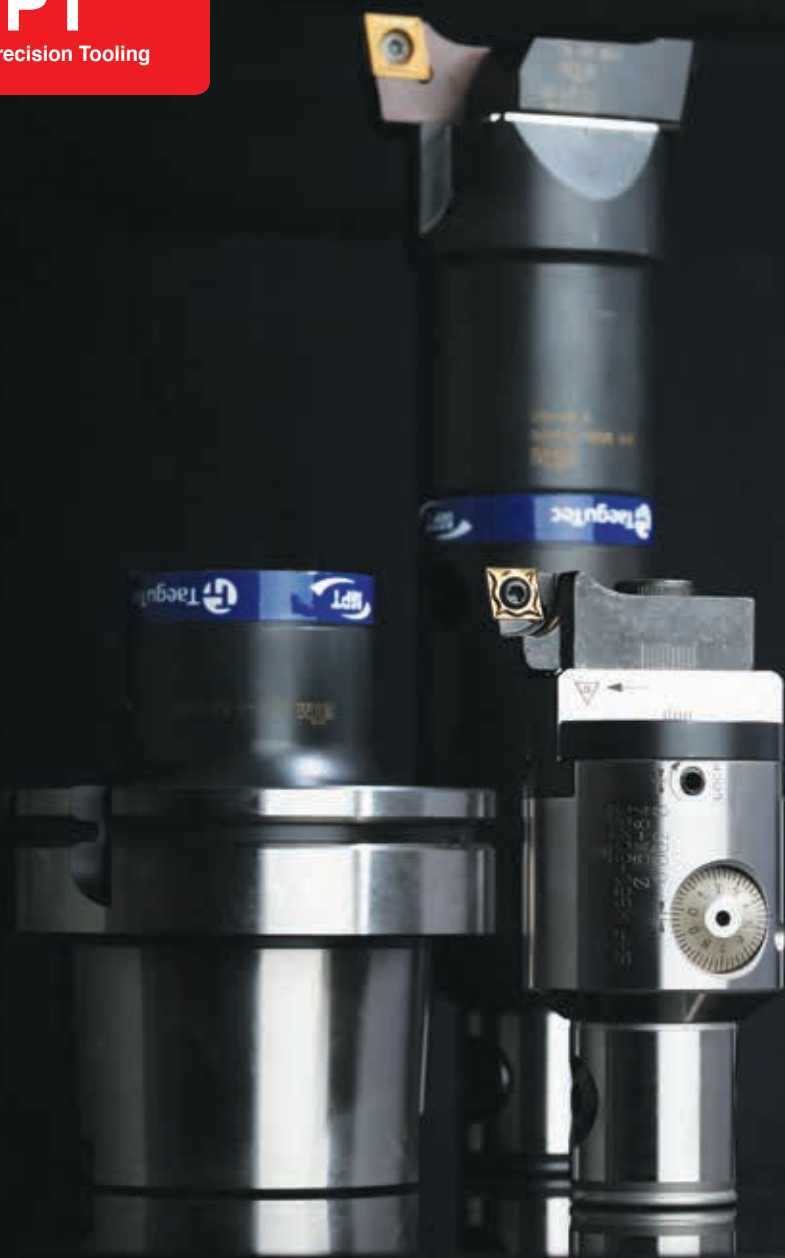


# MPT

Modular Precision Tooling





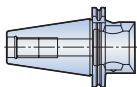



# Tool Selection Guide

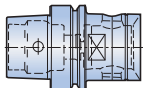
## MPT system

### Shanks

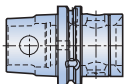
SKA/SKB  
 H6-H7



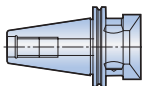
HSK  
 H9-H10



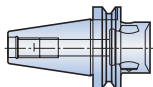
IM XMZ MB  
 H11



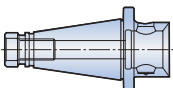
CATM  
 H8



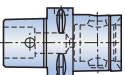
BT/BTB  
 H12



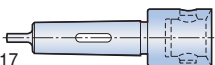
ISOM/ISO  
 H13



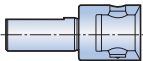
C MB  
 H11



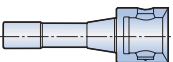
MTT  
 H17



ST  
 H14-H15



R8  
 H17

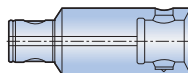


DIN2079  
 H18

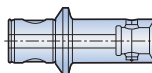


### Extensions and reducers

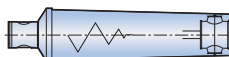
EX  H19



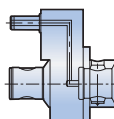
RE  H20



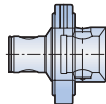
RE AVI  H21



CHS  H21



CHR  H21

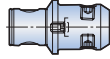


# Tool Selection Guide

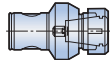
MPT system

## Toolholders

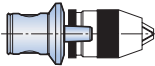
EMH H22



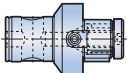
CC H23



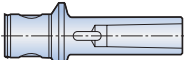
DC H23



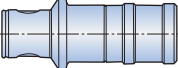
SMH H24



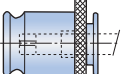
AMT H28



TP H25



TCS/TCC H26-H27

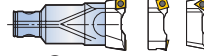


BLANK H29

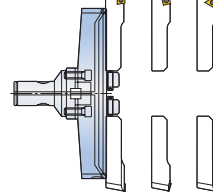


## Rough boring heads

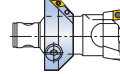
BHR H30



TCH H31

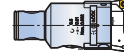


CHA H34



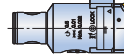
## Combi boring heads

BHC H36

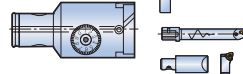


## Fine boring heads

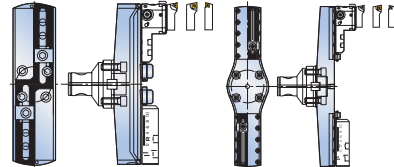
BHE H38-H39



BHF H43-45

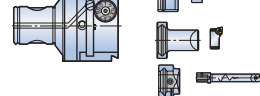


TCH H57



BHF 50,63,80

H45



















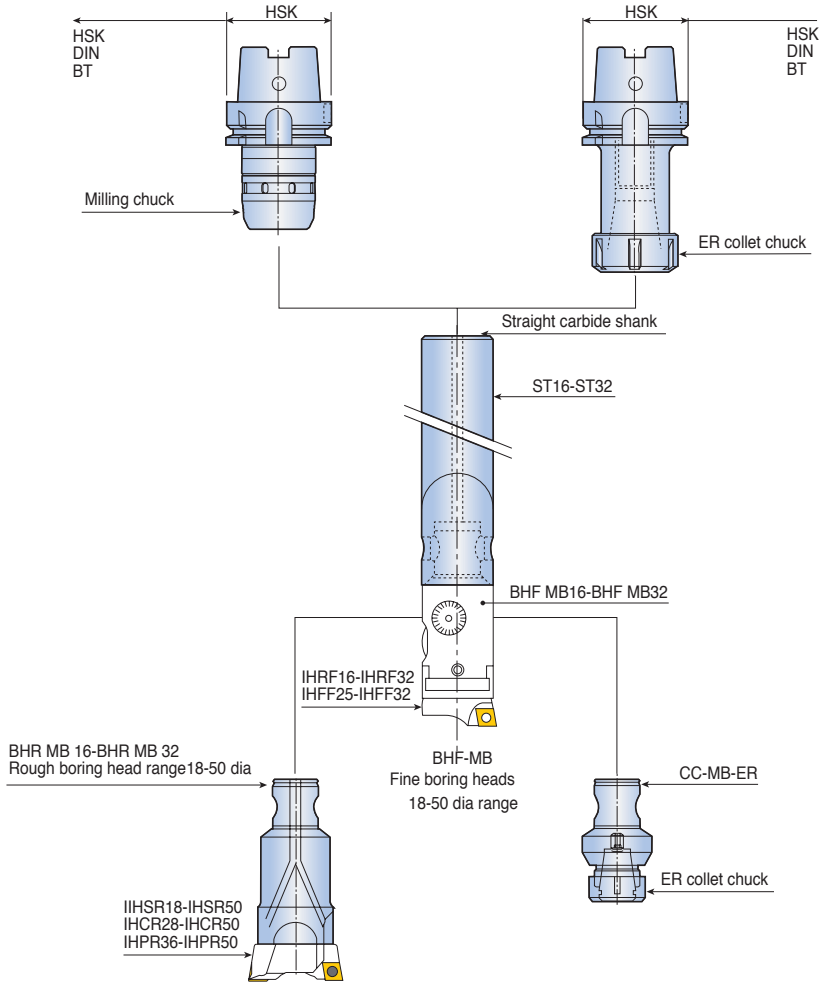






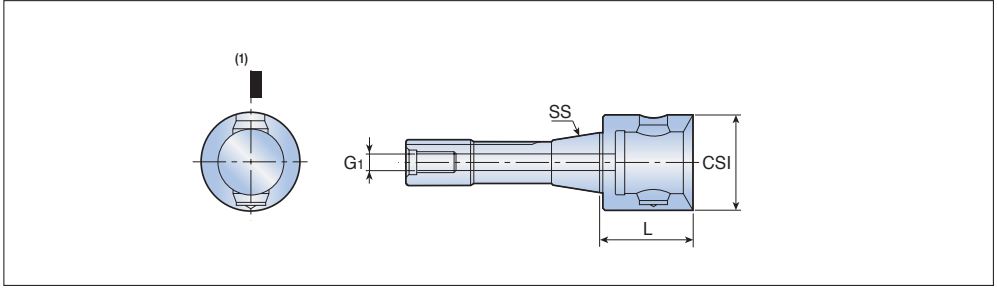
## ST-MB straight carbide shank with MB connection assembly options

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





## Bridgeport shanks with MB connection

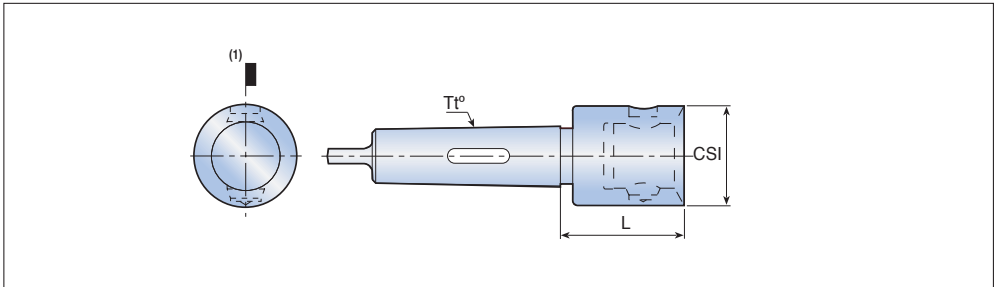


| Designation    | Dimension (mm) |      |    | G1          | Kg  |
|----------------|----------------|------|----|-------------|-----|
|                | SS             | CSI  | L  |             |     |
| <b>R8 MB50</b> | R8             | MB50 | 50 | UNF 7/16-20 | 0.8 |
|                |                |      |    |             |     |
|                |                |      |    |             |     |
|                |                |      |    |             |     |
|                |                |      |    |             |     |
|                |                |      |    |             |     |

• (1)Cutting edge position

# MTT 5-MB63

## Morse taper shanks with MB connection



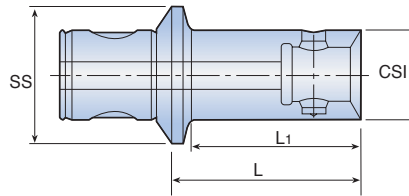
| Designation       | Dimension (mm) |     |    | Kg  |
|-------------------|----------------|-----|----|-----|
|                   | CSI            | Tt° | L  |     |
| <b>MTT 5-MB63</b> | MB63           | MT5 | 65 | 2.1 |
|                   |                |     |    |     |
|                   |                |     |    |     |
|                   |                |     |    |     |
|                   |                |     |    |     |
|                   |                |     |    |     |

• (1)Cutting edge position



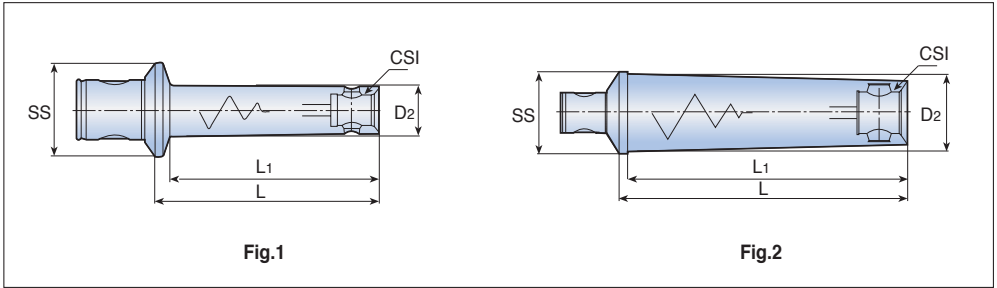


## Reducers for MB connection



| Designation     | Dimension (mm) |      |     |      | Kg  |
|-----------------|----------------|------|-----|------|-----|
|                 | SS             | CSI  | L   | L1   |     |
| RE MB16-MB14x24 | MB16           | MB14 | 24  | 19.5 | 0.3 |
| MB20-MB14x19    | MB20           | MB14 | 19  | 13.5 | 0.4 |
| MB20-MB16x20    | MB20           | MB16 | 20  | 16   | 0.5 |
| MB25-MB14x19    | MB25           | MB14 | 19  | 13.5 | 0.6 |
| MB25-MB16x20    | MB25           | MB16 | 20  | 15   | 0.8 |
| MB25-MB20x25    | MB25           | MB20 | 25  | 20   | 0.9 |
| MB32-MB14x25    | MB32           | MB14 | 25  | 17   | 1.0 |
| MB32-MB16x24    | MB32           | MB16 | 24  | 18   | 1.3 |
| MB32-MB20x25    | MB32           | MB20 | 25  | 20   | 1.6 |
| MB32-MB25x28    | MB32           | MB25 | 28  | 23   | 2.1 |
| MB40-MB14x23    | MB40           | MB14 | 23  | 16   | 2.8 |
| MB40-MB16x24    | MB40           | MB16 | 24  | 17   | 3.5 |
| MB40-MB20x26    | MB40           | MB20 | 26  | 20   | 0.4 |
| MB40-MB25x28    | MB40           | MB25 | 28  | 22   | 0.5 |
| MB40-MB32x32    | MB40           | MB32 | 32  | 27   | 0.6 |
| MB50-MB14x23    | MB50           | MB14 | 23  | 14.5 | 0.8 |
| MB50-MB14x39    | MB50           | MB14 | 39  | 30.5 | 0.9 |
| MB50-MB16x24    | MB50           | MB16 | 24  | 15   | 1.0 |
| MB50-MB16x40    | MB50           | MB16 | 40  | 31   | 1.3 |
| MB50-MB16x74    | MB50           | MB16 | 74  | 65   | 1.6 |
| MB50-MB20x26    | MB50           | MB20 | 26  | 18   | 3.5 |
| MB50-MB20x70    | MB50           | MB20 | 70  | 62   | 0.4 |
| MB50-MB20x93    | MB50           | MB20 | 93  | 85   | 0.5 |
| MB50-MB25x28    | MB50           | MB25 | 28  | 21   | 0.6 |
| MB50-MB25x87    | MB50           | MB25 | 87  | 80   | 0.8 |
| MB50-MB25x117   | MB50           | MB25 | 117 | 110  | 3.5 |
| MB50-MB32x32    | MB50           | MB32 | 32  | 25   | 0.4 |
| MB50-MB32x87    | MB50           | MB32 | 87  | 80   | 0.5 |
| MB50-MB32x144   | MB50           | MB32 | 144 | 137  | 0.6 |
| MB50-MB40x36    | MB50           | MB40 | 36  | 30   | 0.8 |
| MB50-MB40x87    | MB50           | MB40 | 87  | 80   | 0.9 |
| MB50-MB40x176   | MB50           | MB40 | 176 | 170  | 1.0 |
| MB63-MB50x40    | MB63           | MB50 | 40  | 34   | 1.3 |
| MB80-MB50x45    | MB80           | MB50 | 45  | 36   | 1.6 |
| MB80-MB63x60    | MB80           | MB63 | 60  | 52   | 1.6 |
| MB110-MB80x70   | MB110          | MB80 | 70  | 52   | 6.0 |

