

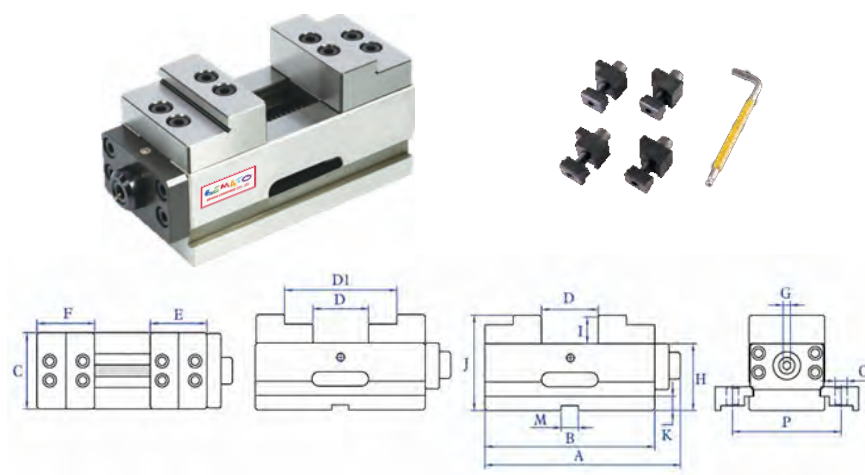
# B “ TOOLS OF WORKHOLDING & PRECISION TOOLS FOR MILLS & VMCS



## SELF-CENTERING VISE

### FEATURES:

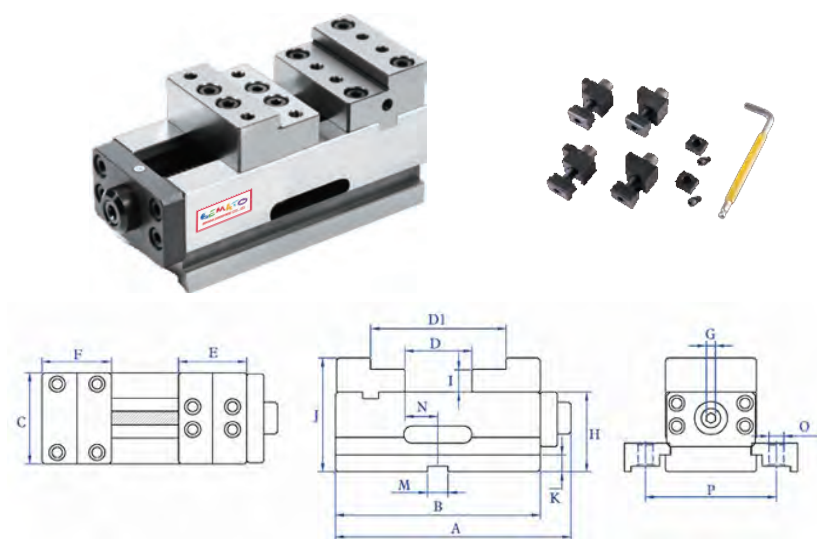
- Suitable to be used in 4 and 5 Axis CNC Rotary Table, either in horizontal or vertical machining.
- Vise body is made of high malleable iron FCD60, delicately designed structure, ensures working precision and enhances rigidity for long service life.
- Sliding surfaces are hardened to HRC 45°, flexible designed vise jaw is made by high quality steel and hardened HRC 50°



UNIT: mm

| ITEM NO. | A   | B   | C  | D  | D1  | E  | F  | G | H  | I  | J   | K  | M  | N  | O  | P   | WEIGHT |
|----------|-----|-----|----|----|-----|----|----|---|----|----|-----|----|----|----|----|-----|--------|
| 52172460 | 207 | 180 | 80 | 58 | 118 | 60 | 60 | 8 | 70 | 30 | 100 | 15 | 18 | 29 | 13 | 115 | 10 kgs |

- Suitable to be used in 4 and 5 Axis CNC Rotary Table, either in horizontal or vertical machining.
- Vise body is made of high malleable iron FCD60, delicately designed structure, ensures working precision and enhances rigidity for long service life.
- Sliding surfaces are hardened to HRC 45°, flexible designed vise jaw is made by high quality steel and hardened HRC 50°



UNIT: mm

| ITEM NO. | A   | B   | C  | D  | D1  | E  | F  | G | H  | I  | J   | K  | M  | N  | O  | P   | WEIGHT |
|----------|-----|-----|----|----|-----|----|----|---|----|----|-----|----|----|----|----|-----|--------|
| 52172461 | 207 | 180 | 80 | 58 | 118 | 60 | 60 | 8 | 70 | 30 | 100 | 15 | 18 | 29 | 13 | 115 | 8 kgs  |

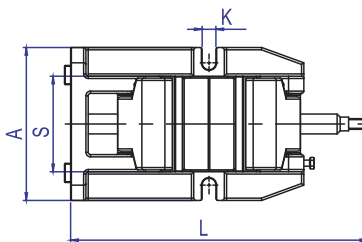
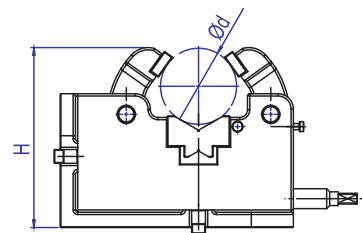


## SHAFT VISE

- Mechanical Vise for clamping of shaft.
- Suitable for horizontal and vertical applications.



- Alloy Steel Jaw which is flame hardened and precision ground ensures the accuracy.



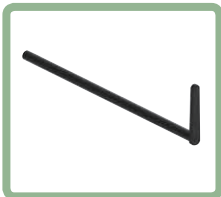
- The parallelism and squareness of slots beneath vise base are very precise. Vise can be quickly positioned and fixed on the machining tables.

- Hypercapnia Alloy Steel Jaw which is flame hardened to HRC52~56 and precision ground to ensure the accuracy.
- Two-way jaw design is able to clamp circular workpiece within  $\varnothing 10\sim 160$  mm.

### Standard Accessory



■ HANDLE



■ STOP DOG

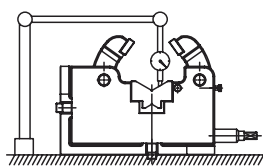
UNIT: mm

| ITEM NO. | S   | A   | H   | D   | K      | MAX. CLAMP. FORCE (kgs) | N.W. (kgs) |
|----------|-----|-----|-----|-----|--------|-------------------------|------------|
| 52172462 | 100 | 180 | 170 | 305 | 10 63  | 1000                    | 22         |
| 52172463 | 125 | 200 | 235 | 405 | 15~100 | 1500                    | 40         |
| 52172464 | 160 | 245 | 295 | 460 | 50~160 | 2000                    | 75         |

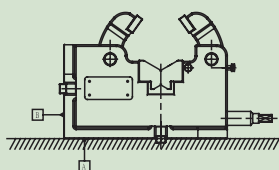
### Accuracy Inspection

#### INSPECTION ITEMS

#### TOLERANCE



Parallelism :  
V block to Vise bed  $\pm 0.05 / 100$  mm



Squareness :  
between A and B  $\pm 0.05 / 100$  mm



# B “ TOOLS OF WORKHOLDING & PRECISION TOOLS FOR MILLS & VMCS



## FREE VISE (FV/SV-TYPE)

### FEATURES:

- The clamping length is no limitation.
- Rigid and durable.



2pcs 1 set UNIT: mm

| ITEM NO. | DIMENSION (LxWxH) | WEIGHT   |
|----------|-------------------|----------|
| 52172468 | 169 x 75 x 77     | 7 kgs    |
| 52172469 | 210 x 102 x 90    | 12.5 kgs |
| 52172470 | 250 x 125 x 120   | 22 kgs   |

### FEATURES:

- The clamping length is no limitation.
- Rigid and durable.
- The material is special steel, and heat treated, precisely ground. The vise has a strong construction and a high precision.



UNIT: mm

| ITEM NO. | DIMENSION (LxWxH) | WEIGHT |
|----------|-------------------|--------|
| 52172465 | 138 x 62 x 60     | 8kgs   |
| 52172466 | 196 x 87 x 75     | 16kgs  |
| 52172467 | 220 x 125 x 98    | 25kgs  |



## MINI VISES

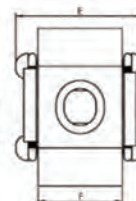
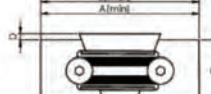
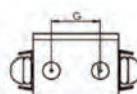
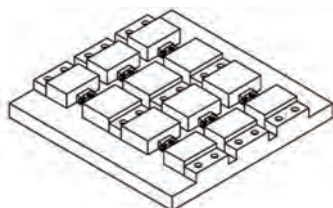
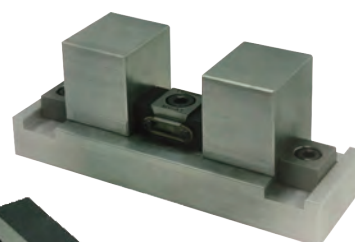
### FEATURES:

1. Mini-Vise reduces the time of changing other jig to cost down.
2. Mini-Vise applies to different platform.

### AUXILIARY:

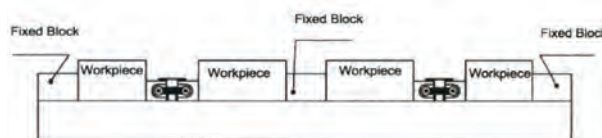
- Accuracy of JIG comes from the accuracy of fixed block, workpiece structure and diameter dowel pin(work origin), the JIG its clamping force at the central point is an auxiliary.

### V ILLUSTRATION FOR EXAMPLE



UNIT: mm

| ITEM NO. | A    | B    | C  | D   | E    | F  | G  |
|----------|------|------|----|-----|------|----|----|
| 52172471 | 24.5 | 26.5 | 11 | 1.5 | 21.5 | 15 |    |
| 52172472 | 39   | 43   | 15 | 1.5 | 32   | 21 | 12 |
| 52172473 | 45   | 51   | 22 | 3   | 37   | 30 | 18 |



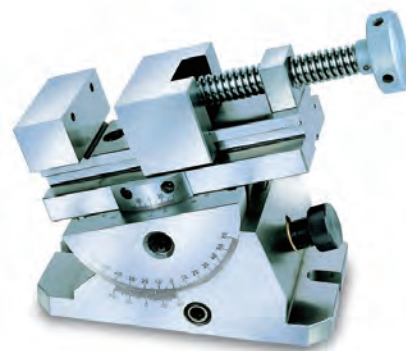


## PRECISION UNIVERSAL VISE

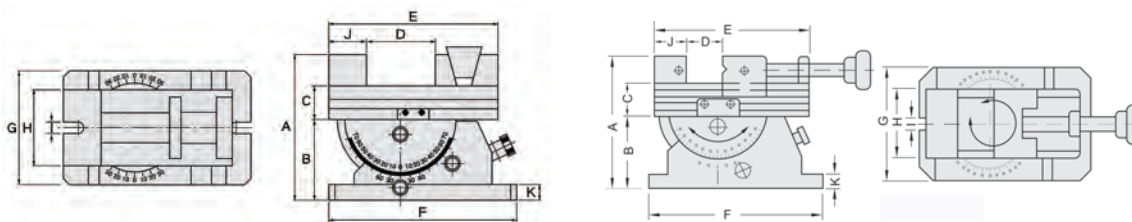
- Precision graduation for accurate reading.
- Horizontal swivel through 360°
- The unit tilts features make it well suited for flat or inclined surface to do angular drilling jobs on various machine tools such as precision surface grinders, boring and milling machines, electrical discharge machines etc.



▲ ITEM NO. 53100674



▲ ITEM NO. 53100222



UNIT: mm

| ITEM NO. | A   | B   | C  | D   | E   | F   | G   | H   | I    | J  | K  | N. W.  |
|----------|-----|-----|----|-----|-----|-----|-----|-----|------|----|----|--------|
| 53100222 | 137 | 75  | 32 | 80  | 160 | 180 | 110 | 70  | 12.5 | 32 | 15 | 14 kgs |
| 53100674 | 231 | 128 | 53 | 110 | 270 | 300 | 180 | 120 | 18   | 60 | 25 | 43 kgs |



B4 - VISES, TABLES, BLOCKS

TOOLS OF WORKHOLDING&PRECISION TOOLS FOR MILLS&VMCS

# B “ TOOLS OF WORKHOLDING & PRECISION TOOLS FOR MILLS & VMCS



## SUPER POWER FEEDS



▲ ITEM NO. 52150001~3

### TRANSFORMER

- For power source voltage of 220, 240, 380, 415, 440, 600V



▲ ITEM NO. 52150007

### FEATURES:

- The power feed is for driving table feeding of milling machines automatically or rapidly in 3 axes.
- Easy to install, no modification needed.
- Highly strengthened driving ZETEL gear.
- Built-in safety overload protection.



▲ ITEM NO. 52150008

- With one output (receptacle) for the application of one axis power feed.



◀ ITEM NO.  
52150009

- With two outputs (receptacle) for the application of 2 axis power feeds.

### FEATURES:

- Application: Suitable for Drilling/Milling Machine.
- Easy to install, no modification needed.
- Circuit panel is designed for easy replacement with insert type connectors.
- Built-in safety overload protection.

| ITEM NO. | FOR AXIS | SPEED RANGE                              | MAX. TORQUE  | VOLTAGE           | NET WEIGHT |
|----------|----------|------------------------------------------|--------------|-------------------|------------|
| 52150001 | X        | 0-160 MAX<br>160 R.P.M.                  | 780<br>IN-LB | 110V<br>50 / 60HZ | 5.8 kgs    |
| 52150002 | Y        |                                          |              |                   |            |
| 52150003 | Z        |                                          |              |                   |            |
| 52150007 |          | 0-270 R.P.M.<br>RAPID SPEED<br>270 R.P.M | 560<br>IN-LB | 110V<br>50 / 60HZ | 5.8 kgs    |



## POWER TABLE FEEDS



◀ ITEM NO.  
X:52171646  
Y:52171647  
Z:52171648



◀ ITEM NO.  
X:52171649  
Y:52171650  
Z:52171651



◀ ITEM NO.  
X:52171652  
Y:52171653  
Z:52171654

UNIT: mm

| ITEM NO.    | MODEL   | TYPE    | VOLTAGE    | AMPERE | R.P.M. | MAX. TORQUE<br>kg.cm | 1b.in | WEIGHT  | L x W x H       |
|-------------|---------|---------|------------|--------|--------|----------------------|-------|---------|-----------------|
| 52171646~48 | APF-500 | X, Y, Z | 110V, 60HZ | 2.8amp | 0-210  | 155                  | 135   | 5.9 kgs | 278 x 170 x 325 |
| 52171649~51 | APF-750 | X, Y, Z | 110V, 60HZ | 3.0amp | 0-210  | 175                  | 152   | 5.9 kgs | 278 x 170 x 325 |
| 52171652~54 | APF-950 | X, Y, Z | 110V, 60HZ | 3.4amp | 0-180  | 195                  | 170   | 5.9 kgs | 278 x 170 x 325 |



## GEAR TYPE POWER TABLE FEEDS



▲ ITEM NO. 52150055

- X AXIS



▲ ITEM NO. 52150056

- X AXIS: For longitudinal leadscrew inside of saddle.

◀ ITEM NO. 52150057

- Y AXIS



▲ ITEM NO. 52150058

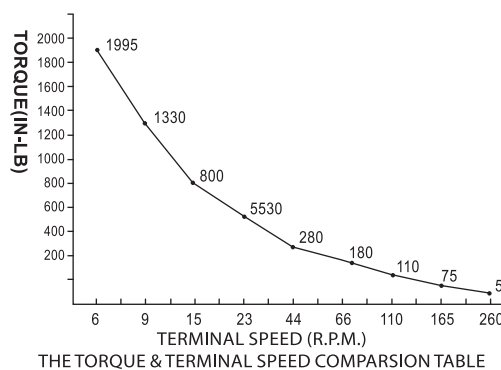
- Z AXIS  
Rapid feed only 825 mm/min.

### FEATURES:

- Gear transmission with high torque for heavy machining.
- Built-in overload clutch for protection gears.
- There are 8 automatic feeds, 30, 45, 75, 113, 218, 330, 548, 825 mm/min and rapid speed 1300 mm/min.

UNIT: mm

| ITEM NO. | SPEED RANGE (R.P.M.)                | MOTOR (HP) |
|----------|-------------------------------------|------------|
| 52150055 | 6, 9, 15, 23, 44, 66, 110, 165, 260 | 1/2        |
| 52150056 | 6, 9, 15, 23, 44, 66, 110, 165, 260 | 1/2        |
| 52150057 | 6, 9, 15, 23, 44, 66, 110, 165, 260 | 1/2        |
| 52150058 | 165                                 | 1/2        |



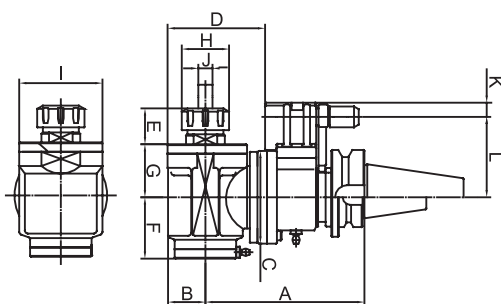
# B “ TOOLS OF WORKHOLDING & PRECISION TOOLS FOR MILLS & VMCS



## 90° ANGLE HEADS – AHA (BT-ER TYPE)

### FEATURES:

- The body is made of FCD60~65. High strength steel; stable machining.
- Wide selections of tool shanks. The design of ER32, ER40, and FA25.4 heads can be applied to various applications.
- Can be automatic tool changed. Increases productivity.
- Suitable for light and middle cutting.



- Concentricity: 0.002 mm
- Squareness: 10 Arc Second
- Material: FCD60~FCD65
- R.P.M: Max. 4000 RPM
- Gear Ratio: 1:0.81
- Spindle Type: BT, NT(ISO), SK, CAT, HSK
- Standard Accessory: Hook Spanner, ER Wrench, ER Nut



UNIT:mm

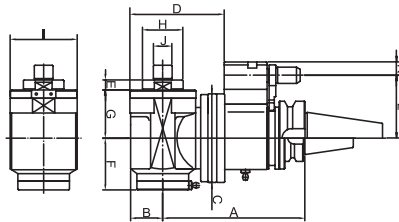
| ITEM NO. | MODEL           | A   | B    | C  | D   | E  | F  | G  | H  | I  | J    | K  | L             | N.W.<br>(kgs) |
|----------|-----------------|-----|------|----|-----|----|----|----|----|----|------|----|---------------|---------------|
| 52171656 | AHA-BT40-ER32   | 168 | 39.5 | 98 | 103 | 38 | 65 | 56 | 50 | 88 | 3~20 | 15 | 65 / 80 / 85  | 7.8           |
| 52171657 | AHA-BT50-ER32   | 171 | 39.5 | 98 | 103 | 38 | 65 | 56 | 50 | 88 | 3~20 | 15 | 80 / 85 / 110 | 9.5           |
| 52171659 | AHA-BT40-ER40   | 168 | 39.5 | 98 | 103 | 39 | 65 | 56 | 63 | 88 | 4~26 | 15 | 65 / 80 / 85  | 7.8           |
| 52171660 | AHA-BT50-ER40   | 171 | 39.5 | 98 | 103 | 39 | 65 | 56 | 63 | 88 | 4~26 | 15 | 80 / 85 / 110 | 9.5           |
| 52171663 | AHA-SK40-ER32   | 168 | 39.5 | 98 | 103 | 38 | 65 | 56 | 50 | 88 | 3~20 | 15 | 65 / 80 / 85  | 7.8           |
| 52171664 | AHA-SK50-ER32   | 171 | 39.5 | 98 | 103 | 38 | 65 | 56 | 50 | 88 | 3~20 | 15 | 80 / 85 / 110 | 9.5           |
| 52171665 | AHA-SK40-ER40   | 168 | 39.5 | 98 | 103 | 39 | 65 | 56 | 63 | 88 | 4~26 | 15 | 65 / 80 / 85  | 7.8           |
| 52171666 | AHA-SK50-ER40   | 171 | 39.5 | 98 | 103 | 39 | 65 | 56 | 63 | 88 | 4~26 | 15 | 80 / 85 / 110 | 9.5           |
| 52171667 | AHA-CAT40-ER32  | 168 | 39.5 | 98 | 103 | 38 | 65 | 56 | 50 | 88 | 3~20 | 15 | 65 / 80 / 85  | 7.8           |
| 52171668 | AHA-CAT50-ER32  | 171 | 39.5 | 98 | 103 | 38 | 65 | 56 | 50 | 88 | 3~20 | 15 | 80 / 85 / 110 | 9.5           |
| 52171669 | AHA-CAT40-ER40  | 168 | 39.5 | 98 | 103 | 39 | 65 | 56 | 63 | 88 | 4~26 | 15 | 65 / 80 / 85  | 7.8           |
| 52171670 | AHA-CAT50-ER40  | 171 | 39.5 | 98 | 103 | 39 | 65 | 56 | 63 | 88 | 4~26 | 15 | 80 / 85 / 110 | 9.5           |
| 52171671 | AHA-HSK63-ER32  | 175 | 39.5 | 98 | 103 | 38 | 65 | 56 | 50 | 88 | 3~20 | 15 | 65 / 80 / 85  | 7.8           |
| 52171672 | AHA-HSK100-ER32 | 178 | 39.5 | 98 | 103 | 38 | 65 | 56 | 50 | 88 | 3~20 | 15 | 80 / 85 / 110 | 7.8           |
| 52171673 | AHA-HSK63-ER40  | 175 | 39.5 | 98 | 103 | 39 | 65 | 56 | 63 | 88 | 4~26 | 15 | 65 / 80 / 85  | 9.5           |
| 52171674 | AHA-HSK100-ER40 | 178 | 39.5 | 98 | 103 | 39 | 65 | 56 | 63 | 88 | 4~26 | 15 | 80 / 85 / 110 | 9.5           |



## 90° ANGLE HEADS – AHA (BT-ER TYPE)

### FEATURES:

- The body is made of FCD60~65. High strength steel; stable machining.
- Wide selections of tool shanks. The design of ER32, ER40, and FA25.4 heads can be applied to various applications.
- Can be automatic tool changed. Increases productivity.
- Suitable for light and middle cutting.
- Concentricity: 0.002 mm
- Squareness: 10 Arc Second
- Material: FCD60~FCD65
- R.P.M.: Max. 4000 RPM
- Gear Ratio: 1:0.81
- Spindle Type: BT, NT(ISO), SK, CAT, HSK
- Standard Accessory: Open End Wrench



UNIT: mm

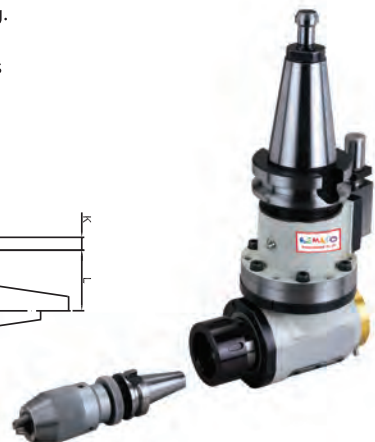
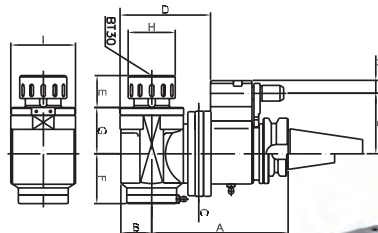
| ITEM NO. | MODEL             | A   | B    | C  | D   | E  | F  | G  | H  | I  | J    | K  | L             | N.W.<br>(kgs) |
|----------|-------------------|-----|------|----|-----|----|----|----|----|----|------|----|---------------|---------------|
| 52171675 | AHA-BT40-FA25.4   | 168 | 39.5 | 98 | 103 | 12 | 65 | 56 | 50 | 88 | 25.4 | 15 | 65 / 80 / 85  | 7.8           |
| 52171676 | AHA-BT50-FA25.4   | 171 | 39.5 | 98 | 103 | 12 | 65 | 56 | 50 | 88 | 25.4 | 15 | 80 / 85 / 110 | 9.5           |
| 52171678 | AHA-SK40-FA25.4   | 168 | 39.5 | 98 | 103 | 12 | 65 | 56 | 50 | 88 | 25.4 | 15 | 65 / 80 / 85  | 7.8           |
| 52171679 | AHA-SK50-FA25.4   | 171 | 39.5 | 98 | 103 | 12 | 65 | 56 | 50 | 88 | 25.4 | 15 | 80 / 85 / 110 | 9.5           |
| 52171680 | AHA-CAT40-FA25.4  | 168 | 39.5 | 98 | 103 | 12 | 65 | 56 | 50 | 88 | 25.4 | 15 | 65 / 80 / 85  | 7.8           |
| 52171681 | AHA-CAT50-FA25.4  | 171 | 39.5 | 98 | 103 | 12 | 65 | 56 | 50 | 88 | 25.4 | 15 | 80 / 85 / 110 | 9.5           |
| 52171682 | AHA-HSK63-FA25.4  | 175 | 39.5 | 98 | 103 | 12 | 65 | 56 | 50 | 88 | 25.4 | 15 | 65 / 80 / 85  | 7.8           |
| 52171683 | AHA-HSK100-FA25.4 | 178 | 39.5 | 98 | 103 | 12 | 65 | 56 | 50 | 88 | 25.4 | 15 | 80 / 85 / 110 | 9.5           |



## 90° ANGLE HEADS – AHB (BT-ER TYPE)

### FEATURES:

- The body is made of FCD 60~65. High strength steel; stable machining. Has the most excellent cutting ability among the other Angle Heads.
- The interfaces of ER40 and BT30 can be applied to various tool holders for wide range application.
- Can be automatic tool changed. Increases productivity.
- Concentricity: 0.002 mm
- Squareness: 10 Arc Second
- Material: FCD60~FCD65
- R.P.M: Max. 4000 RPM
- Gear Ratio: 1:0.96
- Spindle Type: BT, SK, CAT, HSK
- Standard Accessory: Hook Spanner, Open End Wrench, BT Nut



UNIT: mm

| ITEM NO. | MODEL           | A   | B    | C   | D     | E  | F  | G  | H  | I  | J  | L             | N.W.<br>(kgs) |
|----------|-----------------|-----|------|-----|-------|----|----|----|----|----|----|---------------|---------------|
| 52171684 | AHB-BT40-BT30   | 192 | 43.5 | 120 | 127.5 | 45 | 70 | 65 | 66 | 91 | 18 | 70 / 80 / 85  | 12.1          |
| 52171685 | AHB-BT50-BT30   | 195 | 43.5 | 120 | 127.5 | 45 | 70 | 65 | 66 | 91 | 18 | 80 / 85 / 110 | 14.7          |
| 52171686 | AHB-SK40-BT30   | 192 | 43.5 | 120 | 127.5 | 45 | 70 | 65 | 66 | 91 | 18 | 70 / 80 / 85  | 12.1          |
| 52171687 | AHB-SK50-BT30   | 195 | 43.5 | 120 | 127.5 | 45 | 70 | 65 | 66 | 91 | 18 | 80 / 85 / 110 | 14.7          |
| 52171688 | AHB-CAT40-BT30  | 192 | 43.5 | 120 | 127.5 | 45 | 70 | 65 | 66 | 91 | 18 | 70 / 80 / 85  | 12.1          |
| 52171689 | AHB-CAT50-BT30  | 195 | 43.5 | 120 | 127.5 | 45 | 70 | 65 | 66 | 91 | 18 | 80 / 85 / 110 | 14.7          |
| 52171690 | AHB-HSK63-BT30  | 206 | 43.5 | 120 | 127.5 | 45 | 70 | 65 | 66 | 91 | 18 | 70 / 80 / 85  | 12.1          |
| 52171691 | AHB-HSK100-BT30 | 202 | 43.5 | 120 | 127.5 | 45 | 70 | 65 | 66 | 91 | 18 | 80 / 85 / 110 | 14.7          |



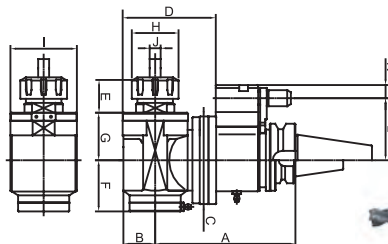
# B “ TOOLS OF WORKHOLDING & PRECISION TOOLS FOR MILLS & VMCS



## 90° ANGLE HEADS – AHB (BT-ER TYPE)

### FEATURES:

- The body is made of FCD 60~65, high strength steel; stable machining. Has the most excellent cutting ability among the other angle heads.
- The interfaces of ER40 and BT30 can be applied to various tool holders for wide range application.
- Can be automatic tool changed. Increases productivity.
- Concentricity: 0.002 mm
- Squareness: 10 Arc Second
- Material: FCD60~FCD65
- R.P.M.: Max. 4000 RPM
- Gear Ratio: 1: 0.96
- Spindle Type: BT, NT(ISO), SK, CAT, HSK
- Standard Accessory: Hook Spanner, ER Wrench, ER Nut



UNIT: mm

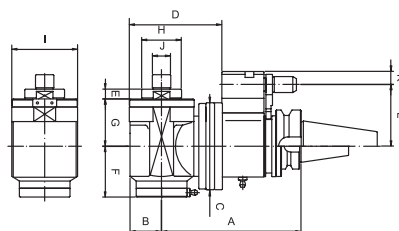
| ITEM NO. | MODEL           | A   | B    | C   | D     | E  | F  | G  | H  | I  | J    | K  | L             | N.W.<br>(kgs) |
|----------|-----------------|-----|------|-----|-------|----|----|----|----|----|------|----|---------------|---------------|
| 52171692 | AHB-BT40-ER40   | 192 | 43.5 | 120 | 127.5 | 41 | 70 | 65 | 63 | 91 | 4-26 | 18 | 70 / 80 / 85  | 12.1          |
| 52171693 | AHB-BT50-ER40   | 195 | 43.5 | 120 | 127.5 | 41 | 70 | 65 | 63 | 91 | 4-26 | 18 | 80 / 85 / 110 | 14.7          |
| 52171694 | AHB-SK40-ER40   | 192 | 43.5 | 120 | 127.5 | 41 | 70 | 65 | 63 | 91 | 4-26 | 18 | 70 / 80 / 85  | 12.1          |
| 52171695 | AHB-SK50-ER40   | 195 | 43.5 | 120 | 127.5 | 41 | 70 | 65 | 63 | 91 | 4-26 | 18 | 80 / 85 / 110 | 14.7          |
| 52171696 | AHB-CAT40-ER40  | 192 | 43.5 | 120 | 127.5 | 41 | 70 | 65 | 63 | 91 | 4-26 | 18 | 70 / 80 / 85  | 12.1          |
| 52171697 | AHB-CAT50-ER40  | 195 | 43.5 | 120 | 127.5 | 41 | 70 | 65 | 63 | 91 | 4-26 | 18 | 80 / 85 / 110 | 14.7          |
| 52171698 | AHB-HSK63-ER40  | 206 | 43.5 | 120 | 127.5 | 41 | 70 | 65 | 63 | 91 | 4-26 | 18 | 70 / 80 / 85  | 12.1          |
| 52171699 | AHB-HSK100-ER40 | 202 | 43.5 | 120 | 127.5 | 41 | 70 | 65 | 63 | 91 | 4-26 | 18 | 80 / 85 / 110 | 14.7          |



## 90° ANGLE HEADS – AHC (BT-ER TYPE)

### FEATURES:

- The body is made of FCD60~65. High strength steel; stable machining. Has the most excellent cutting ability among the other Angle Heads.
- The AHC series is suitable for firm and fast face milling.
- Can be automatic tool changed. Increases productivity.
- Concentricity: 0.002 mm
- Squareness: 10 Arc Second
- Material: FCD60 ~ FCD65
- R.P.M.: Max. 4000 RPM
- Gear Ratio: 1: 0.96
- Spindle Type: BT, SK, CAT, HSK
- Standard Accessory: Open End Wrench



UNIT: mm

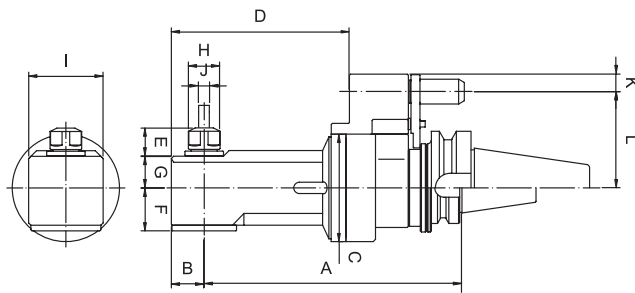
| ITEM NO. | MODEL             | A   | B    | C   | D     | E    | F  | G  | H  | I  | J    | K  | L             | N.W.<br>(kgs) |
|----------|-------------------|-----|------|-----|-------|------|----|----|----|----|------|----|---------------|---------------|
| 52171700 | AHC-BT40-FA25.4   | 192 | 43.5 | 120 | 127.5 | 13.5 | 70 | 65 | 55 | 91 | 25.4 | 18 | 65 / 80 / 85  | 12.1          |
| 52171701 | AHC-BT50-FA25.4   | 195 | 43.5 | 120 | 127.5 | 13.5 | 70 | 65 | 55 | 91 | 25.4 | 18 | 80 / 85 / 110 | 14.7          |
| 52171702 | AHC-SK40-FA25.4   | 192 | 43.5 | 120 | 127.5 | 13.5 | 70 | 65 | 55 | 91 | 25.4 | 18 | 65 / 80 / 85  | 12.1          |
| 52171703 | AHC-SK50-FA25.4   | 195 | 43.5 | 120 | 127.5 | 13.5 | 70 | 65 | 55 | 91 | 25.4 | 18 | 80 / 85 / 110 | 14.7          |
| 52171704 | AHC-CAT40-FA25.4  | 192 | 43.5 | 120 | 127.5 | 13.5 | 70 | 65 | 55 | 91 | 25.4 | 18 | 65 / 80 / 85  | 12.1          |
| 52171705 | AHC-CAT50-FA25.4  | 195 | 43.5 | 120 | 127.5 | 13.5 | 70 | 65 | 55 | 91 | 25.4 | 18 | 80 / 85 / 110 | 14.7          |
| 52171706 | AHC-HSK63-FA25.4  | 206 | 43.5 | 120 | 127.5 | 13.5 | 70 | 65 | 55 | 91 | 25.4 | 18 | 65 / 80 / 85  | 12.1          |
| 52171707 | AHC-HSK100-FA25.4 | 202 | 43.5 | 120 | 127.5 | 13.5 | 70 | 65 | 55 | 91 | 25.4 | 18 | 80 / 85 / 110 | 14.7          |



## MODULAR TYPE ANGLE HEADS – AHD (A1 –A3 TYPE)

### FEATURES:

- 6000 R.P.M high speed processing. Increases machining efficiency.
- Compact and longer body design is suitable for machining the deep-hole and deep-slot.
- Can be automatic tool changed. Increases productivity.



- Concentricity: 0.002 mm
- Squareness: 10 Arc Second
- Material: FCD60~FCD65
- R.P.M.: Max. 6000 RPM
- Gear Ratio: 1:1
- Spindle Type: BT, SK, CAT, HSK
- Standard Accessory: Hook Spanner, ER Wrench, ER Nut



| ITEM NO. | MODEL         | A   | B  | C  | D   | E    | F  | G  | H  | I  | J           | K    | L             | UNIT:mm       |
|----------|---------------|-----|----|----|-----|------|----|----|----|----|-------------|------|---------------|---------------|
|          |               |     |    |    |     |      |    |    |    |    |             |      |               | N.W.<br>(kgs) |
| 52171709 | AHD-BT40-A1   | 227 | 29 | 95 | 156 | 29.5 | 38 | 28 | 34 | 66 | 1~13 (ER20) | 15.5 | 65 / 80 / 85  | 8.4           |
| 52171710 | AHD-BT50-A1   | 238 | 29 | 95 | 156 | 29.5 | 38 | 28 | 34 | 66 | 1~13 (ER20) | 15.5 | 80 / 85 / 110 | 11            |
| 52171711 | AHD-SK40-A1   | 227 | 29 | 95 | 156 | 29.5 | 38 | 28 | 34 | 66 | 1~13 (ER20) | 15.5 | 65 / 80 / 85  | 8.1           |
| 52171712 | AHD-SK50-A1   | 238 | 29 | 95 | 156 | 29.5 | 38 | 28 | 34 | 66 | 1~13 (ER20) | 15.5 | 80 / 85 / 110 | 10.8          |
| 52171713 | AHD-CAT40-A1  | 227 | 29 | 95 | 156 | 29.5 | 38 | 28 | 34 | 66 | 1~13 (ER20) | 15.5 | 65 / 80 / 85  | 8.1           |
| 52171714 | AHD-CAT50-A1  | 238 | 29 | 95 | 156 | 29.5 | 38 | 28 | 34 | 66 | 1~13 (ER20) | 15.5 | 80 / 85 / 110 | 10.8          |
| 52171715 | AHD-HSK63-A1  | 248 | 29 | 95 | 156 | 29.5 | 38 | 28 | 34 | 66 | 1~13 (ER20) | 15.5 | 65 / 80 / 85  | 8.4           |
| 52171716 | AHD-HSK100-A1 | 244 | 29 | 95 | 156 | 29.5 | 38 | 28 | 34 | 66 | 1~13 (ER20) | 15.5 | 80 / 85 / 110 | 11            |
| 52171718 | AHD-BT40-A3   | 227 | 29 | 95 | 156 | 42   | 38 | 28 | 34 | 66 | 2~16 (ER25) | 15.5 | 65 / 80 / 85  | 8.4           |
| 52171719 | AHD-BT50-A3   | 238 | 29 | 95 | 156 | 42   | 38 | 28 | 34 | 66 | 2~16 (ER25) | 15.5 | 80 / 85 / 110 | 11            |
| 52171720 | AHD-SK40-A3   | 227 | 29 | 95 | 156 | 42   | 38 | 28 | 34 | 66 | 2~16 (ER25) | 15.5 | 65 / 80 / 85  | 8.1           |
| 52171721 | AHD-SK50-A3   | 238 | 29 | 95 | 156 | 42   | 38 | 28 | 34 | 66 | 2~16 (ER25) | 15.5 | 80 / 85 / 110 | 10.8          |
| 52171722 | AHD-CAT40-A3  | 227 | 29 | 95 | 156 | 42   | 38 | 28 | 34 | 66 | 2~16 (ER25) | 15.5 | 65 / 80 / 85  | 8.1           |
| 52171723 | AHD-CAT50-A3  | 238 | 29 | 95 | 156 | 42   | 38 | 28 | 34 | 66 | 2~16 (ER25) | 15.5 | 80 / 85 / 110 | 10.8          |
| 52171724 | AHD-HSK63-A3  | 248 | 29 | 95 | 156 | 42   | 38 | 28 | 34 | 66 | 2~16 (ER25) | 15.5 | 65 / 80 / 85  | 8.4           |
| 52171725 | AHD-HSK100-A3 | 244 | 29 | 95 | 156 | 42   | 38 | 28 | 34 | 66 | 2~16 (ER25) | 15.5 | 80 / 85 / 110 | 11            |



B5 - POWER FEEDS, ANGLE HEADS

TOOLS OF WORKHOLDING&PRECISION TOOLS FOR MILLS&VMCS

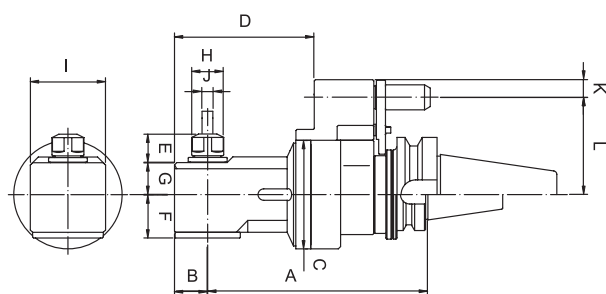
# B “ TOOLS OF WORKHOLDING & PRECISION TOOLS FOR MILLS & VMCS



## MODULAR TYPE ANGLE HEADS – AHD (A2-A4 TYPE)

### FEATURES:

- 6000 R.P.M high speed processing. Increases machining efficiency.
- Compact body design is the best tool for internal processing.
- Can be automatic tool changed. Increases productivity.



- Concentricity: 0.002 mm
- Squareness: 10 Arc Second
- Material: FCD60~FCD65
- R.P.M.: Max. 6000 RPM
- Gear Ratio: 1:1
- Spindle Type: BT, SK, CAT, HSK
- Standard Accessory: Hook Spanner, ER Wrench, ER Nut



UNIT: mm

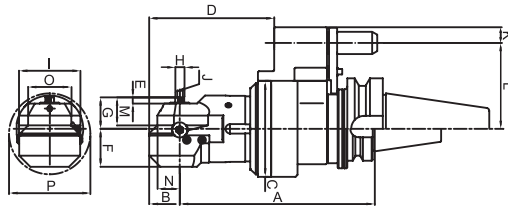
| ITEM NO. | MODEL         | A   | B  | C  | D   | E    | F  | G  | H  | I  | J           | K    | L             | N.W.<br>(kgs) |
|----------|---------------|-----|----|----|-----|------|----|----|----|----|-------------|------|---------------|---------------|
| 52171727 | AHD-BT40-A2   | 192 | 29 | 95 | 122 | 29.5 | 38 | 28 | 33 | 66 | 1~13 (ER20) | 15.5 | 65 / 80 / 85  | 7.2           |
| 52171728 | AHD-BT50-A2   | 203 | 29 | 95 | 122 | 29.5 | 38 | 28 | 33 | 66 | 1~13 (ER20) | 15.5 | 80 / 85 / 110 | 10            |
| 52171729 | AHD-SK40-A2   | 192 | 29 | 95 | 122 | 29.5 | 38 | 28 | 33 | 66 | 1~13 (ER20) | 15.5 | 65 / 80 / 85  | 6.9           |
| 52171730 | AHD-SK50-A2   | 203 | 29 | 95 | 122 | 29.5 | 38 | 28 | 33 | 66 | 1~13 (ER20) | 15.5 | 80 / 85 / 110 | 9.8           |
| 52171731 | AHD-CAT40-A2  | 192 | 29 | 95 | 122 | 29.5 | 38 | 28 | 33 | 66 | 1~13 (ER20) | 15.5 | 65 / 80 / 85  | 6.9           |
| 52171732 | AHD-CAT50-A2  | 203 | 29 | 95 | 122 | 29.5 | 38 | 28 | 33 | 66 | 1~13 (ER20) | 15.5 | 80 / 85 / 110 | 9.8           |
| 52171733 | AHD-HSK63-A2  | 213 | 29 | 95 | 122 | 29.5 | 38 | 28 | 33 | 66 | 1~13 (ER20) | 15.5 | 65 / 80 / 85  | 6.9           |
| 52171734 | AHD-HSK100-A2 | 209 | 29 | 95 | 122 | 29.5 | 38 | 28 | 33 | 66 | 1~13 (ER20) | 15.5 | 80 / 85 / 110 | 9.8           |
| 52171736 | AHD-BT40-A4   | 192 | 29 | 95 | 122 | 40   | 38 | 28 | 33 | 66 | 2~16 (ER25) | 15.5 | 65 / 80 / 85  | 7.2           |
| 52171737 | AHD-BT50-A4   | 203 | 29 | 95 | 122 | 40   | 38 | 28 | 33 | 66 | 2~16 (ER25) | 15.5 | 80 / 85 / 110 | 10            |
| 52171738 | AHD-SK40-A4   | 192 | 29 | 95 | 122 | 40   | 38 | 28 | 33 | 66 | 2~16 (ER25) | 15.5 | 65 / 80 / 85  | 6.9           |
| 52171739 | AHD-SK50-A4   | 203 | 29 | 95 | 122 | 40   | 38 | 28 | 33 | 66 | 2~16 (ER25) | 15.5 | 80 / 85 / 110 | 9.8           |
| 52171740 | AHD-CAT40-A4  | 192 | 29 | 95 | 122 | 40   | 38 | 28 | 33 | 66 | 2~16 (ER25) | 15.5 | 65 / 80 / 85  | 6.9           |
| 52171741 | AHD-CAT50-A4  | 203 | 29 | 95 | 122 | 40   | 38 | 28 | 33 | 66 | 2~16 (ER25) | 15.5 | 80 / 85 / 110 | 9.8           |
| 52171742 | AHD-HSK63-A4  | 213 | 29 | 95 | 122 | 40   | 38 | 28 | 33 | 66 | 2~16 (ER25) | 15.5 | 65 / 80 / 85  | 6.9           |
| 52171743 | AHD-HSK100-A4 | 209 | 29 | 95 | 122 | 40   | 38 | 28 | 33 | 66 | 2~16 (ER25) | 15.5 | 80 / 85 / 110 | 9.8           |



## MODULAR TYPE ANGLE HEADS – AHD (A5 TYPE)

### FEATURES:

- 6000 R.P.M high speed processing. Increases machining efficiency.
- Compact body design is the best tool for internal processing.
- Can be automatic tool changed. Increases productivity.



- Concentricity: 0.002 mm
- Squareness: 10 Arc Second
- Material: FCD60~FCD65
- R.P.M.: Max. 6000 RPM
- Gear Ratio: 1:1
- Spindle Type: BT, SK, CAT, HSK
- Standard Accessory: Open End Wrench

UNIT: mm

| ITEM NO. | MODEL         | A     | B  | C  | D   | E | F    | G  | H | I  |
|----------|---------------|-------|----|----|-----|---|------|----|---|----|
| 52171751 | AHD-HSK63-A5  | 211.5 | 30 | 95 | 123 | 6 | 37.5 | 25 | 9 | 60 |
| 52171752 | AHD-HSK100-A5 | 206.5 | 30 | 95 | 123 | 6 | 37.5 | 25 | 9 | 60 |

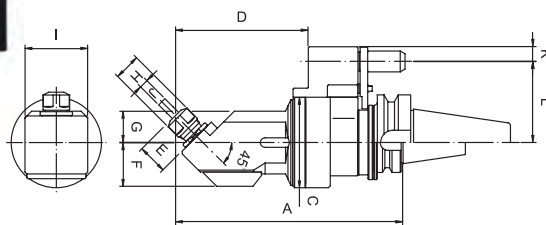
| ITEM NO. | J<br>(EC5) | K    | L             | M    | N  | O  | P  | N.W.<br>(kgs) |
|----------|------------|------|---------------|------|----|----|----|---------------|
| 52171751 | 0.6~5.5    | 15.5 | 65 / 80 / 85  | 21.5 | 22 | 44 | 77 | 6.8           |
| 52171752 | 0.6~5.5    | 15.5 | 80 / 85 / 110 | 21.5 | 22 | 44 | 77 | 9.6           |



## 45° ANGLE HEADS – AHD (BT-B1 TYPE)

### FEATURES:

- 6000 R.P.M high speed processing.
- The 45 degree design can be applied to 45 degree drilling, milling and curved surface processing.
- Can be automatic tool changed. Increases productivity.



- Concentricity: 0.002 mm
- Squareness: 10 Arc Second
- Material: FCD60~FCD65
- R.P.M.: Max. 6000 RPM
- Gear Ratio: 1:1
- Spindle Type: BT, SK, CAT, HSK
- Standard Accessory: Hook Spanner, ER Wrench, ER Nut

UNIT: mm

| ITEM NO. | MODEL         | A   | B  | C   | D  | E  | F  | G  | H  | I           | J    | K             | N.W.<br>(kgs) |
|----------|---------------|-----|----|-----|----|----|----|----|----|-------------|------|---------------|---------------|
| 52171760 | AHD-HSK63-B1  | 259 | 95 | 139 | 30 | 46 | 33 | 34 | 66 | 1~13 (ER20) | 15.5 | 65 / 85 / 80  | 7.1           |
| 52171761 | AHD-HSK100-B1 | 255 | 95 | 139 | 30 | 46 | 33 | 34 | 66 | 1~13 (ER20) | 15.5 | 80 / 85 / 110 | 10            |



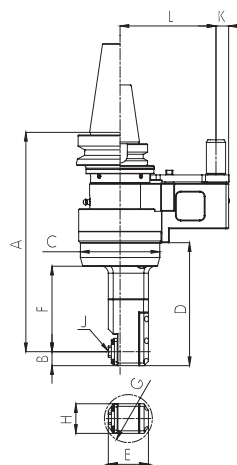
# B “ TOOLS OF WORKHOLDING & PRECISION TOOLS FOR MILLS & VMCS



## MODULAR ANGLE HEADS – SLIM AHD (BT-C1 TYPE)

- 6000 rpm high speed processing, Increases machining efficiency.
- Compact and longer body design is suitable for the deep-hole and deep-slot machining application.
- Can be automatic tool changed, and increases productivity.
- Cutting direction can be adjusted from 0~360 degree.

- Run-out: 0.002 mm
- Material: Alloy Steel & Ductile Cast Iron
- R.P.M: Max. 4000 RPM
- Torque: Max. 8 Nm
- Gear Ratio: 1:1
- Spindle Type: BT, CAT (ISO), SK
- Standard Accessory: Open End Wrench, L Type Wrench
- Output Rotation: Same as input Rotation

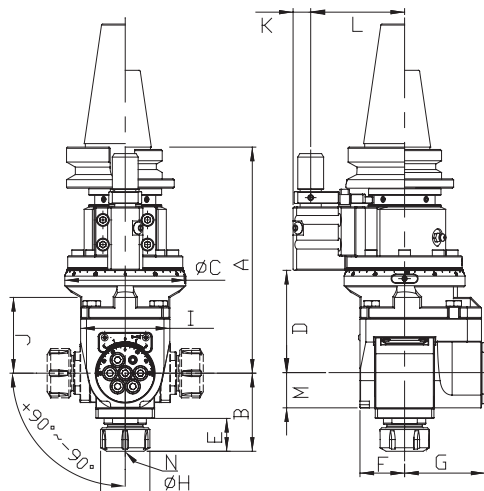


UNIT: mm

| ITEM NO. | MODEL        | A     | B  | C  | D   | E  | F  | G  | H  | J          | K    | L            | N.W. (kgs) |
|----------|--------------|-------|----|----|-----|----|----|----|----|------------|------|--------------|------------|
| 52172480 | AHD-BT40-C1  | 240.5 | 16 | 91 | 141 | 46 | 98 | 50 | 34 | 2~6 (DC 6) | 14.5 | 65/80/85/110 | 6          |
| 52172481 | AHD-BT50-C1  | 251.5 | 16 | 91 | 141 | 46 | 98 | 50 | 34 | 2~6 (DC 6) | 14.5 | 80/85/110    | 8.7        |
| 52172482 | AHD-SK40-C1  | 240.5 | 16 | 91 | 141 | 46 | 98 | 50 | 34 | 2~6 (DC 6) | 14.5 | 65/80/85/110 | 6          |
| 52172483 | AHD-SK50-C1  | 251.5 | 16 | 91 | 141 | 46 | 98 | 50 | 34 | 2~6 (DC 6) | 14.5 | 80/85/110    | 8.7        |
| 52172484 | AHD-CAT40-C1 | 240.5 | 16 | 91 | 141 | 46 | 98 | 50 | 34 | 2~6 (DC 6) | 14.5 | 65/80/85/110 | 6          |
| 52172485 | AHD-CAT50-C1 | 251.5 | 16 | 91 | 141 | 46 | 98 | 50 | 34 | 2~6 (DC 6) | 14.5 | 80/85/110    | 8.7        |



## UNIIVERSAL ANGLE HEADS – AHG (A1 TYPE)



### FEATURES:

- Cutting angle can be set from 0 to 90 degree for various applications.
- Compact design provides extra strength, oil-proof, dust-proof, and duration.
- Can be automatic tool changed. Increases productivity.

- Run-out: 0.002 mm
- Material: FCD60~FCD65
- R.P.M.: Max. 4000 RPM
- Gear Ratio: 1:1
- Spindle Type: BT, NT(ISO), SK, CAT
- Standard Accessory: Open end wrench ER wrench, ER nut.

UNIT: mm

| ITEM NO. | MODEL       | A     | B    | C   | D    | E  | F  | G    | H  | I  | J    | K  | L           | M    | N           | N.W. (kgs) |
|----------|-------------|-------|------|-----|------|----|----|------|----|----|------|----|-------------|------|-------------|------------|
| 52171762 | AHG-BT40-A1 | 184.5 | 66.5 | 103 | 87.6 | 28 | 38 | 68.5 | 42 | 76 | 64.5 | 15 | 65 / 80/85  | 29.5 | 2~16 (ER25) | 9          |
| 52171763 | AHG-BT50-A1 | 195   | 66.5 | 103 | 87.6 | 28 | 38 | 68.5 | 42 | 76 | 64.5 | 15 | 80 / 85/110 | 29.5 | 2~16 (ER25) | 11.5       |

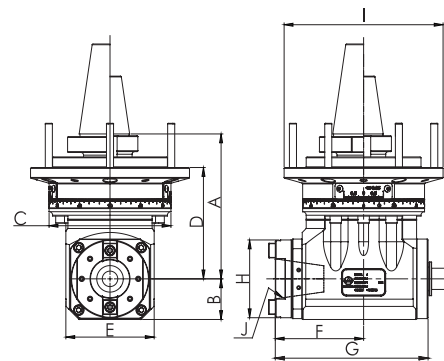


## HEAVY DUTY ANGLE HEADS

### AHK-A1 TYPE

- The output interface of BT40 ensures wide-range application with various BT40 tool holders.
- Mount directly on the machine spindle surface. Rugged body construction for heavy duty cutting.
- Interchangeable among same taper machines by changing the mounting plate.
- Hardened precision spiral bevel gears ensure stable performance with long service life.
- Cutting direction can be adjusted from 0 ~ 360 degree.

|                           |                                        |
|---------------------------|----------------------------------------|
| <b>Run-out</b>            | 0.002 mm                               |
| <b>Material</b>           | Ductile Cast Iron                      |
| <b>R.P.M.</b>             | Max. 2500 RPM (Ground Gear : 4000 RPM) |
| <b>Torque</b>             | Max. 100 Nm                            |
| <b>Gear Ratio</b>         | 1 : 1                                  |
| <b>Spindle Type</b>       | BT, SK(ISO), CAT                       |
| <b>Standard Accessory</b> | Open End Wrench, L Type Wrench         |
| <b>Output Rotation</b>    | Reverse to Input Rotation              |



| UNIT: mm |               |     |    |     |     |     |     |       |    |          |           |
|----------|---------------|-----|----|-----|-----|-----|-----|-------|----|----------|-----------|
| ITEM NO. | MODEL         | A   | B  | C   | D   | E   | F   | G     | H  | J        | N.W (kgs) |
| 52172486 | AHK-BT40-A1G  | 164 | 46 | 138 | 126 | 100 | 100 | 173.5 | 89 | 180 BT40 | 17.3      |
| 52172487 | AHK-BT50-A1G  | 164 | 46 | 138 | 126 | 100 | 100 | 173.5 | 89 | 180 BT40 | 20        |
| 52172488 | AHK-SK40-A1G  | 164 | 46 | 138 | 126 | 100 | 100 | 193   | 88 | 180 BT40 | 17.3      |
| 52172489 | AHK-SK50-A1G  | 164 | 46 | 138 | 126 | 100 | 100 | 193   | 88 | 180 BT40 | 20        |
| 52172490 | AHK-CAT40-A1G | 164 | 46 | 138 | 126 | 100 | 100 | 193   | 88 | 180 BT40 | 17.3      |
| 52172491 | AHK-CAT50-A1G | 164 | 46 | 138 | 126 | 100 | 100 | 193   | 88 | 180 BT40 | 20        |

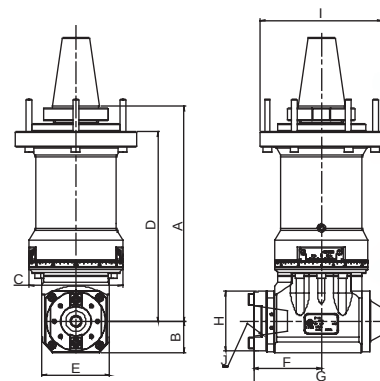


## HEAVY DUTY ANGLE HEADS – LONGER

### AHK-A2 TYPE

- The output interface of BT40 ensures wide-range application with various BT40 tool holders.
- Mount directly on the machine spindle surface.
- Rugged body construction for heavy duty cutting.
- Interchangeable among same taper machines by changing the mounting plate.
- Hardened precision spiral bevel gears ensure stable performance with long service life.
- Cutting direction can be adjusted from 0 ~ 360 degree.

|                           |                                |
|---------------------------|--------------------------------|
| <b>Run-out</b>            | 0.002 mm Material              |
| <b>Material</b>           | Ductile Cast Iron              |
| <b>R.P.M.</b>             | Max. 4000 RPM                  |
| <b>Torque</b>             | Max. 100 Nm                    |
| <b>Gear Ratio</b>         | 1 : 1                          |
| <b>Spindle Type</b>       | BT, SK(ISO), CAT               |
| <b>Standard Accessory</b> | Open End Wrench, L Type Wrench |
| <b>Output Rotation</b>    | Reverse to Input Rotation      |



| Output Notation |               |     |    |     |     |     |     |     |    |     |      | Reverse to Input Notation | UNIT: mm |
|-----------------|---------------|-----|----|-----|-----|-----|-----|-----|----|-----|------|---------------------------|----------|
| ITEM NO.        | MODEL         | A   | B  | C   | D   | E   | F   | G   | H  | I   | J    | N.W (kgs)                 |          |
| 52172492        | AHK-BT40-A2G  | 318 | 46 | 138 | 280 | 100 | 100 | 193 | 88 | 180 | BT40 | 30.9                      |          |
| 52172493        | AHK-BT50-A2G  | 318 | 46 | 138 | 280 | 100 | 100 | 193 | 88 | 180 | BT40 | 33.6                      |          |
| 52172494        | AHK-SK40-A2G  | 318 | 46 | 138 | 280 | 100 | 100 | 193 | 88 | 180 | BT40 | 30.9                      |          |
| 52172495        | AHK-SK50-A2G  | 318 | 46 | 138 | 280 | 100 | 100 | 193 | 88 | 180 | BT40 | 33.6                      |          |
| 52172496        | AHK-CAT40-A2G | 318 | 46 | 138 | 280 | 100 | 100 | 193 | 88 | 180 | BT40 | 30.9                      |          |
| 52172497        | AHK-CAT50-A2G | 318 | 46 | 138 | 280 | 100 | 100 | 193 | 88 | 180 | BT40 | 33.6                      |          |



# B “ TOOLS OF WORKHOLDING & PRECISION TOOLS FOR MILLS & VMCS

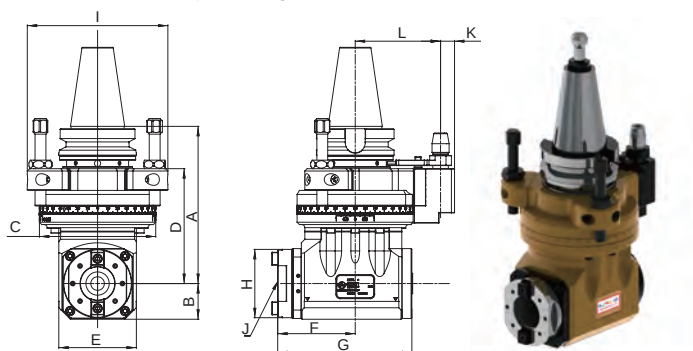


## MULTI-BLOCK ANGLE HEADS – BT

### AHK-B1 TYPE

- The output interface of BT40 ensures wide-range application with various BT40 tool holder.
- Hardened precision spiral bevel gears ensure stable performance with long service life.
- Cutting direction can be adjusted from 0 ~ 360 degree.
- Multi-block support system improves working rigidity and stability.
- The automatic disengagement and engagement of Angle
- Head can be easily operated on the base of table and improve efficiency.
- Rugged Alloy Steel body construction with compact design.

|                           |                                   |
|---------------------------|-----------------------------------|
| <b>Run-out</b>            | 0.002 mm                          |
| <b>Material</b>           | Alloy Steel & Ductile Cast Iron   |
| <b>R.P.M.</b>             | Max. 4000 RPM                     |
| <b>Torque</b>             | Max. 60 Nm                        |
| <b>Gear Ratio</b>         | 1 : 1                             |
| <b>Spindle Type</b>       | BT, SK, CAT                       |
| <b>Standard Accessory</b> | Open End Wrench<br>L Type Wrench, |
| <b>Output Rotation</b>    | Reverse to Input Rotation         |



UNIT: mm

| ITEM NO. | MODEL        | A     | B  | C   | D   | E   | F   | G   | H  | I   | J    | K  | L   | N.W (kgs) |
|----------|--------------|-------|----|-----|-----|-----|-----|-----|----|-----|------|----|-----|-----------|
| 52172498 | AHK-BT50-B1  | 202.5 | 46 | 150 | 148 | 100 | 100 | 193 | 88 | 239 | T40  | 18 | 110 | 22.5      |
| 52172499 | AHK-SK50-B1  | 202.5 | 46 | 150 | 148 | 100 | 100 | 193 | 88 | 239 | BT40 | 18 | 110 | 22.5      |
| 52172500 | AHK-CAT50-B1 | 202.5 | 46 | 150 | 148 | 100 | 100 | 193 | 88 | 239 | BT40 | 18 | 110 | 22.5      |

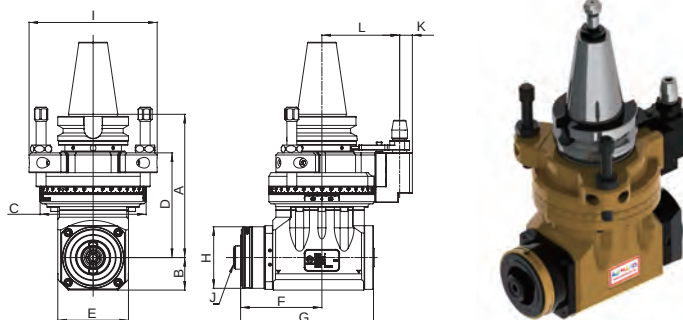


## MULTI-BLOCK ANGLE HEADS – HSK

### AHK-B2 TYPE

- The output interface of HSK63 ensures wide-range application with various HSK63 tool holders.
- Rugged Alloy Steel body construction with compact design.
- Hardened precision spiral bevel gears ensure stable performance with long service life.
- Cutting direction can be adjusted from 0 ~ 360 degree.
- Multi-block support system improves working rigidity and stability.
- The automatic disengagement and engagement of Angle
- Head can be easily operated on the base of table and improve efficiency.

|                           |                                   |
|---------------------------|-----------------------------------|
| <b>Run-out</b>            | 0.002 mm                          |
| <b>Material</b>           | Alloy Steel                       |
| <b>R.P.M.</b>             | Max. 4000 RPM                     |
| <b>Torque</b>             | Max. 60 Nm                        |
| <b>Gear Ratio</b>         | 1 : 1                             |
| <b>Spindle Type</b>       | BT, SK(ISO), CAT                  |
| <b>Standard Accessory</b> | Open End Wrench<br>L Type Wrench, |
| <b>Output Rotation</b>    | Reverse to Input Rotation         |



UNIT: mm

| ITEM NO. | MODEL        | A     | B  | C   | D   | E   | F   | G   | H  | I   | J     | K  | L   | N.W (kgs) |
|----------|--------------|-------|----|-----|-----|-----|-----|-----|----|-----|-------|----|-----|-----------|
| 52172501 | AHK-BT50-B2  | 202.5 | 46 | 150 | 148 | 100 | 115 | 208 | 87 | 239 | HSK63 | 18 | 110 | 23.4      |
| 52172502 | AHK-SK50-B2  | 202.5 | 46 | 150 | 148 | 100 | 115 | 208 | 87 | 239 | HSK63 | 18 | 110 | 23.4      |
| 52172503 | AHK-CAT50-B2 | 202.5 | 46 | 150 | 148 | 100 | 115 | 208 | 87 | 239 | HSK63 | 18 | 110 | 23.4      |

