560TR	-	FT-8	DC□T0702... DC□W0702...
	SDQCR07-13A-2/3	●							105									
E12Q-	SDQC[R]/L07-16A	●	●	16	12	4	11	23	180	9.25	2.6	8						
	SDQCR07-16A-2/3	●							120									
E16X-	SDQC[R]/L07-20A	●	●	20	16		15	28	220	11.3		6						
	SDQCR07-20A-2/3	●							145									
E20S-	SDQC[R]/L11-25A	●	●	25	20	6	19	32	250	14.4	3.7	5	0.4	Yes	SB-4065TR	FT-15	-	DC□T11T3... DC□W11T3...
	SDQCR11-25A-2/3	●							165									
E25T-	SDQC[R]/L11-30A	●	●	30	25		24	38	300	16.9		4						
	SDQCR11-30A-2/3	●							200									

WP chipbreaker (DCMX-WP : Wiper insert) is not applicable to E-SDQC-A Toolholders.

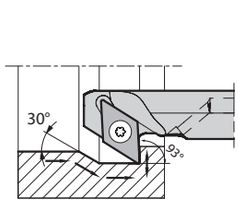
● : Standard item

Applicable inserts (A-SDQC-AE / S-SDQC-A / E-SDQC-A)

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

Recommended cutting conditions ➡ F152, F153
Applicable sleeves ➡ F149~F151

A-SDZC-AE Excellent bar (Back boring)



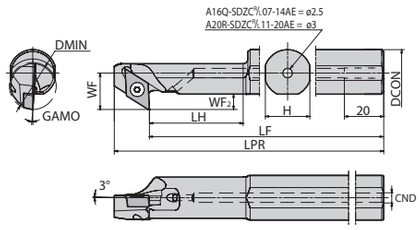


Fig. 1

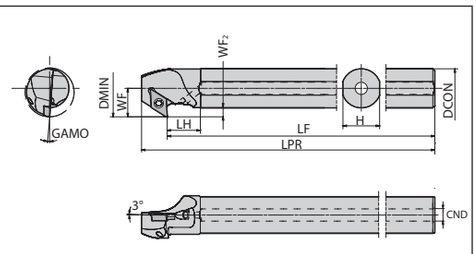


Fig. 2

Max. Overhang Length L/D=~5.5 | Right-hand shown
Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder.

F

Boring

Solid
Positive
AD bars
Negative

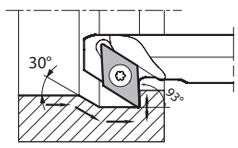
Toolholder dimensions

Description		Availability		Dimension (mm)									GAMO (°)	Standard corner-R(RE)	Coolant hole	Fig.	Spare parts			Applicable inserts
																	Screw	Wrench	Wrench	
		R	L	DMIN	DCON	CND	H	LH	LPR	LF	WF	WF_2								
A10L-	SDZC$^{R}_{L}$07-14AE	●	●	14	10	3	9	14	140	130.5	8.7	3.3	5	0.4	Yes	2	SB-2545TR	-	FT-8	DC□T0702... DC□W0702... DC□X0702...
A12M-	SDZC$^{R}_{L}$07-16AE	●	●	16	12	4	11		150	139.5	9.7					2	SB-2560TR			
A16Q-	SDZC$^{R}_{L}$07-14AE	●	●	14	16	5	15	30	180	170	10.8	4.4				1	SB-2545TR			
	SDZC$^{R}_{L}$07-20AE	●	●	20				14		169.5	11.7	3.3				2	SB-2560TR			
A16Q-	SDZC$^{R}_{L}$11-23AE	●	●	23	16	5	15	15	180	165	14.5	6.1	5	0.4	Yes	2	SB-4065TR	FT-15	-	DC□T11T3... DC□W11T3... DC□X11T3...
A20R-	SDZC$^{R}_{L}$11-20AE	●	●	20	20		19	40	200	185	15.6					1				
	SDZC$^{R}_{L}$11-27AE	●	●	27				15			16.5					2				
A25S-	SDZC$^{R}_{L}$11-32AE	●	●	32	25		24		250	235	19					2				

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

● : Standard item

S-SDZC-A Steel shank bar (Back boring)



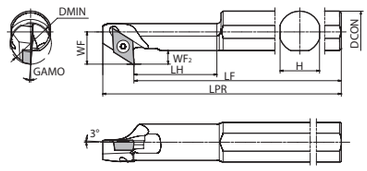


Fig. 1

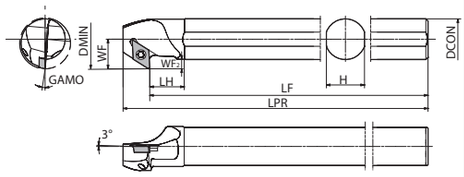


Fig. 2

Max. Overhang Length L/D=~4 | Right-hand shown
Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder.

F

Boring

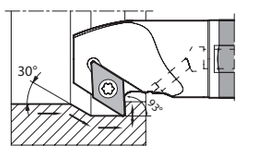
Toolholder dimensions

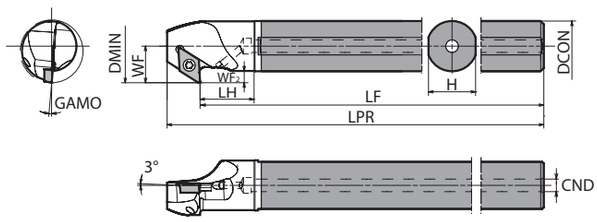
Description		Availability		Dimension (mm)								GAMO (°)	Standard corner-R(RE)	Coolant hole	Fig.	Spare parts			Applicable inserts
																Screw	Wrench	Wrench	
		R	L	DMIN	DCON	H	LH	LPR	LF	WF	WF_2								
S10L-	SDZC$^{R}_{L}$07-14A	●	●	14	10	9	14	140	130.5	8.7	3.3	5	0.4	No	2	SB-2545TR	-	FT-8	DC□T0702... DC□W0702... DC□X0702...
S12M-	SDZC$^{R}_{L}$07-16A	●	●	16	12	11		150	139.5	9.7					2	SB-2560TR			
S16Q-	SDZC$^{R}_{L}$07-14A	●	●	14	16	15	30	180	170	10.8	4.4				1	SB-2545TR			
	SDZC$^{R}_{L}$07-20A	●	●	20			14		169.5	11.7	3.3				2	SB-2560TR			
S16Q-	SDZC$^{R}_{L}$11-23A	●	●	23	16	15	15	180	165	14.5	6.1	5	0.4	No	2	SB-4065TR	FT-15	-	DC□T11T3... DC□W11T3... DC□X11T3...
S20R-	SDZC$^{R}_{L}$11-20A	●	●	20	20	19	40	200	185	15.6					1				
	SDZC$^{R}_{L}$11-27A	●	●	27			15			16.5					2				
S25S-	SDZC$^{R}_{L}$11-32A	●	●	32	25	24		250	235	19					2				

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

● : Standard item

E-SDZC-A Carbide shank bar (Back boring)





Max. Overhang Length L/D=~7 | Right-hand shown
Right-hand Insert for Right-hand Toolholder.

F

Boring

Solid
Positive
AD bars
Negative

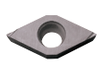
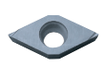
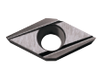
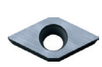
Toolholder dimensions

Description		Availability	Dimension (mm)									GAMO (°)	Standard corner-R(RE)	Coolant hole	Spare parts			Applicable inserts
															Screw	Wrench	Wrench	
		R	DMIN	DCON	CND	H	LH	LPR	LF	WF	WF_2							
E10N-	SDZCR07-14A	●	14	10	3	9	10.5	160	150.5	8.7	3.3	5	0.4	Yes	SB-2545TR	-	FT-8	DC□T0702... DC□W0702... DC□X0702...
E12Q-	SDZCR07-16A	●	16	12	4	11	12.5	180	169.5	9.7					SB-2560TR			
E16X-	SDZCR07-20A	●	20	16		15	17.5	220	209.5	11.7								
E16X-	SDZCR11-23A	●	23	16	4	15	13	220	205	14.5	6.1	5	0.4	Yes	SB-4065TR	FT-15	-	DC□T11T3..., DC□W11T3... DC□X11T3...
E20S-	SDZCR11-27A	●	27	20	6	19	17	250	235	16.5								

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

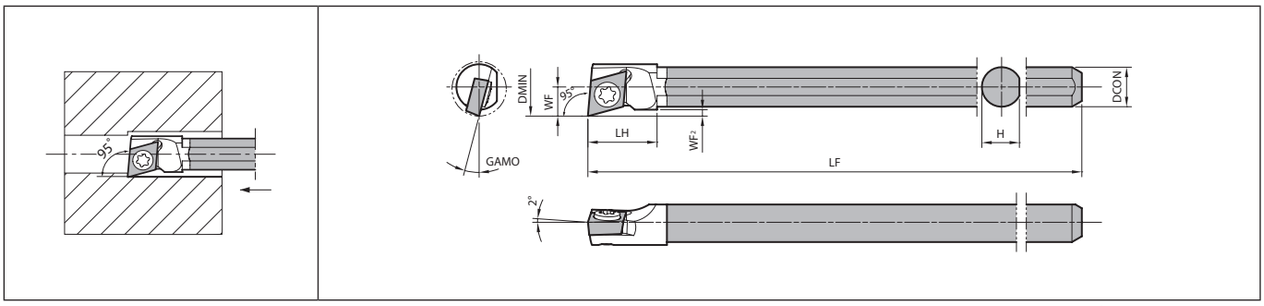
● : Standard item

Applicable inserts (A-SDZC-AE / S-SDZC-A / E-SDZC-A)

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

Recommended cutting conditions **F152, F153**
Applicable sleeves **F149~F151**

C-SJLC Carbide shank bar (Boring / Internal facing)



Max. Overhang Length L/D=~7 | Right-hand shown
Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

F

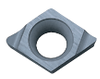
Boring

Solid
Positive
AD bars
Negative

Toolholder dimensions

Description	Availability		Dimension (mm)							GAMO (°)	Standard corner-R(RE)	Coolant hole	Spare parts		Applicable inserts
													Screw	Wrench	
	R	L	DMIN	DCON	H	LH	LF	WF	WF_2						
C04X- SJLC$^{R}_{L}$03-055	●	●	5.5	4	3.8	7	91	2.95	0.65	15	0.03	No	SB-1635TR	FT-6	JC□T0301...

Applicable inserts

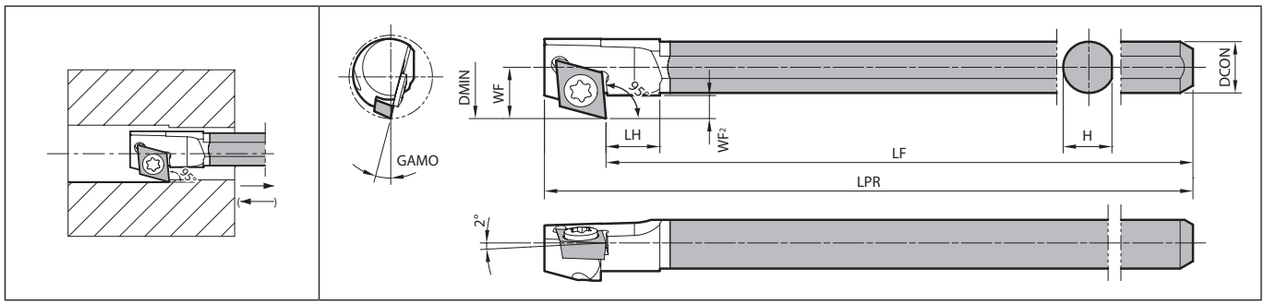
Applications	Finishing	Finishing
Insert		
Chipbreaker type	$^{R}_{L}$-**F**	$^{R}_{L}$-**FSF**
Page	**B80**	**B80**

Recommended cutting conditions **F152, F153**
Applicable sleeves **F148, F150, F151**

- 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.

● : Standard item

C-SJZC Carbide shank bar (Back boring)



Max. Overhang Length L/D=~7 | Right-hand shown
Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder.
When using Right-hand Toolholder, use Right-hand insert if machining from back to front in this direction (→).
Use Left-hand insert if machining from front to back in this direction (←).

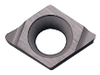
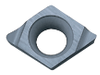
F

Boring

Toolholder dimensions

Description	Availability		Dimension (mm)								GAMO (°)	Standard corner-R(RE)	Coolant hole	Spare parts		Applicable inserts
														Screw	Wrench	
	R	L	DMIN	DCON	H	LH	LPR	LF	WF	WF_2						
C04X- SJZC$^{R}_{L}$03-065	●	●	6.5	4	3.8	4	93	88.1	4	1.8	15	0.03	No	SB-1635TR	FT-6	JC□T0301...

Applicable inserts

Applications	Finishing	Finishing
Insert		
Chipbreaker type	$^{R}_{L}$-**F**	$^{R}_{L}$-**FSF**
Page	**B80**	**B80**

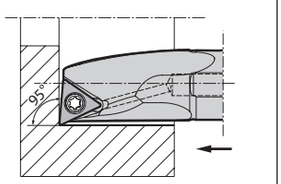
Recommended cutting conditions ➡ **F152, F153**
Applicable sleeves ➡ **F148, F150, F151**

● 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 ø6.5, the edge gap is retained as large as 1.8 mm.

● : Standard item

A/S-STLB(P)-AE Excellent bar (Boring / Internal facing)



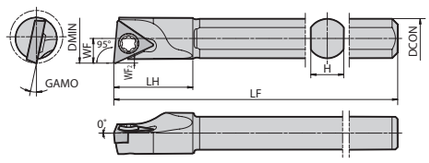


Fig. 1

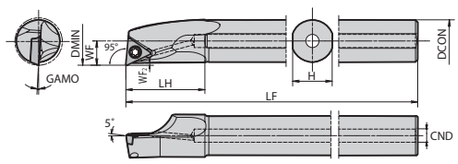


Fig. 2

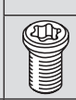
Max. Overhang Length L/D=~5.5 | Right-hand shown
Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

F

Boring

Solid
Positive
AD bars
Negative

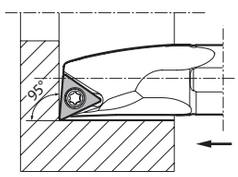
Toolholder dimensions

Description		Availability		Dimension (mm)								GAMO (°)	Standard corner-R(RE)	Coolant hole	Fig.	Spare parts			Applicable inserts
																Screw	Wrench	Wrench	
		R	L	DMIN	DCON	CND	H	LH	LF	WF	WF_2								
S06H-	STLB$^{R/L}$06-08AE	●	●	8	6	-	5	12	100	3.8	0.5	12	0.2	No	1	SB-2035TR		FT-6	TB□T0601..., TB□W0601...
A08X-	STLP$^{R/L}$08-10AE	●	●	10	8	2.5	7	16	120	5	0.5	10	0.4	Yes	2	SB-1TR	-	FT-6	TP□B0802..., TP□H0802... TP□T0802...
A08X-	STLP$^{R/L}$09-10AE	●	●	10	8	2.5	7	16	120	5	0.5	10	0.4	Yes	2	SB-2545TR	-	FT-8	TP□B0902... TP□H0902... TP□T0902... TP□X0902...
A10L-	STLP$^{R/L}$09-12AE	●	●	12	10	3	9	20	140	6.2	0.9	8							
A12M-	STLP$^{R/L}$09-16AE	●	●	16	12	4	11	24	150	8	0.6	5							
A10L-	STLP$^{R/L}$11-12AE	●	●	12	10	3	9	20	140	6	0.7	10	0.4	Yes	2	SB-3060TR	-	FT-10	TP□B1103... TP□H1103... TP□T1103... TP□X1103...
A12M-	STLP$^{R/L}$11-14AE	●	●	14	12	4	11	24	150	7.2	0.8	7							
A16Q-	STLP$^{R/L}$11-18AE	●	●	18	16	5	15	30	180	9.2	0.7	3.5							
A20R-	STLP$^{R/L}$11-22AE	●	●	22	20		19	36	200	11.2		2							
A20R-	STLP$^{R/L}$16-25AE	●	●	25	20	5	19	36	200	13	0.7	0	0.4	Yes	2	SB-4065TR	FT-15	-	TP□B1603... TP□H1603... TP□T1603...
A25S-	STLP$^{R/L}$16-27AE	●	●	27	25		24	46	250	13.7									

For WP chipbreaker, cutting edge offsets or program corrections are required on **R36** and **R37**.
When using P chipbreaker : Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder.

● : Standard item

S-STLB(P)-A Steel shank bar (Boring / Internal facing)



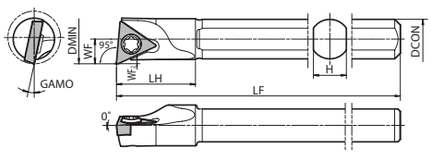


Fig. 1

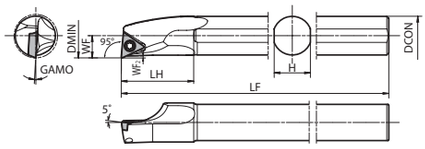


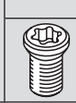
Fig. 2

Max. Overhang Length L/D=~4 | Right-hand shown
Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

F

Boring

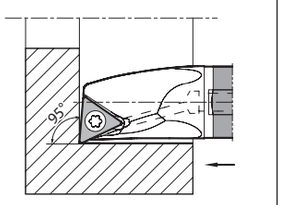
Toolholder dimensions

Description		Availability		Dimension (mm)							GAMO (°)	Standard corner-R(RE)	Coolant hole	Fig.	Spare parts			Applicable inserts
															Screw	Wrench	Wrench	
		R	L	DMIN	DCON	H	LH	LF	WF	WF_2								
S06H-	STLB$^{R/L}$06-08A	●	●	8	6	5	12	100	3.8	0.5	12	0.2	No	1	SB-2035TR		FT-6	TB□T0601..., TB□W0601...
S08X-	STLP$^{R/L}$08-10A	●	●	10	8	7	16	120	5	0.5	10	0.4	No	2	SB-1TR	-	FT-6	TP□B0802..., TP□H0802... TP□T0802...
S08X-	STLP$^{R/L}$09-10A	●	●	10	8	7	16	120	5	0.5	10	0.4	No	2	SB-2545TR	-	FT-8	TP□B0902... TP□H0902... TP□T0902... TP□X0902...
S10L-	STLP$^{R/L}$09-12A	●	●	12	10	9	20	140	6.2	0.9	8							
S12M-	STLP$^{R/L}$09-16A	●	●	16	12	11	24	150	8	0.6	5							
S10L-	STLP$^{R/L}$11-12A	●	●	12	10	9	20	140	6	0.7	10	0.4	No	2	SB-3060TR	-	FT-10	TP□B1103... TP□H1103... TP□T1103... TP□X1103...
S12M-	STLP$^{R/L}$11-14A	●	●	14	12	11	24	150	7.2	0.8	7							
S16Q-	STLP$^{R/L}$11-18A	●	●	18	16	15	30	180	9.2	0.7	3.5							
S20R-	STLP$^{R/L}$11-22A	●	●	22	20	19	36	200	11.2		2							
S25S-	STLP$^{R/L}$16-27A	●	●	27	25	24	46	250	13.7	0.7	0	0.4	No	2	SB-4065TR	FT-15	-	TP□B1603..., TP□H1603... TP□T1603...

For WP chipbreaker, cutting edge offsets or program corrections are required on **R36** and **R37**.
When using P chipbreaker : Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder.

● : Standard item

C/E-STLB(P)-A(N) Carbide shank bar (Boring / Internal facing)



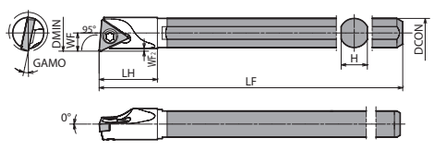


Fig. 1

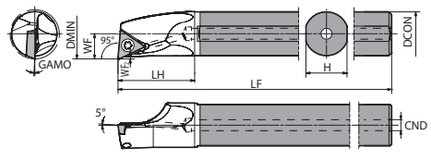


Fig. 2

Max. Overhang Length L/D=~7 | Right-hand shown
Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

F

Boring

Solid

Positive

AD bars

Negative

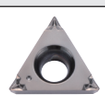
Toolholder dimensions

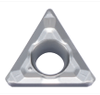
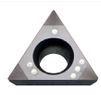
Description		Availability R	Availability L	Dimension (mm) DMIN	DCON	CND	H	LH	LF	WF	WF_2	GAMO (°)	Standard corner-R(RE)	Coolant hole	Fig.	Spare parts: Screw	Spare parts: Wrench	Spare parts: Wrench	Applicable inserts
C06J-	STLB$^{R}_{L}$06-08AN	●	●	8	6	-	5.4	10	110	3.8	0.5	12	0.2	No	1	SB-2035TR	-	FT-6	TB□T0601..., TB□W0601...
E08L-	STLP$^{R}_{L}$08-10AN	●	●	10	8	3	7	14	140	5	0.5	10	0.4	Yes	2	SB-1TR	-	FT-6	TP□B0802..., TP□H0802... TP□T0802...
E08L-	STLP$^{R}_{L}$09-10AN	●	●	10	8	3	7	14	140	5	0.5	10	0.4	Yes	2	SB-2545TR	-	FT-8	TP□B0902... TP□H0902... TP□T0902... TP□X0902...
E10N-	STLP$^{R}_{L}$09-12AN	●	●	12	10	3	9	18	160	6.2	0.9	8							
	STLPR09-12AN2/3	●							105										
	STLPR09-12AN1/2	●							80										
E12Q-	STLP$^{R}_{L}$09-16A	●	●	16	12	4	11	23	180	8	0.6	5							
	STLPR09-16A-2/3	●							120										
	STLPR09-16A-1/2	●							90										
E10N-	STLP$^{R}_{L}$11-12AN	●	●	12	10	3	9	18	160	6	0.7	10	0.4	Yes	2	SB-3060TR	-	FT-10	TP□B1103... TP□H1103... TP□T1103... TP□X1103...
	STLPR11-12AN2/3	●							105										
	STLPR11-12AN1/2	●							80										
E12Q-	STLP$^{R}_{L}$11-14A	●	●	14	12	4	11	23	180	7.2	0.8	7							
	STLPR11-14A-2/3	●							120										
	STLPR11-14A-1/2	●							90										
E16X-	STLP$^{R}_{L}$11-18A	●	●	18	16		15	28	220	9.2	0.7	3.5							
	STLPR11-18A-2/3	●							145										
	STLPR11-18A-1/2	●							110										
E20S-	STLP$^{R}_{L}$11-22A	●	●	22	20	6	19	32	250	11.2		2							
	STLPR11-22A-2/3	●							165										
	STLPR11-22A-1/2	●							125										
E20S-	STLP$^{R}_{L}$16-25A	●	●	25	20	6	19	32	250	13	0.7	0	0.4	Yes	2	SB-4065TR	FT-15	-	TP□B1603... TP□H1603... TP□T1603...
	STLPR16-25A-2/3	●							165										
	STLPR16-25A-1/2	●							125										
E25T-	STLP$^{R}_{L}$16-27A	●	●	27	25		24	38	300	13.7									
	STLPR16-27A-2/3	●							200										

For WP chipbreaker, cutting edge offsets or program corrections are required on **R36** and **R37**.
When using P chipbreaker : Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder.

● : Standard item

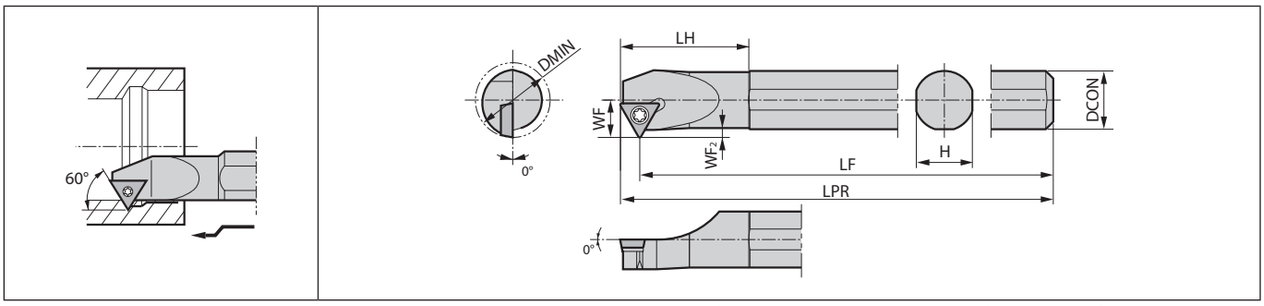
Applicable inserts (A/S-STLB(P)-AE / S-STLB(P)-A / C/E-STLB(P)-A(N))

Applications	Minute ap	Finishing	Finishing	Finishing	Finishing	Finishing	Finishing	Finishing - Medium
Insert								
Chipbreaker type	CF	PF	WP	R/L-WP	PP	GP	DP	HQ
Page	B84, B88	B84, B88	B88	B88	B88	B89	B84	B89
Applications	Finishing	Finishing	Finishing	Medium	Low feed	Low carbon steel	Low carbon steel	Cast iron
Insert								
Chipbreaker type	R/L	R/L-FSF	R/L-P	R/L-H	R/L-USF	XP	XQ	No CB
Page	B84, B90, B91	B92	B92	B93	B94	B89	B89	B84, B94

Applications	Non-Ferrous Metals	Non-Ferrous Metals	Non-Ferrous Metals	Hard materials
Insert				
Chipbreaker type	AP	PCD	APD	CBN
Page	B94	C44, C46, C47	C47	C23

Recommended cutting conditions ➡ F152, F153
Applicable sleeves ➡ F148~F151

S-STWP-E Excellent bar (Internal copying)



Max. Overhang Length L/D=~5 | This toolholder is also available for threading. | Right-hand shown
Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

F

Boring

Solid

Positive

AD bars

Negative

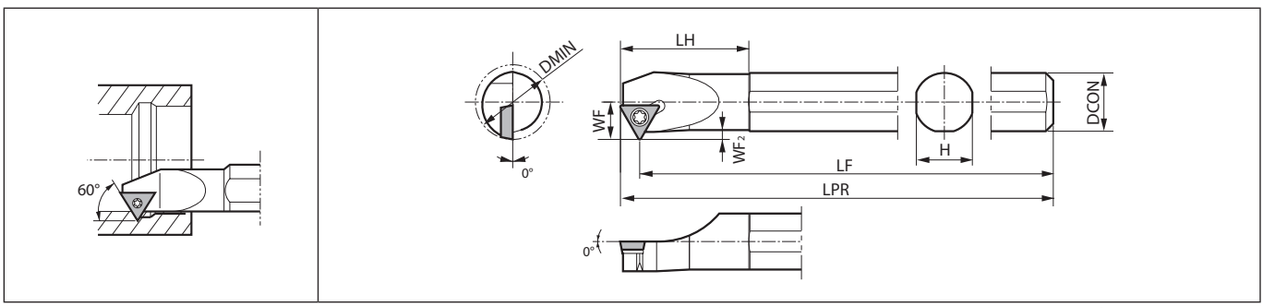
Toolholder dimensions

Description		Availability		Dimension (mm)								GAMO (°)	Standard corner-R(RE)	Coolant hole	Spare parts			Applicable inserts
															Screw	Wrench	Wrench	
		R	L	DMIN	DCON	H	LH	LPR	LF	WF	WF_2							
S10M-	STWP□/L11-12E	●	●	12	10	9.2	23	150	144.5	6	1	0	0.1	No	SB-3STR	-	FT-10	TP□B1102..., TP□H1102...
S12M-	STWP□/L11-16E	●	●	16	12	11	30			8	1.5							TP□B1103... TP□H1103... TP□T1103...
S16R-	STWP□/L11-20E	●	●	20	16	15	35	200	194.5	10	2				SB-3TR			
S20X-	STWP□/L11-25E	●	●	25	20	19	40	220	214.5	12.5	2.5							
S20X-	STWP□/L16-25E	●	●	25	20	19	40	220	212.3	14	4	0	0.8	No	SB-4TR	FT-15	-	TP□B1603..., TP□H1603... TP□T1603...
S25X-	STWP□/L16-32E	●	●	32	25	24	42	270	262.3	16.5								

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

● : Standard item

S-STWP Steel shank bar (Internal copying)

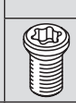


Max. Overhang Length L/D=~3 | This toolholder is also available for threading. | Right-hand shown
Left-hand Insert for Right-hand Toolholder.

