ITS BORE


ETM
RE MB63-MB50x40
ITS-BORE
ETM
BHE MB50-50x80
ø2.5-110
0.5 ø
0.01 ø
Non. 0.002 ø
LOCK
+△
ETM
BHEH 24x75
CW 32

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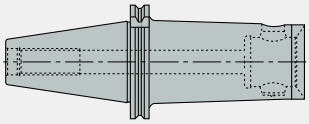

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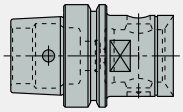

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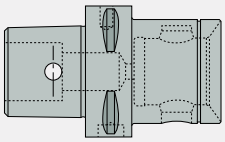

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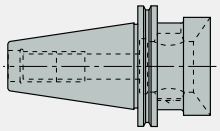

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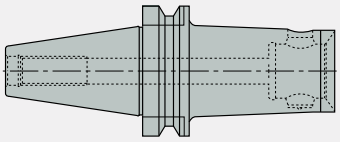

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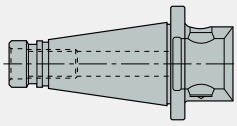

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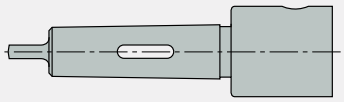

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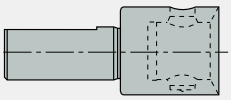

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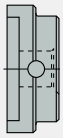

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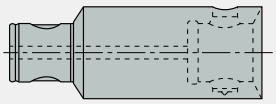

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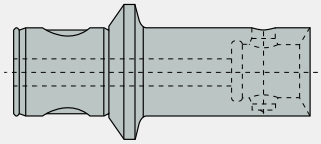

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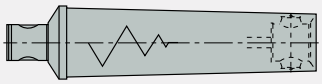

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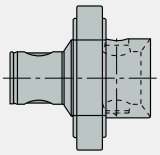

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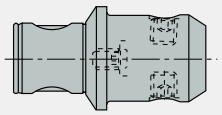

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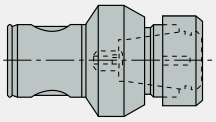

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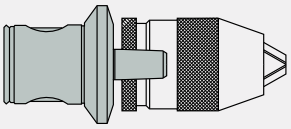

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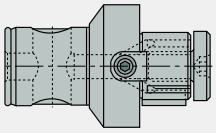

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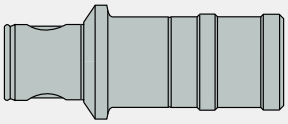

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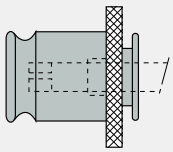

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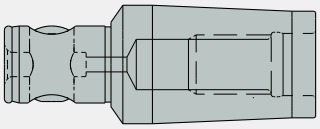

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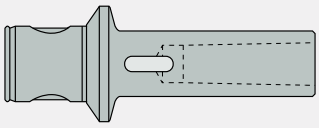

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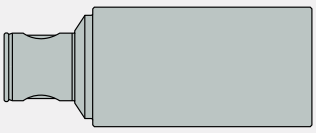
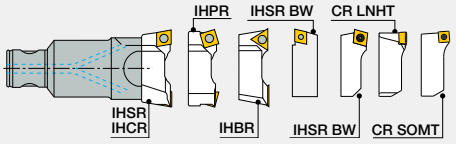


The ITS BORE System

Rough Boring Heads

BHR MB 16, 20, 25, 32, 40, 50, 63, 80

(ø18-200) Page 404



TCH AL 200, 300, 400, 500, 600, 700, 800

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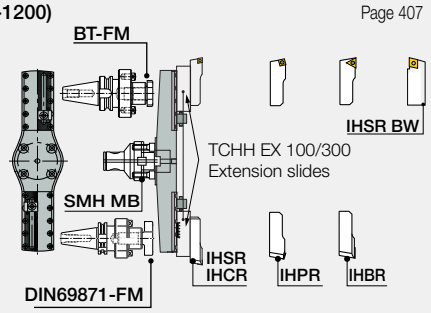
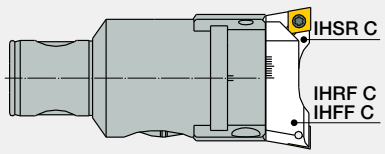


Rough & Fine Boring Heads

BHC MB 25, 32, 40, 50, 63, 80

(ø28-120) Page 411



Fine Boring Heads (10 µm)

BHE MB 14, 16, 20, 25, 32, 40

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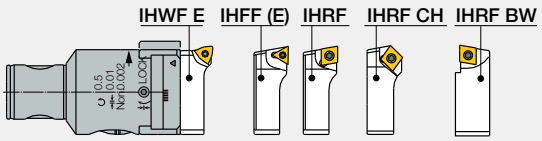

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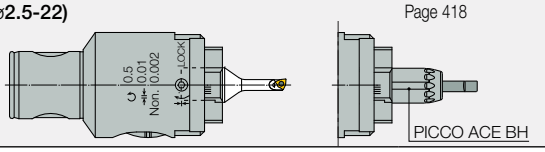

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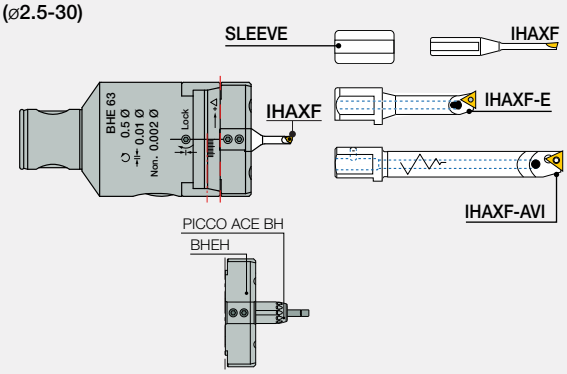

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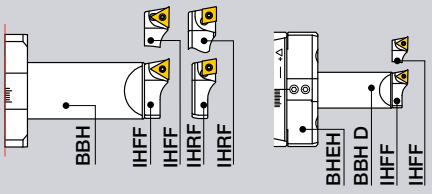
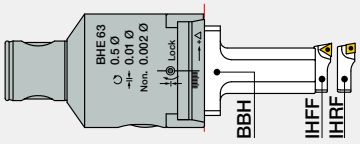


(ø40-90)



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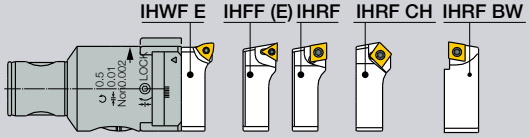
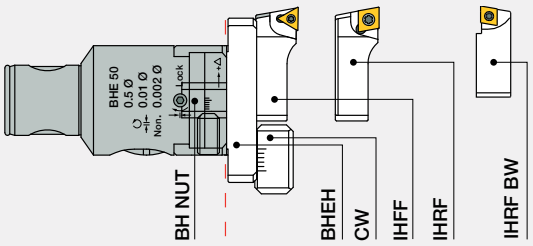


(ø72-200)



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The ITS BORE System

Fine Boring Heads (2 µm)

BHF MB 16, 20, 25, 32, 40

(ø18-63)

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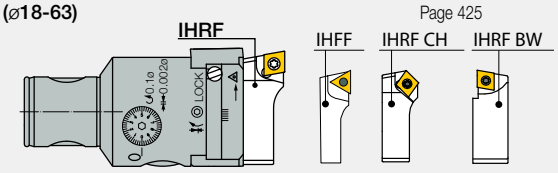

BHF MB 50-BL

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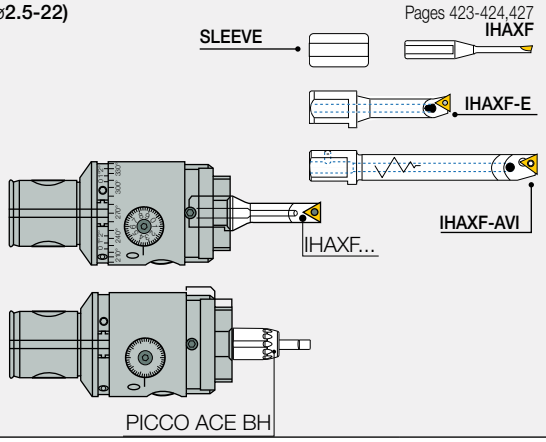
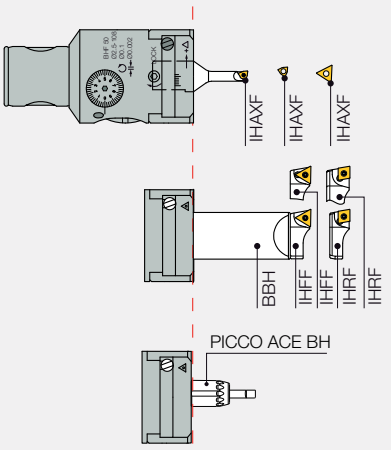


BHF MB 50-50X60

(ø2.5-30)



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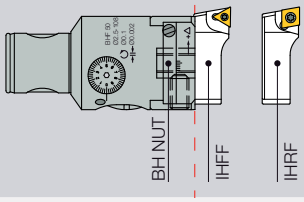

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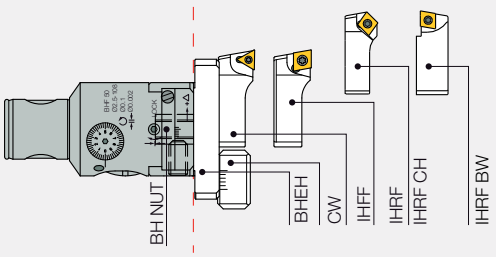

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BHF MB 50, 63, 80

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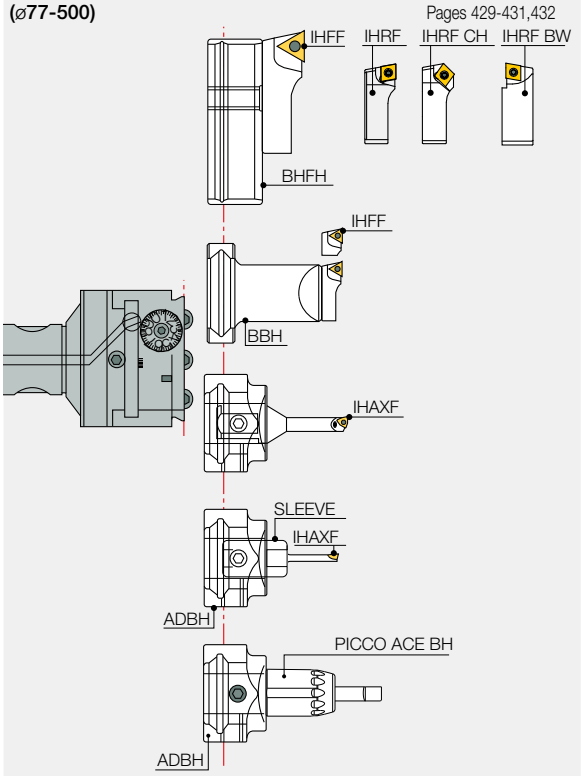

TCH AL 200, 300, 400, 500, 600, 700, 800

(ø200-1200)

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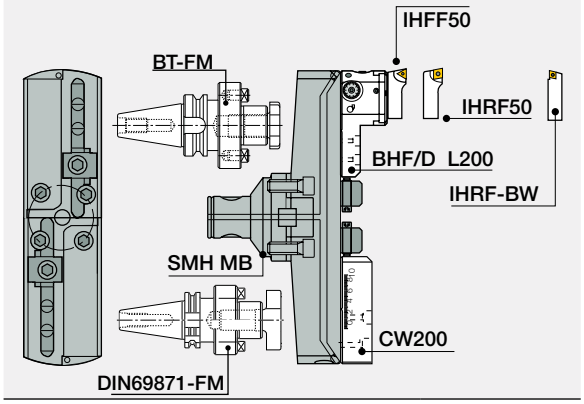

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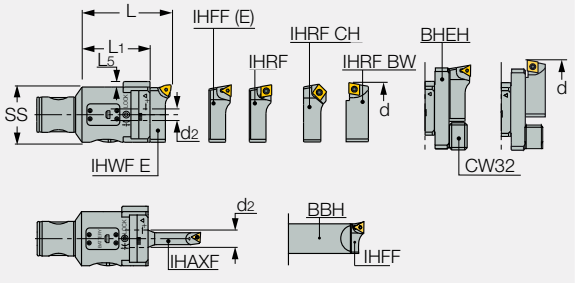
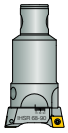
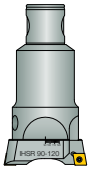
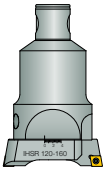
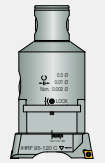
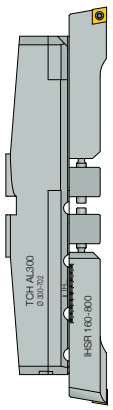


ITS BORE Boring Heads Selection Guide

MB Size		14	16	20	25	32	40	50	63	80	
Rough	BHR-TCH Ø18-1202		BHR MB16-16 Ø18-22  Page 404	BHR MB20-20 Ø22-28  Page 404	BHR MB25-25 Ø28-38  Page 404	BHR MB32-32 Ø35.5-50  Page 404	BHR MB40-40 Ø50-68  Page 404	BHR MB50-50 Ø68-90 MB50-63 Ø90-120  Page 404	BHR MB63-63 Ø90-120  Page 404	BHR MB80-80 Ø120-200  Page 404	**Roughing**
Rough + Finish	BHC Ø28-120 10 µm				BHC MB25-25 Ø28-36  Page 411	BHC MB32-32 Ø36-46  Page 411	BHC MB40-40 Ø46-60  Page 411	BHC MB50-50 Ø60-75  Page 411	BHC MB63-63 Ø75-95  Page 411	BHC MB80-80 Ø95-120  Page 411	 Page 407
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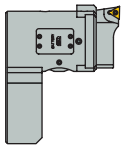
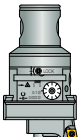
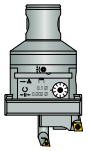
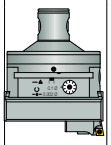
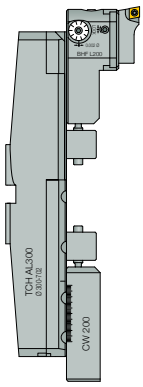
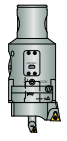
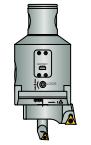
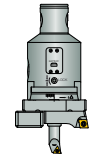
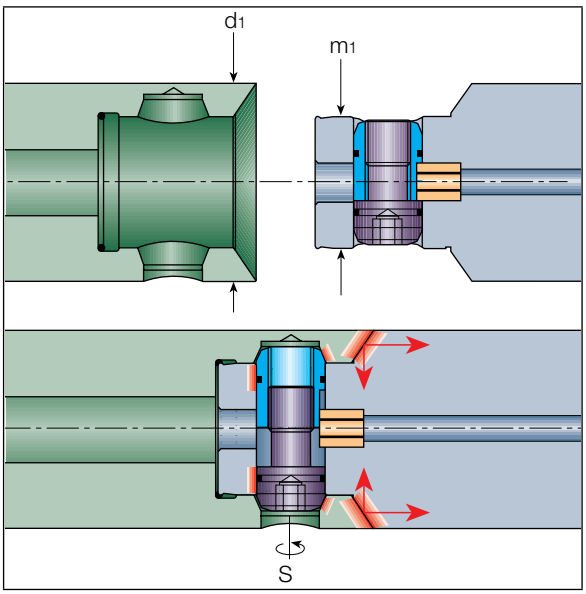
	BHE H Ø2.5-22 10 µm					BHE MB32-32...H Ø2.5-18  Page 418		BHE MB50-50...H Ø2.5-22  Page 418			**Finishing** BHD50 L200 Ø200-1202  Page 437
	BHF Ø2.5-1202 2 µm		BHF MB16-16 Ø18-23  Page 425	BHF MB20-20 Ø22-29  Page 425	BHF MB25-25 Ø28-38  Page 425	BHF MB32-32 Ø35.5-50  Page 425	BHF MB40-40 Ø48-63  Page 425	BHF MB50-50 Ø2.5-108 BHF MB50-80 Ø2.5-160 BHF MB50-63  Page 425	BHF MB63-63 Ø2.5-125  Page 432	BHF MB80-80 Ø2.5-160  Page 432	BHF MB80-125 Ø135-500  Page 432	BHF L200 Ø200 -1202 Page 437
	BHF BL Ø2.5-22 2 µm					BHF MB50-32... BL Ø2.5-12  Page 423		BHF MB50-50... BL Ø6-22  Page 423		Page	 Page 438
	BHD MB Ø2-1202 2 µm					BHD MB32-32-83 Ø35-51  Page 414	BHD MB40-40-90 Ø48-64  Page 414	BHD MB50-50X60 Ø2.5-110  Page 414	BHD MB63-63X89 Ø6-125  Page 414	BHD MB80-80X104 Ø6-200  Page 414	

MB Connection

ITSBORE is a modular toolholder system for boring, milling, drilling and tapping. This rigid, high-precision system is manufactured in one of the world's most advanced production facilities. The system is designed with extreme flexibility and simplicity, making it suitable for machine tools, machining centers and flexible manufacturing systems. It is recommended for machining strict tolerances with a high degree of surface finish. Its cylindrical-conical coupling and radial-expanding pin ensure maximum rigidity and concentricity in boring and milling. The system has an internal coolant supply in all components.

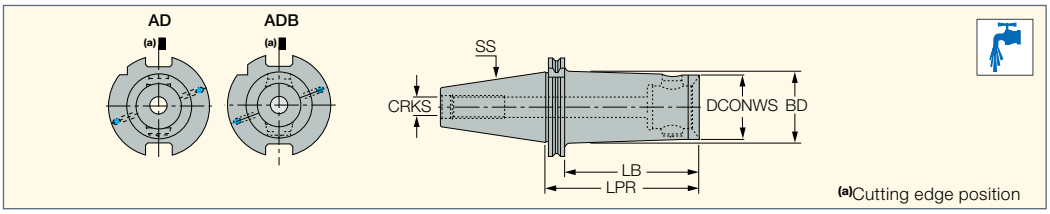


Designation	d_1	øm_1	Size Allen Key (mm)	Tightening Torque (Nm) ⚠	Maximum Driving Torque (Nm)
MB14	14	10	2.5	2-2.5	40
MB16	16	10	2.5	2-2.5	40
MB20	20	13	3	4-4.5	70
MB25	25	16	3	6.5-7.5	120
MB32	32	20	4	7-8	200
MB40	40	25	5	16-18	400
MB50	50	32	6	30-35	700
MB63	63	42	8	70-80	1600
MB80	80	42	8	70-80	1600
MB110	110	76	14	200-220	6300

ITSBORE

SKA-MB

MB Modular Connection System with DIN69871 Form AD/ADB / ISO7388/1 Taper Shanks



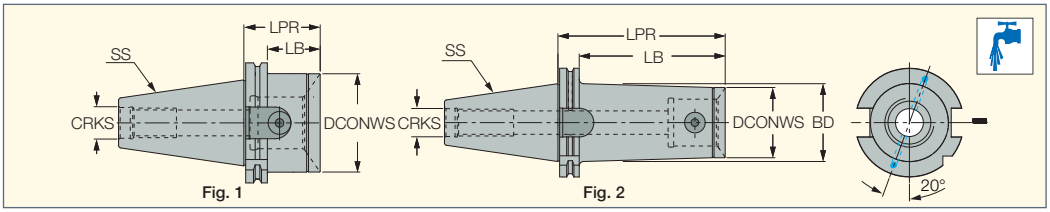
Designation	SS	DCONWS	LPR	LB	BD	CRKS	kg	
SKA 30-MB32	30	32.00	30.00	10.5	-	M12	0.40	HW 4.0
SKA 30-MB50	30	50.00	60.00	41.0	-	M12	0.67	HW 6.0
SKA 40-MB40	40	40.00	45.00	26.0	-	M16	0.94	HW 5.0
SKA 40-MB40X120 ADB	40	40.00	120.00	101.0	44.50	M16	1.70	HW 5.0
SKA 40-MB50	40	50.00	48.00	29.0	-	M16	0.99	HW 6.0
SKA 40-MB50X120 ADB	40	50.00	120.00	101.0	-	M16	2.04	HW 6.0
SKA 40-MB63	40	63.00	80.00	61.0	-	M16	1.52	HW 8.0
SKA 45-MB50	45	50.00	48.00	29.0	-	M20	1.77	HW 6.0
SKA 50-MB110X150	50	110.00	150.00	131.0	-	M24	8.47	HW 10.0
SKA 50-MB50	50	50.00	48.00	29.0	-	M24	2.82	HW 6.0
SKA 50-MB50X120 ADB	50	50.00	120.00	101.0	60.00	M24	4.03	HW 6.0
SKA 50-MB63	50	63.00	56.00	37.0	-	M24	2.95	HW 8.0
SKA 50-MB63X150 ADB	50	63.00	150.00	131.0	70.00	M24	2.81	HW 8.0
SKA 50-MB80	50	80.00	62.00	43.0	-	M24	3.51	HW 8.0
SKA 50-MB80X180 ADB	50	80.00	180.00	161.0	-	M24	7.90	HW 8.0
SKA 60-MB110X100	60	110.00	100.00	81.0	-	M30	10.50	HW 10.0
SKA 60-MB110X200	60	110.00	200.00	181.0	-	M30	18.00	HW 10.0
SKA 60 MB63X60	60	63.00	60.00	41.0	71.00	M30	9.47	HW 8.0
SKA 60-MB80X65	60	80.00	65.00	46.0	-	M30	10.38	HW 8.0

• Verify that the weight of the entire tool assembly does not exceed the machine spindle's carrying capability • The coolant passages of holders with A/B suffix are plugged with screws so they can be used either as SKA or SKB (through coolant).

ITSBORE

SKA-FC-MB

MB Modular Boring Connection System with DIN 69871 Face Contact ADB Tapered Shanks

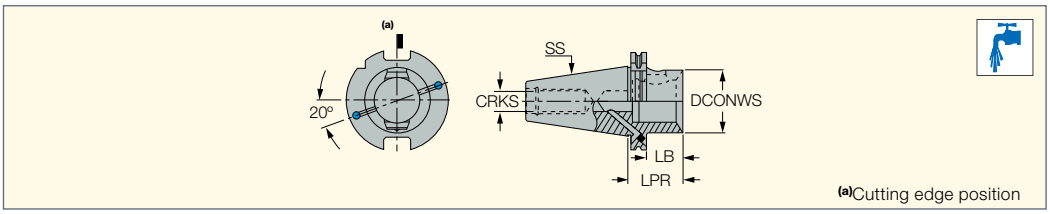


Designation	SS	DCONWS	LPR	BD	LB	CRKS	Fig.	kg	
SKA 40 FC MB50 ADB	40	50.00	48.00	-	29.0	M16	1.	0.90	HW 6.0
SKA 40 FC MB50X120 ADB	40	50.00	120.00	-	101.0	M16	2.	1.70	HW 6.0
SKA 40 FC MB63 ADB	40	63.00	80.00	-	-	M16	1.	1.50	HW 8.0
SKA 50 FC MB50 ADB	50	50.00	48.00	-	29.0	M24	1.	2.70	HW 6.0
SKA 50 FC MB50X120 ADB	50	50.00	120.00	60.00	101.0	M24	2.	3.50	HW 6.0
SKA 50 FC MB63 ADB	50	63.00	56.00	-	37.0	M24	1.	2.80	HW 8.0
SKA 50 FC MB63X150 ADB	50	63.00	150.00	75.50	131.0	M24	2.	5.00	HW 8.0
SKA 50 FC MB80 ADB	50	80.00	62.00	-	43.0	M24	1.	3.40	HW 8.0
SKA 50 FC MB80X180 ADB	50	80.00	180.00	-	161.0	M24	2.	6.90	HW 8.0

ITSBORE

SKB-MB

MB Modular Connection System with DIN69871 Form B (coolant through flange) Taper Shanks



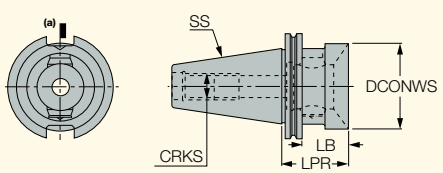
Designation	SS	DCONWS	LB	LPR	CRKS	kg	
SKB 40-MB50	40	50.00	29.0	48.00	M16	1.04	HW 6.0
SKB 40-MB63	40	63.00	61.0	80.00	M16	1.56	HW 8.0
SKB 50-MB50	50	50.00	29.0	48.00	M24	2.91	HW 6.0
SKB 50-MB63	50	63.00	37.0	56.00	M24	3.07	HW 8.0
SKB 50-MB80	50	80.00	43.0	62.00	M24	3.60	HW 8.0

• Verify that the weight of the entire tool assembly does not exceed the machine spindle's carrying capability.

ITSBORE

CATM-MB

MB Modular Boring Connection System with CATM FORM AD ANSIB5.5 Caterpillar Tapered Shanks and Metric Pull Stud Threads



(a)Cutting edge position

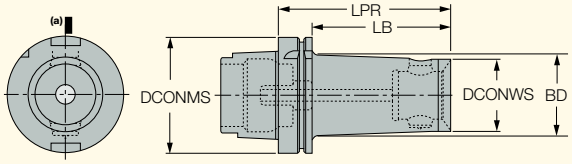
Designation	SS	DCONWS	LB	LPR	CRKS	kg	
CATM 40 MB50	40	50.00	47.0	66.00	M16	1.21	HW 6.0
CATM 40 MB63	40	63.00	-	100.00	M16	1.91	HW 8.0
CATM 45 MB50	45	50.00	29.0	48.00	M20	1.83	HW 6.0
CATM 50 MB50	50	50.00	29.0	48.00	M24	3.06	HW 6.0
CATM 50 MB63	50	63.00	37.0	56.00	M24	3.08	HW 8.0
CATM 50 MB80	50	80.00	43.0	62.00	M24	3.38	HW 8.0

• Verify that the weight of the entire tool assembly does not exceed the machine spindle's carrying capability.

ITSBORE

HSK A-MB

MB Modular Connection System with DIN 69893 HSK A Taper Shanks



(a)Cutting edge position

Designation	DCONMS	DCONWS	LB	LPR	BD	kg			
HSK A40 MB32	40.00	32.00	28.0	48.00	-	0.32	COOLING TUBE HSK A40	WRENCH COOL TUBE HSK40*	HW 4.0
HSK A50 MB50	50.00	50.00	-	66.00	-	0.69	COOLING TUBE HSK A50	WRENCH COOL TUBE HSK50*	HW 6.0
HSK A63 MB40	63.00	40.00	34.0	60.00	-	0.92	COOLING TUBE HSK A63	WRENCH COOL TUBE HSK63*	HW 5.0
HSK A63 MB40X120	63.00	40.00	94.0	120.00	46.00	1.60	COOLING TUBE HSK A63	WRENCH COOL TUBE HSK63*	HW 5.0
HSK A63 MB50	63.00	50.00	40.0	66.00	-	1.04	COOLING TUBE HSK A63	WRENCH COOL TUBE HSK63*	HW 6.0
HSK A63 MB50X120	63.00	50.00	94.0	120.00	-	1.05	COOLING TUBE HSK A63	WRENCH COOL TUBE HSK63*	HW 6.0
HSK A63 MB63	63.00	63.00	-	75.00	-	1.15	COOLING TUBE HSK A63	WRENCH COOL TUBE HSK63*	HW 8.0
HSK A80 MB50	80.00	50.00	44.0	70.00	-	1.61	COOLING TUBE HSK A 80	WRENCH COOL TUBE HSK80*	HW 6.0
HSK A80 MB63	80.00	63.00	54.0	80.00	-	1.50	COOLING TUBE HSK A 80	WRENCH COOL TUBE HSK80*	HW 8.0
HSK A80 MB80	80.00	80.00	-	86.00	-	2.54	COOLING TUBE HSK A 80	WRENCH COOL TUBE HSK80*	HW 8.0
HSK A100 MB50	100.00	50.00	43.0	72.00	-	2.58	COOLING TUBE HSK A100	WRENCH COOL TUBE HSK100*	HW 6.0
HSK A100 MB50X120	100.00	50.00	91.0	120.00	60.00	1.05	COOLING TUBE HSK A100	WRENCH COOL TUBE HSK100*	HW 6.0
HSK A100 MB63	100.00	63.00	53.0	82.00	-	2.86	COOLING TUBE HSK A100	WRENCH COOL TUBE HSK100*	HW 8.0
HSK A100 MB63X150	100.00	63.00	121.0	150.00	70.00	4.71	COOLING TUBE HSK A100	WRENCH COOL TUBE HSK100*	HW 8.0
HSK A100 MB80	100.00	80.00	59.0	88.00	-	3.60	COOLING TUBE HSK A100	WRENCH COOL TUBE HSK100*	HW 8.0
HSK A100 MB80X180	100.00	80.00	151.0	180.00	-	6.50	COOLING TUBE HSK A100	WRENCH COOL TUBE HSK100*	HW 8.0

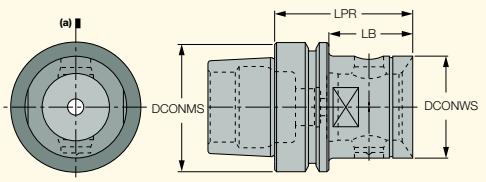
• A cooling tube must be used with all coolant through HSK spindles • Verify that the weight of the entire tool assembly does not exceed the machine spindle's carrying capability.

* Optional, should be ordered separately

ITSBORE

HSK E-MB

MB Modular Connection System with DIN 69893 E Taper Shanks



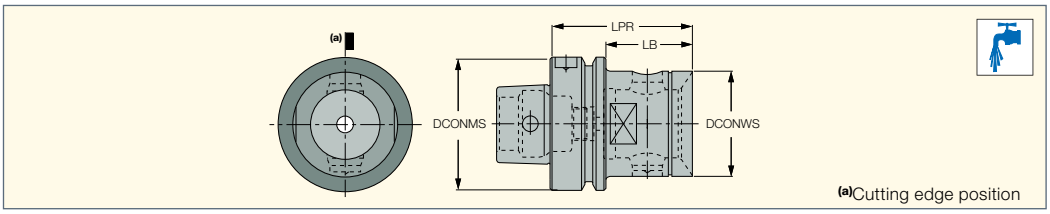
(a)Cutting edge position

Designation	DCONMS	DCONWS	LB	LPR	kg	
HSK E40 MB32	40.00	32.00	22.0	42.00	0.30	HW 4.0
HSK E50 MB50	50.00	50.00	-	66.00	0.71	HW 6.0
HSK E63 MB50	63.00	50.00	40.0	66.00	1.87	HW 6.0

• A cooling tube must be used with all coolant through HSK spindles • Verify that the weight of the entire tool assembly does not exceed the machine spindle's carrying capability.

ITSBORE

HSK F-MB
MB Modular Connection System with DIN 69893 F Taper Shanks

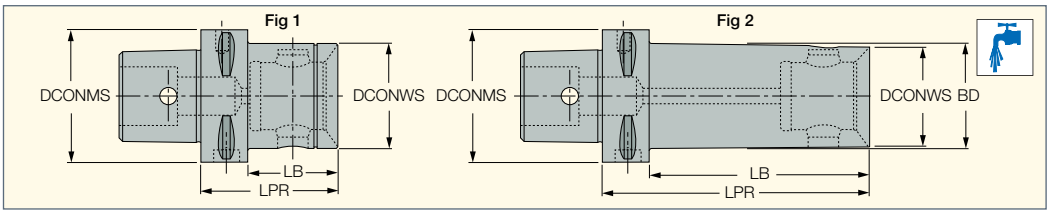


Designation	DCONMS	DCONWS	LB	LPR	kg	
HSK F 63 MB50	63.00	50.00	39.0	65.00	1.00	HW 6.0

• A cooling tube must be used with all coolant through HSK spindles • Verify that the weight of the entire tool assembly does not exceed the machine spindle's carrying capability.

ITSBORE CAMFIX

C#-MB
MB Modular Boring Connection System with CAMFIX Exchangeable Shanks

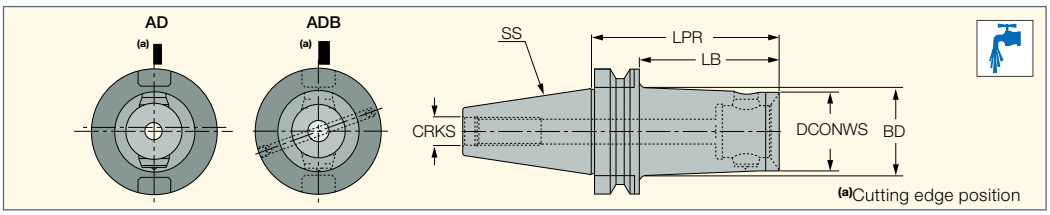


Designation	DCONMS	DCONWS	LPR	LB	BD	Fig.	kg			
C4 MB32X42	40.00	32.00	42.00	22.0	-	1.	0.30	HW 4.0	COOLING TUBE C4*	WRENCH COOL TUBE C4*
C4 MB40X45	40.00	40.00	45.00	-	-	1.	0.40	HW 5.0	COOLING TUBE C4*	WRENCH COOL TUBE C4*
C5 MB50X55	50.00	50.00	55.00	-	-	1.	0.72	HW 6.0	COOLING TUBE C5*	WRENCH COOL TUBE C5*
C6 MB40X50	63.00	40.00	50.00	28.0	-	1.	0.90	HW 5.0	COOLING TUBE C6*	WRENCH COOL TUBE C6*
C6 MB40X120	63.00	40.00	120.00	98.0	44.00	2.	1.50	HW 5.0	COOLING TUBE C6*	WRENCH COOL TUBE C6*
C6 MB50X55	63.00	50.00	55.00	33.0	50.00	2.	0.80	HW 6.0	COOLING TUBE C6*	WRENCH COOL TUBE C6*
C6 MB50X67	63.00	50.00	67.00	45.0	-	1.	1.10	HW 6.0	COOLING TUBE C6*	WRENCH COOL TUBE C6*
C6 MB50X120	63.00	50.00	120.00	98.0	54.00	2.	1.90	HW 6.0	COOLING TUBE C6*	WRENCH COOL TUBE C6*
C6 MB63X77	63.00	63.00	77.00	-	-	1.	1.54	HW 8.0	COOLING TUBE C6*	WRENCH COOL TUBE C6*
C8 MB50X60	80.00	50.00	60.00	30.0	-	1.	1.99	HW 6.0	COOLING TUBE C8*	WRENCH COOL TUBE C8*
C8 MB50X120	80.00	50.00	120.00	90.0	54.00	2.	2.80	HW 6.0	COOLING TUBE C8*	WRENCH COOL TUBE C8*
C8 MB63X70	80.00	63.00	70.00	40.0	-	1.	2.16	HW 8.0	COOLING TUBE C8*	WRENCH COOL TUBE C8*
C8 MB63X150	80.00	63.00	150.00	120.0	67.00	2.	4.00	HW 8.0	COOLING TUBE C8*	WRENCH COOL TUBE C8*
C8 MB80X75	80.00	80.00	75.00	-	-	1.	2.60	HW 8.0	COOLING TUBE C8*	WRENCH COOL TUBE C8*
C8 MB80X120	80.00	80.00	120.00	-	-	1.	4.30	HW 8.0	COOLING TUBE C8*	WRENCH COOL TUBE C8*

• Verify that the weight of the entire tool assembly does not exceed the machine spindle's carrying capability.
* Optional, should be ordered separately

ITSBORE

BT-MB
MB Modular Connection System with BT MAS-403 FORM AD/ADB Taper Shanks



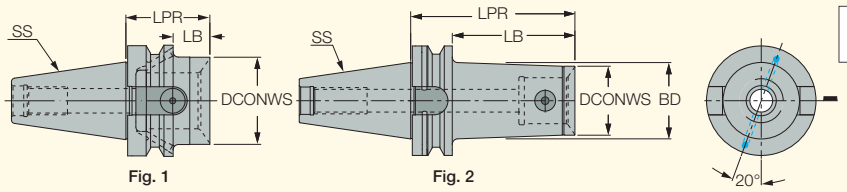
Designation	SS	DCONWS	LB	LPR	BD	CRKS	kg	
BT30 MB32	30	32.00	10.6	32.00	-	M12	0.38	HW 4.0
BT30 MB50	30	50.00	38.6	60.00	-	M12	0.70	HW 6.0
BT40 MB40	40	40.00	18.0	45.00	-	M16	0.99	HW 5.0
BT40 MB40X120 ADB	40	40.00	93.0	120.00	44.50	M16	1.78	HW 5.0
BT40 MB50	40	50.00	21.0	48.00	-	M16	1.00	HW 6.0
BT40 MB50X120 ADB	40	50.00	93.0	120.00	-	M16	2.08	HW 6.0
BT40 MB63	40	63.00	39.0	66.00	-	M16	1.35	HW 8.0
BT45 MB50	45	50.00	29.0	62.00	-	M20	2.32	HW 6.0
BT50 MB50	50	50.00	28.0	66.00	-	M24	3.78	HW 6.0
BT50 MB50X120 ADB	50	50.00	82.0	120.00	60.00	M24	4.64	HW 6.0
BT50 MB63	50	63.00	37.0	75.00	-	M24	3.98	HW 8.0
BT50 MB63X150 ADB	50	63.00	112.0	150.00	70.00	M24	5.85	HW 8.0
BT50 MB80	50	80.00	37.0	75.00	-	M24	4.30	
BT50 MB80X180 ADB	50	80.00	142.0	180.00	-	M24	8.19	HW 8.0
BT50 MB110X140	50	110.00	102.0	140.00	-	M24	6.80	HW 10.0
BT60 MB110X110	60	110.00	63.0	110.00	-	M30	11.50	HW 10.0
BT60 MB110X200	60	110.00	152.0	200.00	-	M30	18.10	HW 10.0

• Verify that the weight of the entire tool assembly does not exceed the machine spindle's carrying capability.

ITSBORE

BT-FC-MB

MB Modular Boring System with BT MAS-403 Face Contact ADB Tapered Shanks

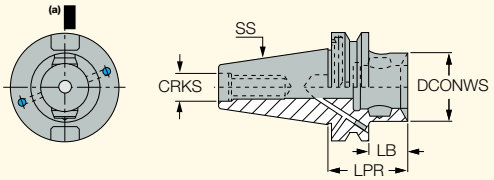


Designation	SS	DCONWS	LPR	BD	LB	Fig.	kg	
BT30 FC MB50	30	50.00	60.00	-	32.0	1.	0.70	
BT40 FC MB50	40	50.00	48.00	-	21.0	1.	0.90	HW 6.0
BT40 FC MB50X120 ADB	40	50.00	120.00	-	93.0	2.	1.90	HW 5.0
BT40 FC MB63	40	63.00	66.00	-	-	1.	1.20	HW 8.0
BT50 FC MB50	50	50.00	66.00	-	28.0	1.	3.30	HW 6.0
BT50 FC MB50X120 ADB	50	50.00	120.00	60.00	82.0	2.	4.20	HW 6.0
BT50 FC MB63	50	63.00	75.00	-	37.0	1.	3.70	HW 8.0
BT50 FC MB63X150 ADB	50	63.00	150.00	70.00	112.0	2.	5.80	HW 8.0
BT50 FC MB80	50	80.00	75.00	-	37.0	1.	4.00	HW 8.0
BT50 FC MB80X180 ADB	50	80.00	180.00	-	142.0	2.	7.50	HW 8.0

ITSBORE

BTB-MB

MB Modular Connection System with BT MAS-403 Type B Taper Shanks



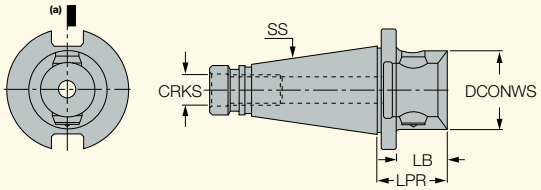
Designation	SS	DCONWS	LB	LPR	CRKS	kg	
BTB40 MB50	40	50.00	21.0	48.00	M16	0.96	HW 6.0
BTB40 MB63	40	63.00	-	66.00	M16	1.34	HW 8.0
BTB50 MB50X66	50	50.00	28.0	66.00	M24	3.89	HW 6.0
BTB50 MB63X75	50	63.00	37.0	75.00	M24	4.00	HW 8.0
BTB50 MB80	50	80.00	37.0	75.00	M24	4.30	HW 8.0

- Verify that the weight of the entire tool assembly does not exceed the machine spindle's carrying capability.

ITSBORE

ISOM-MB

MB Modular Connection System with DIN 2080-A Taper Shanks



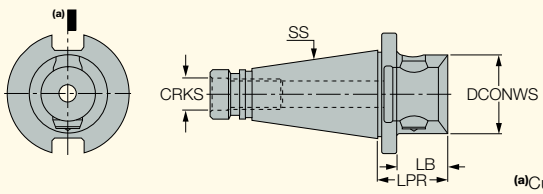
Designation	SS	DCONWS	LB	LPR	CRKS	kg	
ISOM 30-MB50	30	50.00	-	58.00	M12	0.78	HW 6.0
ISOM 40-MB50	40	50.00	36.0	48.00	M16	0.95	HW 6.0
ISOM 40-MB63	40	63.00	-	60.00	M16	1.34	HW 8.0
ISOM 45-MB50	45	50.00	33.0	48.00	M20	1.81	HW 6.0
ISOM 50-MB50	50	50.00	33.0	48.00	M24	2.82	HW 6.0
ISOM 50-MB63	50	63.00	41.0	56.00	M24	3.04	HW 8.0
ISOM 50-MB80	50	80.00	45.0	60.00	M24	3.60	HW 8.0

- Verify that the weight of the entire tool assembly does not exceed the machine spindle's carrying capability.

ITSBORE

ISO-MB

MB Modular Connection System with ISO 297 Taper Shanks

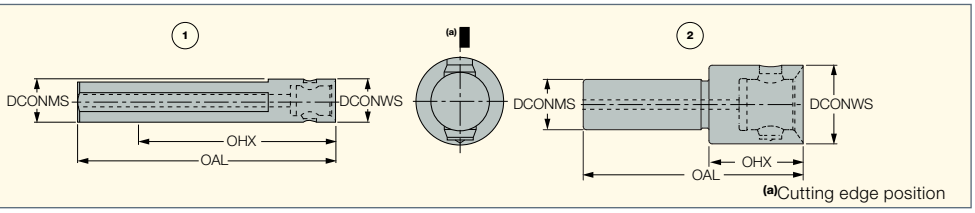


Designation	SS	DCONWS	LB	LPR	CRKS	kg	
ISO 40-MB50	40	50.00	36.0	48.00	UNC 5/8"-11	1.03	HW 6.0
ISO 40-MB63	40	63.00	-	60.00	UNC 5/8"-11	1.36	HW 8.0
ISO 50-MB50	50	50.00	33.0	48.00	UNC 1.0"-8	2.83	HW 6.0
ISO 50-MB63	50	63.00	41.0	56.00	UNC 1.0"-8	2.94	HW 8.0
ISO 50-MB80	50	80.00	45.0	60.00	UNC 1.0"-8	3.56	HW 8.0

- Verify that the weight of the entire tool assembly does not exceed the machine spindle's carrying capability.

ITSBORE

ST-MB
MB Modular Connection System
with Straight Cylindrical Shanks



Designation	DCONMS	DCONWS	OAL	OHX(1)	CSP(2)	Fig.	kg	
ST 16-MB16	16.00	16.00	100.00	66.0	1	1.	0.15	HW 2.5
ST 20-MB20	20.00	20.00	125.00	85.0	1	1.	0.27	HW 3.0
ST 25-MB32	25.00	32.00	100.00	35.0	0	2.	0.41	HW 4.0
ST 32-MB50	32.00	50.00	140.00	60.0	0	2.	0.42	HW 6.0

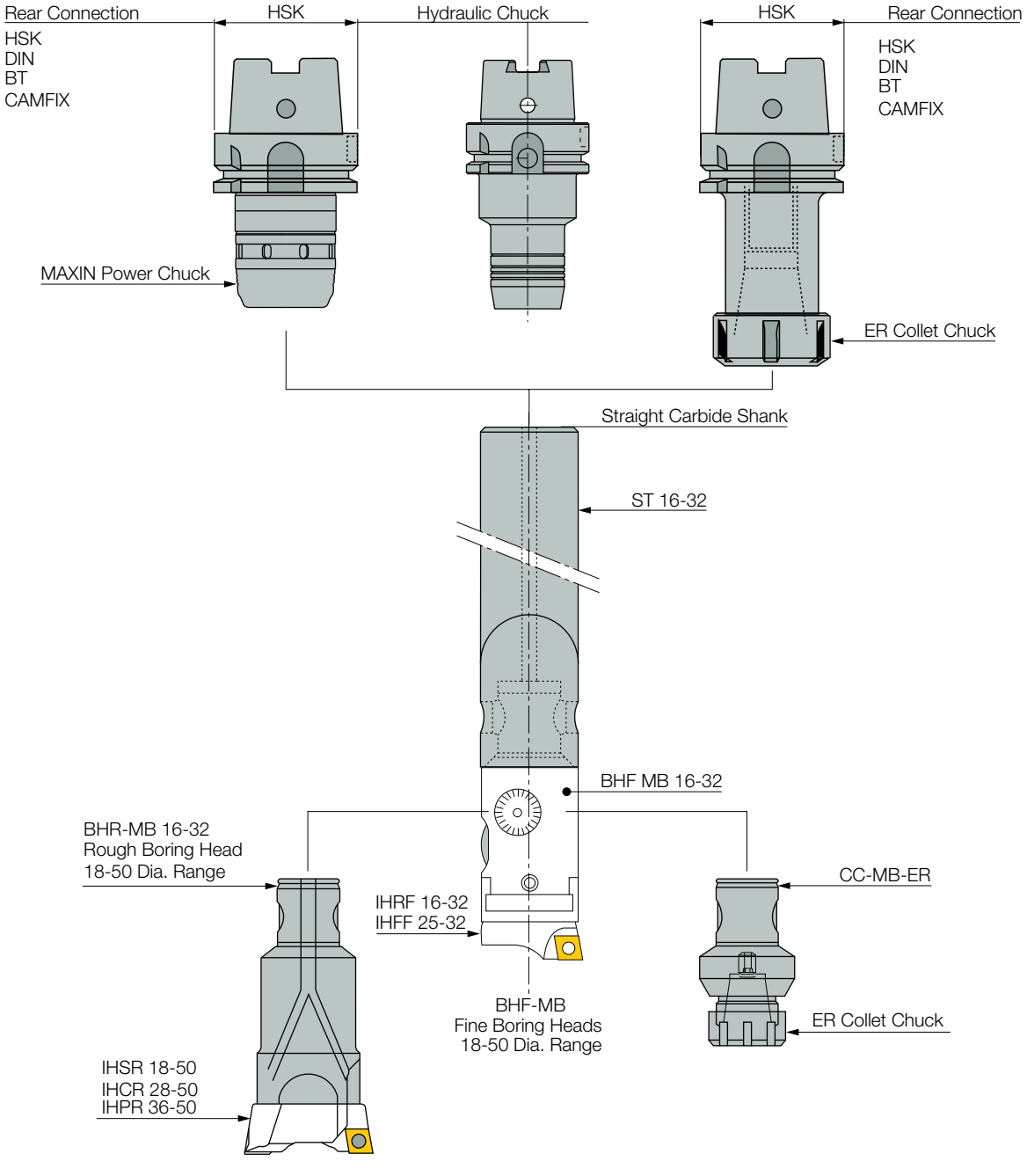
- Verify that the weight of the entire tool assembly does not exceed the machine spindle's carrying capability.

(1) Maximum overhang

(2) 0 - Without coolant supply, 1 - With coolant supply

ST-MB Straight Carbide Shank with MB Connection Assembly Options

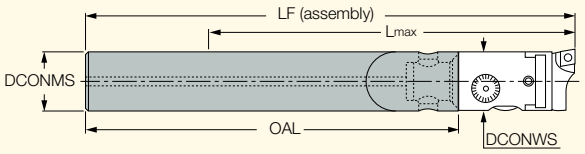
ST16-32 MB16-MB32 Diameter Range: 18-50 mm



ITSBORE

ST-MB-E

MB Modular Connection System with Cylindrical Carbide Shanks



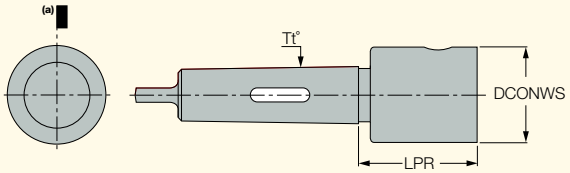
Designation	DCONMS	DCONWS	OAL	LF	L max	kg	
ST 16-MB16X110E	16.00	16.00	110.00	144.00	100.0	0.28	HW 2.5
ST 16-MB16X140E	16.00	16.00	140.00	174.00	125.0	0.17	HW 2.5
ST 16-MB16X170E	16.00	16.00	170.00	204.00	160.0	0.42	HW 2.5
ST 20-MB20X135E	20.00	20.00	135.00	175.00	125.0	0.40	HW 3.0
ST 20-MB20X170E	20.00	20.00	170.00	210.00	160.0	0.69	HW 3.0
ST 20-MB20X210E	20.00	20.00	210.00	250.00	200.0	0.40	HW 3.0
ST 25-MB25X160E	25.00	25.00	160.00	210.00	160.0	0.40	HW 3.0
ST 25-MB25X205E	25.00	25.00	205.00	255.00	200.0	1.28	HW 3.0
ST 25-MB25X255E	25.00	25.00	255.00	305.00	250.0	1.55	HW 3.0
ST 32-MB32X195E	32.00	32.00	195.00	258.00	200.0	1.96	HW 4.0
ST 32-MB32X250E	32.00	32.00	250.00	313.00	250.0	2.50	HW 4.0
ST 32-MB32X315E	32.00	32.00	315.00	378.00	320.0	3.30	HW 4.0

- Verify that the weight of the entire tool assembly does not exceed the machine spindle's carrying capability.

ITSBORE

MTT-MB

MB Modular Connection System with DIN 228/B 1806 Morse Taper Shanks



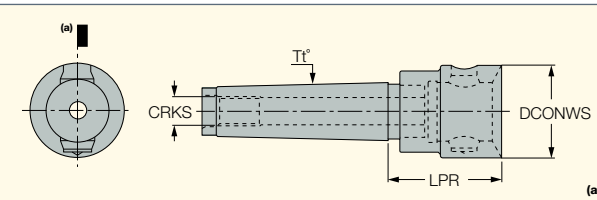
Designation	Tt°	DCONWS	LPR	kg	
MTT 5-MB63	MT5	63.00	65.00	2.16	HW 8.0

- Verify that the weight of the entire tool assembly does not exceed the machine spindle's carrying capability.

ITSBORE

MTD-MB

MB Modular Connection System with DIN 228/A 220 Morse Taper Shanks



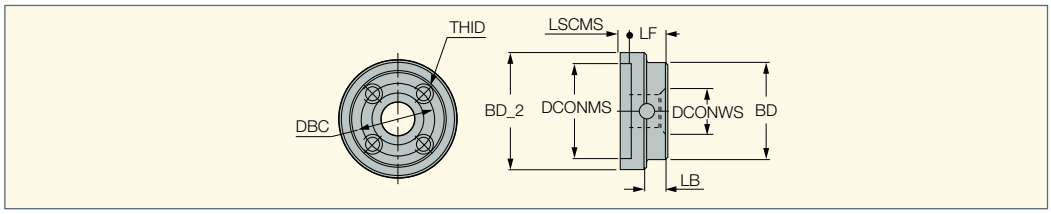
Designation	Tt°	DCONWS	LPR	CRKS	kg	
MTD 4-MB50	MT4	50.00	63.00	M16	0.93	HW 6.0
MTD 4-MB50 SIP	MT4	50.00	63.00	M14	0.98	HW 6.0

- Verify that the weight of the entire tool assembly does not exceed the machine spindle's carrying capability.

ITSBORE

DIN2079-MB

MB Modular Connection System with DIN 2079 Spindle Connecting Interface



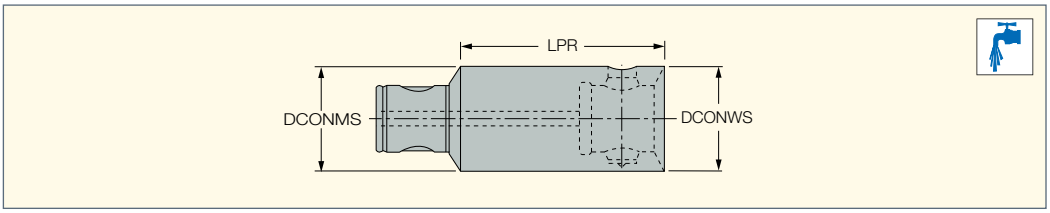
Designation	LF	DCONWS	LSCMS	LB	BD	BD_2	DCONMS	DBC	THID	kg	
DIN2079 MB50 40	35.00	50.00	10.00	21.0	90.00	110.00	88.89	66.70	M12	1.96	HW 6.0
DIN2079 MB63 40	47.00	63.00	10.00	31.0	90.00	110.00	88.89	66.70	M12	2.06	HW 8.0
DIN2079 MB63 50	45.00	63.00	12.00	31.0	135.00	150.00	128.57	101.60	M16	4.60	HW 8.0
DIN2079 MB80 50	50.00	80.00	12.00	36.0	135.00	150.00	128.57	101.60	M16	5.00	HW 8.0

- Standard connection plate that can be assembled easily on most CNC spindle machines with a DIN2079 interface. This connection plate enables the use of ITS BORE components with the MB connection by using any standard adapter with four screws. It is affixed directly on the machine spindle.

ITSBORE

EX-MB

Extensions for the MB Modular Connection System



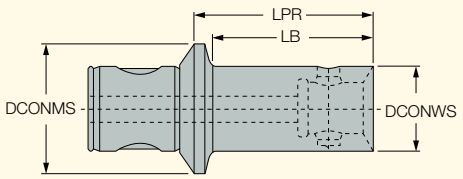
Designation	DCONMS	LPR	DCONWS	kg
EX 14X25-MB14	14.00	25.00	14.00	0.04
EX 16X25-MB16	16.00	25.00	16.00	0.06
EX 20X32-MB20	20.00	32.00	20.00	0.09
EX 25X25-MB25	25.00	25.00	25.00	0.10
EX 25X40-MB25	25.00	40.00	25.00	0.16
EX 32X32-MB32	32.00	32.00	32.00	0.20
EX 32X50-MB32	32.00	50.00	32.00	0.31
EX 40X40-MB40	40.00	40.00	40.00	0.39
EX 40X63-MB40	40.00	63.00	40.00	0.61
EX 50X50-MB50	50.00	50.00	50.00	0.70
EX 50X80-MB50	50.00	80.00	50.00	1.20
EX 50X100-MB50	50.00	100.00	50.00	1.53
EX 63X63-MB63	63.00	63.00	63.00	1.49
EX 63X100-MB63	63.00	100.00	63.00	2.39
EX 63X125-MB63	63.00	125.00	63.00	2.99
EX 80X80-MB80	80.00	80.00	80.00	3.10
EX 80X125-MB80	80.00	125.00	80.00	4.90
EX 80X160-MB80	80.00	160.00	80.00	6.25
EX 110X140-MB110	110.00	140.00	110.00	10.45
EX 110X200-MB110	110.00	200.00	110.00	14.30

- Verify that the weight of the entire tool assembly does not exceed the machine spindle's carrying capability.

