

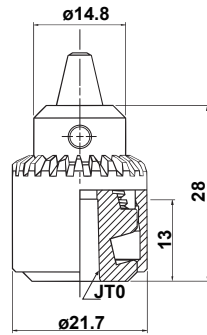


Key Type Drill Chucks Stainless



TAPER & THREAD MOUNT

NEW



ORDER NO. 10090

Enlarged photo

FEATURES:

- Stainless - Anti - Rust
- Good Resistance - Acid Resistance
- Smooth operation
- Suit for EDM, Food, marine industry.

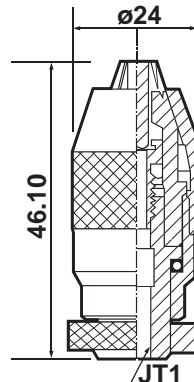
ORDER NO.	TYPE	Clamping Capacity		Female Taper DIN or Jacobs	OUTER Ø / mm	Length		Pitch	Wt g	Key Size	CODE NO.
		mm	inch			Open B mm	Closed A mm				
10090	4KST	0.3-4	1/64-5/32	JT0	22	28	35	5/16"-24	50	T0-3S	3303-100
10091	6KST	0.3-6.5	1/64-1/4	JT1	28.5	40.5	49	3/8"-24	125	T1-3S	3303-101
10092-2	10KST	0.3-10	1/64-3/8	ØD13	37	57	69	3/8"-24	250	T2-3S	3303-103
10092-3				ØD15	37	57	69		250		3303-104



Keyless Drill Chucks Stainless

KEYLESS TAPER & THREAD MOUNT

NEW



ORDER NO. 16001-31

FEATURES:

- Stainless - Anti - Rust
- Good Resistance - Acid Resistance
- Smooth operation
- Suit for EDM, Food, marine industry.

Enlarged photo

ORDER NO.	Size	Capacity		Taper Mount No DIN or Jacobs	Length(m/m)		Outer Dia (m/m)	Weight (g)	CODE NO.
		mm	inch		Open	Closed			
16001-30	3ST	0.3-3	1/64-1/8	JT0	44	50	30	110	3303-111
16001-31				JT1	44	48.5	24	110	3303-112
16001-61	6ST	0.3-6.5	1/64-1/4	JT1	62	68	33	300	3303-113



Keys For Stainless Key Type Drill Chuck

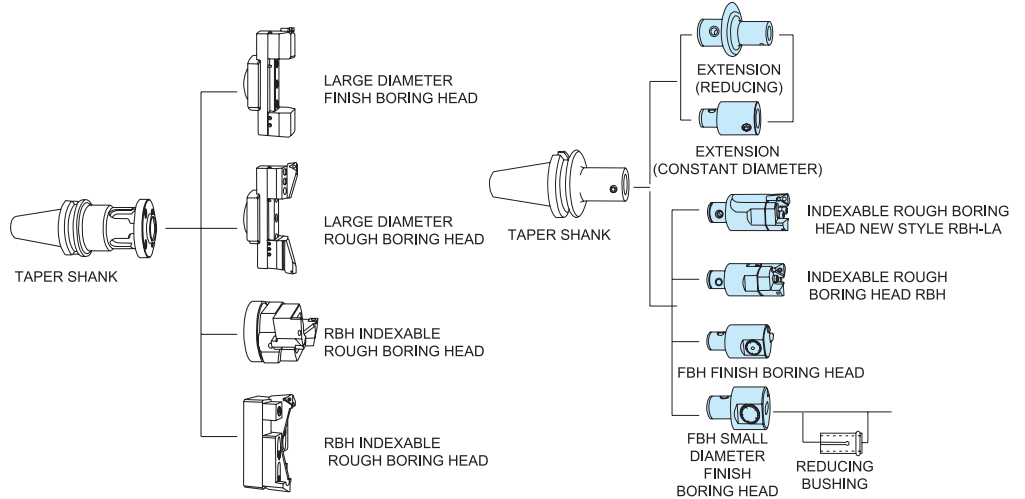
NEW



ORDER NO.	Type	Dmm	Lmm	Weight(g)	Packing	CODE NO.
15001	T0-3S	3.2	60	16		3303-121
15002	T1-3S	4.0	65	40		3303-122
15003	T2-3S	5.5	71	45		3303-123