## Vibration dampening reducers

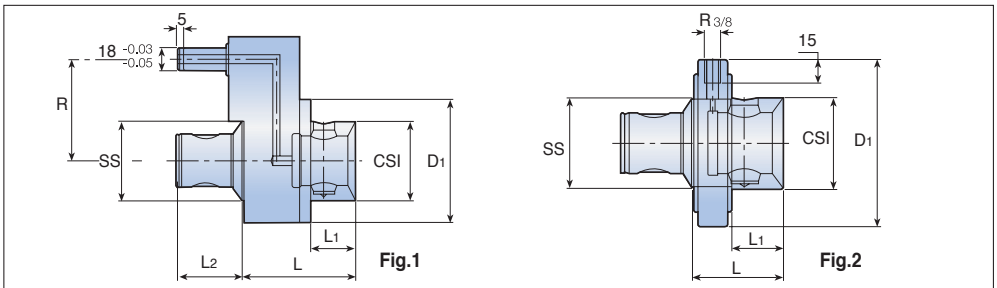


| Designation                | Dimension (mm) |      |      |     |     | Kg   | Fig. |
|----------------------------|----------------|------|------|-----|-----|------|------|
|                            | SS             | CSI  | D2   | L   | L1  |      |      |
| <b>RE MB50-MB16x74-AVI</b> | MB50           | 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

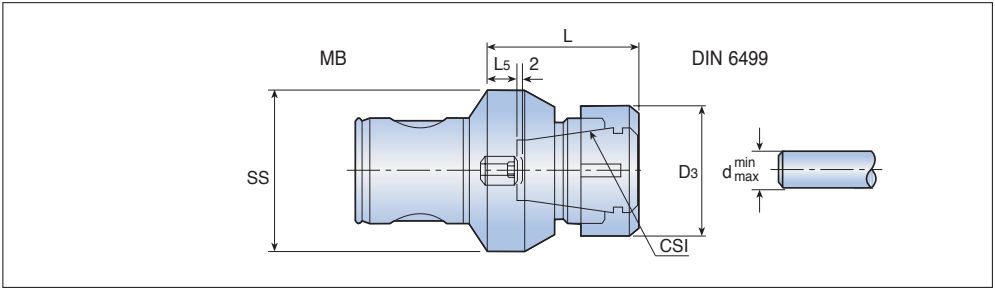


| Designation         | Dimension (mm) |      |    |     |    |      |    |                    |     | Kg  | Fig. |
|---------------------|----------------|------|----|-----|----|------|----|--------------------|-----|-----|------|
|                     | SS             | CSI  | R  | D1  | L  | L1   | L2 | 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)



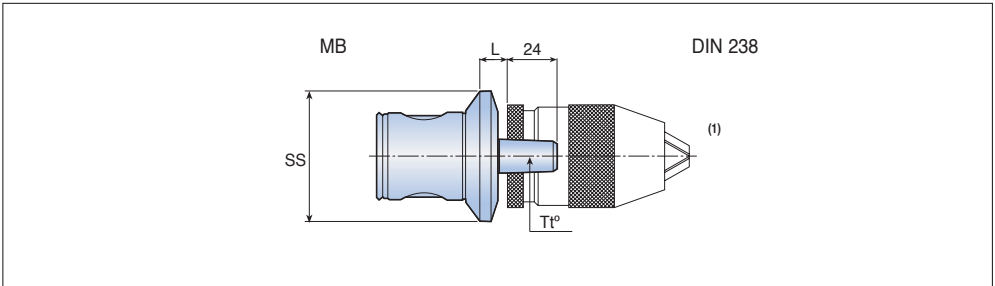
## ER Collet chucks with MB connection



| Designation          | Dimension (mm) |      |                  |                  |                |    |                | Kg   |
|----------------------|----------------|------|------------------|------------------|----------------|----|----------------|------|
|                      | SS             | CSI  | d <sub>min</sub> | d <sub>max</sub> | D <sub>3</sub> | L  | L <sub>5</sub> |      |
| <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

## Drill chucks with MB connection



| Designation        | Dimension (mm) |      |     | Kg  |
|--------------------|----------------|------|-----|-----|
|                    | SS             | L    | Tt° |     |
| <b>DC MB50 B16</b> | MB50           | 10.0 | B16 | 0.4 |
| <b>MB63 B16</b>    | MB63           | 13.5 | B16 | 0.8 |
|                    |                |      |     |     |
|                    |                |      |     |     |
|                    |                |      |     |     |

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

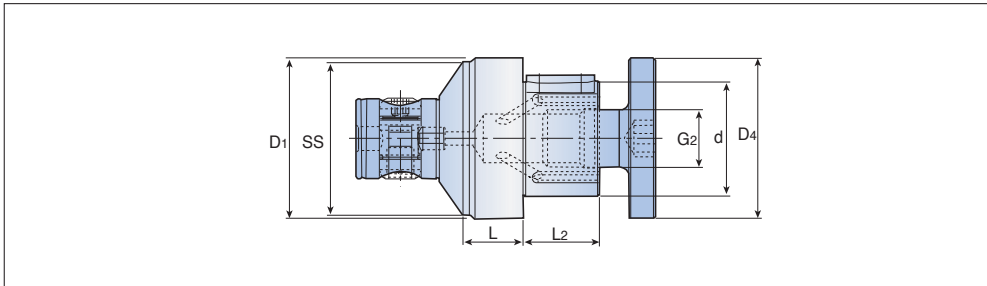


H71-H83





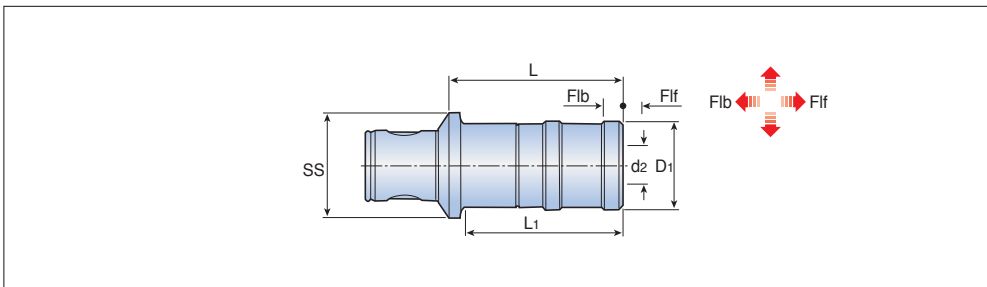
## STUB 60 Holder with an MB80 connection



| Designation         | Dimension (mm) |    |    |    |     |      |    | Kg  |
|---------------------|----------------|----|----|----|-----|------|----|-----|
|                     | SS             | d  | D1 | D4 | G2  | L    | L2 |     |
| <b>STUB MB80-60</b> | MB80           | 60 | 84 | 84 | M30 | 31.5 | 40 | 6.3 |
|                     |                |    |    |    |     |      |    |     |
|                     |                |    |    |    |     |      |    |     |
|                     |                |    |    |    |     |      |    |     |
|                     |                |    |    |    |     |      |    |     |
|                     |                |    |    |    |     |      |    |     |
|                     |                |    |    |    |     |      |    |     |

# TP MB-M

## Tapping chucks with MB modular system connection



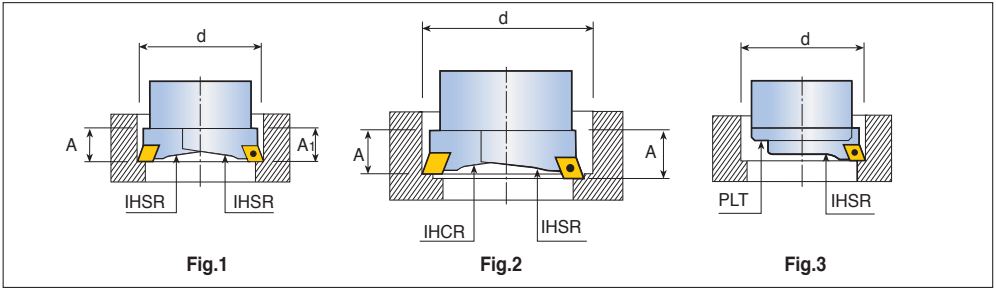
| Designation           | Dimension (mm) |                    |                    |                |     |                |                |      |      | Kg  |
|-----------------------|----------------|--------------------|--------------------|----------------|-----|----------------|----------------|------|------|-----|
|                       | SS             | TAP <sub>min</sub> | TAP <sub>max</sub> | L <sub>1</sub> | L   | D <sub>1</sub> | d <sub>2</sub> | Flf  | Flb  |     |
| <b>TP MB50-M 3-12</b> | MB50           | M3                 | M12                | 60             | 72  | 36             | 19             | 7.5  | 7.5  | 0.8 |
| <b>MB50-M 8-20</b>    | MB50           | M8                 | M20                | -              | 106 | 53             | 31             | 12.5 | 12.5 | 1.6 |
| <b>MB63-M 3-12</b>    | MB63           | M3                 | M12                | 58             | 70  | 36             | 19             | 7.5  | 7.5  | 1.2 |
| <b>MB63-M 8-20</b>    | MB63           | M8                 | M20                | 93             | 104 | 53             | 31             | 12.5 | 12.5 | 1.9 |
|                       |                |                    |                    |                |     |                |                |      |      |     |
|                       |                |                    |                    |                |     |                |                |      |      |     |









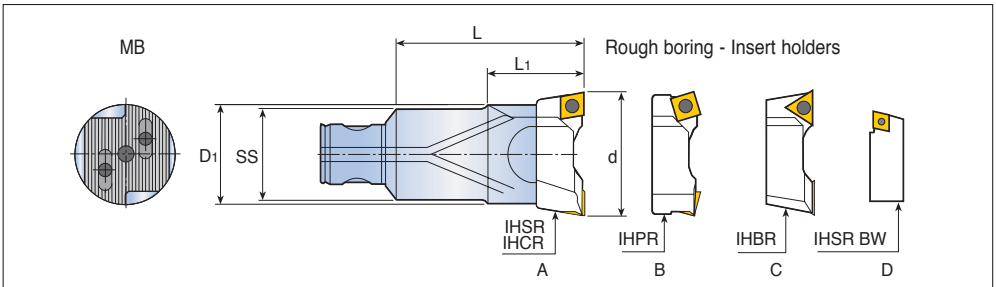


- When using the MPT system, it is strongly recommended that the user utilizes the tool pre-setting equipment provided to set the radial cutting edges. The boring bars that are equipped with two inserts holders are for rough machining and heavy stock removal.
- The bars are applicable to three types 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



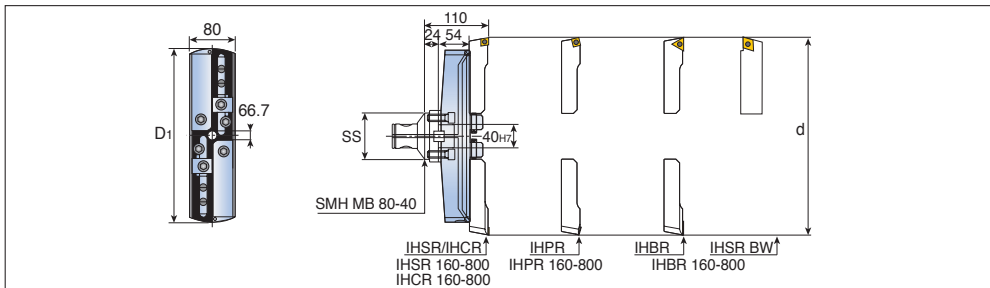
| Designation           | Dimension (mm) |                  |                  |    |     |    | Insert holders |   |   |   | Kg |      |
|-----------------------|----------------|------------------|------------------|----|-----|----|----------------|---|---|---|----|------|
|                       | SS             | d <sub>min</sub> | d <sub>max</sub> | D1 | L   | 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

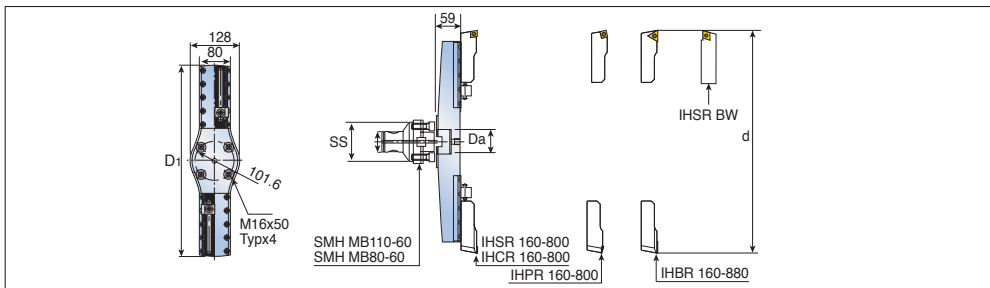


| Designation    | Dimension (mm) |                  |                  |                |                              | Kg  |
|----------------|----------------|------------------|------------------|----------------|------------------------------|-----|
|                | SS             | d <sub>min</sub> | d <sub>max</sub> | D <sub>1</sub> | IH...160-800                 |     |
| <b>TCH 200</b> | 80             | 200              | 300              | 194            | IHRS 160-800<br>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<br>IHRS BW†     | 6.7 |
|                |                |                  |                  |                |                              |     |
|                |                |                  |                  |                |                              |     |
|                |                |                  |                  |                |                              |     |
|                |                |                  |                  |                |                              |     |

# TCH A.L

# Rough Boring Heads

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



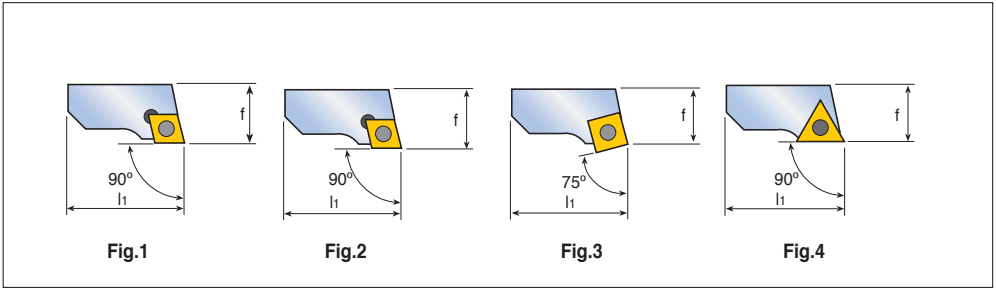
| Designation        | Dimension (mm) |                  |                  |                |    | Kg   |
|--------------------|----------------|------------------|------------------|----------------|----|------|
|                    | SS             | d <sub>min</sub> | d <sub>max</sub> | D <sub>1</sub> | Da |      |
| <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 |
|                    |                |                  |                  |                |    |      |
|                    |                |                  |                  |                |    |      |
|                    |                |                  |                  |                |    |      |
|                    |                |                  |                  |                |    |      |

Spare Parts

Cutting Condition

• Aluminum body with steel serrated seats

H71-H83 H32,H35 H84-H91



| Designation        | Dimension (mm)   |                  |      |                | Spare parts  |              |          | Fig. |
|--------------------|------------------|------------------|------|----------------|--------------|--------------|----------|------|
|                    | d <sub>min</sub> | d <sub>max</sub> | f    | l <sub>1</sub> | 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 40097I    | 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 40097I    | T15/5    | 2    |
| <b>50-68</b>       | 50               | 68               | 18.7 | 40.0           | CCMT 09T3..  | TS 40097I    | 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 40097I    | T15/5    | 3    |
| <b>50-68</b>       | 50               | 68               | 19   | 40.0           | SCMT 09T3... | TS 40097I    | 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    |
|                    |                  |                  |      |                |              |              |          |      |
|                    |                  |                  |      |                |              |              |          |      |
|                    |                  |                  |      |                |              |              |          |      |
|                    |                  |                  |      |                |              |              |          |      |
|                    |                  |                  |      |                |              |              |          |      |
|                    |                  |                  |      |                |              |              |          |      |