ITSBORE

RE MB-MB

Reducers for the MB Modular Connection System



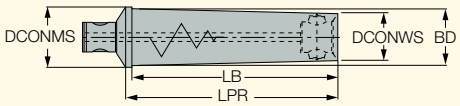
Designation	DCONMS	DCONWS	LPR	LB	kg
RE MB16-MB14X24	16.00	14.00	25.00	19.5	0.04
RE MB20-MB14X19	20.00	14.00	20.00	14.5	0.03
RE MB20-MB16X20	20.00	16.00	20.00	16.0	0.06
RE MB25-MB14X19	25.00	14.00	20.00	13.5	0.06
RE MB25-MB16X20	25.00	16.00	20.00	15.0	0.08
RE MB25-MB20X25	25.00	20.00	25.00	20.0	0.09
RE MB32-MB14X25	32.00	14.00	25.00	17.5	0.08
RE MB32-MB16X24	32.00	16.00	24.00	18.0	0.13
RE MB32-MB20X25	32.00	20.00	25.00	20.0	0.14
RE MB32-MB25X28	32.00	25.00	28.00	23.0	0.16
RE MB40-MB14X25	40.00	14.00	25.00	16.5	0.23
RE MB40-MB16X24	40.00	16.00	24.00	17.0	0.22
RE MB40-MB20X26	40.00	20.00	26.00	20.0	0.23
RE MB40-MB25X28	40.00	25.00	28.00	22.0	0.26
RE MB40-MB32X32	40.00	32.00	32.00	27.0	0.29
RE MB50-MB14X25	50.00	14.00	25.00	14.5	0.40
RE MB50-MB14X39	50.00	14.00	39.00	30.5	0.42
RE MB50-MB16X24	50.00	16.00	24.00	15.0	0.39
RE MB50-MB16X40	50.00	16.00	40.00	31.0	0.41
RE MB50-MB16X74	50.00	16.00	74.00	65.0	0.47
RE MB50-MB20X26	50.00	20.00	26.00	18.0	0.40
RE MB50-MB20X70	50.00	20.00	70.00	62.0	0.50
RE MB50-MB20X93	50.00	20.00	93.00	85.0	0.56
RE MB50-MB25X117	50.00	25.00	117.00	110.0	0.68
RE MB50-MB25X28	50.00	25.00	28.00	21.0	0.42
RE MB50-MB25X87	50.00	25.00	87.00	80.0	0.64
RE MB50-MB32X144	50.00	32.00	144.00	137.0	1.09
RE MB50-MB32X32	50.00	32.00	32.00	25.0	0.46
RE MB50-MB32X87	50.00	32.00	87.00	80.0	0.71
RE MB50-MB40X176	50.00	40.00	176.00	170.0	1.87
RE MB50-MB40X36	50.00	40.00	36.00	30.0	0.51
RE MB50-MB40X87	50.00	40.00	87.00	80.0	0.97
RE MB63-MB50X40	63.00	50.00	40.00	34.0	0.97
RE MB80-MB50X45	80.00	50.00	45.00	36.0	1.35
RE MB80-MB63X60	80.00	63.00	60.00	52.0	1.77
RE MB110-MB80X70	110.00	80.00	70.00	52.0	6.00

- Verify that the weight of the entire tool assembly does not exceed the machine spindle's carrying capability.

ITSBORE

RE MB-AVI

MB Modular System Vibration Damping Reducers



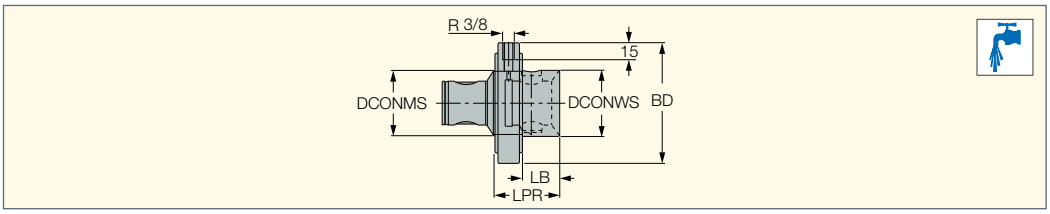
Designation	DCONMS	DCONWS	LPR	BD	LB	kg
RE MB50-MB16X74-AVI	50.00	16.00	74.00	17.50	65.0	0.51
RE MB50-MB20X93-AVI	50.00	20.00	93.00	21.50	85.0	0.65
RE MB50-MB25X117-AVI	50.00	25.00	117.00	27.00	110.0	0.92
RE MB50-MB32X144-AVI	50.00	32.00	144.00	35.00	138.0	1.47
RE MB50-MB40X176-AVI	50.00	40.00	176.00	47.00	170.0	2.66
RE MB63-MB50X220-AVI	63.00	50.00	220.00	60.00	214.0	5.00
RE MB80-MB63X280-AVI	80.00	63.00	280.00	77.00	272.0	10.40

- Verify that the weight of the entire tool assembly does not exceed the machine spindle's carrying capability.

ITSBORE

CHR MB

Coolant Supply Collar for the MB Modular Boring System



Designation	DCONMS	DCONWS	BD	LB	LPR	RPMX(1)	CP(2)	kg
CHR MB63	63.00	63.00	115.00	35.0	63.00	3500	10	3.30

- Important: coolant flow must be started prior to rotating the spindle to avoid damage of the O-rings
- Verify that the weight of the entire tool assembly does not exceed the machine spindle's carrying capability.

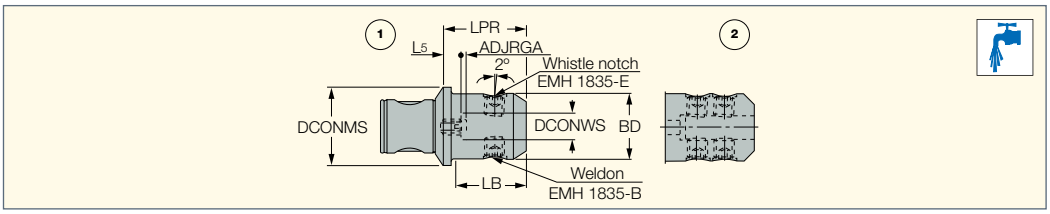
(1) Maximum RPM

(2) Coolant pressure (Bar)

ITSBORE

EMH MB

Weldon and Whistle Notch Side-Lock Holders with the MB Modular Boring Connection System



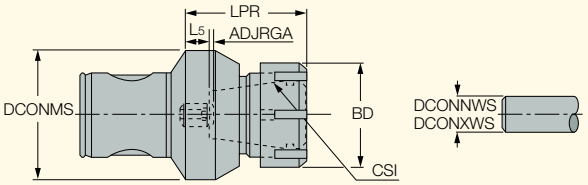
Designation	DCONMS	DCONWS	BD	LB	LPR	L5	ADJRGA	Fig.	kg
EMH MB50-6	50.00	6.00	25.00	32.5	44.00	7.00	2.0	1.	0.51
EMH MB50-8	50.00	8.00	28.00	33.0	44.00	7.00	2.0	1.	0.54
EMH MB50-10	50.00	10.00	35.00	42.0	52.00	11.00	3.0	1.	0.68
EMH MB50-12	50.00	12.00	42.00	48.0	57.00	11.00	3.0	1.	0.85
EMH MB50-14	50.00	14.00	42.00	48.0	57.00	11.00	3.0	1.	0.84
EMH MB50-16	50.00	16.00	48.00	61.0	67.00	17.00	4.0	1.	1.12
EMH MB50-20	50.00	20.00	51.00	-	67.00	16.00	4.0	1.	1.08
EMH MB50-25	50.00	25.00	63.00	-	80.00	22.00	4.0	2.	1.21
EMH MB63-16	63.00	16.00	48.00	53.0	64.00	14.00	4.0	1.	1.45
EMH MB63-20	63.00	20.00	52.00	56.0	66.00	14.00	4.0	1.	1.55
EMH MB63-25	63.00	25.00	64.00	-	74.00	16.00	4.0	2.	2.11
EMH MB63-32	63.00	32.00	72.00	-	76.00	14.00	4.0	2.	2.42
EMH MB80-40	80.00	40.00	80.00	-	83.00	12.00	4.0	2.	3.21

- Verify that the weight of the entire tool assembly does not exceed the machine spindle's carrying capability.

ITSBORE

CC MB-ER

DIN 6499 ER Collet Chuck with the MB Modular Boring Connection System



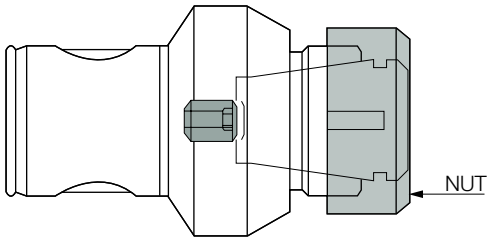
Designation	DCONMS	CSI	DCONNWS(1)	DCONXWS(2)	BD	LPR	L5	ADJRGA	kg		
CC MB16 ER11M	16.00	ER11	0.5	7.0	16.00	25.00	2.50	2.0	0.05	NUT ER11 MINI	WRENCH ER11 MINI*
CC MB20 ER16M	20.00	ER16	0.5	10.0	22.00	32.00	1.00	2.0	0.05	NUT ER16 MINI	WRENCH ER16 MINI*
CC MB25 ER20M	25.00	ER20	1.0	13.0	28.00	40.00	2.50	2.0	0.14	NUT ER20 MINI	WRENCH ER20 MINI*
CC MB32 ER25M	32.00	ER25	1.0	16.0	35.00	42.00	1.50	2.0	0.23	NUT ER25 MINI	WRENCH ER25 MINI*
CC MB40 ER25	40.00	ER25	1.0	16.0	42.00	45.00	5.00	2.0	0.45	NUT ER25 TOP	WRENCH ER25*
CC MB50 ER25	50.00	ER25	1.0	16.0	42.00	48.00	7.00	2.0	0.67	NUT ER25 TOP	WRENCH ER25*
CC MB50 ER32	50.00	ER32	2.0	20.0	50.00	55.00	7.00	2.0	0.79	NUT ER32 TOP	WRENCH ER32*
CC MB63 ER32	63.00	ER32	2.0	20.0	50.00	59.00	12.00	2.0	1.35	NUT ER32 TOP	WRENCH ER32*
CC MB63 ER40	63.00	ER40	3.0	26.0	63.00	64.00	12.00	2.0	1.55	NUT ER40 TOP	WRENCH ER40*

- For ER collets, see ISCAR Tooling Systems Catalog.

(1) Minimum diameter

(2) Maximum diameter

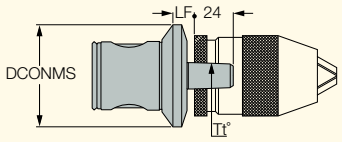
* Optional, should be ordered separately



ITSBORE

DC MB

DIN238 DC Drill Chuck Arbor with the MB Modular Connection System



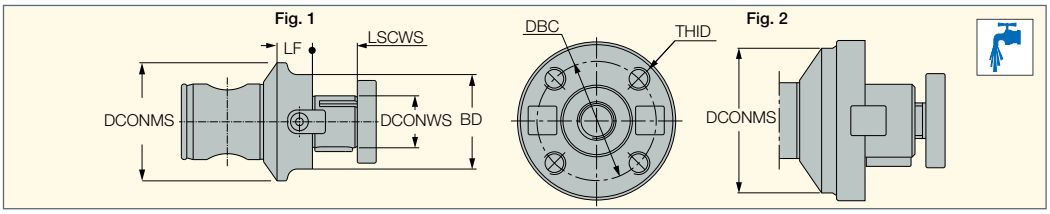
Designation	DCONMS	Tt°	LF	kg
DC MB50 B16	50.00	B16	10.00	0.40
DC MB63 B16	63.00	B16	13.50	0.41

- Without drill chuck.

ITSBORE

SMH MB

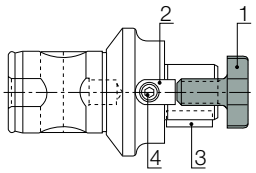
Shell Mill Holders with the MB Modular Boring Connection System



Designation	DCONMS	DCONWS	BD	DBC	THID	LF	LSCWS	Fig.	kg
SMH MB40-16	40.00	16.00	32.00	-	-	15.00	17.00	1.	0.32
SMH MB40-22	40.00	22.00	40.00	-	-	13.00	19.00	1.	0.38
SMH MB50-16	50.00	16.00	32.00	-	-	15.00	17.00	1.	0.48
SMH MB50-22	50.00	22.00	40.00	-	-	15.00	19.00	1.	0.55
SMH MB50-27	50.00	27.00	50.00	-	-	15.00	21.00	1.	0.66
SMH MB50-32	50.00	32.00	60.00	-	-	15.00	24.00	1.	0.79
SMH MB63-22	63.00	22.00	60.00	-	-	15.00	19.00	1.	1.01
SMH MB63-27	63.00	27.00	60.00	-	-	15.00	21.00	1.	1.09
SMH MB63-32	63.00	32.00	70.00	-	-	15.00	24.00	1.	1.24
SMH MB80-32	80.00	32.00	88.00	-	-	24.00	24.00	1.	2.09
SMH MB80-40	80.00	40.00	88.00	66.70	M12	24.00	27.00	2.	2.25
SMH MB80-50	80.00	50.00	90.00	-	-	24.00	30.00	2.	2.58
SMH MB80-60 (1)	80.00	60.00	128.50	101.60	M16	31.50	40.00	2.	4.19
SMH MB110-60 (1)	110.00	60.00	128.50	101.60	M16	36.00	40.00	2.	7.56

- When mounting slitting cutters, remove the drive dogs and use spacer rings.
- Verify that the weight of the entire tool assembly does not exceed the machine spindle's carrying capability.

(1) Shell locking screw not supplied



Spare Parts

Designation	(1)	(2)	(3)	(4)
SMH MB40-16	M 8 CLAMP SCREW SEM 16	BH DOG DRIVE SMH 16	KEY SMH 16	M3X8 SMH KEY SCREW
SMH MB40-22	M 10 CLAMP SCREW SEM 22	BH DOG DRIVE SMH 22	KEY SMH 22	M4X10SMH KEY SCREW
SMH MB50-16	M 8 CLAMP SCREW SEM 16	BH DOG DRIVE SMH 16	KEY SMH 16	M3X8 SMH KEY SCREW
SMH MB50-22	M 10 CLAMP SCREW SEM 22	BH DOG DRIVE SMH 22	KEY SMH 22	M4X10SMH KEY SCREW
SMH MB50-27	M 12 CLAMP SCREW SEM 27	BH DOG DRIVE SMH 27	KEY SMH 27	M5X12SMH KEY SCREW
SMH MB50-32	M 16 CLAMP SCREW SEM 32	BH DOG DRIVE SMH 32	KEY SMH 32	M6X16SMH KEY SCREW
SMH MB63-27	M 12 CLAMP SCREW SEM 27	BH DOG DRIVE SMH 27	KEY SMH 27	M5X12SMH KEY SCREW
SMH MB63-32	M 16 CLAMP SCREW SEM 32	BH DOG DRIVE SMH 32	KEY SMH 32	M6X16SMH KEY SCREW
SMH MB80-32	M 16 CLAMP SCREW SEM 32	BH DOG DRIVE SMH 32	KEY SMH 32	M6X16SMH KEY SCREW
SMH MB80-40	M 20 CLAMP SCREW SEM 40	BH DOG DRIVE SMH 40	KEY SMH 40	M6X18SMH KEY SCREW

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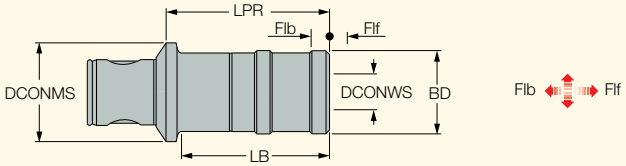
TP MB-M

Tapping Chucks with the MB Modular Connection System

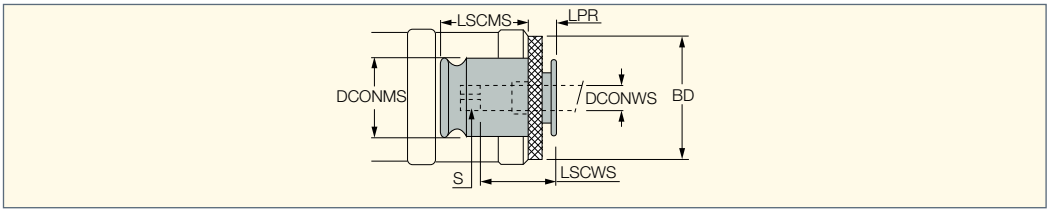


Designation	DCONMS	Tap min	Tap max	LB	LPR	BD	DCONWS	Flf	Flb	kg
TP MB50-M 3-12	50.00	M1	M14	65.0	76.00	36.00	19.00	7.5	7.5	0.78
TP MB50-M 8-20	50.00	M4.5	M20	-	106.00	53.00	31.00	12.5	12.5	1.60
TP MB63-M 3-12	63.00	M1	M14	57.2	70.00	36.00	19.00	7.5	7.5	1.14
TP MB63-M 8-20	63.00	M4.5	M20	93.0	104.00	53.00	31.00	12.5	12.5	1.88

- Verify that the weight of the entire tool assembly does not exceed the machine spindle's carrying capability.

ITSBORE

TCS-DIN
Quick Change Tap
Collets for Solid Taps



Designation	DCONWS(1)	S(2)	S1(3)	S2(4)	BD	DCONMS	LPR	LSCMS	LSCWS	kg
TCS #1 DIN 4-3	4.00	3.00	M4	-	30.00	19.00	7.0	21.50	17.0	0.48
TCS #1 DIN 3.5-2.7	3.50	2.70	M3	M4.5, M5	30.00	19.00	7.0	21.50	17.0	0.01
TCS #1 DIN 4.5-3.4	4.50	3.40	M3.5	M6	30.00	19.00	7.0	21.50	17.0	0.08
TCS #1 DIN 6-4.9	6.00	4.90	M4.5, M6	M8	30.00	19.00	7.0	21.50	17.0	0.08
TCS #1 DIN 8-6.2	8.00	6.20	M8	-	30.00	19.00	7.0	21.50	17.0	0.10
TCS #1 DIN 9-7	9.00	7.00	-	M12	30.00	19.00	7.0	21.50	17.0	0.08
TCS #1 DIN 10-8	10.00	8.00	M10	-	30.00	19.00	7.0	21.50	17.0	0.10
TCS #1 DIN 11-9	11.00	9.00	M14	M14	30.00	19.00	7.0	21.50	17.0	0.48
TCS #2 DIN 8X6.2	8.00	6.20	M8	-	48.00	31.00	11.0	35.00	30.0	0.28
TCS #2 DIN 9X 7	9.00	7.00	-	M12	48.00	31.00	17.0	35.00	30.0	0.28
TCS #2 DIN 10X 8	10.00	8.00	M10	-	48.00	31.00	17.0	35.00	30.0	0.28
TCS #2 DIN 11X 9	11.00	9.00	-	M14	48.00	31.00	17.0	35.00	30.0	0.48
TCS #2 DIN 12X 9	12.00	9.00	-	M16	48.00	31.00	17.0	35.00	30.0	0.27
TCS #2 DIN 14X11	14.00	11.00	-	M18	48.00	31.00	17.0	35.00	30.0	0.25
TCS #2 DIN 16X12	16.00	12.00	-	M20	48.00	31.00	17.0	35.00	30.0	0.24

(1) According to tap shank size.
(2) Square size.
(3) Tap size according to DIN371
(4) Tap size according to DIN376/374

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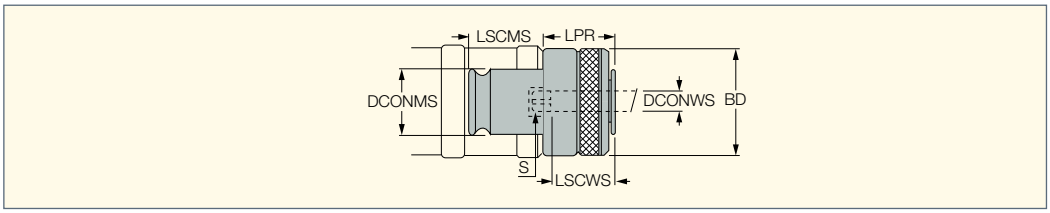
TCC-DIN
Quick Change Tap Collets
with a Safety Clutch



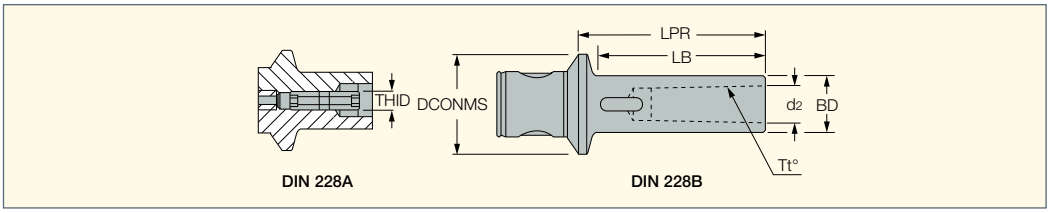
Designation	DCONWS(1)	S(2)	S1(3)	S2(4)	BD	DCONMS	LPR	LSCMS	LSCWS	kg
TCC #1 DIN 2.8-2.1	2.80	2.10	M2, M2.5	M4	32.00	19.00	25.0	21.50	17.0	0.17
TCC #1 DIN 4-3	4.00	3.00	M3.5	-	32.00	19.00	25.0	21.50	17.0	0.34
TCC #1 DIN 4.5-3.4	4.50	3.40	M4	M6	32.00	19.00	25.0	21.50	17.0	0.17
TCC #1 DIN 6-4.9	6.00	4.90	M4.5, M6	M8	32.00	19.00	25.0	21.50	17.0	0.17
TCC #1 DIN 7-5.5	7.00	5.50	M7	M10	32.00	19.00	25.0	21.50	17.0	0.17
TCC #1 DIN 8-6.2	8.00	6.20	M8	-	32.00	19.00	25.0	21.50	17.0	0.16
TCC #1 DIN 9-7	9.00	7.00	-	M12	32.00	19.00	25.0	21.50	17.0	0.17
TCC #1 DIN 10-8	10.00	8.00	M10	-	32.00	19.00	25.0	21.50	17.0	0.16
TCC #1 DIN 11-9	11.00	9.00	M10	M14	32.00	19.00	25.0	21.50	17.0	0.15
TCC #2 DIN 6X4.9	6.00	4.90	M4.5, M6	M8	50.00	31.00	34.0	35.00	30.0	0.53
TCC #2 DIN 7X5.5	7.00	5.50	M7	M10	50.00	31.00	34.0	35.00	30.0	0.54
TCC #2 DIN 8X6.2	8.00	6.20	M8	-	50.00	31.00	34.0	35.00	30.0	0.53
TCC #2 DIN 9X7	9.00	7.00	M7	M12	50.00	31.00	34.0	35.00	30.0	0.53
TCC #2 DIN 10X8	10.00	8.00	M10	-	50.00	31.00	34.0	35.00	30.0	0.53
TCC #2 DIN 11X9	11.00	9.00	-	M14	50.00	31.00	34.0	35.00	30.0	0.53
TCC #2 DIN 12X9	12.00	9.00	-	M16	50.00	31.00	34.0	35.00	30.0	0.52
TCC #2 DIN 14X11	14.00	11.00	-	M18	50.00	31.00	34.0	35.00	30.0	0.51
TCC #2 DIN 16X12	16.00	12.00	-	M20	50.00	31.00	34.0	35.00	30.0	0.50

(1) According to tap shank size.
(2) Square size.
(3) Tap size according to DIN371
(4) Tap size according to DIN376/374

ITSBORE

AMT MB-MT

MB Modular Connection System with Morse Taper Tang DIN 228 A/B

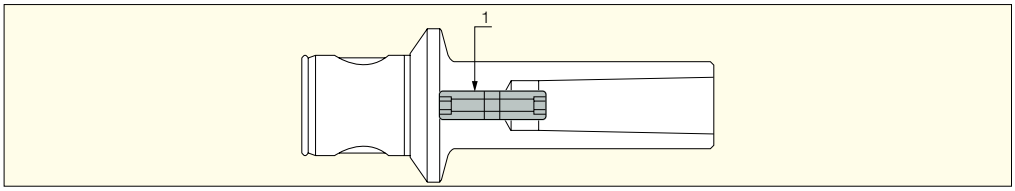


Designation	Tt°	DCONMS	d2	BD	THID	LB	LPR	kg
AMT MB50-MT1	MT1	50.00	12.07	20.00	M6	68.0	80.00	0.52
AMT MB50-MT2	MT2	50.00	17.78	30.00	M10	86.0	100.00	0.78
AMT MB50-MT3	MT3	50.00	23.82	36.00	M12	110.0	120.00	1.02
AMT MB63-MT3	MT3	63.00	23.82	36.00	M12	108.0	120.00	1.40
AMT MB63-MT4	MT4	63.00	31.26	48.00	M16	133.0	150.00	2.20

- Verify that the weight of the entire tool assembly does not exceed the machine spindle's carrying capability.

AMT

Screw for Shanks – Morse Taper Tang AMT



Spare Parts

Designation	1
AMT MB50-MT2	AMT MT2-SCREW
AMT MB50-MT3	AMT MT3-SCREW
AMT MB63-MT3	AMT MT3-SCREW
AMT MB63-MT4	AMT MT4-SCREW

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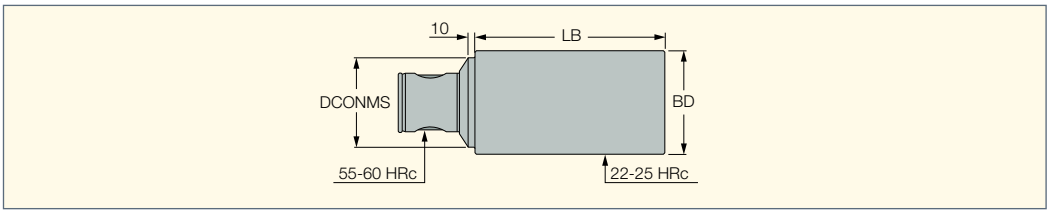
BLANK MB

Blanks with MB Modular Connection System



Designation	DCONMS	BD	LB	kg
BLANK MB50-63X160	50.00	63.00	160.00	4.44
BLANK MB63-80X200	63.00	80.00	200.00	8.77
BLANK MB80-100X250	80.00	100.00	250.00	16.62
BLANK MB110-130X250	110.00	130.00	250.00	18.00

- Material: 39NiCrMo3

Rough Boring Options

Roughing with High Feed			Roughing with High Cutting Depth	Light Roughing or Semi-Finishing Applications

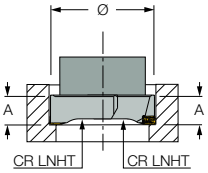
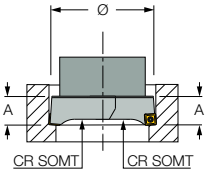
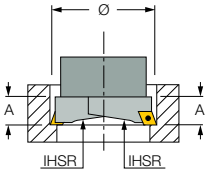
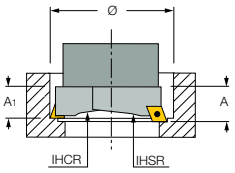
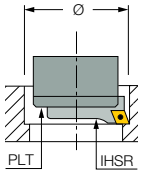

				

Fig. a			Fig. b	Fig. c

1 Radial setting of the cutting edges should be carried out with tool presetting equipment.
2 Boring bars fitted with two insert pockets are for roughing operations involving heavy chip removal.
The double-insert boring bars include:
- Two IHSR/CR SOMT/CR LNHT insert holders on the same plane with the two cutting edges set at an identical radial distance for high feed rate roughing operations (Fig. a).
- An IHCR insert holder and an IHSR insert holder not on the same plane with the two cutting edges set at different radial distances for high-depth roughing operations (Fig. b).
3 Boring bars fitted with a single insert holder are for roughing and finishing operations involving normal chip removal. The serrated surface protection plate PLT should always be used (Fig. c).

Rough Boring Head Diameter Range

	10	20	30	40	50	60	70	80	90	100	110	120	130	200	300	400	500	600	700	800	900	1000	1100	1200	Assembly Reference Page
BHR MB16-16x34			18-22																						
BHR MB20-20x40				22-28																					
BHR MB25-25x50					28-38																				
BHR MB32-32x63						35.5-50																			
BHR MB40-40x80								50-68																	843
BHR MB50-50x100										68-90															
BHR MB50-63x80												90-120													
BHR MB63-63x125												90-120													
BHR MB80-80x140														120-200											
TCH AL200																		200-602							
TCH AL300																			300-702						
TCH AL400																				400-802					
TCH AL 500																					500-902				847
TCH AL 600																						600-1002			
TCH AL 700																							700-1102		
TCH AL 800																								800-1202	

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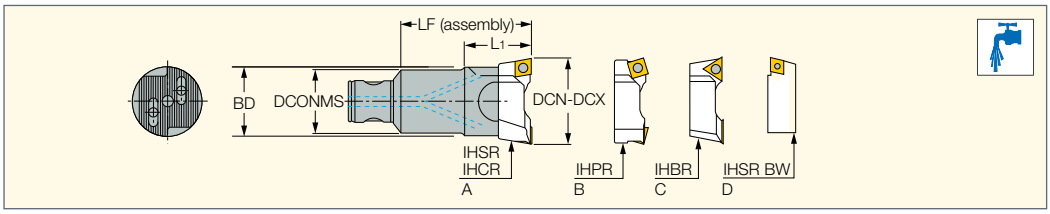
BHR MB

Rough Boring Heads for
Diameter Range 18-200 mm



Designation	BD	DCONMS	LF	DCN(1)	DCX(2)	L1	IH(3)	RPMX(4)	kg
BHR MB16-16X34	16.00	16.00	34.00	18.0	22.0	-	IH...18-22	12000	0.06
BHR MB20-20X40	20.00	20.00	40.50	22.0	28.0	-	IH...22-28	12000	0.11
BHR MB25-25X50	25.00	25.00	50.00	28.0	38.0	-	IH...28-38	10000	0.18
BHR MB32-32X63	32.00	32.00	63.00	35.5	50.0	-	IH...36-50	10000	0.36
BHR MB40-40X80	40.00	40.00	80.00	50.0	68.0	-	IH...50-68	8000	0.70
BHR MB50-50X100	55.00	50.00	100.00	68.0	90.0	50.0	IH...68-90	8000	1.49
BHR MB50-63X80	72.00	50.00	80.00	90.0	120.0	60.0	IH...90-120	8000	1.50
BHR MB63-63X125	72.00	63.00	125.00	90.0	120.0	63.0	IH...90-120	6000	3.09
BHR MB80-80X140	95.00	80.00	140.00	120.0	200.0	75.0	IH...120-800	5000	5.38

- Verify that the weight of the entire tool assembly does not exceed the machine spindle's carrying capability.

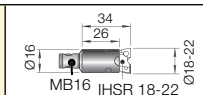
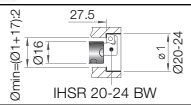
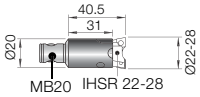
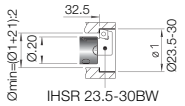
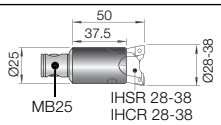
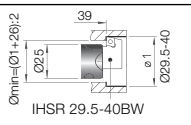
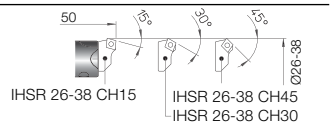
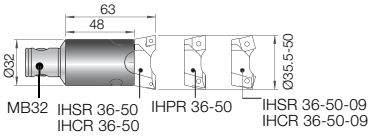
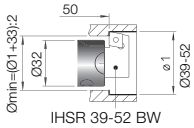
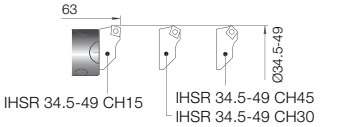
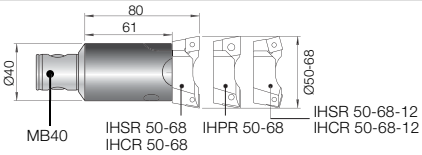
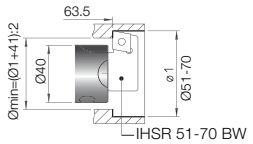
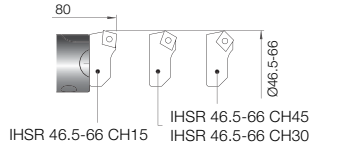
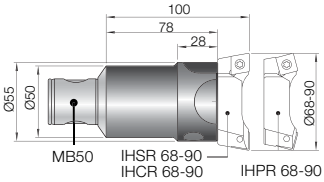
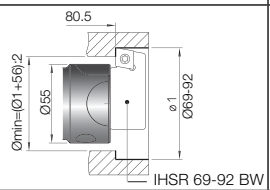
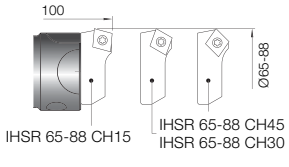
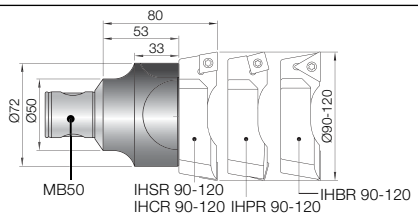
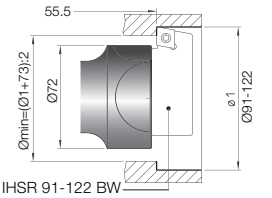
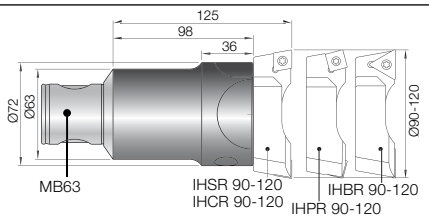
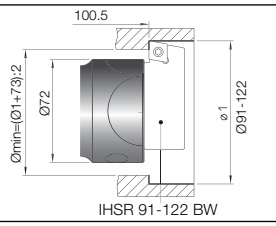
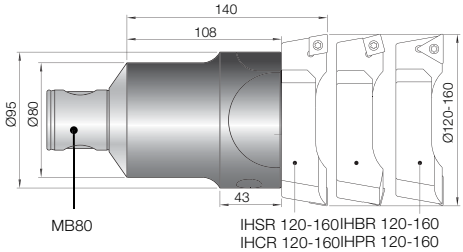
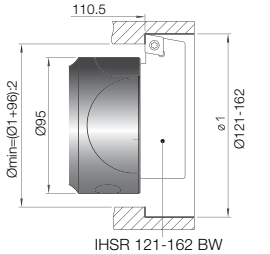
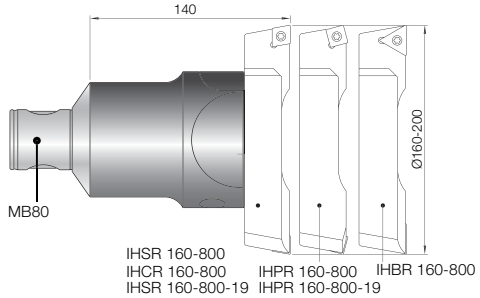
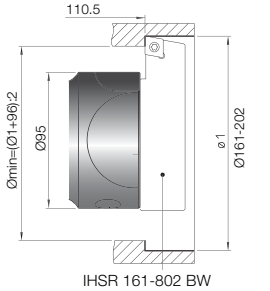
(1) Cutting diameter minimum
(2) Cutting diameter maximum
(3) Insert holders
(4) Maximum RPM

Spare Parts

Designation				
BHR MB16-16X34	BH NUT BHR MB16	PLT 16*	SR M3X14 DIN912	SR M3X8 DIN913
BHR MB20-20X40	BH NUT BHR MB20	PLT 20*	SR M4X15DIN912	BH M3X5UNI5923
BHR MB25-25X50	BH NUT BHR MB25	PLT 25*	SR M4X20 DIN912	SR M3X8 DIN913
BHR MB32-32X63	BH NUT BHR MB32	PLT 32*	SR M5X25DIN912	SR M4X12 DIN913
BHR MB40-40X80	BH NUT BHR MB40	PLT 40*	SR M6X30 DIN912	SR M5X14 DIN913
BHR MB50-63X80	BH NUT BHR MB50	PLT 50*	SR M10X40DIN912	SR M5X12 DIN913
BHR MB63-63X125	BH NUT BHR MB63	PLT 63*	SR M10X40DIN912	SR M6X16 DIN913
BHR MB80-80X140	BH NUT BHR MB80	PLT 80*	SR M12X45DIN912	SR M8X25 DIN913

* Optional, should be ordered separately

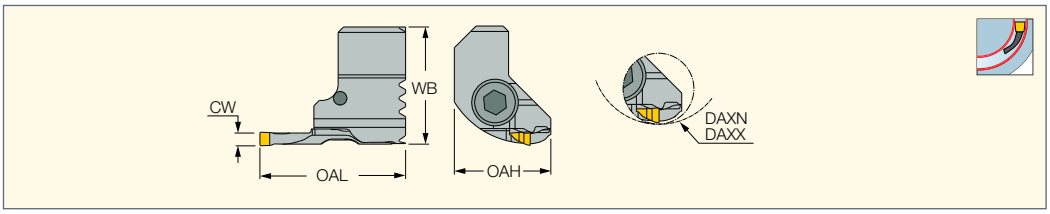
BHR MB - Additional Information

BHR MB16- 16X34 Ø18 ~ .22			
BHR MB20- 20X40 Ø22 ~ 28			
BHR MB25- 25X50 Ø28 ~ 38			
BHR MB32- 32X63 Ø35.5 ~ 50			
BHR MB40- 40X80 Ø50 ~ 68			
BHR MB50- 50X100 Ø68 ~ 90			
BHR MB50- 63X80 Ø90 ~ 120			
BHR MB63- 63X125 Ø90 ~ 120			
BHR MB80- 80X140 Ø120 ~ 200			
			

MINCUT MINI FACE LINE

IHSR-MIFR

Trepanning Cartridges Carrying MINCUT Inserts Mounted on the BHR MB32-32X63 Boring Head



Designation	DAXN(1)	DAXX(2)	CWN(3)	CWX(4)	OAL	WB	OAH	Insert		
IHSR 8-21 MIFR8	8.0	21.0	1.50	2.20	32.00	23.00	17.50	MI.R 8	SR 14-297	T-8/5
IHSR 19-34 MIFR10	19.0	34.0	2.00	3.00	27.00	22.00	17.80	MI.R 10	SR 34-506	T-9/5

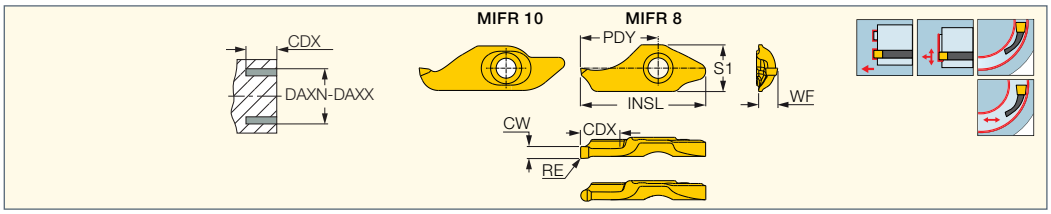
(1) Minimum axial grooving diameter
(2) Maximum axial grooving diameter
(3) Minimum cutting width
(4) Maximum cutting width

For inserts, see pages: MIFR (406)
For holders, see pages: BHR MB (404)

MINCUT MINI FACE LINE

MIFR

Screw-Clamped Inserts for Internal Face Grooving and Turning



Designation	Dimensions											IC908	Recommended Machining Data	
	INSL	CW	CWTOL(1)	RE	RETOL(2)	WF	S1	DAXN(3)	DAXX(4)	CDX	PDY		f face-groove (mm/rev)	f face-turn (mm/rev)
MIFR 8-1.50-0.20	17.70	1.50	0.02	0.20	0.020	2.60	6.5	8.0	11.5	5.50	11.00	•	0.02-0.10	0.02-0.06
MIFR 8-1.60-0.80	17.70	1.60	0.02	0.80	0.020	2.60	6.5	8.0	12.1	5.50	11.00	•	0.02-0.10	0.02-0.06
MIFR 8-2.00-0.20	17.70	2.00	0.02	0.20	0.020	2.80	6.5	8.0	16.0	5.50	11.00	•	0.02-0.10	0.02-0.06
MIFR 8-2.20-0.20	17.70	2.20	0.02	0.20	0.020	2.90	6.5	8.0	21.0	5.50	11.00	•	0.02-0.10	0.02-0.06
MIFR 10-2.00-0.20	25.10	2.00	0.02	0.20	0.020	3.00	7.6	10.0	-	9.00	14.80	•	0.02-0.10	0.02-0.06
MIFR 10-2.00-1.00	25.10	2.00	0.02	1.00	0.020	3.00	7.6	10.0	-	9.00	14.80	•	0.02-0.10	0.02-0.06
MIFR 10-2.50-0.20	25.10	2.50	0.02	0.20	0.020	3.10	7.6	10.0	30.0	9.00	14.80	•	0.02-0.10	0.02-0.06
MIFR 10-2.50-1.25	25.10	2.50	0.02	1.25	0.020	3.30	7.6	10.0	-	9.00	14.80	•	0.02-0.10	0.02-0.06
MIFR 10-3.00-0.20	25.10	3.00	0.02	0.20	0.020	3.40	7.6	10.0	30.0	9.00	14.80	•	0.02-0.10	0.02-0.06
MIFR 10-3.00-1.50	25.10	3.00	0.02	1.50	0.020	3.30	7.6	10.0	34.0	9.00	14.80	•	0.02-0.10	0.02-0.06

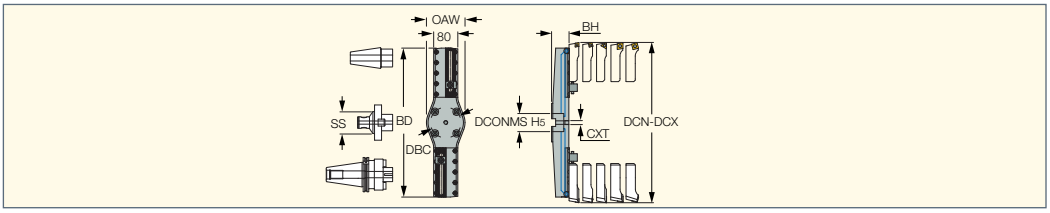
• Recommended cutting speeds and feeds can increased by 20-30% for aluminum, and reduced by 20-30% for titanium and Inconel
(1) Cutting width tolerance (+/-)
(2) Corner radius tolerance (+/-)
(3) Minimum axial grooving diameter
(4) Maximum axial grooving diameter

For tools, see pages: IHSR-MIFR (406)

ITSBORE

TCH AL

Aluminum Twin Cutter Heads for Rough and Fine Boring Operations, Diameter Range 200-1200 mm



Designation	DCN(1)	DCX(2)	BD	DCONMS	DBC	SS	OAW	CXT	BH	CSP(3)	RPMX(4)	kg
TCH AL200	200.0	602.0	194.00	40.00	66.70	80	-	-	54.00	1	700	3.20
TCH AL300	300.0	702.0	288.00	40.00	66.70	80	-	-	54.00	1	400	3.90
TCH AL400	400.0	802.0	394.00	40.00	66.70	80	-	1/4GAS	61.00	0	300	6.90
TCH AL500	500.0	902.0	494.00	60.00	101.60	80,110	128.0	1/4GAS	69.00	0	200	8.70
TCH AL600	600.0	1002.0	594.00	60.00	101.60	80,110	128.0	1/4GAS	71.00	0	200	8.34
TCH AL700	700.0	1102.0	694.00	60.00	101.60	80,110	128.0	1/4GAS	74.00	0	200	8.34
TCH AL800	800.0	1202.0	794.00	60.00	101.60	80,110	128.0	1/4GAS	80.00	0	150	15.20

• Aluminum body, with steel serrated seats • The "O" position on the counterweight balances the BHF boring head for 200 mm boring diameter position. For every 10 mm change in boring diameter, move the counterweight by 1 measurement mark • Verify that the weight of the entire tool assembly does not exceed the machine spindle's carrying capability • For spare parts, see pages 436-437, 468

(1) Cutting diameter minimum

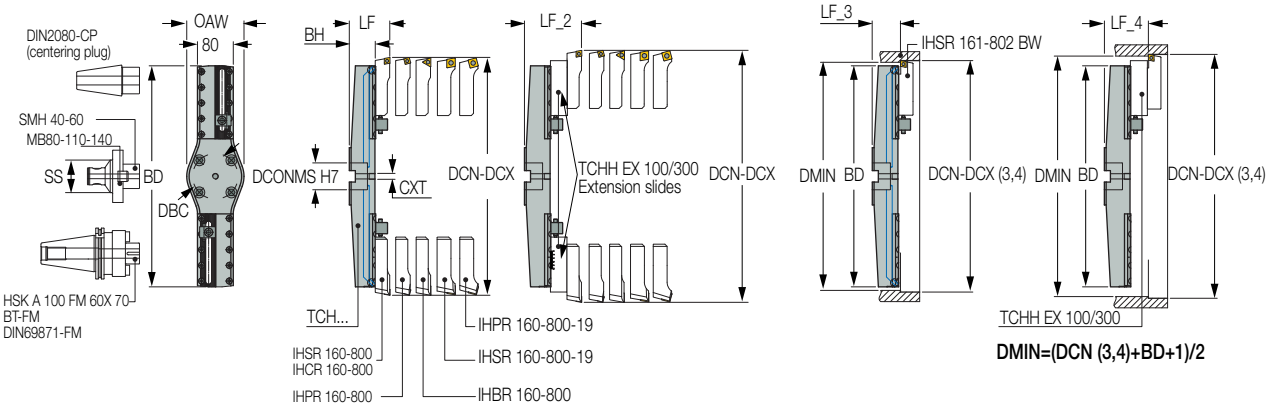
(2) Cutting diameter maximum

(3) 0 - Without coolant supply, 1 - With coolant supply

(4) Maximum RPM

For tools, see pages: IHBR (409) • IHCR (408) • IHPR (408) • IHSR (408) • IHSR-BW (410)

Large Diameter Double Edge Rough Boring Options

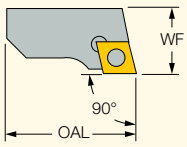


			Aluminum Twin Cutter Heads						
Boring Tools	Extension Slides	Dimensions	TCH 200	TCH 300	TCH 400	TCH 500	TCH 600	TCH 700	TCH 800
IH.R 160-800/-19		DCN-DCX	200-300	300-400	400-500	500-600	600-700	700-800	800-900
IH.R 160-800/-19	TCHH EX 100	DCN-DCX	300-400	400-500	500-600	600-700	700-800	800-900	900-1000
IH.R 160-800/-19	TCHH EX 300	DCN-DCX	400-600	500-700	600-800	700-900	800-1000	900-1100	1000-1200
IHSR 161-802 BW		DCN-DCX (3,4)	202-302	302-402	402-502	502-602	602-702	702-802	802-902
IHSR 161-802 BW	TCHH EX 100	DCN-DCX (3,4)	302-402	402-502	502-602	602-702	702-802	802-902	902-1002
IHSR 161-802 BW	TCHH EX 300	DCN-DCX (3,4)	402-602	502-702	602-802	702-902	802-1002	902-1102	1002-1202
IH.R 160-800		LF	86	86	93	101	103	106	112
IH.R 160-800-19		LF	94	94	101	109	111	114	120
IH.R 160-800	TCHH EX 100	LF_2	116	116	123	131	133	136	142
IH.R 160-800	TCHH EX 300	LF_2	126	126	133	141	143	146	152
IH.R 160-800-19	TCHH EX 100	LF_2	124	124	131	139	141	144	150
IH.R 160-800-19	TCHH EX 300	LF_2	134	134	141	149	151	154	160
IHSR 161-802 BW		LF_3	56.5	56.5	63.5	71.5	73.5	76.5	82.5
IHSR 161-802 BW	TCHH EX 100	LF_4	86.5	86.5	93.5	101.5	103.5	106.5	112.5
IHSR 161-802 BW	TCHH EX 300	LF_4	96.5	96.5	103.5	111.5	113.5	116.5	122.5

ITSBORE

IHSR

Rough Boring Tools for Twin Cutters with a Radial and Axial Edge Positioned Inner to the Opposite Finishing Tool



Designation	DCN(1)	DCX(2)	WF	OAL	Insert			
IHSR 18-22	18.0	22.0	8.00	15.00	CCMT 0602...	SR 14-548	T-7/5	
IHSR 22-28	22.0	28.0	9.50	19.00	CCMT 0602...	SR 14-548	T-7/5	
IHSR 28-38	28.0	38.0	12.50	23.00	CCMT 0602...	SR 14-548	T-7/5	
IHSR 36-50	35.5	50.0	15.00	32.00	CCMT 0602...	SR 14-548	T-7/5	
IHSR 36-50-09	35.5	50.0	15.00	32.00	CCMT 09T3...	SR 16-236	T-15/5	
IHSR 50-68	50.0	68.0	19.00	40.00	CCMT 09T3...	SR 16-236	T-15/5	
IHSR 50-68-12	50.0	68.0	19.00	40.00	CCMT 1204...	SR 16-212	T-20/5	
IHSR 68-90	68.0	90.0	22.00	54.00	CCMT 1204...	SR 16-212	T-20/5	
IHSR 90-120	90.0	120.0	27.00	70.50	CCMT 1204...	SR 16-212	T-20/5	
IHSR 120-160	120.0	160.0	32.00	94.50	CCMT 1204...	SR 16-212	T-20/5	
IHSR 160-800	160.0	800.0	32.00	130.00	CCMT 1204...	SR 16-212	T-20/5	
IHSR 160-800-19	160.0	800.0	40.00	130.00	CNMG 1906...	SR 10402352		HW 4.0

- For user guide, see pages 403, 471-477

(1) Cutting diameter minimum

(2) Cutting diameter maximum

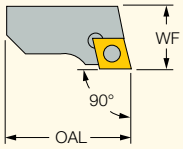
For inserts, see pages: CCET-WF (453) • CCGT-AF (455) • CCGT-AS (455) • CCGW/CCMT (CBN) (454) • CCMT (PCD) (454) • CCMT-14 (453) • CCMT-PF (452) • CCMT-WG (454) • CCMT/CCGT (453) • CCMT/CCGT-SM (452)

For holders, see pages: BHR MB (404) • TCH AL (407) • TCHH EX (438)

ITSBORE

IHCR

Boring Toolholders for the MB Modular Boring System



Designation	DCN(1)	DCX(2)	WF	OAL	Insert		
IHCR 28-38	28.0	38.0	12.30	23.00	CCMT 0602...	SR 14-548	T-7/5
IHCR 36-50	35.5	50.0	14.80	32.00	CCMT 0602...	SR 14-548	T-7/5
IHCR 36-50-09	36.0	50.0	14.80	32.00	CCMT 09T3...	SR 16-236	T-15/5
IHCR 50-68	50.0	68.0	18.70	40.00	CCMT 09T3...	SR 16-236	T-15/5
IHCR 50-68-12	50.0	68.0	18.70	40.00	CCMT 1204...	SR 16-212	T-20/5
IHCR 68-90	68.0	90.0	21.70	54.00	CCMT 1204...	SR 16-212	T-20/5
IHCR 90-120	90.0	120.0	26.70	70.50	CCMT 1204...	SR 16-212	T-20/5
IHCR 120-160	120.0	160.0	31.70	94.50	CCMT 1204...	SR 16-212	T-20/5
IHCR 160-800	160.0	800.0	31.70	130.00	CCMT 1204...	SR 16-212	T-20/5

- For user guide, see pages 403, 471-477

(1) Cutting diameter minimum

(2) Cutting diameter maximum

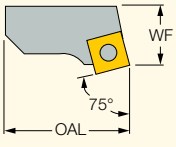
For inserts, see pages: CCET-WF (453) • CCGT-AF (455) • CCGT-AS (455) • CCGW/CCMT (CBN) (454) • CCMT (PCD) (454) • CCMT-14 (453) • CCMT-PF (452) • CCMT-WG (454) • CCMT/CCGT (453) • CCMT/CCGT-SM (452)

For holders, see pages: BHR MB (404) • TCH AL (407) • TCHH EX (438)

ITSBORE

IHPR

75° Rough Boring Toolholders



Designation	DCN(1)	DCX(2)	WF	OAL	Insert			
IHPR 36-50	35.5	50.0	15.00	32.00	SCMT 09T3...	SR 16-236	T-15/5	
IHPR 50-68	50.0	68.0	19.00	40.00	SCMT 09T3...	SR 16-236	T-15/5	
IHPR 68-90	68.0	90.0	22.00	53.90	SCMT 1204...	SR 16-212	T-20/5	
IHPR 90-120	90.0	120.0	27.00	70.50	SCMT 1204...	SR 16-212	T-20/5	
IHPR 120-160	120.0	160.0	32.00	94.50	SCMT 1204...	SR 16-212	T-20/5	
IHPR 160-800	160.0	800.0	32.00	130.00	SCMT 1204...	SR 16-212	T-20/5	
IHPR 160-800-19	160.0	800.0	40.00	129.00	SNMG 1906...	SR10402352		HW 4.0

- For user guide, see pages 403, 471-477

(1) Cutting diameter minimum

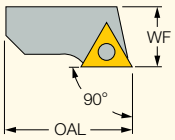
(2) Cutting diameter maximum

For inserts, see pages: SCGT-AS (458) • SCMT-14 (457) • SCMT-19 (458) • SCMT-SM (457)

For holders, see pages: BHR MB (404) • TCH AL (407) • TCHH EX (438)

ITSBORE

IHBR
Rough Boring Toolholders



Designation	DCN(1)	DCX(2)	WF	OAL	Insert		
IHBR 90-120	90.0	120.0	27.00	70.50	TCMT 2205...	SR 16-212	T-20/5
IHBR 120-160	120.0	160.0	32.00	94.50	TCMT 2205...	SR 16-212	T-20/5
IHBR 160-800	160.0	800.0	32.00	130.00	TCMT 2205...	SR 16-212	T-20/5

- For user guide, see pages 403, 471-477

(1) Cutting diameter minimum

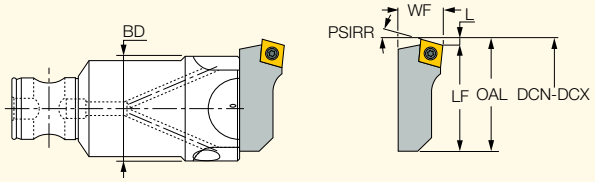
(2) Cutting diameter maximum

For inserts, see pages: TCMT-19 (458) • TCMT-SM (459)

For holders, see pages: BHR MB (404) • TCH AL (407) • TCHH EX (438)

ITSBORE

IHSR-CH
Chamfering Tools for
BHR Boring Heads



Designation	DCN(1)	PSIRR	LF	OAL	WF	L	BD	DCX(2)	Insert		
IHSR 26-38 CH15	26.0	15.0	21.40	23.00	12.50	1.60	25.00	38.00	CCMT 0602...	SR 14-548	T-7/5
IHSR 26-38 CH30	26.0	30.0	20.00	23.00	12.50	3.00	25.00	38.00	CCMT 0602...	SR 14-548	T-7/5
IHSR 26-38 CH45	26.0	45.0	18.70	23.00	12.50	4.30	25.00	38.00	CCMT 0602...	SR 14-548	T-7/5
IHSR 34.5-49 CH15	34.5	15.0	29.40	31.00	15.00	1.60	32.00	49.00	CCMT 0602...	SR 14-548	T-7/5
IHSR 34.5-49 CH30	34.5	30.0	28.00	31.00	15.00	3.00	32.00	49.00	CCMT 0602...	SR 14-548	T-7/5
IHSR 34.5-49 CH45	34.5	45.0	26.70	31.00	15.00	4.30	32.00	49.00	CCMT 0602...	SR 14-548	T-7/5
IHSR 46.5-66 CH15	46.5	15.0	36.60	39.00	19.00	2.40	40.00	66.00	CCMT 09T3...	SR 16-236	T-15/5
IHSR 46.5-66 CH30	46.5	30.0	34.40	39.00	19.00	4.60	40.00	66.00	CCMT 09T3...	SR 16-236	T-15/5
IHSR 46.5-66 CH45	46.5	45.0	32.50	39.00	19.00	6.50	40.00	66.00	CCMT 09T3...	SR 16-236	T-15/5
IHSR 65-88 CH15	65.0	15.0	49.80	53.00	22.00	3.20	50.00	88.00	CCMT 1204...	SR 16-212	T-20/5
IHSR 65-88 CH30	65.0	30.0	46.80	53.00	22.00	6.20	50.00	88.00	CCMT 1204...	SR 16-212	T-20/5
IHSR 65-88 CH45	65.0	45.0	44.20	53.00	22.00	8.80	50.00	88.00	CCMT 1204...	SR 16-212	T-20/5

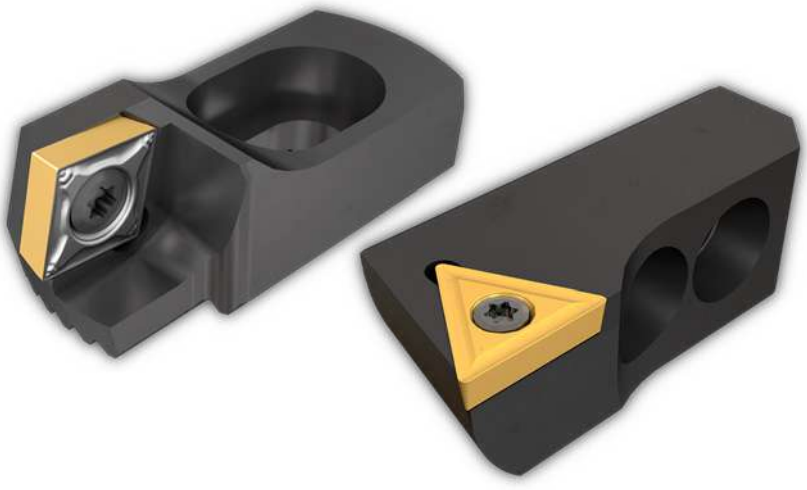
- For user guide, see pages 403,471-477

(1) Cutting diameter minimum

(2) Cutting diameter maximum

For inserts, see pages: CCET-WF (453) • CCGT-AF (455) • CCGT-AS (455) • CCMT-14 (453) • CCMT-PF (452) • CCMT-WG (454) • CCMT/CCGT (453)
• CCMT/CCGT-SM (452)

For holders, see pages: BHR MB (404)

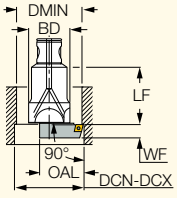


ITSBORE

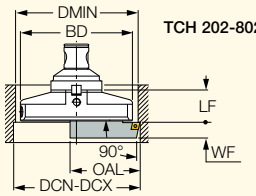
IHSR-BW

Back Face Turning Tools for BHR and TCH AL Rough Boring Heads

BHR 20-200



TCH 202-802



Designation	SS(1)	BD	DCN(2)	LF	DCX(3)	WF	OAL	Insert
IHSR 20-24 BW	BHR MB16-16	16.0	20	27.5	24	10	16.00	CCMT 0602...
IHSR 23.5-30BW	BHR MB20-20	20.0	23.5	32.5	30	11	19.50	CCMT 0602...
IHSR 29.5-40BW	BHR MB25-25	25.0	29.5	39.0	40	14.5	24.00	CCMT 0602...
IHSR 39-52 BW	BHR MB32-32	32.0	39	50.0	52	17	32.00	CCMT 09T3...
IHSR 51-70 BW	BHR MB40-40	40.0	51	63.5	70	21	42.00	CCMT 1204...
IHSR 69-92 BW	BHR MB50-50	55.0	69	80.5	92	24.5	57.00	CCMT 1204...
IHSR 91-122 BW	BHR MB63-63	72.0	91	100.5	122	28.5	76.00	CCMT 1204...
IHSR 121-162 BW	BHR MB80-80	95.0	121	110.5	162	31.5	101.00	CCMT 1204...
IHSR 161-802 BW	BHR MB80-80	95.0	161	110.5	202	31.5	122	CCMT 1204...
	TCH AL200	194	202	56.5	302	28	122	CCMT 1204...
	TCH AL300	288	302	56.5	402	28	122	CCMT 1204...
	TCH AL400	394	402	63.5	502	28	122	CCMT 1204...
	TCH AL500	494	502	71.5	602	28	122	CCMT 1204...
	TCH AL600	594	602	73.5	702	28	122	CCMT 1204...
	TCH AL700	694	702	76.5	802	28	122	CCMT 1204...
	TCH AL800	794	802	82.5	902	28	122	CCMT 1204...