Modular Boring Systems



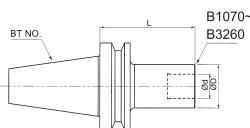
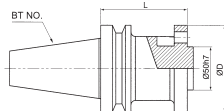
Taper Shank For Boring Heads Series BS70,100,200,300,400 Taper Shank For Boring Heads Series B1070~B6230

BORING SYSTEM

BS70~400 SERIES



B1070~6230 SERIES



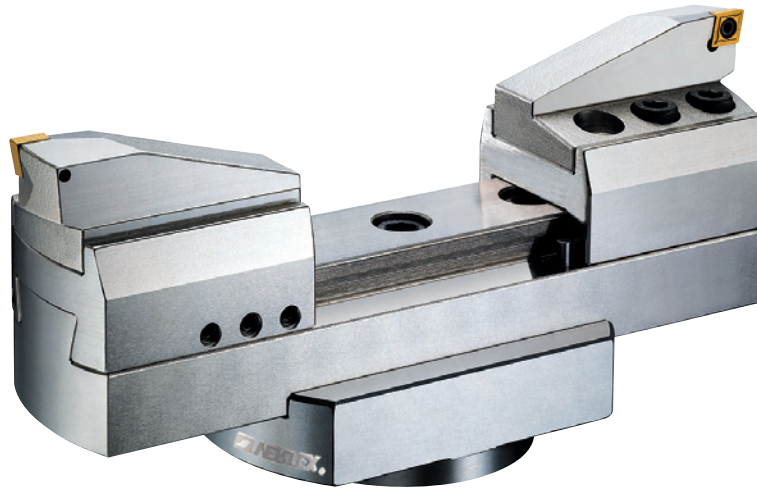
ORDER NO.	Length (L)	External Diameter (D)	Applicable Boring Heads	Weight (kgs)	CODE NO.
VT-BT30-B1070	70	19	FBB20	0.5	3320-214
VT-BT30-B2080	80	24	VRB25 ; FBB25	0.6	3320-215
VT-BT30-B3080	80	31	VRB32 ; FBB32	0.7	3320-216
VT-BT30-B4070	70	39	VRB40 ; FBB40 ; FBB44	0.8	3320-217
VT-BT30-B5060	60	50	VRB52 ; FBB52 ; FBB55	0.8	3320-218
VT-BT30-B6060	60	64	VRB68 ; VRB90 ; FBB68 FBB100 ; FBB150 ; FBB66	1.0	3320-219
VT-BT40-B1075	75	19	FBB20	1.2	3320-220
VT-BT40-B2085	85	23	VRB25 ; FBB25	1.2	3320-221
VT-BT40-B3095	95	30	VRB32 ; FBB32	1.45	3320-222
VT-BT40-B4085	85	38	VRB40 ; FBB40 ; FBB44	1.5	3320-223
VT-BT40-B5075	75	50	VRB52 ; FBB52 ; FBB55	1.8	3320-225
VT-BT40-B6065	65	64	VRB68 ; VRB90 ; FBB68 FBB100 ; FBB150 ; FBB66	2.15	3320-227
VT-BT40-BS70	70	95	VRB120 ; FBB200 VRB120 and above; FBB200 and above	3.2	3320-228
VT-BT50-B1115	115	19	FBB20	3.5	3320-229
VT-BT50-B2110	110	23	VRB25 ; FBB25	4	3320-230
VT-BT50-B3125	125	30	VRB32; FBB32	4.4	3320-232
VT-BT50-B4115	115	38	VRB40; FBB40; FBB44	4.8	3320-234
VT-BT50-B4175	175			5.2	3320-235
VT-BT50-B5105	105	50	VRB52; FBB52; FBB55	5.4	3320-236
VT-BT50-B5180	180			6.2	3320-237
VT-BT50-B5240	240			6.4	3320-238
VT-BT50-B6095	95	64	VRB68 ; VRB90 ; FBB68 FBB100 ; FBB150 ; FBB66	5.9	3320-239
VT-BT50-B6170	170			6.5	3320-240
VT-BT50-B6230	230			6.9	3320-241
VT-BT50-BS100	100	95	VRB120 VRB120 and above; VRB200 - 500; large diameter boring heads series FBB200-500	5.71	3320-242
VT-BT50-BS200	200			8.79	3320-244
VT-BT50-BS300	300			11.25	3320-246
VT-BT50-BS400	400			19.3	3320-247









