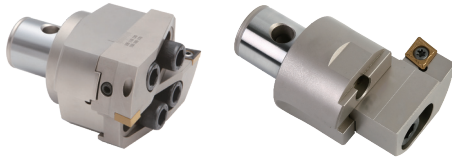


**NEW**  
**PRODUCT!**

# Boring Series Products



- ARB rough boring series
  - Blind hole rough boring tools - 2 edges
  - Through hole rough boring tools - 2 edges
  - Back-boring(rough) tools



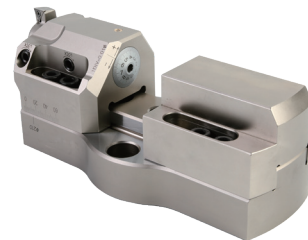
- MLR series large diameter boring tool
  - Standard rough boring
  - Lightweight rough boring



- AFB fine boring series
  - A type of cartridge fine boring
  - B type of cartridge fine boring
  - C type of cartridge fine boring



- MLF series large diameter fine boring tool
  - Standard fine boring
  - Lightweight fine boring



- DFB anti-vibration fine boring series
  - Mono-block anti-vibration fine boring
  - Modular anti-vibration fine boring



- EFB external fine boring series
  - External fine boring
  - Large diameter external fine boring



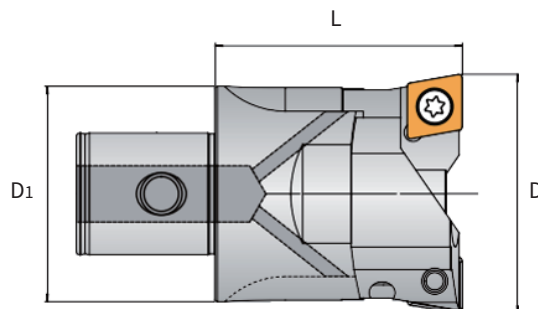
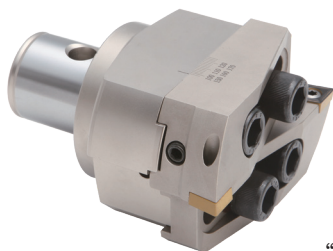
## ARB Series 2 edge Rough Boring Tools

Diameter range  $\Phi 20-203\text{mm}$ .

Cover wide applications.

With high precision, high rigidity, flexible on tool combination.

Adjusting scale marked on tool body, easy for handling.



Product code

ARB-1-2-3-4-5-AK-W

"1" Series name

"2" Minimum boring diameter

"3" Maximum boring diameter

"4" Coupling size: AK1/AK2/AK3/AK4/AK5/AK6/AK7

"5" W means without cartridge, L means extra long rough boring

| Dia range | Product code<br>(For blind holes) | Coupling | D1 | L    | Cartridge<br>(● Standard ○ Option) |   | Screw    | Tool weight |
|-----------|-----------------------------------|----------|----|------|------------------------------------|---|----------|-------------|
| 20-26     | ARB-020-026-AK1                   | AK1      | 19 | 32.5 | RC-020-CC06                        | ● | SH040160 | 0.07        |
|           |                                   |          |    |      | RC-020-SC06                        | ○ |          |             |
| 25-33     | ARB-025-033-AK2                   | AK2      | 24 | 35.5 | RC-025-CC06                        | ● | SH050200 | 0.12        |
|           |                                   |          |    |      | RC-025-SC06                        | ○ |          |             |
| 32-42     | ARB-032-042-AK3                   | AK3      | 31 | 40   | RC-032-CC09                        | ● | SH060200 | 0.2         |
|           |                                   |          |    |      | RC-032-SC09                        | ○ |          |             |
| 41-54     | ARB-041-054-AK4                   | AK4      | 39 | 47   | RC-041-CC09                        | ● | SH080250 | 0.38        |
|           |                                   |          |    |      | RC-041-SC09                        | ○ |          |             |
| 53-70     | ARB-053-070-AK5                   | AK5      | 50 | 57   | RC-041-CC12                        | ● | SH100300 | 0.75        |
|           |                                   |          |    |      | RC-041-SC12                        | ○ |          |             |
| 68-90     | ARB-068-110-AK6                   | AK6      | 63 | 71   | RC-068-CC12                        | ● | SH100350 | 1.6         |
|           |                                   |          |    |      | RC-068-SC12                        | ○ |          |             |
| 88-110    | ARB-068-110-AK6-L                 | AK6      | 63 | 71   | RC-088-CC12                        | ● | SH120400 | 1.8         |
|           |                                   |          |    |      | RC-088-SC12                        | ○ |          |             |
| 98-126    | ARB-098-153-AK6                   | AK6      | 63 | 71   | RC-098-CC12                        | ● | SH120400 | 2.3         |
|           |                                   |          |    |      | RC-098-SC12                        | ○ |          |             |
| 125-153   | ARB-098-153-AK6-L                 | AK6      | 63 | 71   | RC-125-CC12                        | ● | SH120400 | 2.6         |
|           |                                   |          |    |      | RC-125-SC12                        | ○ |          |             |
| 98-126    | ARB-098-153-AK7                   | AK7      | 90 | 87   | RC-098-CC12                        | ● | SH120400 | 3.9         |
|           |                                   |          |    |      | RC-098-SC12                        | ○ |          |             |
| 125-153   | ARB-098-153-AK7-L                 | AK7      | 90 | 87   | RC-125-CC12                        | ● | SH120400 | 4.1         |
|           |                                   |          |    |      | RC-125-SC12                        | ○ |          |             |
| 148-176   | ARB-148-203-AK6                   | AK6      | 63 | 71   | RC-098-CC12                        | ● | SH120400 | 2.9         |
|           |                                   |          |    |      | RC-098-SC12                        | ○ |          |             |
| 175-203   | ARB-148-203-AK6-L                 | AK6      | 63 | 71   | RC-125-CC12                        | ● | SH120400 | 3.2         |
|           |                                   |          |    |      | RC-125-SC12                        | ○ |          |             |

● Tool body is assembled with blind hole boring cartridges as standard package. For through hole, the tool body and cartridges need to be ordered separately. Example: ARB-148-203-AK6-W and RC-098-SC12

● Tool body without cartridge also can be ordered. Example: ARB-148-203-AK6-W.

● Spare parts including: clamping bolt, washer, wrench. The inserts need to be ordered separately.

● ARB double edge rough boring tool is with internal coolant.

● The boring tool must be assembled properly with all the screws and bolts tightened.

● For the ideal axial runout, the inserts need to be indexed at the same time.

## ● ARB Series 2 edge Rough Boring Tools

Blind hole rough boring cartridges

### Product code

RC-\_\_-CC\_\_-B

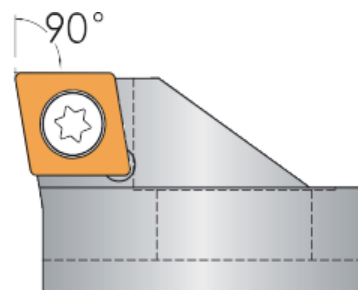
1 2 3 4

"1" Series name

"2" Minimum boring diameter

"3" Insert

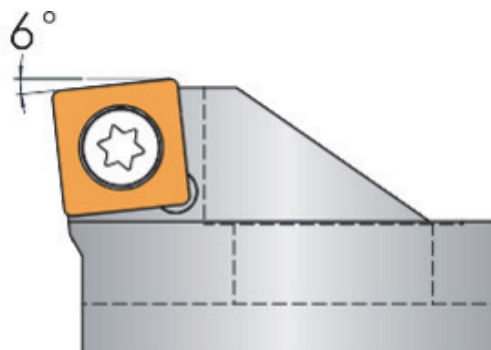
"4" B means back boring, without B means front boring



| Cartridge   | Tool body                                             | Insert     | Screw & Wrench     |
|-------------|-------------------------------------------------------|------------|--------------------|
| RC-020-CC06 | ARB-020-026-AK1                                       | CC__0602__ | ST025060<br>TT-T8  |
| RC-025-CC06 | ARB-025-033-AK2                                       |            |                    |
| RC-032-CC09 | ARB-032-042-AK3                                       | CC__09T3__ | ST040100<br>TT-T15 |
| RC-041-CC09 | ARB-041-054-AK4                                       |            |                    |
| RC-053-CC12 | ARB-053-070-AK5                                       | CC__1204__ | ST050120<br>TT-T20 |
| RC-068-CC12 | ARB-068-110-AK6                                       |            |                    |
| RC-088-CC12 | ARB-068-110-AK6                                       |            |                    |
| RC-098-CC12 | ARB-098-153-AK6<br>ARB-098-153-AK7<br>ARB-148-203-AK6 |            |                    |
| RC-125-CC12 | ARB-098-153-AK6<br>ARB-098-153-AK7<br>ARB-148-203-AK6 |            |                    |