F

Boring

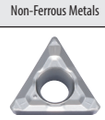
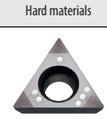
Toolholder dimensions

Description		Availability	Dimension (mm)								GAMO (°)	Standard corner-R(RE)	Coolant hole	Spare parts		Applicable inserts
														Screw	Wrench	
		R	DMIN	DCON	H	LH	LPR	LF	WF	WF2						
S10M-	STWPR11-12	●	12	10	9.2	23	150	144.5	6	1	0	0.1	No	SB-3STR	FT-10	TP□B1102..., TP□H1102...
S12M-	STWPR11-16	●	16	12	11	30			8	1.5						TP□B1103... TP□H1103... TP□T1103...
S16Q-	STWPR11-20	●	20	16	15	35	180	174.5	10	2				SB-3TR		
S20R-	STWPR11-25	●	25	20	19	40	200	194.5	12.5	2.5						

WP chipbreaker (TPMX-WP : Wiper insert) is not applicable to S-STWP Toolholders.

Applicable inserts (S-STWP-E / S-STWP)

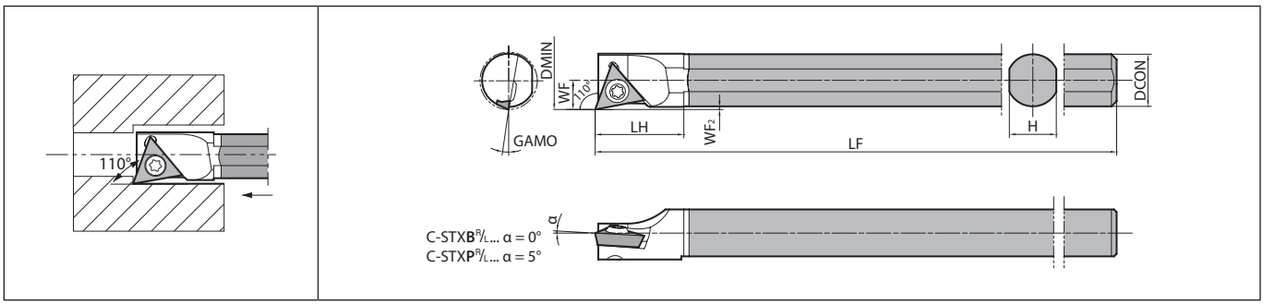
Applications	Finishing	Finishing	Finishing - Medium	Finishing	Finishing	Medium	Low feed	Low carbon steel
Insert								
Chipbreaker type	PP	GP	HQ	R/L	R/L-FSF	R/L-H	R/L-USF	XP
Page	B88	B89	B89	B90, B91	B92	B93	B94	B89

Applications	Low carbon steel	Cast iron	Non-Ferrous Metals	Non-Ferrous Metals	Non-Ferrous Metals	Hard materials
Insert						
Chipbreaker type	XQ	No CB	AP	PCD	APD	CBN
Page	B89	B94	B94	C46, C47	C47	C23

Recommended cutting conditions ➡ F152, F153
Applicable sleeves ➡ F149~F151

● : Standard item

C-STXB(P) Carbide shank bar (Boring / Internal facing)



Max. Overhang Length L/D=~7 | Right-hand shown
Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

F

Boring

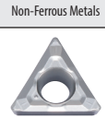
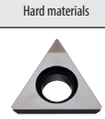
Solid
Positive
AD bars
Negative

Toolholder dimensions

Description		Availability		Dimension (mm)							GAMO (°)	Standard corner-R(RE)	Coolant hole	Spare parts		Applicable inserts
		R	L	DMIN	DCON	H	LH	LF	WF	WF2				Screw	Wrench	
C06J-	STXBR/L06-075	●	●	7.5	6	5.4	11	110	3.75	0.5	10	0.03	No	SB-1STR	FT-6	TB□T0601..., TB□W0601...
C08X-	STXPR/L08-09	●	●	9	8	7	14	143	4.6	0.5	10	0.03	No	SB-1TR	FT-6	TP□B0802..., TP□H0802..., TP□T0802...
C10X-	STXPR/L09-11	●	●	11	10	9	17	164	5.6	0.5	10	0.03	No	SB-2TR	FT-8	TP□B0902..., TP□H0902..., TP□T0902...

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

Applicable inserts

Applications	Minute ap	Finishing	Finishing	Finishing	Finishing	Finishing - Medium	Finishing	Finishing
Insert								
Chipbreaker type	**CF**	**PF**	**PP**	**GP**	**DP**	**HQ**	**R/L**	**R/L-FSF**
Page	**B84, B88**	**B84, B88**	**B88**	**B89**	**B84**	**B89**	**B84, B90, B91**	**B92**
Applications	Medium	Low feed	Low carbon steel	Cast iron	Non-Ferrous Metals	Non-Ferrous Metals	Hard materials	
Insert								
Chipbreaker type	**R/L-H**	**R/L-USF**	**XP**	**No CB**	**AP**	**PCD**	**CBN**	
Page	**B93**	**B94**	**B89**	**B84, B94**	**B94**	**C44, C46, C47**	**C23**	

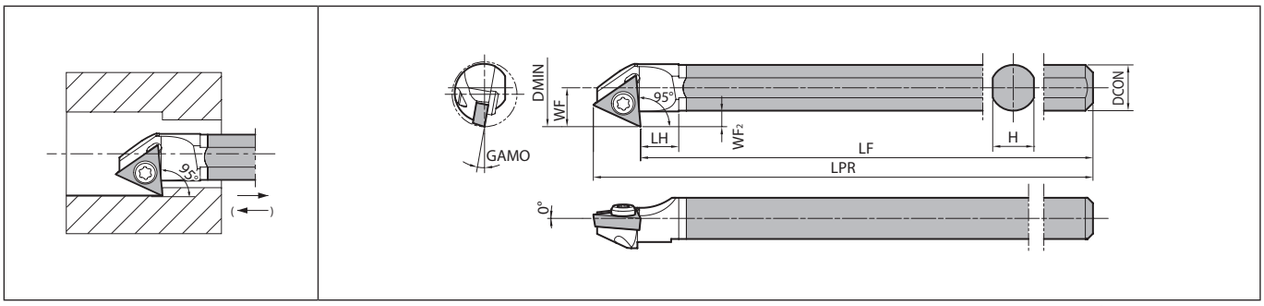
Recommended cutting conditions **F152, F153**
Applicable sleeves **F148, F149, F151**

C-STXP(B) Boring Bar Cutting Conditions (Workpiece Material : SCM435)

Toolholder Description	Insert Description (Grades)	Vc (m/min)	ap (mm)	f (mm/rev)	Coolant
C06J-STXBR/L06-075	TBGT0601003L/R (PR930)	30~100	0.02~0.1	0.02~0.04	Yes
C08X-STXPR/L08-09	TPGH080201L/R (PR930)	30~100	0.05~0.15	0.03~0.08	Yes
C10X-STXPR/L09-11	TPGH090201L/R (PR930)	30~100	0.05~0.15	0.03~0.08	Yes

● : Standard item

C-STZB Carbide shank bar (Back boring)



Max. Overhang Length L/D=~7 | Right-hand shown
Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder.
When using Right-hand Toolholder, use Right-hand insert if machining from back to front in this direction (→).
Use Left-hand insert if machining from front to back in this direction (←).

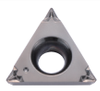
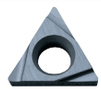
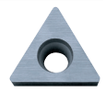
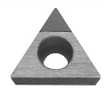
F

Boring

Toolholder dimensions

Description	Availability		Dimension (mm)								GAMO (°)	Standard corner-R(RE)	Coolant hole	Spare parts		Applicable inserts
	R	L	DMIN	DCON	H	LH	LPR	LF	WF	WF_2				Screw	Wrench	
C06J- STZB[R/L].06-085	●	●	8.5	6	5.4	5	110	104.3	5.1	1.8	10	0.03	No	SB-1STR	FT-6	TB□T0601..., TB□W0601...

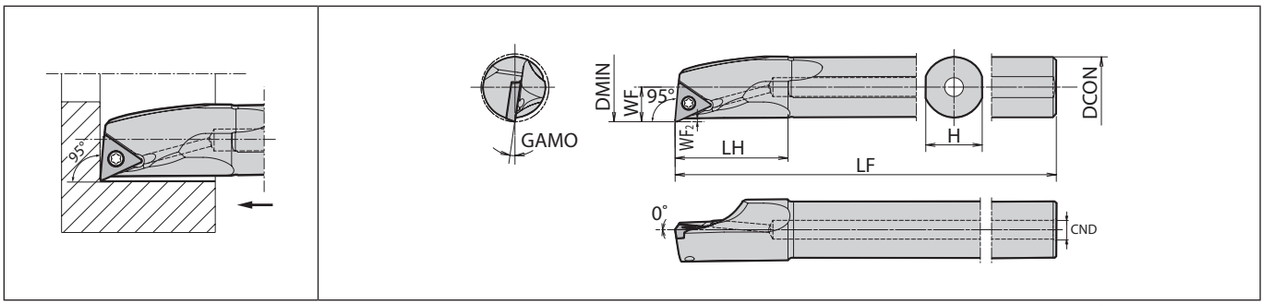
Applicable inserts

Applications	Minute ap	Finishing	Finishing	Finishing	Cast iron	Non-Ferrous Metals
Insert						
Chipbreaker type	CF	PF	DP	R/L	No CB	PCD
Page	B84	B84	B84	B84	B84	C44

Recommended cutting conditions F152, F153
Applicable sleeves F148, F151

● : Standard item

A-STLC-AE Excellent bar (Boring / Internal facing)



Max. Overhang Length L/D=~5.5 | 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		Availability		Dimension (mm)								GAMO (°)	Standard corner-R(RE)	Coolant hole	Spare parts		Applicable inserts
															Screw	Wrench	
		R	L	DMIN	DCON	CND	H	LH	LF	WF	WF_2						
A08X-	STLC□/L09-10AE	●	●	10	8	2.5	7	16	120	5	0.5	14	0.4	Yes	SB-2250TR	FT-7	TCMT0902... TCMX0902...
A10L-	STLC□/L09-12AE	●	●	12	10	3	9	20	140	6.2	0.9	12					
A10L-	STLC□/L11-12AE	●	●	12	10	3	9	20	140	6.2	0.9	12	0.4	Yes	SB-2560TR	FT-8	TCMT1102... TCMX1102...
A12M-	STLC□/L11-14AE	●	●	14	12	4	11	24	150	7.2	0.7	10					
A16Q-	STLC□/L11-18AE	●	●	18	16	5	15	30	180	9.2		8					
A20R-	STLC□/L11-22AE	●	●	22	20		19	36	200	11.2		6					

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

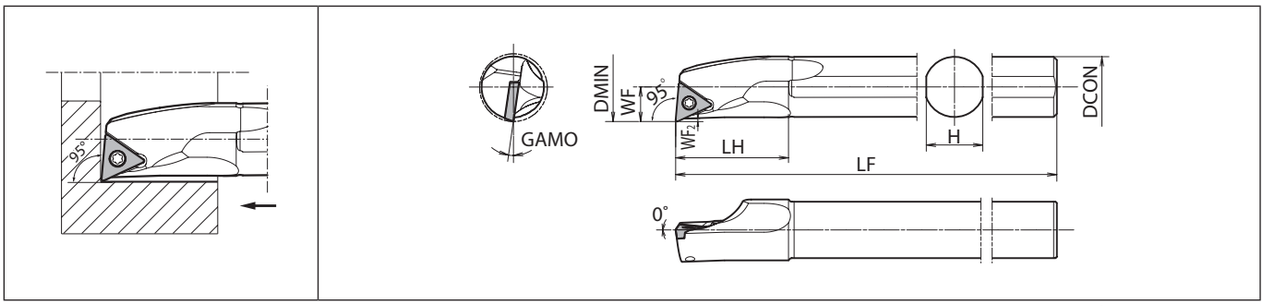
Applicable inserts

Applications	Finishing	Finishing - Medium
Insert		
Chipbreaker type	**WP**	**HQ**
Page	**B85**	**B85**

Recommended cutting conditions ➡ **F152, F153**
Applicable sleeves ➡ **F148~F151**

● : Standard item

S-STLC-A Steel shank 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.

F

Boring

Toolholder dimensions

Description		Availability		Dimension (mm)							GAMO (°)	Standard corner-R(RE)	Coolant hole	Spare parts		Applicable inserts
														Screw	Wrench	
		R	L	DMIN	DCON	H	LH	LF	WF	WF_2						
S08X-	STLC$^{R}_{L}$09-10A	●	●	10	8	7	16	120	5	0.5	14	0.4	No	SB-2250TR	FT-7	TCMT0902... TCMX0902...
S10L-	STLC$^{R}_{L}$09-12A	●	●	12	10	9	20	140	6.2	0.9	12					
S10L-	STLC$^{R}_{L}$11-12A	●	●	12	10	9	20	140	6.2	0.9	12	0.4	No	SB-2560TR	FT-8	TCMT1102... TCMX1102...
S12M-	STLC$^{R}_{L}$11-14A	●	●	14	12	11	24	150	7.2		10					
S16Q-	STLC$^{R}_{L}$11-18A	●	●	18	16	15	30	180	9.2	0.7	8					
S20R-	STLC$^{R}_{L}$11-22A	●	●	22	20	19	36	200	11.2		6					

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

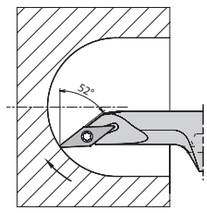
Applicable inserts

Applications	Finishing	Finishing - Medium
Insert		
Chipbreaker type	**WP**	**HQ**
Page	**B85**	**B85**

Recommended cutting conditions ➔ **F152, F153**
Applicable sleeves ➔ **F148~F151**

● : Standard item

A-SVJP(C)(B)-AE Excellent bar (Spherical machining / Internal facing / Internal copying)



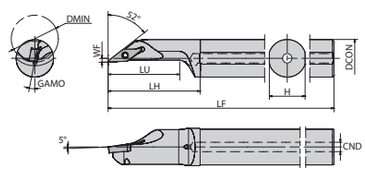


Fig. 1

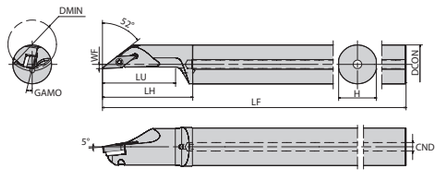


Fig. 2

Max. Overhang Length L/D=~5.5 | Right-hand shown
Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

F

Boring

Solid

Positive

AD bars

Negative

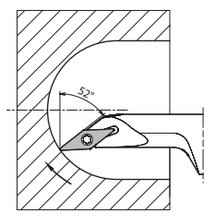
Toolholder dimensions

Description		Availability		Dimension (mm)								GAMO (°)	Standard corner-R(RE)	Coolant hole	Fig.	Spare parts						Applicable inserts
																Screw	Wrench	Wrench	Shim	Shim screw	Wrench	
		R	L	DMIN	DCON	CND	H	LH	LF	LU	WF											
A12M-	SVJP$^{R}_{L}$08-16AE	●	●	16	12	4	11	33	150	26	2	5	0.2	Yes	1	SB-2050TR	-	FT-6	-	-	-	VP□T0802...
A12M-	SVJC$^{R}_{L}$08-16AE	●	●	16	12	4	11	33	150	26	2	5	0.4	Yes	1	SB-2050TR	-	FT-6	-	-	-	VC□T0802... VC□W0802...
A16Q-	SVJC$^{R}_{L}$08-20AE	●	●	20	16		15	43	180	36												
A20R-	SVJB$^{R}_{L}$11-25AE	●	●	25	20	5	19	48	200	37.5	2	5	0.4	Yes	1	SB-2570TR	-	FT-8	-	-	-	VB□T1103... VB□W1103...
A25S-	SVJB$^{R}_{L}$11-30AE	●	●	30	25	7	24	58	250	45	3.5											
A32S-	SVJB$^{R}_{L}$16-40AE	●	●	40	32	7	31	74	250	60	3.5	8	0.4	Yes	2	SB-40125TRN	FT-15	-	SVN-32N (SVN-32S*)	SS-4N	LW-4	VB□T1604... VB□W1604... VC□T1604...
A40T-	SVJB$^{R}_{L}$16-50AE	●	●	50	40	9	39	91	300	75	4.5	7										

Use of VB□T1103..-Y / VB□T1604..-Y with A-SVJB-AE is not recommended.
When using inserts whose corner-R(RE) is 0.2 or 0.4mm, shim (SVN-32S) is recommended (sold separately).

● : Standard item

S-SVJP(C)(B)-A Steel shank bar (Spherical machining / Internal facing / Internal copying)



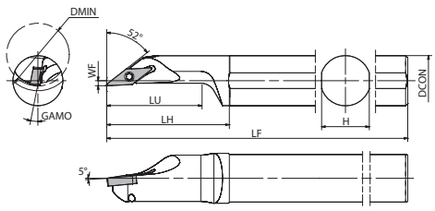


Fig. 1

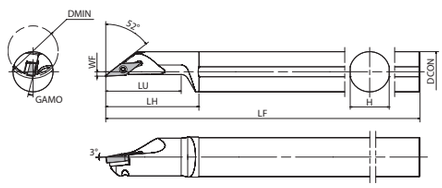


Fig. 2

Max. Overhang Length L/D=~4 | Right-hand shown
Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

F

Boring

Toolholder dimensions

Description		Availability		Dimension (mm)							GAMO (°)	Standard corner-R(RE)	Coolant hole	Fig.	Spare parts						Applicable inserts
															Screw	Wrench	Wrench	Shim	Shim screw	Wrench	
		R	L	DMIN	DCON	H	LH	LF	LU	WF											
S12M-	SVJP$^{R}_{L}$08-16A	●	●	16	12	11	33	150	26	2	5	0.2	No	1	SB-2050TR	-	FT-6	-	-	-	VP□T0802...
S12M-	SVJC$^{R}_{L}$08-16A	●	●	16	12	11	33	150	26	2	5	0.4	No	1	SB-2050TR	-	FT-6	-	-	-	VC□T0802... VC□W0802...
S16Q-	SVJC$^{R}_{L}$08-20A	●	●	20	16	15	43	180	36												
S20R-	SVJB$^{R}_{L}$11-25A	●	●	25	20	19	48	200	37.5	2	5	0.4	No	1	SB-2570TR	-	FT-8	-	-	-	VB□T1103... VB□W1103...
S25S-	SVJB$^{R}_{L}$11-30A	●	●	30	25	24	58	250	45	3.5											
S32S-	SVJB$^{R}_{L}$16-40A	●	●	40	32	31	74	250	60	3.5	8	0.4	No	2	SB-40125TRN	FT-15	-	SVN-32N (SVN-32S*)	SS-4N	LW-4	VB□T1604... VB□W1604... VC□T1604...
S40T-	SVJB$^{R}_{L}$16-50A	●	●	50	40	39	91	300	75	4.5	7										

Use of VB□T1103...-Y / VB□T1604...-Y with S-SVJB-A is not recommended.
When using inserts whose corner-R(RE) is 0.2 or 0.4mm, shim (SVN-32S) is recommended (sold separately).

● : Standard item

Applicable inserts (A-SVJP(C)(B)-AE / S-SVJP(C)(B)-A)

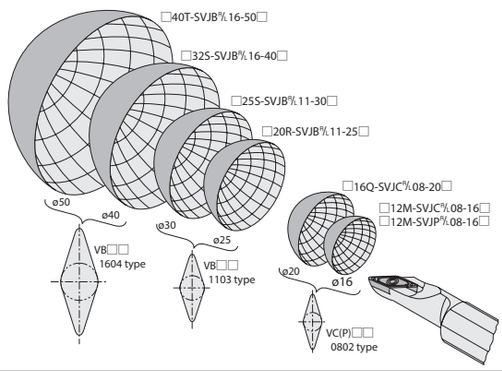
Applications	Finishing	Finishing	Finishing	Finishing	Finishing - Medium	Finishing	Finishing	Low feed
Insert								
Chipbreaker type	CK	VF	PP	GP	HQ	R/L-F	R/L-FSF	R/L-U
Page	B102	B97, B100	B97, B100	B97	B97, B100	B98, B103	B98, B103	B104

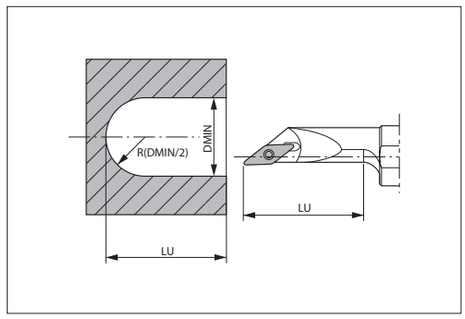
Applications	Low feed	Finishing - Medium	Non-Ferrous Metals	Hard materials
Insert				
Chipbreaker type	R/L-USF	R/L-Y	PCD	CBN
Page	B104	B99	C49, C50	C26, C27

Recommended cutting conditions ➡ **F152, F153**
Applicable sleeves ➡ **F149~F151**

Application of □-SVJP(C)(B)-□ / A-SZJB-AE

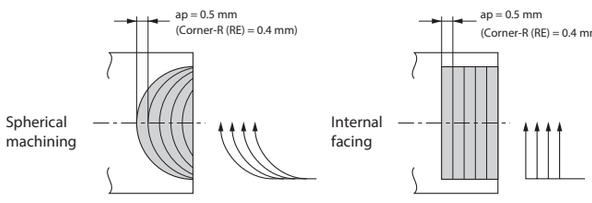
1. Application Range





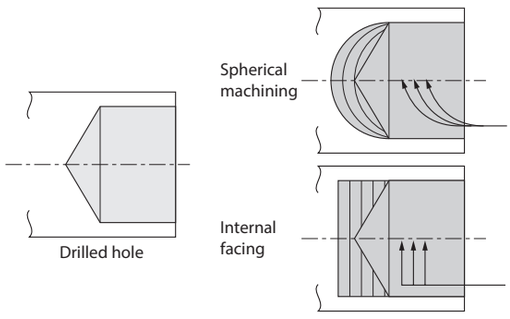
2. Application

Case with no existing hole



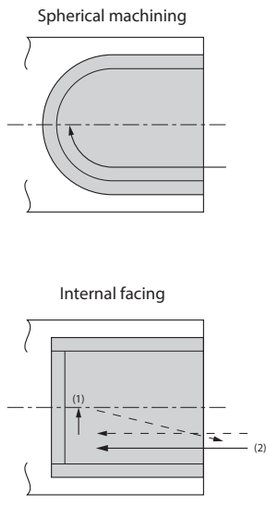
(Note) f shall be 0.05 mm/rev or less at internal facing.

Case with drilled hole



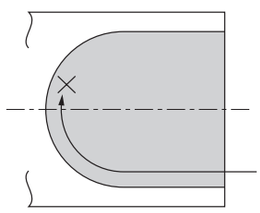
(Note) f shall be 0.05mm/rev or less at internal facing.

Finishing

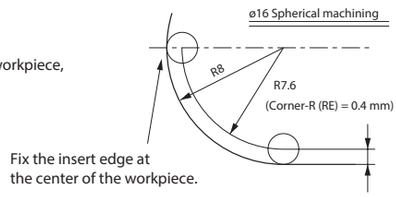


Machining process
(1) Finish the internal face first.
(2) Next, finish the internal diameter.

3. Caution

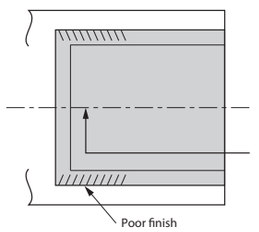


When machining past the center of the workpiece, insert may break.



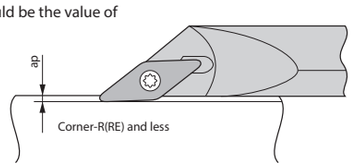
Fix the insert edge at the center of the workpiece.

Adjust the machining program to radius minus the value of corner-R (RE).



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

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

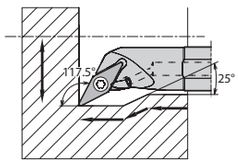


[Burrs may occur, if ap is Corner-R (RE) and more]

F

Boring

A-SVPC(B)-AE Excellent bar (Internal copying / Undercutting)



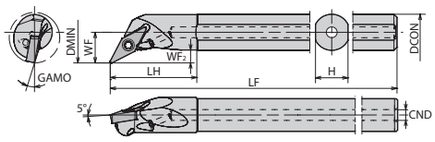


Fig. 1

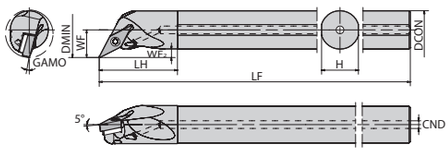


Fig. 2

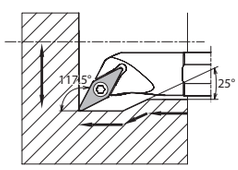
Max. Overhang Length L/D=~5.5 | Right-hand shown
Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

Toolholder dimensions

Description		Availability R	Availability L	Dimension (mm) DMIN	DCON	CND	H	LH	LF	WF	WF2	GAMO (°)	Standard corner-R(RE)	Coolant hole	Fig.	Spare parts: Screw	Wrench	Wrench	Shim	Shim screw	Wrench	Applicable inserts
A10L-	SVPC□/L08-14AE	●	●	14	10	3	9	24	140	8.5	3	8	0.4	Yes	1	SB-2050TR	-	FT-6	-	-	-	VC□T0802... VC□W0802...
A12M-	SVPB□/L11-18AE	●	●	18	12	4	11	29	150	11	4.5	8										
A16Q-	SVPB□/L11-22AE	●	●	22	16	5	15	35	180	13.5	5	5	0.4	Yes	1	SB-2570TR	-	FT-8	-	-	-	VB□T1103... VB□W1103...
A20R-	SVPB□/L11-26AE	●	●	26	20		19	41	200	15.5												
A25S-	SVPB□/L16-31AE	●	●	31	25	5	24	51	250	18	5	13	0.4	Yes	2	SB-40125TRN	FT-15	-	SVN-32N (SVN-32S*)	SS-4N	LW-4	VB□T1604... VB□W1604... VC□T1604...
A32S-	SVPB□/L16-40AE	●	●	40	32		31	54		23	6.5	9										

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

S-SVPC(B)-A Steel shank bar (Internal copying / Undercutting)



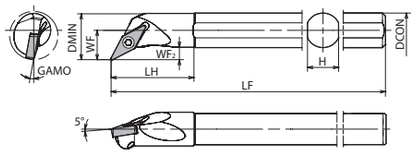


Fig. 1

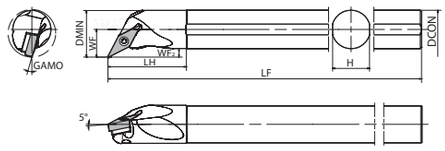


Fig. 2

Max. Overhang Length L/D=~4 | Right-hand shown
Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

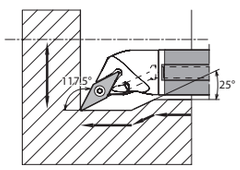
Toolholder dimensions

Description		Availability R	Availability L	Dimension (mm) DMIN	DCON	H	LH	LF	WF	WF2	GAMO (°)	Standard corner-R(RE)	Coolant hole		Spare parts: Screw	Wrench	Wrench	Shim	Shim screw	Wrench	Applicable inserts
S10L-	SVPC□/L08-14A	●	●	14	10	9	24	140	8.5	3	8	0.4	No	1	SB-2050TR	-	FT-6	-	-	-	VC□T0802..., VC□W0802...
S12M-	SVPB□/L11-18A	●	●	18	12	11	29	150	11	4.5	8										
S16Q-	SVPB□/L11-22A	●	●	22	16	15	35	180	13.5	5	5	0.4	No	1	SB-2570TR	-	FT-8	-	-	-	VB□T1103... VB□W1103...
S20R-	SVPB□/L11-26A	●	●	26	20	19	41	200	15.5												
S25S-	SVPB□/L16-31A	●	●	31	25	24	51	250	18	5	13	0.4	No	2	SB-40125TRN	FT-15	-	SVN-32N (SVN-32S*)	SS-4N	LW-4	VB□T1604..., VB□W1604... VC□T1604...
S32S-	SVPB□/L16-40A	●	●	40	32	31	54		23	6.5	9										

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

● : Standard item

E-SVPC(B)-A Carbide shank bar (Internal copying / Undercutting)



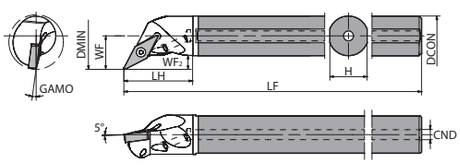


Fig. 1

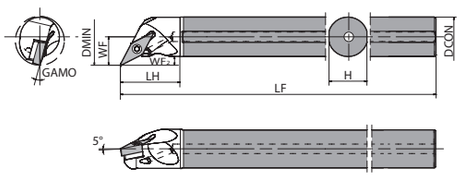


Fig. 2

Max. Overhang Length L/D=~7 | Right-hand shown | Left-hand Insert for Right-hand Toolholder.