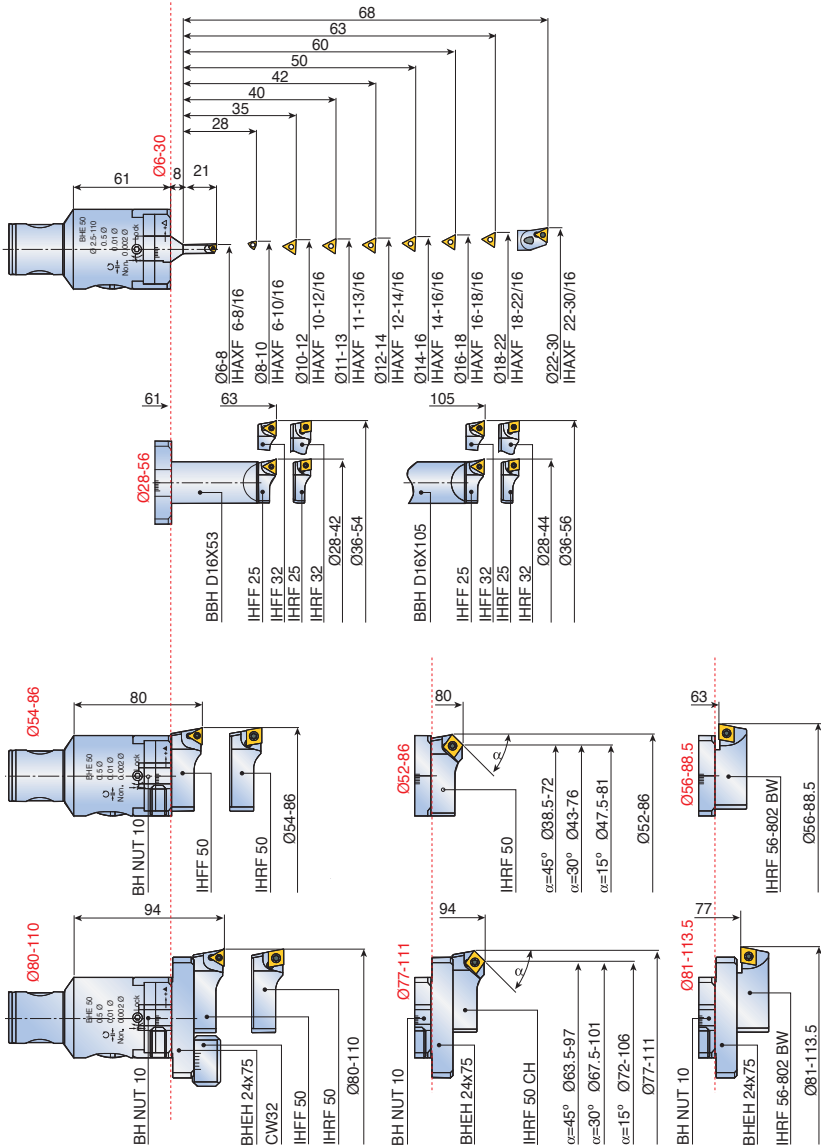




Fine boring head range: 10 $\mu$ m direct diametric adjustment and 2 $\mu$ m with the vernier scale

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

BHE MB50-50x80  
Ø6-113.5

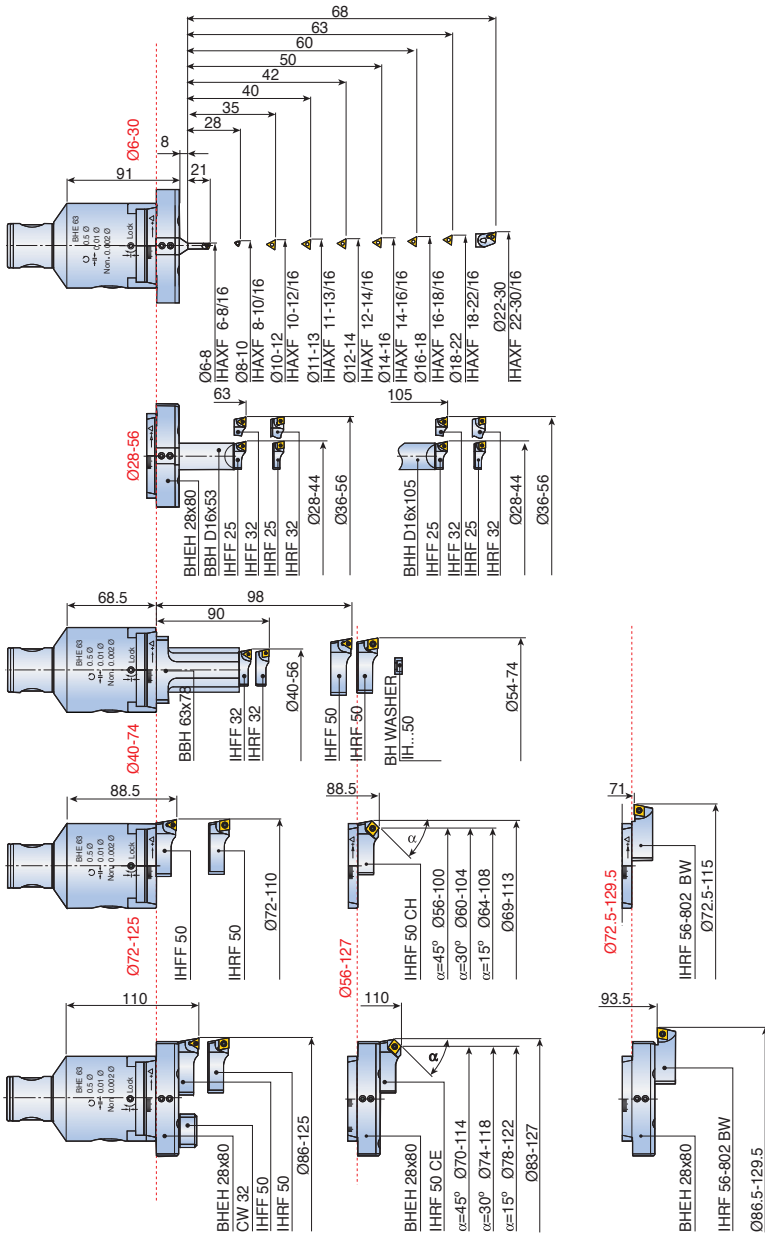




Fine boring head range: 10µm direct diametric adjustment and 2µm with the vernier scale

**BHE MB63-63x89**  
ø6-129.5

10µm  
2µm

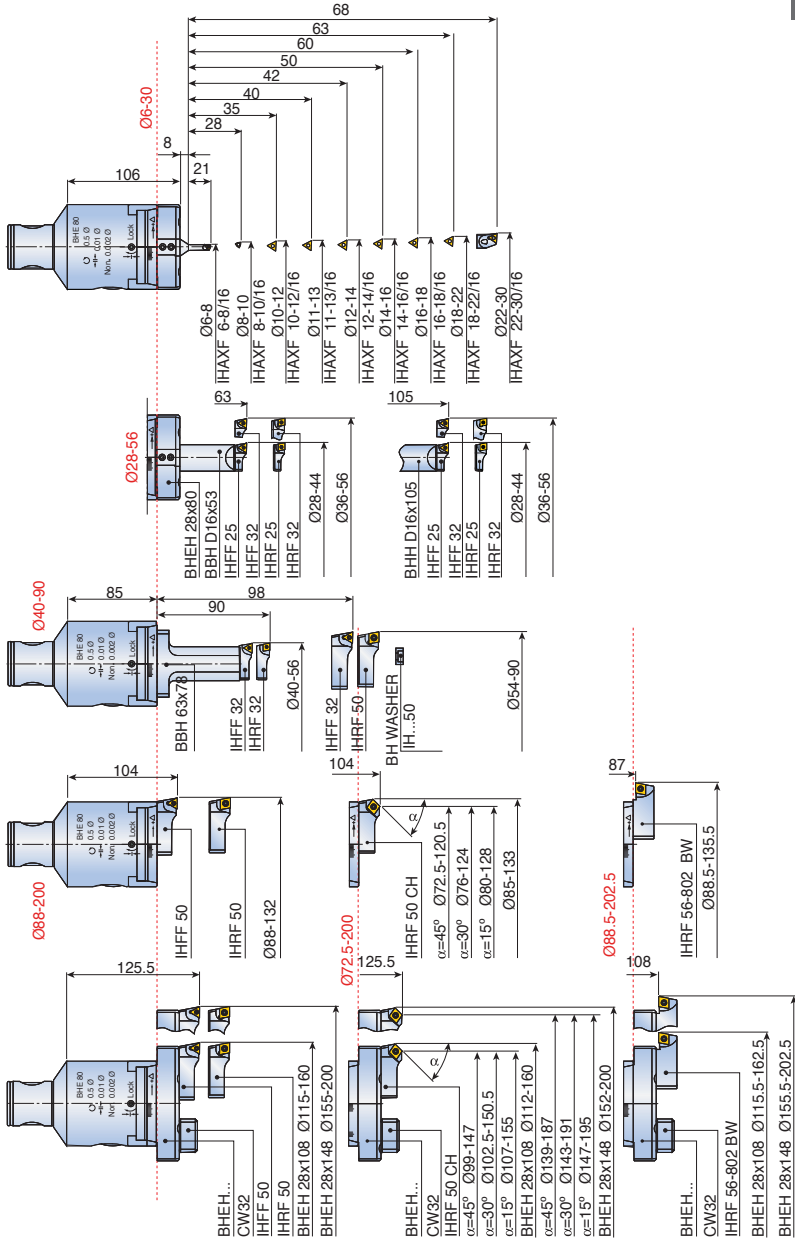


# Fine Boring Range

Fine boring head range: 10μm direct diametric adjustment and 2μm with the vernier scale

10μm  
2μm

**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.

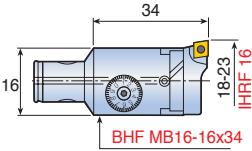
2µm



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

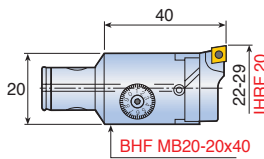
### BHF MB16-16x34 RV

18-23



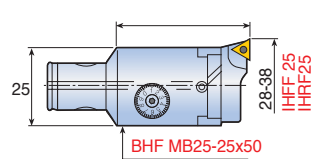
### BHF MB20-20x40 RV

22-29



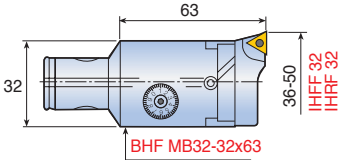
### BHF MB25-25x50

28-38



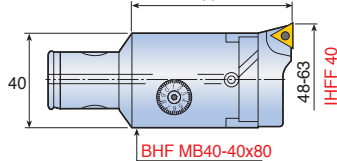
### BHF MB32-32x63

36-50



### BHF MB40-40x80

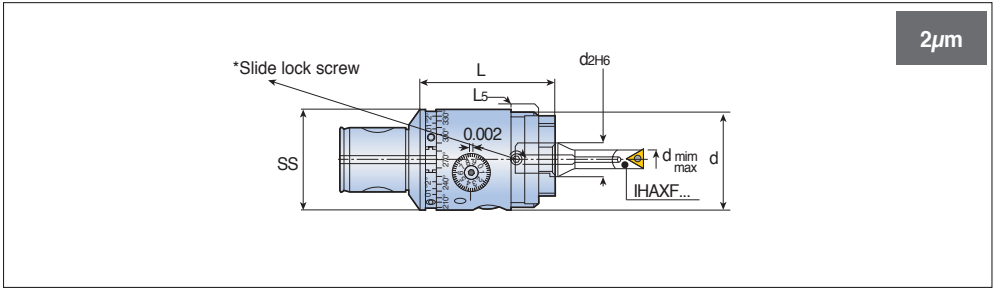
48-63



## 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>        |   |    |        |        |    |    |    |    |    |    |        |     |     |     |     |         |         |     |     |     |     |         |
| <b>20-20x40 RV</b>        |   |    |        |        |    |    |    |    |    |    |        |     |     |     |     |         |         |     |     |     |     |         |
| <b>25-25x50</b>           |   |    |        |        |    |    |    |    |    |    |        |     |     |     |     |         |         |     |     |     |     |         |
| <b>32-32x63</b>           |   |    |        |        |    |    |    |    |    |    |        |     |     |     |     |         |         |     |     |     |     |         |
| <b>40-40x80</b>           |   |    |        |        |    |    |    |    |    |    |        |     |     |     |     |         |         |     |     |     |     |         |
| <b>80-125x114</b>         |   |    |        |        |    |    |    |    |    |    |        |     |     |     |     |         |         |     |     |     |     | 36-500  |
| <b>TCH</b>                |   |    |        |        |    |    |    |    |    |    |        |     |     |     |     |         |         |     |     |     |     |         |
| <b>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

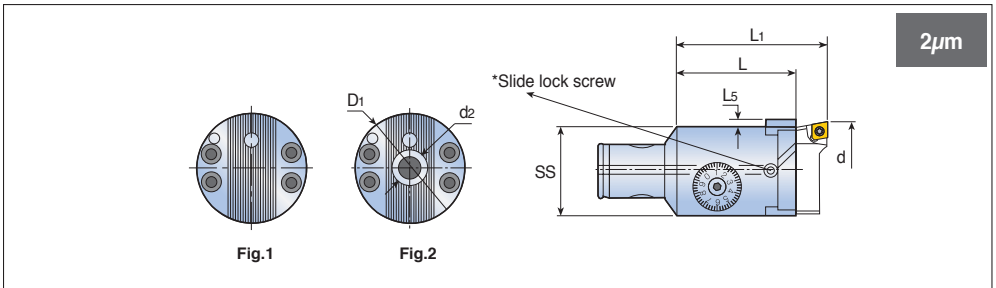


| Designation              | Dimension (mm) |                  |                  |                |    |      |                | Kg  |
|--------------------------|----------------|------------------|------------------|----------------|----|------|----------------|-----|
|                          | SS             | d <sub>min</sub> | d <sub>max</sub> | d <sub>2</sub> | d  | L    | L <sub>5</sub> |     |
| <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 |
|--------------------------|----------------|------------------|------------------|----------------|------|----------------|----------------|----------------|---------------|------|-----|
|                          | SS             | d <sub>min</sub> | d <sub>max</sub> | D <sub>1</sub> | L    | L <sub>1</sub> | L <sub>5</sub> | d <sub>2</sub> |               |      |     |
| <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           | 6                | 108              | 50             | 60   | 79             | 4              | 16             | IH..50        | 1.0  | 2   |
|                          |                |                  |                  |                |      |                |                |                |               |      |     |



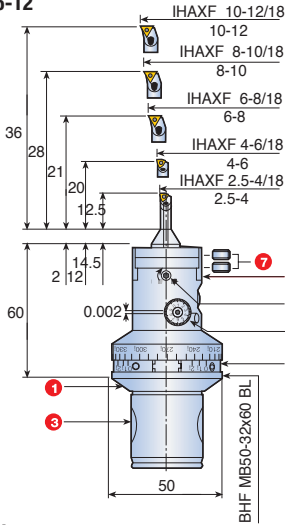
• Important: Loosen the \*slide lock screw before making any slide adjustment