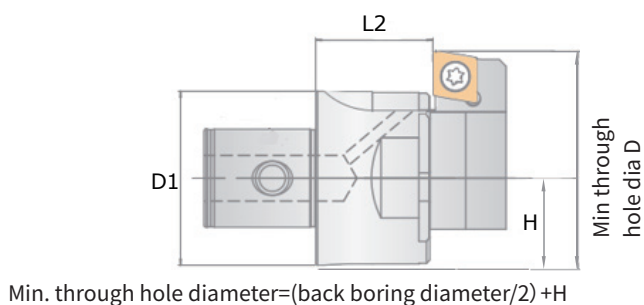
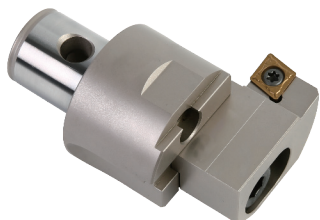
● **ARB Series 2 edge Rough Boring Tools**

Through hole rough boring cartridges



| Cartridge   | Tool body                                             | Insert     | Screw & Wrench     |
|-------------|-------------------------------------------------------|------------|--------------------|
| RC-020-SC06 | ARB-020-026-AK1                                       | SC__0602__ | ST025060<br>TT-T8  |
| RC-025-SC06 | ARB-025-033-AK2                                       |            |                    |
| RC-032-SC09 | ARB-032-042-AK3                                       | SC__09T3__ | ST040100<br>TT-T15 |
| RC-041-SC09 | ARB-041-054-AK4                                       |            |                    |
| RC-053-SC12 | ARB-053-070-AK5                                       | SC__1204__ | ST050120<br>TT-T20 |
| RC-068-SC12 | ARB-068-110-AK6                                       |            |                    |
| RC-088-SC12 | ARB-068-110-AK6                                       |            |                    |
| RC-098-SC12 | ARB-098-153-AK6<br>ARB-098-153-AK7<br>ARB-148-203-AK6 |            |                    |
| RC-125-SC12 | ARB-098-153-AK6<br>ARB-098-153-AK7<br>ARB-148-203-AK6 |            |                    |

● **ARB Rough Back Boring Series**



| D       | Tool body         | Coupling | Back boring cartridge | D1   | L2   | Screw    | H    | Weight (kg) | Insert  | Screw & Wrench     |
|---------|-------------------|----------|-----------------------|------|------|----------|------|-------------|---------|--------------------|
| 25-31   | ARB-020-026-AK1-W | AK1      | RC-025-CC06-B         | 18.7 | 21.5 | SH040160 | 10   | 0.06        | CC 0602 | ST025060<br>TT-18  |
| 30-35   |                   |          | RC-030-CC06-B         |      |      |          |      | 0.06        |         |                    |
| 32-40   | ARB-025-033-AK2-W | AK2      | RC-032-CC06-B         | 23.5 | 23.5 | SH050200 | 12.5 | 0.11        |         |                    |
| 39-47   |                   |          | RC-039-CC06-B         |      |      |          |      | 0.11        |         |                    |
| 41-51   | ARB-032-042-AK3-W | AK3      | RC-041-CC09-B         | 30.5 | 23.5 | SH060200 | 16   | 0.18        | CC 09T3 | ST040100<br>TT-T20 |
| 50-60   |                   |          | RC-05060-CC09-B       |      |      |          |      | 0.19        |         |                    |
| 50-63   | ARB-041-054-AK4-W | AK4      | RC-05063-CC09-B       | 38.5 | 28.5 | SH080250 | 20   | 0.36        |         |                    |
| 61-74   |                   |          | RC-061-CC09-B         |      |      |          |      | 0.38        |         |                    |
| 65-82   | ARB-053-070-AK5-W | AK5      | RC-065-CC12-B         | 49.5 | 33.5 | SH100300 | 25.5 | 0.70        | CC 1204 | ST050120<br>TT-T20 |
| 78-95   |                   |          | RC-078-CC12-B         |      |      |          |      | 0.75        |         |                    |
| 80-102  | ARB-068-110-AK6-W | AK6      | RC-080-CC12-B         | 63   | 45.5 | SH100350 | 32.5 | 1.5         |         |                    |
| 100-122 |                   |          | RC-100-CC12-B         |      |      |          |      | 1.6         |         |                    |
| 98-126  | ARB-098-153-AK6-W | AK6      | RC-098-CC12-B         | 63   | 45.5 | SH120400 | 46.5 | 2.25        |         |                    |
| 125-153 |                   |          | RC-125-CC12-B         |      |      |          |      | 2.45        |         |                    |

● Back boring tool: please order tool body without cartridge, e.g.ARB-020-026-AK1-W, RC-020-CC06-B;

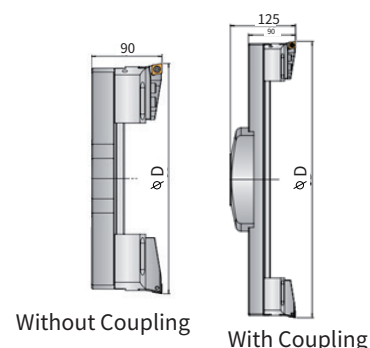
## MLR Series Large Diameter Rough Boring Tools

Diameter range  $\Phi 150-850\text{mm}$ ;  
Modular design, flexible on tool combination. Easy for handling.  
To reduce the tool weight, lightweight rough boring tool is available.

### Product code

MLR-\_\_-\_\_-\_\_-LD  
1 2 3 4

"1" Series name  
"2" Minimum boring diameter  
"3" Maximum boring diameter  
"4" LD means light weight, without LD means standard



### Standard (With Steel Boring Bridge)

| Dia range | Product code<br>(Tool body+cartridge) | Weight (Kg) | Coupling | Bridge     | Slider | Cartridge | Insert  |
|-----------|---------------------------------------|-------------|----------|------------|--------|-----------|---------|
| 150-210   | MLR-150-210                           | 5.5         | /        | BS-150-210 | RB-150 | RC-150    | CC_1204 |
| 210-290   | MLR-210-290                           | 6.7         |          | BS-210-290 |        |           |         |
| 290-370   | MLR-290-370                           | 8.1         |          | BS-290-370 |        |           |         |
| 370-450   | MLR-370-450                           | 9.8         |          | BS-370-450 |        |           |         |
| 450-530   | MLR-450-530                           | 11.4        |          | BS-450-530 |        |           |         |
| 530-610   | MLR-530-610                           | 17.2        | LP40-200 | BS-530-610 | RB-150 | RC-150    | CC_1204 |
| 610-690   | MLR-610-690                           | 18.7        |          | BS-610-690 |        |           |         |
| 690-770   | MLR-690-770                           | 20.4        |          | BS-690-770 |        |           |         |
| 770-850   | MLR-770-850                           | 22.7        |          | BS-770-850 |        |           |         |

### Lightweight (With Aluminium Boring Bridge)

| Dia range | Product code<br>(Tool body+cartridge) | Weight (Kg) | Coupling | Aluminium bridge | Slider | Cartridge | Insert  |
|-----------|---------------------------------------|-------------|----------|------------------|--------|-----------|---------|
| 150-210   | MLR-150-210-LD                        | 3.9         | /        | BS-150-210-LD    | RB-150 | RC-150    | CC_1204 |
| 210-290   | MLR-210-290-LD                        | 4.3         |          | BS-210-290-LD    |        |           |         |
| 290-370   | MLR-290-370-LD                        | 5           |          | BS-290-370-LD    |        |           |         |
| 370-450   | MLR-370-450-LD                        | 5.5         |          | BS-370-450-LD    |        |           |         |
| 450-530   | MLR-450-530-LD                        | 6           |          | BS-450-530-LD    |        |           |         |
| 530-610   | MLR-530-610-LD                        | 11.2        | LP40-200 | BS-530-610-LD    | RB-150 | RC-150    | CC_1204 |
| 610-690   | MLR-610-690-LD                        | 12          |          | BS-610-690-LD    |        |           |         |
| 690-770   | MLR-690-770-LD                        | 13.2        |          | BS-690-770-LD    |        |           |         |
| 770-850   | MLR-770-850-LD                        | 13.9        |          | BS-770-850-LD    |        |           |         |

● Tool body assembled with cartridges as standard package.