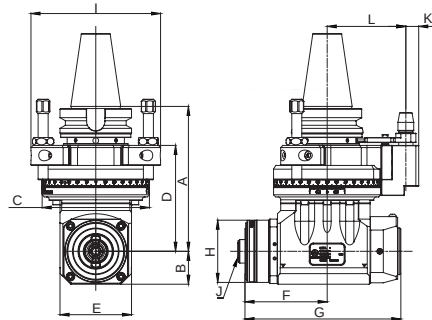


## MULTI-BLOCK ANGLE HEADS – HSK (INT.)

### AHK-B2-I TYPE

- The output interface of HSK63 ensures wide-range application with various HSK63 tool holders.
- Hardened precision spiral bevel gears ensure stable performance with long service life.
- Cutting direction can be adjusted from 0 ~ 360 degree.
- Multi-block support system ensures working rigidity and stability.
- The automatic disengagement and engagement of Angle Head can be easily operated on the base of table and improve efficiency.
- Rugged Alloy Steel body construction with compact design.

|                           |                                   |
|---------------------------|-----------------------------------|
| <b>Run-out</b>            | 0.002 mm                          |
| <b>Material</b>           | Alloy Steel                       |
| <b>R.P.M.</b>             | Max. 4000 RPM                     |
| <b>Torque</b>             | Max. 60 Nm                        |
| <b>Gear Ratio</b>         | 1 : 1                             |
| <b>Spindle Type</b>       | BT, SK(ISO), CAT                  |
| <b>Standard Accessory</b> | Open End Wrench<br>L Type Wrench, |
| <b>Output Rotation</b>    | Reverse to Input Rotation         |



UNIT:mm

| ITEM NO. | MODEL          | A     | B  | C   | D   | E   | F   | G   | H  | I   | J     | K  | L   | N.W (kgs) |
|----------|----------------|-------|----|-----|-----|-----|-----|-----|----|-----|-------|----|-----|-----------|
| 52172504 | AHK-BT50-B2-I  | 202.5 | 46 | 150 | 148 | 100 | 115 | 218 | 87 | 239 | HSK63 | 18 | 110 | 23.4      |
| 52172505 | AHK-SK50-B2-I  | 202.5 | 46 | 150 | 148 | 100 | 115 | 218 | 87 | 239 | HSK63 | 18 | 110 | 23.4      |
| 52172506 | AHK-CAT50-B2-I | 202.5 | 46 | 150 | 148 | 100 | 115 | 218 | 87 | 239 | HSK63 | 18 | 110 | 23.4      |

\*INT.: INTERNAL COOLANT

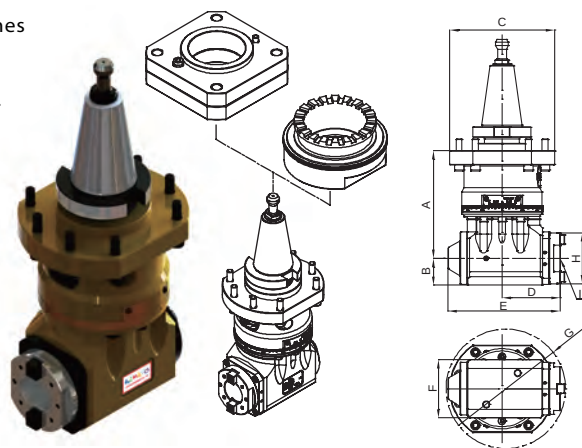


## HEAVY DUTY ANGLE HEADS (VTC)

### AHK-C1 TYPE

- Can be applied on Vertical Turning Center, Plano Milling Machine and various machines with Adapter Plate.
- Built-in spindle positioning system. The flexible design of connection part which is suitable for various magazines makes the ATC application possible.
- Can be connected to tooth-shaped Flange Disc or any shape of Machine Spindle surface to reach Max. rigidity.
- Hardened precision spiral bevel gears ensure stable performance with long service life.
- Cutting direction can be adjusted from 0 ~ 360 degree.

|                           |                                   |
|---------------------------|-----------------------------------|
| <b>Run-out</b>            | 0.002 mm                          |
| <b>Material</b>           | Alloy Steel                       |
| <b>R.P.M.</b>             | Max. 4000 RPM                     |
| <b>Torque</b>             | Max. 60 Nm                        |
| <b>Gear Ratio</b>         | 1 : 1                             |
| <b>Spindle Type</b>       | BT, SK(ISO), CAT                  |
| <b>Standard Accessory</b> | Open End Wrench<br>L Type Wrench, |
| <b>Output Rotation</b>    | Reverse to Input Rotation         |



UNIT:mm

| ITEM NO. | MODEL        | A   | B  | C   | D   | E   | F   | G   | H  | I    | N.W (kgs) |
|----------|--------------|-----|----|-----|-----|-----|-----|-----|----|------|-----------|
| 52172507 | AHK-BT50-C1  | 185 | 46 | 180 | 100 | 193 | 100 | 205 | 88 | BT40 | 25.7      |
| 52172508 | AHK-SK50-C1  | 185 | 46 | 180 | 100 | 193 | 100 | 205 | 88 | BT40 | 25.7      |
| 52172509 | AHK-CAT50-C1 | 185 | 46 | 180 | 100 | 193 | 100 | 205 | 88 | BT40 | 25.7      |

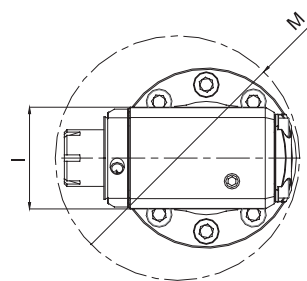
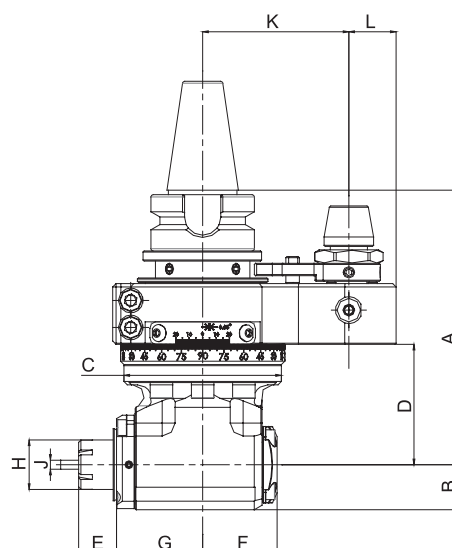


# B“ TOOLS OF WORKHOLDING & PRECISION TOOLS FOR MILLS & VMCS



## LIGHT ANGLE HEADS

- Compact and lighter body design is suitable for drilling, milling, and tapping application.
- Can be automatic tool changed. Increases productivity.
- Cutting direction can be adjusted from 0 ~ 360 degree.



|                           |                                   |
|---------------------------|-----------------------------------|
| <b>Run-out</b>            | 0.002 mm                          |
| <b>Material</b>           | Alloy Steel                       |
| <b>R.P.M.</b>             | Max. 4000 RPM                     |
| <b>Torque</b>             | Max. 12 Nm                        |
| <b>Gear Ratio</b>         | 1 : 1                             |
| <b>Spindle Type</b>       | BT, SK(ISO), CAT                  |
| <b>Standard Accessory</b> | Open End Wrench<br>L Type Wrench, |
| <b>Output Rotation</b>    | Reverse to Input Rotation         |

UNIT:mm

| ITEM NO. | MODEL        | A   | B  | C  | D    | E  | F    | G    | H  | I    | J           | K  | L  | M  | N.W (kgs) |
|----------|--------------|-----|----|----|------|----|------|------|----|------|-------------|----|----|----|-----------|
| 52172510 | AHL-BT30-A1  | 122 | 20 | 70 | 53.5 | 17 | 33.1 | 38.3 | 22 | 39.5 | 1~10 (ER16) | 55 | 21 | 95 | 3         |
| 52172511 | AHL-BT40-A1  | 122 | 20 | 70 | 53.5 | 17 | 33.1 | 38.3 | 22 | 39.5 | 1~10 (ER16) | 55 | 21 | 95 | 3.3       |
| 52172512 | AHL-SK30-A1  | 122 | 20 | 70 | 53.5 | 17 | 33.1 | 38.3 | 22 | 39.5 | 1~10 (ER16) | 55 | 21 | 95 | 3         |
| 52172513 | AHL-SK40-A1  | 122 | 20 | 70 | 53.5 | 17 | 33.1 | 38.3 | 22 | 39.5 | 1~10 (ER16) | 55 | 21 | 95 | 3.3       |
| 52172514 | AHL-CAT30-A1 | 122 | 20 | 70 | 53.5 | 17 | 33.1 | 38.3 | 22 | 39.5 | 1~10 (ER16) | 55 | 21 | 95 | 3         |
| 52172515 | AHL-CAT40-A1 | 122 | 20 | 70 | 53.5 | 17 | 33.1 | 38.3 | 22 | 39.5 | 1~10 (ER16) | 55 | 21 | 95 | 3.3       |
| 52172516 | AHL-BT30-A1  | 122 | 20 | 70 | 53.5 | 17 | 33.1 | 38.3 | 22 | 39.5 | 1~10 (ER16) | 65 | 21 | 95 | 3         |
| 52172517 | AHL-BT40-A   | 122 | 20 | 70 | 53.5 | 17 | 33.1 | 38.3 | 22 | 39.5 | 1~10 (ER16) | 65 | 21 | 95 | 3.3       |
| 52172518 | AHL-SK30-A1  | 122 | 20 | 70 | 53.5 | 17 | 33.1 | 38.3 | 22 | 39.5 | 1~10 (ER16) | 65 | 21 | 95 | 3         |
| 52172519 | AHL-SK40-A1  | 122 | 20 | 70 | 53.5 | 17 | 33.1 | 38.3 | 22 | 39.5 | 1~10 (ER16) | 65 | 21 | 95 | 3.3       |
| 52172520 | AHL-CAT30-A1 | 122 | 20 | 70 | 53.5 | 17 | 33.1 | 38.3 | 22 | 39.5 | 1~10 (ER16) | 65 | 21 | 95 | 3         |
| 52172521 | AHL-CAT40-A1 | 122 | 20 | 70 | 53.5 | 17 | 33.1 | 38.3 | 22 | 39.5 | 1~10 (ER16) | 65 | 21 | 95 | 3.3       |

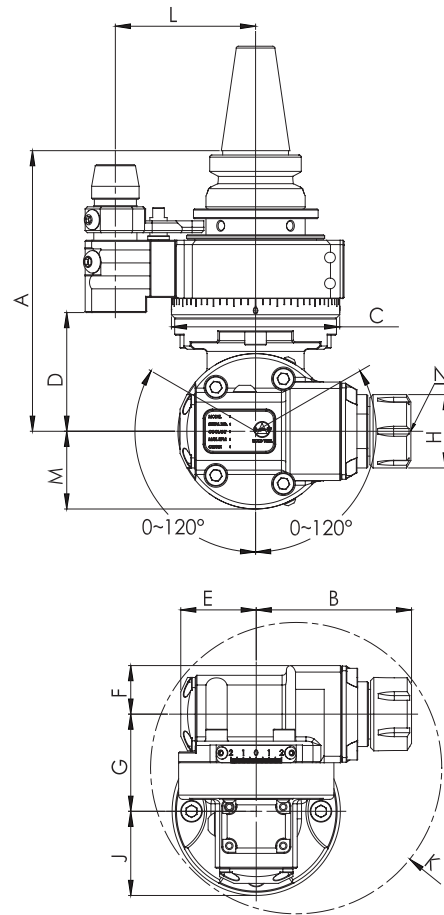
\*FURTHER OPTION: 6000 RPM



## LIGHT ANGLE HEADS – UNIVERSAL

### AHL-B1 TYPE

- Cutting angle can be set from  $0^{\circ} \sim \pm 120^{\circ}$  for various applications.
- Compact design provides extra strength, oil-proof, dust-proof, and duration.
- Can be automatic tool changed. Increases productivity.
- Cutting direction can be adjusted from  $0 \sim 360$  degree.



|                           |                                   |
|---------------------------|-----------------------------------|
| <b>Run-out</b>            | 0.002 mm                          |
| <b>Material</b>           | Alloy Steel                       |
| <b>R.P.M.</b>             | Max. 4000 RPM                     |
| <b>Torque</b>             | Max. 9 Nm                         |
| <b>Gear Ratio</b>         | 1 : 1                             |
| <b>Spindle Type</b>       | BT, SK(ISO), CAT                  |
| <b>Standard Accessory</b> | Open End Wrench<br>L Type Wrench, |
| <b>Output Rotation</b>    | Reverse to Input Rotation         |

UNIT: mm

| ITEM NO. | MODEL           | A   | B     | C  | D    | E    | F    | G  | H  | J    | K   | L  | M  | N           | N.W (kgs) |
|----------|-----------------|-----|-------|----|------|------|------|----|----|------|-----|----|----|-------------|-----------|
| 52172522 | AHL-BT30-B1.55  | 130 | 72~79 | 73 | 61.5 | 34.5 | 22.5 | 45 | 36 | 36.5 | 140 | 55 | 36 | 1~13 (ER20) | 4         |
| 52172523 | AHL-BT40-B1.55  | 130 | 72~79 | 73 | 61.5 | 34.5 | 22.5 | 45 | 36 | 36.5 | 140 | 55 | 36 | 1~13 (ER20) | 4.5       |
| 52172524 | AHL-SK30-B1.55  | 130 | 72~79 | 73 | 61.5 | 34.5 | 22.5 | 45 | 36 | 36.5 | 140 | 55 | 36 | 1~13 (ER20) | 4         |
| 52172525 | AHL-SK40-B1.55  | 130 | 72~79 | 73 | 61.5 | 34.5 | 22.5 | 45 | 36 | 36.5 | 140 | 55 | 36 | 1~13 (ER20) | 4.5       |
| 52172526 | AHL-CAT30-B1.55 | 130 | 72~79 | 73 | 61.5 | 34.5 | 22.5 | 45 | 36 | 36.5 | 140 | 55 | 36 | 1~13 (ER20) | 4         |
| 52172527 | AHL-CAT40-B1.55 | 130 | 72~79 | 73 | 61.5 | 34.5 | 22.5 | 45 | 36 | 36.5 | 140 | 55 | 36 | 1~13 (ER20) | 4.5       |
| 52172528 | AHL-BT30-B1.65  | 130 | 72~79 | 73 | 61.5 | 34.5 | 22.5 | 45 | 36 | 36.5 | 140 | 65 | 36 | 1~13 (ER20) | 4         |
| 52172529 | AHL-BT40-B1.65  | 130 | 72~79 | 73 | 61.5 | 34.5 | 22.5 | 45 | 36 | 36.5 | 140 | 65 | 36 | 1~13 (ER20) | 4.5       |
| 52172530 | AHL-SK30-B1.65  | 130 | 72~79 | 73 | 61.5 | 34.5 | 22.5 | 45 | 36 | 36.5 | 140 | 65 | 36 | 1~13 (ER20) | 4         |
| 52172531 | AHL-SK40-B1.65  | 130 | 72~79 | 73 | 61.5 | 34.5 | 22.5 | 45 | 36 | 36.5 | 140 | 65 | 36 | 1~13 (ER20) | 4.5       |
| 52172532 | AHL-CAT30-B1.65 | 130 | 72~79 | 73 | 61.5 | 34.5 | 22.5 | 45 | 36 | 36.5 | 140 | 65 | 36 | 1~13 (ER20) | 4         |
| 52172533 | AHL-CAT40-B1.65 | 130 | 72~79 | 73 | 61.5 | 34.5 | 22.5 | 45 | 36 | 36.5 | 140 | 65 | 36 | 1~13 (ER20) | 4.5       |



B5 - POWER FEEDS, ANGLE HEADS

TOOLS OF WORKHOLDING&PRECISION TOOLS FOR MILLS&VMCS

# B “ TOOLS OF WORKHOLDING & PRECISION TOOLS FOR MILLS & VMCS

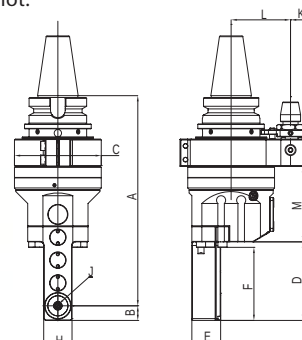


## MODULAR ANGLE HEADS – ULTRA SLIM

### AHL-C1 / D1 TYPE

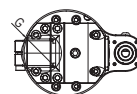
- Compact and longer body design is suitable for machining the deep-hole and deep-slot.
- Can be automatic tool changed, and increase productivity.
- Cutting direction can be adjusted from 0 ~ 360 degree.

|                           |                                 |
|---------------------------|---------------------------------|
| <b>Material</b>           | Alloy Steel                     |
| <b>R.P.M.</b>             | Max. 4000 RPM                   |
| <b>Torque</b>             | C1: Max. 6 Nm<br>D1: Max. 12 Nm |
| <b>Drilling</b>           | Max. 6 mm                       |
| <b>Tapping</b>            | C1: Max. M4<br>D1: Max. M6      |
| <b>Gear Ratio</b>         | 1 : 1                           |
| <b>Spindle Type</b>       | BT, SK(ISO), CAT                |
| <b>Standard Accessory</b> | T Handle Hex. Wrench            |



UNIT: mm

| ITEM NO. | MODEL           | A   | B  | C  | D   | E    | F   | G  | H  | J          | K  | L  | M    | N.W (kgs) |
|----------|-----------------|-----|----|----|-----|------|-----|----|----|------------|----|----|------|-----------|
| 52172534 | AHL-BT40-C1.65  | 230 | 16 | 95 | 86  | 31.5 | 80  | 44 | 31 | 2~6 (ADC6) | 20 | 65 | 82.5 | 6.6       |
| 52172535 | AHL-CAT40-C1.65 | 230 | 16 | 95 | 86  | 31.5 | 80  | 44 | 31 | 2~6 (ADC6) | 20 | 65 | 82.5 | 6.6       |
| 52172536 | AHL-SK40-C1.65  | 230 | 16 | 95 | 86  | 31.5 | 80  | 44 | 31 | 2~6 (ADC6) | 20 | 65 | 82.5 | 6.6       |
| 52172537 | AHL-BT40-D1.65  | 250 | 18 | 95 | 108 | 40   | 102 | 55 | 38 | 2~6 (BDC6) | 20 | 65 | 82.5 | 6.9       |
| 52172538 | AHL-CAT40-D1.65 | 250 | 18 | 95 | 108 | 40   | 102 | 55 | 38 | 2~6 (BDC6) | 20 | 65 | 82.5 | 6.9       |
| 52172539 | AHL-SK40-D1.65  | 250 | 18 | 95 | 108 | 40   | 102 | 55 | 38 | 2~6 (BDC6) | 20 | 65 | 82.5 | 6.9       |

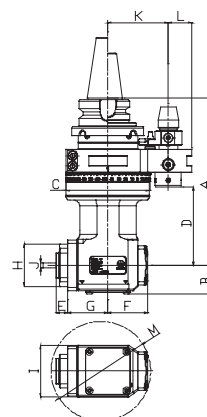


## ALUMINUM ANGLE HEADS

### AHM A04 / A10 TYPE

- 6000 rpm high speed processing. Increases machining efficiency.
- Compact and lighter body design is suitable for machines with light-load magazine and high speed ATC system.
- Can be automatic tool changed. Increases productivity.
- Cutting direction can be adjusted from 0 ~ 360 degree.

|                           |                                    |
|---------------------------|------------------------------------|
| <b>Run-out</b>            | 0.002 mm                           |
| <b>Material</b>           | Aerospace Aluminum Alloy           |
| <b>R.P.M.</b>             | Max. 6000 RPM                      |
| <b>Torque</b>             | Max. 15 Nm                         |
| <b>Gear Ratio</b>         | 1 : 1                              |
| <b>Spindle Type</b>       | BT, SK(ISO), CAT                   |
| <b>Standard Accessory</b> | Open End Wrench, ER Wrench, ER Nut |
| <b>Output Rotation</b>    | Reverse to Input Rotation          |



UNIT: mm

| ITEM NO. | MODEL              | A   | B    | C  | D    | E    | F  | G    | H  | I  | J               | K  | L  | M   | N.W (kgs) |
|----------|--------------------|-----|------|----|------|------|----|------|----|----|-----------------|----|----|-----|-----------|
| 52172540 | AHM-BT30-A04.180G  | 180 | 31.2 | 90 | 84.5 | 26.5 | 43 | 43.5 | 42 | 60 | 1~16 (ER25)     | 65 | 25 | 120 | 4.5       |
| 52172541 | AHM-BT40-A04.180G  | 180 | 31.2 | 90 | 84.5 | 26.5 | 43 | 43.5 | 42 | 60 | 1~16 (ER25)     | 65 | 25 | 120 | 5         |
| 52172542 | AHM-SK30-A04.180G  | 180 | 31.2 | 90 | 84.5 | 26.5 | 43 | 43.5 | 42 | 60 | 1~16 (ER25)     | 65 | 25 | 120 | 4.5       |
| 52172543 | AHM-SK40-A04.180G  | 180 | 31.2 | 90 | 84.5 | 26.5 | 43 | 43.5 | 42 | 60 | 1~16 (ER25)     | 65 | 25 | 120 | 5         |
| 52172544 | AHM-CAT30-A04.180G | 180 | 31.2 | 90 | 84.5 | 26.5 | 43 | 43.5 | 42 | 60 | 1~16 (ER25)     | 65 | 25 | 120 | 4.5       |
| 52172545 | AHM-CAT40-A04.180G | 180 | 31.2 | 90 | 84.5 | 26.5 | 43 | 43.5 | 42 | 60 | 1~16 (ER25)     | 65 | 25 | 120 | 5         |
| 52172546 | AHM-BT30-A10.180G  | 180 | 31.2 | 90 | 84.5 | 12   | 43 | 43.5 | 42 | 60 | 1~13 (ER20 I.N) | 65 | 25 | 105 | 4.5       |
| 52172547 | AHM-BT40-A10.180G  | 180 | 31.2 | 90 | 84.5 | 12   | 43 | 43.5 | 42 | 60 | 1~13 (ER20 I.N) | 65 | 25 | 105 | 5         |
| 52172548 | AHM-SK30-A10.180G  | 180 | 31.2 | 90 | 84.5 | 12   | 43 | 43.5 | 42 | 60 | 1~13 (ER20 I.N) | 65 | 25 | 105 | 4.5       |
| 52172549 | AHM-SK40-A10.180G  | 180 | 31.2 | 90 | 84.5 | 12   | 43 | 43.5 | 42 | 60 | 1~13 (ER20 I.N) | 65 | 25 | 105 | 5         |
| 52172550 | AHM-CAT30-A10.180G | 180 | 31.2 | 90 | 84.5 | 12   | 43 | 43.5 | 42 | 60 | 1~13 (ER20 I.N) | 65 | 25 | 105 | 4.5       |
| 52172551 | AHM-CAT40-A10.180G | 180 | 31.2 | 90 | 84.5 | 12   | 43 | 43.5 | 42 | 60 | 1~13 (ER20 I.N) | 65 | 25 | 105 | 5         |

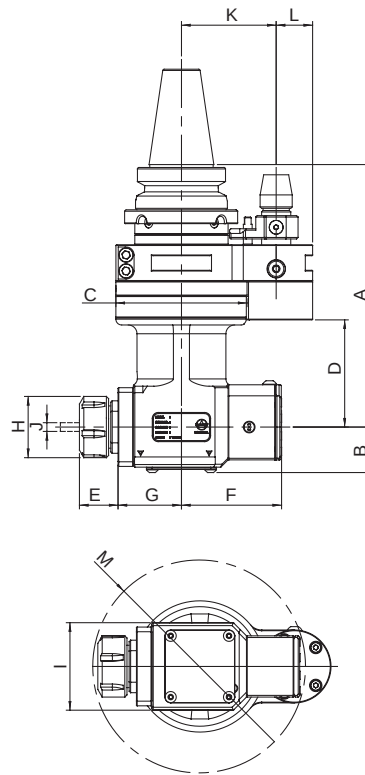
\*INT.: INTERNAL NUT



## ALUMINUM ANGLE HEADS (INT.)

### AHM A04-I TYPE

- 6000 rpm high speed processing. Increases machining efficiency.
- Compact and lighter body design is suitable for machines with light-load magazine and high speed ATC system.
- Can be automatic tool changed. Increases productivity.
- Cutting direction can be adjusted from 0 ~ 360 degree.



|                           |                                       |
|---------------------------|---------------------------------------|
| <b>Run-out</b>            | 0.002 mm                              |
| <b>Material</b>           | Aerospace Aluminum Alloy              |
| <b>R.P.M.</b>             | Max. 6000 RPM                         |
| <b>Torque</b>             | Max. 15 Nm                            |
| <b>Gear Ratio</b>         | 1 : 1                                 |
| <b>Spindle Type</b>       | BT, SK(ISO), CAT                      |
| <b>Standard Accessory</b> | Open End Wrench,<br>ER Wrench, ER Nut |
| <b>Output Rotation</b>    | Reverse to Input Rotation             |

|            |                      |     |      |    |      |      |      |      |    |    |             |    |    |     | UNIT: mm     |
|------------|----------------------|-----|------|----|------|------|------|------|----|----|-------------|----|----|-----|--------------|
| ITEM NO.   | MODEL                | A   | B    | C  | D    | E    | F    | G    | H  | I  | J           | K  | L  | M   | N.W<br>(kgs) |
| 52172540-I | AHM-BT30-A04.180G-I  | 180 | 31.2 | 90 | 84.5 | 26.5 | 68.7 | 43.5 | 42 | 60 | 1~16 (ER25) | 65 | 25 | 120 | 5.3          |
| 52172541-I | AHM-BT40-A04.180G-I  | 180 | 31.2 | 90 | 84.5 | 26.5 | 68.7 | 43.5 | 42 | 60 | 1~16 (ER25) | 65 | 25 | 120 | 5.8          |
| 52172542-I | AHM-SK30-A04.180G-I  | 180 | 31.2 | 90 | 84.5 | 26.5 | 68.7 | 43.5 | 42 | 60 | 1~16 (ER25) | 65 | 25 | 120 | 5.3          |
| 52172543-I | AHM-SK40-A04.180G-I  | 180 | 31.2 | 90 | 84.5 | 26.5 | 68.7 | 43.5 | 42 | 60 | 1~16 (ER25) | 65 | 25 | 120 | 5.8          |
| 52172544-I | AHM-CAT30-A04.180G-I | 180 | 31.2 | 90 | 84.5 | 26.5 | 68.7 | 43.5 | 42 | 60 | 1~16 (ER25) | 65 | 25 | 120 | 5.3          |
| 52172545-I | AHM-CAT40-A04.180G-I | 180 | 31.2 | 90 | 84.5 | 26.5 | 68.7 | 43.5 | 42 | 60 | 1~16 (ER25) | 65 | 25 | 120 | 5.8          |

\*INT.: INTERNAL COOLANT



# B “ TOOLS OF WORKHOLDING & PRECISION TOOLS FOR MILLS & VMCS



## RIGHT ANGLE ATTACHMENT



▲ ITEM NO. 52150010

For using on vertical mill to convert vertical spindle to horizontal position and cutting slots.



## HORIZONTAL MILLING ATTACHMENT



▲ ITEM NO. 52150011

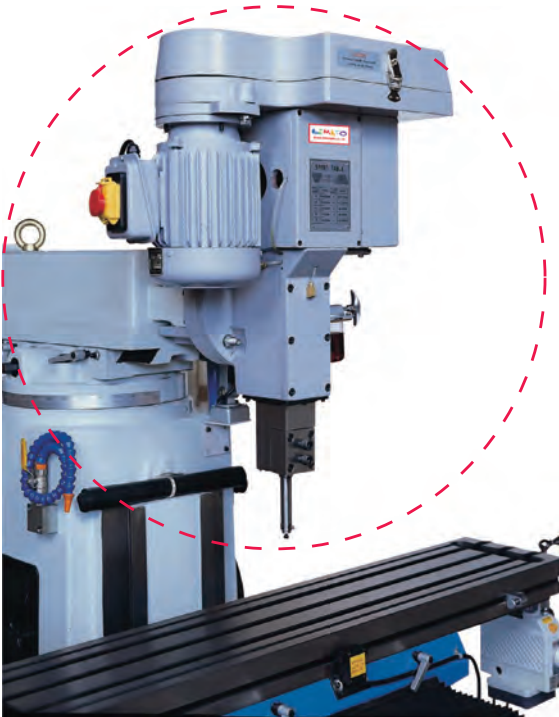
For using on vertical mill to convert vertical spindle to horizontal position and doing horizontal milling jobs.



## PRECISION SLOTTING HEAD

### FEATURES:

- Special design worm and worm gear with linkage transmission mechanism, well construction and highly power output.
- The ram-sliding surface are hardened and precision ground.
- Built-in lubricating system for smoothly running and prolong the life of head.
- Available mounting on the back side of the ram of any type milling m/cs.



### SPECIFICATION:

- Stroke: 125 mm(5")
- No. of stroke speed change: 5 steps
- Stroke speed(stroke/min.): 30, 47, 69, 98, 140 spm(50HZ)
- Stroke speed(stroke/min.): 35, 54, 79, 112, 160 spm(60HZ)
- Driving Motor: 3/4 HP-6P

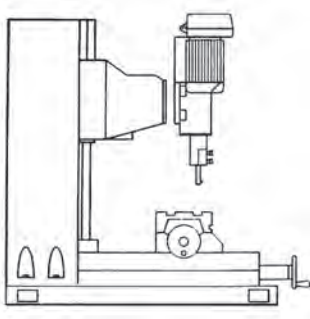
### OPTIONAL ACCESSORIES:

- Flange A: ITEM NO. 52150060
- Flange B: ITEM NO. 52150061
- Slotting bars:
  - 6 mm ITEM NO. 52150064
  - 7 mm ITEM NO. 52150065
  - 8 mm ITEM NO. 52150066
  - 10 mm ITEM NO. 52150067

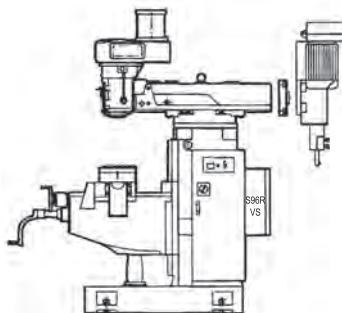
▲ ITEM NO. 52150012

### APPLICATIONS:

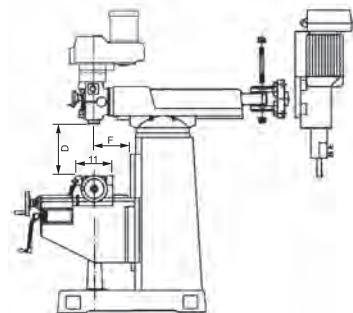
1. Direct mounting



2. Mounting with flange A



3. Mounting with flange B



B6 - SLOTTING HEAD, AIR/ELE. POWER DRAWBARS

TOOLS OF WORKHOLDING&PRECISION TOOLS FOR MILLS&VMCS

# B “ TOOLS OF WORKHOLDING & PRECISION TOOLS FOR MILLS & VMCS



## AIR POWER DRAWBARS

### FEATURES:

- This device can be installed easily.
- It is used for quick changing tool holders and operated by air.
- It is suitable for NC and vertical milling machines.
- It can be installed in any kind of machines, of which the main spindle taper is R8, NT30, NT40 or NT50.
- Main power is air compression.
- This unit is built with solenoid valve for safety operation. The power drawbar can't be operated while machine is running.



### STANDARD EQUIPMENT:

- Driving unit
- Control box
- Air filter, regulator and lubricator
- Drawbar
- Mounting hardware

UNIT: mm

| ITEM NO. | SPEED<br>(R.P.M.) | TORQUE   | AIR<br>PRESSURE                    | VOLTAGE (FOR<br>MAGNETIC VALVE) | NET<br>WEIGHT | REMARK                              |
|----------|-------------------|----------|------------------------------------|---------------------------------|---------------|-------------------------------------|
| 52150051 | 3000              | 135FT-LB | 90PSI<br>(6.3 kg/cm <sup>2</sup> ) | AC110 or 220V<br>AC24V          | 9.4 kgs       | For Spindle Taper<br>R8, NT30, NT40 |
| 52150052 | 3000              | 200FT-LB | 90PSI<br>(6.3 kg/cm <sup>2</sup> ) | AC110 or 220V<br>AC24V          | 9.4kgs        | For Spindle Taper<br>NT40, NT50     |



### < ITEM NO. 52150053

- Pneumatic power drawbar.
- Easy to install, operate & maintain.
- MAX. TORQUE: 279ft-lbs (379n-m)
- R.P.M.: 700

## FRL unit with control valve

### FEATURES:

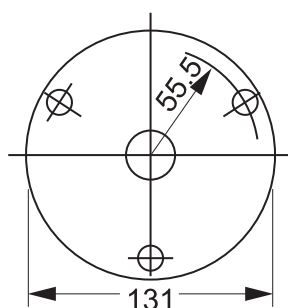
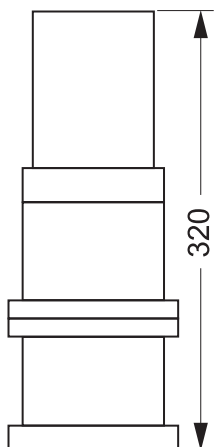
- Fits for spindle taper of R8, NT30, NT40, NT50
- Automate your present milling machine by installing our air power drawbar.
- 10 minutes easy installation: No special drawbar, tool, toolholder & collets require, use the existing drawbar.
- Unique adjustable drawbar feature enable the operator to preset length of power drawbar.
- It comes with complete socket set of 6 sizes: #17, #19, #21, #22, #23, #26 m/m for universal use and easy installation.
- The universal mounting base require NO drilling and NO tapping on the vari-able speed milling machine.
- This unit is pneumatic powered by normal shop air supply of 90 P.S.I.
- Tool changing by operating the control button.
- To ensure long lasting life the air unit motor are made from NICKEL CHROME TUNGSTEN ALLOY STEEL with latest technology in mechanical design for heavy duty industrial grade use.
- The air filter, oil lubricator, control valve & all air fitting are all made from good quality material, to reduce the change resulted from breaking down.



## ELECTRIC POWER DRAWBARS

### FEATURES:

- Tool changing only workable at the spindle stop position for the operator's safety.
- Fits for milling machines of ISO 40 or ISO50 spindle taper.



### UNIT INCLUDES:

- Driving unit
- Plastic cover
- Control unit
- Drawbar
- Spindle taper wiper

| ITEM NO. | SUITABLE FOR SPINDLE TAPER | NOMINAL MAX-TORQUE | RUNNING SPEED | VOLTAGE          | AMPS | N.W.     |
|----------|----------------------------|--------------------|---------------|------------------|------|----------|
| 52150054 | ISO 40                     | 240 ft/ lbs        | 2100 RPM      | 240V<br>50/ 60HZ | 7.5A | 11.2 kgs |
| 52150059 | ISO 50                     |                    |               |                  |      |          |



# B “ TOOLS OF WORKHOLDING & PRECISION TOOLS FOR MILLS & VMCS



## UNIVERSAL WORK STOPPERS



▲ ITEM NO. 52130701

- With locking handle



▲ ITEM NO. 52130702

- With L hex key



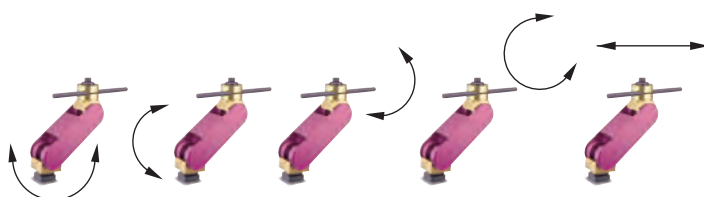
▲ ITEM NO. 52130703

- With locking handle



▲ ITEM NO. 52130704

- With L hex key



▲ ITEM NO. 52130706

- Work stopper for hydraulic vises (fitted on the side of stationary jaw)

### FEATURES:

- For quick, accurate and repeated set-up on milling machines which have T-slot to fix this tool.
- Adjustable to any height and position.
- Maximum height: 160 mm
- Suitable for T-slot of 16 mm and 18 mm.
- With locking L Hex key or locking handle.
- Available in 2 types of arm as illustrated.



## 52 PCS CLAMPING KITS



### KIT INCLUDES:

- 24 studs 4 of each length: 3", 4", 5", 6", 7", 8"
- 6 T-slot nuts
- 6 swivel flange nuts
- 4 coupling nuts
- 6 step blocks & clamps
- Fitted plastic rack

### INCH SIZE

| ITEM NO. | TABLE SLOT | STUD SIZE     |
|----------|------------|---------------|
| 52140001 | 7/16"      | 3/8"-16       |
| 52140002 | 1/2"       |               |
| 52140003 | 9/16"      | 1/2"-13 (USA) |
| 52140004 | 5/8"       |               |
| 52140005 | 5/8"       | 1/2"-12       |
| 52140006 | 11/16"     |               |
| 52140007 | 3/4"       | 5/8"-11       |
| 52140008 | 7/8"       | 3/4"-10       |

- 3/4"-10 set only 50 pcs (4 swivel flange nuts) and packed with wooden base holder.

### METRIC SIZE

| ITEM NO. | TABLE SLOT | STUD SIZE |
|----------|------------|-----------|
| 52140009 | 10         | M8-1.25   |
| 52140010 | 12         | M10-1.25  |
| 52140011 | 14         | M12-1.75  |
| 52140012 | 16         |           |
| 52140013 | 16         | M14-2.0   |
| 52140014 | 18         | M16-2.0   |
| 52140015 | 20         | M18-2.5   |
| 52140016 | 22         | M20-2.5   |

- M8, M18, M20 sets only 50 pcs (4 swivel flange nuts) and packed with wooden base holder.



## MAGNETIC SCREW SUPPORTER & PLAIN CLAMP SETS



UNIT: mm

| ITEM NO. | MODEL   | BOLT | MAGNETIC SCREW SUPPORTER<br>2PCS/PERTYPE | PLAIN CLAMP<br>2PCS/ PER TYPE | PIN WRENCH<br>2PCS/ PER TYPE | G.W.<br>(kgs) |
|----------|---------|------|------------------------------------------|-------------------------------|------------------------------|---------------|
| 52171586 | MPK-140 | M14  | MSS-85, MSS-110                          | JP-14064, JP-14100, JP-14150  | PW-3505, PW-4007             | 6             |
| 52171587 | MPK-160 | M16  | MSS-110, MSS-165                         | JP-16064, JP-16100, JP-16150  | PW-4007, PW-4507             | 8.5           |
| 52171588 | MPK-200 | M20  | MSS-165, MSS-265                         | JP-20100, JP-20150, JP-20200  | PW-4507, PW-5008             | 13.5          |
| 52171589 | MPK-240 | M24  | MSS-265, MSS-300                         | JP-24150, JP-24200, JP-24250  | PW-5008                      | 18            |



## MAGNETIC SCREW SUPPORTER & TIP SETS



UNIT: mm

| ITEM NO. | MODEL   | MAGNETIC SCREW SUPPORTER<br>2PCS/PERTYPE | PLAIN CLAMP<br>2PCS/ PER TYPE | PIN WRENCH<br>2PCS/ PER TYPE | G.W.<br>(kgs) |
|----------|---------|------------------------------------------|-------------------------------|------------------------------|---------------|
| 52171590 | MGK-60A | MSS-85, MSS-110,                         | KT-1A-6A                      | PW-3505, PW-4007             | 4             |
| 52171591 | MGK-60B | MSS-110, MSS-165                         | KT-1B-6B                      | PW-4007, PW-4507             | 6             |
| 52171592 | MGK-60C | MSS-165, MSS-265                         | KT-1B-6B                      | PW-4507, PW-5008             | 10.5          |



B7 - CLAMPING KITS

TOOLS OF WORKHOLDING&PRECISION TOOLS FOR MILLS&VMCS

# B “ TOOLS OF WORKHOLDING & PRECISION TOOLS FOR MILLS & VMCS



## CLAMPING STUDS



| INCH SIZE |           |        |
|-----------|-----------|--------|
| ITEM NO.  | STUD SIZE | LENGTH |
| 52140018  | 5/16"-18  | 3      |
| 52140019  |           | 4      |
| 52140020  |           | 5      |
| 52140021  |           | 6      |
| 52140022  |           | 7      |
| 52140023  | 3/8"-16   | 8      |
| 52140025  |           | 3      |
| 52140026  |           | 4      |
| 52140027  |           | 5      |
| 52140028  |           | 6      |
| 52140029  |           | 7      |
| 52140030  |           | 8      |

| INCH SIZE |           |        |
|-----------|-----------|--------|
| ITEM NO.  | STUD SIZE | LENGTH |
| 52140032  | 1/2"-13   | 3      |
| 52140033  |           | 4      |
| 52140034  |           | 5      |
| 52140035  |           | 6      |
| 52140036  |           | 7      |
| 52140037  | 5/8"-11   | 8      |
| 52140038  |           | 3      |
| 52140039  |           | 4      |
| 52140040  |           | 5      |
| 52140041  |           | 6      |
| 52140042  |           | 7      |
| 52140043  |           | 8      |

| INCH SIZE |           |        |
|-----------|-----------|--------|
| ITEM NO.  | STUD SIZE | LENGTH |
| 52140044  | 3/4"-10   | 3      |
| 52140045  |           | 4      |
| 52140046  |           | 5      |
| 52140047  |           | 6      |
| 52140048  |           | 7      |
| 52140049  | 7/8"-9    | 8      |
| 52140050  |           | 3      |
| 52140051  |           | 4      |
| 52140052  |           | 5      |
| 52140053  |           | 6      |
| 52140054  |           | 7      |
| 52140055  | 1"-8      | 8      |
| 52140056  |           | 3      |
| 52140057  |           | 4      |
| 52140058  |           | 5      |
| 52140059  |           | 6      |
| 52140060  |           | 7      |
| 52140061  |           | 8      |

• Special sizes are available upon request.

| METRIC SIZE |           |        |
|-------------|-----------|--------|
| ITEM NO.    | STUD SIZE | LENGTH |
| 52140062    | M8-1.25   | 50     |
| 52140063    |           | 75     |
| 52140064    |           | 100    |
| 52140065    |           | 125    |
| 52140066    |           | 150    |
| 52140067    | M10-1.5   | 175    |
| 52140068    |           | 200    |
| 52140069    |           | 50     |
| 52140070    |           | 75     |
| 52140071    |           | 100    |
| 52140072    |           | 125    |
| 52140073    |           | 150    |
| 52140074    |           | 175    |
| 52140075    |           | 200    |

| METRIC SIZE |           |        |
|-------------|-----------|--------|
| ITEM NO.    | STUD SIZE | LENGTH |
| 52140076    | M12-1.75  | 50     |
| 52140077    |           | 75     |
| 52140078    |           | 100    |
| 52140079    |           | 125    |
| 52140080    |           | 150    |
| 52140081    | M14-2.0   | 175    |
| 52140082    |           | 200    |
| 52140083    |           | 50     |
| 52140084    |           | 75     |
| 52140085    |           | 100    |
| 52140086    |           | 125    |
| 52140087    |           | 150    |
| 52140088    |           | 175    |
| 52140089    |           | 200    |

| METRIC SIZE |           |        |
|-------------|-----------|--------|
| ITEM NO.    | STUD SIZE | LENGTH |
| 52140090    | M16-2.0   | 50     |
| 52140091    |           | 75     |
| 52140092    |           | 100    |
| 52140093    |           | 125    |
| 52140094    |           | 150    |
| 52140095    | M18-2.5   | 175    |
| 52140096    |           | 200    |
| 52140097    |           | 50     |
| 52140098    |           | 75     |
| 52140099    |           | 100    |
| 52140100    |           | 125    |
| 52140101    | M20-2.5   | 150    |
| 52140102    |           | 175    |
| 52140103    |           | 200    |
| 52140104    |           | 50     |
| 52140105    |           | 75     |
| 52140106    |           | 100    |
| 52140107    |           | 125    |
| 52140108    |           | 150    |
| 52140109    |           | 175    |
| 52140110    |           | 200    |



## CHAMFERING T-SLOT NUTS

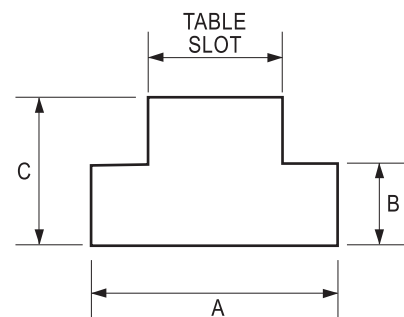
INCH SIZE

| ITEM NO. | THREAD SIZE | TABLE SLOT | A     | B     | C      |
|----------|-------------|------------|-------|-------|--------|
| 52140111 | 5/16-18     | 3/8        | 5/8   | 1/4   | 3/8    |
| 52140112 | 3/8-16      | 7/16       | 11/16 | 7/32  | 1/2    |
| 52140113 | 3/8-16      | 1/2        | 7/8   | 9/32  | 1/2    |
| 52140114 | 3/8-16      | 9/16       | 7/8   | 11/32 | 5/8    |
| 52140115 | 1/2-13      | 9/16       | 7/8   | 11/32 | 5/8    |
| 52140116 | 1/2-13      | 5/8        | 1     | 11/32 | 5/8    |
| 52140117 | 1/2-13      | 11/16      | 1-1/8 | 7/16  | 3/4    |
| 52140118 | 5/8-11      | 11/16      | 1-1/8 | 7/16  | 3/4    |
| 52140119 | 5/8-11      | 3/4        | 1-1/4 | 15/32 | 3/4    |
| 52140120 | 5/8-11      | 13/16      | 1-1/4 | 9/16  | 1      |
| 52140121 | 3/4-10      | 13/16      | 1-1/4 | 9/16  | 1      |
| 52140122 | 3/4-10      | 7/8        | 1-1/2 | 9/16  | 1      |
| 52140123 | 3/4-10      | 1          | 1-5/8 | 5/8   | 1      |
| 52140124 | 3/4-10      | 1-1/16     | 1-5/8 | 11/16 | 11-1/8 |
| 52140125 | 7/8-9       | 1          | 1-5/8 | 5/8   | 1      |
| 52140126 | 1-8         | 1-1/16     | 1-5/8 | 11/16 | 1-1/8  |



METRIC SIZE

| ITEM NO. | THREAD SIZE | TABLE SLOT | A  | B  | C  |
|----------|-------------|------------|----|----|----|
| 52140127 | M8          | 10         | 16 | 6  | 12 |
| 52140128 | M10         | 12         | 18 | 7  | 14 |
| 52140129 | M12         | 14         | 22 | 8  | 16 |
| 52140130 | M12         | 16         | 25 | 8  | 16 |
| 52140131 | M14         | 16         | 25 | 8  | 16 |
| 52140132 | M16         | 18         | 28 | 11 | 20 |
| 52140133 | M18         | 20         | 32 | 12 | 24 |
| 52140134 | M20         | 22         | 35 | 14 | 28 |
| 52140135 | M24         | 28         | 44 | 18 | 36 |



## COUPLING NUTS



FITS FOR BOTH INCH & METRIC STUDS

| ITEM NO. | THREAD SIZE         | LENGTH | HEX SIZE |
|----------|---------------------|--------|----------|
| 52140168 | 5/16-18 (M8 x 1.25) | 7/8    | 9/16     |
| 52140169 | 3/8-16 (M10 x 1.5)  | 1      | 11/16    |
| 52140170 | 1/2-13 (M12 x 1.75) | 1-1/4  | 7/8      |
| 52140171 | 5/8-11 (M16 x 2.0)  | 1-5/8  | 1-1/16   |
| 52140172 | 3/4-10 (M20 x 2.5)  | 1-7/8  | 1-1/4    |
| 52140173 | 7/8-9 (M22 x 2.5)   | 2-1/4  | 1-7/16   |
| 52140174 | 1 (M24 x 3.0)       | 2-1/2  | 1-5/8    |



B7 - CLAMPING KITS

TOOLS OF WORKHOLDING & PRECISION TOOLS FOR MILLS & VMCS

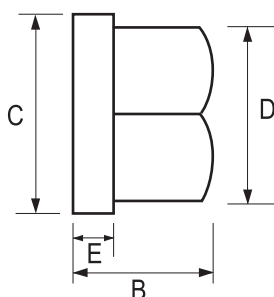
# B “ TOOLS OF WORKHOLDING & PRECISION TOOLS FOR MILLS & VMCS



## SWIVEL FLANGE NUTS

### FEATURES:

- There is a pulling up strength when tightening the flange nut.
- Vibration resistance.
- Lock tight easily with less strength.
- When loosening flange nut, it won't move the step clamp and collapse the setup.



### INCH SIZE

| ITEM NO. | THREAD SIZE | B     | C     | D      | E    |
|----------|-------------|-------|-------|--------|------|
| 52140136 | 5/16-18     | 3/8   | 3/4   | 9/16   | 3/32 |
| 52140137 | 3/8-16      | 1/2   | 7/8   | 11/16  | 1/8  |
| 52140138 | 1/2-13      | 11/16 | 1-1/8 | 7/8    | 5/32 |
| 52140139 | 5/8-11      | 13/16 | 1-3/8 | 1-1/16 | 3/16 |
| 52140140 | 3/4-10      | 1     | 1-5/8 | 1-1/4  | 1/4  |
| 52140141 | 7/8-9       | 1-1/8 | 1-3/4 | 1-7/16 | 1/4  |
| 52140142 | 1-8         | 1-1/4 | 2     | 1-5/8  | 1/4  |

• 52140136-1~52140142-1: FLANGE NUTS(WITHOUT SWIVEL)

### METRIC SIZE

| ITEM NO. | THREAD SIZE | B    | C    | D    | E   |
|----------|-------------|------|------|------|-----|
| 52140143 | M8 x 1.25   | 13.0 | 19.0 | 13.0 | 4.0 |
| 52140144 | M10 x 1.5   | 13.8 | 22.2 | 17.0 | 4.5 |
| 52140145 | M12 x 1.75  | 20.6 | 28.6 | 19.0 | 6.5 |
| 52140146 | M14 x 2.0   | 20.6 | 28.6 | 22.0 | 6.5 |
| 52140147 | M16 x 2.0   | 23.2 | 35.0 | 26.0 | 6.5 |
| 52140148 | M18 x 2.5   | 23.2 | 35.0 | 29.0 | 6.5 |
| 52140149 | M20 x 2.5   | 27.8 | 41.0 | 32.0 | 7.0 |
| 52140150 | M22 x 2.5   | 27.8 | 41.0 | 32.0 | 7.0 |
| 52140151 | M24 x 3.0   | 33.0 | 50.8 | 35.0 | 7.0 |

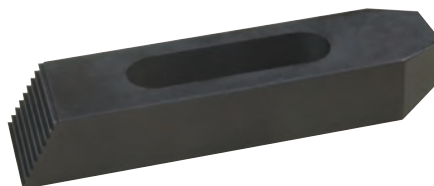
• 52140143-1~52140151-1: FLANGE NUTS(WITHOUT SWIVEL)



## STEP CLAMPS

### FITS FOR BOTH INCH & METRIC STUDS

| ITEM NO. | BOLT SIZE                    | LENGTH | WIDTH | THICKNESS |
|----------|------------------------------|--------|-------|-----------|
| 52140175 | 5/16" or 3/8"<br>(M8 or M10) | 2-1/2  | 1     | 1/2       |
| 52140176 |                              | 4      | 1     | 5/8       |
| 52140177 |                              | 6      | 1-1/8 | 3/4       |
| 52140178 | 1/2"<br>(M12)                | 2-1/2  | 1-1/8 | 1/2       |
| 52140179 |                              | 4      | 1-1/4 | 3/4       |
| 52140180 |                              | 6      | 1-1/4 | 7/8       |
| 52140181 | 5/8"<br>(M16)                | 2-1/2  | 1-1/4 | 5/8       |
| 52140204 |                              | 4      | 1-1/2 | 3/4       |
| 52140182 |                              | 6      | 1-1/2 | 7/8       |
| 52140183 | 3/4"<br>(M18)                | 4      | 1-1/2 | 3/4       |
| 52140184 |                              | 6      | 1-1/2 | 1         |
| 52140185 |                              | 8      | 1-3/4 | 1-1/8     |
| 52140186 | 7/8" or 1"<br>(M20 or M24)   | 6      | 2     | 1-1/4     |
| 52140187 |                              | 8      | 2     | 1-3/8     |
| 52140188 |                              | 10     | 2     | 1-1/2     |





## STEP BLOCKS

### FEATURES:

- Step block (2 pcs/set)
- Heat treated steel
- Black oxide finish

| ITEM NO.                                 | CAPACITY OF FULL BLOCK | HEIGHT OF 1/2 BLOCK |
|------------------------------------------|------------------------|---------------------|
| <b>STANDARD STEEL BLOCKS 1" WIDE</b>     |                        |                     |
| 52140189                                 | 1-1/2~1-3/4            | 1-1/4               |
| 52140190                                 | 1-3/4~2-1/2            | 1-3/4               |
| 52140191                                 | 3-7/8~6                | 3-7/8               |
| <b>STANDARD STEEL BLOCKS 1-1/2" WIDE</b> |                        |                     |
| 52140192                                 | 2-1/2~3-3/4            | 2-1/2               |
| 52140193                                 | 3-7/8~6                | 3-7/8               |
| 52140194                                 | 5-1/2~9                | 5-1/2               |
| <b>STANDARD STEEL BLOCKS 2" WIDE</b>     |                        |                     |
| 52140195                                 | 2-1/2~3-3/4            | 2-1/2               |
| 52140196                                 | 3-7/8~6                | 3-7/8               |
| 52140197                                 | 5-1/2~9                | 5-1/2               |



## UNIVERSAL CLAMPS & U-CLAMPS



▲ ITEM NO. 52140198~52140200



▲ ITEM NO. 52140201~52140203

### SOLD IN PAIR

| ITEM NO. | STUDS   | TABLE SLOT | WEIGHT (kgs) |
|----------|---------|------------|--------------|
| 52140198 | 1/2"-13 | 5/8"       | 1.7/PAIR     |
| 52140199 | 5/8"-16 | 3/4"       | 2.1/PAIR     |
| 52140200 | 3/4"-10 | 1"         | 4.5/PAIR     |
| 52140201 | 1/2"-13 | 5/8"       | 1.6/PAIR     |
| 52140202 | 5/8"-16 | 3/4"       | 2.5/PAIR     |
| 52140203 | 3/4"-10 | 1"         | 4.6/PAIR     |



## U-CLAMPS (W/ COPPER PLATE & SPRING)

| UNIT: mm |            |               |            |
|----------|------------|---------------|------------|
| ITEM NO. | STUDS      | SPE / (LxMxH) | N.W. (kgs) |
| 52172552 | 3/8" (M10) | 88 x 35 x 28  | 0.7 / 2PCS |
| 52172553 | 1/2" (M12) | 115 x 45 x 38 | 1.6 / 2PCS |
| 52172554 | 5/8" (M16) | 132 x 54 x 40 | 2.5 / 2PCS |
| 52172555 | 3/4" (M20) | 155 x 60 x 53 | 4.6 / 2PCS |
| 52172556 | 1" (M24)   | 190 x 75 x 68 | 8.1 / 2PCS |



# B “ TOOLS OF WORKHOLDING & PRECISION TOOLS FOR MILLS & VMCS

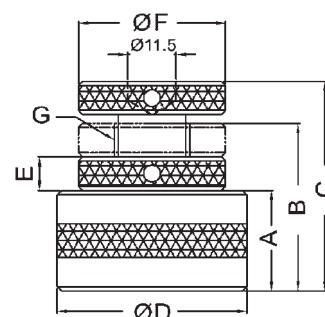


## SCREW SUPPORTERS WITH MAGNET

### FEATURES:

- Allows to be fastened in either horizontal or vertical directions.
- The built-in magnetic device ensures that the body base will not attract iron powders.
- To enlarge the supporting face can use SST7A holder.
- To heighten the supporting workpiece can use SST8A holder.

### EXAMPLE:



UNT:mm

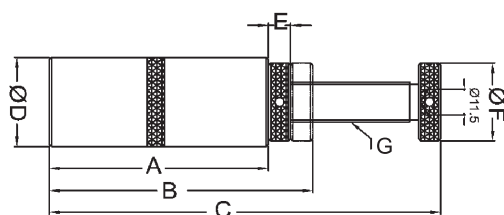
| ITEM NO. | MODEL   | A   | B~C STROKE | ØD | E  | ØF | G        | CAPACITY (kn) | N.W. (kgs) |
|----------|---------|-----|------------|----|----|----|----------|---------------|------------|
| 52171593 | MSS-50  | 24  | 40-50      | 45 | 8  | 35 | Tr18 x 2 | 80            | 0.41       |
| 52171594 | MSS-65  | 34  | 50-65      | 45 | 8  | 35 | Tr18 x 2 | 80            | 0.54       |
| 52171595 | MSS-85  | 49  | 65-85      | 45 | 8  | 35 | Tr20 x 3 | 80            | 1.03       |
| 52171596 | MSS-110 | 63  | 85-110     | 45 | 12 | 40 | Tr25 x 4 | 150           | 1.75       |
| 52171597 | MSS-165 | 85  | 110-165    | 50 | 12 | 45 | Tr25 x 4 | 150           | 2.93       |
| 52171598 | MSS-265 | 135 | 165-265    | 60 | 15 | 50 | Tr32 x 5 | 200           | 6.23       |
| 52171599 | MSS-300 | 170 | 265-300    | 60 | 15 | 50 | Tr32 x 5 | 200           | 7.5        |



## SCREW SUPPORTERS

### FEATURES:

- To enlarge the supporting face can use SST7A holder.
- To heighten the base of supporter can use SST8A holder.



UNT:mm

| ITEM NO. | MODEL   | A   | B~C STROKE | ØD | E  | ØF | G        | CAPACITY (kn) | N.W. (kgs) |
|----------|---------|-----|------------|----|----|----|----------|---------------|------------|
| 52171600 | FS-50S  | 21  | 37-50      | 40 | 8  | 35 | Tr20 x 3 | 80            | 0.56       |
| 52171601 | FS-70S  | 32  | 50-70      | 40 | 8  | 35 | Tr20 x 3 | 80            | 0.78       |
| 52171602 | FS-100S | 46  | 70-100     | 45 | 12 | 40 | Tr20 x 3 | 80            | 1.47       |
| 52171603 | FS-150S | 70  | 100-150    | 50 | 12 | 45 | Tr25 x 4 | 150           | 2.65       |
| 52171604 | FS-250S | 120 | 150-250    | 60 | 15 | 50 | Tr32 x 5 | 200           | 5.64       |
| 52171605 | FS-300S | 170 | 200-300    | 60 | 15 | 50 | Tr32 x 5 | 200           | 7.17       |

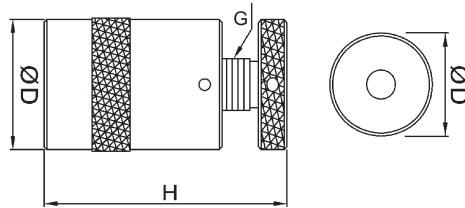




## LEVEL TYPE SCREW SUPPORTERS

### FEATURES:

- Using the ball-typed holder to fix the workpiece, low friction resistance, smooth contact face, easy adjusting and saves the labor force.



UNT:mm

| ITEM NO. | MODEL  | H STROKE      | ØD | G        | CAPACITY (kn) | N.W. (kgs) |
|----------|--------|---------------|----|----------|---------------|------------|
| 52171606 | FS-30  | 30-40 (10)    | 40 | Tm25 x 3 | 40            | 0.25       |
| 52171607 | FS-40  | 40-50 (10)    | 49 | Tm32 x 3 | 60            | 1.47       |
| 52171608 | FS-50  | 50-62 (12)    | 49 | Tm32 x 3 | 80            | 0.65       |
| 52171609 | FS-60  | 60-78 (18)    | 49 | Tm32 x 3 | 100           | 0.73       |
| 52171610 | FS-80  | 80-105 (25)   | 63 | Tm40 x 4 | 160           | 1.60       |
| 52171611 | FS-90  | 90-125 (35)   | 63 | Tm40 x 4 | 160           | 1.80       |
| 52171612 | FS-100 | 100-145 (45)  | 63 | Tm40 x 4 | 160           | 1.90       |
| 52171613 | FS-130 | 130-200 (70)  | 63 | Tm40 x 4 | 160           | 2.60       |
| 52171614 | FS-160 | 160-260 (100) | 63 | Tm40 x 4 | 160           | 3.20       |

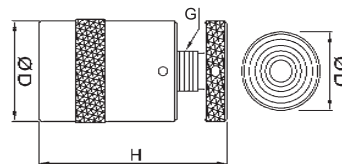


## SPIRAL TYPE SCREW SUPPORTERS

### FEATURES:

- The supporting surface of screw is designed in a deep thread shape, tightens the face of workpiece.

### EXAMPLE:



UNT:mm

| ITEM NO. | MODEL  | H STROKE      | ØD | G        | CAPACITY (kn) | N.W. (kgs) |
|----------|--------|---------------|----|----------|---------------|------------|
| 52171615 | FK-40  | 40-50 (10)    | 49 | Tm32 x 3 | 60            | 0.47       |
| 52171616 | FK-50  | 50-62 (12)    | 49 | Tm32 x 3 | 80            | 0.65       |
| 52171617 | FK-60  | 60-78 (18)    | 49 | Tm32 x 3 | 100           | 0.73       |
| 52171618 | FK-80  | 80-105 (25)   | 63 | Tm40 x 4 | 160           | 1.60       |
| 52171619 | FK-100 | 100-145 (45)  | 63 | Tm40 x 4 | 160           | 1.90       |
| 52171620 | FK-130 | 130-200 (70)  | 63 | Tm40 x 4 | 160           | 2.68       |
| 52171621 | FK-160 | 160-260 (100) | 63 | Tm40 x 4 | 160           | 3.28       |



B7 - CLAMPING KITS

TOOLS OF WORKHOLDING&PRECISION TOOLS FOR MILLS&VMCS

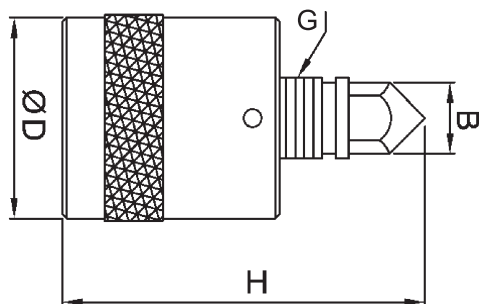
# B “ TOOLS OF WORKHOLDING & PRECISION TOOLS FOR MILLS & VMCS



## CENTER TYPE SCREW SUPPORTERS

### FEATURES:

- The top of the screw is designed in a conical shape and the workpiece is supported by a thimble for the fixed holding purpose.



UNT:mm

| ITEM NO. | MODEL   | H STROKE     | ØD | B (Hexagon) | G        | CAPACITY (kn) | N.W. (kgs) |
|----------|---------|--------------|----|-------------|----------|---------------|------------|
| 52171622 | FJ-60P  | 75-93 (18)   | 49 | 24          | Tm32 x 3 | 100           | 0.70       |
| 52171623 | FJ-80P  | 100-125 (25) | 63 | 30          | Tm40 x 4 | 160           | 1.60       |
| 52171624 | FJ-100P | 120-165 (45) | 63 | 30          | Tm40 x 4 | 160           | 1.90       |

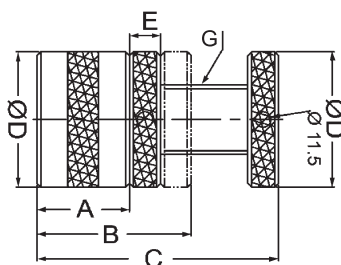


## SCREW SUPPORTERS (ENLARGED TYPE)

### FEATURES:

- The supporting surface of screw (ØD) is designed for enlarged usage, suitable for the use of pressing machines. (without nut)

### EXAMPLE:



UNT:mm

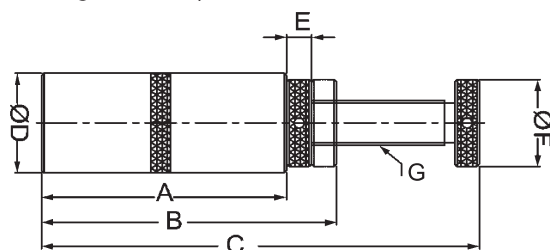
| ITEM NO. | MODEL   | A   | B~C STROKE | ØD | E  | G        | CAPACITY (kn) | N.W. (kgs) |
|----------|---------|-----|------------|----|----|----------|---------------|------------|
| 52171625 | FS-70P  | 40  | 50-70      | 60 | -  | Tr40 x 4 | 400           | 0.97       |
| 52171626 | FS-100P | 46  | 70-100     | 60 | 12 | Tr40 x 4 | 400           | 1.40       |
| 52171627 | FS-150P | 70  | 100-150    | 70 | 15 | Tr44 x 4 | 600           | 2.75       |
| 52171628 | FS-200P | 100 | 150-200    | 80 | 25 | Tr52 x 4 | 800           | 5.20       |



## BIG TYPE SCREW SUPPORTERS

### FEATURES:

- Suitable for the fastening of larger workpieces; convenient operation and high efficiency.