Large Diameter 2 Inserts Rough Boring



Modular Style For Diameter Over 200 mm
Boring $\varnothing D$ range from $\varnothing 200$ - $\varnothing 1,250$ mm



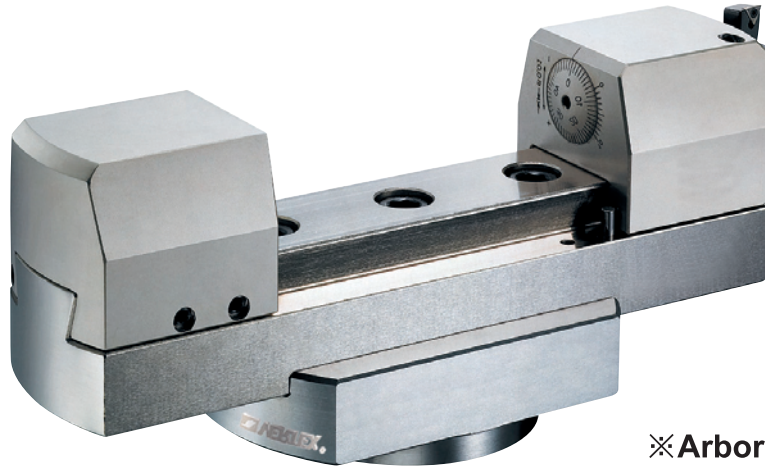
- ✘ Insert Not Included
- ✘ RB200C12 / RB200T16 / RB200T22 / RB200S12
ARE FOR VRB200 ~ VRB900
- ✘ Arbor is not included

Boring Head Type	ORDER NO.	VRB200	VRB300	VRB400	VRB500	VRB600	VRB900	
	Length	130	130	130	130	150	150	
	(kgs) Total Weight Steel/Alloy	9.5	11.5	13.5	15.5	33	43	
	D(mm) Boring Diameter Range	200-310	300-410	400-510	500-610	600-900	900-1200	
Module	Taper Shank		BT50-BS				BT50-FMA-47.625	
	Flange (kgs)Weight Steel/Alloy		BR200 2.7				BR600 8.8kg	BR900 13.5kg
	Extension Slide		RST200	RST300	RST400	RST500	RST300 x2pcs	RST400 x2pcs
	(kg)Weight Steel/Alloy		3.4 kg	5.4 kg	7.4 kg	9.4 kg	10.8 kg	14.8 kg
	Clamp Base (kg)Weight		RS200 0.98 kg					
	Height Setting Shim (kg)Weight		RS201 0.05 kg					
	Insert Holder		RB200C12		RB200T16	RB200T22		RB200S12
	Applicable Insert		CCMT120404		TCMT16T304	TCMT220404		SCMT120404
	(kg)Weight		0.68 kg					
	CODE NO.		3320-250	3320-251	3320-252	3320-253	3320-254	3320-255








Enlargeable Finish Boring Head

Modular Style For Diameter Over 200 mm
Boring $\varnothing D$ from $\varnothing 200$ - $\varnothing 1,250$ mm



※ Arbor is not included

BORING SYSTEM

Boring Head Type	ORDER NO.	VFB200	VFB300	VFB400	VFB500	VFB600	VFB900	
	Length	130	130	130	130	150	150	
	(kgs) Total Weight Steel/Alloy	7	7.8	8.6	9.4	15.8	22.1	
	D(mm) Boring Diameter	200-310	300-410	400-510	500-610	600-900	900-1200	
Module	Taper Shank		BT50-BS				BT50-FMA-47.625	
	Flange (kg)Weight Steel/Alloy		BR200 2.7 kg				BR600 8.8kg	BR900 13.5kg
	Extension Slide		RST200	RST300	RST400	RST500	RST300 x2pcs	RST400 x2pcs
	(kgs)Weight		1.1 kg	1.9 kg	2.7 kg	3.5 kg	3.8 kg	5.4 kg
	Balance Weight (kg)Weight		RBN200 1.6 kg					
	Finish Head (kgs)Weight		CB200 1.6 kg					
	Applicable Insert		TP08/Ø3.2xM2/T6, TP09/M2.5/T8, TC11/M2.5/T8					
	CODE NO.		3320-260	3320-261	3320-262	3320-263	3320-264	3320-265