## Fine boring heads with balancing rings

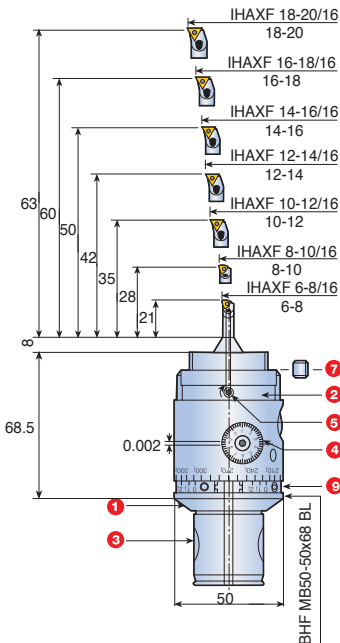
2 $\mu$ m

**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

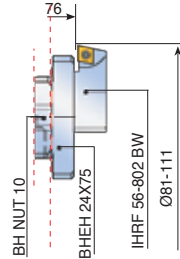
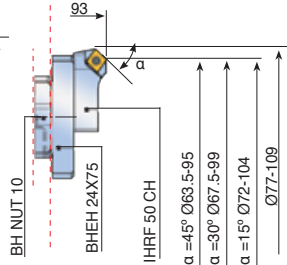
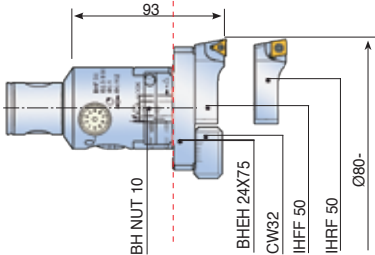
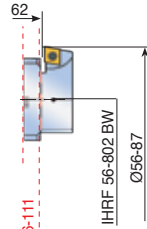
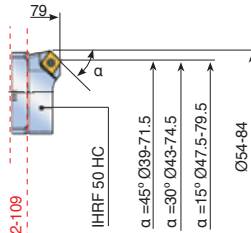
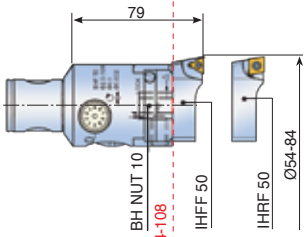
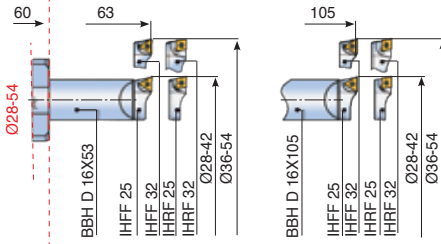
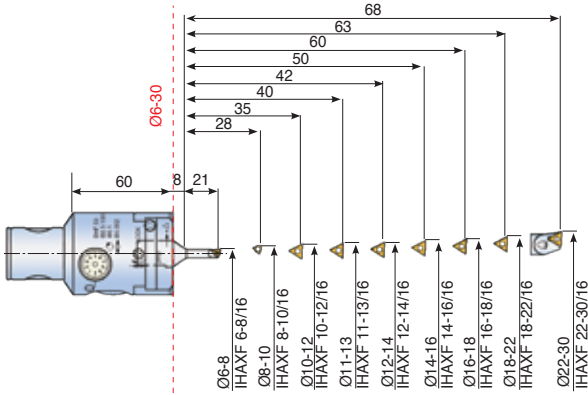


- 1 Body
- 2 Tool slide
- 3 Expanding pin
- 4 Graduated dial
- 5 Slide locking screw
- 6 Coolant nozzle
- 7 Boring bar locking screws
- 8 Oiling nipple
- 9 Balancing rings

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

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

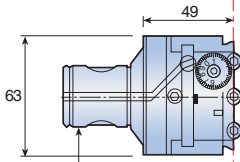
2 $\mu$ m



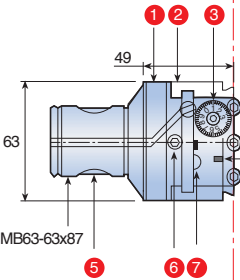
## Fine boring head range: 2µm direct diametric adjustment

2µm

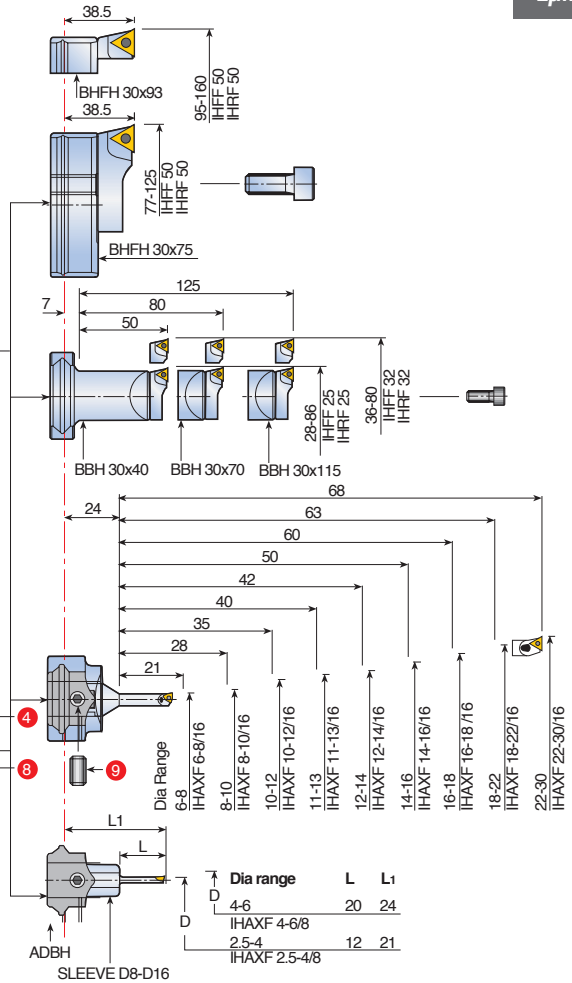
**BHF MB50-63x87**  
**BHF MB63-63x87**  
 Diameter range: 2.5-160



BHF MB50-63x87



BHF MB63-63x87



ADBH  
 SLEEVE D8-D16

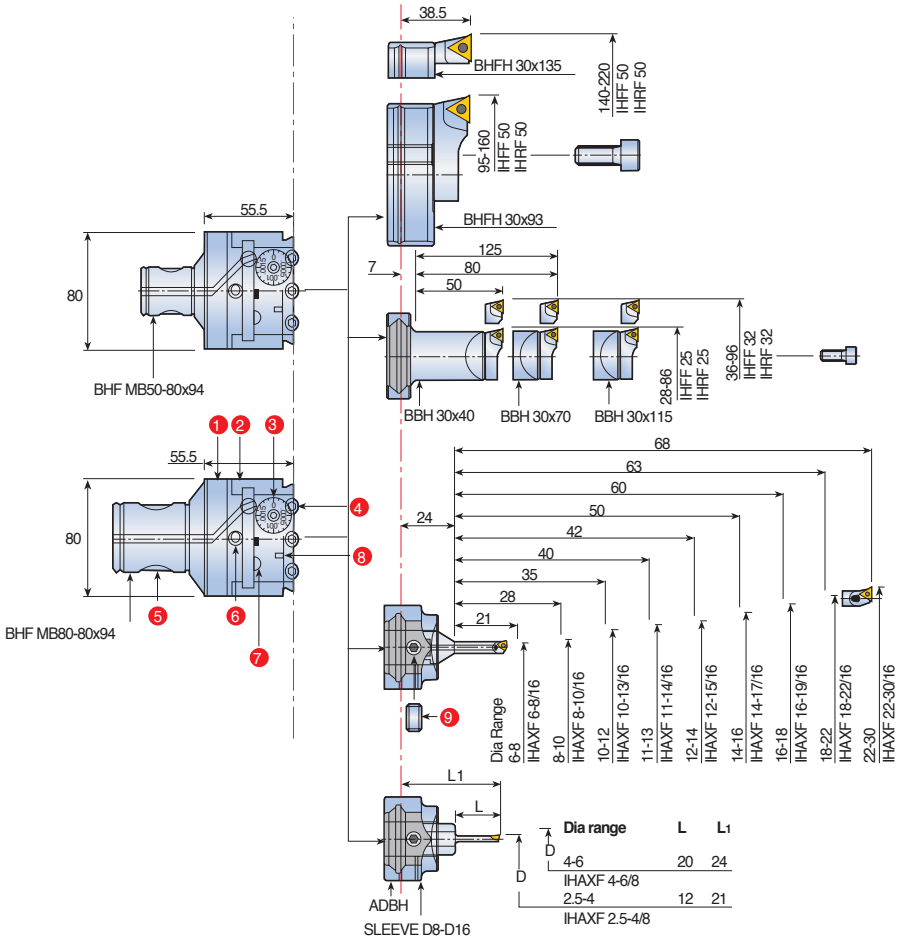
- 1 Body
- 2 Tool slide
- 3 Graduated dial
- 4 Toolholder locking screw
- 5 Expanding pin
- 6 Slide locking screw
- 7 Coolant nozzle
- 8 Oiling nipple
- 9 Toolholder locking screw



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

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

2 $\mu$ m

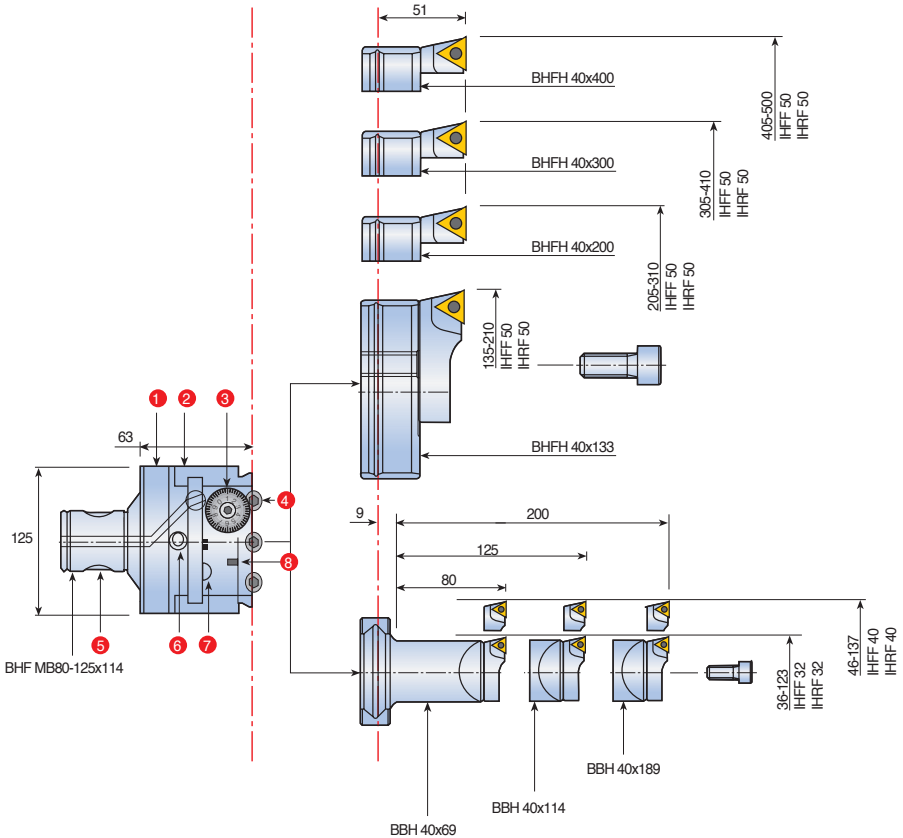


- 1 Body
- 2 Tool slide
- 3 Graduated dial
- 4 Toolholder locking screw
- 5 Expanding pin
- 6 Slide locking screw
- 7 Coolant nozzle
- 8 Oiling nipple
- 9 Toolholder locking screw

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

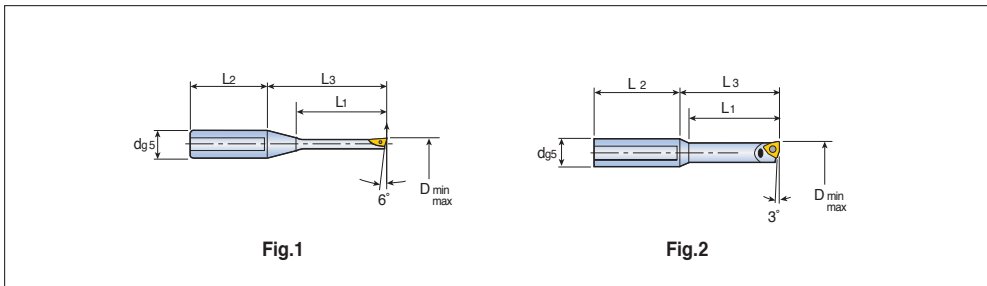
2 $\mu$ m

**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

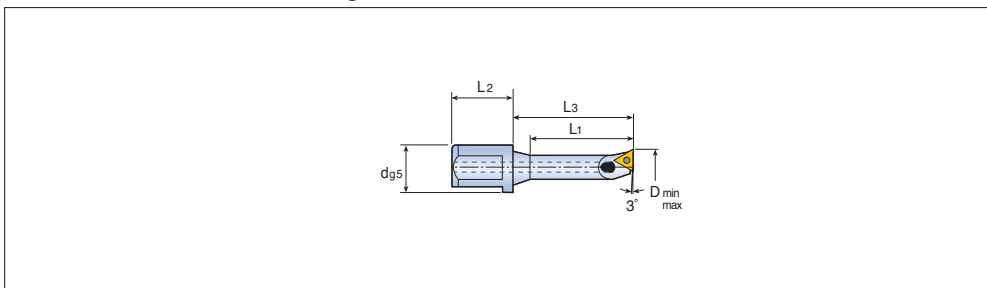
## 8mm boring bar for 2.5-12mm fine boring heads



| Designation                         | Dimension (mm)   |                  |                |                |                |   | Spare parts |           |       | Fig. |
|-------------------------------------|------------------|------------------|----------------|----------------|----------------|---|-------------|-----------|-------|------|
|                                     | D <sub>min</sub> | D <sub>max</sub> | L <sub>1</sub> | L <sub>3</sub> | L <sub>2</sub> | d | Insert      | Screw     | Key   |      |
| <b>IHAXF 2.5-4/8</b> <sup>(1)</sup> | 2.5              | 4                | 12.5           | 21             | 22             | 8 | Solid       | -         | -     | 1    |
| <b>4-6/8</b> <sup>(1)</sup>         | 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

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



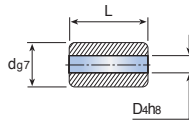
| Designation         | Dimension (mm)   |                  |                |                |                |    | Spare parts |           |       |
|---------------------|------------------|------------------|----------------|----------------|----------------|----|-------------|-----------|-------|
|                     | D <sub>min</sub> | D <sub>max</sub> | L <sub>1</sub> | L <sub>3</sub> | L <sub>2</sub> | d  | 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 25061I | T-8/5 |
| <b>11-13/16</b>     | 11               | 13               | 40.0           | 48             | 22             | 16 | TPGX 0902   | SO 25061I | T-8/5 |
| <b>12-14/16</b>     | 12               | 14               | 42.0           | 48             | 22             | 16 | TPGX 0902   | SO 25061I | T-8/5 |
| <b>14-16/16</b>     | 14               | 16               | 50.0           | 52             | 22             | 16 | TPGX 0902   | SO 25061I | T-8/5 |
| <b>16-18/16</b>     | 16               | 18               | 50.0           | 58             | 22             | 16 | TPGX 0902   | SO 25061I | T-8/5 |
| <b>18-22/16</b>     | 18               | 22               | 60.0           | 63             | 22             | 16 | TPGX 0902   | SO 25061I | T-8/5 |
| <b>22-30/16</b>     | 22               | 30               | 60.0           | 68             | 22             | 16 | TPGX 0902   | SO 25061I | T-8/5 |



# SLEEVE

## Fine Boring Bar

Reducers for fine boring heads

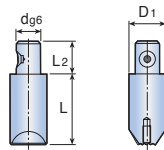


| Designation          | Dimension (mm) |    |    |
|----------------------|----------------|----|----|
|                      | d              | D4 | L  |
| <b>SLEEVE D8-D16</b> | 16             | 8  | 23 |
|                      |                |    |    |
|                      |                |    |    |
|                      |                |    |    |
|                      |                |    |    |
|                      |                |    |    |

# BBH D16

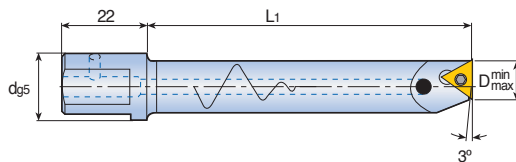
## Fine Boring Bar

Extension for BHF 50x50x63



| Designation       | Dimension (mm) |    |    |      | kg  |
|-------------------|----------------|----|----|------|-----|
|                   | D1             | L  | d  | L2   |     |
| <b>BBH D16x53</b> | 25             | 53 | 16 | 21.5 | 0.3 |
|                   |                |    |    |      |     |
|                   |                |    |    |      |     |
|                   |                |    |    |      |     |
|                   |                |    |    |      |     |
|                   |                |    |    |      |     |

