Boring Bars

E1 to E77

E

E Boring Bars

Stock Indications and Symbols

●● mark: Standard stocked item
● mark: To be replaced by a new item featured on the same page
▲ mark: To be replaced by new item (Please confirm stock availability)
＊ mark: Semi-standard stock (Please confirm stock availability)
○○ mark: Stock or planned stock (Please confirm stock availability)
No mark: Made-to-order item
— mark: We cannot produce

Boring Tools Series

Full Support for Boring in Turning Applications

Guide for Selection by Application

Application		Stop Boring				Bottom Facing		Spherical Internal Facing
Insert shape / System/Shank type		Polygon W / Others		Trangle T / Others		80°Diamand C		35°Diamand V
Screw Lock	Steel	S-SWUB (BBPW) E21 S-SWUP New E23	—	S-STUP/S-STUB (BBPC) E24	—	S-SCLP (BBPC) E42	S-SCLC E36	S-SVJB/S-SVJC E55
	Anti-vibration	—	—	B-STUP/D-STUP※ (XBPT/XBPT-H) E24/E25	—	B-SCLP/D-SCLP※ (XBPC/XBPC-H) E42	B-SCLC E36	B-SVJB E55
	Carbide	C-SWUB (WBPW) E21	—	C-STUP/C-STUB (WBPW) E25	—	C-SCLP (WBPC) E43	C-SCLC E37	—
	Carbide with Oil hole	—	—	E-STUP (WBPT-H) E26	—	—	E-SCLC E37	—
Top Clamp Double Clamp	Steel	CKB E12	S-DWLN New E48	S-DTFN New E34	—	S-DCLN E45	—	—
	Carbide	—	—	S-CTFP E31	—	—	—	—
	Steel with Oil Hole	D-DWLN E47	—	D-DTFN E34	—	D-DCLN E45	—	—
Lever Lock	Steel	S-PWLN New E48	—	S-PTFN E33	—	S-PCLN E46	—	—
	Anti-vibration	—	—	B-PTFN E33	—	B-PCLN E46	—	—
Pin Lock	Steel	—	—	S-ETFN (BTFN) E35	—	S-ECLN (BCLN) E47	—	—
Solid	Carbide	BXBR E16	—	—	—	—	—	—
CBN	Carbide	BSME New E18	BNBX E20	BNB E20	SEXC New E19	BNZ E35	—	—

*mark:With coolant hole. Products in ( ) indicate the previous name of the series

Guide for Selection by Application

Application		Through Boring		Copying			Back Turning	
Insert shape / System/Shank type		Polygon W /Others	Square S	55°Diamand D	35°Diamand V		55°Diamand D	35°Diamand V
Screw Lock	Steel	S-SWUB(BBPW) E68 S-SWUP New E70	S-SSKP(BBPS) E71 S-SSKC E72	S-SDUC E49 S-SDQC E50	S-SVUC E58 S-SVUB New E57	S-SVQC E57 S-SVQB New E56	S-SDZC New E51	S-SVZC E60 S-SVZB New E59
	Anti-vibration	—	—	B-SDUC E49 B-SDQC E50	B-SVUB E58 B-SVQB E56	—	—	B-SVZB E59
	Carbide	C-SWUB (WBPW) E68	C-SSKP (WBPS) E71	C-SDUC E49	C-SVUB E58 C-SVQB E56	—	—	C-SVZB E59
	Carbide with Oil hole	—	—	—	—	—	—	—
Top Clamp Double Clamp	Steel	—	S-DSKN New E75	S-DDUN New E65 S-DDQN E65	—	—	—	—
	Carbide	—	S-CSKP E73	—	—	—	—	—
	Steel with Oil Hole	—	—	D-DDUN E65	—	—	—	—
Lever Lock	Steel	—	S-PSKN E75 S-PSYN E76	S-PDUN E66	—	—	S-PDZN E67	—
	Anti-vibration	—	—	—	—	—	—	—
Pin Lock	Steel	—	S-ESKN/S-ESYN (BSKN/BSYN) E76	S-EDUN (BDUN) E66	—	—	S-EDZN (BDZN) E67	—
Special Double Clamp	T-REX Tool Holders	—	—	S-DTR55C T-REX E67	—	—	—	—
CBN	Carbide	—	—	—	—	—	—	—