Toolholder dimensions

Description		Availability	Dimension (mm)								GAMO (°)	Standard corner-R(RE)	Coolant hole	Fig.	Spare parts						Applicable inserts
															Screw	Wrench	Wrench	Shim	Shim screw	Wrench	
		R	DMIN	DCON	CND	H	LH	LF	WF	WF2											
E10N-	SVPCR08-14A	●	14	10	3	9	20	160	8.5	3	8	0.4	Yes	1	SB-2050TR	-	FT-6	-	-	-	VC□T0802... VC□W0802...
E12Q-	SVPBR11-18A	●	18	12	4	11	23	180	11	4.5	8	0.4	Yes	1	SB-2570TR	-	FT-8	-	-	-	VB□T1103... VB□W1103...
E16X-	SVPBR11-22A	●	22	16		15	28	220	13.5	5	5										
E20S-	SVPBR11-26A	●	26	20	6	19	32	250	15.5												
E25T-	SVPBR16-31A	●	31	25	6	24	38	300	18	5	13	0.4	Yes	2	SB-40125TRN	FT-15	-	SVN-32N (SVN-32S*)	SS-4N	LW-4	VB□T1604... VB□W1604... VC□T1604...

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

Applicable inserts (A-SVPC(B)-AE / S-SVPC(B)-A / E-SVPC(B)-A)

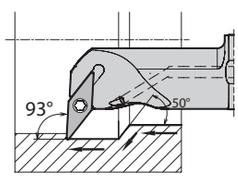
Applications	Finishing	Finishing	Finishing	Finishing - Medium	Finishing	Finishing	Finishing - Medium	Non-Ferrous Metals
Insert								
Chipbreaker type	VF	PP	GP	HQ	R/L-F	R/L-FSF	R/L-Y	PCD
Page	B97, B100	B97, B100	B97	B97, B100	B98	B98	B99	C49, C50

Applications	Hard materials
Insert	
Chipbreaker type	CBN
Page	C26, C27

Recommended cutting conditions F152, F153
Applicable sleeves F149~F151

● : Standard item

A-SVUC(B)-AE Excellent bar (Internal copying)



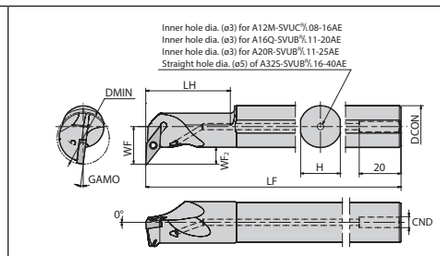


Fig. 1

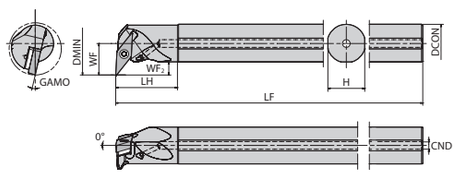


Fig. 2

Max. Overhang Length L/D=~5.5 | Right-hand shown
Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

F

Boring

Solid

Positive

AD bars

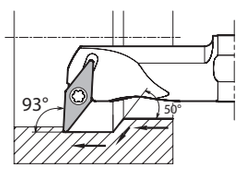
Negative

Toolholder dimensions

Description		Availability		Dimension (mm)								GAMO (°)	Standard corner-R(RE)	Coolant hole	Fig.	Spare parts						Applicable inserts
																Screw	Wrench	Wrench	Shim	Shim screw	Wrench	
		R	L	DMIN	DCON	CND	H	LH	LF	WF	WF_2											
A12M-	SVUC□.08-16AE	●	●	16	12	4	11	25.5	150	11.5	5.5	8	0.4	Yes	1	SB-2050TR		FT-6				VC□T0802... VC□W0802...
A16Q-	SVUB□.11-20AE	●	●	20	16	5	15	32.5	180	16	8	8	0.4	Yes	1	SB-2570TR	-	FT-8	-	-	-	VB□T1103... VB□W1103...
A20R-	SVUB□.11-25AE	●	●	25	20		19	40.5	200	18		7										
A25S-	SVUB□.16-34AE	●	●	34	25	5	24	40	250	20.5	8.5	13	0.4	Yes	2	SB-40125TRN	FT-15	-	SVN-32N (SVN-32S*)	SS-4N	LW-4	VB□T1604... VB□W1604... VC□T1604...
A32S-	SVUB□.16-40AE	●	●	40	32	5	31	84	250	28	12	9	0.4	Yes	1							

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

S-SVUC(B)-A Steel shank bar (Internal copying)



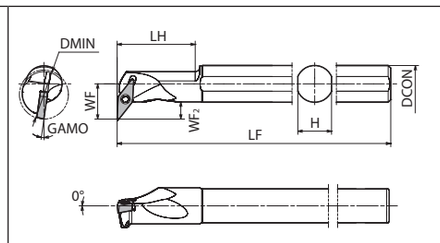


Fig. 1

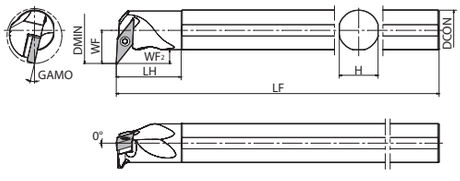


Fig. 2

Max. Overhang Length L/D=~4 | Right-hand shown
Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

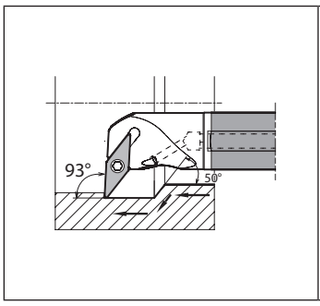
Toolholder dimensions

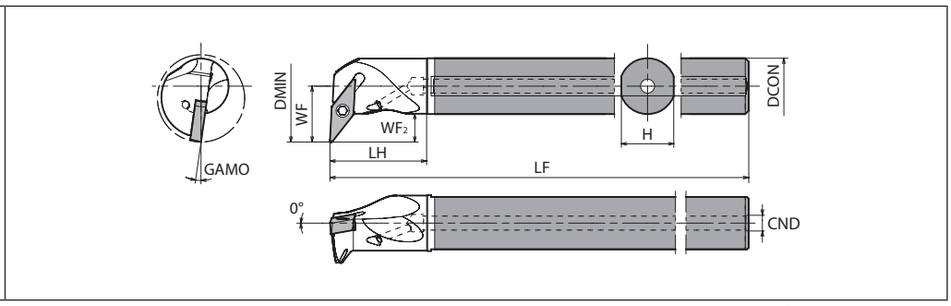
Description		Availability		Dimension (mm)							GAMO (°)	Standard corner-R(RE)	Coolant hole	Fig.	Spare parts						Applicable inserts
															Screw	Wrench	Wrench	Shim	Shim screw	Wrench	
		R	L	DMIN	DCON	H	LH	LF	WF	WF_2											
S12M-	SVUC□.08-16A	●	●	16	12	11	25.5	150	11.5	5.5	8	0.4	No	1	SB-2050TR	-	FT-6	-	-	-	VC□T0802... VC□W0802...
S16Q-	SVUB□.11-20A	●	●	20	16	15	32.5	180	16	8	8	0.4	No	1	SB-2570TR	-	FT-8	-	-	-	VB□T1103... VB□W1103...
S20R-	SVUB□.11-25A	●	●	25	20	19	40.5	200	18		7										
S25S-	SVUB□.16-34A	●	●	34	25	24	40	250	20.5	8.5	13	0.4	No	2	SB-40125TRN	FT-15	-	SVN-32N (SVN-32S*)	SS-4N	LW-4	VB□T1604... VB□W1604... VC□T1604...
S32S-	SVUB□.16-40A	●	●	40	32	31	84	250	28	12	9	0.4	No	1							

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

● : Standard item

E-SVUC(B)-A Carbide shank bar (Internal copying)





Max. Overhang Length L/D=~7 | Right-hand shown
Left-hand Insert for Right-hand Toolholder.

F

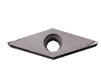
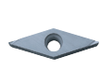
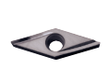
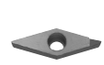
Boring

Toolholder dimensions

Description		Availability	Dimension (mm)								GAMO (°)	Standard corner-R(RE)	Coolant hole	Spare parts						Applicable inserts
														Screw	Wrench	Wrench	Shim	Shim screw	Wrench	
		R	DMIN	DCON	CND	H	LH	LF	WF	WF_2										
E12Q-	SVUCR08-18A	●	18	12	4	11	23	180	11.5	5.5	8	0.4	Yes	SB-2050TR	-	FT-6	-	-	-	VC□T0802... VC□W0802...
E16X-	SVUBR11-25A	●	25	16	4	15	28	220	16	8	8	0.4	Yes	SB-2570TR	-	FT-8	-	-	-	VB□T1103...
E20S-	SVUBR11-29A	●	29	20	6	19	32	250	18		7									VB□W1103...
E25T-	SVUBR16-34A	●	34	25	6	24	38	300	21	8.5	13	0.4	Yes	SB-40125TRN	FT-15	-	SVN-32N (SVN-32S*)	SS-4N	LW-4	VB□T1604... VB□W1604... VB□T1604...

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

Applicable inserts (A-SVUC(B)-AE / S-SVUC(B)-A / E-SVUC(B)-A)

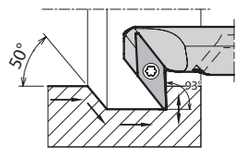
Applications	Finishing	Finishing	Finishing	Finishing - Medium	Finishing	Finishing	Finishing - Medium	Non-Ferrous Metals
Insert								
Chipbreaker type	VF	PP	GP	HQ	R/L-F	R/L-FSF	R/L-Y	PCD
Page	B97, B100	B97, B100	B97	B97, B100	B98	B98	B99	C49, C50

Applications	Hard materials
Insert	
Chipbreaker type	CBN
Page	C26, C27

Recommended cutting conditions F152, F153
Applicable sleeves F149~F151

● : Standard item

A-SVZC(B)-AE Excellent bar (Back boring)



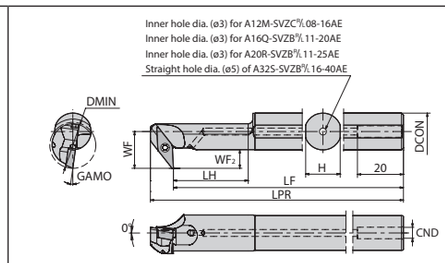


Fig. 1

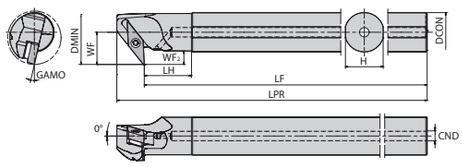


Fig. 2

Max. Overhang Length L/D=~5.5 | Right-hand shown
Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder.

F

Boring

Solid
Positive
AD bars
Negative

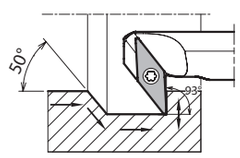
Toolholder dimensions

Description		Availability		Dimension (mm)									GAMO (°)	Standard corner-R(RE)	Coolant hole	Fig.	Spare parts						Applicable inserts
																	Screw	Wrench	Wrench	Shim	Shim screw	Wrench	
		R	L	DMIN	DCON	CND	H	LH	LPR	LF	WF	WF2											
A12M-	SVZC□/L08-16AE	●	●	16	12	4	11	25.5	150	142.5	11.5	5.5	8	0.4	Yes	1	SB-2050TR	-	FT-6	-	-	-	VC□T0802... VC□W0802...
A16Q-	SVZB□/L11-20AE	●	●	20	16	5	15	32.5	180	170	16	8	8	0.4	Yes	1	SB-2570TR	-	FT-8	-	-	-	VB□T1103... VB□W1103...
A20R-	SVZB□/L11-25AE	●	●	25	20		19	40.5	200	190	18		7										
A25S-	SVZB□/L16-34AE	●	●	34	25	5	24	30	250	232.5	20.5	8.5	13	0.4	Yes	2	SB-40125TRN	FT-15	-	SVN-32N (SVN-32S*)	SS-4N	LW-4	VB□T1604... VB□W1604... VC□T1604...
A32S-	SVZB□/L16-40AE	●	●	40	32	5	31	72.5	250	232.5	28	12	9	0.4	Yes	1							

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

● : Standard item

S-SVZC(B)-A Steel shank bar (Back boring)



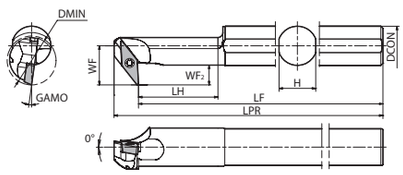


Fig. 1

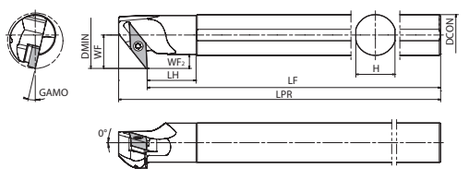


Fig. 2

Max. Overhang Length L/D=~4 | Right-hand shown
Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder.

F

Boring

Toolholder dimensions

Description		Availability		Dimension (mm)								GAMO (°)	Standard corner-R(RE)	Coolant hole	Fig.	Spare parts						Applicable inserts
																Screw	Wrench	Wrench	Shim	Shim screw	Wrench	
		R	L	DMIN	DCON	H	LH	LPR	LF	WF	WF_2											
S12M-	SVZC$^{R/L}$08-16A	●	●	16	12	11	25.5	150	142.5	11.5	5.5	8	0.4	No	1	SB-2050TR	-	FT-6	-	-	-	VC□T0802... VC□W0802...
S16Q-	SVZB$^{R/L}$11-20A	●	●	20	16	15	32.5	180	170	16	8	8	0.4	No	1	SB-2570TR	-	FT-8	-	-	-	VB□T1103...
S20R-	SVZB$^{R/L}$11-25A	●	●	25	20	19	40.5	200	190	18		7										VB□W1103...
S25S-	SVZB$^{R/L}$16-34A	●	●	34	25	24	30	250	232.5	20.5	8.5	13	0.4	No	2	SB-40125TRN	FT-15	-	SVN-32N (SVN-32S*)	SS-4N	LW-4	VB□T1604... VB□W1604...
S32S-	SVZB$^{R/L}$16-40A	●	●	40	32	31	72.5	250	232.5	28	12	9	0.4	No	1							VC□T1604...

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

Applicable inserts (A-SVZC(B)-AE / S-SVZC(B)-A)

Applications	Finishing	Finishing	Finishing	Finishing - Medium	Finishing	Finishing	Finishing - Medium	Non-Ferrous Metals
Insert								
Chipbreaker type	VF	PP	GP	HQ	$^{R/L}$-F	$^{R/L}$-FSF	$^{R/L}$-Y	PCD
Page	B97, B100	B97, B100	B97	B97, B100	B98	B98	B99	C49, C50

Applications	Hard materials
Insert	
Chipbreaker type	CBN
Page	C26, C27

Recommended cutting conditions ➡ F152, F153
Applicable sleeves ➡ F149~F151

● : Standard item

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

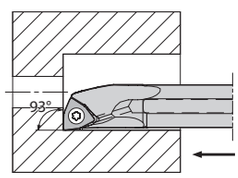


Fig. 1

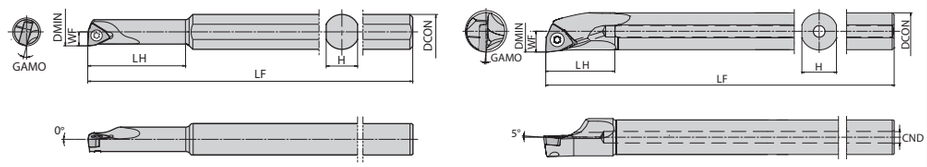


Fig. 2

Max. Overhang Length L/D=~5.5 | Right-hand shown
Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

F

Boring

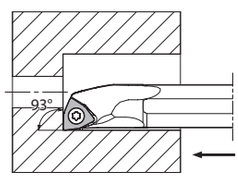
Solid
Positive
AD bars
Negative

Toolholder dimensions

Description		Availability		Dimension (mm)							GAMO (°)	Standard corner-R(RE)	Coolant hole	Fig.	Spare parts			Applicable inserts
															Screw	Wrench	Wrench	
		R	L	DMIN	DCON	CND	H	LH	LF	WF								
S10H-	SWUB$^{R}_{L}$06-06AE	●	●	6	10	-	9	21	100	3	15	0.2	No	1	SB-2035TR	-	FT-6	WB□T0601... WB□W0601...
	SWUB$^{R}_{L}$06-07AE	●	●	7				25		3.5	13							
S10H-	SWUB$^{R}_{L}$08-08AE	●	●	8	10	-	9	28	100	4	15	0.2	No	1	SB-2035TR	-	FT-6	WB□T0802... WB□W0802...
A08X-	SWUB$^{R}_{L}$08-10AE	●	●	10	8	2.5	7	16	120	5	13	0.2	Yes	2	SB-2050TR	-	FT-6	
A10L-	SWUB$^{R}_{L}$08-12AE	●	●	12	10	3	9	20	140	6	10							
A12M-	SWUP$^{R}_{L}$11-14AE	●	●	14	12	4	11	24	150	7	4	0.4	Yes	2	SB-2545TR	-	FT-8	WP□T1102... WP□W1102...
A16Q-	SWUP$^{R}_{L}$11-18AE	●	●	18	16	5	15	30	180	9	1							
A16Q-	SWUP$^{R}_{L}$16-18AE	●	●	18	16	5	15	30	180	9	3.5	0.8	Yes	2	SB-4065TR	FT-15	-	WP□T1603... WP□W1603...
A20R-	SWUP$^{R}_{L}$16-22AE	●	●	22	20		19	36	200	11	2							

● : Standard item

S-SWUB(P)-A Steel shank bar (Boring)



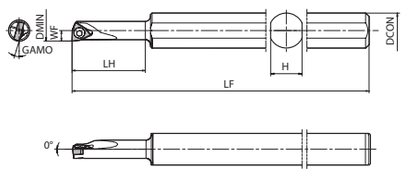


Fig. 1

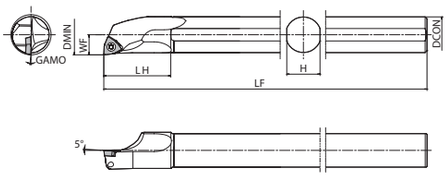


Fig. 2

Max. Overhang Length L/D=~4 | Right-hand shown
Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

F

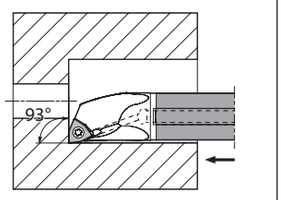
Boring

Toolholder dimensions

Description		Availability		Dimension (mm)						GAMO (°)	Standard corner -R(RE)	Coolant hole	Fig.	Spare parts			Applicable inserts
														Screw	Wrench	Wrench	
		R	L	DMIN	DCON	H	LH	LF	WF								
S10H-	SWUB$^{R}_{L}$06-06A	●	●	6	10	9	21	100	3	15	0.2	No	1	SB-2035TR	-	FT-6	WB□T0601... WB□W0601...
	SWUB$^{R}_{L}$06-07A	●	●	7			25		3.5	13							
S10H-	SWUB$^{R}_{L}$08-08A	●	●	8	10	9	28	100	4	15	0.2	No	1	SB-2035TR	-	FT-6	WB□T0802... WB□W0802...
S08X-	SWUB$^{R}_{L}$08-10A	●	●	10	8	7	16	120	5	13	0.2	No	2	SB-2050TR			
S10L-	SWUB$^{R}_{L}$08-12A	●	●	12	10	9	20	140	6	10							
S12M-	SWUP$^{R}_{L}$11-14A	●	●	14	12	11	24	150	7	4	0.4	No	2	SB-2545TR	-	FT-8	WP□T1102... WP□W1102...
S16Q-	SWUP$^{R}_{L}$11-18A	●	●	18	16	15	30	180	9	1							
S16Q-	SWUP$^{R}_{L}$16-18A	●	●	18	16	15	30	180	9	3.5	0.8	No	2	SB-4065TR	FT-15	-	WP□T1603... WP□W1603...
S20R-	SWUP$^{R}_{L}$16-22A	●	●	22	20	19	36	200	11	2							

● : Standard item

C/E-SWUB(P)-A(N) Carbide shank bar (Boring)



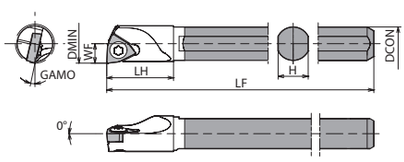


Fig. 1

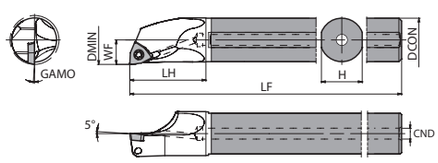


Fig. 2

Max. Overhang Length L/D=~7 | Right-hand shown
Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

F

Boring

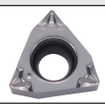
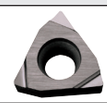
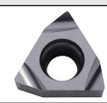
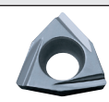
Solid
Positive
AD bars
Negative

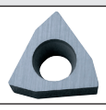
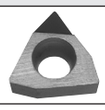
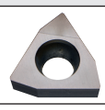
Toolholder dimensions

Description		Availability R	Availability L	DMIN	DCON	CND	H	LH	LF	WF	GAMO (°)	Standard corner-R(RE)	Coolant hole	Fig.	Spare parts: Screw	Spare parts: Wrench	Spare parts: Wrench	Applicable inserts
C05H-	SWUB$^{R}_{L}$06-06AN	●	●	6	5	-	4.4	9	100	3	15	0.2	No	1	SB-2035TR	-	FT-6	WB□T0601... WB□W0601...
C06J-	SWUB$^{R}_{L}$06-07AN	●	●	7	6	-	5.4	10	110	3.5	13	0.2	No	1	SB-2035TR	-	FT-6	WB□T0601... WB□W0601...
C07K-	SWUB$^{R}_{L}$08-08AN	●	●	8	7	-	6.4	11	125	4	15	0.2	No	1	SB-2035TR	-	FT-6	WB□T0802... WB□W0802...
E08L-	SWUB$^{R}_{L}$08-10AN	●	●	10	8	3	7	14	140	5	13	0.2	Yes	2	SB-2050TR	-	FT-6	WB□T0802... WB□W0802...
E10N-	SWUB$^{R}_{L}$08-12AN	●	●	12	10	3	9	18	160	6	10	0.2	Yes	2	SB-2050TR	-	FT-6	WB□T0802... WB□W0802...
	SWUBR08-12AN2/3	●		12	10	3	9	18	105	6	10	0.2	Yes	2	SB-2050TR	-	FT-6	WB□T0802... WB□W0802...
	SWUBR08-12AN1/2	●		12	10	3	9	18	80	6	10	0.2	Yes	2	SB-2050TR	-	FT-6	WB□T0802... WB□W0802...
E12Q-	SWUP$^{R}_{L}$11-14A	●	●	14	12	4	11	23	180	7	4	0.4	Yes	2	SB-2545TR	-	FT-8	WP□T1102... WP□W1102...
	SWUPR11-14A-2/3	●		14	12	4	11	23	120	7	4	0.4	Yes	2	SB-2545TR	-	FT-8	WP□T1102... WP□W1102...
	SWUPR11-14A-1/2	●		14	12	4	11	23	90	7	4	0.4	Yes	2	SB-2545TR	-	FT-8	WP□T1102... WP□W1102...
E16X-	SWUP$^{R}_{L}$11-18A	●	●	18	16	4	15	28	220	9	1	0.4	Yes	2	SB-2545TR	-	FT-8	WP□T1102... WP□W1102...
	SWUPR11-18A-2/3	●		18	16	4	15	28	145	9	1	0.4	Yes	2	SB-2545TR	-	FT-8	WP□T1102... WP□W1102...
	SWUPR11-18A-1/2	●		18	16	4	15	28	110	9	1	0.4	Yes	2	SB-2545TR	-	FT-8	WP□T1102... WP□W1102...
E16X-	SWUP$^{R}_{L}$16-18A	●	●	18	16	4	15	28	220	9	3.5	0.8	Yes	2	SB-4065TR	FT-15	-	WP□T1603... WP□W1603...
	SWUPR16-18A-2/3	●		18	16	4	15	28	145	9	3.5	0.8	Yes	2	SB-4065TR	FT-15	-	WP□T1603... WP□W1603...
	SWUPR16-18A-1/2	●		18	16	4	15	28	110	9	3.5	0.8	Yes	2	SB-4065TR	FT-15	-	WP□T1603... WP□W1603...
E20S-	SWUP$^{R}_{L}$16-22A	●	●	22	20	6	19	32	250	11	2	0.8	Yes	2	SB-4065TR	FT-15	-	WP□T1603... WP□W1603...
	SWUPR16-22A-2/3	●		22	20	6	19	32	165	11	2	0.8	Yes	2	SB-4065TR	FT-15	-	WP□T1603... WP□W1603...
	SWUPR16-22A-1/2	●		22	20	6	19	32	125	11	2	0.8	Yes	2	SB-4065TR	FT-15	-	WP□T1603... WP□W1603...