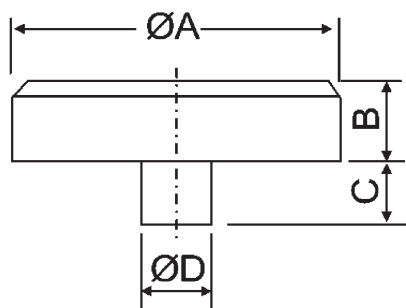


UNT:mm

| ITEM NO. | MODEL    | A   | B~C STROKE | ØD | E  | ØF | G       | CAPACITY (kn) | N.W. (kgs) |
|----------|----------|-----|------------|----|----|----|---------|---------------|------------|
| 52171629 | FS-400T  | 270 | 300-400    | 70 | 15 | 60 | M36 x 4 | 300           | 6          |
| 52171630 | FS-500T  | 370 | 400-500    | 70 | 15 | 60 | M36 x 4 | 300           | 7.5        |
| 52171631 | FS-600T  | 470 | 500-600    | 70 | 15 | 60 | M36 x 4 | 300           | 8.9        |
| 52171632 | FS-700T  | 570 | 600-700    | 70 | 15 | 60 | M36 x 4 | 300           | 10.4       |
| 52171633 | FS-800T  | 670 | 700-800    | 70 | 15 | 60 | M36 x 4 | 300           | 11.9       |
| 52171634 | FS-900T  | 770 | 800-900    | 70 | 15 | 60 | M36 x 4 | 300           | 13.4       |
| 52171635 | FS-1000T | 870 | 900-1000   | 70 | 15 | 60 | M36 x 4 | 300           | 15         |



## SUPPORTER HOLDERS (FACE TYPE)



### FEATURES:

- Suitable for enlarging the supporting face of workpiece (use for MODEL FS-S & MSS).

UNT:mm

| ITEM NO. | MODEL  | ØA | B  | C  | ØD | N.W. (g) |
|----------|--------|----|----|----|----|----------|
| 52171636 | SST-7A | 48 | 10 | 10 | 11 | 150      |
| 52171637 | SST-7B | 54 | 12 | 10 | 11 | 260      |
| 52171638 | SST-7C | 58 | 15 | 10 | 11 | 320      |
| 52171639 | SST-7D | 64 | 20 | 10 | 11 | 450      |



B7 - CLAMPING KITS

TOOLS OF WORKHOLDING & PRECISION TOOLS FOR MILLS & VMCS

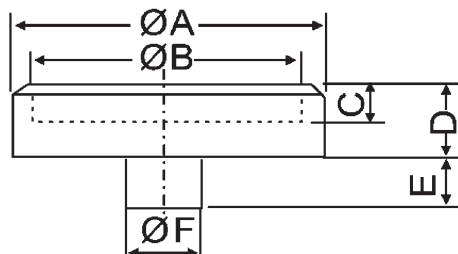
# B “ TOOLS OF WORKHOLDING & PRECISION TOOLS FOR MILLS & VMCS



## SUPPORTER HOLDERS (HEIGHT TYPE)

### FEATURES:

- Suitable for heightening the supporting workpiece.  
(Use for MODEL FS-S and MSS)

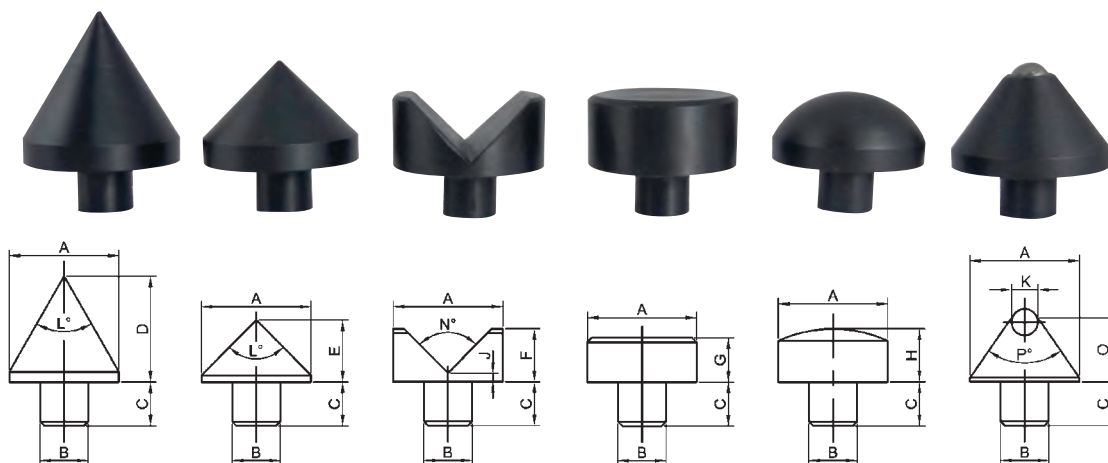


UNT:mm

| ITEM NO. | MODEL  | APPLICATION                           | øA | B  | C | D  | E  | øF | N.W. (g) |
|----------|--------|---------------------------------------|----|----|---|----|----|----|----------|
| 52171640 | SST-8A | FS50S, FS70S                          | 46 | 40 | 4 | 8  | 10 | 11 | 80       |
| 52171641 | SST-8B | MSS50, MSS65, MSS85<br>MSS110, FS100S | 52 | 45 | 4 | 9  | 10 | 11 | 100      |
| 52171642 | SST-8C | MSS165, FS150S                        | 58 | 50 | 5 | 10 | 10 | 11 | 140      |
| 52171643 | SST-8D | MSS265, FS250S, FS300S                | 70 | 60 | 6 | 12 | 10 | 11 | 230      |



## TIPS FOR SCREW SUPPORTERS



UNT:mm

| ITEM NO  | MODEL       | TIPS FOR SCREW SUPPORTER       | A  | B  | C  | D  | E    | F  |
|----------|-------------|--------------------------------|----|----|----|----|------|----|
| 52171644 | KT-1A~KT-6A | FS70S, FS100S, MSS85, MSS110   | 25 | 11 | 10 | 24 | 14   | 12 |
| 52171645 | KT-1B~KT-6B | FS150S, FS250S, MSS165, MSS265 | 30 | 11 | 10 | 31 | 20.5 | 14 |

UNT:mm

| ITEM NO. | G  | H  | I  | J | K | L  | M  | N  | O    | P  |
|----------|----|----|----|---|---|----|----|----|------|----|
| 52171644 | 10 | 12 | 14 | 2 | 6 | 60 | 90 | 90 | 14.5 | 70 |
| 52171645 | 14 | 14 | 18 | 2 | 8 | 60 | 90 | 90 | 19   | 70 |



## BORING HEADS

- This boring head is in constant demand in any machine shop. Note the wide base bearing surface that assures maximum rigidity even when the bar holder is in an off-set position. The 2"(50mm) boring head has a 7/8"~20 threaded back and also features a direct reading dial. 1-1/2"~18 threaded back for 3" (75mm) and 4"(100mm) boring head.



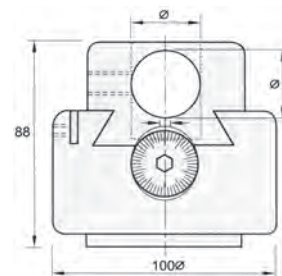
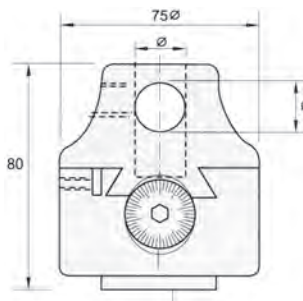
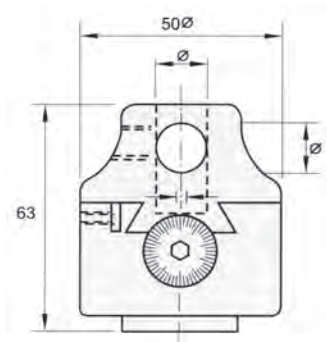
ITEM NO. 52160101



ITEM NO. 52160103



ITEM NO. 52160105



### Ø: HOLE SIZE

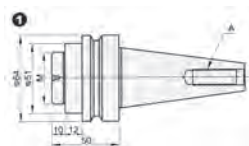
| ITEM NO. | ACTUAL SIZE | OVERALL LENGTH | BORING BAR HOLE SIZE | CENTER DISTANCE BETWEEN HOLES | CROSS HOLE DIA. | OFF SET | N.W.   |
|----------|-------------|----------------|----------------------|-------------------------------|-----------------|---------|--------|
| 52160101 | 2" DIA.     | 2-7/16"        | 1/2"                 | 5/8"                          | 1/2"            | 5/8"    | 0.7 kg |
| 52160102 | 50 mm       | 63 mm          | 12 mm                | 15 mm                         | 12 mm           | 15 mm   | 0.7 kg |
| 52160103 | 3" DIA.     | 3-5/32"        | 3/4"                 | 15/16"                        | 3/4"            | 1"      | 2 kgs  |
| 52160104 | 75 mm       | 80 mm          | 18 mm                | 23 mm                         | 18 mm           | 25 mm   | 2 kgs  |
| 52160105 | 4" DIA.     | 3-1/2"         | 1"                   | 1-1/4"                        | 1"              | 1"      | 4 kgs  |
| 52160106 | 100 mm      | 88 mm          | 25 mm                | 32 mm                         | 25 mm           | 25 mm   | 4 kgs  |



# B<sup>“</sup> TOOLS OF WORKHOLDING & PRECISION TOOLS FOR MILLS & VMCS

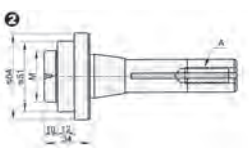


**BORING HEADS SHANKS – FOR ITEMS 52160101~106**



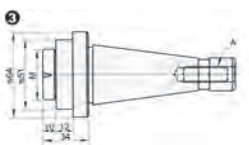
| ITEM NO. | SHANK | DRAWBAR | N.W. |
|----------|-------|---------|------|
|----------|-------|---------|------|

|          |      |           |          |
|----------|------|-----------|----------|
| 52160107 | BT40 | M16 x 2.0 | 1.24 kgs |
| 52160108 | BT50 | M24 x 3.0 | 3.97 kgs |



| ITEM NO. | SHANK | DRAWBAR | N.W. |
|----------|-------|---------|------|
|----------|-------|---------|------|

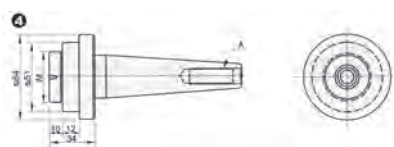
|          |    |               |        |
|----------|----|---------------|--------|
| 52160109 | RB | 7/16" x 20UNC | 0.6 kg |
|----------|----|---------------|--------|



| ITEM NO. | SHANK | DRAWBAR | N.W. |
|----------|-------|---------|------|
|----------|-------|---------|------|

|          |      |              |          |
|----------|------|--------------|----------|
| 52160110 | NT30 | 1/2" x 12W   | 0.6 kg   |
| 52160111 | NT30 | M12 x P1.75  | 0.6 kg   |
| 52160112 | NT40 | 5/8" x 11UNC | 1.2 kgs  |
| 52160113 | NT40 | M16 x P2.0   | 1.2 kgs  |
| 52160114 | NT50 | 1" x 8UNC    | 3.14 kgs |
| 52160115 | NT50 | M24 x P3.0   | 3.14 kgs |

M: Treaded back 7/8"~20 or 1-1/2"~18, please specify when ordering.



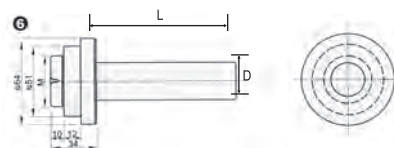
| ITEM NO. | SHANK | DRAWBAR | N.W. |
|----------|-------|---------|------|
|----------|-------|---------|------|

|          |     |              |         |
|----------|-----|--------------|---------|
| 52160116 | MT2 | 3/8" x 16UNC | 0.4 kg  |
| 52160117 | MT2 | M10 x P1.5   | 0.4 kg  |
| 52160118 | MT3 | 3/8" x 16UNC | 0.44 kg |
| 52160119 | MT3 | 1/2" x 13UNC | 0.44 kg |
| 52160120 | MT3 | 1/2" x 12W   | 0.44 kg |
| 52160121 | MT3 | M12 x P1.75  | 0.44 kg |
| 52160122 | MT4 | 5/8" x 11UNC | 0.95 kg |
| 52160123 | MT4 | M16 x P2.0   | 0.95 kg |
| 52160124 | MT5 | 1" x 8UNC    | 1.7 kgs |
| 52160125 | MT5 | M24 x P3.0   | 1.7 kgs |



| ITEM NO. | SHANK | DRAWBAR | N.W. |
|----------|-------|---------|------|
|----------|-------|---------|------|

|          |     |        |         |
|----------|-----|--------|---------|
| 52160126 | MT2 | TANGED | 0.4 kg  |
| 52160127 | MT3 | TANGED | 0.5 kg  |
| 52160128 | MT4 | TANGED | 0.8 kg  |
| 52160129 | MT5 | TANGED | 1.8 kgs |



UNIT: mm

| ITEM NO. | SHANK | D | L | N.W. |
|----------|-------|---|---|------|
|----------|-------|---|---|------|

|          |     |    |    |        |
|----------|-----|----|----|--------|
| 52160130 | Ø20 | 20 | 60 | 0.4 kg |
| 52160131 | Ø25 | 25 | 60 | 0.5 kg |
| 52160132 | Ø32 | 32 | 60 | 0.8 kg |

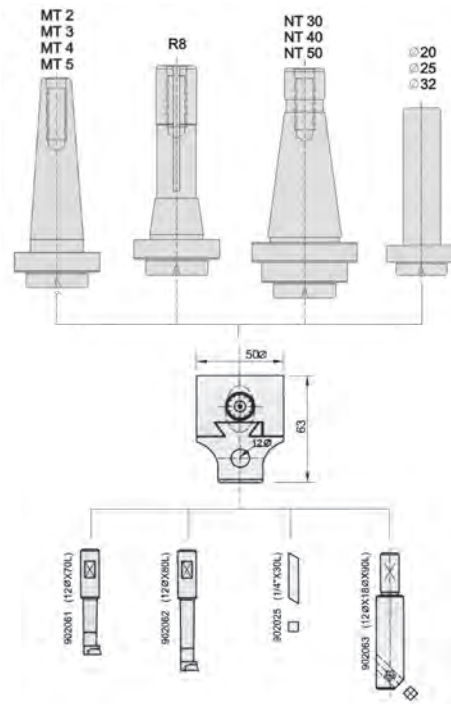


## 2" (50mm) BORING HEAD SETS



### CAPACITY:

- Min. boring diameter 10 mm
- Max. boring diameter 150 mm
- Max. boring depth 50 mm
- Set includes: Boring head x 1pc  
Shank x 1pc  
Boring bar x 2pcs  
Boring bar holder x 1pc  
Tool bit x 1pc  
Hex wrench x 3pcs
- PACKED IN WOODEN CASE



UNT:mm

| ITEM NO.   | SHANK         | DRAWBAR       | N.W.     |
|------------|---------------|---------------|----------|
| 52160133-1 | Without shank |               | 0.9 kgs  |
| 52160133   | BT40          | M16 x P2.0    | 2.6 kgs  |
| 52160134   | BT50          | M24 x P3.0    | 5.4 kgs  |
| 52160135   | R8            | 7/16" x 20UNC | 2 kgs    |
| 52160136   | NT30          | 1/2" x 12W    | 2 kgs    |
| 52160137   | NT30          | M12 x P1.75   | 2 kgs    |
| 52160138   | NT40          | 5/8" x 11UNC  | 2.6 kgs  |
| 52160139   | NT40          | M16 x P2.0    | 2.6 kgs  |
| 52160140   | NT50          | 1" x 8UNC     | 4.5 kgs  |
| 52160141   | NT50          | M24 x P3.0    | 4.5 kgs  |
| 52160142   | MT2           | 3/8" x 16UNC  | 1.8 kgs  |
| 52160143   | MT2           | M10 x P1.5    | 1.8 kgs  |
| 52160144   | MT3           | 3/8" x 16UNC  | 1.84 kgs |
| 52160145   | MT3           | 1/2" x 13UNC  | 1.84 kgs |
| 52160146   | MT3           | 1/2" x 12W    | 1.84 kgs |
| 52160147   | MT3           | M12 x P1.75   | 1.84 kgs |
| 52160148   | MT4           | 5/8" x 11UNC  | 2.35 kgs |
| 52160149   | MT4           | M16 x P2.0    | 2.35 kgs |
| 52160150   | MT5           | 1" x 8UNC     | 3 kgs    |
| 52160151   | MT5           | M24 x P3.0    | 3 kgs    |
| 52160152   | MT2           | TANGED        | 1.8 kgs  |
| 52160153   | MT3           | TANGED        | 1.9 kgs  |
| 52160154   | MT4           | TANGED        | 2.2 kgs  |
| 52160155   | MT5           | TANGED        | 3.2 kgs  |

### STRAIGHT SHANK

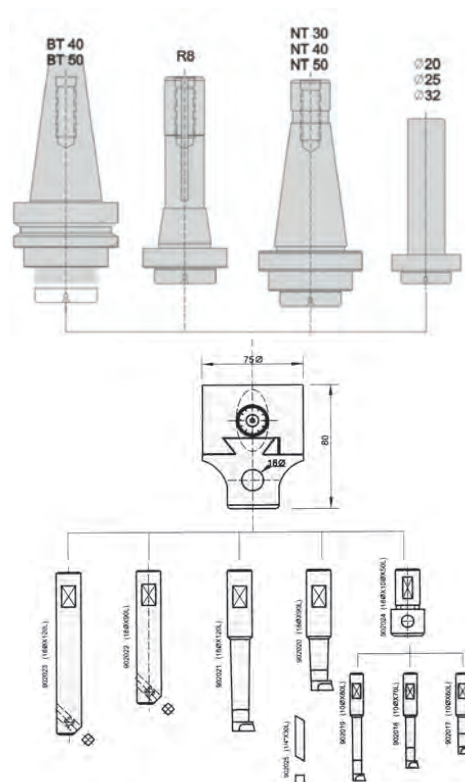
UNIT: mm

| ITEM NO. | SHANK | D  | L  | N.W.    |
|----------|-------|----|----|---------|
| 52160156 | Ø20   | 20 | 60 | 1.8 kgs |
| 52160157 | Ø25   | 25 | 60 | 1.9 kgs |
| 52160158 | Ø32   | 32 | 60 | 2 kgs   |





- PACKED IN PLASTIC CASE

B201 BENIGN ENTERPRISE CO., LTD.

## BORING HEAD SETS



**CAPACITY:**

- Boring bar hole: 18 mm
- Cross hole: 18 mm
- Direct dial reading
- Hardened & Ground feed screw
- Large bearing surface
- Boring range:  $\varnothing 8 \sim \varnothing 250$  mm
- Set includes: Boring head x 1pc  
Shank x 1pc  
Boring bar holder x 3pcs  
Boring bar x 5pcs  
Tool bit x 1pc  
Hex wrench x 3pcs

### Optional Accessories:

(Page B204)

52160387 boring bar x 1pc

Boring range:  $\varnothing 110 \sim \varnothing 270$  mm

Boring depth: 90 mm

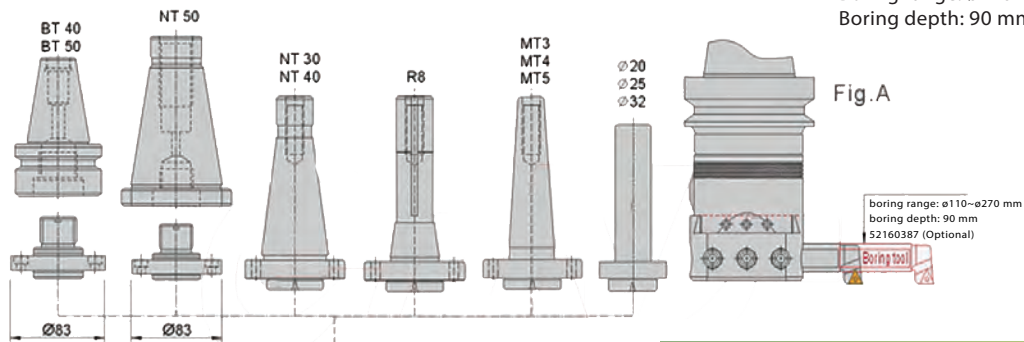


Fig.A

boring range:  $\phi 110 \sim \phi 270$  mm  
boring depth: 90 mm  
52160387 (Optional)

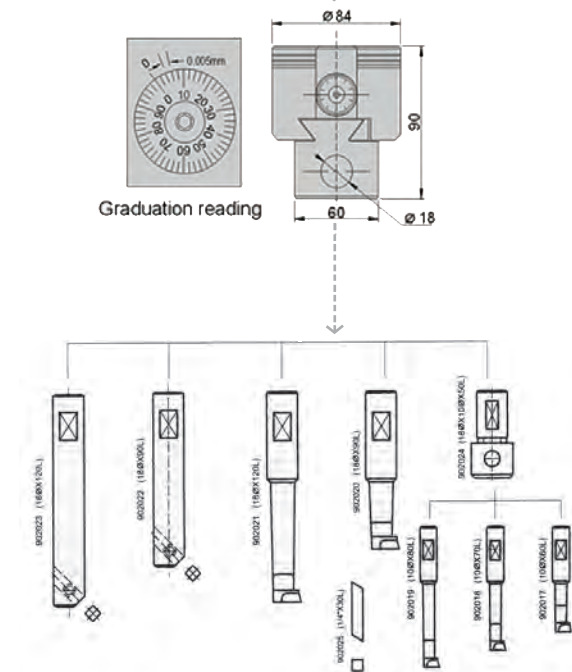
UNIT: mm

| ITEM NO.   | SHANK | DRAWBAR       | N.W.    |
|------------|-------|---------------|---------|
| 52160186-1 |       | Without shank | 4.6 kgs |
| 52160186   | BT40  | M16 x P2.0    | 5.6 kgs |
| 52160187   | BT50  | M24 x P3.0    | 8.3 kgs |
| 52160188   | R8    | 7/16" x 20UNC | 4.8 kgs |
| 52160189   | NT30  | 1/2" x 12W    | 4.5 kgs |
| 52160190   | NT30  | M12 x P1.75   | 4.5 kgs |
| 52160191   | NT40  | 5/8" x 11UNC  | 4.9 kgs |
| 52160192   | NT40  | M16 x P2.0    | 4.9 kgs |
| 52160193   | NT50  | 1" x 8UNC     | 7.6 kgs |
| 52160194   | NT50  | M24 x P3.0    | 7.6 kgs |
| 52160195   | MT3   | 1/2" x 12W    | 4.6 kgs |
| 52160196   | MT3   | M12 x P1.75   | 4.6 kgs |
| 52160197   | MT4   | 5/8" x 11UNC  | 5 kgs   |
| 52160198   | MT4   | M16 x P2.0    | 5 kgs   |
| 52160199   | MT5   | 1" x 8UNC     | 6 kgs   |
| 52160200   | MT5   | M24 x P3.0    | 6 kgs   |
| 52160201   | MT3   | TANGED        | 4.6 kgs |
| 52160202   | MT4   | TANGED        | 5 kgs   |
| 52160203   | MT5   | TANGED        | 6 kgs   |

## STRAIGHT SHANK

UNIT: mm

| ITEM NO. | SHANK | D  | L  | N.W.    |
|----------|-------|----|----|---------|
| 52160204 | Ø20   | 20 | 60 | 4.7 kgs |
| 52160205 | Ø25   | 25 | 60 | 4.8 kgs |
| 52160206 | Ø32   | 32 | 60 | 4.9 kgs |



# B “ TOOLS OF WORKHOLDING & PRECISION TOOLS FOR MILLS & VMCS



## BORING HEAD SETS



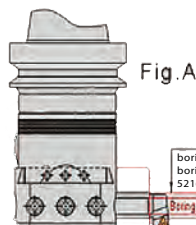
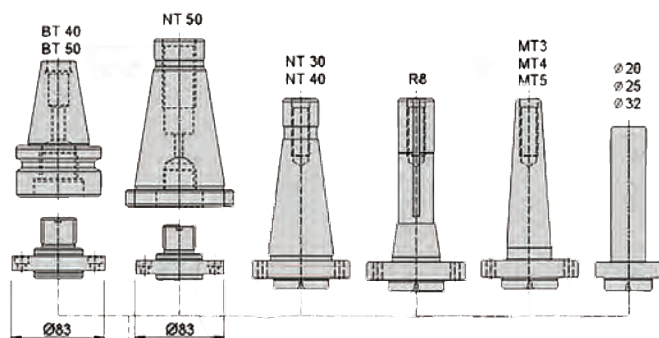
### CAPACITY:

- Boring bar hole: 20 mm
- Cross hole: 20 mm
- Direct dial reading
- Hardened & Ground feed screw
- Large bearing surface
- Boring range:  $\phi 8 \sim \phi 250$  mm
- Set includes: Boring head x 1pc

Shank x 1pc  
Boring bar holder x 4pcs  
Boring bar x 3pcs  
Tool bit x 1pc  
Hex wrench x 3pcs

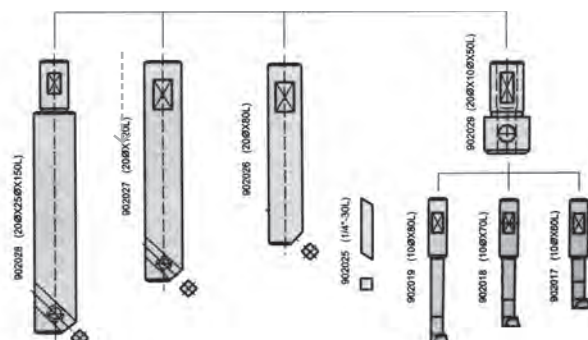
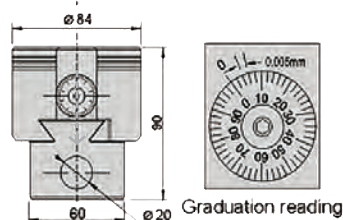
### Optional Accessories:

(Page B204)  
52160396 boring bar x 1pc  
Boring range:  $\phi 110 \sim \phi 270$  mm  
Boring depth: 90 mm



boring range:  $\phi 110 \sim \phi 270$  mm  
boring depth: 90 mm  
52160396 (Optional)

UNIT: mm



| ITEM NO.   | SHANK         | DRAWBAR       | N.W.    |
|------------|---------------|---------------|---------|
| 52160207-1 | Without shank |               | 5 kgs   |
| 52160207   | BT40          | M16 x P2.0    | 6.1 kgs |
| 52160208   | BT50          | M24 x P3.0    | 8.8 kgs |
| 52160209   | R8            | 7/16" x 20UNC | 5.3 kgs |
| 52160210   | NT30          | 1/2" x 12W    | 5 kgs   |
| 52160211   | NT30          | M12 x P1.75   | 5 kgs   |
| 52160212   | NT40          | 5/8" x 11UNC  | 5.4 kgs |
| 52160213   | NT40          | M16 x P2.0    | 5.4 kgs |
| 52160214   | NT50          | 1" x 8UNC     | 8.1 kgs |
| 52160215   | NT50          | M24 x P3.0    | 8.1 kgs |
| 52160216   | MT3           | 1/2" x 12W    | 5.1 kgs |
| 52160217   | MT3           | M12 x P1.75   | 5.1 kgs |
| 52160218   | MT4           | 5/8" x 11UNC  | 5.5 kgs |
| 52160219   | MT4           | M16 x P2.0    | 5.5 kgs |
| 52160220   | MT5           | 1" x 8UNC     | 6.5 kgs |
| 52160221   | MT5           | M24 x P3.0    | 6.5 kgs |
| 52160222   | MT3           | TANGED        | 5.1 kgs |
| 52160223   | MT4           | TANGED        | 5.5 kgs |
| 52160224   | MT5           | TANGED        | 6.5 kgs |

### STRAIGHT SHANK

UNIT: mm

| ITEM NO. | SHANK     | D  | L  | N.W.    |
|----------|-----------|----|----|---------|
| 52160225 | $\phi 20$ | 20 | 60 | 5.2 kgs |
| 52160226 | $\phi 25$ | 25 | 60 | 5.3 kgs |
| 52160227 | $\phi 32$ | 32 | 60 | 5.4 kgs |



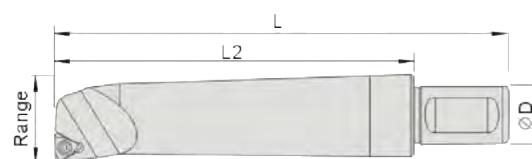
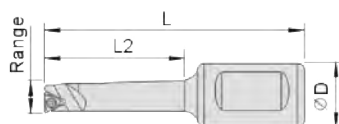
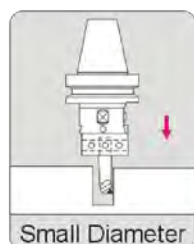
## PRECISION BORING TOOL



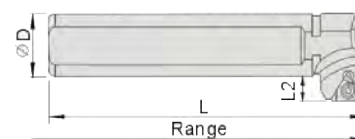
B205



B206



ITEM NO. 52160387  
52160396



UNIT: mm

| ITEM NO. | MODEL        | D                                                                                     | RANGE | L   | L2      | INSERT                                                                                 |                                                                                         |             |             |    |
|----------|--------------|---------------------------------------------------------------------------------------|-------|-----|---------|----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|-------------|-------------|----|
| 52160380 | BH1808-32    | 18                                                                                    | 8-10  | 80  | 32      |  5° | TBGT0601..L                                                                             | SB-1STR-M2  | T6          |    |
| 52160381 | BH1810-40    |                                                                                       | 10-12 | 87  | 40      |                                                                                        |                                                                                         |             |             |    |
| 52160382 | BH1812-53    |                                                                                       | 12-16 | 98  | 53      |                                                                                        |  11° | TBGH0902..L | SB-2TR-M2.5 | T8 |
| 52160383 | BH1816-68    |                                                                                       | 16-20 | 110 | 68      |                                                                                        |                                                                                         |             |             |    |
| 52160384 | BH1820-83    |                                                                                       | 20-25 | 123 | 83      |                                                                                        |                                                                                         |             |             |    |
| 52160385 | BH1825-96    |                                                                                       | 25-30 | 137 | 96      |                                                                                        |                                                                                         |             |             |    |
| 52160386 | BH1830-115   |                                                                                       | 30-35 | 152 | 115     |                                                                                        | TPGH1103..L                                                                             | SB-3TR-M3   | T10         |    |
| 52160387 | BH1836       |                                                                                       | --    | 100 | 80+BTL1 |                                                                                        |                                                                                         |             |             |    |
| 52160388 | BH1818 (SET) | BH 1808-32, BH1810-40, BH1812-53, BH1816-68, BH1820-83, BH1825-96, BH1830-115, BH1836 |       |     |         |                                                                                        |                                                                                         |             |             |    |

UNIT: mm

| ITEM NO. | MODEL        | D  | RANGE                                                                              | L   | L2      | INSERT                                                                                  |             |            |     |
|----------|--------------|----|------------------------------------------------------------------------------------|-----|---------|-----------------------------------------------------------------------------------------|-------------|------------|-----|
| 52160389 | BH2008-32    | 20 | 8-10                                                                               | 80  | 32      |  5°  | TBGT0601..L | SB-1STR-M2 | T6  |
| 52160390 | BH2010-40    |    | 10-12                                                                              | 87  | 40      |                                                                                         |             |            |     |
| 52160391 | BH2012-53    |    | 12-16                                                                              | 98  | 53      |                                                                                         |             |            |     |
| 52160392 | BH2016-68    |    | 16-20                                                                              | 110 | 68      |                                                                                         |             |            |     |
| 52160393 | BH2020-83    |    | 20-25                                                                              | 123 | 83      |  11° |             |            |     |
| 52160394 | BH2025-96    |    | 25-30                                                                              | 137 | 96      |                                                                                         |             |            |     |
| 52160395 | BH2030-115   |    | 30-35                                                                              | 152 | 115     |                                                                                         | TPGH1103..L | SB-3TR-M3  | T10 |
| 52160396 | BH2036       |    | 110-270                                                                            | 100 | 80+BTL1 |                                                                                         |             |            |     |
| 52160397 | BH2018 (SET) | BH | 2008-32, BH2010-40, BH2012-53, BH2016-68, BH2020-83, BH2025-96, BH2030-115, BH2036 |     |         |                                                                                         |             |            |     |



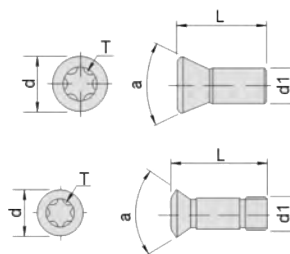
B8 - BORING HEAD SETS

TOOLS OF WORKHOLDING&PRECISION TOOLS FOR MILLS&VMCS

# B “ TOOLS OF WORKHOLDING & PRECISION TOOLS FOR MILLS & VMCS

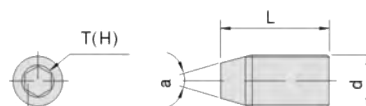


## SCREW – PRECISION BORING TOOL



UNIT: mm

| NO. | SPEC.     | d   | d1  | L   | a   | T (H) |
|-----|-----------|-----|-----|-----|-----|-------|
| 1   | M2 x 4    | 2.7 | 2   | 3.7 | 55° | 6     |
| 2   | M2 x 5    | 2.7 | 2   | 5   | 55° | 6     |
| 3   | M2.2 x 5  | 3   | 2.2 | 4.8 | 55° | 8     |
| 4   | M2.5 x 5  | 3.5 | 2.5 | 5.5 | 55° | 8     |
| 5   | M2.5 x 6  | 3.5 | 2.5 | 6   | 55° | 8     |
| 6   | M3 x 6    | 4   | 3   | 6.5 | 55° | 10    |
| 7   | M3 x 7    | 4   | 3   | 7   | 55° | 10    |
| 8   | M3.5 x 8  | 5.2 | 3.5 | 8.5 | 55° | 15    |
| 9   | M4 x 8    | 5.5 | 4   | 8.5 | 55° | 15    |
| 10  | M4 x 9    | 5.5 | 4   | 9   | 55° | 15    |
| 11  | M4 x 10   | 6   | 4   | 10  | 55° | 15    |
| 12  | M4 x 11   | 5.5 | 4   | 11  | 55° | 15    |
| 13  | M5 x 11   | 7.2 | 5   | 11  | 55° | 15    |
| 14  | M5 x 12   | 7.2 | 5   | 12  | 55° | 20    |
| 15  | M3 x 7B   | 4.5 | 3   | 7   | 60° | 8     |
| 16  | M3 x 10B  | 4.5 | 3   | 10  | 60° | 8     |
| 17  | M3.5 x 8B | 5.2 | 3.5 | 8   | 60° | 15    |
| 18  | M4 x 8B   | 5.7 | 4   | 8.2 | 60° | 15    |
| 19  | B4 x 10B  | 5.7 | 4   | 10  | 60° | 15    |
| 20  | M5 x 12B  | 7.2 | 5   | 12  | 60° | 20    |

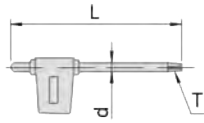


UNIT: mm

| NO. | SPEC.       | d  | L  | a   | T (H) |
|-----|-------------|----|----|-----|-------|
| 1   | AHV0507-2.5 | 5  | 7  | 60° | 2.5   |
| 2   | AHV0608-3   | 6  | 8  | 60° | 3     |
| 3   | AHV0811-4   | 8  | 11 | 60° | 4     |
| 4   | AHV1014-5   | 10 | 14 | 60° | 5     |
| 5   | AHV1218-6   | 12 | 18 | 60° | 6     |

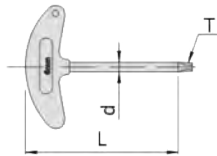


## WRENCH – FINE BORING SYSTEM



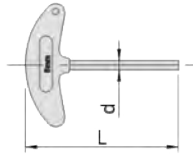
UNIT: mm

| ITEM NO. | WRENCH MODEL | DIMENSION |    |    |
|----------|--------------|-----------|----|----|
|          |              | d         | L  | T  |
| 52160398 | T6           | 2.5       | 84 | 6  |
| 52160399 | T8           | 3         | 86 | 8  |
| 52160400 | T10          | 3         | 90 | 10 |
| 52160401 | T15          | 5         | 94 | 15 |
| 52160402 | T20          | 5         | 94 | 20 |



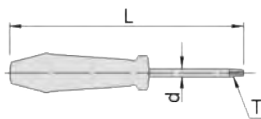
UNIT: mm

| ITEM NO. | WRENCH MODEL | DIMENSION |     |    |
|----------|--------------|-----------|-----|----|
|          |              | d         | L   | T  |
| 52160403 | T30T         | 6         | 120 | 30 |



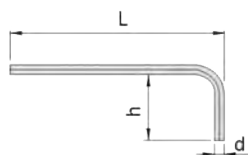
UNIT: mm

| ITEM NO. | WRENCH MODEL | DIMENSION |     |     |
|----------|--------------|-----------|-----|-----|
|          |              | d         | L   | T   |
| 52160404 | TH-20        | 2         | 58  | 8   |
| 52160405 | TH-25        | 2.5       | 66  | 2.5 |
| 52160406 | TH-30        | 3         | 72  | 3   |
| 52160407 | TH-40        | 4         | 76  | 4   |
| 52160408 | TH-50        | 5         | 92  | 5   |
| 52160409 | TH-60        | 6         | 102 | 6   |



UNIT: mm

| ITEM NO. | WRENCH MODEL | DIMENSION |     |    |
|----------|--------------|-----------|-----|----|
|          |              | d         | L   | T  |
| 52160410 | T6A          | 2.5       | 92  | 6  |
| 52160411 | T8A          | 3         | 94  | 8  |
| 52160412 | T10A         | 3         | 98  | 10 |
| 52160413 | T15A         | 5         | 102 | 15 |
| 52160414 | T20A         | 5         | 102 | 20 |



UNIT: mm

| ITEM NO. | WRENCH MODEL | DIMENSION |    |    |
|----------|--------------|-----------|----|----|
|          |              | d         | L  | T  |
| 52160415 | L2           | 2         | 52 | 12 |
| 52160416 | L2.5         | 2.5       | 60 | 15 |
| 52160417 | L3           | 3         | 65 | 20 |
| 52160418 | L4           | 4         | 70 | 25 |
| 52160419 | L5           | 5         | 78 | 28 |
| 52160420 | L6           | 6         | 85 | 32 |



# B “ TOOLS OF WORKHOLDING & PRECISION TOOLS FOR MILLS & VMCS

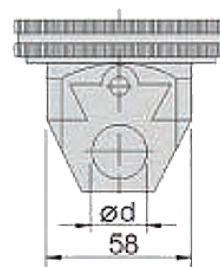
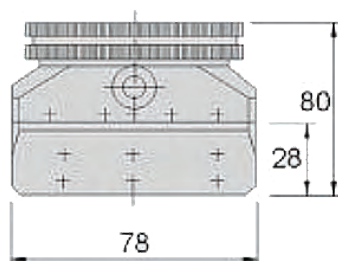


## UNIVERSAL BORING AND FACING HEAD



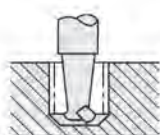
### FEATURES:

- It is constructed with precision parts, freedom of selection feeding quantity, auto feed and stop.
- Processing range from 5 mm to 250 mm.

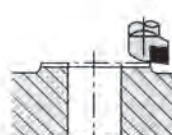
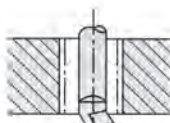


UNIT: mm

| ITEM NO. | BORING BAR HOLE SIZE | CENTER DISTANCE BETWEEN HOLES | CROSS HOLE DIA. | OFFSET |
|----------|----------------------|-------------------------------|-----------------|--------|
| 52160228 | 18                   | 23                            | 18              | 15     |



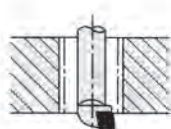
Boring with several different bits from Ø5-Ø250mm



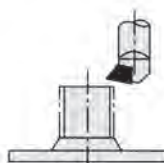
From inside outward



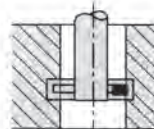
From outside inward



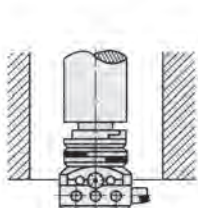
Taper turning



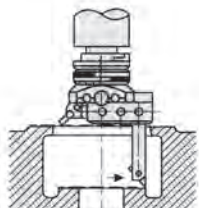
Outside turning



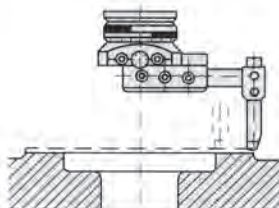
Recessing



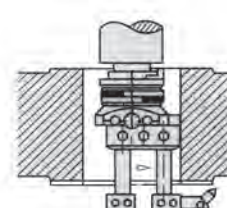
Because of the small construction of the facing and boring heads deep bores can be made. In this case the boring bit is fixed directly in the side



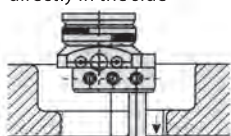
Facing in two ares with one boring bar and a boring bar holder



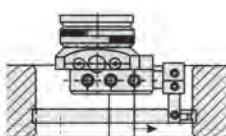
Facing of large with long boring bar holder, reinforced by rings and draw in screw.



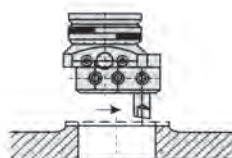
Facing of the reverse side by using boring bar holders contained in attachment.



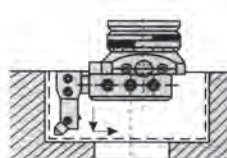
Boring with long boring bar



Recessing with short boring bar holder and a boring bar



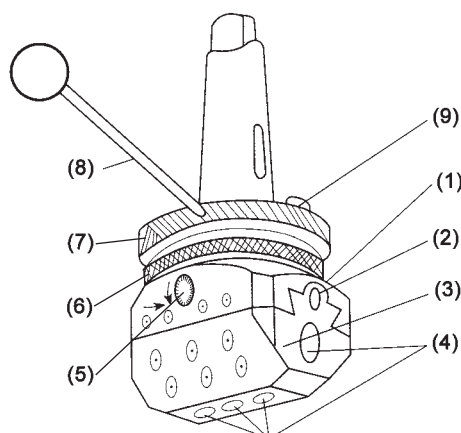
Facing with bit fixed directly in slide



Boring and facing with short boring bar holder and a boring bar



## UNIVERSAL BORING AND FACING HEAD SETS



Main part of the universal boring heads is the body(1), in which the tool slide (3) moves on dovetail guideways. The tool slide is provided with holes for accommodation of tool holders (4). In boring holes or turning external cylindrical surfaces, the tool is adjusted with the aid of the graduated dial for fine setting of tool slide (5), one division of which means a change in diameter of bored hole by 0.0005". On the types Vhu 80 and 125 rapid adjustment of the tool slide (3) can be produced by rotating the graduated dial for quick adjustment of the tool slide (2).

During recessing, turning of front or rear facings or similar jobs calling for automatic transverse feed movement to the tool slide is engaged with the aid of the engagement ring (6). After setting of tool, the automatic transverse feed movement to the tool slide is started by braking of the brake ring (7), by means of the handle (8).

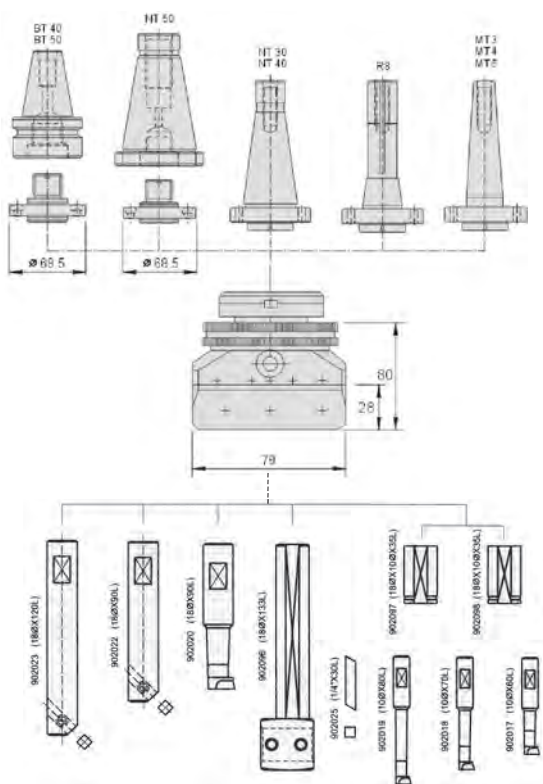
The clutch (9) provides for tripping of the automatic feed movement when cutting resistance increases or when the trip dog is approached. Mechanism of the boring heads has a lubrication circuit delivering oil from two lubricators to all friction surfaces.

All parts are hardened and working surfaces are ground.

- Set includes: Boring & facing head x 1pc  
Shank x 1pc  
Boring bar holder x 2pcs  
Boring bar x 4pcs  
Extension holder x 1pc  
Reducing sleeve x 2pcs  
Tool bit x 1pc

- Please refer to page B209, B210 for information of boring head shank.

UNIT: mm



| ITEM NO.   | SHANK         | DRAWBAR       | N.W.    |
|------------|---------------|---------------|---------|
| 52160229-1 | Without shank |               | 4 kgs   |
| 52160229   | BT40          | M16 x P2.0    | 5.6 kgs |
| 52160230   | BT50          | M24 x P3.0    | 8.3 kgs |
| 52160231   | R8            | 7/16" x 20UNC | 4.8 kgs |
| 52160232   | NT30          | 1/2" x 12W    | 4.5 kgs |
| 52160233   | NT30          | M12 x P1.75   | 4.5 kgs |
| 52160234   | NT40          | 5/8" x 11UNC  | 4.9 kgs |
| 52160235   | NT40          | M16 x P2.0    | 4.9 kgs |
| 52160236   | NT50          | 1" x 8UNC     | 7.6 kgs |
| 52160237   | NT50          | M24 x P3.0    | 7.6 kgs |
| 52160238   | MT3           | 1/2" x 12W    | 4.6 kgs |
| 52160239   | MT3           | M12 x P1.75   | 4.6 kgs |
| 52160240   | MT4           | 5/8" x 11UNC  | 5 kgs   |
| 52160241   | MT4           | M16 x P2.0    | 5 kgs   |
| 52160242   | MT5           | 1" x 8UNC     | 6 kgs   |
| 52160243   | MT5           | M24 x P3.0    | 6 kgs   |
| 52160244   | MT3           | TANGED        | 4.6 kgs |
| 52160245   | MT4           | TANGED        | 5 kgs   |
| 52160246   | MT5           | TANGED        | 6 kgs   |

## BORING HEAD SHANKS

For boring heads ITEM NO. 52160186~52160227 and boring and facing heads ITEM NO. 52160228~52160246.

Fig 1

| ITEM NO. | SHANK | DRAWBAR   | N.W.    |
|----------|-------|-----------|---------|
| 52160247 | BT40  | M16 x 2.0 | 1.6 kgs |
| 52160248 | BT50  | M24 x 3.0 | 4.3 kgs |

Fig 2

| ITEM NO.   | SHANK | DRAWBAR   | N.W.    |
|------------|-------|-----------|---------|
| 52160247-1 | BT40  | M16 x 2.0 | 1.7 kgs |
| 52160248-1 | BT50  | M24 x 3.0 | 4.6 kgs |

Fig 3

| ITEM NO. | SHANK | DRAWBAR        | N.W.    |
|----------|-------|----------------|---------|
| 52160249 | R8    | 7/16" x 2.0UNF | 0.8 kgs |

Fig 4

| ITEM NO. | SHANK | DRAWBAR       | N.W.   |
|----------|-------|---------------|--------|
| 52160250 | NT30  | 1/12" x 12UNC | 0.5 kg |
| 52160251 | NT30  | M12 x P1.75   | 0.5 kg |
| 52160252 | NT40  | 5/8" x 11UNC  | 1.0 kg |
| 52160253 | NT40  | M16 x 2.0     | 1.0 kg |

Fig 5

| ITEM NO. | SHANK | DRAWBAR    | N.W.    |
|----------|-------|------------|---------|
| 52160254 | NT50  | 1" x 8UNC  | 3.6 kgs |
| 52160255 | NT50  | M24 x P3.0 | 3.6 kgs |

Fig 6

| ITEM NO.   | SHANK | DRAWBAR    | N.W.    |
|------------|-------|------------|---------|
| 52160254-1 | NT50  | 1" x 8UNC  | 3.6 kgs |
| 52160255-1 | NT50  | M24 x P3.0 | 3.6 kgs |

Fig 7

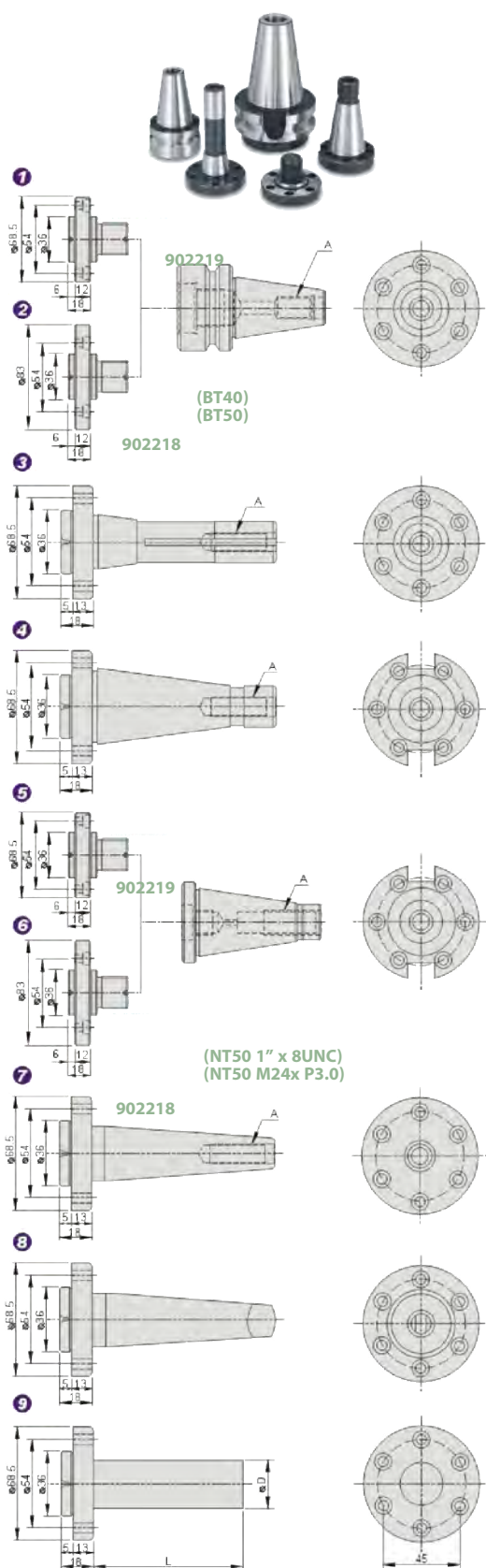
| ITEM NO. | SHANK | DRAWBAR       | N.W.    |
|----------|-------|---------------|---------|
| 52160256 | MT3   | 1/12" x 12UNC | 0.6 kg  |
| 52160257 | MT3   | M12 x P1.75   | 0.6 kg  |
| 52160258 | MT4   | 5/8" x 11UNC  | 1.0 kg  |
| 52160259 | MT4   | M16 x 2.0     | 1.0 kg  |
| 52160260 | MT5   | 1" x 8UNC     | 1.6 kgs |
| 52160261 | MT5   | M24 x P3.0    | 1.6 kgs |

Fig 8

| ITEM NO. | SHANK | DRAWBAR | N.W.    |
|----------|-------|---------|---------|
| 52160262 | MT3   | TANGED  | 0.8 kgs |
| 52160263 | MT4   | TANGED  | 1.0 kgs |
| 52160264 | MT5   | TANGED  | 2.0 kgs |

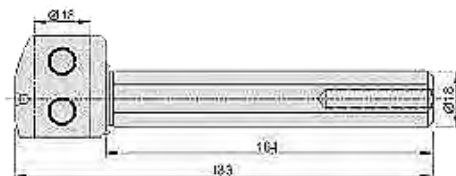
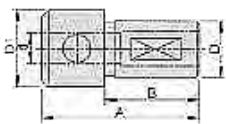
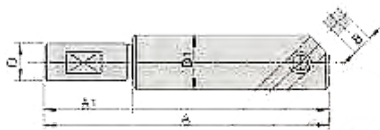
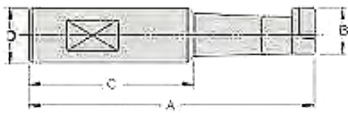
Fig 9

| ITEM NO. | SHANK | D  | L  | N.W.   |
|----------|-------|----|----|--------|
| 52160265 | ø20   | 20 | 60 | 0.5 kg |
| 52160266 | ø25   | 25 | 60 | 0.7 kg |
| 52160267 | ø32   | 32 | 60 | 0.9 kg |





## ACCESSORIES FOR BORING HEADS



## CARBIDE BORING BARS

UNIT: mm

| ITEM NO. | A   | B  | C  | D  | SPEC.      | N.W.    | SUITABLE FOR<br>ITEM NO.                             |
|----------|-----|----|----|----|------------|---------|------------------------------------------------------|
| 52160268 | 60  | 10 | 34 | 10 | ø10 x 60L  | 0.01 kg | Series of<br>52160159,52160186,<br>52160207,52160229 |
| 52160269 | 70  | 10 | 34 | 10 | ø10 x 70L  | 0.01 kg |                                                      |
| 52160270 | 80  | 10 | 34 | 10 | ø10 x 80L  | 0.01 kg |                                                      |
| 52160271 | 70  | 11 | 34 | 12 | ø12 x 70L  | 0.01 kg | Series of<br>52160133                                |
| 52160272 | 80  | 11 | 34 | 12 | ø12 x 80L  | 0.01 kg |                                                      |
| 52160273 | 90  | 18 | 51 | 18 | ø18 x 90L  | 0.14 kg | Series of<br>52160159,52160186                       |
| 52160274 | 120 | 18 | 51 | 18 | ø18 x 120L | 0.17 kg |                                                      |

## BORING BAR HOLDERS

UNIT: mm

| ITEM NO. | A   | A1 | D  | D1 | SPEC.            | N.W.    | SUITABLE FOR<br>ITEM NO. |
|----------|-----|----|----|----|------------------|---------|--------------------------|
| 52160275 | 90  | 28 | 12 | 18 | ø12 x ø18 x 90L  | 0.14 kg | Series of 52160133       |
| 52160276 | 150 | 35 | 20 | 25 | ø20 x ø25 x 150L | 0.49 kg | Series of 52160207       |

## BORING BAR HOLDERS

UNIT: mm

| ITEM NO. | A   | B   | D  | SPEC.      | N.W.    | SUITABLE FOR<br>ITEM NO.       |
|----------|-----|-----|----|------------|---------|--------------------------------|
| 52160277 | 90  | 6.5 | 18 | ø18 x 90L  | 0.16 kg | Series of<br>52160159~52160206 |
| 52160278 | 120 | 6.5 | 18 | ø18 x 120L | 0.23 kg |                                |
| 52160279 | 90  | 6.5 | 20 | ø20 x 80L  | 0.17 kg | Series of 52160207             |
| 52160280 | 120 | 6.5 | 20 | ø20 x 120L | 0.26 kg |                                |

## REDUCING SLEEVES

UNIT: mm

| ITEM NO. | A  | B  | D  | D1 | d  | SPEC.                 | N.W.    | SUITABLE FOR<br>ITEM NO. |
|----------|----|----|----|----|----|-----------------------|---------|--------------------------|
| 52160281 | 50 | 30 | 18 | 25 | 10 | ø18 x ø25 x ø10 x 50L | 0.09 kg | 52160159~52160206        |
| 52160282 | 50 | 32 | 20 | 25 | 10 | ø20 x ø25 x ø10 x 50L | 0.09 kg | 52160207                 |

## REDUCING SLEEVES

UNIT: mm

| ITEM NO. | D  | d  | L  | SPEC.           | N.W.    | SUITABLE FOR<br>ITEM NO. |
|----------|----|----|----|-----------------|---------|--------------------------|
| 52160283 | 18 | 10 | 35 | ø18 x ø10 x 35L | 0.01 kg | Series of 52160229       |
| 52160284 | 18 | 12 | 35 | ø20 x ø12 x 35L | 0.01 kg |                          |

## LATHE CUTTER

UNIT: mm

| ITEM NO. | SPEC.      | N.W.    | SUITABLE FOR<br>ITEM NO.    |
|----------|------------|---------|-----------------------------|
| 52160285 | 1/4" x 30L | 0.01 kg | Series of 52160133~52160246 |

## EXTENDED BAR

UNIT: mm

| ITEM NO. | SPEC.      | N.W.    | SUITABLE FOR<br>ITEM NO. |
|----------|------------|---------|--------------------------|
| 52160286 | ø18 x 133L | 0.36 kg | Series of 52160229       |

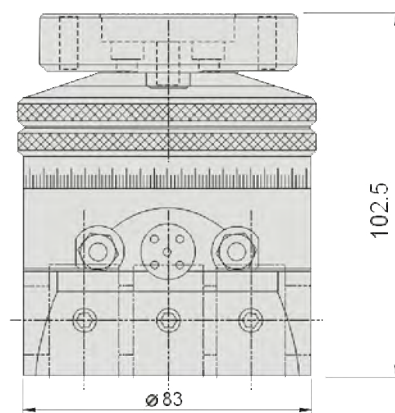
# B “ TOOLS OF WORKHOLDING & PRECISION TOOLS FOR MILLS & VMCS



## HIGH PRECISION UNIVERSAL BORING AND FACING MASTER HEAD

### FEATURES:

- MAX.RPM ..... 1000 rpm
- Built-in feed per rev. .... 0.05 mm
- Rapid return per rev. .... 2 mm



UNIT: mm

| ITEM NO. | BORING HEAD DIA. | BORING BAR HOLE DIA. | TOTAL LENGTH | ADJUSTABLE | BORING RANGE | N.W.    |
|----------|------------------|----------------------|--------------|------------|--------------|---------|
| 52160287 | Ø83              | Ø20                  | 87           | 50         | 5-280        | 2.7 kgs |



## HIGH PRECISION UNIVERSAL BORING AND FACING MASTER HEAD SETS

UNIT: mm



| ITEM NO.   | SHANK | SPEC.         | N.W.      |
|------------|-------|---------------|-----------|
| 52160287-1 |       | Without shank | 6.66 kgs  |
| 52160289   | BT40  | M16 x P2.0    | 8.16 kgs  |
| 52160421   | BT50  | M24 x P3.0    | 10.66 kgs |
| 52160422   | R8    | 7/16" x 20UNC | 7.40 kgs  |
| 52160423   | NT30  | 1/2" x 12UNC  | 7.20 kgs  |
| 52160424   | NT30  | M12 x P1.75   | 7.20 kgs  |
| 52160425   | NT40  | 5/8" x 11UNC  | 7.60 kgs  |
| 52160426   | NT40  | M16 x P2.0    | 7.60 kgs  |
| 52160427   | NT50  | 1" x 8UNC     | 9.45 kgs  |
| 52160428   | NT50  | M24 x P3.0    | 9.45 kgs  |
| 52160429   | MT3   | 1/2" x 12UNC  | 7.27 kgs  |
| 52160430   | MT3   | M12 x P1.75   | 7.27 kgs  |
| 52160431   | MT4   | 5/8" x 11UNC  | 7.52 kgs  |
| 52160432   | MT4   | M16 x P2.0    | 7.52 kgs  |
| 52160433   | MT5   | 1" x 8UNC     | 8.08 kgs  |
| 52160434   | MT5   | M24 x P3.0    | 8.08 kgs  |
| 52160435   | MT3   | TANGED        | 7.32 kgs  |
| 52160436   | MT4   | TANGED        | 7.50 kgs  |
| 52160437   | MT5   | TANGED        | 8.42 kgs  |

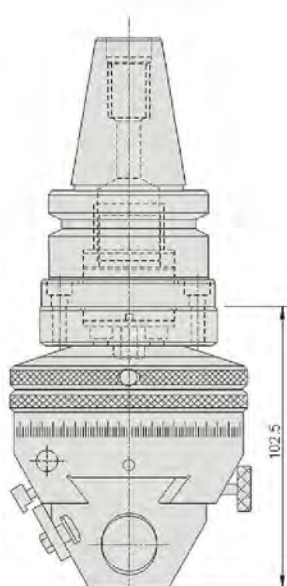


# HIGH PRECISION UNIVERSAL BORING & FACING MASTER HEAD SETS

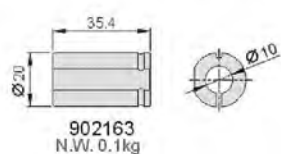
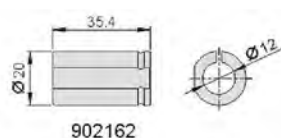
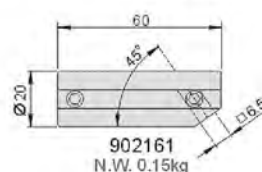
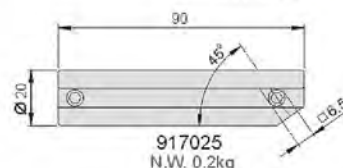
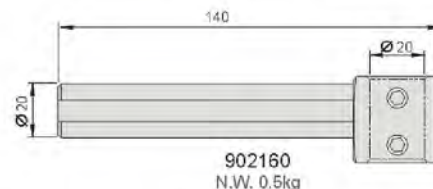
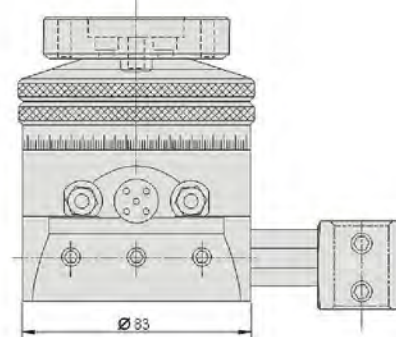
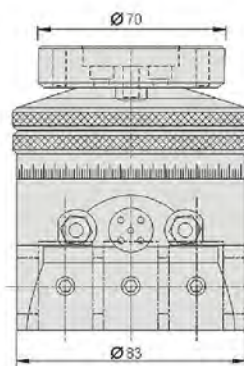
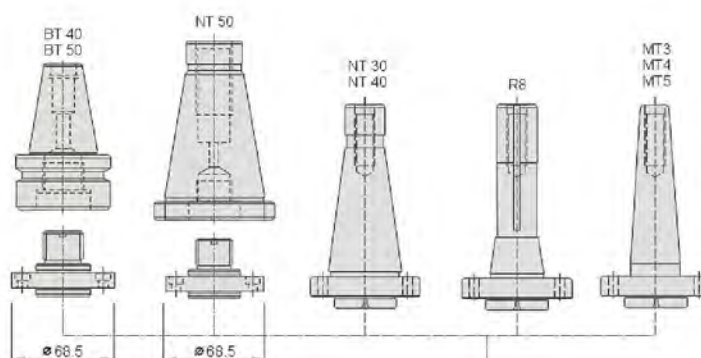


B8 - BORING HEAD SETS

TOOLS OF WORKHOLDING & PRECISION TOOLS FOR MILLS & VMCS



N.W. 4.3 kgs



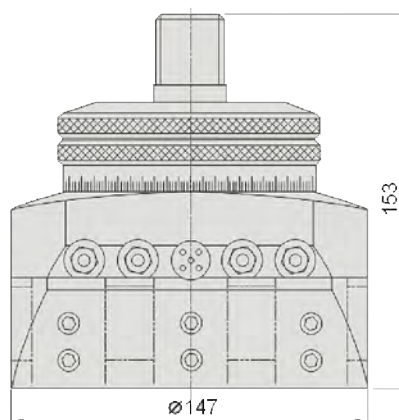
# B “ TOOLS OF WORKHOLDING & PRECISION TOOLS FOR MILLS & VMCS



## HIGH PRECISION UNIVERSAL BORING & FACING MASTER HEAD

### FEATURES:

- MAX.RPM ..... 500 rpm
- Built-in feed per rev. .... 0.05 mm
- Rapid return per rev. .... 2 mm



UNIT: mm

| ITEM NO. | BORING HEAD DIA. | BORING BAR HOLE DIA. | TOTAL LENGTH | ADJUSTABLE | BORING RANGE | N.W.    |
|----------|------------------|----------------------|--------------|------------|--------------|---------|
| 52160288 | Ø147             | Ø30                  | 115          | 100        | 12-500       | 7.5 kgs |



## HIGH PRECISION UNIVERSAL BORING & FACING MASTER HEAD SETS

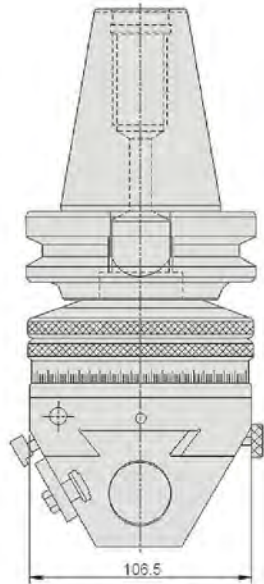
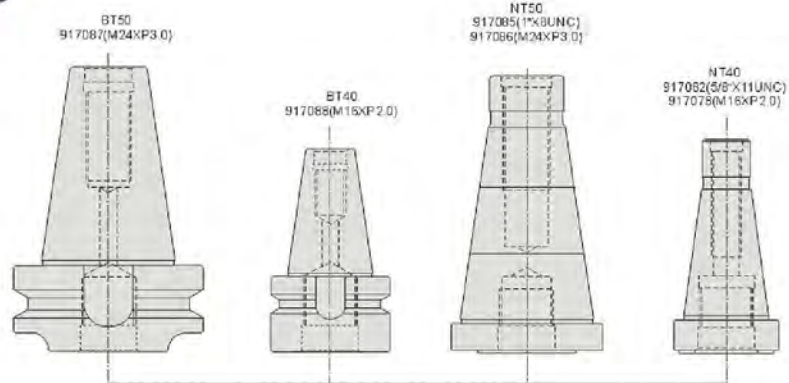


UNIT: mm

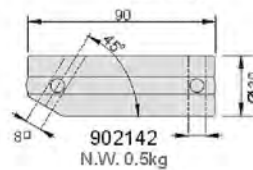
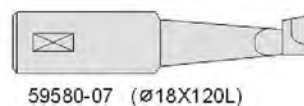
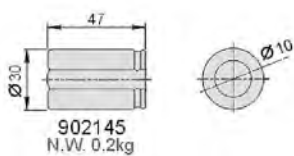
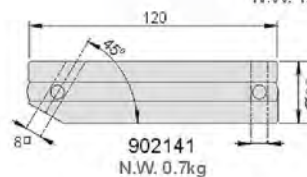
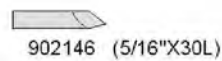
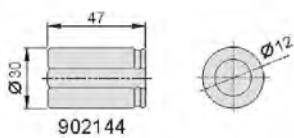
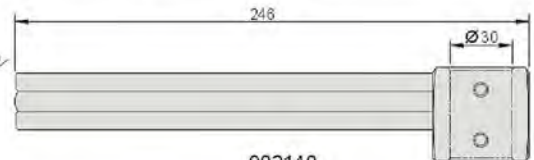
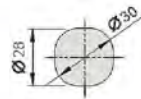
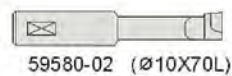
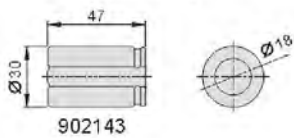
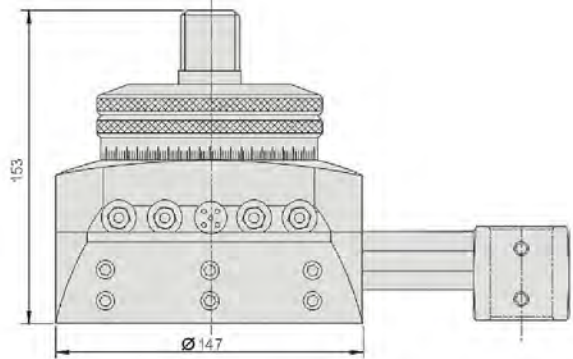
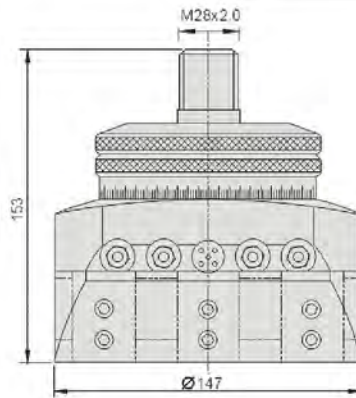
| ITEM NO.   | SHANK | SPEC.         | N.W.      |
|------------|-------|---------------|-----------|
| 52160290-1 |       | Without shank | 15.58 kgs |
| 52160290   | BT40  | M16 x P2.0    | 16.70 kgs |
| 52160438   | BT50  | M24 x P3.0    | 19.00 kgs |
| 52160439   | NT40  | 5/8" x 11UNC  | 16.21 kgs |
| 52160440   | NT40  | M16 x P2.0    | 16.21 kgs |
| 52160441   | NT50  | 1" x 8UNC     | 17.80 kgs |
| 52160442   | NT50  | M24 x P3.0    | 17.80 kgs |



## HIGH PRECISION UNIVERSAL BORING & FACING MASTER HEAD SETS



N.W. 11.3 kgs



B8 - BORING HEAD SETS

TOOLS OF WORKHOLDING & PRECISION TOOLS FOR MILLS & VMCS

# B “ TOOLS OF WORKHOLDING & PRECISION TOOLS FOR MILLS & VMCS



## BORING SHANKS / ARBORS



< ITEM NO. 52160288

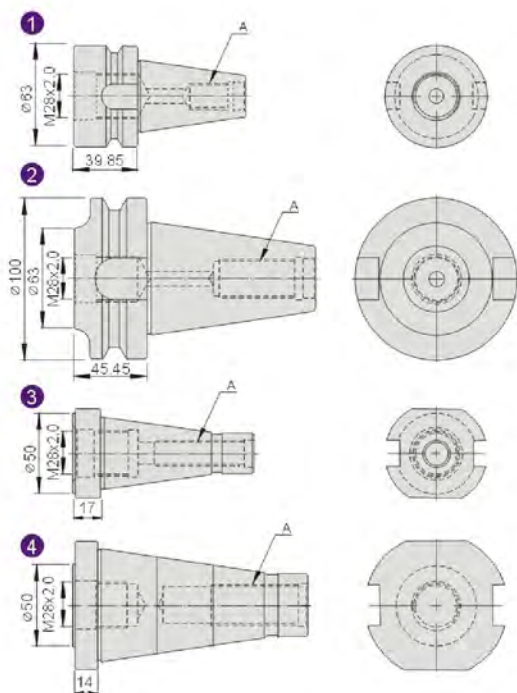


Fig. 1

UNIT: mm

| ITEM NO. | SHANK | SPEC.      | N.W.    |
|----------|-------|------------|---------|
| 52160443 | BT40  | M16 x P2.0 | 1.1 kgs |

Fig. 2

UNIT: mm

| ITEM NO. | SHANK | SPEC.      | N.W.    |
|----------|-------|------------|---------|
| 52160444 | BT50  | M24 x P3.0 | 3.6 kgs |

Fig. 3

UNIT: mm

| ITEM NO. | SHANK | SPEC.        | N.W.   |
|----------|-------|--------------|--------|
| 52160445 | NT40  | 5/8" x 11UNC | 0.6 kg |
| 52160446 | NT40  | M16 x P2.0   | 0.6 kg |

Fig. 4

UNIT: mm

| ITEM NO. | SHANK | SPEC.      | N.W.    |
|----------|-------|------------|---------|
| 52160447 | NT50  | 1" x 8UNC  | 2.4 kgs |
| 52160448 | NT50  | M24 x P3.0 | 2.4 kgs |



## HIGH PRECISION UNIVERSAL BORING & FACING MASTER HEAD SETS



▲ ITEM NO. 52160289



▲ ITEM NO. 52160441

High precision universal boring and facing master head, our unique products, contribute a lot to the promotion of the machinery industry. They are compatible with all kinds of lathes, radial drilling machines, milling machines, horizontal boring machines, and other cutting, drilling, and boring machines, thanks to their merits of automation, accuracy, and constant tolerance control. They are especially designed for working on all machine tools to give high precision, easy, and safe operation. Each head consists of more than 10 components, with an outer head circle of 83 mm, and a total height of 95 mm.