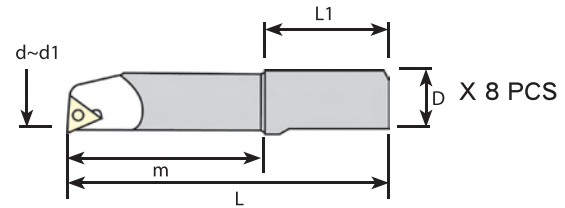


Insert Type Boring Bar



ORDER NO. BBAR-D16 CODE NO.6004-071

※All inserts are floating price.
Contact us before ordering from F1~F49



8 PCS/SET

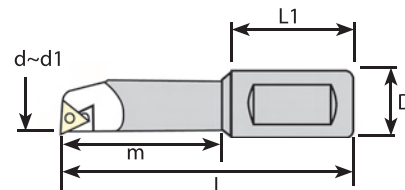
BORING BAR FOR BORING HEAD

BORING BAR	SHANK D.	RANGE d~d1	DEPTH m	L1	SHANK L. L	INSERT	FIXING UNIT	WRENCH	WEIGHT (kg)
BRB1608-32	16	8-11	32	32	80	TBGT060102L	TS2001	T6	2
BRB1610-40	16	10-13	40	32	80				
BRB1612-53	16	12-15	53	32	85	TPGH090204L	TS2504	T8	
BRB1616-68	16	16-21	68	32	100				
BRB1620-83	16	20-26	83	32	115	TPGH110304L	TS3005	T10	
BRB1625-90	16	25-31	90	32	122				
BRB1630-90	16	30-36	90	32	122				
BRB1640-90	16	40-46	90	32	122				



Insert Type Boring Bar

ORDER NO. BBAR-D18A CODE NO.6004-072A



X 4 PCS

BORING BAR FOR BORING HEAD

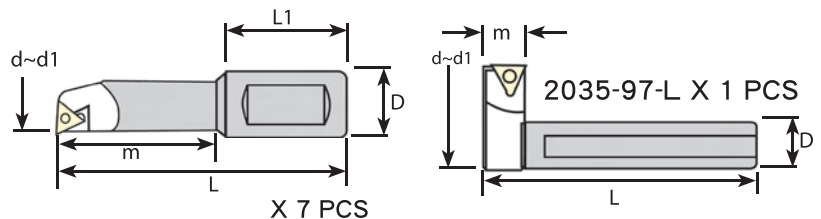
4 PCS/SET

BORING BAR	SHANK D.	RANGE d~d1	DEPTH m	L1	SHANK L. L	INSERT	FIXING UNIT	WRENCH	WEIGHT (kg)
BRB1810-40	18	10-13	40	32	80	TBGT060102L	TS2001	T6	1.0
BRB1812-53	18	12-17	53	32	88				
BRB1816-68	18	16-21	68	32	104	TPGH090204L	TS2504	T8	
BRB1820-83	18	20-130	83	32	118				
						TPGH110304L	TS3005	T10	



Insert Type Boring Bar

ORDER NO. BBAR-D20 CODE NO.6004-073



X 7 PCS

2035-97-L X 1 PCS

BORING BAR FOR BORING HEAD

8 PCS/SET

BORING BAR	SHANK D.	RANGE d~d1	DEPTH m	L1	SHANK L. L	INSERT	FIXING UNIT	WRENCH	WEIGHT (kg)
BRB2008-32	20	8-11	23	32	80	TBGT060102L	TS2001	T6	2.65
BRB2010-40	20	10-13	40	32	80				
BRB2012-53	20	12-17	53	32	85	TPGH090204L	TS2504	T8	
BRB2016-68	20	16-21	68	32	100				
BRB2020-83	20	20-130	83	32	115	TPGH110304L	TS3005	T10	
BRB2025-96	20	25-135	96	32	135				
BRB2030-115	20	30-140	115	32	154				
BRB2035-97-L	20	120-280	14		99				