• DMIN=(min bore diameter)=(DCN+BD+1)/2 • BD=Size of the boring head being used • For user guide, see pages 403, 471-477

(1) Suitable boring heads

(2) Cutting diameter minimum

(3) Cutting diameter maximum

For inserts, see pages: CCET-WF (453) • CCGT-AF (455) • CCGT-AS (455) • CCGW/CCMT (CBN) (454) • CCMT (PCD) (454) • CCMT-14 (453) • CCMT-PF (452) • CCMT-WG (454) • CCMT/CCGT (453) • CCMT/CCGT-SM (452)

For holders, see pages: BHR MB (404) • TCH AL (407, 438) • TCHH EX (438)

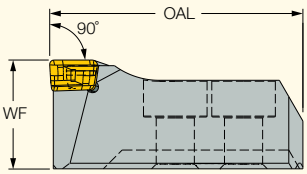
Spare Parts

Designation		
IHSR 20-24 BW	SR 14-548	T-7/5
IHSR 23.5-30BW	SR 14-548	T-7/5
IHSR 29.5-40BW	SR 14-548	T-7/5
IHSR 39-52 BW	SR 16-236	T-15/5
IHSR 51-70 BW	SR 16-212	T-20/5
IHSR 69-92 BW	SR 16-212	T-20/5
IHSR 91-122 BW	SR 16-212	T-20/5
IHSR 121-162 BW	SR 16-212	T-20/5
IHSR 161-802 BW	SR 16-212	T-20/5

ITSBORE

CR LNHT

Boring Cartridge with a Tangential Insert for BHR MB50-50X100 Boring Head



Designation	DCN(1)	DCX(2)	WF	OAL	MIID(3)
CR LNHT10 68-90-CP	68.00	90.00	23.10	53.76	HTP LN.. 1006

• For user guide, see pages 403, 471-477

(1) Cutting diameter minimum

(2) Cutting diameter maximum

(3) Master insert identification

For inserts, see pages: HTP LN.. 1006 (450)

For holders, see pages: BHR MB (404)

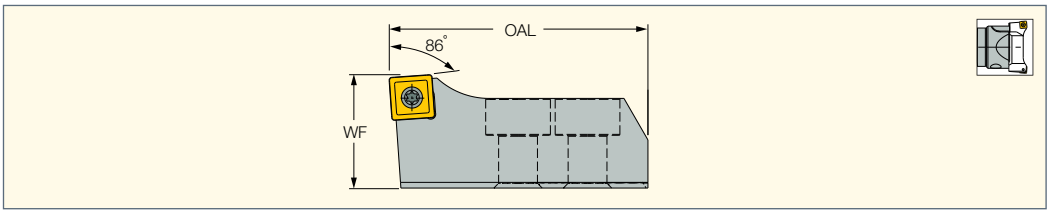
Spare Parts

Designation			
CR LNHT	SR 34-550	BLD T10/S7	SW6-SD

ITSBORE

CR SOMT

Boring Cartridge with a Square Insert for BHR MB50-50X100 Boring Head



Designation	DCN(1)	DCX(2)	WF	OAL	MIID(3)
CR SOMT09 68-90-CP	68.00	90.00	23.60	54.00	SO.T 09...

- For user guide, see pages 403, 471-477

(1) Cutting diameter minimum
(2) Cutting diameter maximum
(3) Master insert identification

For inserts, see pages: SOGX/T-AL (115) • SOMT-DT (116) • SOMT-GF (115) • SOMT-HD (116)
For holders, see pages: BHR MB (404)

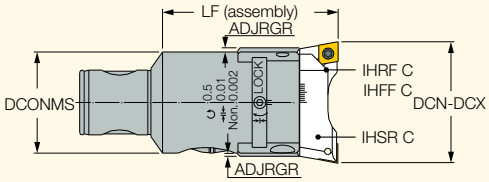
Spare Parts

Designation			
CR SOMT	SR 34-506	SW4-SD	BLD T09/M7-SW4

ITSBORE

BHC MB

Combi Rough and Fine Boring Heads with 10 µm Direct Diameter Adjustment and 2 µm by a Vernier Scale



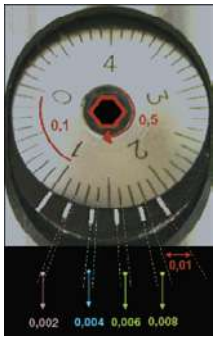
Designation	DCONMS	LF	DCN(1)	DCX(2)	ADJRGR	IH	RPMX(3)	kg
BHC MB25-25-57	25.00	56.50	28.0	36.0	0.50	IH...-C	10000	0.23
BHC MB32-32-71	32.00	71.00	36.0	46.0	0.50	IH...-C	10000	0.45
BHC MB40-40-90	40.00	90.00	46.0	60.0	1.00	IH...-C	8000	0.70
BHC MB50-50-87	50.00	87.00	60.0	75.0	1.00	IH...-C	8000	1.21
BHC MB63-63-109	63.00	109.00	75.0	95.0	2.00	IH...-C	6000	2.70
BHC MB80-80-130	80.00	130.00	95.0	120.0	2.00	IH...-C	5000	4.41

- The roughing head precedes the finishing head by 0.2 mm. Each head can be adjusted independently • Important: insert radius for combi rough and fine boring must be the same size. • For spare parts, see page 468

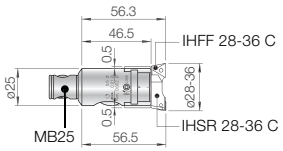
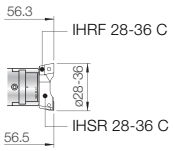
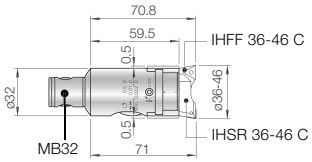
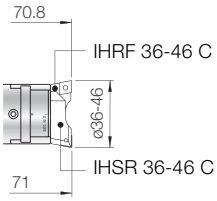
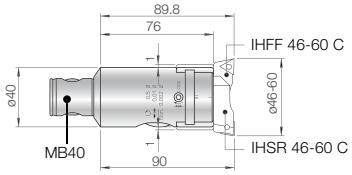
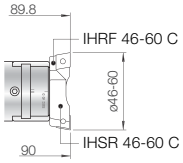
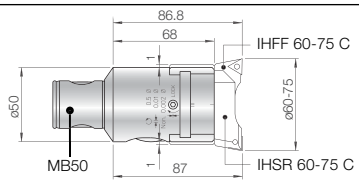
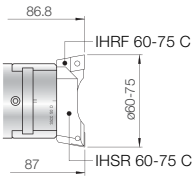
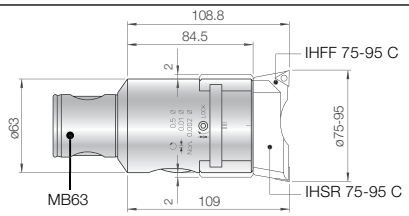
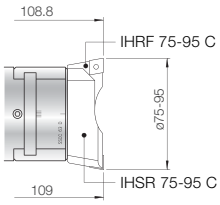
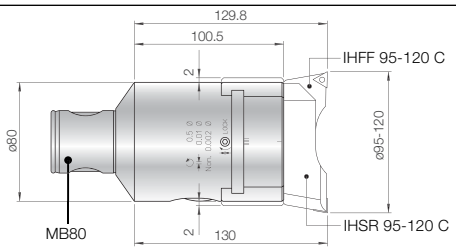
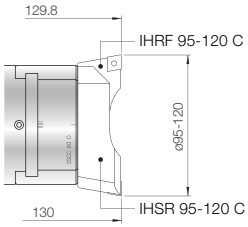
(1) Cutting diameter minimum
(2) Cutting diameter maximum
(3) Maximum RPM

For tools, see pages: IHFF-C (413) • IHRF-C (413) • IHSR-C (413)

Graduated dial of 0.01 mm with circular vernier of 0.002 mm

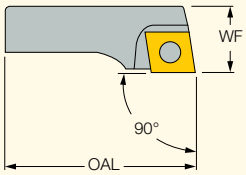


BHC MB - Additional Information

BHC MB25-25-57 **Ø28 ~ 36**		
BHC MB32-32-71 **Ø36 ~ 46**		
BHC MB40-40-90 **Ø46 ~ 60**		
BHC MB50-50-87 **Ø60 ~ 75**		
BHC MB63-63-109 **Ø75 ~ 95**		
BHC MB80-80-130 **Ø95 ~ 120**		

ITSBORE

IHRF-C
Boring Tools for Twin Cutters Positioned Inner to the Opposite Finishing Tool on MB BHC Combi Boring Heads



Designation	DCN(1)	DCX(2)	WF	OAL	Insert		
IHRF 28-36 C	28.0	36.0	9.80	24.00	CCGT 0602...	SR 14-548	T-7/5
IHRF 36-46 C	36.0	46.0	11.30	30.00	CCGT 0602...	SR 14-548	T-7/5
IHRF 46-60 C	46.0	60.0	13.80	40.00	CCGT 09T3...	SR 16-236	T-15/5
IHRF 60-75 C	60.0	75.0	18.80	54.00	CCGT 09T3...	SR 16-236	T-15/5
IHRF 75-95 C	75.0	95.0	24.30	68.00	CCGT 09T3...	SR 16-236	T-15/5
IHRF 95-120 C	95.0	120.0	29.30	87.00	CCGT 09T3...	SR 16-236	T-15/5

- For user guide, see page 477

(1) Cutting diameter minimum

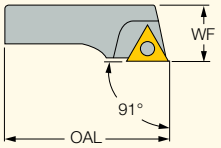
(2) Cutting diameter maximum

For inserts, see pages: CCGT-AS (455) • CCGW/CCMT (CBN) (454) • CCMT (PCD) (454) • CCMT-14 (453) • CCMT-PF (452) • CCMT-WG (454) • CCMT/CCGT (453) • CCMT/CCGT-SM (452)

For holders, see pages: BHC MB (411)

ITSBORE

IHFF-C
Triangular Finishing Insert Holders for BHC Combi Boring Heads



Designation	WF	OAL	DCN(1)	DCX(2)	Insert		
IHFF 28-36 C	9.80	24.00	28.00	36.00	TPGX 0902...	SR 14-298	T-8/5
IHFF 36-46 C	11.30	30.00	36.00	46.00	TPGX 0902...	SR 14-298	T-8/5
IHFF 46-60 C	13.80	40.00	46.00	60.00	TPGX 1103...	SR-17979 M3X8	T-8/5
IHFF 60-75 C	18.80	54.00	60.00	75.00	TPGX 1103...	SR-17979 M3X8	T-8/5
IHFF 75-95 C	25.30	68.00	75.00	95.00	TPGX 1103...	SR-17979 M3X8	T-8/5
IHFF 95-120 C	29.30	87.00	95.00	120.00	TPGX 1103...	SR-17979 M3X8	T-8/5

- For user guide, see page 477

(1) Cutting diameter minimum

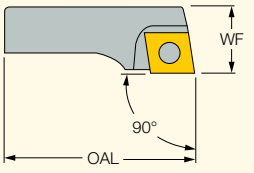
(2) Cutting diameter maximum

For inserts, see pages: TPGX (459) • TPGX (CBN) (460)

For holders, see pages: BHC MB (411)

ITSBORE

IHSR-C
Rhombic Roughing Insert Holders for BHC Combi Boring Heads



Designation	DCN(1)	DCX(2)	WF	OAL	Insert		
IHSR 28-36 C	28.0	36.0	10.00	24.00	CCMT 0602...	SR 14-548	T-7/5
IHSR 36-46 C	36.0	46.0	11.50	30.00	CCMT 0602...	SR 14-548	T-7/5
IHSR 46-60 C	46.0	60.0	14.00	40.00	CCMT 09T3...	SR 16-236	T-15/5
IHSR 60-75 C	60.0	75.0	19.00	54.00	CCMT 09T3...	SR 16-236	T-15/5
IHSR 75-95 C	75.0	95.0	24.50	68.00	CCMT 09T3...	SR 16-236	T-15/5
IHSR 95-120 C	95.0	120.0	29.50	87.00	CCMT 09T3...	SR 16-236	T-15/5

- For user guide, see page 477

(1) Cutting diameter minimum

(2) Cutting diameter maximum

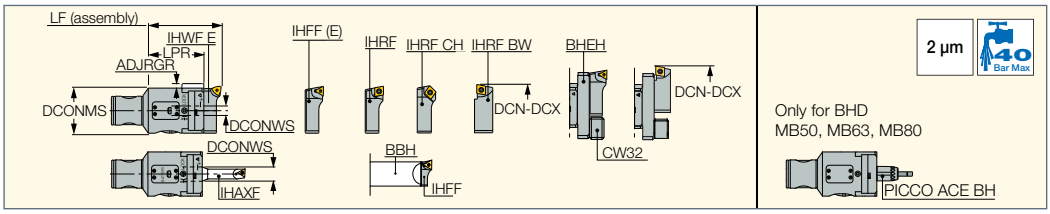
For inserts, see pages: CCET-WF (453) • CCGT-AF (455) • CCGT-AS (455) • CCGW/CCMT (CBN) (454) • CCMT (PCD) (454) • CCMT-14 (453) • CCMT-PF (452) • CCMT-WG (454) • CCMT/CCGT (453) • CCMT/CCGT-SM (452)

For holders, see pages: BHC MB (411)

ITSBORE

BHD MB

Fine Boring Heads with Digital 2 µm Direct Adjustment Diametric Display



Designation	LF	DCONMS	DCN(1)	DCX(2)	LPR	ADJRGR	DCONWS	RPMX(3)	kg
BHD MB32-32-83	83.00	32.00	35.0	51.0	71.5	3.00	-	20000	0.41
BHD MB40-40-90	90.00	40.00	48.0	64.0	76.0	4.00	-	20000	0.73
BHD MB50-50-60	80.00	50.00	2.5	110.0	61.0	5.00	16.00	20000	1.10
BHD MB63-63-89	88.50	63.00	6.0	125.0	69.5	5.00	16.00	20000	2.20
BHD MB80-80-104	104.00	80.00	6.0	200.0	84.5	5.00	16.00	20000	3.90

• For spare parts, see pages 435-436 • Note that a protruding reset button dictates the enlargement of the actual DCONMS by 2 mm in each size respectively. This is important when the tool is being used for back-boring applications where you must clear any obstacles inside the machine/workpiece.

(1) Cutting diameter minimum

(2) Cutting diameter maximum

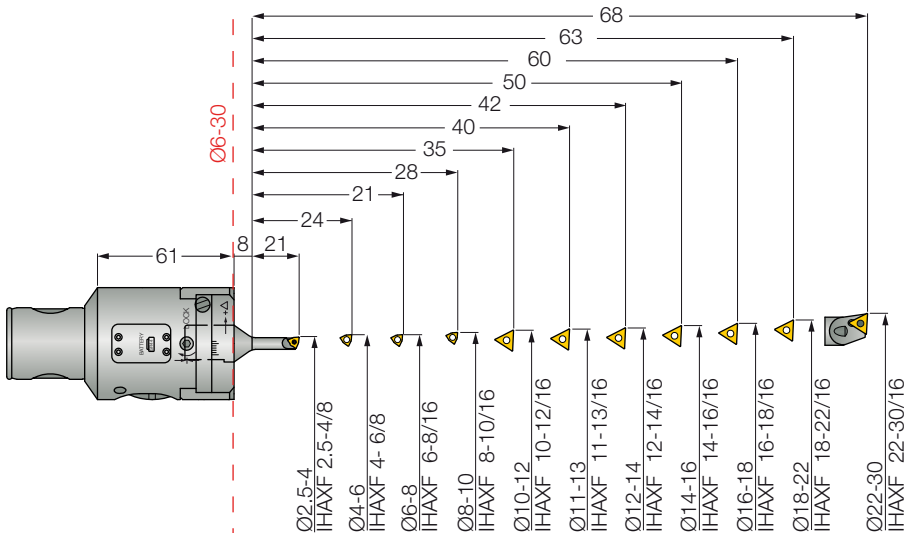
(3) Maximum RPM

For tools, see pages: IHAXF (432) • IHAXF-AVI (434) • IHAXF-E (434) • IHFF (436) • IHRF (436) • IHRF-BW (439) • IHRF-CH (439) • IHWF (436)

Fine Boring Head Range 2 µm Direct Diametric Adjustment

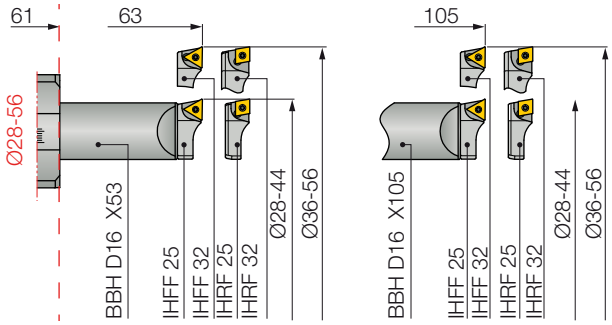
BHD MB50-50X60 ø2.5-110

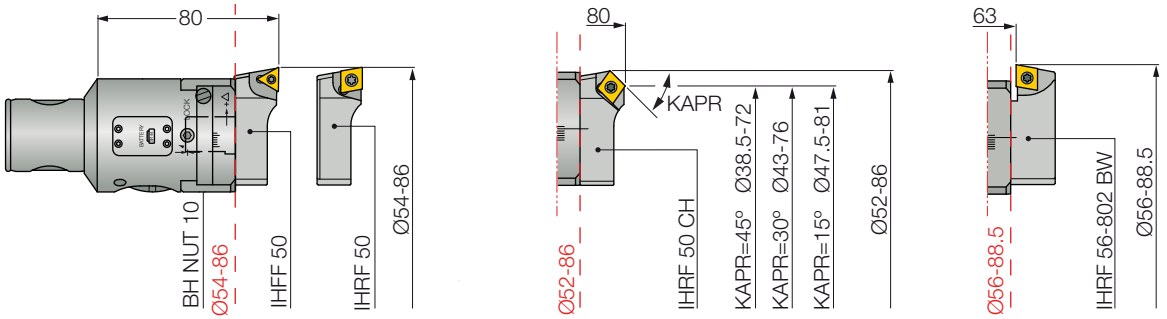
2 µm

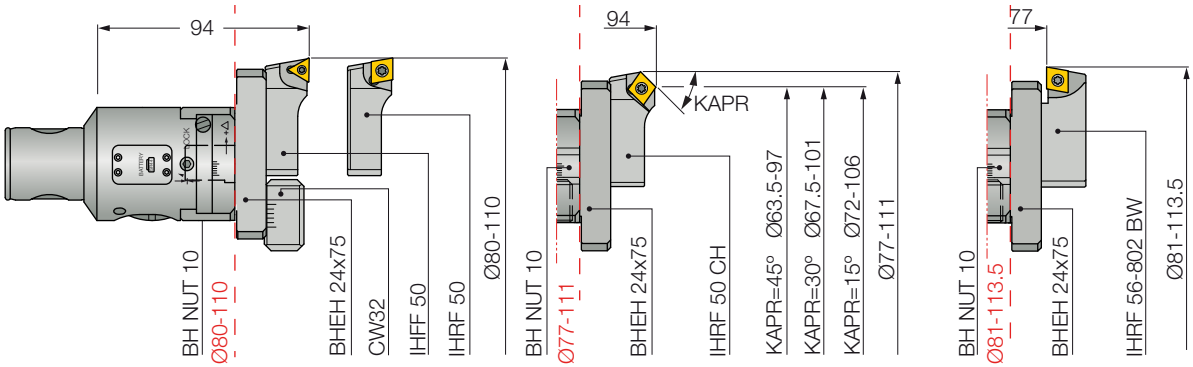


SLEEVE D8-D16

REQUIRED FOR IHAXF.../8



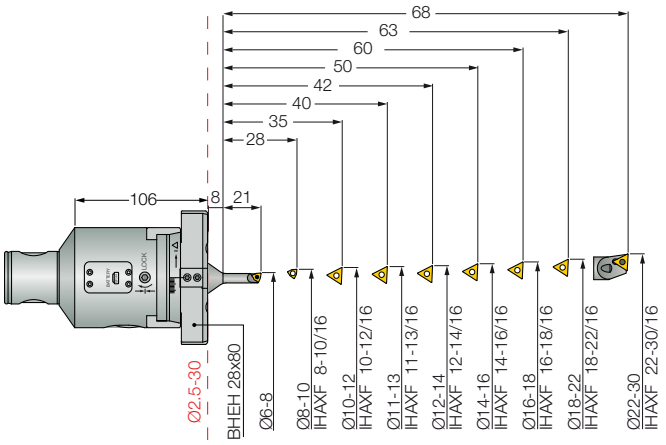


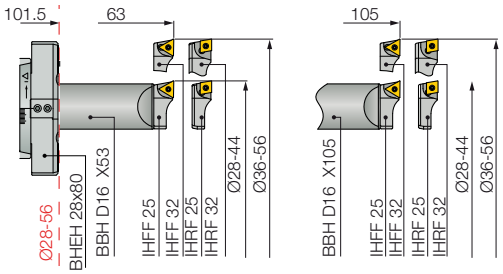


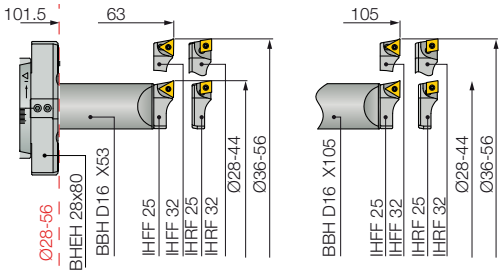
Fine Boring Head Range 2 µm Direct Diametric Adjustment

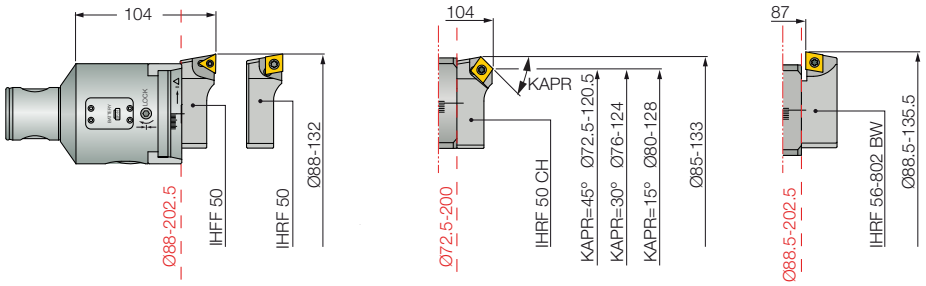
BHD MB63-63X89 ø6-125

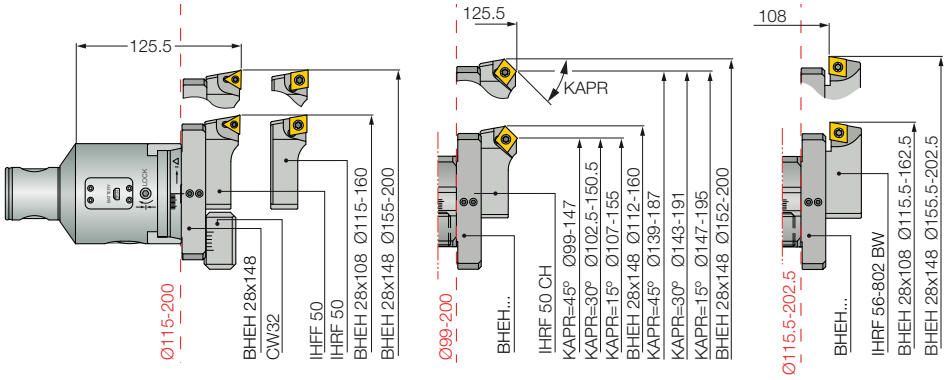
2 µm







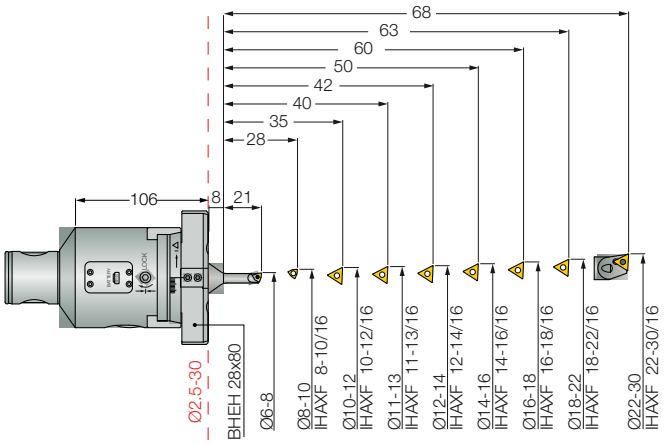


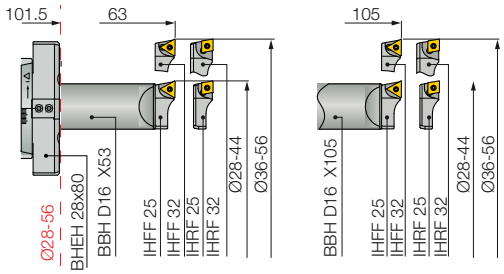


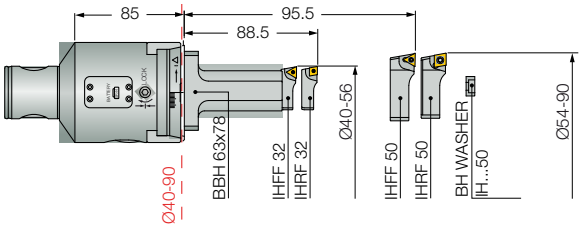
Fine Boring Head Range 2 µm Direct Diametric Adjustment

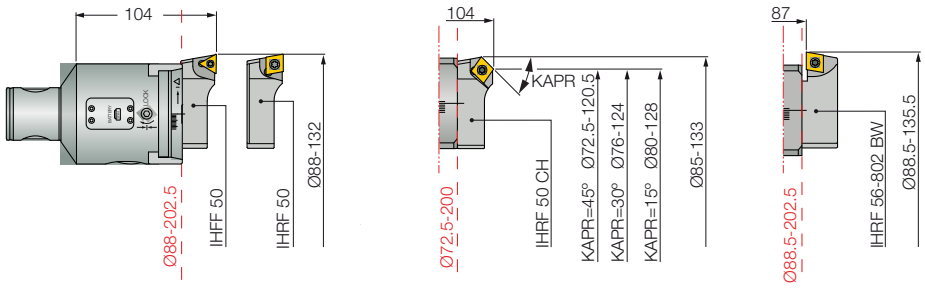
BHD MB80-80X104 ø6-200

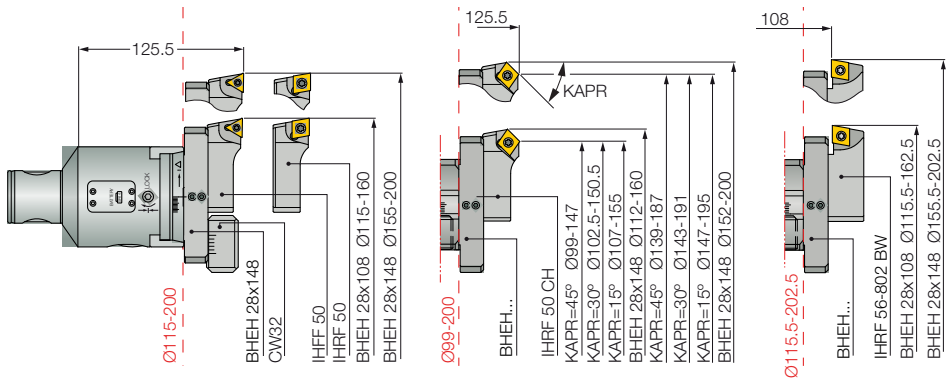
2 µm











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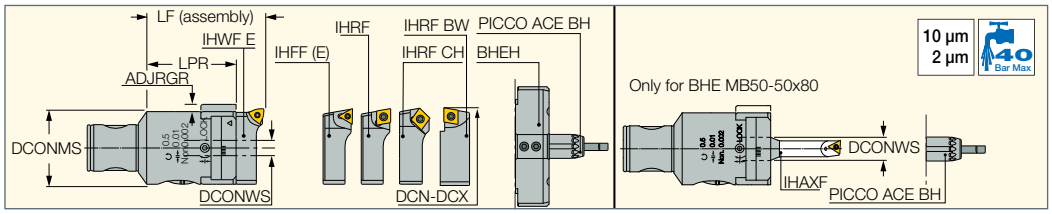
BHE MB

Fine Boring Heads with the MB Connection, 10 µm Direct Diametric Adjustment and 2 µm by a Vernier Scale



Designation	DCONMS	LF	DCN(1)	DCX(2)	LPR	ADJRGR	DCONWS	kg
BHE MB14-14-30	14.00	30.00	14.5	18.0	22.0	1.00	-	0.05
BHE MB16-16-34	16.00	34.00	18.0	24.0	26.0	2.00	-	0.08
BHE MB20-20-40	20.00	40.00	22.0	30.0	31.5	3.00	-	0.05
BHE MB25-25-50	25.00	50.00	28.0	40.0	40.0	3.00	-	0.20
BHE MB32-32-63	32.00	63.00	35.0	53.0	51.5	4.00	-	0.41
BHE MB40-40-80	40.00	80.00	48.0	66.0	66.0	5.00	-	0.79
BHE MB50-50-80	50.00	80.00	2.5	110.0	61.0	5.00	16.00	1.04
BHE MB63-63-89	63.00	89.00	6.0	125.0	69.5	10.00	-	1.00
BHE MB80-80-104	80.00	104.00	6.0	200.0	84.5	12.00	-	3.84

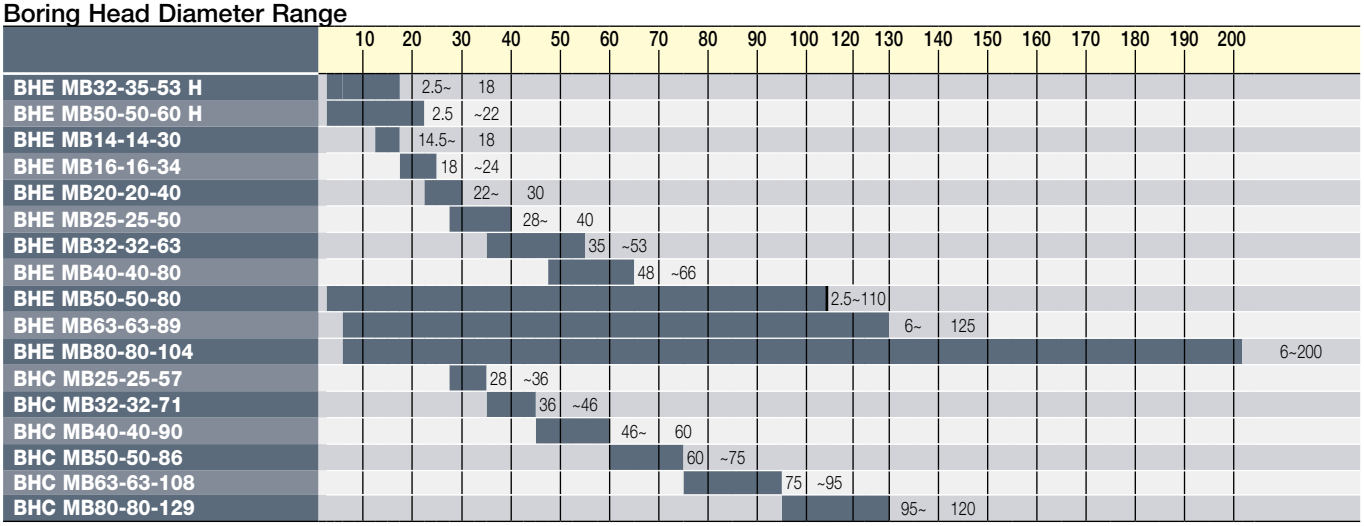
• For boring options, see pages 388, 419-422 • For spare parts, see pages 435-436, 467

(1) Cutting diameter minimum

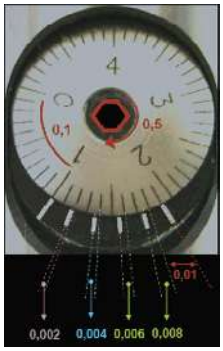
(2) Cutting diameter maximum

For tools, see pages: IHAXF (432) • IHAXF-AVI (434) • IHAXF-E (434) • IHFF (436) • IHRF (436) • IHRF-BW (439) • IHRF-CH (439) • IHWF (436)

Boring Head Diameter Range



BHE MB50-50-80



Graduated dial of 0.01 mm with circular vernier of 0.002 mm

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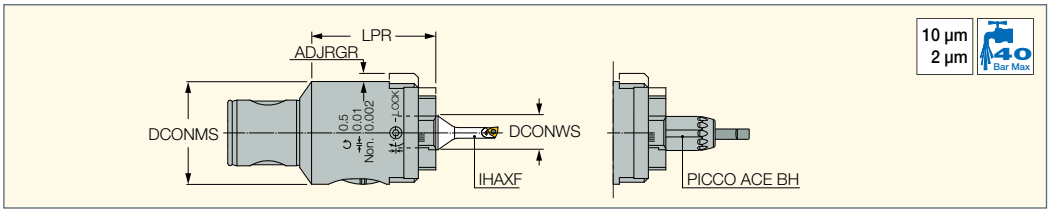
BHE MB-H

Fine Boring Heads for High Rotation Speed with a 10 Micrometer Direct Dia. Adjustment and 2 Micrometer by a Vernier Scale



Designation	DCONMS	LPR	DCN(1)	DCX(2)	DCONWS	ADJRGR	RPMX(3)	kg
BHE MB32-32-53 H	32.00	53.00	2.5	18.0	8.00	0.50	10000	0.35
BHE MB50-50-60 H	50.00	60.00	2.5	22.0	16.00	1.00	8000	1.00

• For spare parts, see pages 435-436, 467

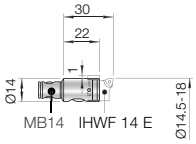
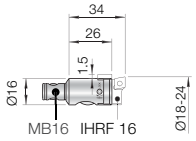
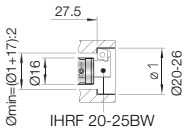
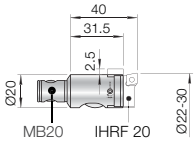
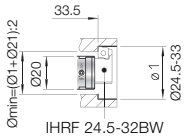
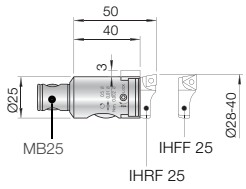
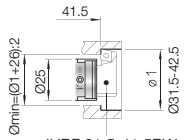
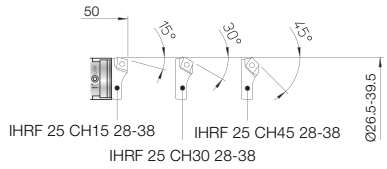
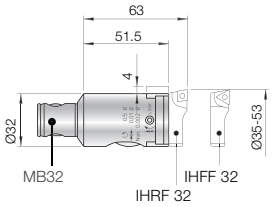
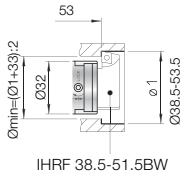
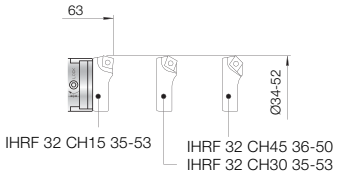
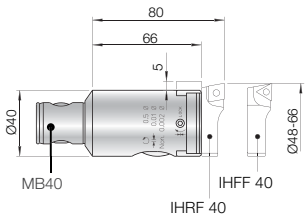
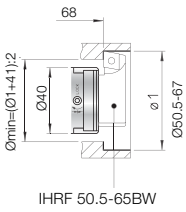
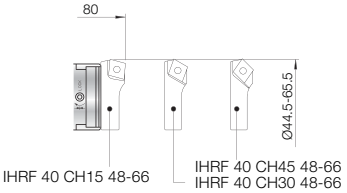
(1) Cutting diameter minimum

(2) Cutting diameter maximum

(3) Maximum RPM

For tools, see pages: IHAXF (432) • IHAXF-AVI (434) • IHAXF-E (434)

BHE MB - Additional Information

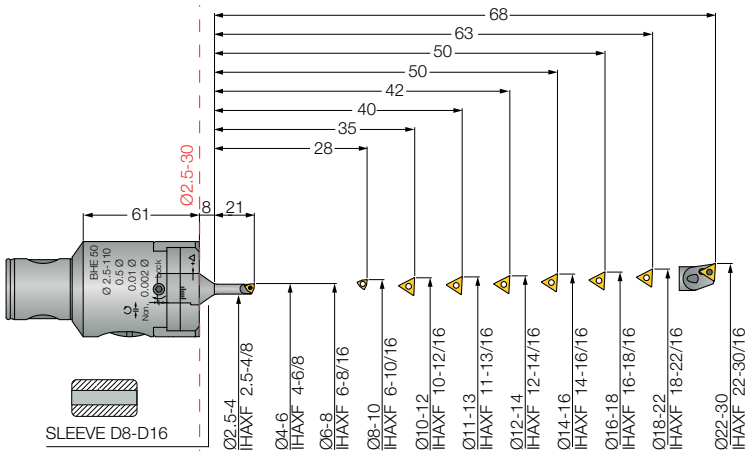
BHE MB14-14-30 **Ø14.5 ~ 18**			
BHE MB16-16-34 **Ø18 ~ 24**			
BHE MB20-20-40 **Ø22 ~ 30**			
BHE MB25-25-50 **Ø28 ~ 40**			
BHE MB32-32-63 **Ø35 ~ 53**			
BHE MB40-40-80 **Ø48 ~ 66**			

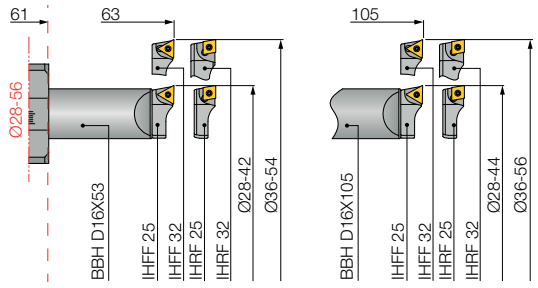
Fine Boring Head Range

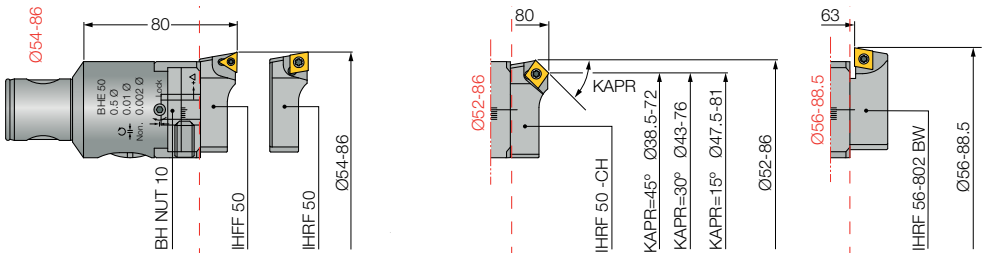
10 µm Direct Diametric Adjustment and 2 µm by a Vernier Scale

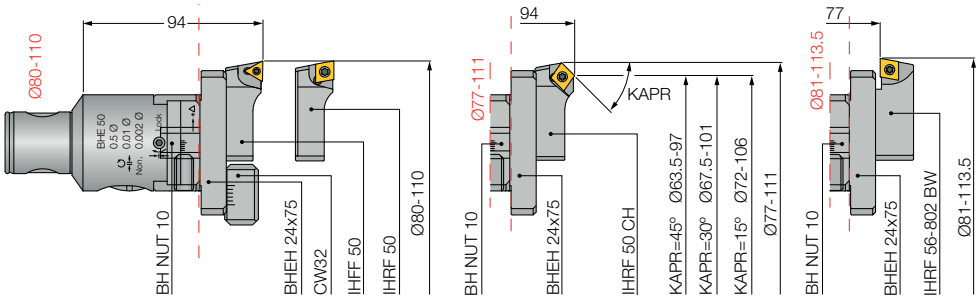
BHE MB50-50x80 ø2.5-113.5

2 µm
10 µm









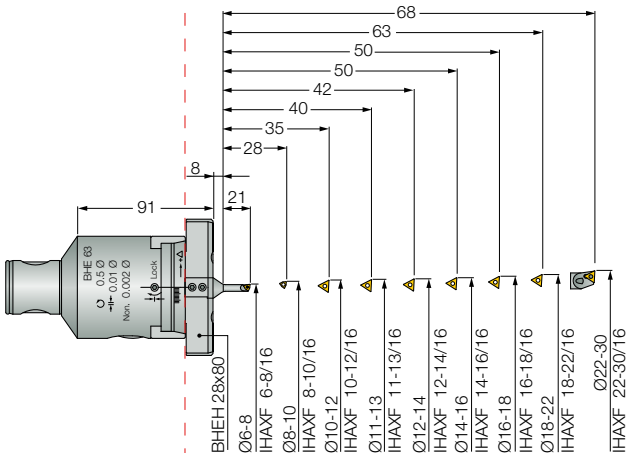
See page 481

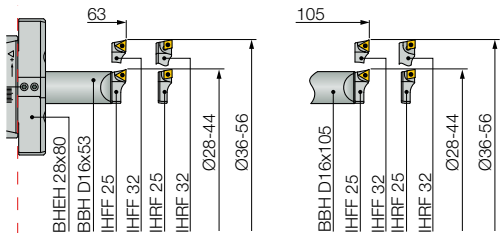
Fine Boring Head Range

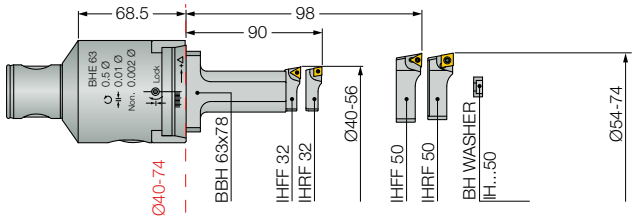
10 µm Direct Diametric Adjustment and 2 µm by a Vernier Scale

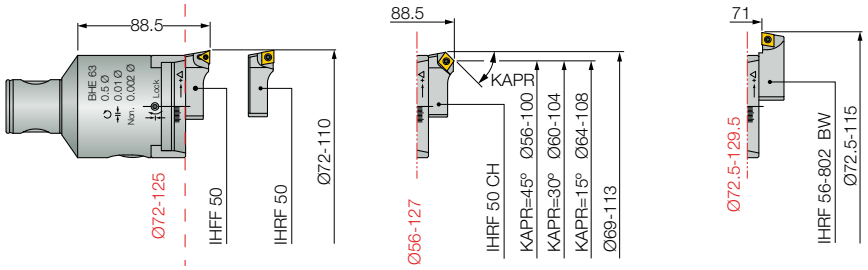
BHE MB63-63x89 ø6-129.5

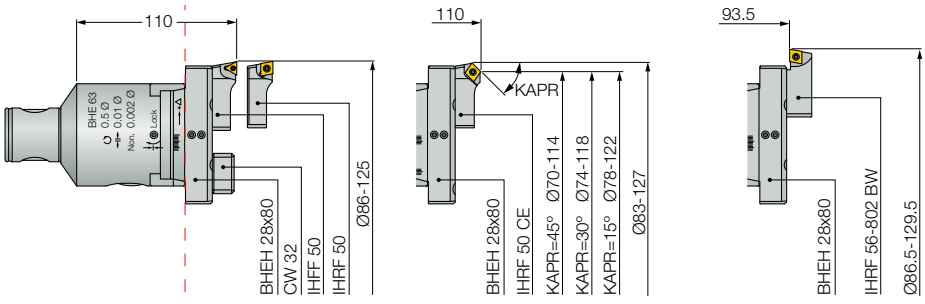
2 µm
10 µm











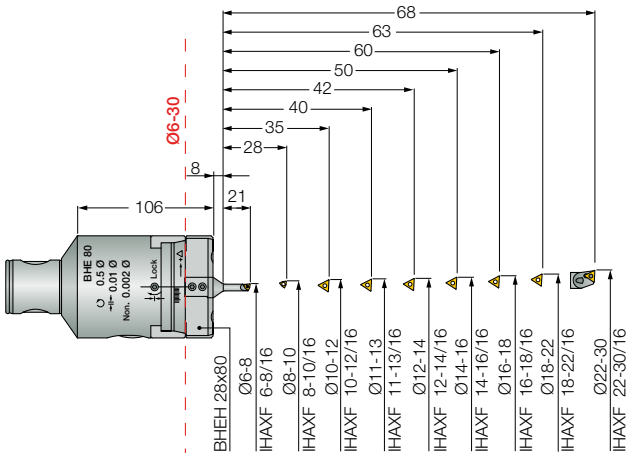
See page 482

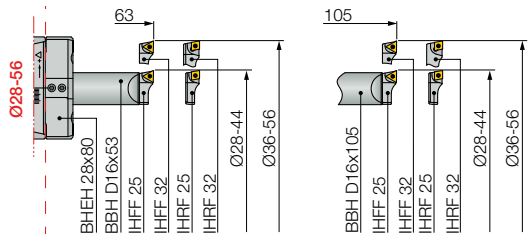
Fine Boring Head Range

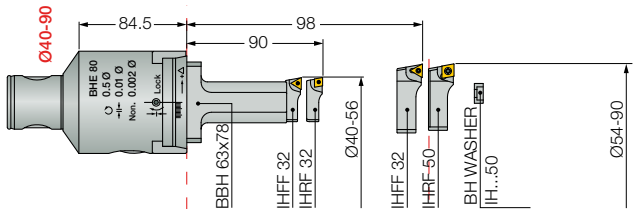
10 µm Direct Diametric Adjustment and 2 µm by a Vernier Scale

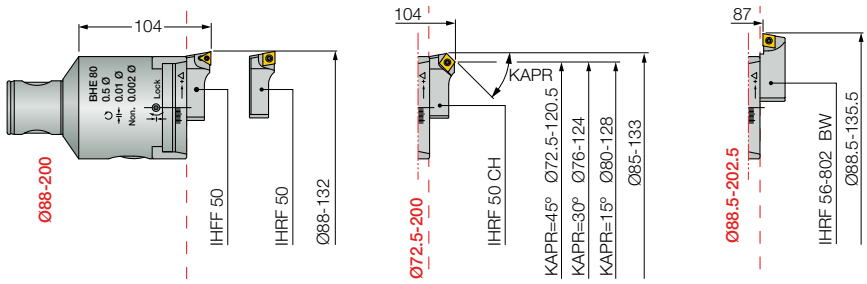
BHE MB80-80x104 ø6-202.5

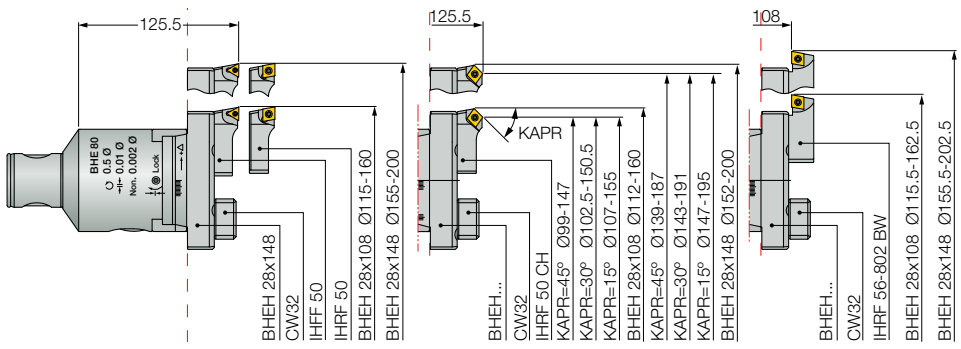
2 µm
10 µm









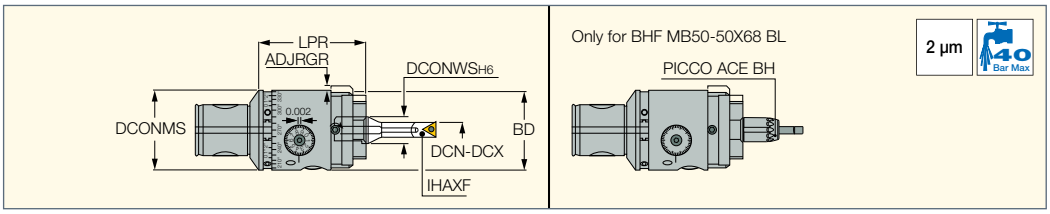


See page 482

ITSBORE

BHF MB-BL

Fine Boring Heads with a Balancing Mechanism and a 2 Micrometer Direct Diametric Adjustment



Designation	DCONMS	BD	LPR	DCN(1)	DCX(2)	DCONWS	ADJRGR	RPMX(3)	kg
BHF MB50-32X60 BL	50.00	32.00	60.00	2.5	12.0	8.00	3.00	20000	0.80
BHF MB50-50X68 BL	50.00	50.00	68.50	6.0	22.0	16.00	4.00	20000	1.12

• For boring options, see page 427 • For spare parts, see page 466 • For cutting conditions, see page 477

(1) Cutting diameter minimum
(2) Cutting diameter maximum
(3) Maximum RPM

For tools, see pages: IHAXF (432)

BHF MB50-32X60 BL and BHF MB50-50X68 BL with the simple positioning of the two counterweights into the graduated groove. The table below displays all tools available for the working range of 2.5-22 mm diameters.