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



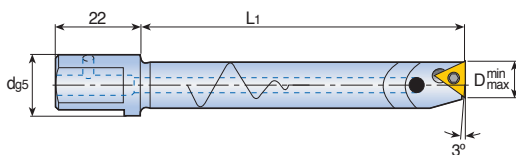
| Designation          | Dimension (mm)   |                  |                |    | Spare parts |           |       |
|----------------------|------------------|------------------|----------------|----|-------------|-----------|-------|
|                      | D <sub>min</sub> | D <sub>max</sub> | L <sub>1</sub> | d  | Insert      | Screw     | Key   |
| <b>IHAXF 6-9-AVI</b> | 6                | 9                | 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 |           |       |
|--------------------|------------------|------------------|----------------|----|-------------|-----------|-------|
|                    | D <sub>min</sub> | D <sub>max</sub> | L <sub>1</sub> | d  | 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

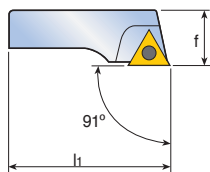


Fig.1

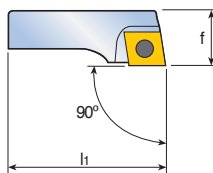


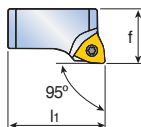
Fig.2

| Designation    | Dimension (mm)   |                  |      |                | Spare parts  |              |           | Fig.   |   |
|----------------|------------------|------------------|------|----------------|--------------|--------------|-----------|--------|---|
|                | d <sub>min</sub> | d <sub>max</sub> | f    | l <sub>1</sub> | Insert       | Insert screw | Torx key  |        |   |
| <b>IHFF 25</b> | 28               | 40               | 10.0 | 26.5           | TPGX 0902... | SO 250611    | T8/5      | 1      |   |
|                | 32               | 53               | 11.5 | 34.5           | TPGX 0902... | SO 250611    | T8/5      | 1      |   |
|                | 40               | 66               | 14.0 | 44.0           | TPGX 1103... | SO 300811    | T8/5      | 1      |   |
|                | 50               | 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      |   |
|                | 20               | 22               | 30   | 8.5            | 21.0         | CCGT 0602..  | SR 14-548 | T-7/5  | 2 |
|                | 25               | 28               | 40   | 10.0           | 26.5         | CCGT 0602..  | SR 14-548 | T-7/5  | 2 |
|                | 32               | 35               | 53   | 11.5           | 34.5         | CCGT 0602..  | TS 400971 | T-7/5  | 2 |
|                | 40               | 48               | 66   | 14.0           | 44.0         | CCGT 09T3... | TS 400971 | T-15/5 | 2 |
|                | 50               | 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

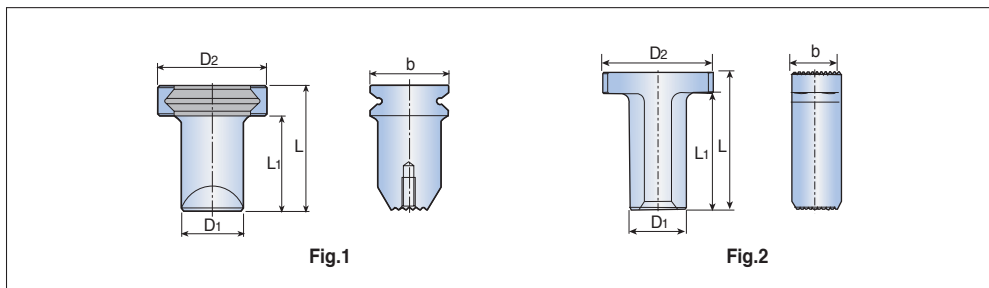


| Designation     | Dimension (mm)   |                  |     |                | Spare parts  |              |          |
|-----------------|------------------|------------------|-----|----------------|--------------|--------------|----------|
|                 | d <sub>min</sub> | d <sub>max</sub> | f   | l <sub>1</sub> | Insert       | Insert screw | Torx key |
| <b>IHWF 14E</b> | 14.5             | 18               | 8.0 | 14.0           | WCGT 0201... | SR 14-299    | T6/5     |
|                 |                  |                  |     |                |              |              |          |
|                 |                  |                  |     |                |              |              |          |
|                 |                  |                  |     |                |              |              |          |



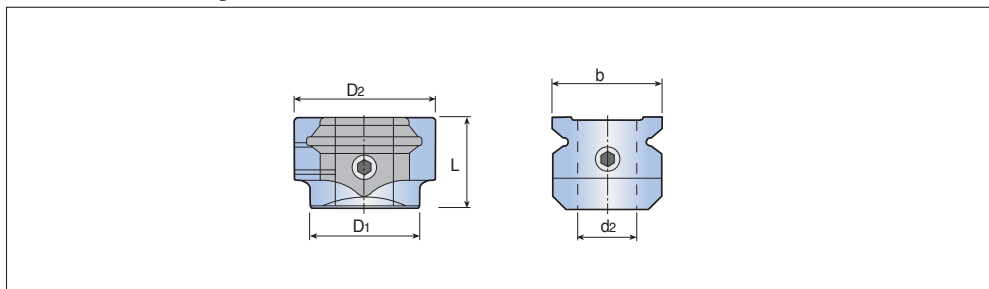
H61-H64

## Slide extensions for fine boring holders



| Designation      | Dimension (mm) |     |       |    |      | Kg  | Fig. |
|------------------|----------------|-----|-------|----|------|-----|------|
|                  | D1             | L1  | L     | D2 | b    |     |      |
| <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

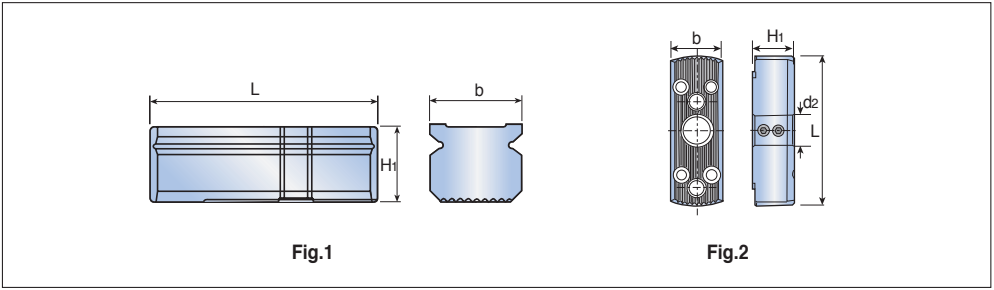


| Designation        | Dimension (mm) |    |    |      |    | Kg  |
|--------------------|----------------|----|----|------|----|-----|
|                    | D1             | D2 | L  | b    | d2 |     |
| <b>ADBH 30xD16</b> | 30             | 39 | 25 | 30.5 | 16 | 0.2 |
|                    |                |    |    |      |    |     |
|                    |                |    |    |      |    |     |
|                    |                |    |    |      |    |     |

# BHFH/BHEH

# Fine Boring Insert Holders & Slides

Slide for BHF & BHE fine boring holders

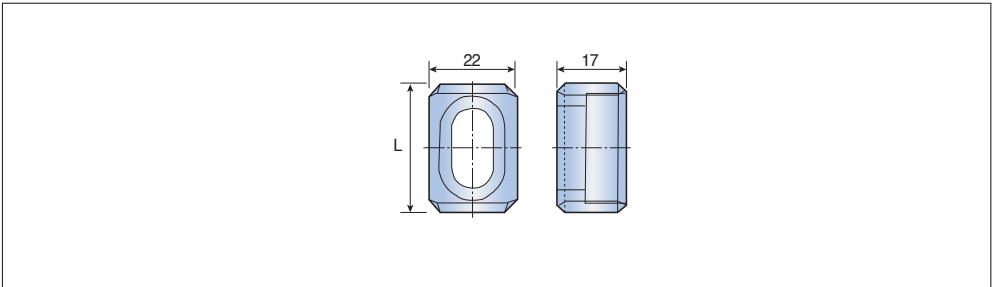


| Designation       | Dimension (mm) |     |    |      | Kg  | Fig. |
|-------------------|----------------|-----|----|------|-----|------|
|                   | H1             | L   | d2 | b    |     |      |
| <b>BHFH 30x75</b> | 25             | 75  | -  | 30.5 | 0.4 | 1    |
| <b>30x93</b>      | 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> | 14.5           | 75  | -  | 24   | 0.2 | 2    |
| <b>28x80</b>      | 22.5           | 80  | 16 | 28   | 0.3 | 2    |
| <b>28x108</b>     | 22.5           | 108 | -  | 28   | 0.5 | 2    |
| <b>28x148</b>     | 22.5           | 148 | -  | 28   | 0.6 | 2    |

# CW32

# Fine Boring Insert Holders & Slides

Counter balancing weight



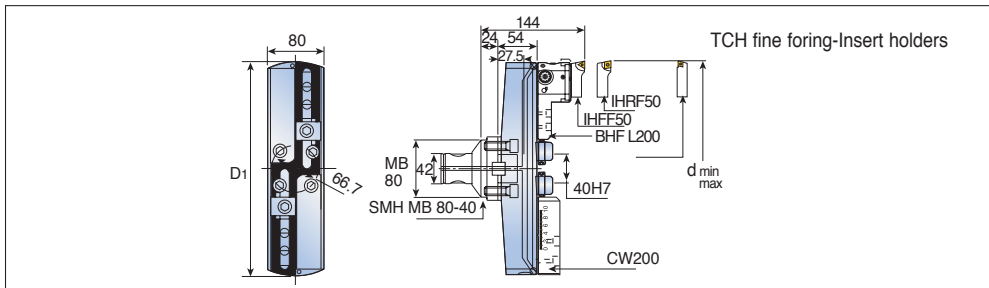
| Designation  | Dimension (mm) |  | Kg  |
|--------------|----------------|--|-----|
|              | L              |  |     |
| <b>CW 32</b> | 31.5           |  | 0.5 |
|              |                |  |     |
|              |                |  |     |
|              |                |  |     |



# TCH

# Fine Boring Heads

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

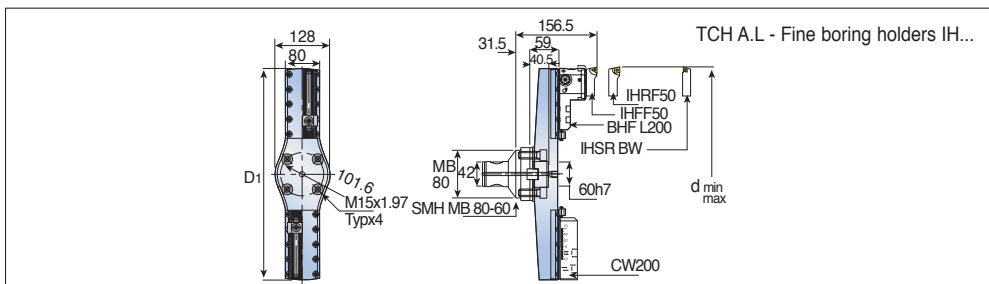


| Designation    | Dimension (mm)   |                  |     | Kg  |
|----------------|------------------|------------------|-----|-----|
|                | d <sub>min</sub> | d <sub>max</sub> | D1  |     |
| <b>TCH 200</b> | 200              | 300              | 198 | 2.6 |
| <b>300</b>     | 300              | 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   |
|--------------------|------------------|------------------|-----|------|
|                    | d <sub>min</sub> | d <sub>max</sub> | D1  |      |
| <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

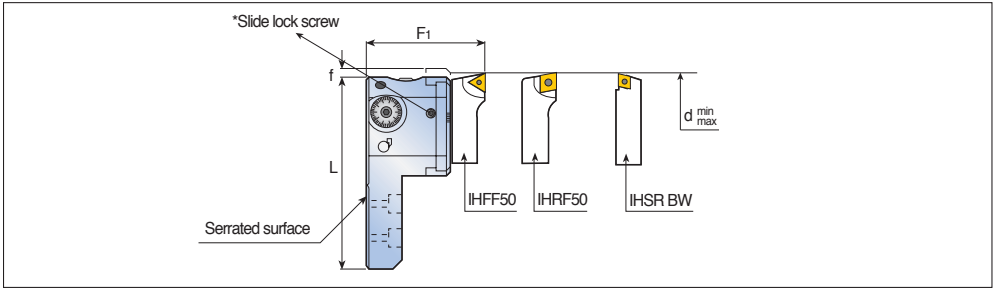


H32

# BHF L200

# Fine Boring Heads & Tool Holders

(200-800) Fine boring slide heads for TCH

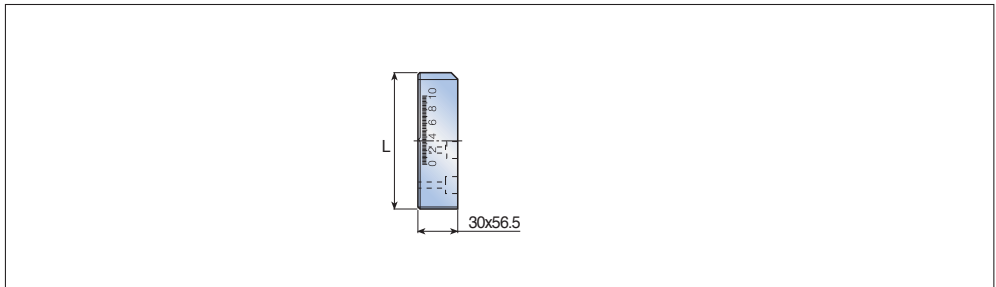


| Designation     | Dimension (mm)   |                  |     |                |   | Kg  |
|-----------------|------------------|------------------|-----|----------------|---|-----|
|                 | d <sub>min</sub> | d <sub>max</sub> | L   | F <sub>1</sub> | f |     |
| <b>BHF L200</b> | 200              | 800              | 110 | 67             | 5 | 1.3 |
|                 |                  |                  |     |                |   |     |
|                 |                  |                  |     |                |   |     |
|                 |                  |                  |     |                |   |     |
|                 |                  |                  |     |                |   |     |
|                 |                  |                  |     |                |   |     |

# CW200

# Fine Boring Heads & Tool Holders

Counter balancing weight for TCH



| Designation   | Dimension (mm) |  | Kg  |
|---------------|----------------|--|-----|
|               | L              |  |     |
| <b>CW 200</b> | 105            |  | 1.3 |
|               |                |  |     |
|               |                |  |     |
|               |                |  |     |
|               |                |  |     |

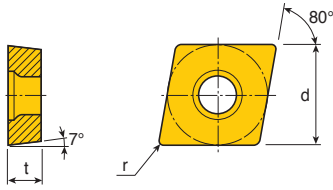


• Important: Loosen the \*slide lock screw before making any slide adjustment.