For the ideal axial runout, the inserts need to be indexed at the same time.

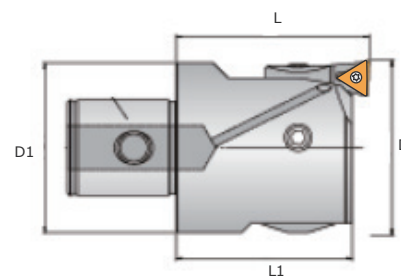
### AFB fine boring series

Diameter range  $\Phi 20-203\text{mm}$ ;  
Fine boring cartridge can be switched for different applications;

#### Product code

AFB-\_\_-\_\_-\_\_-AK\_-W  
1 2 3 4 5

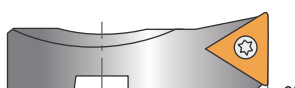
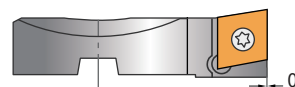
"1" Series name  
"2" Minimum boring diameter  
"3" Maximum boring diameter  
"4" Coupling size  
"5" "W" means without cartridge, without "W" means including A type of cartridge



| Product code<br>(Tool body+cartridge) | Coupling | Cartridge<br>(● Standard ○ Option) |   | Dia range | L    | L1   | D1 | Weight<br>(Kg) | Insert |        |
|---------------------------------------|----------|------------------------------------|---|-----------|------|------|----|----------------|--------|--------|
| AFB-020-036-AK1                       | AK1      | FCT-10A                            | ● | 20-26     | 32.5 | 30.5 | 19 | 0.07           | TP0802 | /      |
|                                       |          | FCT-10B                            | ○ | 25-31     |      |      |    |                |        |        |
|                                       |          | FCT-10C                            | ○ | 30-36     |      |      |    |                |        |        |
| AFB-025-047-AK2                       | AK2      | FCT-20A                            | ● | 25-33     | 35.5 | 33   | 24 | 0.12           |        |        |
|                                       |          | FCT-20B                            | ○ | 35-40     |      |      |    |                |        |        |
|                                       |          | FCT-20C                            | ○ | 39-47     |      |      |    |                |        |        |
| AFB-032-060-AK3                       | AK3      | FCT-30A                            | ● | 32-42     | 40   | 37   | 31 | 0.22           |        |        |
|                                       |          | FCT-30B                            | ○ | 41-51     |      |      |    |                |        |        |
|                                       |          | FCT-30C                            | ○ | 50-60     |      |      |    |                |        |        |
| AFB-041-074-AK4                       | AK4      | FCT-40A                            | ● | 41-54     | 47   | 43   | 40 | 0.42           | TC1102 | CC0602 |
|                                       |          | FCT-40B                            | ○ | 50-63     |      |      |    |                |        |        |
|                                       |          | FCT-40C                            | ○ | 61-74     |      |      |    |                |        |        |
| AFB-053-095-AK5                       | AK5      | FCT-50A                            | ● | 53-70     | 57   | 52   | 50 | 0.85           | TC1102 | CC0602 |
|                                       |          | FCT-50B                            | ○ | 65-82     |      |      |    |                |        |        |
|                                       |          | FCT-50C                            | ○ | 78-95     |      |      |    |                |        |        |
| AFB-068-150-AK6                       | AK6      | FCT-60A                            | ● | 68-100    | 71   | 67   | 64 | 1.85           |        |        |
|                                       |          | FCT-60B                            | ○ | 94-126    |      |      |    |                |        |        |
|                                       |          | FCT-60C                            | ○ | 118-150   |      |      |    |                |        |        |
| AFB-100-203-AK6                       | AK6      | FCT-60A                            | ● | 100-153   | 71   | 67   | 64 | 2.7            |        |        |
|                                       |          | FCT-60B                            | ○ | 126-179   |      |      |    |                |        |        |
|                                       |          | FCT-60C                            | ○ | 150-203   |      |      |    |                |        |        |
| AFB-100-203-AK7                       | AK7      | FCT-60A                            | ● | 100-153   | 87   | 83   | 90 | 4.05           |        |        |
|                                       |          | FCT-60B                            | ○ | 126-179   |      |      |    |                |        |        |
|                                       |          | FCT-60C                            | ○ | 150-203   |      |      |    |                |        |        |

- Tool body assembled with A type of boring cartridge as standard package.
- The minimum scale of adjustment range is 0.002mm on radial direction.
- Tool body and cartridge need to be ordered separately if B or C type of cartridge need to be used.  
Example: AFB-020-036-AK1-W and FCT-10B. Insert need to ordered separately.
- All AFB boring tool is with internal coolant.
- Regularly use grease for the internal lubrication to extend the boring holder tool life.