Balance Correction for BHF MB50-32x60BL

TOOLS	Ø BORE	SKB 40-MB50		BTB 40 MB50		HSK 63 MB50	
		W1	W2	W1	W2	W1	W2
IHAXF 2.5-4/8	2.5	66°	283°	54°	292°	60°	257°
	3	76°	283°	56°	284°	8°	196°
	3.5	83°	360°	44°	246°	107°	261°
	4	116°	285°	30°	224°	128°	264°
IHAXF 4-6/8	4	71°	293°	50°	294°	63°	262°
	4.5	75°	287°	55°	287°	6°	194°
	5.5	4°	238°	44°	248°	129°	287°
	5.5	126°	298°	32°	229°	129°	268°
	6	123°	264°	145°	301°	136°	254°
IHAXF 6-8/8	6.6	2°	302°	45°	307°	68°	280°
	6.5	75°	288°	56°	288°	78°	274°
	7.7	5°	280°	55°	280°	179°	351°
	7.5	16°	199°	78°	295°	129°	284°
	8	121°	292°	18°	214°	128°	275°
IHAXF 8-10/8	8	70°	295°	49°	297°	88°	300°
	8.5	75°	280°	55°	281°	51°	245°
	9	67°	255°	49°	258°	160°	330°
	9.5	131°	302°	19°	216°	112°	273°
	10	119°	272°	167°	320°	129°	266°
IHAXF 10-12/8	10	65°	293°	46°	293°	56°	257°
	10.5	66°	273°	29°	262°	182°	351°
	11	44°	234°	45°	255°	163°	317°
	11.5	130°	295°	16°	214°	131°	270°
	12	127°	275°	156°	312°	138°	259°

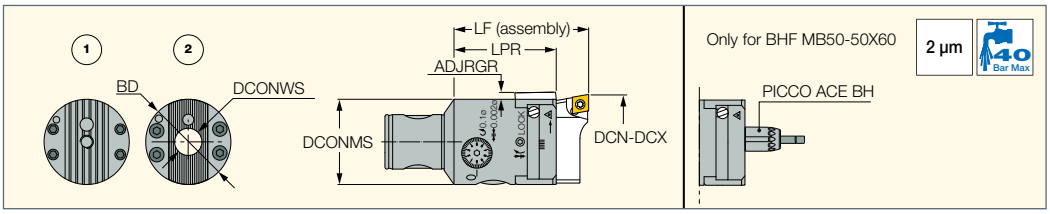
Balancing Data for Various BHF...MB...BL Boring Combinations (continued)

Balance Correction for BHF MB50-50x68 BL							
TOOLS	Ø BORE	SKB 40-MB50		BTB 40 MB50		HSK 63 MB50	
		W_1	W_2	W_1	W_2	W_1	W_2
IHAXF 6- 8/16	6.0	43°	315°	46°	346°	46°	346°
	6.5	63°	326°	44°	326°	59°	336°
	7	82°	305°	67°	304°	93°	323°
	7.5	30°	205°	62°	255°	5.5°	163°
	8	124°	242°	126°	258°	92°	219°
IHAXF 8-10/16	8	42°	312°	36°	336°	48°	348°
	8.5	52°	328°	39°	339°	75°	330°
	9	68°	318°	51°	317°	112°	331°
	9.5	104°	283°	73°	268°	56°	212°
	10	110°	270°	15°	200°	113°	222°
IHAXF 10-12/16	10	35°	336°	30°	330°	44°	344°
	10.5	44°	321°	32°	332°	45°	345°
	11	56°	307°	35°	312°	71°	325°
	11.5	153°	328°	21°	223°	327°	121°
	12	139°	297°	171°	333°	84°	234°
IHAXF 12-14/16	12	30°	330°	26°	326°	40°	340°
	12.5	32°	332°	28°	328°	48°	334°
	13	64°	281°	40°	280°	80°	304°
	13.5	38°	236°	42°	261°	38°	208°
	14	138°	253°	177°	300°	114°	236°
IHAXF 14-16/16	14	22°	324°	18°	318°	39°	339°
	14.5	30°	330°	16°	316°	57°	357°
	15	37°	257°	22°	266°	54°	302°
	15.5	184°	340°	35°	270°	130°	297°
	16	160°	253°	172°	277°	138°	251°
IHAXF 16-18/16	16	26°	326°	24°	324°	58°	358°
	16.5	36°	303°	14°	313°	37°	319°
	17	37°	276°	27°	292°	56°	272°
	17.5	151°	287°	187°	324°	128°	288°
	18	160°	279°	189°	304°	140°	243°
IHAXF 18-22/16	18	10°	310°	6°	305°	28°	328°
	18.5	29°	328°	0°	300°	17°	313°
	19	200°	317°	230°	332°	26°	259°
	19.5	190°	295°	208°	307°	169°	303°
	20	180°	242°	188°	249°	174°	234°
	20.5	179°	240°	186°	247°	168°	228°
	21	176°	236°	174°	236°	169°	229°
	21.5	190°	252°	141°	202°	170°	230°
	22	180°	240°	170°	230°	176°	236°

ITSBORE

BHF MB16-MB50
Dia. 2.5-108

Fine Boring Heads with a 2 µm Direct Diametric Adjustment for a Diameter Range of 2.5 up to 108 mm



Designation	DCONMS	BD	LF	LPR	ADJRGR	DCN(1)	DCX(2)	DCONWS	Fig.	IH	RPMX(3)	kg		
BHF MB16-16X34 RV	16.00	16.00	34.0	26.00	1.00	18.0	23.0	-	1.	IH.. 16..	12000	0.11	BH LOCK NUT 14/16	BH LOCK SR 14/16
BHF MB20-20X40 RV	20.00	20.00	40.0	32.60	2.00	22.0	29.0	-	1.	IH.. 20..	12000	0.14	BH LOCK NUT 20	BH LOCK SR 20
BHF MB25-25X50	25.00	25.00	50.0	40.00	2.00	28.0	38.0	-	1.	IH.. 25..	10000	0.21	BH LOCK NUT 25	BH LOCK SR 25
BHF MB32-32X63	32.00	32.00	63.0	51.50	3.00	35.5	50.0	-	1.	IH.. 32..	10000	0.43	BH LOCK NUT 32	BH LOCK SR 32
BHF MB40-40X80	40.00	40.00	80.0	66.00	4.00	48.0	63.0	-	1.	IH.. 40..	8000	0.79	BH LOCK NUT 40	BH LOCK SR 40
BHF MB50-50X60	50.00	50.00	79.0	60.00	4.00	2.5	108.0	16.00	2.	IH.. 50..	8000	1.09	BH NUT 10	BH LOCK SR 50

• For user guide, see pages 428, 481 • For spare parts, see page 466

(1) Cutting diameter minimum

(2) Cutting diameter maximum

(3) Maximum RPM

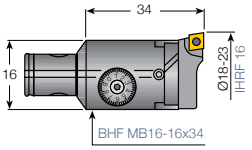
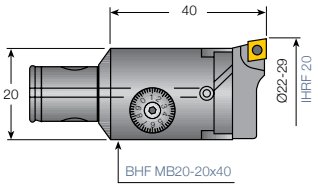
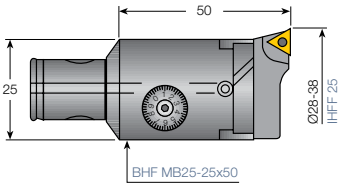
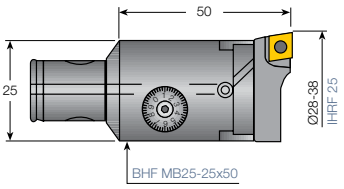
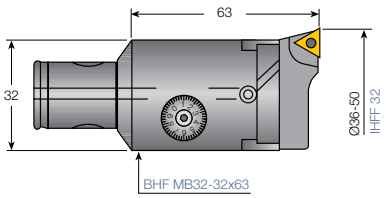
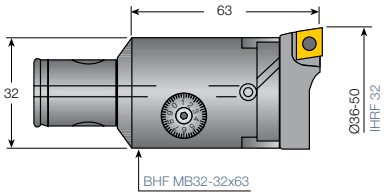
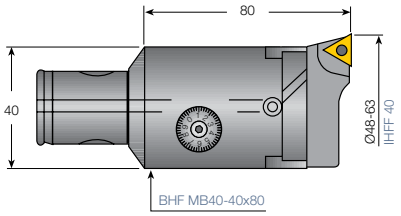
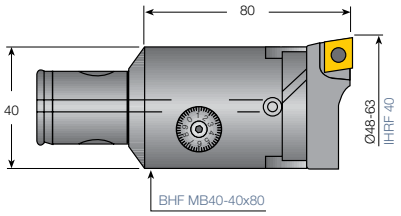
For tools, see pages: IHAXF (432) • IHAXF-AVI (434) • IHAXF-E (434) • IHFF (436) • IHRF (436) • IHRF-BW (439) • IHRF-CH (439)

Fine Boring Head Diameter Range

Assembly Reference

	0 10 20 30 40 50 60 70 80 90 100 110 120 130 150 180 280 400 600 700 800 1200	Page
BHF MB16-16x34	18-23	864
BHF MB20-20x40	22-29	
BHF MB25-25x50	28-38	
BHF MB32-32x63	35.5-50	
BHF MB40-40x80	48-63	
BHF MB50-32x60 BL	2.5-12	862
BHF MB50-50x68 BL	6-22	
BHF MB50-50x60	2.5-108	864
BHF MB50-63x87	2.5-160	871
BHF MB50-80x94	2.5-220	
BHF MB80-80x94	2.5-220	
BHF MB80-125x114	36-500	
TCH AL 200	200-602	
TCH AL 300	300-702	
TCH AL 400	400-802	
TCH AL 500	500-902	876
TCH AL 600	600-1002	
TCH AL 700	700-1102	
TCH AL 800	800-1202	

BHF Fine Boring Heads high precision machining to a close tolerance with high surface quality.
These heads enable a fine diametric adjustment as small as 2 µm with a direct reading.

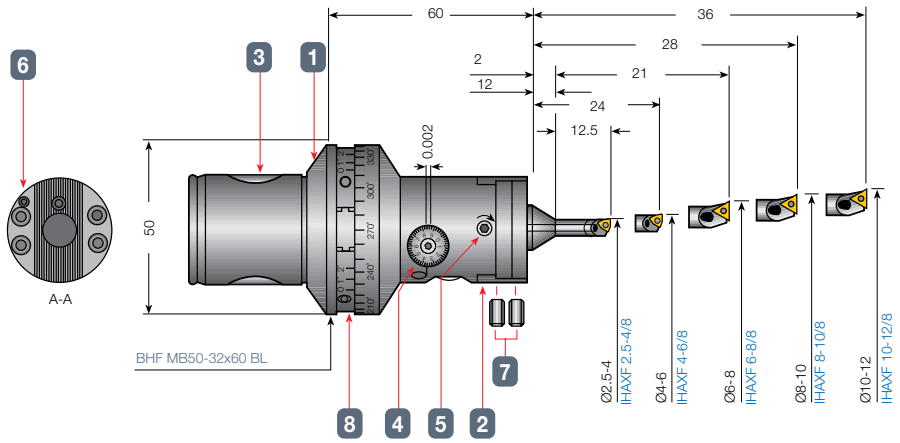
BHF MB16-MB40 Diameter Range: 18-63	
ø18-23 **BHF MB16-16X34 RV**	
ø22-29 **BHF MB20-20X40 RV**	
ø28-38 **BHF MB25-25x50**	 
BHF MB16-MB40 Diameter Range: 18-63	
ø36-50 **BHF MB32-32x63**	 
ø48-63 **BHF MB40-40x80**	 

Fine Boring Heads with Balancing Rings

2 µm Direct Diametric Adjustment

BHF MB50-32x60 BL ø2.5-12

2 µm

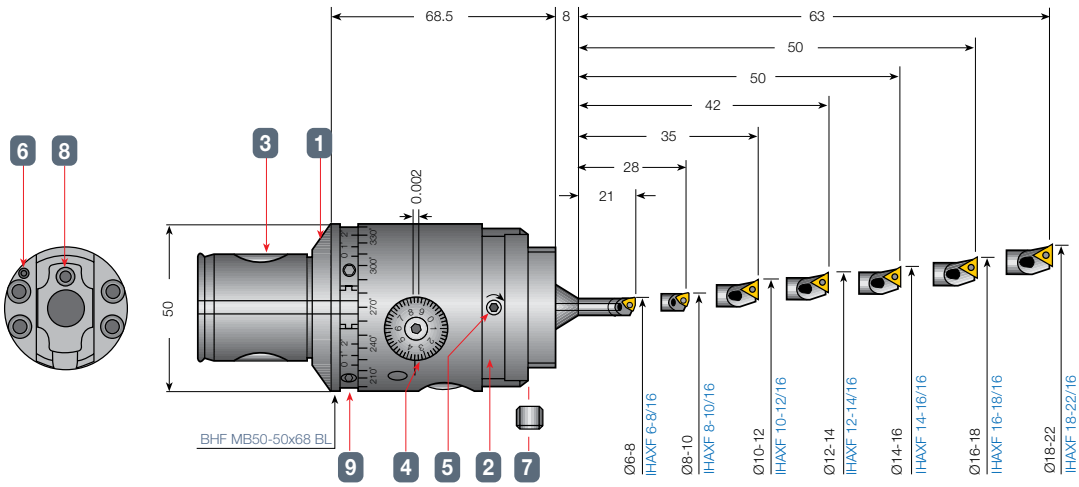


1 Body
2 Tool Slide
3 Expanding Pin
4 Graduated Dial
5 Slide Locking Screw
6 Coolant Nozzle
7 Boring Bar Locking Screws
8 Balancing Rings

See page 481

BHF MB50-50x68 BL ø6-22

2 µm



1 Body
2 Tool Slide
3 Expanding Pin
4 Graduated Dial
5 Slide Locking Screw
6 Coolant Nozzle
7 Boring Bar Locking Screws
8 Oiling Nipple
9 Balancing Rings

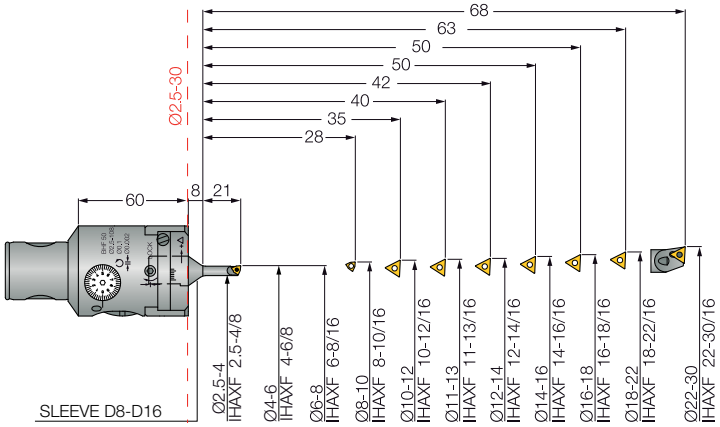
See page 481

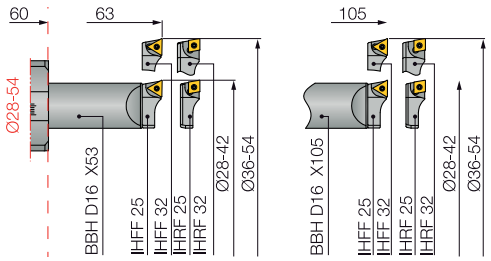
Fine Boring Head Range

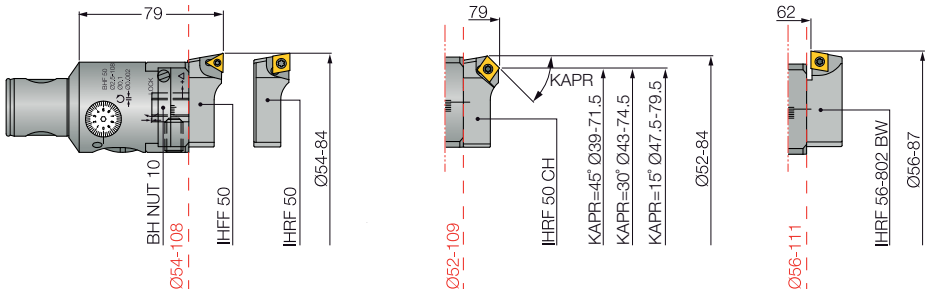
2 µm Direct Diametric Adjustment

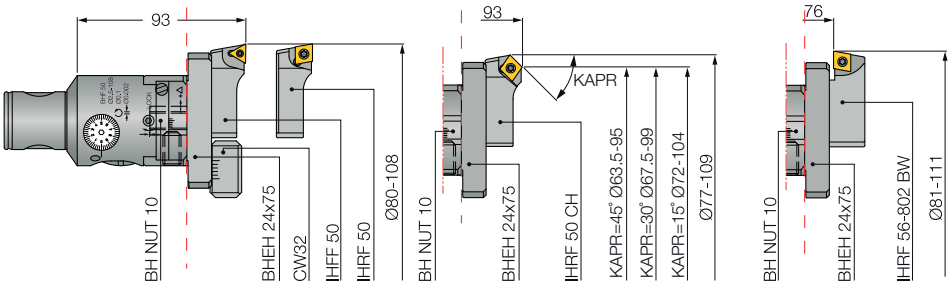
BHF MB50-50x60 ø2.5-108

2 µm









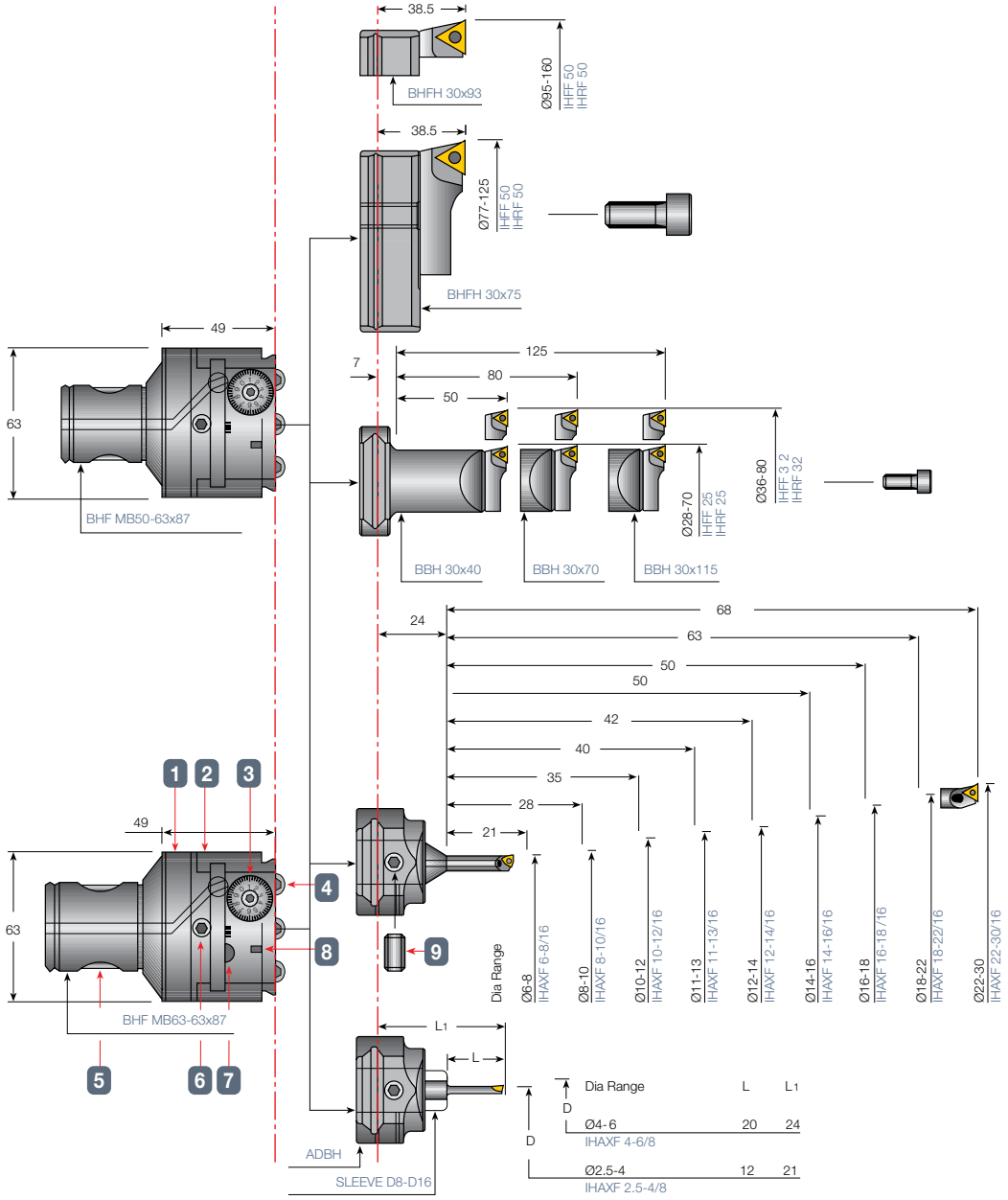
See page 481

Fine Boring Head Range

2 µm Direct Diametric Adjustment

BHF MB50-63x87 ø2.5-160
BHF MB63-63x87 ø2.5-160

2 µm



1. Body
2. Tool Slide
3. Graduated Dial
4. Toolholder Locking Screw
5. Expanding Pin
6. Slide Locking Screw
7. Coolant Nozzle
8. Oiling Nipple
9. Toolholder Locking Screw

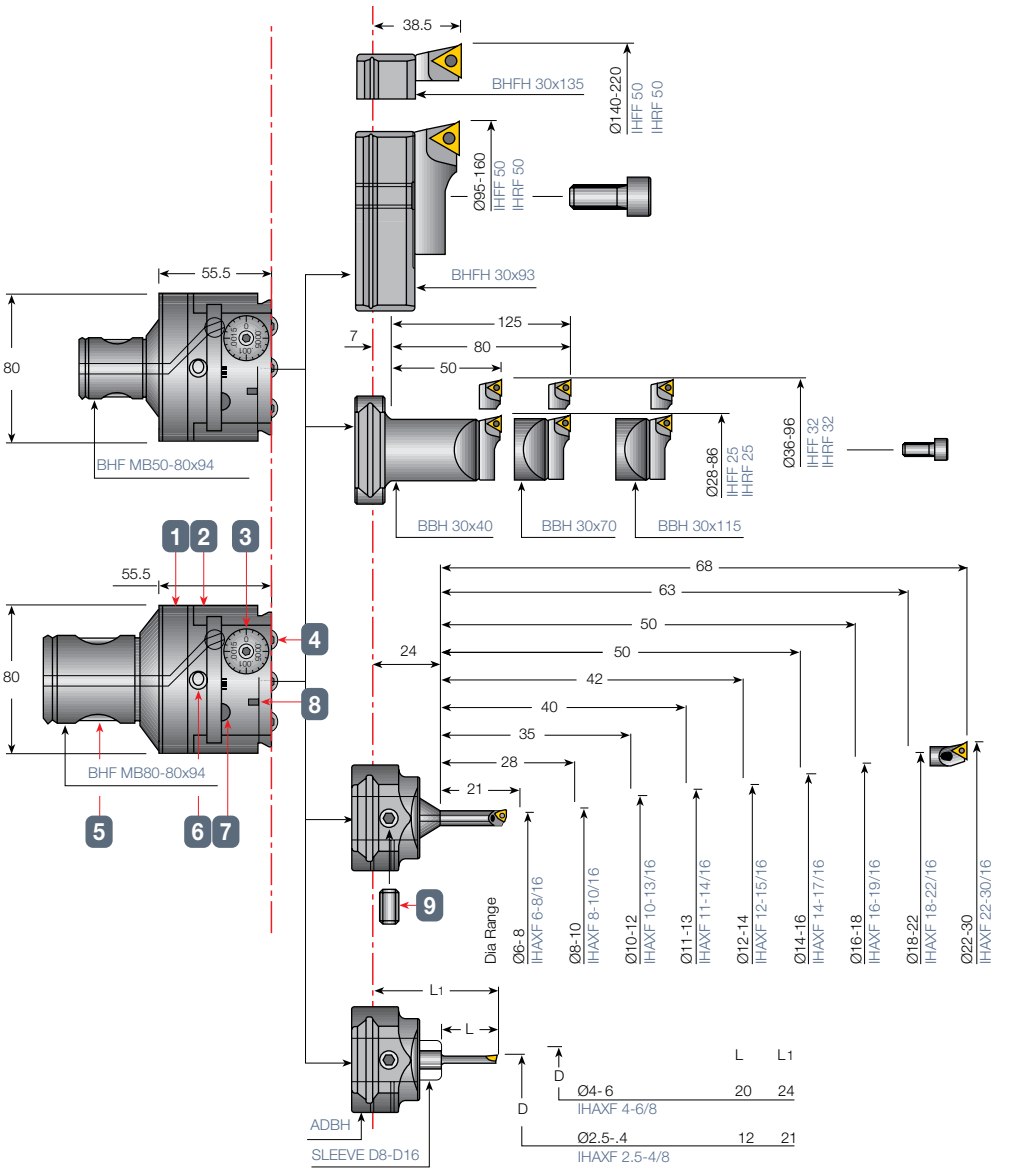
See pages 481-482

Fine Boring Head Range

2 µm Direct Diametric Adjustment

BHF MB50-80x94 ø2.5-220
BHF MB80-80x94 ø2.5-220

2 µm



1. Body
2. Tool Slide
3. Graduated Dial
4. Toolholder Locking Screw
5. Expanding Pin
6. Slide Locking Screw
7. Coolant Nozzle
8. Oiling Nipple
9. Toolholder Locking Screw

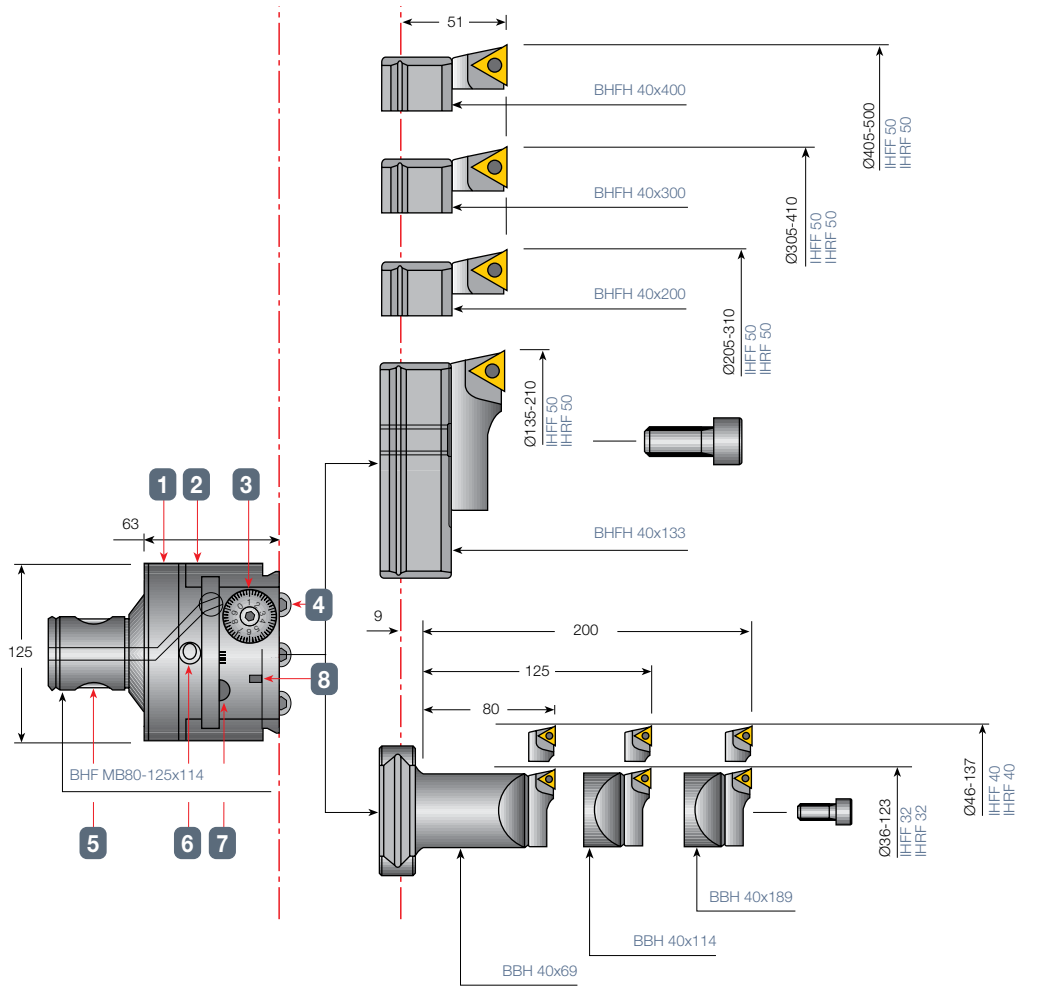
See pages 481-482

Fine Boring Head Range

2 µm Direct Diametric Adjustment

BHF MB80-125x114 ø36-500

2 µm



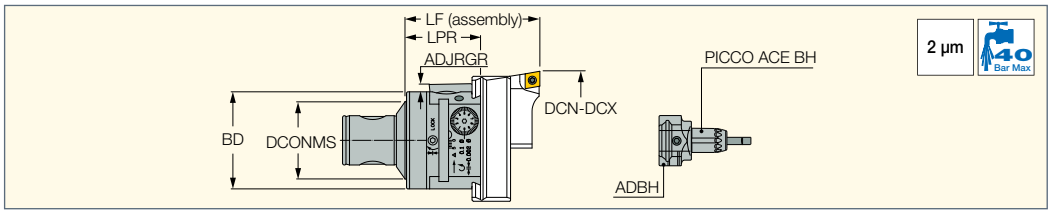
1 Body
2 Tool Slide
3 Graduated Dial
4 Toolholder Locking Screw
5 Expanding Pin
6 Slide Locking Screw
7 Coolant Nozzle
8 Oiling Nipple

See page 482

ITSBORE

BHF MB50-MB80
Dia. 2.5-500

Fine Boring Heads with a 2 µm Direct Diametric Adjustment for a Diameter Range of 2.5 up to 500 mm



Designation	DCONMS	BD	LF	DCN[4]	DCX[5]	LPR	ADJRGR	RPMX[6]	kg
BHF MB50-63X87 [1]	50.00	63.00	87.0	2.5	125.0	49.00	5.00	8000	1.28
BHF MB50-80X94 [2]	50.00	80.00	94.0	2.5	160.0	58.00	5.00	8000	2.22
BHF MB63-63X87 [1]	63.00	63.00	87.0	2.5	125.0	49.00	5.00	6000	1.57
BHF MB80-80X94 [2]	80.00	80.00	94.0	2.5	160.0	58.00	5.00	5000	2.63
BHF MB80-125X114 [3]	80.00	125.00	114.0	135.0	500.0	63.00	5.00	4000	5.72

• For user guide, see pages 429-431, 478-483 • For spare parts, see page 466

[1] Use with slide BHFH 30X75 or BHFH 30X93.

[2] Use with slide BHFH 30X93 or BHFH 30X135.

[3] Use with slide BHFH 40X133, BHFH 40X200, BHFH 40X300 and BHFH 40X400.

[4] Cutting diameter minimum

[5] Cutting diameter maximum

[6] Maximum RPM

ITSBORE

IHAXF

Brazed and Indexable Boring Bars for the MB Modular Boring System

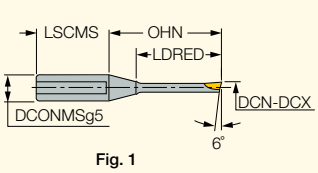


Fig. 1

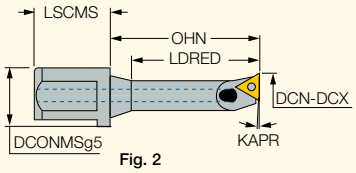


Fig. 2

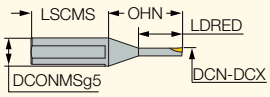


Fig. 3

Designation	DCN[2]	DCX[3]	LDRED	OHN[4]	LSCMS	DCONMS[5]	Fig.	KAPR[6]	Insert	CSP[7]		
IHAXF 2.5-4/8 [1]	2.50	4.00	12.5	21.00	22.00	8.00	1.	3.0	SOLID	0		
IHAXF 4- 6/8 [1]	4.00	6.00	20.0	24.00	24.00	8.00	1.	3.0	SOLID	0		
IHAXF 6- 8/16	6.00	8.00	21.0	29.00	22.00	16.00	2.	3.0	WCGT 0201...	1	SR 14-299	T-6/5
IHAXF 6- 8/8	6.00	8.00	21.0	23.00	16.00	8.00	3.	5.0	WCGT 0201...	1	SR 14-299	T-6/5
IHAXF 8-10/16	8.00	10.00	28.0	36.00	22.00	16.00	2.	3.0	WCGT 0201...	1	SR 14-299	T-6/5
IHAXF 8-10/8	8.00	10.00	-	28.00	16.00	8.00	3.	5.0	WCGT 0201...	1	SR 14-299	T-6/5
IHAXF 10-12/16	10.00	12.00	35.0	43.00	22.00	16.00	2.	3.0	TPGX 0902...	1	SR 14-298	T-8/5
IHAXF 10-12/8	10.00	12.00	-	36.00	16.00	8.00	3.	5.0	TPGX 0902...	1	SR 14-298	T-8/5
IHAXF 11-13/16	11.00	13.00	40.0	48.00	22.00	16.00	2.	3.0	TPGX 0902...	1	SR 14-298	T-8/5
IHAXF 12-14/16	12.00	14.00	42.0	48.00	22.00	16.00	2.	3.0	TPGX 0902...	1	SR 14-298	T-8/5
IHAXF 12-14/8	12.00	14.00	-	42.00	14.00	8.00	3.	3.0	TPGX 0902...	1	SR 14-298	T-8/5
IHAXF 14-16/16	14.00	16.00	50.0	52.00	22.00	16.00	2.	3.0	TPGX 0902...	1	SR 14-298	T-8/5
IHAXF 14-16/8	14.00	16.00	-	48.00	14.00	8.00	3.	3.0	TPGX 0902...	1	SR 14-298	T-8/5
IHAXF 16-18/16	16.00	18.00	50.0	58.00	22.00	16.00	2.	3.0	TPGX 0902...	1	SR 14-298	T-8/5
IHAXF 16-18/8	16.00	18.00	-	54.00	14.00	8.00	3.	3.0	TPGX 0902...	1	SR 14-298	T-8/5
IHAXF 18-22/16	18.00	22.00	-	63.00	22.00	16.00	2.	3.0	TPGX 0902...	1	SR 14-298	T-8/5
IHAXF 22-30/16	22.00	30.00	-	68.00	22.00	16.00	2.	3.0	TPGX 0902...	1	SR 14-298	T-8/5

[1] Brazed tool

[2] Cutting diameter minimum

[3] Cutting diameter maximum

[4] Minimum overhang

[5] For DCONMS=8 mm, 16 mm O.D. sleeves should be used

[6] Tool cutting edge angle

[7] 0 - Without coolant supply, 1 - With coolant supply

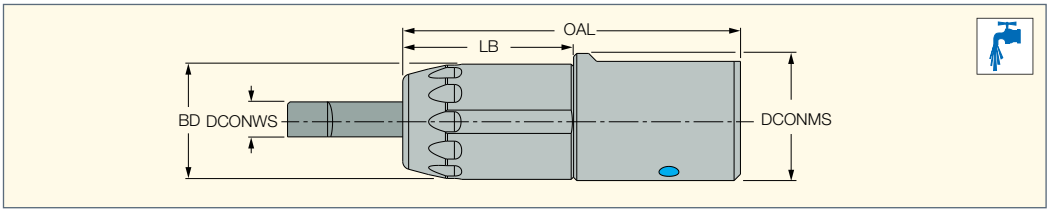
For inserts, see pages: TPGX (459) • TPGX (CBN) (460) • TPGX (PCD) (460) • WCGT (459)

For holders, see pages: ADBH (435) • BHD MB (414) • BHE MB (418) • BHE MB-H (418) • BHF MB-BL (423) • BHF MB16-MB50 Dia. 2.5-108 (425) • SLEEVE (433)

PICCOACE ITSBORE

PICCO ACE-BH

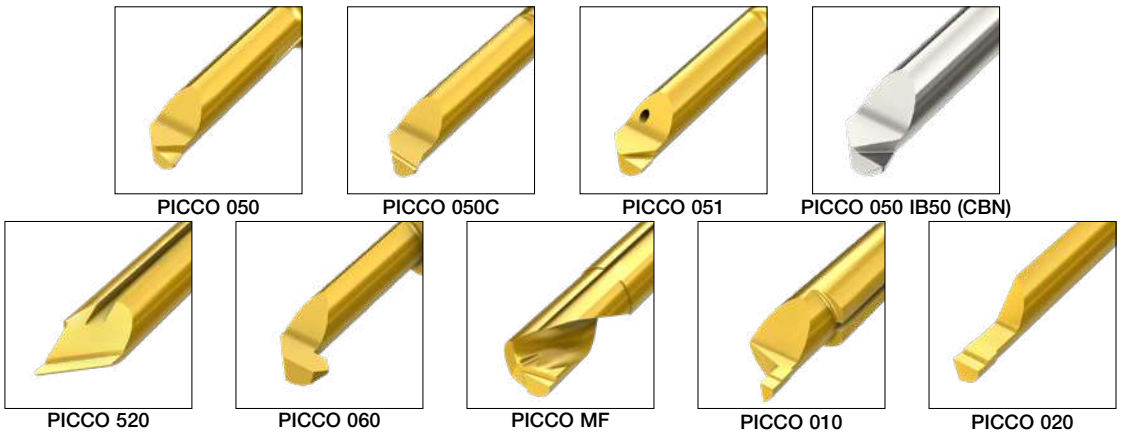
Holders with Short Shanks for ITS BORE System Carrying PICCOCUT Inserts



Designation	DCONMS	DCONWS	BD	OAL	LB	
PICCO ACE-BH 16-4	16.00	4.00	14.50	42.50	21.50	WRENCH ACE 4-5
PICCO ACE-BH 16-5	16.00	5.00	14.50	42.50	21.50	WRENCH ACE 4-5
PICCO ACE-BH 16-6	16.00	6.00	19.90	43.50	21.50	WRENCH ACE 6-7
PICCO ACE-BH 16-7	16.00	7.00	19.90	43.50	21.50	WRENCH ACE 6-7

- Holders are suitable for right- and left-hand PICCO inserts

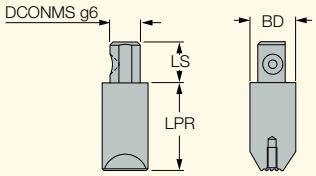
The PICCO-ACE-BH Holders Can Carry a Wide Range of PICCOCUT Insert Geometries



ITSBORE

BBH D16

Extension Slides for MB Modular Fine Boring Holders



Designation	DCONMS	LPR	BD	LS	kg
BBH D16-53	16.00	53.00	25.00	21.50	0.50
BBH D16-105	16.00	95.00	25.00	21.50	0.80

For tools, see pages: IHFF (436) • IHRF (436)

ITSBORE

SLEEVE

Reduction Sleeves for Boring Bars on the MB Modular Boring System

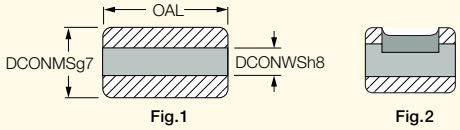


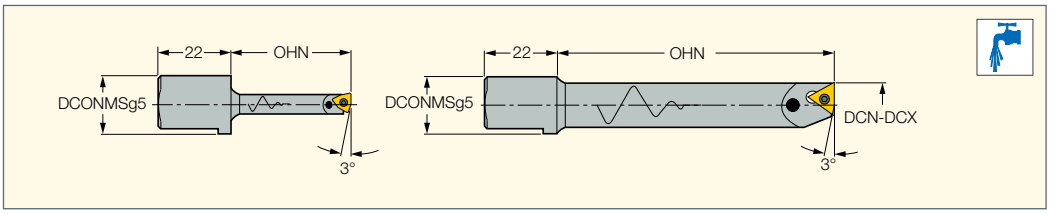
Fig.1 Fig.2

Designation	DCONMS	DCONWS	OAL	Fig.
SLEEVE D 8-D16	16.00	8.00	23.00	2.

For tools, see pages: IHAXF (432)

ITSBORE

IHAXF-AVI
Heavy Metal Vibration
Damping Boring Bars



Designation	DCN(1)	DCX(2)	OHN(3)	DCONMS	Insert		
IHAXF 6- 8-AVI	6.00	8.00	36.0	16.00	WCGT 0201...	SR 14-299	T-6/5
IHAXF 8-10-AVI	8.00	10.00	48.0	16.00	WCGT 0201...	SR 14-299	T-6/5
IHAXF 10-12-AVI	10.00	12.00	60.0	16.00	TPGX 0902...	SR 14-298	T-8/5
IHAXF 12-14-AVI	12.00	14.00	72.0	16.00	TPGX 0902...	SR 14-298	T-8/5
IHAXF 14-16-AVI	14.00	16.00	84.0	16.00	TPGX 0902...	SR 14-298	T-8/5
IHAXF 16-18-AVI	16.00	18.00	96.0	16.00	TPGX 0902...	SR 14-298	T-8/5

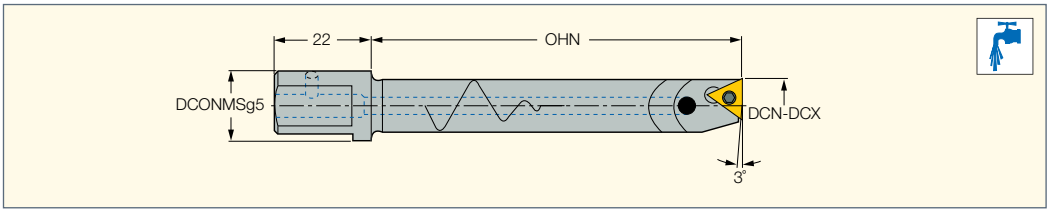
- Note: Not recommended to be used on balanceable BHF-BL fine boring heads.

(1) Cutting diameter minimum
(2) Cutting diameter maximum
(3) Minimum overhang

For inserts, see pages: TPGX (459) • TPGX (CBN) (460) • WCGT (459)
For holders, see pages: ADBH (435) • BHD MB (414) • BHE MB (418) • BHE MB-H (418) • BHF MB16-MB50 Dia. 2.5-108 (425)

ITSBORE

IHAXF-E
Carbide Vibration
Dampening Boring Bars



Designation	DCN(1)	DCX(2)	OHN(3)	DCONMS	Insert		
IHAXF 6- 8-E	6.00	8.00	45.0	16.00	WCGT 0201...	SR 14-299	T-6/5
IHAXF 8-10-E	8.00	10.00	60.0	16.00	WCGT 0201...	SR 14-299	T-6/5
IHAXF 10-12-E	10.00	12.00	75.0	16.00	TPGX 0902...	SR 14-298	T-8/5
IHAXF 12-14-E	12.00	14.00	90.0	16.00	TPGX 0902...	SR 14-298	T-8/5
IHAXF 14-16-E	14.00	16.00	105.0	16.00	TPGX 0902...	SR 14-298	T-8/5
IHAXF 16-18-E	16.00	18.00	120.0	16.00	TPGX 0902...	SR 14-298	T-8/5

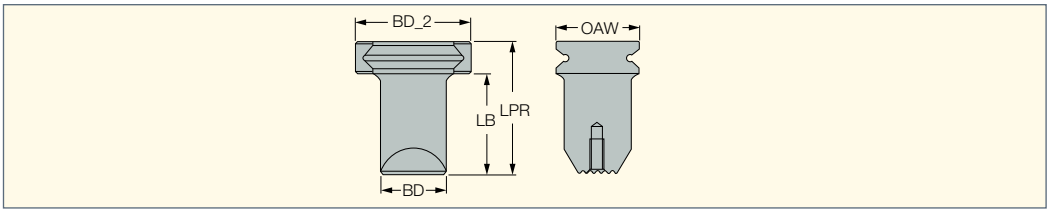
- Note: Not recommended to be used on balanceable BHF-BL fine boring heads.

(1) Cutting diameter minimum
(2) Cutting diameter maximum
(3) Minimum overhang

For inserts, see pages: TPGX (459) • TPGX (CBN) (460) • WCGT (459)
For holders, see pages: ADBH (435) • BHD MB (414) • BHE MB (418) • BHE MB-H (418) • BHF MB16-MB50 Dia. 2.5-108 (425)

ITSBORE

BBH 30/40
Extension Slides for MB
Modular Fine Boring Holders

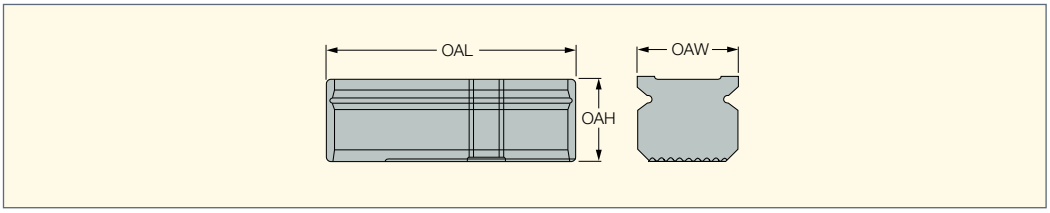


Designation	OAW	LB	BD	LPR	BD_2	kg
BBH 30X40	30.5	40.0	25.00	52.50	43.00	0.27
BBH 30X70	30.5	70.0	25.00	82.50	43.00	0.38
BBH 30X115	30.5	115.0	27.00	127.50	43.00	0.64
BBH 40X69	40.0	69.0	32.00	86.00	56.00	0.69
BBH 40X114	40.0	114.0	32.00	131.00	56.00	0.98
BBH 40X189	40.0	189.0	38.00	206.00	56.00	1.94

For tools, see pages: IHFF (436) • IHRF (436)

ITSBORE

BHFH
Counter Weight Slides for MB Modular Fine Boring Holders

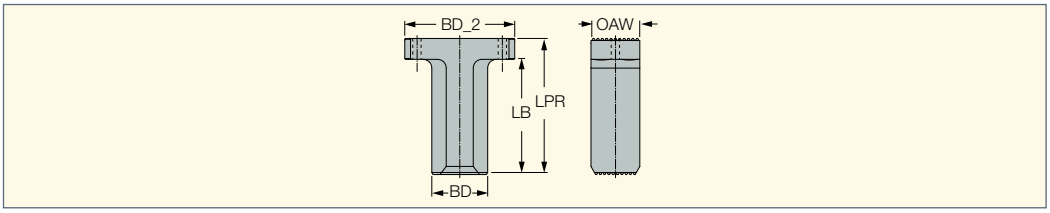


Designation	OAW	OAL	OAH	kg	
BHFH 30X75	30.5	75.00	25.00	0.44	SR M10X25 DIN912
BHFH 30X93	30.5	93.00	25.00	0.54	SR M10X25 DIN912
BHFH 30X135	30.5	135.00	25.00	0.76	SR M10X25 DIN912
BHFH 40X133	40.0	133.00	40.00	1.52	SR M10X25 DIN912
BHFH 40X200	40.0	200.00	40.00	2.30	SR M10X25 DIN912
BHFH 40X300	40.0	300.00	40.00	3.47	SR M10X25 DIN912
BHFH 40X400	40.0	400.00	40.00	4.56	SR M10X25 DIN912

For tools, see pages: IHFF (436) • IHRF (436) • IHRF-BW (439) • IHRF-CH (439)

ITSBORE

BBH 63
Extension Slides for MB Modular BHE Fine Boring Holders

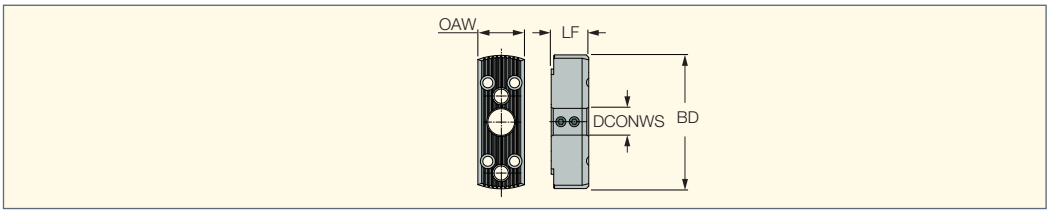


Designation	BD_2	LPR	BD	LB	OAW	kg
BBH 63X78	63.00	78.00	32.00	66.0	28.0	0.52

For tools, see pages: IHFF (436) • IHRF (436)

ITSBORE

BHEH
Slides for MB Modular BHE Fine Boring Holders



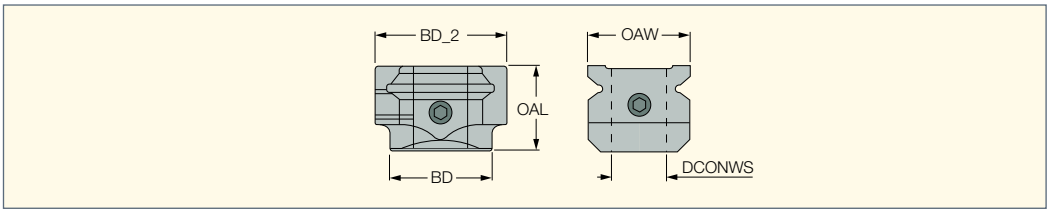
Designation	OAW	BD	LF	DCONWS	kg				
BHEH 24X75	24.0	75.00	14.50	-	0.20				
BHEH 28X80	28.0	80.00	22.50	16.00	0.33	SR M6X6 DIN913*	SR M5X25DIN912*	HW 4.0*	HW 3.0*
BHEH 28X108	28.0	108.00	22.50	-	0.53				
BHEH 28X148	28.0	148.00	22.50	-	0.69				

* Optional, should be ordered separately

For tools, see pages: IHFF (436) • IHRF (436) • IHRF-BW (439) • IHRF-CH (439)

ITSBORE

ADBH
Sleeve for MB Modular Fine Boring Holders

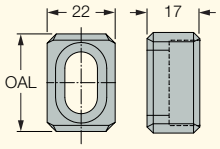


Designation	BD	DCONWS	OAL	BD_2	OAW	kg
ADBH 30XD16	30.00	16.00	25.00	39.00	30.5	0.15

For tools, see pages: IHAXF (432) • IHAXF-AVI (434) • IHAXF-E (434)

ITSBORE

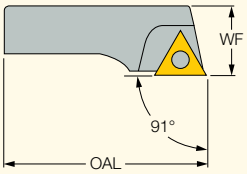
CW32
Counter Balancing Weight
Used on BHEH Slide for
Fine Boring Holders



Designation	OAL	kg
CW32	31.50	0.05

ITSBORE

IHFF
Triangular Insert Holders
for Mounting on MB
Fine Boring Heads

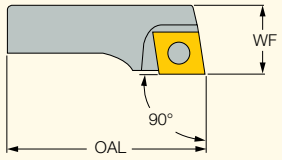


Designation	WF	OAL	DCN(1)	DCX(2)	Insert		
IHFF 25	10.00	26.50	28.0	40.0	TPGX 0902...	SR 14-298	T-8/5
IHFF 32	11.50	34.50	35.0	53.0	TPGX 0902...	SR 14-298	T-8/5
IHFF 40	14.00	44.60	48.0	66.0	TPGX 1103...	SR-17979 M3X8	T-8/5
IHFF 50	19.00	52.00	54.0	86.0	TPGX 1103...	SR-17979 M3X8	T-8/5

(1) Cutting diameter minimum
(2) Cutting diameter maximum
For inserts, see pages: TPGX (459) • TPGX (CBN) (460)
For holders, see pages: BBH 30/40 (434) • BBH 63 (435) • BBH D16 (433) • BHD 50 L200 (437) • BHD MB (414) • BHE MB (418) • BHEH (435) • BHF L200 (437) • BHF MB16-MB50 Dia. 2.5-108 (425) • BHFH (435)

ITSBORE

IHRF
80° Rhombic Insert
Holders for Mounting on
MB Fine Boring Heads

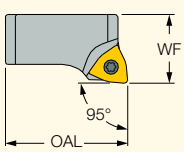


Designation	WF	OAL	DCN(1)	DCX(2)	Insert		
IHRF 16	8.00	17.00	18.0	24.0	CCGT 0602...	SR 14-548	T-7/5
IHRF 20	8.50	21.00	22.0	30.0	CCGT 0602...	SR 14-548	T-7/5
IHRF 25	10.00	26.50	28.0	40.0	CCGT 0602...	SR 14-548	T-7/5
IHRF 32	11.50	34.50	35.0	53.0	CCGT 0602...	SR 14-548	T-7/5
IHRF 40	14.00	44.00	48.0	66.0	CCGT 09T3...	SR 16-236	T-15/5
IHRF 50	19.00	52.00	54.0	86.0	CCGT 09T3...	SR 16-236	T-15/5

(1) Cutting diameter minimum
(2) Cutting diameter maximum
For inserts, see pages: CCET-WF (453) • CCGT-AF (455) • CCGT-AS (455) • CCGW/CCMT (CBN) (454) • CCMT (PCD) (454) • CCMT-14 (453) • CCMT-PF (452) • CCMT-WG (454) • CCMT/CCGT (453) • CCMT/CCGT-SM (452)
For holders, see pages: BBH 30/40 (434) • BBH 63 (435) • BBH D16 (433) • BHD 50 L200 (437) • BHD MB (414) • BHE MB (418) • BHEH (435) • BHF L200 (437) • BHF MB16-MB50 Dia. 2.5-108 (425) • BHFH (435)

ITSBORE

IHWF
Trigon Insert Holders for Mounting
on MB Fine Boring Heads



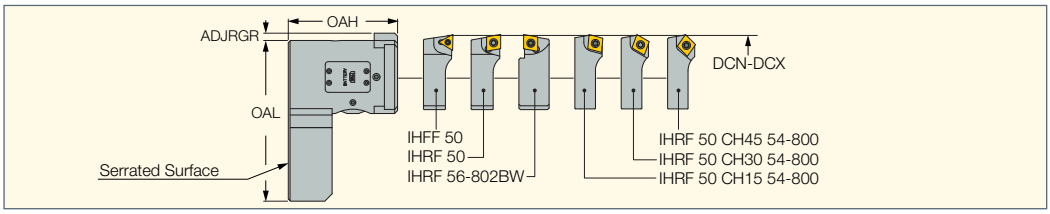
Designation	WF	OAL	DCN(1)	DCX(2)	Insert
IHWF 14 E	8.00	14.00	14.5	18.0	WCGT 0201...