● : Standard item

Applicable inserts

Applications	Minute ap	Finishing	Finishing	Finishing	Finishing - Medium	Finishing	Finishing	Finishing - Medium
Insert								
Chipbreaker type	R/L-**CF**	R/L-**PF**	**GP**	R/L-**DP**	**HQ**	R/L-**F**	R/L-**P**	R/L-**Y**
Page	**B105**	**B105**	**B107**	**B105**	**B107**	**B105, B106**	**B106**	**B107**

Applications	Cast iron	Non-Ferrous Metals	Hard materials
Insert			
Chipbreaker type	**No CB**	**PCD**	**CBN**
Page	**B107**	**C51**	**C28**

Recommended cutting conditions **F152, F153**

25° Insert Profiling Tools

ZBMT Series

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

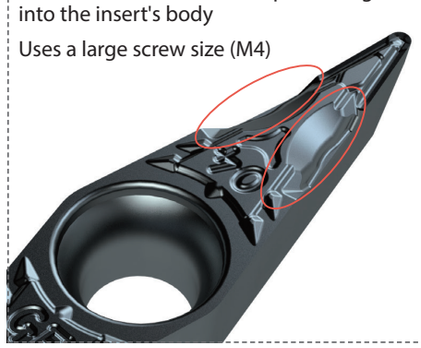
1 Newly Developed Unique-Clamping Mechanism Achieves a Higher Rigidity

Side Lock Mechanism

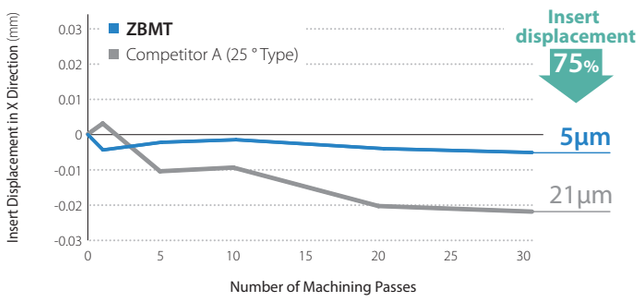
Unique design holds insert at 2 points
Safe even for insert with small tip angle that is difficult to mount

Indentations for screw clamp are designed into the insert's body

Uses a large screw size (M4)



Insert Displacement During Facing Comparison (Internal evaluation)



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

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

Check

By controlling insert displacement,

– Machining precision is stabilized and long tool life is enable

– Reduces defect rate due to sudden dimensional deviation

Provides High Quality and Stable Machining in Various Machining Applications

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

Shaft Copying

Internal Undercutting

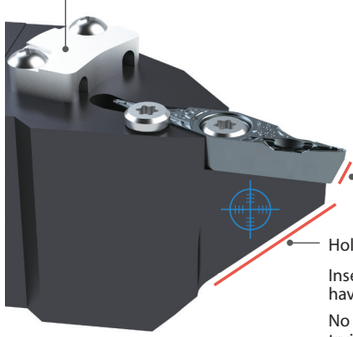
End Face Tapering

CG images

2 Unique Holder Design to Meet Customers' Needs

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

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



Unique Double Coolant Hole Design

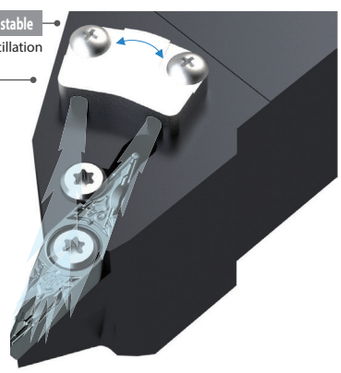
Supplies coolant directly to the cutting edge and provides improved chip evacuation and long tool life (Coolant discharge direction: Fine adjustment possible)

*Though coolant stream hits side clamp screw, machining performance is not affected

*Pressure resistance: ~ 3 MPa

Fine Tuned and Adjustable

± 4 ° Adjustable Oscillation



Easy to use for Facing

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

Holder: Tapered shape

Inserts and toolholders have a unique end shape

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

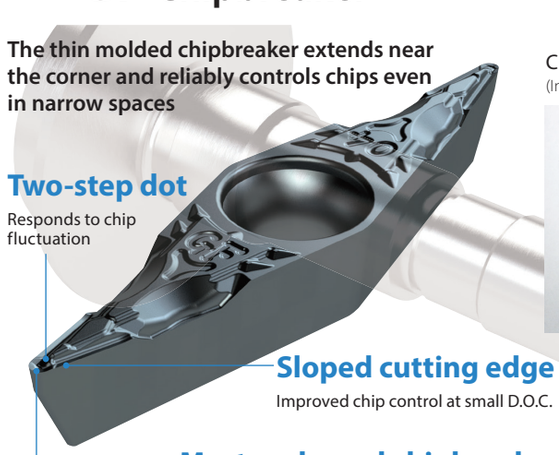
Effective for facing applications

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

GF Chipbreaker

Solving chip control issues leads to high-quality surface finishes

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



Two-step dot

Responds to chip fluctuation

Sloped cutting edge

Improved chip control at small D.O.C.

Mortar-shaped chipbreaker

Low resistance and excellent chip control even in ductile workpieces

Chip control comparison

(Internal evaluation)

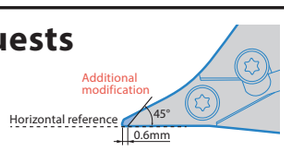
GF Chipbreaker

Competitor A (25 ° Type)

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

15° Inserts are also available upon customer requests

To avoid holder interference, additional modifications is required as shown in the figure on the right (Details: **P8**). Also, as shown in the figure below, special order for holders may be required depending on machining application.

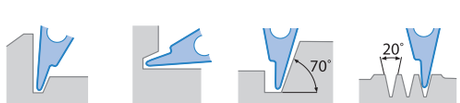


Examples

When using the toolholder in reverse mounting position

When using the toolholder in normal mounting position

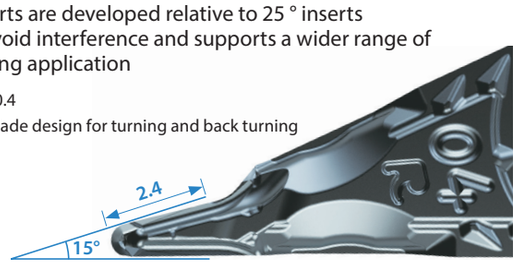
* Holder: Special order specification



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

Corner-R 0.4

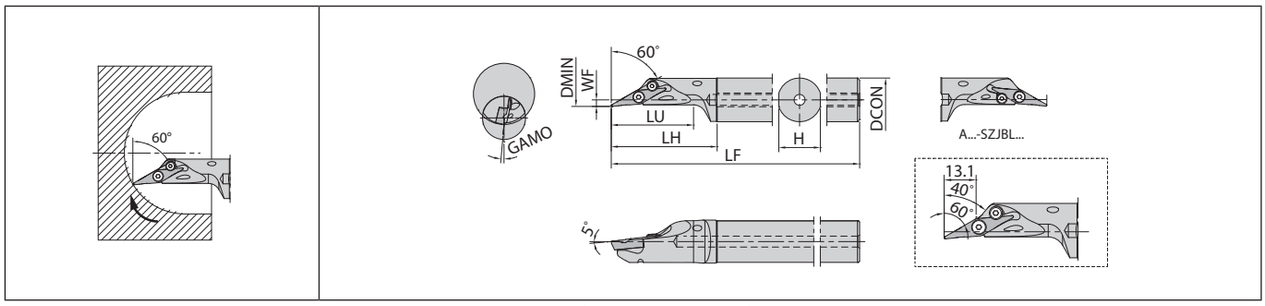
Double-blade design for turning and back turning



F

Boring

A-SZJB-AE Excellent bar (Spherical machining / Internal facing / Internal copying)



Max. Overhang Length L/D=~5.5 | Right-hand shown | ZBMT13T304R-GF-15D is applicable to Right-hand Toolholder.

Toolholder dimensions

Description		Availability R	Availability L	Dimension (mm) DMIN	DCON	CND	H	LH	LF	LU	WF	GAMO (°)	Standard corner-R(RE)	Coolant hole	Spare parts: Screw	Spare parts: Wrench	Applicable inserts
A20R-	SZJB$^{R/L}$13-28AE	●	●	28	20	5	19	48	200	37.5	3	5	0.4	Yes	SB-3079TR	FT-8	ZBMT13T3...
A25S-	SZJB$^{R/L}$13-30AE	●	●	30	25		24	58	250	47	3.5						
A32S-	SZJB$^{R/L}$13-40AE	●	●	40	32		31	72		61.5							

For application of A-SZJB-AE, please refer to **F93**.

Applicable inserts

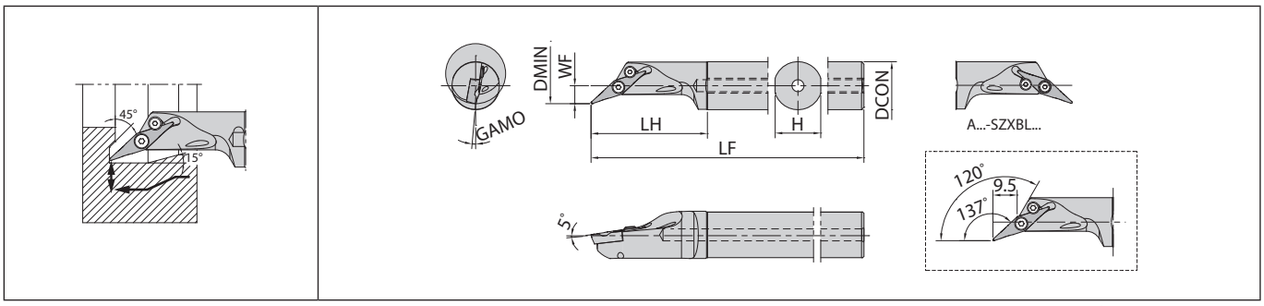
Applications	Finishing	Finishing
Insert		
Chipbreaker type	**GF**	**R-GF-15D**
Page	**B108**	**B108**

R-GF-15D inserts are only for the right-hand toolholders of A-SZJB-AE.

Recommended cutting conditions ➡ **F152, F153**
Applicable sleeves ➡ **F150**

● : Standard item

A-SZXB-AE Excellent bar (Internal facing / Internal copying / Undercutting)



Max. Overhang Length L/D=~5.5 | Right-hand shown

F

Boring

Toolholder dimensions

Description		Availability		Dimension (mm)								GAMO (°)	Standard corner-R(RE)	Coolant hole	Spare parts		Applicable inserts
		R	L	DMIN	DCON	CND	H	LH	LF	LU	WF				Screw	Wrench	
A20R-	SZXB$^{R}_{L}$13-25AE	●	●	25	20		19	48	200	37.5	7.5						
A25S-	SZXB$^{R}_{L}$13-30AE	●	●	30	25	5	24	58	250	45.2	7	5	0.4	Yes	SB-3079TR	FT-8	ZBMT13T3...
A32S-	SZXB$^{R}_{L}$13-40AE	●	●	40	32		31	74		60.2							

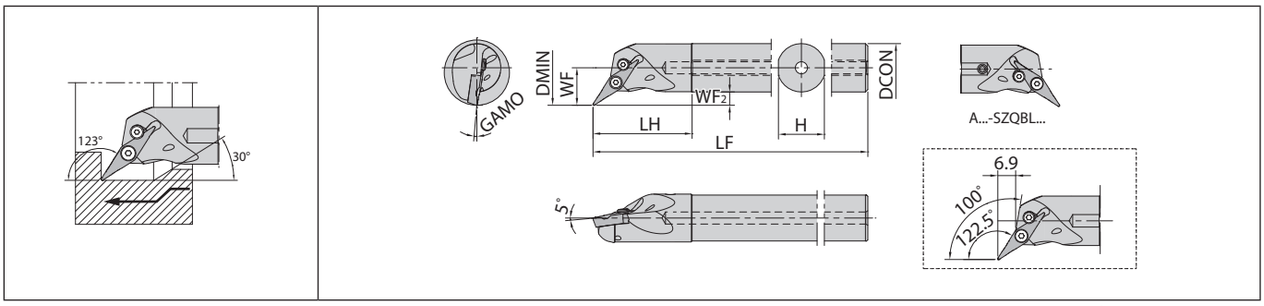
Applicable inserts

Applications	Finishing
Insert	
Chipbreaker type	GF
Page	B108

Recommended cutting conditions ➡ F152, F153
Applicable sleeves ➡ F150

● : Standard item

A-SZQB-AE Excellent bar (Internal copying / Undercutting)



Max. Overhang Length L/D=~5.5 | Right-hand shown

Toolholder dimensions

Description	Availability R	Availability L	DMIN	DCON	CND	H	LH	LF	WF	WF2	GAMO (°)	Standard corner-R(RE)	Coolant hole	Spare parts: Screw	Spare parts: Wrench	Applicable inserts
A20R- SZQB□/□13-27AE	●	●	27	20	5	19	41	200	15.5	5.5	5	0.4	Yes	SB-3079TR	FT-8	ZBMT13T3...
A25S- SZQB□/□13-32AE	●	●	32	25		24	51	250	18							
A32S- SZQB□/□13-40AE	●	●	40	32		31	54		22.5	6.5						

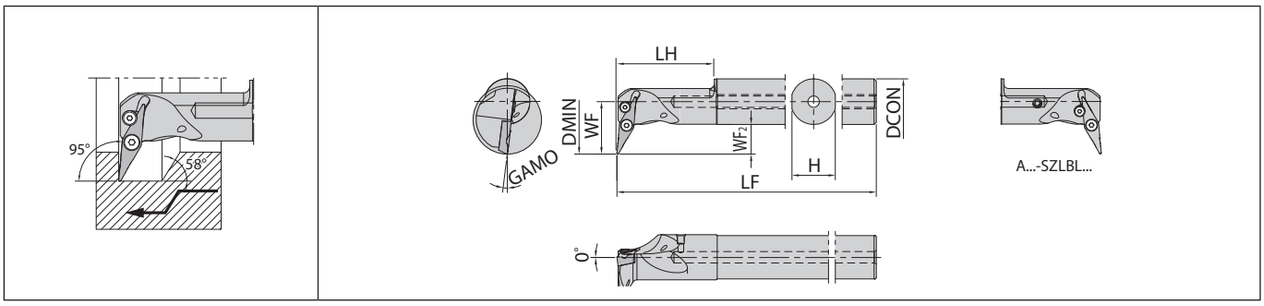
Applicable inserts

Applications	Finishing
Insert	
Chipbreaker type	GF
Page	B108

Recommended cutting conditions ➡ F152, F153
Applicable sleeves ➡ F150

● : Standard item

A-SZLB-AE Excellent bar (Internal copying)



Max. Overhang Length L/D=~5.5 | Right-hand shown | ZBMT13T304R-GF-15D is applicable to Left-hand Toolholder.

Toolholder dimensions

Description		Availability R	Availability L	Dimension (mm) DMIN	DCON	CND	H	LH	LF	WF	WF2	GAMO (°)	Standard corner-R(RE)	Coolant hole	Spare parts: Screw	Spare parts: Wrench	Applicable inserts
A20R-	SZLB$^{R}_{L}$13-30AE	●	●	30	20	5	19	42	200	23	13	7	0.4	Yes	SB-3079TR	FT-8	ZBMT13T3...
A25S-	SZLB$^{R}_{L}$13-34AE	●	●	34	25		24	64	250	25.5							
A32S-	SZLB$^{R}_{L}$13-40AE	●	●	40	32		31	86		29							

Applicable inserts

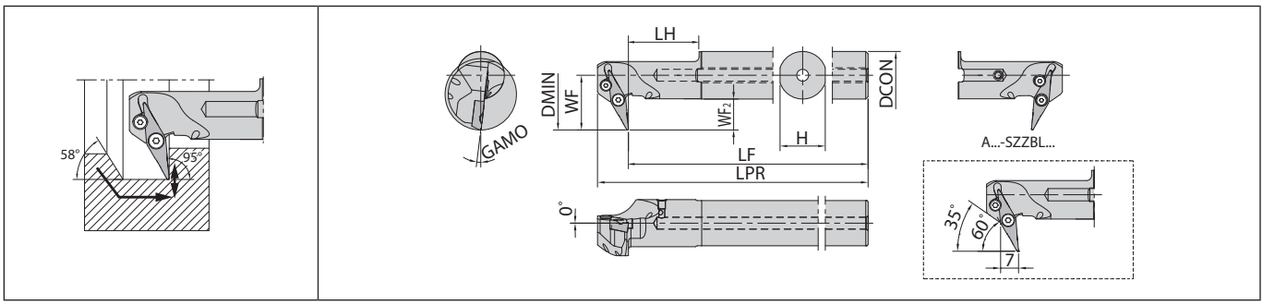
Applications	Finishing	Finishing
Insert		
Chipbreaker type	GF	R-GF-15D
Page	B108	B108

R-GF-15D inserts are only for the left-hand toolholders of A-SZLB-AE.

Recommended cutting conditions ➡ F152, F153
Applicable sleeves ➡ F150

● : Standard item

A-SZZB-AE Excellent bar (Back boring)



Max. Overhang Length L/D=~5.5 | Right-hand shown | ZBMT13T304R-GF-15D is applicable to Right-hand Toolholder.

Toolholder dimensions

Description	Availability R	Availability L	Dimension (mm) DMIN	DCON	CND	H	LH	LPR	LF	WF	WF2	GAMO (°)	Standard corner-R(RE)	Coolant hole	Spare parts: Screw	Spare parts: Wrench	Applicable inserts
A20R- SZZB□/L 13-30AE	●	●	30	20		19	42	200	187	23							
A25S- SZZB□/L 13-34AE	●	●	34	25	5	24	58	250	237	25.5	13	7	0.4	Yes	SB-3079TR	FT-8	ZBMT13T3...
A32S- SZZB□/L 13-40AE	●	●	40	32		31	74			29							

Applicable inserts

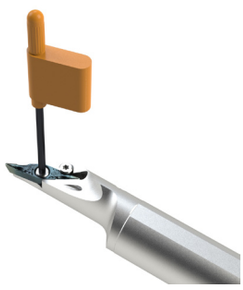
Applications	Finishing	Finishing
Insert		
Chipbreaker type	GF	R-GF-15D
Page	B108	B108

R-GF-15D inserts are only for the right-hand toolholders of A-SZZB-AE.

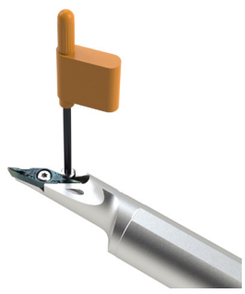
Recommended cutting conditions ➡ F152, F153
Applicable sleeves ➡ F150

Instructions

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

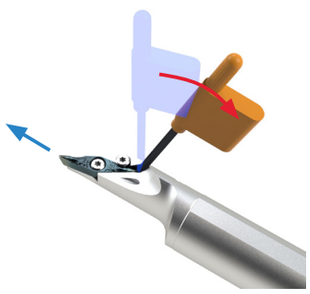


1. Tighten the main screw with the insert pressed against the contact surface with fingertips.



2. Tighten the side screw to complete the installation.

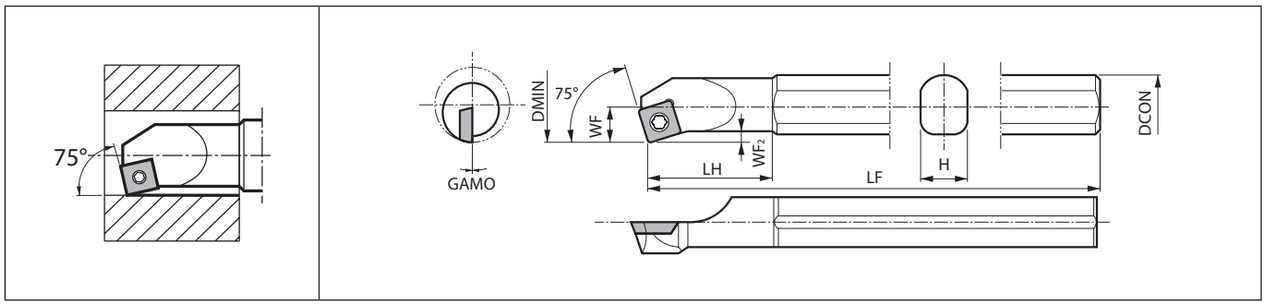
When removing the insert



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

● : Standard item

S-SSKP Steel shank bar (Boring)

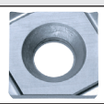


Max. Overhang Length L/D=~3 | Right-hand shown | Left-hand Insert for Right-hand Toolholder.

Toolholder dimensions

Description	Availability	Dimension (mm)							GAMO (°)	Standard corner-R(RE)	Coolant hole	Spare parts		Applicable inserts
												Screw	Wrench	
	R	DMIN	DCON	H	LH	LF	WF	WF_2						
S16Q- SSKPR09-20	●	20	16	14	30	180	10	2	-3	0.8	No	SB-4TR	FT-15	SPGH0903...

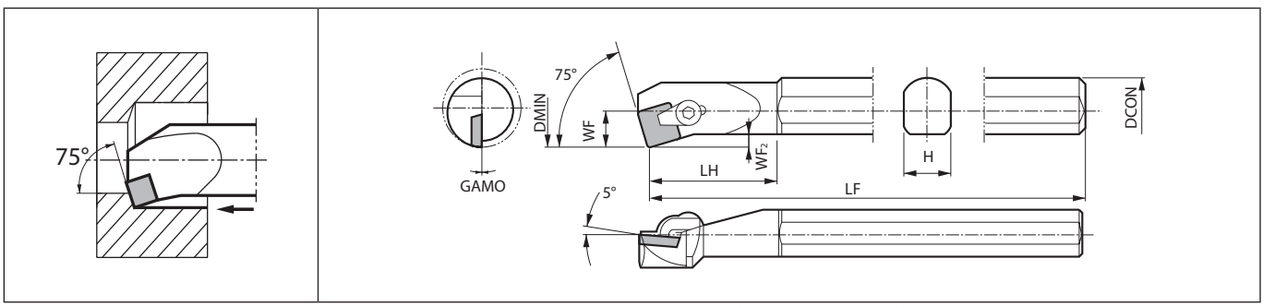
Applicable inserts

Applications	Finishing
Insert	
Chipbreaker type	L
Page	B82

Recommended cutting conditions ➡ F152, F153
Applicable sleeves ➡ F150, F151

● : Standard item

S-CSKP Steel shank bar (Boring)



Max. Overhang Length L/D=~3 | Right-hand shown | Left-hand Insert for Right-hand Toolholder.

F

Boring

Solid

Positive

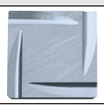
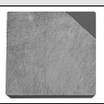
AD bars

Negative

Toolholder dimensions

Description	Availability	Dimension (mm)							GAMO (°)	Standard corner -R(RE)	Coolant hole	Spare parts			Applicable inserts
												Clamp set	Wrench	Wrench	
	R	DMIN	DCON	H	LH	LF	WF	WF2							
S16N- CSKPR09-20	●	20	16	14	40	160	10	2	0	0.8	No	CPS-2	-	FH-2.5	SP□N0903... SP□R0903...
S20Q- CSKPR09-27	●	27	20	18	45	180	13.5	3.5							
S25X- CSKPR12-34	●	34	25	23	60	220	17	4.5	0	0.8	No	CPS-3	LW-3	-	SP□N1203..., SP□R1203...

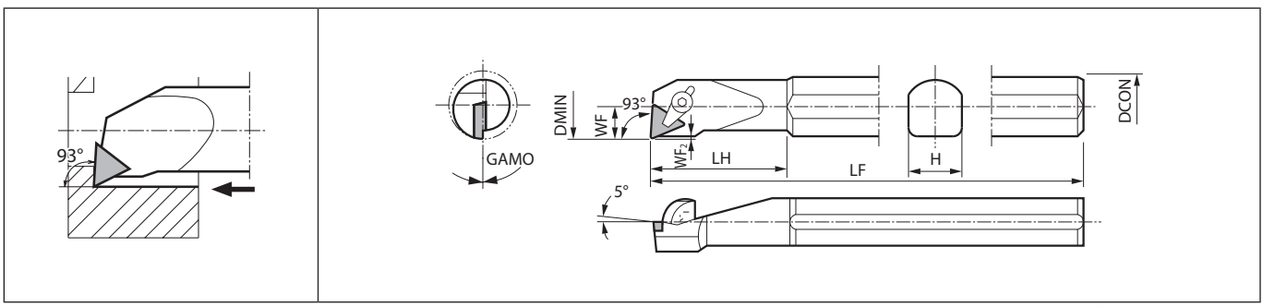
Applicable inserts

Applications	Medium	Medium	Finishing - Medium	Cast iron	Cast iron	Non-Ferrous Metals
Insert						
Chipbreaker type	G	STD	L	No CB	Ceramic	PCD
Page	B83	B83	B83	B83	B121	C43

Recommended cutting conditions ➡ F152, F153
Applicable sleeves ➡ F150, F151

● : Standard item

S-CTUP Steel shank bar (Boring)



Max. Overhang Length L/D=~3 | Right-hand shown
Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

F

Boring

Toolholder dimensions

Description		Availability R	Availability L	Dimension (mm) DMIN	DCON	H	LH	LF	WF	WF_2	GAMO (°)	Standard corner-R(RE)	Coolant hole	Spare parts: Clamp set	Clamp set	Shim screw	Shim	Wrench	Wrench	Applicable inserts
S12L-	CTUPR09-16	●		16	12	11	32	140	8	0.5	0	0.4	No	CPS-1	-	-	-	-	FH-2	TP□N0902... TP□R0902...
S16N-	CTUP[R/L]11-20	●	●	20	16	15	30	160	10	0.5	0	0.4	No	-	CPS-2	-	-	-	FH-2.5	TP□N1103... TP□R1103...
S20Q-	CTUP[R/L]11-27	●	●	27	20	18	40	180	13.5	1.3										
S25X-	CTUP[R/L]16-34	●	●	34	25	23	60	220	17	1	0	0.8	No	-	CPS-3	-	-	LW-3	-	TP□N1603... TP□R1603...
S32S-	CTUP[R/L]16-43	●	●	43	32	30	70	250	21.5							SP3X10	KPT-32			
S40X-	CTUP[R/L]16-50	●	●	50	40	37	80	315	25											

Applicable inserts

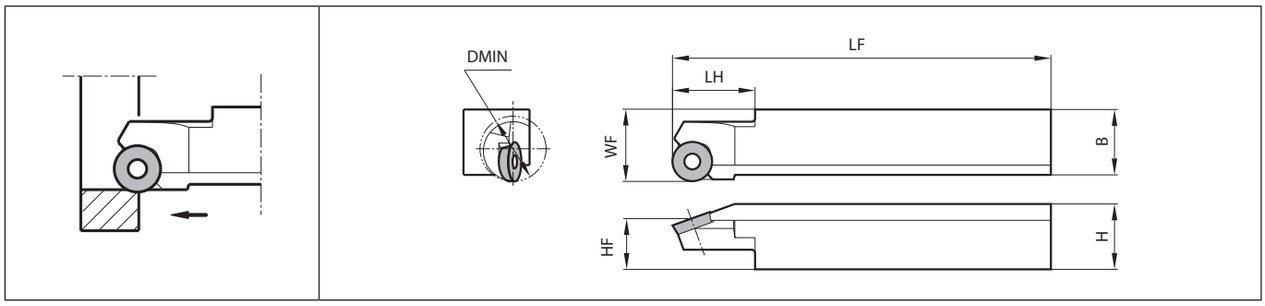
Applications	Finishing	Finishing	Finishing - Medium	Medium	Medium	Finishing	Finishing	Finishing - Medium
Insert								
Chipbreaker type	DP	GP	HQ	G	STD	[R/L]-F	[R/L]-A	[R/L]-B
Page	B95	B95	B95	B95	B95	B96	B96	B96

Applications	Medium	Cast iron	Cast iron	Non-Ferrous Metals	Hard materials
Insert					
Chipbreaker type	[R/L]-C	No CB	Ceramic	PCD	CBN
Page	B96	B96	B122	C48	C25

Recommended cutting conditions ➡ F152, F153
Applicable sleeves ➡ F149~F151

● : Standard item

SRCP-B (Boring)



Right-hand shown

Toolholder dimensions

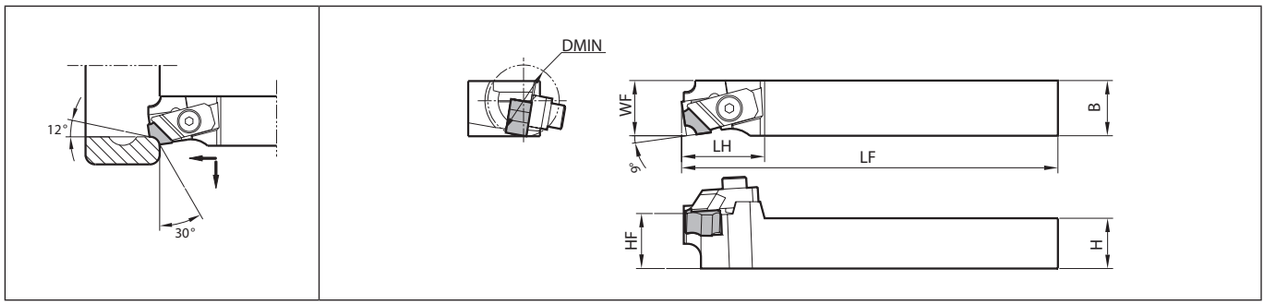
Description	Availability		Dimension (mm)							Spare parts			Applicable inserts
	R	L	DMIN	H	B	LH	HF	LF	WF	Screw	Wrench	Wrench	
SRCP R/L 2020B-12-A20	●	●	20	20	20	25	15.5	125	22	SB-4TR	FT-15	-	RPMT1203M0-BB
SRCPR 2525B-16-A32	●		32	25	25	31	20	150	27	SB-5090TR	-	LTW-20	RPMT1604M0-BB

