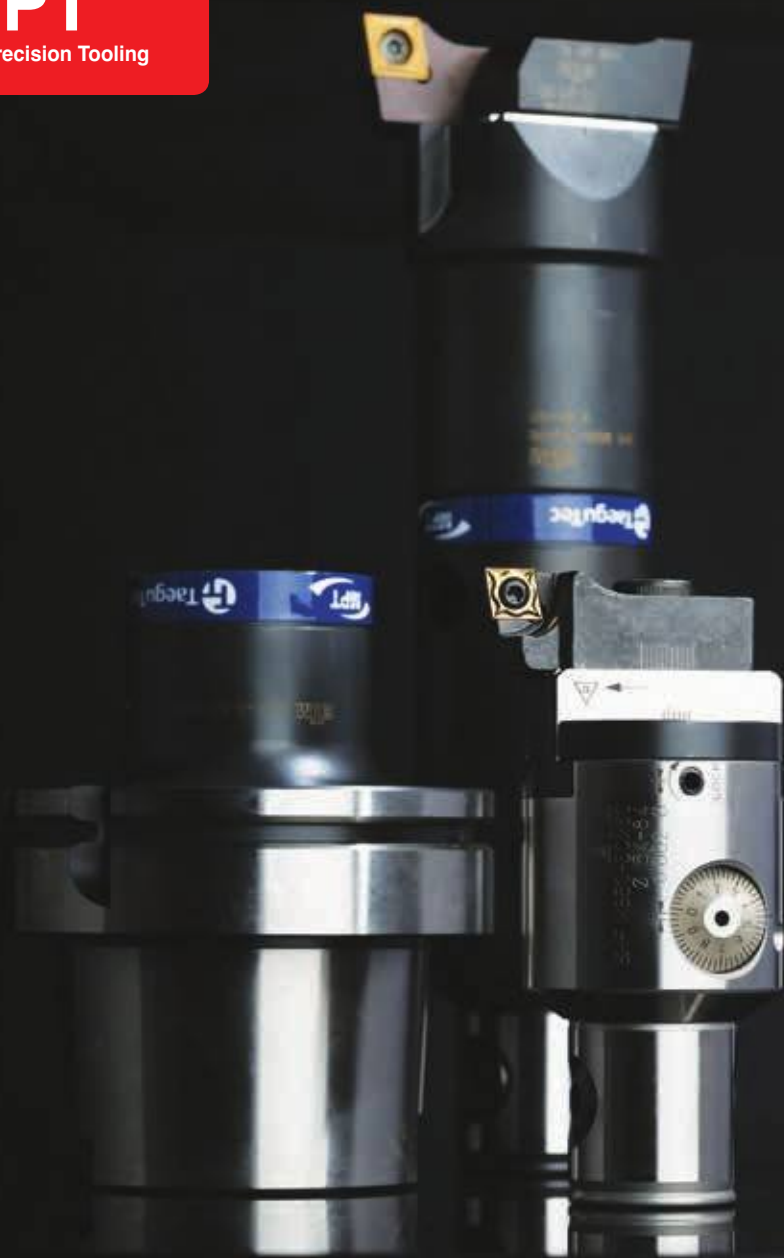


# MPT

Modular Precision Tooling



# MPT

Modular Precision Tooling



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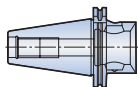



# Tool Selection Guide

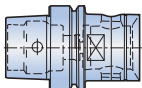
## MPT system

### Shanks

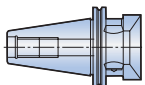
SKA/SKB  
 H6-H7



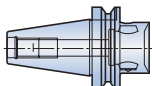
HSK  
 H9-H10



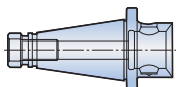
CATM  
 H8



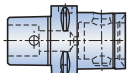
BT/BTB  
 H12



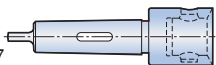
ISOM/ISO  
 H13




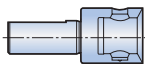
C MB  
 H11



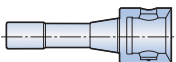
MTT  
 H17



ST  
 H14-H15



R8  
 H17

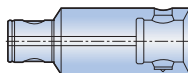


DIN2079  
 H18

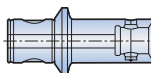


### Extensions and reducers

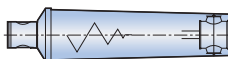
EX  H19



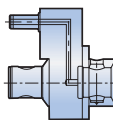
RE  H20



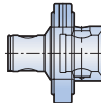
RE AVI  H21



CHS  H21



CHR  H21

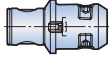


# Tool Selection Guide

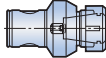
MPT system

## Toolholders

EMH  H22



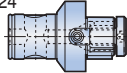
CC  H23



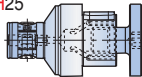
DC  H23



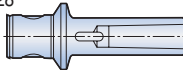
SMH  H24



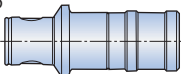
STUB  H25



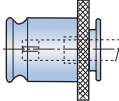
AMT  H28



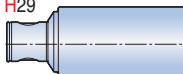
TP  H25



TCS/TCC  H26-H27

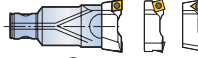


BLANK  H29

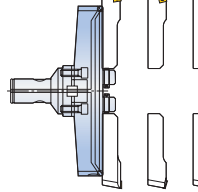


## Rough boring heads

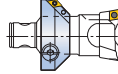
BHR  H30



TCH  H31

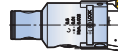


CHA  H34



## Combi boring heads

BHC  H36

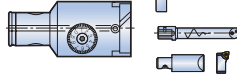


## Fine boring heads

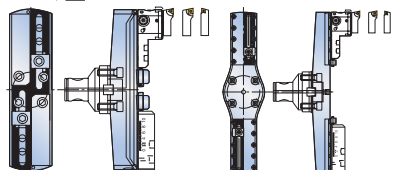
BHE  H38-H39



BHF  H43-45

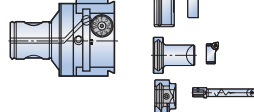


TCH  H57

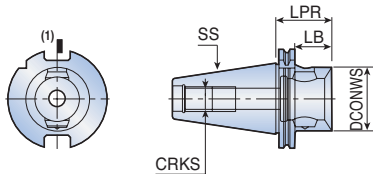


BHF 50,63,80

 H45

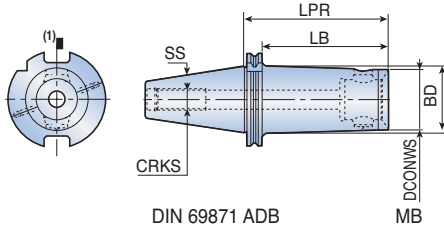


## Taper shank with MB connection



DIN 69871- AD / ISO 7388/1 MB

**Fig.1**



DIN 69871 ADB

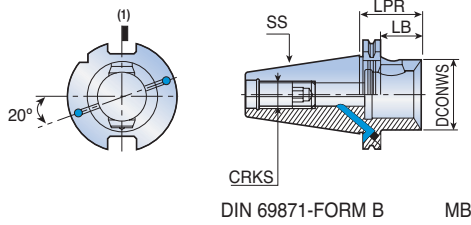
MB

**Fig.2**

Designation	Dimension (mm)					CRKS	Kg	Fig.
	SS	DCONWS	LPR	LB	BD			
<b>SKA 30-MB32</b>	30	MB32	30	10.5	-	M12	0.6	1
<b>30-MB50</b>	30	MB50	60	41	-	M12	0.7	1
<b>40-MB40</b>	40	MB40	45	26	-	M16	0.9	1
<b>40-MB50</b>	40	MB50	48	29	-	M16	1.2	1
<b>40-MB63</b>	40	MB63	80	61	-	M16	1.6	1
<b>45-MB50</b>	45	MB50	48	29	-	M20	1.9	1
<b>45-MB63</b>	45	MB63	60	41	-	M20	0.2	1
<b>45-MB80</b>	45	MB80	66	47	-	M20	2.3	1
<b>50-MB50</b>	50	MB50	48	29	-	M24	2.8	1
<b>50-MB63</b>	50	MB63	56	37	-	M24	3.0	1
<b>50-MB80</b>	50	MB80	62	43	-	M24	3.6	1
<b>40 MB40x120 A/B</b>	40	MB40	120	101	44.50	M16	1.7	2
<b>40 MB50x120 A/B</b>	40	MB50	120	101	-	M16	2.8	2
<b>50 MB50x120 A/B</b>	50	MB50	120	101	60.00	M24	4.0	2
<b>50 MB63x150 A/B</b>	50	MB63	150	131	70.00	M24	2.8	2
<b>50 MB80x180 A/B</b>	50	MB80	180	161	-	M24	7.9	2
<b>50 MB110x150</b>	50	MB110	150	131	-	M24	8.2	2
<b>60 MB80x65</b>	60	MB80	65	46	-	M30	10.7	2
<b>60 MB110x100</b>	60	MB110	100	81	-	M30	10.5	2
<b>60 MB110x200</b>	60	MB110	200	181	-	M30	18.0	2

• <sup>(1)</sup>Cutting edge position

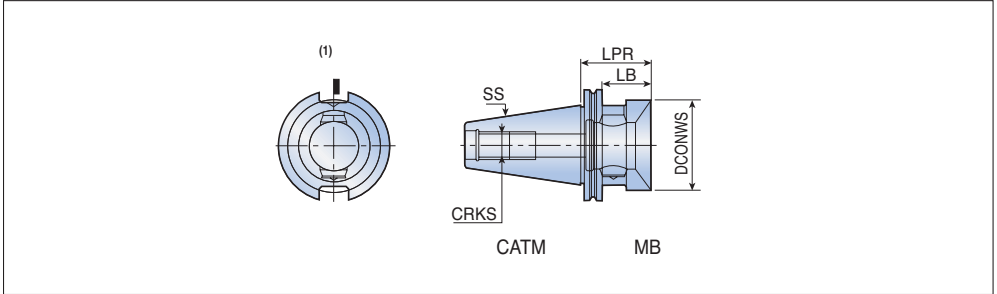
### Taper shank with MB connection



Designation	Dimension (mm)				CRKS	Kg
	SS	DCONWS	LPR	LB		
<b>SKB 40-MB50</b>	40	MB50	48	29	M16	0.9
<b>40-MB63</b>	40	MB63	80	61	M16	1.5
<b>45-MB50</b>	45	MB50	48	29	M20	1.7
<b>45-MB63</b>	45	MB63	60	41	M20	1.9
<b>50-MB50</b>	50	MB50	48	29	M24	2.7
<b>50-MB63</b>	50	MB63	56	37	M24	2.8
<b>50-MB80</b>	50	MB80	62	43	M24	3.4

• <sup>(1)</sup>Cutting edge position

Taper shank with MB connection

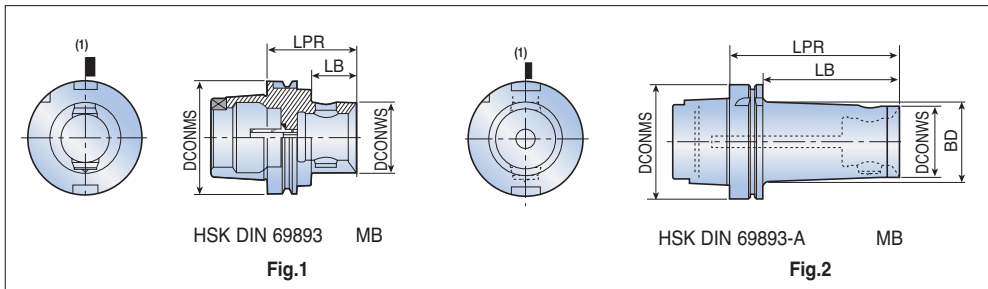


Designation	Dimension (mm)				CRKS	Kg
	SS	DCONWS	LPR	LB		
<b>CATM 40-MB50</b>	40	MB50	66	47	M16	1.1
<b>40-MB63</b>	40	MB63	100	81	M16	1.9
<b>45-MB50</b>	45	MB50	48	29	M20	1.7
<b>45-MB63</b>	45	MB63	75	56	M20	2.1
<b>45-MB80</b>	45	MB80	80	61	M20	2.7
<b>50-MB50</b>	50	MB50	48	29	M24	2.9
<b>50-MB63</b>	50	MB63	56	37	M24	2.9
<b>50-MB80</b>	50	MB80	62	43	M24	3.2

• (1)Cutting edge position



## HSK shank with MB connection

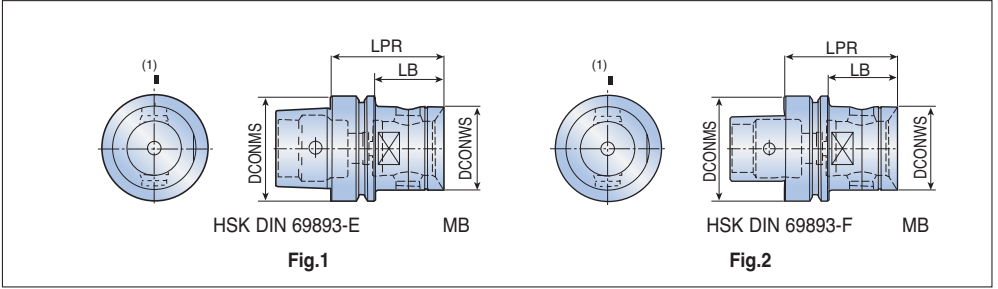


Designation	Dimension (mm)					Kg	Fig.
	DCONMS	DCONWS	LPR	LB	BD		
<b>HSK A 50-MB50</b>	50	MB50	66	40	-	0.6	1
<b>63-MB40</b>	63	MB40	60	34	-	1.0	1
<b>63-MB40x120</b>	63	MB40	120	94	46	1.6	2
<b>63-MB50</b>	63	MB50	66	40	-	0.9	1
<b>63-MB50x120</b>	63	MB50	120	94	-	1.1	2
<b>63-MB63</b>	63	MB63	75	49	-	1.1	1
<b>80-MB50</b>	80	MB50	70	44	-	1.5	1
<b>80-MB63</b>	80	MB63	80	54	-	1.8	1
<b>80-MB80</b>	80	MB80	86	60	-	2.1	1
<b>100-MB50</b>	100	MB50	72	43	-	2.0	1
<b>100-MB50x120</b>	100	MB50	120	91	60	4.9	2
<b>100-MB63</b>	100	MB63	82	53	-	2.7	1
<b>100-MB63x150</b>	100	MB63	150	121	70	4.7	2
<b>100-MB80</b>	100	MB80	88	59	-	3.0	1
<b>100-MB80x180</b>	100	MB80	180	151	-	7.3	2

• <sup>(1)</sup>Cutting edge position

# HSK E-MB/HSK F-MB

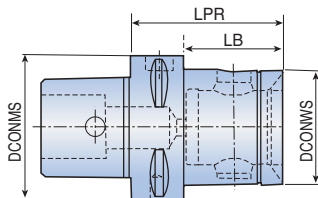
HSK shank with MB connection



Designation	Dimension (mm)				kg	Fig.
	DCONMS	DCONWS	LPR	LB		
<b>HSK E 40 MB32</b>	40	MB32	42	22	0.3	1
<b>50 MB50</b>	50	MB50	66	-	0.7	1
<b>HSK F 63 MB50</b>	63	MB50	65	39	1.0	2

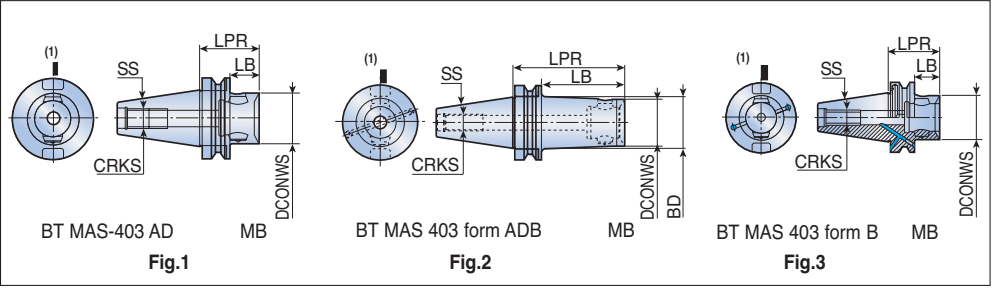
• (1)Cutting edge position

## MB connection with C-adapter taper shank



Designation	Dimension (mm)				Kg
	DCONMS	DCONWS	LPR	LB	
<b>C6 MB50x67</b>	63	MB50	67	45	1.1
<b>MB63x77</b>	63	MB63	77	-	1.8
<b>C8 MB63x70</b>	80	MB63	70	39	2.3

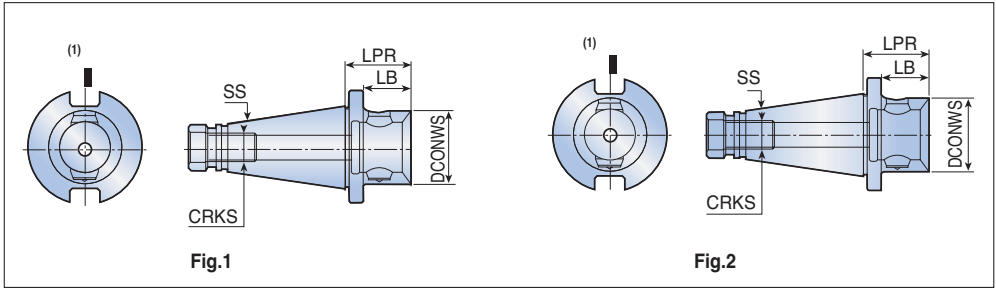
## BT form taper shanks with MB connection



Designation	Dimension (mm)					CRKS	Kg	Fig.
	SS	DCONWS	LPR	LB	BD			
<b>BT 30-MB32</b>	30	MB32	32	10.6	-	M12	0.5	1
<b>30-MB50</b>	30	MB50	60	38.6	-	M12	0.7	1
<b>35-MB50</b>	35	MB50	60	36	-	M12	0.8	1
<b>40-MB40</b>	40	MB40	45	18	-	M16	0.6	1
<b>40-MB50</b>	40	MB50	48	21	-	M16	0.9	1
<b>40-MB63</b>	40	MB63	66	39	-	M16	1.2	1
<b>45-MB50</b>	45	MB50	62	29	-	M20	1.7	1
<b>45-MB63</b>	45	MB63	70	37	-	M20	2.3	1
<b>45-MB80</b>	45	MB80	70	37	-	M20	2.7	1
<b>50-MB50</b>	50	MB50	66	28	-	M24	3.5	1
<b>50-MB63</b>	50	MB63	75	37	-	M24	3.7	1
<b>50-MB80</b>	50	MB80	75	37	-	M24	4.0	1
<b>40-MB40x120 A/B</b>	40	MB40	120	93	44.5	M16	0.9	2
<b>40-MB50x120 A/B</b>	40	MB50	120	93	-	M16	1.9	2
<b>50-MB50x120 A/B</b>	50	MB50	120	82	60	M24	4.2	2
<b>50-MB63x150 A/B</b>	50	MB63	150	112	70	M24	5.8	2
<b>50-MB80x180 A/B</b>	50	MB80	180	142	-	M24	7.5	2
<b>50-MB110x140</b>	50	MB110	140	102	-	M24	6.8	2
<b>60-MB110x110</b>	60	MB110	110	63	-	M30	11.5	2
<b>60-MB110x200</b>	60	MB110	200	152	-	M30	18.1	2
<b>BTB 40-MB50</b>	40	MB50	48	21	-	M16	0.9	3
<b>40-MB63</b>	40	MB63	66	39	-	M16	1.2	3
<b>50-MB50x66</b>	50	MB50	66	28	-	M24	3.5	3
<b>50-MB63x75</b>	50	MB63	75	37	-	M24	3.7	3
<b>50-MB80</b>	50	MB80	75	37	-	M24	4.0	3

• <sup>(1)</sup>Cutting edge position

## ISO Taper shank with MB connection



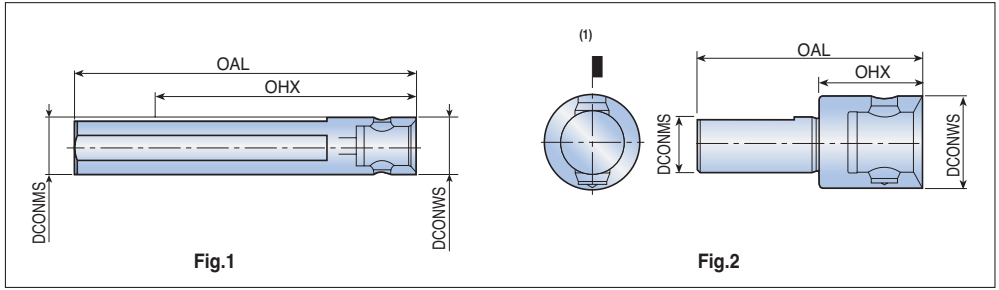
**Fig.1**

**Fig.2**

Designation	Dimension (mm)				CRKS	Kg	Fig.
	SS	DCONWS	LPR	LB			
<b>ISOM 30-MB50</b>	30	MB50	58	-	M12	0.6	1
<b>40-MB50</b>	40	MB50	48	36	M16	0.9	1
<b>40-MB63</b>	40	MB63	60	-	M16	1.2	1
<b>45-MB50</b>	45	MB50	48	33	M20	1.6	1
<b>45-MB63</b>	45	MB63	60	45	M20	1.9	1
<b>45-MB80</b>	45	MB80	66	-	M20	2.2	1
<b>50-MB50</b>	50	MB50	48	33	M24	2.6	1
<b>50-MB63</b>	50	MB63	56	41	M24	2.7	1
<b>50-MB80</b>	50	MB80	60	45	M24	3.2	1
<b>ISO 40-MB50</b>	40	MB50	48	36	UNC 5/8"-11	0.9	2
<b>40-MB63</b>	40	MB63	60	-	UNC 5/8"-11	1.2	2
<b>50-MB50</b>	50	MB50	48	33	UNC 1"-8	2.6	2
<b>50-MB63</b>	50	MB63	56	41	UNC 1"-8	2.7	2
<b>50-MB80</b>	50	MB80	60	45	UNC 1"-8	3.2	2

• <sup>(1)</sup>Cutting edge position

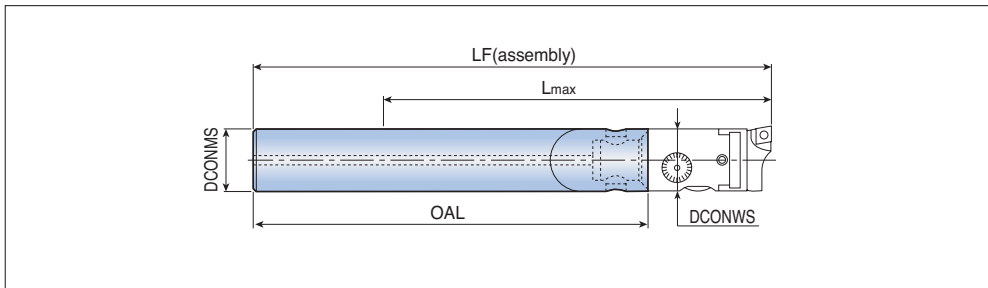
### Straight shanks with MB connection



Designation	Dimension (mm)				kg	Fig.
	DCONMS	DCONWS	OAL	OHX		
<b>ST 16-MB16</b>	16	MB16	100	66	0.2	1
<b>20-MB20</b>	20	MB20	125	85	0.3	1
<b>25-MB32</b>	25	MB32	100	35	0.7	2
<b>32-MB50</b>	32	MB50	140	60	1.0	2

• (1)Cutting edge position

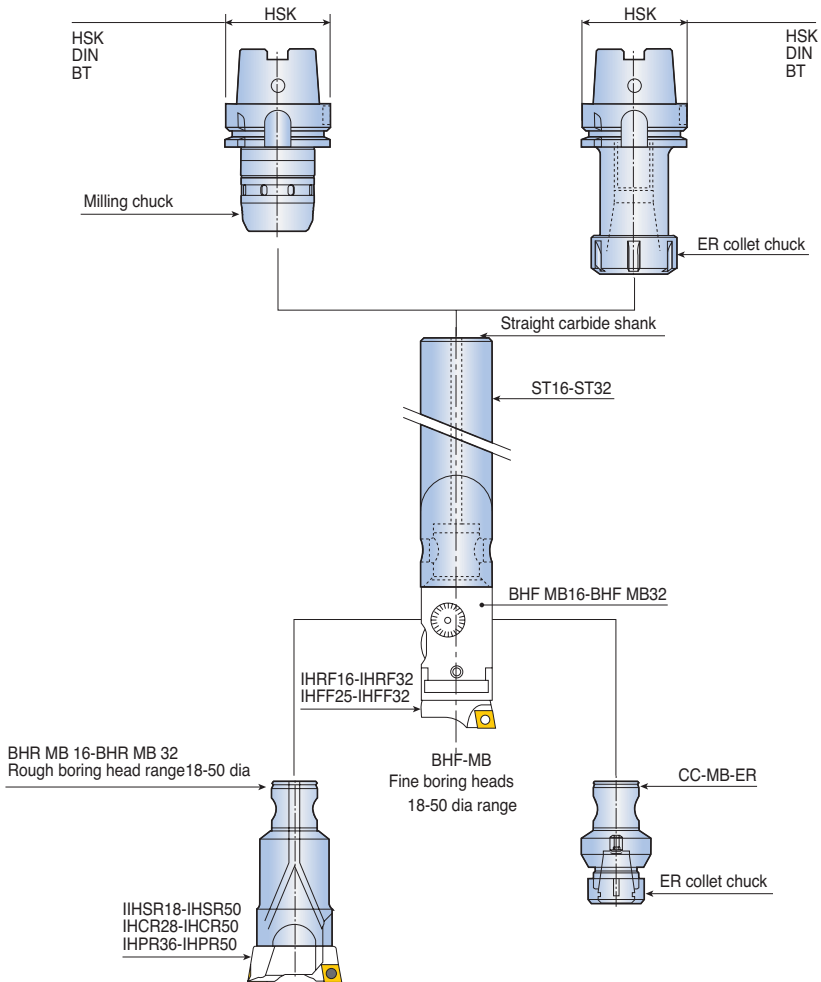
## Straight carbide shanks with MB connection