## Fine boring cartridge

|                                                                                     | Cartridge                                                                           | Tool body       | Diameter range(D) | Insert   | Screw & Wrench    |                    |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-----------------|-------------------|----------|-------------------|--------------------|
|    | FCT-10A                                                                             | AFB-020-036-AK1 | 20-26             | TP__0802 | ST020040<br>TT-T6 |                    |
|                                                                                     | FCT-10B                                                                             |                 | 25-31             |          |                   |                    |
|                                                                                     | FCT-10C                                                                             |                 | 30-36             |          |                   |                    |
|                                                                                     | FCT-20A                                                                             | AFB-025-047-AK2 | 25-33             |          |                   |                    |
|                                                                                     | FCT-20B                                                                             |                 | 35-40             |          |                   |                    |
|                                                                                     | FCT-20C                                                                             |                 | 39-47             |          |                   |                    |
|                                                                                     | FCT-30A                                                                             | AFB-032-060-AK3 | 32-42             |          |                   |                    |
|                                                                                     | FCT-30B                                                                             |                 | 41-51             |          |                   |                    |
|                                                                                     | FCT-30C                                                                             |                 | 50-60             |          |                   |                    |
|                                                                                     | FCT-40A                                                                             | AFB-041-074-AK4 | 41-54             | TC__1102 | ST025060<br>TT-T8 |                    |
|                                                                                     | FCT-40B                                                                             |                 | 50-63             |          |                   |                    |
|                                                                                     | FCT-40C                                                                             |                 | 61-74             |          |                   |                    |
|                                                                                     | FCT-50A                                                                             | AFB-053-095-AK5 | 53-70             |          |                   |                    |
|                                                                                     | FCT-50B                                                                             |                 | 65-82             |          |                   |                    |
|                                                                                     | FCT-50C                                                                             |                 | 78-95             |          |                   |                    |
|                                                                                     | FCT-60A                                                                             | AFB-068-150-AK6 | 68-153            |          |                   |                    |
|                                                                                     | FCT-60B                                                                             | AFB-100-203-AK6 | 94-179            |          |                   |                    |
|                                                                                     | FCT-60C                                                                             | AFB-100-203-AK7 | 118-203           |          |                   |                    |
|  | FCT-40A00                                                                           | AFB-041-074-AK4 | 41-54             | TC__1102 | ST025060<br>TT-T8 |                    |
|                                                                                     | FCT-50A00                                                                           | AFB-053-095-AK5 | 53-70             |          |                   |                    |
|                                                                                     | FCT-60A00                                                                           | AFB-068-150-AK6 | 68-100            |          |                   |                    |
|                                                                                     |                                                                                     | AFB-100-203-AK6 | 100-153           |          |                   |                    |
|                                                                                     |                                                                                     | AFB-100-203-AK7 | 100-153           |          |                   |                    |
|                                                                                     |  | FCC-40A00       | AFB-041-074-AK4   | 41-54    | CC__0602          | ST040100<br>TT-T15 |
| FCC-50A00                                                                           |                                                                                     | AFB-053-095-AK5 | 53-70             |          |                   |                    |
| FCC-60A00                                                                           |                                                                                     | AFB-068-150-AK6 | 68-100            | CC__09T3 |                   |                    |
|                                                                                     |                                                                                     | AFB-100-203-AK6 | 100-153           |          |                   |                    |
|                                                                                     |                                                                                     | AFB-100-203-AK7 | 100-153           |          |                   |                    |
|  |                                                                                     | FCT-40A45       | AFB-041-074-AK4   | 41-54    | TC__1102          |                    |
|                                                                                     | FCT-50A45                                                                           | AFB-053-095-AK5 | 53-70             |          |                   |                    |
|                                                                                     | FCT-60A45                                                                           | AFB-068-150-AK6 | 68-100            |          |                   |                    |
|                                                                                     |                                                                                     | AFB-100-203-AK6 | 100-153           |          |                   |                    |
|                                                                                     |                                                                                     | AFB-100-203-AK7 | 100-153           |          |                   |                    |
|                                                                                     |  | FCT-30A25       | AFB-032-060-AK3   | 32-42    | TP__0802          | ST020040<br>TT-T6  |
| FCT-40A25                                                                           |                                                                                     | AFB-041-074-AK4 | 41-54             |          |                   |                    |
| FCT-50A25                                                                           |                                                                                     | AFB-053-095-AK5 | 53-70             |          |                   |                    |
| FCT-60A25                                                                           |                                                                                     | AFB-068-150-AK6 | 68-100            | TC__1102 | ST025060<br>TT-T8 |                    |
|                                                                                     |                                                                                     | AFB-100-203-AK6 | 100-153           |          |                   |                    |
|                                                                                     |                                                                                     | AFB-100-203-AK7 | 100-153           |          |                   |                    |

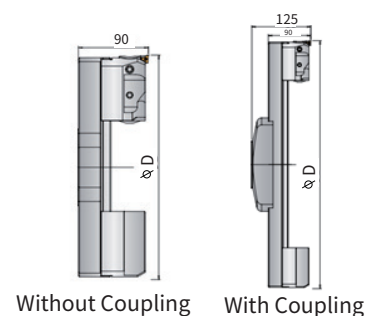
## MLF Series Large Diameter Fine Boring Tools

Diameter range  $\Phi 150-850\text{mm}$   
 Modular design, for both tool body balancing and machining precision.  
 Flexible on tool combination. Easy to use.  
 Including steel or Aluminium bridge.

### Product code

MLF- - - - -LD  
 1 2 3 4

"1" Series name  
 "2" Minimum boring diameter  
 "3" Maximum boring diameter  
 "4" "LD" means light weight, without "LD" means standard



Standard ( With Steel Boring Bridge)

| Dia range | Product code<br>(Tool body+cartridge) | Weight<br>(kg) | Coupling | Steel bridge | Slider | Balance<br>Block              | Cartridge                             | Insert   |
|-----------|---------------------------------------|----------------|----------|--------------|--------|-------------------------------|---------------------------------------|----------|
| 150-210   | MLF-150-210                           | 6.2            | /        | BS-150-210   | FB-150 | BB-150                        | FCT-60AStandard<br>FCT-60B<br>FCT-60C | TC__1102 |
| 210-290   | MLF-210-290                           | 7.5            |          | BS-210-290   |        | BB-200                        |                                       |          |
| 290-370   | MLF-290-370                           | 8.5            |          | BS-290-370   |        |                               |                                       |          |
| 370-450   | MLF-370-450                           | 10.2           |          | BS-370-450   |        |                               |                                       |          |
| 450-530   | MLF-450-530                           | 11.6           |          | BS-450-530   |        |                               |                                       |          |
| 530-610   | MLF-530-610                           | 17.5           | LP40-200 | BS-530-610   |        | FCC-60A<br>FCC-60B<br>FCC-60C | CC__09T3                              |          |
| 610-690   | MLF-610-690                           | 19             |          | BS-610-690   |        |                               |                                       |          |
| 690-770   | MLF-690-770                           | 20.8           |          | BS-690-770   |        |                               |                                       |          |
| 770-850   | MLF-770-850                           | 23             |          | BS-770-850   |        |                               |                                       |          |

Aluminium Boring Bridge

| Dia range | Product code<br>(Tool body+cartridge) | Weight<br>(kg) | Coupling | Aluminium<br>bridge | Slider | Balance<br>block              | Cartridge                             | Insert   |
|-----------|---------------------------------------|----------------|----------|---------------------|--------|-------------------------------|---------------------------------------|----------|
| 150-210   | MLF-150-210-LD                        | 4.6            | /        | BS-150-210-LD       | FB-150 | BB-150                        | FCT-60AStandard<br>FCT-60B<br>FCT-60C | TC__1102 |
| 210-290   | MLF-210-290-LD                        | 5.1            |          | BS-210-290-LD       |        | BB-200                        |                                       |          |
| 290-370   | MLF-290-370-LD                        | 5.5            |          | BS-290-370-LD       |        |                               |                                       |          |
| 370-450   | MLF-370-450-LD                        | 5.9            |          | BS-370-450-LD       |        |                               |                                       |          |
| 450-530   | MLF-450-530-LD                        | 6.2            |          | BS-450-530-LD       |        |                               |                                       |          |
| 530-610   | MLF-530-610-LD                        | 11.5           | LP40-200 | BS-530-610-LD       |        | FCC-60A<br>FCC-60B<br>FCC-60C | CC__09T3                              |          |
| 610-690   | MLF-610-690-LD                        | 12.3           |          | BS-610-690-LD       |        |                               |                                       |          |
| 690-770   | MLF-690-770-LD                        | 13.6           |          | BS-690-770-LD       |        |                               |                                       |          |
| 770-850   | MLF-770-850-LD                        | 14.2           |          | BS-770-850-LD       |        |                               |                                       |          |

- Tool body assembled with FCT-60A fine boring cartridge as standard package.
- Tool body and cartridge need to be ordered separately if FCT-60B or FCT-60C are needed.  
 Example: MLF-150-210-W and FCT-60B.
- Inserts need to be ordered separately.