Applicable inserts

Applications	Bearing machining
Insert	
Chipbreaker type	BB
Page	B109

● : Standard item

CBSN-B (Internal round chamfering)

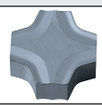


Right-hand shown

Toolholder dimensions

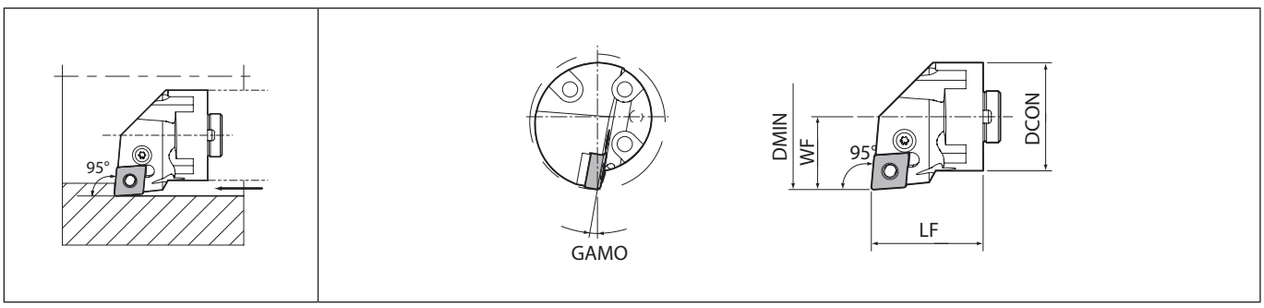
Description		Availability	Dimension (mm)							Spare parts		Applicable inserts
										Clamp set (R)	Wrench	
		R	DMIN	H	B	LH	HF	LF	WF			
CBSNR	2020B-12-A20	●	20	20	20	32	21	125	20	CP-RCR	LW-5	SNMF1204..-21
	2525B-12-A20	●		25	25		26	150	25			

Applicable inserts

Applications	Bearing machining
Insert	
Chipbreaker type	**21**
Page	**B109**

● : Standard item

HA-PCLN (Boring / Internal facing)



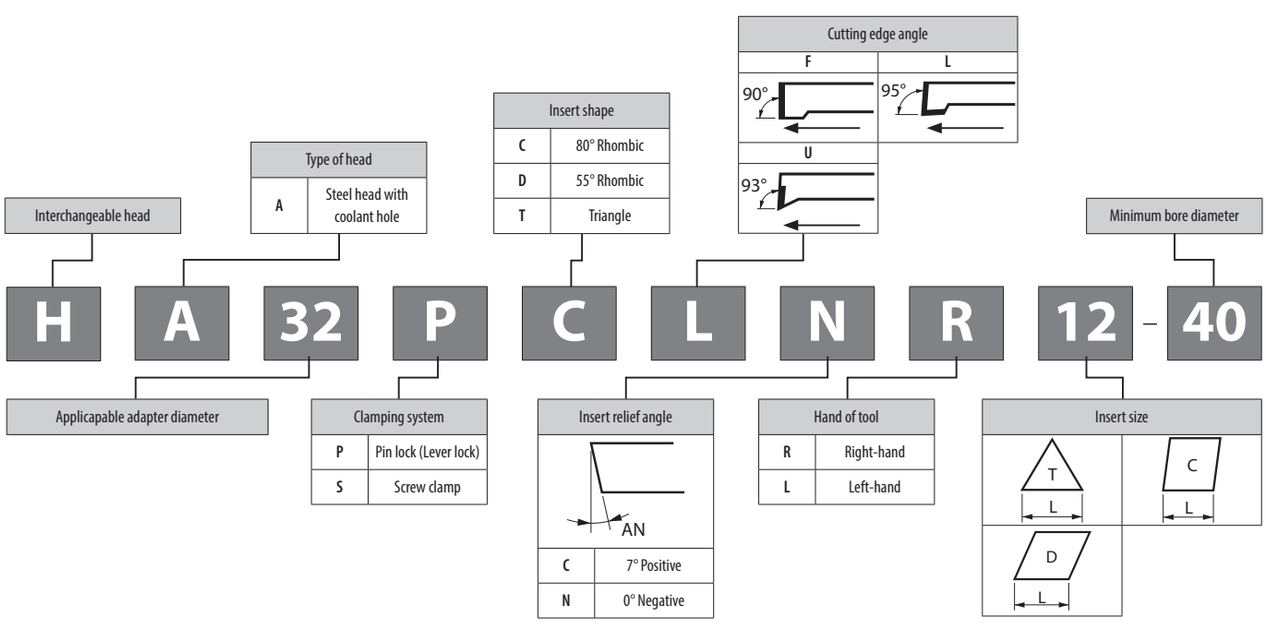
Right-hand shown | Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

Toolholder dimensions

Description		Availability R	Availability L	Dimension (mm) DMIN	DCON	LF	WF	GAMO (°)	Standard corner-R(RE)	Coolant hole	Spare parts: Lever	Lock screw	Punch*	Shim pin	Shim	Wrench*	Applicable boring adapter	Applicable inserts
HA32	PCLN$^{R}/_{L}$12-40	●	●	40	32		22										AD32U	
HA40	PCLN$^{R}/_{L}$12-50	●	●	50	40	41	27	10	0.8	Yes	LL-2K	LS-2P	PC-2K	LSP-3K	LC-4K	DTPM-15	AD40V	CN□A1204... CN□G1204... CN□M1204...
HA50	PCLN$^{R}/_{L}$12-63	●	●	63	50		35										AD50W	

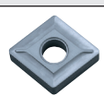
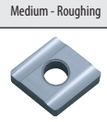
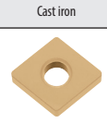
Punch (PC-2K) : Not included. Purchase separately.
Included wrench is L type.

AD bars - Identification system for interchangeable heads



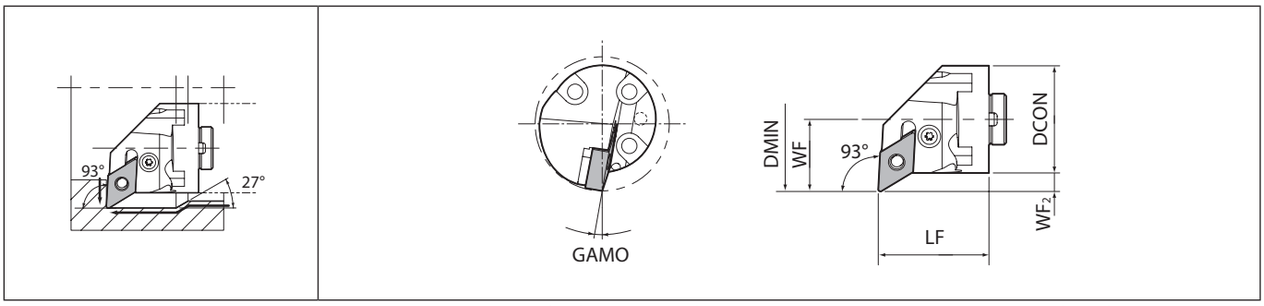
● : Standard item

Applicable inserts

Applications	Finishing	Finishing	Finishing - Medium	Finishing - Medium	Finishing	Finishing	Finishing - Medium	Finishing - Medium
Insert								
Chipbreaker type	WF	WP	WE	WQ	PP	GP	PQ	HQ
Page	B16	B16	B16	B16	B16	B16	B16	B17
Applications	Finishing - Medium	Finishing - Medium	Medium	Medium - Roughing	Medium - Roughing	Medium - Roughing	Medium - Roughing	Medium - Roughing
Insert								
Chipbreaker type	CQ	CJ	TN-V	GS	PG	PS	PT	GT
Page	B17	B17	B17	B17	B17	B18	B18	B18
Applications	Roughing	Roughing	Roughing	Medium	Medium - Roughing	Medium - Roughing	Low carbon steel	Low carbon steel
Insert								
Chipbreaker type	STD	PH	PX	R/L	R/L-25R	Z	XF	XP
Page	B18	B18	B19	B23	B23	B23	B19	B19
Applications	Low carbon steel	Low carbon steel	Finishing - Medium	Medium - Roughing	Stainless steel / Heat-resistant alloys	Stainless steel / Heat-resistant alloys	Stainless steel / Heat-resistant alloys	Stainless steel / Heat-resistant alloys
Insert								
Chipbreaker type	XQ	XS	SK	FP-TK	TK	MQ	MS	MU
Page	B19	B19	B19	B19	B20	B20	B20	B20
Applications	Cast iron	Cast iron	Cast iron	Cast iron	Cast iron	Cast iron	Cast iron	Cast iron / Hard materials
Insert								
Chipbreaker type	KQ	KG	KH	C	ZS	GC	No CB	Ceramic
Page	B21	B21	B21	B22	B22	B22	B22	B113
Applications	Non-Ferrous Metals	Non-Ferrous Metals	Non-Ferrous Metals	Heat-resistant alloys	Heat-resistant alloys	Hard materials	Hard materials	Hard materials
Insert								
Chipbreaker type	R/L-A3	AH	PCD	SQ	SG	HH	HL	HD
Page	B23	B23	C34	B20	B21	C9	C9	C9
Applications	Hard materials / Cast iron							
Insert								
Chipbreaker type	CBN							
Page	C8							

Recommended cutting conditions F152, F153

HA-PDUN (Internal copying)



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

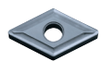
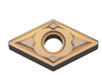
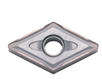
Toolholder dimensions

Description		Availability		Dimension (mm)					GAMO (°)	Standard corner-R(RE)	Coolant hole	Spare parts						Applicable boring adapter	Applicable inserts
												Lever	Lock screw	Punch*	Shim pin	Shim	Wrench*		
		R	L	DMIN	DCON	LF	WF	WF_2											
HA32	PDUN$^{R}_{L}$15-43	●	●	43	32	41	25	9	12	0.8	Yes	LL-3K	LS-3P	PC-2K	LSP-3K	LD-4K43 (LD-4K*)	DTPM-15	AD32U	DN□A1504...
HA40	PDUN$^{R}_{L}$15-50	●	●	50	40		27	7	10									AD40V	DN□G1504...
HA50	PDUN$^{R}_{L}$15-63	●	●	63	50		35	10										AD50W	DN□M1504...

Punch (PC-2K) : Not included. Purchase separately.
Included wrench is L type.
Shim : LD-4K43 is attached to Toolholder. When using DN□□1506 Insert, purchase LD-4K separately.
For WF chipbreaker, cutting edge offsets or program corrections are required on **R34** and **R35**.

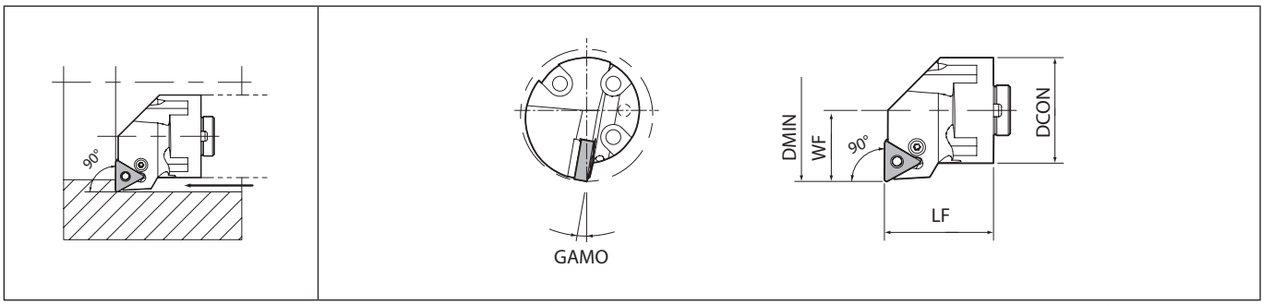
● : Standard item

Applicable inserts

Applications	Finishing	Finishing	Finishing	Finishing - Medium	Finishing - Medium	Finishing - Medium	Finishing - Medium	Medium
Insert								
Chipbreaker type	WF	PP	GP	PQ	HQ	CQ	CJ	TN-V
Page	B24	B24	B24	B24	B25	B25	B25	B25
Applications	Medium - Roughing	Medium - Roughing	Medium - Roughing	Medium - Roughing	Medium - Roughing	Roughing	Roughing	Roughing
Insert								
Chipbreaker type	GS	PG	PS	PT	GT	STD	PH	PX
Page	B25	B26	B26	B26	B26	B27	B27	B27
Applications	Medium	Low carbon steel	Low carbon steel	Low carbon steel	Low carbon steel	Finishing - Medium	Large ap	Medium - Roughing
Insert								
Chipbreaker type	R/L	XF	XP	XQ	XS	SK	R-LD	FP-TK
Page	B31	B27	B27	B27	B27	B28	B28	B28
Applications	Stainless steel / Heat-resistant alloys	Stainless steel / Heat-resistant alloys	Stainless steel / Heat-resistant alloys	Stainless steel / Heat-resistant alloys	Cast iron	Cast iron	Cast iron	Cast iron
Insert								
Chipbreaker type	TK	MQ	MS	MU	KQ	KG	KH	C
Page	B28	B28	B29	B29	B30	B30	B30	B30
Applications	Cast iron	Cast iron	Cast iron	Cast iron / Hard materials	Non-Ferrous Metals	Non-Ferrous Metals	Non-Ferrous Metals	Heat-resistant alloys
Insert								
Chipbreaker type	ZS	GC	No CB	Ceramic	R/L-A3	AH	PCD	SQ
Page	B30	B30	B31	B114	B31	B31	C35	B29
Applications	Heat-resistant alloys	Hard materials	Hard materials	Hard materials	Hard materials / Cast iron			
Insert								
Chipbreaker type	SG	HH	HL	HD	CBN			
Page	B29	C11	C11	C11	C10			

Recommended cutting conditions F152, F153

HA-PTFN (Internal copying)



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

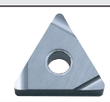
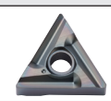
Toolholder dimensions

Description		Availability		Dimension (mm)				GAMO (°)	Standard corner-R(RE)	Coolant hole	Spare parts						Applicable boring adapter	Applicable inserts
		R	L	DMIN	DCON	LF	WF				Lever	Lock screw	Punch*	Shim pin	Shim	Wrench*		
HA32	PTFN$^{R}_{L}$16-40	●	●	40	32	41	22	10	0.8	Yes	LL-1K	LS-1P	PC-2K	LSP-2K	LT-3K	DTPM-10	AD32U	TN□A1604... TN□G1604... TN□M1604... TN□X1604...
HA40	PTFN$^{R}_{L}$16-50	●	●	50	40		27										AD40V	
HA50	PTFN$^{R}_{L}$16-63	●	●	63	50		35	8									AD50W	

Punch (PC-2K) : Not included. Purchase separately.
Included wrench is L type.
For WF chipbreaker, cutting edge offsets or program corrections are required on **R34** and **R35**.

● : Standard item

Applicable inserts

Applications	Finishing	Finishing	Finishing	Finishing - Medium	Finishing - Medium	Finishing - Medium	Medium - Roughing	Medium - Roughing
Insert								
Chipbreaker type	WF	PP	GP	PQ	HQ	CQ	GS	PG
Page	B39	B39	B39	B39	B39	B39	B40	B40
Applications	Medium - Roughing	Medium - Roughing	Medium - Roughing	Roughing	Roughing	Roughing	Finishing	Finishing - Medium
Insert								
Chipbreaker type	PS	PT	GT	STD	PH	PX	R/L-SSF	R/L-B
Page	B40	B40	B40	B40	B41	B41	B45	B45
Applications	Medium - Roughing	Medium - Roughing	Low carbon steel	Low carbon steel	Low carbon steel	Low carbon steel	Finishing - Medium	Large ap
Insert								
Chipbreaker type	R/L-C	R/L-25R	XF	XP	XQ	XS	SK	R-LD
Page	B46	B46	B41	B41	B41	B41	B42	B42
Applications	Medium - Roughing	Stainless steel / Heat-resistant alloys	Stainless steel / Heat-resistant alloys	Stainless steel / Heat-resistant alloys	Stainless steel / Heat-resistant alloys	Stainless steel	Cast iron	Cast iron
Insert								
Chipbreaker type	FP-TK	TK	MQ	MS	MU	R/L-ST	KQ	KG
Page	B42	B42	B42	B42	B42	B43	B43	B43
Applications	Cast iron	Cast iron	Cast iron	Cast iron	Cast iron	Cast iron / Hard materials	Non-Ferrous Metals	Non-Ferrous Metals
Insert								
Chipbreaker type	KH	C	ZS	GC	No CB	Ceramic	R/L-A3	AH
Page	B43	B43	B43	B43	B44	B118	B44	B44

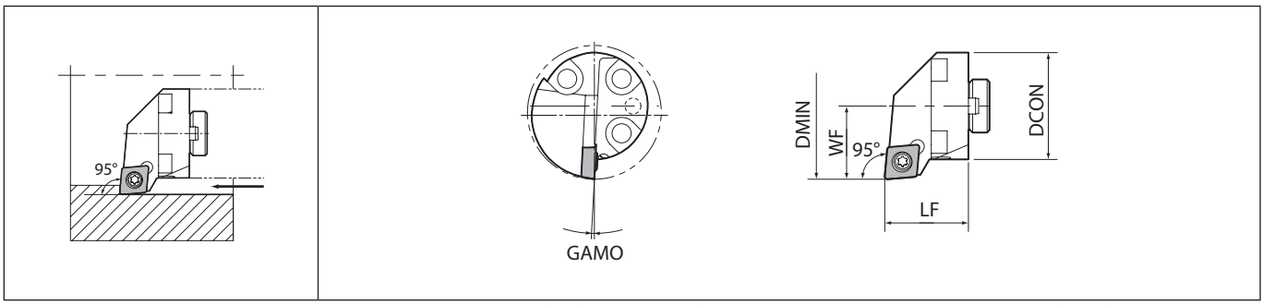
Applications	Non-Ferrous Metals	Heat-resistant alloys	Hard materials / Cast iron
Insert			
Chipbreaker type	PCD	SG	CBN
Page	C36	B43	C13

Recommended cutting conditions F152, F153

F

Boring

HA-SCLC (Boring / Internal facing)

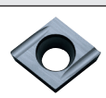
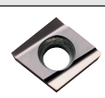
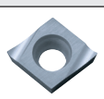


Right-hand shown | Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

Toolholder dimensions

Description	Availability R	Availability L	Dimension (mm) DMIN	DCON	LF	WF	GAMO (°)	Standard corner-R(RE)	Coolant hole	Spare parts: Screw	Spare parts: Wrench	Applicable boring adapter	Applicable inserts
													
HA32 SCLC$^{R}_{L}$09-40	●	●	40	32	25	22	3	0.8	Yes	SB-3580TR	FT-15	AD32U	CC□T09T3... CC□W09T3...

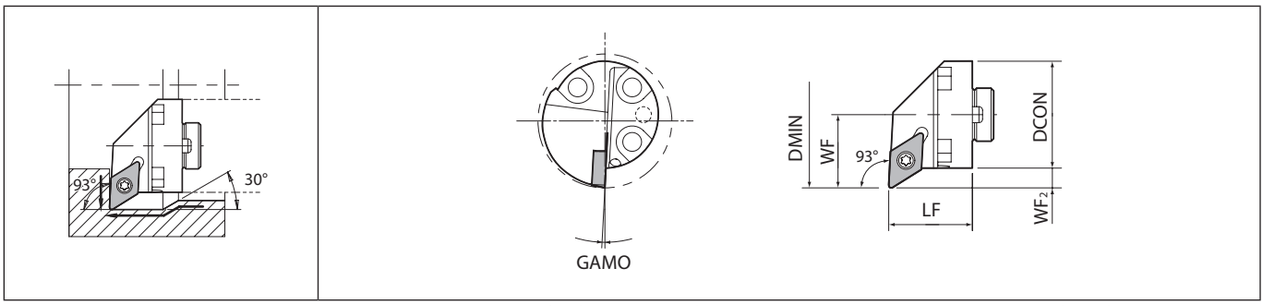
Applicable inserts

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

Recommended cutting conditions F152, F153

● : Standard item

HA-SDUC (Internal copying)



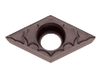
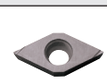
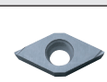
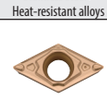
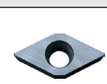
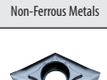
Right-hand shown | Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

Toolholder dimensions

Description	Availability		Dimension (mm)						GAMO (°)	Standard corner-R(RE)	Coolant hole	Spare parts		Applicable boring adapter	Applicable inserts
												Screw	Wrench		
	R	L	DMIN	DCON	LH	LF	WF	WF_2							
HA32 SDUC□/L 11-40	●	●	40	32	25	25	22	6	3	0.8	Yes	SB-3580TR	FT-15	AD32U	DC□T11T3..., DC□W11T3..., DC□X11T3...

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

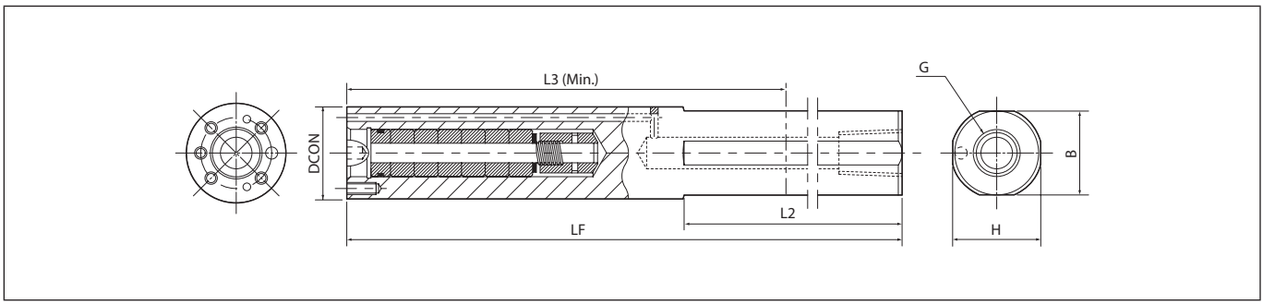
Applicable inserts

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

Recommended cutting conditions ➡ **F152, F153**

● : Standard item

Boring adapter



Toolholder dimensions

Description		Availability	Dimension (mm)							Spare parts		
										Clamp bolt		Wrench
			DCON	H	B	LF	L2	L3 (Min.)	G			
AD	32U	●	32	31	29	310	200	200	Rp3/8	HH5X20 (3 pcs)	HH5X30 (1 pcs)	LW-4
AD	40V	●	40	39	37	360	248	228	Rp3/8			
AD	50W	●	50	47	47	410	280	276	Rp3/8	HH6X20 (3 pcs)	HH6X30 (1 pcs)	LW-5

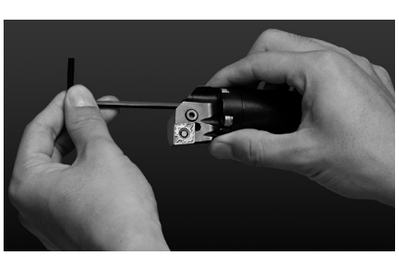
Combination of boring adapter and interchangeable head

Interchangeable Head Description			Boring Adapter			
			Base Description	Clamp Bolt		Wrench
HA32	PCLN$^{R}/_{L}$	12-40	AD32U	HH5X20	HH5X30	LW-4
	PDUN$^{R}/_{L}$	15-43				
	PTFN$^{R}/_{L}$	16-40				
	SCLC$^{R}/_{L}$	09-40		HH5X20		
	SDUC$^{R}/_{L}$	11-40				
HA40	PCLN$^{R}/_{L}$	12-50	AD40V	HH5X20	HH5X30	
	PDUN$^{R}/_{L}$	15-50				
	PTFN$^{R}/_{L}$	16-50				
HA50	PCLN$^{R}/_{L}$	12-63	AD50W	HH6X20	HH6X30	LW-5
	PDUN$^{R}/_{L}$	15-63				
	PTFN$^{R}/_{L}$	16-63				

How to change heads


1. No head attached

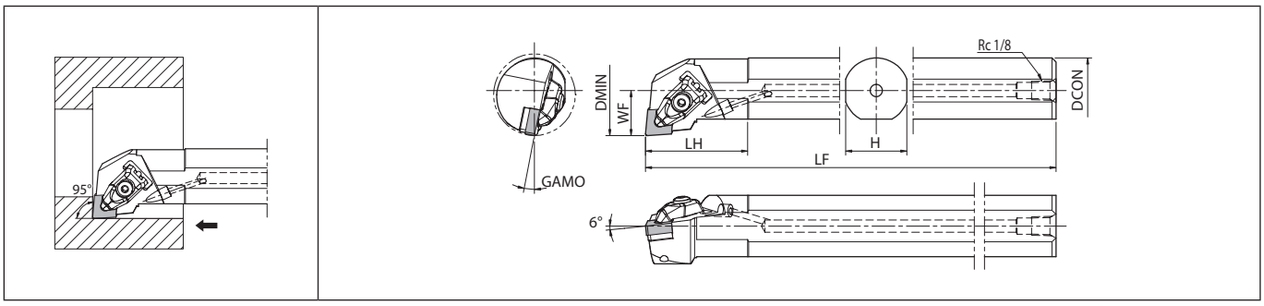

2. Align hole positions


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$^{R}/_{L}$09-40 and
HA32 SDUC$^{R}/_{L}$11-40 use HH5X20
for all 3 bolts.

● : Standard item

A-DCLN (Boring / Internal facing)



Max. Overhang Length L/D=~3 | Right-hand shown
Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

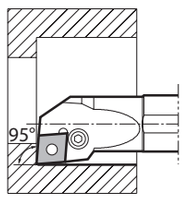
Toolholder dimensions

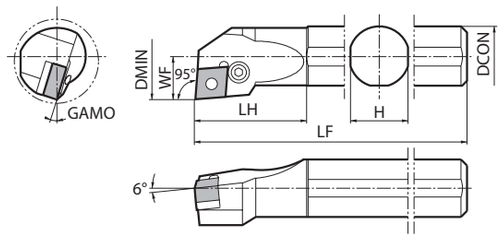
Description	Availability		Dimension (mm)						GAMO (°)	Standard corner-R(RE)	Coolant hole	Spare parts								Applicable inserts
												Clamp	Screw (for clamp)	Spring	Wrench (for clamp)	Shim	Screw (for shim)	Wrench* (for shim)	Nozzle	
	R	L	DMIN	DCON	H	LH	LF	WF												
A25R- DCLN□12-32	●	●	32	25	23	42	200	17	11	0.8	Yes	CP-3D	CS-3D	SP-3D	LW-3	DC-42	SB-4085TR	FT-15	DN10	CN□A1204... CN□G1204... CN□M1204...
A32S- DCLN□12-40	●	●	40	32	30	50	250	22												
A40T- DCLN□12-50	●	●	50	40	37	60	300	27	14										DN20	

Not applicable to high-pressure coolant
Wrench (FT-15) is sold separately.

● : Standard item

S-PCLN (Boring / Internal facing)





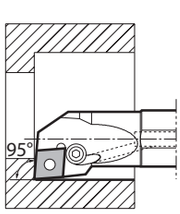
Max. Overhang Length L/D=~3 | Right-hand shown
Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

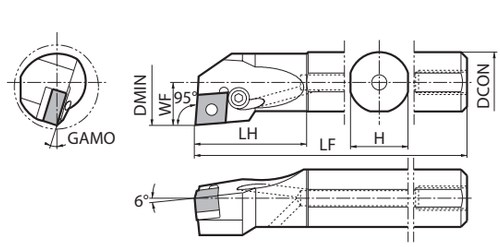
Toolholder dimensions

Description		Availability		Dimension (mm)						GAMO (°)	Standard corner-R(RE)	Coolant hole	Spare parts								Applicable inserts
													Lever	Lock screw	Punch	Shim pin	Shim pin	Shim	Wrench	Wrench	
		R	L	DMIN	DCON	H	LH	LF	WF												
S16M-	PCLN$^{R}_{L}$09-20	●	●	20	16	15	34	150	11	16	0.8	No	LL-03SN	LS-03SN	-	-	P-03S	-	-	FH-2.5	CN□G0904...
S20Q-	PCLN$^{R}_{L}$09-27	●	●	27	20	19	37	180	14.2	17			LL-1N	LS-1SN	PC-1	LSP-1	-	LC-32N	-		
S25R-	PCLN$^{R}_{L}$09-32	●	●	32	25	24	42	200	15.7	15											
S25R-	PCLN$^{R}_{L}$12-32	●	●	32	25	24	42	200	16.3	16	0.8	No	LL-2N	LS-2N	PC-2	LSP-2	-	LC-42N$^{R}_{L}$	LW-3	-	CN□A1204...
S32S-	PCLN$^{R}_{L}$12-40	●	●	40	32	30	50	250	21	10											CN□G1204...
S40T-	PCLN$^{R}_{L}$12-50	●	●	50	40	37	60	300	25												CN□M1204...