Designation	Dimension (mm)					Kg
	DCONMS	DCONWS	OAL	LF	Lmax	
<b>ST16 MB16x110E</b>	16	MB16	110	144	100	0.3
<b>MB16x140E</b>	16	MB16	140	174	125	0.4
<b>MB16x170E</b>	16	MB16	170	204	160	0.5
<b>ST20 MB20x135E</b>	20	MB20	135	175	125	0.6
<b>MB20x170E</b>	20	MB20	170	210	160	0.8
<b>MB20x210E</b>	20	MB20	210	250	200	0.9
<b>ST25 MB25x160E</b>	25	MB25	160	210	160	1.0
<b>MB25x205E</b>	25	MB25	205	255	200	1.3
<b>MB25x255E</b>	25	MB25	255	305	250	1.6
<b>ST32 MB32x195E</b>	32	MB32	195	258	200	2.1
<b>MB32x250E</b>	32	MB32	250	313	250	2.8
<b>MB32x315E</b>	32	MB32	315	378	320	3.5

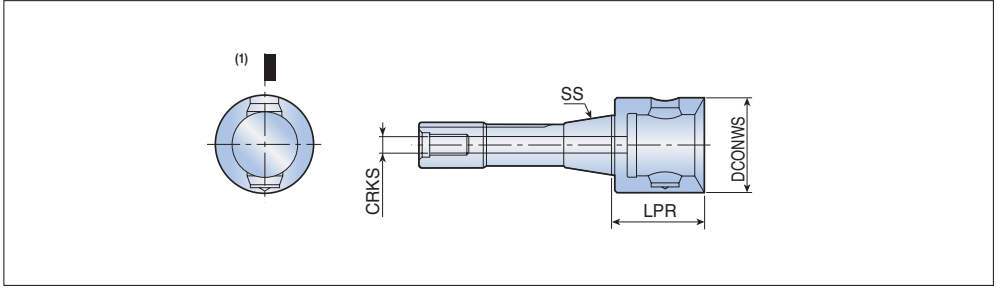
## ST-MB straight carbide shank with MB connection assembly options

**ST16-ST32 MB16-MB32**  
**Diameter range: 18-50 mm**





## Bridgeport shanks with MB connection

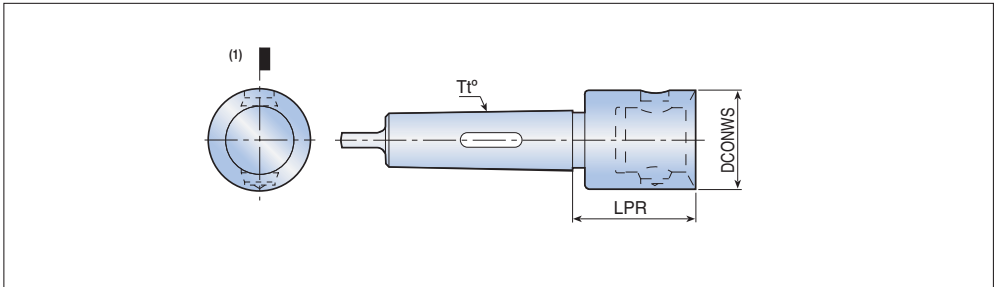


Designation	Dimension (mm)			CRKS	Kg
	SS	DCONWS	LPR		
<b>R8 MB50</b>	R8	MB50	50	UNF 7/16-20	0.8

• (1)Cutting edge position

# MTT 5-MB63

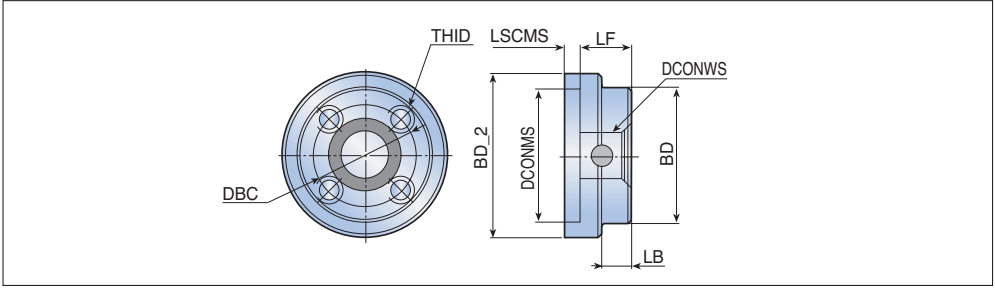
## Morse taper shanks with MB connection



Designation	Dimension (mm)			Kg
	Tt°	DCONWS	LPR	
<b>MTT 5- MB63</b>	MT5	MB63	65	2.1

• (1)Cutting edge position

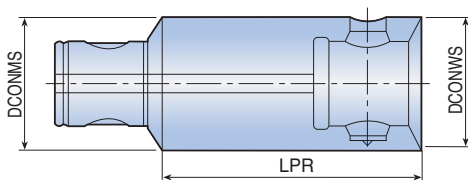
Connecting plates



Designation	Dimension (mm)									Kg
	DCONWS	LF	LSCMS	LB	BD	BD_2	DCONMS	DBC	THID	
<b>DIN 2079 MB50 40</b>	MB50	35	10	21	90	110	88.89	66.7	M12	1.8
<b>MB63 40</b>	MB63	45	10	31	90	110	88.89	66.7	M12	2.0
<b>MB63 50</b>	MB63	45	12	31	135	150	128.57	101.6	M16	5.4
<b>MB80 50</b>	MB80	45	12	31	135	150	128.57	101.6	M16	5.3

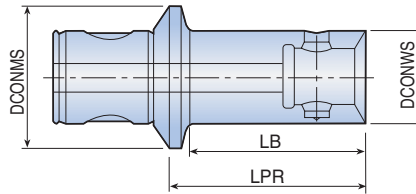
• A standard connecting plate that can be assembled easily on most CNC spindle machines with a DIN 2079 interface. This connection plate enables the use of MPT components with the MB connection by using any standard adapter with four screws. It is fixed directly on the machine spindle.

## Extensions for MB connection



Designation	Dimension (mm)			Kg
	DCONMS	DCONWS	LPR	
<b>EX 14x25-MB14</b>	MB14	MB14	25	0.2
<b>16x25-MB16</b>	MB16	MB16	25	0.4
<b>20x32-MB20</b>	MB20	MB20	32	0.7
<b>25x25-MB25</b>	MB25	MB25	25	0.9
<b>25x40-MB25</b>	MB25	MB25	40	0.2
<b>32x32-MB32</b>	MB32	MB32	32	0.2
<b>32x50-MB32</b>	MB32	MB32	50	0.3
<b>40x40-MB40</b>	MB40	MB40	40	0.4
<b>40x63-MB40</b>	MB40	MB40	63	0.6
<b>50x50-MB50</b>	MB50	MB50	50	0.7
<b>50x80-MB50</b>	MB50	MB50	80	1.1
<b>50x100-MB50</b>	MB50	MB50	100	1.5
<b>63x63-MB63</b>	MB63	MB63	63	1.4
<b>63x100-MB63</b>	MB63	MB63	100	2.2
<b>63x125-MB63</b>	MB63	MB63	125	2.9
<b>80x80-MB80</b>	MB80	MB80	80	3.0
<b>80x125-MB80</b>	MB80	MB80	125	4.6
<b>80x160-MB80</b>	MB80	MB80	160	6.1
<b>110x140-MB110</b>	MB110	MB110	140	0.0
<b>110x200-MB110</b>	MB110	MB110	200	0.0

## Reducers for MB connection

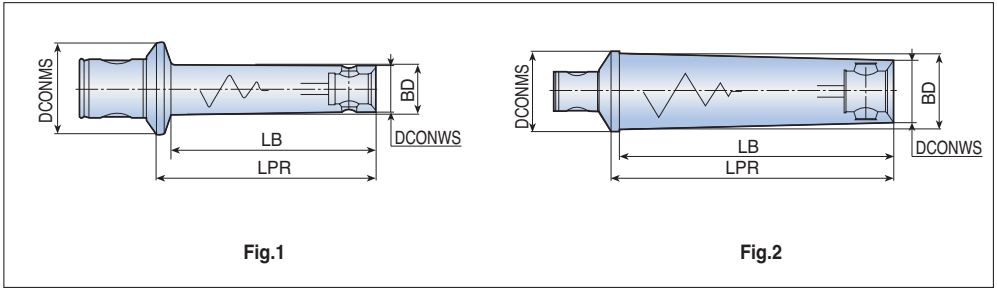


Designation	Dimension (mm)				Kg
	DCONMS	DCONWS	LPR	LB	
<b>RE MB16-MB14x24</b>	MB16	MB14	24	19.5	0.3
<b>MB20-MB14x19</b>	MB20	MB14	19	13.5	0.4
<b>MB20-MB16x20</b>	MB20	MB16	20	16	0.5
<b>MB25-MB14x19</b>	MB25	MB14	19	13.5	0.6
<b>MB25-MB16x20</b>	MB25	MB16	20	15	0.8
<b>MB25-MB20x25</b>	MB25	MB20	25	20	0.9
<b>MB32-MB14x25</b>	MB32	MB14	25	17	1.0
<b>MB32-MB16x24</b>	MB32	MB16	24	18	1.3
<b>MB32-MB20x25</b>	MB32	MB20	25	20	1.6
<b>MB32-MB25x28</b>	MB32	MB25	28	23	2.1
<b>MB40-MB14x23</b>	MB40	MB14	23	16	2.8
<b>MB40-MB16x24</b>	MB40	MB16	24	17	3.5
<b>MB40-MB20x26</b>	MB40	MB20	26	20	0.4
<b>MB40-MB25x28</b>	MB40	MB25	28	22	0.5
<b>MB40-MB32x32</b>	MB40	MB32	32	27	0.6
<b>MB50-MB14x23</b>	MB50	MB14	23	14.5	0.8
<b>MB50-MB14x39</b>	MB50	MB14	39	30.5	0.9
<b>MB50-MB16x24</b>	MB50	MB16	24	15	1.0
<b>MB50-MB16x40</b>	MB50	MB16	40	31	1.3
<b>MB50-MB16x74</b>	MB50	MB16	74	65	1.6
<b>MB50-MB20x26</b>	MB50	MB20	26	18	3.5
<b>MB50-MB20x70</b>	MB50	MB20	70	62	0.4
<b>MB50-MB20x93</b>	MB50	MB20	93	85	0.5
<b>MB50-MB25x28</b>	MB50	MB25	28	21	0.6
<b>MB50-MB25x87</b>	MB50	MB25	87	80	0.8
<b>MB50-MB25x117</b>	MB50	MB25	117	110	3.5
<b>MB50-MB32x32</b>	MB50	MB32	32	25	0.4
<b>MB50-MB32x87</b>	MB50	MB32	87	80	0.5
<b>MB50-MB32x144</b>	MB50	MB32	144	137	0.6
<b>MB50-MB40x36</b>	MB50	MB40	36	30	0.8
<b>MB50-MB40x87</b>	MB50	MB40	87	80	0.9
<b>MB50-MB40x176</b>	MB50	MB40	176	170	1.0
<b>MB63-MB50x40</b>	MB63	MB50	40	34	1.3
<b>MB80-MB50x45</b>	MB80	MB50	45	36	1.6
<b>MB80-MB63x60</b>	MB80	MB63	60	52	1.6
<b>MB110-MB80x70</b>	MB110	MB80	70	52	6.0

# RE MB-AVI

# Extensions and Reducers

## Vibration dampening reducers

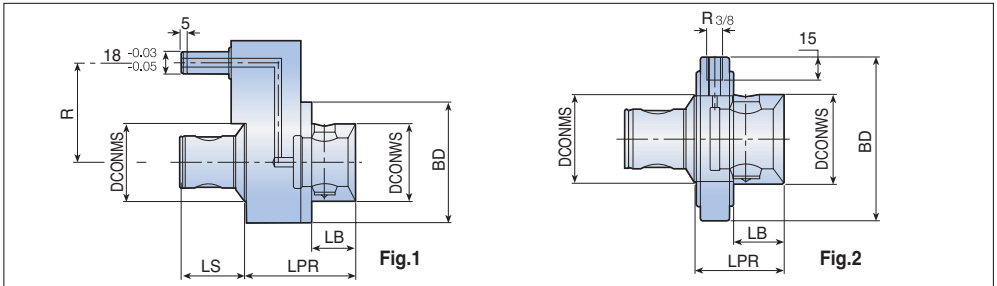


Designation	Dimension (mm)					Kg	Fig.
	DCONMS	DCONWS	BD	LPR	LB		
<b>RE MB50-MB16x74-AVI</b>	MB50	MB16	17.5	74	65	0.4	1
<b>MB50-MB20x93-AVI</b>	MB50	MB20	21.5	93	85	0.5	1
<b>MB50-MB25x117-AVI</b>	MB50	MB25	27	117	110	0.8	1
<b>MB50-MB32x144-AVI</b>	MB50	MB32	35	144	138	1.4	1
<b>MB50-MB40x176-AVI</b>	MB50	MB40	47	176	170	2.5	1
<b>MB63-MB50x220-AVI</b>	MB63	MB50	60	220	214	5.6	1
<b>MB80-MB63x280-AVI</b>	MB80	MB63	77	280	272	10.6	2

# CHS MB-R/CHR MB

# Extensions and Reducers

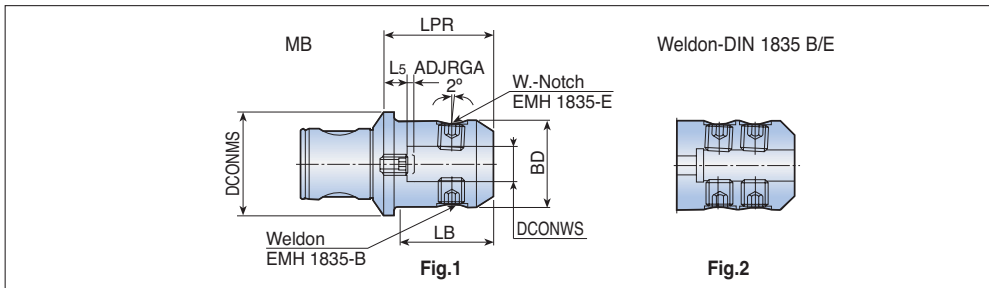
## Coolant extensions for MB connection



Designation	Dimension (mm)									Kg	Fig.
	DCONMS	DCONWS	R	BD	LPR	LB	LS	RPM <sub>Max</sub>	Bar		
<b>CHS MB50-R65</b>	MB50	MB50	65	80	72	28.5	43	7000	10	1.9	1
<b>MB50-R80</b>	MB50	MB50	80	80	72	28.5	43	7000	10	2.5	1
<b>MB63-R80</b>	MB63	MB63	80	100	88	37.0	51	5600	10	5.0	1
<b>CHR MB63</b>	MB63	MB63	-	115	63	35	-	3500	10	5.0	2

- Important: Start coolant flow prior to rotating the spindle to avoid damage of the O rings.
- Use with stop block. (not included)

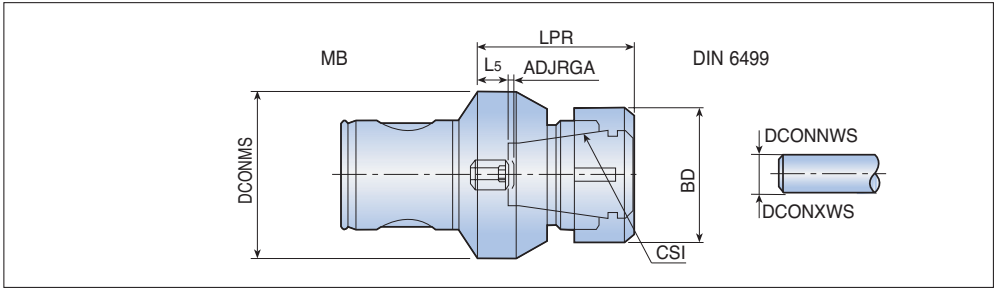
## Weldon holder with MB connection



Designation	Dimension (mm)							Kg	Fig.
	DCONMS	DCONWS	BD	LPR	LB	L5	ADJRG		
<b>EMH MB50-8</b>	MB50	8	28	44	33	7	2	0.5	1
<b>MB50-10</b>	MB50	10	35	52	42	11	3	0.7	1
<b>MB50-12</b>	MB50	12	42	57	48	11	3	0.8	1
<b>MB50-14</b>	MB50	14	42	57	48	11	3	0.8	1
<b>MB50-16</b>	MB50	16	48	67	61	17	4	1.1	1
<b>MB50-20</b>	MB50	20	51	67	-	16	4	1.2	1
<b>MB63-16</b>	MB63	16	48	64	53	14	4	1.4	1
<b>MB63-20</b>	MB63	20	52	66	56	14	4	1.5	1
<b>MB63-25</b>	MB63	25	64	74	-	16	4	2.1	2
<b>MB63-32</b>	MB63	32	72	76	-	14	4	2.5	2
<b>MB80-40</b>	MB80	40	80	83	-	12	4	3.2	2



## ER Collet chucks with MB connection

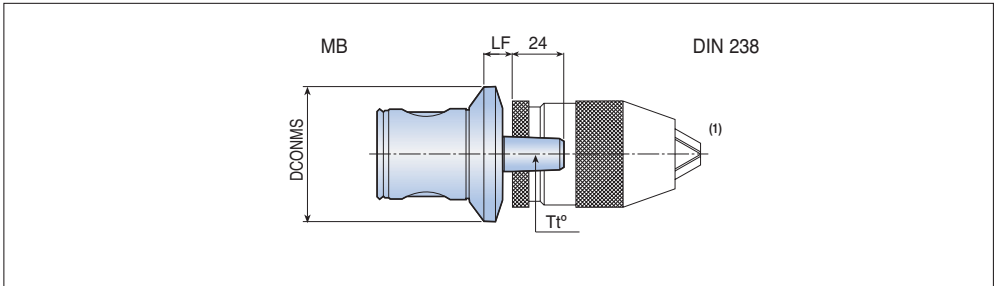


Designation	Dimension (mm)							Kg
	DCONMS	CSI	DCONWS	DCONXWS	BD	LPR	ADJRGA	
<b>CC MB16 ER11M</b>	MB16	ER11	0.5	7.0	16	25	2.5	0.03
<b>MB20 ER16M</b>	MB20	ER16	0.5	10.0	22	32	1.0	0.06
<b>MB25 ER20M</b>	MB25	ER20	1.0	13.0	28	40	2.5	0.15
<b>MB32 ER25M</b>	MB32	ER25	1.0	16.0	35	42	1.5	0.25
<b>MB40 ER25</b>	MB40	ER25	1.0	16.0	42	45	5.0	0.25
<b>MB50 ER25</b>	MB50	ER25	1.0	16.0	42	48	7.0	0.70
<b>MB50 ER32</b>	MB50	ER32	2.0	20.0	50	59	7.0	1.00
<b>MB63 ER32</b>	MB63	ER32	2.0	20.0	50	59	12	1.30
<b>MB63 ER40</b>	MB63	ER40	3.0	26.0	63	64	12	1.50

# DC MB

# Toolholders

## Drill chucks with MB connection



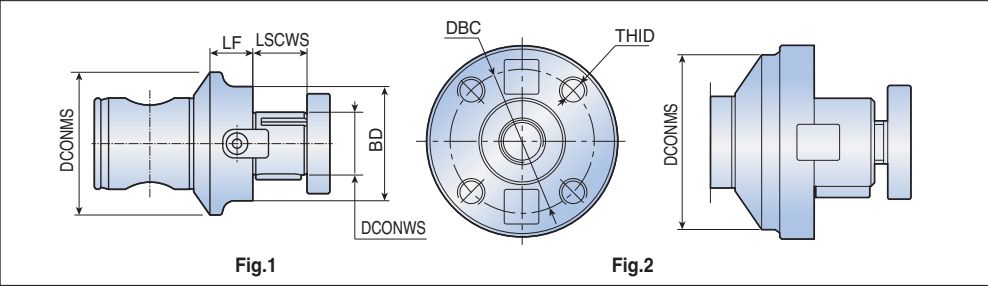
Designation	Dimension (mm)			Kg
	DCONMS	Tt°	LF	
<b>DC MB50 B16</b>	MB50	B16	10.0	0.4
<b>MB63 B16</b>	MB63	B16	13.5	0.8

Spare Parts • <sup>(1)</sup>Without drill chuck



H71-H83

**Shell mill holders with MB connection**



**Fig.1**

**Fig.2**

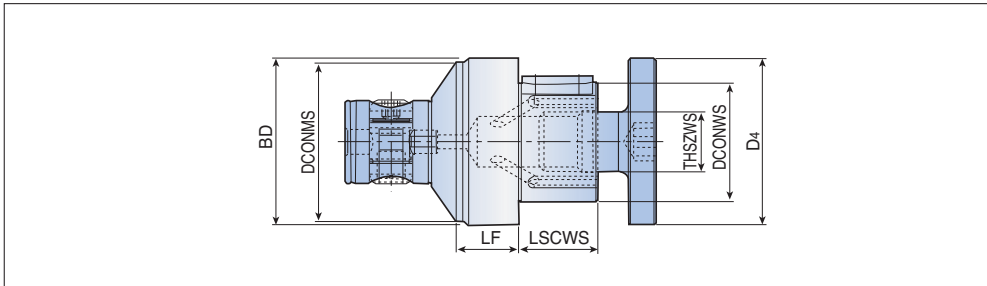
Designation	Dimension (mm)							Fig.	Kg
	DCONMS	DCONWS	BD	DBC	THID	LF	LSCWS		
<b>SMH MB40-16</b>	40	16	32	-	-	15	17	1	0.32
<b>MB40-22</b>	40	22	40	-	-	13	19	1	0.38
<b>MB50-16</b>	50	16	32	-	-	15	17	1	0.48
<b>MB50-22</b>	50	22	40	-	-	15	19	1	0.55
<b>MB50-27</b>	50	27	50	-	-	15	21	1	0.66
<b>MB50-32</b>	50	32	60	-	-	15	24	1	0.79
<b>MB63-22</b>	63	22	60	-	-	15	19	1	1.01
<b>MB63-27</b>	63	27	60	-	-	15	21	1	1.09
<b>MB63-32</b>	63	32	70	-	-	15	24	1	1.24
<b>MB80-32</b>	80	32	88	-	-	24	24	1	2.09
<b>MB80-40</b>	80	40	88	66.7	M12	24	27	2	2.25
<b>MB80-50</b>	80	50	90	-	-	24	30	2	2.58
<b>MB80-60<sup>(1)</sup></b>	80	60	128.5	101.6	M16	31.5	40	2	4.19
<b>MB110-60<sup>(1)</sup></b>	110	60	128.5	101.6	M16	36	40	2	7.64

Spare Parts  (1)Shell locking screw not supplied

H71-H83



## STUB 60 Holder with an MB80 connection

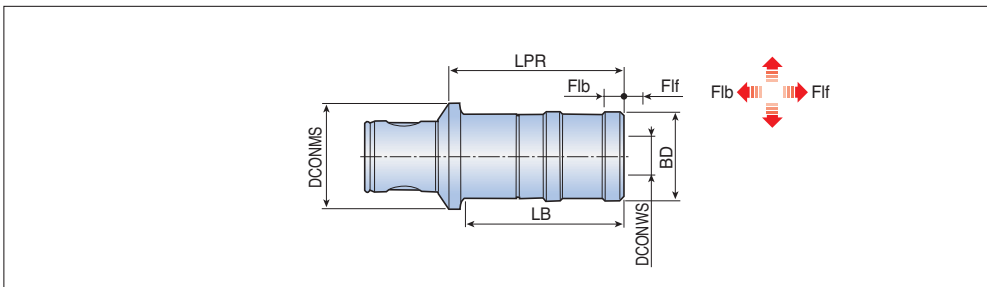


Designation	Dimension (mm)							
	DCONMS	DCONWS	BD	D4	THSZWS	LF	LSCWS	
<b>STUB MB80-60</b>	MB80	60	84	84	M30	31.5	40	6.3

# TP MB-M

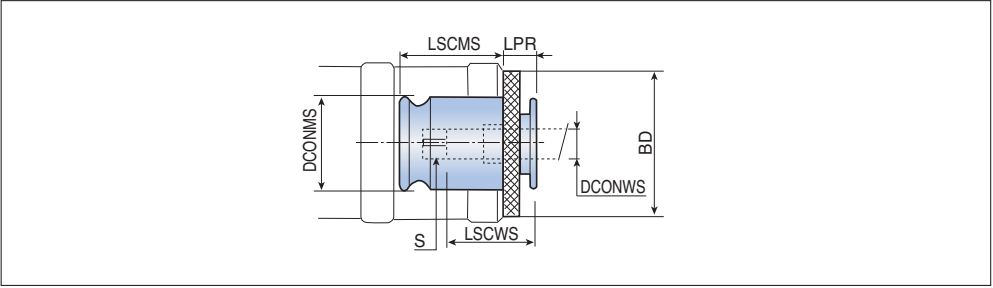
# Toolholders

## Tapping chucks with MB modular system connection



Designation	Dimension (mm)									
	DCONMS	TAP <sub>min</sub>	TAP <sub>max</sub>	LB	LPR	BD	DCONWS	Flf	Flb	
<b>TP MB50-M 3-12</b>	MB50	M1	M14	60	72	36	19	7.5	7.5	0.8
<b>MB50-M 8-20</b>	MB50	M4.5	M20	-	106	53	31	12.5	12.5	1.6
<b>MB63-M 3-12</b>	MB63	M1	M14	58	70	36	19	7.5	7.5	1.2
<b>MB63-M 8-20</b>	MB63	M4.5	M20	93	104	53	31	12.5	12.5	1.9