*mark:With coolant hole. Products in ( ) indicate the previous name of the series

SEC-

Boring Tools Identification Table

■ Catalogue Classification System For SEC-Boring Holders (Round Shank) [ISO Standard]

(Example) **S 16 R – S T U P R 11 03 - 18**

①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩ *	⑪ *
(1) Shank Material – Chart 1	(2) Shank Diameter – mm	(3) Shank Length – Chart 3	(4) Clamping System – Chart 4	(5) Insert Shape – Chart 5	(6) Holder Style – Chart 6	(7) Relief Angle – Chart 7	(8) Feed Direction – Chart 8	(9) Insert Cutting Edge Length – mm	(10) Insert Thickness – mm	(11) Min. Bore Diameter – mm

* This code may only be included in some of the catalogue nos.

Chart 1

(1) Shank Material	
S	Steel
B	Steel with Anti-vibration mechanism
D	Steel with Anti-Vibration / Oil hole
C	Carbide
E	Carbide with Oil hole

Chart 3

(3) Shank Length					
Symbol	Length (mm)	Symbol	Length (mm)	Symbol	Length (mm)
F	80	M	150	T	300
G	90	N	160	U	350
H	100	P	170	V	400
J	110	Q	180	W	450
K	125	R	200		
L	140	S	250		

Chart 4

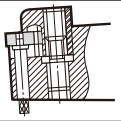
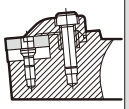
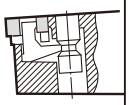
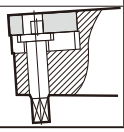
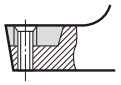
(4) Clamping System					
Symbol	System	Structure	Symbol	System	Structure
C	Top Clamp		M	Top Clamp + Pin Lock	
D	Double Clamp		P	Lever Lock (Insert is supported by 2 faces)	
E	Pin Lock (Insert is supported by 1 face)		S	Screw Lock	

Chart 8

(8) Feed Direction			
Symbol	Right Hand	Symbol	Left Hand
R		L	

Chart 5

(5) Insert Shape			
Symbol	Insert Shape	Symbol	Insert Shape
A	Parallellogram 85°	M	Diamond 86°
B	Parallelogram 82°	O	Octagonal
C	Diamond 80°	P	Pentagonal
D	Diamond 55°	R	Round
E	Diamond 75°	S	Square
F	Diamond 50°	T	Triangle
H	Hexagonal	V	Diamond 35°
K	Parallelogram 55°	W	Trigon
L	Rectangular		

Chart 6

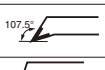
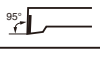
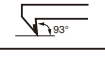
(6) Holder Style (— Indicates major cutting edge)					
Symbol	Shape	Offset	Symbol	Shape	Offset
A		Nil	N		Nil
B		Nil	Q		Yes
D		Nil	R		Yes
E		Nil	S		Yes
F		Yes	T		Yes
G		Yes	U		Yes
J		Yes	W		Yes
K		Yes	Y		Yes
L		Yes	Z		Yes

Chart 7

(7) Relief Angle	
Symbol	Relief Angle
A	3°
B	5°
C	7°
D	15°
E	20°
F	25°
G	30°
N	0°
P	11°
O	Special Angle

■ Catalogue Classification System For SEC-Boring Holders (Round Shank) [Sumitomo Electric Standard]

(Example) **WB P T – 2 12 R (H) (14)**

BB	Steel Shank Boring Bar
WB	Carbide Shank Boring Bar
XB	Steel Shank Boring Bar with Anti-Vibration Mechanism

P	Positive Insert

Symbol	T	S	C
Insert Shape	3-cornered	4-cornered	80° Diamond

Symbol	08	10	12	16	20	25
Shank Diameter (mm)	8	10	12	16	20	25

Symbol	5	6	2	0	3	4
Insert IC (mm)	3.97	4.76	6.35	7.94	9.525	12.70

Symbol	R	L
Hand	Right	Left

Oil Hole

Min. Bore Diameter

Selection Guide for Boring Tools

Guide for Selection by Usage and Boring

Colored box: Manufacturable size (without oil hole), ●: Stock, Ⓗ: Stock with oil hole