High precision universal boring and facing master head cannot be assembled if its components tolerance is beyond 0.005 mm, an indication of its superb accuracy.

Each head is made of well heat treated high carbon and chromium and molybdenum alloy to give wear-proof and long-time service life. For quality products.

## Applications

### MAJOR APPLICATIONS

|                                 |                                    |                                   |
|---------------------------------|------------------------------------|-----------------------------------|
| <p>1. BORING SMALL HOLE</p>     | <p>2. BORING LARGE HOLE</p>        | <p>7. RECESSING IN LARGE BORE</p> |
| <p>3. FACING SMALL DIAMETER</p> | <p>4. FACING LARGE DIAMETER</p>    | <p>8. EXTERNAL TURNING</p>        |
| <p>5. FACING FROM THE REAR</p>  | <p>6. RECESSING, IN SMALL BORE</p> | <p>9. THREAD CUTTING</p>          |



# B “ TOOLS OF WORKHOLDING & PRECISION TOOLS FOR MILLS & VMCS



## BORING HEAD SET

- Processing capacity:  $\varnothing 10$  mm- $\varnothing 240$  mm
- Hole diameter:  $\varnothing 20$  mm
- Uses on milling machines, boring machine and VMCs.
- SET INCLUDES: Boring head x 1pc  
Shank x 1pc (choose one of the followings:  
R8, NT30, NT40, MT3, MT4)  
Boring bar holders x 4pcs  
Boring bar tools x 3pcs  
Tool bit x 1pc  
Hex key x 3pcs

> ITEM NO.52160351



### > OPTIONAL BORING HEAD SHANKS:

|      |               |                   |
|------|---------------|-------------------|
| BT40 | ...M16 x 2.0  | ITEM NO. 52160352 |
| BT50 | ...M24 x 3.0  | ITEM NO. 52160353 |
| R8   | ...7/16" x 20 | ITEM NO. 52160354 |
| NT30 | ...1/2"-12UNC | ITEM NO. 52160355 |
| NT30 | ...M12 x 1.75 | ITEM NO. 52160356 |
| NT40 | ...M16 x 2.0  | ITEM NO. 52160357 |
| NT40 | ...5/8" x 11  | ITEM NO. 52160358 |
| NT50 | ...1" x 8     | ITEM NO. 52160359 |
| NT50 | ...M24 x 3.0  | ITEM NO. 52160360 |
| MT3  | ...M12 x 1.75 | ITEM NO. 52160361 |
| MT4  | ...M16 x 2.0  | ITEM NO. 52160362 |
| MT5  | ...M20 x 2.5  | ITEM NO. 52160363 |



## ICK-LA LARGE DIA. MODULAR ROUGH BORING HEADS

WITH DIAMETER OVER  $\varnothing 220$  mm

### FEATURES:

- This type is suitable for large diameter boring with ranges from  $\varnothing 200$  mm to  $\varnothing 1250$  mm.
- The structure includes common flange and extension slide for both rough and finish boring heads. Available can be optional accessories for different works. Adjustment ranges is within 110 mm on diameter. The adjustment range for both CBH600 and CBH900LA is 350 mm.
- Available is the horizontal slide made of aluminum alloy to reduce total weight.
- Options of external boring kit with boring range from  $\varnothing 20$ mm to  $\varnothing 300$  mm.



> SPECIFICATION:

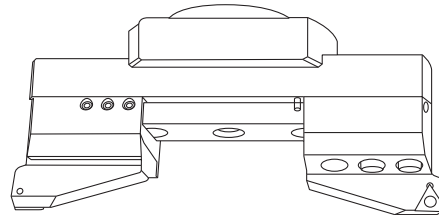
UNIT: mm

| TYPE              |                                                                                     | ICK200LA                                                                            | ICK300LA                                                                            | ICK400LA                        | ICK500LA            | ICK600LA   | ICK900LA        |          |    |
|-------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------|---------------------|------------|-----------------|----------|----|
| BORING HEAD TYPE  | LENGTH (mm)                                                                         | 130                                                                                 | 130                                                                                 | 130                             | 130                 | 150        | 150             |          |    |
|                   | TOTAL WEIGHT (kgs)                                                                  | ALLOY STEEL                                                                         | 9.5                                                                                 | 11.5                            | 13.5                | 15.5       | 33              | 43       |    |
|                   |                                                                                     | ALUMINUM ALLOY                                                                      | 7.2                                                                                 | 8.0                             | 8.8                 | 9.6        | 13.7            | 17.2     |    |
|                   | BORING DIAMETER (mm)                                                                |                                                                                     | 200~310                                                                             | 300~410                         | 400~510             | 500~610    | 600~950         | 900~1250 |    |
| MODULE            | TAPER SHANK                                                                         |  |                                                                                     | BT50-ICK120/ NT50-ICK120 SERIES |                     |            | BT50-FMA-47.625 |          |    |
|                   | FLANGE                                                                              | BR200                                                                               |                                                                                     |                                 |                     |            | BR600           | BR900    |    |
|                   | WEIGHT                                                                              | ALLOY STEEL                                                                         |  |                                 | ALLOY STEEL 2.7 kgs |            |                 | 19       | 29 |
|                   |                                                                                     | ALUMINUM ALLOY                                                                      |                                                                                     |                                 |                     |            |                 | 6.5      | 10 |
|                   | EXTENSION SLIDE                                                                     |  | RST200                                                                              | RST300                          | RST400              | RST500     | RST300 x 2 pcs  |          |    |
|                   | WEIGHT                                                                              | ALLOY STEEL                                                                         | 3.4                                                                                 | 5.4                             | 7.4                 | 9.4        | 10.8            |          |    |
|                   |                                                                                     | ALUMINUM ALLOY                                                                      | 1.1                                                                                 | 1.9                             | 2.7                 | 3.5        | 3.8             |          |    |
|                   | CLAMP BASE                                                                          |  | RS200                                                                               |                                 |                     |            |                 |          |    |
|                   | WEIGHT (kgs)                                                                        |                                                                                     | 0.98 kg                                                                             |                                 |                     |            |                 |          |    |
|                   | HEIGHT SETTING SHIM                                                                 |  | RS201                                                                               |                                 |                     |            |                 |          |    |
|                   | WEIGHT (kgs)                                                                        |                                                                                     | 0.05 kg                                                                             |                                 |                     |            |                 |          |    |
|                   | INSERT HEIGHT                                                                       |                                                                                     | RB200C12                                                                            | RB200T16                        | RB200T22            |            | RB200S12        |          |    |
| APPLICABLE INSERT |  | CCMT120404                                                                          | TCMT16T304                                                                          | TCMT220404                      |                     | SCMT120404 |                 |          |    |
| WEIGHT (kgs)      |                                                                                     | 0.68 kg                                                                             |                                                                                     |                                 |                     |            |                 |          |    |



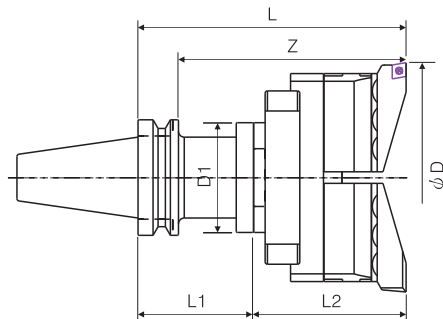
## ICK-LA INDEXABLE TWIN-BIT ROUGH BORING HEAD FOR LARGE HOLE BORING/+ICK120 SHANK

✓ BORING RANGE FROM  $\varnothing 200$  mm –  $\varnothing 1250$  mm (MAS 403 BT)



UNIT: mm

| ITEM NO. | BORING HEAD TYPE | ICK120 NO. | BORING RANGE | L2  | INSERT                                                                   | ALLOY STEEL WEIGHT | ALUMINUM ALLOY WEIGHT |
|----------|------------------|------------|--------------|-----|--------------------------------------------------------------------------|--------------------|-----------------------|
| 52171788 | ICK200-310LA     | ICK 120    | 200-310      | 130 | OPTIONAL INSERTS<br>CCMT120408<br>TCMT16T304<br>TCMT220408<br>SCMT120404 | 9.5 kgs            | 7.2 kgs               |
| 52171789 | ICK300-410LA     |            | 300-410      |     |                                                                          | 11.5 kgs           | 8.0 kgs               |
| 52171790 | ICK400-510LA     |            | 400-510      |     |                                                                          | 13.5 kgs           | 8.8 kgs               |
| 52171791 | ICK500-610LA     |            | 500-610      |     |                                                                          | 15.5 kgs           | 9.6 kgs               |
| 52171792 | ICK600-950LA     | FMA-47.625 | 600-950      | 150 |                                                                          | 33.0 kgs           | 13.7 kgs              |
| 52171793 | ICK900-1250LA    |            | 900-1250     |     |                                                                          | 43.0 kgs           | 17.2 kgs              |



◀ SET

UNIT: mm

| ITEM NO. | TYPE              | D        | Z   | ICK120 SHANK    | ICK BORING HEAD | ICK NO. | L   | L1  | D1  | ALLOY STEEL WEIGHT | ALUMINUM ALLOY WEIGHT |
|----------|-------------------|----------|-----|-----------------|-----------------|---------|-----|-----|-----|--------------------|-----------------------|
| 52171794 | BT50-ICK200LA-230 | 200-310  | 185 | BT50-ICK120-100 | ICK200LA        | ICK120  | 230 | 100 | 95  | 18 kgs             | 15.7 kgs              |
| 52171795 | BT50-ICK200LA-330 |          | 285 | BT50-ICK120-200 |                 |         | 330 | 200 |     | 19 kgs             | 16.7 kgs              |
| 52171796 | BT50-ICK200LA-430 |          | 385 | BT50-ICK120-300 |                 |         | 430 | 300 |     | 23 kgs             | 20.7 kgs              |
| 52171797 | BT50-ICK200LA-530 |          | 485 | BT50-ICK120-400 |                 |         | 530 | 400 |     | 27 kgs             | 24.7 kgs              |
| 52171798 | BT50-ICK300LA-230 | 300-410  | 185 | BT50-ICK120-100 | ICK300LA        | ICK120  | 230 | 100 | 95  | 20 kgs             | 16.5 kgs              |
| 52171799 | BT50-ICK300LA-330 |          | 285 | BT50-ICK120-200 |                 |         | 330 | 200 |     | 21 kgs             | 17.5 kgs              |
| 52171800 | BT50-ICK300LA-430 |          | 385 | BT50-ICK120-300 |                 |         | 430 | 300 |     | 25 kgs             | 21.5 kgs              |
| 52171801 | BT50-ICK300LA-530 |          | 485 | BT50-ICK120-400 |                 |         | 530 | 400 |     | 29 kgs             | 25.5 kgs              |
| 52171802 | BT50-ICK400LA-230 | 400-510  | 185 | BT50-ICK120-100 | ICK400LA        | ICK120  | 230 | 100 | 95  | 22 kgs             | 17.3 kgs              |
| 52171803 | BT50-ICK400LA-330 |          | 285 | BT50-ICK120-200 |                 |         | 330 | 200 |     | 23 kgs             | 18.3 kgs              |
| 52171804 | BT50-ICK400LA-430 |          | 385 | BT50-ICK120-300 |                 |         | 430 | 300 |     | 27 kgs             | 22.3 kgs              |
| 52171805 | BT50-ICK400LA-530 |          | 485 | BT50-ICK120-400 |                 |         | 530 | 400 |     | 31 kgs             | 26.3 kgs              |
| 52171806 | BT50-ICK500LA-230 | 500-610  | 185 | BT50-ICK120-100 | ICK500LA        | ICK120  | 230 | 100 | 95  | 24 kgs             | 18.1 kgs              |
| 52171807 | BT50-ICK500LA-330 |          | 285 | BT50-ICK120-200 |                 |         | 330 | 200 |     | 25 kgs             | 19.1 kgs              |
| 52171808 | BT50-ICK500LA-430 |          | 385 | BT50-ICK120-300 |                 |         | 430 | 300 |     | 29 kgs             | 23.1 kgs              |
| 52171809 | BT50-ICK500LA-530 |          | 485 | BT50-ICK120-400 |                 |         | 530 | 400 |     | 33 kgs             | 27.1 kgs              |
| 52171810 | BT50-ICK600LA-230 | 600-950  | 185 | BT50-           | ICK600LA        | FMA     | 230 | 75  | 128 | 40 kgs             | 20.7 kgs              |
| 52171811 | BT50-ICK900LA-230 | 900-1250 | 185 | FMA47.625-75    | ICK900LA        | 47.625  | 230 | 75  |     | 50 kgs             | 24.2 kgs              |

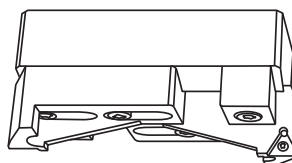


# B “ TOOLS OF WORKHOLDING & PRECISION TOOLS FOR MILLS & VMCS



## ICK INDEXABLE TWIN-BIT ROUGH BORING HEADS

▽ BORING RANGE FROM ø200mm-ø454 mm



UNIT: mm

| ITEM NO. | BORING HEAD TYPE | LBK NO. | BORING RANGE | L2 | INSERT     | WEIGHT (kgs) |
|----------|------------------|---------|--------------|----|------------|--------------|
| 52171812 | ICK200-300-C     | ICK 120 | 200-254      | 95 | CCMT120408 | 6.5 kgs      |
| 52171813 | ICK200-300-T     |         |              |    | TCMT220408 |              |
| 52171814 | ICK200-300-S     |         |              |    | SCMT120404 |              |
| 52171818 | ICK300-400-C     |         | 300-354      |    | CCMT120408 | 10 kgs       |
| 52171819 | ICK300-400-T     |         |              |    | TCMT220408 |              |
| 52171820 | ICK300-400-S     |         |              |    | SCMT120404 |              |
| 52171824 | ICK400-500-C     |         | 400-454      |    | CCMT120408 | 13.4 kgs     |
| 52171825 | ICK400-500-T     |         |              |    | TCMT220408 |              |
| 52171826 | ICK400-500-S     |         |              |    | SCMT120404 |              |
|          |                  |         |              |    |            |              |

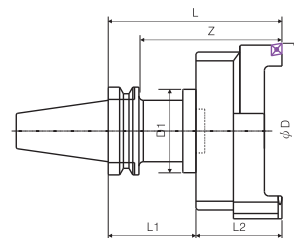


## ICK-LA INDEXABLE TWIN-BIT ROUGH BORING HEAD FOR LARGE HOLE BORING/+ICK120 SHANK

▽ BORING RANGE FROM ø200 mm-ø454 mm (MAS 403 BT)

### FEATURES:

- The head is suitable for single bit boring, twin-bit boring and step boring with working diameter from ø200 mm to ø450 mm on diameter.
- New cartridge style with built-up rib. The pressure imposed on both cartridges counteracts producing highest rigidity and cutting efficiency, most suitable for a variety of borings.
- Boring head can be easily adjusted to different boring needs for machining on demand. Boring depth can be extended by tool connection.
- Clear side division provide a convenient adjustment without using a tool pre-setter.
- Most suitable for boring on various machine centers or boring mills. Universal design accepts inserts of any brands, which will reduce tool grinding and greatly improve boring performance.
- Patented step boring design, suitable for both level boring and step boring.
- Boring heads over 200 mm feature direct module, simple structure and high rigidity with adjustment range 50mm on diameter.



< SET

UNIT: mm

| ITEM NO. | TYPE            | D       | Z   | LBK SHANK       | RBH BORING HEAD | ICK NO. | L   | L1  | D1 | WEIGHT (kgs) |
|----------|-----------------|---------|-----|-----------------|-----------------|---------|-----|-----|----|--------------|
| 52171827 | BT50-ICK200-195 | 200-254 | 150 | BT50-ICK120-100 | ICK200          | ICK120  | 195 | 100 |    | 15.0 kgs     |
| 52171828 | BT50-ICK200-295 |         | 250 | BT50-ICK120-200 |                 |         | 295 | 200 |    | 16.0 kgs     |
| 52171829 | BT50-ICK200-395 |         | 350 | BT50-ICK120-300 |                 |         | 395 | 300 |    | 20.0 kgs     |
| 52171830 | BT50-ICK200-495 |         | 450 | BT50-ICK120-400 |                 |         | 495 | 400 |    | 24.0 kgs     |
| 52171835 | BT50-ICK300-195 | 300-354 | 150 | BT50-ICK120-100 | ICK300          |         | 195 | 100 |    | 18.5 kgs     |
| 52171836 | BT50-ICK300-295 |         | 250 | BT50-ICK120-200 |                 |         | 295 | 200 |    | 19.5 kgs     |
| 52171837 | BT50-ICK300-395 |         | 350 | BT50-ICK120-300 |                 |         | 395 | 300 | 95 | 23.5 kgs     |
| 52171838 | BT50-ICK300-495 |         | 450 | BT50-ICK120-400 |                 |         | 495 | 400 |    | 27.5 kgs     |
| 52171843 | BT50-ICK400-195 | 400-454 | 150 | BT50-ICK120-100 | ICK400          |         | 195 | 100 |    | 21.9 kgs     |
| 52171844 | BT50-ICK400-295 |         | 250 | BT50-ICK120-200 |                 |         | 295 | 200 |    | 22.9 kgs     |
| 52171845 | BT50-ICK400-395 |         | 350 | BT50-ICK120-300 |                 |         | 395 | 300 |    | 26.9 kgs     |
| 52171846 | BT50-ICK400-495 |         | 450 | BT50-ICK120-400 |                 |         | 495 | 400 |    | 30.9 kgs     |

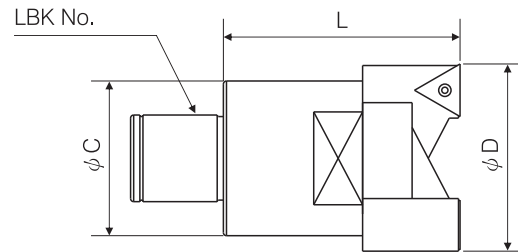


## ICK INDEXABLE TWIN-BIT ROUGH BORING HEADS

✓ BORING RANGE FROM  $\varnothing 25$  mm– $\varnothing 204$  mm

### FEATURES:

- The head is suitable for single bit boring, twin-bit boring and step boring with working diameter from  $\varnothing 25$  mm to  $\varnothing 204$  mm on diameter.
- New cartridge style with built-up rib. The pressure imposed on both cartridges counteracts producing highest rigidity and cutting efficiency, most suitable for a variety of borings.
- Boring head can be easily adjusted to different boring needs for machining on demand. Boring depth can be extended by tool connection.
- Clear side division provide a convenient adjustment without using a tool pre-setter.
- Most suitable for boring on various machine centers or boring mills. Universal design accepts inserts of any brands, which will reduce tool grinding and greatly improve boring performance.
- Patented steps boring design, suitable for both level boring and step boring.



UNIT: mm

| ITEM NO. | BORING HEAD TYPE | LBK NO.          | BORING RANGE<br>$\varnothing D$ | L   | C   | INSERT     | WEIGHT<br>(kgs) |
|----------|------------------|------------------|---------------------------------|-----|-----|------------|-----------------|
| 52171847 | ICK25-33-C       | ICK2             | 25-33                           | 45  | 24  | CCMT060204 | 0.15            |
| 52171848 | ICK32-42-C       | ICK3             | 32-42                           | 55  | 31  | CCMT060204 | 0.3             |
| 52171849 | ICK32-42-T       |                  |                                 |     |     | TCMT110204 |                 |
| 52171850 | ICK40-55-C       | ICK4             | 40-55                           | 65  | 39  | CCMT09T304 | 0.5             |
| 52171851 | ICK44-55-T       |                  |                                 |     |     | TCMT16T304 |                 |
| 52171852 | ICK-40-55-S      |                  |                                 |     |     | SCMT09T304 |                 |
| 52171853 | ICK52-70-C       | ICK5             | 52-75                           | 75  | 50  | CCMT09T304 | 1               |
| 52171854 | ICK52-70-T       |                  |                                 |     |     | TCMT16T304 |                 |
| 52171856 | ICK52-70-S       |                  |                                 |     |     | SCMT09T304 |                 |
| 52171857 | ICK68-92-C       | ICK6             | 68-92                           | 85  | 64  | CCMT120408 | 2               |
| 52171858 | ICK68-92-T       |                  |                                 |     |     | TCMT12T304 |                 |
| 52171859 | ICK68-92-S       |                  |                                 |     |     | SCMT120404 |                 |
| 52171860 | ICK90-122-C      | ICK6             | 90-122                          | 100 | 80  | CCMT120408 | 2.9             |
| 52171861 | ICK90-122-T      |                  |                                 |     |     | TCMT220408 |                 |
| 52171862 | ICK90-122-S      |                  |                                 |     |     | SCMT120404 |                 |
| 52171863 | ICK120-164-C     | ICK120<br>SERIES | 120-164                         | 100 | 100 | CCMT120408 | 3.8             |
| 52171864 | ICK120-164-T     |                  |                                 |     |     | TCMT220408 |                 |
| 52171865 | ICK120-164-S     |                  |                                 |     |     | SCMT220408 |                 |
| 52171866 | ICK160-204-C     |                  | 160-204                         | 130 | 130 | CCMT120408 | 4.8             |
| 52171867 | ICK160-204-T     |                  |                                 |     |     | TCMT220408 |                 |
| 52171868 | ICK160-204-S     |                  |                                 |     |     | SCMT120404 |                 |

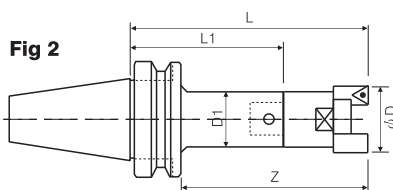
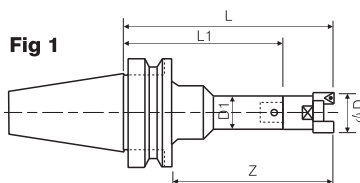


# B “ TOOLS OF WORKHOLDING & PRECISION TOOLS FOR MILLS & VMCS



## ICK INDEXABLE TWIN – BIT ROUGH BORING HEADS + ICK SHANK

▽ BORING RANGE FROM ø25 mm–ø204 mm (MAS 403 BT)



< SET

UNIT: mm

| ITEM NO. | TYPE            | FIG. | ØD      | Z   | LBK SHANK       | RBH BORING HEAD | LBK NO. | L   | L1  | D1 | WEIGHT (kgs) |
|----------|-----------------|------|---------|-----|-----------------|-----------------|---------|-----|-----|----|--------------|
| 52171869 | BT30-ICK25-125  | 2    | 25-33   | 95  | BT30-ICK2-80    | ICK25           | 2       | 125 | 80  | 24 | 0.8          |
| 52171870 | BT30-ICK32-135  |      | 32-42   |     | BT30-ICK3-80    | ICK32           | 3       |     |     | 31 | 1.0          |
| 52171871 | BT30-ICK40-135  |      | 40-55   | 105 | BT30-ICK4-70    | ICK40           | 4       | 135 | 70  | 39 | 1.3          |
| 52171872 | BT30-ICK52-135  |      | 52-70   |     | BT30-ICK5-60    | ICK52           | 5       |     |     | 50 | 1.8          |
| 52171873 | BT30-ICK68-145  |      | 68-92   | 115 | BT30-ICK6-60    | ICK68           | 6       | 145 | 60  | 64 | 3.0          |
| 52171874 | BT30-ICK90-160  | 2    | 90-122  | 130 |                 | ICK90           |         | 160 |     |    | 3.9          |
| 52171875 | BT40-ICK25-130  |      | 25-33   | 95  | BT40-ICK2-85    | ICK25           | 2       | 130 | 85  | 24 | 1.3          |
| 52171876 | BT40-ICK32-150  |      | 32-42   |     | BT40-ICK3-95    | ICK32           | 3       |     | 95  | 31 | 1.5          |
| 52171877 | BT40-ICK40-150  |      | 40-55   | 115 | BT40-ICK4-85    | ICK40           | 4       | 150 | 85  | 39 | 1.8          |
| 52171878 | BT40-ICK52-150  |      | 52-70   |     | BT40-ICK5-75    | ICK52           | 5       |     | 75  | 50 | 2.3          |
| 52171879 | BT40-ICK68-150  | 2    | 68-92   |     |                 | ICK68           | 6       |     | 65  | 64 | 3.3          |
| 52171880 | BT40-ICK90-165  |      | 90-122  |     | BT40-ICK6-65    | ICK90           |         |     |     |    | 4.2          |
| 52171881 | BT40-ICK120-165 |      | 120-164 | 130 |                 | ICK120          |         | 165 | 70  | 95 | 7.0          |
| 52171882 | BT40-ICK160-165 |      | 160-204 |     | BT40-ICK120-70  | ICK160          | ICK120  |     |     |    | 8.0          |
| 52171883 | BT50-ICK25-155  |      | 25-33   | 105 | BT50-ICK2-110   | ICK25           | 2       | 155 | 110 | 24 | 4.1          |
| 52171884 | BT50-ICK32-180  | 2    | 32-42   | 130 | BT50-ICK3-125   | ICK32           | 3       |     | 125 | 31 | 4.4          |
| 52171885 | BT50-ICK40-180  |      | 40-55   |     | BT50-ICK4-115   | ICK40           | 4       |     | 115 | 39 | 4.8          |
| 52171886 | BT50-ICK40-240  |      |         | 190 | BT50-ICK4-175   |                 |         | 240 | 175 |    | 5.3          |
| 52171887 | BT50-ICK52-180  |      |         | 130 | BT50-ICK5-105   |                 |         | 180 | 105 |    | 5.5          |
| 52171888 | BT50-ICK52-255  |      | 52-70   | 205 | BT50-ICK5-180   | ICK52           | 5       | 255 | 180 | 50 | 6.5          |
| 52171889 | BT50-ICK52-315  | 2    |         | 265 | BT50-ICK5-240   |                 |         | 315 | 240 |    | 7.2          |
| 52171890 | BT50-ICK68-180  |      |         | 130 | BT50-ICK6-95    |                 |         | 180 | 105 |    | 6.5          |
| 52171891 | BT50-ICK68-255  |      |         | 205 | BT50-ICK6-170   |                 |         | 255 | 180 |    | 8.3          |
| 52171892 | BT50-ICK68-315  |      |         | 265 | BT50-ICK6-230   |                 |         | 315 | 240 |    | 9.6          |
| 52171893 | BT50-ICK68-375  |      | 68-92   | 325 | BT50-ICK6-290   | ICK68           |         | 375 | 290 |    | 11.0         |
| 52171894 | BT50-ICK68-435  | 1    |         |     | BT50-ICK6-350   |                 |         |     |     |    | 15.5         |
| 52171895 | BT50-ICK68-435  |      |         | 385 | BT50-ICK6-350   |                 |         | 435 | 350 |    | 13.2         |
| 52171896 | BT50-ICK90-195  |      |         | 145 | BT50-ICK6-95    |                 | 6       | 195 | 95  | 64 | 7.4          |
| 52171897 | BT50-ICK90-270  |      |         | 220 | BT50-ICK6-170   |                 |         | 270 | 170 |    | 9.2          |
| 52171898 | BT50-ICK90-330  |      |         | 280 | BT50-ICK6-230   |                 |         | 330 | 230 |    | 10           |
| 52171899 | BT50-ICK90-390  | 2    | 90-122  | 340 | BT50-ICK6-290   | ICK90           |         | 390 | 290 |    | 11.9         |
| 52171900 | BT50-ICK90-450  |      |         |     | BT50-ICK6-350   |                 |         |     |     |    | 16.4         |
| 52171901 | BT50-ICK90-450  |      |         | 400 | BT50-ICK6-350   |                 |         | 435 | 350 |    | 14.1         |
| 52171902 | BT50-ICK120-195 |      |         | 150 | BT50-ICK120-100 |                 |         | 195 | 100 |    | 8.8          |
| 52171903 | BT50-ICK120-295 |      |         | 250 | BT50-ICK-200    |                 |         | 295 | 200 |    | 11.3         |
| 52171904 | BT50-ICK120-395 | 2    | 120-164 | 350 | BT50-ICK-300    | ICK120          |         | 395 | 300 |    | 13.8         |
| 52171905 | BT50-ICK120-495 |      |         | 450 | BT50-ICK-400    |                 |         | 495 | 400 | 95 | 16.3         |
| 52171906 | BT50-ICK160-195 |      |         | 150 | BT50-ICK100     |                 | ICK120  | 195 | 100 |    | 9.8          |
| 52171907 | BT50-ICK160-295 |      |         | 250 | BT50-ICK-200    |                 |         | 295 | 200 |    | 12.3         |
| 52171908 | BT50-ICK160-395 |      | 160-204 | 350 | BT50-ICK-300    | ICK120          |         | 395 | 300 |    | 14.8         |
| 52171909 | BT50-ICK160-495 |      |         | 450 | BT50-ICK-400    |                 |         | 495 | 400 |    | 17.3         |



## CBH LARGE DIA. MODULAR FINISH BORING HEADS

✓ WITH DIAMETER OVER Ø200 mm

### FEATURES:

- This type is suitable for large diameter boring with ranges from Ø200 mm to Ø1250 mm.
- The structure includes common flange and extension slide for both rough and finish boring heads.  
Available can be optional accessories for different works. Adjustment ranges is within 110 mm on diameter. The adjustment range for both CBH600 and CBH900LA is 350 mm.
- Available is the horizontal slide made of aluminum alloy to reduce total weight.



### ✓ SPECIFICATION:

| TYPE                 |                     | CBH200                                                                              | CBH300                                                                              | CBH400                          | CBH500  | CBH600  | CBH900          |                |      |
|----------------------|---------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------|---------|---------|-----------------|----------------|------|
| BORING HEAD TYPE     | LENGTH (mm)         | 130                                                                                 | 130                                                                                 | 130                             | 130     | 130     | 150             |                |      |
|                      | TOTAL WEIGHT (kgs)  | ALLOY STEEL                                                                         | 9.7                                                                                 | 11.7                            | 13.7    | 15.7    | 33              | 43             |      |
|                      |                     | ALUMINUM ALLOY                                                                      | 7                                                                                   | 7.8                             | 8.6     | 9.4     | 13.5            | 17             |      |
| BORING DIAMETER (mm) |                     | 200~310                                                                             | 300~410                                                                             | 400~510                         | 500~610 | 600~950 | 900~1250        |                |      |
| MODULE               | TAPER SHANK         |  |                                                                                     | BT50-ICK120/ NT50-ICK120 SERIES |         |         | BT50-FMA-47.625 |                |      |
|                      | FLANGE              | BR200                                                                               |                                                                                     |                                 |         | BR600   | BR900           |                |      |
|                      | WEIGHT              | ALLOY STEEL                                                                         | ALLOY STEEL 2.7 kgs                                                                 |                                 |         |         | 19              | 29             |      |
|                      |                     | ALUMINUM ALLOY                                                                      |                                                                                     |                                 |         |         | 6.5             | 10             |      |
|                      | EXTENSION SLIDE     |  |                                                                                     | RST200                          | RST300  | RST400  | RST500          | RST300 x 2 pcs |      |
|                      | WEIGHT              | ALLOY STEEL                                                                         |  |                                 | 3.4     | 5.4     | 7.4             | 9.7            | 10.8 |
|                      |                     | ALUMINUM ALLOY                                                                      |                                                                                     |                                 | 1.1     | 1.9     | 2.7             | 3.5            | 3.8  |
|                      | BALANCE WEIGHT      |  |                                                                                     | RBN200                          |         |         |                 |                |      |
|                      | WEIGHT (kgs)        |                                                                                     |                                                                                     | 1.6 kgs                         |         |         |                 |                |      |
|                      | HEIGHT SETTING SHIM |  |                                                                                     | CB200                           |         |         |                 |                |      |
| WEIGHT (kgs)         |                     |                                                                                     | 1.6 kgs                                                                             |                                 |         |         |                 |                |      |
| APPLICABLE INSERT    |                     | TP08 / M2.2 / T7, TP09 / M2.5 / T8, TC11 / M2.5 / T8                                |                                                                                     |                                 |         |         |                 |                |      |



B8 - BORING HEAD SETS

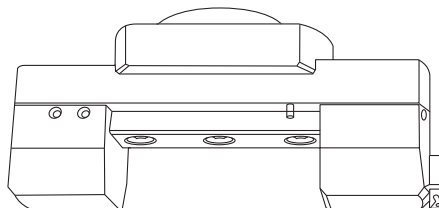
TOOLS OF WORKHOLDING & PRECISION TOOLS FOR MILLS & VMCS

# B “ TOOLS OF WORKHOLDING & PRECISION TOOLS FOR MILLS & VMCS



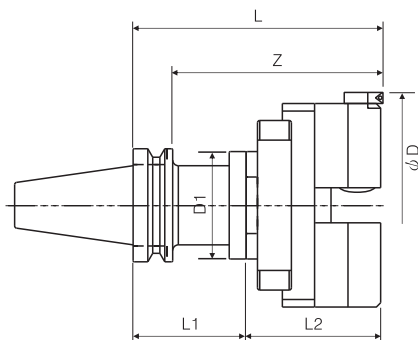
## CBH LARGE DIA. MODULAR FINISH BORING HEADS /+ ICK 120 SHANK

▽BORING RANGE FROM ø200 mm-ø1250 mm (MAS 403BT)



UNIT: mm

| ITEM NO. | BORING HEAD TYPE | ICK120 NO.     | BORING RANGE | L2  | INSERT / CLAMPING SCREW / WRENCH                         | ALLOY STEEL WEIGHT | ALUMINUM ALLOY WEIGHT |
|----------|------------------|----------------|--------------|-----|----------------------------------------------------------|--------------------|-----------------------|
| 52171764 | CBH200           | ICK 120 SERIES | 200-310      | 130 | TP08 / M2.2 / T7<br>TP09 / M2.5 / T8<br>TP11 / M2.5 / T8 | 9.7 kgs            | 7.0 kgs               |
| 52171765 | CBH300           |                | 300-410      |     |                                                          | 11.7 kgs           | 7.8 kgs               |
| 52171766 | CBH400           |                | 400-510      |     |                                                          | 13.7 kgs           | 8.6 kgs               |
| 52171767 | CBH500           |                | 500-610      |     |                                                          | 15.7 kgs           | 9.4 kgs               |
| 52171768 | CBH600           | FMA-47.625     | 600-950      | 150 |                                                          | 33 kgs             | 13.5 kgs              |
| 52171769 | CBH900           |                | 900-1250     |     |                                                          | 43 kgs             | 17 kgs                |



< SET

UNIT: mm

| ITEM NO. | TYPE            | D        | Z   | ICK120 SHANK    | CBH BORING HEAD | ICK NO. | L   | L1  | D1  | ALLOY STEEL WEIGHT | ALUMINUM ALLOY WEIGHT |
|----------|-----------------|----------|-----|-----------------|-----------------|---------|-----|-----|-----|--------------------|-----------------------|
| 52171770 | BT50-CBH200-230 | 200-310  | 185 | BT50-ICK120-100 | CBH200          | ICK120  | 230 | 100 | 95  | 18.2 kgs           | 15.5 kgs              |
| 52171771 | BT50-CBH200-330 |          | 285 | BT50-ICK120-200 |                 |         | 330 | 200 |     | 19.2 kgs           | 16.5 kgs              |
| 52171772 | BT50-CBH200-430 |          | 385 | BT50-ICK120-300 |                 |         | 430 | 300 |     | 22.3 kgs           | 20.5 kgs              |
| 52171773 | BT50-CBH200-530 |          | 485 | BT50-ICK120-400 |                 |         | 530 | 400 |     | 27.2 kgs           | 24.5 kgs              |
| 52171774 | BT50-CBH300-230 | 300-410  | 185 | BT50-ICK120-100 | CBH300          | ICK120  | 230 | 100 | 95  | 20.2 kgs           | 16.3 kgs              |
| 52171775 | BT50-CBH300-330 |          | 285 | BT50-ICK120-200 |                 |         | 330 | 200 |     | 21.2 kgs           | 17.3 kgs              |
| 52171776 | BT50-CBH300-430 |          | 385 | BT50-ICK120-300 |                 |         | 430 | 300 |     | 25.2 kgs           | 21.3 kgs              |
| 52171777 | BT50-CBH300-530 |          | 485 | BT50-ICK120-400 |                 |         | 530 | 400 |     | 29.2 kgs           | 25.3 kgs              |
| 52171778 | BT50-CBH400-230 | 400-510  | 185 | BT50-ICK120-100 | CBH400          | ICK120  | 230 | 100 | 95  | 22.2 kgs           | 17.1 kgs              |
| 52171779 | BT50-CBH400-330 |          | 285 | BT50-ICK120-200 |                 |         | 330 | 200 |     | 23.2 kgs           | 18.1 kgs              |
| 52171780 | BT50-CBH400-430 |          | 385 | BT50-ICK120-300 |                 |         | 430 | 300 |     | 27.2 kgs           | 22.1 kgs              |
| 52171781 | BT50-CBH400-530 |          | 485 | BT50-ICK120-400 |                 |         | 530 | 400 |     | 31.2 kgs           | 26.1 kgs              |
| 52171782 | BT50-CBH500-230 | 500-610  | 185 | BT50-ICK120-100 | CBH500          | ICK120  | 230 | 100 | 95  | 24.2 kgs           | 17.9 kgs              |
| 52171783 | BT50-CBH500-330 |          | 285 | BT50-ICK120-200 |                 |         | 330 | 200 |     | 25.2 kgs           | 18.9 kgs              |
| 52171784 | BT50-CBH500-430 |          | 385 | BT50-ICK120-300 |                 |         | 430 | 300 |     | 29.2 kgs           | 22.9 kgs              |
| 52171785 | BT50-CBH500-530 |          | 485 | BT50-ICK120-400 |                 |         | 530 | 400 |     | 33.2 kgs           | 26.9 kgs              |
| 52171786 | BT50-CBH600-230 | 600-950  | 185 | BT50-           | CBH600          | FMA     | 230 | 75  | 128 | 40.0 kgs           | 20.5 kgs              |
| 52171787 | BT50-CBH900-230 | 900-1250 | 185 | FMA47.625-75    | CBH900          | 47.625  | 230 | 75  |     | 50.0 kgs           | 24.2 kgs              |



## CBH FINISH BORING HEADS

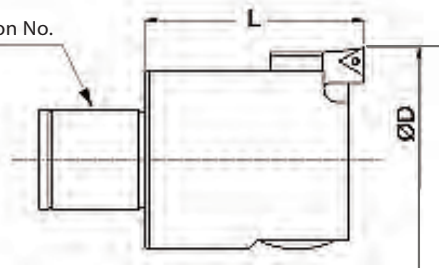
### ✓ BORING RANGE FROM $\varnothing 20$ mm – $\varnothing 202$ mm

- CBH finish boring head is suitable for finish boring with working ranges from  $\varnothing 20$ mm to  $\varnothing 202$ mm on diameter.
- The dial has been graduated into 50 divisions, each of which is 0.01mm on diameter. Available is a sub-dial for finer adjustment.
- High precision internal lead screw with inner lubrication is free from the effects of chip, featuring high durability.
- Coolant nozzle easily cools the insert elongating its working life.
- Cartridge unit is housed in a square structure with two face support, proving high stability and rigidity.



Tool Connection No.

LBK No.



UNIT: mm

| ITEM NO. | BORING HEAD TYPE | LBK NO. | ØD BORING RANGE | LENGTH | WEIGHT (kgs) | INSERT / CLAMPING / WRENCH |
|----------|------------------|---------|-----------------|--------|--------------|----------------------------|
| 52172562 | CBH20            | ICK1    | 20-26           | 35     | 0.1          | TB06 / M2 / T6             |
| 52172563 | CBH25            | ICK2    | 25-33           | 40     | 0.2          | TP08 / M2.2 / T7           |
| 52172564 | CBH32            | ICK3    | 32-42           | 40     | 0.3          | TC09 / M2.2 / T7           |
| 52172565 | CBH40            | ICK4    | 40-55           | 50     | 0.5          |                            |
| 52172566 | CBH52            | ICK5    | 52-75           | 60     | 1            | TP08 / M2.2 / T7           |
| 52172567 | CBH68            | ICK6    | 68-102          | 70     | 2            | TP09 / M2.5 / T8           |
| 52172568 | CBH100           |         | 100-152         |        | 2.9          | TC11 / M2.5 / T8           |
| 52172569 | CBH150           |         | 150-202         |        | 4.2          |                            |



B8 - BORING HEAD SETS

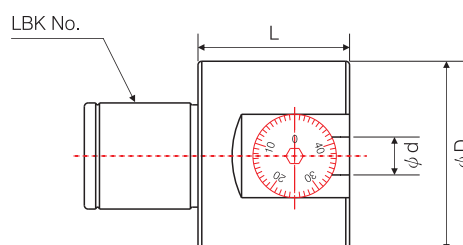
TOOLS OF WORKHOLDING & PRECISION TOOLS FOR MILLS & VMCS

# B “ TOOLS OF WORKHOLDING & PRECISION TOOLS FOR MILLS & VMCS



## IBJ SMALL DIAMETER FINISH BORING HEADS

✓ BORING RANGE FROM  $\phi 3$  mm –  $\phi 40$  mm



### FEATURES:

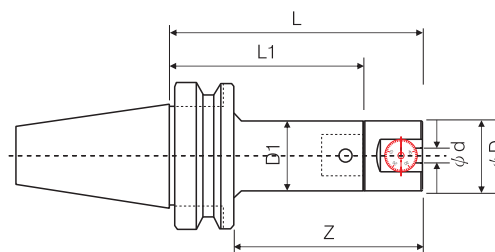
- Available are three different style enabling small diameter boring form  $\phi 8$  mm to  $\phi 40$  mm. boring range can be within  $\phi 3$  mm to  $\phi 10$  mm if small diameter solid carbide boring bar has been employed.
- The dial has been graduated into 50 divisions, each of which is 0.01 mm on diameter. Available is a sub-dial for finer  $\phi$  adjustment.
- High precision internal lead screw with inner lubrication is free from the effect of chip, featuring high durability.

|          |                  |         |                                |                                |        |       | UNIT: mm     |
|----------|------------------|---------|--------------------------------|--------------------------------|--------|-------|--------------|
| ITEM NO. | BORING HEAD TYPE | ICK NO. | INTERNAL DIAMETER ( $\phi d$ ) | EXTERNAL DIAMETER ( $\phi D$ ) | LENGTH | FEED  | WEIGHT (kgs) |
| 52171910 | IBJ14            | ICK4    | 10                             | 39                             | 32     | 0-2.0 | 0.4          |
| 52171911 | IBJ15            | ICK5    | 12                             | 50                             | 40     | 0-3.5 | 1.8          |
| 52171912 | IBJ16            | ICK6    | 16                             | 64                             | 50     | 0-5.0 | 1.4          |



## IBJ SMALL DIAMETER FINISH BORING HEADS + ICK SAHNK

✓ MAS 403 BT



|          |                |       |    |               |                 |         |     |     |    |    | UNIT: mm     |
|----------|----------------|-------|----|---------------|-----------------|---------|-----|-----|----|----|--------------|
| ITEM NO. | TYPE           | F     | Z  | ICK120 SHANK  | IBJ BORING HEAD | ICK NO. | L   | L1  | D1 | d  | WEIGHT (kgs) |
| 52171913 | BT30-IBJ14-100 | 0-2.0 | 70 | BT30-ICK4-070 | IBJ10           | 4       | 100 | 70  | 39 | 10 | 1.2          |
| 52171914 | BT30-IBJ15-100 | 0-3.5 | 70 | BT30-ICK5-060 | IBJ12           | 5       | 100 | 60  | 50 | 12 | 1.6          |
| 52171915 | BT30-IBJ16-110 | 0-5.0 | 80 | BT30-ICK6-060 | IBJ16           | 6       | 110 | 60  | 64 | 16 | 2.4          |
| 52171916 | BT40-IBJ14-115 | 0-2.0 | 75 | BT40-ICK4-085 | IBJ10           | 4       | 115 | 85  | 39 | 10 | 1.7          |
| 52171917 | BT40-IBJ15-115 | 0-3.5 | 75 | BT40-ICK5-075 | IBJ12           | 5       | 115 | 75  | 50 | 12 | 2.1          |
| 52171918 | BT40-IBJ16-115 | 0-5.0 | 75 | BT40-ICK6-065 | IBJ16           | 6       | 115 | 65  | 64 | 16 | 2.7          |
| 52171919 | BT50-IBJ14-145 | 0-2.0 | 95 | BT50-ICK4-115 | IBJ10           | 4       | 145 | 115 | 39 | 10 | 4.7          |
| 52171920 | BT50-IBJ15-145 | 0-3.5 | 95 | BT50-ICK5-105 | IBJ12           | 5       | 145 | 105 | 50 | 12 | 5.3          |
| 52171921 | BT50-IBJ16-145 | 0-5.0 | 95 | BT50-ICK6-095 | IBJ16           | 6       | 145 | 95  | 64 | 16 | 5.9          |



## IBJ ACCESSORIES

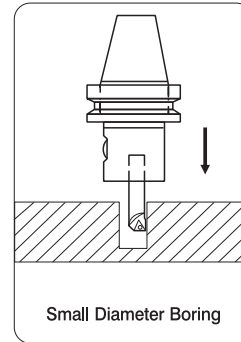


**Fig. 1**

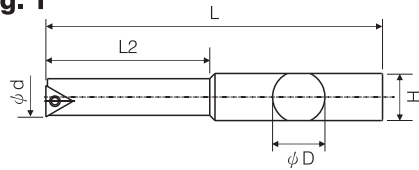
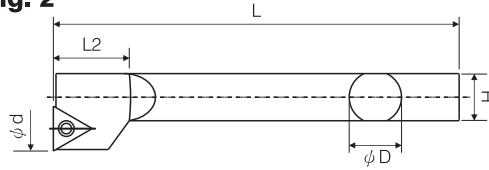


**Fig. 2**



### ✓ BJ TYPE FINE BORING BAR (FOR CB14) (BORING RANGE FROM ø8~ø22 mm)

UNIT: mm

| ITEM NO. | TYPE      | Fig. | øD | ød | L  | L2 | H | INSERT      | CLAMP SCREW | WRENCH |
|----------|-----------|------|----|----|----|----|---|-------------|-------------|--------|
| 52171922 | BJ1008-32 | 1    | 10 | 8  | 64 | 32 | 9 | TB...0601.. | MS2005A     | TF6    |
| 52171923 | BJ1010-40 | 1    | 10 | 10 | 72 | 40 | 9 |             |             |        |
| 52171924 | BJ1012-45 | 2    | 10 | 12 | 77 | 27 | 9 | TB...0902.. | MS2506A     | TF9    |
| 52171925 | BJ1016-45 | 2    | 10 | 16 | 77 | 27 | 9 |             |             |        |
| 52171926 | BJ1020-45 | 2    | 10 | 20 | 77 | 27 | 9 |             |             |        |

• BJ10-5PCS: BJ1008-32, BJ1010-40, BJ1012-45, BJ1016-45, BJ1020-45

### ✓ BJ TYPE FINE BORING BAR (FOR CB15) (BORING RANGE FROM ø8~ø25 mm)

UNIT: mm

| ITEM NO. | TYPE      | Fig. | øD | ød | L  | L2 | H | INSERT      | CLAMP SCREW | WRENCH |
|----------|-----------|------|----|----|----|----|---|-------------|-------------|--------|
| 52171927 | BJ1208-32 | 1    | 12 | 8  | 64 | 32 | 9 | TB...0601.. | MS2005A     | TF6    |
| 52171928 | BJ1210-40 | 1    | 12 | 10 | 72 | 40 | 9 |             |             |        |
| 52171929 | BJ1212-45 | 1    | 12 | 12 | 77 | 45 | 9 | TB...0902.. | MS2506A     | TF9    |
| 52171930 | BJ1216-45 | 2    | 12 | 16 | 77 | 22 | 9 |             |             |        |
| 52171931 | BJ1220-45 | 2    | 12 | 20 | 77 | 25 | 9 |             |             |        |

• BJ12-5PCS: BJ1208-32, BJ1210-40, BJ1212-45, BJ1216-45, BJ1220-45

### ✓ BJ TYPE FINE BORING BAR (FOR CB16) (BORING RANGE FROM ø8~ø50 mm)

UNIT: mm

| ITEM NO. | TYPE      | Fig. | øD | ød | L   | L2 | H  | INSERT      | CLAMP SCREW | WRENCH |
|----------|-----------|------|----|----|-----|----|----|-------------|-------------|--------|
| 52171932 | BJ1608-32 | 1    | 16 | 8  | 74  | 32 | 15 | TB...0601.. | MS2005A     | TF6    |
| 52171933 | BJ1610-40 | 1    | 16 | 10 | 75  | 40 | 15 |             |             |        |
| 52171934 | BJ1612-53 | 1    | 16 | 12 | 85  | 53 | 15 | TB...0902.. | MS2506A     | TF9    |
| 52171935 | BJ1616-68 | 1    | 16 | 16 | 100 | 68 | 15 |             |             |        |
| 52171936 | BJ1620-83 | 2    | 16 | 20 | 115 | 83 | 15 |             |             |        |
| 52171937 | BJ1625-90 | 2    | 16 | 25 | 122 | 90 | 15 | TB...1103.. | MS3008A     | TF9    |
| 52171938 | BJ1630-90 | 2    | 16 | 30 | 122 | 90 | 15 |             |             |        |
| 52171939 | BJ1640-90 | 2    | 16 | 40 | 122 | 90 | 15 |             |             |        |
|          |           |      |    |    |     |    |    |             |             |        |

• BJ12-8PCS: BJ1608-32, BJ1610-40, BJ1612-53, BJ1616-68, BJ1620-83, BJ1625-90, BJ1630-90, BJ1640-90



# B “ TOOLS OF WORKHOLDING & PRECISION TOOLS FOR MILLS & VMCS

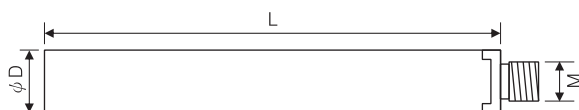
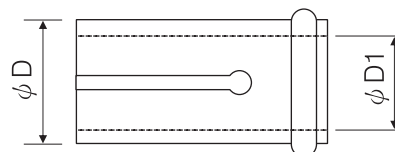


## IBJ ACCESSORIES

### ✓ COLLET FOR TUNGSTEN CARBIDE SMALL DIAMETER MODULAR BORING BAR SERIES TYPE EC

UNIT: mm

| ITEM NO. | TYPE   | D  | D1 | APPLICABLE CARBIDE TOOL HOLDER |
|----------|--------|----|----|--------------------------------|
| 52171940 | EC1608 | 16 | 8  | ST08, HC08                     |
| 52171941 | EC1610 | 16 | 10 | ST10, HC10                     |
| 52171942 | EC1612 | 16 | 12 | ST12, HC12                     |



### ✓ TUNGSTEN CARBIDE SMALL DIAMETER MODULAR BORING BAR TYPE SC

UNIT: mm

| ITEM NO. | TYPE         | L   | D  | M   | APPLICABLE INSERT HOLDER                                                                     | APPLICABLE BUSHING |
|----------|--------------|-----|----|-----|----------------------------------------------------------------------------------------------|--------------------|
| 52171943 | ST08-M5-115  | 115 | 8  | M5  | BE09A, BE10.5A                                                                               | EC1608             |
| 52171944 | ST10-M6-115  | 115 | 10 | M6  | BE 12A                                                                                       | EC1610             |
| 52171945 | ST10-M6-135  | 135 | 10 | M6  | BE 12A                                                                                       | EC1610             |
| 52171946 | ST10-M6-160  | 160 | 10 | M6  | BE 12A                                                                                       | EC1610             |
| 52171947 | ST12-M6-135  | 135 | 12 | M6  | BE14A, BE16A                                                                                 | EC1612             |
| 52171948 | ST12-M6-165  | 165 | 12 | M6  | BE14A, BE16A                                                                                 | EC1612             |
| 52171949 | ST16-M10-180 | 180 | 16 | M10 | BE 18A, BE 20A, BE22A, BE24A<br>BE 26A, BE 28A, BE30A, BE32A<br>BE 34A, BE 36A, BE38A, BE40A | -                  |

### ✓ TUNGSTEN CARBIDE SMALL DIAMETER MODULAR BORING BAR TYPE HC

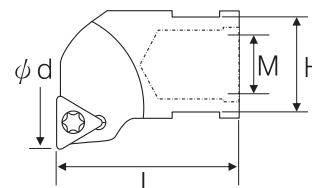
UNIT: mm

| ITEM NO. | TYPE         | L   | D  | M   | APPLICABLE INSERT HOLDER                                     | APPLICABLE BUSHING |
|----------|--------------|-----|----|-----|--------------------------------------------------------------|--------------------|
| 52171950 | HC08-M5-080  | 80  | 8  | M5  | BE09A, BE10.5A                                               | EC1608             |
| 52171951 | HC10-M6-100  | 100 | 10 | M6  | BE12A                                                        | EC1610             |
| 52171952 | HC12-M6-120  | 120 | 12 | M6  | BE14A, BE16A                                                 | EC1612             |
| 52171953 | HC12-M10-120 | 120 | 12 | M10 | BE 18A, BE 20A, BE22A, BE24A                                 | EC1612             |
| 52171954 | HC16-M10-140 | 140 | 16 |     | BE 26A, BE 28A, BE30A, BE32A<br>BE 34A, BE 36A, BE38A, BE40A |                    |

### ✓ MODULAR INSERT HOLDER TYPE BE (BORING RANGE FROM ø9 mm-ø40 mm)

UNIT: mm

| ITEM NO. | TYPE    | d    | H  | L  | M   | INSERT     | CLAMP SCREW | WRENCH |
|----------|---------|------|----|----|-----|------------|-------------|--------|
| 52171955 | BE 09A  | 9    | 7  | 18 | M5  |            |             |        |
| 52171956 | BE10.5A | 10.5 | 7  | 18 | M5  |            |             |        |
| 52171957 | BE12A   | 12   | 8  | 23 | M6  |            |             |        |
| 52171958 | BE14A   | 14   | 10 | 23 | M6  |            |             |        |
| 52171959 | BE16A   | 16   | 10 | 23 | M6  |            |             |        |
| 52171960 | BE18A   | 18   | 14 | 27 | M10 |            |             |        |
| 52171961 | BE20A   | 20   | 14 | 27 | M10 |            |             |        |
| 52171962 | BE22A   | 22   | 14 | 27 | M10 |            |             |        |
| 52171963 | BE24A   | 24   | 14 | 27 | M10 | TP..0802.. | MS2006A     | TF7    |
| 52171964 | BE26A   | 26   | 14 | 27 | M10 |            |             |        |
| 52171965 | BE28A   | 28   | 14 | 27 | M10 |            |             |        |
| 52171966 | BE30A   | 30   | 14 | 27 | M10 |            |             |        |
| 52171967 | BE32A   | 32   | 14 | 27 | M10 |            |             |        |
| 52171968 | BE34A   | 34   | 14 | 27 | M10 |            |             |        |
| 52171969 | BE36A   | 36   | 14 | 27 | M10 |            |             |        |
| 52171970 | BE38A   | 38   | 14 | 27 | M10 |            |             |        |
| 52171971 | BE40A   | 40   | 14 | 27 | M10 |            |             |        |

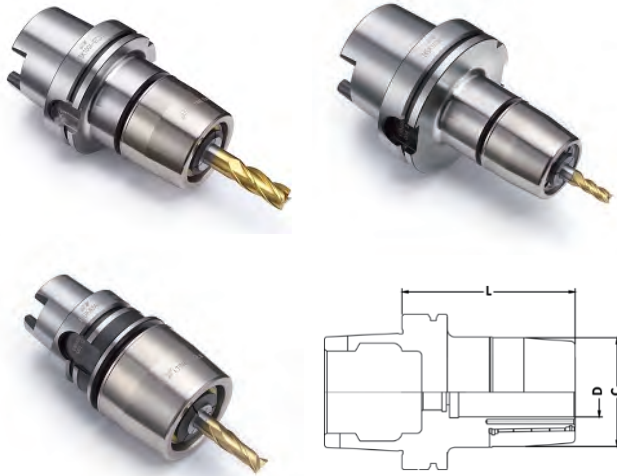




## HSK HIGH SPEED PRECISION DOUBLE POWER MILLING CHUCKS

### FEATURES:

- Complete fit of nut and body achieves high rigidity as a integral body.
- Strong and tight force to fully clamp the cutter and generates a stabilized clamp force.
- No wind resistant.
- The design and the performance were reformed completely. improve immediately 100% of cutting efficiency and accuracy.
- This chuck is suitable for high speed and high precision cutting. Max speed is 30,000; 2.5G



UNIT: mm

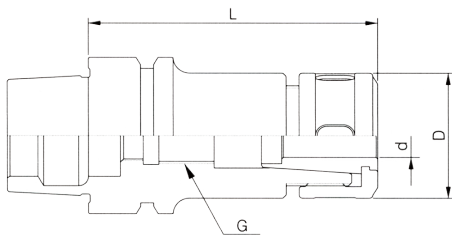
| ITEM NO. | MODEL NO.         | L   | C  | D  |
|----------|-------------------|-----|----|----|
| 52172570 | HSK63A-IEC20-90   | 90  | 50 | 20 |
| 52172571 | HSK63A-IEC20-105  | 105 | 50 | 20 |
| 52172572 | HSK63A-IEC20-120  | 120 | 50 | 20 |
| 52172573 | HSK63A-IEC20-135  | 135 | 50 | 20 |
| 52172574 | HSK63A-IEC20-165  | 165 | 50 | 20 |
| 52172575 | HSK63A-IEC32-105  | 105 | 70 | 32 |
| 52172576 | HSK63A-IEC32-135  | 135 | 70 | 32 |
| 52172577 | HSK100A-IEC20-105 | 105 | 50 | 20 |
| 52172578 | HSK100A-IEC20-135 | 135 | 50 | 20 |
| 52172579 | HSK100A-IEC32-165 | 165 | 50 | 20 |
| 52172580 | HSK100A-IEC32-120 | 120 | 70 | 32 |
| 52172581 | HSK100A-IEC32-140 | 140 | 70 | 32 |
| 52172582 | HSK100A-IEC32-170 | 170 | 70 | 32 |



## HSK HIGH SPEED PRECISION COLLET CHUCKS



UNIT: mm



| ITEM NO. | MODEL NO.      | COLLET TYPE | Ød RANGE  | L   | D  |
|----------|----------------|-------------|-----------|-----|----|
| 52172583 | HSK40A-SK10-90 | SK10        | 03.0-10.0 | 90  | 28 |
| 52172584 | HSK40E-SK10-90 | SK10        | 03.0-10.0 | 70  | 28 |
| 52172585 | HSK40E-SK16-90 | SK16        | 03.0-16.0 | 70  | 32 |
| 52172586 | HSK50E-SK10-90 | SK10        | 03.0-10.0 | 90  | 28 |
| 52172587 | HSK50E-SK16-90 | SK16        | 03.0-16.0 | 90  | 40 |
| 52172588 | HSK63A-SK10-90 | SK10        | 03.0-10.0 | 90  | 28 |
| 52172589 | HSK63A-SK16-90 | SK16        | 03.0-16.0 | 90  | 40 |
| 52172590 | HSK100-SK10-90 | SK10        | 03.0-10.0 | 105 | 28 |
| 52172591 | HSK100-SK10-90 | SK10        | 03.0-10.0 | 135 | 28 |
| 52172592 | HSK100-SK10-90 | SK10        | 03.0-10.0 | 165 | 28 |
| 52172593 | HSK100-SK16-90 | SK16        | 03.0-16.0 | 135 | 40 |
| 52172594 | HSK100-SK16-90 | SK16        | 03.0-16.0 | 165 | 40 |

# B “ TOOLS OF WORKHOLDING & PRECISION TOOLS FOR MILLS & VMCS



## SEMI-UNIVERSAL / UNIVERSAL DIVIDING HEADS



◀ ITEM NO.  
52170101~2  
(SEMI-UNIVERSAL)



◀ ITEM NO.  
52170103  
(UNIVERSAL)

### FEATURES:

- Dividing any angle by the direct, indirect or differential methods.
- High tensile castings and accurately machined.
- Can be adjusted to any angle between -10°~+90°.
- Direct mounted index plate has 24 divisions.
- Worm gear has a 40 to 1 ratio.
- Headstock swivels to all angles.