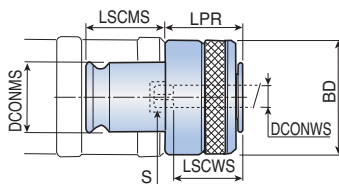
Quick change tap collets for solid taps



Designation	Dimension (mm)								
	DCONWS <sup>(1)</sup>	S <sup>(2)</sup>	S <sub>1</sub> <sup>(3)</sup>	S <sub>2</sub> <sup>(4)</sup>	BD	DCONMS	LSCWS	LPR	LSCMS
<b>TCS #1 DIN 6-4.9</b>	6.0	4.9	M4.5,M6	M8	30	19	17	7	21.5
<b>#1 DIN 7-5.5</b>	7.0	5.5	M7	M10	30	19	17	7	21.5
<b>#1 DIN 8-6.2</b>	8.0	6.2	M8	-	30	19	17	7	21.5
<b>#1 DIN 9-7</b>	9.0	7.0	-	M12	30	19	17	7	21.5
<b>#1 DIN 10-8</b>	10.0	8.0	M10	-	30	19	17	7	21.5
<b>#1 DIN 11-9</b>	11.0	9.0	M14	M14	30	19	17	7	21.5
<b>#2 DIN 8x6.2</b>	8.0	6.2	M8	-	48	31	30	11	35.0
<b>#2 DIN 9x7</b>	9.0	7.0	-	M12	48	31	30	17	35.0
<b>#2 DIN 10x8</b>	10.0	8.0	M10	-	48	31	30	17	35.0
<b>#2 DIN 11x9</b>	11.0	9.0	-	M14	48	31	30	17	35.0
<b>#2 DIN 12x9</b>	12.0	9.0	-	M16	48	31	30	17	35.0
<b>#2 DIN 14x11</b>	14.0	11.0	-	M18	48	31	30	17	35.0
<b>#2 DIN 16x12</b>	16.0	12.0	-	M20	48	31	30	17	35.0

• <sup>(1)</sup>According to tap shank size <sup>(2)</sup>Square size <sup>(3)</sup> Tap size according to DIN371 <sup>(4)</sup> Tap size according to DIN376/374

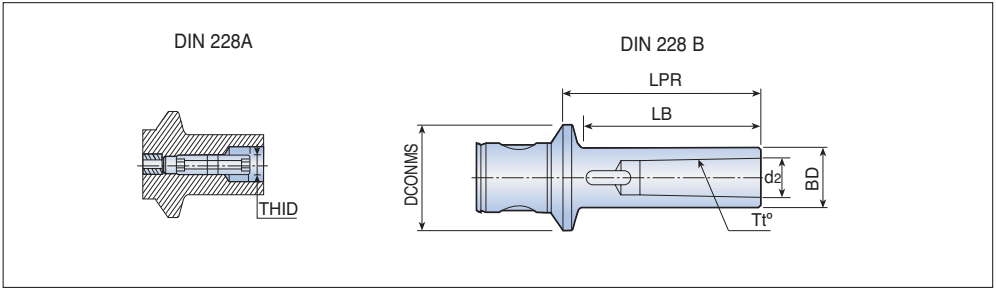
## Quick change tap collets with a safety clutch



Designation	Dimension (mm)								
	DCONWS <sup>(1)</sup>	S <sup>(2)</sup>	S <sub>1</sub> <sup>(3)</sup>	S <sub>2</sub> <sup>(4)</sup>	BD	DCONMS	LSCWS	LPR	LSCMS
<b>TCC #1 DIN 2.8-2.1</b>	2.8	2.1	M2,M2.5	M4	32	19	17	25	21.5
<b>#1 DIN 4-3</b>	4.0	3.0	M3.5	-	32	19	17	25	21.5
<b>#1 DIN 4.5-3.4</b>	4.5	3.4	M4	M6	32	19	17	25	21.5
<b>#1 DIN 6-4.9</b>	6.0	4.9	M4.5,M6	M8	32	19	17	25	21.5
<b>#1 DIN 7-5.5</b>	7.0	5.5	M7	M10	32	19	17	25	21.5
<b>#1 DIN 8-6.2</b>	8.0	6.2	M8	-	32	19	17	25	21.5
<b>#1 DIN 9-7</b>	9.0	7.0	-	M12	32	19	17	25	21.5
<b>#1 DIN 10-8</b>	10.0	8.0	M10	-	32	19	17	25	21.5
<b>#1 DIN 11-9</b>	11.0	9.0	M10	M14	32	19	17	25	21.5
<b>#2 DIN 6x4.9</b>	6.0	4.9	M4.5,M6	M8	50	31	30	34	35.0
<b>#2 DIN 7x5.5</b>	7.0	5.5	M7	M10	50	31	30	34	35.0
<b>#2 DIN 8x6.2</b>	8.0	6.2	M8	-	50	31	30	34	35.0
<b>#2 DIN 9x7</b>	9.0	7.0	M7	M12	50	31	30	34	35.0
<b>#2 DIN 10x8</b>	10.0	8.0	M10	-	50	31	30	34	35.0
<b>#2 DIN 11x9</b>	11.0	9.0	-	M14	50	31	30	34	35.0
<b>#2 DIN 12x9</b>	12.0	9.0	-	M16	50	31	30	34	35.0
<b>#2 DIN 14x11</b>	14.0	11.0	-	M18	50	31	30	34	35.0
<b>#2 DIN 16x12</b>	16.0	12.0	-	M20	50	31	30	34	35.0

• <sup>(1)</sup>According to tap shank size <sup>(2)</sup>Square size <sup>(3)</sup> Tap size according to DIN371 <sup>(4)</sup> Tap size according to DIN376/374

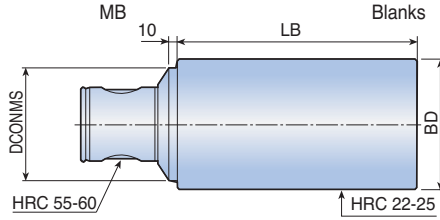
## MB shanks for Morse taper tang



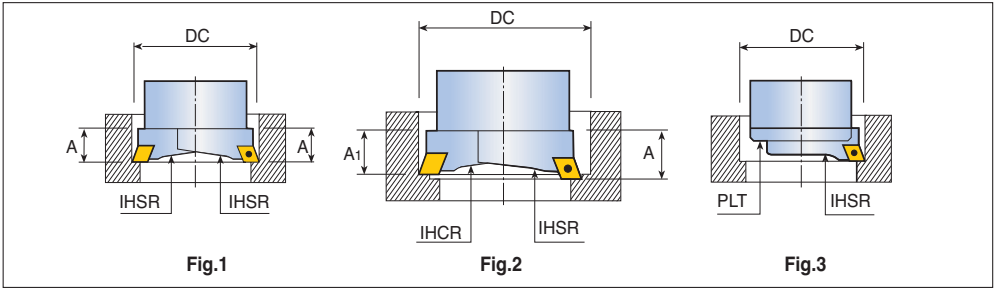
Designation	Dimension (mm)							Kg
	DCONMS	Tt°	d <sub>2</sub>	BD	THID	LPR	LB	
<b>AMT MB50-MT1</b>	MB50	MT1	12.07	20	M6	80	68	0.6
<b>MB50-MT2</b>	MB50	MT2	17.78	30	M10	100	86	0.7
<b>MB50-MT3</b>	MB50	MT3	23.82	36	M12	120	110	1.0
<b>MB63-MT3</b>	MB63	MT3	23.82	36	M12	120	108	1.3
<b>MB63-MT4</b>	MB63	MT4	31.26	48	M16	150	133	2.0



## Blanks with MB connection



Designation	Dimension (mm)			Kg
	DCONMS	BD	LB	
<b>BLANK MB50-63x60</b>	MB50	63	60	0.48
<b>MB50-63x120</b>	MB50	63	120	0.4
<b>MB50-63x150</b>	MB50	63	150	0.5
<b>MB50-80x150</b>	MB50	80	150	0.5
<b>MB50-100x150</b>	MB50	100	150	0.6
<b>MB63-80x100</b>	MB63	80	100	0.7
<b>MB63-80x150</b>	MB63	80	150	1.1
<b>MB63-100x100</b>	MB63	100	100	1.2
<b>MB63-100x150</b>	MB63	100	150	1.9
<b>MB63-120x100</b>	MB63	120	100	2.1
<b>MB63-120x200</b>	MB63	120	200	3.5
<b>MB80-100x100</b>	MB80	100	100	0.4
<b>MB80-80x100</b>	MB80	80	100	0.5
<b>MB80-80x150</b>	MB80	80	150	0.5
<b>MB80-100x150</b>	MB80	100	150	0.6
<b>MB80-120x100</b>	MB80	120	100	0.7
<b>MB80-120x200</b>	MB80	120	200	1.1
<b>MB80-100x150</b>	MB80	100	150	1.2
<b>MB80-120x100</b>	MB80	120	100	1.9
<b>MB80-120x200</b>	MB80	120	200	2.1
<b>MB110-130x250</b>	MB110	130	250	18.0

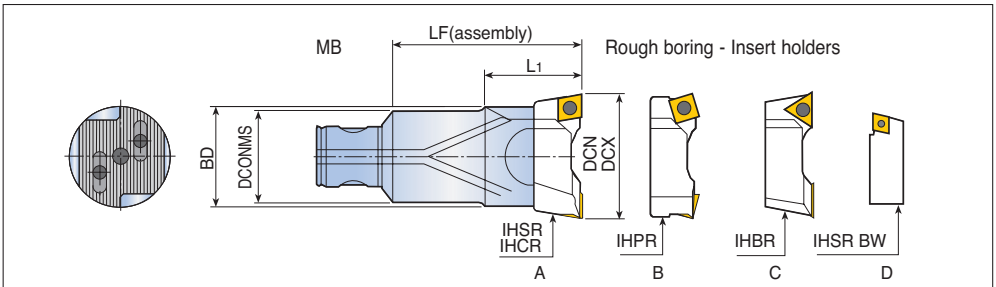


- When using the MPT system, it is strongly recommended that the user utilizes the tool pre-setting equipment provided to set the radial cutting edges. The boring bars that are equipped with two inserts holders are for rough machining and heavy stock removal.
- The bars are applicable to three types of machining scenarios:
  - When two IHSR insert holders are on the same plane, the two cutting edges are placed at identical radial distances for high feed rough machining (Fig. 1).
  - When each IHCR and IHSR insert is not set on the same plane, each of the two cutting edges is placed at a different radial distance for deep rough machining (Fig. 2).
  - If boring bars are set with a single insert holder it allows rough and finish machining with normal chip removal. In this situation, it is strongly recommended that a serrated surface protection plate (PLT) is used (Fig. 3).

## BHR MB

## Rough Boring Heads

### Rough boring heads 18-200mm range with MB connection



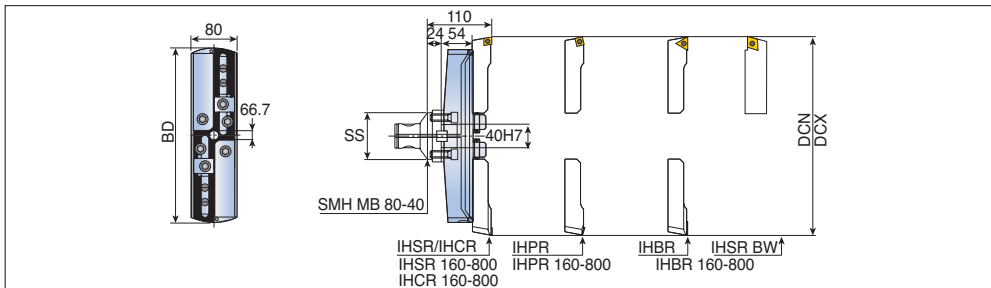
Designation	Dimension (mm)						Insert holders				Kg		
	DCONMS	DCN	DCX	BD	LF	L1	Insert holders	A	B	C		D	
<b>BHR MB16-16x34</b>	MB16	18	22	16	34	-	IH...18-22	●				●	0.05
<b>MB20-20x40</b>	MB20	22	28	20	40	-	IH...22-28	●				●	0.09
<b>MB25-25x50</b>	MB25	28	38	25	50	-	IH...28-38	●				●	0.20
<b>MB32-32x63</b>	MB32	36	50	32	63	-	IH...36-50	●	●			●	0.35
<b>MB40-40x80</b>	MB40	50	68	40	80	-	IH...50-68	●	●			●	0.70
<b>MB50-50x100</b>	MB50	68	90	55	100	50	IH...68-90	●	●			●	1.50
<b>MB50-63x80</b>	MB50	90	120	72	80	60	IH...90-120	●	●	●		●	2.00
<b>MB63-63x125</b>	MB63	90	120	72	125	63	IH...90-120	●	●	●	●	●	3.00
<b>MB80-80x140</b>	MB80	120	200	95	140	75	IH...120-800	●	●	●	●	●	5.30



# TCH

# Rough Boring Heads

Rough boring aluminum body range: 200-500mm with MB connection

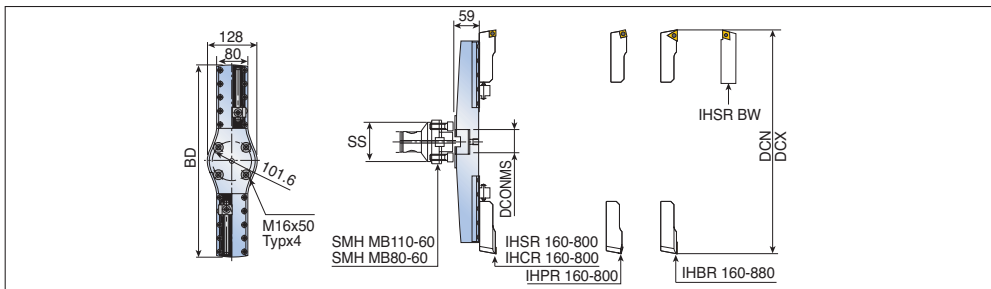


Designation	Dimension (mm)					Kg
	SS	DCN	DCX	BD	IH...160-800	
<b>TCH 200</b>	80	200	300	194	IHSR 160-800 IHCR 160-800	3.4
<b>300</b>	80	300	400	298	IHPR 160-800	4.3
<b>400</b>	80	400	500	398	IHBR 160-800	6.7

# TCH A.L

# Rough Boring Heads

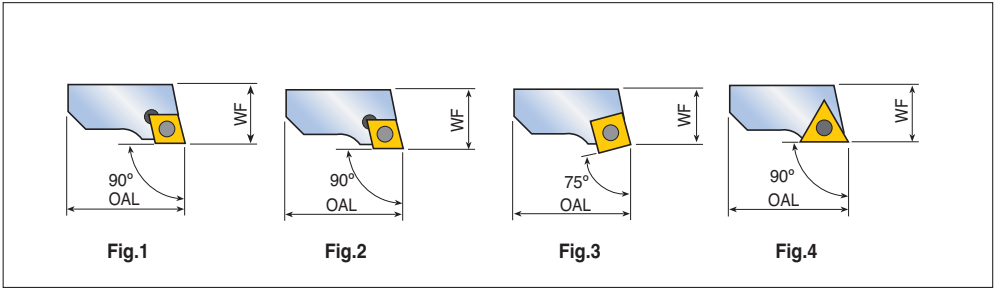
Rough boring aluminum body range: 500-800mm with MB connection



Designation	Dimension (mm)					Kg
	SS	DCN	DCX	BD	DCONMS	
<b>TCH A.L 500</b>	80,110	500	600	494	60	8.7
<b>600</b>	80,110	600	700	594	60	8.34
<b>700</b>	80,110	700	800	694	60	8.34



• Aluminum body with steel serrated seats

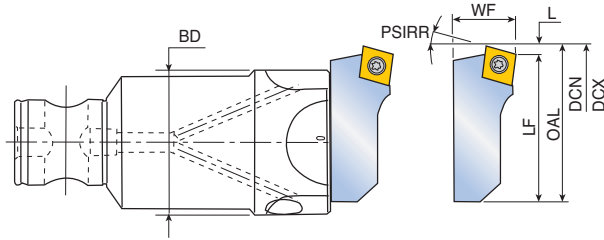


Designation	Dimension (mm)				Spare parts			Fig.
	DCN	DCX	WF	OAL	Insert	Insert screw	Torx key	
<b>IHSR 18-22</b>	18	22	8.0	15.0	CCMT 0602...	SR 14-548	T7/5	1
<b>22-28</b>	22	28	9.5	19.0	CCMT 0602...	SR 14-548	T7/5	1
<b>28-38</b>	28	38	12.5	23.0	CCMT 0602...	SR 14-548	T7/5	1
<b>36-50</b>	36	50	15.0	32.0	CCMT 0602...	SR 14-548	T7/5	1
<b>50-68</b>	50	68	19.0	40.0	CCMT 09T3...	TS 400971	T15/5	1
<b>50-68-12</b>	50	68	19.0	40.0	CCMT 1204..	SR 16-212	T20/5	1
<b>68-90</b>	68	90	22.0	54.0	CCMT 1204..	SR 16-212	T20/5	1
<b>90-120</b>	90	120	27.0	70.5	CCMT 1204...	SR 16-212	T20/5	1
<b>120-160</b>	120	160	32.0	94.5	CCMT 1204..	SR 16-212	T20/5	1
<b>160-800</b>	160	800	32.0	130.0	CCMT 1204..	SR 16-212	T20/5	1
<b>IHCR 28-38</b>	28	38	12.3	23.0	CCMT 0602..	SR 14-548	T7/5	2
<b>36-50</b>	36	50	14.8	32.0	CCMT 0602...	SR 14-548	T7/5	2
<b>36-50-09</b>	36	50	14.8	32.0	CCMT 09T3..	TS 400971	T15/5	2
<b>50-68</b>	50	68	18.7	40.0	CCMT 09T3..	TS 400971	T15/5	2
<b>50-68-12</b>	50	68	18.7	40.0	CCMT 1204..	SR 16-212	T20/5	2
<b>68-90</b>	68	90	21.7	54.0	CCMT 1204..	SR 16-212	T20/5	2
<b>90-120</b>	90	120	26.7	70.5	CCMT 1204..	SR 16-212	T20/5	2
<b>120-160</b>	120	160	31.7	94.5	CCMT 1204..	SR 16-212	T20/5	2
<b>160-800</b>	160	800	31.7	130.0	CCMT 1204..	SR 16-212	T20/5	2
<b>IHPR 36-50</b>	36	50	15	32.0	SCMT 09T3..	TS 400971	T15/5	3
<b>50-68</b>	50	68	19	40.0	SCMT 09T3...	TS 400971	T15/5	3
<b>68-90</b>	68	90	22	54.0	SCMT 1204..	SR 16-212	T20/5	3
<b>90-120</b>	90	120	27	70.5	SCMT 1204..	SR 16-212	T20/5	3
<b>120-160</b>	120	160	32	94.5	SCMT 1204..	SR 16-212	T20/5	3
<b>160-800</b>	160	800	32	130.0	SCMT 1204..	SR 16-212	T20/5	3
<b>IHBR 90-120</b>	90	120	27	70.5	TCMT 2205..	SR 16-212	T20/5	4
<b>120-160</b>	120	160	32	94.5	TCMT 2205..	SR 16-212	T20/5	4
<b>160-800</b>	160	800	32	130.0	TCMT 2205..	SR 16-212	T20/5	4





## Chamfering tools

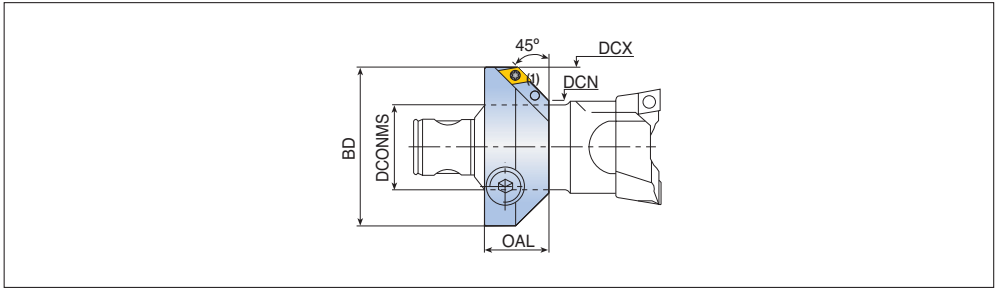


Designation	Dimension (mm)								Spare parts		
	DCN	DCX	PSIRR	LF	OAL	WF	L	BD	Insert	Insert screw	Torx key
<b>IHSR 26-38 CH15</b>	26.0	38.0	15	21.4	23	13.5	1.6	25	CCMT 0602..	SR 14-548	T-7/5
<b>26-38 CH30</b>	26.0	38.0	30	20.0	23	13.5	3.0	25	CCMT 0602..	SR 14-548	T-7/5
<b>26-38 CH45</b>	26.0	38.0	45	18.7	23	13.5	4.3	25	CCMT 0602..	SR 14-548	T-7/5
<b>34.5-49 CH15</b>	34.5	49.0	15	29.4	31	16.0	1.6	32	CCMT 0602..	SR 14-548	T-7/5
<b>34.5-49 CH30</b>	34.5	49.0	30	28.0	31	16.0	3.0	32	CCMT 0602..	SR 14-548	T-7/5
<b>34.5-49 CH45</b>	34.5	49.0	45	26.7	31	16.0	4.3	32	CCMT 0602..	SR 14-548	T-7/5
<b>46.5-66 CH15</b>	46.5	66.0	15	36.6	39	20.0	2.4	40	CCMT 09T3..	SR 16-236	T-15/5
<b>46.5-66 CH30</b>	46.5	66.0	30	34.4	39	20.0	4.6	40	CCMT 09T3..	SR 16-236	T-15/5
<b>46.5-66 CH45</b>	46.5	66.0	45	32.5	39	20.0	6.5	40	CCMT 09T3..	SR 16-236	T-15/5
<b>65-88 CH15</b>	65.0	88.0	15	49.8	53	23.0	3.2	50	CCMT 1204..	SR 16-236	T-15/5
<b>65-88 CH30</b>	65.0	88.0	30	46.8	53	23.0	6.2	50	CCMT 1204..	SR 16-236	T-15/5
<b>65-88 CH45</b>	65.0	88.0	45	44.2	53	23.0	8.8	50	CCMT 1204..	SR 16-236	T-15/5



H61-H64

## Chamfering tools



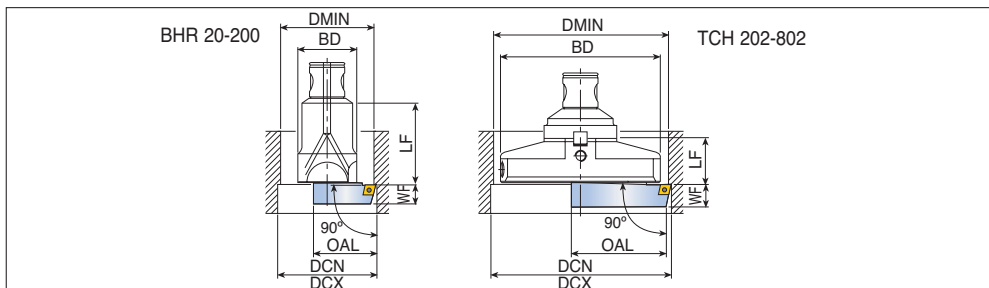
Designation	Dimension (mm)					Spare parts			Kg
	DCN	DCX	DCONMS	BD	OAL	Insert	Insert screw	Torx key	
<b>CHA 16-45</b>	18	28	16	28	13	DCMT 0702..	SR 14-548	T7/5	0.035
<b>20-45</b>	22	32	20	32	15	DCMT 0702..	SR 14-548	T7/5	0.045
<b>25-45</b>	28	43	25	43	18	DCMT 0702..	SR 14-548	T7/5	0.10
<b>32-45</b>	35	54	32	54	22	DCMT 0702..	SR 14-548	T7/5	0.20
<b>40-45</b>	46	72	40	72	30	DCMT 11T3..	SR 16-236P	T15/5	0.50
<b>50-45</b>	56	95	50	95	38	DCMT 11T3..	SR 16-236P	T15/5	1.10

- To minimize mismatch use insert radius 0.2 mm.
- (1) Only one insert can be mounted on either one of the two pockets simultaneously.

H61-H64

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## Back face for BHR and TCH rough boring heads

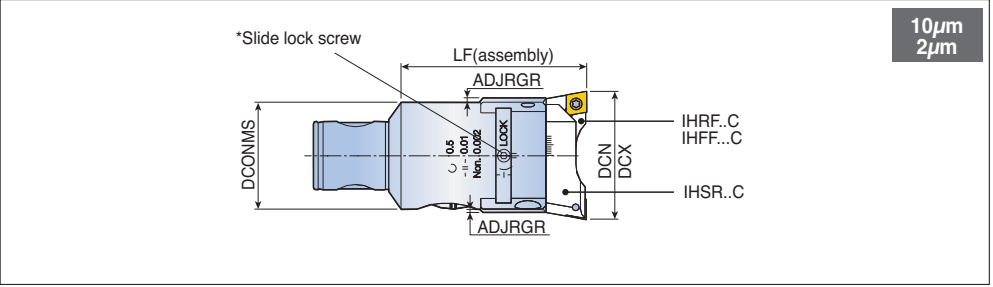


Designation	Dimension (mm)							Spare parts		
	SS	DCN	DCX	BD	LF	WF	OAL	Insert	Insert screw	Torx key
<b>IHSR 20-24 BW</b>	BHR MB16-16	20.0	24	16	27.5	8.0	16.0	CCMT 0602..	SR 14-548	T7/5
<b>23.5-30 BW</b>	BHR MB20-20	23.5	30	20	32.5	9.5	19.5	CCMT 0602..	SR 14-548	T7/5
<b>29.5-40 BW</b>	BHR MB25-20	29.5	40	25	39.0	12.0	24.0	CCMT 0602..	SR 14-548	T7/5
<b>39-52 BW</b>	BHR MB32-32	39	52	32	50.0	14.0	32.0	CCMT 09T3..	TS 400971	T15/5
<b>51-70 BW</b>	BHR MB40-40	51	70	40	63.5	17.5	42.0	CCMT 1204..	SR 16-212	T20/5
<b>69-92 BW</b>	BHR MB50-50	69	92	55	80.5	21.0	57.0	CCMT 1204..	SR 16-212	T20/5
<b>91-122 BW</b>	BHR MB63-63	91	122	72	100.5	25.0	76.0	CCMT 1204..	SR 16-212	T20/5
<b>121-162 BW</b>	BHR MB80-80	121	162	95	110.5	28.0	101.0	CCMT 1204..	SR 16-212	T20/5
<b>161-802 BW</b>	BHR MB80-80	161	200	95	110.5	28.0	122.0	CCMT 1204..	SR 16-212	T20/5
	TCH200	202	302	198	56.5	28.0	122.0	CCMT 1204..	SR 16-212	T20/5
	TCH300	302	402	298	56.5	28.0	122.0	CCMT 1204..	SR 16-212	T20/5
	TCH400	402	502	398	61.5	28.0	122.0	CCMT 1204..	SR 16-212	T20/5
	TCH500	502	602	494	61.5	28.0	122.0	CCMT 1204..	SR 16-212	T20/5
	TCH600	602	702	594	61.5	28.0	122.0	CCMT 1204..	SR 16-212	T20/5
	TCH700	702	802	694	61.5	28.0	122.0	CCMT 1204..	SR 16-212	T20/5

- DCX= Size of the boring head being used
- D<sub>min</sub>= (min bore diameter)= (DCN+BD+1)/2



## Combi rough and fine boring heads

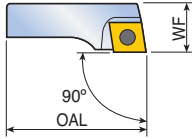


Designation	Dimension (mm)					IH	Kg
	DCONMS	DCN	DCX	LF	ADJRGR		
<b>BHC MB25-25-57</b>	MB25	28	36	56.5	0.5	IH.. C	0.20
<b>MB32-32-71</b>	MB32	36	46	71.0	0.5	IH.. C	0.35
<b>MB40-40-90</b>	MB40	46	60	90.0	1.0	IH.. C	0.70
<b>MB50-50-87</b>	MB50	60	75	87.0	1.0	IH.. C	1.50
<b>MB63-63-109</b>	MB63	78	100	109.0	2.0	IH.. C	2.70
<b>MB80-80-130</b>	MB80	95	120	130.0	2.0	IH.. C	4.80

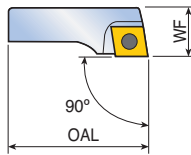


- The roughing head precedes the finishing head by 0.2 mm. Each head can be adjusted independently.
- The finishing insert holder can be radially adjusted within 5 microns.
- Insert radius for combi rough and fine boring must be the same size.
- Loosen the \*slide lock screw before making any slide adjustment.