Application	Tool Type	Shank Type Boring Depth (L / D) Steel	Carbide	Anti-vibration	Applicable Insert Type/Shape	Tooling	Min. Bore Diameter (mm) * When different from header bore diameters, the correct values are written in the table.
							1 1.5 2 3 4 5 6 7 8 10 12 13 14 16 18 20 22 25 28 34 44 54 70
Minimal Boring	CKB → E12	Up to 3			Coated Carbide SUMIDIA Special Insert		● ● ● ● ● ●
	BXBR → E16		Up to 5		Coated Carbide		● 2.0 to 5.0 In 0.5 increments
	DABB → E17		Up to 2		Brazing SUMIDIA		● ● ● ●
Stop Boring	BSME New → E18		Up to 4		Brazing SUMIBORON		2.0 to 5.0 In 0.5 increments
	SEXC New → E19		Up to 3		SUMIBORON Special Insert		
	BNBX → E20		Up to 5		Brazing SUMIBORON		● 2.5 to 8.5 In 0.5 increments
	BNB → E20		Up to 4		SUMIBORON Special Insert		● ● ● ● ●
	S-SWUB [BBPW] → E21	Up to 3			Polygon 5°Positive (with hole) 11°Positive (with hole)		● 5.5 ● ●
	C-SWUB [WBPW] → E21		Up to 8				● 5.5
	S-SWUP New → E23	Up to 3					● ● ●
	S-STUP/ S-STUB [BBPT] → E24	Up to 3			Triangular Type 5°Positive(with hole) 11°Positive(with hole)		● ● ● ● ● ● ● ● ●
	B-STUP/ D-STUP [XBPT/XBPT-H] → E24, E25			Up to 6			● ● ● Ⓗ ● Ⓗ ● Ⓗ ● 40
	C-STUP(B)/ E-STUP [WBPT/WBPT-H] → E25, E26		Up to 8				● ● Ⓗ ● Ⓗ ● Ⓗ ● Ⓗ ● Ⓗ ● ●
	S-CTFP → E31	Up to 3			Triangle 11°Positive (without hole)		● ● ● 32
	S-PTFN → E33	Up to 3			Triangular Type Negative (with hole)		● ● ●
	B-PTFN → E33			Up to 6			● ● ● 32 40 50
	S-DTFN New → E34	Up to 3					40 50 63
	D-DTFN → E34			Up to 6			Ⓗ Ⓗ Ⓗ 32 40 50
	S-ETFN [BTFN] → E35	Up to 3					● ● ● 32 40 50
Bottom Facing	BNZ → E35		Up to 5		SUMIBORON Special Insert		● ● ● ● 9 11 17 21
	S-SCLC → E36	Up to 3			80°Diamond 7°Positive(with hole)		● ● ● ● ● ● ● ● ● ● 27 ● 32
	B-SCLC → E36			Up to 6			● ● ● ● ● ● ● 32
	C-SCLC → E37		Up to 8				● ● ● ● ● ● ● ● ● ● ● ●
	E-SCLC → E37		Up to 8 With oil hole				Ⓗ Ⓗ Ⓗ Ⓗ

Products in [ ] indicate the previous name of the series

Selection Guide for Boring Tools

Colored box: Manufacturable size (without oil hole), ●: Stock, Ⓗ: Stock with oil hole

Application	Tool Type	Shank Type Boring Depth (L / D) Steel	Carbide	Anti-vibration	Applicable Insert Type/Shape	Tooling	Min. Bore Diameter (mm) * When different from header bore diameters, the correct values are written in the table.
							1 / 1.5 / 2 / 3 / 4 / 5 / 6 / 7 / 8 / 10 / 12 / 13 / 14 / 16 / 18 / 20 / 22 / 25 / 28 / 34 / 44 / 54 / 70
Bottom Facing	S-SCLP [BBPC] → E42	Up to 3			80°Diamond 11°Positive(with hole)		● 12 ● ● ● ● ● ●
	B-SCLP/ D-SCLP [XBPC/XBPC-H] → E42			Up to 6			Ⓗ 14 Ⓗ 18 Ⓗ 22
	C-SCLP [WBPC] → E43		Up to 8				● 12 ● ● ● ● 14 16 18 20
	S-DCLN → E45	Up to 3				DCLN Type	● 32 40 50 63
	D-DCLN → E45			Up to 6			Ⓗ 32 Ⓗ 40 Ⓗ 50
	S-PCLN → E46	Up to 3				PCLN/BCLN Type	32 ● ● ●
	B-PCLN → E46			Up to 6			● 40 ● 50
	S-ECLN [BCLN] → E47	Up to 3			80°Diamond Negative(with hole)		● 26 ● ● ●
	D-DWLN → E47			Up to 6			Ⓗ 32 Ⓗ 40 Ⓗ 50
	S-DWLN New → E48	Up to 3					32 40 50 63
	S-PWLN New → E48	Up to 3			Polygon Negative(with hole)		40 50