(1) Cutting diameter minimum
(2) Cutting diameter maximum
For inserts, see pages: WCGT (459)
For holders, see pages: BHD MB (414) • BHE MB (418)

ITSBORE

BHD 50 L200

Digital Fine Boring Slide Head for TCH AL Large Diameter Holders



Designation	DCN(1)	DCX(2)	OAL	OAH	ADJRGR	RPMX(3)	kg
BHD 50 L200	200.0	1202.0	110.00	74.0	5.00	20000	1.70

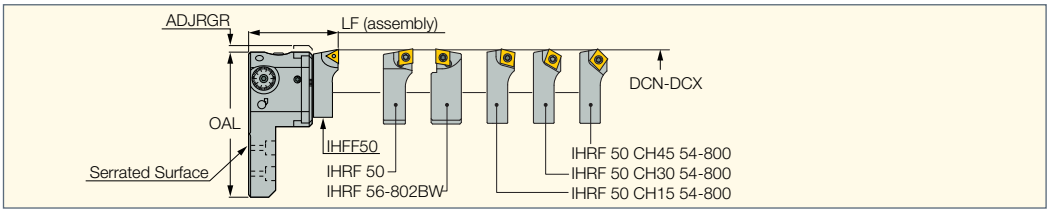
(1) Cutting diameter minimum
(2) Cutting diameter maximum
(3) Maximum RPM

For tools, see pages: IHFF (436) • IHRF (436) • IHRF-BW (439) • IHRF-CH (439)

ITSBORE

BHF L200

Fine Boring Slide Head for TCH AL Large Diameter Holders



Designation	DCN(1)	DCX(2)	OAL	LF	ADJRGR	kg
BHF L200	200.0	1202.0	110.00	67.0	5.00	1.27

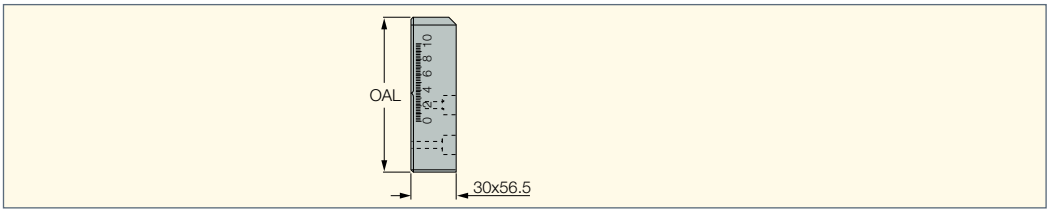
(1) Cutting diameter minimum
(2) Cutting diameter maximum

For tools, see pages: IHFF (436) • IHRF (436) • IHRF-BW (439) • IHRF-CH (439)

ITSBORE

CW200

Counter Balancing Weight for TCH AL Rough and Fine Boring Holders

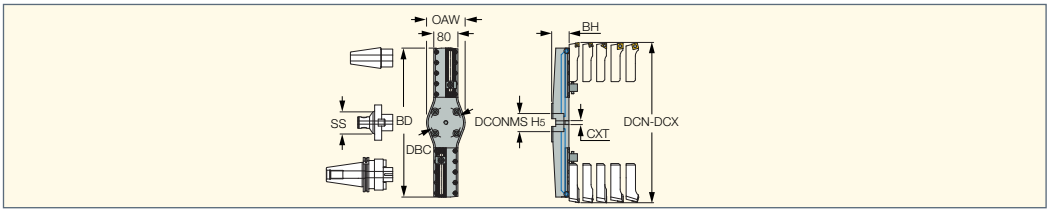


Designation	OAL	kg
CW200	105.00	1.12

ITSBORE

TCH AL

Aluminum Twin Cutter Heads for Rough and Fine Boring Operations, Diameter Range 200-1200 mm



Designation	DCN(1)	DCX(2)	BD	DCONMS	DBC	SS	OAW	CXT	BH	CSP(3)	RPMX(4)	kg
TCH AL200	200.0	602.0	194.00	40.00	66.70	80	-	-	54.00	1	700	3.20
TCH AL300	300.0	702.0	288.00	40.00	66.70	80	-	-	54.00	1	400	3.90
TCH AL400	400.0	802.0	394.00	40.00	66.70	80	-	1/4GAS	61.00	0	300	6.90
TCH AL500	500.0	902.0	494.00	60.00	101.60	80,110	128.0	1/4GAS	69.00	0	200	8.70
TCH AL600	600.0	1002.0	594.00	60.00	101.60	80,110	128.0	1/4GAS	71.00	0	200	8.34
TCH AL700	700.0	1102.0	694.00	60.00	101.60	80,110	128.0	1/4GAS	74.00	0	200	8.34
TCH AL800	800.0	1202.0	794.00	60.00	101.60	80,110	128.0	1/4GAS	80.00	0	150	15.20

• Aluminum body, with steel serrated seats • The "O" position on the counterweight balances the BHF boring head for 200 mm boring diameter position. For every 10 mm change in boring diameter, move the counterweight by 1 measurement mark • Verify that the weight of the entire tool assembly does not exceed the machine spindle's carrying capability • For spare parts, see pages 436-437, 469

(1) Cutting diameter minimum

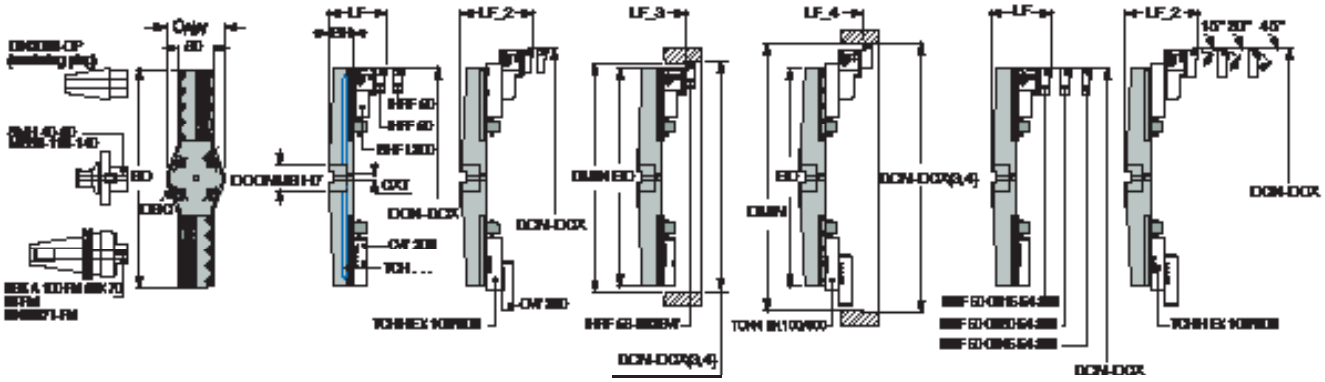
(2) Cutting diameter maximum

(3) 0 - Without coolant supply, 1 - With coolant supply

(4) Maximum RPM

For tools, see pages: IHBR (409) • IHCR (408) • IHPR (408) • IHSR (408) • IHSR-BW (410)

Large Diameter Double Edge Fine Boring Options

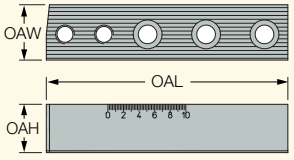


Boring Tools	Fine Boring Slide Head	Extension Slides	Dimensions	Aluminum Twin Cutter Heads: TCH 200	TCH 300	TCH 400	TCH 500	TCH 600	TCH 700	TCH 800
IH.F 50	BHF L200 / BHD50 L200		DCN-DCX	200-300	300-400	400-500	500-600	600-700	700-800	800-900
IH.F 50	BHF L200 / BHD50 L200	TCHH EX 100	DCN-DCX	300-400	400-500	500-600	600-700	700-800	800-900	900-1000
IH.F 50	BHF L200 / BHD50 L200	TCHH EX 300	DCN-DCX	400-600	500-700	600-800	700-900	800-1000	900-1100	1000-1200
IHRF 56-802BW	BHF L200 / BHD50 L200		DCN-DCX(3,4)	202-302	302-402	402-502	502-602	602-702	702-802	802-902
IHRF 56-802BW	BHF L200 / BHD50 L200	TCHH EX 100	DCN-DCX(3,4)	302-402	402-502	502-602	602-702	702-802	802-902	902-1002
IHRF 56-802BW	BHF L200 / BHD50 L200	TCHH EX 300	DCN-DCX(3,4)	402-602	502-702	602-802	702-902	802-1002	902-1102	1002-1202
IH.F 50	BHF L200		LF	120	120	127	135	137	140	146
IH.F 50	BHF L200	TCHH EX 100	LF_2	150	150	157	165	167	170	176
IH.F 50	BHF L200	TCHH EX 300	LF_2	160	160	167	175	177	180	186
IHRF 56-802BW	BHF L200		LF_3	103	103	110	118	120	123	129
IHRF 56-802BW	BHF L200	TCHH EX 100	LF_4	133	133	140	148	150	153	159
IHRF 56-802BW	BHF L200	TCHH EX 300	LF_4	143	143	150	158	160	163	169
IH.F 50	BHD50 L200		LF	147	147	154	162	164	167	173
IH.F 50	BHD50 L200	TCHH EX 100	LF_2	177	177	184	192	194	197	203
IH.F 50	BHD50 L200	TCHH EX 300	LF_2	187	187	194	202	204	207	213
IHRF 56-802BW	BHD50 L200		LF_3	130	130	137	145	147	150	156
IHRF 56-802BW	BHD50 L200	TCHH EX 100	LF_4	160	160	167	175	177	180	186
IHRF 56-802BW	BHD50 L200	TCHH EX 300	LF_4	170	170	177	185	187	190	196

ITSBORE

TCHH EX

Boring Tools Extension Slides for TCH AL Boring Heads



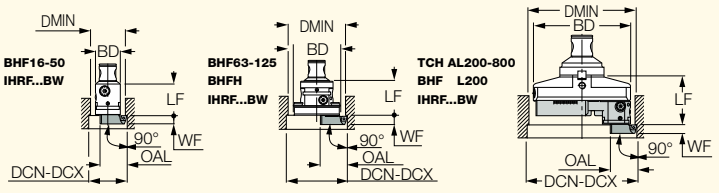
Designation	OAH	OAW	OAL	kg
TCHH EX100	31.00	35.5	155.00	1.50
TCHH EX300	41.00	35.5	255.00	2.80

For tools, see pages: IHBR (409) • IHCR (408) • IHPR (408) • IHSR (408) • IHSR-BW (410)

ITSBORE

IHRF-BW

Back Face Turning Toolholders
for BHF and TCH AL
Fine Boring Heads



Designation	SS [1]	BD	DCN[2]	LF	DCX[3]	WF	OAL	Insert
IHRF 20-25BW	BHF MB16-16x34	16	20	27.5	25	8	18	CCMT 0602...
IHRF 24.5-32BW	BHF MB20-20x40	20	24.5	33.5	32	8.5	22.5	CCMT 0602...
IHRF 31.5-41.5BW	BHF MB25-25x50	25	31.5	41.5	40.5	9.5	28.5	CCMT 0602...
IHRF 38.5-51.5BW	BHF MB32-32x63	32	38.5	53	51.5	11	35.5	CCMT 0602...
IHRF 50.5-65BW	BHF MB40-40X80	40	50.5	68	65	13.5	46	CCMT 09T3...
IHRF 56-802BW	BHF MB50-50X60	50	56	62	87	17.5	53	CCMT 09T3...
	BHF MB63-63X87+BHFH...	75-93	82	70.5	127	17.5	53	CCMT 09T3...
	BHF MB80-80X94+BHFH...	93-135	100	79.5	162	17.5	53	CCMT 09T3...
	BHF MB80-125X114+BHFH...	133-400	140	98	502	17.5	53	CCMT 09T3...
	TCH AL200+BHF L200/BHD 50 L200	194	202	103	302	17.5	53	CCMT 09T3...
	TCH AL300+BHF L200/BHD 50 L200	288	302	103	402	17.5	53	CCMT 09T3...
	TCH AL400+BHF L200/BHD 50 L200	394	402	110	502	17.5	53	CCMT 09T3...
	TCH AL500+BHF L200/BHD 50 L200	494	502	118	602	17.5	53	CCMT 09T3...
	TCH AL600+BHF L200/BHD 50 L200	594	602	120	702	17.5	53	CCMT 09T3...
	TCH AL700+BHF L200/BHD 50 L200	694	702	123	802	17.5	53	CCMT 09T3...
	TCH AL800+BHF L200/BHD 50 L200	794	802	129	902	17.5	53	CCMT 09T3...

• DMIM=(min bore diameter)=(DCN+BD+1)/2 • BD=Size of the boring head being used

[1] Cutting diameter minimum

[2] Cutting diameter maximum

For inserts, see pages: CCGT-AS (455) • CCGW/CCMT (CBN) (454) • CCMT (PCD) (454) • CCMT-14 (453) • CCMT-PF (452) • CCMT-WG (454) • CCMT/CCGT (453) • CCMT/CCGT-SM (452)

For holders, see pages: BHD 50 L200 (437) • BHD MB (414) • BHE MB (418) • BHEH (435) • BHF L200 (437) • BHF MB16-MB50 Dia. 2.5-108 (425) • BHFH (435)

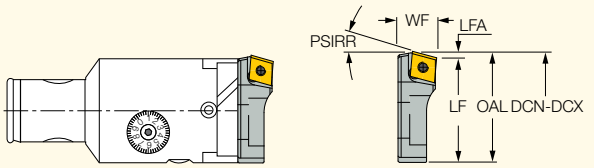
Spare Parts

Designation		
IHRF-BW	SR 16-236	T-15/5

ITSBORE

IHRF-CH

Chamfering Tools for
BHF Boring Heads



Designation	DCN[1]	DCX[2]	LF	OAL	WF	LFA	PSIRR	Insert
IHRF 16 CH20 18-23	18.00	23.00	17.80	20.00	11.00	2.20	20.0	CCGT 0602...
IHRF 16 CH30 18-23	18.00	23.00	16.80	20.00	9.00	3.20	30.0	CCGT 0602...
IHRF 16 CH45 18-23	18.00	23.00	15.54	20.10	9.50	4.60	45.0	CCGT 0602...
IHRF 16 CH60 18-23	18.00	23.00	14.50	20.00	9.50	5.60	60.0	CCGT 0602...
IHRF 20 CH15 22-29	22.00	29.00	22.30	24.00	11.00	1.70	15.0	CCGT 0602...
IHRF 20 CH20 22-29	22.00	29.00	21.70	24.00	11.00	2.20	20.0	CCGT 0602...
IHRF 20 CH30 22-29	22.00	29.00	20.80	24.00	9.00	3.20	30.0	CCGT 0602...
IHRF 20 CH60 22-29	22.00	29.00	18.40	24.00	9.50	5.60	60.0	CCGT 0602...
IHRF 25 CH15 28-38	28.00	38.00	24.00	25.70	10.40	1.70	15.0	CCGT 0602...
IHRF 25 CH30 28-38	28.00	38.00	22.60	25.60	10.40	3.20	30.0	CCGT 0602...
IHRF 25 CH45 28-38	28.00	38.00	21.40	25.90	10.40	4.40	45.0	CCGT 0602...
IHRF 32 CH15 35-53	35.00	53.00	32.00	33.70	12.60	1.70	15.0	CCGT 0602...
IHRF 32 CH30 35-53	35.00	53.00	30.50	33.70	12.10	3.20	30.0	CCGT 0602...
IHRF 32 CH45 36-50	36.00	50.00	29.20	33.70	12.10	4.60	45.0	CCGT 0602...
IHRF 32 CH60 36-50	36.00	50.00	29.30	34.80	12.00	5.60	60.0	CCGT 0602...
IHRF 40 CH60 48-63	48.00	63.00	39.10	47.50	16.50	8.40	60.0	CCGT 09T3...
IHRF 40 CH15 48-66	48.00	66.00	44.90	47.40	17.50	2.50	15.0	CCGT 09T3...
IHRF 40 CH30 48-66	48.00	66.00	38.20	42.90	14.40	4.70	30.0	CCGT 09T3...
IHRF 40 CH45 48-66	48.00	66.00	36.40	43.00	14.40	6.70	45.0	CCGT 09T3...
IHRF 50 CH15 54-800	54.00	800.00	48.10	50.60	19.00	2.50	15.0	CCGT 09T3...
IHRF 50 CH20 54-800	54.00	800.00	52.20	55.50	18.00	3.30	20.0	CCGT 09T3...
IHRF 50 CH30 54-800	54.00	800.00	49.95	50.80	19.00	4.70	30.0	CCGT 09T3...
IHRF 50 CH45 54-800	54.00	800.00	44.00	50.60	19.00	6.70	45.0	CCGT 09T3...
IHRF 50 CH60 54-800	54.00	800.00	47.10	55.50	16.50	8.40	60.0	CCGT 09T3...

[1] Cutting diameter minimum

[2] Cutting diameter maximum

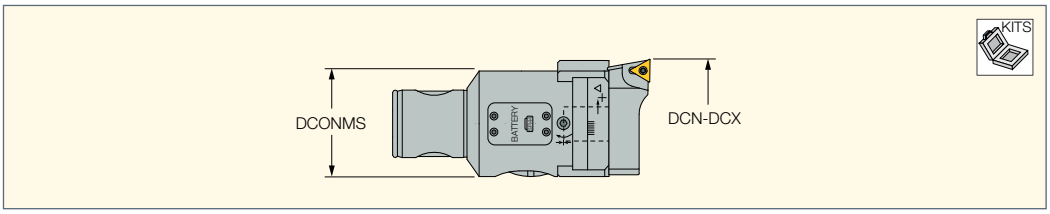
For inserts, see pages: CCGT-AS (455) • CCGW/CCMT (CBN) (454) • CCMT (PCD) (454) • CCMT-14 (453) • CCMT-PF (452) • CCMT-WG (454) • CCMT/CCGT (453) • CCMT/CCGT-SM (452)

For holders, see pages: BHD 50 L200 (437) • BHD MB (414) • BHE MB (418) • BHEH (435) • BHF L200 (437) • BHF MB16-MB50 Dia. 2.5-108 (425) • BHFH (435)

ITSBORE

KIT BHD-MB

Digital Display Fine Boring Head and Various Boring Tools and Inserts

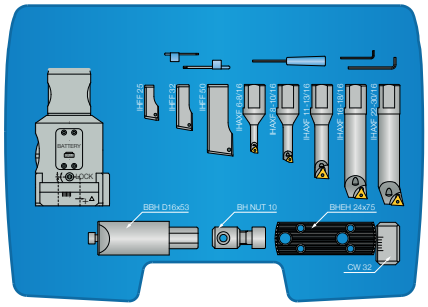


Designation	DCN(1)	DCONMS	DCX(2)
KIT BHD MB50-50 6-110	6.00	50.00	110.00
KIT BHD MB63-63 6-125	6.00	63.00	125.00
KIT BHD MB80-80 6-200	6.00	80.00	200.00

(1) Cutting diameter minimum
(2) Cutting diameter maximum

Boring Kit BHD MB50-50 metric/inch (ø6-110 mm)

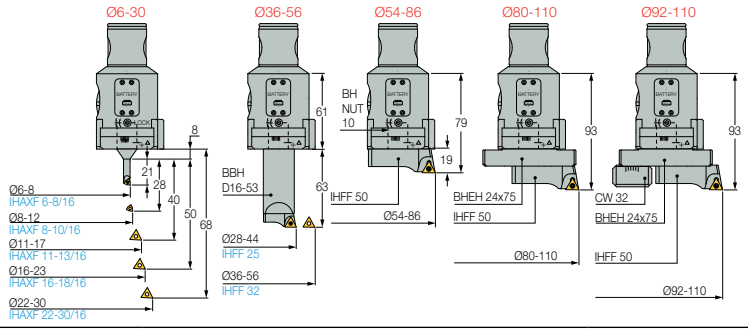
Fine Boring Head with a 2 µm Direct Diametric Adjustment Resolution and a Built-in Digital Display



2 µm

Tools	Inserts
1 BHD MB50-50x60	2 WCGT 020102L
1 IHFF 25	5 TPGX 730-L
1 IHFF 32	1 TPGX 220-L
1 IHFF 50	
1 IHAXF 6-8/16	
1 IHAXF 8-10/16	
1 IHAXF 11-13/16	
1 IHAXF 16-18/16	
1 IHAXF 22-30/16	
1 BBH D16-53	
1 BHEH 24x75	
1 BH NUT 10	
1 CW 32	

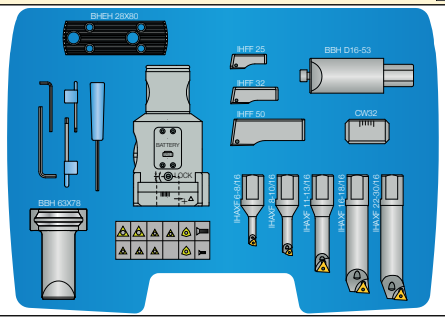
Designation	MB	Boring Range
KIT BHD MB50-50 6-110	50	6-110



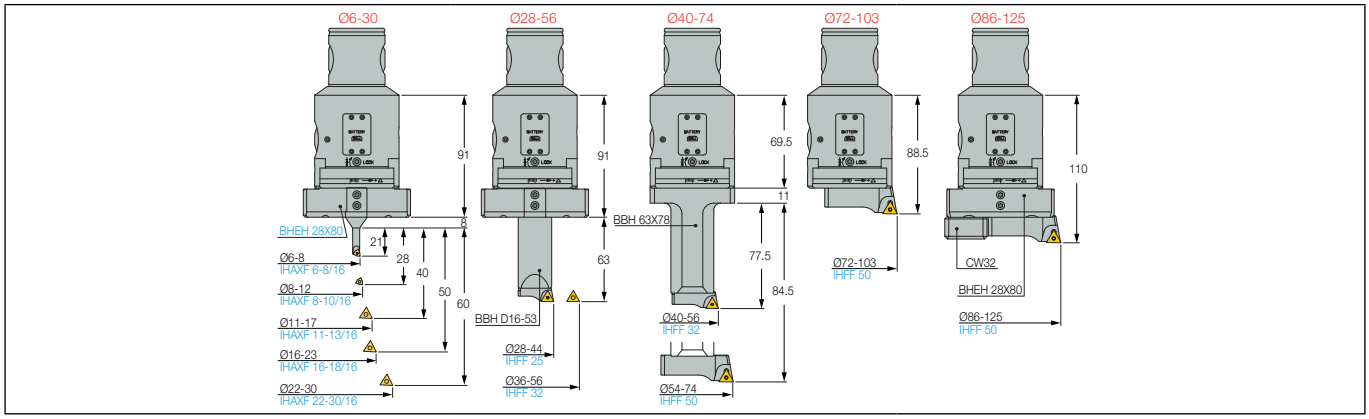
ITSBORE

Boring Kit BHD MB63-63 6-125 metric/inch (ø6-125 mm)

Fine Boring Head with a 2 µm Direct Diametric Adjustment Resolution and a Built-in Digital Display

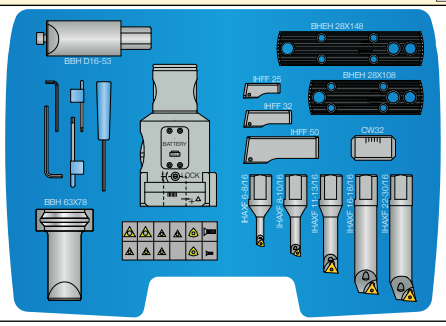
2 µm	Tools	Inserts
	1 BHD MB63-63-89	2 WCGT 020102L
	1 BBH 63X78	5 TPGX 730-L
	1 BHEH 28X80	1 TPGX 220-L
	1 BBH 16-53	
	1 CW32	
	1 IHAXF 6- 8/16	
	1 IHAXF 8-10/16	
	1 IHAXF 11-13/16	
	1 IHAXF 16-18/16	
	1 IHAXF 22-30/16	
	1 IHFF 25	
	1 IHFF 32	
	1 IHFF 50	

Designation	MB d1	Boring Range
KIT BHD MB63-63 6-125	63	2.5-125

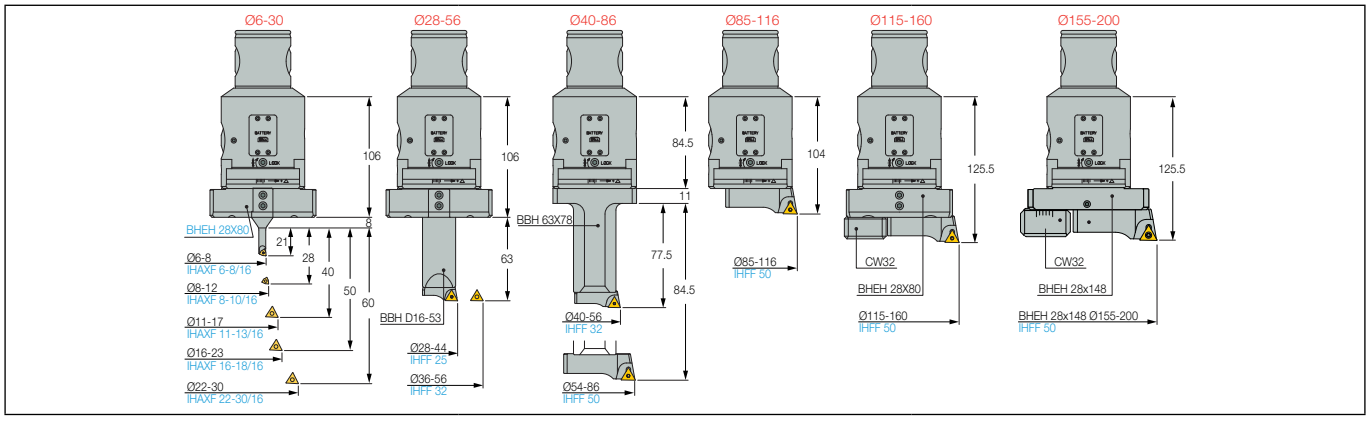


Boring KIT BHD MB80-80 6-200 metric/inch (ø6-200 mm)

Fine Boring Head with a 2 µm Direct Diametric Adjustment Resolution and a Built-in Digital Display

2 µm	Tools	Inserts
	1 BHD MB80-80-104	2 WCGT 020102L
	1 BBH D16-53	5 TPGX 730-L
	1 BBH 63X78	1 TPGX 220-L
	1 BHEH 28X108	
	1 BHEH 28X148	
	1 CW32	
	1 IHAXF 6- 8/16	
	1 IHAXF 8-10/16	
	1 IHAXF 11-13/16	
	1 IHAXF 16-18/16	
	1 IHAXF 22-30/16	
	1 IHFF 25	
	1 IHFF 32	
	1 IHFF 50	

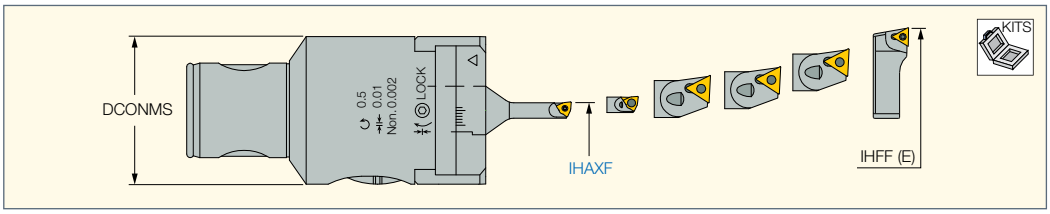
Designation	MB	Boring Range
KIT BHD MB80-80 6-200	80	6-200



ITSBORE

KIT BHE MB

Contains a Fine Boring Head and Various Boring Tools and Inserts



Designation	DCN[2]	DCX[3]	DCONMS	RPMX[4]
KIT BHE MB32-32 2.5-12 H [1]	2.50	12.00	32.00	10000
KIT BHE MB50-50 6-110	6.00	110.00	50.00	8000
KIT BHE MB50-50 6-22 H [1]	6.00	22.00	50.00	8000
KIT BHE MB63-63 6-125	6.00	125.00	63.00	6000
KIT BHE MB80-80 6-200	6.00	200.00	80.00	5000

- For kit contents and boring options, see following page.
- 0.01 mm direct diametric adjustment and 0.002 mm by a vernier scale.

[1] Balanced to G2.5/12,000 RPM
[2] Cutting diameter minimum
[3] Cutting diameter maximum
[4] Maximum RPM

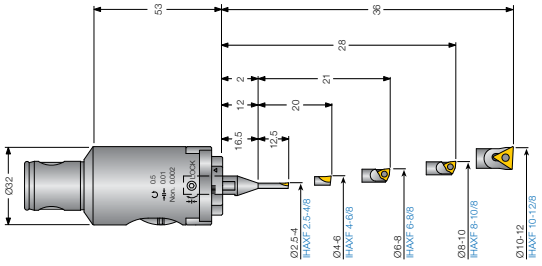
Boring KIT BHE MB32-32 2.5-12 H (ø2.5-12 mm)

Fine Boring Head 10 µm Direct Diametric Adjustment and a 2 µm by a Vernier Scale

10 µm
2 µm

Boring Tools	Inserts
1 BHE MB32-32X53 H	5 TPGX 090202L
1 IHAXF 2.5-4/8	2 WCGT 020102L
1 IHAXF 4-6/8	
1 IHAXF 6-8/8	
1 IHAXF 8-10/8	
1 IHAXF 10-12/8	

Designation	MB	Boring Range
KIT BHE MB32-32 2.5-12 H	32	2.5-12



ITSBORE

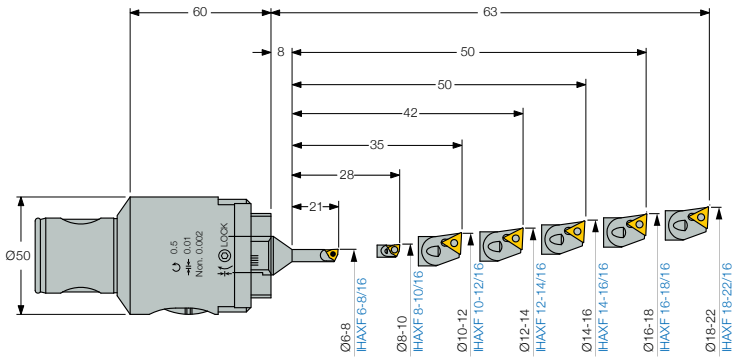
Boring KIT BHE MB50-50 6-22 H (ø6-22 mm)

Fine Boring Head 10 µm Direct Diametric Adjustment and a 2 µm by a Vernier Scale

10 µm 2 µm	Boring Tools	Inserts
	1 BHE MB50-50X60 H	5 TPGX 090202L
	1 IHAXF 6-8/16	2 WCGT 020102L
	1 IHAXF 8-10/16	
	1 IHAXF 10-12/16	
	1 IHAXF 12-14/16	
	1 IHAXF 14-16/16	
	1 IHAXF 16-18/16	
	1 IHAXF 18-22/16	

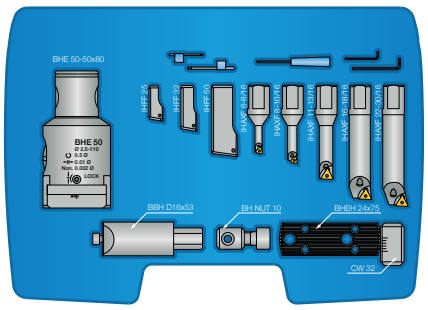
Designation	MB	Boring Range
KIT BHE MB50-50 6-22 H	50	6-22

10 µm direct diametric adjustment and 2 µm by a Vernier scale



Boring KIT BHE MB50-50 6-110 (ø6-110 mm)

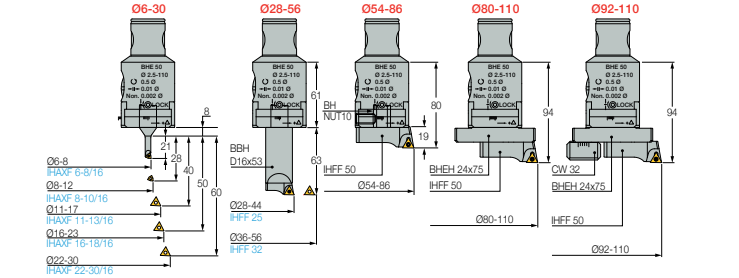
Fine Boring Head 10 µm Direct Diametric Adjustment and a 2 µm by a Vernier Scale



10 µm 2 µm	Boring Tools
	1 BHE MB50-50x80
	1 IHFF 25
	1 IHFF 32
	1 IHFF 50
	1 IHAXF 6-8/16
	1 IHAXF 8-10/16
	1 IHAXF 11-13/16
	1 IHAXF 16-18/16
	1 IHAXF 22-30/16
	1 BBH D16x53
	1 BHEH 24x75
	1 BH NUT 10
	1 CW 32

Designation	MB	Boring Range
KIT BHE MB50-50 6-110	50	6-110

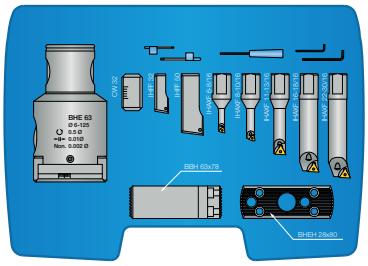
10 µm direct diametric adjustment and 2 µm by a Vernier scale



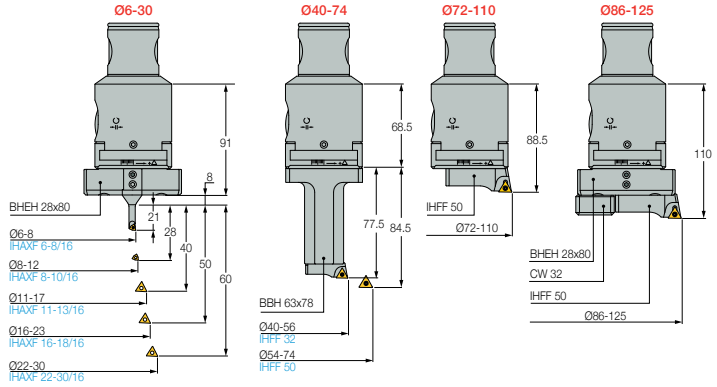
ITSBORE

Boring KIT BHD MB63-63 6-125 (ø6-125 mm)

Fine Boring Head 10 µm Direct Diametric Adjustment and a 2 µm by a Vernier Scale

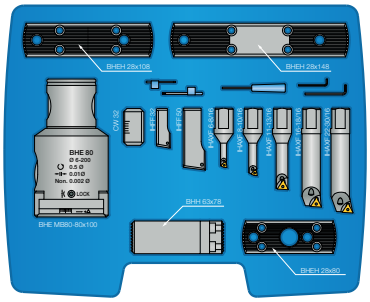
10 µm 2 µm	Boring Tools
	1 BHD MB63-63x89
	1 IHFF 32
	1 IHFF 50
	1 IHFF 6-8/16
	1 IHAXF 8-10/16
	1 IHAXF 11-13/16
	1 IHAXF 16-18/16
	1 IHAXF 22-30/16
	1 BBH 63x78
	1 BHEH 28x80
	1 BH WASHER IH..50
	1 CW 32

Designation	MB	Boring Range
KIT BHD MB63-63 6-125	63	6-125



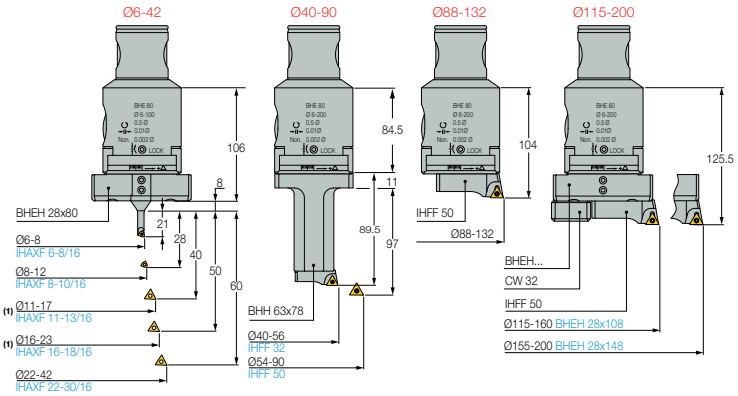
Boring KIT BHE MB80-80 6-200 (ø6-200 mm)

Fine Boring Head 10 µm Direct Diametric Adjustment and a 2 µm by a Vernier Scale

10 µm 2 µm	Boring Tools
	1 BHE MB80-80x104
	1 IHFF 32
	1 IHFF 50
	1 IHFF 6-8/16
	1 IHAXF 8-10/16
	1 IHAXF 11-13/16
	1 IHAXF 16-18/16
	1 IHAXF 22-30/16
	1 BBH 63x78
	1 BHEH 28x80
	1 BHEH 28x108
	1 BHEH 28x148
	1 BH WASHER IH..50
	1 CW 32

Designation	MB	Boring Range
KIT BHE MB80-80 6-200	80	6-200

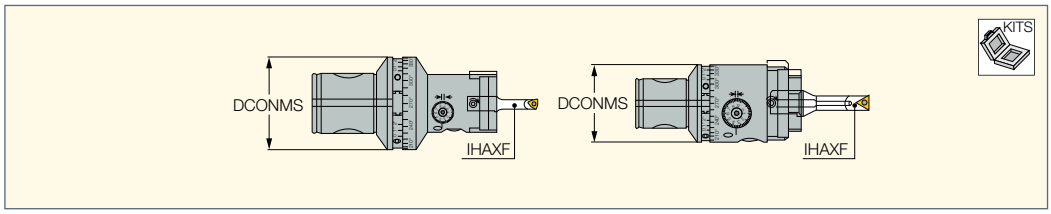
(1) The specified boring range differs from the one specified for the boring bar.
The extra range is not recommended for high rotational speeds.



ITSBORE

KIT BHF MB-BL

Contains a Balanceable Fine Boring Head and Various Boring Tools and Inserts

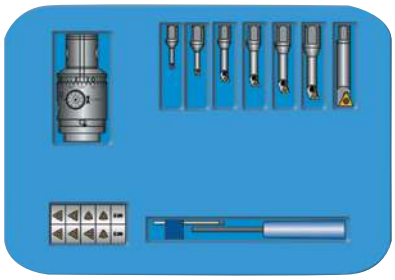


Designation	DCONMS	DCN(2)	DCX(3)	RPMX(4)
KIT BHF MB50-50 6-22 BL (1)	50.00	6.00	22.00	20000

(1) Balanced to G2.5/20,000 RPM.
(2) Cutting diameter minimum
(3) Cutting diameter maximum
(4) Maximum RPM

Boring KIT BHF MB50-50 6-22 BL (ø6-22 mm)

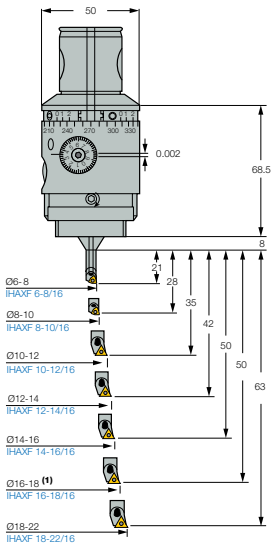
BHF BL Fine Boring Balanceable Head



2 µm	Tools	Inserts
	1 BHF MB50-50X68 BL	5 TPGX 090202L
	1 IHAXF 6-8/16	2 WCGT 020102L
	1 IHAXF 8-10/16	
	1 IHAXF 10-12/16	
	1 IHAXF 12-14/16	
	1 IHAXF 14-16/16	
	1 IHAXF 16-18/16	
	1 IHAXF 18-22/16	

Designation	MB	Boring Range
KIT BHF MB50-50 6-22 BL	50	6-22

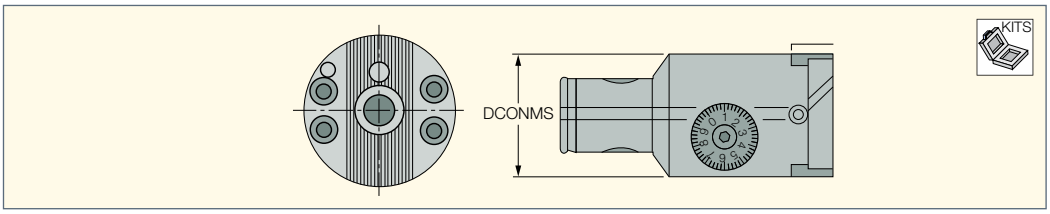
(1) On BHF BL max. balanceable dia. is 20 mm.



ITSBORE

KIT BHF-MB

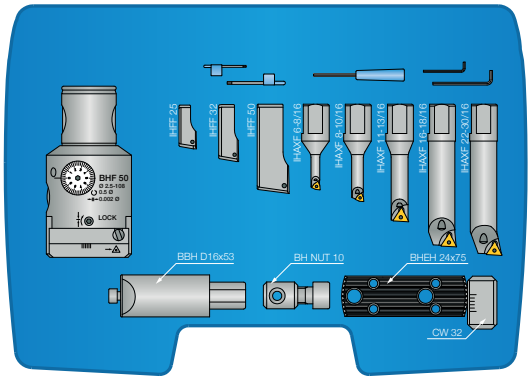
Contains a Fine Boring Head and Various Boring Tools and Inserts



Designation	DCN(1)	DCX(2)	DCONMS	RPMX(3)
KIT BHF MB50-50 6-108	6.00	108.00	50.00	8000
KIT BHF MB50-63 6-125	6.00	125.00	50.00	8000
KIT BHF MB50-80 6-220	6.00	220.00	50.00	8000
KIT BHF MB63-63 6-125	6.00	125.00	63.00	6000
KIT BHF MB80-80 6-220	6.00	220.00	80.00	5000

(1) Cutting diameter minimum
(2) Cutting diameter maximum
(3) Maximum RPM

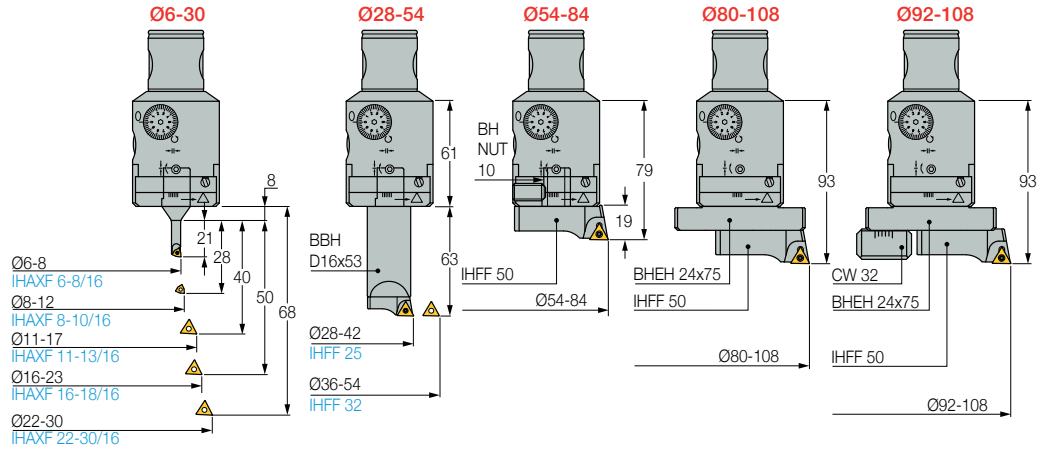
Boring KIT BHF MB50-50 6-108 (ø6-108 mm)



2 µm

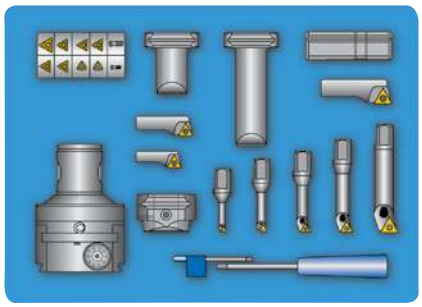
Tools	Inserts
1 BHF MB50-50x60	2 WCGT 020102L
1 IHFF 25	5 TPGX 730-L
1 IHFF 32	1 TPGX 220-L
1 IHFF 50	
1 IHAXF 6-8/16	
1 IHAXF 8-10/16	
1 IHAXF 11-13/16	
1 IHAXF 16-18/16	
1 IHAXF 22-30/16	
1 BBH D16x53	
1 BHEH 24x75	
1 BH NUT 10	
1 CW 32	

Designation	MB	Boring Range
KIT BHF MB50-50 6-108	50	6-108



ITSBORE

Boring KIT BHF MB50-63 6-125 / Boring KIT BHF MB63-63 6-125 (ø6-125 mm)

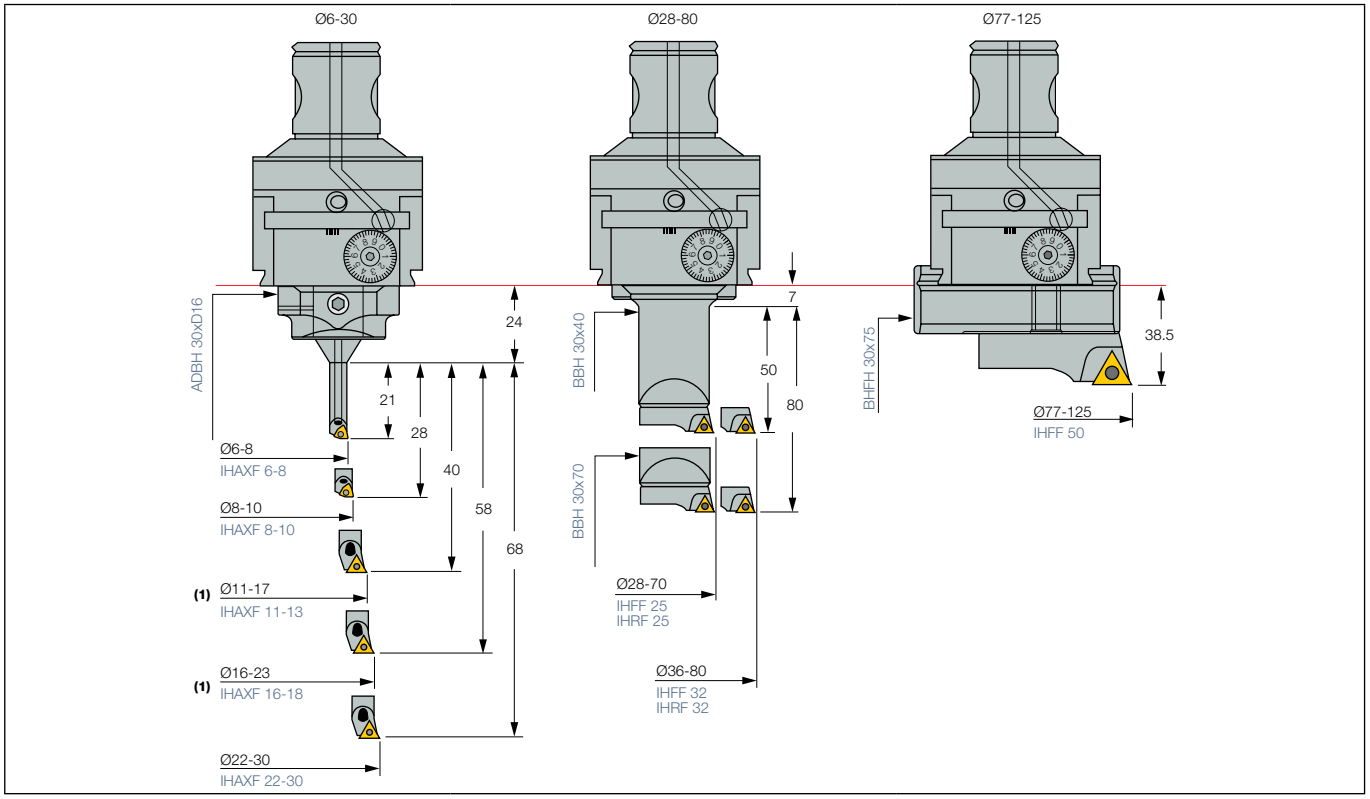


2 µm

Tools	Inserts
1 BHF MB...-63x87	5 TPGX 090202L
1 IHAXF 6-8/16	1 TPGX 110302L
1 IHAXF 8-10/16	2 WCGT 020102L
1 IHAXF 11-13/16	
1 IHAXF 16-18/16	
1 IHAXF 22-30/16	
1 ADBH 30xD16	
1 BBH 30x40	
1 BBH 30x70	
1 BHFH 30x75	
1 IHFF 25	
1 IHFF 32	
1 IHFF 50	

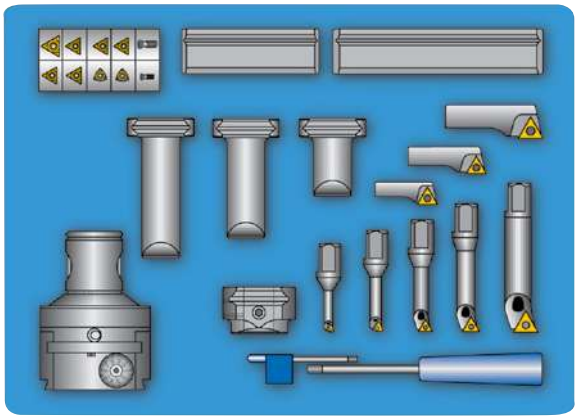
Designation	MB	Boring Range
KIT BHF MB50-63 6-125	50	6-125
KIT BHF MB63-63 6-125	63	6-125

(1) The specified boring range differs from the one specified for the boring bar. The extra range is not recommended for high rotational speeds.



ITSBORE

Boring KIT BHF MB50-80 6-220 / KIT BHF MB80-80 6-220 (ø6-220 mm)

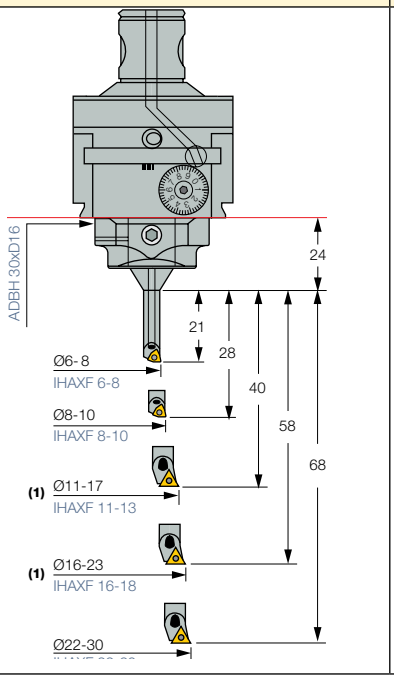


2 µm	Tools	Inserts
	1 BHF MB..-80x94	5 TPGX 090202L
	1 IHAXF 6-8/16	1 TPGX 110302L
	1 IHAXF 8-10/16	2 WCGT 020102L
	1 IHAXF 11-13/16	
	1 IHAXF 16-18/16	
	1 IHAXF 22-30/16	
	1 ADBH 30xD16	
	1 BBH 30x40	
	1 BBH 30x70	
	1 BBH 30x115	
	1 BHFH 30x93	
	1 BHFH 30x135	
	1 IHFF 25	
	1 IHFF 32	
	1 IHFF 50	

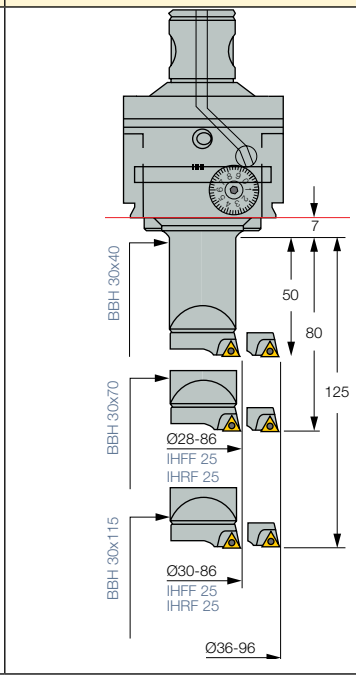
Designation	MB	Boring Range
KIT BHF MB50-80 6-220	50	6-220
KIT BHF MB80-80 6-220	80	6-220

(1) The specified boring range differs from the one specified for the boring bar. The extra range is not recommended for high rotational speeds.