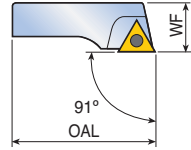
Insert holders for BHC combi boring heads



**Fig.1**



**Fig.2**



**Fig.3**

Designation	Dimension (mm)				Spare parts			Fig.
	DCN	DCX	WF	OAL	Insert	Insert screw	Torx key	
<b>IHRF 28-36 C<sup>(1)</sup></b>	28	36	9.8	24.0	CCGT 0602..	SR 14-548	T7/5	1
<b>36-46 C<sup>(1)</sup></b>	36	46	11.3	30.0	CCGT 0602..	SR 14-548	T7/5	1
<b>46-60 C<sup>(1)</sup></b>	46	60	13.8	40.0	CCGT 09T3...	TS 40097I	T15/5	1
<b>60-75 C<sup>(1)</sup></b>	60	75	18.8	54.0	CCGT 09T3...	TS 40097I	T15/5	1
<b>75-95 C<sup>(1)</sup></b>	75	95	24.3	68.0	CCGT 09T3...	TS 40097I	T15/5	1
<b>95-120 C<sup>(1)</sup></b>	95	120	29.3	87.0	CCGT 09T3...	TS 40097I	T15/5	1
<b>IHSR 28-36 C<sup>(2)</sup></b>	28	36	10.0	24.0	CCMT 0602..	SR 14-548	T7/5	2
<b>36-46 C<sup>(2)</sup></b>	36	46	11.5	30.0	CCMT 0602..	SR 14-548	T7/5	2
<b>46-60 C<sup>(2)</sup></b>	46	60	14.0	40.0	CCMT 09T3...	TS 40097I	T15/5	2
<b>60-75 C<sup>(2)</sup></b>	60	75	19.0	54.0	CCMT 09T3...	TS 40097I	T15/5	2
<b>75-95 C<sup>(2)</sup></b>	75	95	24.5	68.0	CCMT 09T3...	TS 40097I	T15/5	2
<b>95-120 C<sup>(2)</sup></b>	95	120	29.5	87.0	CCMT 09T3...	TS 40097I	T15/5	2
<b>IHFF 28-36 C<sup>(1)</sup></b>	28	36	9.8	24.0	TPGX 0902...	SO 25061I	T8/5	3
<b>36-46 C<sup>(1)</sup></b>	36	46	11.3	30.0	TPGX 0902...	SO 25061I	T8/5	3
<b>46-60 C<sup>(1)</sup></b>	46	60	13.8	40.0	TPGX 1103...	SO 30081I	T8/5	3
<b>60-75 C<sup>(1)</sup></b>	60	75	18.8	54.0	TPGX 1103...	SO 30081I	T8/5	3
<b>75-95 C<sup>(1)</sup></b>	75	95	24.3	68.0	TPGX 1103...	SO 30081I	T8/5	3
<b>95-120 C<sup>(1)</sup></b>	95	120	29.3	87.0	TPGX 1103...	SO 30081I	T8/5	3

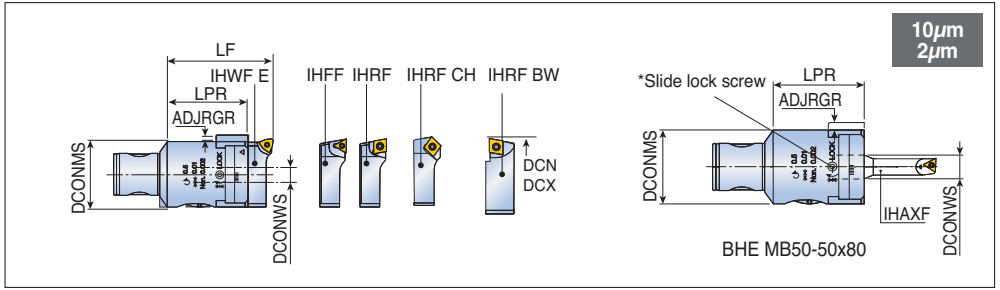


• <sup>(1)</sup>For finishing, <sup>(2)</sup> For roughing

# BHE MB

# Fine Boring Heads

10μm direct diametric adjustment and 2μm with the vernier scale



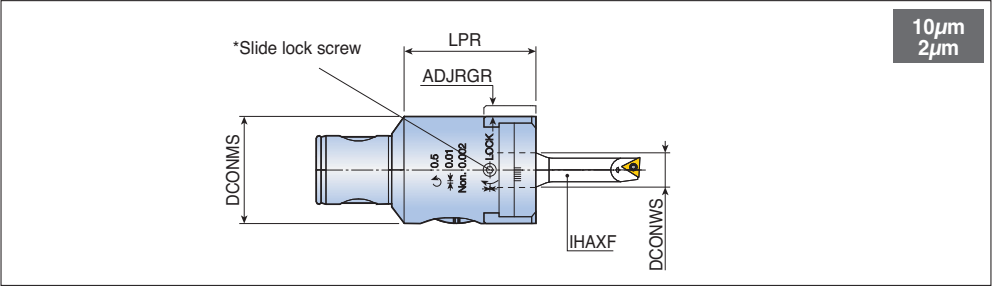
Designation	Dimension (mm)							Kg
	DCONMS	DCN	DCX	LF	LPR	ADJRGR	DCONWS	
<b>BHE MB14-14-30</b>	MB14	14.5	18	30.0	22.0	1.0	-	0.09
<b>MB16-16-34</b>	MB16	18	24	34.0	26.0	2.0	-	0.10
<b>MB20-20-40</b>	MB20	22	30	40.0	31.5	3.0	-	0.15
<b>MB25-25-50</b>	MB25	28	40	50.0	40.0	3.0	-	0.23
<b>MB32-32-63</b>	MB32	35	53	63.0	51.5	4.0	-	0.42
<b>MB40-40-80</b>	MB40	48	66	80.0	66.0	5.0	-	0.83
<b>MB50-50-80</b>	MB50	6.0	110	80.0	61.0	5.0	16.0	1.15
<b>MB63-63-89</b>	MB63	6.0	125	89.0	69.5	10.0	-	2.13
<b>MB80-80-104</b>	MB80	6.0	200	104.0	85.0	12.0	-	3.83



# BHE MB-H

## Fine Boring Heads

Fine boring heads for high rotation speed



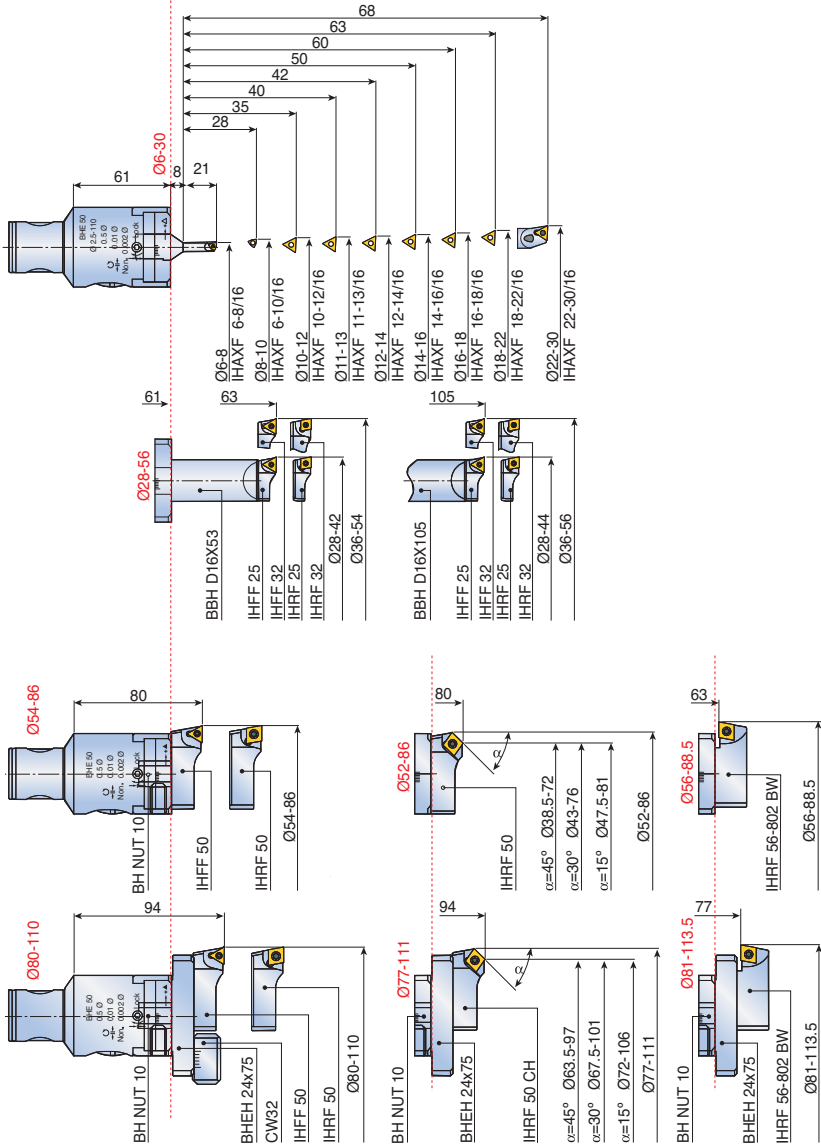
Designation	Dimension (mm)							Kg
	DCONMS	DCN	DCX	DCONWS	LPR	ADJRGR	RPMX	
<b>BHE MB32-32-53H</b>	MB32	2.5	18	8	53	0.5	12,000	0.35
<b>MB50-50-60H</b>	MB50	2.5	22	16	60	1.0	12,000	1.50

- Important: Loosen the \*slide lock screw before making any slide adjustment.

Fine boring head range: 10 $\mu$ m direct diametric adjustment and 2 $\mu$ m with the vernier scale

10 $\mu$ m  
2 $\mu$ m

**BHE MB50-50x80**  
**Ø6-113.5**



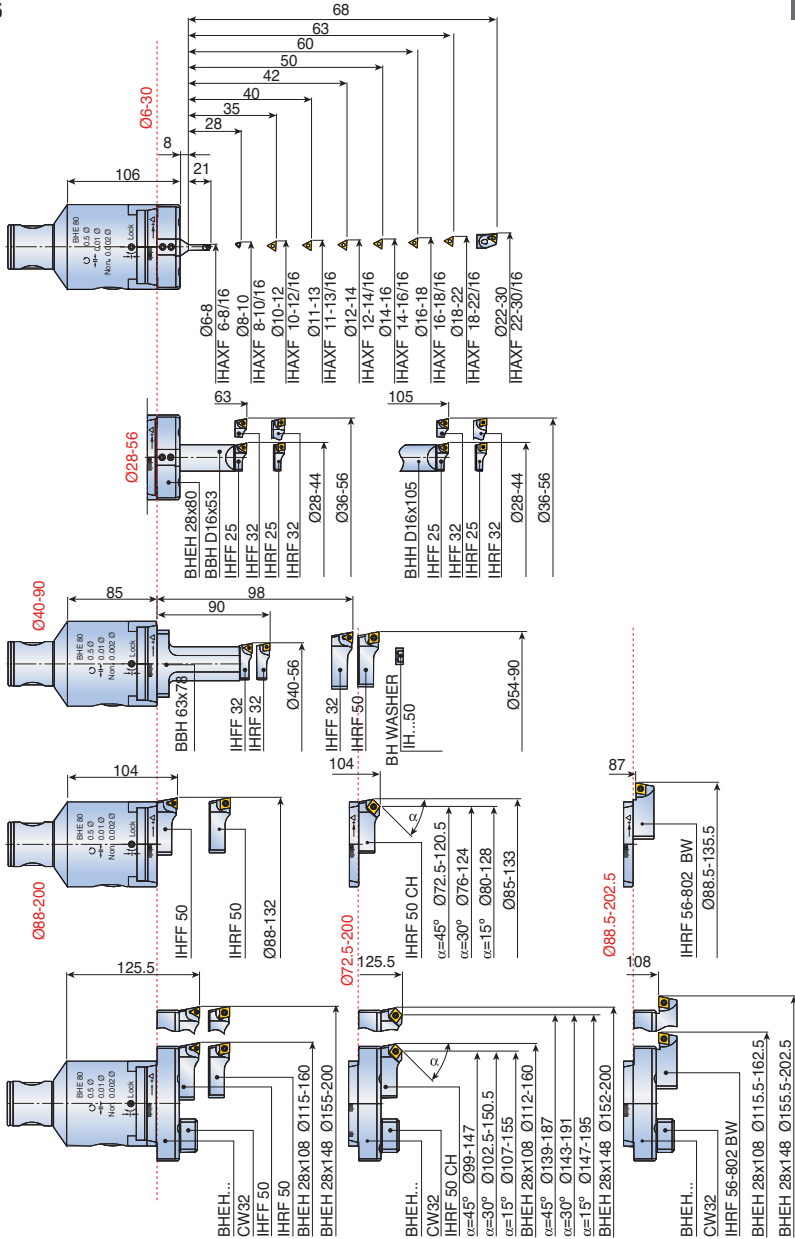




Fine boring head range: 10 $\mu$ m direct diametric adjustment and 2 $\mu$ m with the vernier scale

10 $\mu$ m  
2 $\mu$ m

**BHE MB80-80x104**  
**Ø6-202.5**



## BHF fine boring heads

These intricate boring heads enable fine radial adjustments as small as 0.002mm whilst accomplishing high precision machining to the strictest of tolerances with a superb surface finish.

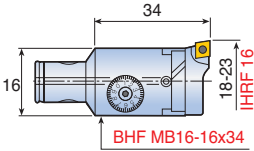
2µm



## BHF MB16-MB40 Diameter range: 18-63

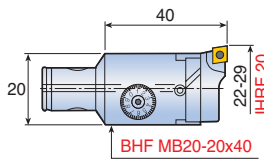
### BHF MB16-16x34 RV

18-23



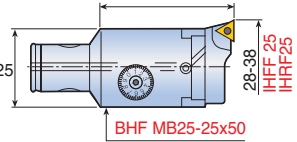
### BHF MB20-20x40 RV

22-29



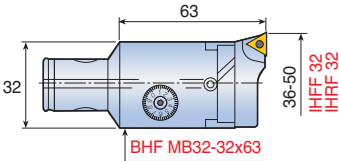
### BHF MB25-25x50

28-38



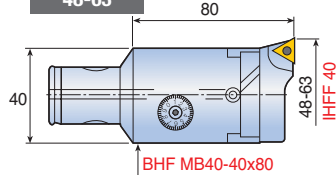
### BHF MB32-32x63

36-50



### BHF MB40-40x80

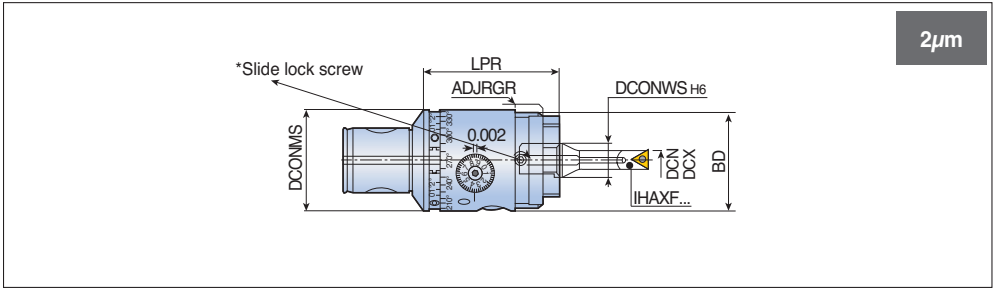
48-63



## Fine boring head diameter range

	0	10	20	30	40	50	60	70	80	90	100	110	120	130	150	180	280	400	600	700	800	
<b>BHF MB 50-32x60 BL</b>			2.5-12																			
<b>50-50x68 BL</b>			2.5-20																			
<b>50-50x60</b>												2.5-84										
<b>50-63x87</b>																	2.5-160					
<b>80-80x94</b>																	2.5-220					
<b>16-16x34 RV</b>				18-23																		
<b>20-20x40 RV</b>					22-29																	
<b>25-25x50</b>						28-38																
<b>32-32x63</b>							36-50															
<b>40-40x80</b>								48-63														
<b>80-125x114</b>																						36-500
<b>TCH 200</b>																						200-300
<b>300</b>																						300-400
<b>400</b>																						400-500
<b>A.L 500</b>																						500-600
<b>A.L 600</b>																						600-700
<b>A.L 700</b>																						700-800

## Fine boring heads with balancing rings

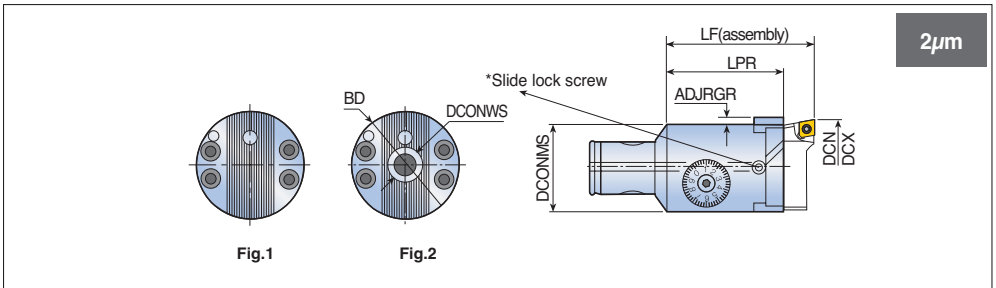


Designation	Dimension (mm)							Kg
	DCONMS	DCN	DCX	DCONWS	BD	LPR	ADJRGR	
<b>BHF MB50-32x60 BL</b>	MB50	2.5	12.0	8	32	60.0	3	0.8
<b>MB50-50x68 BL</b>	MB50	6.0	22.0	16	50	68.5	4	1.1

# BHF MB16-MB50, Dia.6-108

# Fine Boring Heads

## BHF MB: Fine boring heads



Designation	Dimension (mm)								Insert holder	Kg	Fig
	DCONMS	DCN	DCX	BD	LPR	LF	ADJRGA	DCONWS			
<b>BHF MB16-16x34 RV</b>	MB16	18	23	16	26.0	34	1	-	IH..16	0.05	1
<b>MB20-20x40 RV</b>	MB20	22	29	20	32.5	40	2	-	IH..20	0.1	1
<b>MB25-25x50</b>	MB25	28	38	25	40.0	50	2	-	IH..25	0.2	1
<b>MB32-32x63</b>	MB32	36	50	32	51.5	63	3	-	IH..32	0.35	1
<b>MB40-40x80</b>	MB40	48	63	40	66.0	80	4	-	IH..40	0.7	1
<b>MB50-50x60</b>	MB50	2.5	108	50	60.0	79	4	16	IH..50	1.0	2



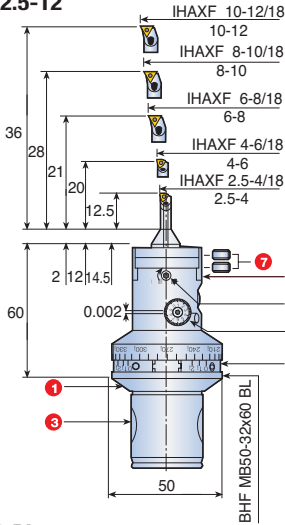
• Important: Loosen the \*slide lock screw before making any slide adjustment



## Fine boring heads with balancing rings

2μm

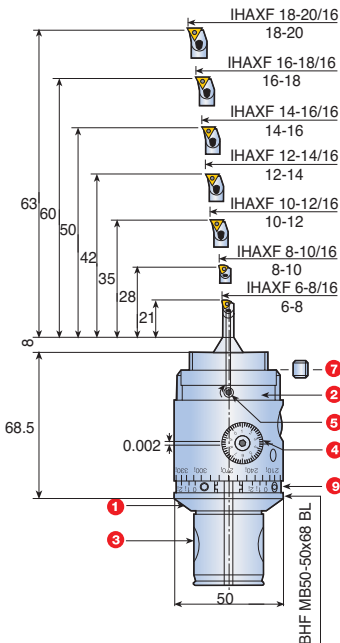
### BHF MB50-32x60 BL Diameter range: 2.5-12



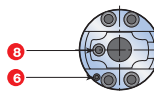
- 1 Body
- 2 Tool slide
- 3 Expanding pin
- 4 Graduated dial
- 5 Slide locking screw
- 6 Coolant nozzle
- 7 Boring bar locking screws
- 8 Balancing rings



### BHF MB50-50x68 BL Diameter range: 6-12



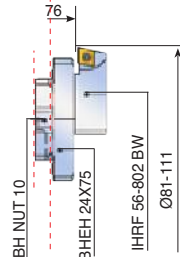
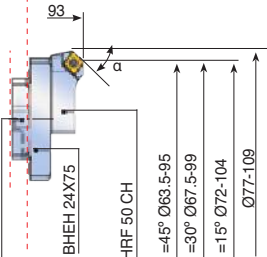
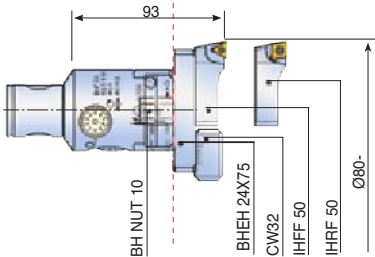
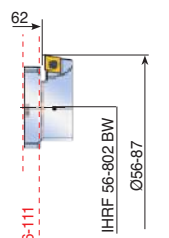
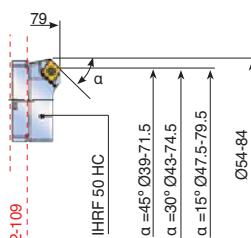
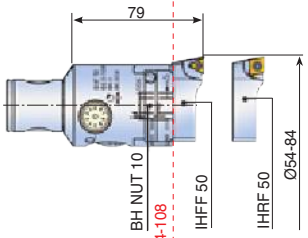
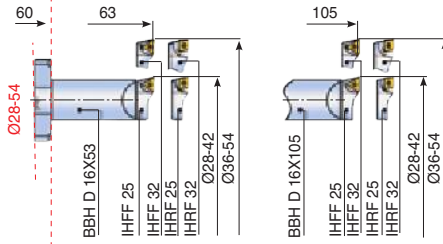
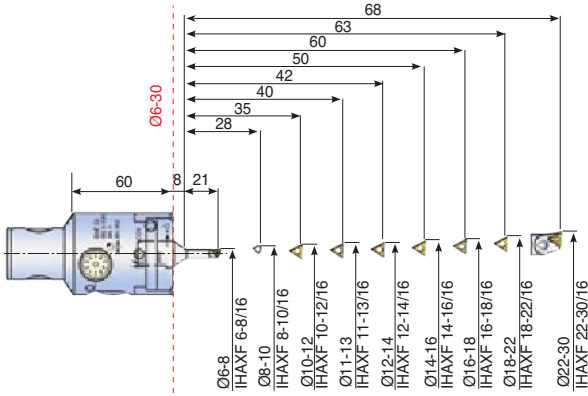
- 1 Body
- 2 Tool slide
- 3 Expanding pin
- 4 Graduated dial
- 5 Slide locking screw
- 6 Coolant nozzle
- 7 Boring bar locking screws
- 8 Oiling nipple
- 9 Balancing rings



## Fine boring head range: 2 $\mu$ m direct diametric adjustment

**BHF MB50-50x60**  
Diameter range: 6-111

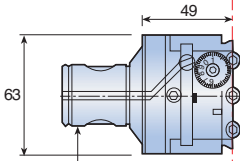
2 $\mu$ m



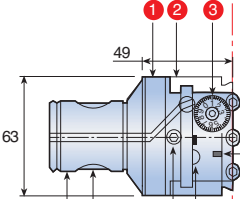
## Fine boring head range: 2µm direct diametric adjustment