Application	Tool Type	Shank Type Boring Depth (L / D) Steel	Carbide	Anti-vibration	Applicable Insert Type/Shape	Tooling	6 / 8 / 10 / 12 / 13 / 14 / 16 / 18 / 20 / 22 / 25 / 28 / 32 / 34 / 35 / 40 / 44 / 50 / 54 / 63 / 70
Copying	S-SDUC S-SDQC → E49, E50	Up to 3			55°Diamond 7°Positive(with hole)	SDUC Type	● 13 ● 16 ● 20 ● 25 ● 32
	B-SDUC B-SDQC → E49, E50			Up to 6		SDQC Type	● 13 ● 16 ● 20 ● 25 ● 32
	C-SDUC → E49		Up to 8				● 13 ● 16 ● 20 ● 25
	S-SDZC New → E51	Up to 3					16 ● 20 ● 23
	S-SVJB → E55	Up to 3					● 25 ● 32 30
	B-SVJB → E55			Up to 6			● 25 ● 32 30
	S-SVJC → E55	Up to 3					● 16 ● 20
	S-SVQC S-SVUC → E57, E58	Up to 3				SVU □ Type	● 16 ● 20 ● 25 ● 35 ● 40 ● 50
	S-SVQB S-SVUB New → E56, E57	Up to 3					● 32 ● 40 ● 50
	B-SVQB B-SVUB → E56, E57			Up to 6		SVQ □ Type	● 20 ● 25
	C-SVQB C-SVUB → E56, E58		Up to 8				● 20 ● 25
	S-SVZB New → E59	Up to 3					● 32 ● 40 ● 50
	S-SVZC → E60	Up to 3					● 16 ● 20 ● 35 ● 40 ● 50
	B-SVZB →E59			Up to 6			● 20 ● 25
	C-SVZB → E59		Up to 8		35°Diamond 5°Positive(with hole) 7°Positive(with hole)		● 20 ● 25

Products in [ ] indicate the previous name of the series

Selection Guide for Boring Tools

Colored box: Manufacturable size (without oil hole), ●: Stock, ⊕: Stock with oil hole

Application	Tool Type	Shank Type Boring Depth (L / D) Steel	Carbide	Anti-vibration	Applicable Insert Type/Shape	Tooling	Min. Bore Diameter (mm) * When different from header bore diameters, the correct values are written in the table. 6	8	10	12	13	14	16	18	20	22	25	28	32	34	35	40	44	50	54	63	70
Copying	S-DDQN → E65	Up to 3			55°Diamond Negative(with hole)																	●						
	S-DDUN New → E65	Up to 3																										
	D-DDUN → E65			Up to 6																		⊕		⊕				
	S-PDUN → E66	Up to 3																				●						
	S-EDUN [BDUN] → E66	Up to 3																		●		●						
	S-PDZN → E67	Up to 3																				●						
	S-EDZN [BDZN] → E67	Up to 3																		●		●						
	S-DTR55C → E67	Up to 3			T-REX Special Insert																	●		●				
Through Boring	S-SWUB [BBPW] → E68	Up to 3			Polygon 5°Positive(with hole) 11°Positive(with hole)		● 5.5	●	●	●																		
	C-SWUB [WBPW] → E68		Up to 8				● 5.5																					
	S-SWUP New → E70	Up to 3										●		●		●												
	S-SSKP [BBPS] → E71	Up to 3			Square 11°Positive(with hole)								●		●		●	●										
	C-SSKP [WBPS] → E71		Up to 8										●		●													
	S-SSKC → E72	Up to 3			Square 7°Positive (with hole)										●		●		●			●						
	S-CSKP → E73	Up to 3			Square 11°Positive (without hole)										●		●											
	S-DSKN New → E75	Up to 3			Square Negative(with hole)																							
	S-PSKN → E75	Up to 3																				●		●		●		●
	S-PSYN → E76	Up to 3																				●						
	S-ESKN [BSKN] → E76	Up to 3																		●		●						
	S-ESYN [BSYN] → E76	Up to 3																										