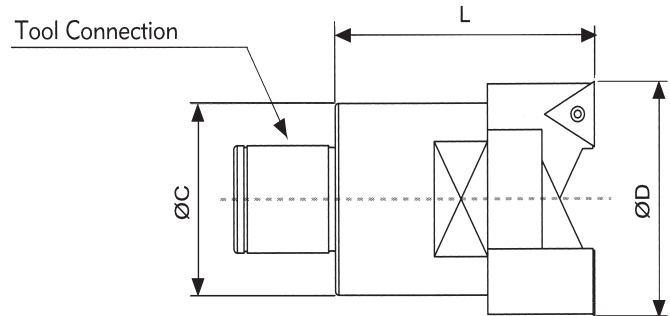
Changeable 2 Inserts Rough Boring Head VRB



VMH-SYSTEM

Boring diameter from $\varnothing 25$ - $\varnothing 350$ mm

✳️Adjustable



- C ◆
- INSERT STYLE -T ▲
- S ■

BORING SYSTEM

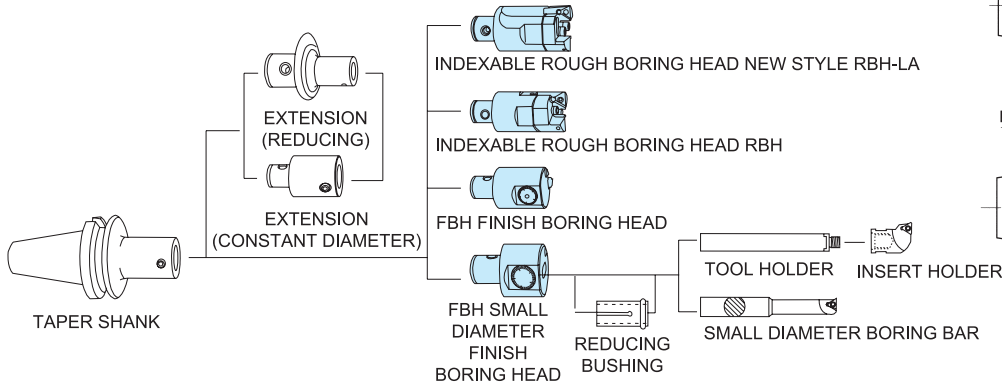
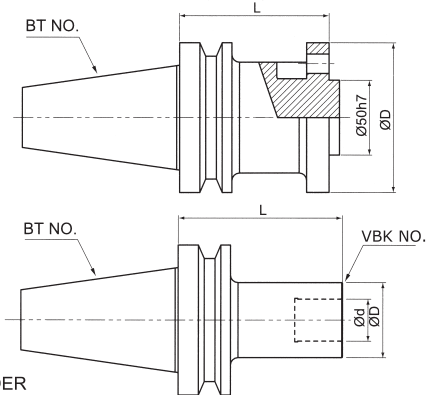
	ORDER NO.	Tool connection	D(mm) Boring Range		L (mm)	C (mm)	Insert	Weight (g)	CODE NO.
		VRB25-33C	B2080	25	33	45	24	CCMT060204	0.15
VRB32-42C		B3080	32	42	55	31	CCMT060204	0.3	3320-271
VRB32-42T							TCMT110204		3320-272
VRB40-55C		B4070	40	55	65	39	CCMT09T304	0.5	3320-273
VRB40-55T							TCMT16T304		3320-274
VRB40-55S							SCMT09T304		3320-275
VRB52-70C		B5060	52	70	75	50	CCMT09T304	1	3320-276
VRB52-70T							TCMT16T304		3320-277
VRB52-70S							SCMT09T304		3320-278
VRB68-92C		B6065	68	92	85	64	CCMT120408	2	3320-279
VRB68-92T							TCMT16T304		3320-280
VRB68-92S							SCMT120404		3320-281
VRB90-122C		B6065	90	122	100	80	CCMT120408	2.9	3320-282
VRB90-122T							TCMT220408		3320-283
VRB90-122S							SCMT120404		3320-284
	VRB120-164C		120	164	95	100	CCMT120408	3.8	3320-285
	VRB120-164T					TCMT220408	3320-286		
	VRB120-164S					SCMT120404	3320-287		
	VRB160-204C	VT-BT40-BS70 VT-BT50-BS100 VT-BT50-BS200 VT-BT50-BS300 VT-BT50-BS400	160	204	130	170	CCMT120408	4.8	3320-288
	VRB160-204T					TCMT220408	3320-289		
	VRB160-204S					SCMT120404	3320-290		
	VRB200-300C		200	300	95	170	CCMT120408	6.5	3320-291A
	VRB200-300T					TCMT220408	3320-292A		
	VRB200-300S					SCMT120404	3320-293A		
	VRB300-400C		300	400	260	170	CCMT120408	10	3320-297A
	VRB300-400T					TCMT220408	3320-298A		
	VRB300-400S					SCMT120404	3320-299A		