### INCLUDES:

- Threaded back plate for mounting chuck.
- Center & driving dog.
- Headstock
- Dividing plates
- Tailstock

UNIT: mm

| ITEM NO. | MODEL | HEIGHT<br>OF CENTER | BASE<br>W x L | OVERALL<br>HEIGHT | WEIGHT<br>N.W. | CHUCK    |
|----------|-------|---------------------|---------------|-------------------|----------------|----------|
| 52170101 | BS-0  | 100                 | 91 x 160      | 173               | 20 kgs         | 5"       |
| 52170102 | BS-1  | 128                 | 114 x 207     | 220               | 33 kgs         | 6"       |
| 52170103 | BS-2  | 132.7               | 134 x 213     | 236               | 65 kgs         | 6" or 8" |

### STANDARD ACCESSORIES:

#### DIVIDING PLATES:

- For BS-0: ITEM NO. 52170104 & ITEM NO. 52170105
- For BS-1, BS-2: ITEM NO. 52170106 & ITEM NO. 52170107

#### TAILSTOCKS:

(Please refer to specification & drawing on page of rotary tables.)

- For BS-0, ITEM NO. 52170110
- For BS-1 & BS-2, ITEM NO. 52170111



UNIT: mm

| ITEM NO. | NUMBER OF HOLES                     | A/B        |
|----------|-------------------------------------|------------|
| 52170104 | 15.16.17.18.19.20                   | 100 / 20.5 |
| 52170105 | 21.23.27.29.31.33.37.39.41.43.47.49 | 100 / 20.5 |
| 52170106 | 15.16.17.18.19.20.21.23.27.29.31.33 | 126 / 28.8 |
| 52170107 | 37.39.41.43.47.49                   | 126 / 28.8 |

### OPTIONAL DIVIDING PLATE: For BS-1 & BS-2

UNIT: mm

| ITEM NO. | NUMBER OF HOLES                                          | A/B        |
|----------|----------------------------------------------------------|------------|
| 52170108 | 26.30.34.38.41.44.47.51.57<br>28.32.37.39.43.46.49.53.59 | 180 / 28.8 |
| 52170109 | 61.67.71.77.81.87.91.97<br>63.69.73.79.83.89.93.99       | 180 / 28.8 |





## HORIZONTAL / VERTICAL ROTARY TABLES

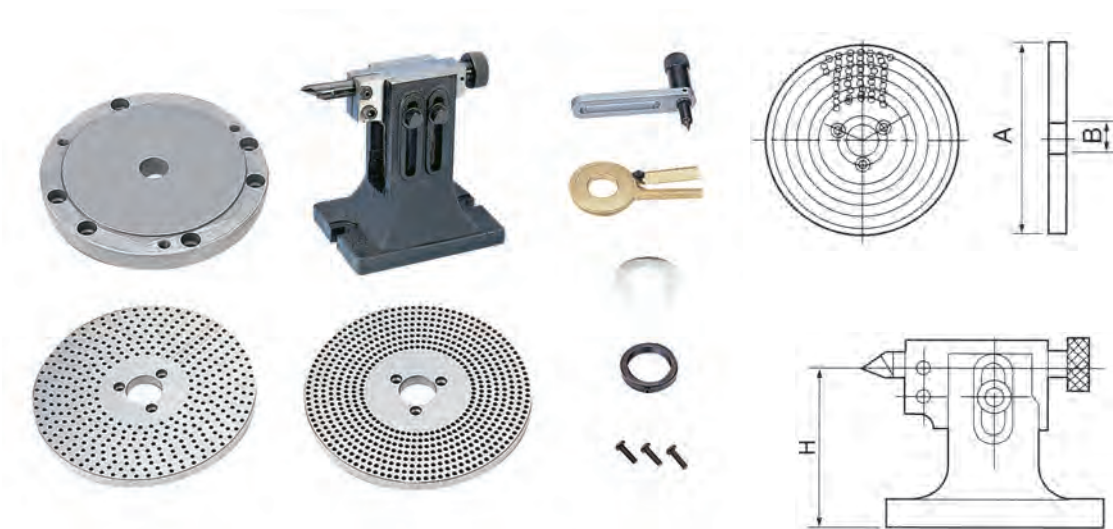
### FEATURES:

- Each table is provided with worm adjustment to compensate for wear.
- Indexing for drilling or milling.
- Machined curved surfaces by utilizing circular milling.
- Milling and boring where close tolerances are required.
- High tensile castings, tempered.
- Adjustable satin chrome dials are extremely large in diameter for easy reading.
- 2 locks provided for positive action.
- Disengageable worm allows quick rotation for indicating workpieces.
- Oiling facilities are provided for all moving parts.



UNIT: mm

| ITEM NO. | DIA. OF TABLE | HEIGHT OF TABLE | HEIGHT OF VERTICAL TABLE | HEIGHT OF VERTICAL TABLE CENTER TO BASE | WIDTH OF T-SLOT | CENTER HOLE M.T. | WEIGHT N.W. |
|----------|---------------|-----------------|--------------------------|-----------------------------------------|-----------------|------------------|-------------|
| 52172049 | 110           | 72              | 145                      | 85                                      | 11              | 2                | 7.5 kgs     |
| 52170114 | 150           | 80              | 200                      | 100                                     | 11              | 2                | 13 kgs      |
| 52170115 | 205           | 102             | 260                      | 135                                     | 14              | 3                | 26 kgs      |
| 52170116 | 254           | 109             | 325                      | 165                                     | 14              | 3                | 37 kgs      |
| 52170117 | 305           | 125             | 388                      | 195                                     | 16              | 4                | 70 kgs      |
| 52170118 | 353           | 125             | 450                      | 230                                     | 16              | 4                | 93 kgs      |
| 52170119 | 406           | 130             | 500                      | 255                                     | 16              | 4                | 122 kgs     |



UNIT: mm

| ITEM NO. | NUMBER OF HOLES                                          | A/B        | FOR TABLE SIZE |
|----------|----------------------------------------------------------|------------|----------------|
| 52170106 | 15.16.17.18.19.20.21.23.27.29.31.33                      | 126 / 28.8 | 150            |
| 52170107 | 37.39.41.43.47.49                                        | 126 / 28.8 | 205            |
| 52170108 | 26.30.34.38.41.44.47.51.57<br>28.32.37.39.43.46.49.53.59 | 180 / 28.8 | 254<br>305     |
| 52170109 | 61.67.71.77.81.87.91.97<br>63.69.73.79.83.89.93.99       | 180 / 28.8 | 353<br>406     |

| ITEM NO. | TO BE USED FOR                                          | H       |
|----------|---------------------------------------------------------|---------|
| 52170110 | 4", 6" rotary table, BS-0 diving head                   | 80-108  |
| 52170111 | 8" rotary table, 6" simple spacer, BS-1 & 2 diving head | 115-145 |
| 52170112 | 10", 12" rotary table, 8" super spacer                  | 130-205 |
| 52170113 | 14", 16" rotary table                                   | 182-260 |



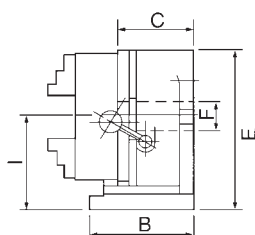
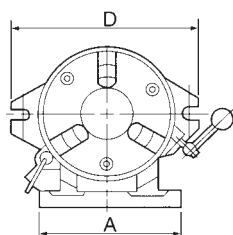
# B “ TOOLS OF WORKHOLDING & PRECISION TOOLS FOR MILLS & VMCS



## 6" & 8" ROTARY INDEXING SPACERS

### FEATURES:

- For milling, drilling, jig boring & many common shop applications.
- High tensile castings & accurately machined.
- 24 position hardened & ground master plate, 360 graduated ring & adjustable 10seconds vernier reading.
- 90:1 gear ratio.
- 6 masking plates (2,3,4,6,8, & 12 divisions) included for quick indexing.
- Used horizontally / vertically.



### STANDARD ACCESSORIES:

- 3 jaw chuck, 2pcs jaw
- 8" face plate for 6"
- 10" face plate for 8"
- Masking plates x 6pcs

### OPTIONAL ACCESSORIES:

- Tailstock:  
ITEM NO. 52170111 for 6"  
ITEM NO. 52170112 for 8"
- Dividing plates:  
ITEM NO. 52170108 for 6"  
ITEM NO. 52170109 for 8"

With 6" / 8" 3 jaw chuck (2 pcs jaw),  
8" / 10" face plate and 6 masking plates

UNIT: mm

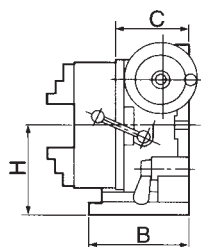
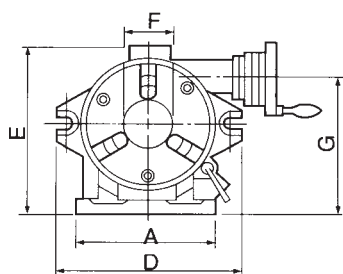
| ITEM NO. | CHUCK DIA. | CENTER HEIGHT WHEN<br>SPINDLE IS HORIZONTAL | VERTICAL BASE | MAX. HEIGHT<br>VERTICALLY | THROUGH<br>HOLE |
|----------|------------|---------------------------------------------|---------------|---------------------------|-----------------|
| 52170120 | 6"         | 123                                         | 220 x 130     | 218                       | 44              |
| 52170121 | 8"         | 155                                         | 258 x 148     | 257                       | 63              |
| 52172050 | 12"        | 228                                         | 353.8 x 198.3 | 391                       | 110             |



## 6" & 8" SUPER INDEXING SPACERS

### FEATURES:

- Same as those of rotary indexing spacer.
- With satin-chromed dial for easy indexing.



### STANDARD ACCESSORIES:

- 3 jaw chuck, 2pcs jaw
- 8" face plate for 6"
- 10" face plate for 8"
- Masking plates x 6pcs

### OPTIONAL ACCESSORIES:

- Tailstock:  
ITEM NO. 52170111 for 6"  
ITEM NO. 52170112 for 8"
- Dividing plates:  
ITEM NO. 52170108 for 6"  
ITEM NO. 52170109 for 8"

UNIT: mm

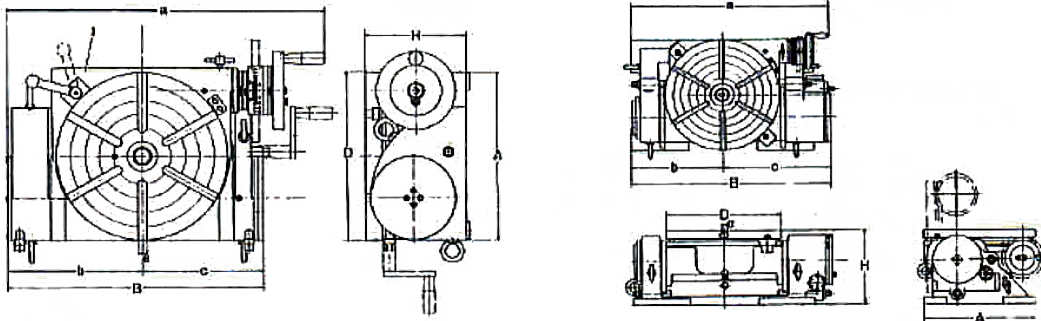
| ITEM NO. | CHUCK DIA. | CENTER HEIGHT WHEN<br>SPINDLE IS HORIZONTAL | VERTICAL BASE | E   | THROUGH<br>HOLE |
|----------|------------|---------------------------------------------|---------------|-----|-----------------|
| 52170122 | 6"         | 123                                         | 220 x 150     | 235 | 44              |
| 52170123 | 8"         | 155                                         | 225 x 160     | 285 | 63              |



## TILTING ROTARY TABLES

### FEATURES:

- Accurate and built for use in milling, boring and other machines.
- Indexing, facing and other operations can be done rapidly with extreme precision.
- Worm shafts are hardened and ground.
- Indexing can be done with optional dividing plates.
- Includes: Dividing plates & tailstock.



UNIT: mm

| ITEM NO. | W   | H   | T-SLOT WIDTH | CENTER HEIGHT (Tilted at 90°) | WEIGHT (kgs) |
|----------|-----|-----|--------------|-------------------------------|--------------|
| 52172051 | 115 | 180 | 10           | 90                            | 27           |
| 52172052 | 155 | 255 | 12           | 150                           | 74           |
| 52172053 | 178 | 300 | 14           | 169                           | 100          |

### MAIN SPECIFICATION:

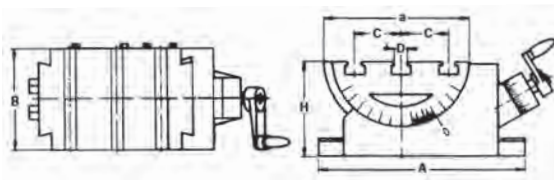
|                | ITEM NO.                        | 52172051 | 52172052<br>52172053 |
|----------------|---------------------------------|----------|----------------------|
| <b>TILTING</b> | Degree per one handle rotation. | 6°       | 1°                   |
|                | Vernier reading                 | 1'       | 2'                   |
| <b>TABLE</b>   | Degree per one handle rotation  | 4°       | 4°                   |
|                | Scale of micro collar           | 1'       | 1'                   |
|                | Vernier reading                 | 10"      | 10"                  |
|                | Gear ration                     | 1:90     | 1:90                 |



## TILTING TABLE

### FEATURES:

- Perfect for setting work at any angle during milling or any other operations.
- Rigidly built with machined T-slots.
- Adjustable angle setting through crank handle with dial.
- Angle -30° to 90°.
- Graduated in degrees for setting purpose.



UNIT: mm

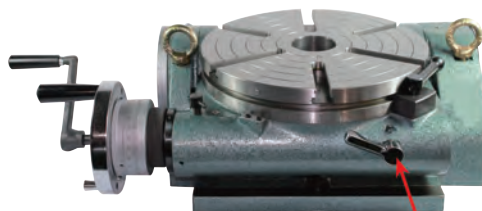
| ITEM NO. | A   | a   | B   | C  | D  | H   | N.W.   |
|----------|-----|-----|-----|----|----|-----|--------|
| 52170125 | 252 | 190 | 125 | 40 | 14 | 115 | 20 kgs |



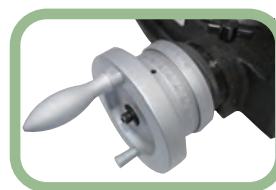
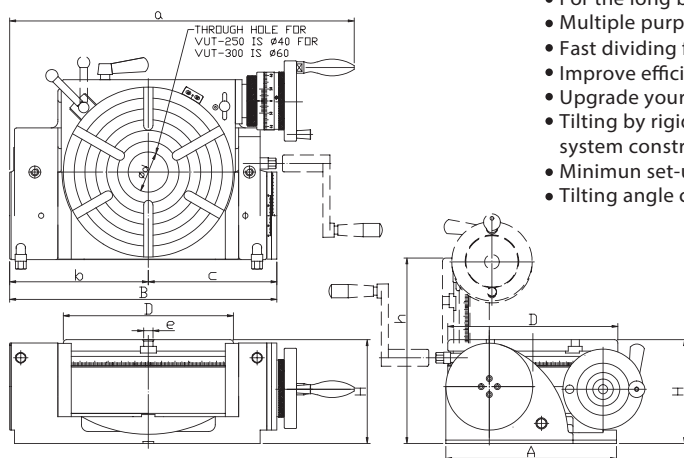
# B “ TOOLS OF WORKHOLDING & PRECISION TOOLS FOR MILLS & VMCS



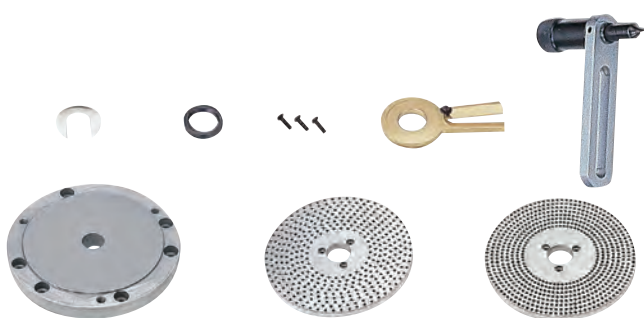
## MULTIPLE TILTING ROTARY TABLES



24-NOTCH  
RAPID INDEX/EACH



New Model



### DIVIDING PLATES

| SUIT FOR ITEM NO. | WEIGHT (kgs) |
|-------------------|--------------|
| 52172595~52172596 | 4.6          |

### TAILSTOCK

| ADJUSTABLE HIGHEST | ADJUSTABLE LOWEST | SUIT FOR ITEM NO. | UNIT: mm            |
|--------------------|-------------------|-------------------|---------------------|
| 205                | 130               | 52172595~52172596 | G.W. MEAS (kgs) CFT |
|                    |                   |                   | 8.1 0.4             |

UNIT: mm

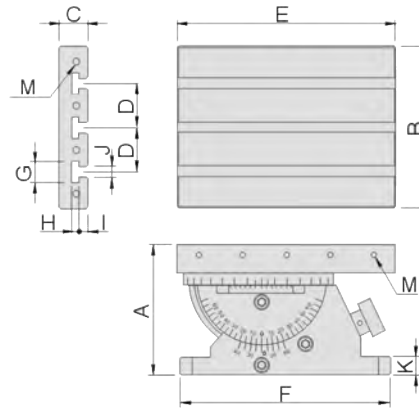
| ITEM NO. | TABLE DIAMETER & TABLE HEIGHT | MOUNTING SURFACE | OVERALL SIZE | WIDTH T-SOLT | CENTER HOLE | CENTER HEIGHT (TILTED AT 90°) | WEIGHT (kgs) |
|----------|-------------------------------|------------------|--------------|--------------|-------------|-------------------------------|--------------|
|          | D H h                         | A B              | a b c        | e            |             |                               |              |
| 52172595 | 250 155 275                   | 255 397          | 495 210 187  | 14           | Ø40         | 150                           | 75.5         |
| 52172596 | 300 178 319                   | 300 447          | 551 235 212  | 14           | Ø60         | 169                           | 108          |



## PRECISION TWO DIMENSION TABLE

### FEATURES:

- Table with T-slot assembly with swivel base for rotation and angle adjustment.
- Suitable for inclined surface, angular drilling machining various machine tools.



UNIT: mm

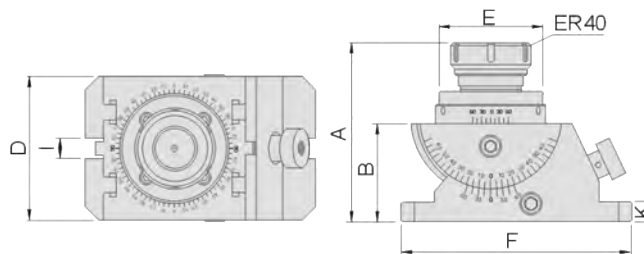
| ITEM NO. | A   | B   | C  | D  | E   | F   | G  | H  | I  | J  | K  | M  | CLAMP | N.W.   |
|----------|-----|-----|----|----|-----|-----|----|----|----|----|----|----|-------|--------|
| 52172803 | 183 | 220 | 40 | 60 | 300 | 300 | 28 | 10 | 12 | 14 | 25 | M8 | M16   | 47 kgs |



## PRECISION UNIVERSAL ER CHUCK

### FEATURES:

- Swivel base assembly with ER40 chuck to achieve angle adjustments.
- Suitable for applying in milling, grinding and engraving...etc.



UNIT: mm

| ITEM NO. | A   | B  | D   | E   | F   | I  | K  | N.W.   |
|----------|-----|----|-----|-----|-----|----|----|--------|
| 52172804 | 137 | 75 | 110 | ø80 | 178 | 16 | 15 | 11 kgs |



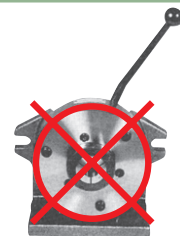
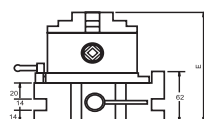
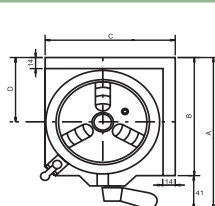
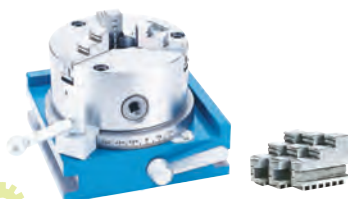
# B “ TOOLS OF WORKHOLDING & PRECISION TOOLS FOR MILLS & VMCS



## ECONOMIZAL TYPE RAPID INDEX

### FEATURES:

- 3 jaw chuck 4", for 52172597/5" for 52172598, the big range clamping capacity  $\phi 3$ - $\phi 100$ , it's better than collet fixing type.
- Simple & rapid operation.
- Dividual number 24-notch (15° each).
- Table scale 1°, for angular indexing.
- Table vbore 30mm
- Horizontal / vertical & 2 direction
- Suit for milling & drilling machine using.
- Option a: tailstock 52170110.



5C COLLET INDEXER  
NON ECONOMICAL

UNIT: mm

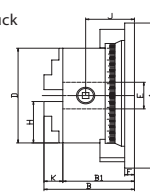
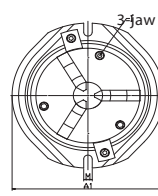
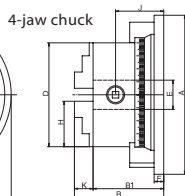
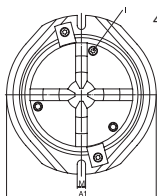
| ITEM NO. | A   | B   | C   | D  | E   | kgs  | CHUCK |
|----------|-----|-----|-----|----|-----|------|-------|
| 52172597 | 187 | 146 | 146 | 80 | 135 | 10.5 | 4"    |
| 52172598 | 202 | 161 | 161 | 87 | 142 | 14.5 | 5"    |



## SIMPLE ROTARY CHUCK

### FEATURES:

- 4-jaw chuck (include reversable and removable jaw) is designed with swivel base for multifunctional purpose.
- Simple rotary chuck can be placed and fixed on your desired position.
- 360° vernier scale: smooth swival motion and easy locking by screws.
- Both horizontal and vertical position could be used on milling and machining center.



▲ ITEM NO. 52172599, 52172600 ▲ ITEM NO. 52172601, 52172602

UNIT: mm

| ITEM NO. | A   | A1  | B   | B1  | D   | E  | F  | H  | I     | J  | K  | M  | kgs  | CHUCK |
|----------|-----|-----|-----|-----|-----|----|----|----|-------|----|----|----|------|-------|
| 52172599 | 245 | 233 | 139 | 110 | 160 | 45 | 15 | 70 | 3-M8  | 69 | 29 | 14 | 18   | 6"    |
| 52172600 | 305 | 270 | 159 | 125 | 200 | 65 | 20 | 86 | 3-M10 | 75 | 34 | 18 | 30.5 | 8"    |
| 52172601 | 245 | 233 | 139 | 110 | 160 | 45 | 15 | 70 | 3-M8  | 69 | 29 | 14 | 18   | 6"    |
| 52172602 | 305 | 270 | 159 | 125 | 200 | 65 | 20 | 86 | 3-M10 | 75 | 34 | 18 | 30.5 | 8"    |



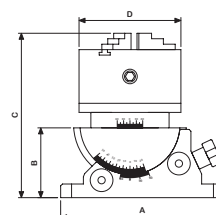
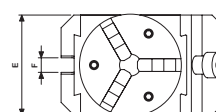
## PRECISION UNIVERSAL ANGLE CHUCK

### FEATURES:

- Precision graduation for accurate reading.
- Its swivelling and tilting features with clamping make this unit well suited for straight or inclined surface, angular drilling machining on various machine tools.
- With 4" 3-jaw chuck.
- O.D. clamping  $\phi 3$ -90 mm.
- O.D. clamping  $\phi 32$ -84 mm.
- Tolerance  $\pm 0.01$  mm / 100 mm.
- 2 axis with angle scale.
- For angle setting.
- Chuck indexing / rotating setting



WITH 4" CHUCK

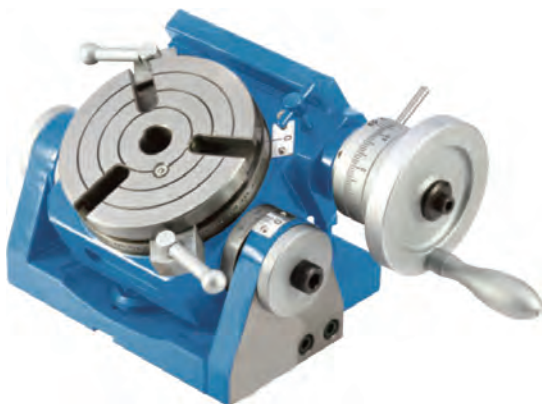


UNIT: mm

| ITEM NO. | A   | B  | C   | D   | E   | F  | G.W. (kgs) | CHUCK |
|----------|-----|----|-----|-----|-----|----|------------|-------|
| 52172603 | 180 | 77 | 181 | 112 | 110 | 16 | 14         | 4"    |

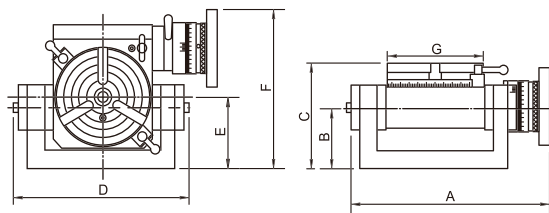


## UNIVERSAL TILTING ROTARY TABLE



### OPTIONAL:

1. TAIL STOCK: TS-1 / TS-3
2. DIVIDING PLATE: DP-1 / DP-2



- Tilting range 0°-90° degrees from horizontal to vertical position, It is high rigidity.
- Minimum set-up time: It has two screws to lock setting, low profile body for bigger capacity.
- Worm is hardened and ground. The ratio is 90:1. The work table is graduated a full 360° so that of the handle moves the table through 4°. Micro collar is graduated in steps of 2' min.
- The tailstock & dividing plates are optional. The sizes are same as the rotary table.
- For arc or index cutting at milling machine, grinding machine or drill machine.

UNIT: mm

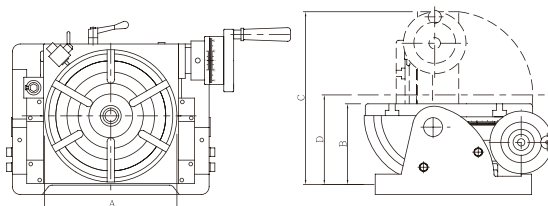
| ITEM NO. | A   | B   | C   | D   | E   | F   | G   | SUITABLE<br>TAILSTOCK | SUITABLE<br>DIVIDING PLATE | WEIGHT<br>kgs / cuft |
|----------|-----|-----|-----|-----|-----|-----|-----|-----------------------|----------------------------|----------------------|
| 52172604 | 228 | 68  | 117 | 202 | 80  | 177 | 110 | TS-1                  | DP-1                       | 13.5 / 1.5           |
| 52172605 | 266 | 75  | 140 | 246 | 90  | 216 | 150 | TS-1                  | DP-1                       | 21.5 / 2.0           |
| 52172606 | 429 | 111 | 177 | 432 | 141 | 283 | 205 | TS-3                  | DP-2                       | 46 / 2.5             |



This is an accurate designed table for milling, boring and other machine tools.

This table allows indexing, facing and other work to be carried out rapidly with extreme precision. Tilting range 90 degrees from horizontal to vertical position, 1 rotation of handle equals 3 degrees, 5 minutes tilting reading. 10 second vernier scale.

- Table dial 1 minute graduations.
- fast degrees: dividing notch pin & 24 holes in 15 degrees
- Around that insures rapid & accurate spacing.
- Minimum set-up time.
- Rugged construction.



UNIT: mm

| ITEM NO.                      | 52170124 |
|-------------------------------|----------|
| Table diameter A              | 300      |
| Table height (horizontal) B   | 185      |
| Table O/A height (vertical) C | 370      |
| Center hole                   | MT3      |
| Center height (vertical) D    | 208      |
| Direct indexing               | 24-div   |
| Gear ratio                    | 90 : 1   |
| Weight (G.W.)                 | 102 kgs  |
| Weight (N.W.)                 | 99.5 kgs |

### Special Accessories:

1. Dividing plate DP-5
2. Tailstock
3. Flange



# B “ TOOLS OF WORKHOLDING & PRECISION TOOLS FOR MILLS & VMCS

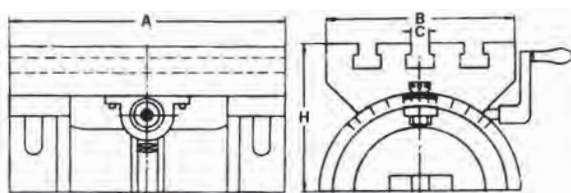


## SWIVEL ANGLE PLATES



### FEATURES:

- Perfect for setting work at any angle during milling or any other operations.
- Rigidly built with machined T-slots.
- Adjustable angle setting through crank handle.
- Angle  $-45^{\circ}$  to  $+45^{\circ}$ .
- Graduated in degrees for setting purpose.



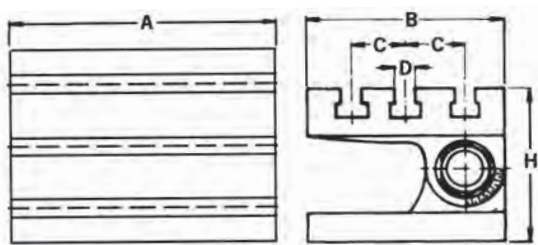
UNIT: mm

| ITEM NO. | A   | B   | C  | H   | N.W.    |
|----------|-----|-----|----|-----|---------|
| 52170126 | 184 | 132 | 13 | 92  | 8 kgs   |
| 52170127 | 260 | 182 | 16 | 139 | 22 kgs  |
| 52170128 | 386 | 266 | 16 | 189 | 62 kgs  |
| 52170129 | 600 | 305 | 16 | 215 | 128 kgs |



### FEATURES:

- Perfect for setting work at any angle during milling or any other operations.
- Rigidly built with machined T-slots.
- Adjustable angle setting by loosening two clamping nuts.
- Angle  $0^{\circ}$  to  $90^{\circ}$ .
- Graduated in degrees for setting purpose.



UNIT: mm

| ITEM NO. | A   | B   | C  | D  | H   | N.W.    |
|----------|-----|-----|----|----|-----|---------|
| 52170130 | 204 | 154 | 46 | 13 | 130 | 8 kgs   |
| 52170131 | 256 | 204 | 64 | 16 | 170 | 22 kgs  |
| 52170132 | 306 | 254 | 68 | 16 | 197 | 62 kgs  |
| 52170133 | 386 | 308 | 80 | 16 | 210 | 128 kgs |



## CNC ROTARY TABLES



### FEATURES:

- Work table diameter  $\varnothing 125$ ,  $\varnothing 170$ ,  $\varnothing 210$ ,  $\varnothing 255$  mm.
- Heavy duty precision cross roller bearings.
- Motor is mounted at right side (vertical & horizontal application).
- Transmitted by dual lead worm with high efficiency and increased teeth depths.
- Equipped with high precision cross roller bearing.

| ITEM NO.                          |                   | UNIT                  | 52172054           | 52172055           | 52172056           | 52172057           |
|-----------------------------------|-------------------|-----------------------|--------------------|--------------------|--------------------|--------------------|
| Work table diameter               |                   | mm                    | $\varnothing 125$  | $\varnothing 170$  | $\varnothing 210$  | $\varnothing 255$  |
| Center bore diameter              |                   | mm                    | $\varnothing 30H7$ | $\varnothing 40H7$ | $\varnothing 40H7$ | $\varnothing 40H7$ |
| Through-hole diameter             |                   | mm                    | $\varnothing 25$   | $\varnothing 40$   | $\varnothing 40$   | $\varnothing 40$   |
| Height of table (horizontal)      |                   | mm                    | 155                | 158                | 158                | 186                |
| Height of center (vertical)       |                   | mm                    | 110                | 135                | 160                | 160                |
| Width of T-slot                   |                   | mm                    | 12H7               | 12H7               | 12H7               | 12H7               |
| Width of guide block              |                   | mm                    | 14                 | 18                 | 18                 | 18                 |
| Drive pressure / method           |                   | kgs/cm <sup>2</sup>   | 5/ Pneumatic       | 5/ Pneumatic       | 5/ Pneumatic       | 5/ Pneumatic       |
| Clamping torque                   |                   | kgs.m                 | 8                  | 18                 | 26                 | 26                 |
| Servo motor type                  | Fanuc             |                       | $\alpha 2i$        | $\alpha 4i$        | $\alpha 4i$        | $\alpha 4i$        |
|                                   | Mitsubishi        |                       | HF74T/ 44T         | HF53T              | HF53T              | HF53T              |
| Transmission ratio                |                   |                       | 1/90               | 1/90               | 1/90               | 1/90               |
| Max. table speed                  |                   | min <sup>-1</sup>     | 44.4               | 44.4               | 44.4               | 44.4               |
| Allowable loading inertia         |                   | kgs.cm.s <sup>2</sup> | 2                  | 5.5                | 8.4                | 8.4                |
| Resolution                        |                   | deg.                  | 0.001              | 0.001              | 0.001              | 0.001              |
| Indexing accuracy                 |                   | sec.                  | 40                 | 20                 | 20                 | 20                 |
| Repeatability                     |                   | sec.                  | 4                  | 4                  | 4                  | 4                  |
| Net weight (servo motor excluded) |                   | kgs                   | 25                 | 52                 | 57                 | 58                 |
| Allowable loading capacity        | Vertical          | kgs                   | 50                 | 75                 | 75                 | 75                 |
|                                   | Horizontal        | kgs                   | 100                | 150                | 150                | 150                |
|                                   | Tailstock applied | kgs                   | 100                | 150                | 150                | 150                |
|                                   | Axial             | kgs                   | 970                | 1400               | 1400               | 1400               |
| Clamping torque                   | Radial x length   | kgs.m                 | 41                 | 102                | 102                | 102                |
|                                   | Radial x radius   | kgs.m                 | 8                  | 18                 | 26                 | 26                 |
| Allowable cutting torque          |                   | kgs.m                 | 8.5                | 17                 | 25                 | 25                 |



# B “ TOOLS OF WORKHOLDING & PRECISION TOOLS FOR MILLS & VMCS



## CNC ROTARY TABLES



### FEATURES:

- Work table diameter  $\varnothing 255$ ,  $\varnothing 320$ ,  $\varnothing 400$ ,  $\varnothing 500$  mm.
- Motor is mounted at right side (vertical & horizontal application).
- Transmitted by dual lead worm with high efficiency and increased teeth depths.
- Equipped with extra large bearings, preloaded in radial and axial directions.

| ITEM NO.                          |                   | UNIT                  | 52172058                | 52172059                 | 52172060            | 52172061            | 52172062                |
|-----------------------------------|-------------------|-----------------------|-------------------------|--------------------------|---------------------|---------------------|-------------------------|
| Work table diameter               |                   | mm                    | $\varnothing 255$       | $\varnothing 320$        | $\varnothing 400$   | $\varnothing 500$   | $\varnothing 255$       |
| Center bore diameter              |                   | mm                    | $\varnothing 50H7$      | $\varnothing 70H7$       | $\varnothing 110H7$ | $\varnothing 180H7$ | $\varnothing 50H7$      |
| Through-hole diameter             |                   | mm                    | $\varnothing 50$        | $\varnothing 70$         | $\varnothing 110$   | $\varnothing 140$   | $\varnothing 50$        |
| Height of table (horizontal)      |                   | mm                    | 210                     | 235                      | 255                 | 280                 | -                       |
| Height of center (vertical)       |                   | mm                    | 190                     | 210                      | 255                 | 310                 | 190                     |
| Width of T-slot                   |                   | mm                    | 12H7                    | 14H7                     | 14H7                | 8H7                 | 12H7                    |
| Width of guide block              |                   | mm                    | 18                      | 18                       | 18                  | 18                  | 18                      |
| Drive pressure / method           |                   | kgs/cm <sup>2</sup>   | 50/Hydraulic            | 50/Hydraulic             | 50/Hydraulic        | 50/Hydraulic        | 50/Hydraulic            |
| Clamping torque                   |                   | kgs.m                 | 70                      | 118                      | 250                 | 320                 | 70                      |
| Servo motor type                  | Fanuc             |                       | $\alpha 4i / \alpha 8i$ | $\alpha 8i / \alpha 12i$ | $\alpha 12i$        | $\alpha 12i$        | $\alpha 4i / \alpha 8i$ |
|                                   | Mitsubishi        |                       | HF53T/103T              | HF153T/203S              | HF203S              | HF203S              | F53T/103T               |
| Transmission ratio                |                   |                       | 1/120                   | 1/120                    | 1/144               | 1/180               | 1/120                   |
| Max. table speed                  |                   | min <sup>-1</sup>     | 22.2                    | 22.2                     | 11.1                | 11.1                | 22.2                    |
| Allowable loading inertia         |                   | kgs.cm.s <sup>2</sup> | 20.7                    | 45.7                     | 102                 | 191                 | 20.7                    |
| Resolution                        |                   | deg.                  | 0.001                   | 0.001                    | 0.001               | 0.001               | 0.001                   |
| Indexing accuracy                 |                   | sec.                  | 15                      | 15                       | 15                  | 15                  | 15                      |
| Repeatability                     |                   | sec.                  | 4                       | 4                        | 4                   | 4                   | 4                       |
| Net weight (servo motor excluded) |                   | kgs                   | 132                     | 187                      | 300                 | 420                 | 150                     |
| Allowable loading capacity        | Vertical          | kgs                   | 100                     | 150                      | 200                 | 250                 | 100                     |
|                                   | Horizontal        | kgs                   | 250                     | 350                      | 500                 | 600                 | -                       |
|                                   | Tailstock applied | kgs                   | 250                     | 350                      | 500                 | 600                 | 250                     |
| Clamping torque                   | Axial             | kgs                   | 1600                    | 2000                     | 3000                | 4000                | 1600                    |
|                                   | Radial x length   | kgs.m                 | 112                     | 180                      | 400                 | 500                 | 112                     |
|                                   | Radial x radius   | kgs.m                 | 70                      | 118                      | 250                 | 320                 | 70                      |
| Allowable cutting torque          |                   | kgs.m                 | 55                      | 78                       | 170                 | 250                 | 55                      |



## CNC ROTARY TABLES



### FEATURES:

- Work table diameter  $\varnothing 255$ ,  $\varnothing 320$ ,  $\varnothing 400$  mm.
- Motor is mounted at right side (vertical & horizontal application).
- Equipped with 3 pieces type coupling with worm gear to achieve positioning. It is suitable for heavy cutting.
- The minimum degree is  $1^\circ$  or  $5^\circ$ .

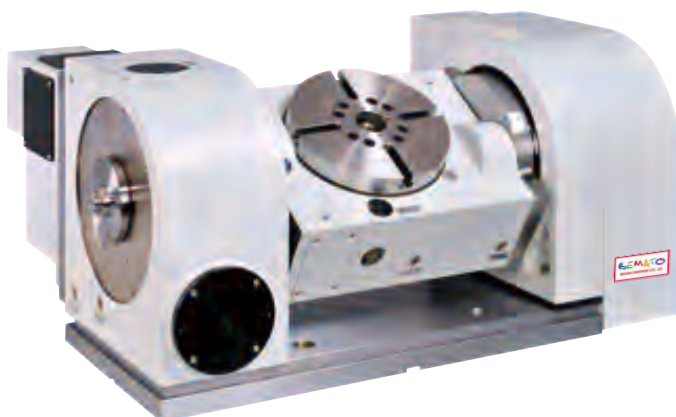
| ITEM NO.                          | UNIT                  | 52172063                | 52172064                 | 52172065            |
|-----------------------------------|-----------------------|-------------------------|--------------------------|---------------------|
| Work table diameter               | mm                    | $\varnothing 255$       | $\varnothing 320$        | $\varnothing 400$   |
| Center bore diameter              | mm                    | $\varnothing 50H7$      | $\varnothing 70H7$       | $\varnothing 110H7$ |
| Through-hole diameter             | mm                    | $\varnothing 50$        | $\varnothing 70$         | $\varnothing 110$   |
| Height of table (horizontal)      | mm                    | 210                     | 235                      | 255                 |
| Height of center (vertical)       | mm                    | 190                     | 210                      | 255                 |
| Width of T-slot                   | mm                    | 12H7                    | 14H7                     | 14H7                |
| Width of guide block              | mm                    | 18                      | 18                       | 18                  |
| Drive pressure / method           | kgs/cm <sup>2</sup>   | 35/ Hydraulic           | 35/ Hydraulic            | 35/ Hydraulic       |
| Clamping torque                   | kgs.m                 | 250                     | 350                      | 350                 |
| Servo motor type                  | Fanuc                 | $\alpha 4i / \alpha 8i$ | $\alpha 8i / \alpha 12i$ | $\alpha 12i$        |
|                                   | Mitsubishi            | HF53T/ 103T             | HF153T/ 203S             | HF203S              |
| Transmission ratio                |                       | 1/120                   | 1/120                    | 1/144               |
| Max. table speed                  | min <sup>-1</sup>     | 22.2                    | 22.2                     | 11.1                |
| Allowable loading inertia         | kgs.cm.s <sup>2</sup> | 24.8                    | 45.7                     | 102                 |
| Resolution                        | deg.                  | $1^\circ/5^\circ$       | $1^\circ/5^\circ$        | $1^\circ/5^\circ$   |
| Indexing accuracy                 | sec.                  | $\pm 5$                 | $\pm 5$                  | $\pm 5$             |
| Repeatability                     | sec.                  | $\pm 1$                 | $\pm 1$                  | $\pm 1$             |
| Net weight (servo motor excluded) | kgs                   | 160                     | 220                      | 350                 |
| Allowable loading capacity        | Vertical              | kgs                     | 125                      | 175                 |
|                                   | Horizontal            | kgs                     | 300                      | 350                 |
|                                   | Tailstock applied     | kgs                     | 300                      | 400                 |
| Clamping torque                   | Axial                 | kgs                     | 1600                     | 2000                |
|                                   | Radial x length       | kgs.m                   | 150                      | 210                 |
|                                   | Radial x radius       | kgs.m                   | 250                      | 350                 |
| Allowable cutting torque          | kgs.m                 | 29.4                    | 58.8                     | 105.75              |



# B “ TOOLS OF WORKHOLDING & PRECISION TOOLS FOR MILLS & VMCS



## CNC TILTING ROTARY TABLES



### FEATURES:

- Work table diameter  $\phi 125$ ,  $\phi 170$ ,  $\phi 210$ ,  $\phi 255$  mm.
- The pneumatic brake equipped with heavy-duty precision cross roller bearing.
- The hydraulic brake equipped with radial and axial bearing.
- Transmitted by dual lead worm with high efficiency and increased teeth depth.

| ITEM NO.                     |                  | UNIT                | 52172066            |                     | 52172066            |                     | 52172068            |                     | 52172069            |                     |
|------------------------------|------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| Work table diameter          |                  | mm                  | $\phi 125$          |                     | $\phi 170$          |                     | $\phi 210$          |                     | $\phi 255$          |                     |
| Center bore diameter         |                  | mm                  | $\phi 30H7$         |                     | $\phi 40H7$         |                     | $\phi 40H7$         |                     | $\phi 50H7$         |                     |
| Through-hole diameter        |                  | mm                  | $\phi 25$           |                     | $\phi 40$           |                     | $\phi 40$           |                     | $\phi 50$           |                     |
| Height of center (vertical)  |                  | mm                  | 160                 |                     | 190                 |                     | 225                 |                     | 225                 |                     |
| Width of T-slot              |                  | mm                  | 12H7                |                     | 12H7                |                     | 12H7                |                     | 12H7                |                     |
| Width of guide block         |                  | mm                  | 14                  |                     | 18                  |                     | 18                  |                     | 18                  |                     |
| Servo motor type             | Fanuc            |                     | Axis<br>$\alpha 2i$ | Tilt<br>$\alpha 4i$ | Axis<br>$\alpha 4i$ | Tilt<br>$\alpha 4i$ | Axis<br>$\alpha 4i$ | Tilt<br>$\alpha 8i$ | Axis<br>$\alpha 4i$ | Tilt<br>$\alpha 8i$ |
|                              | Mitsubishi       |                     | HF75T               | HF53T               | HF53T               | HF53T               | HF53T               | HF103T              | HF53T               | HF103T              |
| Transmission ratio           |                  |                     | 1:90                | 1:90                | 1:90                | 1:120               | 1:90                | 1:120               | 1:90                | 1:120               |
| Indexing resolution          |                  | deg.                | 0.001               |                     | 0.001               |                     | 0.001               |                     | 0.001               |                     |
| Tilting angle range          |                  | deg.                | +40~-120            |                     | +40~-120            |                     | +30~-120            |                     | +30~-120            |                     |
| Max. rotation speed          |                  | min <sup>-1</sup>   | 44.4                | 44.4                | 33.3                | 22.2                | 33.3                | 22.2                | 22.5                | 16.6                |
| Max. load                    | In horizontal    | kgs                 | 50                  |                     | 50                  |                     | 75                  |                     | 100                 |                     |
|                              | In tilt (0°-90°) | kgs                 | 35                  |                     | 35                  |                     | 50                  |                     | 75                  |                     |
| Permissible cutting force    |                  | kgs-m               | 8                   |                     | 17                  |                     | 25                  |                     | 40                  |                     |
| Drive pressure / method      |                  | kgs/cm <sup>2</sup> | 5/ Pneumatic        |                     | 5/ Pneumatic        |                     | 5/ Pneumatic        |                     | 50/ Hydraulic       |                     |
| Brake torque                 |                  | kgs-m               | 8.5                 | 18                  | 18                  | 26                  | 26                  | 30                  | 70                  | 70                  |
| Indexing accuracy            |                  | sec.                | 40"                 | 60"                 | 20"                 | 60"                 | 20"                 | 50"                 | 15"                 | 50"                 |
| Repeatability                |                  | sec.                | 4"                  | 8"                  | 4"                  | 8"                  | 4"                  | 8"                  | 4"                  | 8"                  |
| Net weight (w/o servo motor) |                  | kgs                 | 100                 |                     | 170                 |                     | 260                 |                     | 340                 |                     |



## DDM ROTARY TABLES



### FEATURES:

- Rotation speed exceeds  $150 \text{ min}^{-1}$ , making the rotary suitable for turning and grinding applications.
- Low inertia-No gears or belts in direct drive system, resulting in lower inertia and greater acceleration / deceleration.
- Equipped with high precision encoder to achieve high precision positioning.
- Backlash-free transmission improves workpiece accuracy and surface roughness.
- Direct drive features reach zero-wear.

| ITEM NO.                          | UNIT                  | 52172070     | 52172071      | 52172072      | 52172073      |
|-----------------------------------|-----------------------|--------------|---------------|---------------|---------------|
| Work table diameter               | mm                    | ø210         | ø255          | ø320          | ø400          |
| Center bore diameter              | mm                    | ø40H7        | ø50H7         | ø70H7         | ø70H7         |
| Through-hole diameter             | mm                    | -            | -             | -             | -             |
| Height of table (horizontal)      | mm                    | -            | 225           | 265           | 315           |
| Height of center (vertical)       | mm                    | 160          | 190           | 220           | 255           |
| Width of T-slot                   | mm                    | 12H7         | 12H7          | 14H7          | 18H7          |
| Width of guide block              | mm                    | 18           | 18            | 18            | 18            |
| Drive pressure / method           | kgs/cm <sup>2</sup>   | 5/ Pneumatic | 50/ Hydraulic | 50/ Hydraulic | 50/ Hydraulic |
| Clamping torque                   | kgs.m                 | 9            | 50            | 80            | 180           |
| Transmission ratio                |                       | Direct drive | Direct drive  | Direct drive  | Direct drive  |
| Max. table speed                  | min <sup>-1</sup>     | 100          | 150           | 150           | 150           |
| Allowable loading inertia         | kgs.cm.s <sup>2</sup> | 7            | 8.3           | 19.6          | 40.8          |
| Resolution                        | deg.                  | 0.001        | 0.001         | 0.001         | 0.001         |
| Indexing accuracy                 | sec.                  | ±5           | ±5            | ±5            | ±5            |
| Repeatability                     | sec.                  | 4            | 4             | 4             | 4             |
| Net weight (servo motor excluded) | kgs                   | 70           | 160           | 200           | 300           |
| Allowable loading capacity        | Vertical              | kgs          | 35            | 50            | 75            |
|                                   | Horizontal            | kgs          | 50            | 100           | 150           |
|                                   | Tailstock applied     | kgs          | 70            | 100           | 150           |
| Clamping torque                   | Axial                 | kgs          | 1400          | 1400          | 1600          |
|                                   | Radial x length       | kgs.m        | 102           | 103           | 146           |
|                                   | Radial x radius       | kgs.m        | 9             | 50            | 80            |
| Allowable cutting torque          | kgs.m                 | 2.5          | 4.5           | 10.5          | 15            |



# B “ TOOLS OF WORKHOLDING & PRECISION TOOLS FOR MILLS & VMCS



## CNC ROTARY TABLES

| ITEM NO.            | 52172074               | 52172075               |
|---------------------|------------------------|------------------------|
| Table size          | 500 x 500              | 630 x 630              |
| Key sizes           | 18 mm                  | -                      |
| Servo motor type    | FANUC α12/ 3000i       | FANUC α12/ 3000i       |
| Transmission ratio  | 1:90                   | 1:144                  |
| Motor speed         | 2000 min <sup>-1</sup> | 2400 min <sup>-1</sup> |
| Max. workpiece load | 500 kgs                | 800 kgs                |
| Min. indexing       | 1 deg                  | 1 deg                  |
| Max. table speed    | 22.2 min <sup>-1</sup> | 16.6 min <sup>-1</sup> |
| Max. tilting torque | 780 kgs-m              | 1000 kgs-m             |
| Clamping force      | 4500 kgs               | 5300 kgs               |
| Hydraulic drive     |                        |                        |
| Pressure            | 50 kgs/cm <sup>2</sup> | 50 kgs/cm <sup>2</sup> |
| Indexing accuracy   | ±5 sec                 | ±5 sec                 |
| Repeatability       | 4 sec                  | 4 sec                  |



## MANUAL INDEX TABLES



| ITEM NO.             | UNIT                | 52172076                  | 52172077  | 52172078  | 52172079  | 52172080  | 52172081    | 52172082    |
|----------------------|---------------------|---------------------------|-----------|-----------|-----------|-----------|-------------|-------------|
| Table size           | mm                  | 300 x 300                 | 450 x 450 | 600 x 600 | 700 x 700 | 800 x 800 | 1000 x 1000 | 1200 x 1200 |
| Table height         | mm                  | 163                       | 170       | 200       | 220       | 280       | 300         | 340         |
| Width of T-slot      | mm                  | 14                        | 16        | 20        | 20        | 22        | 22          | 22          |
| Dia. of spindle hole | mm                  | ø30                       | ø30       | ø40       | ø40       | ø60       | ø60         | ø80         |
| Z axis travel        | mm                  | 4                         | 4         | 6         | 6         | 8         | 8           | 9           |
| Indexing angle       |                     | 5°(standard) / 1°(option) |           |           |           |           |             |             |
| Turning direction    |                     | cw. or ccw.               |           |           |           |           |             |             |
| Coupling mode        | SEC.                | 2pcs Hirth coupling       |           |           |           |           |             |             |
| Accuracy of indexing |                     | ±2                        |           |           |           |           |             |             |
| Drive                | longitudinal        | Pneumatic                 |           |           |           |           |             |             |
| Method               | revolving           | Manual                    |           |           |           |           |             |             |
| Max. pressure        | kgs/cm <sup>2</sup> | 5~8                       |           |           |           |           |             |             |
| Max. clamping        | kgs                 | 1540                      | 3310      | 5250      | 5250      | 6000      | 6500        | 8000        |
| Max. loading         | kgs                 | 1500                      | 3265      | 5470      | 5470      | 6500      | 7500        | 9000        |
| Load capacity        | kgs                 | 1000                      | 1200      | 2500      | 2500      | 5000      | 6000        | 7500        |
| Weight               | kgs                 | 90                        | 200       | 400       | 600       | 900       | 1200        | 2600        |



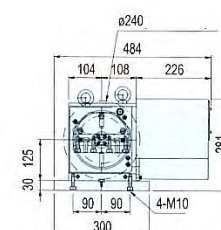
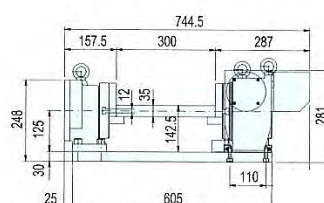
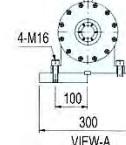
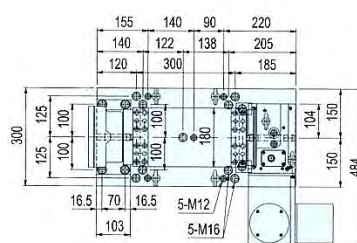
## NC ROTARY TABLE & STRONG TAILSTOCK (TABLE)

✓ ITEM NO. 52172607



- The material of sub table & working table :  
Ductile iron FCD60

| ITEM NO.         | 52172607                 |
|------------------|--------------------------|
| NC rotary table  | SRT-170                  |
| Strong tailstock | SRT-170F                 |
| Sub table        | 30 x 300 x 605 mm        |
| Working table    | 35 x 180 x 300 mm        |
| Allowance dia.   | Ø240 mm                  |
| Allowance weight | 40 kgs x 2(side)= 80 kgs |
| Height           | 142.5 mm                 |
| Net weight       | 138 kgs                  |

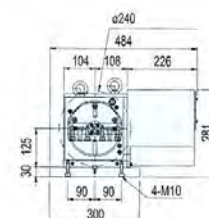
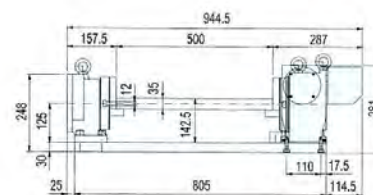
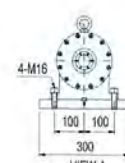
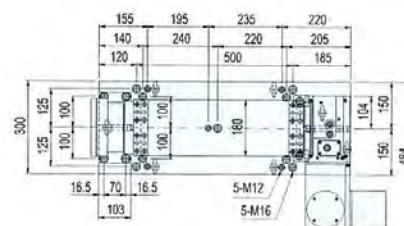


✓ ITEM NO. 52172608



- The material of sub table & working table :  
Ductile iron FCD60

| ITEM NO.         | 52172608                 |
|------------------|--------------------------|
| NC rotary table  | SRT-170                  |
| Strong tailstock | SRT-170F                 |
| Sub table        | 30 x 300 x 805 mm        |
| Working table    | 35 x 180 x 500 mm        |
| Allowance dia.   | Ø240 mm                  |
| Allowance weight | 40 kgs x 2(side)= 80 kgs |
| Height           | 142.5 mm                 |
| Net weight       | 160 kgs                  |

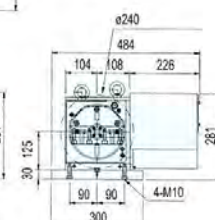
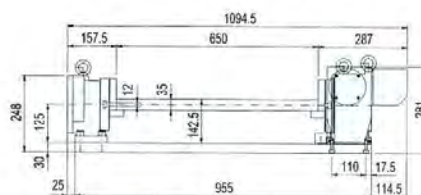
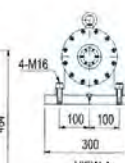
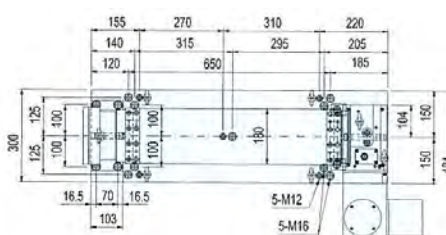


✓ ITEM NO. 52172609



- The material of sub table & working table :  
Ductile iron FCD60

| ITEM NO.         | 52172609                 |
|------------------|--------------------------|
| NC rotary table  | SRT-170                  |
| Strong tailstock | SRT-170F                 |
| Sub table        | 30 x 300 x 955 mm        |
| Working table    | 35 x 180 x 650 mm        |
| Allowance dia.   | Ø240 mm                  |
| Allowance weight | 40 kgs x 2(side)= 80 kgs |
| Height           | 142.5 mm                 |
| Net weight       | 177 kgs                  |



B11 - CNC ROTARY TABLES

TOOLS OF WORKHOLDING&PRECISION TOOLS FOR MILLS&VMCS

# B “ TOOLS OF WORKHOLDING & PRECISION TOOLS FOR MILLS & VMCS



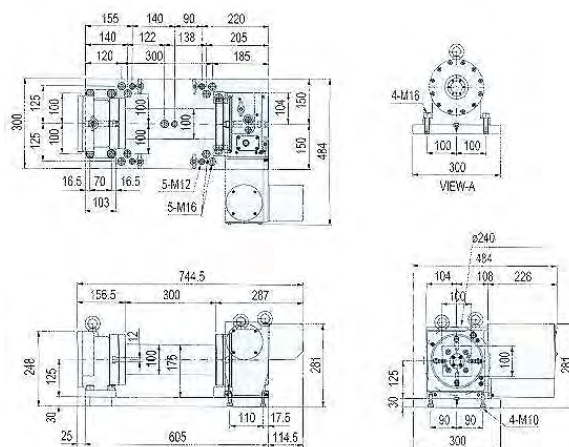
## NC ROTARY TABLE & STRONG TAILSTOCK (U TYPE TABLE)

✓ ITEM NO. 52172610



- The material of sub table & working table :  
Ductile FCD60

| ITEM NO.         | 52172610                  |
|------------------|---------------------------|
| NC rotary table  | SRT-170                   |
| Strong tailstock | SRT-170F                  |
| Sub table        | 30 x 300 x 605 mm         |
| Working table    | 35 x 180 x 300 mm         |
| Allowance dia.   | Ø240 mm                   |
| Allowance weight | 80 kgs x 1 (side)= 80 kgs |
| Height           | 75 mm                     |
| Net weight       | 135 kgs                   |

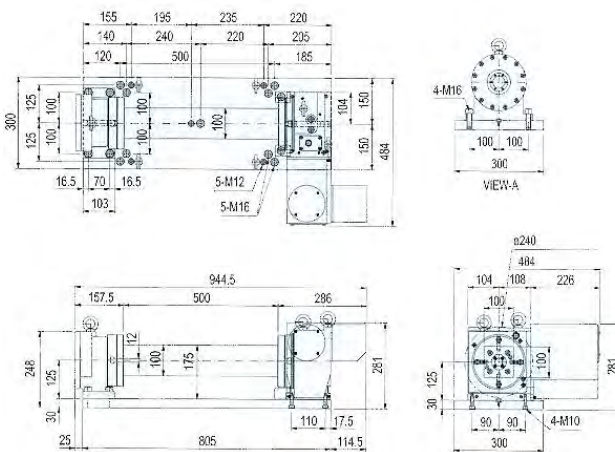


✓ ITEM NO. 52172611



- The material of sub table & working table :  
Ductile iron FCD60

| ITEM NO.         | 52172611                  |
|------------------|---------------------------|
| NC rotary table  | SRT-170                   |
| Strong tailstock | SRT-170F                  |
| Sub table        | 30 x 300 x 805 mm         |
| Working table    | 35 x 180 x 500 mm         |
| Allowance dia.   | Ø240 mm                   |
| Allowance weight | 80 kgs x 1 (side)= 80 kgs |
| Height           | 75 mm                     |
| Net weight       | 163 kgs                   |