2µm

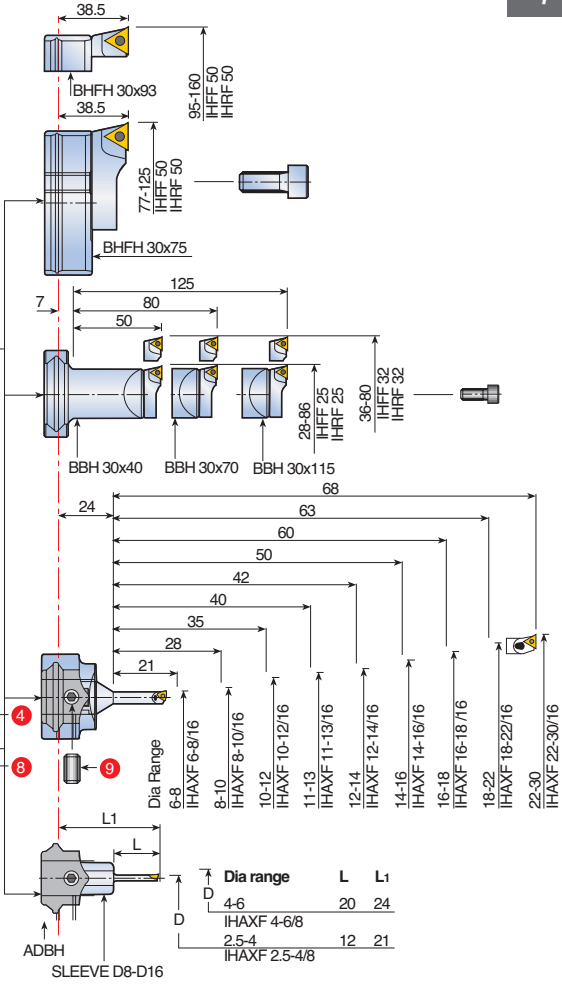
**BHF MB50-63x87**  
**BHF MB63-63x87**  
**Diameter range: 2.5-160**



BHF MB50-63x87



BHF MB63-63x87



Dia range	L	L1
D 4-6	20	24
IHAXF 4-6/8		
D 2.5-4	12	21
IHAXF 2.5-4/8		

ADBH  
 SLEEVE D8-D16

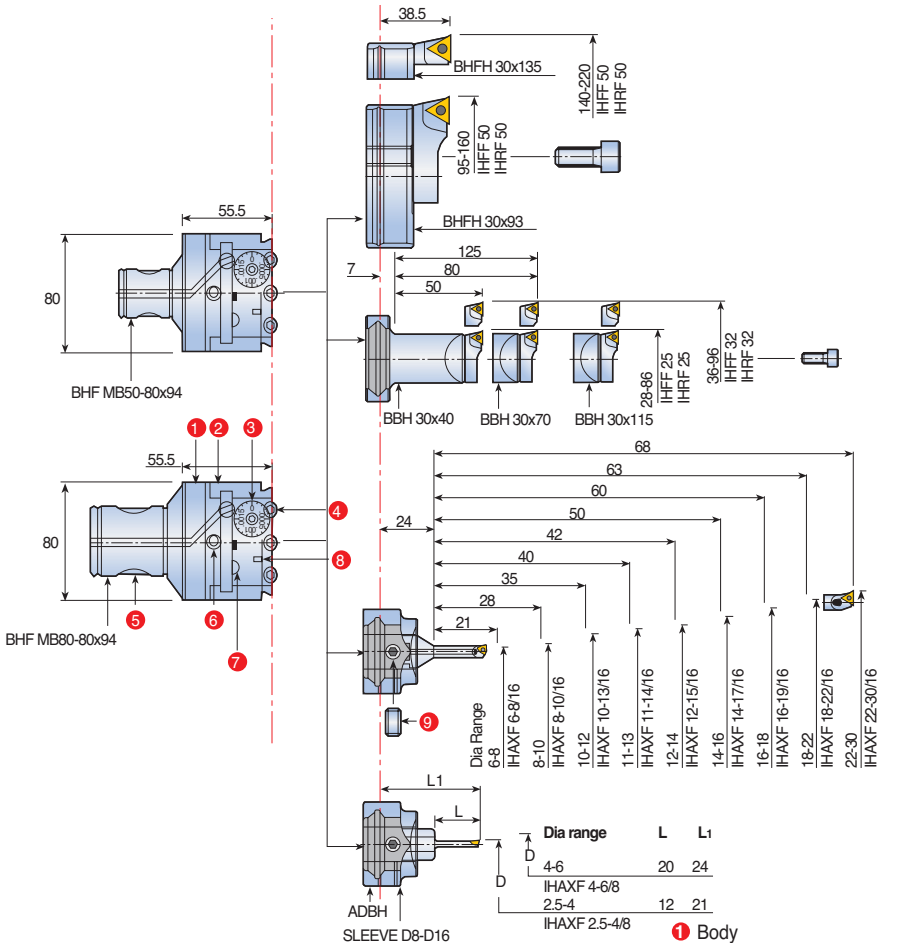
- 1 Body
- 2 Tool slide
- 3 Graduated dial
- 4 Toolholder locking screw
- 5 Expanding pin
- 6 Slide locking screw
- 7 Coolant nozzle
- 8 Oiling nipple
- 9 Toolholder locking screw



## Fine boring head range: 2 $\mu$ m direct diametric adjustment

**BHF MB50-80x94**  
**BHF MB80-80x94**  
 Diameter range: 2.5-220

2 $\mu$ m

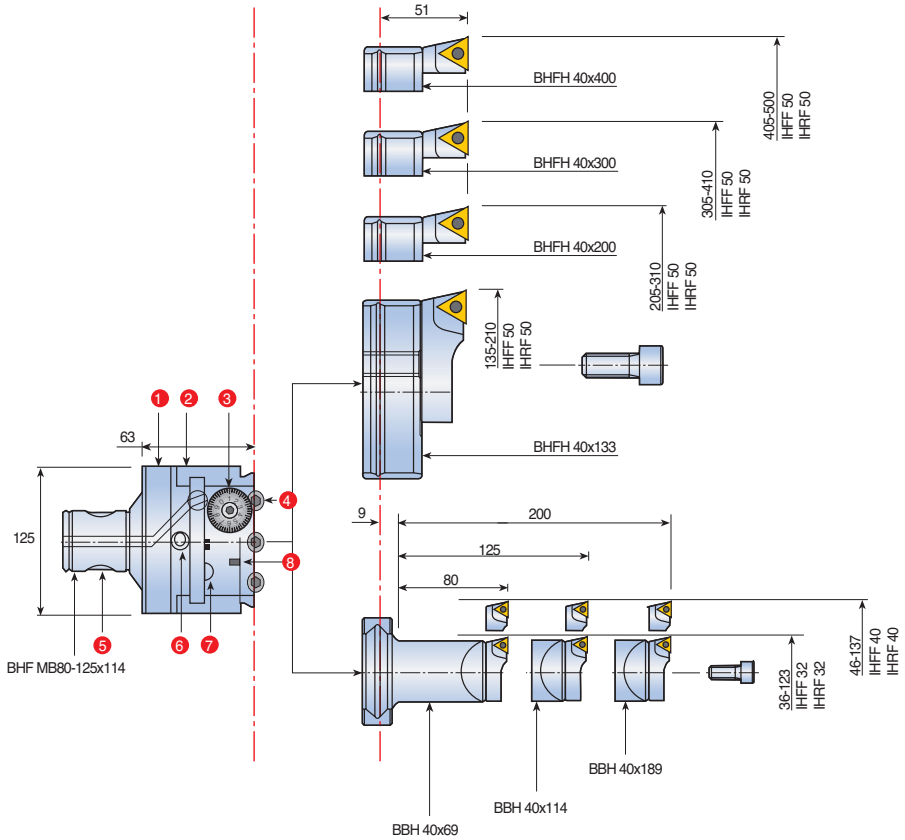


- 1 Body
- 2 Tool slide
- 3 Graduated dial
- 4 Toolholder locking screw
- 5 Expanding pin
- 6 Slide locking screw
- 7 Coolant nozzle
- 8 Oiling nipple
- 9 Toolholder locking screw

## Fine boring head range: 2 $\mu$ m direct diametric adjustment

2 $\mu$ m

**BHF MB80-125x114**  
Diameter range:36-500



- 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

## 8mm boring bar for 2.5-12mm fine boring heads

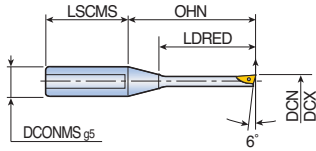


Fig.1

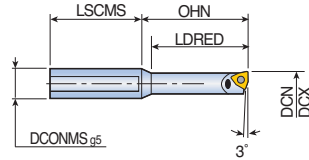


Fig.2

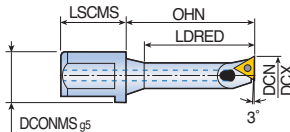
Designation	Dimension (mm)						Spare parts			Fig.
	DCN	DCX	LDRED	OHN	LSCMS	DCONMS	Insert	Screw	Key	
<b>IHAXF 2.5-4/8<sup>(1)</sup></b>	2.5	4	12.5	21	22	8	Solid	-	-	1
<b>4-6/8<sup>(1)</sup></b>	4	6	20.0	24	24	8	Solid	-	-	1
<b>6-8/8</b>	6	8	21.0	21	16	8	WCGT 0201	SR 14-299	T-6/5	2
<b>8-10/8</b>	8	10	-	28	16	8	WCGT 0201	SR 14-299	T-6/5	2
<b>10-12/8</b>	10	12	-	36	16	8	TPGX 0902	SR 14-299	T-6/5	2

• <sup>(1)</sup> Brazed tool

# IHAXF

# Fine Boring Bar

## 16mm bars for 6-30mm fine boring heads



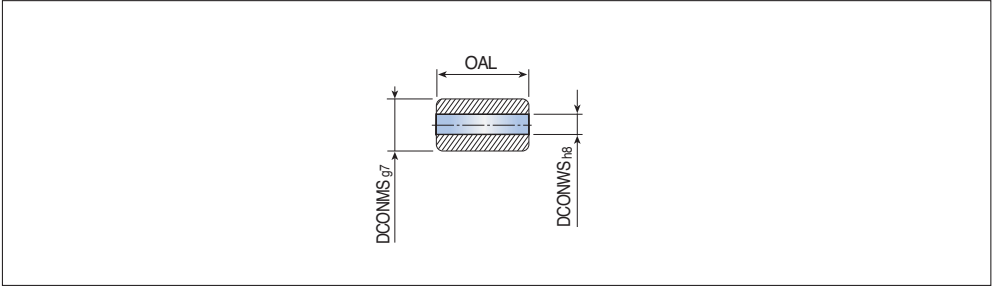
Designation	Dimension (mm)						Spare parts		
	DCN	DCX	LDRED	OHN	LSCMS	DCONMS	Insert	Screw	Key
<b>IHAXF 6-8/16</b>	6	8	21.0	29	22	16	WCGT 0201	SR 14-299	T-6/5
<b>8-10/16</b>	8	10	28.0	36	22	16	WCGT 0201	SR 14-299	T-6/5
<b>10-12/16</b>	10	12	35.0	43	22	16	TPGX 0902	SO 250611	T-8/5
<b>11-13/16</b>	11	13	40.0	48	22	16	TPGX 0902	SO 250611	T-8/5
<b>12-14/16</b>	12	14	42.0	48	22	16	TPGX 0902	SO 250611	T-8/5
<b>14-16/16</b>	14	16	50.0	52	22	16	TPGX 0902	SO 250611	T-8/5
<b>16-18/16</b>	16	18	50.0	58	22	16	TPGX 0902	SO 250611	T-8/5
<b>18-22/16</b>	18	22	60.0	63	22	16	TPGX 0902	SO 250611	T-8/5
<b>22-30/16</b>	22	30	60.0	68	22	16	TPGX 0902	SO 250611	T-8/5



# SLEEVE

## Fine Boring Bar

Reducers for fine boring heads

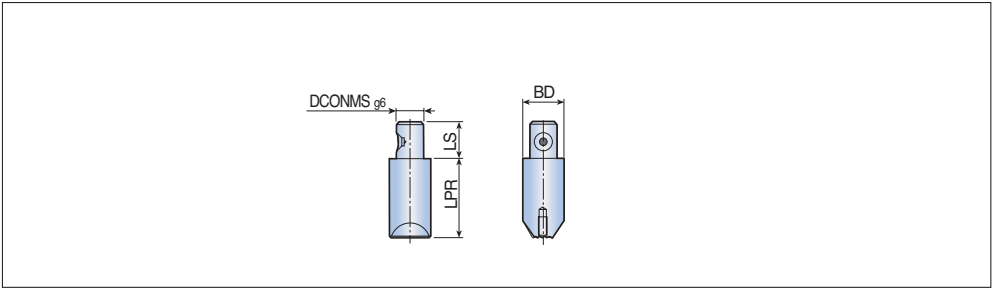


Designation	Dimension (mm)		
	DCONMS	DCONWS	OAL
<b>SLEEVE D8-D16</b>	16	8	23

# BBH D16

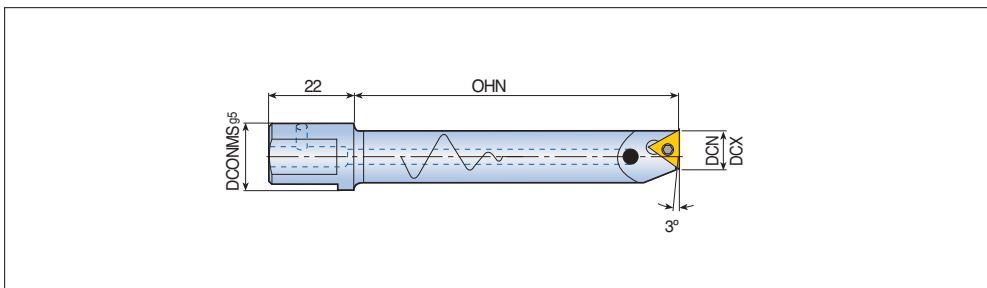
## Fine Boring Bar

Extension for BHF 50x50x63



Designation	Dimension (mm)				Kg
	BD	LPR	DCONMS	LS	
<b>BBH D16x53</b>	25	53	16	21.5	0.3

## Vibration dampening for fine boring bars – Heavy metal shank



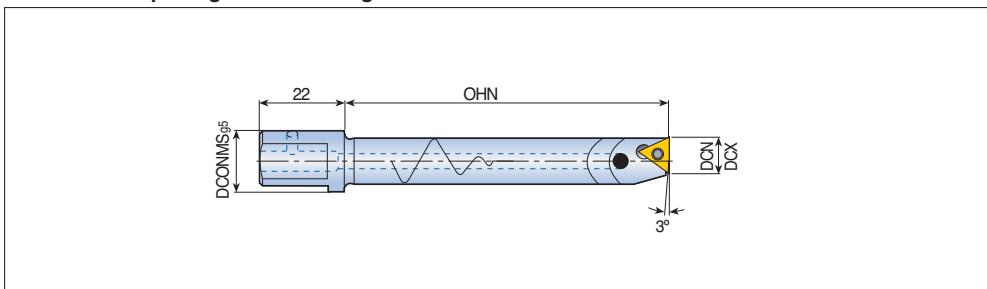
Designation	Dimension (mm)				Spare parts		
	DCN	DCX	OHN	DCONMS	Insert	Screw	Key
<b>IHAXF 6-8-AVI</b>	6	8	36	16	WCGT 0201..	SR 14-299	T-6/5
<b>8-10-AVI</b>	8	10	48	16	WCGT 0201..	SR 14-299	T-6/5
<b>10-12-AVI</b>	10	12	60	16	TPGX 0902..	SO 250611	T-8/5
<b>12-14-AVI</b>	12	14	72	16	TPGX 0902..	SO 250611	T-8/5
<b>14-16-AVI</b>	14	16	84	16	TPGX 0902..	SO 250611	T-8/5
<b>16-18-AVI</b>	16	18	96	16	TPGX 0902..	SO 250611	T-8/5

• Note: Not recommended to be used on balanceable BHF-BL fine boring head

# IHAXF-E

# Fine Boring Bar

## Vibration dampening for fine boring bars – Carbide shank

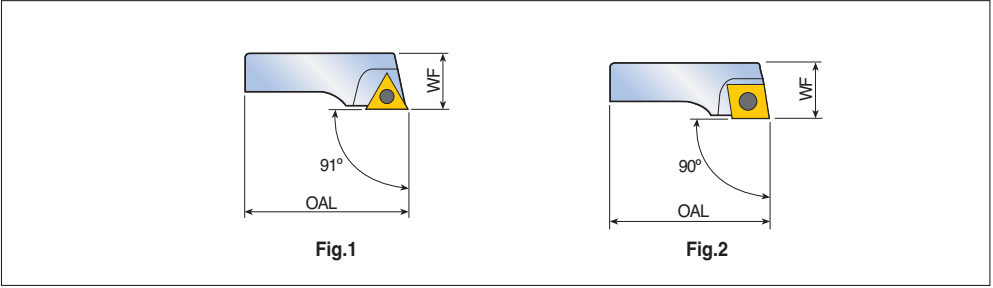


Designation	Dimension (mm)				Spare parts		
	DCN	DCX	OHN	DCONMS	Insert	Screw	Key
<b>IHAXF 6-8-E</b>	6	8	45	16	WCGT 0201..	SR 14-299	T-6/5
<b>8-10-E</b>	8	10	60	16	WCGT 0201..	SR 14-299	T-6/5
<b>10-12-E</b>	10	12	75	16	TPGX 0902..	SO 250611	T-8/5
<b>12-14-E</b>	12	14	90	16	TPGX 0902..	SO 250611	T-8/5
<b>14-16-E</b>	14	16	105	16	TPGX 0902..	SO 250611	T-8/5
<b>16-18-E</b>	16	18	120	16	TPGX 0902..	SO 250611	T-8/5

• Note: Not recommended to be used on balanceable BHF-BL fine boring head



Insert holders for mounting on the MB fine boring heads

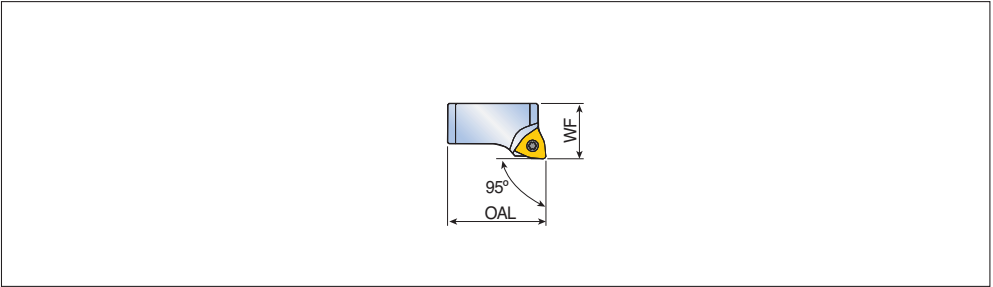


Designation	Dimension (mm)				Spare parts			Fig.
	DCN	DCX	WF	OAL	Insert	Insert screw	Torx key	
<b>IHFF 25</b>	28	40	10.0	26.5	TPGX 0902...	SO 250611	T8/5	1
<b>32</b>	35	53	11.5	34.5	TPGX 0902...	SO 250611	T8/5	1
<b>40</b>	48	66	14.0	44.0	TPGX 1103...	SO 300811	T8/5	1
<b>50</b>	54	86	19.0	52.0	TPGX 1103...	SO 300811	T8/5	1
<b>IHRF 16</b>	18	24	8.0	17	CCGT 0602..	SR 14-548	T-7/5	2
<b>20</b>	22	30	8.5	21.0	CCGT 0602..	SR 14-548	T-7/5	2
<b>25</b>	28	40	10.0	26.5	CCGT 0602..	SR 14-548	T-7/5	2
<b>32</b>	35	53	11.5	34.5	CCGT 0602..	TS 400971	T-7/5	2
<b>40</b>	48	66	14.0	44.0	CCGT 09T3...	TS 400971	T-15/5	2
<b>50</b>	54	86	19.0	52.0	CCGT 09T3...	TS 400971	T-15/5	2

# IHWF

# Fine Boring Insert Holders

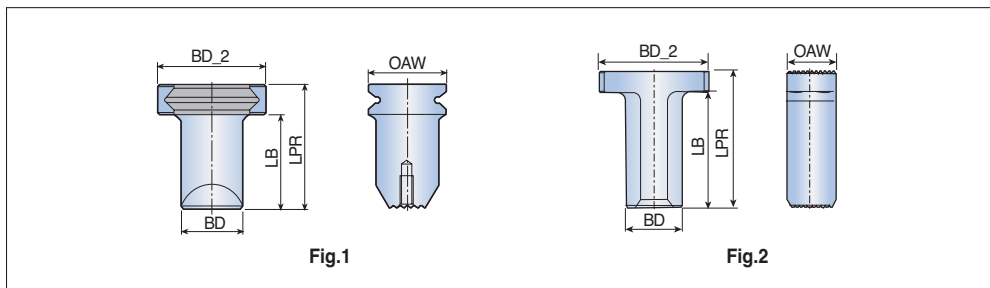
Insert holders for mounting on the MB fine boring heads



Designation	Dimension (mm)				Spare parts		
	DCN	DCX	WF	OAL	Insert	Insert screw	Torx key
<b>IHWF 14E</b>	14.5	18	8.0	14.0	WCGT 0201...	SR 14-299	T6/5

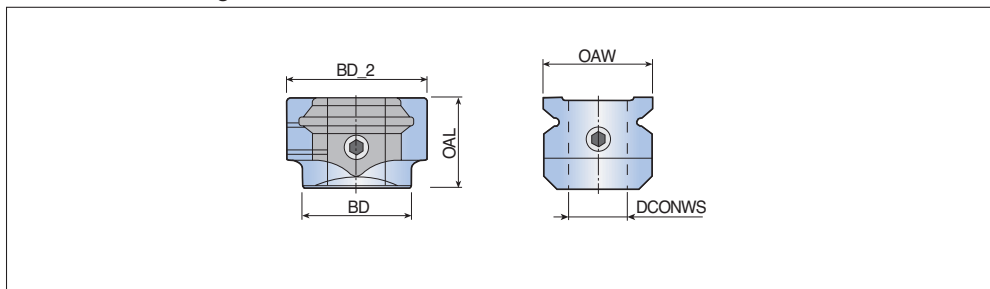


## Slide extensions for fine boring holders



Designation	Dimension (mm)					Kg	Fig.
	BD	LB	LPR	BD_2	OAW		
<b>BBH 30x40</b>	25	40	52.5	43	30.5	0.3	1
<b>30x70</b>	25	70	82.5	43	30.5	0.4	1
<b>30x115</b>	27	115	127.5	43	30.5	0.7	1
<b>40x69</b>	32	69	86	56	40	0.7	1
<b>40x114</b>	32	114	131	56	40	1.0	1
<b>40x189</b>	38	189	206	56	40	2.0	1
<b>63x78</b>	32	66	78	63	28	0.7	2

## Sleeve for fine boring holders

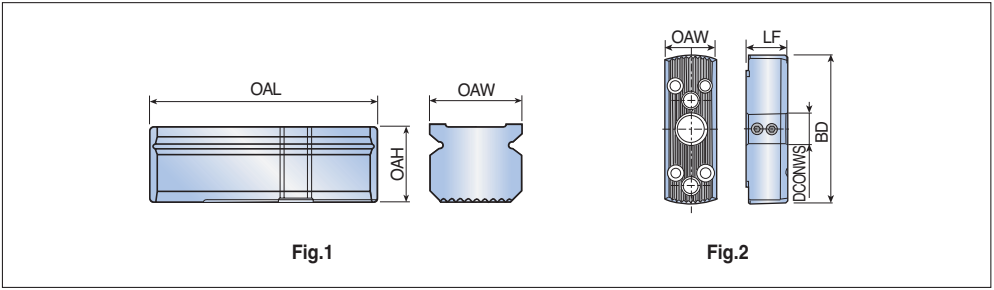


Designation	Dimension (mm)					Kg
	BD	BD_2	OAL	OAW	DCONWS	
<b>ADBH 30xD16</b>	30	39	25	30.5	16	0.2

# BHFH/BHEH

# Fine Boring Insert Holders & Slides

Slide for BHF & BHE fine boring holders

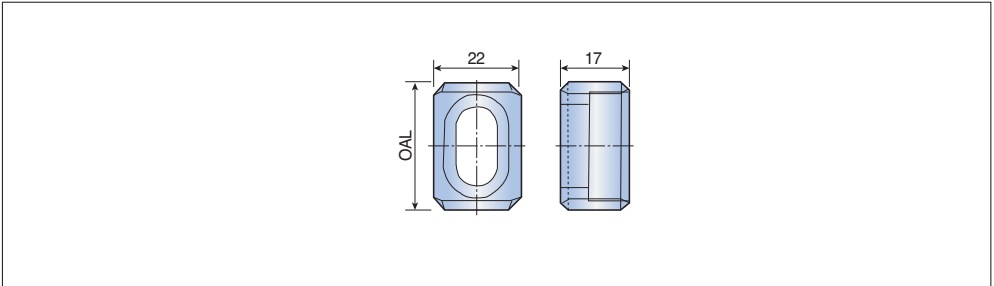


Designation	Dimension (mm)						Kg	Fig.
	OAH	OAL	OAW	BD	LF	DCONWS		
<b>BHFH 30x75</b>	25	75	30.5	-	-	-	0.4	1
<b>30x93</b>	25	93	30.5	-	-	-	0.5	1
<b>30x135</b>	25	135	30.5	-	-	-	0.7	1
<b>40x133</b>	40	133	40	-	-	-	1.5	1
<b>40x200</b>	40	200	40	-	-	-	2.4	1
<b>40x300</b>	40	300	40	-	-	-	3.5	1
<b>40x400</b>	40	400	40	-	-	-	4.6	1
<b>BHEH 24x75</b>	-	-	24	75	14.5	-	0.2	2
<b>28x80</b>	-	-	28	80	22.5	16	0.3	2
<b>28x108</b>	-	-	28	108	22.5	-	0.5	2
<b>28x148</b>	-	-	28	148	22.5	-	0.6	2

# CW32

# Fine Boring Insert Holders & Slides

Counter balancing weight



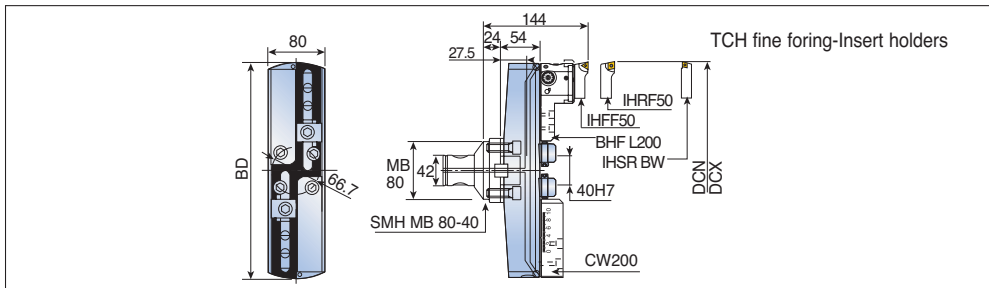
Designation	Dimension (mm)		Kg
	OAL		
<b>CW 32</b>	31.5		0.5