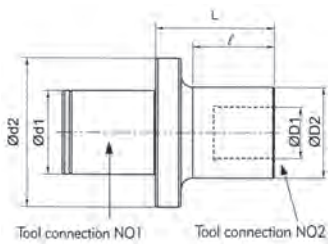
Taper Shank For Boring Heads Series



Modular Boring Systems



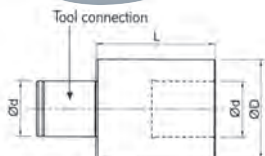
Extension (Reduced)



ORDER NO.	d1	d2	D1	D2	L	ℓ	Applicable Boring Heads	Weight (kg)	CODE NO.
VBQ2-1-36	14	24	11	19	36	30	FBB20	0.1	3320-301
VBQ3-1-41	18	31			41	30	FBB20	0.15	3320-302
VBQ3-2-37			14	24	37	25	VRB25 ; FBB25	0.15	3320-303
VBQ4-1-58	22	39	11	19	58	40	FBB20	0.3	3320-304
VBQ4-2-50			14	24	50	36	VRB25 ; FBB25	0.3	3320-305
VBQ4-3-50			18	31	50	37	VRB32 ; FBB32	0.35	3320-306
VBQ5-1-60	28	50	11	19	60	40	FBB20	0.45	3320-307
VBQ5-2-54			14	24	54	35	VRB25 ; FBB25	0.45	3320-308
VBQ5-2-74			18	31	74	55	VRB25 ; FBB25	0.5	3320-309
VBQ5-3-47			18	31	47	29	VRB32 ; FBB32	0.5	3320-310
VBQ5-3-72			18	31	72	54	VRB32 ; FBB32	0.6	3320-311
VBQ5-4-42			22	39	42	25	VRB40 ; FBB40	0.5	3320-312
VBQ5-4-67	22	39	67	50	VRB40 ; FBB40	0.7	3320-313		
VBQ6-1-70	36	64	11	19	70	40	FBB20	0.9	3320-314
VBQ6-2-63			14	24	63	45	VRB25 ; FBB25	0.7	3320-315
VBQ6-2-93			14	24	93	75	VRB25 ; FBB25	0.8	3320-316
VBQ6-3-56			18	31	56	39	VRB32 ; FBB32	0.75	3320-317
VBQ6-3-96			18	31	96	79	VRB32 ; FBB32	0.95	3320-318
VBQ6-4-51			22	39	51	35	VRB40 ; FBB40	0.85	3320-319
VBQ6-4-101			22	39	101	85	VRB40 ; FBB40	1.3	3320-320
VBQ6-5-41			28	50	41	25	VRB52 ; FBB52	0.85	3320-321
VBQ6-5-91	28	50	91	75	VRB52 ; FBB52	1.45	3320-322		



Extension (Constant Diameter)



ORDER NO.	d	D	L	Applicable Boring Heads	Weight (kg)	CODE NO.
VBQ1-1-30	11	19	30	FBB20	0.07	3320-323
VBQ2-2-30	14	24	30	VRB25 ; FBB25	0.1	3320-324
VBQ3-3-30	18	31	30	VRB32 ; FBB32	0.15	3320-325
VBQ4-4-45	22	39	45	VRB40 ; FBB40 ; FBB44	0.4	3320-326
VBQ5-5-60	28	50	60	VRB52 ; FBB52 ; FBB55	0.8	3320-327
VBQ6-6-60	36	64	60	VRB68/VRB90 ; FBB68, 100, 150 ; FBB66	1.4	3320-328