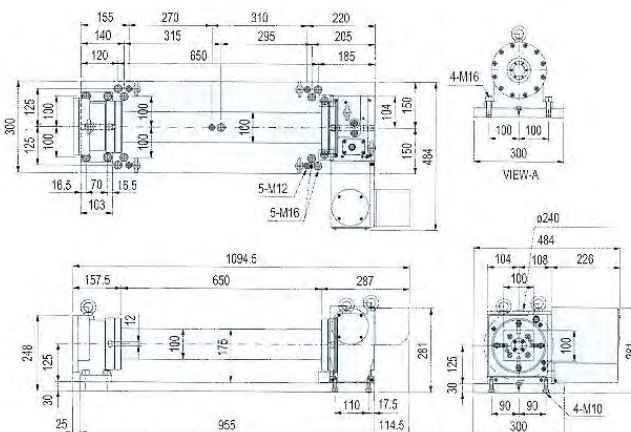


✓ ITEM NO. 52172612



- The material of sub table & working table :  
Ductile iron FCD60

| ITEM NO.         | 52172612                 |
|------------------|--------------------------|
| NC rotary table  | SRT-170                  |
| Strong tailstock | SRT-170F                 |
| Sub table        | 30 x 300 x 955 mm        |
| Working table    | 35 x 180 x 650 mm        |
| Allowance dia.   | Ø240 mm                  |
| Allowance weight | 80 kgs x 1 (side)=80 kgs |
| Height           | 75 mm                    |
| Net weight       | 178 kgs                  |





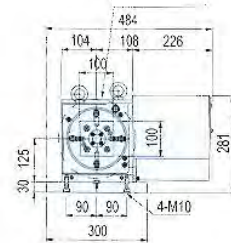
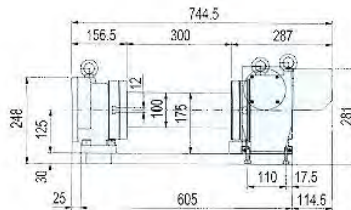
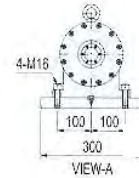
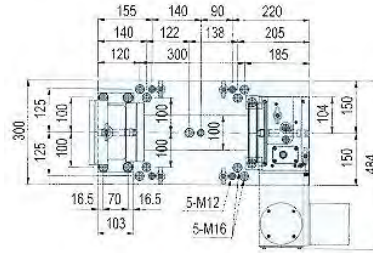
## NC ROTARY TABLE & STRONG TAILSTOCK (SQUARE TABLE)

### ITEM NO. 52172613



- The material of sub table & working table:  
Ductile iron FCD60

| ITEM NO.         | 52172613                  |
|------------------|---------------------------|
| NC rotary table  | SRT-170                   |
| Strong tailstock | SRT-170F                  |
| Sub table        | 30 x 300 x 605 mm         |
| Working table    | 100 x 100 x 300 mm        |
| Allowance dia.   | Ø240 mm                   |
| Allowance weight | 20 kgs x 4 (side)= 80 kgs |
| Height           | 75 mm                     |
| Net weight       | 146 kgs                   |

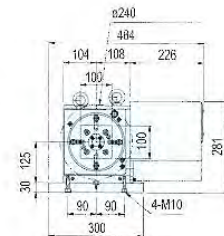
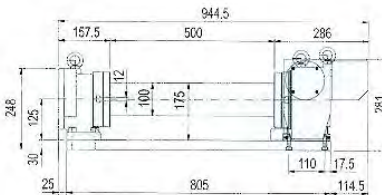
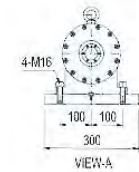
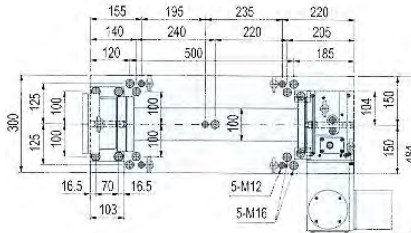


### ITEM NO. 52172614



- The material of sub table & working table:  
Ductile iron FCD60

| ITEM NO.         | 52172614                 |
|------------------|--------------------------|
| NC rotary table  | SRT-170                  |
| Strong tailstock | SRT-170F                 |
| Sub table        | 30 x 300 x 805 mm        |
| Working table    | 100 x 100 x 500 mm       |
| Allowance dia.   | Ø240 mm                  |
| Allowance weight | 20 kgs x 4 (side)= 80kgs |
| Height           | 175 mm                   |
| Net weight       | 173 kgs                  |

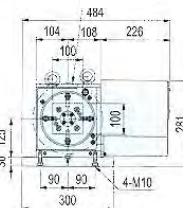
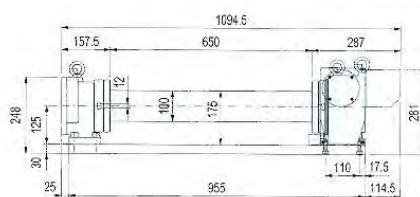
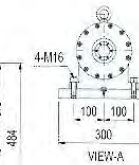
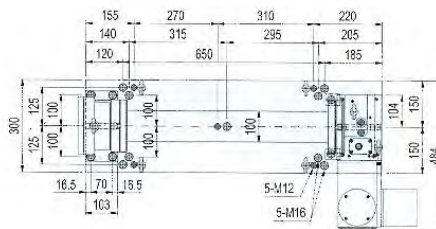


### ITEM NO. 52172615



- The material of sub table & working table:  
Ductile iron FCD60

| ITEM NO.         | 52172615                  |
|------------------|---------------------------|
| NC rotary table  | SRT-170                   |
| Strong tailstock | SRT-170F                  |
| Sub table        | 30 x 300 x 955 mm         |
| Working table    | 100 x 100 x 650 mm        |
| Allowance dia.   | Ø240 mm                   |
| Allowance weight | 20 kgs x 4 (side)= 80 kgs |
| Height           | 175 mm                    |
| Net weight       | 192 kgs                   |



# B “ TOOLS OF WORKHOLDING & PRECISION TOOLS FOR MILLS & VMCS



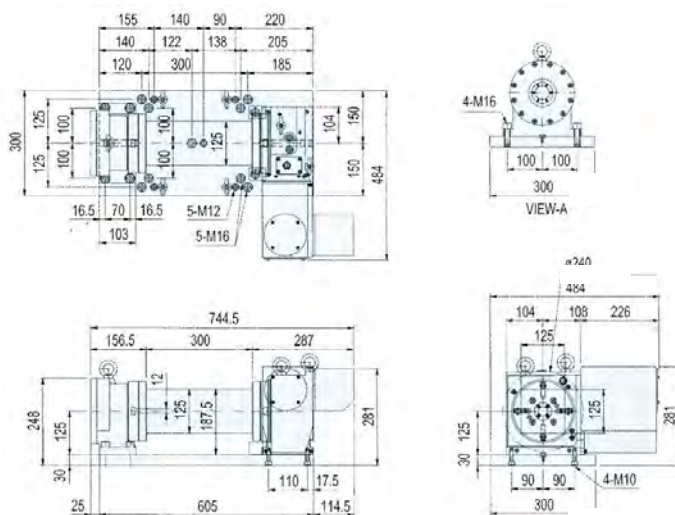
## NC ROTARY TABLE & STRONG TAILSTOCK (SQUARE TABLE)

ITEM NO. 52172616



- The material of sub table & working table:  
Ductile iron FCD60

| ITEM NO.         | 52172616                  |
|------------------|---------------------------|
| NC rotary table  | SRT-170                   |
| Strong tailstock | SRT-170F                  |
| Sub table        | 30 x 300 x 605 mm         |
| Working table    | 125 x 125 x 300 mm        |
| Allowance dia.   | Ø240 mm                   |
| Allowance weight | 20 kgs x 4 (side)= 80 kgs |
| Height           | 75 mm                     |
| Net weight       | 158 kgs                   |

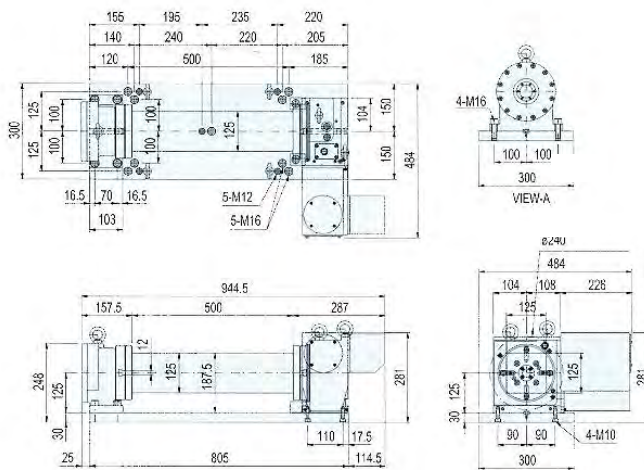


ITEM NO. 52172617



- The material of sub table & working table:  
Ductile iron FCD60

| ITEM NO.         | 52172617                  |
|------------------|---------------------------|
| NC rotary table  | SRT-170                   |
| Strong tailstock | SRT-170F                  |
| Sub table        | 30 x 300 x 805 mm         |
| Working table    | 125 x 125 x 500 mm        |
| Allowance dia.   | Ø240 mm                   |
| Allowance weight | 20 kgs x 4 (side)= 80 kgs |
| Height           | 187.5 mm                  |
| Net weight       | 193 kgs                   |

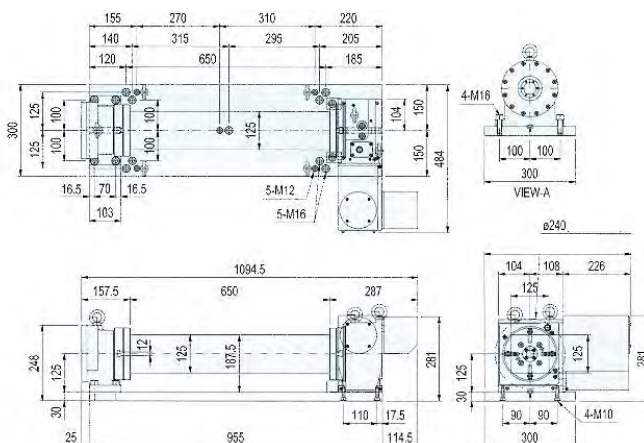


ITEM NO. 52172618



- The material of sub table & working table:  
Ductile iron FCD60

| ITEM NO.         | 52172618                 |
|------------------|--------------------------|
| NC rotary table  | SRT-170                  |
| Strong tailstock | SRT-170F                 |
| Sub table        | 30 x 300 x 955 mm        |
| Working table    | 125 x 125 x 650 mm       |
| Allowance dia.   | Ø240 mm                  |
| Allowance weight | 20 kgs x 4(side)= 80 kgs |
| Height           | 187.5 mm                 |
| Net weight       | 224 kgs                  |





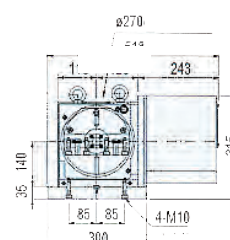
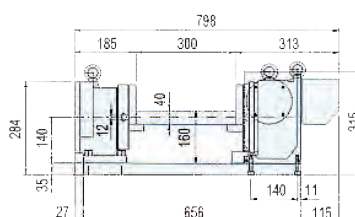
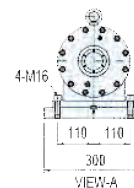
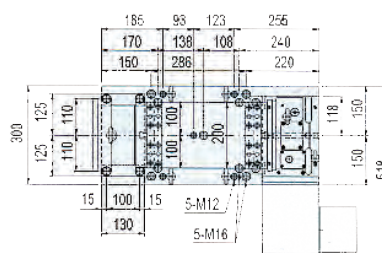
## NC ROTARY TABLE & STRONG TAILSTOCK (TABLE)

✓ ITEM NO. 52172619



- The material of sub table & working table :  
Ductile iron FCD60

| ITEM NO.         | 52172619                   |
|------------------|----------------------------|
| NC rotary table  | SRT-217                    |
| Strong tailstock | SRT-217F                   |
| Sub table        | 30 x 300 x 656 mm          |
| Working table    | 40 x 200 x 300 mm          |
| Allowance dia.   | Ø270 mm                    |
| Allowance weight | 50 kgs x 2 (side)= 100 kgs |
| Height           | 160 mm                     |
| Net weight       | 198 kgs                    |

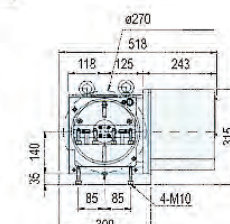
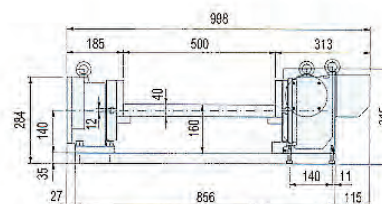
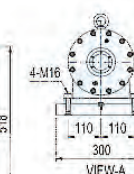
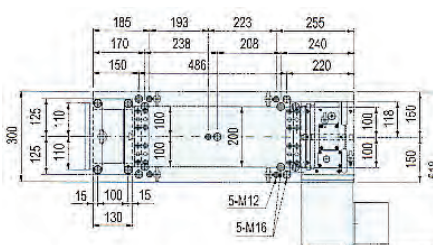


✓ ITEM NO. 52172620



- The material of sub table & working table :  
Ductile iron FCD60

| ITEM NO.         | 52172620                   |
|------------------|----------------------------|
| NC rotary table  | SRT-217                    |
| Strong tailstock | SRT-217F                   |
| Sub table        | 30 x 300 x 856 mm          |
| Working table    | 40 x 200 x 500 mm          |
| Allowance dia.   | Ø270 mm                    |
| Allowance weight | 50 kgs x 2 (side)= 100 kgs |
| Height           | 160 mm                     |
| Net weight       | 225 kgs                    |

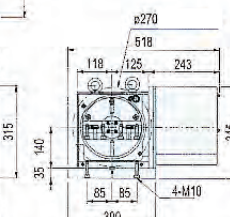
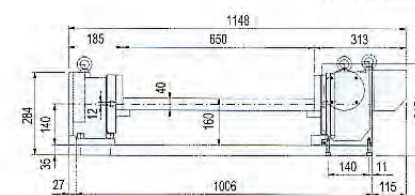
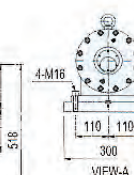
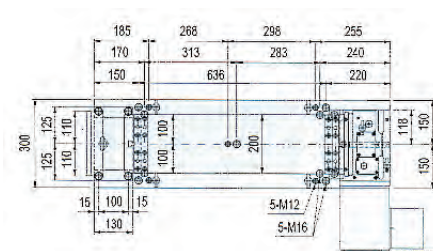


✓ ITEM NO. 52172621



- The material of sub table & working table :  
Ductile iron FCD60

| ITEM NO.         | 52172621                   |
|------------------|----------------------------|
| NC rotary table  | SRT-217                    |
| Strong tailstock | SRT-217F                   |
| Sub table        | 35 x 300 x 1006 mm         |
| Working table    | 40 x 200 x 650 mm          |
| Allowance dia.   | Ø270 mm                    |
| Allowance weight | 50 kgs x 2 (side)= 100 kgs |
| Height           | 160 mm                     |
| Net weight       | 243 kgs                    |



B11 - CNC ROTARY TABLES

TOOLS OF WORKHOLDING&PRECISION TOOLS FOR MILLS&VMCS

# B “ TOOLS OF WORKHOLDING & PRECISION TOOLS FOR MILLS & VMCS



## NC ROTARY TABLE & STRONG TAILSTOCK (U TYPE TABLE)

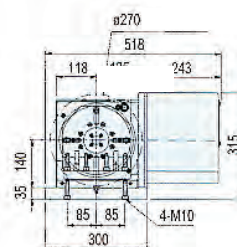
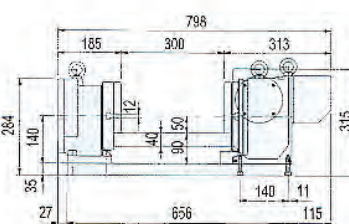
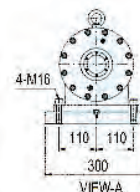
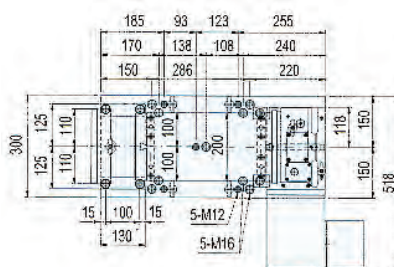
✓ ITEM NO. 52172622



- The material of sub table & working table :  
Ductile iron FCD60

ITEM NO. 52172622

|                  |                             |
|------------------|-----------------------------|
| NC rotary table  | SRT-217                     |
| Strong tailstock | SRT-217F                    |
| Sub table        | 35 x 300 x 656 mm           |
| Working table    | 40 x 200 x 300 mm           |
| Allowance dia.   | Ø270 mm                     |
| Allowance weight | 100 kgs x 1 (side)= 100 kgs |
| Height           | 90 mm                       |
| Net weight       | 199kgs                      |



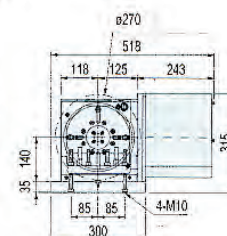
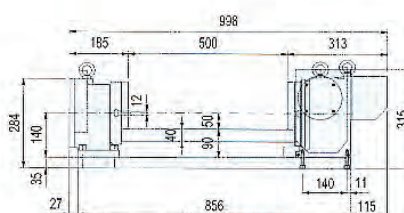
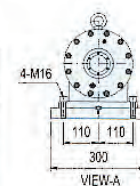
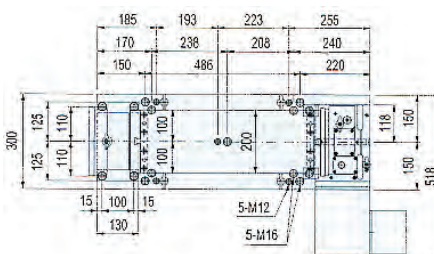
✓ ITEM NO. 52172623



- The material of sub table & working table :  
Ductile iron FCD60

ITEM NO. 52172623

|                  |                             |
|------------------|-----------------------------|
| NC rotary table  | SRT-217                     |
| Strong tailstock | SRT-217F                    |
| Sub table        | 35 x 300 x 856 mm           |
| Working table    | 40 x 200 x 500 mm           |
| Allowance dia.   | Ø270 mm                     |
| Allowance weight | 100 kgs x 1 (side)= 100 kgs |
| Height           | 90 mm                       |
| Net weight       | 226 kgs                     |



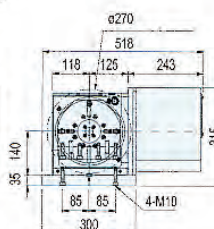
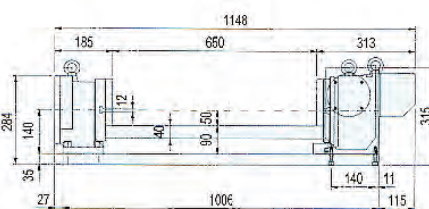
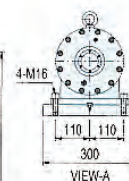
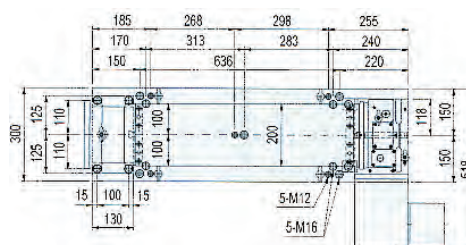
✓ ITEM NO. 52172624



- The material of sub table & working table :  
Ductile iron FCD60

ITEM NO. 52172624

|                  |                             |
|------------------|-----------------------------|
| NC rotary table  | SRT-217                     |
| Strong tailstock | SRT-217F                    |
| Sub table        | 35 x 300 x 1006 mm          |
| Working table    | 40 x 200 x 650 mm           |
| Allowance dia.   | Ø270 mm                     |
| Allowance weight | 100 kgs x 1 (side)= 100 kgs |
| Height           | 90 mm                       |
| Net weight       | 246 kgs                     |





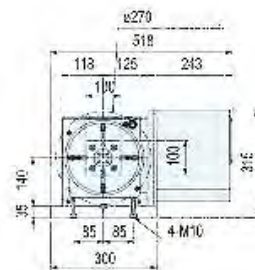
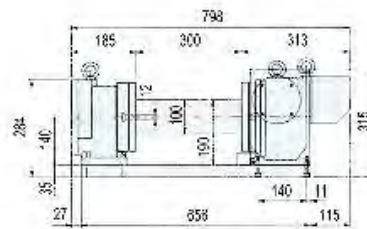
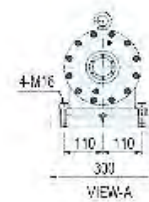
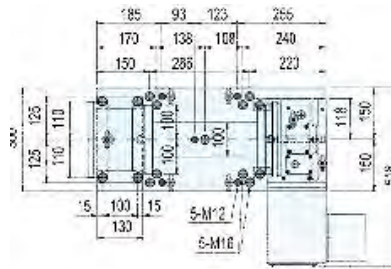
## NC ROTARY TABLE & STRONG TAILSTOCK (SQUARE TABLE)

ITEM NO. 52172625



- The material of sub table & working table : Ductile iron FCD60

| ITEM NO.         | 52172625                   |
|------------------|----------------------------|
| NC rotary table  | SRT-217                    |
| Strong tailstock | SRT-217F                   |
| Sub table        | 35 x 300 x 656 mm          |
| Working table    | 100 x 100 x 300 mm         |
| Allowance dia.   | Ø270 mm                    |
| Allowance weight | 25 kgs x 4 (side)= 100 kgs |
| Height           | 190 mm                     |
| Net weight       | 203 kgs                    |

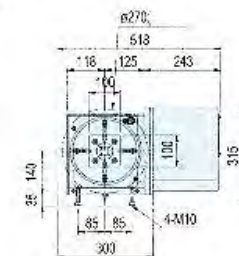
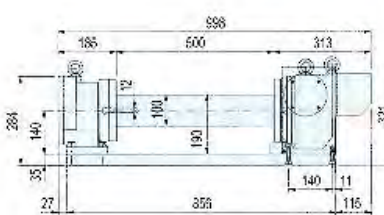
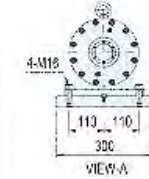
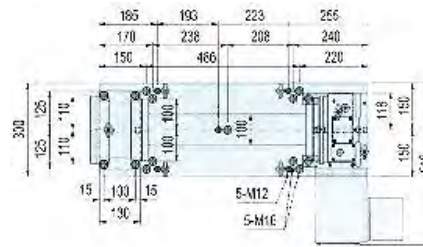


ITEM NO. 52172626



- The material of sub table & working table : Ductile iron FCD60

| ITEM NO.         | 52172626                   |
|------------------|----------------------------|
| NC rotary table  | SRT-217                    |
| Strong tailstock | SRT-217F                   |
| Sub table        | 35 x 300 x 856 mm          |
| Working table    | 100 x 100 x 500 mm         |
| Allowance dia.   | Ø270 mm                    |
| Allowance weight | 25 kgs x 4 (side)= 100 kgs |
| Height           | 190 mm                     |
| Net weight       | 232 kgs                    |

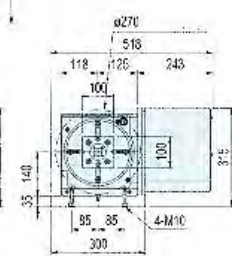
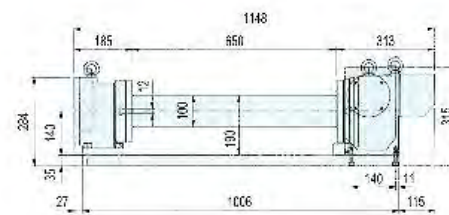
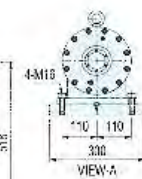
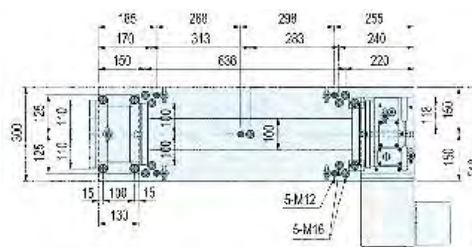


ITEM NO. 52172627



- The material of sub table & working table : Ductile iron FCD60

| ITEM NO.         | 52172627                  |
|------------------|---------------------------|
| NC rotary table  | SRT-217                   |
| Strong tailstock | SRT-217F                  |
| Sub table        | 35 x 300 x 1006 mm        |
| Working table    | 100 x 100 x 650 mm        |
| Allowance dia.   | Ø270 mm                   |
| Allowance weight | 25 kgs x 4 (side)= 100kgs |
| Height           | 190 mm                    |
| Net weight       | 253 kgs                   |



# B “ TOOLS OF WORKHOLDING & PRECISION TOOLS FOR MILLS & VMCS



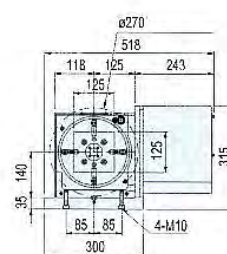
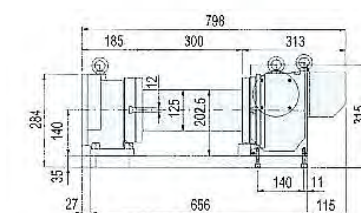
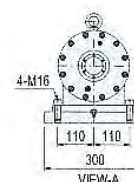
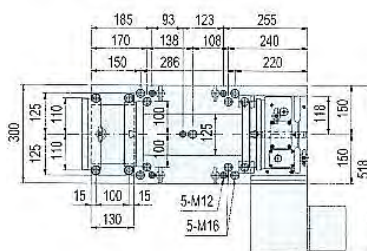
## NC ROTARY TABLE & STRONG TAILSTOCK (SQUARE TABLE)

✓ ITEM NO. 52172628



- The material of sub table & working table :  
Ductile iron FCD60

| ITEM NO.         | 52172628                   |
|------------------|----------------------------|
| NC rotary table  | SRT-217                    |
| Strong tailstock | SRT-217F                   |
| Sub table        | 35 x 300 x 656 mm          |
| Working table    | 125 x 125 x 300 mm         |
| Allowance dia.   | Ø270 mm                    |
| Allowance weight | 25 kgs x 4 (side)= 100 kgs |
| Height           | 202.5 mm                   |
| Net weight       | 215 kgs                    |

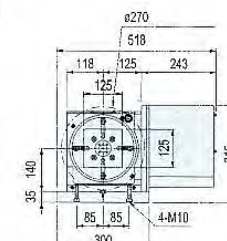
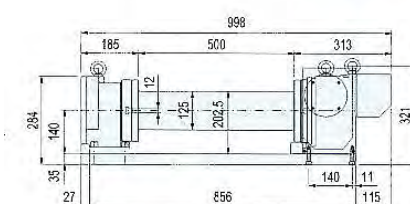
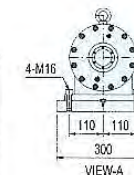
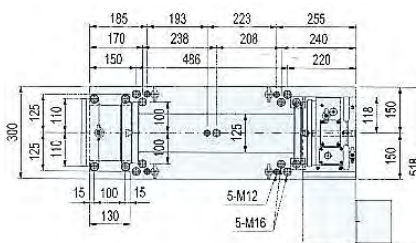


✓ ITEM NO. 52172629



- The material of sub table & working table :  
Ductile iron FCD60

| ITEM NO.         | 52172629                   |
|------------------|----------------------------|
| NC rotary table  | SRT-217                    |
| Strong tailstock | SRT-217F                   |
| Sub table        | 35 x 300 x 856 mm          |
| Working table    | 125 x 125 x 500 mm         |
| Allowance dia.   | Ø350 mm                    |
| Allowance weight | 25 kgs x 4 (side)= 100 kgs |
| Height           | 202.5 mm                   |
| Net weight       | 252 kgs                    |

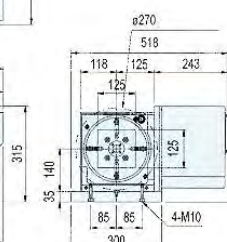
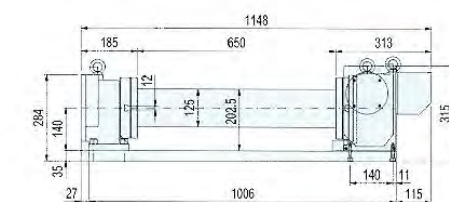
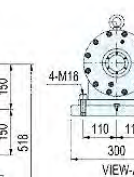
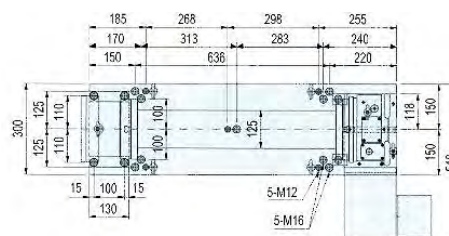


✓ ITEM NO. 52172630



- The material of sub table & working table :  
Ductile iron FCD60

| ITEM NO.         | 52172630                   |
|------------------|----------------------------|
| NC rotary table  | SRT-217                    |
| Strong tailstock | SRT-217F                   |
| Sub table        | 35 x 300 x 1006 mm         |
| Working table    | 125 x 125 x 650 mm         |
| Allowance dia.   | Ø270 mm                    |
| Allowance weight | 25 kgs x 4 (side)= 100 kgs |
| Height           | 202.5 mm                   |
| Net weight       | 284 kgs                    |





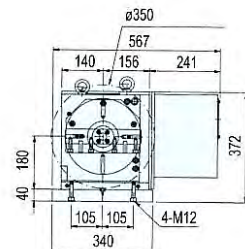
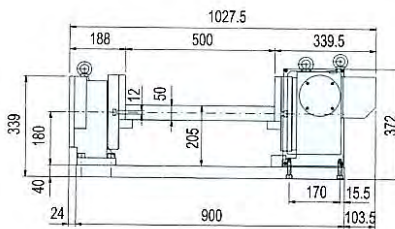
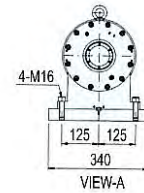
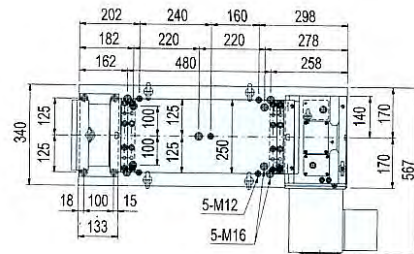
## NC ROTARY TABLE & STRONG TAILSTOCK (TABLE)

ITEM NO. 52172631



- The material of sub table & working table : Ductile iron FCD60

| ITEM NO.         | 52172631                    |
|------------------|-----------------------------|
| NC rotary table  | SRT-256                     |
| Strong tailstock | SRT-256F                    |
| Sub table        | 40 x 340 x 900 mm           |
| Working table    | 50 x 250 x 500 mm           |
| Allowance dia.   | Ø350 mm                     |
| Allowance weight | 62.5 kgs x2 (side)= 125 kgs |
| Height           | 205 mm                      |
| Net weight       | 330 kgs                     |

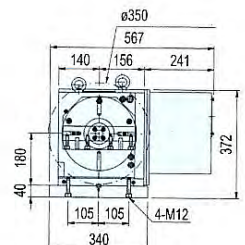
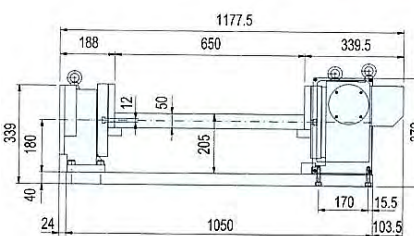
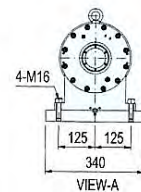
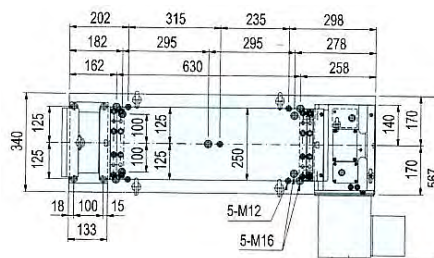


ITEM NO. 52172632



- The material of sub table & working table : Ductile iron FCD60

| ITEM NO.         | 52172632                     |
|------------------|------------------------------|
| NC rotary table  | SRT-256                      |
| Strong tailstock | SRT-256F                     |
| Sub table        | 40 x 340 x 1050 mm           |
| Working table    | 50 x 250 x 650 mm            |
| Allowance dia.   | Ø350 mm                      |
| Allowance weight | 62.5 kgs x 2 (side)= 125 kgs |
| Height           | 205 mm                       |
| Net weight       | 359 kgs                      |

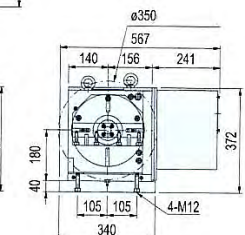
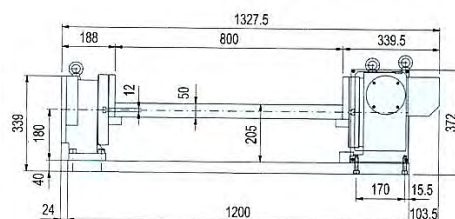
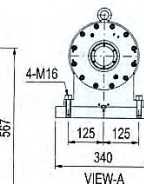
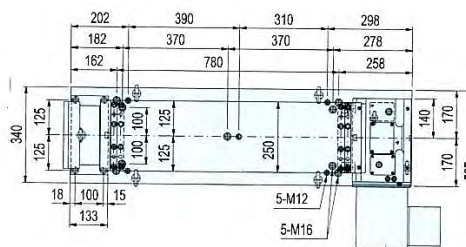


ITEM NO. 52172633



- The material of sub table & working table : Ductile iron FCD60

| ITEM NO.         | 52172633                     |
|------------------|------------------------------|
| NC rotary table  | SRT-256                      |
| Strong tailstock | SRT-256F                     |
| Sub table        | 40 x 340 x 1200 mm           |
| Working table    | 50 x 250 x 800 mm            |
| Allowance dia.   | Ø350 mm                      |
| Allowance weight | 62.5 kgs x 2 (side)= 125 kgs |
| Height           | 205 mm                       |
| Net weight       | 387 kgs                      |



B11 - CNC ROTARY TABLES

TOOLS OF WORKHOLDING & PRECISION TOOLS FOR MILLS & VMCS

# B “ TOOLS OF WORKHOLDING & PRECISION TOOLS FOR MILLS & VMCS



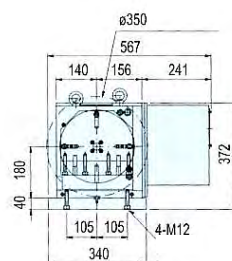
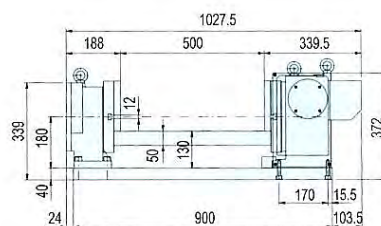
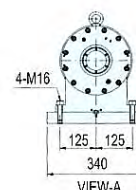
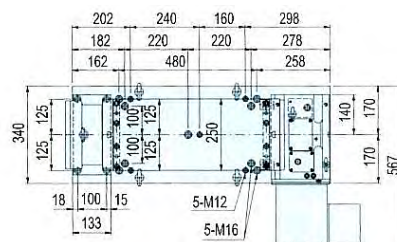
## NC ROTARY TABLE & STRONG TAILSTOCK (U TYPE TABLE)

✓ ITEM NO. 52172634



- The material of sub table & working table :  
Ductile iron FCD60

| ITEM NO.         | 52172634                    |
|------------------|-----------------------------|
| NC rotary table  | SRT-256                     |
| Strong tailstock | SRT-256F                    |
| Sub table        | 40 x 340 x 900 mm           |
| Working table    | 50x 250 x 500 mm            |
| Allowance dia.   | Ø350 mm                     |
| Allowance weight | 125 kgs x 1 (side)= 125 kgs |
| Height           | 130 mm                      |
| Net weight       | 330 kgs                     |

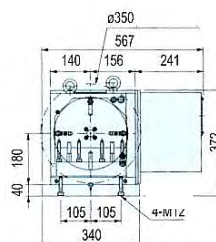
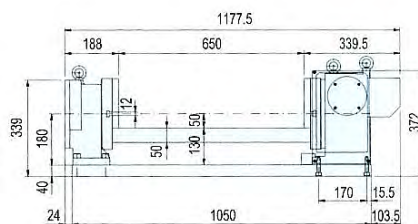
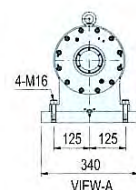
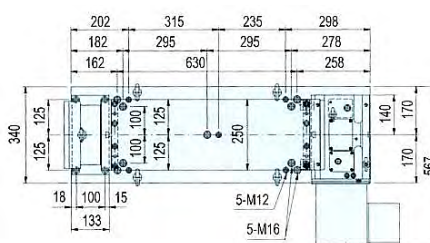


✓ ITEM NO. 52172635



- The material of sub table & working table :  
Ductile iron FCD60

| ITEM NO.         | 52172635                    |
|------------------|-----------------------------|
| NC rotary table  | SRT-256                     |
| Strong tailstock | SRT-256F                    |
| Sub table        | 40 x 340 x 1050 mm          |
| Working table    | 50 x 250 x 650 mm           |
| Allowance dia.   | Ø350 mm                     |
| Allowance weight | 125 kgs x 1 (side)= 125 kgs |
| Height           | 130 mm                      |
| Net weight       | 359 kgs                     |

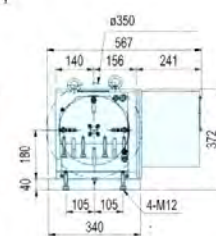
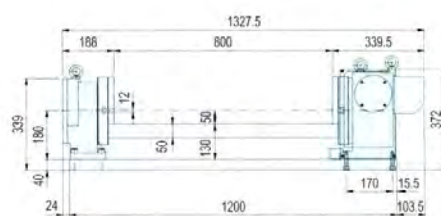
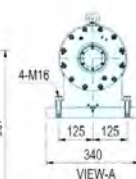
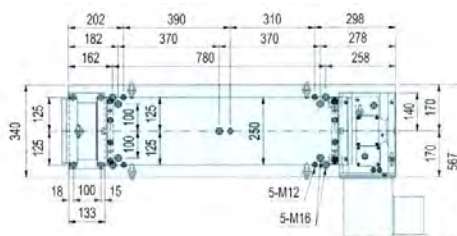


✓ ITEM NO. 52172636



- The material of sub table & working table :  
Ductile iron FCD60

| ITEM NO.         | 52172636                    |
|------------------|-----------------------------|
| NC rotary table  | SRT-256                     |
| Strong tailstock | SRT-256F                    |
| Sub table        | 40 x 340 x 1200 mm          |
| Working table    | 50 x 250 x 800 mm           |
| Allowance dia.   | Ø350 mm                     |
| Allowance weight | 125 kgs x 1 (side)= 125 kgs |
| Height           | 130 mm                      |
| Net weight       | 387 kgs                     |





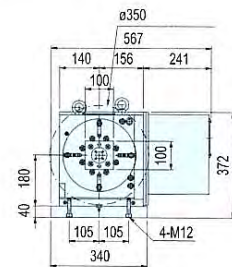
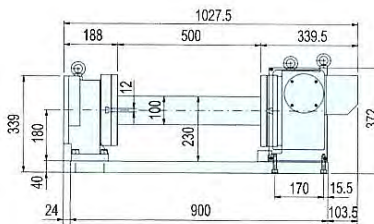
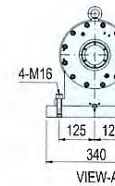
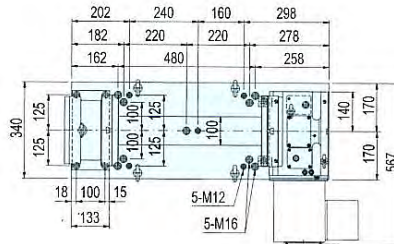
## NC ROTARY TABLE & STRONG TAILSTOCK (SQUARE TABLE)

✓ ITEM NO. 52172637



- The material of sub table & working table :  
Ductile iron FCD60

| ITEM NO.         | 52172637                      |
|------------------|-------------------------------|
| NC rotary table  | SRT-256                       |
| Strong tailstock | SRT-256F                      |
| Sub table        | 40 x 340 x 900 mm             |
| Working table    | 100 x 100 x 500 mm            |
| Allowance dia.   | Ø350 mm                       |
| Allowance weight | 31.25 kgs x 4 (side)= 125 kgs |
| Height           | 230 mm                        |
| Net weight       | 321 kgs                       |

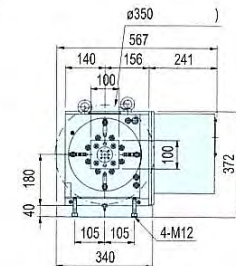
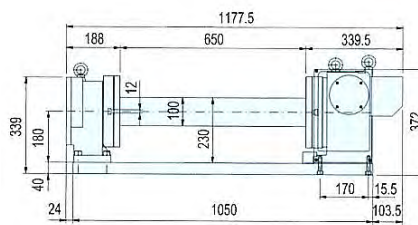
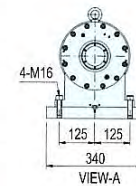
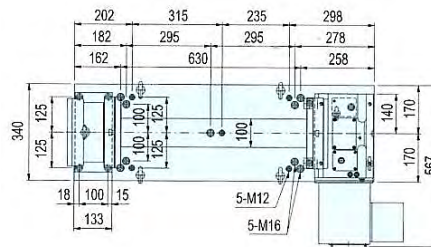


✓ ITEM NO. 52172638



- The material of sub table & working table :  
Ductile iron FCD60

| ITEM NO.         | 52172638                      |
|------------------|-------------------------------|
| NC rotary table  | SRT-256                       |
| Strong tailstock | SRT-256F                      |
| Sub table        | 40 x 340 x 1050 mm            |
| Working table    | 100 x 100 x 650 mm            |
| Allowance dia.   | Ø350 mm                       |
| Allowance weight | 31.25 kgs x 4 (side)= 125 kgs |
| Height           | 230 mm                        |
| Net weight       | 348 kgs                       |

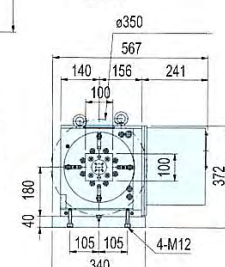
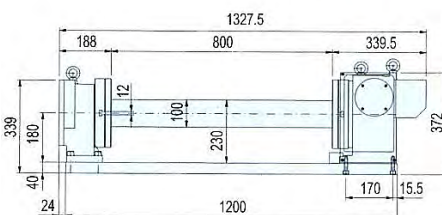
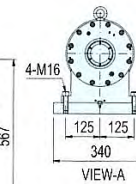
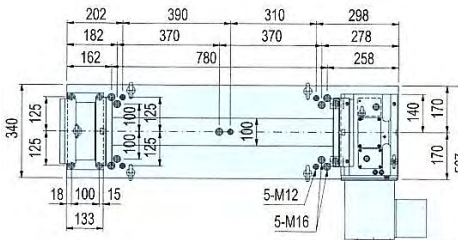


✓ ITEM NO. 52172639



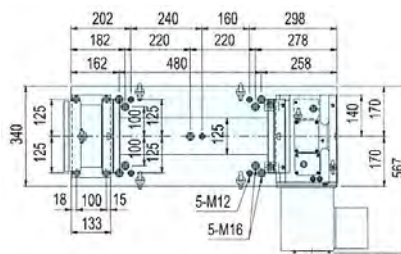
- The material of sub table & working table :  
Ductile iron FCD60

| ITEM NO.         | 52172639                      |
|------------------|-------------------------------|
| NC rotary table  | SRT-256                       |
| Strong tailstock | SRT-256F                      |
| Sub table        | 40 x 340 x 1200 mm            |
| Working table    | 100 x 100 x 800 mm            |
| Allowance dia.   | Ø350 mm                       |
| Allowance weight | 31.25 kgs x 4 (side)= 125 kgs |
| Height           | 230 mm                        |
| Net weight       | 374 kgs                       |

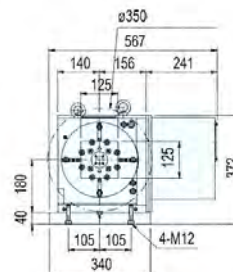




## ITEM NO. 52172640

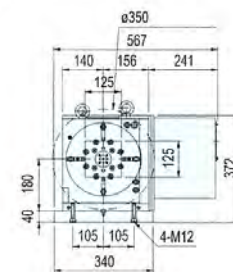


- 



ITEM NO. 52172641

- 
- Technical drawing of the base plate for the 1000mm x 1000mm column. The drawing shows a rectangular plate with dimensions 340mm x 170mm. It features four M12 bolts at the corners and four M16 bolts along the edges. Dimensions for bolt spacing and plate thickness are provided.

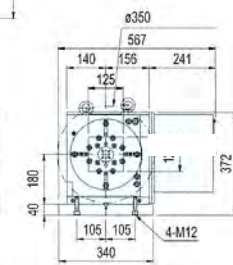


ITEM NO. 52172642

A long, silver-colored metal fixture, likely a part of a testing machine. It has a black motor or actuator on the right end and a circular component, possibly a pulley or a sensor, on the left end. The fixture is mounted on a base.

- 
- Technical drawing of the front view of a mechanical component. The drawing shows a rectangular plate with various dimensions and hole specifications. The overall width is 390 and the overall height is 340. The drawing includes dimensions for the top edge (202, 182, 162, 370, 780, 370, 298, 278, 258), the bottom edge (125, 125, 100, 100, 125, 125, 140, 170, 170, 587), and the side edges (18, 100, 15, 133). The drawing also shows the locations of 5-M12 and 5-M16 holes.

VIEW-A





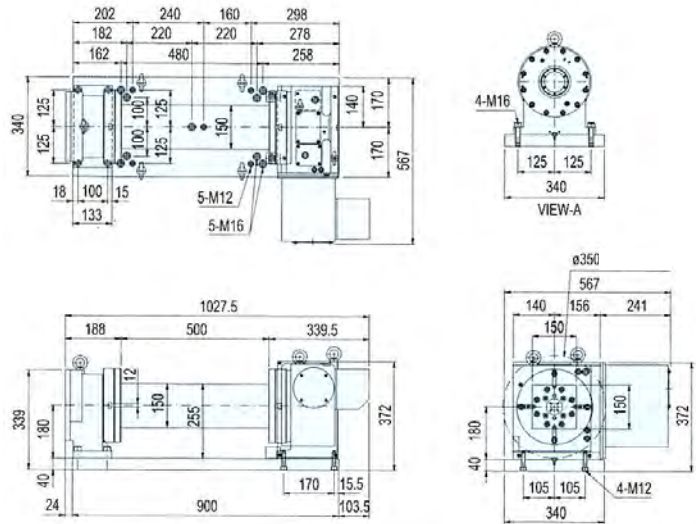
## NC ROTARY TABLE & STRONG TAILSTOCK (SQUARE TABLE)

✓ ITEM NO. 52172643



- The material of sub table & working table :  
Ductile iron FCD60

| ITEM NO.         | 52172643                      |
|------------------|-------------------------------|
| NC rotary table  | SRT-256                       |
| Strong tailstock | SRT-256F                      |
| Sub table        | 40 x 340 x 900 mm             |
| Working table    | 150 x 150 x 500 mm            |
| Allowance dia.   | Ø350 mm                       |
| Allowance weight | 31.25 kgs x 4 (side)= 125 kgs |
| Height           | 255 mm                        |
| Net weight       | 366 kgs                       |

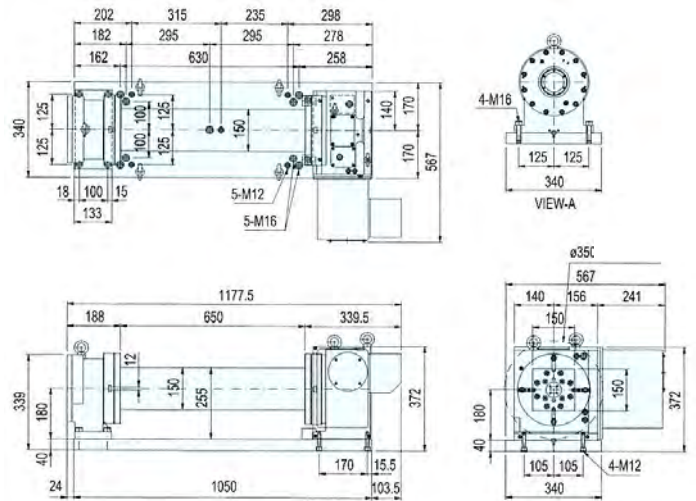


✓ ITEM NO. 52172644



- The material of sub table & working table :  
Ductile iron FCD60

| ITEM NO.         | 52172644                      |
|------------------|-------------------------------|
| NC rotary table  | SRT-256                       |
| Strong tailstock | SRT-256F                      |
| Sub table        | 40 x 340 x 1050 mm            |
| Working table    | 150 x 150 x 650 mm            |
| Allowance dia.   | Ø350 mm                       |
| Allowance weight | 31.25 kgs x 4 (side)= 125 kgs |
| Height           | 255 mm                        |
| Net weight       | 405 kgs                       |

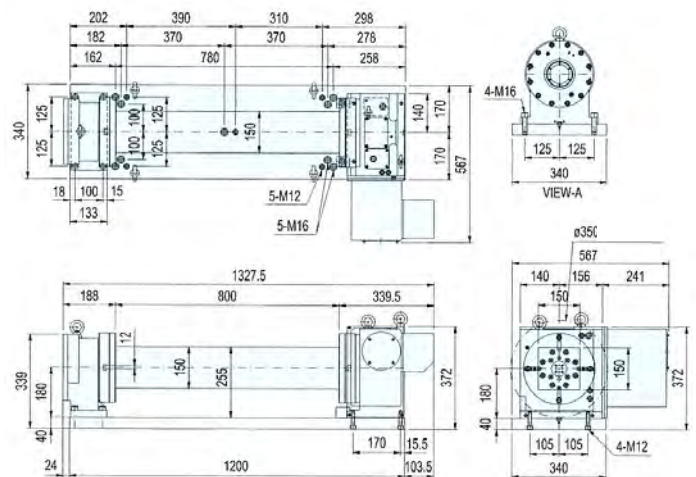


✓ ITEM NO. 52172645



- The material of sub table & working table :  
Ductile iron FCD60

| ITEM NO.         | 52172645                      |
|------------------|-------------------------------|
| NC rotary table  | SRT-256                       |
| Strong tailstock | SRT-256F                      |
| Sub table        | 40 x 340 x 1200 mm            |
| Working table    | 150 x 150 x 800 mm            |
| Allowance dia.   | Ø350 mm                       |
| Allowance weight | 31.25 kgs x 4 (side)= 125 kgs |
| Height           | 255 mm                        |
| Net weight       | 445 kgs                       |



# B “ TOOLS OF WORKHOLDING & PRECISION TOOLS FOR MILLS & VMCS



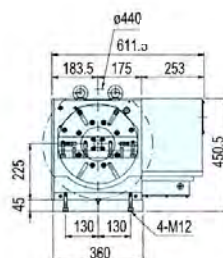
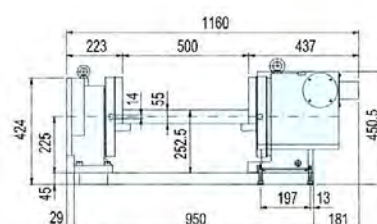
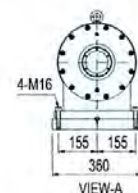
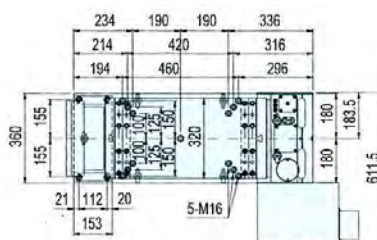
## NC ROTARY TABLE & STRONG TAILSTOCK (TABLE)

✓ ITEM NO. 52172646



- The material of sub table & working table :  
Ductile iron FCD60

| ITEM NO.         | 52172646                   |
|------------------|----------------------------|
| NC rotary table  | SRT-322                    |
| Strong tailstock | SRT-322F                   |
| Sub table        | 45 x 360 x 950 mm          |
| Working table    | 55 x 320 x 500 mm          |
| Allowance dia.   | Ø440 mm                    |
| Allowance weight | 90 kgs x 2 (side)= 180 kgs |
| Height           | 252.5 mm                   |
| Net weight       | 516 kgs                    |

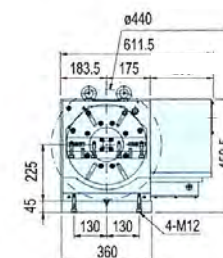
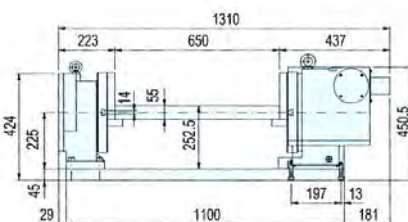
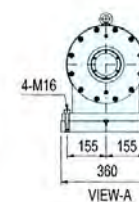
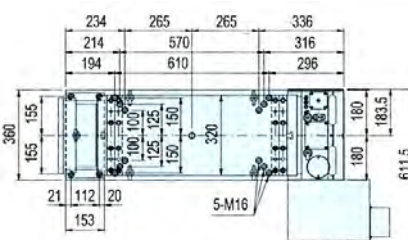


✓ ITEM NO. 52172647



- The material of sub table & working table :  
Ductile iron FCD60

| ITEM NO.         | 52172647                   |
|------------------|----------------------------|
| NC rotary table  | SRT-322                    |
| Strong tailstock | SRT-322F                   |
| Sub table        | 45 x 360 x 1100 mm         |
| Working table    | 55 x 320 x 650 mm          |
| Allowance dia.   | Ø440 mm                    |
| Allowance weight | 90 kgs x 2 (side)= 180 kgs |
| Height           | 252.5 mm                   |
| Net weight       | 553 kgs                    |

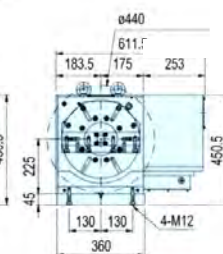
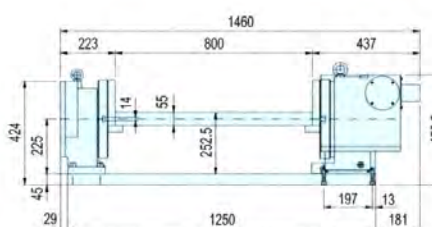
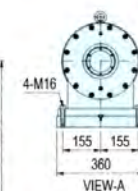
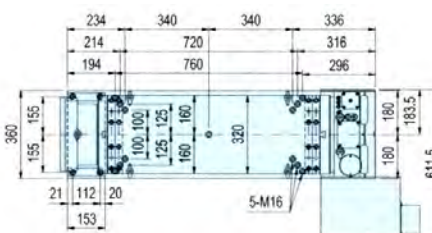


✓ ITEM NO. 52172648

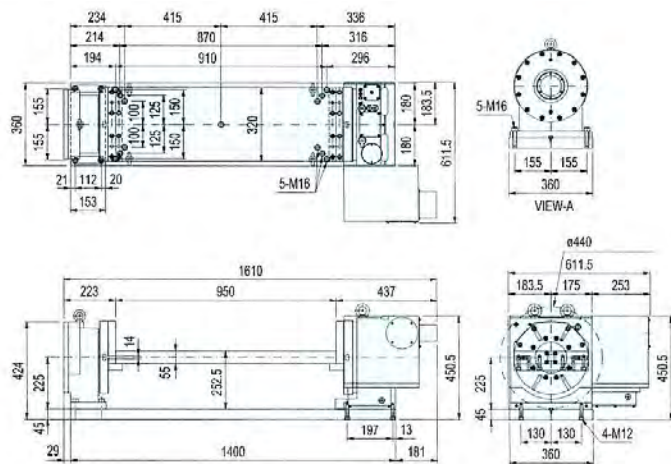


- The material of sub table & working table :  
Ductile iron FCD60

| ITEM NO.         | 52172648                   |
|------------------|----------------------------|
| NC rotary table  | SRT-322                    |
| Strong tailstock | SRT-322F                   |
| Sub table        | 45 x 360 x 1250 mm         |
| Working table    | 55 x 320 x 800 mm          |
| Allowance dia.   | Ø440 mm                    |
| Allowance weight | 90 kgs x 2 (side)= 180 kgs |
| Height           | 252.5 mm                   |
| Net weight       | 589                        |

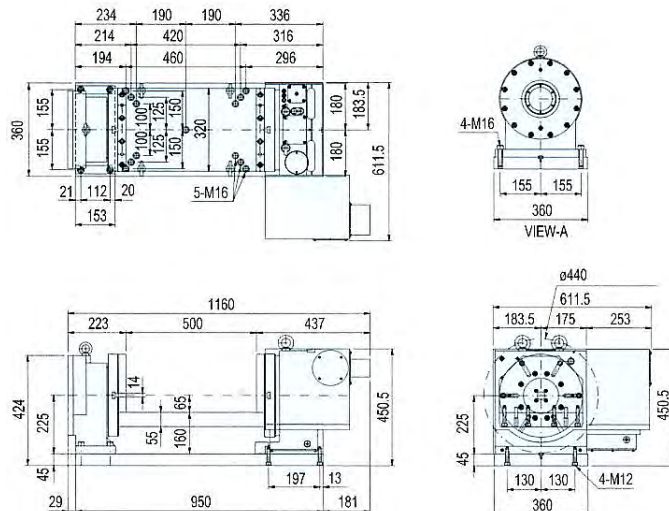


**V** ITEM NO. 52172649



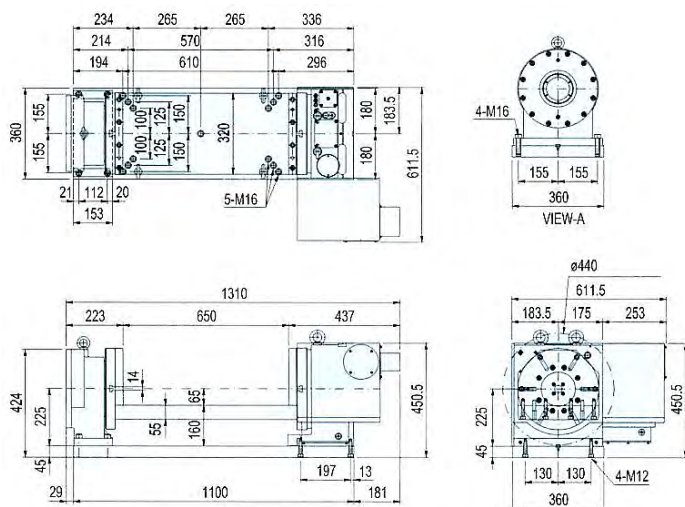
- | ITEM NO.         | 52172649                   |
|------------------|----------------------------|
| NC rotary table  | SRT-322                    |
| Strong tailstock | SRT-322F                   |
| Sub table        | 45 x 360 x 1400 mm         |
| Working table    | 55 x 320 x 950 mm          |
| Allowance dia.   | Ø440 mm                    |
| Allowance weight | 90 kgs x 2 (side)= 180 kgs |
| Height           | 252.5 mm                   |
| Net weight       | 616 kgs                    |

**V** ITEM NO. 52172650



- | ITEM NO.         | 52172650                    |
|------------------|-----------------------------|
| NC rotary table  | SRT-322                     |
| Strong tailstock | SRT-322F                    |
| Sub table        | 45 x 360 x 950 mm           |
| Working table    | 55 x 320 x 500 mm           |
| Allowance dia.   | Ø440 mm                     |
| Allowance weight | 180 kgs x 1 (side)= 180 kgs |
| Height           | 160 mm                      |
| Net weight       | 522 kgs                     |

## ITEM NO. 52172651



- | ITEM NO.         | 52172651                    |
|------------------|-----------------------------|
| NC rotary table  | SRT-322                     |
| Strong tailstock | SRT-322F                    |
| Sub table        | 45 x 360 x 1100 mm          |
| Working table    | 55 x 320 x 650 mm           |
| Allowance dia.   | Ø440 mm                     |
| Allowance weight | 180 kgs x 1 (side)= 180 kgs |
| Height           | 160 mm                      |
| Net weight       | 559 kgs                     |

# B “ TOOLS OF WORKHOLDING & PRECISION TOOLS FOR MILLS & VMCS



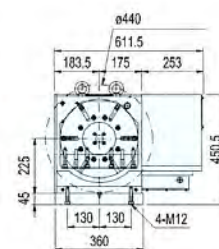
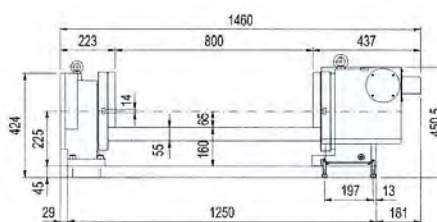
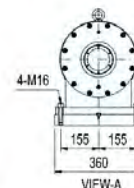
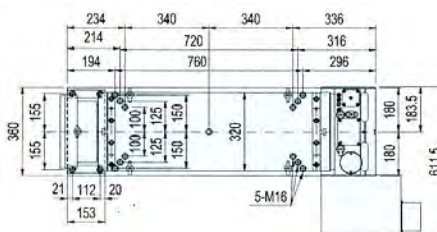
## NC ROTARY TABLE & STRONG TAILSTOCK (U TYPE TABLE)

ITEM NO. 52172652



- The material of sub table & working table :  
Ductile iron FCD60

| ITEM NO.         | 52172652                    |
|------------------|-----------------------------|
| NC rotary table  | SRT-322                     |
| Strong tailstock | SRT-322F                    |
| Sub table        | 45 x 360 x 1250 mm          |
| Working table    | 55 x 320 x 800 mm           |
| Allowance dia.   | Ø440 mm                     |
| Allowance weight | 180 kgs x 1 (side)= 180 kgs |
| Height           | 160 mm                      |
| Net weight       | 595 kgs                     |

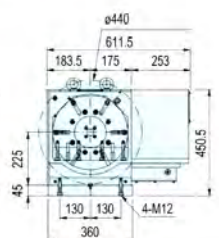
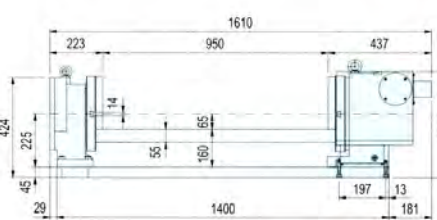
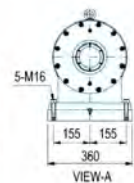
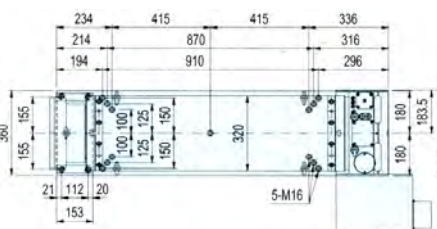


ITEM NO. 52172653



- The material of sub table & working table :  
Ductile iron FCD60

| ITEM NO.         | 52172653                    |
|------------------|-----------------------------|
| NC rotary table  | SRT-322                     |
| Strong tailstock | SRT-322F                    |
| Sub table        | 45 x 360 x 1400 mm          |
| Working table    | 55 x 320 x 950 mm           |
| Allowance dia.   | Ø440 mm                     |
| Allowance weight | 180 kgs x 1 (side)= 180 kgs |
| Height           | 160 mm                      |
| Net weight       | 623 kgs                     |



