

HOW TO READ THE STANDARD OF BORING BARS

● How this section page is organised

- Organised by product series.
(Refer to the index on the next page.)

TYPE OF BORING BAR

indicates the initial letters for the order number, as well as applicable insert types.

TITLE OF PRODUCT SERIES

PRODUCT SECTION

PRODUCT FEATURES

FIGURE SHOWING THE TOOLING APPLICATION uses illustrations and arrows to depict available machining applications along with cutting edge lead angles.

GEOMETRY CHIP BREAKER BY CUTTING APPLICATION

BORING BARS

DIMPLE BAR

- Excellent vibration resistance due to light dimple head.
- Chip disposal is improved by having two channels for chip evacuation.
- A laser printed scale on the side for easy installation (Steel shaft).
- Up to 5 times the diameter (Carbide shaft 0.7 to 8 times the diameter).

FSTUP

With coolant hole

TP-Inserts

Right hand tool holder shown.

Order Number	Stock	Insert Number	Dimensions (mm)					Min. Cutting Diameter	Standard Corner Radius	Max. Recommended R Ratio	Wrench		
	R/L		D4	L3	L1	F1	F2	H	RR*				
FSTUP1008RL-08A	●	080200	8	125	18	5	7.2	10	0.4	9	TS2D	TKY08F	
1210RL-09A	●	090200	10	150	22.5	6	9	8	0.4	3.5	TS2SD	TKY08F	
1412RL-09A	●	090200	12	150	27	7	11	7	0.4	4	TS2SD	TKY08F	
1816RL-11A	●	110300	16	180	36	9	15	4	0.4	5	TS3D	TKY10F	
2220RL-11A	●	110300	20	220	45	11	19	0	0.22	0.4	5	TS3D	TKY10F
3225RL-16A	●	160300	25	270	56.3	16	23.4	0	0.32	0.8	5	TS4D	TKY15F

* Clamp Torque (N·m) : TS2D=0.6, TS2SD=1.0, TS3D=2.5, TS4D=3.5

FSTUP-E

Carbide shaft with coolant hole

TP-Inserts

Right hand tool holder shown.

Order Number	Stock	Insert Number	Dimensions (mm)					Min. Cutting Diameter	Standard Corner Radius	Max. Recommended R Ratio	Wrench		
	R/L		D4	L3	L1	F1	F2	H	RR*				
FSTUP1008RL-08E	●	080200	8	140	13.8	5	7.2	10	0.4	7	TS2D	TKY08F	
1008R-08E-2/3	●	080200	8	90	13.8	5	7.2	10	0.4	7	TS2D	TKY08F	
1008R-08E-1/2	●	080200	8	70	13.8	5	7.2	10	0.4	7	TS2D	TKY08F	
1210RL-09E	●	090200	10	100	16.0	6	9	8	0.4	7.5	TS2SD	TKY08F	
1210R-09E-2/3	●	090200	10	105	16.0	6	9	8	0.4	7.5	TS2SD	TKY08F	
1210R-09E-1/2	●	090200	10	80	16.0	6	9	8	0.4	7.5	TS2SD	TKY08F	
1412RL-09E	●	090200	12	180	17.8	7	11	7	0.4	8	TS2SD	TKY08F	
1412R-09E-2/3	●	090200	12	120	17.8	7	11	7	0.4	8	TS2SD	TKY08F	
1412R-09E-1/2	●	090200	12	90	17.8	7	11	7	0.4	8	TS2SD	TKY08F	
1816RL-11E	●	110300	16	220	21.8	9	15	4	0.4	8	TS3D	TKY10F	
1816R-11E-2/3	●	110300	16	145	21.8	9	15	4	0.4	8	TS3D	TKY10F	
1816R-11E-1/2	●	110300	16	110	21.8	9	15	4	0.4	8	TS3D	TKY10F	
2220RL-11E	●	110300	20	250	24.0	11	19	0	0.22	0.4	8	TS3D	TKY10F
2220R-11E-2/3	●	110300	20	165	24.0	11	19	0	0.22	0.4	8	TS3D	TKY10F
2220R-11E-1/2	●	110300	20	125	24.0	11	19	0	0.22	0.4	8	TS3D	TKY10F

* Clamp Torque (N·m) : TS2D=0.6, TS2SD=1.0, TS3D=2.5

(Note 1) Insert photo, letters show chip breaker style, figures show insert dimensions.
(Note 2) When using inserts with right or left hand chip breakers, please use left hand inserts for right hand holders and right hand inserts for left hand holders.

● : Inventory maintained. * : Inventory maintained in Japan.

TP-Inserts : A147, A148
CBN & PCO inserts : B949, B951

FSDUC

With coolant hole

DC-Inserts

Right hand tool holder shown.

Order Number	Stock	Insert Number	Dimensions (mm)					Min. Cutting Diameter	Standard Corner Radius	Max. Recommended R Ratio	Wrench			
	R/L		D4	L3	L1	F1	F2	H	RR*					
FSDUC1410RL-07A	●	070200	10	150	18	8.3	3.3	9	7.5	14	0.4	3.5	TS2S	TKY08F
1612RL-07A	●	070200	12	150	20	9.3	3.3	11	6	16	0.4	4	TS2S	TKY08F
2016RL-07A	●	070200	16	180	20	11.3	3.3	15	5	20	0.4	5	TS2S	TKY08F
3220RL-11A	●	117300	20	180	22.5	16.1	6.1	10	5	32	0.8	5	TS43	TKY15F

* Clamp Torque (N·m) : TS2S=1.0, TS43=3.5

FSDUC-E

Carbide shaft with coolant hole

DC-Inserts

Right hand tool holder shown.

Order Number	Stock	Insert Number	Dimensions (mm)					Min. Cutting Diameter	Standard Corner Radius	Max. Recommended R Ratio	Wrench			
	R/L		D4	L3	L1	F1	F2	H	RR*					
FSDUC1410RL-07E	●	070200	10	160	16.0	8.3	3.3	9	7.5	14	0.4	7.5	TS2S	TKY08F
1612RL-07E	●	070200	12	180	17.8	9.3	3.3	11	6.0	16	0.4	8	TS2S	TKY08F
2016RL-07E	●	070200	16	220	21.8	11.3	3.3	15	5.0	20	0.4	8	TS2S	TKY08F
3220RL-11E	●	117300	20	250	24.0	16.1	6.1	19	5.0	32	0.8	8	TS43	TKY15F

* Clamp Torque (N·m) : TS2S=1.0, TS43=3.5

DC-Inserts : A134-A138
CBN & PCO inserts : B937, B938, B942

CUTTING CONDITIONS : E813
SPARE PARTS : M001
TECHNICAL DATA : M001

E008

E003

LEGEND FOR STOCK STATUS MARK

is shown on the left hand page of each double-page spread.

PRODUCT STANDARDS

indicates order numbers, stock status (per right/left hand), applicable inserts, dimensions, minimum cutting diameters, standard corner radius, recommended I/d ratios, and spare parts.

MIN. CUTTING DIAMETER

is colour-coded to let you find, at a glance, the maximum / minimum cutting diameters for internal machining.

REFERENCE PAGE FOR APPLICABLE INSERTS

indicates reference pages for details of inserts that are applicable to the title product.

PAGE REFERENCE

• SPARE PARTS
• TECHNICAL DATA
indicates reference pages, including the above, on the right hand page of each double-page spread.