# TCH

# Fine Boring Heads

Fine boring aluminum body range: 200-500mm with MB connection

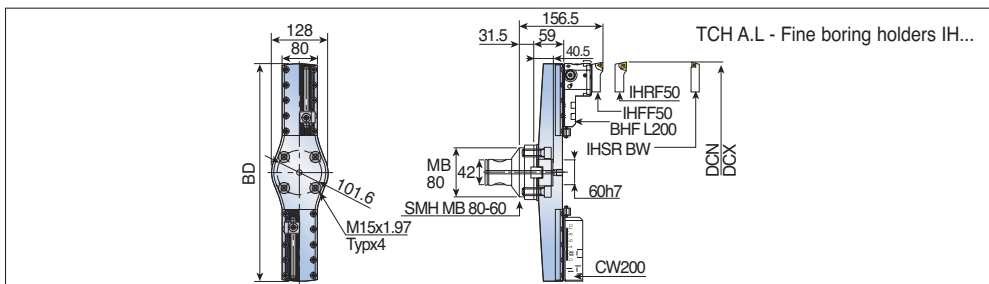


Designation	Dimension (mm)			Kg
	DCN	DCX	BD	
<b>TCH 200</b>	200	300	198	2.6
<b>300</b>	300	400	298	3.5
<b>400</b>	400	500	398	4.1

# TCH A.L

# Fine Boring Heads

Fine boring aluminum body range: 500-800mm with MB connection



Designation	Dimension (mm)			Kg
	DCN	DCX	BD	
<b>TCH A.L 500</b>	500	600	494	7.5
<b>600</b>	600	700	594	9.0
<b>700</b>	700	800	694	10.5

Spare Parts



H71-H83

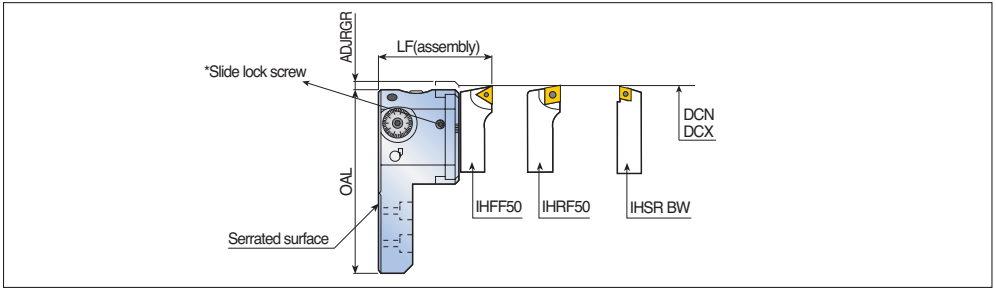


H32

# BHF L200

# Fine Boring Heads & Tool Holders

(200-800) Fine boring slide heads for TCH

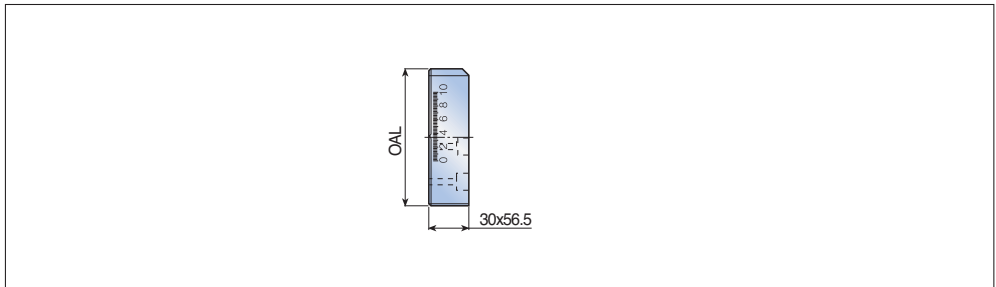


Designation	Dimension (mm)					Kg
	DCN	DCX	OAL	LF	ADJRGR	
<b>BHFL200</b>	200	800	110	67	5	1.3

# CW200

# Fine Boring Heads & Tool Holders

Counter balancing weight for TCH



Designation	Dimension (mm)		Kg
	OAL		
<b>CW 200</b>	105		1.3

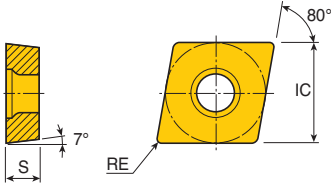


• Important: Loosen the \*slide lock screw before making any slide adjustment.





Positive 7° clearance 80° rhombic inserts



Size	Dimension (mm)		
	IC	S	RE
<b>06</b>	6.35	2.38	0.1-0.8
<b>09</b>	9.52	3.97	0.1-0.8
<b>12</b>	12.7	4.76	0.2-1.2

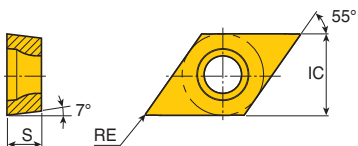
Insert	Designation	Cermet		CVD coated										PVD coated				Uncoated				
		PV3010	CT3000	TT7005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT15100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20	
	<b>CCMT 060204 MT</b>	●	●	●	●		●	●	●		●	●	●	●	●					●		
	<b>060208 MT</b>	●	●	●	●			●	●	●			●	●	●							
	<b>09T304 MT</b>	●	●	●	●	●		●	●			●	●	●	●	●						
	<b>09T308 MT</b>		●	●	●	●		●	●	●	●	●	●	●	●	●						
	<b>120404 MT</b>	●	●	●	●			●	●				●	●	●	●						
	<b>120408 MT</b>		●	●	●	●		●	●	●		●	●	●	●	●						
	<b>120412 MT</b>				●			●	●				●	●	●							
	<b>CCGT 060201 SA</b>													●		●						
	<b>060202 SA</b>													●		●						
	<b>060204 SA</b>													●		●						
	<b>09T301 SA</b>													●		●						
	<b>09T302 SA</b>													●		●						
	<b>09T304 SA</b>													●		●	●					
	<b>09T308 SA</b>													●		●						
	<b>CCGT 060202 FL</b>																				●	
	<b>060204 FL</b>																				●	
	<b>09T302 FL</b>																				●	
	<b>09T304 FL</b>																				●	
	<b>09T308 FL</b>																				●	
	<b>120402 FL</b>																				●	
	<b>120404 FL</b>																				●	
	<b>120408 FL</b>																				●	

●: Standard items

# DCMT

# Boring Inserts

Positive 7° clearance 55° rhombic inserts



Size	Dimension (mm)		
	IC	S	RE
<b>07</b>	6.35	2.38	0.4-0.8
<b>11</b>	9.52	3.97	0.4-1.2

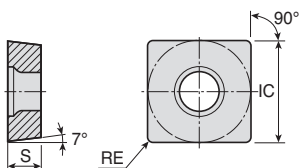
Insert	Designation	Cermet		CVD coated								PVD coated				Uncoated					
		PV3010	CT3000	TT7005	TT7015	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20
	<b>DCMT 070204 PC</b>		●				●	●		●	●							●			
	<b>070208 PC</b>		●				●	●		●	●							●			
	<b>11T304 PC</b>		●			●	●	●		●	●							●			
	<b>11T308 PC</b>		●			●	●	●		●	●							●			
	<b>11T312 PC</b>		●				●	●		●	●							●			

● : Standard items

# SCGT

# Boring Inserts

Positive 7° clearance inserts for aluminum machining

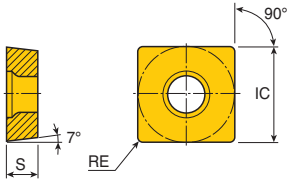


Size	Dimension (mm)		
	IC	S	RE
<b>09</b>	9.52	3.97	0.8
<b>12</b>	12.7	4.76	0.2-0.8

Insert	Designation	Cermet		CVD coated								PVD coated				Uncoated					
		PV3010	CT3000	TT7005	TT7015	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P20	K10	K20
	<b>SCGT 09T308 FL</b>																			●	
	<b>120402 FL</b>																			●	
	<b>120404 FL</b>																			●	
	<b>120408 FL</b>																			●	

● : Standard items

## Positive 7° clearance square inserts



Size	Dimension (mm)		
	IC	S	RE
<b>09</b>	9.52	3.97	0.4-0.8
<b>12</b>	12.7	4.76	0.4-1.2

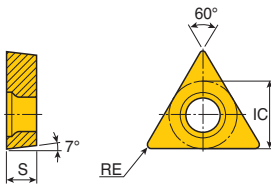
Insert	Designation	Cermet		CVD coated										PVD coated			Uncoated					
		PV3010	CT3000	TT7005	TT7015	TT7025	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	P20	K10	K20	
	<b>SCMT 09T304 FG</b>							●			●											
	<b>09T308 FG</b>	●						●	●		●		●			●	●					
	<b>SCMT 09T304 MT</b>	●	●	●	●		●	●	●		●		●			●						
	<b>09T308 MT</b>		●	●	●	●		●	●	●		●	●	●	●	●	●					
	<b>120404 MT</b>		●	●	●			●	●				●									
	<b>120408 MT</b>		●	●	●	●		●	●	●		●	●	●		●	●					
	<b>120412 MT</b>			●	●		●		●	●						●						

●: Standard items

# TCMT

# Boring Inserts

## Positive 7° clearance triangular inserts

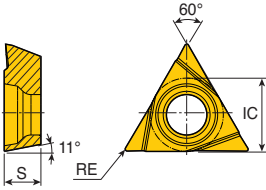


Size	Dimension (mm)		
	IC	S	RE
<b>22</b>	12.7	4.76	0.8


Insert	Designation	Cermet		CVD coated										PVD coated			Uncoated					
		PV3010	CT3000	TT7005	TT7015	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	TT9080	P30	K10	K20	
	<b>TCMT 220508-19</b>																		●			

●: Standard items

## Positive 11° clearance triangular inserts



Size	Dimension (mm)		
	IC	S	RE
<b>09</b>	5.56	2.38	0.2-0.4
<b>11</b>	6.35	3.18	0.2-0.4

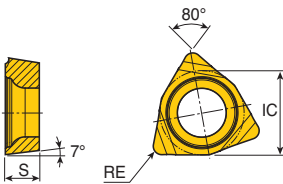
Insert	Designation	Cermet		CVD coated								PVD coated			Uncoated							
		PV3010	CT3000	TT7005	TT7015	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9020	P20	P30	K10	K20	
 Left-hand	<b>TPGX 090202 L</b>	●																				
	<b>090204 L</b>	●																		●		
	<b>110302 L</b>	●																			●	
	<b>110304 L</b>	●																				●

● : Standard items


# WCGT

# Boring Inserts

## Positive 7° clearance 80° trigon inserts



Size	Dimension (mm)		
	IC	S	RE
<b>02</b>	3.97	1.59	0.2-0.4

Insert	Designation	Cermet		CVD coated								PVD coated			Uncoated						
		PV3010	CT3000	TT7005	TT7015	TT8105B	TT8115B	TT8125B	TT8135B	TT9215	TT9225	TT9235	TT5100	TT7100	TT5080	TT8020	TT9030	TT9080	P20	K10	K20
	<b>WCGT 020102L</b>															●					
	<b>020104L</b>															●					

● : Standard items



# KIT BHE MB50-50x80

Kits

Boring kit BHE MB50-50 (ø6-110mm) with fine boring head

10µm  
2µm

**Ø6-30**  
 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

**Ø28-56**  
 1 IHFF 25  
 1 IHFF 32

**Ø54-86**  
 1 IHFF 50

**Ø80-110**  
 1 BHEH 24x75  
 1 IHFF 50

**Ø92-110**  
 1 CW 32  
 1 BHEH 24x75  
 1 IHFF 50

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 BH NUT 10  
 1 CW 32

Designation	Dimension (mm)	
	SS	Boring range
<b>KIT BHE MB50-50x80</b>	MB50	6-110

• 10µm direct diametric adjustment and 2µm by a vernier scale

# KIT BHE MB63-63x89

Kits

Boring kit BHE MB63-63 (ø6-125mm) with fine boring head

10µm  
2µm

**Ø6-30**  
 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

**Ø40-90**  
 1 IHFF 32  
 1 IHFF 50

**Ø88-132**  
 1 SFTP 50

**Ø115-200**  
 1 BHEH...  
 1 CW 32  
 1 SFTP 50  
 1 BHEH 28x108  
 1 I155-200 BHEH 28x148

1 BHE 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 BH WASHER IH..50  
 1 CW 32

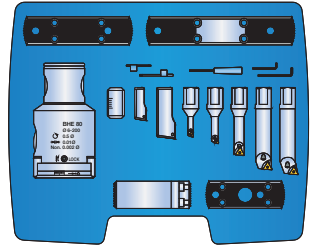
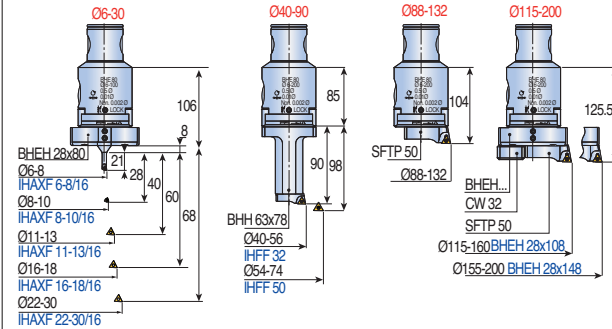
Designation	Dimension (mm)	
	SS	Boring range
<b>KIT BHE MB63-63x89</b>	MB63	6-125

# KIT BHE MB80-80x104

Kits

Boring kit BHE MB80-80 (ø6-200mm) with fine boring head

10µm  
2µm



- 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 BHEH 22-30/16
- 1 BHH 63x78
- 1 BHEH 28x80
- 1 BHEH 28x108
- 1 BHEH 28x148
- 1 BH WASHER IH..50
- 1 CW 32

Designation	Dimension (mm)	
	SS	Boring range
<b>KIT BHE MB80-80x104</b>	MB80	6-200

# KIT BHE MB32-32x53 H

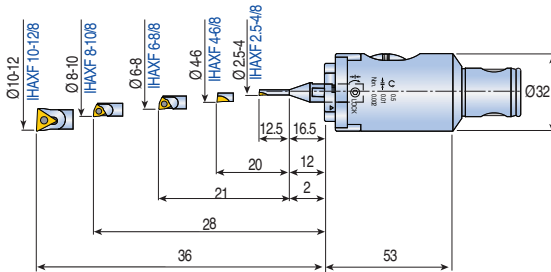
Kits

Boring kit BHE MB32-32x53 H (ø2.5-12mm) with fine boring head

G2.5  
12,000 RPM



10µm  
2µm



- Boring tools:
- 1 BHF MB32-32x53 H
  - 1 IHAXF 2.5-4/8
  - 1 IHAXF 4-6/8
  - 1 IHAXF 6-8/8
  - 1 IHAXF 8-10/8
  - 1 IHAXF 10-12/8
- Inserts:
- 5 TPGX 090202L
  - 2 WCGT 020102L

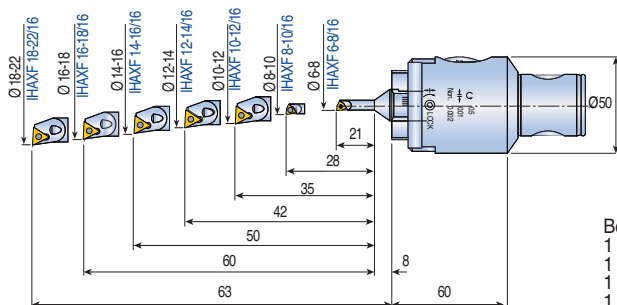
Designation	Dimension (mm)	
	SS	Boring range
<b>KIT BHE MB32-32x53 H</b>	MB32	2.5-12

# KIT BHE MB50-50x60 H

Kits

Boring kit BHE MB50-50x60 H (ø6-22mm) with fine boring head

G2.5 12,000 RPM		10µm 2µm
--------------------	--	-------------



- Boring tools:
- 1 BHE MB50-50x60 H
  - 1 IHAXF 6-8/16
  - 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
- Inserts:
- 5 TPGX 090202L
  - 2 WCGT 020102L

Designation	Dimension (mm)	
	SS	Boring range
<b>KIT BHE MB50-50x60 H</b>	MB50	6-22

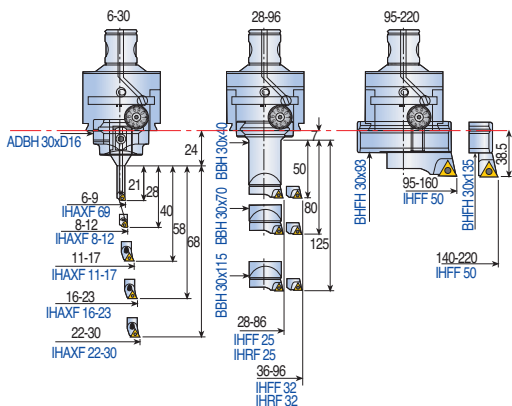
• 10µm direct diametric adjustment and 2µm by a vernier scale

# KIT BHF MB50-80/80-80

Kits

Kit BHF MB50-80 / Kit BHF MB80-80 6-220mm diameter range

2µm



- 1 BHF MB.-80x94
- 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 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
- 5 TPGX 090202L
- 1 TPGX 110302L
- 2 WCGT 020102L
- T-8/5
- T-6/5

Designation	Dimension (mm)	
	SS	Boring range
<b>KIT BHF MB50-80</b>	MB50	6-220
<b>MB80-80</b>	MB80	6-220

# KIT BHF MB 50-32 BL

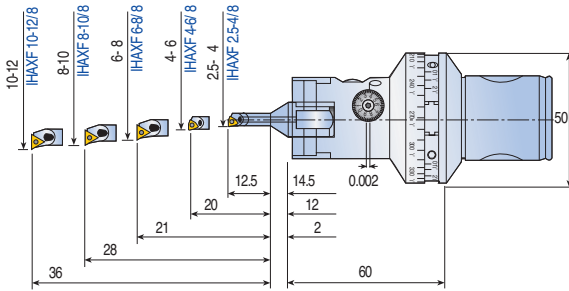
Kits

Boring kit 2.5-12mm diameter range with BHF fine boring balanceable head

G2.5  
20,000 RPM



2µm



- 1 BHF MB50-32X60 BL
- 1 IHAXF 2.5-4/8
- 1 IHAXF 4-6/8
- 1 IHAXF 6-8/8
- 1 IHAXF 8-10/8
- 1 IHAXF 10-12/8
- 5 TPGX 090202L
- 2 WCGT 020102L

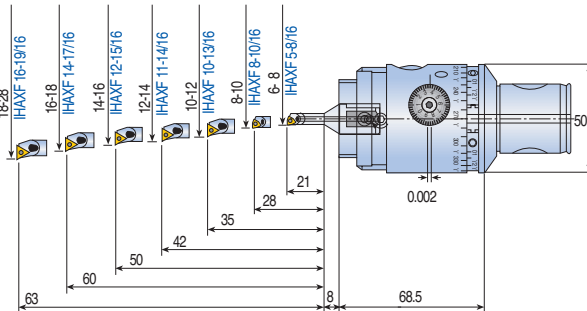
Designation	Dimension (mm)	
	SS	Boring range
<b>KIT BHF MB50-32 BL</b>	MB50	2.5-12

# KIT BHF MB50-50 BL

Kits

Boring Kit 6-20mm diameter range with BHF BL fine boring balanceable head

2µm



- 1 BHF MB50-50X68 BL
- 1 IHAXF 6-8/16
- 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
- 5 TPGX 090202L
- 2 WCGT 020102L

Designation	Dimension (mm)	
	SS	Boring range
<b>KIT BHF MB50-50 BL</b>	MB50	6-20

• 10µm direct diametric adjustment and 2µm by a vernier scale

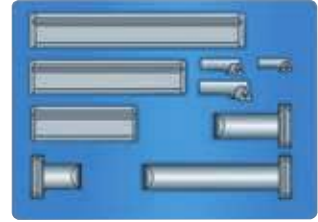
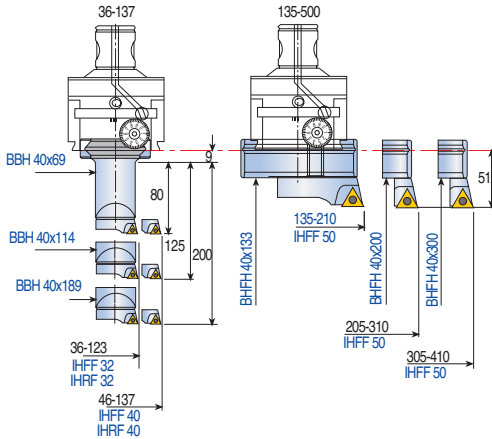


# KIT BHFH MB80-125

Kits

Kit BHFH MB80-125 holder for BHF MB80-125x114,36-410mm diameter range

2µm



- 1 BBH 40x69
- 1 BBH 40x114
- 1 BBH 40x189
- 1 BHFH 40x133
- 1 BHFH 40x200
- 1 BHFH 40x300
- 1 IHFF 25
- 1 IHFF 40
- 1 IHFF 50

Designation	Dimension (mm)	
	SS	Boring range
<b>KIT BHFH MB80-125</b>	MB50	36-410

• 10µm direct diametric adjustment and 2µm by a vernier scale

# KIT IHAXF 6-30

Kits

Kit IHAXF 6-30,6-30mm diameter range

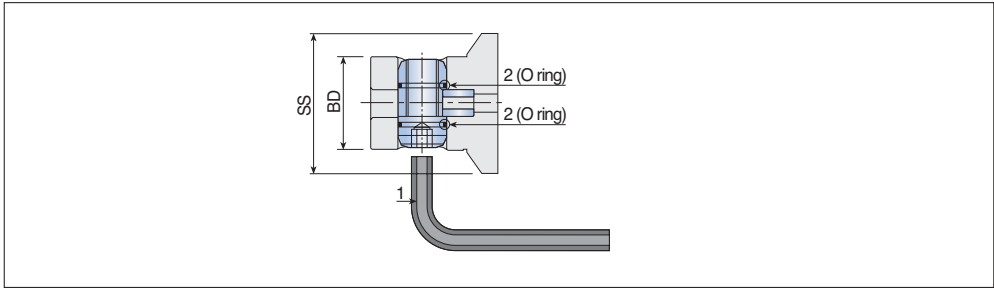
2µm

- 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
- 5 TPGX 090202L
- 3 WCGT 020102L
- T-8/5
- T-6/5



Designation	Dimension (mm)	
	Boring range	
<b>KIT IHAXF 6-30</b>	6-30	

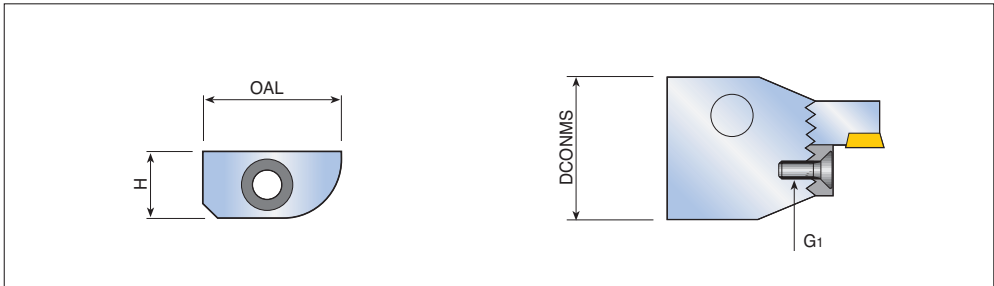
## MB system clamp set



Designation	Dimension (mm)			
	SS	BD	1	2
<b>MB CLAMP 16</b>	MB16	10	2.5	-
<b>20</b>	MB20	13	3	-
<b>25</b>	MB25	16	3	-
<b>32</b>	MB32	20	4	ORM 0100-10
<b>40</b>	MB40	25	5	ORM 0130-10
<b>50</b>	MB50	32	6	ORM 0140-10
<b>63-80</b>	MB63-80	42	8	OR 2075

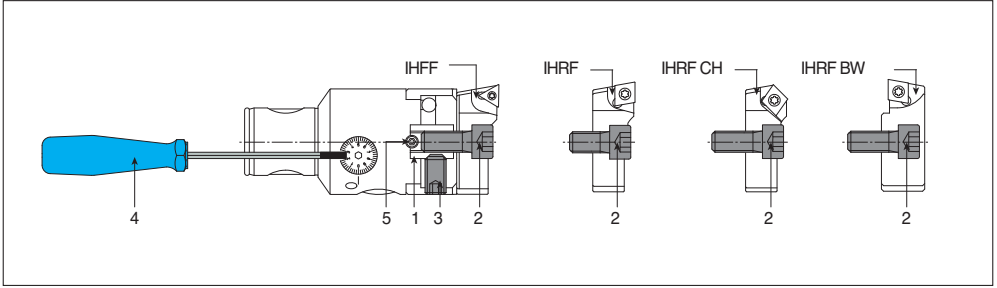
# PLT

## Cover plate

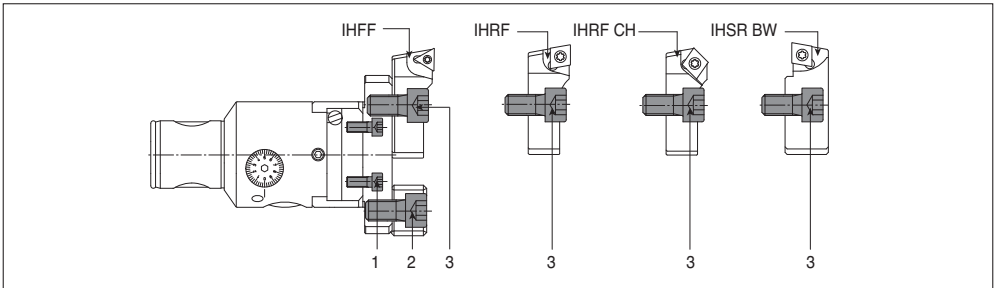


Designation	Dimension (mm)			
	DCONMS	H	OAL	G1
<b>PLT 16</b>	16	7	14	M 3x8
<b>20</b>	20	8.5	17	M 4x10
<b>25</b>	25	10.2	21	M 4x16
<b>32</b>	32	13.9	28	M 5x20
<b>40</b>	40	17.4	35	M 6x25
<b>50</b>	50	21.4	47.5	M 8x25
<b>63</b>	63	26.4	62	M 10x30
<b>80</b>	80	33.9	82.5	M 12x35

- Protects the serrated faces when a single toolholder is being used.