Products in [ ] indicate the previous name of the series

Boring Tools Series

Full Support for Boring in Turning Applications

■ General Feature

Following the 1976 launch of the popular industry-leading SEC-Small Diameter Boring Bars in steel/carbide shank, the SumiTurn X-Bar series, equipped with an anti-vibration mechanism, was added to the product range. The SEC-Boring Bar series further promotes the optimization of the insert grades and chipbreakers.

■ Characteristics

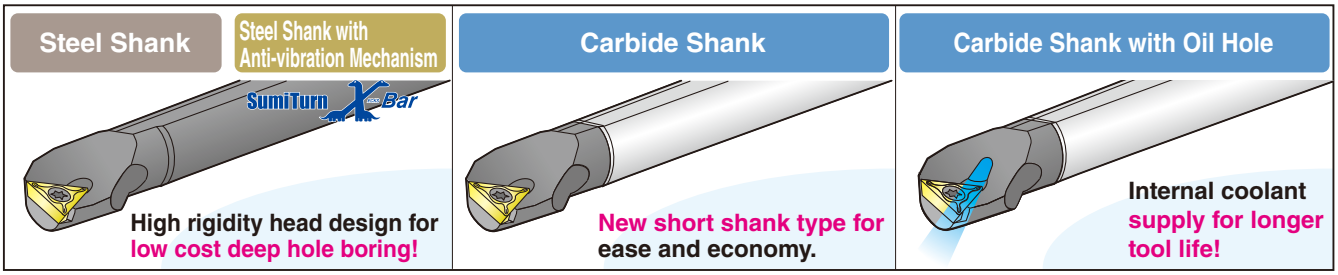
- Wide series selection for various boring operations.
  Stop boring / Bottom facing / Through boring / Copying
- Minimum bore diameters of CKB type from ø1 mm and C-SCLC type from ø5 mm
- New anti-vibration boring bars, SumiTurn X-Bar.
- Short carbide shank types C16M-STUP and C20M-STUP, for use on turret lathes.
- Wide selection of grades and chipbreakers available for various processes and work materials.

■ Steel Shank Type with Anti-Vibration Mechanism

SumiTurn X-Bar

- High anti-vibration capabilities for effective rough boring of deep holes.
- Achieving low cost boring of large diameters and deep holes, ø32 mm shank is available.
- Excellent chip control with double chip pockets.
- Bars with internal coolant hole are also available.
- Negative insert holders (shank diameter ø 25 to ø 40 mm) are now stocked.

■ Steel / Carbide Shank Applications



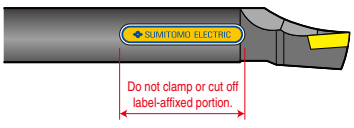
■ Shank Material Selection

SumiTurn X-Bar

Application \ Type		Steel Shank	Steel Shank with Anti-Vibration Mechanism	Carbide Shank
General Steel	Shallow hole (L/D < 3)	◎ (More economical)	○ (High speed cutting)	
	Deep hole (L/D > 3)		◎ (More economical)	◎
High efficiency boring by wiper insert			○	◎
Hardened Steel			—	◎
High precision boring				◎