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

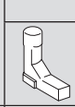
A-PCLN (Boring / Internal facing)





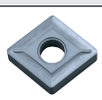
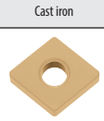
Max. Overhang Length L/D=~3 | Right-hand shown | Left-hand Insert for Right-hand Toolholder.

Toolholder dimensions

Description		Availability	Dimension (mm)						GAMO (°)	Standard corner-R(RE)	Coolant hole	Spare parts							Applicable inserts
												Lever	Lock screw	Punch	Shim pin	Shim pin	Shim	Wrench	
		R	DMIN	DCON	H	LH	LF	WF											
A16M-	PCLNR09-20	●	20	16	15	34	150	11	16	0.8	Yes	LL-03SN	LS-03SN	-	-	P-03S	-	FH-2.5	CN□G0904...
A20Q-	PCLNR09-27	●	27	20	19	37	180	14.2	17			LL-1N	LS-1SN	PC-1	LSP-1	-	LC-32N		
A25R-	PCLNR09-32	●	32	25	24	42	200	15.7	15										

● : Standard item

Applicable inserts (A-DCLN / S-PCLN / A-PCLN)

Applications	Finishing	Finishing	Finishing - Medium	Finishing - Medium	Finishing	Finishing	Finishing - Medium	Finishing - Medium
Insert								
Chipbreaker type	WF	WP	WE	WQ	PP	GP	PQ	HQ
Page	B16	B16	B16	B16	B16	B16	B16	B17
Applications	Finishing - Medium	Finishing - Medium	Medium	Medium - Roughing	Medium - Roughing	Medium - Roughing	Medium - Roughing	Medium - Roughing
Insert								
Chipbreaker type	CQ	CJ	TN-V	GS	PG	PS	PT	GT
Page	B17	B17	B17	B17	B17	B18	B18	B18
Applications	Roughing	Roughing	Roughing	Finishing	Medium	Medium - Roughing	Medium - Roughing	Low carbon steel
Insert								
Chipbreaker type	STD	PH	PX	R/L-S	R/L	R/L-25R	Z	XF
Page	B18	B18	B19	B23	B23	B23	B23	B19
Applications	Low carbon steel	Low carbon steel	Low carbon steel	Finishing - Medium	Medium - Roughing	Stainless steel / Heat-resistant alloys	Stainless steel / Heat-resistant alloys	Stainless steel / Heat-resistant alloys
Insert								
Chipbreaker type	XP	XQ	XS	SK	FP-TK	TK	MQ	MS
Page	B19	B19	B19	B19	B19	B20	B20	B20
Applications	Stainless steel / Heat-resistant alloys	Cast iron	Cast iron	Cast iron	Cast iron	Cast iron	Cast iron	Cast iron
Insert								
Chipbreaker type	MU	KQ	KG	KH	C	ZS	GC	No CB
Page	B20	B21	B21	B21	B22	B22	B22	B22
Applications	Cast iron / Hard materials	Non-Ferrous Metals	Non-Ferrous Metals	Non-Ferrous Metals	Heat-resistant alloys	Heat-resistant alloys	Hard materials	Hard materials
Insert								
Chipbreaker type	Ceramic	R/L-A3	AH	PCD	SQ	SG	HH	HL
Page	B113	B23	B23	C34	B20	B21	C9	C9
Applications	Hard materials	Hard materials / Cast iron						
Insert								
Chipbreaker type	HD	CBN						
Page	C9	C8						

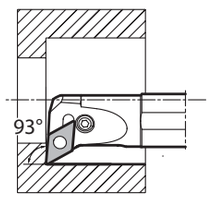
Recommended cutting conditions F152, F153

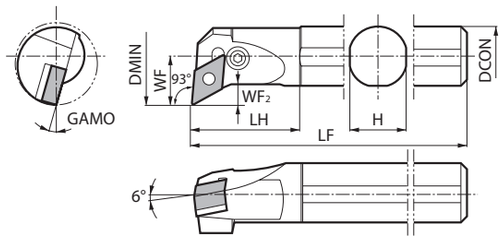
Applicable Coolant Sleeve / Joint

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

For Coolant Sleeve, Coolant Joint See Page F150, F151

S-PDUN11 (Boring / Internal facing)



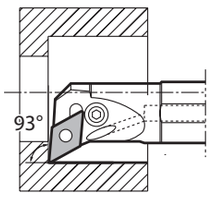


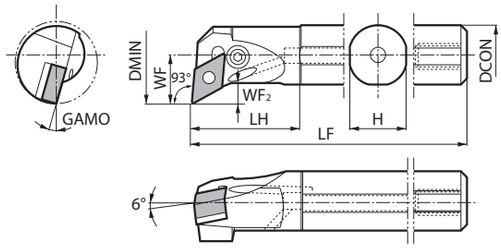
Max. Overhang Length L/D=~3 | Right-hand shown
Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

Toolholder dimensions

Description		Availability		Dimension (mm)							GAMO (°)	Standard corner-R(RE)	Coolant hole	Spare parts						Applicable inserts
														Lever	Lock screw	Punch	Shim pin	Shim	Wrench	
		R	L	DMIN	DCON	H	LH	LF	WF	WF_2										
S20Q-	PDUN□11-27	●	●	27	20	19	35	180	16	7.6	17	0.4	No	LL-1DN	LS-1SN	PC-1	LSP-1	LD-32N	FH-2.5	DN□G1104...
S25R-	PDUN□11-32	●	●	32	25	24	40	200	17		15									
S32S-	PDUN□11-40	●	●	40	32	31	45	250	22	8.5	12									

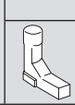
A-PDUN11 (Boring / Internal facing)





Max. Overhang Length L/D=~3 | Right-hand shown | Left-hand Insert for Right-hand Toolholder.

Toolholder dimensions

Description		Availability	Dimension (mm)							GAMO (°)	Standard corner-R(RE)	Coolant hole	Spare parts						Applicable inserts
													Lever	Lock screw	Punch	Shim pin	Shim	Wrench	
		R	DMIN	DCON	H	LH	LF	WF	WF_2										
A20Q-	PDUNR11-27	●	27	20	19	35	180	16	7.6	17	0.4	Yes	LL-1DN	LS-1SN	PC-1	LSP-1	LD-32N	FH-2.5	DN□G1104...
A25R-	PDUNR11-32	●	32	25	24	40	200	17		15									
A32S-	PDUNR11-40	●	40	32	31	45	250	22	8.5	12									

● : Standard item

Applicable inserts (S-PDUN / A-PDUN)

Applications	Finishing	Finishing - Medium	Medium - Roughing	Finishing	Medium
Insert					
Chipbreaker type	GP	HQ	GS	R/L-S	R/L
Page	B24	B25	B25	B31	B31

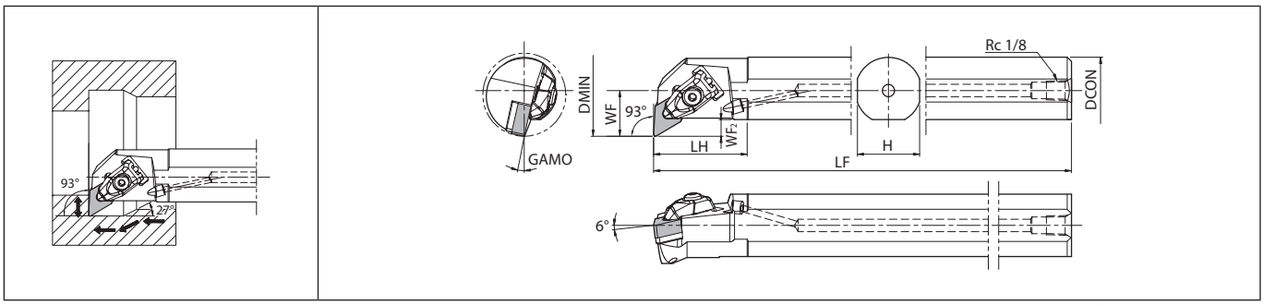
Recommended cutting conditions ➡ F152, F153

Applicable Coolant Sleeve / Joint

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

For Coolant Sleeve, Coolant Joint See Page ➡ F150, F151

A-DDUN (Boring / Internal copying)



Max. Overhang Length L/D=~3 | Right-hand shown
Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

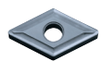
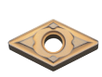
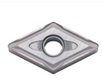
Toolholder dimensions

Description		Availability		Dimension (mm)							GAMO (°)	Standard corner-R(RE)	Coolant hole	Spare parts								Applicable inserts
														Clamp	Screw (for clamp)	Spring	Wrench (for clamp)	Shim	Screw (for shim)	Wrench* (for shim)	Nozzle	
		R	L	DMIN	DCON	H	LH	LF	WF	WF_2												
A32S-	DDUN$^{R}_{L}$15-40	●	●	40	32	30	45	250	22	8	12	0.8	Yes	CP-3D	CS-3D	SP-3D	LW-3	DD-42 (DD-42-16*)	SB-4085TR	FT-15	DN10	DN□A1504... DN□G1504... DN□M1504...
A40T-	DDUN$^{R}_{L}$15-50	●	●	50	40	37	55	300	27	8.5												
A50U-	DDUN$^{R}_{L}$15-63	●	●	63	50	47	65	350	35	10.5											DN20	DN□X1504...

When using inserts whose corner-R(RE) is greater than 1.6 mm, please purchase a shim* and use it in order to prevent workpiece and shim from interfering each other.
Not applicable to high-pressure coolant
When using the insert with WF chipbreaker, tool edge offset or program corrections are required on **R34** and **R35**.
Wrench (FT-15) is sold separately.

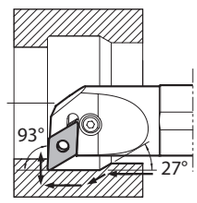
● : Standard item

Applicable inserts

Applications	Finishing	Finishing	Finishing	Finishing - Medium	Finishing - Medium	Finishing - Medium	Finishing - Medium	Medium
Insert								
Chipbreaker type	WF	PP	GP	PQ	HQ	CQ	CJ	TN-V
Page	B24	B24	B24	B24	B25	B25	B25	B25
Applications	Medium - Roughing	Medium - Roughing	Medium - Roughing	Medium - Roughing	Medium - Roughing	Roughing	Roughing	Roughing
Insert								
Chipbreaker type	GS	PG	PS	PT	GT	STD	PH	PX
Page	B25	B26	B26	B26	B26	B27	B27	B27
Applications	Medium	Low carbon steel	Low carbon steel	Low carbon steel	Low carbon steel	Finishing - Medium	Large ap	Medium - Roughing
Insert								
Chipbreaker type	R/L	XF	XP	XQ	XS	SK	R-LD	FP-TK
Page	B31	B27	B27	B27	B27	B28	B28	B28
Applications	Stainless steel / Heat-resistant alloys	Stainless steel / Heat-resistant alloys	Stainless steel / Heat-resistant alloys	Stainless steel / Heat-resistant alloys	Cast iron	Cast iron	Cast iron	Cast iron
Insert								
Chipbreaker type	TK	MQ	MS	MU	KQ	KG	KH	C
Page	B28	B28	B29	B29	B30	B30	B30	B30
Applications	Cast iron	Cast iron	Cast iron	Cast iron / Hard materials	Non-Ferrous Metals	Non-Ferrous Metals	Non-Ferrous Metals	Heat-resistant alloys
Insert								
Chipbreaker type	ZS	GC	No CB	Ceramic	R/L-A3	AH	PCD	SQ
Page	B30	B30	B31	B114	B31	B31	C35	B29
Applications	Heat-resistant alloys	Hard materials	Hard materials	Hard materials	Hard materials / Cast iron			
Insert								
Chipbreaker type	SG	HH	HL	HD	CBN			
Page	B29	C11	C11	C11	C10			

Recommended cutting conditions ➡ F152, F153

S-PDUN15 (Internal copying)



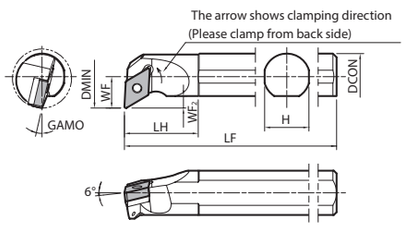


Fig. 1

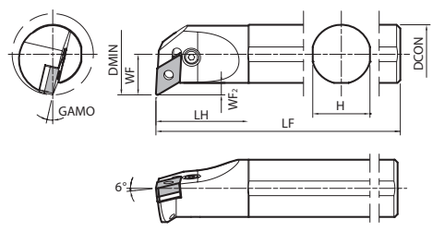


Fig. 2

Max. Overhang Length L/D=~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

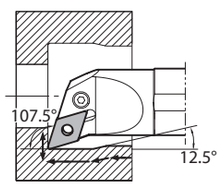
Description		Availability		Dimension (mm)							GAMO (°)	Standard corner-R(RE)	Coolant hole	Fig.	Applicable inserts
		R	L	DMIN	DCON	H	LH	LF	WF	WF_2					
S25R-	PDUN[R/L]15-32	●	●	32	25	24	40	200	17	6.5	13	0.8	No	1	DN□A1504..., DN□G1504...
S32S-	PDUN[R/L]15-44	●	●	44	32	31	50	250	22					2	DN□M1504..., DN□X1504...
S40T-	PDUN[R/L]15-54	●	●	54	40	39	65	300	27	7.5	12				

Description		Spare parts									
		Lever	Lock pin	Lock screw	Wrench	Shim	Shim	Screw	Wrench	Shim pin	Punch
											
S25R-	PDUN[R/L]15-32	-	PP-4	-	LW-3	-	PD-42	SB-2050TR	FT-6	-	-
S32S-	PDUN[R/L]15-44	LL-3N	-	LS-2N		LD-42 (LD-42-20*)	-	-	-	LSP-2	PC-2
S40T-	PDUN[R/L]15-54										

When using the insert with WF chipbreaker, tool edge offset or program corrections are required on **R34** and **R35**.
When using inserts whose corner-R(RE) is greater than 1.6 mm for S25R-PDUN[R/L]15-32, use shim modified by additional processing in order to prevent workpiece and shim from interfering each other.
When using inserts whose corner-R(RE) is greater than 1.6 mm for S32S-PDUN[R/L]15-44 and S40T-PDUN[R/L]15-54, please purchase a shim with* mark and use it in order to prevent workpiece and shim from interfering each other.

● : Standard item

S-PDQN15 (Internal copying)



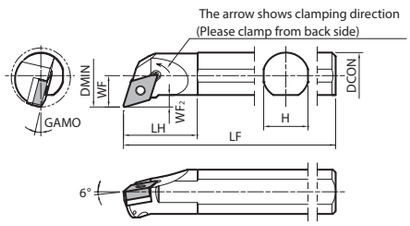


Fig. 1

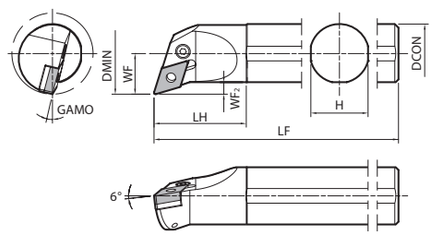


Fig. 2

Max. Overhang Length L/D=~3 | Right-hand shown
Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

F

Boring

Toolholder dimensions

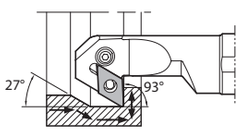
Description		Availability		Dimension (mm)							GAMO (°)	Standard corner-R(RE)	Coolant hole	Fig.	Applicable inserts
		R	L	DMIN	DCON	H	LH	LF	WF	WF_2					
S25R-	PDQN$^{R}_{L}$15-32	●	●	32	25	24	40	200	17	6.5	13	0.8	No	1	DN□A1504...
S32S-	PDQN$^{R}_{L}$15-44	●	●	44	32	31	50	250	22					2	DN□G1504...
S40T-	PDQN$^{R}_{L}$15-54	●	●	54	40	39	65	300	27	7.5	12				DN□M1504...

Description		Spare parts									
		Lever	Lock pin	Lock screw	Wrench	Shim	Shim	Screw	Wrench	Shim pin	Punch
											
S25R-	PDQN$^{R}_{L}$15-32	-	PP-4	-	LW-3	-	PD-42	SB-2050TR	FT-6	-	-
S32S-	PDQN$^{R}_{L}$15-44	LL-3N	-	LS-2N		LD-42 (LD-42-20*)	-	-	-	LSP-2	PC-2
S40T-	PDQN$^{R}_{L}$15-54										

When using inserts whose corner-R(RE) is greater than 1.6 mm for S25R-PDQN$^{R}_{L}$15-32, use shim modified by additional processing in order to prevent workpiece and shim from interfering each other.
When using inserts whose corner-R(RE) is greater than 1.6 mm for S32S-PDQN$^{R}_{L}$15-44 and S40T-PDQN$^{R}_{L}$15-54, please purchase a shim with* mark and use it in order to prevent workpiece and shim from interfering each other.
WF chipbreaker can not be used for S-PDQN15 toolholder.

● : Standard item

S-PDZN15 (Back boring)



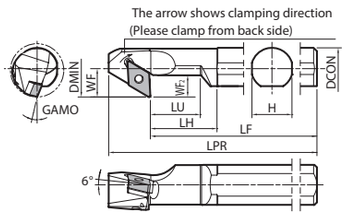


Fig. 1

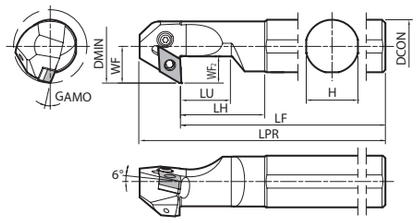


Fig. 2

Max. Overhang Length L/D=~3 | Right-hand shown
Right-hand Insert for Right-hand Toolholder, Left-hand Insert for Left-hand Toolholder.

F

Boring

Solid
Positive
AD bars
Negative

Toolholder dimensions

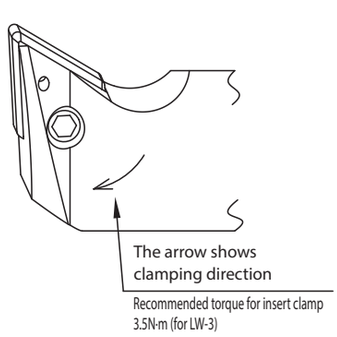
Description		Availability R	Availability L	Dimension (mm) DMIN	DCON	H	LH	LPR	LU	WF	WF_2	GAMO (°)	Standard corner-R(RE)	Coolant hole	Fig.	Applicable inserts
S25R-	PDZN$^{R}_{L}$15-32	●	●	32	25	24	40	225	30	17	13	13	0.8	No	1	DN□A1504..., DN□G1504... DN□M1504..., DN□X1504...
S32S-	PDZN$^{R}_{L}$15-44	●	●	44	32	31	50	275		22	16					
S40T-	PDZN$^{R}_{L}$15-54	●	●	54	40	39	65	325	50	27		12			2	

Description		Spare parts Lever	Lock pin	Lock screw	Wrench	Shim	Shim	Screw	Wrench	Shim pin	Punch
S25R-	PDZN$^{R}_{L}$15-32	-	PP-4	-	LW-3	-	PD-42	SB-2050TR	FT-6	-	-
S32S-	PDZN$^{R}_{L}$15-44	LL-3N	-	LS-2N		LD-42 (LD-42-20*)	-	-	-	LSP-2	PC-2
S40T-	PDZN$^{R}_{L}$15-54										

When using the insert with WF chipbreaker, tool edge offset or program corrections are required on **R34** and **R35**.
When using inserts whose corner-R(RE) is greater than 1.6 mm for S25R-PDZN$^{R}_{L}$15-32, use shim modified by additional processing in order to prevent workpiece and shim from interfering each other.
When using inserts whose corner-R(RE) is greater than 1.6 mm for S32S-PDZN$^{R}_{L}$15-44 and S40T-PDZN$^{R}_{L}$15-54, 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$^{R}_{L}$15-32 inserts

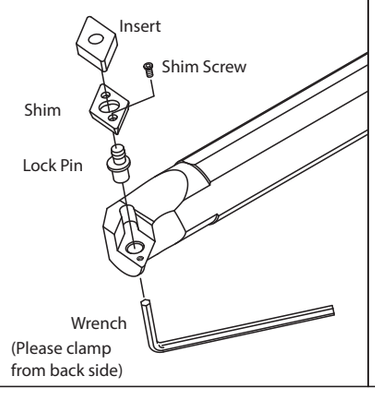
· Please replace S25R-PD□N$^{R}_{L}$15-32 insert from the back side



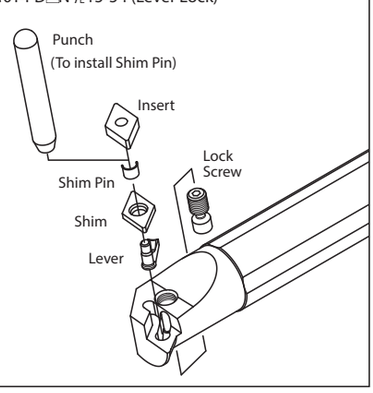
Back side of toolholder

How to assemble spare parts

· S25R-PD□N$^{R}_{L}$15-32 (Pin Lock)

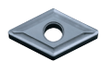
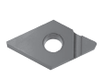


· S32S-PD□N$^{R}_{L}$15-44 (Lever Lock)
· S40T-PD□N$^{R}_{L}$15-54 (Lever Lock)



● : Standard item

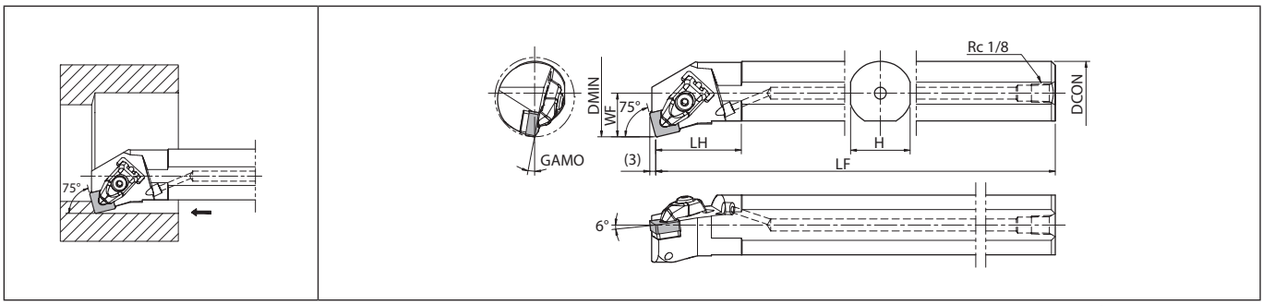
Applicable inserts (S-PDUN15 / S-PDQN15 / S-PDZN15)

Applications	Finishing	Finishing	Finishing	Finishing - Medium	Finishing - Medium	Finishing - Medium	Finishing - Medium	Medium
Insert								
Chipbreaker type	WF*	PP	GP	PQ	HQ	CQ	CJ	TN-V
Page	B24	B24	B24	B24	B25	B25	B25	B25
Applications	Medium - Roughing	Medium - Roughing	Medium - Roughing	Medium - Roughing	Medium - Roughing	Roughing	Roughing	Roughing
Insert								
Chipbreaker type	GS	PG	PS	PT	GT	STD	PH	PX
Page	B25	B26	B26	B26	B26	B27	B27	B27
Applications	Medium	Low carbon steel	Low carbon steel	Low carbon steel	Low carbon steel	Finishing - Medium	Large ap	Medium - Roughing
Insert								
Chipbreaker type	R/L	XF	XP	XQ	XS	SK	R-LD	FP-TK
Page	B31	B27	B27	B27	B27	B28	B28	B28
Applications	Stainless steel / Heat-resistant alloys	Stainless steel / Heat-resistant alloys	Stainless steel / Heat-resistant alloys	Stainless steel / Heat-resistant alloys	Cast iron	Cast iron	Cast iron	Cast iron
Insert								
Chipbreaker type	TK	MQ	MS	MU	KQ	KG	KH	C
Page	B28	B28	B29	B29	B30	B30	B30	B30
Applications	Cast iron	Cast iron	Cast iron	Cast iron / Hard materials	Non-Ferrous Metals	Non-Ferrous Metals	Non-Ferrous Metals	Heat-resistant alloys
Insert								
Chipbreaker type	ZS	GC	No CB	Ceramic	R/L-A3	AH	PCD	SQ
Page	B30	B30	B31	B114	B31	B31	C35	B29
Applications	Heat-resistant alloys	Hard materials	Hard materials	Hard materials	Hard materials / Cast iron			
Insert								
Chipbreaker type	SG	HH	HL	HD	CBN			
Page	B29	C11	C11	C11	C10			

Recommended cutting conditions ➡ F152, F153

When using the insert with WF chipbreaker, tool edge offset or program corrections are required on **R34** and **R35**.
The insert with WF chipbreaker is not applicable for S-PDQN15 type toolholder.

A-DSKN (Boring)



Max. Overhang Length L/D=~3 | Right-hand shown
Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

Toolholder dimensions

Description	Availability R	Availability L	Dimension (mm) DMIN	DCON	H	LH	LF	WF	GAMO (°)	Standard corner-R(RE)	Coolant hole	Spare parts: Clamp	Screw (for clamp)	Spring	Wrench (for clamp)	Shim	Screw (for shim)	Wrench* (for shim)	Nozzle	Applicable inserts
A25R- DSKN$^{R}_{L}$12-32	●	●	32	25	23	43	200	17	11	0.8	Yes	CP-3D	CS-3D	SP-3D	LW-3	DS-42	SB-4085TR	FT-15	DN10	SN□A1204... SN□G1204... SN□M1204...
A32S- DSKN$^{R}_{L}$12-40	●	●	40	32	30		250	22												
A40T- DSKN$^{R}_{L}$12-50	●	●	50	40	37	53	300	27											DN20	

Not applicable to high-pressure coolant
Wrench (FT-15) is sold separately.