Positive 7° clearance 80° rhombic inserts

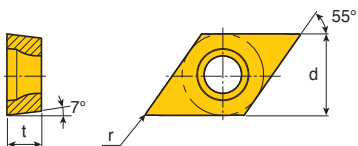


| Size      | Dimension (mm) |      |         |
|-----------|----------------|------|---------|
|           | d              | t    | r       |
| <b>06</b> | 6.35           | 2.38 | 0.1-0.8 |
| <b>09</b> | 9.52           | 3.97 | 0.1-0.8 |
| <b>12</b> | 12.7           | 4.76 | 0.2-1.2 |
|           |                |      |         |
|           |                |      |         |
|           |                |      |         |


| Insert | Designation           | Cermet |        | CVD coated |        |        |        |        |        |        |        |        |        | PVD coated |        |        |        | Uncoated |     |     |     |  |
|--------|-----------------------|--------|--------|------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------------|--------|--------|--------|----------|-----|-----|-----|--|
|        |                       | PV3010 | CT3000 | TT7005     | TT7015 | TT7310 | TT8115 | TT8125 | TT8135 | TT9215 | TT9225 | TT9235 | TT5100 | TT7100     | 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>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  
○ : Semi standard items

## Positive 7° clearance 55° rhombic inserts



| Size | Dimension (mm) |      |         |
|------|----------------|------|---------|
|      | d              | t    | r       |
| 07   | 6.35           | 2.38 | 0.4-0.8 |
| 11   | 9.52           | 3.97 | 0.4-1.2 |
|      |                |      |         |
|      |                |      |         |
|      |                |      |         |

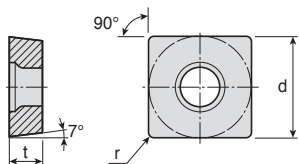
| Insert   | Designation           | Cermet |        | CVD coated |        |        |        |        |        |        |        | PVD coated |        |        | Uncoated |        |        |        |     |     |     |
|--|-----------------------|--------|--------|------------|--------|--------|--------|--------|--------|--------|--------|------------|--------|--------|----------|--------|--------|--------|-----|-----|-----|
|  |                       | PV3010 | CT3000 | TT7005     | TT7015 | TT7310 | TT8115 | TT8125 | TT8135 | 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

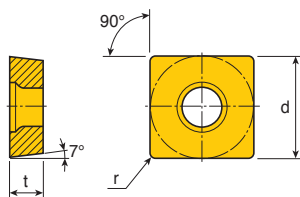


| Size | Dimension (mm) |      |         |
|------|----------------|------|---------|
|      | d              | t    | r       |
| 09   | 9.52           | 3.97 | 0.8     |
| 12   | 12.7           | 4.76 | 0.2-0.8 |
|      |                |      |         |
|      |                |      |         |
|      |                |      |         |

| Insert   | Designation           | Cermet |        | CVD coated |        |        |        |        |        |        |        | PVD coated |        |        | Uncoated |        |        |        |     |     |     |  |  |
|--|-----------------------|--------|--------|------------|--------|--------|--------|--------|--------|--------|--------|------------|--------|--------|----------|--------|--------|--------|-----|-----|-----|--|--|
|  |                       | PV3010 | CT3000 | TT7005     | TT7015 | TT7310 | TT8115 | TT8125 | TT8135 | 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) |      |         |
|-----------|----------------|------|---------|
|           | d              | t    | r       |
| <b>09</b> | 9.52           | 3.97 | 0.4-0.8 |
| <b>12</b> | 12.7           | 4.76 | 0.4-1.2 |
|           |                |      |         |
|           |                |      |         |
|           |                |      |         |
|           |                |      |         |

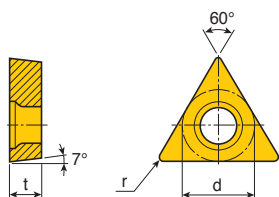
| Insert | Designation           | Cermet |        | CVD coated |        |        |        |        |        |        |        | PVD coated |        |        |        | Uncoated |        |        |     |     |     |  |
|--------|-----------------------|--------|--------|------------|--------|--------|--------|--------|--------|--------|--------|------------|--------|--------|--------|----------|--------|--------|-----|-----|-----|--|
|        |                       | PV3010 | CT3000 | TT7005     | TT7015 | TT7310 | TT8115 | TT8125 | TT8135 | TT9215 | TT9225 | TT9235     | TT5100 | TT7100 | TT5080 | TT8020   | TT9020 | TT9080 | 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

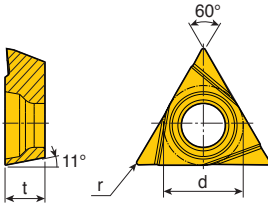


| Size      | Dimension (mm) |      |     |
|-----------|----------------|------|-----|
|           | d              | t    | r   |
| <b>22</b> | 12.7           | 4.76 | 0.8 |
|           |                |      |     |
|           |                |      |     |
|           |                |      |     |
|           |                |      |     |


| Insert | Designation           | Cermet |        | CVD coated |        |        |        |        |        |        |        | PVD coated |        |        |        | Uncoated |        |        |     |     |     |  |
|--------|-----------------------|--------|--------|------------|--------|--------|--------|--------|--------|--------|--------|------------|--------|--------|--------|----------|--------|--------|-----|-----|-----|--|
|        |                       | PV3010 | CT3000 | TT7005     | TT7015 | TT7310 | TT8115 | TT8125 | TT8135 | 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) |      |         |
|------|----------------|------|---------|
|      | d              | t    | r       |
| 09   | 5.56           | 2.38 | 0.2-0.4 |
| 11   | 6.35           | 3.18 | 0.2-0.4 |
|      |                |      |         |
|      |                |      |         |
|      |                |      |         |

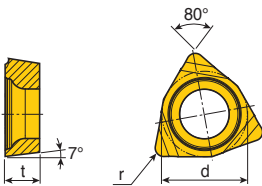
| Insert  | Designation          | Cermet |        | CVD coated |        |        |        |        |        |        |        | PVD coated |        |        | Uncoated |        |        |     |     |     |     |
|---|----------------------|--------|--------|------------|--------|--------|--------|--------|--------|--------|--------|------------|--------|--------|----------|--------|--------|-----|-----|-----|-----|
|   |                      | PV3010 | CT3000 | TT7005     | TT7015 | TT7310 | TT8115 | TT8125 | TT8135 | TT9215 | TT9225 | TT9235     | TT5100 | TT7100 | TT5080   | TT8020 | TT9020 | P20 | P30 | K10 | K20 |
| <br>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) |      |         |
|------|----------------|------|---------|
|      | d              | t    | r       |
| 02   | 3.97           | 1.59 | 0.2-0.4 |
|      |                |      |         |
|      |                |      |         |
|      |                |      |         |

| Insert   | Designation         | Cermet |        | CVD coated |        |        |        |        |        |        |        | PVD coated |        |        | Uncoated |        |        |        |     |     |     |
|--|---------------------|--------|--------|------------|--------|--------|--------|--------|--------|--------|--------|------------|--------|--------|----------|--------|--------|--------|-----|-----|-----|
|  |                     | PV3010 | CT3000 | TT7005     | TT7015 | TT7310 | TT8115 | TT8125 | TT8135 | 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  
 IHAXF 6-8/16  
 Ø8-12  
 IHAXF 8-10/16  
 Ø11-17  
 IHAXF 11-13/16  
 Ø16-23  
 IHAXF 16-18/16  
 Ø22-30  
 IHAXF 22-30/16

Ø28-56  
 BH D16x53  
 Ø28-44  
 IHFF 25  
 Ø36-56  
 IHFF 32

Ø54-86  
 IHFF 50  
 Ø54-86

Ø80-110  
 BHEH 24x75  
 IHFF 50  
 Ø80-110

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

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 BH NUT 10  
 1 CW 32  
 1 BH D16x53  
 1 BHEH 24x75  
 1 BHEH 24x75  
 1 BH WASHER IH..50  
 1 BH NUT 10  
 1 CW 32

| Designation               | Dimension (mm) |              |
|---------------------------|----------------|--------------|
|                           | MB d1          | Boring range |
| <b>KIT BHE MB50-50x80</b> | 50             | 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  
 BHEH 28x80  
 Ø6-8  
 IHAXF 6-8/16  
 Ø8-10  
 IHAXF 8-10/16  
 Ø11-13  
 IHAXF 11-13/16  
 Ø16-18  
 IHAXF 16-18/16  
 Ø22-30  
 IHAXF 22-30/16

Ø40-90  
 BH D16x53  
 Ø40-56  
 Ø54-74  
 IHFF 32  
 IHFF 50

Ø88-132  
 SFTP 50  
 Ø88-132

Ø115-200  
 BHEH...  
 CW 32  
 SFTP 50  
 Ø115-160 BHEH 28x108  
 Ø155-200 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 BH WASHER IH..50  
 1 BH NUT 10  
 1 CW 32  
 1 BH D16x53  
 1 BHEH 28x80  
 1 BHEH 28x108  
 1 BHEH 28x148

| Designation               | Dimension (mm) |              |
|---------------------------|----------------|--------------|
|                           | MB d1          | Boring range |
| <b>KIT BHE MB63-63x89</b> | 63             | 6-125        |

# KIT BHE MB80-80x104

Kits

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

10µm  
2µm

**06-30**  
 BHEH 28x80  
 06-8  
 IHAXF 6-8/16  
 08-10  
 IHAXF 8-10/16  
 011-13  
 IHAXF 11-13/16  
 016-18  
 IHAXF 16-18/16  
 022-30  
 IHAXF 22-30/16

**040-90**  
 BHH 63x78  
 040-56  
 IHFF 32  
 064-74  
 IHFF 50

**088-132**  
 SFTP 50  
 088-132

**0115-200**  
 BHEH...  
 CW 32  
 SFTP 50  
 0115-160 BHEH 28x106  
 0155-200 BHEH 28x148

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 BH 63x78  
 1 BHEH 28x80  
 1 BHEH 28x108  
 1 BHEH 28x148  
 1 BH WASHER IH..50  
 1 CW 32

| Designation                | Dimension (mm) |              |
|----------------------------|----------------|--------------|
|                            | MB d1          | Boring range |
| <b>KIT BHE MB80-80x104</b> | 80             | 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

010-12  
 IHAXF 10-12H  
 08-10  
 IHAXF 8-10H  
 06-8  
 IHAXF 6-8H  
 046  
 IHAXF 4-6H  
 025-4  
 IHAXF 2.5-4H  
 025-48  
 IHAXF 2.5-48H

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

5 TPGX 090202L  
 2 WCGT 020102L

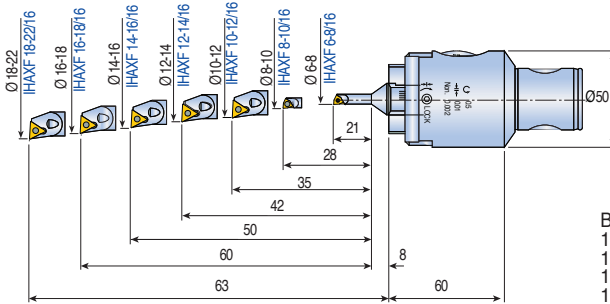
| Designation                 | Dimension (mm) |              |
|-----------------------------|----------------|--------------|
|                             | MB d1          | Boring range |
| <b>KIT BHE MB32-32x53 H</b> | 32             | 2.5-12       |

# KIT BHE MB50-50x60 H

Kits

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

|            |  |             |
|------------|--|-------------|
| G2.5       |  | 10µm<br>2µm |
| 12,000 RPM |  |             |



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) |              |
|-----------------------------|----------------|--------------|
|                             | MB d1          | Boring range |
| <b>KIT BHE MB50-50x60 H</b> | 50             | 6-22         |

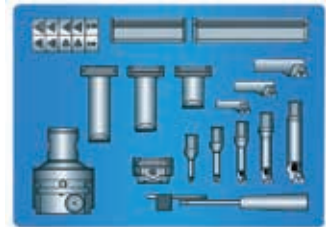
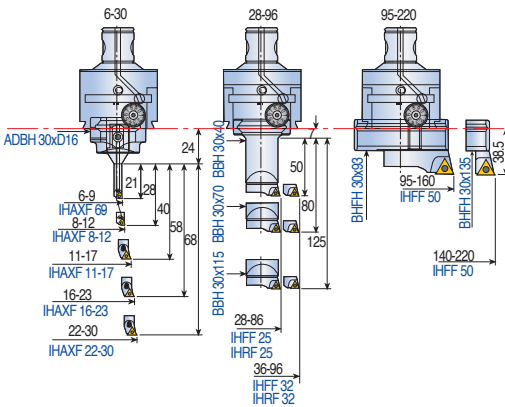
- 10µm direct diametric adjustment and 2µm by a vernier scale

# 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) |              |
|------------------------|----------------|--------------|
|                        | MB d1          | Boring range |
| <b>KIT BHF MB50-80</b> | 50             | 6-220        |
| <b>MB80-80</b>         | 80             | 6-220        |

# KIT BHF MB 50-32 BL

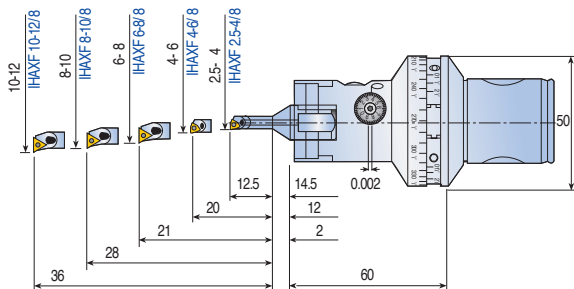
Kits

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

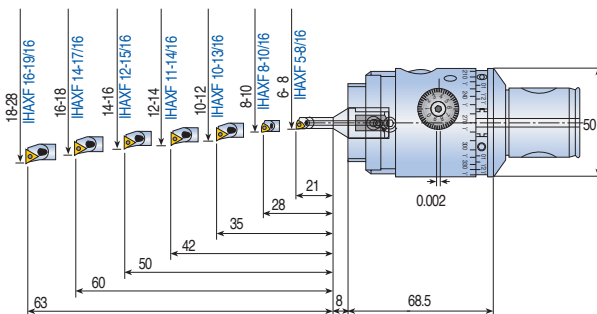
| Designation               | Dimension (mm) |              |
|---------------------------|----------------|--------------|
|                           | MB d1          | Boring range |
| <b>KIT BHF MB50-32 BL</b> | 50             | 2.5-12       |

# 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) |              |
|---------------------------|----------------|--------------|
|                           | MB d1          | Boring range |
| <b>KIT BHF MB50-50 BL</b> | 50             | 6-20         |

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

# KIT BHF MB50-50 6-108

Kits

6-108mm diameter range

2 $\mu$ m

Technical drawings showing dimensions and part numbers for the BHF MB50-50 6-108 kit. The drawings illustrate the tool holder and its compatibility with various inserts for different diameter ranges: 6-30, 32-54, 54-84, 80-108, and 92-108. Dimensions include diameters (e.g.,  $\varnothing 22-30$ ,  $\varnothing 32$ ,  $\varnothing 36-54$ ,  $\varnothing 54-84$ ,  $\varnothing 80-108$ ,  $\varnothing 92-108$ ), lengths (e.g., 63, 61, 28-54, 83, 93, 79, 19), and specific part numbers like IHAXF, IHHF, BHEH, BBH, and BH NUT.

1 BHF MB50-50x60  
 1 IHHF 25  
 1 IHHF 32  
 1 IHHF 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 D 16x53  
 1 BHEH 24x75  
 1 BH NUT 10  
 1 CW 32  
 5 TPGX 090202L  
 1 TPGX 110302L  
 2 WCGT 020102L

| Designation                  | Dimension (mm) |              |
|------------------------------|----------------|--------------|
|                              | MB d1          | Boring range |
| <b>KIT BHF MB50-50 6-108</b> | 50             | 6-108        |

# KIT BHF MB50-63/MB63-63

Kits

6-125mm diameter range

2 $\mu$ m

Technical drawings showing dimensions and part numbers for the BHF MB50-63/MB63-63 kit. The drawings illustrate the tool holder and its compatibility with various inserts for different diameter ranges: 6-30, 28-80, and 77-125. Dimensions include diameters (e.g.,  $\varnothing 6-30$ ,  $\varnothing 28-80$ ,  $\varnothing 77-125$ ), lengths (e.g., 24, 21, 28, 40, 58, 68, 50, 80, 38.5), and specific part numbers like BBH, BHF, IHAXF, IHHF, and IHRF.