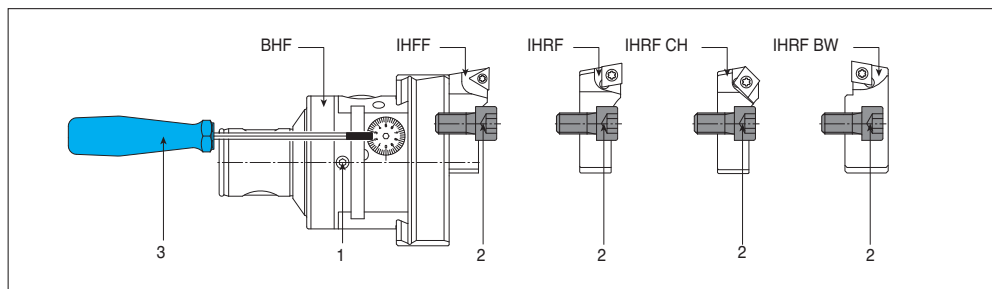


Designation	1	2	3	4	5
<b>BHF...- 16...</b>	-	SR M3x6 DIN 912	-	BH SR 1.5 HANDLE	SR M3x4.5 DIN 913
<b>20...</b>	-	SR M4x8 DIN 912	-	BH SR 1.5 HANDLE	SR M3x4.5 DIN 913
<b>25...</b>	-	SR M5x10 DIN 912	-	BH SR 2.0 HANDLE	SR M4x4 DIN 913
<b>32...</b>	-	SR M6x12 DIN 912	-	BH SR 2.0 HANDLE	SR M4x5 DIN 913
<b>40...</b>	-	SR M8x14 DIN 912	-	BH SR 2.5 HANDLE	SR M5x6 DIN 913 SR
<b>50-60</b>	BH NUT 10	SR M10x25 DIN 912	SR M10x16 DIN 913	BH SR 2.5 HANDLE	SR M5x8 DIN 913

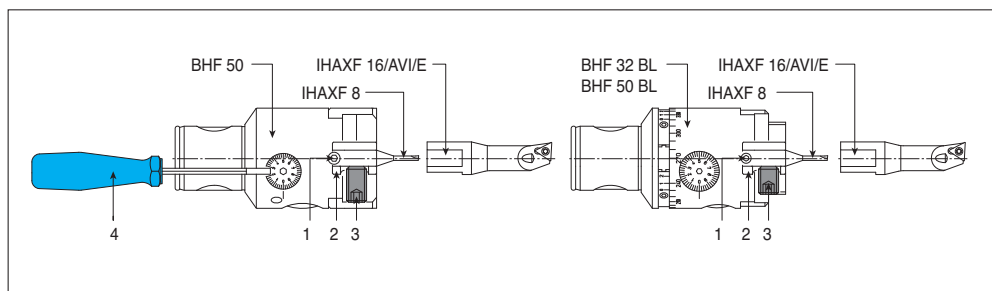


Designation	1	2	3
<b>BHF...- 50...</b>	SR M5x10 DIN 912	SR M10x20 DIN 912	SR M10x25 DIN 912



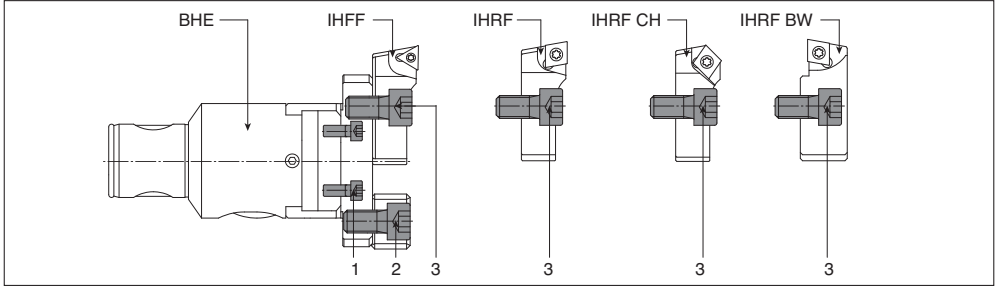


Designation	1	2	3
<b>BHF...- 63...</b>	SR M6x10 DIN 915	SR M10x25 DIN 912	BH SR 3.0 HANDLE
<b>80...</b>	SR M6x14 DIN 915	SR M10x25 DIN 912	BH SR 3.0 HANDLE
<b>125...</b>	SR M6x22 DIN 915	SR M10x25 DIN 912	BH SR 3.0 HANDLE

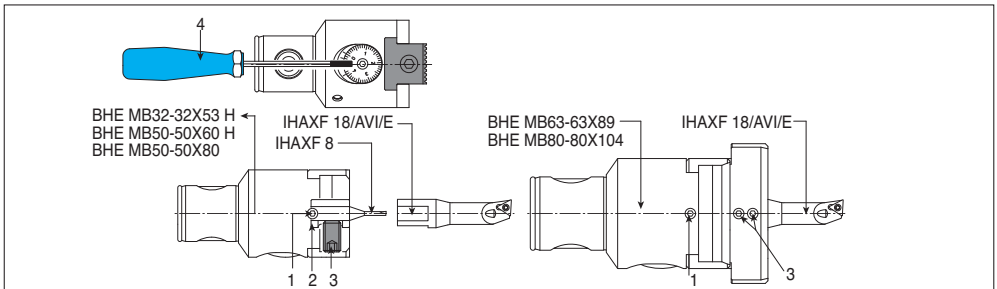


Designation	1	2	3	4
<b>BHF...- 50...</b>	SR M5x8 DIN 913	SLEEVE D 8-D16	SR M10x10 DIN 912	BH SR 2.5 HANDLE
<b>32... BL</b>	SR M4x5 DIN 913	-	SR M5x8 DIN 913 SR M5x12 DIN 913	BH SR 2.0 HANDLE
<b>50... BL</b>	SR M5x8 DIN 913	SLEEVE D 8-D16	SR M10x10 DIN 913 SR	BH SR 2.5 HANDLE

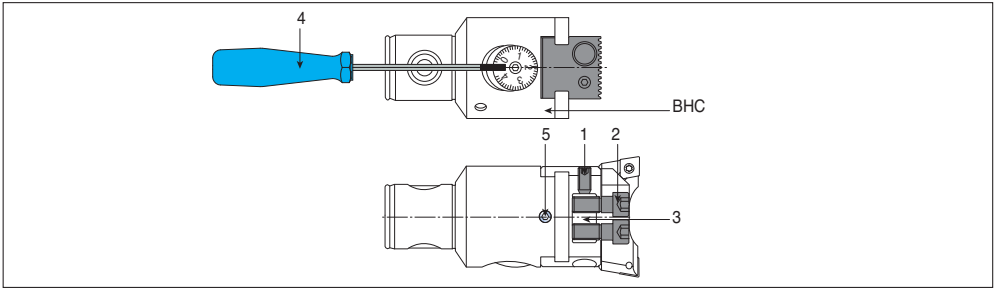




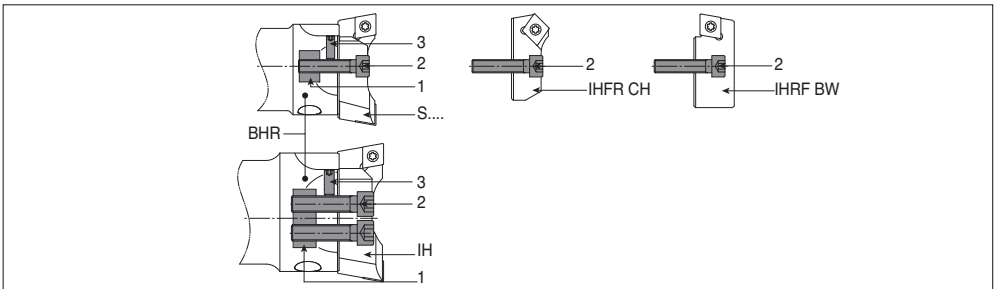
Designation	1	2	3
<b>BHE MB50-50x80</b>	SR M5x12 DIN 912	SR M10x20 DIN 912	SR M10x25 DIN 912
<b>MB63-63x89</b>	SR M5x25 DIN 912	SR M10x20 DIN 912	SR M10x25 DIN 912
<b>MB80-80x104</b>	SR M5x25 DIN 912	SR M10x20 DIN 912	SR M10x25 DIN 912



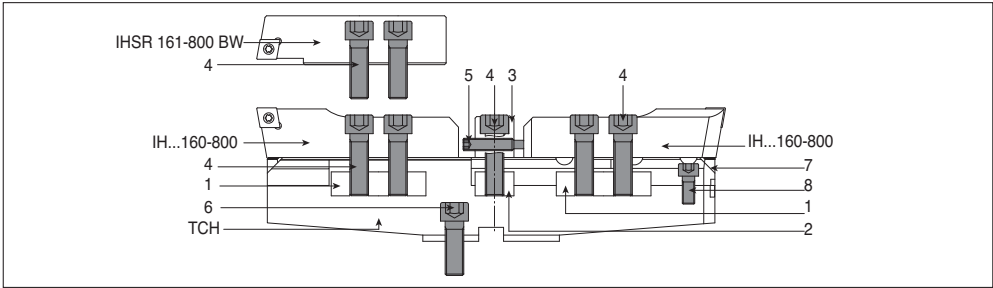
Designation	1	2	3	4
<b>BHE MB32-32x53 H</b>	SR M5x5 DIN 913	-	SR M5x8 DIN 913	BH SR 2.5 HANDLE
	SR M5x5 DIN 913	-	SR M5x12 DIN 913	BH SR 2.5 HANDLE
<b>MB50-50x60 H</b>	SR M6x8 DIN 913	SLEEVE D 8-D16	SR M10x10 DIN 913	BH SR 3.0 HANDLE
<b>MB50-50x8</b>	SR M6x8 DIN 913	-	SR M10x10 DIN 913	BH SR 3.0 HANDLE
<b>MB63-63x89</b>	SR M6x8 DIN 913	-	SR M6x6 DIN 913	BH SR 3.0 HANDLE
<b>MB80-80x104</b>	SR M6x12 DIN 913	-	SR M6x6 DIN 913	BH SR 3.0 HANDLE



Designation	1	2	3	4	5
<b>BHC MB25-25x57</b>	SR M4x8 DIN 913	BH SR M4x11 DIN 912 PT	BH NUT-BHC MB25	BH SR 2.0 HANDLE	SR M4x5 DIN 913
<b>MB32-32x71</b>	SR M5x10 DIN 913	BH SR M5x12.5 DIN 912 PT	BH NUT-BHC MB32	BH SR 2.5 HANDLE	SR M5x5 DIN 913
<b>MB40-40x90</b>	SR M6x12 DIN 913	BH SR M6x16 DIN 912 PT	BH NUT-BHC MB40	BH SR 3.0 HANDLE	SR M6x6 DIN 913
<b>MB50-50x87</b>	SR M6x14 DIN 913	BH SR M8x20 DIN 912 PT	BH NUT-BHC MB50	BH SR 3.0 HANDLE	SR M6x8 DIN 913
<b>MB63-63x109</b>	SR M6x16 DIN 913	BH SR M10x26 DIN 912 PT	BH NUT-BHC MB63	BH SR 3.0 HANDLE	SR M6x8 DIN 913
<b>MB80-80x130</b>	SR M6x20 DIN 913	BH SR M12x30 DIN 912 PT	BH NUT-BHC MB80	BH SR 3.0 HANDLE	SR M6x12 DIN 913

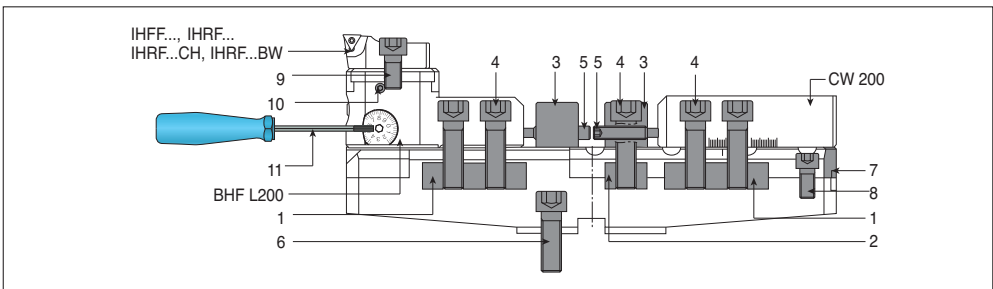


Designation	1	2	3
<b>BHR MB16...16</b>	BH NUT BHR MB16	SR M3x14 DIN 912	SR M3x4 DIN 913
<b>MB20...20</b>	BH NUT BHR MB20	SR M4x15 DIN 912	SR M3x5 DIN 913
<b>MB25...25</b>	BH NUT BHR MB25	SR M4x20 DIN 912	SR M3x8 DIN 913
<b>MB32...32</b>	BH NUT BHR MB32	SR M5x25 DIN 912	SR M4x12 DIN 913
<b>MB40...50</b>	BH NUT BHR MB40	SR M6x30 DIN 912	SR M5x14 DIN 913
<b>MB50...50</b>	BH NUT BHR MB50	SR M8x35 DIN 912	SR M5x12 DIN 913
<b>MB50...63</b>	BH NUT BHR MB63	SR M10x40 DIN 912	SR M6x16 DIN 913
<b>MB63...63</b>	BH NUT BHR MB63	SR M10x40 DIN 912	SR M6x16 DIN 913
<b>MB80...80</b>	BH NUT BHR MB80	SR M12x45 DIN 912	SR M8x25 DIN 913



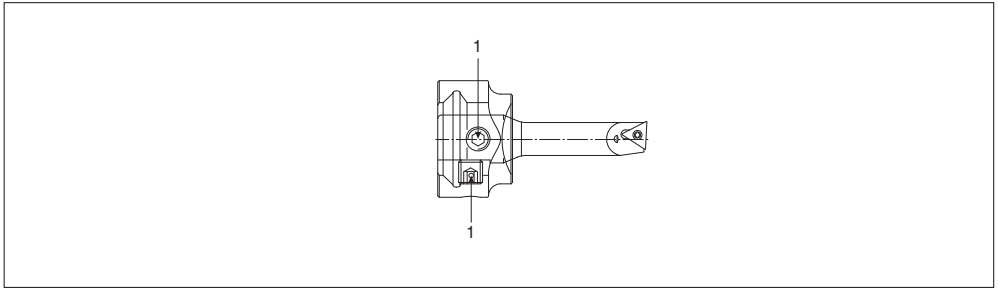
Designation	1	2	3	4
<b>TCH 200-300-400</b>	BH TCH NUT A	BH TCH NUT B	BH TCH NUT C	SR M12x40 DIN 912
<b>500-600-700</b>	BH TCH NUT A	BH TCH NUT B	BH TCH NUT C	SR M12x40 DIN 912

Designation	5	6	7	8
<b>TCH 200-300</b>	SR M8x40 DIN 915	SR M12x35 DIN 912	BH SERRATED PLATE 200-300	SR M8x25 DIN 912
<b>400</b>	SR M8x40 DIN 915	SR M12x35 DIN 912	BH SERRATED PLATE 400-700	SR M8x20 DIN 912
<b>500-600-700</b>	SR M8x40 DIN 915	SR M16x50 DIN 912	BH SERRATED PLATE 400-700	SR M8x25 DIN 912



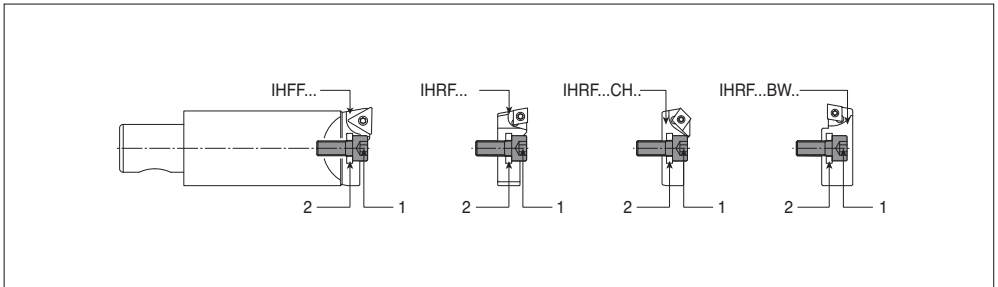
Designation	1	2	3	4	5
<b>TCH 200-300-400</b>	BH TCH NUT A	BH TCH NUT B	BH TCH NUT C	SR M12x40 DIN 912	SR M8x40 DIN 915
<b>500-600-700</b>	BH TCH NUT A	BH TCH NUT B	BH TCH NUT C	SR M12x40 DIN 912	SR M8x40 DIN 915

Designation	6	7	8	9	10	11
<b>TCH 200-300</b>	SR M12x35 DIN912	BH SERRATED PLATE 200-300	SR M8x25 DIN912	SR M10x20 DIN912	SR M6x8 DIN915	BH SR 3.0 HANDLE
<b>400</b>	SR M12x35 DIN912	BH SERRATED PLATE 400-700	SR M8x20 DIN912	SR M10x20 DIN912	SR M6x8 DIN915	BH SR 3.0 HANDLE
<b>500-600-700</b>	SR M16x50 DIN912	BH SERRATED PLATE 400-700	SR M8x25 DIN912	SR M10x20 DIN912	SR M6x8 DIN915	BH SR 3.0 HANDLE

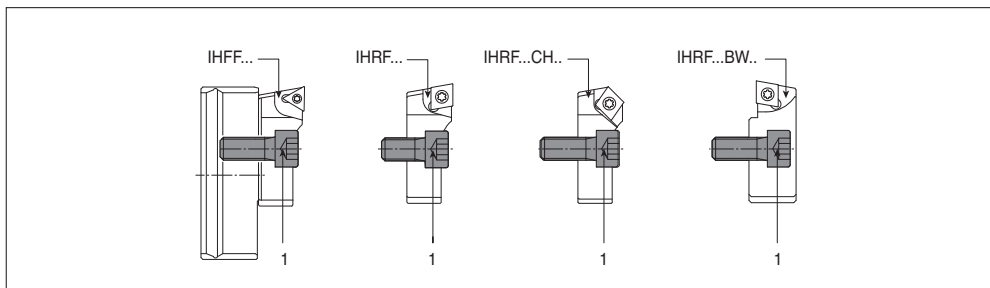


Designation	1
<b>ADBH 30xD16</b>	SR M45x8 DIN 913

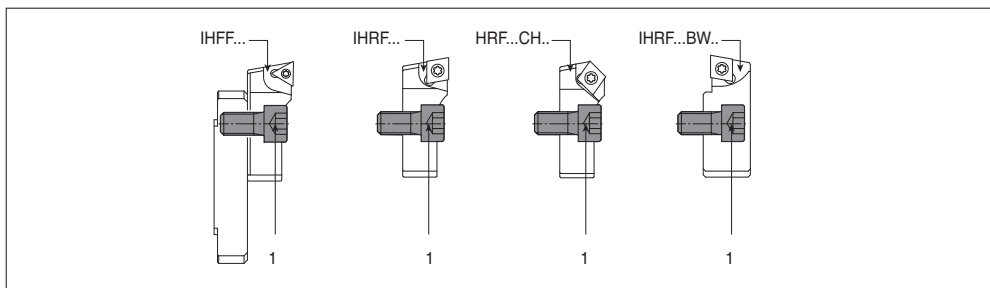
**BBH-D**



Designation	1	2
<b>BBH D16x63</b>	SR M5x12 DIN 912	WASHER DIN 125A M5
<b>D16x105</b>	SR M5x12 DIN 912	WASHER DIN 125A M5



Designation	1
<b>BHFH 30x75</b>	SR M10x18 DIN 912
<b>40x133</b>	SR M10x18 DIN 912
<b>30x93</b>	SR M10x18 DIN 912
<b>40x200</b>	SR M10x25 DIN 912
<b>30x135</b>	SR M10x25 DIN 912
<b>40x300</b>	SR M10x25 DIN 912
<b>40x400</b>	SR M10x25 DIN 912

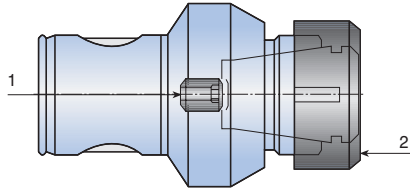


Designation	1
<b>BHEH 24x75</b>	SR M10x20 DIN 912
<b>28x80</b>	SR M10x25 DIN 912
<b>28x108</b>	SR M10x25 DIN 912
<b>28x148</b>	SR M10x25 DIN 912





## Components for CC

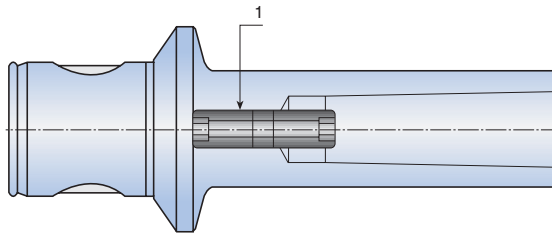


Designation	1	2	Wrench
<b>CC MB16-ER11M</b>	CC MB16 SCREW	NUT ER11 MINI	WRENCH ER11 MINI
<b>MB20-ER16M</b>	CC MB20 SCREW	NUT ER16 MINI	WRENCH ER16 MINI
<b>MB25-ER20M</b>	CC MB25 SCREW	NUT ER20 MINI	WRENCH ER20 MINI
<b>MB32-ER25M</b>	CC MB32 SCREW	NUT ER25 MINI	WRENCH ER25 MINI
<b>MB40-ER25</b>	CC MB40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

# AMT MB...-MT

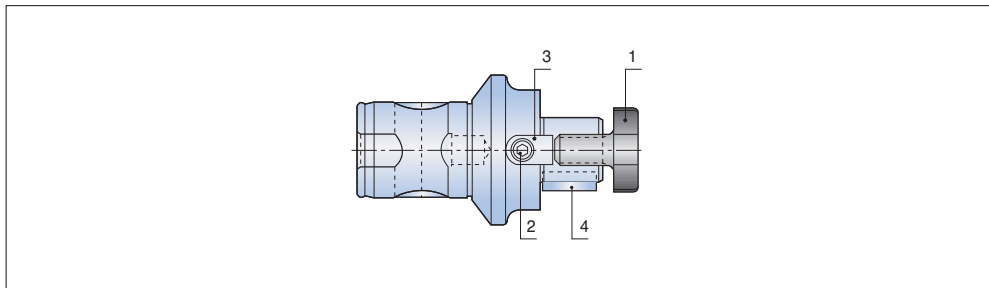
# Spare Parts

## Screw for shanks: Morse taper tang AMT



Designation	1
<b>AMT MB50-MT2</b>	AMT MT2-SCREW
<b>MB50-MT3</b>	AMT MT3-SCREW
<b>MB63-MT3</b>	AMT MT3-SCREW
<b>MB63-MT4</b>	AMT MT4-SCREW

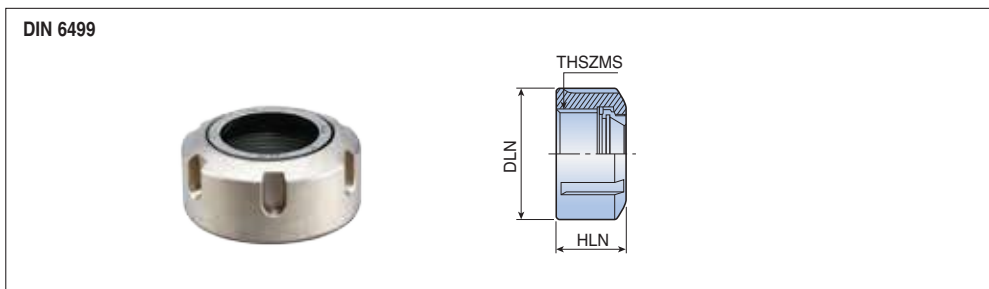
## Screw for shell mill holders SMH



Designation	1	2	3	4
<b>SMH MB40-22</b>	M10 CLAMP SCREW SEM 22	DOG DRIVE SMH 22	KEY SMH 22	M4x10 SMH KEY SCREW
<b>MB50-16</b>	M 8 CLAMP SCREW SEM 16	DOG DRIVE SMH 16	KEY SMH 16	M3x 8 SMH KEY SCREW
<b>MB50-22</b>	M10 CLAMP SCREW SEM 22	DOG DRIVE SMH 22	KEY SMH 22	M4x10 SMH KEY SCREW
<b>MB50-27</b>	M12 CLAMP SCREW SEM 27	DOG DRIVE SMH 27	KEY SMH 27	M5x12 SMH KEY SCREW
<b>MB50-32</b>	M16 CLAMP SCREW SEM 32	DOG DRIVE SMH 32	KEY SMH 32	M6x16 SMH KEY SCREW
<b>MB63-27</b>	M12 CLAMP SCREW SEM 27	DOG DRIVE SMH 27	KEY SMH 27	M5x12 SMH KEY SCREW
<b>MB63-32</b>	M16 CLAMP SCREW SEM 32	DOG DRIVE SMH 32	KEY SMH 32	M6x16 SMH KEY SCREW
<b>MB80-32</b>	M16 CLAMP SCREW SEM 32	DOG DRIVE SMH 32	KEY SMH 32	M6x16 SMH KEY SCREW
<b>MB80-40</b>	M20 CLAMP SCREW SEM 40	DOG DRIVE SMH 40	KEY SMH 40	M6x18 SMH KEY SCREW