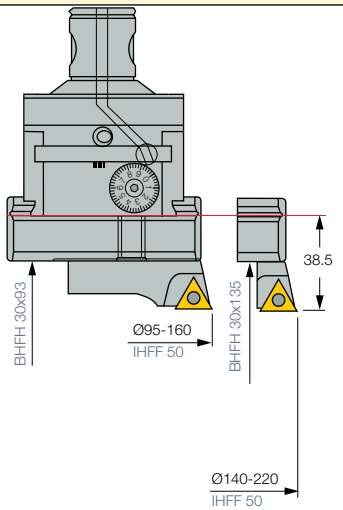
ø6-30



ø28-96



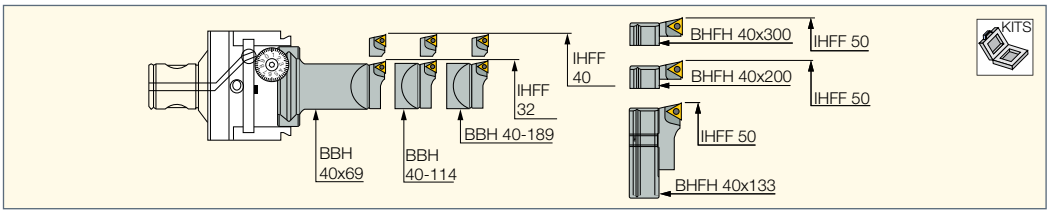
ø95-220



ITSBORE

KIT BHFH-MB

Contains Adapters, Extensions and Boring Bars for 36 to 410 mm Boring Range

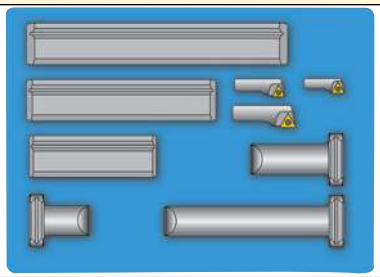


Designation	DCONMS	DCN(1)	DCX(2)
KIT BHFH MB80-125	80.00	36.00	410.00

(1) Cutting diameter minimum
(2) Cutting diameter maximum

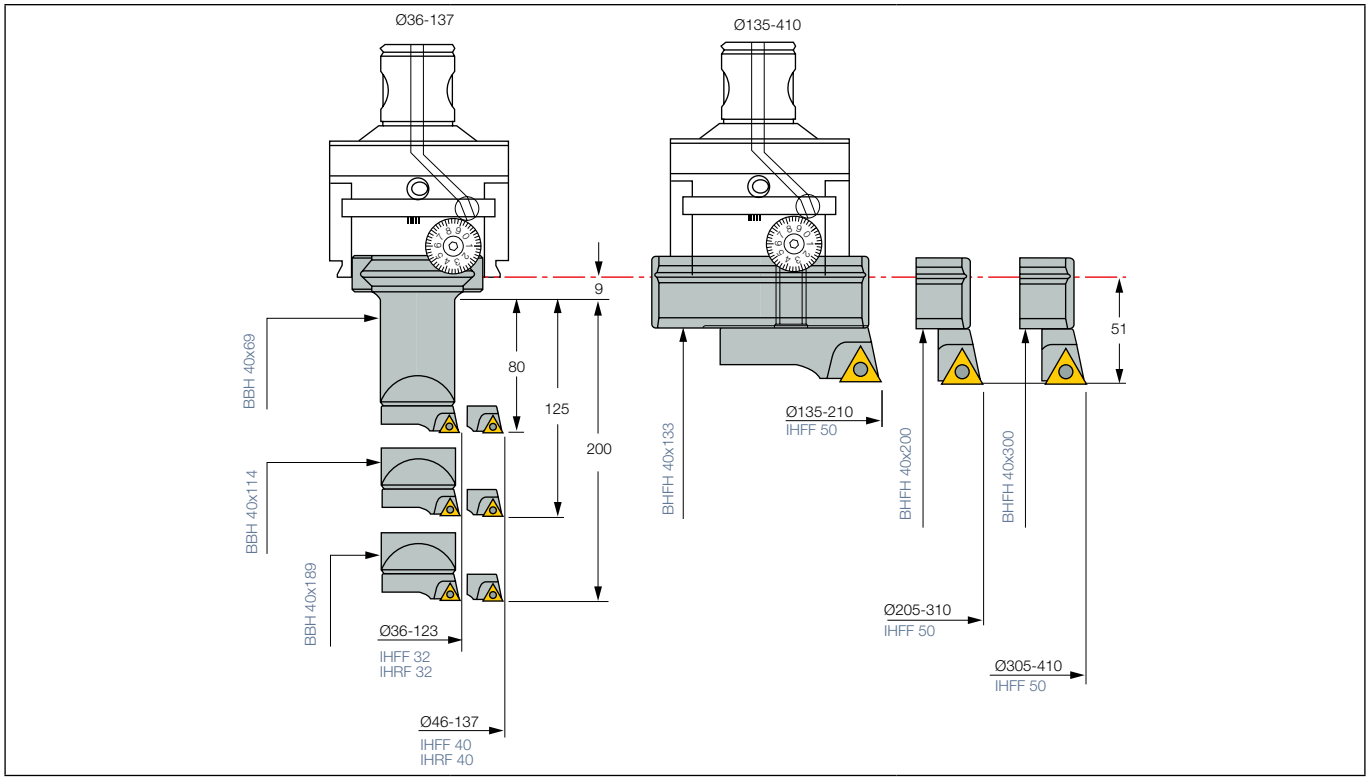
KIT BHFH MB80-125 36-410

Holder for BHF MB80-125x114 ø36-410



ACCESSORIES
1 BBH 40x69
1 BBH 40x114
1 BBH 40x189
1 BHFH 40x133
1 BHFH 40x200
1 BHFH 40x300
1 IHFF 32
1 IHFF 40
1 IHFF 50

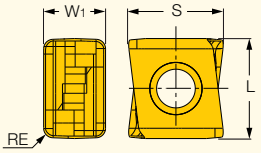
Designation	MB	Boring Range
KIT BHFH MB80-125 36-410	80	36-410

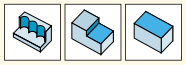


TANGPLUNGE
PLUNGING LINE

HTP LN.. 1006

Tangentially Clamped Inserts with 4 Cutting Edges for Plungers





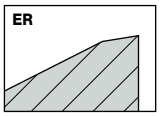
Designation	Dimensions W1	L	S	RE	Tough ↔ Hard IC330	IC830	IC808	IC810	IC07	Recommended Machining Data f_z (mm/t)
HTP LNAR 1006 FR (1)	6.50	10.50	10.13	1.00			●			0.05-0.15
HTP LNAR 1006 FR-P	6.50	10.50	10.13	1.00					●	0.05-0.15
HTP LNHT 1006 ER	6.50	10.50	9.93	1.00	●	●	●	●		0.10-0.15
HTP LNHT 1006 ETR	6.50	10.50	9.93	1.00	●	●	●			0.12-0.20
HTP LNMT 1006 ER (2)	6.50	10.50	9.96	1.00	●	●	●			0.08-0.15

- FR-P - For machining aluminum, ER- For general applications, ETR- First priority for hardened steel

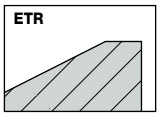
(1) FR - Sharp cutting edge for unstable conditions and for ISO S material

(2) Mounting this insert increases tool diameter by 0.1 mm

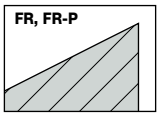
For tools, see page: CR LNHT (410)



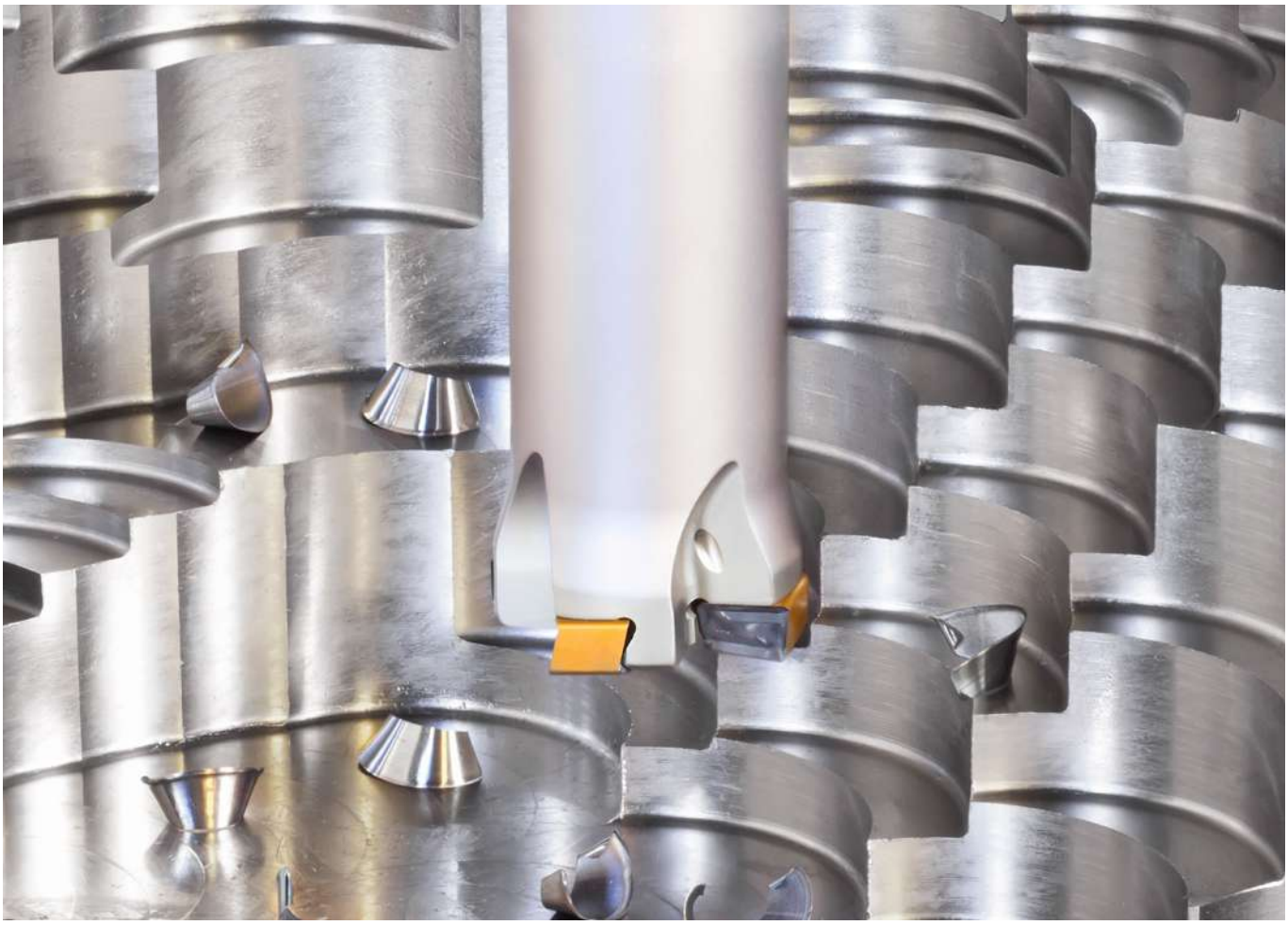
ER- For general applications



ETR- First priority for hardened steel



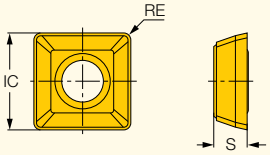
FR-P- For machining aluminum



DR-TWIST INDEXABLE DRILL LINE

SOMT-DT

Inserts for DR Drills for General Applications at Medium-to-High Feeds



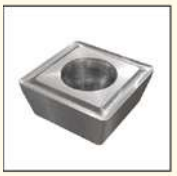
Designation	Dimensions IC	S	RE	Tough ↔ Hard IC328	IC5500	IC808	IC908	IC8080	IC9080
SOMT 09T306-DT	9.00	3.81	0.60		●	●	●	●	●

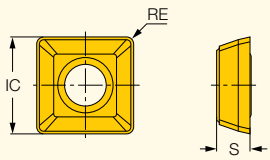
For tools, see pages: CR SOMT (411) • DR-2D-N (106) • DR-3D-N (108) • DR-4D-N (109) • DR-4D-T (112) • DR-CA (113)

DR-TWIST INDEXABLE DRILL LINE

SOMT-GF

Inserts for DR Drills for Soft Materials at Low-to-Medium Feeds





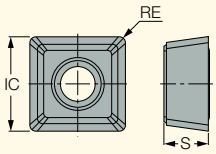
Designation	Dimensions IC	S	RE	Tough ↔ Hard IC328	IC908
SOMT 09T306-GF	9.00	3.81	0.60	●	●

For tools, see pages: CR SOMT (411) • DR-2D-N (106) • DR-3D-N (108) • DR-4D-N (109) • DR-4D-T (112) • DR-CA (113)

DR-TWIST INDEXABLE DRILL LINE

SOGX/T-AL

Inserts for DR Drills for Aluminum



Designation	Dimensions IC	S	RE	IC08
SOGT 09T306-AL	9.00	3.81	0.60	●

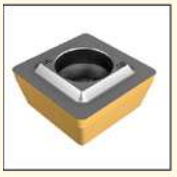
- Sharp cutting edge with polished rake for aluminum

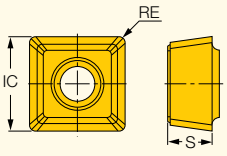
For tools, see pages: CR SOMT (411) • DR-2D-N (106) • DR-3D-N (108) • DR-4D-N (109) • DR-4D-T (112) • DR-5D-N (111)

DR-TWIST INDEXABLE DRILL LINE

SOMT-HD

Inserts for DR Drills for Carbon Steel and Soft Materials





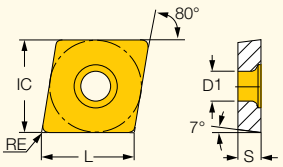
Designation	Dimensions IC	S	RE	IC808
SOMT 09T306-HD	9.00	3.81	0.60	●

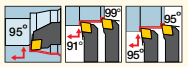
For tools, see pages: CR SOMT (411) • DR-2D-N (106) • DR-3D-N (108) • DR-4D-N (109) • DR-4D-T (112) • DR-CA (113)

ISOTURN

CCMT/CCGT-SM

Single-Sided Turning Inserts for Semi-Finish and Finishing on Soft Materials and Exotic Alloys





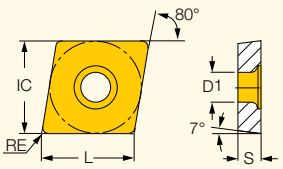
Designation	Dimensions L	IC	S	RE	D1	Tough ↔ Hard IC6025	IC8250	IC6015	IC8150	IC20	IC5010	IC428	IC5005	IC806	IC807	IC907	Recommended Machining Data a_p (mm)	f (mm/rev)
CCGT 060201-SM	6.45	6.35	2.38	0.10	2.80											●	0.25-2.00	0.05-0.20
CCGT 060202-SM	6.45	6.35	2.38	0.20	2.80											●	0.25-2.00	0.05-0.25
CCMT 060202-SM	6.45	6.35	2.38	0.20	2.80		●		●					●			0.25-2.00	0.05-0.25
CCMT 060204-SM	6.45	6.35	2.38	0.40	2.80	●	●	●	●					●	●	●	0.50-2.50	0.07-0.25
CCMT 060208-SM	6.45	6.35	2.38	0.80	2.80	●		●							●	●	0.50-2.50	0.07-0.25
CCMT 09T302-SM	9.70	9.52	3.97	0.20	4.40	●	●	●						●	●	●	0.50-2.50	0.06-0.25
CCMT 09T304-SM	9.70	9.52	3.97	0.40	4.40	●	●		●	●	●	●	●	●	●	●	0.50-2.50	0.06-0.25
CCMT 09T308-SM	9.70	9.52	3.97	0.80	4.40	●	●	●	●		●		●	●	●	●	0.50-3.00	0.07-0.25
CCMT 120404-SM	12.90	12.70	4.76	0.40	5.50		●		●					●	●	●	0.70-3.50	0.07-0.25
CCMT 120408-SM	12.90	12.70	4.76	0.80	5.50	●	●	●	●						●	●	0.70-3.50	0.07-0.30

For tools, see pages: IHCR (408) • IHRF (436) • IHRF-BW (439) • IHRF-C (413) • IHRF-CH (439) • IHSR (408) • IHSR-BW (410) • IHSR-C (413) • IHSR-CH (409)

ISOTURN

CCMT-PF

80° Rhombic Inserts with a Positive Flank for Semi-Finish and Finishing on Soft Materials and Exotic Alloys



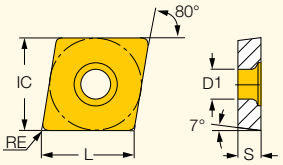
Designation	Dimensions L	IC	S	RE	D1	Tough ↔ Hard IC830	IC6025	IC6015	IC806	IC807	IC907	IC804	Recommended Machining Data a_p (mm)	f (mm/rev)
CCMT 060202-PF	6.30	6.35	2.38	0.20	2.80	●	●	●		●	●	●	0.20-2.50	0.04-0.25
CCMT 060204-PF	6.30	6.35	2.38	0.40	2.80	●	●	●	●	●	●		0.40-2.50	0.04-0.30
CCMT 09T302-PF	9.70	9.52	3.97	0.20	4.40	●			●	●	●	●	0.50-3.00	0.05-0.30
CCMT 09T304-PF	9.70	9.52	3.97	0.40	4.40	●	●	●	●	●	●	●	0.50-3.50	0.05-0.35

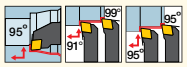
For tools, see pages: IHCR (408) • IHRF (436) • IHRF-BW (439) • IHRF-C (413) • IHRF-CH (439) • IHSR (408) • IHSR-BW (410) • IHSR-C (413) • IHSR-CH (409)

ISOTURN

CCMT-14

80° Rhombic Inserts with a 7° Positive Flank for Semi-Finishing and Finish Turning





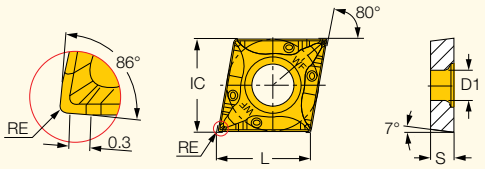
Designation	Dimensions L	IC	S	RE	D1	Tough ↔ Hard IC830	IC8250	IC20	IC428	IC5005	IC807	IC907	Recommended Machining Data a_p (mm)	f (mm/rev)
CCMT 060204-14	6.30	6.35	2.38	0.40	2.80	●		●	●	●	●	●	0.50-2.50	0.14-0.25
CCMT 09T304-14	9.70	9.52	3.97	0.40	4.40		●				●	●	0.50-3.00	0.14-0.25
CCMT 09T308-14	9.70	9.52	3.97	0.80	4.40	●	●	●	●	●			0.80-3.00	0.14-0.30
CCMT 120408-14	12.90	12.70	4.76	0.80	5.50	●		●					0.80-3.00	0.14-0.30

For tools, see pages: IHCR (408) • IHRF (436) • IHRF-BW (439) • IHRF-C (413) • IHRF-CH (439) • IHSR (408) • IHSR-BW (410) • IHSR-C (413) • IHSR-CH (409)

ISOTURN

CCET-WF

80° Rhombic Inserts with a 7° Positive Flank and a Wiper Near the Corner for High Feed Finishing



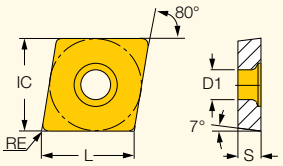
Designation	Dimensions L	IC	S	RE	D1	IC907	Recommended Machining Data a_p (mm)	f (mm/rev)
CCET 0602005-WF	6.30	6.35	2.38	0.05	2.80	●	0.05-2.00	0.01-0.20
CCET 09T3005-WF	9.50	9.52	3.97	0.05	4.40	●	0.05-2.00	0.01-0.20

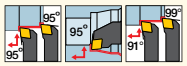
For tools, see pages: IHCR (408) • IHRF (436) • IHSR (408) • IHSR-BW (410) • IHSR-C (413) • IHSR-CH (409)

ISOTURN

CCMT/CCGT

80° Rhombic Inserts with a 7° Positive Flank for Semi-Finishing and Finish Turning





Designation	Dimensions L	IC	S	RE	D1	Tough ↔ Hard IC8250	IC30N	IC20	IC20N	IC520N	Recommended Machining Data a_p (mm)	f (mm/rev)
CCGT 060202	6.45	6.35	2.38	0.20	2.80		●				0.50-2.00	0.10-0.20
CCGT 060202L [1]	6.45	6.35	2.38	0.20	2.80		●	●			0.50-2.00	0.10-0.20
CCGT 060204	6.45	6.35	2.38	0.40	2.80		●				0.50-2.00	0.10-0.20
CCGT 060204L [1]	6.45	6.35	2.38	0.40	2.80		●				0.50-2.00	0.10-0.20
CCMT 060202	6.45	6.35	2.38	0.20	2.80	●			●		0.50-2.00	0.10-0.20
CCMT 060204	6.45	6.35	2.38	0.40	2.80		●		●	●	0.50-2.00	0.12-0.22
CCMT 09T302	9.70	9.52	3.97	0.20	4.40				●	●	0.50-2.50	0.12-0.25
CCMT 09T304	9.70	9.52	3.97	0.40	4.40				●	●	0.50-2.50	0.12-0.25
CCMT 09T308	9.70	9.52	3.97	0.80	4.40				●	●	0.80-3.00	0.14-0.25

• Use left-hand inserts for left-hand external tools and for right-hand internal tools

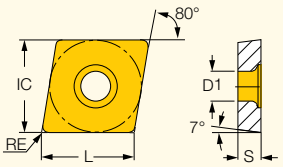
[1] Left-hand insert

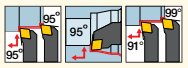
For tools, see pages: IHCR (408) • IHRF (436) • IHRF-BW (439) • IHRF-C (413) • IHRF-CH (439) • IHSR (408) • IHSR-BW (410) • IHSR-C (413) • IHSR-CH (409)

ISOTURN

CCMT-WG

80° Rhombic Inserts with a 7° Positive Flank and a Wiper Near the Corner for High Feed Finishing





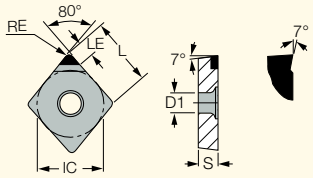
Designation	Dimensions L	IC	S	RE	D1	Tough ↔ Hard IC8250	IC807	IC907	Recommended Machining Data a_p (mm)	f (mm/rev)
CCMT 060204-WG	6.30	6.35	2.38	0.40	2.80		●	●	0.40-2.00	0.10-0.35
CCMT 09T304-WG	9.70	9.52	3.97	0.40	4.40	●			0.40-2.00	0.14-0.30
CCMT 09T308-WG	9.70	9.52	3.97	0.80	4.40	●			0.50-2.50	0.20-0.38
CCMT 120408-WG	12.90	12.70	4.76	0.80	5.50	●			0.50-3.00	0.20-0.36

For tools, see pages: • IHCR (408) • IHRF (436) • IHRF-BW (439) • IHRF-C (413) • IHRF-CH (439) • IHSR (408) • IHSR-BW (410) • IHSR-C (413) • IHSR-CH (409)

ISOTURN

CCMT (PCD)

Inserts with a Single PCD Top Corner Tip, 7° Clearance and Positive Rake Angle for Finishing Aluminum



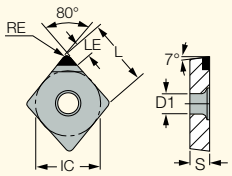
Designation	Dimensions L	IC	S	RE	LE	D1	ID5	Recommended Machining Data a_p (mm)	f (mm/rev)
CCMT 060202D	6.30	6.35	2.38	0.20	3.1	2.80	●	0.08-3.00	0.05-0.30
CCMT 060204D	6.30	6.35	2.38	0.40	3.0	2.80	●	0.10-3.00	0.05-0.30
CCMT 09T304D	9.70	9.52	3.97	0.40	3.9	4.40	●	0.10-3.00	0.05-0.30

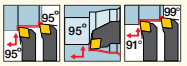
For tools, see pages: IHCR (408) • IHRF (436) • IHRF-BW (439) • IHRF-C (413) • IHRF-CH (439) • IHSR (408) • IHSR-BW (410) • IHSR-C (413)

ISOTURN

CCGW/CCMT (CBN)

80° Rhombic Inserts with a Single CBN Top Corner Tip and 7° Clearance for Machining Hardened Steel





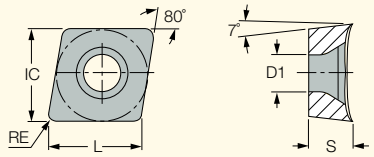
Designation	Dimensions L	IC	S	RE	LE	D1	Tough ↔ Hard IB05H	IB55	IB10H	Recommended Machining Data a_p (mm)	f (mm/rev)
CCGW 03X102T01015-1	3.63	3.57	1.39	0.20	2.0	1.90	●		●	0.05-0.50	0.05-0.20
CCGW 03X104T01015-1	3.63	3.57	1.39	0.40	2.3	1.90	●		●	0.05-0.50	0.05-0.20
CCGW 04T102T01015-1	4.44	4.37	1.79	0.20	2.0	2.30	●		●	0.05-0.50	0.05-0.20
CCGW 04T104T01015-1	4.44	4.37	1.79	0.40	2.3	2.30	●		●	0.05-0.50	0.05-0.20
CCMT 060202T	6.30	6.35	2.38	0.20	2.6	2.80		●		0.05-0.50	0.05-0.20
CCMT 060204T	6.30	6.35	2.38	0.40	2.7	2.80		●		0.05-0.50	0.05-0.20
CCMT 09T304T	9.70	9.52	3.97	0.40	2.9	4.40		●		0.05-0.50	0.05-0.20
CCMT 09T308T	9.70	9.52	3.97	0.80	3.6	4.40		●		0.05-0.50	0.05-0.20

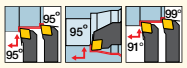
For tools, see pages: IHCR (408) • IHRF (436) • IHRF-BW (439) • IHRF-C (413) • IHRF-CH (439) • IHSR (408) • IHSR-BW (410) • IHSR-C (413)

ISOTURN

CCGT-AS

80° Rhombic Inserts with a 7° Positive Flank, Very Positive Rake Angle and Sharp Cutting Edge for Machining Aluminum





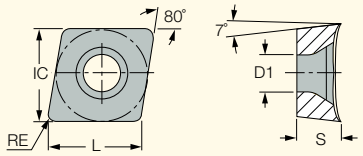
Designation	Dimensions L	IC	S	RE	D1	IC20	Recommended Machining Data a_p (mm)	f (mm/rev)
CCGT 060201-AS	6.40	6.35	2.38	0.10	2.80	●	0.50-2.00	0.10-0.20
CCGT 060202-AS	6.40	6.35	2.38	0.20	2.80	●	0.50-2.00	0.10-0.20
CCGT 060204-AS	6.40	6.35	2.38	0.40	2.80	●	0.50-2.00	0.10-0.25
CCGT 09T301-AS	9.70	9.52	3.97	0.10	4.40	●	0.50-2.50	0.10-0.25
CCGT 09T302-AS	9.70	9.52	3.97	0.20	4.40	●	0.50-2.50	0.10-0.25
CCGT 09T304-AS	9.70	9.52	3.97	0.40	4.40	●	0.50-2.50	0.10-0.25
CCGT 09T308-AS	9.70	9.52	3.97	0.80	4.40	●	0.80-3.00	0.10-0.30
CCGT 120402-AS	12.90	12.70	4.76	0.20	5.50	●	0.50-2.50	0.10-0.25
CCGT 120404-AS	12.90	12.70	4.76	0.40	5.50	●	0.50-2.50	0.10-0.25
CCGT 120408-AS	12.90	12.70	4.76	0.80	5.50	●	1.00-3.50	0.10-0.30

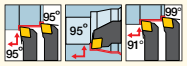
For tools, see pages: IHCR (408) • IHRF (436) • IHRF-BW (439) • IHRF-C (413) • IHRF-CH (439) • IHSR (408) • IHSR-BW (410) • IHSR-C (413) • IHSR-CH (409)

ISOTURN

CCGT-AF

80° Rhombic Inserts with a 7° Positive Flank, Very Positive Rake Angle and Sharp Cutting Edge for Machining Aluminum





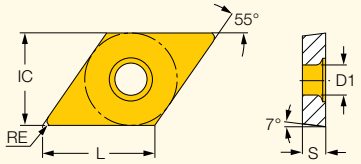
Designation	Dimensions L	IC	S	RE	D1	IC20	Recommended Machining Data a_p (mm)	f (mm/rev)
CCGT 09T308-AF	9.70	9.52	3.97	0.80	4.40	●	0.80-3.00	0.15-0.25
CCGT 120408-AF	12.90	12.70	4.76	0.80	5.50	●	1.00-3.50	0.15-0.30

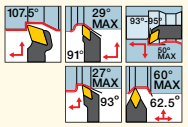
For tools, see pages: IHCR (408) • IHRF (436) • IHSR (408) • IHSR-BW (410) • IHSR-C (413) • IHSR-CH (409)

ISOTURN

DCMT-14

55° Rhombic Inserts with a Positive Flank for Semi-Finishing and Finish Turning on Soft Materials and Exotic Alloys



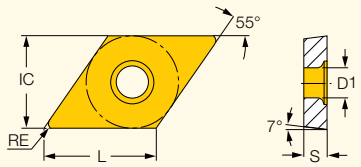


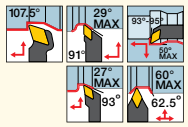
Designation	Dimensions L	IC	S	RE	D1	Tough ↔ Hard IC830	IC8150	IC20	IC428	IC5005	Recommended Machining Data a_p (mm)	f (mm/rev)
DCMT 11T304-14	11.60	9.52	3.97	0.40	4.40	•	•	•			1.00-2.50	0.14-0.25
DCMT 11T308-14	11.60	9.52	3.97	0.80	4.40		•	•	•	•	1.50-3.00	0.14-0.29

ISOTURN

DCMT/DCGT

55° Rhombic Inserts with a 7° Positive Clearance for Finishing Applications





Designation	Dimensions L	IC	S	RE	D1	Tough ↔ Hard IC830	IC8250	IC908	IC30N	IC530N	IC8150	IC20N	IC520N	Recommended Machining Data a_p (mm)	f (mm/rev)
DCGT 070201R (1)	7.70	6.35	2.38	0.10	2.80			•						0.25-1.50	0.05-0.15
DCGT 070202	7.70	6.35	2.38	0.20	2.80				•					0.50-2.00	0.08-0.20
DCGT 070204	7.70	6.35	2.38	0.40	2.80				•					0.80-2.50	0.10-0.25
DCMT 070202	7.70	6.35	2.38	0.20	2.80	•	•				•	•	•	0.50-2.00	0.08-0.20
DCMT 070204	7.70	6.35	2.38	0.40	2.80	•	•		•		•	•	•	0.50-2.00	0.08-0.22
DCGT 11T302	11.60	9.52	3.97	0.20	4.40				•					0.50-2.00	0.08-0.20
DCGT 11T304	11.60	9.52	3.97	0.40	4.40				•			•		1.00-2.50	0.12-0.25
DCMT 11T302	11.60	9.52	3.97	0.20	4.40				•	•		•	•	0.50-2.00	0.08-0.20
DCMT 11T304	11.60	9.52	3.97	0.40	4.40				•			•	•	0.50-2.00	0.12-0.25
DCMT 11T308	11.60	9.52	3.97	0.80	4.40	•						•	•	1.50-3.00	0.14-0.29

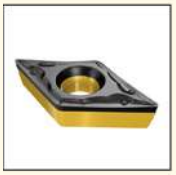
• Right-hand inserts for right-hand external tools and for left-hand internal tools • For user guide and cutting speed recommendations, see pages ..

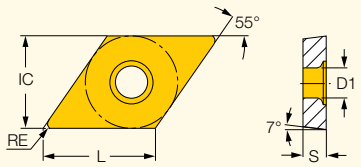
(1) Right-hand insert

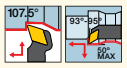
ISOTURN

DCMT/DCGT-PF

55° Rhombic Inserts with a Positive Flank for Semi-Finish and Finishing on Soft Materials and Exotic Alloys





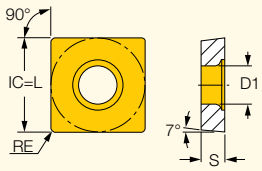


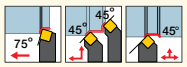
Designation	Dimensions L	IC	S	RE	D1	Tough ↔ Hard IC830	IC6025	IC8250	IC908	IC6015	IC806	IC807	IC907	IC804	Recommended Machining Data a_p (mm)	f (mm/rev)
DCGT 070201-PF	7.70	6.35	2.38	0.10	2.80				•						0.30-3.00	0.02-0.25
DCGT 070202-PF	7.70	6.35	2.38	0.20	2.80				•						0.40-3.00	0.03-0.25
DCGT 070204-PF	7.70	6.35	2.38	0.40	2.80				•						0.50-3.00	0.05-0.25
DCMT 070201-PF	7.70	6.35	2.38	0.10	2.80							•	•		0.30-3.00	0.02-0.25
DCMT 070202-PF	7.70	6.35	2.38	0.20	2.80	•									0.40-3.00	0.03-0.25
DCMT 070204-PF	7.70	6.35	2.38	0.40	2.80	•									0.50-3.00	0.05-0.25
DCMT 070208-PF	7.70	6.35	2.38	0.80	2.80							•	•		0.70-3.00	0.08-0.25
DCGT 11T301-PF	11.60	9.52	3.97	0.10	4.40				•						0.30-3.00	0.03-0.25
DCGT 11T302-PF	11.60	9.52	3.97	0.20	4.40				•						0.40-3.00	0.04-0.25
DCGT 11T304-PF	11.60	9.52	3.97	0.40	4.40				•						0.50-3.00	0.05-0.25
DCGT 11T308-PF	11.60	9.52	3.97	0.80	4.40				•						0.70-3.00	0.10-0.25
DCMT 11T302-PF	11.60	9.52	3.97	0.20	4.40	•					•	•	•	•	0.30-3.00	0.04-0.25
DCMT 11T304-PF	11.60	9.52	3.97	0.40	4.40	•	•	•		•	•	•	•	•	0.50-3.00	0.05-0.25
DCMT 11T308-PF	11.60	9.52	3.97	0.80	4.40	•	•	•		•	•	•	•	•	0.70-3.00	0.10-0.25

ISOTURN

SCMT-SM

Square Inserts with a 7° Positive Flank for Semi-Finishing and Finish Turning on Soft Materials and Exotic Alloys





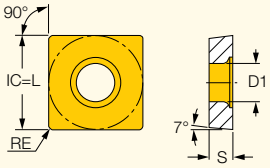
Designation	Dimensions L	S	RE	D1	Tough ↔ Hard IC830	IC6025	IC8250	IC8150	IC5005	IC807	IC907	Recommended Machining Data a_p (mm)	f (mm/rev)
SCMT 09T304-SM	9.52	3.97	0.40	4.40			●	●		●	●	0.50-3.00	0.07-0.25
SCMT 09T308-SM	9.52	3.97	0.80	4.40	●	●	●	●	●	●	●	0.50-3.00	0.10-0.30
SCMT 120404-SM	12.70	4.76	0.40	5.50				●				0.50-3.50	0.10-0.25
SCMT 120408-SM	12.70	4.76	0.80	5.50			●	●		●	●	1.00-4.00	0.10-0.30

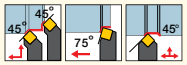
For tools, see page: IHPR (408)

ISOTURN

SCMT-14

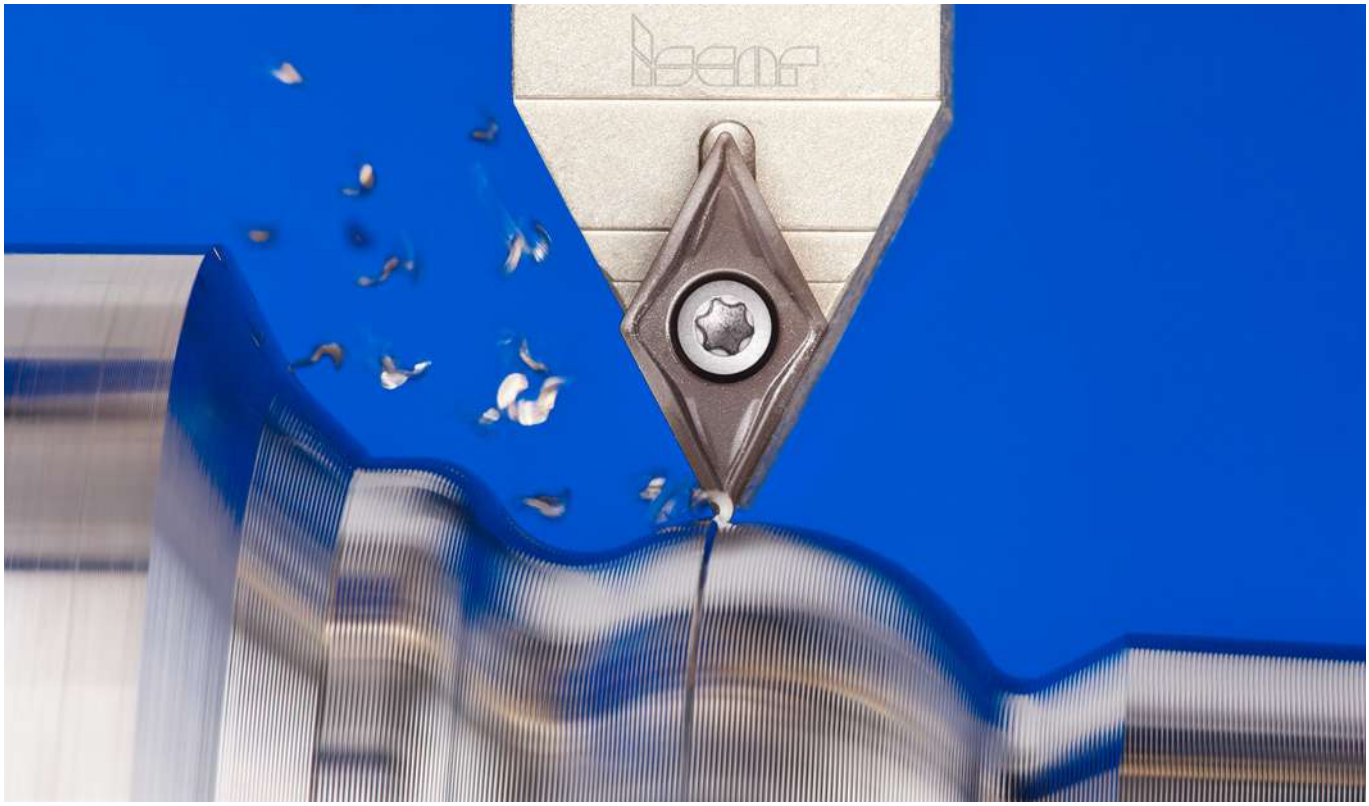
Square Inserts with a 7° Positive Flank for Semi-Finishing and Finish Turning on Soft Materials and Exotic Alloys





Designation	Dimensions L	S	RE	D1	Tough ↔ Hard IC8250	IC807	IC907	Recommended Machining Data a_p (mm)	f (mm/rev)
SCMT 09T304-14	9.52	3.97	0.40	4.40		●	●	1.00-3.50	0.12-0.30
SCMT 120404-14	12.70	4.76	0.40	5.50	●			1.00-4.00	0.12-0.30

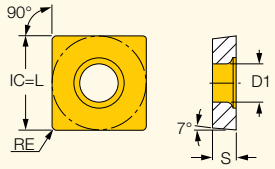
For tools, see page: IHPR (408)

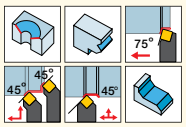


ISOTURN

SCMT-19

Square Inserts with a 7° Positive Flank for Semi-Roughing at Medium to High Feeds





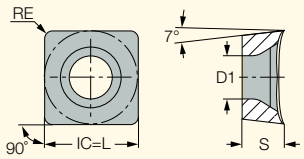
Designation	Dimensions L	S	RE	D1	Tough ↔ Hard IC830	IC20	IC5005	IC807	IC907	Recommended Machining Data a_p (mm)	f_z (mm/rev)
SCMT 120408-19	12.70	4.76	0.80	5.50	●	●	●	●	●	3.00-8.00	0.08-0.15
SCMT 120412-19	12.70	4.76	1.20	5.50		●				3.00-8.00	0.08-0.15

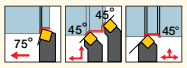
For tools, see page: IHPR (408)

ISOTURN

SCGT-AS

Square Inserts with a 7° Positive Flank, Very Positive Rake Angle and Sharp Cutting Edge for Machining Aluminum





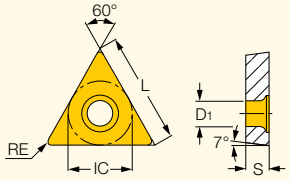
Designation	Dimensions L	IC	S	RE	D1	IC20	Recommended Machining Data a_p (mm)	f (mm/rev)
SCGT 09T308-AS	9.52	9.52	3.97	0.80	4.40	●	0.50-3.00	0.10-0.30
SCGT 120404-AS	12.70	12.70	4.76	0.40	5.50	●	1.00-4.00	0.10-0.30
SCGT 120408-AS	12.70	12.70	4.76	0.80	5.50	●	1.00-4.00	0.10-0.30

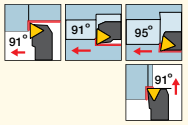
For tools, see page: IHPR (408)

ISOTURN

TCMT-19

Triangular Inserts with a 7° Positive Flat Rake for Semi-Roughing Applications at Medium to High Feeds





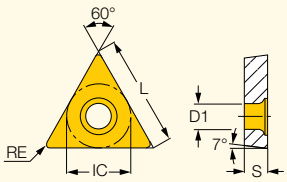
Designation	Dimensions L	IC	S	RE	D1	Tough ↔ Hard IC830	IC50M	IC8150	IC20	Recommended Machining Data a_p (mm)	f (mm/rev)
TCMT 110204-19	11.00	6.35	2.38	0.40	2.80		●	●	●	0.50-3.00	0.10-0.30
TCMT 16T308-19	16.50	9.52	3.97	0.80	4.40	●	●		●	1.00-4.00	0.20-0.35
TCMT 220508-19	22.00	12.70	5.00	0.80	5.50		●			1.00-4.00	0.20-0.35

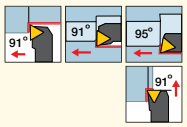
For tools, see page: IHBR (409)

ISOTURN

TCMT-SM

Triangular Inserts with a 7° Positive Flank for Semi-Finishing and Finish Turning on Soft Materials and Exotic Alloys





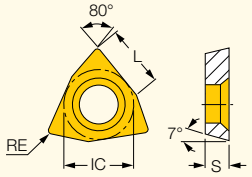
Designation	Dimensions L	IC	S	RE	D1	Tough ↔ Hard IC830	IC8350	IC8250	IC908	IC8150	IC5010	IC428	IC5005	IC807	IC907	Recommended Machining Data a_p (mm)	f (mm/rev)
TCMT 110204-SM	11.00	6.35	2.38	0.40	2.80		●	●	●	●	●		●	●	●	0.20-3.00	0.05-0.25
TCMT 110208-SM	11.00	6.35	2.38	0.80	2.80			●						●	●	0.50-2.50	0.07-0.25
TCMT 16T304-SM	16.50	9.52	3.97	0.40	4.40	●		●		●		●	●	●	●	0.50-3.00	0.06-0.25
TCMT 16T308-SM	16.50	9.52	3.97	0.80	4.40	●		●		●			●	●	●	0.50-3.00	0.08-0.28
TCMT 16T308-SM*	16.50	9.52	3.97	0.80	4.40		●									0.50-3.00	0.08-0.28

For tools, see page: IHBR (409)

ISOTURN

WCGT

Trigon Inserts with a 7° Positive Flank and Chipformer for Finish Turning



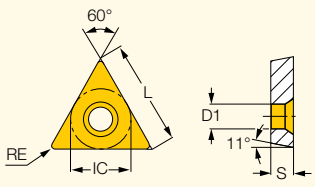
Designation	Dimensions L	IC	S	RE	Tough ↔ Hard IC908	IC30N	Recommended Machining Data a_p (mm)	f (mm/rev)
WCGT 020102L	2.18	3.97	1.59	0.20	●	●	0.40-2.00	0.05-0.10
WCGT 020104L	2.18	3.97	1.59	0.40	●	●	0.40-2.00	0.10-0.15

For tools, see pages: IHAXF (432) • IHAXF-AVI (434) • IHAXF-E (434) • IHWF (436)

ISOTURN

TPGX

Triangular Inserts with an 11° Positive Flank and Ground Chipformer for Finish Turning



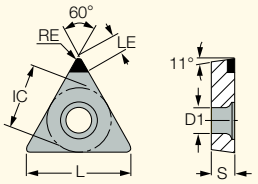
Designation	Dimensions L	IC	S	RE	D1	Tough ↔ Hard IC908	IC20	IC20N	IC520N	Recommended Machining Data a_p (mm)	f (mm/rev)
TPGX 090202-L	9.52	5.56	2.38	0.20	3.00	●	●	●	●	1.00-2.00	0.10-0.20
TPGX 090204-L	9.52	5.56	2.38	0.40	3.00	●	●	●	●	1.00-2.50	0.15-0.20
TPGX 110302-L	11.00	6.35	3.18	0.20	3.50	●	●	●	●	1.00-2.50	0.10-0.20
TPGX 110304-L	11.00	6.35	3.18	0.40	3.50	●	●	●	●	1.00-3.00	0.15-0.20
TPGX 110308-L	11.00	6.35	3.18	0.80	3.50		●			1.00-3.50	0.15-0.25

For tools, see pages: IHAXF (432) • IHAXF-AVI (434) • IHAXF-E (434) • IHFF (436) • IHFF-C (413)

ISOTURN

TPGX (CBN)

Triangular Inserts with CBN Single Top Corner Brazed Tip, 11° Clearance for Machining Cast Iron and Hardened Steel



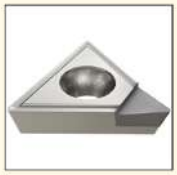
Designation	Dimensions L	IC	S	RE	LE	D1	Tough ↔ Hard IB90	IB50	Recommended Machining Data a_p (mm)	f (mm/rev)
TPGX 090202T	9.52	5.56	2.38	0.20	2.5	2.50	●	●	0.05-0.50	0.03-0.20
TPGX 090204T	9.52	5.56	2.38	0.40	2.6	2.50	●	●	0.05-0.50	0.03-0.20
TPGX 110302T	11.00	6.35	3.18	0.20	3.3	3.50	●	●	0.05-0.50	0.03-0.20
TPGX 110304T	11.00	6.35	3.18	0.40	3.0	3.50	●	●	0.05-0.50	0.03-0.20

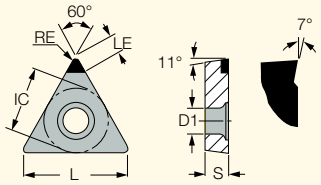
For tools, see pages: IHAXF (432) • IHAXF-AVI (434) • IHAXF-E (434) • IHFF (436) • IHFF-C (413)

ISOTURN

TPGX (PCD)

Triangular Inserts with PCD Single Top Corner Brazed Tip, 11° Clearance and Positive Rake Angle for Finishing Aluminum





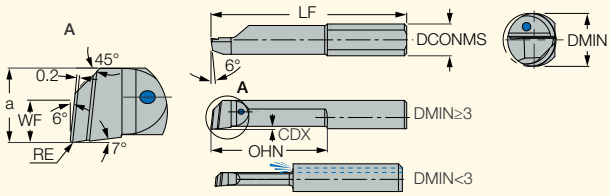
Designation	Dimensions L	IC	S	RE	LE	D1	ID5	Recommended Machining Data a_p (mm)	f (mm/rev)
TPGX 090202	9.52	5.56	2.38	0.20	3.0	2.50	●	0.10-3.00	0.05-0.30
TPGX 090204	9.52	5.56	2.38	0.40	3.0	2.50	●	0.10-3.00	0.05-0.30
TPGX 110302	11.00	6.35	3.18	0.20	3.4	3.50	●	0.10-3.00	0.05-0.30
TPGX 110304	11.00	6.35	3.18	0.40	3.8	3.50	●	0.10-3.00	0.05-0.30

For tools, see page: AIHAXF (432)

PICCOCUT

PICCO R/LX050

Reinforced Boring Inserts with Internal Coolant Holes



Designation	Dimensions DCONMS	WF	a	RE	LF	OHN(1)	CDX(2)	DMIN	IC908
PICCO R/LX050.2-5R15	4.00	-	1.80	0.15	19.00	5.0	0.10	2.00	●
PICCO R/LX050.2-10R05	4.00	-	1.80	0.05	24.00	10.0	0.10	2.00	●
PICCO R/LX050.2-10R15	4.00	-	1.80	0.15	24.00	10.0	0.10	2.00	●
PICCO R/LX050.3-16R10	4.00	0.70	2.70	0.10	30.00	16.0	0.15	3.00	●
PICCO R/LX050.3-16R20	4.00	0.70	2.70	0.20	30.00	16.0	0.15	3.00	●
PICCO R/LX050.4-10R10	4.00	1.60	3.60	0.10	24.00	10.0	0.20	4.00	●
PICCO R/LX050.4-10R20	4.00	1.60	3.60	0.20	24.00	10.0	0.20	4.00	●
PICCO R/LX050.4-16R10	4.00	1.60	3.60	0.10	30.00	16.0	0.20	4.00	●
PICCO R/LX050.4-16R20	4.00	1.60	3.60	0.20	30.00	16.0	0.20	4.00	●
PICCO R/LX050.5-15R10	5.00	2.10	4.60	0.10	30.00	15.0	0.30	5.00	●
PICCO R/LX050.5-15R20	5.00	2.10	4.60	0.20	30.00	15.0	0.30	5.00	●
PICCO R/LX050.5-25R10	5.00	2.10	4.60	0.10	40.00	25.0	0.30	5.00	●
PICCO R/LX050.5-25R20	5.00	2.10	4.60	0.20	40.00	25.0	0.30	5.00	●
PICCO R/LX050.6-15R10	6.00	2.50	5.50	0.10	30.00	15.0	0.40	6.00	●
PICCO R/LX050.6-15R20	6.00	2.50	5.50	0.20	30.00	15.0	0.40	6.00	●
PICCO R/LX050.6-22R20	6.00	2.50	5.50	0.20	37.00	22.0	0.40	6.00	●
PICCO R/LX050.6-35R20	6.00	2.50	5.50	0.20	50.00	35.0	0.40	6.00	●

• Left-hand inserts on request

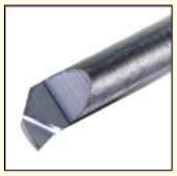
(1) Minimum overhang

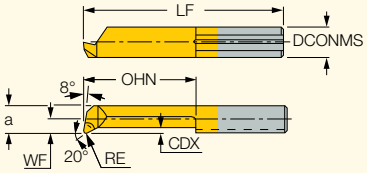
(2) Cutting depth maximum

PICCOCUT

PICCO R/L 050, 053, 055

Inserts for Internal Turning and Chamfering





Right-hand shown

Designation	Dimensions								Tough ↔ Hard	
	DCONMS	WF	a	LF	OHN(2)	RE	CDX(3)	DMIN	IC228	IC908
PICCO R 050.06-2 (1)	4.00	-	0.50	20.00	2.0	0.04	0.08	0.60	•	•
PICCO R 050.06-3 (1)	4.00	-	0.50	20.00	3.0	0.04	0.08	0.60	•	•
PICCO R 050.08-4	4.00	-	0.70	20.00	4.0	0.04	0.08	0.80		•
PICCO R/L 050.1-5	4.00	-	0.90	20.00	4.5	0.05	0.10	1.00	•	•
PICCO R/L 050.1-7	4.00	-	0.90	22.00	6.5	0.05	0.10	1.00	•	•
PICCO R 050.15-5	4.00	-	1.30	19.00	5.0	0.05	0.10	1.50		•
PICCO R 050.15-10	4.00	-	1.30	24.00	10.0	0.06	0.10	1.50		•
PICCO R/L 050.2-5	4.00	-	1.70	19.00	4.0	0.05	0.10	2.00	•	•
PICCO R 055.2-5	4.00	-	1.70	19.00	5.0	0.05	0.10	2.00		•
PICCO R/L 050.2-10	4.00	-	1.70	24.00	9.0	0.05	0.10	2.00	•	•
PICCO R 055.2-10	4.00	-	1.70	24.00	10.0	0.05	0.10	2.00		•
PICCO L 050.2-15	4.00	-	1.70	29.00	15.0	0.05	0.10	2.00	•	•
PICCO R 050.2-15	4.00	-	1.70	29.00	14.0	0.05	0.10	2.00	•	•
PICCO R 055.2-15	4.00	-	1.70	29.00	15.0	0.05	0.10	2.00		•
PICCO R 050.25-5	4.00	0.20	2.20	19.00	5.0	0.05	0.15	2.50		•
PICCO R 050.25-10	4.00	0.20	2.20	24.00	10.0	0.07	0.15	2.50		•
PICCO R 050.25-16	4.00	0.20	2.20	30.00	16.0	0.07	0.15	2.50		•
PICCO R 053.3-10	4.00	0.60	2.60	24.00	9.0	0.03	0.20	2.80		•
PICCO R 055.3-10	4.00	0.60	2.60	24.00	10.0	0.05	0.20	2.80		•
PICCO R/L 050.3-10	4.00	0.60	2.60	24.00	9.0	0.10	0.20	2.80	•	•
PICCO R 053.3-16	4.00	0.60	2.60	30.00	15.0	0.03	0.20	2.80		•
PICCO R 055.3-16	4.00	0.60	2.60	30.00	16.0	0.05	0.20	2.80		•
PICCO R/L 050.3-16	4.00	0.60	2.60	30.00	15.0	0.10	0.20	2.80	•	•
PICCO R 053.3-20	4.00	0.60	2.60	34.00	19.0	0.03	0.20	2.80		•
PICCO R/L 050.3-20	4.00	0.60	2.60	34.00	19.0	0.10	0.20	2.80	•	•
PICCO R 050.35-10	4.00	1.10	3.10	24.00	10.0	0.10	0.25	3.50		•
PICCO R 050.35-16	4.00	1.10	3.10	30.00	16.0	0.10	0.25	3.50		•
PICCO R 050.35-20	4.00	1.10	3.10	34.00	20.0	0.10	0.25	3.50		•
PICCO R 050.35-24	4.00	1.10	3.10	38.00	24.0	0.10	0.25	3.50		•
PICCO R 053.4-10	4.00	1.50	3.50	24.00	9.0	0.03	0.30	4.00		•
PICCO R 055.4-10	4.00	1.50	3.50	24.00	10.0	0.05	0.30	4.00		•
PICCO R/L 050.4-10	4.00	1.50	3.50	24.00	9.0	0.10	0.30	4.00	•	•
PICCO R 053.4-16	4.00	1.50	3.50	30.00	15.0	0.03	0.30	4.00		•
PICCO R 055.4-16	4.00	1.50	3.50	30.00	16.0	0.05	0.30	4.00		•
PICCO R/L 050.4-16	4.00	1.50	3.50	30.00	15.0	0.10	0.30	4.00	•	•
PICCO R 053.4-20	4.00	1.50	3.50	34.00	19.0	0.03	0.30	4.00		•
PICCO R 055.4-20	4.00	1.50	3.50	34.00	20.0	0.05	0.30	4.00		•
PICCO R/L 050.4-20	4.00	1.50	3.50	34.00	19.0	0.10	0.30	4.00	•	•
PICCO R/L 050.4-24	4.00	1.50	3.50	38.00	23.0	0.10	0.30	4.00	•	•
PICCO R/L 050.4-28	4.00	1.50	3.50	42.00	27.0	0.10	0.30	4.00	•	•
PICCO R 055.4-28	4.00	1.50	3.50	42.00	28.0	0.05	0.50	4.00		•
PICCO R 055.5-10	5.00	1.90	4.40	25.00	9.0	0.05	0.50	5.00		•
PICCO R/L 050.5-10	5.00	1.90	4.40	25.00	9.0	0.15	0.50	5.00	•	•
PICCO R 055.5-15	5.00	1.90	4.40	30.00	14.0	0.05	0.50	5.00		•
PICCO R/L 050.5-15	5.00	1.90	4.40	30.00	14.0	0.15	0.50	5.00	•	•
PICCO R 055.5-20	5.00	1.90	4.40	35.00	19.0	0.05	0.50	5.00		•
PICCO R/L 050.5-20	5.00	1.90	4.40	35.00	19.0	0.15	0.50	5.00	•	•
PICCO R 055.5-25	5.00	1.90	4.40	40.00	24.0	0.05	0.50	5.00		•
PICCO R/L 050.5-25	5.00	1.90	4.40	40.00	24.0	0.15	0.50	5.00	•	•
PICCO R 055.5-30	5.00	1.90	4.40	45.00	29.0	0.05	0.50	5.00		•
PICCO R/L 050.5-30	5.00	1.90	4.40	45.00	29.0	0.15	0.50	5.00	•	•
PICCO R/L 050.5-35	5.00	1.90	4.40	50.00	34.0	0.15	0.50	5.00	•	•
PICCO R 055.6-15	6.00	2.30	5.30	30.00	14.0	0.05	0.50	6.00		•
PICCO R/L 050.6-15	6.00	2.30	5.30	30.00	14.0	0.15	0.50	6.00	•	•
PICCO R 055.6-22	6.00	2.30	5.30	37.00	21.0	0.05	0.50	6.00		•
PICCO R/L 050.6-22	6.00	2.30	5.30	37.00	21.0	0.15	0.50	6.00	•	•
PICCO R 055.6-25	6.00	2.30	5.30	40.00	24.0	0.05	0.50	6.00		•
PICCO R/L 050.6-25	6.00	2.30	5.30	40.00	24.0	0.15	0.50	6.00	•	•
PICCO R 055.6-30	6.00	2.30	5.30	45.00	29.0	0.05	0.50	6.00		•

• Specify right- or left-hand bars

(1) Maximum D.O.C.=0.01-0.03 mm, maximum feed=0.01 mm/rev.

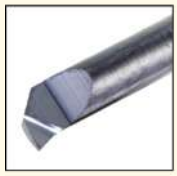
(2) Minimum overhang

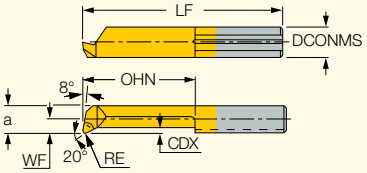
(3) Cutting depth maximum

PICCOCUT

PICCO R/L 050, 053, 055 (Continue)

Inserts for Internal Turning and Chamfering





Right-hand shown

Designation	Dimensions								Tough ↔ Hard	
	DCONMS	WF	a	LF	OHN(2)	RE	CDX(3)	DMIN	IC228	IC908
PICCO R/L 050.6-30	6.00	2.30	5.30	45.00	29.0	0.15	0.50	6.00	●	●
PICCO R/L 050.6-35	6.00	2.30	5.30	50.00	34.0	0.15	0.50	6.00	●	●
PICCO R/L 050.6-42	6.00	2.30	5.30	57.00	41.0	0.15	0.50	6.00	●	●
PICCO R/L 050.7-20	7.00	2.80	6.30	35.00	19.0	0.15	0.60	6.80	●	●
PICCO R/L 050.7-25	7.00	2.80	6.30	40.00	24.0	0.15	0.60	6.80	●	●
PICCO R/L 050.7-30	7.00	2.80	6.30	45.00	29.0	0.15	0.60	6.80	●	●
PICCO R/L 050.7-35	7.00	2.80	6.30	50.00	34.0	0.15	0.60	6.80	●	●
PICCO R/L 050.7-40	7.00	2.80	6.30	55.00	39.0	0.15	0.60	6.80	●	●
PICCO R/L 050.7-45	7.00	2.80	6.30	60.00	44.0	0.15	0.60	6.80	●	●
PICCO R/L 050.7-50	7.00	2.80	6.30	65.00	49.0	0.15	0.60	6.80	●	●

- Specify right- or left-hand bars

(1) Maximum D.O.C.=0.01-0.03 mm, maximum feed=0.01 mm/rev.