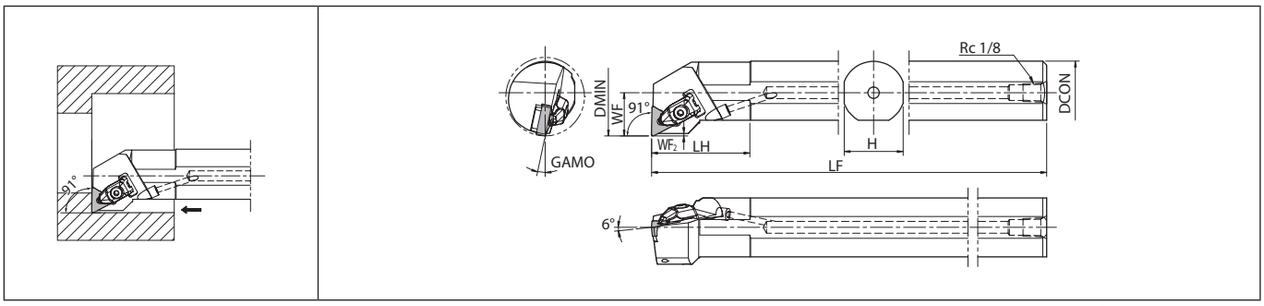
Applicable inserts

Applications	Finishing - Medium	Finishing - Medium	Medium - Roughing	Medium - Roughing	Medium - Roughing	Roughing	Roughing	Roughing
Insert								
Chipbreaker type	PQ	HQ	PG	PS	PT	STD	PH	PX
Page	B34	B34	B34	B34	B34	B34	B35	B35
Applications	Medium - Roughing	Medium - Roughing	Low carbon steel	Low carbon steel	Low carbon steel	Stainless steel / Heat-resistant alloys	Stainless steel / Heat-resistant alloys	Cast iron
Insert								
Chipbreaker type	$^{R}_{L}$-C	$^{R}_{L}$-25R	XP	XQ	XS	MQ	MS	KG
Page	B37	B37	B35	B35	B35	B36	B36	B36
Applications	Cast iron	Cast iron	Cast iron	Cast iron	Cast iron	Cast iron / Hard materials	Heat-resistant alloys	Hard materials / Cast iron
Insert								
Chipbreaker type	KH	C	ZS	GC	No CB	Ceramic	SG	CBN
Page	B36	B36	B37	B37	B37	B117	B36	C12

Recommended cutting conditions F152, F153

● : Standard item

A-DTFN (Boring)



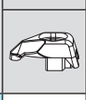
Max. Overhang Length L/D=~3 | Right-hand shown
Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

F

Boring

Toolholder dimensions

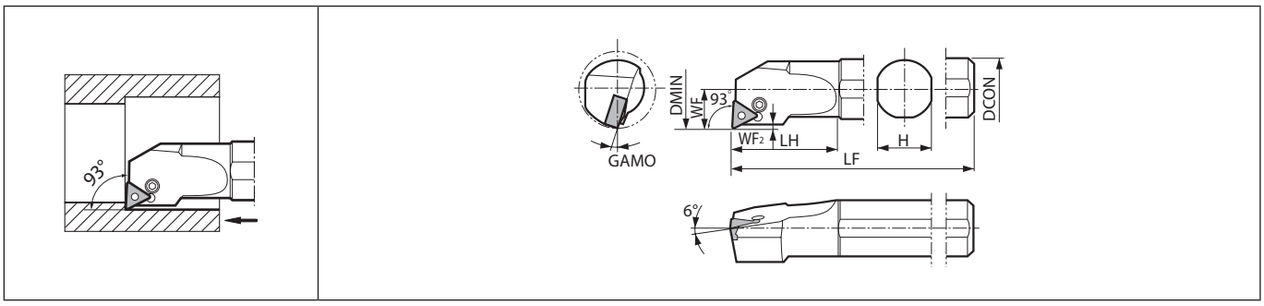
Description		Availability		Dimension (mm)							GAMO (°)	Standard corner-R(RE)	Coolant hole	Applicable inserts
		R	L	DMIN	DCON	H	LH	LF	WF	WF_2				
A25R-	DTFN$^{R}_{L}$16-32	●	●	32	25	23	42	200	17	0.8	12	0.8	Yes	TN□A1604..., TN□G1604... TN□M1604..., TN□X1604...
A32S-	DTFN$^{R}_{L}$16-40	●	●	40	32	30	50	250	22	1.2				
A40T-	DTFN$^{R}_{L}$22-50	●	●	50	40	37	60	300	27	1.5	12	0.8	Yes	TN□G2204..., TN□M2204...

Description		Spare parts								
		Clamp	Screw (for clamp)	Spring	Wrench (for clamp)	Shim	Screw (for shim)	Wrench* (for shim)	Wrench* (for shim)	Nozzle
										
A25R-	DTFN$^{R}_{L}$16-32	CP-2D	CS-2D	SP-2D	LW-2.5	DT-32	SB-3080TR	FT-10	-	DN10
A32S-	DTFN$^{R}_{L}$16-40									
A40T-	DTFN$^{R}_{L}$22-50	CP-3D	CS-3D	SP-3D	LW-3	DT-42	SB-4085TR	-	FT-15	DN20

Not applicable to high-pressure coolant
When using the insert with WF chipbreaker, tool edge offset or program corrections are required on **R34** and **R35**.
Wrench (FT-10 or FT-15) is sold separately

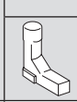
● : Standard item

S-PTUN (Boring)



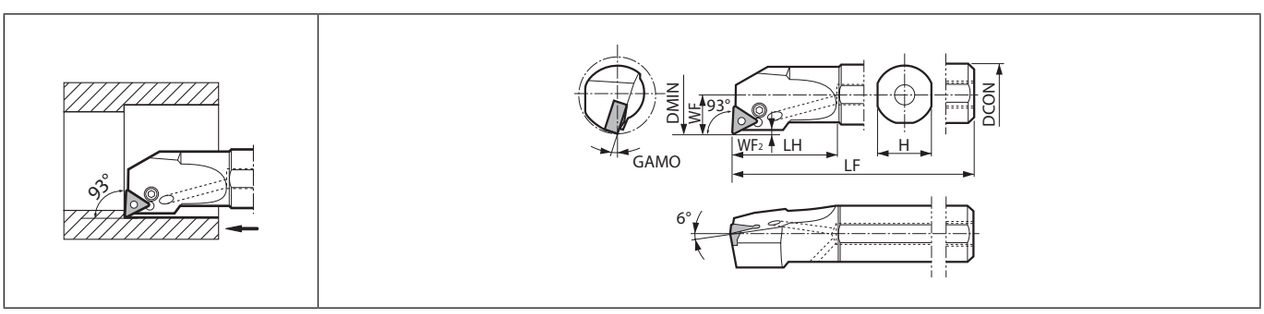
Max. Overhang Length L/D=~3 | Right-hand shown
Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

Toolholder dimensions

Description	Availability		Dimension (mm)							GAMO (°)	Standard corner-R(RE)	Coolant hole	Spare parts							Applicable inserts
													Lever	Lock screw	Punch	Shim	Shim pin	Shim pin	Wrench	
	R	L	DMIN	DCON	H	LH	LF	WF	WF_2											
S16M- PTUN□11-20	●	●	20	16	15	34	150	11	0.3	18	0.8	No	LL-03TN	LS-03SN	-	-	-	P-03S	FH-2.5	TN□G1104...
S20Q- PTUN□11-25	●	●	25	20	19	37	180	13.2	0.2	17										
S25R- PTUN□11-32	●	●	32	25	24	42	200	15.7	0.3	16										
S16M- PTUN□16-20	●	●	20	16	15	34	150	11	1.3	18	0.8	No	LL-03SN	LS-03SN	-	-	-	P-03S	FH-2.5	TN□A1604... TN□G1604... TN□M1604...
S20Q- PTUN□16-25	●	●	25	20	19	37	180	13.2		17										
S25R- PTUN□16-30	●	●	30	25	24	42	200	15.5		13										
S32S- PTUN□16-40	●	●	40	32	30	50	250	22	0.7				LL-1N	LS-1N	PC-1	LT-32N (LT-32N-20*)	LSP-1	-		
S40T- PTUN□16-50	●	●	50	40	37	60	300	27	0.6	11										

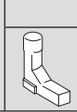
When using inserts whose corner-R(RE) is greater than 1.6 mm, please purchase a shim* and use it in order to prevent workpiece and shim from interfering each other.

A-PTUN (Boring)



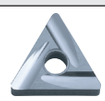
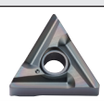
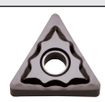
Max. Overhang Length L/D=~3 | Right-hand shown
Left-hand Insert for Right-hand Toolholder.

Toolholder dimensions

Description	Availability	Dimension (mm)							GAMO (°)	Standard corner-R(RE)	Coolant hole	Spare parts				Applicable inserts
												Lever	Lock screw	Shim pin	Wrench	
	R	DMIN	DCON	H	LH	LF	WF	WF_2								
A16M- PTUNR11-20	●	20	16	15	34	150	11	0.3	18	0.8	Yes	LL-03TN	LS-03SN	P-03S	FH-2.5	TN□G1104...
A20Q- PTUNR11-25	●	25	20	19	37	180	13.2	0.2	17							
A25R- PTUNR11-32	●	32	25	24	42	200	15.7	0.3	16							

● : Standard item

Applicable inserts (A-DTFN / S-PTUN / A-PTUN)

Applications	Finishing	Finishing	Finishing	Finishing - Medium	Finishing - Medium	Finishing - Medium	Medium - Roughing	Medium - Roughing
Insert								
Chipbreaker type	WF*	PP	GP	PQ	HQ	CQ	GS	PG
Page	B39	B39	B39	B39	B39	B39	B40	B40
Applications	Medium - Roughing	Medium - Roughing	Medium - Roughing	Roughing	Roughing	Roughing	Finishing	Finishing
Insert								
Chipbreaker type	PS	PT	GT	STD	PH	PX	R/L-SSF	R/L-S
Page	B40	B40	B40	B40	B41	B41	B45	B45
Applications	Finishing - Medium	Medium - Roughing	Medium - Roughing	Medium - Roughing	Low carbon steel	Low carbon steel	Low carbon steel	Low carbon steel
Insert								
Chipbreaker type	R/L-B	R/L-C	R/L	R/L-25R	XF	XP	XQ	XS
Page	B45	B46	B46	B46	B41	B41	B41	B41
Applications	Finishing - Medium	Large ap	Medium - Roughing	Stainless steel / Heat-resistant alloys	Stainless steel / Heat-resistant alloys	Stainless steel / Heat-resistant alloys	Stainless steel / Heat-resistant alloys	Stainless steel
Insert								
Chipbreaker type	SK	R-LD	FP-TK	TK	MQ	MS	MU	R/L-ST
Page	B42	B42	B42	B42	B42	B42	B42	B43
Applications	Cast iron	Cast iron	Cast iron	Cast iron	Cast iron	Cast iron	Cast iron	Cast iron / Hard materials
Insert								
Chipbreaker type	KQ	KG	KH	C	ZS	GC	No CB	Ceramic
Page	B43	B43	B43	B43	B43	B43	B44	B118
Applications	Non-Ferrous Metals	Non-Ferrous Metals	Non-Ferrous Metals	Heat-resistant alloys	Hard materials / Cast iron			
Insert								
Chipbreaker type	R/L-A3	AH	PCD	SG	CBN			
Page	B44	B44	C36	B43	C13			

When using the insert with WF chipbreaker, tool edge offset or program corrections are required on **R34** and **R35**.
The insert with WF chipbreaker is not applicable for S-PTUN type and A-PTUN type toolholder.

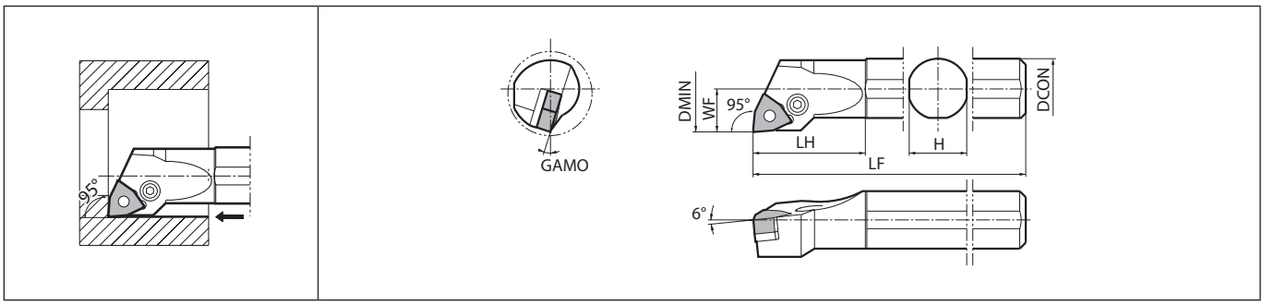
Recommended cutting conditions ➡ **F152, F153**

Applicable Coolant Sleeve / Joint

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

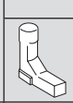
For Coolant Sleeve, Coolant Joint See Page ➡ **F150, F151**

S-PWLN (Boring / Internal facing)



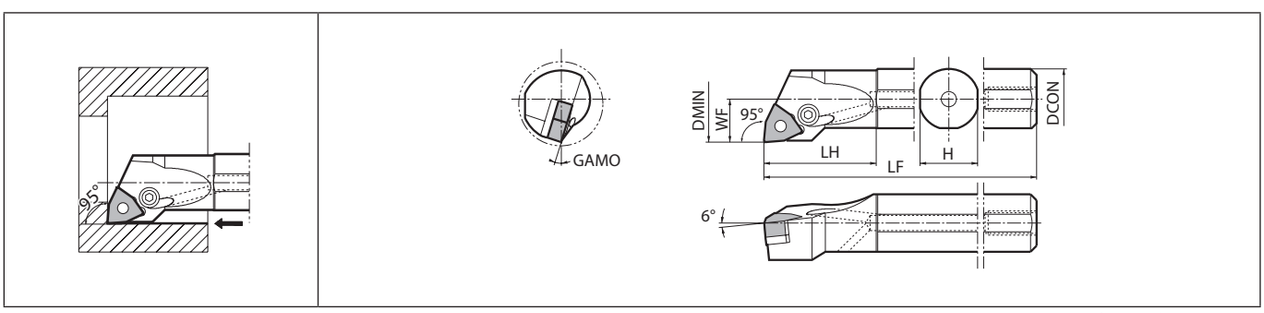
Max. Overhang Length L/D=~3 | Right-hand shown
Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

Toolholder dimensions

Description		Availability		Dimension (mm)						GAMO (°)	Standard corner-R(RE)	Coolant hole	Spare parts								Applicable inserts
													Lever	Lock screw	Punch	Shim	Shim pin	Shim pin	Wrench	Wrench	
		R	L	DMIN	DCON	H	LH	LF	WF												
S16M-	PWLNR/L06-20	●	●	20	16	15	34	150	11	16	0.8	No	LL-03SN	LS-03SN	-	-	-	P-03S	-	FH-2.5	WN□G0604...
S20Q-	PWLNR/L06-27	●	●	27	20	19	37	180	14.2	17			LL-1N	LS-1SN	PC-1	LW-32N	LSP-1	-			
S25R-	PWLNR/L06-32	●	●	32	25	24	42	200	15.7	15											
S32S-	PWLNR/L08-40	●	●	40	32	30	50	250	22	10	0.8	No	LL-2N	LS-2N	PC-2	LW-42NR/L	LSP-2	-	LW-3	-	WN□A0804... WN□G0804... WN□M0804...
S40T-	PWLNR/L08-50	●	●	50	40	37	60	300	27												

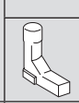
Shim : LW-42NR for Right-hand Toolholder, LW-42NL for Left-hand Toolholder.

A-PWLN (Boring / Internal facing)



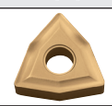
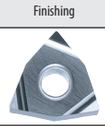
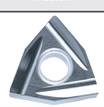
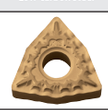
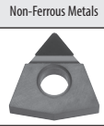
Max. Overhang Length L/D=~3 | Right-hand shown
Left-hand Insert for Right-hand Toolholder.

Toolholder dimensions

Description		Availability	Dimension (mm)						GAMO (°)	Standard corner-R(RE)	Coolant hole	Spare parts							Applicable inserts
												Lever	Lock screw	Punch	Shim	Shim pin	Shim pin	Wrench	
		R	DMIN	DCON	H	LH	LF	WF											
A16M-	PWLNR06-20	●	20	16	15	34	150	11	16	0.8	Yes	LL-03SN	LS-03SN	-	-	-	P-03S	FH-2.5	WN□G0604...
A20Q-	PWLNR06-27	●	27	20	19	37	180	14.2	17			LL-1N	LS-1SN	PC-1	LW-32N	LSP-1	-		
A25R-	PWLNR06-32	●	32	25	24	42	200	15.7	15										

● : Standard item

Applicable inserts (S-PWLN / A-PWLN)

Applications	Finishing	Finishing	Finishing - Medium	Finishing - Medium	Finishing	Finishing	Finishing - Medium	Finishing - Medium
Insert								
Chipbreaker type	WF	WP	WE	WQ	PP	GP	PQ	HQ
Page	B50	B50	B50	B50	B50	B50	B50	B51
Applications	Finishing - Medium	Finishing - Medium	Medium - Roughing	Medium - Roughing	Medium - Roughing	Medium - Roughing	Medium - Roughing	Roughing
Insert								
Chipbreaker type	CQ	CJ	GS	PG	PS	PT	GT	STD
Page	B51	B51	B51	B51	B51	B51	B52	B52
Applications	Roughing	Finishing	Medium	Low carbon steel	Low carbon steel	Low carbon steel	Stainless steel / Heat-resistant alloys	Stainless steel / Heat-resistant alloys
Insert								
Chipbreaker type	PH	R/L-S	R/L	XP	XQ	XS	TK	MQ
Page	B52	B54	B54	B52	B52	B52	B52	B53
Applications	Stainless steel / Heat-resistant alloys	Stainless steel / Heat-resistant alloys	Cast iron	Cast iron	Cast iron	Cast iron	Cast iron	Cast iron
Insert								
Chipbreaker type	MS	MU	KQ	KG	KH	C	ZS	GC
Page	B53	B53	B53	B53	B53	B54	B54	B54
Applications	Cast iron	Non-Ferrous Metals	Non-Ferrous Metals	Heat-resistant alloys	Hard materials / Cast iron			
Insert								
Chipbreaker type	No CB	AH	PCD	SG	CBN			
Page	B54	B54	C38	B53	C15			

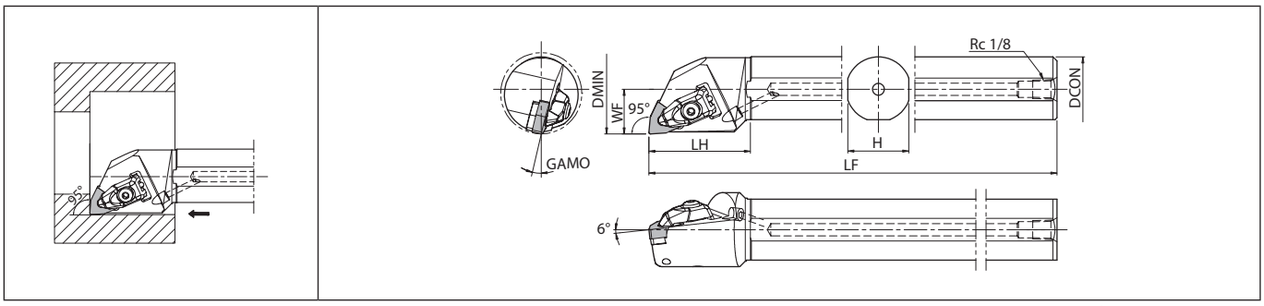
Recommended cutting conditions ➡ F152, F153

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 See Page ➡ F150, F151

A-DWLN (Boring / Internal facing)



Max. Overhang Length L/D=~3 | Right-hand shown
Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

Toolholder dimensions

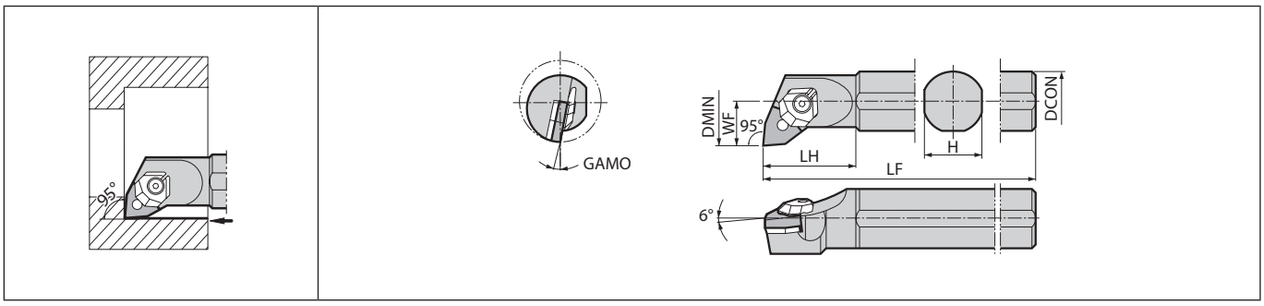
Description		Availability R	Availability L	Dimension (mm) DMIN	DCON	H	LH	LF	WF	GAMO (°)	Standard corner-R(RE)	Coolant hole	Applicable inserts
A25R-	DWLN□□08-32	●	●	32	25	23	50	200	17	13	0.8	Yes	WN□A0804... WN□G0804... WN□M0804...
A32S-	DWLN□□08-40	●	●	40	32	30		250	22				
A40T-	DWLN□□08-50	●	●	50	40	37	60	300	27				

Description		Spare parts: Clamp	Screw (for clamp)	Spring	Wrench (for clamp)	Shim	Screw (for shim)	Wrench* (for shim)	Nozzle
A25R-	DWLN□□08-32	CP-3D	CS-3D	SP-3D	LW-3	DW-42	SB-4085TR	FT-15	DN10
A32S-	DWLN□□08-40								
A40T-	DWLN□□08-50								DN20

Not applicable to high-pressure coolant
Wrench (FT-15) is sold separately.

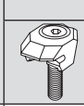
● : Standard item

S-WWLN-E Excellent bar (Boring / Internal facing)



Max. Overhang Length L/D=~5 | Right-hand shown
Left-hand Insert for Right-hand Toolholder, Right-hand Insert for Left-hand Toolholder.

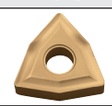
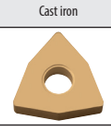
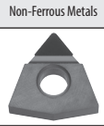
Toolholder dimensions

Description		Availability		Dimension (mm)						GAMO (°)	Standard corner-R(RE)	Coolant hole	Spare parts					Applicable inserts
													Clamp set	Wrench	Shim	Shim pin	Wrench	
		R	L	DMIN	DCON	H	LH	LF	WF									
S25S-	WWLN□□08-28E	●	●	28	25	24	36	250	14	13	1.2	No	WCS-8	LW-3	WWP-42 (WWP-42-16*)	WP5X11	LW-2	WN□A0804...
	WWLN□□08-34E	●	●	34			40		17	11								WN□G0804...
S32S-	WWLN□□08-40E	●	●	40	32	30	50		20	10								WN□M0804...

When using inserts whose corner-R(RE) is greater than 1.6 mm, please purchase a shim* and use it in order to prevent workpiece and shim from interfering each other.
In wedge lock, use of ceramic insert other than silicon nitride insert is not recommended due to strong restrain force.

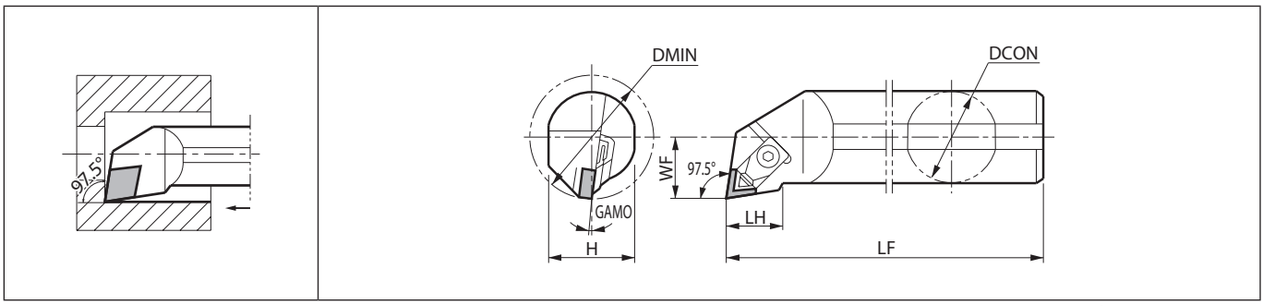
● : Standard item

Applicable inserts (A-DWLN / S-WWLN-E)

Applications	Finishing	Finishing	Finishing - Medium	Finishing - Medium	Finishing	Finishing	Finishing - Medium	Finishing - Medium
Insert								
Chipbreaker type	WF	WP	WE	WQ	PP	GP	PQ	HQ
Page	B50	B50	B50	B50	B50	B50	B50	B51
Applications	Finishing - Medium	Finishing - Medium	Medium - Roughing	Medium - Roughing	Medium - Roughing	Medium - Roughing	Medium - Roughing	Roughing
Insert								
Chipbreaker type	CQ	CJ	GS	PG	PS	PT	GT	STD
Page	B51	B51	B51	B51	B51	B51	B52	B52
Applications	Roughing	Low carbon steel	Low carbon steel	Low carbon steel	Stainless steel / Heat-resistant alloys	Stainless steel / Heat-resistant alloys	Stainless steel / Heat-resistant alloys	Stainless steel / Heat-resistant alloys
Insert								
Chipbreaker type	PH	XP	XQ	XS	TK	MQ	MS	MU
Page	B52	B52	B52	B52	B52	B52	B53	B53
Applications	Cast iron	Cast iron	Cast iron	Cast iron	Cast iron	Cast iron	Cast iron	Non-Ferrous Metals
Insert								
Chipbreaker type	KQ	KG	KH	C	ZS	GC	No CB	AH
Page	B53	B53	B53	B54	B54	B54	B54	B54
Applications	Non-Ferrous Metals	Heat-resistant alloys	Hard materials / Cast iron					
Insert								
Chipbreaker type	PCD	SG	CBN					
Page	C38	B53	C15					

Recommended cutting conditions F152, F153

S-CELN (Boring / Internal facing)



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

Toolholder dimensions

Description	Availability	Dimension (mm)						GAMO (°)	Standard corner-R(RE)	Coolant hole	Spare parts					Applicable inserts
											Chipbreaker	Clamp set	Wrench	Shim	Shim screw	
	R	DMIN	DCON	H	LH	LF	WF									
S40T- CELNR13-50	●	50	40	37	32	300	27	12	0.8	No	CB-16	CE-010	LW-4	SP-341P	M3X8	ENGN1307...

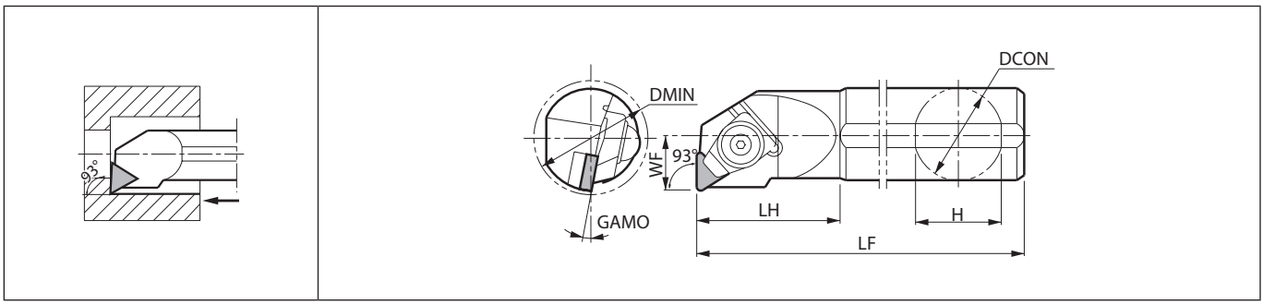
Applicable inserts

Applications	Cast iron / Hard materials
Insert	
Type	Ceramic
Page	B115

Recommended cutting conditions F152, F153

● : Standard item

S-CTUN-A (Boring)



Right-hand shown

Toolholder dimensions

Description	Availability	Dimension (mm)						GAMO (°)	Standard corner-R(RE)	Spare parts				Applicable inserts
										Clamp set	Shim screw	Shim	Wrench	
	R	DMIN	DCON	H	LH	LF	WF							
S25X- CTUNR11-30A	●	30	25	24	40	220	15	10	0.8	CE-360S	BH3X6	SP-210A	LW-4	TN□N1103...