**MLF big diameter series fine boring**

| Dia range | Bridge boring set | Cartridge (○Optional) |   |
|-----------|-------------------|-----------------------|---|
| 150-210   | MLF-150-210       | FC_-60A               | ○ |
| 176-236   |                   | FC_-60B               | ○ |
| 200-260   |                   | FC_-60C               | ○ |
| 210-290   | MLF-210-290       | FC_-60A               | ○ |
| 236-315   |                   | FC_-60B               | ○ |
| 260-340   |                   | FC_-60C               | ○ |
| 290-370   | MLF-290-370       | FC_-60A               | ○ |
| 316-396   |                   | FC_-60B               | ○ |
| 340-420   |                   | FC_-60C               | ○ |

| Dia range | Bridge boring set | Cartridge (○Optional) |   |
|-----------|-------------------|-----------------------|---|
| 370-450   | MLF-370-450       | FC_-60A               | ○ |
| 396-476   |                   | FC_-60B               | ○ |
| 420-500   |                   | FC_-60C               | ○ |
| 450-530   | MLF-450-530       | FC_-60A               | ○ |
| 476-556   |                   | FC_-60B               | ○ |
| 500-580   |                   | FC_-60C               | ○ |
| 530-610   | MLF-530-610       | FC_-60A               | ○ |
| 556-636   |                   | FC_-60B               | ○ |
| 580-660   |                   | FC_-60C               | ○ |

| Dia range | Bridge boring set | Cartridge (○Optional) |   |
|-----------|-------------------|-----------------------|---|
| 610-690   | MLF-610-690       | FC_-60A               | ○ |
| 636-716   |                   | FC_-60B               | ○ |
| 660-740   |                   | FC_-60C               | ○ |
| 610-770   | MLF-610-770       | FC_-60A               | ○ |
| 716-746   |                   | FC_-60B               | ○ |
| 740-820   |                   | FC_-60C               | ○ |
| 770-850   | MLF-770-850       | FC_-60A               | ○ |
| 796-876   |                   | FC_-60B               | ○ |
| 820-900   |                   | FC_-60C               | ○ |

## DFB Series Anti-Vibration Fine Boring

Mono-block Type

DFB-\_\_\_\_-\_\_\_\_-BT50-L\_\_\_\_

1 2 3 4 5

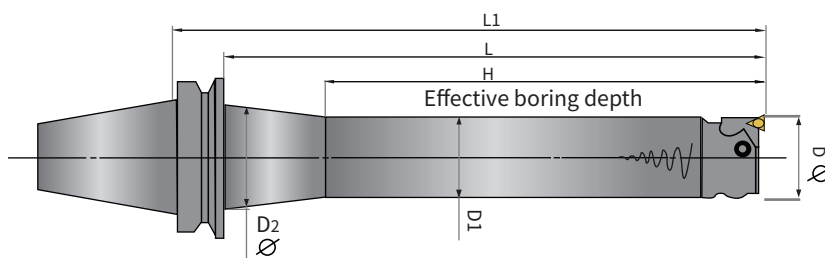
“1” Series name

“2” Minimum boring diameter

“3” Maximum boring diameter

“4” Shank size (BT50)

“5” Effective boring depth



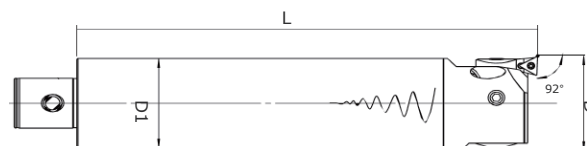
| Product code<br>(Tool body+cartridge) | Cartridge | Dia range | H   | L   | L1  | Weight<br>(Kg) | D1 | D2 | Insert |
|---------------------------------------|-----------|-----------|-----|-----|-----|----------------|----|----|--------|
| DFB-021-036-BT50-L130                 | FCT-10A   | 21-26     | 130 | 160 | 198 | 4.2            | 20 | 30 | TP0802 |
|                                       | FCT-10B   | 25-31     |     |     |     |                |    |    |        |
|                                       | FCT-10C   | 30-36     |     |     |     |                |    |    |        |
| DFB-021-036-BT50-L170                 | FCT-10A   | 21-26     | 170 | 200 | 238 | 4.4            |    |    |        |
|                                       | FCT-10B   | 25-31     |     |     |     |                |    |    |        |
|                                       | FCT-10C   | 30-36     |     |     |     |                |    |    |        |
| DFB-026-047-BT50-L165                 | FCT-20A   | 26-33     | 165 | 200 | 238 | 4.7            | 25 | 35 |        |
|                                       | FCT-20B   | 35-40     |     |     |     |                |    |    |        |
|                                       | FCT-20C   | 39-47     |     |     |     |                |    |    |        |
| DFB-026-047-BT50-L215                 | FCT-20A   | 26-33     | 215 | 250 | 288 | 4.9            |    |    |        |
|                                       | FCT-20B   | 35-40     |     |     |     |                |    |    |        |
|                                       | FCT-20C   | 39-47     |     |     |     |                |    |    |        |
| DFB-033-060-BT50-L210                 | FCT-30A   | 33-42     | 210 | 256 | 294 | 5.7            | 32 | 45 |        |
|                                       | FCT-30B   | 41-51     |     |     |     |                |    |    |        |
|                                       | FCT-30C   | 50-60     |     |     |     |                |    |    |        |
| DFB-033-060-BT50-L275                 | FCT-30A   | 33-42     | 275 | 320 | 358 | 6.1            |    |    |        |
|                                       | FCT-30B   | 41-51     |     |     |     |                |    |    |        |
|                                       | FCT-30C   | 50-60     |     |     |     |                |    |    |        |
| DFB-041-074-BT50-L260                 | FCT-40A   | 41-54     | 260 | 320 | 358 | 7.4            | 40 | 55 |        |
|                                       | FCT-40B   | 50-63     |     |     |     |                |    |    |        |
|                                       | FCT-40C   | 61-71     |     |     |     |                |    |    |        |
| DFB-041-074-BT50-L340                 | FCT-40A   | 41-54     | 340 | 400 | 438 | 8.2            |    |    |        |
|                                       | FCT-40B   | 50-63     |     |     |     |                |    |    |        |
|                                       | FCT-40C   | 61-71     |     |     |     |                |    |    |        |
| DFB-053-095-BT50-L325                 | FCT-50A   | 50-70     | 325 | 400 | 438 | 11             | 50 | 65 |        |
|                                       | FCT-50B   | 65-82     |     |     |     |                |    |    |        |
|                                       | FCT-50C   | 78-95     |     |     |     |                |    |    |        |
| DFB-053-095-BT50-L425                 | FCT-50A   | 50-70     | 425 | 500 | 538 | 12.4           |    |    |        |
|                                       | FCT-50B   | 65-82     |     |     |     |                |    |    |        |
|                                       | FCT-50C   | 78-95     |     |     |     |                |    |    |        |

| Product code<br>(Tool body+cartridge) | Cartridge | Dia range | H   | L   | L1  | Weight<br>(Kg) | D1 | D2 | Insert |
|---------------------------------------|-----------|-----------|-----|-----|-----|----------------|----|----|--------|
| DFB-068-150-BT50-L420                 | FCT-60A   | 68-100    | 420 | 512 | 550 | 18.9           | 64 | 80 | TC1102 |
|                                       | FCT-60B   | 94-126    |     |     |     |                |    |    |        |
|                                       | FCT-60C   | 118-150   |     |     |     |                |    |    |        |
| DFB-068-150-BT50-L550                 | FCT-60A   | 68-100    | 550 | 640 | 678 | 21.8           | 64 | 80 | TC1102 |
|                                       | FCT-60B   | 94-126    |     |     |     |                |    |    |        |
|                                       | FCT-60C   | 118-150   |     |     |     |                |    |    |        |
| DFB-100-203-BT50-L455                 | FCT-60A   | 100-153   | 455 | 560 | 598 | 24.2           | 70 | 85 | TC1102 |
|                                       | FCT-60B   | 126-179   |     |     |     |                |    |    |        |
|                                       | FCT-60C   | 150-203   |     |     |     |                |    |    |        |
| DFB-100-203-BT50-L595                 | FCT-60A   | 100-153   | 595 | 700 | 738 | 28.2           | 70 | 85 | TC1102 |
|                                       | FCT-60B   | 126-179   |     |     |     |                |    |    |        |
|                                       | FCT-60C   | 150-203   |     |     |     |                |    |    |        |

- Tool body assembled with FC\*-60A fine boring cartridge as standard package.
- Tool body and cartridge need to be ordered separately if FC\*-60B or FC\*-60C cartridge is needed.  
Example: DFB-021-036-BT50-L130-W and FC\*-60B.
- Inserts need to be ordered separately.