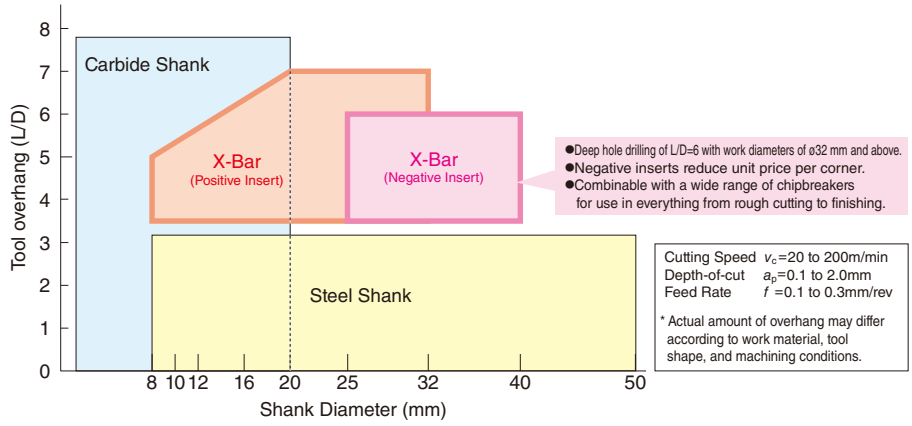
◎1st Recommendation ○2nd Recommendation

⚠ Precautions for Clamping Position on Steel Shank with Anti-Vibration Mechanism

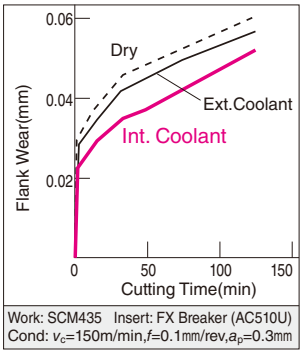


Clamping a shank on the portion labeled with SUMITOMO ELECTRIC may affect usage. (Due to built-in anti-vibration mechanism) Thus, minimum tool overhang should be 3.5D (3.5x shank dia).

■ Application Range by Shank Type



■ Wear Comparison by Coolant Supply Method



Work: SCM435 Insert: FX Breaker (AC510U)
Cond: v_c=150m/min,f=0.1mm/rev,a_p=0.3mm

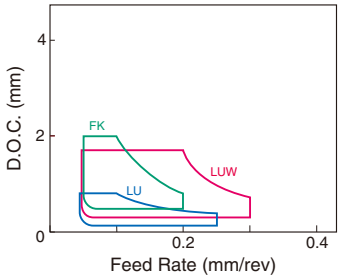
■ Grade Recommendations

Tool Material		Application Range: High Precision	Application Range: Finish-Light Cut	Application Range: Medium Cut	Work Material: P General Steel	Work Material: M Stainless Steel	Work Material: K Cast Iron	Work Material: S Heat Resistive Alloys	Work Material: H Hardened Steel	Work Material: N Non-Ferrous Metal	Work Material: PM
Coated (Carbide)	CVD		AC810P		◎						
			AC820P		◎	○	○				
			AC830P		◎	○					
			New AC6030M		○	◎					
			AC405K				◎				
			AC415K				◎				
			AC420K				◎				
	PVD		ACZ150		◎	◎				○	
			AC510U		◎	◎	○	◎			○
			AC520U		◎	◎	○	◎			
			AC530U		◎	○	○	○		○	
			New AC6040M			◎					
Cermet Coated Cermet			T1000A		◎	○	◎			○	○
			T1500A/T1500Z		◎	○	○			○	
			T3000Z		◎	○	○				
Uncoated Carbide			G10E				◎			○	
CBN SUMIBORON			BN1000						◎		
			BN2000						◎		
			New BNC2010						◎		
			New BNC2020						◎		
			BN7000				◎	○			○
			BN7500								◎
PCD SUMIDIA			DA1000							◎	
			DA150							◎	

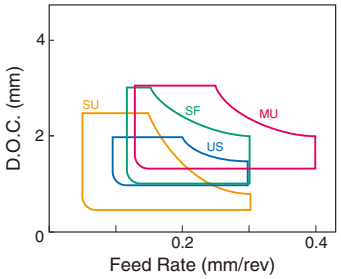
◎1st Recommendation ○2nd Recommendation

■ Chipbreaker Recommendations

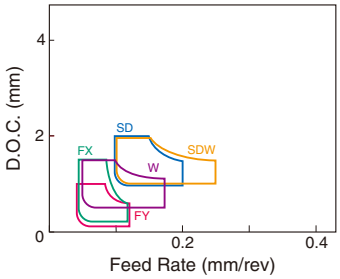
● M-Class Finish-Light Cut



● M-Class Light-Medium Cut



● G-Class Ground Type



● G-Class Breaker