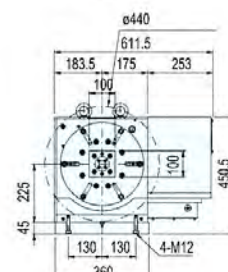
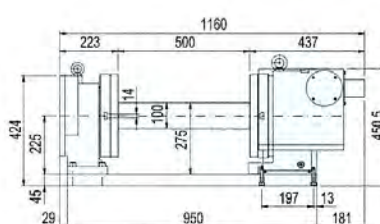
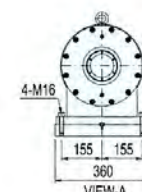
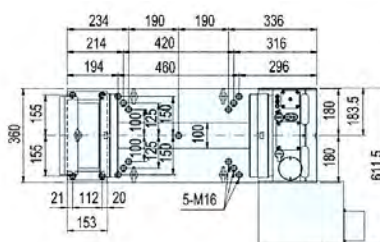
## NC ROTARY TABLE & STRONG TAILSTOCK (SQUARE TABLE)

ITEM NO. 52172654



- The material of sub table & working table :  
Ductile iron FCD60

| ITEM NO.         | 52172654                   |
|------------------|----------------------------|
| NC rotary table  | SRT-322                    |
| Strong tailstock | SRT-322F                   |
| Sub table        | 45 x 360 x 950 mm          |
| Working table    | 100 x 100 x 500 mm         |
| Allowance dia.   | Ø440 mm                    |
| Allowance weight | 45 kgs x 4 (side)= 180 kgs |
| Height           | 275 mm                     |
| Net weight       | 497 kgs                    |





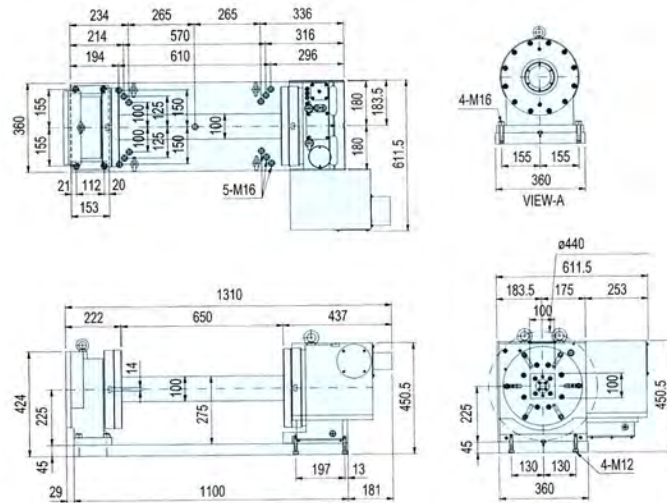
## NC ROTARY TABLE & STRONG TAILSTOCK (SQUARE TABLE)

### ITEM NO. 52172655



- The material of sub table & working table :  
Ductile iron FCD60

| ITEM NO.         | 52172655                   |
|------------------|----------------------------|
| NC rotary table  | SRT-322                    |
| Strong tailstock | SRT-322F                   |
| Sub table        | 45 x 360 x 1100 mm         |
| Working table    | 100 x 100 x 650 mm         |
| Allowance dia.   | Ø440 mm                    |
| Allowance weight | 45 kgs x 4 (side)= 180 kgs |
| Height           | 275 mm                     |
| Net weight       | 526 kgs                    |

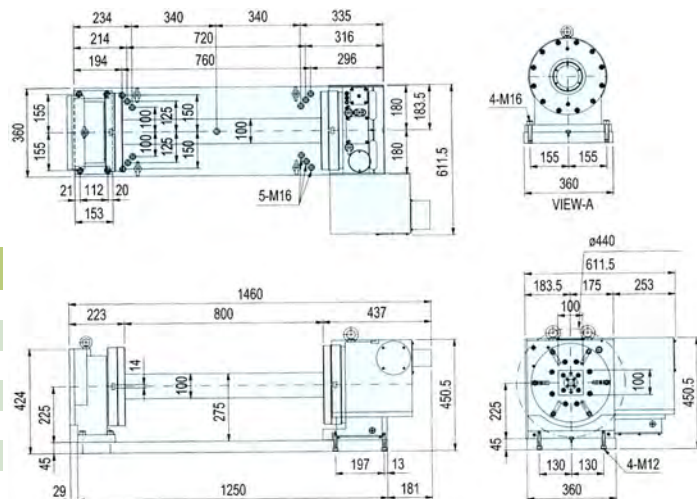


### ITEM NO. 52172656



- The material of sub table & working table :  
Ductile iron FCD60

| ITEM NO.         | 52172656                    |
|------------------|-----------------------------|
| NC rotary table  | SRT-322                     |
| Strong tailstock | SRT-322F                    |
| Sub table        | 45 x 360 x 1250 mm          |
| Working table    | 100 x 100 x 800 mm          |
| Allowance dia.   | Ø440 mm                     |
| Allowance weight | 440 kgs x 4 (side)= 180 kgs |
| Height           | 275 mm                      |
| Net weight       | 554 kgs                     |

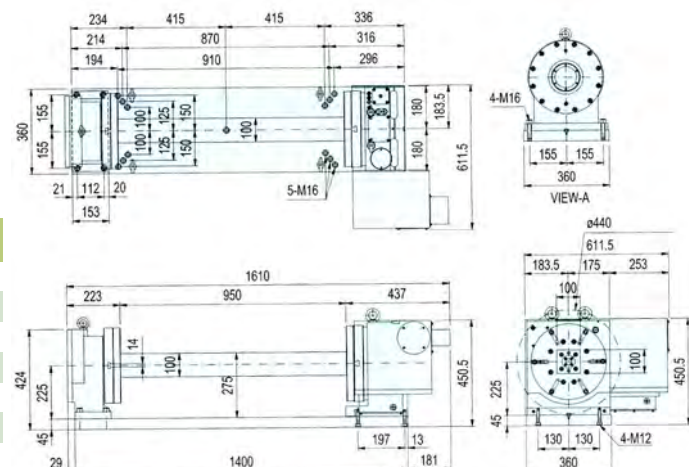


### ITEM NO. 52172657



- The material of sub table & working table :  
Ductile iron FCD60

| ITEM NO.         | 52172657                   |
|------------------|----------------------------|
| NC rotary table  | SRT-322                    |
| Strong tailstock | SRT-322F                   |
| Sub table        | 45 x 360 x 1400 mm         |
| Working table    | 100 x 100 x 950 mm         |
| Allowance dia.   | Ø440 mm                    |
| Allowance weight | 45 kgs x 4 (side)= 180 kgs |
| Height           | 275 mm                     |
| Net weight       | 574 kgs                    |



# B “ TOOLS OF WORKHOLDING & PRECISION TOOLS FOR MILLS & VMCS



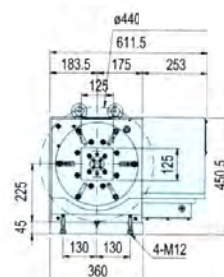
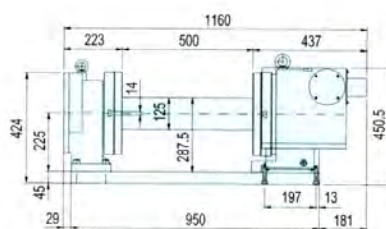
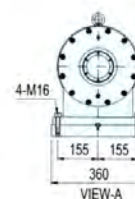
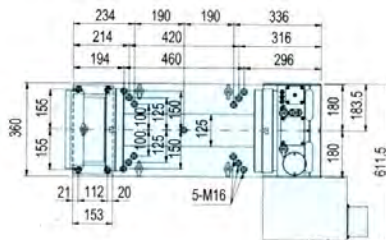
## NC ROTARY TABLE & STRONG TAILSTOCK (SQUARE TABLE)

ITEM NO. 52172658



- The material of sub table & working table :  
Ductile iron FCD60

| ITEM NO.         | 52172658                   |
|------------------|----------------------------|
| NC rotary table  | SRT-322                    |
| Strong tailstock | SRT-322F                   |
| Sub table        | 45 x 360 x 950 mm          |
| Working table    | 125 x 125 x 500 mm         |
| Allowance dia.   | Ø440 mm                    |
| Allowance weight | 45 kgs x 4 (side)= 180 kgs |
| Height           | 287.5 mm                   |
| Net weight       | 517 kgs                    |

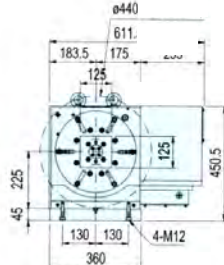
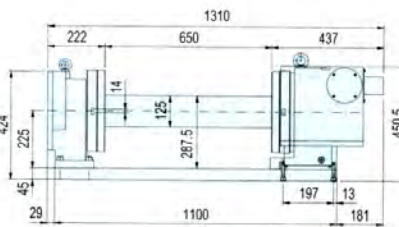
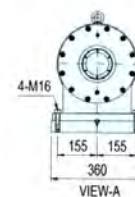
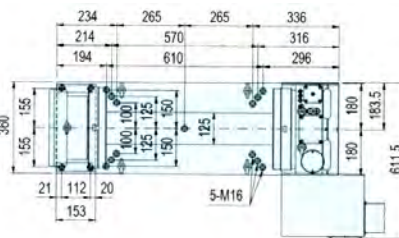


ITEM NO. 52172659



- The material of sub table & working table :  
Ductile iron FCD60

| ITEM NO.         | 52172659                   |
|------------------|----------------------------|
| NC rotary table  | SRT-322                    |
| Strong tailstock | SRT-322F                   |
| Sub table        | 45 x 360 x 1100 mm         |
| Working table    | 125 x 125 x 650 mm         |
| Allowance dia.   | Ø440 mm                    |
| Allowance weight | 45 kgs x 4 (side)= 180 kgs |
| Height           | 287.5mm                    |
| Net weight       | 557 kgs                    |

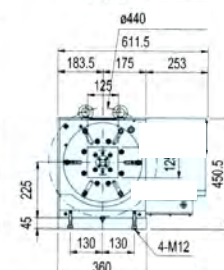
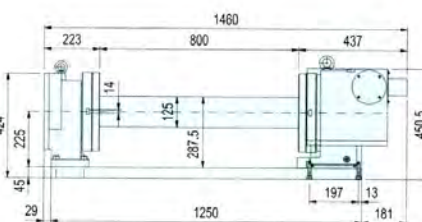
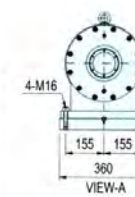
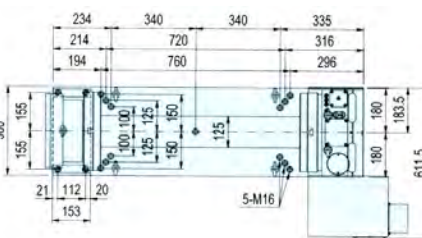


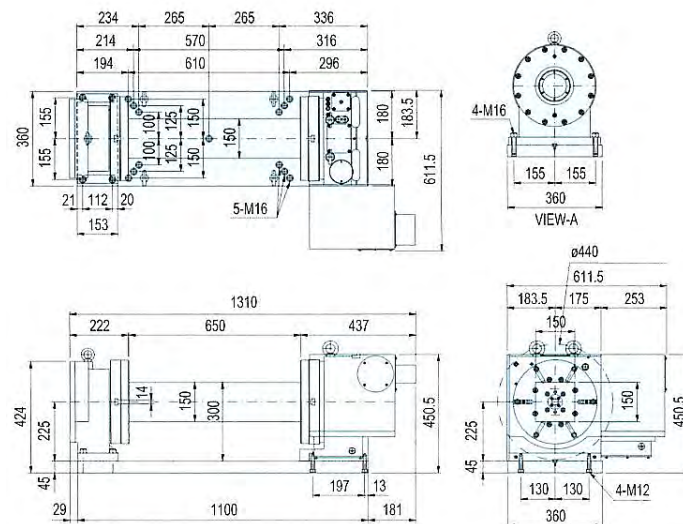
ITEM NO. 52172660



- The material of sub table & working table :  
Ductile iron FCD60

| ITEM NO.         | 52172660                   |
|------------------|----------------------------|
| NC rotary table  | SRT-322                    |
| Strong tailstock | SRT-322F                   |
| Sub table        | 45 x 360 x 1250 mm         |
| Working table    | 125 x 125 x 800 mm         |
| Allowance dia.   | Ø440 mm                    |
| Allowance weight | 45 kgs x 4 (side)= 180 kgs |
| Height           | 287.5 mm                   |
| Net weight       | 586 kgs                    |





# B “ TOOLS OF WORKHOLDING & PRECISION TOOLS FOR MILLS & VMCS



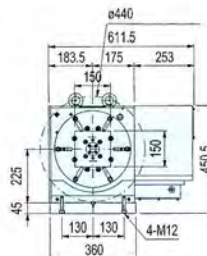
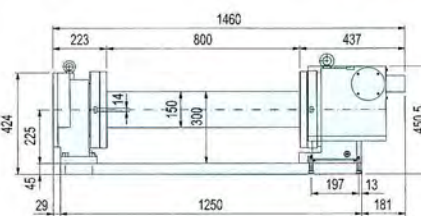
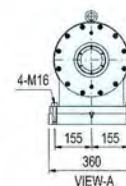
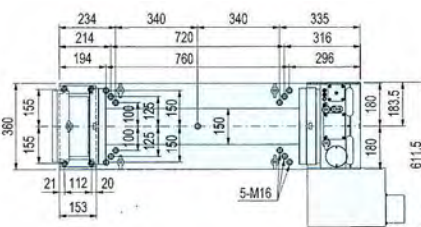
## NC ROTARY TABLE & STRONG TAILSTOCK (SQUARE TABLE)

### ITEM NO. 52172664



- The material of sub table & working table :  
Ductile iron FCD60

| ITEM NO.         | 52172664                   |
|------------------|----------------------------|
| NC rotary table  | SRT-322                    |
| Strong tailstock | SRT-322F                   |
| Sub table        | 45 x 360 x 1250 mm         |
| Working table    | 150 x 150 x 800 mm         |
| Allowance dia.   | Ø440 mm                    |
| Allowance weight | 45 kgs x 4 (side)= 180 kgs |
| Height           | 300 mm                     |
| Net weight       | 625 kgs                    |

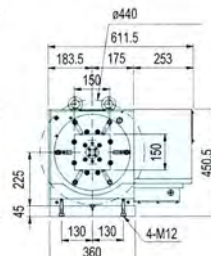
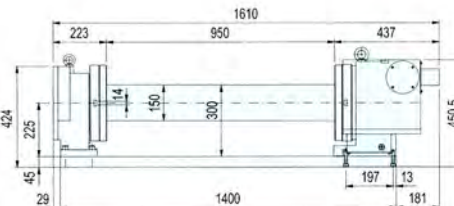
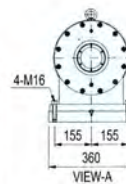
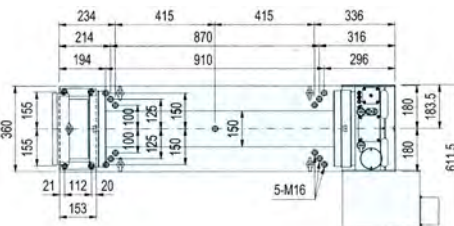


### ITEM NO. 52172665



- The material of sub table & working table :  
Ductile iron FCD60

| ITEM NO.         | 52172665                   |
|------------------|----------------------------|
| NC rotary table  | SRT-322                    |
| Strong tailstock | SRT-322F                   |
| Sub table        | 45 x 360 x 1400 mm         |
| Working table    | 150 x 150 x 950 mm         |
| Allowance dia.   | Ø440 mm                    |
| Allowance weight | 45 kgs x 4 (side)= 180 kgs |
| Height           | 300 mm                     |
| Net weight       | 657 kgs                    |

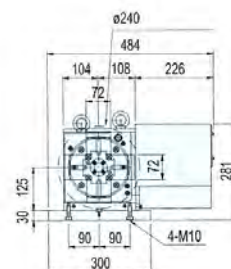
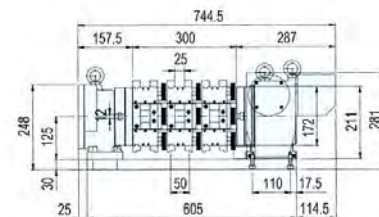
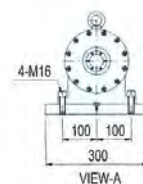
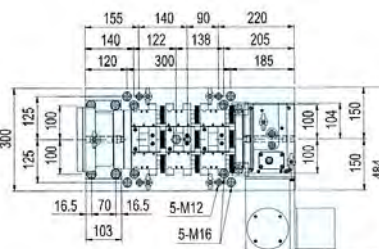


### ITEM NO. 52172666



- The material of sub table & working table :  
Ductile iron FCD60

| ITEM NO.             | 52172666                  |
|----------------------|---------------------------|
| NC rotary table      | SRT-170                   |
| Strong tailstock     | SRT-170F                  |
| Sub table            | 30 x 300 x 605 mm         |
| Vise (width/opening) | 72/25 & 50                |
| Vise quantity        | 4 (SIDE) x 2= 8 (PCS)     |
| Allowance dia.       | Ø240 mm                   |
| Allowance weight     | 20 kgs x 4 (side)= 80 kgs |
| Height               | 211 mm                    |
| Net weight           | 164 kgs                   |





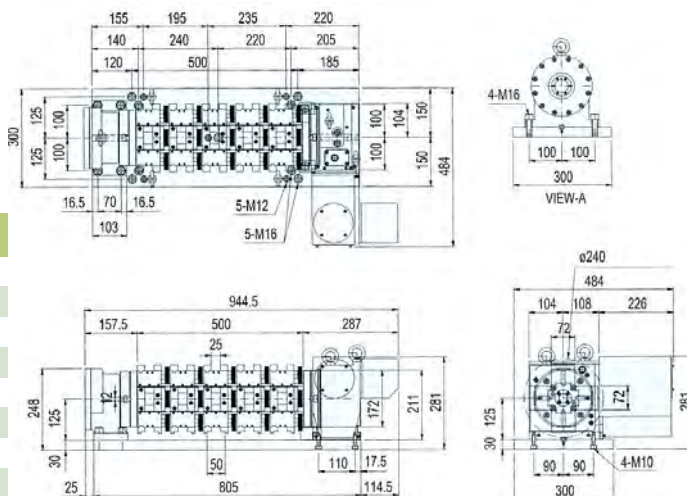
## NC ROTARY TABLE & STRONG TAILSTOCK (YES VISE)

### ITEM NO. 52172667



- The material of sub table & working table : Ductile iron FCD60

| ITEM NO.             | 52172667                  |
|----------------------|---------------------------|
| NC rotary table      | SRT-170                   |
| Strong tailstock     | SRT-170F                  |
| Sub table            | 30 x 300 x 805 mm         |
| Vise (width/opening) | 72/25 & 50                |
| Vise quantity        | 4 (SIDE) x 4= 16 (PCS)    |
| Allowance dia.       | Ø240 mm                   |
| Allowance weight     | 20 kgs x 4 (side)= 80 kgs |
| Height               | 211 mm                    |
| Net weight           | 202 kgs                   |

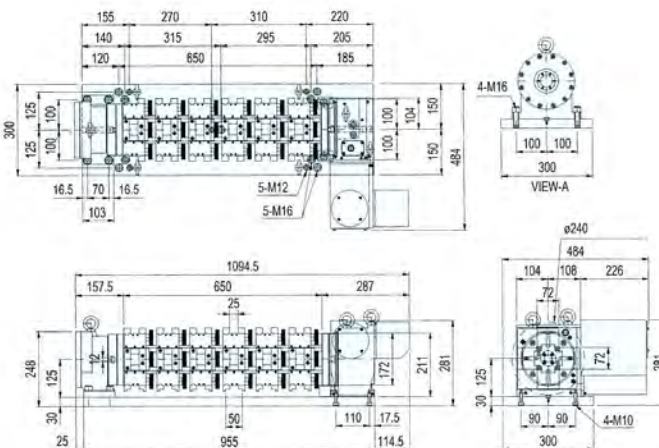


### ITEM NO. 52172668



- The material of sub table & working table : Ductile iron FCD60

| ITEM NO.             | 52172668                  |
|----------------------|---------------------------|
| NC rotary table      | SRT-170                   |
| Strong tailstock     | SRT-170F                  |
| Sub table            | 30 x 300 x 955 mm         |
| Vise (width/opening) | 72/25 & 50                |
| Vise quantity        | 4 (SIDE) x 5= 20 (PCS)    |
| Allowance dia.       | Ø240 mm                   |
| Allowance weight     | 20 kgs x 4 (side)= 80 kgs |
| Height               | 211 mm                    |
| Net weight           | 226 kgs                   |

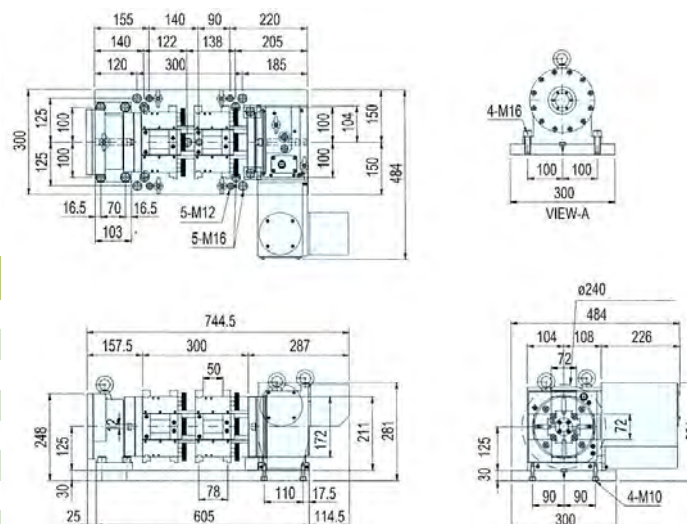


### ITEM NO. 52172669



- The material of sub table & working table : Ductile iron FCD60

| ITEM NO.             | 52172669                  |
|----------------------|---------------------------|
| NC rotary table      | SRT-170                   |
| Strong tailstock     | SRT-170F                  |
| Sub table            | 30 x 300 x 605 mm         |
| Vise (width/opening) | 72/50 & 78                |
| Vise quantity        | 4 (SIDE) x 2= 8 (PCS)     |
| Allowance dia.       | Ø240 mm                   |
| Allowance weight     | 20 kgs x 4 (side)= 80 kgs |
| Height               | 211 mm                    |
| Net weight           | 161 kgs                   |



# B “ TOOLS OF WORKHOLDING & PRECISION TOOLS FOR MILLS & VMCS



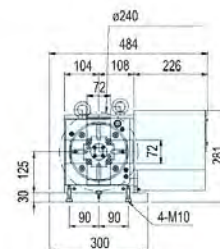
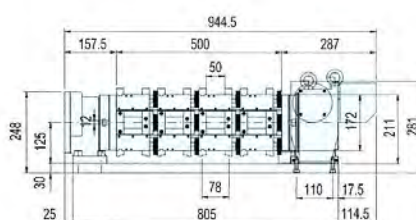
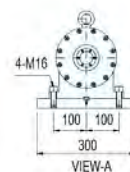
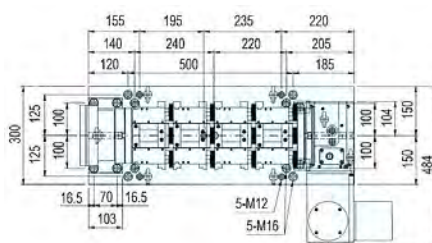
## NC ROTARY TABLE & STRONG TAILSTOCK (YES VISE)

ITEM NO. 52172670



- The material of sub table & working table :  
Ductile iron FCD60

| ITEM NO.             | 52172670                  |
|----------------------|---------------------------|
| NC rotary table      | SRT-170                   |
| Strong tailstock     | SRT-170F                  |
| Sub table            | 30 x 300 x 805 mm         |
| Vise (width/opening) | 72/50 & 75                |
| Vise quantity        | 4 (SIDE) x 3= 12 (PCS)    |
| Allowance dia.       | Ø240 mm                   |
| Allowance weight     | 20 kgs x 4 (side)= 80 kgs |
| Height               | 211 mm                    |
| Net weight           | 203 kgs                   |

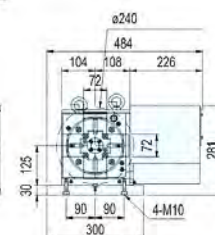
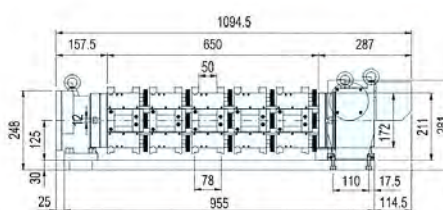
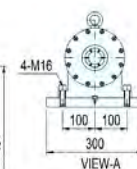
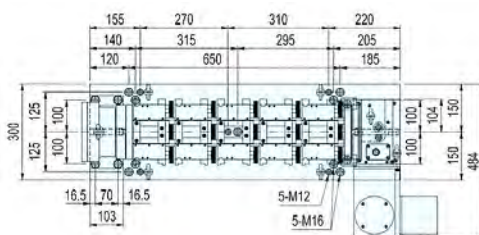


ITEM NO. 52172671



- The material of sub table & working table :  
Ductile iron FCD60

| ITEM NO.             | 52172671                  |
|----------------------|---------------------------|
| NC rotary table      | SRT-170                   |
| Strong tailstock     | SRT-170F                  |
| Sub table            | 30 x 300 x 955 mm         |
| Vise (width/opening) | 72/50 & 78                |
| Vise quantity        | 4 (SIDE) x 4= 16 (PCS)    |
| Allowance dia.       | Ø240 mm                   |
| Allowance weight     | 20 kgs x 4 (side)= 80 kgs |
| Height               | 211 mm                    |
| Net weight           | 229 kgs                   |

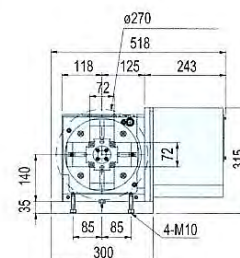
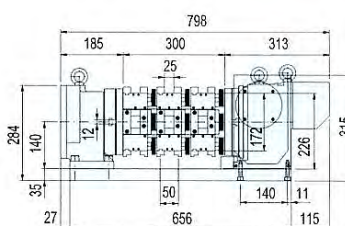
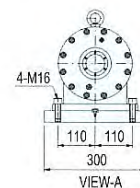
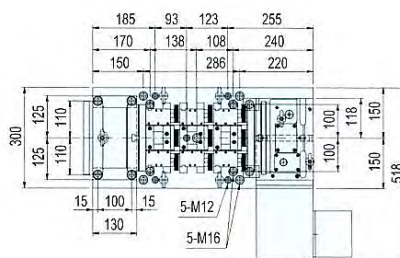


ITEM NO. 52172672



- The material of sub table & working table :  
Ductile iron FCD60

| ITEM NO.             | 52172672                   |
|----------------------|----------------------------|
| NC rotary table      | SRT-217                    |
| Strong tailstock     | SRT-217F                   |
| Sub table            | 35 x 300 x 656 mm          |
| Vise (width/opening) | 72/25 & 50                 |
| Vise quantity        | 4 (SIDE) x 2= 8 (PCS)      |
| Allowance dia.       | Ø270 mm                    |
| Allowance weight     | 25 kgs x 4 (side)= 100 kgs |
| Height               | 226 mm                     |
| Net weight           | 221 kgs                    |





## NC ROTARY TABLE & STRONG TAILSTOCK (YES VISE)

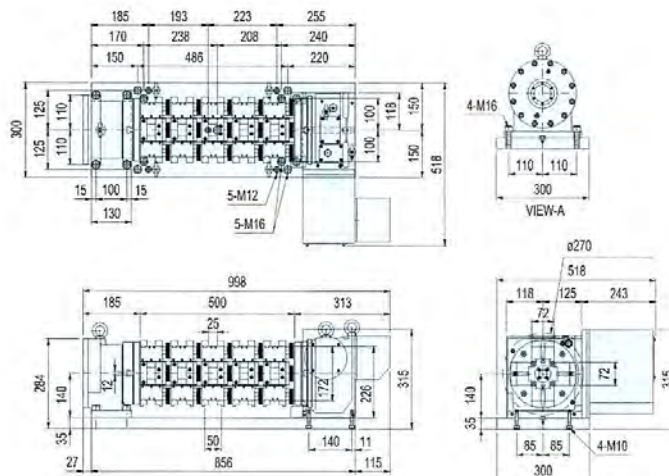
### ITEM NO. 52172673



- The material of sub table & working table :  
Ductile iron FCD60

#### ITEM NO. 52172673

|                      |                            |
|----------------------|----------------------------|
| NC rotary table      | SRT-217                    |
| Strong tailstock     | SRT-217F                   |
| Sub table            | 35 x 300 x 856 mm          |
| Vise (width/opening) | 72/25 & 50                 |
| Vise quantity        | 4 (SIDE) x 4= 16 (PCS)     |
| Allowance dia.       | Ø270 mm                    |
| Allowance weight     | 25 kgs x 4 (side)= 100 kgs |
| Height               | 226 mm                     |
| Net weight           | 261 kgs                    |



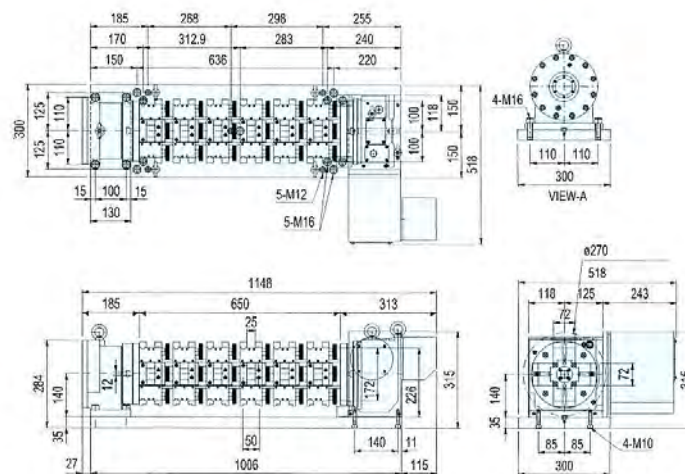
### ITEM NO. 52172674



- The material of sub table & working table :  
Ductile iron FCD60

#### ITEM NO. 52172674

|                      |                            |
|----------------------|----------------------------|
| NC rotary table      | SRT-217                    |
| Strong tailstock     | SRT-217F                   |
| Sub table            | 35 x 300 x 1006 mm         |
| Vise (width/opening) | 72/25 & 50                 |
| Vise quantity        | 4 (SIDE) x 5= 20 (PCS)     |
| Allowance dia.       | Ø270 mm                    |
| Allowance weight     | 25 kgs x 4 (side)= 100 kgs |
| Height               | 226 mm                     |
| Net weight           | 286 kgs                    |



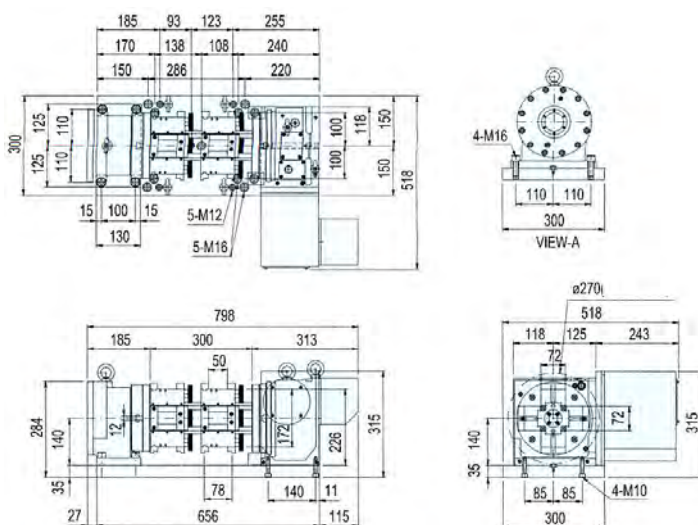
### ITEM NO. 52172675



- The material of sub table & working table :  
Ductile iron FCD60

#### ITEM NO. 52172675

|                      |                            |
|----------------------|----------------------------|
| NC rotary table      | SRT-217                    |
| Strong tailstock     | SRT-217F                   |
| Sub table            | 35 x 300 x 656 mm          |
| Vise (width/opening) | 72/50 & 78                 |
| Vise quantity        | 4 (SIDE) x 2= 8 (PCS)      |
| Allowance dia.       | Ø270 mm                    |
| Allowance weight     | 25 kgs x 4 (side)= 100 kgs |
| Height               | 226 mm                     |
| Net weight           | 218 kgs                    |

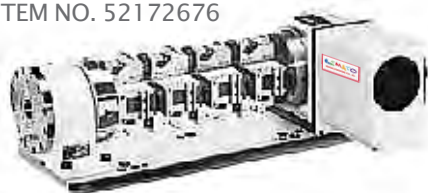


# B “ TOOLS OF WORKHOLDING & PRECISION TOOLS FOR MILLS & VMCS



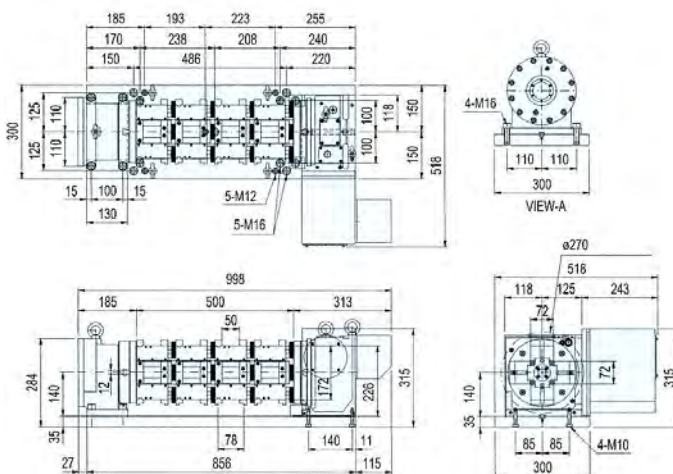
## NC ROTARY TABLE & STRONG TAILSTOCK (YES VISE)

### ITEM NO. 52172676



- The material of sub table & working table :  
Ductile iron FCD60

| ITEM NO.             | 52172676                   |
|----------------------|----------------------------|
| NC rotary table      | SRT-217                    |
| Strong tailstock     | SRT-217F                   |
| Sub table            | 35 x 300 x 856 mm          |
| Vise (width/opening) | 72/50 & 78                 |
| Vise quantity        | 4 (SIDE) x 3= 12 (PCS)     |
| Allowance dia.       | Ø270 mm                    |
| Allowance weight     | 25 kgs x 4 (side)= 100 kgs |
| Height               | 226 mm                     |
| Net weight           | 262 kgs                    |

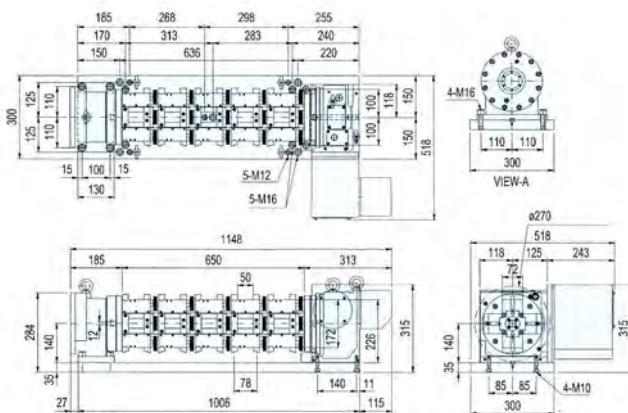


### ITEM NO. 52172677



- The material of sub table & working table :  
Ductile iron FCD60

| ITEM NO.             | 52172677                   |
|----------------------|----------------------------|
| NC rotary table      | SRT-217                    |
| Strong tailstock     | SRT-217F                   |
| Sub table            | 35 x 300 x 1006 mm         |
| Vise (width/opening) | 72/50 & 78                 |
| Vise quantity        | 4 (SIDE) x 4= 16 (PCS)     |
| Allowance dia.       | Ø270 mm                    |
| Allowance weight     | 25 kgs x 4 (side)= 100 kgs |
| Height               | 226 mm                     |
| Net weight           | 289 kgs                    |

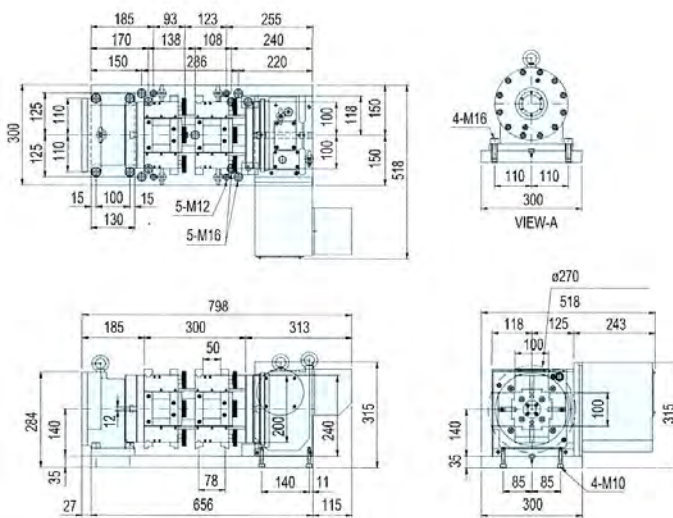


### ITEM NO. 52172678



- The material of sub table & working table :  
Ductile iron FCD60

| ITEM NO.             | 52172678                   |
|----------------------|----------------------------|
| NC rotary table      | SRT-217                    |
| Strong tailstock     | SRT-217F                   |
| Sub table            | 35 x 300 x 656 mm          |
| Vise (width/opening) | 100/50 & 78                |
| Vise quantity        | 4 (SIDE) x 2= 8 (PCS)      |
| Allowance dia.       | Ø270 mm                    |
| Allowance weight     | 25 kgs x 4 (side)= 100 kgs |
| Height               | 240 mm                     |
| Net weight           | 240 kgs                    |





- [illegible]

Technical drawing of the 1000mm x 1000mm x 100mm model, showing front and side views with dimensions.

**Front View Dimensions:**

- Overall width: 998
- Overall height: 315
- Top flange width: 185
- Top flange height: 140
- Top flange thickness: 35
- Top flange hole diameter: 12
- Top flange hole spacing: 50
- Top flange hole diameter: 200
- Top flange hole spacing: 313
- Top flange hole diameter: 240
- Top flange hole spacing: 11
- Top flange hole diameter: 115
- Top flange hole spacing: 856
- Top flange hole diameter: 78
- Top flange hole spacing: 27

**Side View Dimensions:**

- Overall width: 518
- Overall height: 315
- Top flange width: 118
- Top flange height: 160
- Top flange thickness: 35
- Top flange hole diameter: 125
- Top flange hole spacing: 243
- Top flange hole diameter: 100
- Top flange hole spacing: 100
- Top flange hole diameter: 4-M10
- Top flange hole spacing: 300
- Top flange hole diameter: 85
- Top flange hole spacing: 85

- 

- 

Technical drawing of the 3000W three-phase asynchronous motor, showing front and side views with dimensions in millimeters.

**Front View Dimensions:**

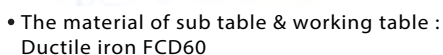
- Total width: 1027.5
- Top flange width: 188
- Motor body width: 500
- Terminal box width: 339.5
- Top flange thickness: 12
- Motor body height: 25
- Terminal box height: 172
- Base height: 288
- Base width: 372
- Base mounting hole diameter: 170
- Base mounting hole spacing: 15.5
- Base mounting hole diameter: 103.5
- Base mounting hole diameter: 900
- Base mounting hole diameter: 24
- Base mounting hole diameter: 339
- Base mounting hole diameter: 180
- Base mounting hole diameter: 40

**Side View Dimensions:**

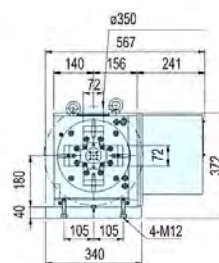
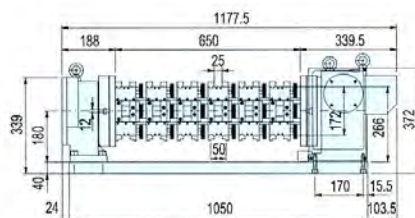
- Total width: 6350
- Top flange width: 140
- Motor body width: 156
- Terminal box width: 241
- Top flange thickness: 72
- Motor body height: 72
- Base height: 372
- Base width: 340
- Base mounting hole diameter: 105
- Base mounting hole spacing: 105
- Base mounting hole diameter: 4-M12
- Base mounting hole diameter: 180
- Base mounting hole diameter: 40



## ITEM NO. 52172682

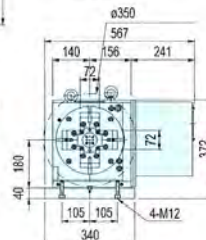
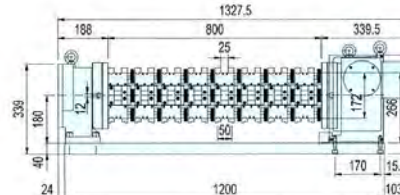


Technical drawing of the front view of a mechanical component. The drawing shows a symmetrical assembly with various dimensions and part numbers. Key dimensions include overall width of 557, overall height of 340, and internal widths of 125, 100, and 125. Horizontal dimensions at the top are 202, 315, 235, and 298. Horizontal dimensions at the bottom are 18, 100, 15, and 133. Vertical dimensions on the right are 140, 170, and 170. Part numbers 5-M12 and 5-M16 are indicated for specific components.



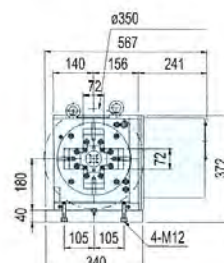
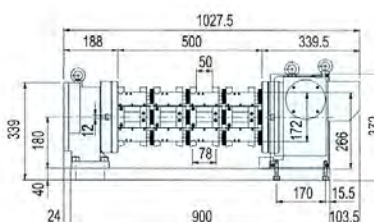
- The material of sub table & working table :  
Ductile iron FCD60

Technical drawing of the front view of a mechanical component. The drawing shows a rectangular assembly with various dimensions and fastener locations. Key dimensions include overall width of 340, overall height of 170, and internal spacing dimensions such as 125, 100, 100, 15, 18, 133, 162, 182, 202, 370, 390, 780, 310, 278, 298, 140, and 527. Fastener locations are indicated by circles with labels: 5-M12 and 5-M16.



- The material of sub table & working table :  
Ductile iron FCD60

Technical drawing of the front view of a mechanical assembly. The drawing shows a symmetrical component with various dimensions and labels. Key dimensions include overall width of 567, overall height of 340, and internal widths of 125, 100, and 100. Horizontal dimensions at the top are 202, 240, 160, and 298. Horizontal dimensions at the bottom are 18, 100, and 15. Vertical dimensions on the right are 140, 170, and 170. Labels include '5-M12' and '5-M16' pointing to specific components.





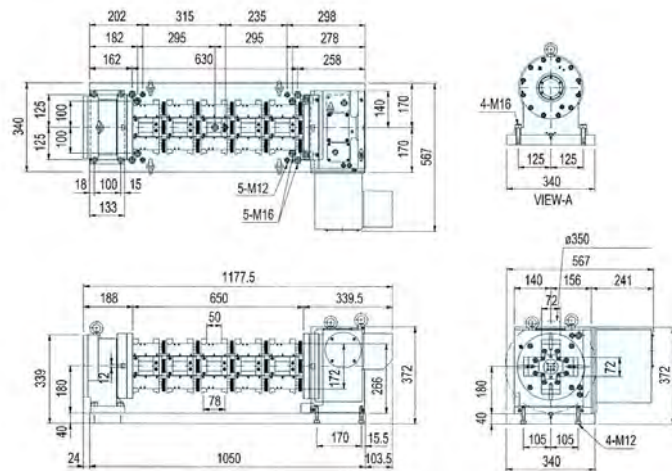
## NC ROTARY TABLE & STRONG TAILSTOCK (YES VISE)

### ITEM NO. 52172685



- The material of sub table & working table :  
Ductile iron FCD60

| ITEM NO.             | 52172685                      |
|----------------------|-------------------------------|
| NC rotary table      | SRT-256                       |
| Strong tailstock     | SRT-256F                      |
| Sub table            | 40 x 340 x 1050 mm            |
| Vise (width/opening) | 72/50 & 78                    |
| Vise quantity        | 4 (SIDE) x 4= 16 (PCS)        |
| Allowance dia.       | Ø350 mm                       |
| Allowance weight     | 31.25 kgs x 4 (side)= 125 kgs |
| Height               | 266 mm                        |
| Net weight           | 384 kgs                       |

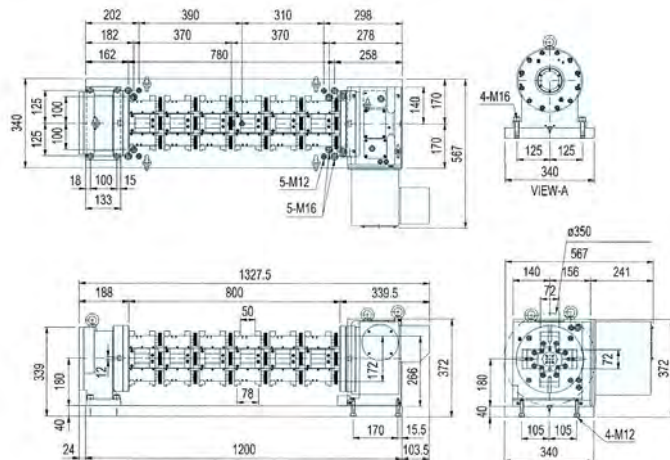


### ITEM NO. 52172686



- The material of sub table & working table :  
Ductile iron FCD60

| ITEM NO.             | 52172686                      |
|----------------------|-------------------------------|
| NC rotary table      | SRT-256                       |
| Strong tailstock     | SRT-256F                      |
| Sub table            | 40 x 340 x 1200 mm            |
| Vise (width/opening) | 72/50 & 78                    |
| Vise quantity        | 4 (SIDE) x 5= 20 (PCS)        |
| Allowance dia.       | Ø350 mm                       |
| Allowance weight     | 31.25 kgs x 4 (side)= 125 kgs |
| Height               | 266 mm                        |
| Net weight           | 417 kgs                       |

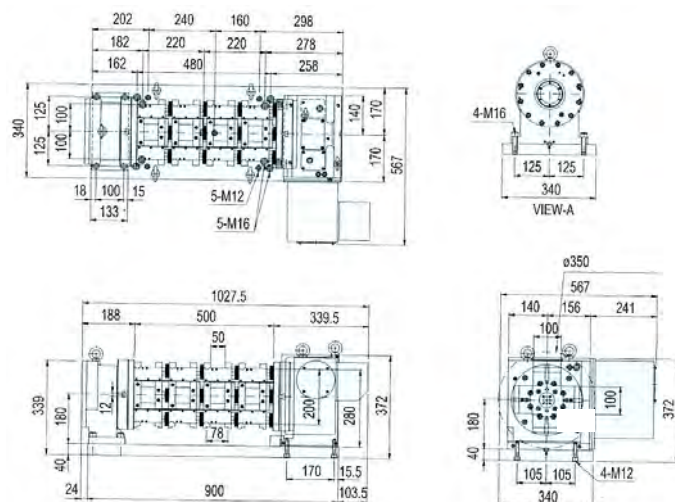


### ITEM NO. 52172687



- The material of sub table & working table :  
Ductile iron FCD60

| ITEM NO.             | 52172687                      |
|----------------------|-------------------------------|
| NC rotary table      | SRT-256                       |
| Strong tailstock     | SRT-256F                      |
| Sub table            | 40 x 340 x 900 mm             |
| Vise (width/opening) | 100/50 & 78                   |
| Vise quantity        | 4 (SIDE) x 3= 12 (PCS)        |
| Allowance dia.       | Ø350 mm                       |
| Allowance weight     | 31.25 kgs x 4 (side)= 125 kgs |
| Height               | 280 mm                        |
| Net weight           | 392 kgs                       |



# B “ TOOLS OF WORKHOLDING & PRECISION TOOLS FOR MILLS & VMCS



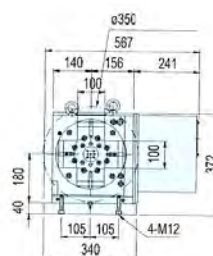
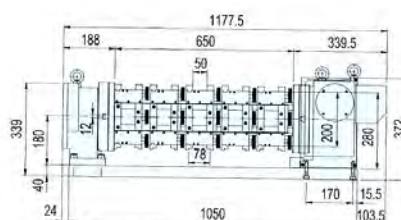
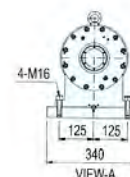
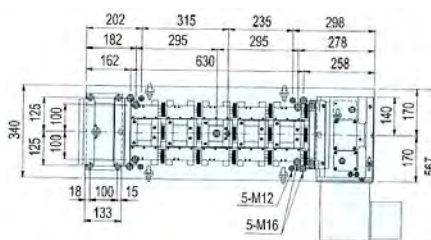
## NC ROTARY TABLE & STRONG TAILSTOCK (YES VISE)

### ✓ ITEM NO. 52172688



- The material of sub table & working table :  
Ductile iron FCD60

| ITEM NO.             | 52172688                      |
|----------------------|-------------------------------|
| NC rotary table      | SRT-256                       |
| Strong tailstock     | SRT-256F                      |
| Sub table            | 40 x 340 x 1050 mm            |
| Vise (width/opening) | 100/50 & 78                   |
| Vise quantity        | 4 (SIDE) x 4= 16 (PCS)        |
| Allowance dia.       | Ø350 mm                       |
| Allowance weight     | 31.25 kgs x 4 (side)= 125 kgs |
| Height               | 280 mm                        |
| Net weight           | 437 kgs                       |

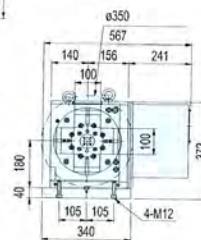
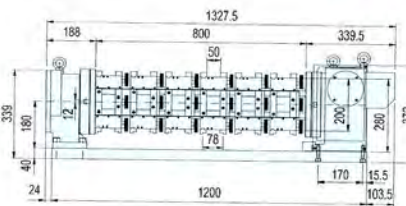
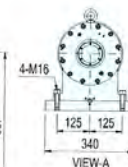
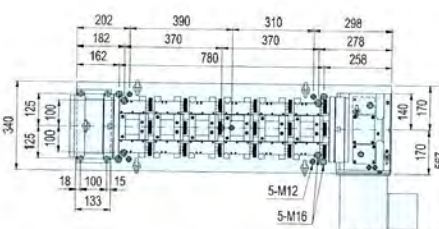


### ✓ ITEM NO. 52172689



- The material of sub table & working table :  
Ductile iron FCD60

| ITEM NO.             | 52172689                      |
|----------------------|-------------------------------|
| NC rotary table      | SRT-256                       |
| Strong tailstock     | SRT-256F                      |
| Sub table            | 40 x 340 x 1200 mm            |
| Vise (width/opening) | 100/50 & 78                   |
| Vise quantity        | 4 (SIDE) x 5= 20 (PCS)        |
| Allowance dia.       | Ø350 mm                       |
| Allowance weight     | 31.25 kgs x 4 (side)= 125 kgs |
| Height               | 280 mm                        |
| Net weight           | 481 kgs                       |

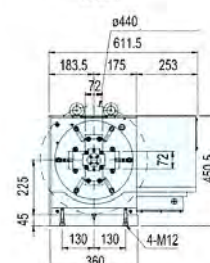
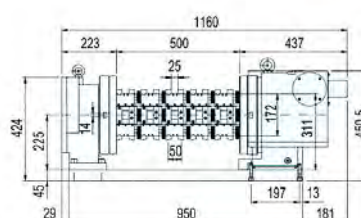
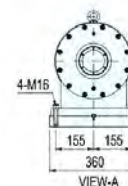
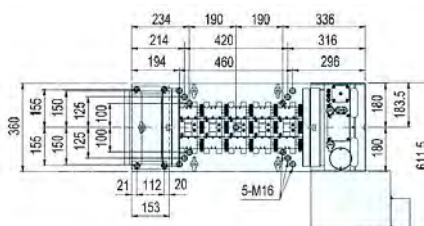


### ✓ ITEM NO. 52172690



- The material of sub table & working table :  
Ductile iron FCD60

| ITEM NO.             | 52172690                   |
|----------------------|----------------------------|
| NC rotary table      | SRT-322                    |
| Strong tailstock     | SRT-322F                   |
| Sub table            | 45 x 360 x 950 mm          |
| Vise (width/opening) | 72/25 & 50                 |
| Vise quantity        | 4 (SIDE) x 4= 16 (PCS)     |
| Allowance dia.       | Ø440 mm                    |
| Allowance weight     | 45 kgs x 4 (side)= 180 kgs |
| Height               | 311 mm                     |
| Net weight           | 526 kgs                    |





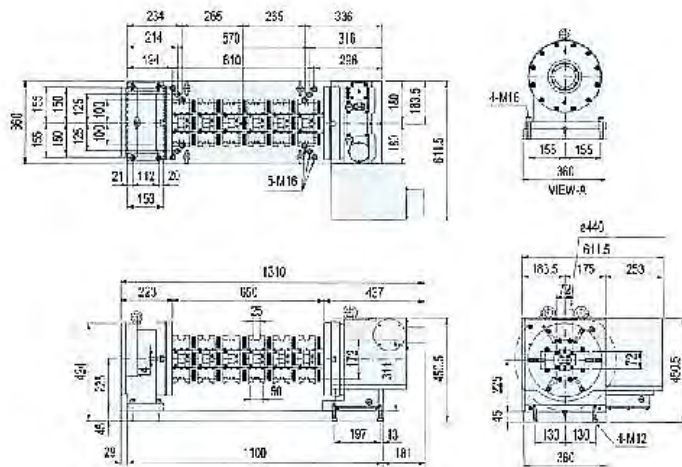
## NC ROTARY TABLE & STRONG TAILSTOCK (YES VISE)

### ITEM NO. 52172691

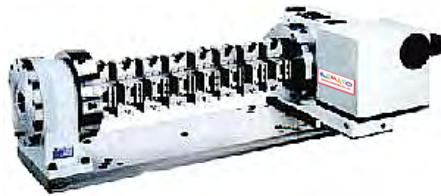


- The material of sub table & working table :  
Ductile iron FCD60

| ITEM NO.             | 52172691                   |
|----------------------|----------------------------|
| NC rotary table      | SRT-322                    |
| Strong tailstock     | SRT-322F                   |
| Sub table            | 45 x 360 x 1100 mm         |
| Vise (width/opening) | 72/25 & 50                 |
| Vise quantity        | 4 (SIDE) x 5= 20 (PCS)     |
| Allowance dia.       | Ø440 mm                    |
| Allowance weight     | 45 kgs x 4 (side)= 180 kgs |
| Height               | 311 mm                     |
| Net weight           | 559 kgs                    |

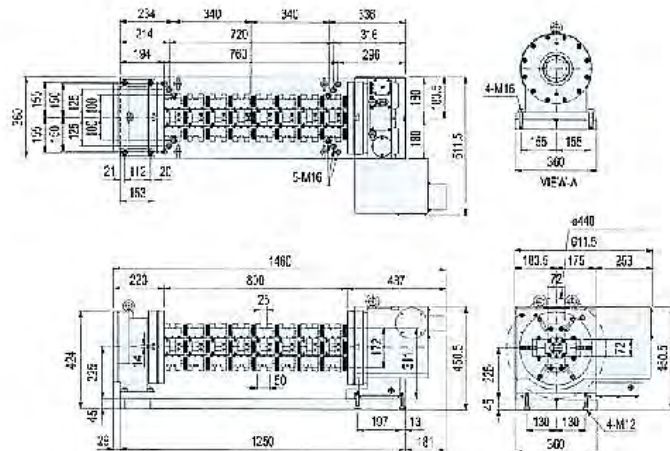


### ITEM NO. 52172692



- The material of sub table & working table :  
Ductile iron FCD60

| ITEM NO.             | 52172692                   |
|----------------------|----------------------------|
| NC rotary table      | SRT-322                    |
| Strong tailstock     | SRT-322F                   |
| Sub table            | 45 x 360 x 1250 mm         |
| Vise (width/opening) | 72/25 & 50                 |
| Vise quantity        | 4 (SIDE) x 7= 28 (PCS)     |
| Allowance dia.       | Ø440 mm                    |
| Allowance weight     | 45 kgs x 4 (side)= 180 kgs |
| Height               | 311 mm                     |
| Net weight           | 599 kgs                    |

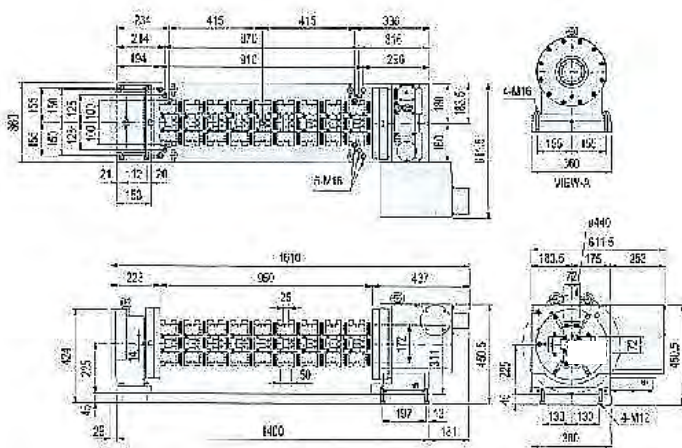


### ITEM NO. 52172693



- The material of sub table & working table :  
Ductile iron FCD60

| ITEM NO.             | 52172693                   |
|----------------------|----------------------------|
| NC rotary table      | SRT-322                    |
| Strong tailstock     | SRT-322F                   |
| Sub table            | 45 x 360 x 1400 mm         |
| Vise (width/opening) | 72/25 & 50                 |
| Vise quantity        | 4 (SIDE) x 8= 32 (PCS)     |
| Allowance dia.       | Ø440 mm                    |
| Allowance weight     | 45 kgs x 4 (side)= 180 kgs |
| Height               | 311 mm                     |
| Net weight           | 623 kgs                    |



# B “ TOOLS OF WORKHOLDING & PRECISION TOOLS FOR MILLS & VMCS



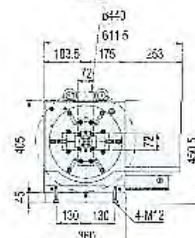
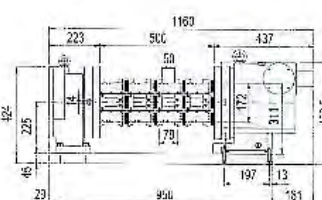
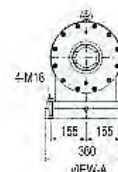
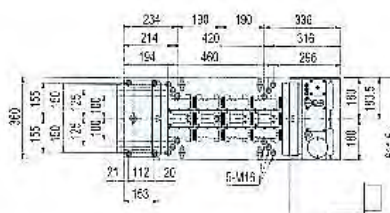
## NC ROTARY TABLE & STRONG TAILSTOCK (YES VISE)

### ITEM NO. 52172694



- The material of sub table & working table :  
Ductile iron FCD60

| ITEM NO.             | 52172694                   |
|----------------------|----------------------------|
| NC rotary table      | SRT-322                    |
| Strong tailstock     | SRT-322F                   |
| Sub table            | 45 x 360 x 950 mm          |
| Vise (width/opening) | 72/50 & 78                 |
| Vise quantity        | 4 (SIDE) x 3= 12 (PCS)     |
| Allowance dia.       | Ø440 mm                    |
| Allowance weight     | 45 kgs x 4 (side)= 180 kgs |
| Height               | 311 mm                     |
| Net weight           | 527 kgs                    |

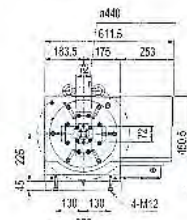
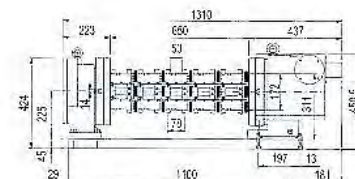
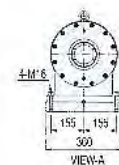
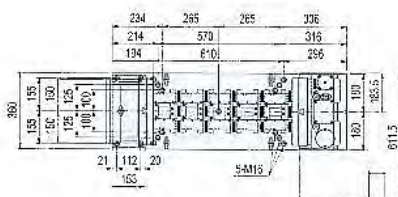


### ITEM NO. 52172695



- The material of sub table & working table :  
Ductile iron FCD60

| ITEM NO.             | 52172695                   |
|----------------------|----------------------------|
| NC rotary table      | SRT-322                    |
| Strong tailstock     | SRT-322F                   |
| Sub table            | 45 x 360 x 1100 mm         |
| Vise (width/opening) | 72/50 & 78                 |
| Vise quantity        | 4 (SIDE) x 4= 16 (PCS)     |
| Allowance dia.       | Ø440 mm                    |
| Allowance weight     | 45 kgs x 4 (side)= 180 kgs |
| Height               | 311 mm                     |
| Net weight           | 562 kgs                    |

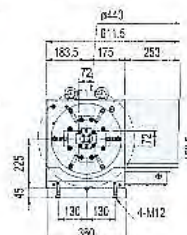
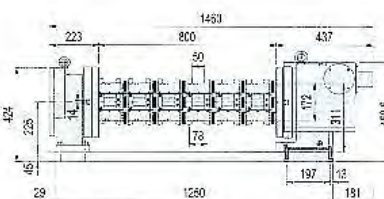
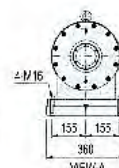
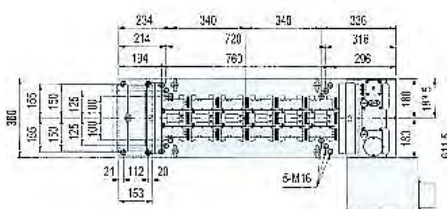


### ITEM NO. 52172696



- The material of sub table & working table :  
Ductile iron FCD60

| ITEM NO.             | 52172696                  |
|----------------------|---------------------------|
| NC rotary table      | SRT-322                   |
| Strong tailstock     | SRT-322F                  |
| Sub table            | 45 x 360 x 1250 mm        |
| Vise (width/opening) | 72/50 & 78                |
| Vise quantity        | 4 (SIDE) x 5= 20 (PCS)    |
| Allowance dia.       | Ø440 mm                   |
| Allowance weight     | 45 kgs x 4 (side)=180 kgs |
| Height               | 311 mm                    |
| Net weight           | 597 kgs                   |





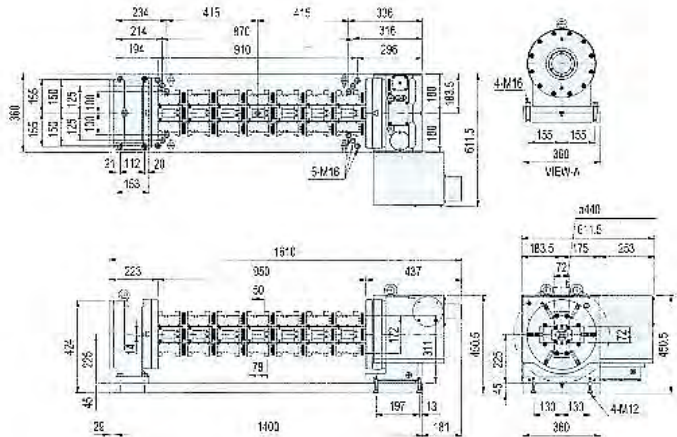
## NC ROTARY TABLE & STRONG TAILSTOCK (YES VISE)

### ✓ ITEM NO. 52172697



- The material of sub table & working table :  
Ductile iron FCD60

| ITEM NO.             | 52172697                   |
|----------------------|----------------------------|
| NC rotary table      | SRT-322                    |
| Strong tailstock     | SRT-322F                   |
| Sub table            | 45 x 360 x 1400 mm         |
| Vise (width/opening) | 72/50 & 78                 |
| Vise quantity        | 4 (SIDE) x 6= 24 (PCS)     |
| Allowance dia.       | Ø440 mm                    |
| Allowance weight     | 45 kgs x 4 (side)= 180 kgs |
| Height               | 311 mm                     |
| Net weight           | 623 kgs                    |