## ● DFB Series Anti-Vibration Fine Boring

Modular Type



| Product code<br>(Tool body+cartridge) | Cartridge | Dia range | Coupling | L   | D1 | Weight (Kg) | Insert(Option) |
|---------------------------------------|-----------|-----------|----------|-----|----|-------------|----------------|
| DFB-041-074-AK4-L165                  | FC*-40A   | 41-54     | AK4      | 165 | 40 | 2.2         | TC1102         |
|                                       | FC*-40B   | 50-63     |          |     |    |             |                |
|                                       | FC*-40C   | 61-71     |          |     |    |             |                |
| DFB-053-095-AK5-L235                  | FC*-50A   | 50-70     | AK5      | 235 | 50 | 4.7         |                |
|                                       | FC*-50B   | 65-82     |          |     |    |             |                |
|                                       | FC*-50C   | 78-95     |          |     |    |             |                |
| DFB-068-150-AK6-L252                  | FC*-60A   | 68-100    | AK6      | 252 | 63 | 8.9         |                |
|                                       | FC*-60B   | 94-126    |          |     |    |             |                |
|                                       | FC*-60C   | 118-150   |          |     |    |             |                |

- Tool body assembled with FC\*-60A fine boring cartridge as standard package.
- Tool body and cartridge need to be ordered separately if FC\*-60B or FC\*-60C cartridge is needed.  
Example: DFB-068-150-AK6-L252-W and FC\*-60B.
- Inserts need to be ordered separately.

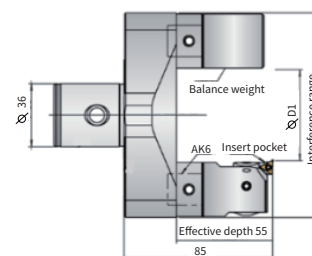
## ● EPB external fine boring series

 Diameter range  $\Phi 25$ -102mm

Modular design, for both tool body balancing and machining precision.

Flexible on tool combination. Easy to used.

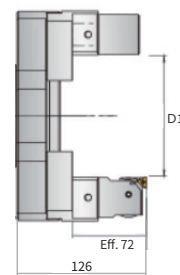
The spindle needs to rotate in anti-clockwise direction while external turning.



| D1     | Tool body                             |                |                  | Fine boring unit |                | Balance block   |                | Cartridge       | Insert    |      |         |      |                 |           |      |         |      |         |           |
|--------|---------------------------------------|----------------|------------------|------------------|----------------|-----------------|----------------|-----------------|-----------|------|---------|------|-----------------|-----------|------|---------|------|---------|-----------|
|        | Product code<br>(Tool body+cartridge) | Weight<br>(kg) | Coupling<br>size | Product code     | Weight<br>(kg) | Product<br>code | Weight<br>(kg) |                 |           |      |         |      |                 |           |      |         |      |         |           |
| 25-34  | EFB-025-052-AK6                       | 1.5            | 118              | AFB-032-060-AK3  | 0.22           | EB-AK32         | 0.22           | FCT-30C         | TP_ _0802 |      |         |      |                 |           |      |         |      |         |           |
| 34-43  |                                       |                |                  |                  |                |                 |                | FCT-30B         |           |      |         |      |                 |           |      |         |      |         |           |
| 43-52  |                                       |                |                  |                  |                |                 |                | FCT-30A         |           |      |         |      |                 |           |      |         |      |         |           |
| 50-59  | EFB-050-077-AK6                       | 1.8            | 143              |                  |                |                 |                | AFB-032-060-AK3 |           | 0.22 | EB-AK32 | 0.22 | FCT-30C         | TP_ _0802 |      |         |      |         |           |
| 59-68  |                                       |                |                  |                  |                |                 |                |                 |           |      |         |      | FCT-30B         |           |      |         |      |         |           |
| 68-77  |                                       |                |                  |                  |                |                 |                |                 |           |      |         |      | FCT-30A         |           |      |         |      |         |           |
| 75-84  | EFB-075-102-AK6                       | 1.9            | 168              |                  |                |                 |                |                 |           |      |         |      | AFB-032-060-AK3 |           | 0.22 | EB-AK32 | 0.22 | FCT-30C | TP_ _0802 |
| 84-93  |                                       |                |                  |                  |                |                 |                |                 |           |      |         |      |                 |           |      |         |      | FCT-30B |           |
| 93-102 |                                       |                |                  |                  |                |                 |                |                 |           |      |         |      |                 |           |      |         |      | FCT-30A |           |

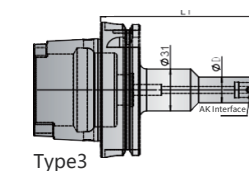
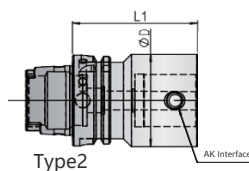
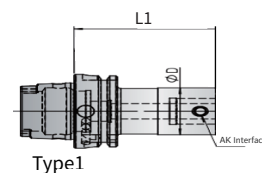
## EPB external fine boring series

Fine boring for big diameter



| Dia range | Coupling     |             | Boring bridge | Slider     | Fine boring unit | Cartridge | Insert  | Balance weight |
|-----------|--------------|-------------|---------------|------------|------------------|-----------|---------|----------------|
|           | Product code | Weight (Kg) |               |            |                  |           |         |                |
| 41-96     | /            | /           | BS-150-210    | EB-150-AK4 | AFB-041-074-AK4  | FCT-40A   | TC 1102 | EB-AK4         |
| 80-160    |              |             | BS-210-290    |            |                  |           |         |                |
| 160-240   |              |             | BS-290-370    |            |                  |           |         |                |
| 240-320   |              |             | BS-370-450    |            |                  |           |         |                |
| 320-400   |              |             | BS-450-530    |            |                  |           |         |                |
| 400-480   | LP40-200     | 4.7         | BS-530-610    |            |                  |           |         |                |
| 480-560   |              |             | BS-610-690    |            |                  |           |         |                |
| 560-640   |              |             | BS-690-770    |            |                  |           |         |                |
| 640-720   |              |             | BS-770-850    |            |                  |           |         |                |

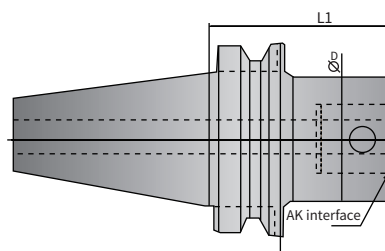
## HSK-A modular adaptor



| Product code    | Coupling | D  | L1  | Weight (Kg) | Type |
|-----------------|----------|----|-----|-------------|------|
| HSK-A63-AK1-75  | AK1      | 19 | 75  | 0.9         | 1    |
| HSK-A63-AK1-100 | AK1      | 19 | 100 | 1.3         | 1    |
| HSK-A63-AK2-85  | AK2      | 24 | 85  | 1.7         | 1    |
| HSK-A63-AK2-100 | AK2      | 24 | 100 | 2.2         | 1    |
| HSK-A63-AK3-95  | AK3      | 31 | 95  | 2.3         | 1    |
| HSK-A63-AK3-125 | AK3      | 31 | 125 | 2.6         | 1    |
| HSK-A63-AK4-85  | AK4      | 39 | 85  | 2.1         | 1    |
| HSK-A63-AK4-130 | AK4      | 39 | 130 | 2.7         | 1    |
| HSK-A63-AK5-75  | AK5      | 50 | 75  | 2.3         | 1    |
| HSK-A63-AK5-135 | AK5      | 50 | 135 | 2.8         | 1    |
| HSK-A63-AK6-75  | AK6      | 64 | 75  | 2.3         | 2    |
| HSK-A63-AK6-115 | AK6      | 64 | 115 | 2.8         | 2    |
| HSK-A63-AK6-165 | AK6      | 64 | 165 | 3.1         | 2    |

| Product code     | Coupling | D  | L1  | Weight(kg) | Type |
|------------------|----------|----|-----|------------|------|
| HSK-A100-AK1-105 | AK1      | 19 | 105 | 2.6        | 3    |
| HSK-A100-AK2-115 | AK2      | 24 | 115 | 2.7        | 1    |
| HSK-A100-AK3-125 | AK3      | 31 | 125 | 2.9        | 1    |
| HSK-A100-AK4-120 | AK4      | 39 | 120 | 3.1        | 1    |
| HSK-A100-AK4-180 | AK4      | 39 | 180 | 3.7        | 1    |
| HSK-A100-AK5-110 | AK5      | 50 | 110 | 3.5        | 1    |
| HSK-A100-AK5-185 | AK5      | 50 | 185 | 4.6        | 1    |
| HSK-A100-AK6-95  | AK6      | 64 | 95  | 3.6        | 1    |
| HSK-A100-AK6-170 | AK6      | 64 | 170 | 5.5        | 1    |
| HSK-A100-AK6-230 | AK6      | 64 | 230 | 7.1        | 1    |