1 BHF MB...-63x87  
 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 BHFH 30x75  
 1 BHFH 30x75  
 1 IHHF 25  
 1 IHHF 32  
 1 IHHF 50  
 5 TPGX 090202L  
 1 TPGX 110302L  
 2 WCGT 020102L  
 T-8/5  
 T-6/5

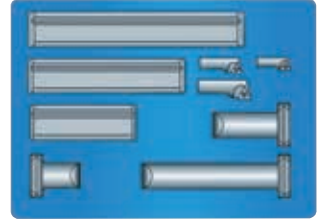
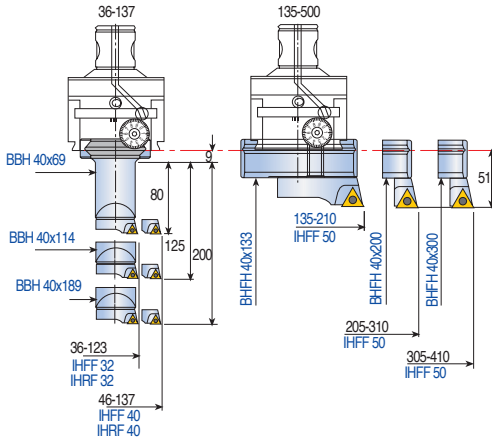
| Designation            | Dimension (mm) |              |
|------------------------|----------------|--------------|
|                        | MB d1          | Boring range |
| <b>KIT BHF MB50-63</b> | 50             | 6-125        |
| <b>MB63-63</b>         | 63             | 6-125        |

# 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) |              |
|--------------------------|----------------|--------------|
|                          | MB d1          | Boring range |
| <b>KIT BHFH MB80-125</b> | 50             | 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

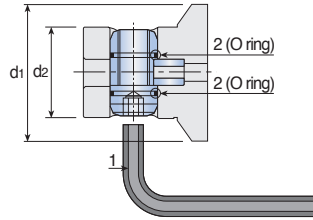
2µm

- 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           |  |

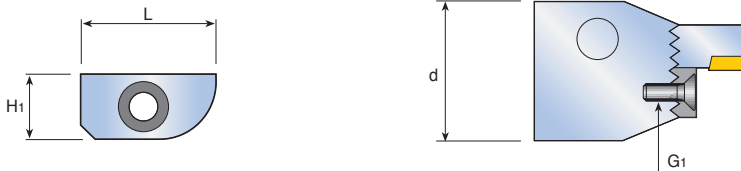
## MB system clamp set



| Designation        | Dimension (mm) |    |     |             |
|--------------------|----------------|----|-----|-------------|
|                    | d1             | d2 | 1   | 2           |
| <b>MB CLAMP 16</b> | 16             | 10 | 2.5 | -           |
| <b>20</b>          | 20             | 13 | 3   | -           |
| <b>25</b>          | 25             | 16 | 3   | -           |
| <b>32</b>          | 32             | 20 | 4   | ORM 0100-10 |
| <b>40</b>          | 40             | 25 | 5   | ORM 0130-10 |
| <b>50</b>          | 50             | 32 | 6   | ORM 0140-10 |
| <b>63-80</b>       | 63-80          | 42 | 8   | OR 2075     |

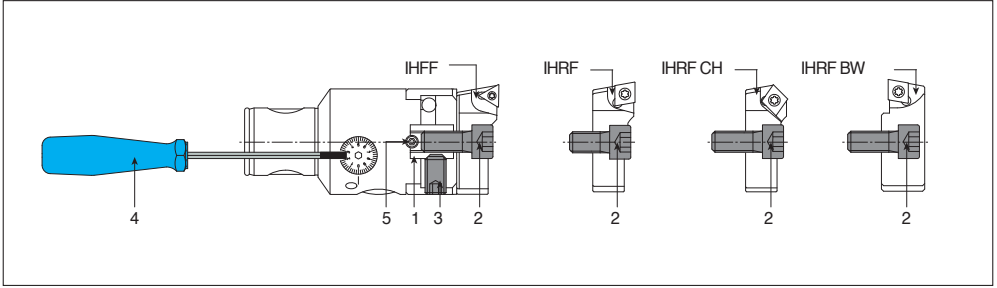
# PLT

## Cover plate

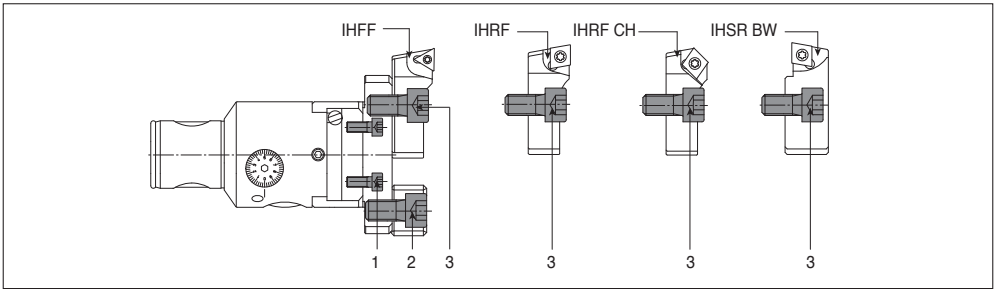


| Designation   | Dimension (mm) |      |      |         |
|---------------|----------------|------|------|---------|
|               | d              | H1   | L    | G1      |
| <b>PLT 16</b> | 16             | 7    | 14   | M 3x8   |
| <b>20</b>     | 20             | 8.5  | 17   | M 4x10  |
| <b>25</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.

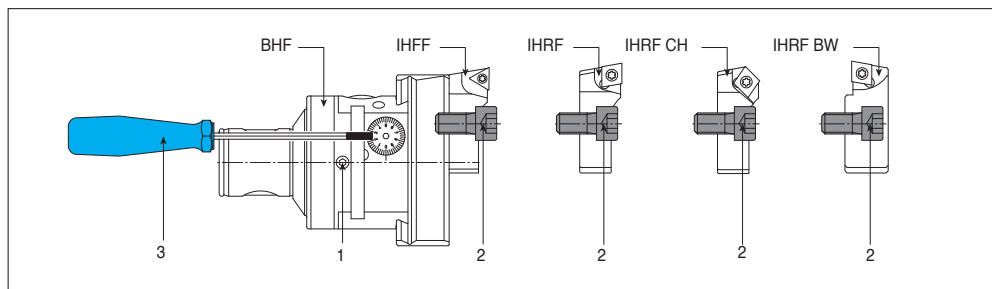


| Designation          | 1         | 2                 | 3                 | 4                                   | 5 |
|----------------------|-----------|-------------------|-------------------|-------------------------------------|---|
| <b>BHF...- 16...</b> | -         | SR M3x6 DIN 912   | -                 | 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    |   |

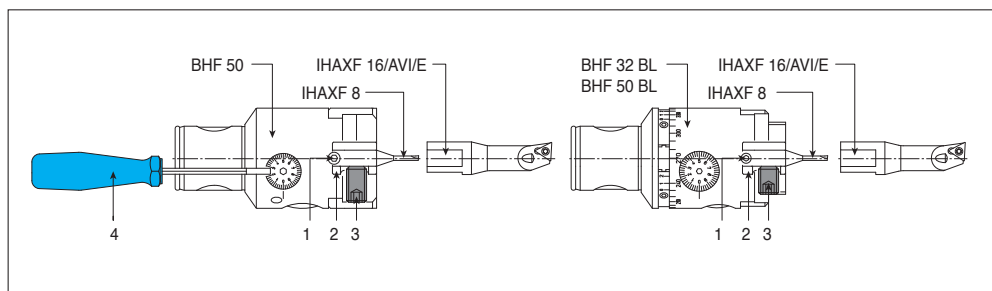


| Designation          | 1                | 2                 | 3                 |
|----------------------|------------------|-------------------|-------------------|
| <b>BHF...- 50...</b> | SR M5x10 DIN 912 | SR M10x20 DIN 912 | SR M10x25 DIN 912 |
|                      |                  |     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



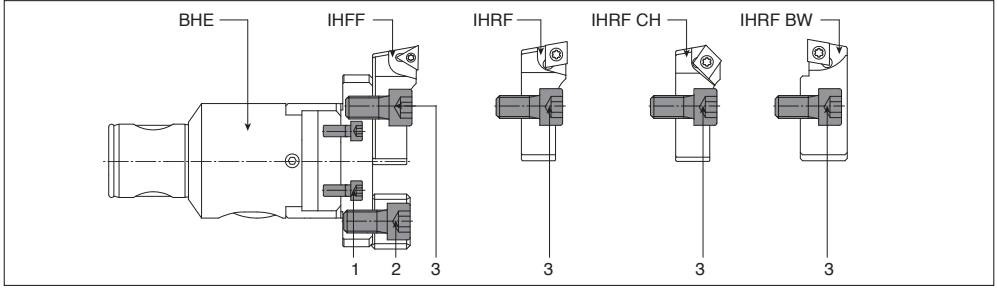


| Designation         | 1                | 2                 | 3                |
|---------------------|------------------|-------------------|------------------|
| <b>BHF... 63...</b> | SR M6x10 DIN 915 | SR M10x25 DIN 912 | BH SR 3.0 HANDLE |
| <b>80...</b>        | SR M6x14 DIN 915 | SR M10x25 DIN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

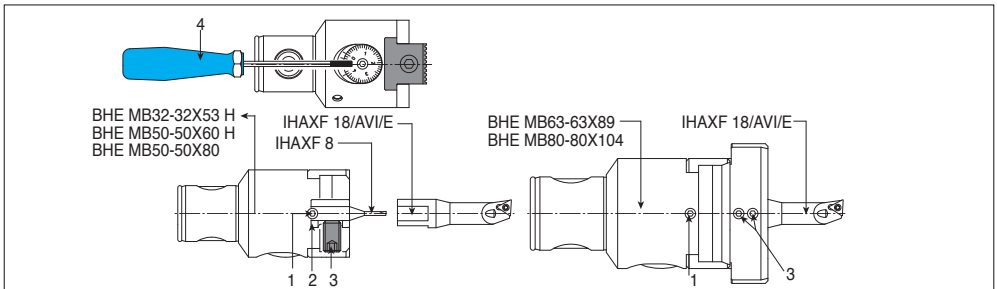


| Designation         | 1               | 2              | 3                                | 4                |
|---------------------|-----------------|----------------|----------------------------------|------------------|
| <b>BHF... 50...</b> | SR M5x8 DIN 913 | SLEEVE D 8-D16 | SR M10x10 DIN 912                | 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 |
|                     |                 |                |                                  |                  |
|                     |                 |                |                                  |                  |
|                     |                 |                |                                  |                  |

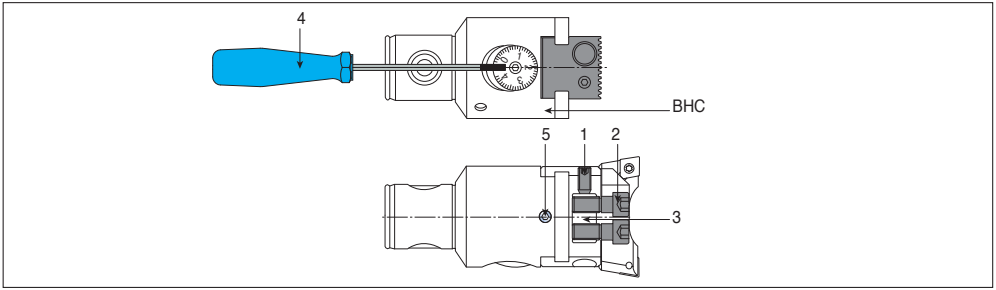




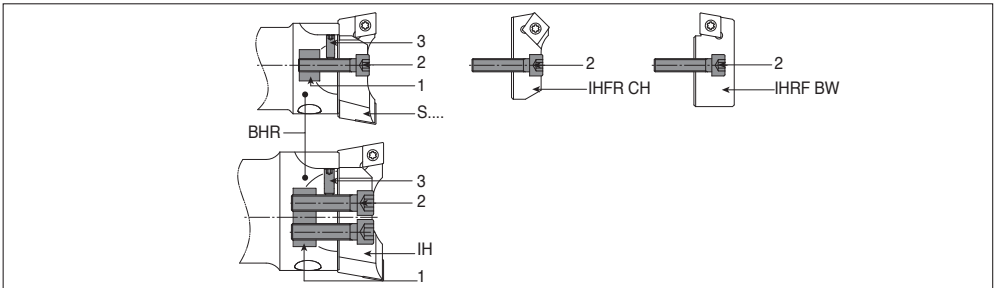
| Designation           | 1                | 2                 | 3                 |
|-----------------------|------------------|-------------------|-------------------|
| <b>BHE MB50-50x80</b> | SR M5x12 DIN 912 | SR M10x20 DIN 912 | SR M10x25 DIN 912 |
| <b>MB63-63x89</b>     | SR M5x25 DIN 912 | SR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



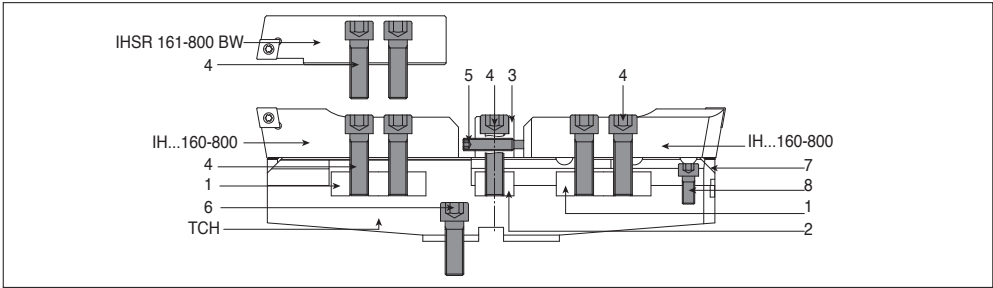
| Designation             | 1                | 2              | 3                 | 4                |
|-------------------------|------------------|----------------|-------------------|------------------|
| <b>BHE MB32-32x53 H</b> | SR M5x5 DIN 913  | -              | SR M5x8 DIN 913   | BH SR 2.5 HANDLE |
|                         | 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 |

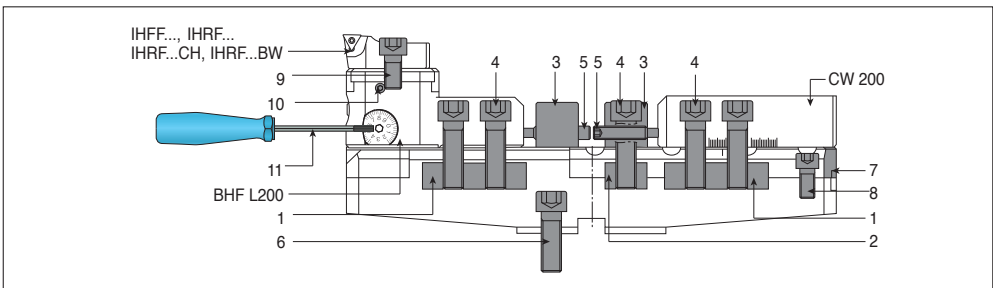


| Designation          | 1               | 2                 | 3                |
|----------------------|-----------------|-------------------|------------------|
| <b>BHR MB16...16</b> | BH NUT BHR MB16 | SR M3x14 DIN 912  | SR M3x4 DIN 913  |
| <b>MB20...20</b>     | BH NUT BHR MB20 | SR M4x15 DIN 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 |



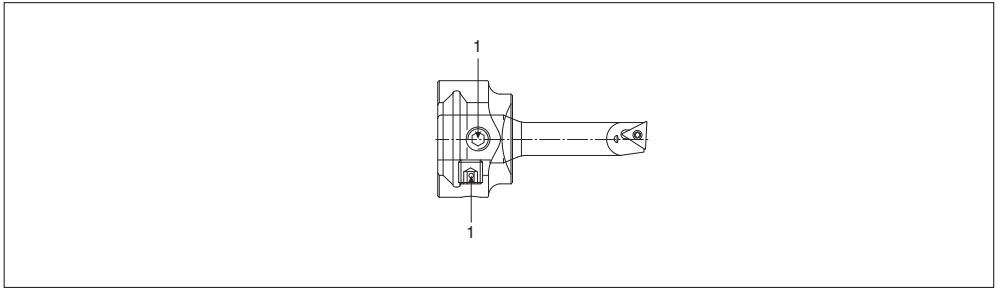
| Designation            | 1            | 2            | 3            | 4                 |
|------------------------|--------------|--------------|--------------|-------------------|
| <b>TCH 200-300-400</b> | BH TCH NUT A | BH TCH NUT B | BH TCH NUT C | SR M12x40 DIN 912 |
| <b>500-600-700</b>    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