FBB Finish Boring Head



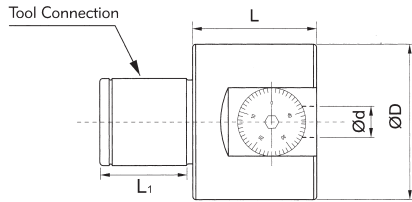
Boring diameter from Ø3 - Ø40 mm



BORING CAPACITY
 FBB44 Ø8 - Ø20 m/m
 FBB55 Ø12 - Ø40 m/m
 FBB66 Ø8 - Ø40 m/m

FEATURES:

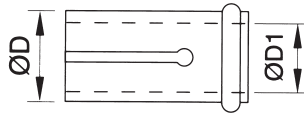
- Available are three different styles enabling small diameter boring from Ø8mm to Ø40mm. Boring range can be within Ø3mm to Ø10mm if small diameter solid carbide boring bar has been employed.
- The dial has been graduated into 50 divisions, each of which is 0.01mm on diameter. Available is a subdial for finer adjustment.
- High precision internal lead screw with inner lubrication is free from the effects of chip, featuring high durability.
- Cartridge unit is housed in a square structure with two face support, proving high stability and rigidity.



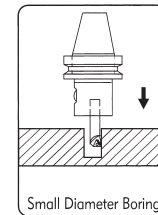
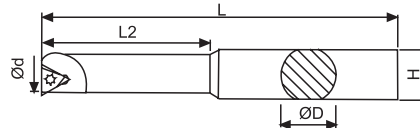
ORDER NO.	Tool Connection	Ød Internal Diameter	ØD External Diameter	L length	L1	mm feed	Weight (kg)	CODE NO.
FBB44	B4070	10	39	32	Ø22x24L	0-2	0.4	3320-390
FBB55	B5060	12	50	40	Ø28x30L	0-3.5	0.8	3320-391
FBB66	B6065	16	64	50	Ø36x40L	0-5	1.4	3320-392

BORING BAR SLEEVE FOR FBB66

ORDER NO.	D mm	D1 mm	Applicable Carbide Tool Holder	CODE NO.
EC1608	16	8	ST08-5M	3320-393
EC1610	16	10	ST10-6M	3320-394
EC1612	16	12	ST12-6M	3320-395



Small Diameter Boring Head FBB44



FOR FBB44 BORING CAPACITY FROM Ø8 - Ø20 MM

ORDER NO.	ØD mm	Ød mm	L mm	L2 mm	H mm	Insert	Clamp Screw	Wrench	CODE NO.	
BRB1008-32	10	8	64	32	9	TBGT060104 KYOCERA	M2	T6	3320-400	
BRB1010-40		10	72	40					3320-401	
BRB1012-45		12	77	27		TPGB090204 KYOCERA	M2.5	T8	3320-402	
BRB1016-45		16	77	27					3320-403	
BRB1020-45		20	77	27					3320-404	
BRB10-5PCS/SET	BRB1008-32 BRB1010-40 BRB1012-45 BRB1016-45 BRB1020-45									3320-405

FOR FBB66 BORING CAPACITY FROM Ø8 - Ø40 MM

ORDER NO.	ØD mm	Ød mm	L mm	L2 mm	H mm	Insert	Clamp Screw	Wrench	CODE NO.	
BRB1608-32	16	8	74	32	15	TBGT060104 KYOCERA	M2	T6	3320-406	
BRB1610-40		10	75	40					3320-407	
BRB1612-53		12	85	53		TPGB090204 KYOCERA	M2.5	T8	3320-408	
BRB1616-68		16	100	68					3320-409	
BRB1620-83		20	115	83					3320-410	
BRB1625-90		25	122	90		TPGB090204 KYOCERA	M2.5	T8	3320-411	
BRB1630-90		30	122	90					3320-412	
BRB1640-90		40	122	90					3320-413	
BRB16-8PCS/SET	BRB1608-32 BRB1610-40 BRB1612-53 BRB1616-68 BRB1620-83 BRB1625-90 BRB1630-90 BRB1640-90									3320-414