BT modular adaptor

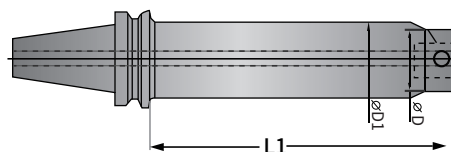


| Product code | Coupling | D  | L1 | Weight(kg) | Type |
|--------------|----------|----|----|------------|------|
| BT30-AK1-70  | AK1      | 19 | 70 | 0.5        | 2    |
| BT30-AK2-80  | AK2      | 24 | 80 | 0.6        | 2    |
| BT30-AK3-80  | AK3      | 31 | 80 | 0.7        | 2    |
| BT30-AK4-70  | AK4      | 39 | 70 | 0.8        | 2    |
| BT30-AK5-70  | AK5      | 50 | 70 | 0.8        | 2    |
| BT30-AK6-70  | AK6      | 64 | 70 | 1.2        | 2    |

 **BT modular adaptor**

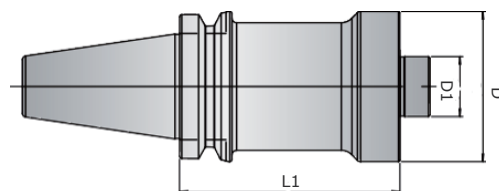
| Product code | Coupling | D  | L1  | Weight (kg) | Type |
|--------------|----------|----|-----|-------------|------|
| BT40-AK1-75  | AK1      | 19 | 75  | 1           | 2    |
| BT40-AK1-105 | AK1      | 19 | 105 | 1.2         | 2    |
| BT40-AK2-85  | AK2      | 24 | 85  | 1.1         | 2    |
| BT40-AK2-115 | AK2      | 24 | 115 | 1.4         | 2    |
| BT40-AK3-95  | AK3      | 31 | 95  | 1.2         | 2    |
| BT40-AK3-125 | AK3      | 31 | 125 | 1.5         | 2    |
| BT40-AK4-85  | AK4      | 39 | 85  | 1.3         | 2    |
| BT40-AK4-130 | AK4      | 39 | 130 | 1.9         | 2    |
| BT40-AK4-175 | AK4      | 39 | 175 | 2.2         | 2    |
| BT40-AK5-50  | AK5      | 50 | 50  | 1.2         | 2    |
| BT40-AK5-75  | AK5      | 50 | 75  | 1.3         | 2    |
| BT40-AK5-125 | AK5      | 50 | 125 | 2.4         | 2    |
| BT40-AK5-175 | AK5      | 50 | 175 | 3           | 2    |
| BT40-AK6-65  | AK6      | 64 | 65  | 1.3         | 2    |
| BT40-AK6-115 | AK6      | 64 | 115 | 2.7         | 2    |
| BT40-AK6-165 | AK6      | 64 | 165 | 3.9         | 2    |
| BT50-AK1-115 | AK1      | 19 | 115 | 4           | 1    |
| BT50-AK2-85  | AK2      | 24 | 85  | 3.8         | 2    |
| BT50-AK2-110 | AK2      | 24 | 110 | 3.9         | 2    |
| BT50-AK3-90  | AK3      | 31 | 90  | 3.9         | 2    |
| BT50-AK3-125 | AK3      | 31 | 125 | 4.1         | 2    |
| BT50-AK4-115 | AK4      | 39 | 115 | 4.3         | 2    |
| BT50-AK4-145 | AK4      | 39 | 145 | 4.5         | 2    |
| BT50-AK4-175 | AK4      | 39 | 175 | 4.8         | 2    |
| BT50-AK5-65  | AK5      | 50 | 65  | 3.9         | 2    |
| BT50-AK5-105 | AK5      | 50 | 105 | 4.5         | 2    |
| BT50-AK5-150 | AK5      | 50 | 150 | 5.1         | 2    |
| BT50-AK5-180 | AK5      | 50 | 180 | 5.5         | 2    |
| BT50-AK5-240 | AK5      | 64 | 240 | 6.2         | 2    |
| BT50-AK6-95  | AK6      | 64 | 95  | 4.5         | 2    |
| BT50-AK6-170 | AK6      | 64 | 170 | 6.3         | 2    |
| BT50-AK6-230 | AK6      | 64 | 230 | 7.7         | 2    |
| BT50-AK6-290 | AK6      | 64 | 290 | 9           | 2    |
| BT50-AK7-170 | AK7      | 90 | 170 | 6.1         | 2    |
| BT50-AK7-230 | AK7      | 90 | 230 | 11.8        | 2    |
| BT50-AK7-290 | AK7      | 90 | 290 | 14.6        | 2    |
| BT50-AK7-350 | AK7      | 90 | 350 | 17.4        | 2    |

BT modular reinforced adaptor



| Product code     | Coupling | D  | D1 | L1  | Weight (Kg) |
|------------------|----------|----|----|-----|-------------|
| BT50-AK4-190-P46 | AK4      | 39 | 46 | 190 | 5.6         |
| BT50-AK4-235-P48 | AK4      | 39 | 48 | 235 | 6.2         |
| BT50-AK5-240-P61 | AK5      | 50 | 61 | 240 | 8.2         |
| BT50-AK5-300-P61 | AK5      | 50 | 61 | 300 | 9.6         |
| BT50-AK6-260-P72 | AK6      | 64 | 72 | 260 | 10.3        |
| BT50-AK6-315-P72 | AK6      | 64 | 72 | 315 | 12.2        |
| BT50-AK6-290-P80 | AK6      | 64 | 80 | 290 | 13.2        |
| BT50-AK6-350-P80 | AK6      | 64 | 80 | 350 | 15.2        |

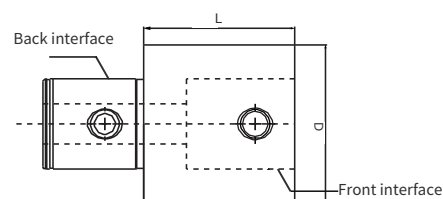
Boring adaptor



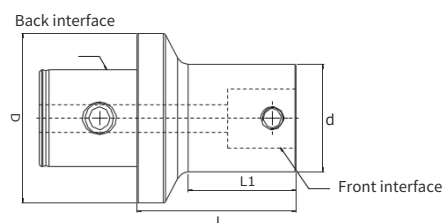
| Product code  | Coupling | D   | D1 | L1  | Screw    | Weight(kg) |
|---------------|----------|-----|----|-----|----------|------------|
| BT40-BA40-70  | BA40     | 100 | 40 | 70  | SH120350 | 2.8        |
| BT50-BA40-100 | BA40     | 100 | 40 | 100 |          | 6.1        |
| BT50-BA40-150 | BA40     | 100 | 40 | 150 |          | 7.9        |
| BT50-BA40-200 | BA40     | 100 | 40 | 200 |          | 9.7        |
| BT50-BA40-250 | BA40     | 100 | 40 | 250 |          | 10.9       |
| BT50-BA40-300 | BA40     | 100 | 40 | 300 |          | 12.5       |
| BT50-BA40-350 | BA40     | 100 | 40 | 350 |          | 13.9       |

HSK-A100 step boring tool

| Product code      | Coupling | D   | D1 | L1  | Screw    | Weight(kg) |
|-------------------|----------|-----|----|-----|----------|------------|
| HSK-A100-BA40-80  | BA40     | 100 | 40 | 80  | SH120350 | 5.1        |
| HSK-A100-BA40-150 | BA40     | 100 | 40 | 150 |          | 7.3        |