Applicable inserts

Applications	Hard materials / Cast iron	Cast iron / Hard materials
Insert		
Type	CBN	Ceramic
Page	C19	B118

Recommended cutting conditions F152, F153

● : Standard item

EZH Sleeves

Sleeve Description				Applicable Inserts				Applicable Machine Manufacturer
EZH-CT (Adjustable overhang length with coolant hole)	EZH-HP (Adjustable overhang length)	EZH-ST	Sleeve Shank Dia. DCON (mm)	EZB	EZBT/EZBF EZBP/EZBC EZVB/EZG EZFG/EZT	EZ Bar PLUS	Shank Dia. DCON (mm)	
-	-	EZH 01712ST-80	12	EZB_ ...017...	-	-	1.7	(General purpose)
		02012ST-80		EZB_ ...020...	EZ_ _ ...020...		2	
		02512ST-80		EZB_ ...025...	EZ_ _ ...025-...		2.5	
		03012ST-80		EZB_ ...030...	EZ_ _ ...030-...		3	
		03512ST-80		EZB_ ...035...	EZ_ _ ...035-...		3.5	
		04012ST-80		EZB_ ...040...	EZ_ _ ...040-...		4	
		05012ST-80		EZB_ ...050...	EZ_ _ ...050-...		5	
		06012ST-80		EZB_ ...060...	EZ_ _ ...060-...		6	
		07012ST-80		EZB_ ...070...	EZ_ _ ...070-...		7	
-	EZH 01716HP-100	EZH 01716ST-100	16	EZB_ ...017...	-	-	1.7	(General purpose)
	02016HP-100	02016ST-100		EZB_ ...020...	EZ_ _ ...020...		2	
	02516HP-100	02516ST-100		EZB_ ...025...	EZ_ _ ...025-...		2.5	
	03016HP-100	03016ST-100		EZB_ ...030...	EZ_ _ ...030-...		3	
	03516HP-100	03516ST-100		EZB_ ...035...	EZ_ _ ...035-...		3.5	
	04016HP-100	04016ST-100		EZB_ ...040...	EZ_ _ ...040-...		4	
	04516HP-100	-		EZB_ ...045...	-	_045X- ...-050EZP	4.5	
	05016HP-100	05016ST-100		EZB_ ...050...	EZ_ _ ...050-...	_050X- ...-060EZP	5	
	06016HP-100	06016ST-100		EZB_ ...060...	EZ_ _ ...060-...	_060X- ...-070EZP	6	
	07016HP-100	07016ST-100		EZB_ ...070...	EZ_ _ ...070-...	_070X- ...-080EZP	7	
	-	08016ST-100		EZB_ ...080...	-	_080X- ...-100EZP	8	
EZH 01719CT-120	EZH 01719HP-120	EZH 01719ST-120	19.05	EZB_ ...017...	-	-	1.7	Citizen Machinery
02019CT-120	02019HP-120	02019ST-120		EZB_ ...020...	EZ_ _ ...020...		2	
02519CT-120	02519HP-120	02519ST-120		EZB_ ...025...	EZ_ _ ...025-...		2.5	
03019CT-120	03019HP-120	03019ST-120		EZB_ ...030...	EZ_ _ ...030-...		3	
03519CT-120	03519HP-120	03519ST-120		EZB_ ...035...	EZ_ _ ...035-...		3.5	
04019CT-120	04019HP-120	04019ST-120		EZB_ ...040...	EZ_ _ ...040-...		4	
04519CT-120	04519HP-120	-		EZB_ ...045...	-	_045X- ...-050EZP	4.5	
05019CT-120	05019HP-120	05019ST-120		EZB_ ...050...	EZ_ _ ...050-...	_050X- ...-060EZP	5	
06019CT-120	06019HP-120	06019ST-120		EZB_ ...060...	EZ_ _ ...060-...	_060X- ...-070EZP	6	
07019CT-120	07019HP-120	07019ST-120		EZB_ ...070...	EZ_ _ ...070-...	_070X- ...-080EZP	7	
08019CT-120	08019HP-120	08019ST-120		EZB_ ...080...	-	_080X- ...-100EZP	8	
EZH 01720CT-120	EZH 01720HP-120	EZH 01720ST-120	20	EZB_ ...017...	-	-	1.7	Eguro Tsugami Citizen Machinery (General purpose)
02020CT-120	02020HP-120	02020ST-120		EZB_ ...020...	EZ_ _ ...020...		2	
02520CT-120	02520HP-120	02520ST-120		EZB_ ...025...	EZ_ _ ...025-...		2.5	
03020CT-120	03020HP-120	03020ST-120		EZB_ ...030...	EZ_ _ ...030-...		3	
03520CT-120	03520HP-120	03520ST-120		EZB_ ...035...	EZ_ _ ...035-...		3.5	
04020CT-120	04020HP-120	04020ST-120		EZB_ ...040...	EZ_ _ ...040-...		4	
04520CT-120	04520HP-120	-		EZB_ ...045...	-	_045X- ...-050EZP	4.5	
05020CT-120	05020HP-120	05020ST-120		EZB_ ...050...	EZ_ _ ...050-...	_050X- ...-060EZP	5	
06020CT-120	06020HP-120	06020ST-120		EZB_ ...060...	EZ_ _ ...060-...	_060X- ...-070EZP	6	
07020CT-120	07020HP-120	07020ST-120		EZB_ ...070...	EZ_ _ ...070-...	_070X- ...-080EZP	7	
08020CT-120	08020HP-120	08020ST-120		EZB_ ...080...	-	_080X- ...-100EZP	8	
EZH 01722CT-135	EZH 01722HP-135	EZH 01722ST-135	22	EZB_ ...017...	-	-	1.7	Star Micronics Nomura DS Tsugami
02022CT-135	02022HP-135	02022ST-135		EZB_ ...020...	EZ_ _ ...020...		2	
02522CT-135	02522HP-135	02522ST-135		EZB_ ...025...	EZ_ _ ...025-...		2.5	
03022CT-135	03022HP-135	03022ST-135		EZB_ ...030...	EZ_ _ ...030-...		3	
03522CT-135	03522HP-135	03522ST-135		EZB_ ...035...	EZ_ _ ...035-...		3.5	
04022CT-135	04022HP-135	04022ST-135		EZB_ ...040...	EZ_ _ ...040-...		4	
04522CT-135	04522HP-135	-		EZB_ ...045...	-	_045X- ...-050EZP	4.5	
05022CT-135	05022HP-135	05022ST-135		EZB_ ...050...	EZ_ _ ...050-...	_050X- ...-060EZP	5	
06022CT-135	06022HP-135	06022ST-135		EZB_ ...060...	EZ_ _ ...060-...	_060X- ...-070EZP	6	
07022CT-135	07022HP-135	07022ST-135		EZB_ ...070...	EZ_ _ ...070-...	_070X- ...-080EZP	7	
08022CT-135	08022HP-135	08022ST-135		EZB_ ...080...	-	_080X- ...-100EZP	8	
EZH 01725.0CT-135	EZH 01725.0HP-135	EZH 01725.0ST-135	25	EZB_ ...017...	-	-	1.7	Eguro Tsugami Citizen Machinery (General purpose)
02025.0CT-135	02025.0HP-135	02025.0ST-135		EZB_ ...020...	EZ_ _ ...020...		2	
02525.0CT-135	02525.0HP-135	02525.0ST-135		EZB_ ...025...	EZ_ _ ...025-...		2.5	
03025.0CT-135	03025.0HP-135	03025.0ST-135		EZB_ ...030...	EZ_ _ ...030-...		3	
03525.0CT-135	03525.0HP-135	03525.0ST-135		EZB_ ...035...	EZ_ _ ...035-...		3.5	
04025.0CT-135	04025.0HP-135	04025.0ST-135		EZB_ ...040...	EZ_ _ ...040-...		4	
04525.0CT-135	04525.0HP-135	-		EZB_ ...045...	-	_045X- ...-050EZP	4.5	
05025.0CT-135	05025.0HP-135	05025.0ST-135		EZB_ ...050...	EZ_ _ ...050-...	_050X- ...-060EZP	5	
06025.0CT-135	06025.0HP-135	06025.0ST-135		EZB_ ...060...	EZ_ _ ...060-...	_060X- ...-070EZP	6	
07025.0CT-135	07025.0HP-135	07025.0ST-135		EZB_ ...070...	EZ_ _ ...070-...	_070X- ...-080EZP	7	
08025.0CT-135	08025.0HP-135	08025.0ST-135		EZB_ ...080...	-	_080X- ...-100EZP	8	
EZH 01725.4CT-120	EZH 01725.4HP-120	EZH 01725.4ST-120	25.4	EZB_ ...017...	-	-	1.7	Citizen Machinery
02025.4CT-120	02025.4HP-120	02025.4ST-120		EZB_ ...020...	EZ_ _ ...020...		2	
02525.4CT-120	02525.4HP-120	02525.4ST-120		EZB_ ...025...	EZ_ _ ...025-...		2.5	
03025.4CT-120	03025.4HP-120	03025.4ST-120		EZB_ ...030...	EZ_ _ ...030-...		3	
03525.4CT-120	03525.4HP-120	03525.4ST-120		EZB_ ...035...	EZ_ _ ...035-...		3.5	
04025.4CT-120	04025.4HP-120	04025.4ST-120		EZB_ ...040...	EZ_ _ ...040-...		4	
04525.4CT-120	04525.4HP-120	-		EZB_ ...045...	-	_045X- ...-050EZP	4.5	
05025.4CT-120	05025.4HP-120	05025.4ST-120		EZB_ ...050...	EZ_ _ ...050-...	_050X- ...-060EZP	5	
06025.4CT-120	06025.4HP-120	06025.4ST-120		EZB_ ...060...	EZ_ _ ...060-...	_060X- ...-070EZP	6	
07025.4CT-120	07025.4HP-120	07025.4ST-120		EZB_ ...070...	EZ_ _ ...070-...	_070X- ...-080EZP	7	
08025.4CT-120	08025.4HP-120	08025.4ST-120		EZB_ ...080...	-	_080X- ...-100EZP	8	

· Choose sleeves (DCB) to meet with DCON dimension of bar.

· Adjustment Pin cannot be installed to EZH-ST sleeves. To adjust overhang of the bar, please use EZH-CT / HP sleeves.

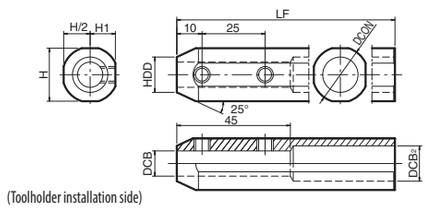
EZH Sleeves and Applicable Inserts / Toolholders

Shank Size (Hole Dia.: mm)		017 (1.7mm)	020 (2mm)	025 (2.5mm)	03 (3mm)	035 (3.5mm)
EZH-CT sleeve (Internal coolant) EZH-HP sleeve description (Adjustable overhang length)		EZH 01716HP-100	EZH 02016HP-100	EZH 02516HP-100	EZH 03016HP-100	EZH 03516HP-100
		01719CT/HP-120	02019CT/HP-120	02519CT/HP-120	03019CT/HP-120	03519CT/HP-120
		01720CT/HP-120	02020CT/HP-120	02520CT/HP-120	03020CT/HP-120	03520CT/HP-120
		01722CT/HP-135	02022CT/HP-135	02522CT/HP-135	03022CT/HP-135	03522CT/HP-135
		01725.0CT/HP-135	02025.0CT/HP-135	02525.0CT/HP-135	03025.0CT/HP-135	03525.0CT/HP-135
		01725.4CT/HP-120	02025.4CT/HP-120	02525.4CT/HP-120	03025.4CT/HP-120	03525.4CT/HP-120
EZH-ST sleeve description		EZH 01712ST-80	EZH 02012ST-80	EZH 02512ST-80	EZH 03012ST-80	EZH 03512ST-80
		01716ST-100	02016ST-100	02516ST-100	03016ST-100	03516ST-100
		01719ST-120	02019ST-120	02519ST-120	03019ST-120	03519ST-120
		01720ST-120	02020ST-120	02520ST-120	03020ST-120	03520ST-120
		01722ST-135	02022ST-135	02522ST-135	03022ST-135	03522ST-135
		01725.0ST-135	02025.0ST-135	02525.0ST-135	03025.0ST-135	03525.0ST-135
		01725.4ST-120	02025.4ST-120	02525.4ST-120	03025.4ST-120	03525.4ST-120
EZ Bars	Boring		EZB$^{R}/_{L}$ 020020HP-	EZB$^{R}/_{L}$ 025025HP-	EZB$^{R}/_{L}$ 030030HP-	EZB$^{R}/_{L}$ 035035HP-
		EZBR 020017ST-	EZBR 025020ST-	EZBR 030025ST-	EZBR 035030ST-	EZBR 040035ST-
		EZBR 020017-...NB	EZBR 025020-...NB	EZBR 030025-...NB	EZBR ...030-...NB	EZBR 040035-...NB
					EZBFR 030030-008	
			EZBPR 020020-		EZBPR 030030-	
					EZVBR 035030-	
	Internal Grooving				EZGR 030030-	
	Face Grooving					
	Internal Threading			EZTR 030025-	EZTR 035030-	EZTR 040035-
EZ Bar PLUS						

Shank Size (Hole Dia.: mm)		04 (4mm)	045 (4.5mm)	05 (5mm)	06 (6mm)	07 (7mm)	08 (8mm)
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	04519CT/HP-120	05019CT/HP-120	06019CT/HP-120	07019CT/HP-120	EZH 08019CT/HP-120
		04020CT/HP-120	04520CT/HP-120	05020CT/HP-120	06020CT/HP-120	07020CT/HP-120	08020CT/HP120
		04022CT/HP-135	04522CT/HP-135	05022CT/HP-135	06022CT/HP-135	07022CT/HP-135	08022CT/HP-135
		04025.0CT/HP-135	04525.0CT/HP-135	05025.0CT/HP-135	06025.0CT/HP-135	07025.0CT/HP-135	08025.0CT/HP-135
		04025.4CT/HP-120	04525.4CT/HP-120	05025.4CT/HP-120	06025.4CT/HP-120	07025.4CT/HP-120	08025.4CT/HP-120
EZH-ST sleeve description		EZH 04012ST-80		EZH 05012ST-80	EZH 06012ST-80	EZH 07012ST-80	
		04016ST-100		05016ST-100	06016ST-100	07016ST-100	EZH 08016ST-100
		04019ST-120		05019ST-120	06019ST-120	07019ST-120	08019ST-120
		04020ST-120		05020ST-120	06020ST-120	07020ST-120	08020ST-120
		04022ST-135		05022ST-135	06022ST-135	07022ST-135	08022ST-135
		04025.0ST-135		05025.0ST-135	06025.0ST-135	07025.0ST-135	08025.0ST-135
		04025.4ST-120		05025.4ST-120	06025.4ST-120	07025.4ST-120	08025.4ST-120
EZ Bars	Boring	EZB$^{R}/_{L}$ 040040HP-	EZB$^{R}/_{L}$ 045045HP-	EZB$^{R}/_{L}$ 050050HP-	EZB$^{R}/_{L}$ 060060HP-	EZB$^{R}/_{L}$ 070070HP-	EZB$^{R}/_{L}$ 080080HP-
		EZBR 045040ST-		EZBR 055050ST-	EZBR 065060ST-	EZBR 075070ST-	
		EZBR ...040-...NB		EZBR ...050-...NB	EZBR ...060-...NB	EZBR ...070-...NB	
		EZBFR 040040-008		EZBFR 050050-015	EZBFR 060060-015		
		EZBPR 040040-015		EZBPR 050050-015	EZBPR 060060-015		
				EZBCR 050050-	EZBCR 060060-	EZBCR 070070-	
		EZVBR 045040-		EZVBR 055050-	EZVBR 065060-		
		EZBTR 040040-		EZBTR 050050-			
	Internal Grooving	EZG$^{R}/_{L}$ 040040-		EZG$^{R}/_{L}$ 050050-	EZG$^{R}/_{L}$ 060060-	EZG$^{R}/_{L}$ ...070-...	
	Face Grooving	EZFG$^{R}/_{L}$ 050040-		EZFG$^{R}/_{L}$ 060050-		EZFG$^{R}/_{L}$ 080070-	
	Internal Threading	EZTR 050040-		EZTR 060050-	EZTR 070060-	EZTR 080070-	
EZ Bar PLUS			S/C045X-SCLCR03-050EZP	S/C050X-SCLCR03-060EZP	S/C060X-SCLCR04-070EZP	S/C070X-SCLCR04-080EZP	S/C080X-SCLCR06-100EZP
						S/C070X-STLBR06-080EZP	S/C080X-STLPR09-100EZP
				S/C050X-SWUBR06-060EZP	S/C060X-SWUBR06-070EZP	S/C070X-SWUBR08-080EZP	
Boring Bars		C04-....		C05-....	C06-....	C07-....	C/E08-....
					S06-....		A/S08-....

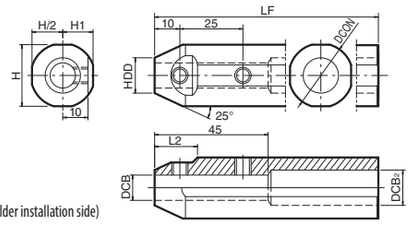
Note 1) When attaching 2-Edge Tip-Bars to EZH-CT/HP Sleeve (Adjustable overhang length), detach Adjustable Pin.
Overhang length of bar is not adjustable.

SHA sleeves (Applicable Toolholders F151)



(Toolholder installation side)

Fig. 1



(Toolholder installation side)

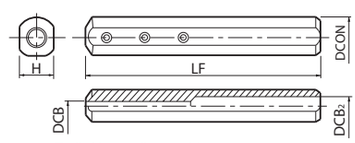
Fig. 2

Description		Availability	Dimension (mm)								Drawing	Spare Parts		Applicable Machine Manufacturer
			DCB	DCON	HDD	DCB_2	H	H1	LF	L2		Screw	Wrench	
SHA	0820-120	●	8	20	14	12	19	9.25	120	-	Fig. 1	HS6X4P	LW-3	Eguro Tsugami Citizen Machinery
	1020-120	●	10											
SHA	0825.0-135	●	8	25	14	14	24	11.5	135	17	Fig. 2			
	1025.0-135	●	10											
	1225.0-135	●	12		16									
SHA	0819-120	●	8	19.05	14	12	18	8.75	120	-	Fig. 1	HS6X4P	LW-3	Citizen Machinery
	1019-120	●	10											
SHA	0820-120	●	8	20	14	12	19	9.25	120	-	Fig. 1			
	1020-120	●	10											
SHA	0825.4-120	●	8	25.4	14	14	24.4	12	120	17	Fig. 2			
	1025.4-120	●	10											
	1225.4-120	●	12		16									
SHA	0822-125	●	8	22	14	14	21	10	125	-	Fig. 1	HS6X4P	LW-3	Star Micronics Nomura DS
	1022-125	●	10											
	1222-125	●	12		16									
SHA	0823-120	●	8	23	14	14	22	10.5	120	16	Fig. 2	HS6X4P	LW-3	Nomura DS
	1023-120	●	10											
	1223-120	●	12		16									

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

● : Standard item

Sleeves for Boring Bars

Shape	Description		Availability	Dimension (mm) DCON	DCB	DCB_2	H	LF	Spare Parts: Screw	Spare Parts: Wrench
 (Toolholder installation side)	SH	0416-100	●	16	4	5	14	100	HS4X4	LW-2
		0516-100	●		5	6				
		0616-100	●		6	7				
		0716-100	●		7	8				
	SH	0820-120	●	20	8	9	18	120	HS4X4	LW-2
		1020-120	●		10	11				
		1225-150	●	25	12	13	23	150	HS5X5	LW-2.5
		1632-180	●	32	16	18	30	180		
		2032-180	●		20	22				

Coolant Sleeve Dimensions

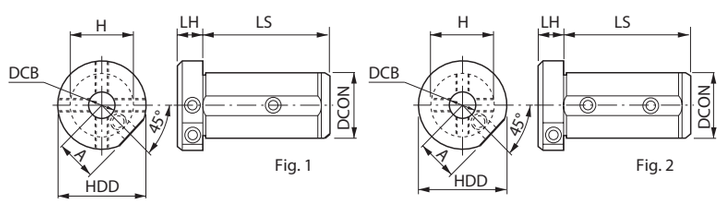


Fig. 1 Fig. 2

Accessories

Back Cover / SHL-4···SHC○○40-70
SHL-5···SHC○○50-95

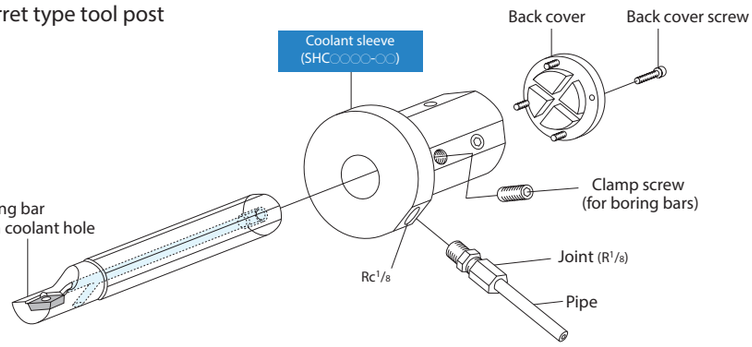
Back Cover Screw
Shank Clamp Screw

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

Description		Availability	Dimension (mm) DCON	HDD	DCB	LS	LH	H	A	Drawing	Spare Parts: 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
	1040-70	●			10												
	1240-70	●			12					Fig. 2	HS10X10	LW-5	HS10X10	LW-5			
	1640-70	●			16												
	2040-70	●			20					Fig. 1	HS10X10	LW-5	HS6X6	LW-3			
	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
	1050-95	●			10												
	1250-95	●			12					Fig. 2	HS10X10	LW-5	HS10X10	LW-5			
	1650-95	●			16												
	2050-95	●			20												
	2550-95	●			25												

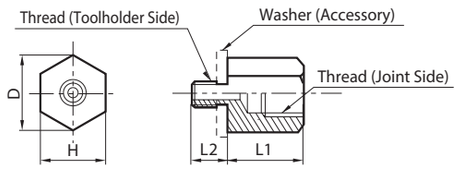
How to Install

1. For turret type tool post



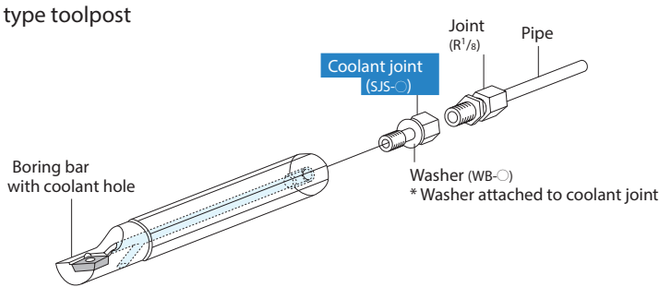
● : Standard item

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



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

2. For gang type toolpost



List of toolholders and applicable joints

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

*This Coolant Joint is not applicable for Dynamic Bar

F

Boring

SHA / SH / SHC Sleeves and Applicable Toolholders

Shank Size (Hole Dia.: mm)	04 (4mm)	05 (5mm)	06 (6mm)	07 (7mm)	08 (8mm)	10 (10mm)	12 (12mm)	16 (16mm)	20 (20mm)	25 (25mm)
Sleeve Description	SH0416-100	SH0516-100	SH0616-100	SH0716-100	SH0820-120	SH1020-120	SH1225-150	SH1632-180	SH2032-180	
					SHA0819-120	SHA1019-120				
					SHA0820-120	SHA1020-120				
					SHA0822-125	SHA1022-125	SHA1222-125			
					SHA0823-120	SHA1023-120	SHA1223-120			
					SHA0825.0-135	SHA1025.0-135	SHA1225.0-135			
					SHA0825.4-120	SHA1025.4-120	SHA1225.4-120			
					SHC0840-70	SHC1040-70	SHC1240-70	SHC1640-70	SHC2040-70	SHC2540-70
					SHC0850-95	SHC1050-95	SHC1250-95	SHC1650-95	SHC2050-95	SHC2550-95
Boring Bar Description					A08.-...	A10.-...	A12.-...	A16.-...	A20.-...	A25.-...
	C04.-...	C05.-...	C06.-...	C07.-...	C08.-...	C10.-...	C12.-...	C16.-...	C20.-...	C25.-...
					E08.-...	E10.-...	E12.-...	E16.-...	E20.-...	E25.-...
			S06.-...		S08.-...	S10.-...	S12.-...	S16.-...	S20.-...	S25.-...
Internal Grooving Toolholder Description			SIGC$^{R}_{L}$0806-WH		SIGC$^{R}_{L}$1008-WH-L85	SIGCR1210-WH-L95	SIGC$^{R}_{L}$0812-EH	SIGC$^{R}_{L}$1016-EH		
					SIGCR1008-WH-L100	SIGC$^{R}_{L}$1210-WH-L110		SIGC$^{R}_{L}$1216-EH		
					SIGE$^{R}_{L}$0808A-EH	SIGE$^{R}_{L}$1010B-EH	SIGE$^{R}_{L}$1412C-EH	SIGE$^{R}_{L}$1616C-EH	SIGE$^{R}_{L}$2020D-EH	SIGE$^{R}_{L}$2525E-EH
						SIGE$^{R}_{L}$1210B-EH	SIGE$^{R}_{L}$1612C-EH			KIGBA$^{R}_{L}$3525-16
					SIGE$^{R}_{L}$0808A-WH	SIGE$^{R}_{L}$1010B-WH	SIGE$^{R}_{L}$1412C-WH	KGDI$^{R}_{L}$...16B-	KGDI$^{R}_{L}$2520B-	KGDI$^{R}_{L}$3225B-
						SIGE$^{R}_{L}$1210B-WH	SIGE$^{R}_{L}$1612C-WH			
					SIGER1008B-WH-90	SIGER1210B-WH-90	SIGER1412C-WH-90			
							GIV$^{R}_{L}$1412-1SE	GIV$^{R}_{L}$1216-1SS	GIV$^{R}_{L}$1420-1S	GIV$^{R}_{L}$2025-1B
							GIV$^{R}_{L}$1612-1AE	GIV$^{R}_{L}$2016-1BE	GIV$^{R}_{L}$1620-1A	GIV$^{R}_{L}$2025-2B
								GIV$^{R}_{L}$2016-2BE	GIV$^{R}_{L}$2520-1CE	GIV$^{R}_{L}$3225-1CE
								GIV$^{R}_{L}$1616-1AW	GIV$^{R}_{L}$2720-2CE	GIV$^{R}_{L}$3225-2CE
									GIV$^{R}_{L}$2020-1BW	GIV$^{R}_{L}$2525-1CW
									GIV$^{R}_{L}$2020-2BW	GIV$^{R}_{L}$2525-2CW
Internal Threading Toolholder Description							SINR0612S-06E	SINR0816S-08E	SIN$^{R}_{L}$2420S-16	CIN$^{R}_{L}$3025S-16
								SIN$^{R}_{L}$1216S-11E	SINR2420S-22	CINR3025S-22
								SIN$^{R}_{L}$1516S-11		
								SIN$^{R}_{L}$1616S-16		
								SIN$^{R}_{L}$2016S-16		

* For SHA sleeves, please see page **F149**. For SH / SHC sleeves, please see page **F150**.

● : Standard item

Boring: Positive insert (Cutting diameter under 10 mm)

ISO classification	Workpiece material	Hardness	Cutting range	Applications	Chipbreaker	Insert grades	Corner-R (RE)	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	PR1725	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	PR1725	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	PR1725	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	PR1725	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	PR1725	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	PR1725	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 PR1725 set to Vc = 150 m/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.
• ap indicates radius

Boring: Positive insert (Cutting diameter over 10 mm)

ISO classification	Workpiece material	Hardness	Cutting range	Applications	Chipbreaker	Insert grades	Corner-R (RE)	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 PR1725	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 CA025P	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 CA025P	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 CA025P	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 PR1725	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 CA025P	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 CA025P	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 CA025P	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 PR1725	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 CA025P	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 CA025P	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 CA025P	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	CA310 CA315	0.4 0.8	150 - **180** - 200 100 - **150** - 180	0.2 - **0.5** - 1.0 0.2 - **0.5** - 1.0	0.05 - **0.1** - 0.2 0.05 - **0.1** - 0.2
			Medium	Continuous Interruption	Standard Without chipbreaker	CA310 CA315	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	CA310 CA315	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	CA315 CA320	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
		45~68 HRC	Finishing	Continuous Interruption	ME MET	KBN05M	0.4 0.8	100 - **140** - 180 90 - **120** - 160	0.1 - **0.2** - 0.3 0.1 - **0.2** - 0.3	0.02 - **0.07** - 0.1 0.02 - **0.07** - 0.1
			Medium	Continuous	Without chipbreaker Negative	KBN900	0.8	60 - **80** - 100	0.3 - **0.7** - 1.0	0.03 - **0.1** - 0.15

* When machining free-cutting steel such as SUM, please use PR1725 for Vc = 200 m/min or under or use PV720 / CA515, etc.
• ap indicates radius