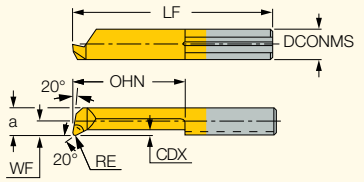
(2) Minimum overhang

(3) Cutting depth maximum

PICCOCUT

PICCO R 050.20

Inserts for Internal Turning and Chamfering Next to the Bottom of Blind Holes



Right-hand shown

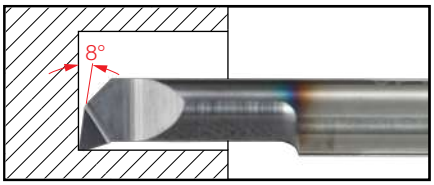
Designation	Dimensions								IC908
	DCONMS	WF	a	LF	OHN(1)	RE	CDX(2)	DMIN	
PICCO R 050.20.2-10	4.00	-	1.70	24.00	10.0	0.05	0.10	2.00	●
PICCO R 050.20.3-10	4.00	0.60	2.60	24.00	10.0	0.10	0.20	2.80	●
PICCO R 050.20.4-16	4.00	1.50	3.50	30.00	16.0	0.10	0.30	4.00	●
PICCO R 050.20.5-20	5.00	1.90	4.40	35.00	19.0	0.15	0.50	5.00	●

- Specify right- or left-hand bars

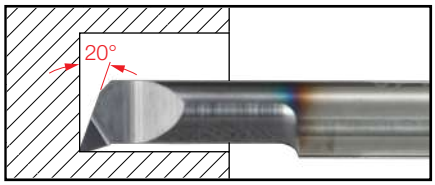
(1) Minimum overhang

(2) Cutting depth maximum

PICCO 050...



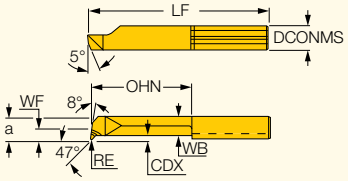
PICCO 050.20...



PICCOCUT

PICCO R/L 047

Inserts for Internal Deep Profiling



Right-hand shown

Designation	Dimensions									IC908
	DCONMS	WF	a	LF	OHN(1)	WB	CDX(2)	DMIN	RE	
PICCO R/L 047.4-20	4.00	1.50	3.50	34.00	20.0	3.00	0.30	4.00	0.15	●
PICCO R/L 047.5-25	5.00	1.90	4.40	40.00	25.0	3.80	0.50	5.00	0.15	●
PICCO R/L 047.6-30	6.00	2.30	5.30	45.00	30.0	4.50	0.50	6.00	0.15	●
PICCO R 047.T6-22	6.00	2.30	5.30	37.00	22.0	3.40	1.80	6.00	0.15	●
PICCO R 047.T6-30	6.00	2.30	5.30	45.00	30.0	3.40	1.80	6.00	0.15	●

• Left hand inserts on request

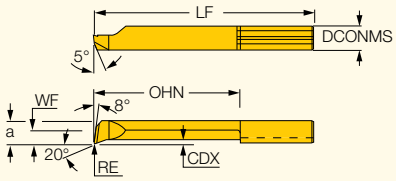
(1) Minimum overhang

(2) Cutting depth maximum

PICCOCUT

PICCO R/L 050-C

Inserts with Chipformers for Internal Boring and Profiling



Right-hand shown

Designation	Dimensions								IC908
	DCONMS	WF	a	LF	OHN(1)	CDX(2)	DMIN	RE	
PICCO R/L 050.4-10C	4.00	1.50	3.50	24.00	10.0	0.30	4.00	0.10	●
PICCO R/L 050.4-20C	4.00	1.50	3.50	34.00	20.0	0.30	4.00	0.10	●
PICCO R/L 050.4-24C	4.00	1.50	3.50	38.00	24.0	0.30	4.00	0.10	●
PICCO R/L 050.4-28C	4.00	1.50	3.50	42.00	28.0	0.30	4.00	0.10	●
PICCO R 050.4-16C	4.00	1.50	3.50	30.00	16.0	0.30	4.00	0.10	●
PICCO R/L 050.5-10C	5.00	1.90	4.40	25.00	10.0	0.50	5.00	0.15	●
PICCO R/L 050.5-15C	5.00	1.90	4.40	30.00	15.0	0.50	5.00	0.15	●
PICCO R/L 050.5-20C	5.00	1.90	4.40	35.00	20.0	0.50	5.00	0.15	●
PICCO R/L 050.5-25C	5.00	1.90	4.40	40.00	25.0	0.50	5.00	0.15	●
PICCO R/L 050.5-30C	5.00	1.90	4.40	45.00	30.0	0.50	5.00	0.15	●
PICCO R/L 050.5-35C	5.00	1.90	4.40	50.00	35.0	0.50	5.00	0.15	●
PICCO R/L 050.6-15C	6.00	2.30	5.30	30.00	15.0	0.50	6.00	0.15	●
PICCO R/L 050.6-22C	6.00	2.30	5.30	37.00	22.0	0.50	6.00	0.15	●
PICCO R/L 050.6-25C	6.00	2.30	5.30	40.00	25.0	0.50	6.00	0.15	●
PICCO R/L 050.6-30C	6.00	2.30	5.30	45.00	30.0	0.50	6.00	0.15	●
PICCO R/L 050.6-35C	6.00	2.30	5.30	50.00	35.0	0.50	6.00	0.15	●
PICCO R/L 050.6-42C	6.00	2.30	5.30	57.00	42.0	0.50	6.00	0.15	●
PICCO R/L 050.7-20C	7.00	2.80	6.30	35.00	20.0	0.60	6.80	0.15	●
PICCO R/L 050.7-25C	7.00	2.80	6.30	40.00	25.0	0.60	6.80	0.15	●
PICCO R/L 050.7-30C	7.00	2.80	6.30	45.00	30.0	0.60	6.80	0.15	●
PICCO R/L 050.7-35C	7.00	2.80	6.30	50.00	35.0	0.60	6.80	0.15	●
PICCO R/L 050.7-40C	7.00	2.80	6.30	55.00	40.0	0.60	6.80	0.15	●
PICCO L 050.7-50C	7.00	2.80	6.30	65.00	50.0	0.60	6.80	0.15	●

• All left-hand inserts on request

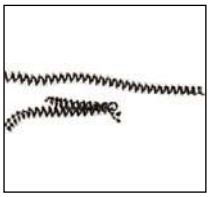
(1) Minimum overhang

(2) Cutting depth maximum

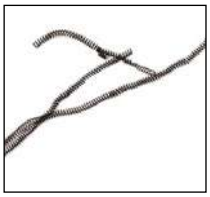
Stainless Steel 316L

PICCO R 050.6-35C with Chipbreaker

f= 0.03 mm/rev



f= 0.05 mm/rev

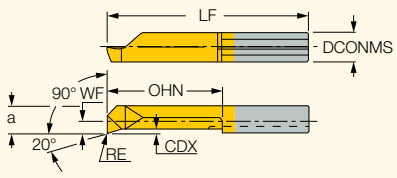


PICCO R 050.6-35 Standard

f= 0.03 mm/rev

f= 0.05 mm/rev

PICCO R/L 090
Inserts for Internal Turning and Profiling

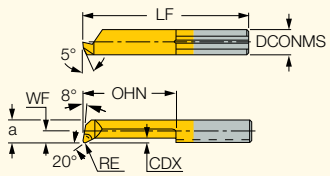


Right-hand shown

Designation	Dimensions DCONMS	WF	a	LF	OHN(1)	RE	CDX(2)	DMIN	IC228
PICCO R/L 090.3-10	4.00	0.60	2.60	24.00	9.0	0.10	0.20	2.80	●
PICCO R/L 090.3-16	4.00	0.60	2.60	30.00	15.0	0.10	0.20	2.80	●
PICCO R/L 090.4-10	4.00	1.50	3.50	24.00	9.0	0.10	0.30	4.00	●
PICCO R/L 090.4-16	4.00	1.50	3.50	30.00	15.0	0.10	0.30	4.00	●
PICCO R/L 090.5-10	5.00	1.90	4.40	25.00	9.0	0.15	0.50	5.00	●
PICCO R/L 090.5-15	5.00	1.90	4.40	30.00	14.0	0.15	0.50	5.00	●
PICCO R/L 090.5-20	5.00	1.90	4.40	35.00	19.0	0.15	0.50	5.00	●

• Specify right- or left-hand bars
(1) Minimum overhang
(2) Cutting depth maximum

PICCO R 050 (CBN)
CBN Tipped Inserts for Internal Turning, Profiling and Chamfering of Hard Steel

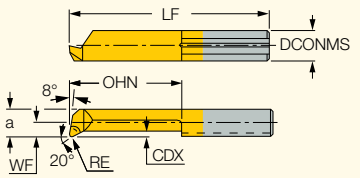


Right-hand shown • HARD MATERIALS

Designation	Dimensions DCONMS	WF	a	LF	OHN(1)	CDX(2)	DMIN	RE	IB55
PICCO R 050.3-10B	4.00	0.60	2.60	25.50	10.0	0.20	2.80	0.10	●
PICCO R 050.4-10B	4.00	1.50	3.50	25.50	10.0	0.30	4.00	0.10	●
PICCO R 050.5-15B	5.00	1.90	4.40	31.50	15.0	0.50	5.00	0.15	●
PICCO R 050.6-15B	6.00	2.30	5.30	31.50	15.0	0.50	6.00	0.15	●
PICCO R 050.7-20B	7.00	2.80	6.30	36.50	20.0	0.60	6.80	0.15	●

• It is not recommended to use coolant when machining with CBN tipped tools • Available on request only
(1) Minimum overhang
(2) Cutting depth maximum

PICCO R/LHD 050
Inserts for Internal Turning and Chamfering of Hard Steel - Up to 65 HRC



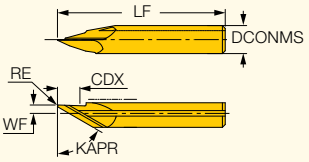
Designation	Dimensions DCONMS	WF	a	LF	OHN(1)	RE	CDX(2)	DMIN	IC902
PICCO R/LHD 050.2-5	4.00	-	1.70	19.00	4.0	0.05	0.10	2.00	●
PICCO R/LHD 050.3-10	4.00	0.60	2.60	24.00	9.0	0.10	0.20	2.80	●
PICCO R/LHD 050.3-16	4.00	0.60	2.60	30.00	15.0	0.10	0.20	2.80	●
PICCO R/LHD 050.4-10	4.00	1.50	3.50	24.00	9.0	0.10	0.30	4.00	●
PICCO R/LHD 050.4-20	4.00	1.50	3.50	34.00	19.0	0.10	0.30	4.00	●
PICCO R/LHD 050.5-10	5.00	1.90	4.40	25.00	9.0	0.15	0.50	5.00	●
PICCO R/LHD 050.5-15	5.00	1.90	4.40	30.00	14.0	0.15	0.50	5.00	●
PICCO R/LHD 050.6-15	6.00	2.30	5.30	30.00	14.0	0.15	0.50	6.00	●
PICCO R/LHD 050.7-20	7.00	2.80	6.30	35.00	19.0	0.15	0.60	6.80	●
PICCO R/LHD 050.7-25	7.00	2.80	6.30	40.00	24.0	0.15	0.60	6.80	●
PICCO R/LHD 050.7-35	7.00	2.80	6.30	50.00	34.0	0.15	0.60	6.80	●

• Specify right- or left-hand bars
(1) Minimum overhang
(2) Cutting depth maximum

PICCOCUT

PICCO R/L 520

Inserts for Internal Chamfering



Right-hand shown

Designation	Dimensions							IC908
	DCONMS	WF	KAPR(1)	LF	RE	CDX	DMIN	
PICCO R/L 520.0045-15	5.00	1.50	45.0	30.00	0.20	3.50	1.00	●
PICCO R/L 520.0060-15	5.00	1.50	60.0	30.00	0.20	4.00	1.00	●

• Left hand inserts on request

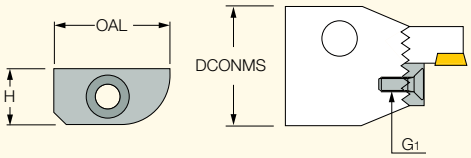
(1) Tool cutting edge angle

ITSBORE

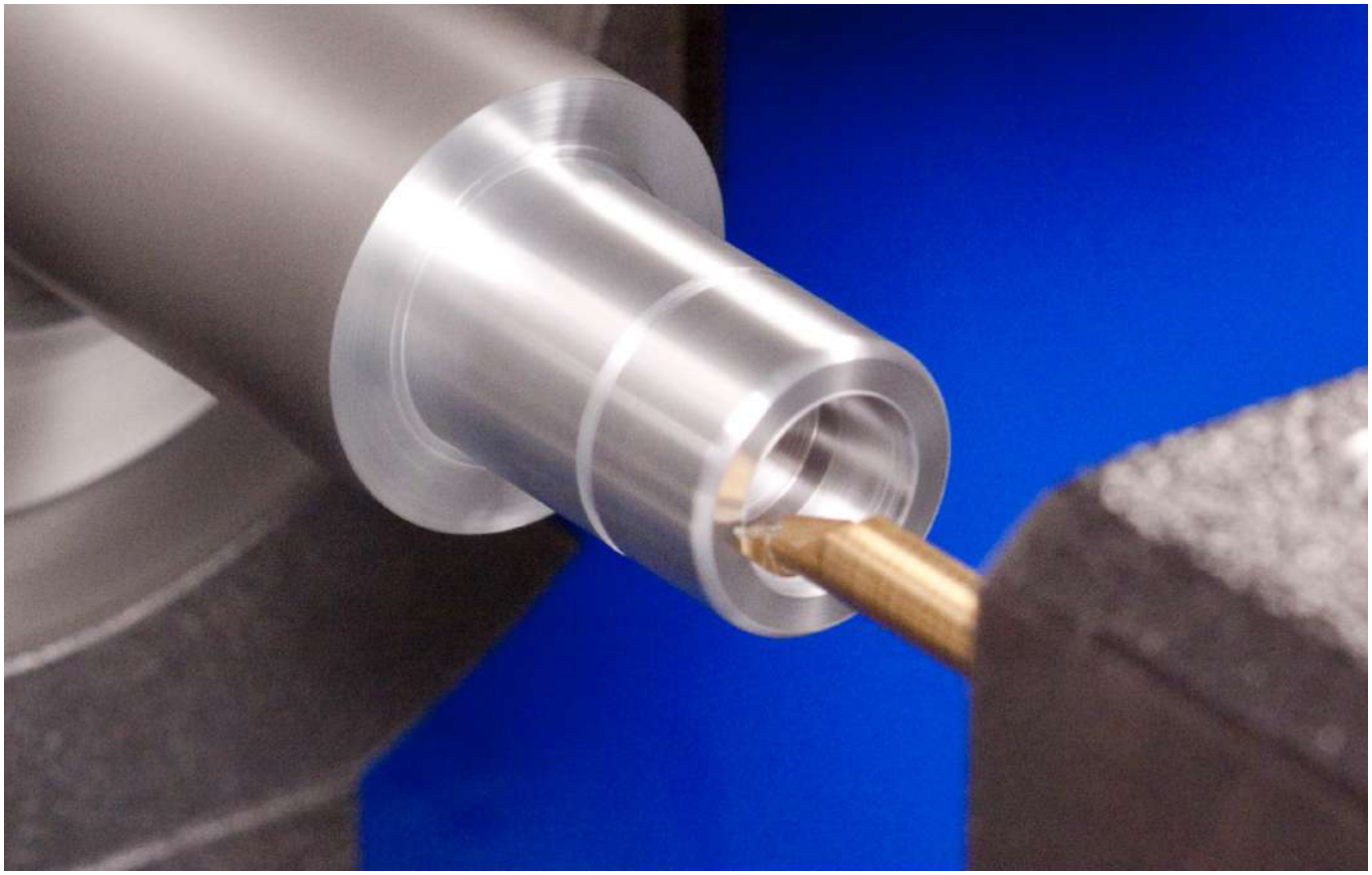
Accessories

PLT

Cover Plate Protects the Serrated Faces When a Single Toolholder is Used

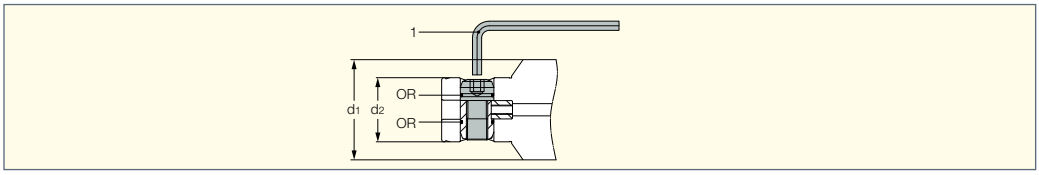


Designation	DCONMS	H	OAL	G1
PLT 16	16.00	7.0	14.00	SR M3x12 DIN912
PLT 20	20.00	8.5	17.00	SR M4x14 DIN912
PLT 25	25.00	10.2	21.00	SR M4x16 DIN7991
PLT 32	32.00	13.9	28.00	SR M5x20 DIN7991
PLT 40	40.00	17.4	35.00	SR M6x25 DIN7991
PLT 50	50.00	21.4	47.50	SR M8x25 DIN7991
PLT 63	63.00	26.4	62.00	SR M10x30 DIN7991
PLT 80	80.00	33.9	82.50	SR M12x35 DIN7991



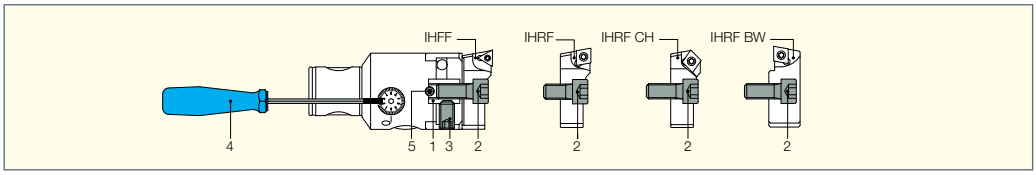
ITSBORE

BH MB COUPLING SET



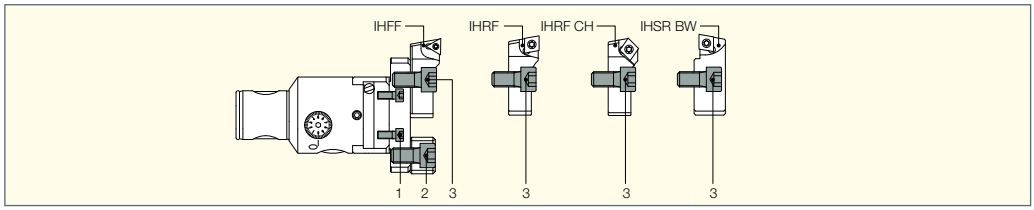
Designation	d1	d2	1	OR
BH MB14 COUPLING SET	14	10	2.5	-
BH MB16 COUPLING SET	16	10	2.5	-
BH MB20 COUPLING SET	20	13	3	-
BH MB25 COUPLING SET	25	16	3	-
BH MB32 COUPLING SET	32	20	4	ORM 0075-10
BH MB40 COUPLING SET	40	25	5	ORM 0100-10
BH MB50 COUPLING SET/M5	50	32	6	ORM 0130-10
BH MB63-80 COUPLING SET	63 - 80	42	8	OR 2075
BH MB110 COUPLING SET	110	76	14	OR 3112

BHF - SPARE PARTS



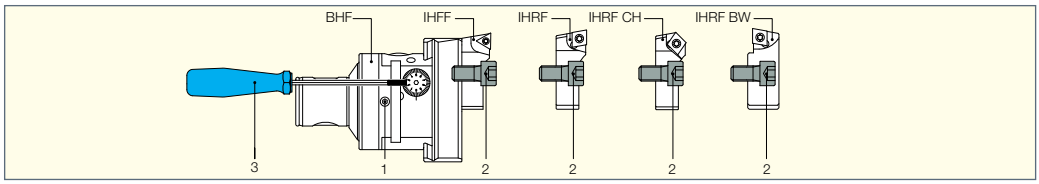
Designation	1	2	3	4	5
BHF...-16...	-	SR M3X6 DIN 912	-	BH HW 1.5 HANDLE	SR M3X4.5 DIN 913
BHF...-20...	-	SR M4X8 DIN 912	-	BH HW 1.5 HANDLE	SR M3X4.5 DIN 913
BHF...-25...	-	SR M5X1O DIN 912	-	BH HW 2.0 HANDLE	SR M4X4 DIN 913
BHF...-32...	-	SR M6X12 DIN 912	-	BH HW 2.0 HANDLE	SR M4X5 DIN 913
BHF...-40...	-	SR M8X14 DIN 912	-	BH HW 2.5 HANDLE	SR M5X6 DIN 913 SR
BHF...-50-60	BH NUT 10	SR M1OX25 DIN 912	SR M10X16 DIN 913	BH HW 2.5 HANDLE	SR M5X8 DIN 913

BHF - SPARE PARTS



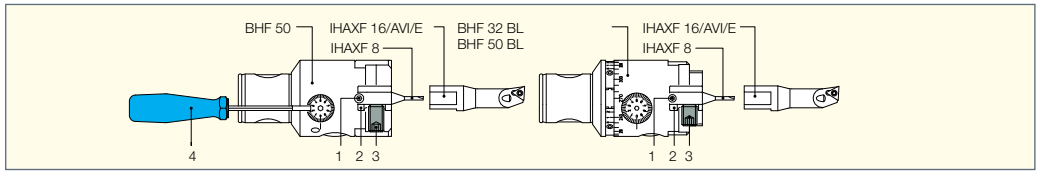
Designation	1	2	3
BHF...-50...	SR M5X12 DIN 912	SR M1OX20 DIN 912	SR M1OX25 DIN 912

BHF - SPARE PARTS



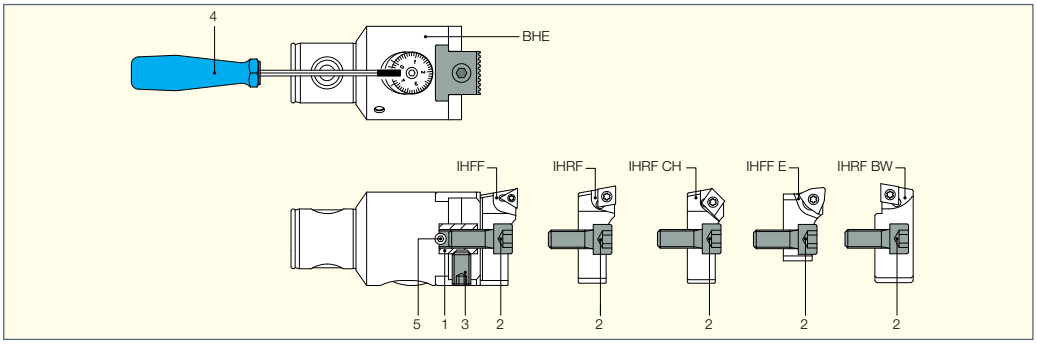
Designation	1	2	3
BHF...-63...	SR M6X10 DIN 915		
BHF...-80...	SR M6X14 DIN 915	SR M1OX25 DIN 912	BH HW 3.0 HANDLE
BHF...-125...	SR M6X22 DIN 915		

BHF - SPARE PARTS



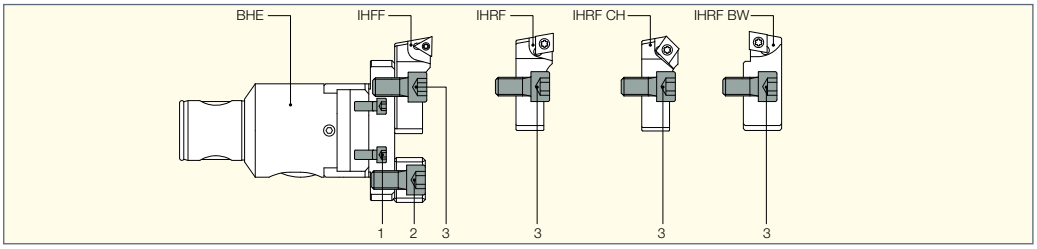
Designation	1	2	3	4
BHF...-50...	SR M5X8 DIN 913	SLEEVE D 8-D16	SR M10X10 DIN 913	BH HW 2.5 HANDLE
BHF...-32... BL	SR M4X5 DIN 913	-	SR M5X8 DIN 913 SR M5X12 DIN 913	BH HW 2.0 HANDLE
BHF...-50... BL	SR M5X8 DIN 913	SLEEVE D 8-D16	SR M10X10 DIN 913	BH HW 2.5 HANDLE

BHE MB - SPARE PARTS



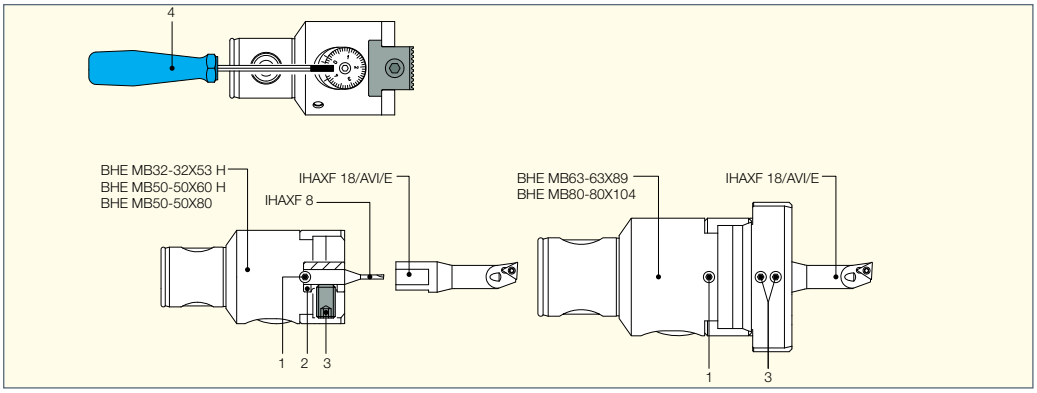
Designation	1	2	3	4	5
BHE MB14-14X30	-	SR M3X6 DIN 912	-	BH HW 1.5 HANDLE	SR M3X3.5 DIN 913
BHE MB16-16X34	-	SR M3X6 DIN 912	-	BH HW 1.5 HANDLE	SR M3X4.5 DIN 913
BHE MB20-20X40	-	SR M4X8 DIN 912	-	BH HW 1.5 HANDLE	SR M3X4.5 DIN 913
BHE MB25-25X50	-	SR M5X1O DIN 912	-	BH HW 1.5 HANDLE	SR M4X4 DIN 913
BHE MB32-32X63	-	SR M6X12 DIN 912	-	BH HW 2.5 HANDLE	SR M5X5 DIN 913
BHE MB40-40X80	-	SR M8X14 DIN 912	-	BH HW 3.0 HANDLE	SR M6X6 DIN 913
BHE MB50-50X80	BH NUT 10	SR M1OX25 DIN 912	SR M10X16 DIN 913	BH HW 3.0 HANDLE	SR M6X8 DIN 913
BHE MB63-63X89	-	SR M1OX20 DIN 912	-	BH HW 3.0 HANDLE	SR M6X8 DIN 913
BHE MB80-80X104	-	SR M1OX25 DIN 912	-	BH HW 3.0 HANDLE	SR M6X12 DIN 913

BHE - SPARE PARTS



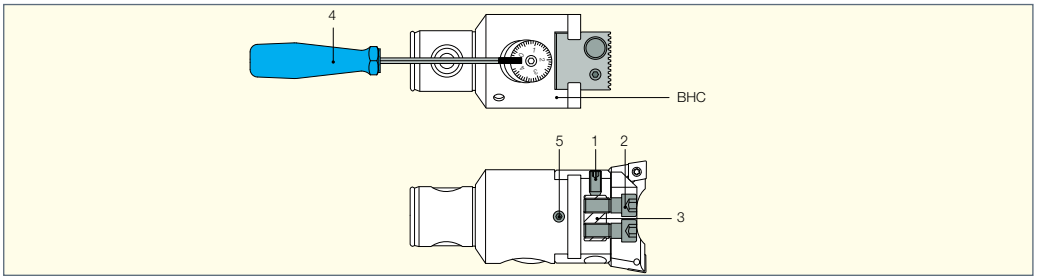
Designation	1	2	3
BHE MB50-50X80	SR M5X12 DIN 912	SR M1OX20 DIN 912	SR M1OX25 DIN 912
BHE MB63-63X89	SR M5X25 DIN 912		
BHE MB80-80X104			

BHE - SPARE PARTS



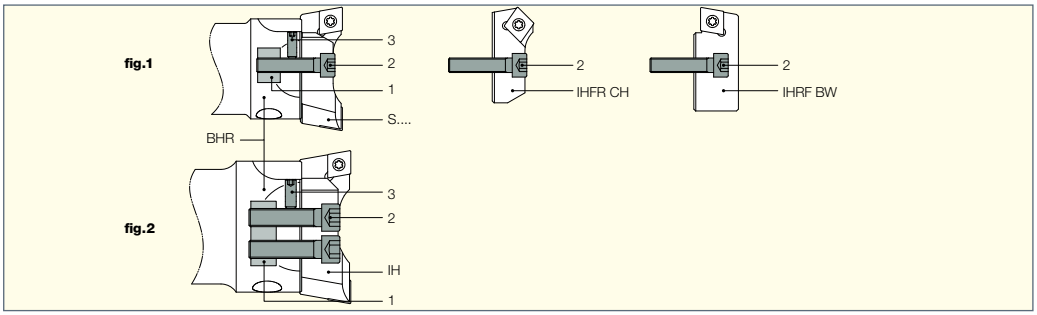
Designation	1	2	3	4
BHE MB32-32X53 H	SR M5X5 DIN 913	-	SR M5X8 DIN 913	BH HW 2.5 HANDLE
	SR M5X5 DIN 913	-	SR M5X12 DIN 913	
BHE MB50-50X60 H	SR M6X8 DIN 913	SLEEVE D 8-D16	SR M10X10 DIN 913	BH HW 3.0 HANDLE
BHE MB50-50X80	SR M6X8 DIN 913	SLEEVE D 8-D16	SR M10X10 DIN 913	
BHE MB63-63X89	SR M6X8 DIN 913	-	SR M6X6 DIN 913	
BHE MB80-80X104	SR M6X12 DIN 913	-	SR M6X6 DIN 913	

BHC - SPARE PARTS



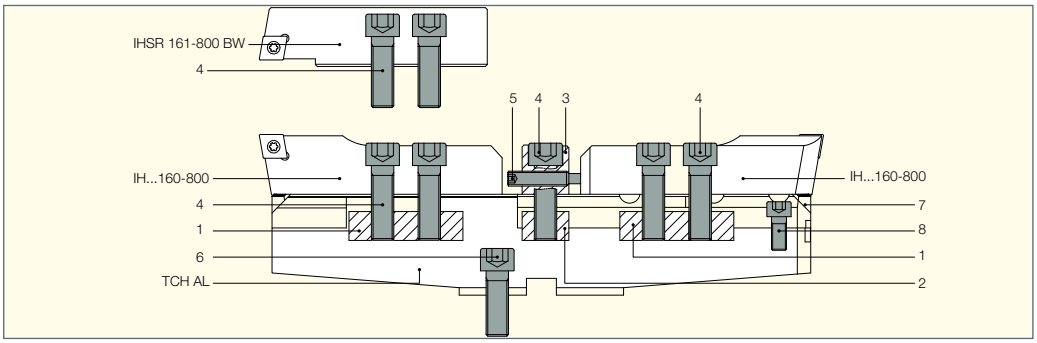
Designation	1	2	3	4	5
BHC MB25-25X57	SR M4X8 DIN 913	BH SR M4X11 DIN 912 PT	BH NUT-BHC MB25	BH HW 2.0 HANDLE	SR M4X5 DIN 913
BHC MB32-32X71	SR M5X10 DIN 913	BH SR M5X12.5 DIN 912 PT	BH NUT-BHC MB32	BH HW 2.5 HANDLE	SR M5X5 DIN 913
BHC MB40-40X90	SR M6X12 DIN 913	BH SR M6X16 DIN 912 PT	BH NUT-BHC MB40	BH HW 3.0 HANDLE	SR M6X6 DIN 913
BHC MB50-50X87	SR M6X14 DIN 913	BH SR M8X20 DIN 912 PT	BH NUT-BHC MB50	BH HW 3.0 HANDLE	SR M6X8 DIN 913
BHC MB63-63X109	SR M6X16 DIN 913	BH SR M10X26 DIN 912 PT	BH NUT-BHC MB63	BH HW 3.0 HANDLE	SR M6X8 DIN 913
BHC MB80-80X130	SR M6X20 DIN 913	BH SR M12X30 DIN 912 PT	BH NUT-BHC MB80	BH HW 3.0 HANDLE	SR M6X12 DIN 913

BHR - SPARE PARTS



Designation	1	2	3
BHR MB16...16	BH NUT BHR MB16	SR M3X14 DIN912	SR M3X4 DIN913
BHR MB20...20	BH NUT BHR MB20	SR M4X15 DIN912	SR M3X5 DIN913
BHR MB25...25	BH NUT BHR MB25	SR M4X20 DIN912	SR M3X8 DIN913
BHR MB32...32	BH NUT BHR MB32	SR M5X25 DIN912	SR M4X12 DIN913
BHR MB40...50	BH NUT BHR MB40	SR M6X30 DIN912	SR M5X14 DIN913
BHR MB50...50	BH NUT BHR MB50	SR M8X35 DIN912	SR M5X12 DIN913
BHR MB50...63	BH NUT BHR MB63	SR M10X40 DIN912	SR M6X16 DIN913
BHR MB63...63	BH NUT BHR MB63	SR M10X40 DIN912	SR M6X16 DIN913
BHR MB80...80	BH NUT BHR MB80	SR M12X45 DIN912	SR M8X25 DIN913

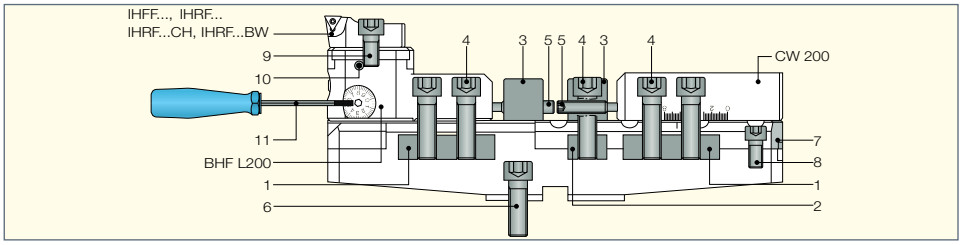
TCH AL - SPARE PARTS (Rough Boring)



Designation	1	2	3	4
TCH AL 200-300-400 TCH AL 500-600-700-800	BH TCH NUT A	BH TCH NUT B	BH TCH NUT C	SR M12X40 DIN 912

Designation	5	6	7	8
TCH AL 200	SR M8X40 DIN 915	SR M12X35 DIN 912	BH SERRATED PLATE 200	SR M8X25 DIN 912
TCH AL 300	SR M8X40 DIN 915	SR M12X35 DIN 912	BH SERRATED PLATE 300	SR M8X25 DIN 912
TCH AL 400	SR M8X40 DIN 915	SR M12X35 DIN 912	BH SERRATED PLATE 400-700	SR M8X20 DIN 912
TCH AL 500-600-700-800	SR M8X40 DIN 915	SR M16X50 DIN 912	BH SERRATED PLATE 400-700	SR M8X25 DIN 912

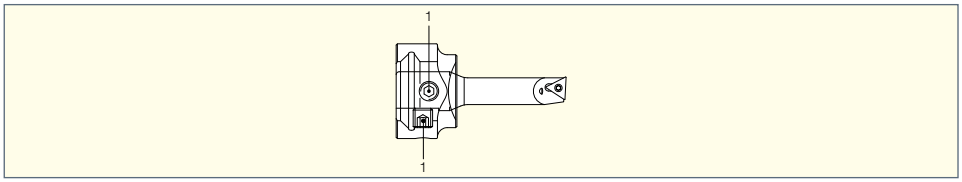
TCH AL - SPARE PARTS
(Fine Boring)



Designation	1	2	3	4	5
TCH AL 200-300-400 TCH AL 500-600-700-800	BH TCH NUT A	BH TCH NUT B	BH TCH NUT C	SR M12X40 DIN 912	SR M8X40 DIN 915

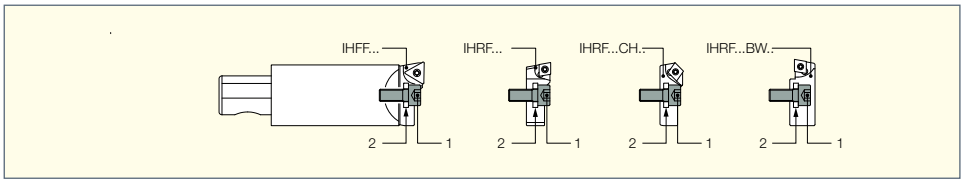
Designation	6	7	8	9	10	11
TCH AL 200	SR M12X35 DIN 912	BH SERRATED PLATE 200	SR M8X25 DIN 912	SR M1OX20 DIN 912	SR M6X8 DIN 915	BH HW 3.0 HANDLE
TCH AL 300	SR M12X35 DIN 912	BH SERRATED PLATE 300	SR M8X25 DIN 912	SR M1OX20 DIN 912	SR M6X8 DIN 915	BH HW 3.0 HANDLE
TCH AL 400	SR M12X35 DIN 912	BH SERRATED PLATE 400-700	SR M8X20 DIN 912	SR M1OX20 DIN 912	SR M6X8 DIN 915	BH HW 3.0 HANDLE
TCH AL 500-600-700-800	SR M16X50 DIN 912	BH SERRATED PLATE 400-700	SR M8X25 DIN 912	SR M1OX20 DIN 912	SR M6X8 DIN 915	BH HW 3.0 HANDLE

ADBH - SPARE PARTS



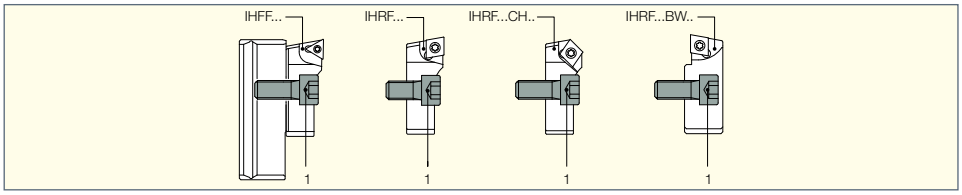
Designation	1
ADBH 30XD16	TSR M8X8 DIN 915

BBH-D - SPARE PARTS



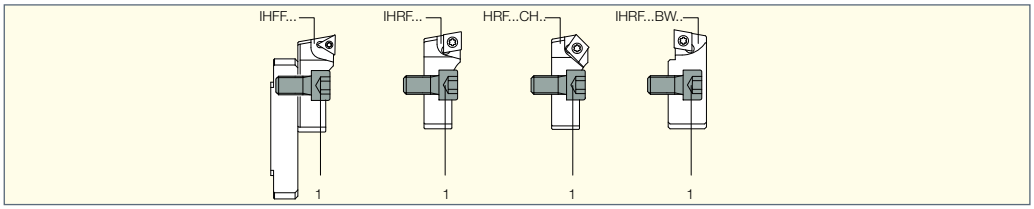
Designation	1	2
BBH D16-53	SR M5X12 DIN 912	WASHER DIN 125A M5
BBH D16-105	SR M5X12 DIN 912	WASHER DIN 125A M5

BHFH - SPARE PARTS



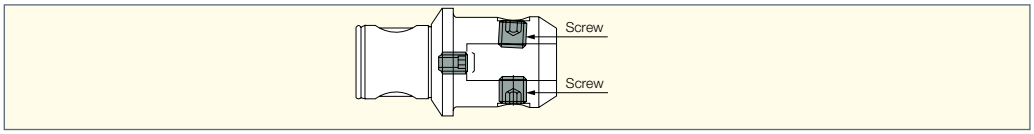
Designation	1
BHFH 30X75	SR M1OX18 DIN 912
BHFH 40X133	
BHFH 30X93	
BHFH 40X200	SR M1OX25 DIN 912
BHFH 30X135	
BHFH 40X300	
BHFH 40X400	

BHEH - SPARE PARTS



Designation	1
BHEH 24x75	SR M1OX20 DIN 912
BHEH 28x80	SR M1OX25 DIN 912
BHEH 28x108	
BHEH 28x148	

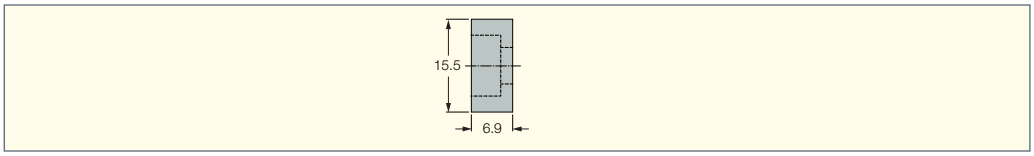
EMH - SPARE PARTS



Designation	Screw #1	Screw # 2
EMH MB 50-6	EMH 50-6 SCREW	M6x10 EM SCREW
EMH MB 50-8	EMH 50-8 SCREW	M8x10 EM SCREW
EMH MB 50-10	EMH 50-10 SCREW	M10x12 EM SCREW
EMH MB 50-12	EMH 50-12 SCREW	M12x16 EM SCREW
EMH MB 50-14	EMH 50-14 SCREW	M14x16 EM SCREW
EMH MB 50-16	EMH 50-16 SCREW	M14x16 EM SCREW
EMH MB 50-20	EMH 50-20 SCREW	M16x16 EM SCREW
EMH MB 63-16	EMH 63-16 SCREW	M14x16 EM SCREW
EMH MB 63-20	EMH 63-20 SCREW	M16x16 EM SCREW
EMH MB 63-25	EMH 63-25 SCREW	M18x20 EM SCREW
EMH MB 63-32	EME 63-32 SCREW	M18x20 EM SCREW
EMH MB 80-40	EMH 80-40 SCREW	M20x20 EM SCREW

BH WASHER - SPARE PARTS

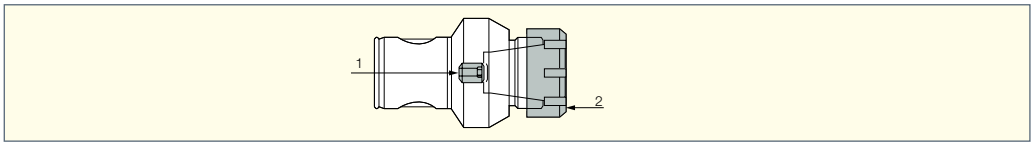
For Kit BHE



Designation	For Kit BHE
BH WASHER IH..50	KIT BHE MB50-50X80
	KIT BHE MB63-63X89
	KIT BHE MB80-80X104
	KIT BHF MB50-50X80 6-108

CC - SPARE PARTS

Components for CC MB



Designation	1	2	Wrench
CC MB16-ER11M	CC MB16 SCREW	NUT ER11 MINI	WRENCH ER11 MINI
CC MB20-ER16M	CC MB20 SCREW	NUT ER16 MINI	WRENCH ER16 MINI
CC MB25-ER20M	CC MB25 SCREW	NUT ER20 MINI	WRENCH ER20 MINI
CC MB32-ER25M	CC MB32 SCREW	NUT ER25 MINI	WRENCH ER25 MINI
CC MB40-ER25	CC MB40 SCREW	NUT ER25 TOP	WRENCH ER25
CC MB50-ER25	CC MB50 SCREW	NUT ER25 TOP	WRENCH ER25
CC MB50-ER32	CC MB50 SCREW	NUT ER32 TOP	WRENCH ER32
CC MB63-ER32	CC MB63 SCREW	NUT ER32 TOP	WRENCH ER32
CC MB63-ER40	CC MB63 SCREW	NUT ER40 TOP	WRENCH ER40

BHR Rough Boring Cutting Data

ISO	Workpiece Material	Hardness HB	Overhang LDRED/BDRED	a_p (mm) RE (Radius)	Boring Range 18-28		Boring Range 28-50		Boring Range 50-68	
					0.5-1.2	1.2-2.5	0.8-1.5	1.5-2.5	0.8-1.5	1.5-3.0
					0.2	0.4	0.2-0.4	0.4	0.2-0.4	0.4-0.8
P	Carbon Steel	HB<200	2.5	V_c (m/min)	150-180	120-150	160-200	140-170	160-200	140-180
			●●●	f (mm/rev)	0.1-0.2	0.08-0.2	0.15-0.2	0.15-0.2	0.15-0.25	0.08-0.2
			4	V_c (m/min)	140-160	100-140	160-180	120-150	160-180	120-150
			●●	f (mm/rev)	0.1-0.18	0.08-0.15	0.1-0.12	0.08-0.1	0.1-0.12	0.08-0.1
			6.3	V_c (m/min)	60-80	40-60	60-90	50-60	70-90	50-70
			●	f (mm/rev)	0.06-0.12	0.06-0.1	0.06-0.12	0.06-0.1	0.06-0.1	0.06-0.1
	Carbon Steel	HB>200	2.5	V_c (m/min)	130-160	100-130	140-180	120-160	140-180	120-160
			●●●	f (mm/rev)	0.08-0.15	0.08-0.12	0.08-0.2	0.06-0.12	0.08-0.25	0.08-0.18
			4	V_c (m/min)	110-140	80-110	100-140	80-120	100-140	80-120
			●●	f (mm/rev)	0.08-0.12	0.08-0.1	0.08-0.15	0.06-0.15	0.08-0.2	0.06-0.15
			6.3	V_c (m/min)	70-90	60-70	80-100	60-80	80-100	60-80
			●	f (mm/rev)	0.08-0.1	0.06-0.08	0.06-0.1	0.06-0.08	0.08-0.15	0.06-0.1

ISO	Workpiece Material	Hardness HB	Overhang LDRED/BDRED	a_p (mm) RE (Radius)	Boring Range 68-120		Boring Range 120-200		Boring Range 200-500	
					0.8-1.5	1.5-3.5	0.8-2.0	2.0-3.5	0.8-2.0	2.0-4.0
					0.2-0.4	0.4-0.8	0.2-0.4	R=0.4-0.8	R=0.2-0.4	R=0.4-0.8
P	Carbon Steel	HB<200	2.5	V_c (m/min)	160-220	150-180	180-250	160-200	220-280	200-220
			●●●	f (mm/rev)	0.15-0.25	0.08-0.2	0.15-0.3	0.1-0.2	0.15-0.3	0.1-0.15
			4	V_c (m/min)	140-180	120-150	160-200	140-180	N.R.	N.R.
			●●	f (mm/rev)	0.08-0.2	0.08-0.15	0.1-0.2	0.08-0.15		
			6.3	V_c (m/min)	70-100	50-70	N.R.	N.R.	N.R.	N.R.
			●	f (mm/rev)	0.06-0.1	0.06-0.1				
	Carbon Steel	HB>200	2.5	V_c (m/min)	140-180	120-160	150-170	100-140	100-140	80-120
			●●●	f (mm/rev)	0.15-0.3	0.12-0.2	0.15-0.25	0.1-0.2	0.15-0.3	0.1-0.2
			4	V_c (m/min)	120-150	100-140	100-130	80-110	N.R.	N.R.
			●●	f (mm/rev)	0.1-0.2	0.1-0.18	0.08-0.2	0.08-0.12		
			6.3	V_c (m/min)	80-100	60-80	N.R.	N.R.	N.R.	N.R.
			●	f (mm/rev)	0.08-0.12	0.08-0.12				

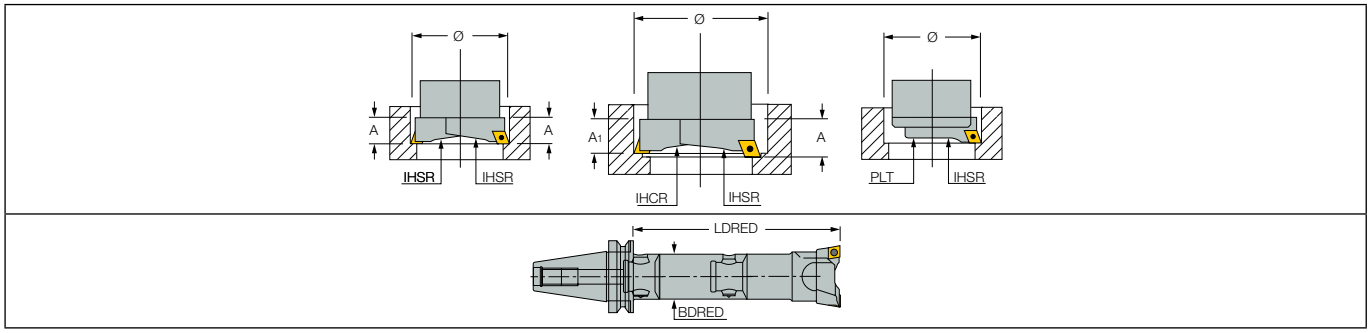
N.R. = Not Recommended

Stability

●●● Good

●● Normal

● Poor



In case of a single or a stepped boring cutter configuration, only half the feed should be applied.

BHR Rough Boring Cutting Data

ISO	Workpiece Material	Hardness HB	Overhang LDRED/BDRED	a_p (mm) RE (Radius)	Boring Range 18-28		Boring Range 28-50		Boring Range 50-68	
					0.5-1.0	1.0-1.8	0.5-1.0	1.0-1.8	0.5-1.2	1.2-2.0
					0.2	0.4	0.2-0.4	0.4	0.2-0.4	0.4-0.8
P	Carbon Steel	HB<200	2.5	V_c (m/min)	140-160	90-120	150-180	100-130	160-200	140-180
			●●●	f (mm/rev)	0.08-0.18	0.08-0.15	0.08-0.2	0.08-0.18	0.1-0.25	0.1-0.15
			4	V_c (m/min)	100-130	70-100	110-150	90-120	140-180	100-130
			●●	f (mm/rev)	0.08-0.15	0.06-0.12	0.08-0.18	0.08-0.15	0.8-0.18	0.08-0.12
			6.3	V_c (m/min)	80-100	60-90	80-100	70-90	100-140	80-120
			●	f (mm/rev)	0.08-0.15	0.06-0.1	0.06-0.12	0.06-0.12	0.6-0.15	0.08-0.1
	Carbon Steel	HB>200	2.5	V_c (m/min)	130-150	120-140	130-150	120-140	140-170	120-150
			●●●	f (mm/rev)	0.08-0.18	0.06-0.15	0.08-0.18	0.06-0.15	0.08-0.2	0.08-0.18
			4	V_c (m/min)	100-130	100-120	100-130	100-120	120-150	100-120
			●●	f (mm/rev)	0.08-0.15	0.06-0.13	0.08-0.15	0.06-0.13	0.08-0.18	0.08-0.15
			6.3	V_c (m/min)	80-100	70-90	80-100	70-90	100-120	70-90
			●	f (mm/rev)	0.08-0.12	0.06-0.11	0.08-0.12	0.06-0.11	0.08-0.12	0.06-0.11

ISO	Workpiece Material	Hardness HB	Overhang LDRED/BDRED	a_p (mm) RE (Radius)	Boring Range 68-120		Boring Range 120-200		Boring Range 200-500	
					1.8	2.5	0.8-2.0	2.0-3.5	0.8-2.0	2.0-4.0
					0.2-0.4	0.4-0.8	0.2-0.4	0.4-0.8	0.2-0.4	0.4-0.8
P	Carbon Steel	HB<200	2.5	V_c (m/min)	160-220	140-180	160-220	140-180	160-220	140-180
			●●●	f (mm/rev)	0.1-0.3	0.1-0.25	0.1-0.3	0.1-0.25	0.1-0.35	0.1-0.3
			4	V_c (m/min)	150-200	120-160	120-160	120-160	N.R	N.R
			●●	f (mm/rev)	0.1-0.2	0.08-0.18	0.1-0.2	0.08-0.18		
			6.3	V_c (m/min)	100-140	100-140	N.R	N.R	N.R	N.R
			●	f (mm/rev)	0.08-0.18	0.08-0.15				
	Carbon Steel	HB>200	2.5	V_c (m/min)	160-200	140-180	140-200	140-180	140-200	140-180
			●●●	f (mm/rev)	0.1-0.3	0.01-0.25	0.01-0.35	0.01-0.3	0.01-0.35	0.01-0.3
			4	V_c (m/min)	140-160	120-140	150-180	120-140	N.R	N.R
			●●	f (mm/rev)	0.08-0.2	0.08-0.15	0.08-0.12	0.08-0.12		
			6.3	V_c (m/min)	100-120	70-90	N.R	N.R	N.R	N.R
			●	f (mm/rev)	0.08-0.16	0.08-0.12				

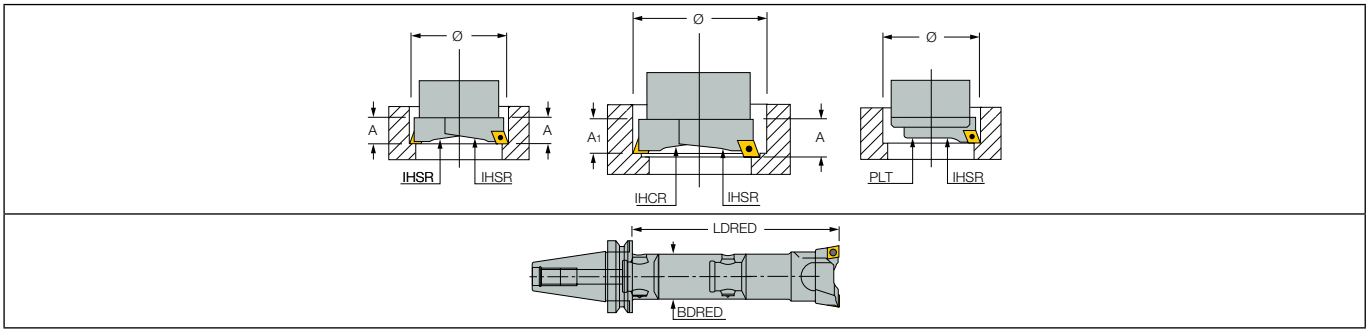
N.R. = Not Recommended

Stability

●●● Good

●● Normal

● Poor



In case of a single or a stepped boring cutter configuration, only half the feed should be applied.