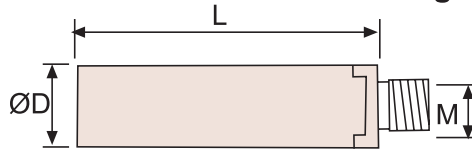


Carbide Shank Holder



Small Diameter Modular Boring Bar

Boring diameter from
Ø8 - Ø16 mm

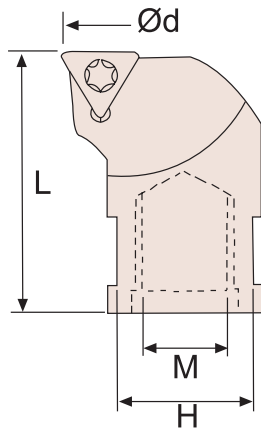


ORDER NO.	L mm	D mm	M mm	Applicable Insert Holder	Applicable Bushing	CODE NO.
ST08-5M-100	100	8	M5	IH09, IH10.5	EC1608	3320-420
ST10-6M-110	110	10	M6	IH12	EC1610	3320-421
ST12-6M-120	120	12		IH14, IH16	EC1612	3320-424
ST16-10M-160	160	16	M10x1.25P	IH18, IH20, IH22, IH24 IH26, IH28, IH30, IH32 IH34, IH36, IH38, IH40	---	3320-426



Insert Holder For Carbide Shank Holder

Boring diameter from Ø9 - Ø40 mm



ORDER NO.	d(mm)	H(mm)	L(mm)	M(mm)	Insert	Clamping Screw	Wrench	CODE NO.
IH09	9	7	18	M5	TPGT080204L SUMITOMO	Ø3.2xM2	T6	3320-430
IH10.5	10.5	7	23	M6				3320-431
IH12	12	8						3320-432
IH14	14	10	27	M10x1.25P				3320-433
IH16	16	10						3320-434
IH18	18	14						3320-435
IH20	20	14						3320-436
IH22	22	14						3320-437
IH24	24	14						3320-438
IH26	26	14						3320-439
IH28	28	14						3320-440
IH30	30	14						3320-441
IH32	32	14						3320-442
IH34	34	14	3320-443					
IH36	36	14	3320-444					
IH38	38	14	3320-445					
IH40	40	14	3320-446					



VRB Changeable 2 Inserts Rough Boring Head

Boring diameter from Ø25 - Ø500 mm



- The head is suitable for single bit boring, twin-bit boring and step boring with working diameter from Ø25 mm to Ø350 mm on diameter.
- New cartridge style with built-up rib. The pressure imposed on both cartridges counteracts producing highest rigidity and cutting efficiency, most suitable for a variety of borings.
- Boring head can be easily adjusted to different boring needs for machining on demand. Boring depth can be extended by tool connection.
- Clear side division provides a convenient adjustment without using a tool pre-setter.
- Most suitable for boring on various machine centers or boring mills. Universal design accepts inserts of any brands, which will reduce tool grinding and greatly improve boring performance.
- Patented step boring design; suitable for both level boring and step boring.



Changeable 2 Inserts Rough Boring Head VRB 200~900

Boring diameter from Ø25 - Ø204 mm



- Thickened cartridge with higher rigidity.
- Coolant nozzle easily cools the insert elongating its working life.
- Completed with chip pocket, improving chip flow of deep boring.
- Clamp plate solidifies cartridges and head, upgrading cutting rigidity.
- Patented step boring design; suitable for both level boring and step boring.



Enlargeable Modular Rough Boring Head With Diameter Over Ø200mm

Boring diameter from Ø200 - Ø2,000 mm



- This type is suitable for large diameter boring with ranges from 200 mm to 810 mm.
- The structure includes common flange and extension slide for both rough and finish boring heads. Adjustment range is within 110 mm on diameter.
- Options of various inserts for rough boring of different materials and boring styles.
- Available is the horizontal slide made of Aluminum alloy to reduce total weight.
- Options of external boring kit with boring range from Ø20mm to Ø300mm.