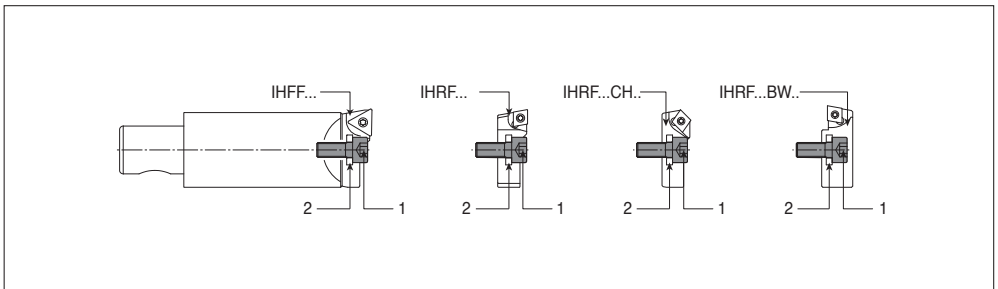
| Designation            | 1            | 2            | 3            | 4                 | 5                |
|------------------------|--------------|--------------|--------------|-------------------|------------------|
| <b>TCH 200-300-400</b> | BH TCH NUT A | BH TCH NUT B | BH TCH NUT C | SR M12x40 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 |

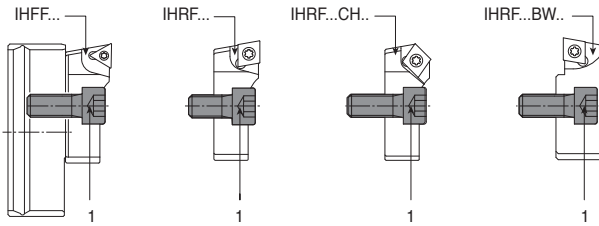


| Designation        | 1                |
|--------------------|------------------|
| <b>ADBH 30xD16</b> | SR M45x8 DIN 913 |
|                    |                  |
|                    |                  |
|                    |                  |
|                    |                  |
|     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

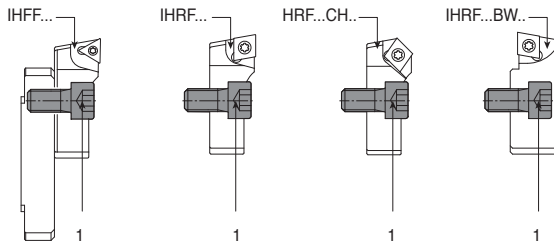
**BBH-D**



| 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 |

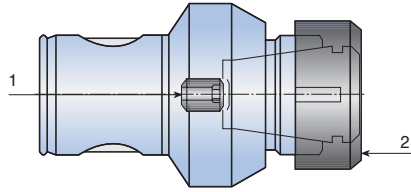


| Designation       | 1                 |
|-------------------|-------------------|
| <b>BHEH 24x75</b> | SR M10x20 DIN 912 |
| <b>28x80</b>      | SR M10x25 DIN 912 |
| <b>28x108</b>     | SR M10x25 DIN 912 |
| <b>28x148</b>     | SR M10x25 DIN 912 |
|                   |                   |
|     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





## Components for CC

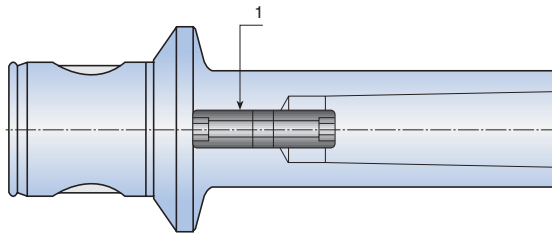


| Designation          | 1             | 2             | Wrench           |
|----------------------|---------------|---------------|------------------|
| <b>CC MB16-ER11M</b> | CC MB16 SCREW | NUT ER11 MINI | WRENCH ER11 MINI |
| <b>MB20-ER16M</b>    | CC MB20 SCREW | NUT ER16 MINI | WRENCH ER16 MINI |
| <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

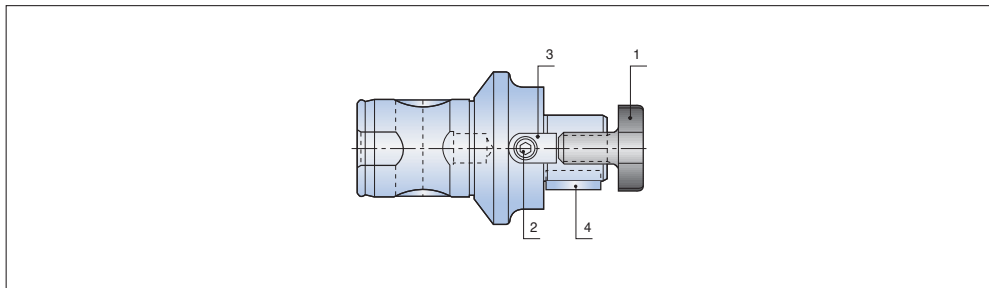
# Spare Parts

## 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 |
|                     |               |
|                     |               |

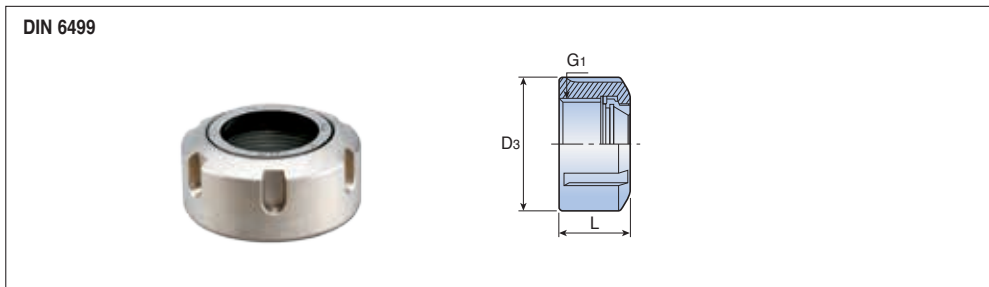
## Screw for shell mill holders SMH



| 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

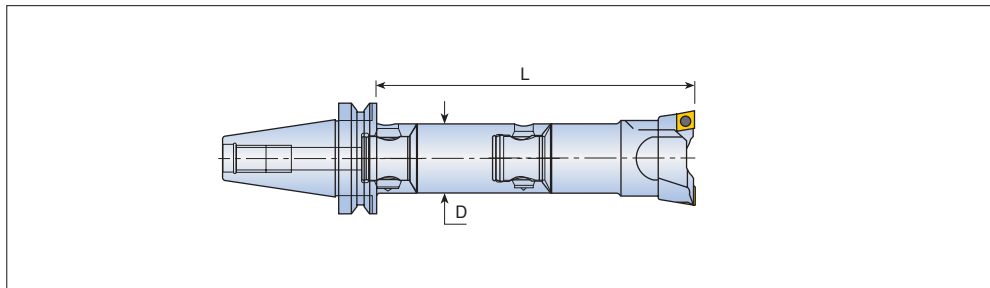


| Designation         | Dimension (mm) |    |                |
|---------------------|----------------|----|----------------|
|                     | D <sub>3</sub> | L  | G <sub>1</sub> |
| <b>NUT ER16 TOP</b> | 28             | 17 | M22x1.5        |
| <b>ER20 TOP</b>     | 34             | 19 | M25x1.5        |
| <b>ER25 TOP</b>     | 42             | 20 | M32x1.5        |
| <b>ER32 TOP</b>     | 50             | 22 | M40x1.5        |
| <b>ER40 TOP</b>     | 63             | 25 | M50x1.5        |

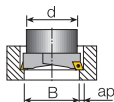


# Recommended Cutting Conditions

## BHR rough boring heads



## Cutting depth



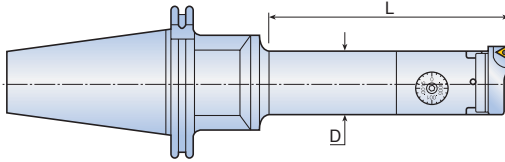
It's advisable to start with  $B \text{ hole} \geq \text{boring bar diameter } d$

| B<br>Working range | ap (mm)<br>Steel | ap (mm)<br>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<br>(Vc=m/min) | Feed f=mm/rev |           | Cutting depth<br>(ap) |
|-----------------------------|---------|-----------|-----------------------------|---------------|-----------|-----------------------|
|                             |         |           |                             | Insert radius |           |                       |
|                             |         |           |                             | R=0.2         | R=0.4     |                       |
| Carbon steel<br>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<br>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<br>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<br>(Vc=m/min) | Feed f=mm/rev |         | Cutting depth<br>(mm) |     |     |     |
|---------------------------------|---------|-----------|-----------------------------|---------------|---------|-----------------------|-----|-----|-----|
|                                 |         |           |                             | Insert radius |         |                       |     |     |     |
|                                 |         |           |                             | R=0.2         | R=0.4   |                       |     |     |     |
| Carbon steel<br>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<br>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<br>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 |                       |     |     |     |

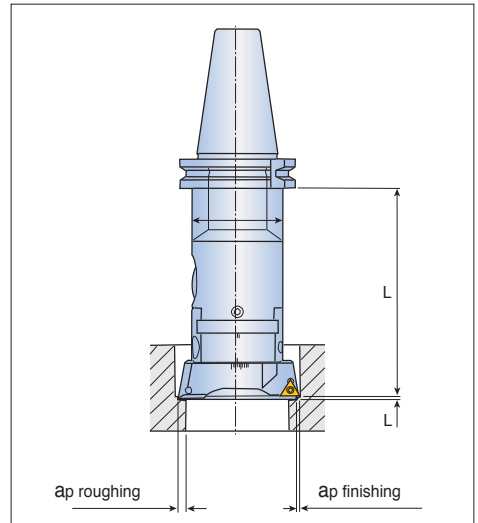
- \*Only for finishing Inserts.
- Use inserts with the same corner radii for both roughing and finishing inserts.

VC Cutting speed (m/min)  
D Diameter of workpiece (mm)  
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<br>***   | 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<br>***     | 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<br>***   | 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<br>***   | 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<br>***     | 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<br>***   | 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<br>***   | 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<br>***     | 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<br>***   | 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<br>***   | 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<br>***     | 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<br>***   | 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

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)    | 0.5-1.0   | 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<br>•••   | 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<br>••      | 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<br>•     | 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<br>•••   | 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<br>••      | 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<br>•     | 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<br>•••   | 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<br>••      | 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<br>•     | 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<br>•••   | 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<br>••      | 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<br>•     | 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)<br>R (Radius) | 0.5-1.0<br>0.2 | 1.0-1.8<br>0.4 | 0.5-1.0<br>0.2-0.4 | 1.0-1.8<br>0.4 | 0.5-1.2<br>0.2-0.4 | 1.2-2.0<br>0.4-0.8 |  |  |
| M   | Stainless steel      | Ferritic & martensitic | 2.5<br>***   | 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<br>**      | 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<br>*     | 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<br>***   | 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<br>**      | 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<br>*     | 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<br>***   | 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<br>**      | 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<br>*     | 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<br>***   | 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<br>**      | 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<br>*     | 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           |  |  |

| ISO | Workpiece material   | Hardness HB            | Overhang L/D | Boring range          |                    |                    |                    |                    |                    |                    |  |  |
|-----|----------------------|------------------------|--------------|-----------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--|--|
|     |                      |                        |              | D68-120               |                    | D120-200           |                    | D200-500           |                    |                    |  |  |
|     |                      |                        |              | ap (mm)<br>R (Radius) | 0.8-1.8<br>0.2-0.4 | 1.8-2.5<br>0.4-0.8 | 0.8-2.0<br>0.2-0.4 | 2.0-3.0<br>0.4-0.8 | 0.8-2.0<br>0.2-0.4 | 2.0-3.5<br>0.2-0.4 |  |  |
| M   | Stainless steel      | Ferritic & martensitic | 2.5<br>***   | 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<br>**      | Vc                    | 100-160            | 90-140             | 120-180            | 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<br>*     | 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<br>***   | 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<br>**      | 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<br>*     | 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<br>***   | 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<br>**      | 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<br>*     | 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<br>***   | 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<br>**      | Vc                    | 100-140            | 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          |                    |                    |  |  |
|     |                      |                        | 6.3<br>*     | 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 |           | 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   | 0.4                 | 0.2-0.4   | 0.4                 | 0.2-0.4   | 0.4-0.8   |
| K             | Gray cast iron GG 10-25 | HB<200      | 2.5<br>•••   | 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<br>••      | 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<br>•     | 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 | HB<200      | 2.5<br>•••   | 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<br>••      | 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<br>•     | 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<br>•••  | 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<br>••     | 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<br>•    | 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 |           | Boring range D28-50 |           | Boring range 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   |
|               |                         |             |              | 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   |
| K             | Gray cast iron GG 10-25 | HB<200      | 2.5<br>•••   | 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<br>••      | 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<br>•     | 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 | HB<200      | 2.5<br>•••   | 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<br>••      | 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<br>•     | 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<br>•••  | 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<br>••     | 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<br>•    | 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/<br>Cast  | >12si       | 2.5<br>***   | 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<br>**      | 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<br>•     | 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/<br>Cast  | <12si       | 2.5<br>***   | 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<br>**      | 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<br>•     | 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/<br>Cast  | >12si       | 2.5<br>***   | 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<br>**      | 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<br>•     | Vc                   | 60-100    | 60-100                | N.R.      | N.R.                  | N.R.      | N.R.     |
|     |                    |             |              | f                    | 0.06-0.1  | 0.06-0.1              |           |                       |           |          |
|     | Aluminum/<br>Cast  | <12si       | 2.5<br>***   | 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<br>**      | 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<br>•     | 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

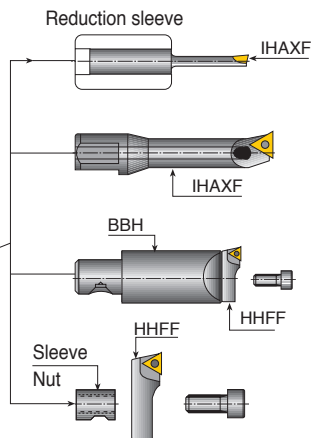
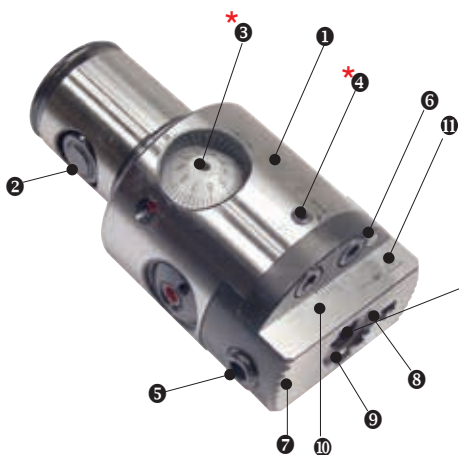
Weekly:

- 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

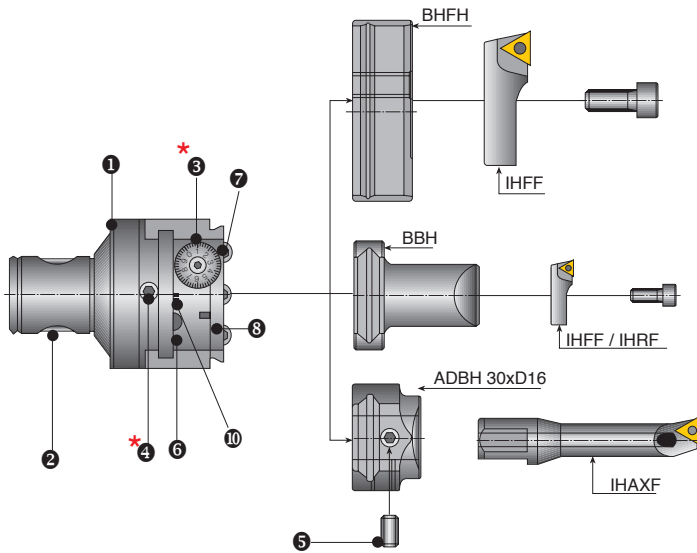
Periodically:

- 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!! |