BHR Rough Boring Cutting Data

ISO	Workpiece Material	Hardness HB	Overhang LDRED/BDRED	a_p (mm) RE (Radius)	Boring Range 18-28		Boring Range 28-50		Boring Range 50-68	
					0.5-1.0	1.0-1.8	0.5-1.0	1.0-1.8	0.5-1.2	1.2-2.0
					0.2	0.4	0.2-0.4	0.4	0.2-0.4	0.4-0.8
M	Stainless Steel	Ferritic & Martensitic	2.5	V_c (m/min)	100-150	110-130	120-160	100-150	120-160	110-160
			●●●	f (mm/rev)	0.08-0.15	0.06-0.12	0.08-0.18	0.06-0.12	0.08-0.25	0.08-0.18
			4	V_c (m/min)	90-130	90-120	100-140	90-140	100-150	80-120
			●●	f (mm/rev)	0.08-0.12	0.06-0.1	0.08-0.12	0.06-0.1	0.08-0.18	0.08-0.12
			6.3	V_c (m/min)	60-90	50-70	60-90	50-70	70-100	50-70
			●	f (mm/rev)	0.06-0.1	0.06-0.1	0.06-0.12	0.06-0.1	0.06-0.15	0.08-0.1
	Stainless Steel	Austenitic	2.5	V_c (m/min)	110-130	100-130	120-150	110-140	110-160	100-150
			●●●	f (mm/rev)	0.08-0.15	0.06-0.12	0.08-0.18	0.06-0.12	0.08-0.25	0.06-0.12
			4	V_c (m/min)	80-110	80-110	90-130	90-120	100-150	90-130
			●●	f (mm/rev)	0.08-0.12	0.06-0.1	0.08-0.12	0.06-0.1	0.08-0.18	0.06-0.1
			6.3	V_c (m/min)	60-90	50-70	60-90	50-70	70-100	50-70
			●	f (mm/rev)	0.06-0.1	0.06-0.1	0.06-0.12	0.06-0.1	0.06-0.15	0.06-0.1
	Cast Stainless Steel	Ferritic & Martensitic	2.5	V_c (m/min)	90-130	100-130	120-150	110-140	120-160	100-150
			●●●	f (mm/rev)	0.08-0.15	0.06-0.12	0.08-0.18	0.06-0.12	0.08-0.25	0.06-0.12
			4	V_c (m/min)	70-110	80-110	90-130	90-120	100-150	90-130
			●●	f (mm/rev)	0.08-0.12	0.06-0.1	0.08-0.12	0.06-0.1	0.08-0.18	0.06-0.1
			6.3	V_c (m/min)	60-90	50-70	60-90	50-70	70-100	50-70
			●	f (mm/rev)	0.06-0.1	0.06-0.1	0.06-0.12	0.06-0.1	0.06-0.15	0.06-0.1
	Cast Stainless Steel	Austenitic	2.5	V_c (m/min)	80-120	70-110	100-150	90-140	110-150	100-150
			●●●	f (mm/rev)	0.08-0.15	0.06-0.12	0.08-0.18	0.06-0.1	0.08-0.25	0.06-0.12
			4	V_c (m/min)	70-100	70-100	80-130	70-120	90-140	90-130
			●●	f (mm/rev)	0.08-0.12	0.06-0.1	0.08-0.12	0.06-0.1	0.08-0.18	0.06-0.1
			6.3	V_c (m/min)	60-90	50-70	60-90	50-70	70-100	50-70
			●	f (mm/rev)	0.06-0.1	0.06-0.1	0.06-0.12	0.06-0.1	0.06-0.15	0.06-0.1

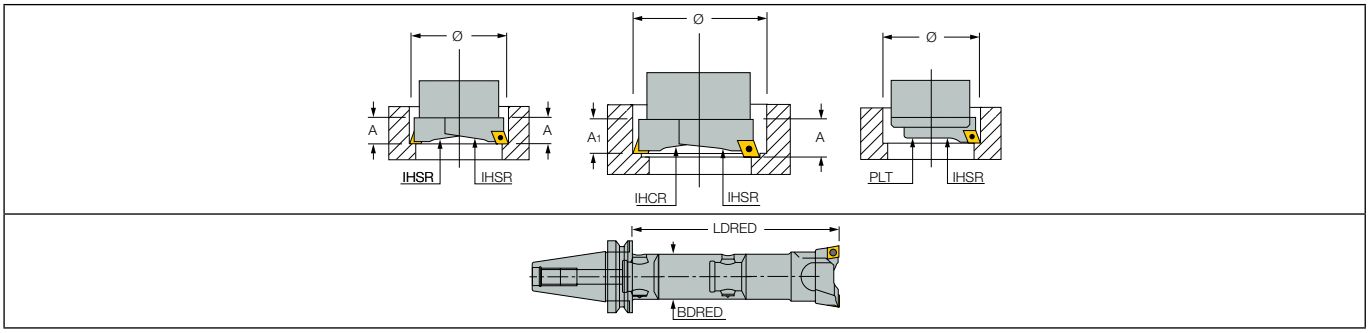
N.R. = Not Recommended

Stability

●●● Good

●● Normal

● Poor



In case of a single or a stepped boring cutter configuration, only half the feed should be applied.

BHR Rough Boring Cutting Data

ISO	Workpiece Material	Hardness HB	Overhang LDRED/BDRED	a_p (mm) RE (Radius)	Boring Range 68-120		Boring Range 120-200		Boring Range 200-500	
					0.8-1.8	1.8-2.5	0.8-2.0	2.0-3.0	0.8-2.0	2.0-3.5
					0.2-0.4	0.4-0.8	0.2-0.4	0.4-0.8	0.2-0.4	0.4-0.8
M	Stainless Steel	Ferritic & Martensitic	2.5	V_c (m/min)	130-220	120-200	140-220	120-180	150-220	120-20
			●●●	f (mm/rev)	0.08-0.3	0.08-0.25	0.08-0.3	0.08-0.25	0.08-0.3	0.08-0.25
			4	V_c (m/min)	100-160	90-140	120-180	90-140	N.R	N.R
			●●	f (mm/rev)	0.08-0.25	0.08-0.18	0.08-0.25	0.08-0.18		
			6.3	V_c (m/min)	70-100	50-70	N.R	N.R	N.R	N.R
			●	f (mm/rev)	0.08-0.2	0.08-0.15				
	Stainless Steel	Austenitic	2.5	V_c (m/min)	120-200	100-160	120-200	100-160	120-200	100-180
			●●●	f (mm/rev)	0.08-0.3	0.08-0.25	0.08-0.3	0.08-0.25	0.08-0.3	0.08-0.25
			4	V_c (m/min)	100-150	90-140	100-160	90-140	N.R	N.R
			●●	f (mm/rev)	0.08-0.25	0.08-0.18	0.08-0.25	0.08-0.18		
			6.3	V_c (m/min)	70-100	50-70	N.R	N.R	N.R	N.R
			●	f (mm/rev)	0.08-0.2	0.08-0.15				
	Cast Stainless Steel	Ferritic & Martensitic	2.5	V_c (m/min)	130-200	120-180	140-200	120-160	140-200	120-180
			●●●	f (mm/rev)	0.08-0.3	0.08-0.25	0.08-0.3	0.08-0.25	0.08-0.3	0.08-0.25
			4	V_c (m/min)	110-150	90-150	100-160	90-140	N.R	N.R
			●●	f (mm/rev)	0.08-0.25	0.08-0.18	0.08-0.25	0.08-0.18		
			6.3	V_c (m/min)	70-100	50-70	N.R	N.R	N.R	N.R
			●	f (mm/rev)	0.08-0.2	0.08-0.15				
	Cast Stainless Steel	Austenitic	2.5	V_c (m/min)	130-180	120-180	120-200	100-160	120-200	100-180
			●●●	f (mm/rev)	0.08-0.3	0.08-0.25	0.08-0.3	0.08-0.25	0.08-0.3	0.08-0.25
			4	V_c (m/min)	100-140	90-140	100-160	90-140	N.R	N.R
			●●	f (mm/rev)	0.08-0.25	0.08-0.18	0.08-0.25	0.08-0.18		
			6.3	V_c (m/min)	70-190	50-70	N.R	N.R	N.R	N.R
			●	f (mm/rev)	0.08-0.2	0.08-0.15				

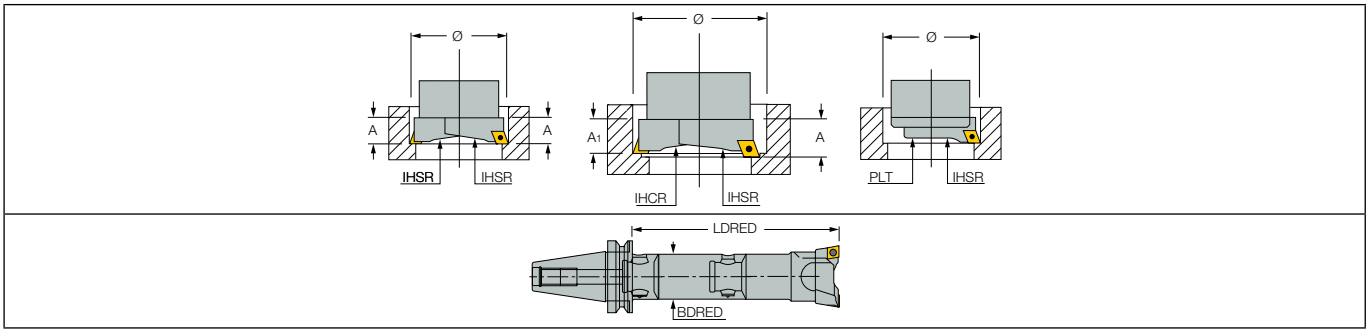
N.R. = Not Recommended

Stability

●●● Good

●● Normal

● Poor



In case of a single or a stepped boring cutter configuration, only half the feed should be applied.

BHR Rough Boring Cutting Data

ISO	Workpiece Material	Hardness HB	Overhang LDRED/BDRED	a_p (mm) RE (Radius)	Boring Range 18-28		Boring Range 28-50		Boring Range 50-68	
					0.5-1.0	1.0-1.8	0.5-1.0	1.0-1.8	0.5-1.2	1.2-2.0
					0.2-0.4	0.4	0.2-0.4	0.4	0.2-0.4	0.4-0.8
K	Gray Cast Iron GG 10-25	HB<200	2.5	V_c (m/min)	120-160	100-140	120-180	110-150	120-180	110-150
			●●●	f (mm/rev)	0.06-0.15	0.06-0.18	0.06-0.15	0.06-0.12	0.08-0.2	0.08-0.12
			4	V_c (m/min)	100-140	80-120	100-150	80-120	100-150	80-120
			●●	f (mm/rev)	0.06-0.12	0.06-0.1	0.06-0.12	0.06-0.1	0.08-0.12	0.08-0.1
			6.3	V_c (m/min)	70-100	60-90	70-100	60-90	70-100	60-90
			●	f (mm/rev)	0.06-0.1	0.06-0.1	0.06-0.1	0.06-0.1	0.08-0.1	0.08-0.1
	Gray Cast Iron GG 25-40		2.5	V_c (m/min)	140-200	140-200	140-220	160-250	180-220	200-280
			●●●	f (mm/rev)	0.06-0.15	0.06-0.18	0.06-0.15	0.06-0.18	0.08-0.2	0.1-0.25
			4	V_c (m/min)	120-160	120-160	120-180	140-200	140-180	180-220
			●●	f (mm/rev)	0.06-0.12	0.06-0.14	0.06-0.12	0.06-0.14	0.08-0.12	0.08-0.2
			6.3	V_c (m/min)	70-100	60-90	70-100	60-90	60-100	60-120
			●	f (mm/rev)	0.06-0.1	0.06-0.1	0.06-0.1	0.06-0.1	0.08-0.1	0.08-0.1
	Cast Iron GGG	Spheroidal & Graphite	2.5	V_c (m/min)	120-180	120-180	120-200	140-220	180-220	180-240
			●●●	f (mm/rev)	0.06-0.15	0.06-0.18	0.06-0.15	0.06-0.18	0.08-0.18	0.1-0.2
			4	V_c (m/min)	120-160	120-160	120-180	140-200	140-200	160-220
			●●	f (mm/rev)	0.06-0.12	0.06-0.14	0.06-0.12	0.06-0.14	0.08-0.12	0.08-0.18
			6.3	V_c (m/min)	60-100	60-90	60-100	60-90	60-90	60-100
			●	f (mm/rev)	0.06-0.1	0.06-0.1	0.06-0.1	0.06-0.1	0.08-0.1	0.08-0.1

ISO	Workpiece Material	Hardness HB	Overhang LDRED/BDRED	a_p (mm) RE (Radius)	Boring Range 68-120		Boring Range 120-200		Boring Range 50-68	
					0.8-1.8	1.8-2.5	0.8-2.0	2.0-3.0	0.8-2.0	2.0-3.5
					0.2-0.4	0.4-0.8	0.2-0.4	0.4-0.8	0.2-0.4	0.4-0.8
K	Gray Cast Iron GG 10-25	HB<200	2.5	V_c (m/min)	120-200	110-150	150-250	180-280	150-250	180-280
			●●●	f (mm/rev)	0.08-0.25	0.08-0.3	0.08-0.25	0.08-0.35	0.08-0.25	0.08-0.35
			4	V_c (m/min)	100-150	80-120	120-170	120-170	N.R	N.R
			●●	f (mm/rev)	0.08-0.18	0.08-0.2	0.08-0.18	0.08-0.25		
			6.3	V_c (m/min)	70-100	60-90	N.R	N.R	N.R	N.R
			●	f (mm/rev)	0.08-0.15	0.08-0.12				
	Gray Cast Iron GG 25-40		2.5	V_c (m/min)	250-300	250-350	250-350	250-350	250-350	250-350
			●●●	f (mm/rev)	0.12-0.35	0.12-0.35	0.15-0.3	0.15-0.4	0.15-0.3	0.15-0.4
			4	V_c (m/min)	200-270	230-300	200-300	200-270	N.R	N.R
			●●	f (mm/rev)	0.1-0.25	0.12-0.3	0.15-0.3	0.15-0.35		
			6.3	V_c (m/min)	70-150	60-120	N.R	N.R	N.R	N.R
			●	f (mm/rev)	0.1-0.15	0.12-0.25				
	Cast Iron GGG	Spheroidal & Graphite	2.5	V_c (m/min)	200-240	200-280	200-280	220-300	220-300	220-300
			●●●	f (mm/rev)	0.12-0.3	0.12-0.3	0.15-0.3	0.15-0.35	0.15-0.3	0.15-0.35
			4	V_c (m/min)	160-220	180-240	180-250	200-270	N.R	N.R
			●●	f (mm/rev)	0.1-0.2	0.12-0.25	0.12-0.2	0.15-0.35		
			6.3	V_c (m/min)	60-100	60-100	N.R	N.R	N.R	N.R
			●	f (mm/rev)	0.1-0.15	0.12-0.2				

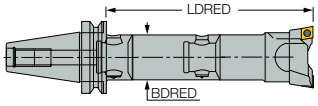
N.R. = Not Recommended

Stability

●●● Good

●● Normal

● Poor



In case of a single or a stepped boring cutter configuration, only half the feed should be applied.

BHR Rough Boring Cutting Data

ISO	Workpiece Material	Hardness HB	Overhang LDRED/BDRED	a_p (mm) RE (Radius)	Boring Range 18-28		Boring Range 28-50		Boring Range 50-68	
					0.5-1.5	1.5-2.5	0.5-1.5	1.5-2.5	0.5-2.0	1.2-3.0
					0.2-0.4	0.4	0.2-0.4	0.4	0.2-0.4	0.4-0.8
N	Aluminum / Cast	>12si	2.5	V_c (m/min)	200-300	240-350	200-300	240-350	200-300	240-35
			●●●	f (mm/rev)	0.06-0.2	0.06-0.25	0.06-0.2	0.06-0.25	0.06-0.25	0.06-0.3
			4	V_c (m/min)	150-220	150-220	150-220	150-220	150-220	150-220
			●●	f (mm/rev)	0.06-0.2	0.06-0.2	0.06-0.2	0.06-0.2	0.06-0.2	0.06-0.2
			6.3	V_c (m/min)	60-100	60-100	60-100	60-100	60-100	60-100
			●	f (mm/rev)	0.06-0.1	0.06-0.1	0.06-0.1	0.06-0.1	0.06-0.1	0.06-0.1
	Aluminum / Cast	<12si	2.5	V_c (m/min)	180-250	220-280	180-250	220-280	180-250	220-280
			●●●	f (mm/rev)	0.06-0.2	0.06-0.25	0.06-0.25	0.06-0.25	0.06-0.25	0.06-0.3
			4	V_c (m/min)	120-220	120-220	120-220	120-220	120-220	120-220
			●●	f (mm/rev)	0.06-0.2	0.06-0.2	0.06-0.2	0.06-0.2	0.06-0.2	0.06-0.25
			6.3	V_c (m/min)	60-100	60-100	60-100	60-100	60-100	60-100
			●	f (mm/rev)	0.06-0.1	0.06-0.1	0.06-0.1	0.06-0.1	0.06-0.1	0.06-0.1

ISO	Workpiece Material	Hardness HB	Overhang LDRED/BDRED	a_p (mm) RE (Radius)	Boring Range 68-120		Boring Range 120-200		Boring Range 200-500	
					0.8-3.0	1.8-4.0	0.8-3.0	2.0-4.0	0.8-3.0	2.0-4.5
					0.2-0.4	0.4-0.8	0.2-0.4	0.4-0.8	0.2-0.4	0.4-0.8
N	Aluminum / Cast	>12si	2.5	V_c (m/min)	200-300	240-350	200-300	240-350	200-300	240-350
			●●●	f (mm/rev)	0.06-0.25	0.06-0.3	0.06-0.25	0.06-0.4	0.06-0.25	0.06-0.4
			4	V_c (m/min)	150-220	150-220	150-220	150-220	N.R	N.R
			●●	f (mm/rev)	0.06-0.2	0.06-0.2	0.06-0.2	0.06-0.2		
			6.3	V_c (m/min)	60-100	60-100	N.R	N.R	N.R	N.R
			●	f (mm/rev)	0.06-0.1	0.06-0.1				
	Aluminum / Cast	<12si	2.5	V_c (m/min)	180-250	220-280	180-250	220-280	180-250	220-280
			●●●	f (mm/rev)	0.06-0.25	0.06-0.3	0.06-0.3	0.06-0.4	0.06-0.3	0.06-0.4
			4	V_c (m/min)	120-220	120-220	120-220	120-220	N.R	N.R
			●●	f (mm/rev)	0.06-0.2	0.06-0.2	0.06-0.2	0.06-0.2		
			6.3	V_c (m/min)	60-100	60-100	N.R	N.R	N.R	N.R
			●	f (mm/rev)	0.06-0.1	0.06-0.1				

N.R. = Not Recommended

Stability

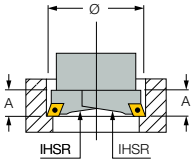
●●● Good

●● Normal

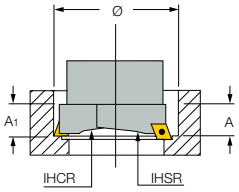
● Poor

Cutting Conditions

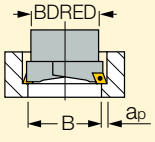
Cutting Conditions for BHR Rough Boring Heads



Twin boring cutters with the same cutting diameter



Twin boring cutters with different cutting diameters and heights (Z=1)



B Working Range	a_p Steel	a_p Cast Iron, Aluminum
18-28	a_p - 1.5-2	a_p - 2-2.5
28-50	a_p - 2-3	a_p - 2.5-3.5
50-68	a_p - 3-4	a_p - 3.5-5
68-200	a_p - 4-5	a_p - 5-7
200-500	a_p - 5-6	a_p - 6-8

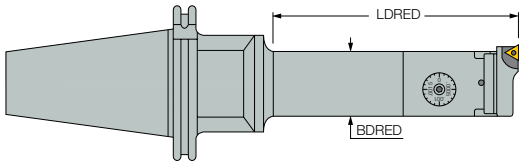
It's advisable to start with B hole≥boring bar diameter d

Cutting Conditions for Boring Operations with BHC Combi Rough and Fine

ISO	Material	Boring Depth to Diameter Ratio	Working Conditions	Cutting Speed V_c=m/min	Feed fn=mm/rev		Carbide Grade	Cutting Depth mm			
					RE=0.2	RE=0.4		Finishing	Roughing Ø28-Ø46	Roughing Ø46-Ø75	Roughing Ø75-Ø160
P	Carbon Steel HB < 200	LDRED/BDRED = 2.5	good	160-250	0.1-0.2	0.1-0.2	IC807, IC908, IC520N, IC20N, IC30N, IC8150, IC8250, IC3028	0.15-0.3	1.5	2	2.5
		LDRED/BDRED = 4	normal	120-180	0.1-0.2	0.1-0.2					
		LDRED/BDRED = 6.3	difficult	70-100	*0.1-0.15	0.1-0.2					
	Carbon Steel HB > 200	LDRED/BDRED = 2.5	good	140-200	0.1-0.2	0.1-0.2		0.15-0.3	1.5	2	2.5
		LDRED/BDRED = 4	normal	100-160	0.1-0.2	0.1-0.2					
		LDRED/BDRED = 6.3	difficult	70-100	*0.1-0.15	0.1-0.2					
M	Stainless Steel AISI 304-316	LDRED/BDRED = 2.5	good	100-140	0.1-0.2	0.1 -0.2	IC807, IC30N, IC3028	0.15-0.3	1.5	2	2.5
		LDRED/BDRED = 4	normal	80-110	0.1-0.2	0.1 -0.2					
		LDRED/BDRED = 6.3	difficult	60-90	*0.1-0.15	0.1-0.2					
K	Cast Iron	LDRED/BDRED = 2.5	good	120-160	0.1-0.2	0.1 -0.2	IB55, IC908, IC5005, IC428	0.15-0.3	2	2.5	3
		LDRED/BDRED = 4	normal	90-120	0.1-0.2	0.1 -0.2					
		LDRED/BDRED = 6.3	difficult	60-90	*0.1-0.15	0.1-0.2					
N	Aluminum	LDRED/BDRED = 2.5	good	250-350	0.1-0.2	0.1-0.2	ID5, IC20	0.15-0.3	2	2.5	3
		LDRED/BDRED = 4	normal	160-250	0.1-0.2	0.1-0.2					
		LDRED/BDRED = 6.3	difficult	100-150	*0.1-0.15	0.1-0.2					

* Only for finishing Inserts.
** Use inserts with the same corner radii for both roughing and finishing inserts

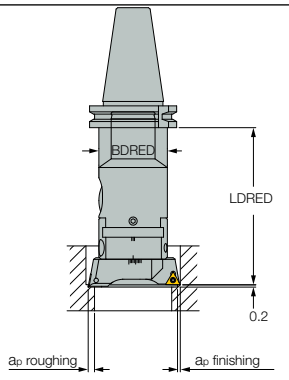
V_c Cutting speed (m/min)
D Diameter of workpiece (mm)
n Number of revolutions / min' (rev./min)
V_f Feed rate (mm/min.)
fn Feed / rev/ (mm/rev)
∏ 3.14



$$Vc = \frac{\prod \cdot D \cdot n}{1000}$$

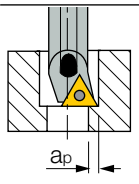
$$n = \frac{Vc\ 1000}{\prod \cdot D}$$

$$Vf = n \cdot fn$$



In case of a single or a stepped boring cutter configuration, only half the feed should be applied.

Cutting Conditions for BHD / BHF / BHE Fine Boring Heads



ISO	Material	LDRED/BDRED	Stability	Cutting Speed V_c=m/min	Feed f=mm/rev Insert Radius RE=0.2	Feed f=mm/rev Insert Radius RE=0.4	Insert Grade
P	Carbon Steel HB<200	LDRED/BDRED=2.5	good	200-300	0.05-0.08	0.08-0.10	IC20N
		LDRED/BDRED=4	normal	160-250	0.05-0.08	0.08-0.10	IC30N
		LDRED/BDRED=6.3	difficult	70-100	0.05-0.08	-	IC54
	Carbon Steel HB<200	LDRED/BDRED=2.5	good	160-250	0.05-0.08	0.08-0.10	IC20N
		LDRED/BDRED=4	normal	150-200	0.05-0.08	0.08-0.10	IC30N
		LDRED/BDRED=6.3	difficult	70-100	0.05-0.08	-	
M	Stainless Steel AISI 304-316	LDRED/BDRED=2.5	good	120-160	0.05-0.08	0.08-0.10	IC54
		LDRED/BDRED=4	normal	100-140	0.05-0.08	0.08-0.10	
		LDRED/BDRED=6.3	difficult	70-100	0.05-0.08	-	
K	Cast Iron	LDRED/BDRED=2.5	good	120-160	0.05-0.08	0.08-0.10	IC20
		LDRED/BDRED=4	normal	100-140	0.05-0.08	0.08-0.10	
		LDRED/BDRED=6.3	difficult	70-100	0.05-0.08	-	
N	Aluminum	LDRED/BDRED=2.5	good	300-400	0.05-0.08	0.08-0.10	IC20
		LDRED/BDRED=4	normal	250-350	0.05-0.08	0.08-0.10	
		LDRED/BDRED=6.3	difficult	100-150	0.05-0.08	-	

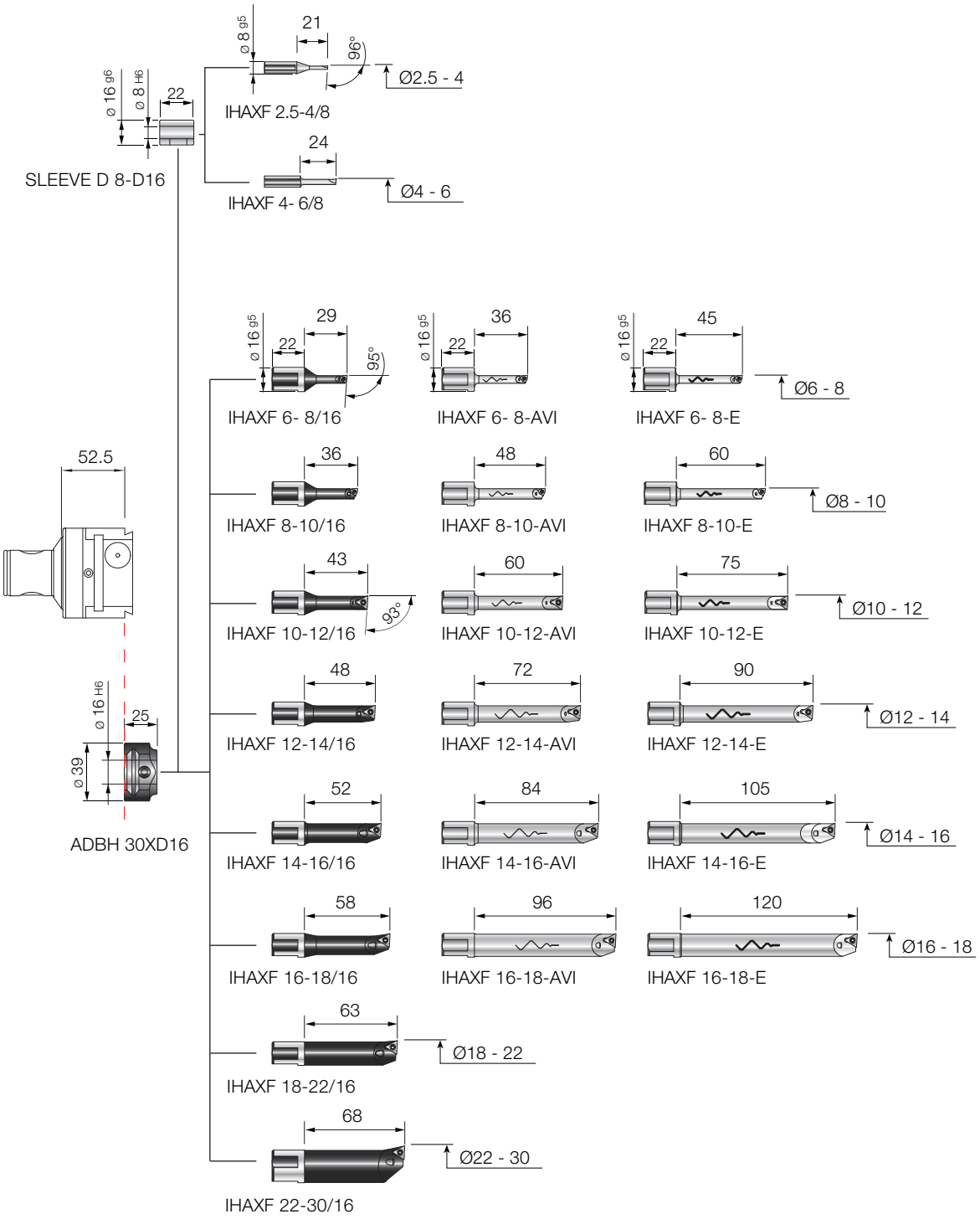
(1) a_p=0.1 min

Fine Boring Head Range

2 µm Direct Diametric Adjustment

BHF MB50-80x94
BHF MB80-80x94
ø2.5-160

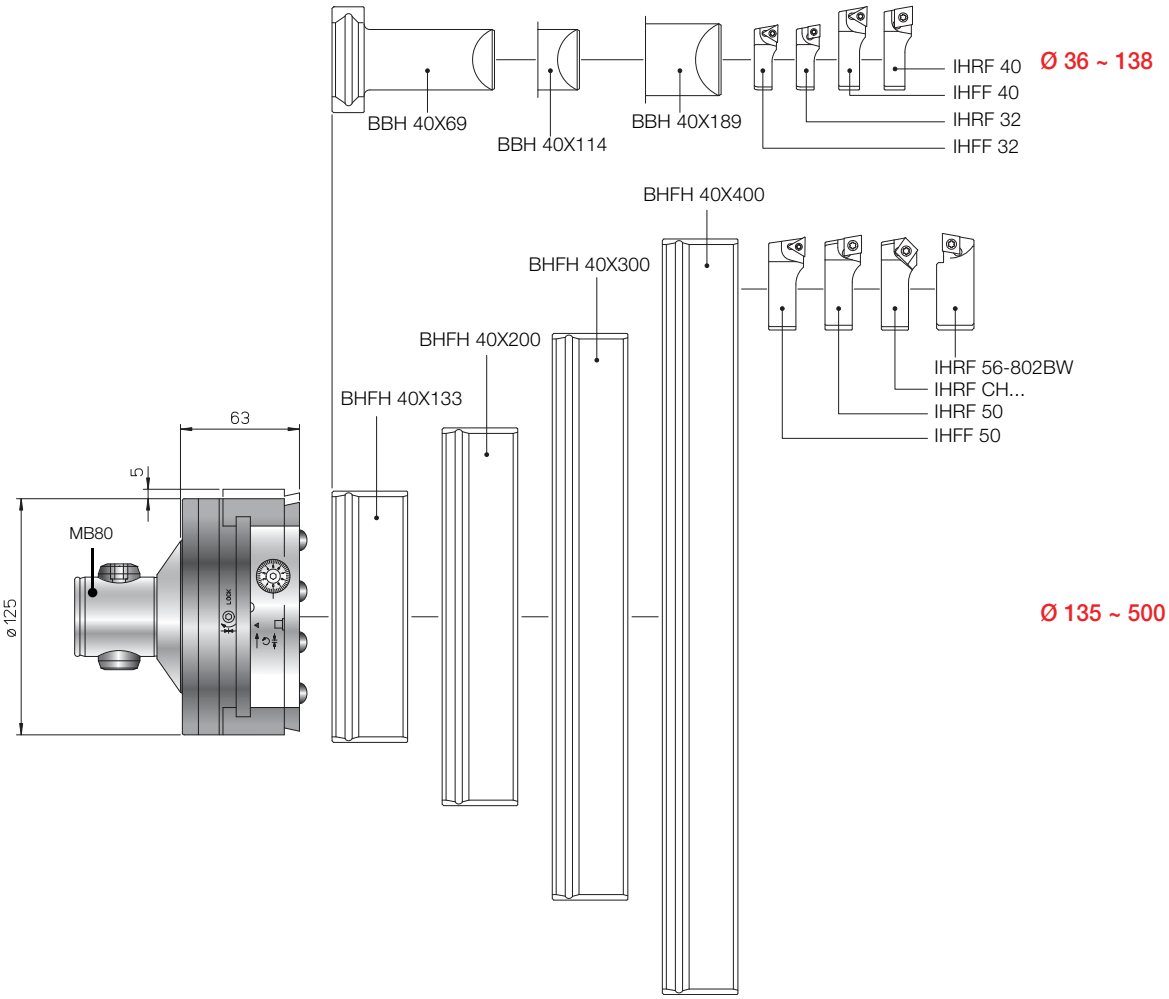
2 µm



Fine Boring Head Range

2 µm Direct Diametric Adjustment

BHF MB80-125x114
ø36-500

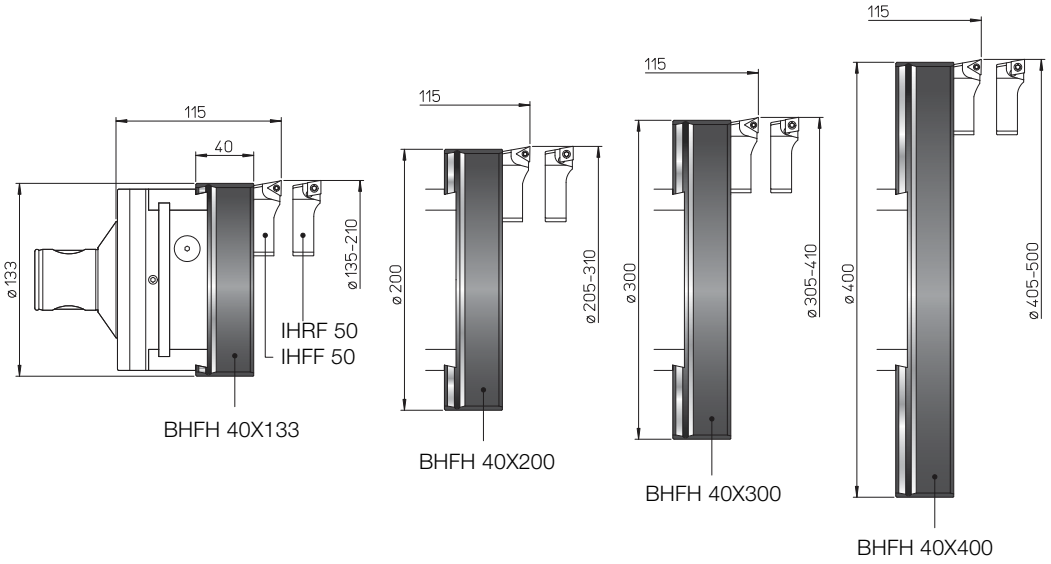


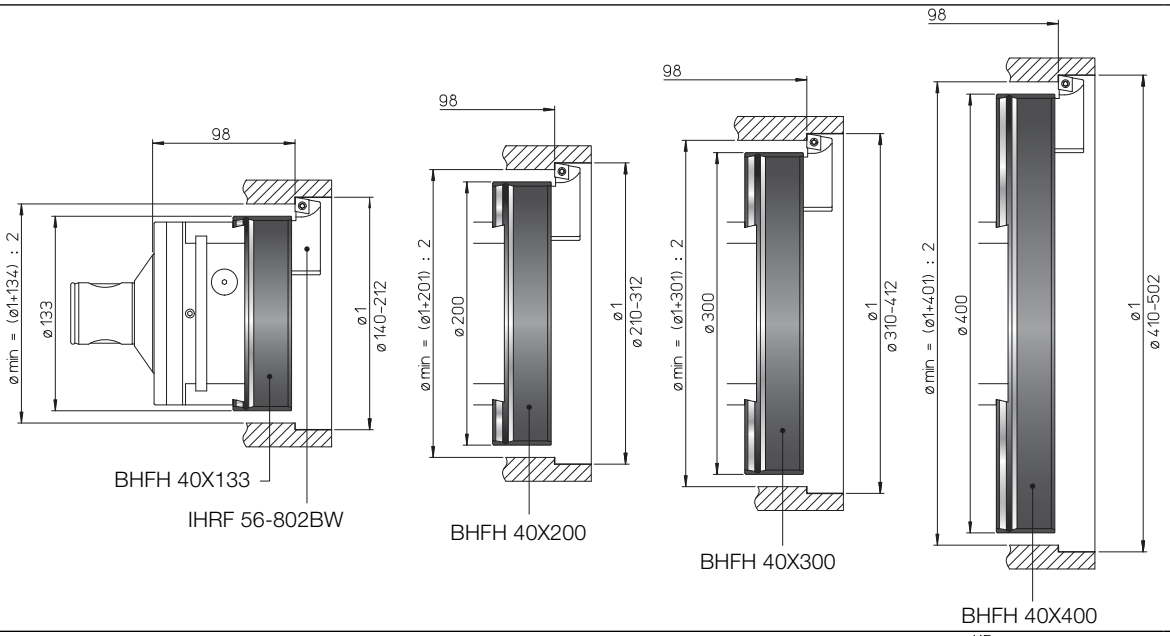
Fine Boring Head Range

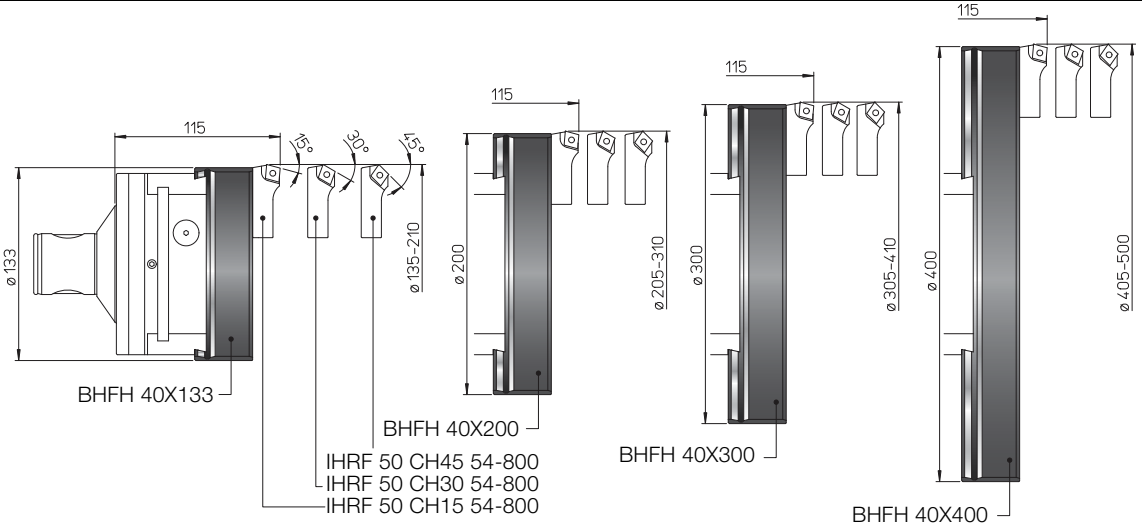
2 µm Direct Diametric Adjustment

BHF MB80-125x114
ø2.5-160

2 µm



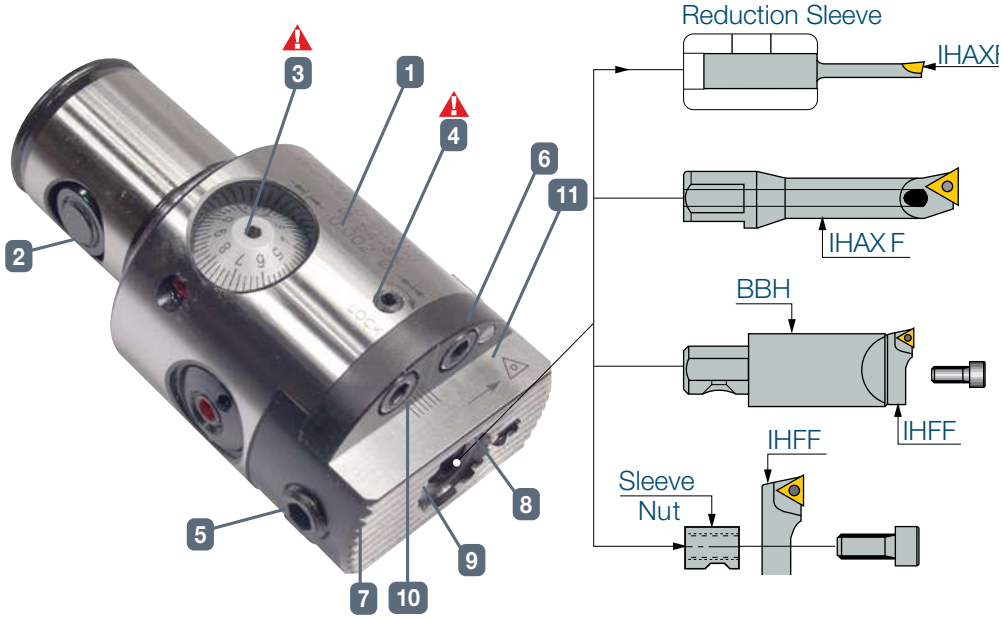




Fine Boring Head BHF 16-50

Operating Instructions

BHF 50 Shown



1. Body
2. Expanding pin
3. Graduated dial
4. Slide locking screw
5. Toolholder locking screw
6. Coolant nozzle
7. Serrated face
8. Oiling nipple
9. Tool bore 16H7
10. Slide adjustment range
    Do not exceed the range marks!!
11. Cutting edge position mark

Assembly

- Before mounting the BHF boring head, make sure the expanding pin **[2]** does not protrude from the cylindrical body part.
- Insert BHF into the shank.
- Tighten pin [**2**] by turning clockwise following the recommended tightening torque guidelines below:

Recommended torque:	(N.m)
BHF MB16-16x34	2.0 - 2.5
BHF MB20-20x40	4.0 - 4.5
BHF MB25-25x50	6.5 - 7.5
BHF MB32-32x63	7.0 - 8.0
BHF MB40-40x80	16.0 - 18.0
BHF MB50-50x60	30.0 - 35.0

- Insert the screw **[5]**. If it protrudes, the sleeve should be rotated until the screw can enter the recess in the sleeve nut, reduction sleeve or boring bar.

Disassembly

In order to separate the BHF from the shank, loosen the expanding pin **[2]** by turning counterclockwise.

Positioning

- The tool slide **[7]** allows for a 4 mm adjustment by turning graduated dial **[3]** counterclockwise.
- When changing the direction of the dial rotation, backlash must be compensated for.
- After positioning, lock the tool slide by means of the screw **[4]**.
- Loosen screw [**4**] before making any slide adjustment.

Maintenance

Weekly:

- Lubricate through the nipple **[8]** with ISO UN G220 oil.

Periodically:

- Clean and lubricate the conical and cylindrical matching surfaces.
- Treat expanding pin **[2]** with an anti-friction lubricant.
- Clean and lubricate the tool slide guideway.

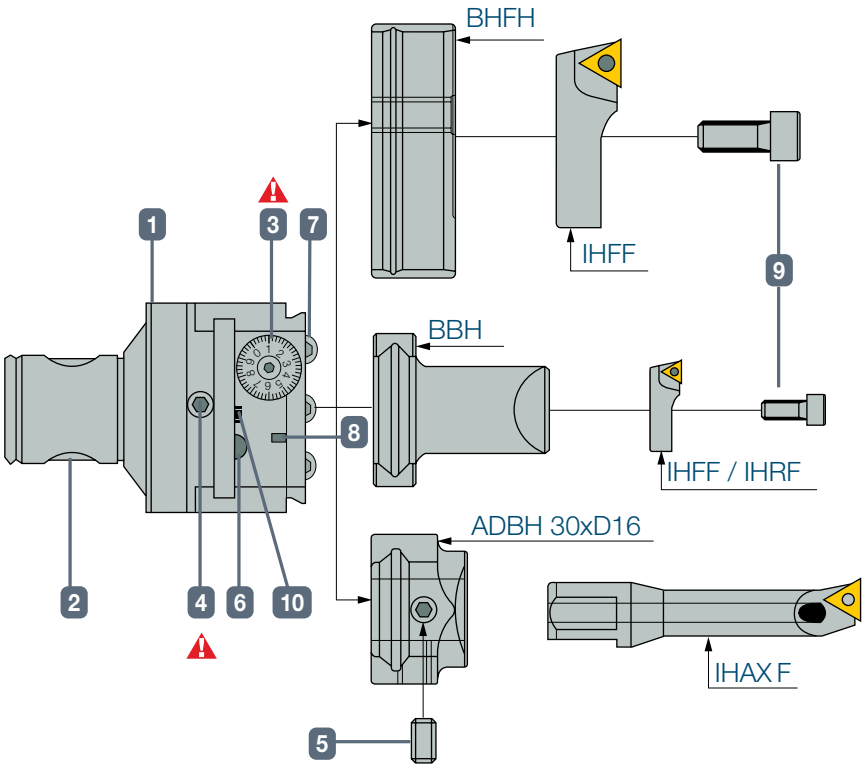
Important Note:

Toolholder should be firmly affixed to the slide.

Fine Boring Head BHF 63-125

Operating Instructions

BHF 50 Shown



1 Body
2 Expanding pin
3 Graduated dial
4 Slide locking screw
5 Toolholder locking screw
6 Coolant nozzle
7 Slide holder
8 Oiling nipple
9 Toolholder locking screws
10 Slide adjustment range
Do not exceed the range marks

Assembly

- Before mounting the BHF boring head, make sure the expanding pin **[2]** does not protrude from the cylindrical body part.
- Insert BHF into the shank.
- Tighten pin [2] by turning clockwise following the recommended tightening torque guidelines below:

Recommended torque:	(N.m)
BHF MB50- 63x87	30-35
BHF MB50- 80x94	30-35
BHF MB63- 63x87	80-90
BHF MB80- 80x94	80-90
BHF MB80-125x94	80-90

- Insert the screw **[5]**. If it protrudes, the sleeve should be rotated until the screw can enter the recess in the sleeve nut or boring bar.

Disassembly

In order to separate the BHF from the shank, loosen the expanding pin **[2]** by turning counterclockwise.

Positioning

- The tool slide **[7]** allows for a 5 mm adjustment by turning graduated dial **[3]** counterclockwise.
- When changing the direction of the dial rotation, backlash must be compensated for.
- After positioning, lock the tool slide by means of the screw **[4]**.
- Loosen screw [4] before making any slide adjustment.

Maintenance

Weekly:

- Lubricate through the nipple **[8]** with ISO UN G220 oil.

Periodically:

- Clean and lubricate the conical and cylindrical matching surfaces.
- Treat expanding pin **[2]** with an anti-friction lubricant.
- Clean and lubricate the tool slide guideway.

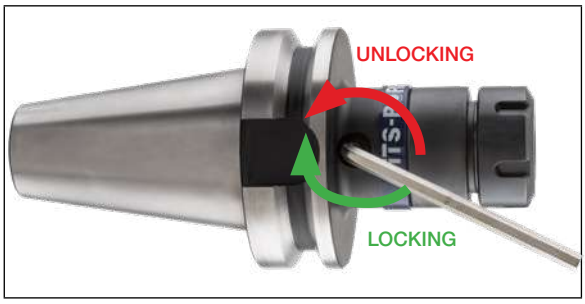
Important Note:
Toolholder should be firmly affixed to the slide.

Operation and Maintenance

MB Connection

To LOCK, rotate the radial pin clockwise

To UNLOCK, rotate the radial pin counter-clockwise
Table shows the recommended tightening torques:



Before assembling the MB connection elements, make sure the radial pin is not projected from the cylindrical parts.

CORRECT ✔	WRONG ✗
	

Stages for adjusting boring heads with dial:

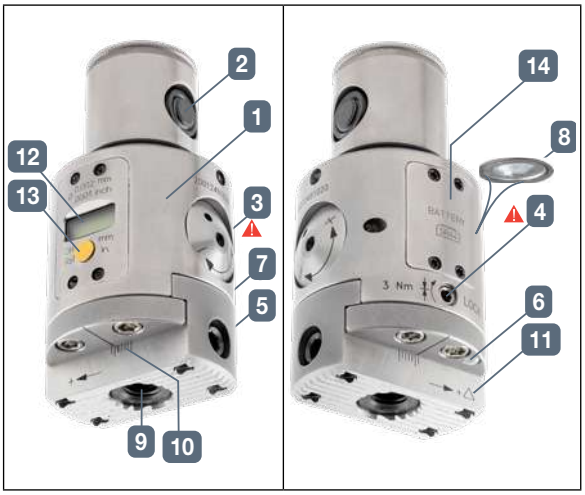
1. Loosen slide adjustment screw
2. Adjust the dial screw
3. Tighten slide adjustment screw

1	2	3
		

Driving Torque	
MB	**Nm**
MB14	2-2.5
MB16	2-2.5
MB20	4-4.5
MB25	6.5-7.5
MB32	7-8
MB40	16-18
MB50	30-35
MB63	70-80
MB80	70-80
MB110	200-220

BHD Digital Fine Boring Head Metric/Inch Operating Instructions

BHD MB 80-32



Tighten pin [2] by turning clockwise
Following the recommended tightening torque guidelines below:

Designation	(Nm)	(Lbf.ft)	Allen Key (mm)
BHD MB32-32-83	7.0-8.0	5.16-5.90	4
BHD MB40-40-90	16.0-18.0	11.80-13.28	5
BHD MB50-50-60	30.0-35.0	22.13-25.81	6
BHD MB63-63-89	70.0-80.0	51.63-59.0	8
BHD MB80-80-104	70.0-80.0	51.63-59.0	8

1 Body
2 Expanding pin
3 Dial
4 Slide locking screw
5 Toolholder locking screw
6 Coolant nozzle
7 Slide holder
8 Oiling nipple
9 Tool bore 16H7
10 Slide adjustment range
11 Cutting edge position mark
12 Digital display
13 Selection button
14 Battery cover

Assembly

- Before mounting the BHD boring head, make sure the expanding pin **[2]** does not protrude from the cylindrical body part.
- Insert BHD boring head into the shank.

⚠ Tighten pin **[2]** by turning clockwise.

- Tighten screw **[5]**. If it protrudes, the sleeve should be rotated until the screw can enter the recess in the sleeve nut or boring bar.

Disassembly
To separate the BHD from the shank, loosen the expanding pin **[2]** by turning counterclockwise.

Positioning
The display **[12]** shows the value of the adjustment diameter with a 2µm screen resolution.

- Switch on the BHD boring head by pushing the selection button **[13]**. The display **[12]** will show the value of the previous adjustment. To reset the value displayed, press and hold the button **[13]**. After 2 seconds, the display will show. Release the button. The display will show the value 0.000.

⚠ Loosen screw **[4]** before making any slide adjustment to the dial **[3]**.

- Adjust the required diameter by turning the dial **[3]** counterclockwise. The tool slide **[7]** allows a 5mm radial adjustment. The display **[12]** will show the new value in diameter. The absolute value CANNOT be viewed, only the relative value.
- After positioning, lock the tool slide by means of the screw **[4]** see torque recommendation. If unused for more than 30 seconds, the display switches off automatically.

WARNINIG
⚠ DO NOT perform any slide movement when the display is switched off.
⚠ DO NOT exceed the range marks **[10]**.

Before carrying out a fine adjustment (described in FIG.3):
1 Loosen screw **[4]** of slide adjustment.
2 Adjust dial **[3]** to required diameter.
3 Tighten screw **[4]**.

Setting metric/inch
To change unit readout from metric to inch:

- Press and hold the button **[13]**. The display shows "----", after 10 sec the new unit readout appears on the left of the display.
- Release the button.

BHD Digital Fine Boring Head Metric/Inch Operating Instructions

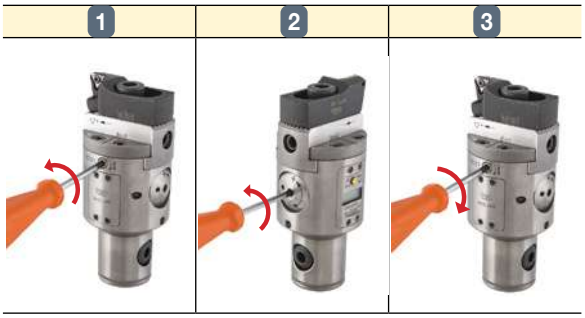


Fig. 3

Locking Screw Tightening Torques (Nm)

Designation:	(Nm)
BHD MB32-32-83	2.0
BHD MB40-40-90	2.5
BHD MB50-50-60	3.0
BHD MB63-63-89	3.5
BHD MB80-80-104	4.0

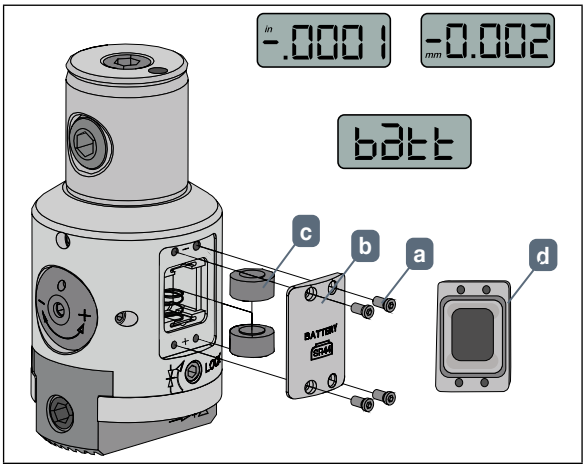


Fig. 4

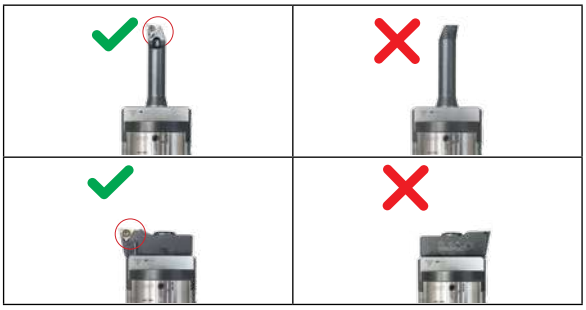


Fig. 5

Battery Replacement

When the batteries are low the display will show a warning sign "batt" for a few seconds (FIG.4). It is recommended to replace the batteries as soon as possible.

To replace the batteries (**FIG.5**):

- Remove the battery compartment cover **[b]** by unscrewing the 4 screws **[a]**.
- Replace the two batteries using type SR44 1.55V and position them in the correct direction.
- Tighten the 4 screws **[a]**.
- The integrated seal **[d]** is now secured on the battery cover.

Maintenance Weekly:

- Lubricate through the nipple **[8]** with ISO UN G220 oil.

Periodically:

Clean and lubricate the conical and cylindrical matching surfaces.

Treat the expanding pin **[2]** with an anti-friction lubricant.

Clean and lubricate the tool slide guide way.

WARNING

- The only maneuvering and adjustment screws to be used are those listed in the components section.
- The screws not listed in the components section should not be touched so as to avoid malfunction of the boring bars and heads.
- Bit holders and boring bars should be assembled with the insert turned in the same direction as the screw **[4]**.
- The use of coolant on the BHD boring head double-bit heads should be 40 BAR max.
- The machine tool must be equipped with all of the active and passive safety devices that will assure safe use of the BHD boring head.
- ISCAR requires that the machine tools where the BHD boring head is mounted comply with the provisions of the 2006/42/CE directive.

Inserts

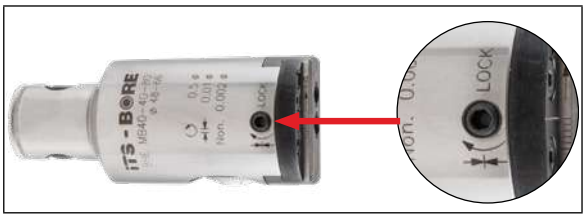
We advise you to use the inserts proposed by ISCAR. The use of different inserts can affect ultimate machining results.

Cartridge should be mounting according to the insert symbol direction

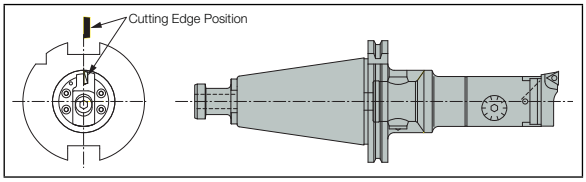
CORRECT ✔	WRONG ✗
	

CORRECT ✔	WRONG ✗
	

Warning: slide position must be adjusted within the indicated limits. Excess movements damage internal kinematics



When BHF is assembled, the cutting edge should be positioned in relation to the arbor key slots.



Maintenance

Boring heads should be lubricated with ISO UN G220 oil weekly

ITSBORE