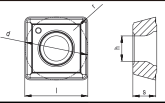
**Extention bar**


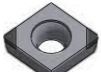
| Product code | Back coupling | Front coupling | D  | L   | Weight (Kg) |
|--------------|---------------|----------------|----|-----|-------------|
| AK11-30      | AK1           | AK1            | 19 | 30  | 0.07        |
| AK22-30      | AK2           | AK2            | 24 | 30  | 0.1         |
| AK33-30      | AK3           | AK3            | 31 | 30  | 0.15        |
| AK44-45      | AK4           | AK4            | 39 | 45  | 0.4         |
| AK44-60      | AK4           | AK4            | 39 | 60  | 0.53        |
| AK55-60      | AK5           | AK5            | 50 | 60  | 0.8         |
| AK55-90      | AK5           | AK5            | 50 | 90  | 1.25        |
| AK66-60      | AK6           | AK6            | 64 | 60  | 1.4         |
| AK66-100     | AK6           | AK6            | 64 | 100 | 2.33        |

**Reduction bar**


| Model   | Back coupling | Front coupling | D  | d  | L  | L1 | Weight (Kg) |
|---------|---------------|----------------|----|----|----|----|-------------|
| AK21-36 | AK2           | AK1            | 24 | 19 | 36 | 30 | 0.1         |
| AK31-41 | AK3           | AK1            | 31 | 19 | 41 | 30 | 0.15        |
| AK32-37 | AK3           | AK2            | 31 | 24 | 37 | 25 | 0.15        |
| AK41-58 | AK4           | AK1            | 39 | 19 | 58 | 40 | 0.3         |
| AK42-50 | AK4           | AK2            | 39 | 24 | 50 | 36 | 0.3         |
| AK43-50 | AK4           | AK3            | 39 | 31 | 50 | 37 | 0.35        |
| AK51-60 | AK5           | AK1            | 50 | 19 | 60 | 40 | 0.45        |
| AK52-54 | AK5           | AK2            | 50 | 24 | 54 | 35 | 0.45        |
| AK52-75 | AK5           | AK2            | 50 | 24 | 75 | 55 | 0.47        |
| AK53-47 | AK5           | AK3            | 50 | 31 | 47 | 29 | 0.5         |
| AK53-75 | AK5           | AK3            | 50 | 31 | 75 | 55 | 0.57        |
| AK54-42 | AK5           | AK4            | 50 | 39 | 42 | 25 | 0.5         |
| AK54-75 | AK5           | AK4            | 50 | 39 | 75 | 55 | 0.66        |
| AK61-70 | AK6           | AK1            | 64 | 19 | 70 | 40 | 0.9         |
| AK62-63 | AK6           | AK2            | 64 | 24 | 63 | 45 | 0.7         |
| AK62-90 | AK6           | AK2            | 64 | 24 | 90 | 72 | 0.72        |
| AK63-56 | AK6           | AK3            | 64 | 31 | 56 | 39 | 0.75        |
| AK63-90 | AK6           | AK3            | 64 | 31 | 90 | 73 | 0.88        |
| AK64-51 | AK6           | AK4            | 64 | 39 | 51 | 35 | 0.85        |
| AK64-90 | AK6           | AK4            | 64 | 39 | 90 | 75 | 1.08        |
| AK65-41 | AK6           | AK5            | 64 | 50 | 41 | 25 | 0.85        |
| AK65-90 | AK6           | AK5            | 64 | 50 | 90 | 74 | 1.45        |

● Boring insert

| Insert                                                                              | Product code     |  |           | Grade  |        |        |        |        |
|-------------------------------------------------------------------------------------|------------------|-----------------------------------------------------------------------------------|-----------|--------|--------|--------|--------|--------|
|                                                                                     |                  | l<br>(mm)                                                                         | r<br>(mm) | AP301U | AP301M | ACK15A | AW100K | AP100S |
|    | CCGT 060204F-NC2 | 6.45                                                                              | 0.4       |        |        |        | ●      |        |
|                                                                                     | 09T304F-NC2      | 9.67                                                                              | 0.4       |        |        |        | ●      |        |
|                                                                                     | 09T308F-NC2      | 9.67                                                                              | 0.8       |        |        |        | ●      |        |
|                                                                                     | 120404F-NC2      | 12.7                                                                              | 0.4       |        |        |        | ●      | ●      |
|    | CCMT 060204E-KC2 | 6.45                                                                              | 0.4       |        | ●      | ●      |        |        |
|                                                                                     | 09T304E-KC2      | 9.67                                                                              | 0.4       |        | ●      | ●      |        |        |
|                                                                                     | 09T308E-KC2      | 9.67                                                                              | 0.8       |        | ●      | ●      |        |        |
|                                                                                     | 120404E-KC2      | 12.7                                                                              | 0.4       |        | ○      | ●      |        |        |
|                                                                                     | 120408E-KC2      | 12.7                                                                              | 0.8       |        | ●      | ●      |        |        |
|                                                                                     | 120412E-KC2      | 12.7                                                                              | 1.2       |        | ○      | ●      |        |        |
|    | CCET 09T304FR-M  | 9.67                                                                              | <0.4      |        | ●      | ●      |        |        |
|                                                                                     | 09T304FL-M       | 9.67                                                                              | <0.4      |        | ●      | ●      |        |        |
|  | SCMT 09T304E-KC2 | 9.67                                                                              | 0.4       |        |        | ●      |        |        |
|                                                                                     | 09T308E-KC2      | 9.67                                                                              | 0.8       |        |        | ●      |        |        |
|                                                                                     | 120408E-KC2      | 12.7                                                                              | 0.8       |        |        | ●      |        |        |
|                                                                                     | 120412E-KC2      | 12.7                                                                              | 1.2       |        |        | ●      |        |        |
|  | TCGT 110204F-NC2 | 11                                                                                | 0.4       |        |        |        | ○      |        |
|  | TPEH 080202FL-F  | 08                                                                                | <0.2      |        | ○      |        |        |        |
|                                                                                     | 080204FL-F       | 08                                                                                | <0.4      |        | ○      |        |        |        |
|  | TCGT 110204E-UF  | 11                                                                                | 0.4       |        | ●      |        |        |        |
|                                                                                     | 110202F-UF       | 11                                                                                | 0.2       |        | ●      |        |        |        |

| Insert                                                                              | Product code            | r<br>(mm) | Grade |      |      |
|-------------------------------------------------------------------------------------|-------------------------|-----------|-------|------|------|
|                                                                                     |                         |           | PB30  | PB60 | PB90 |
|  | CCGW 060202-S01020-SL-2 | 0.2       | ●     | ●    | ●    |
|                                                                                     | CCGW 060204-S01020-SL-2 | 0.4       | ●     | ●    | ●    |
|                                                                                     | CCGW 060208-S01020-SL-2 | 0.8       | ●     | ●    | ●    |
|                                                                                     | CCGW 09T302-S01020-SL-2 | 0.2       | ●     | ●    | ●    |
|                                                                                     | CCGW 09T304-S01020-SL-2 | 0.4       | ●     | ●    | ●    |
|                                                                                     | CCGW 09T308-S01020-SL-2 | 0.8       | ●     | ●    | ●    |
|                                                                                     | CCGW 120402-S01020-SL-2 | 0.2       | ●     | ●    | ●    |
|                                                                                     | CCGW 120404-S01020-SL-2 | 0.4       | ●     | ●    | ●    |
|                                                                                     | CCGW 120408-S01020-SL-2 | 0.8       | ●     | ●    | ●    |
|                                                                                     | CCGW 120412-S01020-SL-2 | 1.2       | ●     | ●    | ●    |
|  | TPGW 080202-S01020-SL-3 | 0.2       | ●     | ●    | ●    |
|                                                                                     | TPGW 080204-S01020-SL-3 | 0.4       | ●     | ●    | ●    |
|                                                                                     | TPGW 110302-S01020-SL-3 | 0.2       | ●     | ●    | ●    |
|                                                                                     | TPGW 110304-S01020-SL-3 | 0.4       | ●     | ●    | ●    |