# NUT ER ... TOP

## ER - Top™ clamping nut

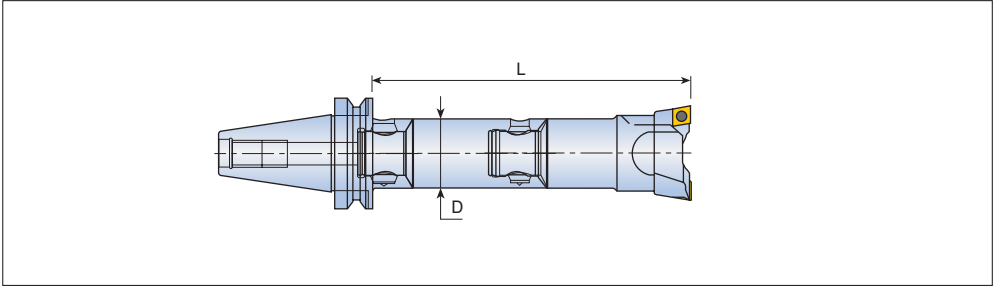


Designation	Dimension (mm)		
	DLN	HLN	THSZMS
<b>NUT ER16 TOP</b>	28	17	M22x1.5
<b>ER20 TOP</b>	34	19	M25x1.5
<b>ER25 TOP</b>	42	20	M32x1.5
<b>ER32 TOP</b>	50	22	M40x1.5
<b>ER40 TOP</b>	63	25	M50x1.5

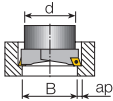


# Recommended Cutting Conditions

## BHR rough boring heads



## Cutting depth



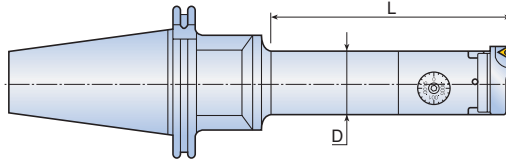
It's advisable to start with  $B \text{ hole} \geq \text{boring bar diameter } d$

B Working range	ap (mm) Steel	ap (mm) Cast iron, Aluminum
18-28	1.5-2	2-2.5
28-50	2-3	2.5-3.5
50-68	3-4	3.5-5
68-200	4-5	5-7
200-500	5-6	6-8

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

# Recommended Cutting Conditions

## Fine boring heads



Stability \*\*\* – Good  
\*\* – Normal  
\* – Poor

Material	L/D	Stability	Cutting speed (Vc=m/min)	Feed f=mm/rev		Cutting depth (ap)
				Insert radius		
				R=0.2	R=0.4	
Carbon steel HB≤200	L/D=2.5	***	200-300	0.05-0.08	0.08-0.10	
	L/D=4	**	160-250	0.05-0.08	0.08-0.10	
	L/D=6.3	*	70-100	0.05-0.08	-	
Carbon steel HB>200	L/D=2.5	***	160-250	0.05-0.08	0.08-0.10	
	L/D=4	**	150-200	0.05-0.08	0.08-0.10	
	L/D=6.3	*	70-100	0.05-0.08	-	
Stainless steel	L/D=2.5	***	150-200	0.05-0.08	0.08-0.10	
	L/D=4	**	120-180	0.08-0.10	0.08-0.10	
	L/D=6.3	*	70-80	0.05-0.08	0.08-0.10	
Alloyed steel HB 480-550	L/D=2.5	***	120-160	0.05-0.08	0.08-0.10	
	L/D=4	**	100-140	0.05-0.08	0.08-0.10	
	L/D=6.3	*	70-100	0.05-0.08	-	
Cast iron	L/D=2.5	***	120-160	0.05-0.08	0.08-0.10	
	L/D=4	**	100-140	0.05-0.08	0.08-0.10	
	L/D=6.3	*	70-100	0.05-0.08	-	
Aluminum	L/D=2.5	***	300-400	0.05-0.08	0.08-0.10	
	L/D=4	**	250-350	0.05-0.08	0.08-0.10	
	L/D=6.3	*	100-150	0.05-0.08	-	

# Recommended Cutting Conditions

Stability ••• – Good  
•• – Normal  
• – Poor

## Boring operations with BHC combi rough and fine

Material	L/D	Stability	Cutting speed (Vc=m/min)	Feed f=mm/rev		Cutting depth (mm)			
				Insert radius					
				R=0.2	R=0.4				
Carbon steel HB<200	L/D=2.5	•••	160-250	0.1-0.2	0.1-0.2	0.15-0.3	1.5	2	2.5
	L/D=4	••	120-180	0.1-0.2	0.1-0.2				
Carbon steel HB>200	L/D=2.5	•••	140-200	0.1-0.2	0.1-0.2	0.15-0.3	1.5	2	2.5
	L/D=4	••	100-160	0.1-0.2	0.1-0.2				
	L/D=6.3	•	70-100	* 0.1-0.15	0.1-0.2				
Stainless steel AISI 304-316	L/D=2.5	•••	100-140	0.1-0.2	0.1-0.2	0.15-0.3	1.5	2	2.5
	L/D=4	••	80-110	0.1-0.2	0.1-0.2				
	L/D=6.3	•	60-90	* 0.1-0.15	0.1-0.2				
Cast iron	L/D=2.5	•••	120-160	0.1-0.2	0.1-0.2	0.15-0.3	2	2.5	3
	L/D=4	••	90-120	0.1-0.2	0.1-0.2				
	L/D=6.3	•	60-90	* 0.1-0.15	0.1-0.2				
Aluminum	L/D=2.5	•••	250-350	0.1-0.2	0.1-0.2	0.15-0.3	2	2.5	3
	L/D=4	••	160-250	0.1-0.2	0.1-0.2				
	L/D=6.3	•	100-150	* 0.1-0.15	0.1-0.2				

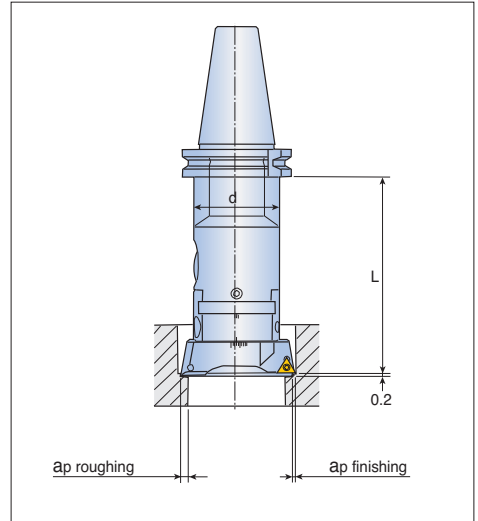
- \*Only for finishing Inserts.
- Use inserts with the same corner radii for both roughing and finishing inserts.

VC Cutting speed (m/min)  
D Diameter of workpiece (m/min)  
n Number of revolutions / min' (rev./min)  
Vf Feed rate (mm/min.)  
Fn Feed (mm/rev)  
 $\pi$  3.14

$$VC = \frac{\pi \cdot D \cdot n}{1000}$$

$$n = \frac{VC \cdot 1000}{\pi \cdot D}$$

$$Vf = n \cdot fn$$



# Recommended Cutting Conditions

Stability \*\*\* – Good  
\*\* – Normal  
\* – Poor

## BHR rough boring cutting data

ap(mm), R(radius), Vc(m/min), f(mm/rev)

ISO	Workpiece material	Hardness HB	Overhang L/D	Boring range D18-28		Boring range D28-50		Boring range D50-68		
				ap (mm)	0.5-1.2	1.2-2.5	0.8-1.5	1.5-2.5	0.8-1.5	1.5-3.0
				R (Radius)	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 ***	Vc	150-180	120-150	160-200	140-170	160-200	140-180
				f	0.1-0.2	0.08-0.2	0.15-0.2	0.1-0.175	0.15-0.25	0.08-0.2
			4 ***	Vc	140-160	100-140	160-180	120-150	160-180	120-150
				f	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 ***	Vc	60-80	40-60	60-90	50-60	70-90	50-70
				f	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 ***	Vc	130-160	100-130	140-180	120-160	140-180	120-160
				f	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 ***	Vc	110-140	80-110	100-140	80-120	100-140	80-120
				f	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 ***	Vc	70-90	60-70	80-100	60-80	80-100	60-80
				f	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 L/D	Boring range D68-120		Boring range D120-200		Boring range D200-500		
				ap (mm)	0.8-1.5	1.5-3.5	0.8-2.0	2.0-3.5	0.8-1.5	2.0-4.0
				R (Radius)	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 ***	Vc	160-220	150-180	180-250	160-200	220-280	200-220
				f	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 ***	Vc	140-180	120-150	160-200	140-180	N.R.	N.R.
				f	0.08-0.2	0.08-0.15	0.1-0.2	0.08-0.15		
			6.3 ***	Vc	70-100	50-70	N.R.	N.R.	N.R.	N.R.
				f	0.06-0.1	0.06-0.1				
	Carbon steel	HB>200	2.5 ***	Vc	140-180	120-160	150-170	100-140	100-140	80-120
				f	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 ***	Vc	120-150	100-140	100-130	80-110	N.R.	N.R.
				f	0.1-0.2	0.1-0.18	0.08-0.2	0.08-0.12		
			6.3 ***	Vc	80-100	60-80	N.R.	N.R.	N.R.	N.R.
				f	0.08-0.12	0.08-0.12				

- N.R. = Not recommended
- In case of a single or a stepped boring cutter configuration, only half the feed should be applied

# Recommended Cutting Conditions

Stability ••• – Good  
•• – Normal  
• – Poor

## BHR rough boring cutting data

$a_p$ (mm), R(radius), Vc(m/min), f(mm/rev)

ISO	Workpiece material	Hardness HB	Overhang L/D			Boring range D18-28		Boring range D28-50		Boring range D50-68	
				ap (mm)		0.5-1.0	1.0-1.8	0.5-1.0	1.0-1.8	0.5-1.2	1.2-2.0
				R (Radius)		0.2	0.4	0.2-0.4	0.4	0.2-0.4	0.4-0.8
P	Alloyed steel	HB<200	2.5 •••	Vc	140-160	90-120	150-180	100-130	160-200	140-180	
				f	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 ••	Vc	100-130	70-100	110-150	90-120	140-180	100-130	
				f	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 •	Vc	80-100	60-90	80-100	70-90	100-140	80-120	
				f	0.08-0.15	0.06-0.1	0.06-0.12	0.06-0.12	0.6-0.15	0.08-0.1	
	Alloyed steel	HB>200	2.5 •••	Vc	130-150	120-140	130-150	120-140	140-170	120-150	
				f	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 ••	Vc	100-130	100-120	100-130	100-120	120-150	100-120	
				f	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 •	Vc	80-100	70-90	80-100	70-90	100-120	70-90	
				f	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 L/D			Boring range D68-120		Boring range D120-200		Boring range D200-500	
				ap (mm)		0.8	2.5	0.8-2.0	2.0-3.5	0.8-2.0	2.0-4.0
				R (Radius)		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	Alloyed steel	HB<200	2.5 •••	Vc	160-220	140-180	160-220	140-180	160-220	140-180	
				f	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 ••	Vc	150-200	120-160	120-160	120-160	N.R.	N.R.	
				f	0.1-0.2	0.08-0.18	0.1-0.2	0.08-0.18			
			6.3 •	Vc	100-140	100-140	N.R.	N.R.	N.R.	N.R.	
				f	0.08-0.18	0.08-0.15					
	Alloyed steel	HB>200	2.5 •••	Vc	160-200	140-180	140-200	140-180	140-200	140-180	
				f	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 ••	Vc	140-160	120-140	150-180	120-140	N.R.	N.R.	
				f	0.08-0.2	0.08-0.15	0.08-0.12	0.08-0.12			
			6.3 •	Vc	100-120	70-90	N.R.	N.R.	N.R.	N.R.	
				f	0.08-0.16	0.08-0.12					

- N.R. = Not recommended
- In case of a single or a stepped boring cutter configuration, only half the feed should be applied



# Recommended Cutting Conditions

Stability \*\*\* – Good  
\*\* – Normal  
\* – Poor

## BHR rough boring cutting data

ap(mm), R(radius), Vc(m/min), f(mm/rev)

ISO	Workpiece material	Hardness HB	Overhang L/D	Boring range								
				D18-28		D28-50		D50-68				
				ap (mm)	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	0.4-0.8
M	Stainless steel	Ferritic & martensitic	2.5 ***	Vc	100-150	110-130	120-160	100-150	120-160	110-160		
				f	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 **	Vc	90-130	90-120	100-140	90-140	100-150	80-120		
				f	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 *	Vc	60-90	50-70	60-90	50-70	70-100	50-70		
				f	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 ***	Vc	110-130	100-130	120-150	110-140	110-160	100-150		
				f	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 **	Vc	80-110	80-110	90-130	90-120	100-150	90-130		
				f	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 *	Vc	60-90	50-70	60-90	50-70	70-100	50-70		
				f	0.06-0.1	0.06-0.1	0.06-0.12	0.06-0.1	0.06-0.15	0.06-0.1		
	Stainless steel cast	Ferritic & martensitic	2.5 ***	Vc	90-130	100-130	120-150	110-140	120-160	100-150		
				f	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 **	Vc	70-110	80-110	90-130	90-120	100-150	90-130		
				f	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 *	Vc	60-90	50-70	60-90	50-70	70-100	50-70		
				f	0.06-0.1	0.06-0.1	0.06-0.12	0.06-0.1	0.06-0.15	0.06-0.1		
	Stainless steel cast	Austenitic	2.5 ***	Vc	80-120	70-110	100-150	90-140	110-150	100-150		
				f	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 **	Vc	70-100	70-100	80-130	70-120	90-140	90-130		
				f	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 *	Vc	60-90	50-70	60-90	50-70	70-100	50-70		
				f	0.06-0.1	0.06-0.1	0.06-0.12	0.06-0.1	0.06-0.15	0.06-0.1		
M	Stainless steel	Ferritic & martensitic	2.5 ***	Vc	130-220	120-200	140-220	120-180	150-220	120-200		
				f	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 **	Vc	100-160	90-140	120-180	90-140	N.R.	N.R.	N.R.	N.R.
				f	0.08-0.25	0.08-0.18	0.08-0.25	0.08-0.18				
			6.3 *	Vc	70-100	50-70	N.R.	N.R.	N.R.	N.R.		
				f	0.08-0.2	0.08-0.15						
	Stainless steel	Austenitic	2.5 ***	Vc	120-200	100-160	120-200	100-160	120-200	100-180		
				f	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 **	Vc	100-150	90-140	100-160	90-140	N.R.	N.R.		
				f	0.08-0.25	0.08-0.18	0.08-0.25	0.08-0.18	0.08-0.18	0.06-0.1		
			6.3 *	Vc	70-100	50-70	N.R.	N.R.	N.R.	N.R.		
				f	0.08-0.2	0.08-0.15						
	Stainless steel cast	Ferritic & martensitic	2.5 ***	Vc	130-200	120-180	140-200	120-160	140-200	120-180		
				f	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 **	Vc	110-150	90-150	100-160	90-140	N.R.	N.R.		
				f	0.08-0.25	0.08-0.18	0.08-0.25	0.08-0.18				
			6.3 *	Vc	70-100	50-70	N.R.	N.R.	N.R.	N.R.		
				f	0.08-0.2	0.08-0.15						
	Stainless steel cast	Austenitic	2.5 ***	Vc	130-180	120-180	120-200	100-160	120-200	100-180		
				f	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 **	Vc	100-140	90-140	100-160	90-140	N.R.	N.R.	N.R.	N.R.
				f	0.08-0.25	0.08-0.18	0.08-0.25	0.08-0.18				
			6.3 *	Vc	70-190	50-70	N.R.	N.R.	N.R.	N.R.		
				f	0.08-0.2	0.08-0.15						

• N.R. = Not recommended

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

# Recommended Cutting Conditions

Stability ••• – Good  
•• – Normal  
• – Poor

## BHR rough boring cutting data

ap(mm), R(radius), Vc(m/min), f(mm/rev)

ISO	Workpiece material	Hardness HB	Overhang L/D	Boring range						
				D18-28		D28-50		D50-68		
				ap (mm)	0.5-1.0	1.0-1.8	0.5-1.0	1.0-1.8	0.5-1.2	1.2-2.0
<b>K</b>	Gray cast iron GG 10-25	HB<200	2.5 •••	Vc	120-160	100-140	120-180	110-150	120-180	110-150
				f	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 ••	Vc	100-140	80-120	100-150	80-120	100-150	80-120
				f	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 •	Vc	70-100	60-90	70-100	60-90	70-100	60-90
				f	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 •••	Vc	140-200	140-200	140-220	160-250	180-220	200-280
				f	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 ••	Vc	120-160	120-160	120-180	140-200	140-180	180-220
				f	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 •	Vc	70-100	60-90	70-100	60-90	60-100	60-120
				f	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 •••	Vc	120-180	120-180	120-200	140-220	180-220	180-240
				f	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 ••	Vc	120-160	120-160	120-180	140-200	140-200	160-220
				f	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 •	Vc	60-100	60-90	60-100	60-90	60-90	60-100
				f	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 L/D	Boring range						
				D18-28		D28-50		D50-68		
				ap (mm)	0.8-1.8	1.8-2.5	0.8-2.0	2.0-3.0	0.8-2.0	2.0-3.5
<b>K</b>	Gray cast iron GG 10-25	HB<200	2.5 •••	Vc	120-200	110-150	150-250	180-280	150-250	180-280
				f	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 ••	Vc	100-150	80-120	120-170	120-170	N.R.	N.R.
				f	0.08-0.18	0.08-0.2	0.08-0.18	0.08-0.25		
			6.3 •	Vc	70-100	60-90	N.R.	N.R.	N.R.	N.R.
				f	0.08-0.15	0.08-0.12				
	Gray cast iron GG 25-40		2.5 •••	Vc	50-300	250-350	250-350	250-350	250-350	250-350
				f	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 ••	Vc	200-270	230-300	200-300	200-270	N.R.	N.R.
				f	0.1-0.25	0.12-0.3	0.15-0.3	0.15-0.35		
			6.3 •	Vc	70-150	60-120	N.R.	N.R.	N.R.	N.R.
				f	0.1-0.15	0.12-0.25				
	Cast iron GGG	Spheroidal & graphite	2.5 •••	Vc	200-240	200-280	200-280	220-300	220-300	220-300
				f	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 ••	Vc	160-220	180-240	180-250	200-270	N.R.	N.R.
				f	0.1-0.2	0.12-0.25	0.15-0.25	0.15-0.35		
			6.3 •	Vc	60-100	60-100	N.R.	N.R.	N.R.	N.R.
				f	0.1-0.15	0.12-0.2				

- N.R. = Not recommended
- In case of a single or a stepped boring cutter configuration, only half the feed should be applied

# Recommended Cutting Conditions

Stability    \*\*\* – Good  
                  \*\* – Normal  
                  \* – Poor

## BHR rough boring cutting data

ap(mm), R(radius), Vc(m/min), f(mm/rev)

ISO	Workpiece material	Hardness HB	Overhang L/D	Boring range D18-28		Boring range D28-50		Boring range D50-68		
				ap (mm)	0.5-1.5	1.5-2.5	0.5-1.5	1.5-2.5	0.5-2.0	1.2-3.0
				R (Radius)	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 ***	Vc	200-300	240-350	200-300	240-350	200-300	240-350
				f	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 **	Vc	150-220	150-220	150-220	150-220	150-220	150-220
				f	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 *	Vc	60-100	60-100	60-100	60-100	60-100	60-100
				f	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 ***	Vc	180-250	220-280	180-250	220-280	180-250	220-280
				f	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 **	Vc	120-220	120-220	120-220	120-220	120-220	120-220
				f	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 *	Vc	60-100	60-100	60-100	60-100	60-100	60-100
				f	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 L/D	Boring range D68-120		Boring range D120-200		Boring range D200-500		
				ap (mm)	0.8-3.0	1.8-4.0	0.8-3.0	2.0-4.0	0.8-3.0	2.0-4.5
				R (Radius)	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 ***	Vc	200-300	240-350	200-300	240-350	200-300	240-350
				f	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 **	Vc	150-220	150-220	150-220	150-220	N.R.	N.R.
				f	0.06-0.2	0.06-0.2	0.06-0.2	0.06-0.2		
			6.3 *	Vc	60-100	60-100	N.R.	N.R.	N.R.	N.R.
				f	0.06-0.1	0.06-0.1				
	Aluminum/ Cast	<12si	2.5 ***	Vc	180-250	220-280	180-250	220-280	180-250	220-280
				f	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 **	Vc	120-220	120-220	120-220	120-220	N.R.	N.R.
				f	0.06-0.2	0.06-0.25	0.06-0.2	0.06-0.25		
			6.3 *	Vc	60-100	60-100	N.R.	N.R.	N.R.	N.R.
				f	0.06-0.1	0.06-0.1				

- N.R. = Not recommended
- In case of a single or a stepped boring cutter configuration, only half the feed should be applied

# Technical Data

## ► Fine boring head BHF 16-50 and BHE operating instructions

### ■ Assembly

- When mounting the BHF boring head, the expanding pin should be kept tightly inside the cylindrical body
- Insert the BHF into the shank
- Tighten the pin ② by turning clockwise

The recommended tightening torque guidelines are as follows:

Recommended Torque	(N·m)
BHF MB16 - 16 x 34	2.0 - 2.5
BHF MB20 - 20 x 40	4.0 - 4.5
BHF MB25 - 25 x 50	6.5 - 7.5
BHF MB32 - 32 x 63	7.0 - 8.0
BHF MB40 - 40 x 80	16.0 - 18.0
BHF MB50 - 50 x 60	30.0 - 35.0

- Insert screw ⑤ until it completely enters the recess in the sleeve nut or boring bar

### ■ Disassembly

- Loosen the pin ② by turning counter-clockwise

### ■ Positioning

- Loosen the screw ④ before making any slide adjustment
- By turning the graduated dial ③ counterclockwise, set the tool slide ⑦ allowance for a 4mm adjustment
- Lock the tool slide by means of screw ④, to the desired position
- Lock the screw ④
- When making any slide adjustment, firstly loosen the screw ④

### ■ Maintenance

Weekly:

- Lubricate through the oiling nipple ⑧ with ISO UN G220 oil

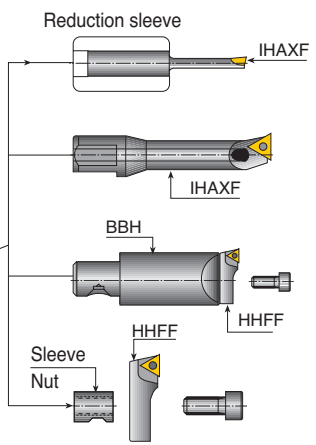
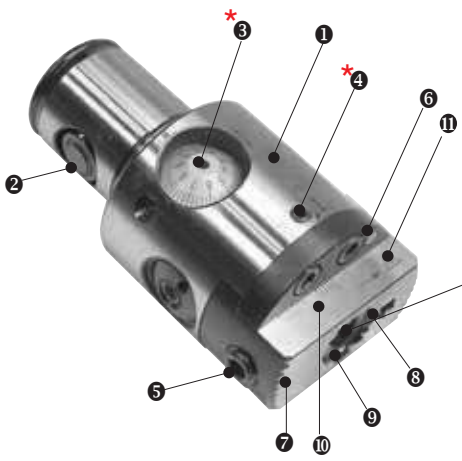
Periodically:

- Clean the conical cylindrical surface and then lubricate
- Grease the 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 at all times

\* Due to back-lash phenomenon, if you pass the required value, turn the dial ③ in the reverse direction at least one rotation and then re-adjust in the original direction



- |                   |                            |                   |  |
|-------------------|----------------------------|-------------------|--|
| ① Body            | *④ Slide locking screw     | ⑦ Slide holder    | ⑩ Slide adjusting range<br>Do not exceed the range marks!! |
| ② Expanding pin   | ⑤ Toolholder locking screw | ⑧ Oiling nipple   |  |
| *③ Graduated dial | ⑥ Coolant nozzle           | ⑨ Tool bore .63H7 | ⑪ Cutting edge position mark                               |

# Technical Data

## ► Fine boring head BHF 63-125 operating instructions

### ■ Assembly

- When mounting the BHF boring head, the expanding pin should be kept tightly inside the cylindrical body
- Insert the BHF into the shank
- Tighten the pin ② by turning clockwise

The recommended tightening torque guidelines are as follows:

Recommended Torque	(N·m)
BHF MB50 - 63 x 87	30 - 35
BHF MB50 - 80 x 94	30 - 35
BHF MB63 - 63 x 87	80 - 90
BHF MB80 - 80 x 94	80 - 90
BHF MB80 - 125 x 94	80 - 90
BHF MB50 - 50 x 60	30.0 - 35.0

- Insert screw ⑤ until it completely enters the recess in the sleeve nut or boring bar

### ■ Disassembly

- Loosen the pin ② by turning counter-clockwise

### ■ Positioning

- Loosen the screw ④ before making any slide adjustment
- By turning the graduated dial ③ counterclockwise, set the tool slide ⑦ allowance for a 4mm adjustment
- Lock the tool slide by means of screw ④, to the desired position
- Lock the screw ④
- When making any slide adjustment, firstly loosen the screw ④

### ■ Maintenance

Weekly:

- Lubricate through the oiling nipple ⑥ with ISO UN G220 oil

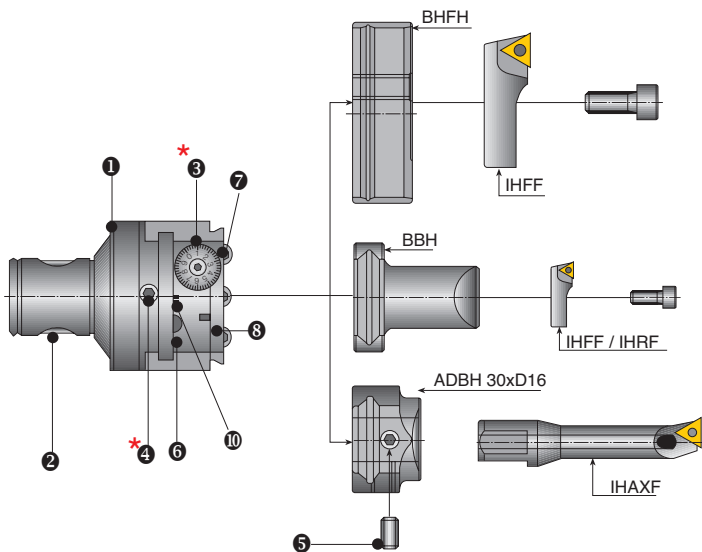
Periodically:

- Clean the conical cylindrical surface and then lubricate
- Grease the 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 at all times

\* Due to back-lash phenomenon, if you pass the required value, turn the dial ③ in the reverse direction at least one rotation and then re-adjust in the original direction



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