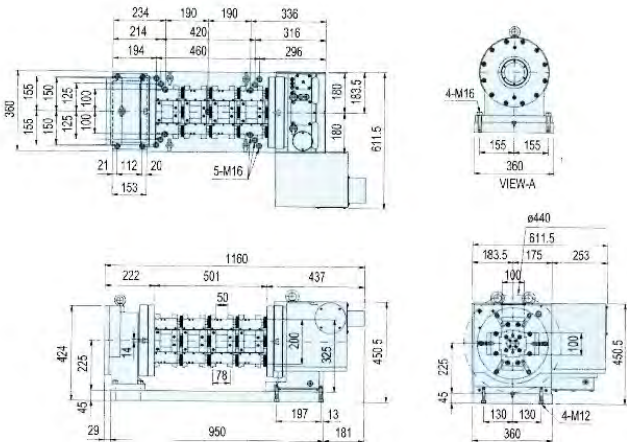


### ✓ ITEM NO. 52172698



- The material of sub table & working table :  
Ductile iron FCD60

| ITEM NO.             | 52172698                   |
|----------------------|----------------------------|
| NC rotary table      | SRT-322                    |
| Strong tailstock     | SRT-322F                   |
| Sub table            | 45 x 360 x 950 mm          |
| Vise (width/opening) | 100/50 & 78                |
| Vise quantity        | 4 (SIDE) x 3= 12 (PCS)     |
| Allowance dia.       | Ø440 mm                    |
| Allowance weight     | 45 kgs x 4 (side)= 180 kgs |
| Height               | 325 mm                     |
| Net weight           | 568 kgs                    |

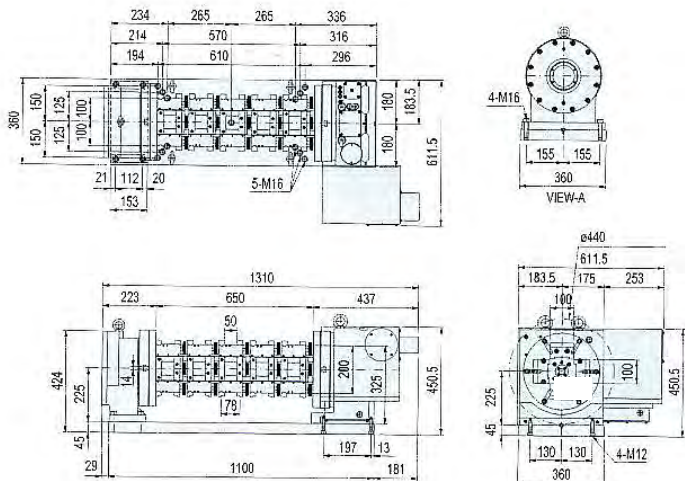


### ✓ ITEM NO. 52172699



- The material of sub table & working table :  
Ductile iron FCD60

| ITEM NO.             | 52172699                   |
|----------------------|----------------------------|
| NC rotary table      | SRT-322                    |
| Strong tailstock     | SRT-322F                   |
| Sub table            | 45 x 360 x 1100 mm         |
| Vise (width/opening) | 100/50 & 78                |
| Vise quantity        | 4 (SIDE) x 4= 16 (PCS)     |
| Allowance dia.       | Ø440 mm                    |
| Allowance weight     | 45 kgs x 4 (side)= 180 kgs |
| Height               | 325 mm                     |
| Net weight           | 615 kgs                    |

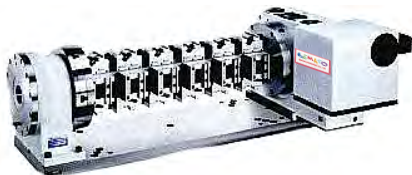


# B “ TOOLS OF WORKHOLDING & PRECISION TOOLS FOR MILLS & VMCS



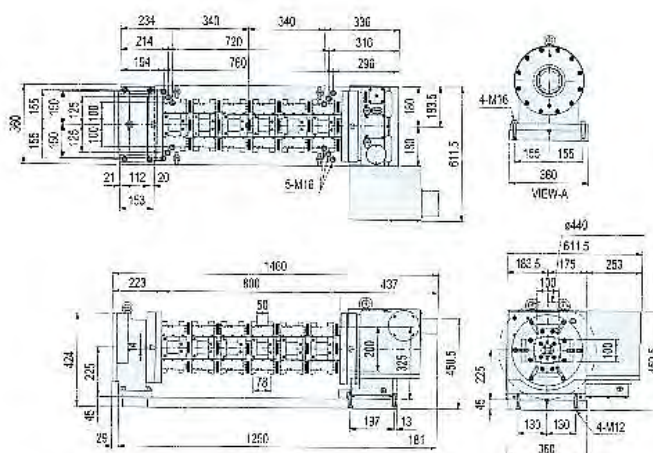
## NC ROTARY TABLE & STRONG TAILSTOCK (YES VISE)

ITEM NO. 52172700

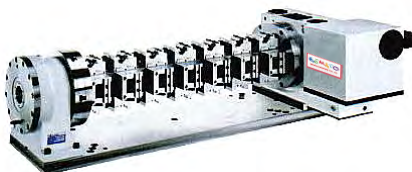


- The material of sub table & working table :  
Ductile iron FCD60

| ITEM NO.             | 52172700                   |
|----------------------|----------------------------|
| NC rotary table      | SRT-322                    |
| Strong tailstock     | SRT-322F                   |
| Sub table            | 45 x 360 x 1250 mm         |
| Vise (width/opening) | 72/50 & 78                 |
| Vise quantity        | 4 (SIDE) x 5= 20 (PCS)     |
| Allowance dia.       | Ø440 mm                    |
| Allowance weight     | 45 kgs x 4 (side)= 180 kgs |
| Height               | 325 mm                     |
| Net weight           | 661 kgs                    |

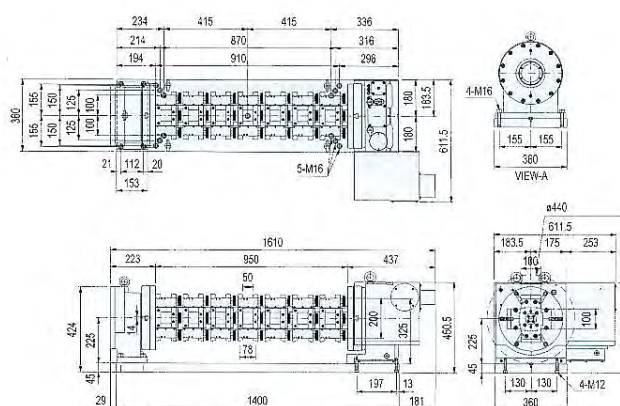


ITEM NO. 52172701



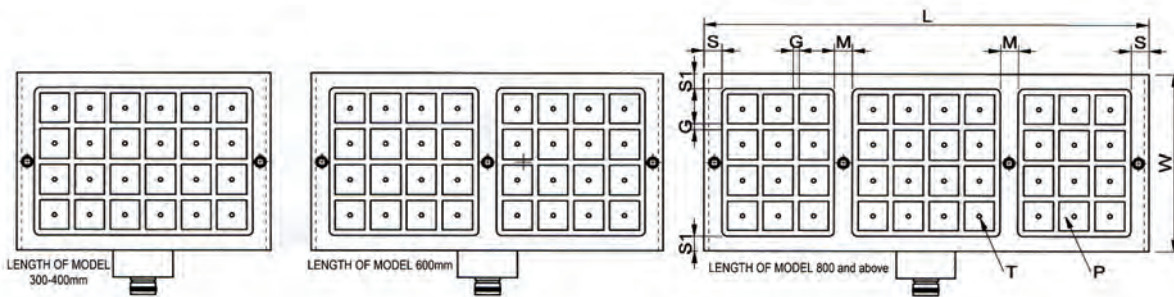
- The material of sub table & working table :  
Ductile iron FCD60

| ITEM NO.             | 52172701                   |
|----------------------|----------------------------|
| NC rotary table      | SRT-322                    |
| Strong tailstock     | SRT-322F                   |
| Sub table            | 45 x 360 x 1400 mm         |
| Vise (width/opening) | 100/50 & 78                |
| Vise quantity        | 4 (SIDE) x 6= 24 (PCS)     |
| Allowance dia.       | Ø440 mm                    |
| Allowance weight     | 45 kgs x 4 (side)= 180 kgs |
| Height               | 325 mm                     |
| Net weight           | 699 kgs                    |





## ELECTRO-PERMANENT MAGNETIC CHUCKS SUITABLE FOR MEDIUM & SMALL WORKPIECE (CAN DO 5 SIDES MACHINING)



UNIT: mm

| ITEM NO. | DIMENSION |     |                          |    | PITCH<br>H | POLE<br>G | POLE<br>P | NO.OF<br>POLE | CHUCK<br>N.W | VOLTAGE | CURRENT<br>AMP | CONTROLLER<br>(included) | VOLTAGE       | CURRENT<br>AMP | CONTROLLER<br>(included) |
|----------|-----------|-----|--------------------------|----|------------|-----------|-----------|---------------|--------------|---------|----------------|--------------------------|---------------|----------------|--------------------------|
|          | W         | L   | S/S1/t                   | M  |            |           |           |               |              |         |                |                          |               |                |                          |
| 53100699 | 240       | 430 |                          | -  |            |           |           | 18            | 42           |         | 13A            | C1                       |               | 17A            | C1                       |
| 53100700 | 240       | 590 |                          | 30 |            |           |           | 24            | 63           |         | 20A            | C1                       |               | 11A            | C1                       |
| 53100701 | 240       | 810 |                          | 30 |            |           |           | 33            | 84           |         | 30A            | C1                       |               | 13A            | C1                       |
| 53100702 | 240       | 870 |                          | 30 |            |           |           | 36            | 94           |         | 14A            | C2                       |               | 13A            | C1                       |
| 53100703 | 240       | 990 |                          | 30 |            |           |           | 42            | 105          |         | 26A            | C2                       |               | 13A            | C2                       |
| 53100704 | 300       | 310 |                          | -  |            |           |           | 16            | 38           |         | 14A            | C1                       |               | 7A             | C1                       |
| 53100705 | 300       | 430 |                          | -  |            |           |           | 24            | 51           |         | 22A            | C1                       |               | 10A            | C1                       |
| 53100706 | 300       | 590 |                          | 30 |            |           |           | 32            | 76           |         | 31A            | C1                       |               | 14A            | C1                       |
| 53100707 | 300       | 810 |                          | 30 |            |           |           | 44            | 102          |         | 25A            | C2                       |               | 15A            | C2                       |
| 53100708 | 300       | 870 |                          | 30 |            |           |           | 48            | 115          |         | 25A            | C2                       |               | 16A            | C2                       |
| 53100709 | 300       | 990 | 30<br>/<br>25<br>/<br>M8 | 30 | 70         | 10        | 50X50     | 56            | 127          |         | 32A            | C2                       | AC380V ~ 440V | 13A            | C2                       |
| 53100710 | 420       | 430 |                          | -  |            |           |           | 36            | 68           | 13A     | C2             | 13A                      |               | C1             |                          |
| 53100711 | 430       | 480 |                          | -  |            |           |           | 42            | 84           | 26A     | C2             | 13A                      |               | C2             |                          |
| 53100712 | 420       | 590 |                          | 30 |            |           |           | 48            | 102          | 23A     | C2             | 17A                      |               | C2             |                          |
| 53100713 | 420       | 810 |                          | 30 |            |           |           | 66            | 135          | 30A     | C2             | 13A                      |               | C2             |                          |
| 53100714 | 420       | 870 |                          | 30 |            |           |           | 72            | 152          | 14A     | C4             | 13A                      |               | C2             |                          |
| 53100715 | 420       | 990 |                          | 30 |            |           |           | 84            | 168          | 25A     | C4             | 13A                      |               | C4             |                          |
| 53100716 | 480       | 590 |                          | 30 |            |           |           | 56            | 126          | 32A     | C2             | 13A                      |               | C2             |                          |
| 53100717 | 480       | 810 |                          | 30 |            |           |           | 77            | 168          | 16A     | C4             | 14A                      |               | C4             |                          |
| 53100718 | 480       | 870 |                          | 30 |            |           |           | 84            | 189          | 25A     | C4             | 14A                      |               | C4             |                          |
| 53100719 | 480       | 990 |                          | 30 |            |           |           | 98            | 210          | 24A     | C4             | 13A                      |               | C4             |                          |
| 53100720 | 600       | 590 |                          | 30 |            |           |           | 72            | 152          | 15A     | C4             | 13A                      |               | C2             |                          |
| 53100721 | 600       | 810 |                          | 30 |            |           |           | 99            | 203          | 24A     | C4             | 15A                      |               | C4             |                          |
| 53100722 | 600       | 870 |                          | 30 |            |           |           | 108           | 227          | 18A     | C4             | 17A                      |               | C4             |                          |
| 53100723 | 600       | 990 |                          | 30 |            |           |           | 126           | 252          | 28A     | C4             | 23A                      |               | C4             |                          |
| 53100724 | 755       | 810 |                          | 30 |            |           |           | 121           | 268          | 31A     | C4             | 13A                      |               | C4             |                          |

▲ Custom-made is available



# B “ TOOLS OF WORKHOLDING & PRECISION TOOLS FOR MILLS & VMCS



## ELECTRO-PERMANENT MAGNETIC CHUCKS SUITABLE FOR MEDIUM & SMALL WORKPIECE (CAN DO 5 SIDES MACHINING)

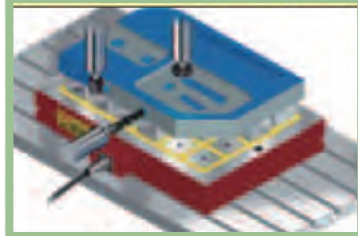
### FEATURES:

1. Super power magnetic force 1000 kgf /100 cm<sup>2</sup>. (4 Poles)
2. 3~10 seconds control for power ON & OFF. No electric power supply required to keep the magnetic chuck ON. Safety in case of power failure.
3. No power supply to keep the magnetic chuck ON, It could be used for long time and never get temperatures to affect the accuracy of workpieces.
4. Can do 5 sides machining, un-obstructed movement of cutters during machining. One cycle to finish a workpiece, helps in achieving best machining accuracy and increases efficiency a lot.
5. Easy and convenient to clamp a workpiece, shortens clamping time.

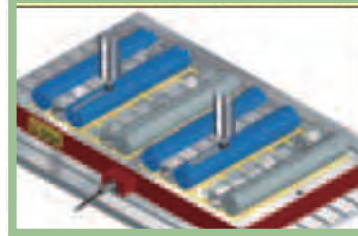
### APPLICATIONS:

1. Most suitable for machining on medium & small or even rough workpieces.
2. Suitable for drilling and finishing machining on small workpieces.
3. Minimum size of workpiece required as 4 alternate magnetic square poles and above contacts are necessary for optimum clamping.
4. Minimum thickness of workpiece required: 10 mm.
5. More functions for cooperate with Induction Block and Spring Block.  
(See the detail of option accessories)

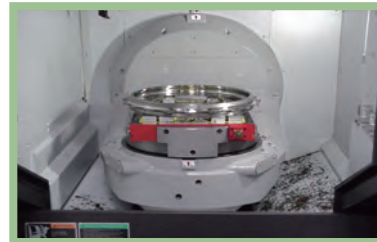
5 sides machining



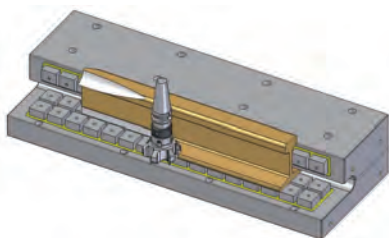
Round steel slotting & machining



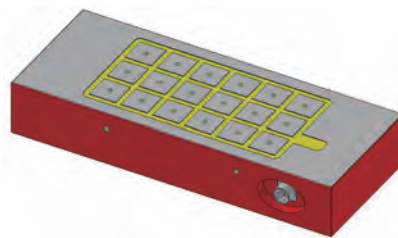
✓ Working Example



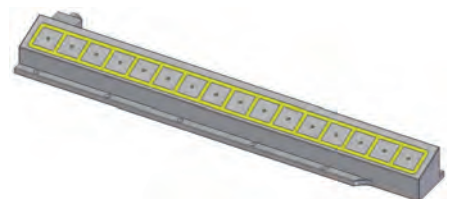
✓ Example of Special Made Chucks



Used for railway machining.



Used on special 4 axis index device.



Used for taper part grinding.



## ELECTRO-PERMANENT MAGNETIC INDEX TABLES SUITABLE FOR HORIZONTAL MILLING & BORING MACHINE ON PRECISION MACHINING OF DIVISION

### FEATURES:

1. Traditional milling machine can do 5 side machining too.
2. We changed traditional clamping way of index table. Made with electro-permanent magnetic chuck, can do 5 side machining, without any obstructed movement of cutters during machining.
3. Super magnetic force 1000 kgf/100 cm<sup>2</sup>. (4 poles)
4. Pneumatic system to rotate and fix the table, easy and convenient to operate.
5. Minimum thickness of workpiece required: 10 mm



UNIT: mm

| ITEM NO.                               | 53100725                            | 53100726  | 53100727  | 53100728  |
|----------------------------------------|-------------------------------------|-----------|-----------|-----------|
| 1. L x W                               | 300 x 300                           | 470 x 470 | 600 x 600 | 800 x 800 |
| 2. Height                              | 193                                 | 190       | 226       | 302       |
| 3. Driving                             | Air Pressure 5~8 kg/cm <sup>2</sup> |           |           |           |
|                                        | Manual                              |           |           |           |
| 4. Max. load weight vertical in theory | 1200 kgs                            | 2400 kgs  | 3400 kgs  | 4500 kgs  |
| 5. Allowable load weight               | 500 kgs                             | 1000 kgs  | 2000 kgs  | 3000 kgs  |
| 6. Table rotation                      | Clockwise & Anticlockwise           |           |           |           |
| 7. Division                            | Standard 72T~5° /Option 360T~1°     |           |           |           |
| 8. Net weight                          | 100 kgs                             | 223 kgs   | 446 kgs   | 1000 kgs  |
| 9. Dimension of pole                   | 50 x 50                             |           |           |           |
| 10. No. of pole                        | 16                                  | 49        | 72        | 144       |
| 11. Voltage                            | AC 220V                             |           |           |           |
| 12. Current (AMP)                      | 15A                                 | 25A       | 14A       | 33A       |
| 13. Controller (included)              | C1                                  | C2        | C4        | C4        |
| 14. Voltage                            | AC 380V~440V                        |           |           |           |
| 15. Current (AMP)                      | 18A                                 | 17A       | 13A       | 13A       |
| 16. Controller (included)              | C1                                  | C2        | C2        | C4        |

UNIT: mm

| ITEM NO.                  | 53100725 | 53100726 | 53100727 | 53100728 |
|---------------------------|----------|----------|----------|----------|
| 17. Squareness of table   | 0.01     | 0.015    | 0.02     | 0.02     |
| 18. Repeat rotation       | 0.01     | 0.01     | 0.015    | 0.015    |
| 19. Parallelism of table  | 0.01     | 0.015    | 0.02     | 0.02     |
| 20. Basic side squareness | 0.015    | 0.015    | 0.02     | 0.02     |
| 21. Division              | ±2"      |          |          |          |
| (second)                  | ±3"      |          |          |          |

### V Loading workpiece



### V Rotate angle and keep to machining



# B “ TOOLS OF WORKHOLDING & PRECISION TOOLS FOR MILLS & VMCS



## VACUUM CHUCKS

- The chuck apply for milling machine or grinding machine to process the surface and side.
- Change the chuck's size, depending on the workpiece's size.
- No need air pump, just connect the air compressor then start the operation.
- Any workpiece can be done very well.
- Light metal, hard metal, plastics, ceramics, glass, aluminum alloy, etc.

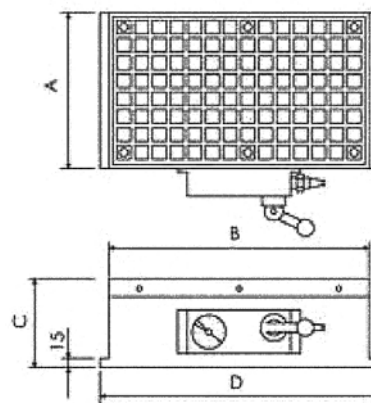
Start operation right  
away as combine

None magnesium alloy



UNIT: mm

| ITEM NO. | A<br>W | B<br>L | C<br>H | D<br>TOTAL-L | WEIGHT<br>(kgs) | SUCTION<br>(kgf) |
|----------|--------|--------|--------|--------------|-----------------|------------------|
| 53101090 | 150    | 150    | 60     | 180          | 4               | 135              |
| 53101091 | 150    | 300    | 60     | 330          | 16              | 270              |
| 53101092 | 300    | 300    | 100    | 330          | 45              | 540              |
| 53101093 | 300    | 400    | 100    | 430          | 48              | 720              |
| 53101094 | 300    | 450    | 105    | 480          | 56              | 810              |
| 53101095 | 300    | 600    | 60     | 630          | 69              | 1080             |
| 53101096 | 300    | 750    | 100    | 780          | 70              | 1350             |
| 53101097 | 200    | 200    | 100    | 230          | 15              | 240              |
| 53101098 | 200    | 400    | 100    | 430          | 35              | 480              |
| 53101099 | 400    | 400    | 100    | 430          | 52              | 960              |
| 53101100 | 400    | 600    | 100    | 630          | 77              | 1440             |
| 53101101 | 400    | 800    | 100    | 830          | 118             | 1920             |
| 53101102 | 400    | 1000   | 100    | 1030         | 130             | 2400             |
| 53101103 | 250    | 250    | 100    | 280          | 20              | 375              |
| 53101104 | 250    | 500    | 100    | 530          | 44              | 750              |
| 53101105 | 500    | 500    | 100    | 530          | 78              | 1500             |
| 53101106 | 500    | 750    | 100    | 780          | 95              | 2250             |
| 53101107 | 500    | 1000   | 100    | 1030         | 165             | 3000             |
| 53101108 | 500    | 1250   | 100    | 1280         | 178             | 3750             |
| 53101109 | 600    | 600    | 100    | 630          | 110             | 2160             |
| 53101110 | 600    | 900    | 100    | 930          | 140             | 3240             |



- Parallel angle:  $\pm 0.01$
- Material: S45C
- Product: dye black up/down grinding
- Plate: hot handling
- Fitting: Silicone strip  $\phi 4 \times 10M$



## PERMANENT MAGNETIC CLAMPING BLOCKS

Suitable for medium & large workpiece. (Can do 5 sides machining)



### Standard Accessories:

Handle  
-----1 set  
Induction soft block  
-----1 set  
Stopping plate  
-----1 set  
Guide key  
-----2 pcs  
Switch connector  
-----1 set

### Induction soft block



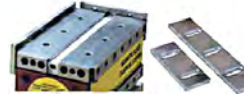
### Handle



### Guide key



### Stopping plate



### Switch connector



### FEATURES:

1. The all new model magnetic clamping block ECB series are a new sense of clamping way for metal working on CNC machining center and milling machine in quick clamp workpieces.
2. Free to set up position, numbers and distance of magnetic clamping block according to the size of workpiece.
3. The ECB series include changeable Induction soft block. It can revise the surface to be 100% accurate on the machine for clamping workpieces. Can also cutting, drilling, tapping and slotting directly to the induction soft block during machining workpiece. With multi-function of Induction soft block, the user can make it by themselves according to workpiece required.
4. Two machining circle for finish workpiece machining, increase a lot of machining efficiency and achieve accuracy required.

### APPLICATIONS:

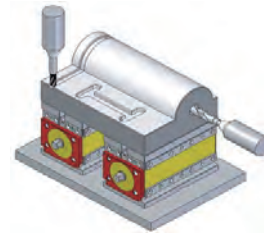
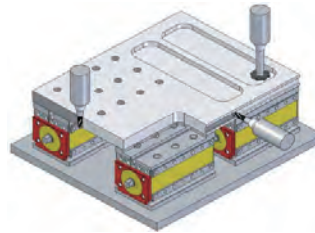
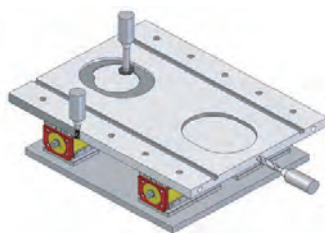
1. Most suitable for medium and large size of workpiece machining on milling machine and CNC machining center.
2. Minimum size of workpiece required as bigger than an area of two magnetic clamping blocks.
3. The magnetic clamping blocks are not suitable for small workpiece clamping.

### NOTE:

1. Please always make sure the switch was in ON position before machining.
2. The magnetic clamping blocks are not suitable for non-magnetic material, such as brass, copper, aluminum and stainless steel, etc.
3. The principle of magnetic clamping blocks is magnetism of N. S. poles, so please always put the workpiece between N. S. poles. (The middle of top clamping range)



## WORKING EXAMPLE



UNIT: mm

| ITEM NO. | HOLDING POWER | MINIMUM THICKNESS OF WORKPIECE REQUIRED | G    | G = $\begin{smallmatrix} +0 \\ -0.03 \end{smallmatrix}$ | H   | H = $\begin{smallmatrix} +0 \\ -0.03 \end{smallmatrix}$ | N.W.    |
|----------|---------------|-----------------------------------------|------|---------------------------------------------------------|-----|---------------------------------------------------------|---------|
| 53101035 | 2100 kgf      | 30                                      | 115  | Accuracy control required                               | 134 | Accuracy control required                               | 36 kgs  |
| 53101036 | 1200 kgf      | 20                                      | 94.5 |                                                         | 108 |                                                         | 18 kgs  |
| 53101037 | 750 kgf       | 15                                      | 88   |                                                         | 78  |                                                         | 9.5 kgs |
| 53101038 | 500 kgf       | 15                                      | 61   |                                                         | 78  |                                                         | 7 kgs   |

# B “ TOOLS OF WORKHOLDING & PRECISION TOOLS FOR MILLS & VMCS

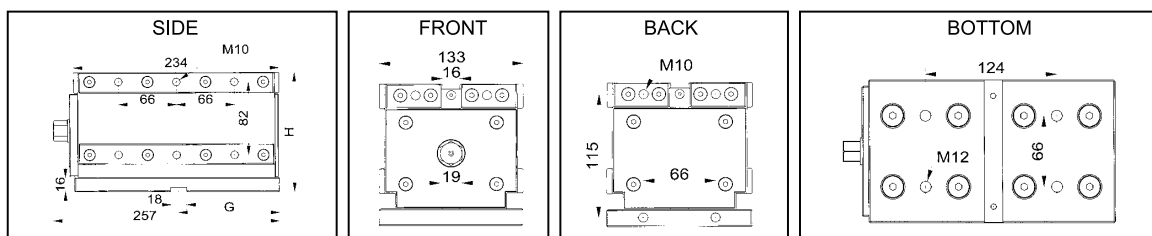


## PERMANENT MAGNETIC CLAMPING BLOCKS

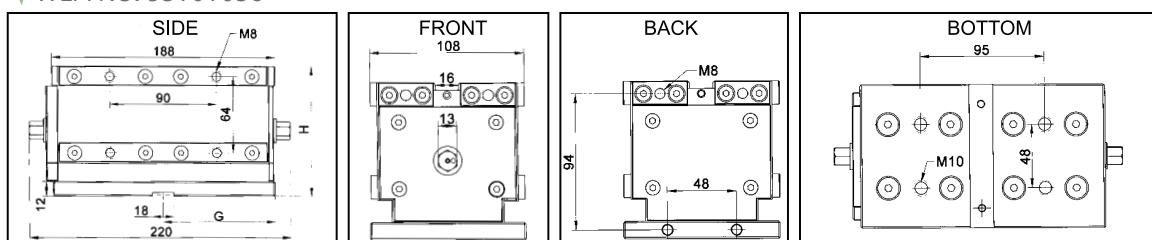
Suitable for medium & large workpiece. (Can do 5 sides machining)

### DIMENSION

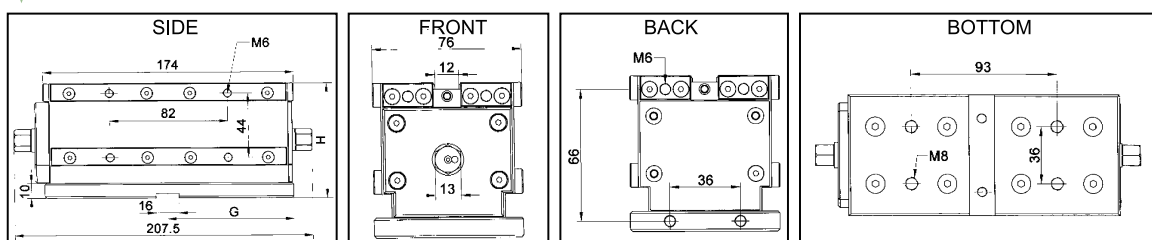
✓ ITEM NO. 53101035



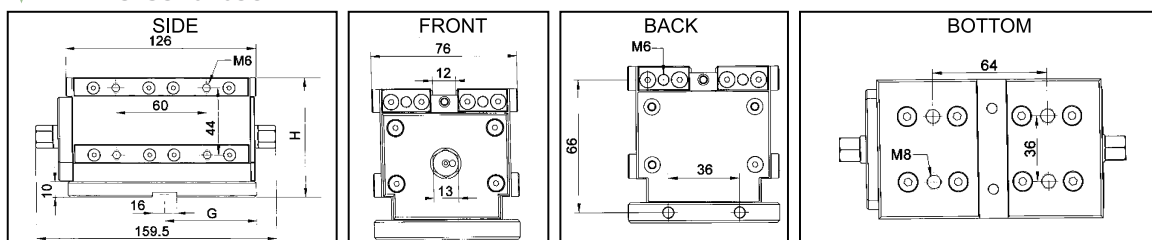
✓ ITEM NO. 53101036



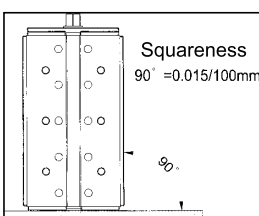
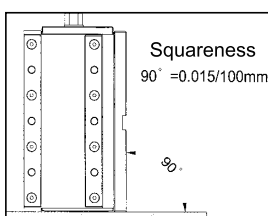
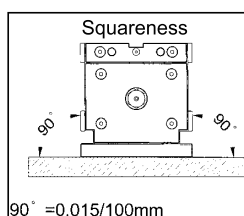
✓ ITEM NO. 53101037



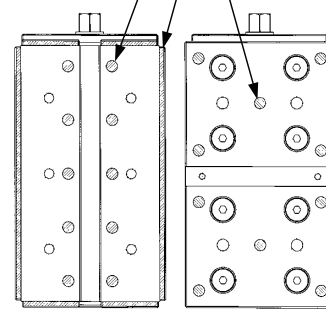
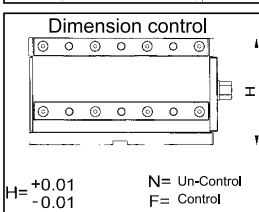
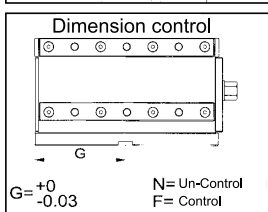
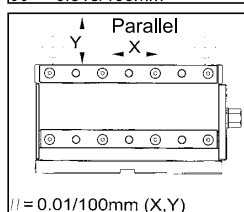
✓ ITEM NO. 53101038



### ACCURACY CONTROL



The points are hardened up to HRC55° for keep the basic surface in precision





## PERMANENT MAGNETIC CLAMPING BLOCKS

Suitable for medium & large workpiece. (Can do 5 sides machining)

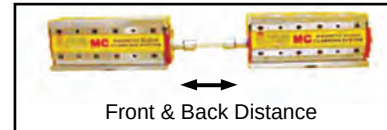
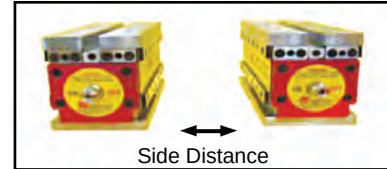
Customer can make switch connector by standard hexagon steel bar themselves depending on length required. The dimension of hexagon bar required is 53101035 --- 19 mm, 53101036~53101038 --- 13 mm.



### Maximum & Minimum distance required

UNIT: mm

| ITEM NO.              | 53101035  | 53101036 | 53101037 | 53101038 |
|-----------------------|-----------|----------|----------|----------|
| Side distance         | Min. 100  | 60       | 25       | 25       |
|                       | Max. 1000 | 600      | 400      | 400      |
| Front & back distance | Min. 70   | 40       | 40       | 40       |
|                       | Max. 500  | 300      | 200      | 200      |



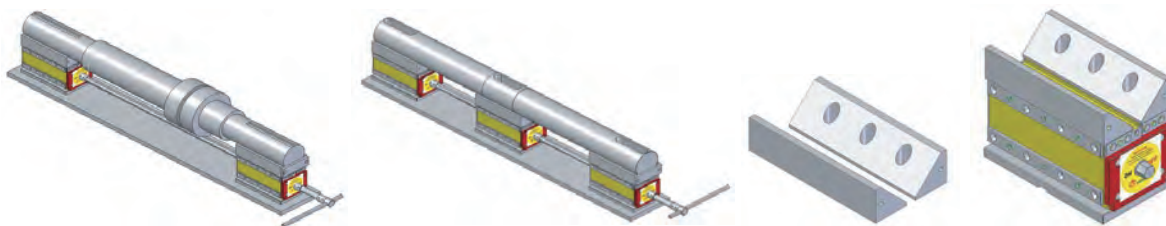
## WORKING EXAMPLE



### Special made Induction Block:

Customer can make special induction block themselves depending on the workpiece and application required.  
(The material of induction block required as general and low carbon steel)

### EXAMPLE

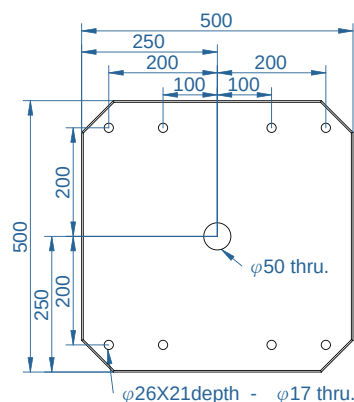
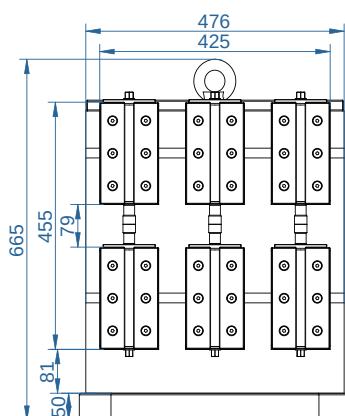
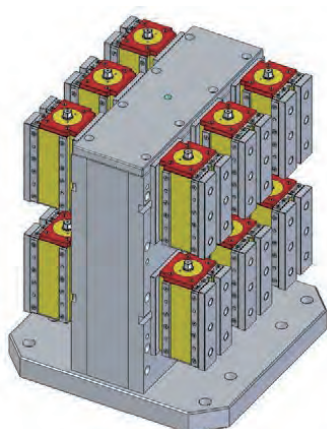


# B “ TOOLS OF WORKHOLDING & PRECISION TOOLS FOR MILLS & VMCS



## PERMANENT MAGNETIC CLAMPING BLOCKS

Suitable for medium & large workpiece. (Can do 5 sides machining)

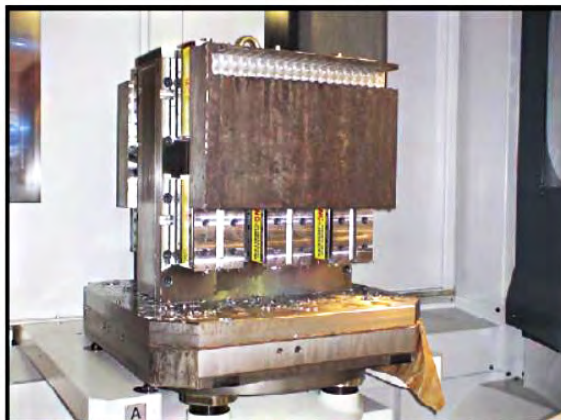


▲ ITEM NO. 53101039

### FEATURES & APPLICATIONS:

1. Every 6pcs of 53101036 magnetic clamping blocks on 2 working face have 7200 kgf (1200 kgf x 6) holding power, and can clamp 2 big workpieces for machining at the same time.
2. Customer can make and assemble any type of clamping device themselves by ECB series depending on the workpieces required.
3. Suitable to use on CNC horizontal machining center. (can do 5 sides machining.)

### WORKING EXAMPLE



Custom-made is available.



## ELECTRO-PERMANENT MAGNETIC CHUCKS

Suitable to use with CNC 4 Axis Index Device

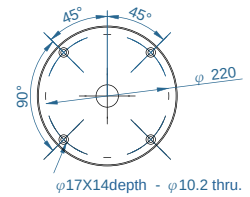
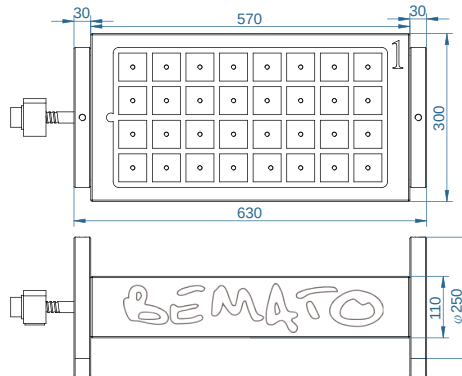


B12 - ELECTRO-PERMANENT MAGNETIC CHUCK / INDEX TABLE

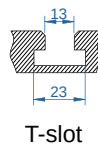
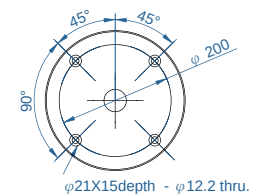
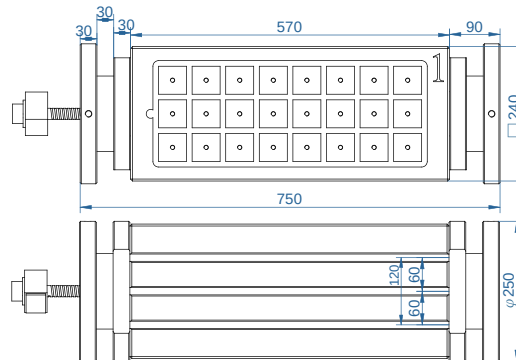
TOOLS OF WORKHOLDING & PRECISION TOOLS FOR MILLS & VMCS



ITEM NO. 53101040



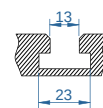
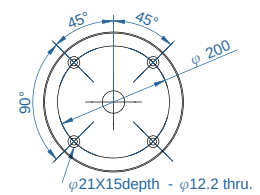
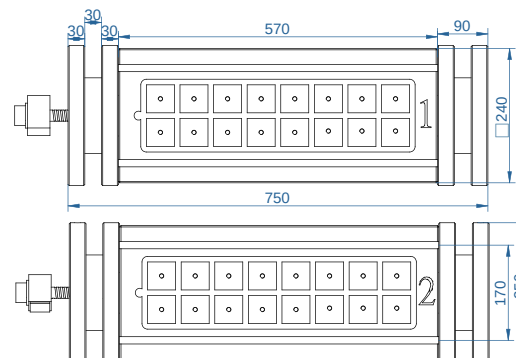
ITEM NO. 53101041



T-slot



ITEM NO. 53101042



T-slot

UNIT: mm

| ITEM NO. | WORKING FACE | PITCH | POLE    | NO.OF POLE | CHUCK N.W. | VOLTAGE (Single Phase) | CURRENT AMP | CONTROLLER (included) | VOLTAGE (Single Phase) | CURRENT AMP | CONTROLLER (included) |
|----------|--------------|-------|---------|------------|------------|------------------------|-------------|-----------------------|------------------------|-------------|-----------------------|
| 53101040 | 300 x 570    |       |         | 32 x 2     | 141 kgs    |                        | 31A         | C1                    |                        | 14A         | C1                    |
| 53101041 | 240 x 570    | 10    | 50 x 50 | 24 x 2     | 228 kgs    | AC 220V                | 22A         | C1                    | AC 380V ~ 440V         | 10A         | C1                    |
| 53101042 | 240 x 570    |       |         | 16 x 4     | 219 kgs    |                        | 14A         | C1                    |                        | 7A          | C1                    |

Custom-made is available.

# B “ TOOLS OF WORKHOLDING & PRECISION TOOLS FOR MILLS & VMCS



## ELECTRO-PERMANENT MAGNETIC CHUCKS

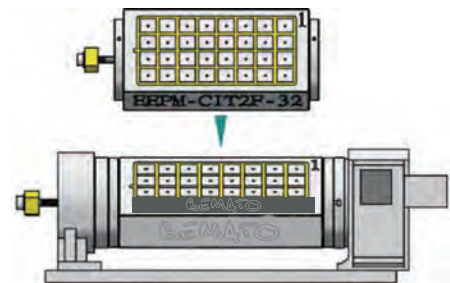
Suitable to use with CNC 4 Axis Index Device

### FEATURES:

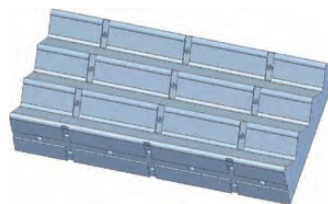
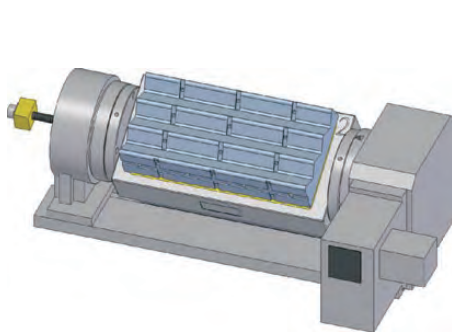
1. Super power magnetic force 1000 kgf/100 cm (4 Poles)
2. Control each working face for ON and OFF, so it can load and unload the workpiece on each working face.  
3 seconds control for power ON and OFF.
3. 53101040 with 2 magnetic working face, can clamp 2 workpieces for machining.  
Suitable for bigger workpiece.
4. 53101041 with 2 magnetic working faces and 2 T-slots working face, can clamp both of magnetic and non-magnetic workpiece.  
Suitable for smaller workpiece machining.
5. 53101042 with 4 magnetic working faces and T-slots available. Suitable for smaller workpiece machining.
6. Without any obstructed movement of cutters during machining, it can use all the functions of CNC 4 Axis Index Device completely.

### APPLICATIONS:

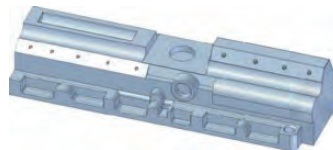
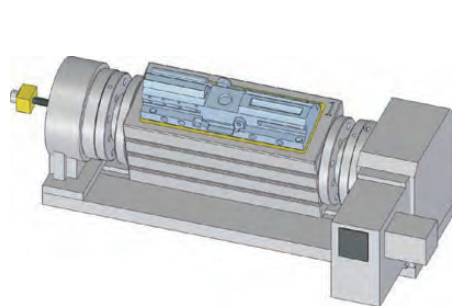
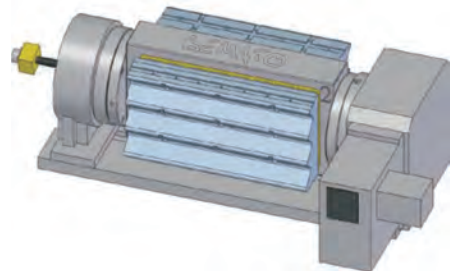
1. Suitable to use with CNC 4 Axis Index Device.
2. Minimum thickness of workpiece required: 10 mm.
3. Minimum size of workpiece required as 4 alternate magnetic square poles and above is necessary for optimum clamping.



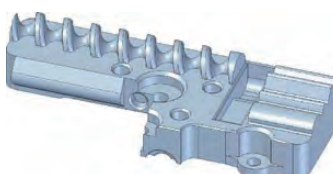
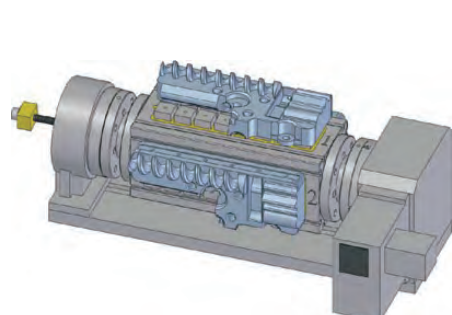
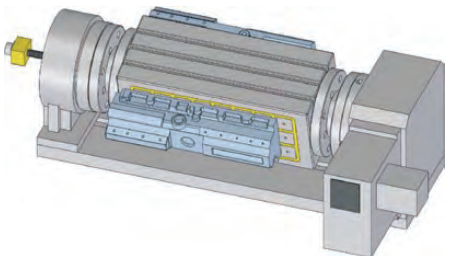
### WORKING EXAMPLE



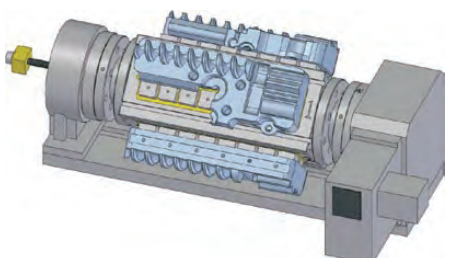
▲ ITEM NO. 53101040



▲ ITEM NO. 53101041



▲ ITEM NO. 53101042





## ELECTRO-PERMANENT MAGNETIC CHUCKS

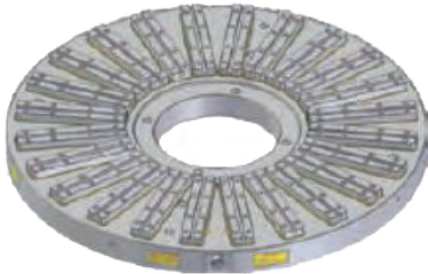
Suitable to use on vertical lathe, CNC 5 axis machining center, etc.



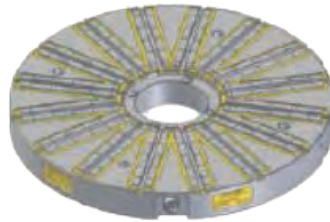
B12 - ELECTRO-PERMANENT MAGNETIC CHUCK / INDEX TABLE

TOOLS OF WORKHOLDING & PRECISION TOOLS FOR MILLS & VMCS

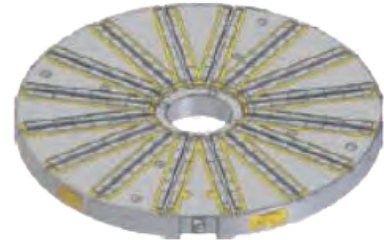
**Made with T-slots available**



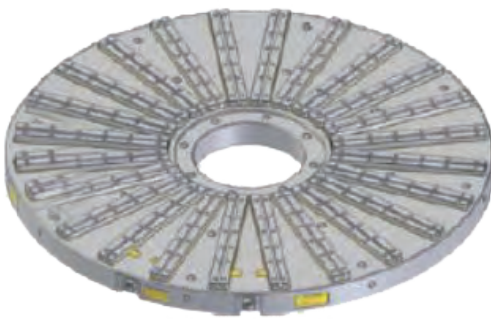
▲ ITEM NO. 53101047



▲ ITEM NO. 53101045



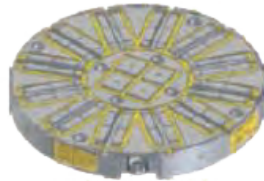
▲ ITEM NO. 53101046



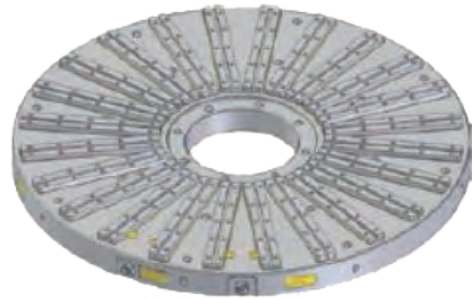
▲ ITEM NO. 53101049



▲ ITEM NO. 53101044



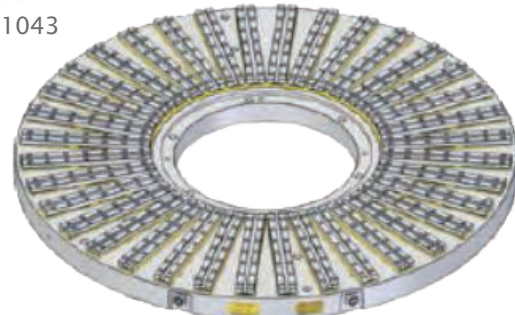
▲ ITEM NO. 53101043



▲ ITEM NO. 53101048



▲ ITEM NO. 53101051



▲ ITEM NO. 53101050

UNIT: mm

| ITEM NO. | TYPE | DIMENSION |       |        | NO. OF | T-SLOT                                                                              | MAGNETIC FORCE |           |          | VOLTAGE        | CURRENT | CONTROLLER | VOLTAGE           | CURRENT | CONTROLLER |
|----------|------|-----------|-------|--------|--------|-------------------------------------------------------------------------------------|----------------|-----------|----------|----------------|---------|------------|-------------------|---------|------------|
|          |      | OD        | ID    | HEIGHT | POLE   |                                                                                     | MIN            | MAX       | N.W.     | (Single Phase) | AMP     | (included) | (Single Phase)    | AMP     | (included) |
| 53101043 | 500  | ø500      | 0     | 70     | 12/4   |  | 1340 kgf       | 6600 kgf  | 104 kgs  | AC 220V        | 33A     | C1         | AC 380V<br>~ 440V | 15A     | C1         |
| 53101044 | 600  | ø600      | 0     | 70     | 12/4   |                                                                                     | 1920 kgf       | 9600 kgf  | 148 kgs  |                | 27A     | C2         |                   | 15A     | C2         |
| 53101045 | 800  | ø800      | ø250  | 85     | 16     |                                                                                     | 3060 kgf       | 15200 kgf | 302 kgs  |                | 30A     | C2         |                   | 28A     | C2         |
| 53101046 | 1000 | ø1000     | ø250  | 85     | 16     |                                                                                     | 4600 kgf       | 23000 kgf | 471 kgs  |                | 24A     | C4         |                   | 20A     | C4         |
| 53101047 | 1250 | ø1260     | ø500  | 110    | 24     |                                                                                     | 5760 kgf       | 28800 kgf | 828 kgs  |                | 33A     | C4         |                   | 18A     | C4         |
| 53101048 | 1500 | ø1520     | ø500  | 120    | 24     |                                                                                     | 8060 kgf       | 40200 kgf | 1325 kgs |                | 24A     | C8         |                   | 25A     | C8         |
| 53101049 | 1600 | ø1630     | ø500  | 120    | 24     |                                                                                     | 9200 kgf       | 46000 kgf | 1507 kgs |                | 24A     | C8         |                   | 20A     | C8         |
| 53101050 | 1800 | ø1820     | ø800  | 120    | 36     |                                                                                     | 12100 kgf      | 60400 kgf | 2290 kgs |                | 33A     | C8         |                   | 28A     | C8         |
| 53101051 | 2000 | ø2050     | ø1000 | 130    | 36     |                                                                                     | 12100 kgf      | 60400 kgf | 2490 kgs |                | 33A     | C8         |                   | 28A     | C8         |

Custom-made is available.

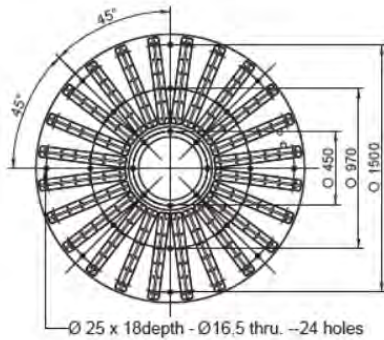
# B “ TOOLS OF WORKHOLDING & PRECISION TOOLS FOR MILLS & VMCS



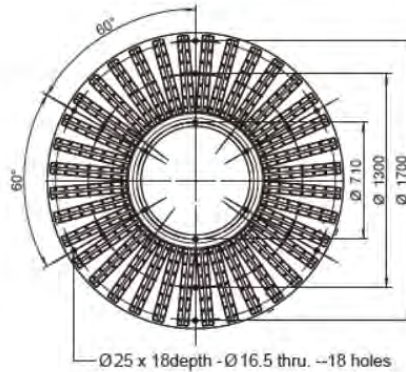
## ELECTRO-PERMANENT MAGNETIC CHUCKS

Suitable to use on vertical lathe, CNC 5 axis machining center, etc.

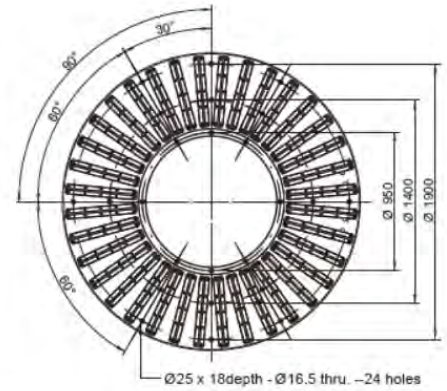
### DIMENSION OF SCREW HOLES FOR SETTING UP



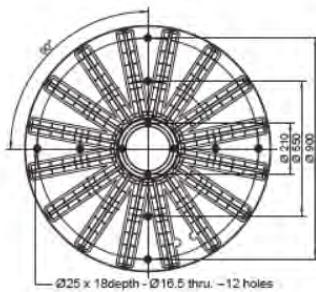
▲ ITEM NO. 53101049



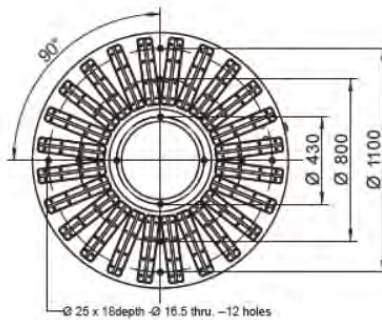
▲ ITEM NO. 53101050



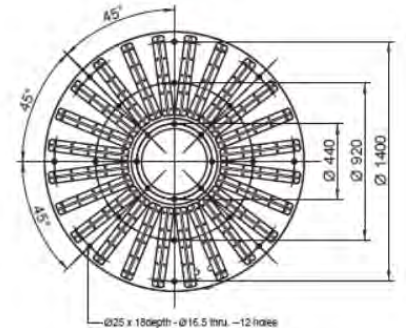
▲ ITEM NO. 53101051



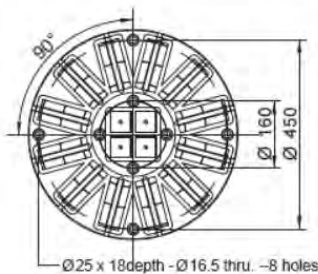
▲ ITEM NO. 53101046



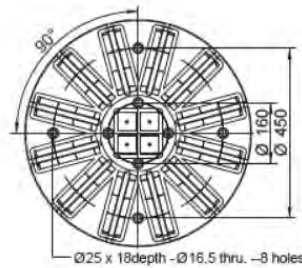
▲ ITEM NO. 53101047



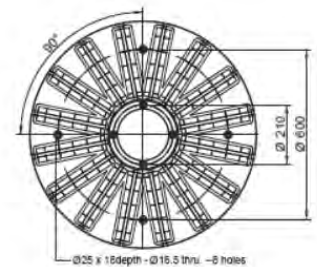
▲ ITEM NO. 53101048



▲ ITEM NO. 53101043



▲ ITEM NO. 53101044



▲ ITEM NO. 53101045

#### FEATURES:

1. Round type and radiate magnetic poles, suitable for clamping round type and any form of workpiece machining.
2. Workpieces can be attached to all poles of magnetic chuck, Super power magnetic force: minimum of 1340 kgf (1.34 tons)  $\pm 5\%$  and maximum of 60,400 kgf (60 tons)  $\pm 5\%$ . It depends on the size of workpiece and magnetic chuck. (Please refer to the spec. list)
3. 3.1~10 seconds control for power ON & OFF. No electric power supply required to keep the magnetic chuck ON. Cable can be taken off for turning chuck freely while machining.
4. Un-obstructed movement of cutters during machining, the real functions of 5 side machining on workholding.
5. Design of electric-permanent, never gets temperature to effect the accuracy of the workpieces.



## ELECTRO – PERMANENT MAGNETIC CHUCKS

Suitable to use on vertical lathe, CNC 5 axis machining center, etc.

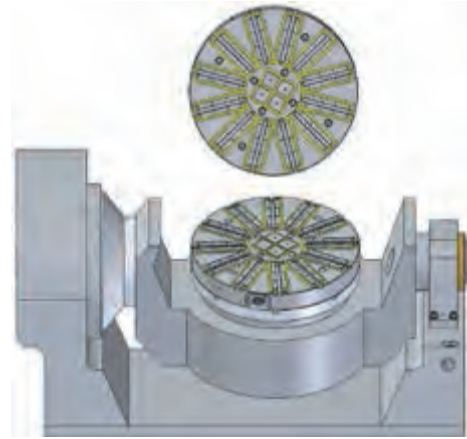
### APPLICATIONS:

1. Suitable to use with vertical lathe, CNC 5 axis index device, CNC 5 axis machining center, etc.
2. Minimum thickness of workpiece required : 10 mm.
3. Minimum dimension of workpiece required as:  
 type 500-φ300 mm: type 600-φ360 mm  
 type 800-φ500 mm: type 1000-φ500 mm  
 type 1250-φ850 mm: type 1500-φ850 mm  
 type 1600-φ1200 mm: type 1800-φ1200 mm  
 or same dimensions of any other forms of workpiece.
4. More functions to cooperate with induction plate, can do positioning on workholding.

### OPTIONAL ACCESSORIES:

#### INDUCTION BLOCK:

1. Induction block **TYPE IB** series are used for **53101043~51** chucks, can do many more function on working.
2. **Convenience and Accuracy:** Induction block are interchanging & consuming accessories. You can machine the surface or form induction blocks of induction block will always 100% match to the machine.



SPF



IB120



IB245



IB170



IB345



IB220



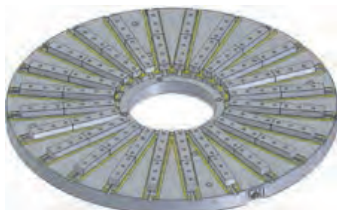
IB270

UNIT: mm

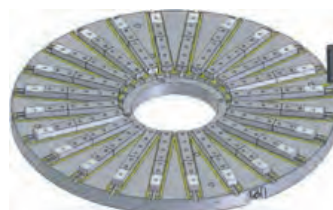
| INDUCTION BLOCK | L   | W  | H    | SUITABLE  |
|-----------------|-----|----|------|-----------|
| SPF             | 50  |    | 32.5 | All       |
| IB120           | 120 |    |      | TYPE 500  |
| IB170           | 170 |    |      | TYPE 600  |
| IB245           | 245 | 50 | 20   | TYPE 800  |
| IB335           | 335 |    |      | TYPE 1000 |
| IB220           | 220 |    |      | TYPE 500  |
| IB270           | 270 |    |      | TYPE 600  |

Working Example: ID positioning and OD machining by induction block.

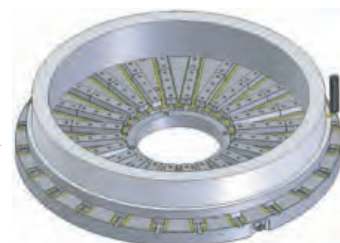
#### Set up induction block



#### Precise machining on induction block for ID positing.



#### OD machining



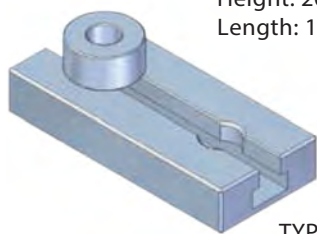
# B “ TOOLS OF WORKHOLDING & PRECISION TOOLS FOR MILLS & VMCS



## ELECTRO – PERMANENT MAGNETIC CHUCKS

Suitable to use on vertical lathe, CNC 5 axis machining center, etc.

### ▼ T FIXED SLIDE BLOCK



Height: 20 mm  
Length: 120 mm

TYPE-20T

1. T fixed slide blocks can do base points for workpiece postioning.
2. Since the holding surface of small workpiece is not big enough, please always use the T fixed slide block to avoid he workpiece moeing when machining.

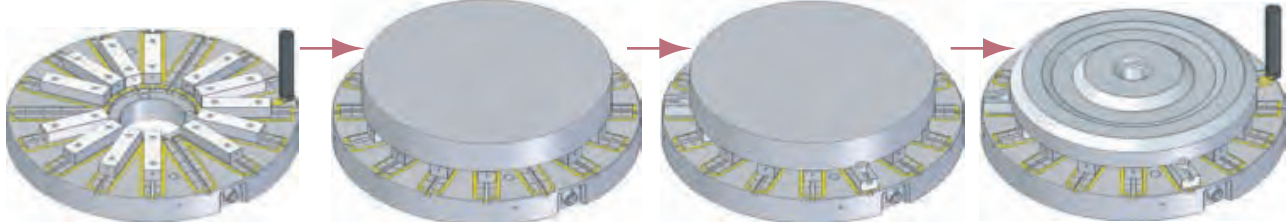
Working Example: Vertical lathe machining by induction block with T fixed slide block

#### Set up and precise machining induction blocks

#### Set up workpiece

#### Fix 3 pcs of T fixed slide block

#### Workpiece machining by vertical lathe



### ▼ SPRING BLOCK

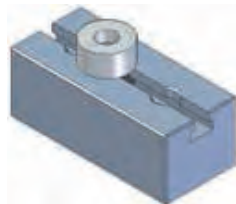


TYPE-SP

### ▼ FIXED BLOCK



TYPE-SPF



TYPE-30T

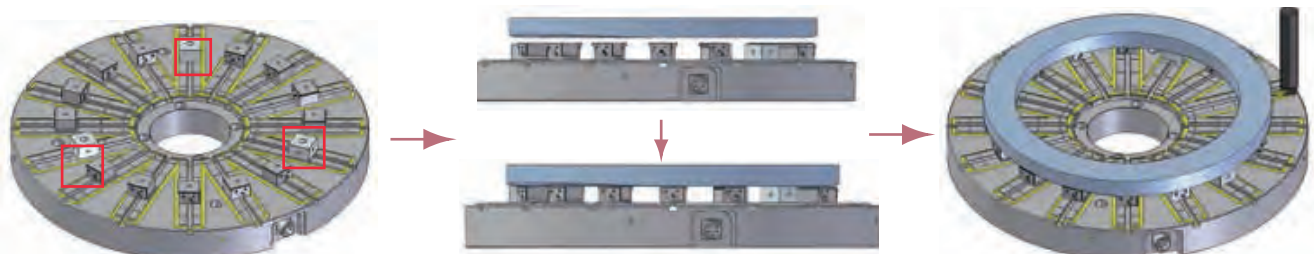
1. Suitables for clamping on iron cast, flexuous and thin workpieces. It will not be out of shape of the workpiece after machining.
2. 3 pcs of fixed blocks is necessary for workpiece clamping. It can make a basic surface for the workpiece to touch the spring blocks.
3. Elastic range of spring block: each 2.5 mm for up and down.

Working Example: Vertical lathe machining by spring block with fixed block.

#### Set up spring block and 3 pcs of fixed block

#### Set up workpiece

#### Workpiece machining by vertical lathe



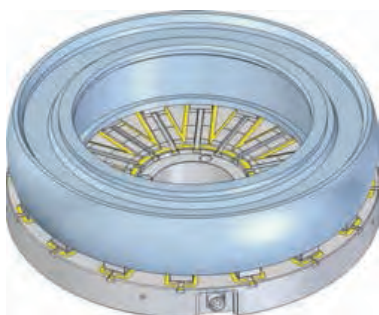


## ELECTRO-PERMANENT MAGNETIC CHUCKS

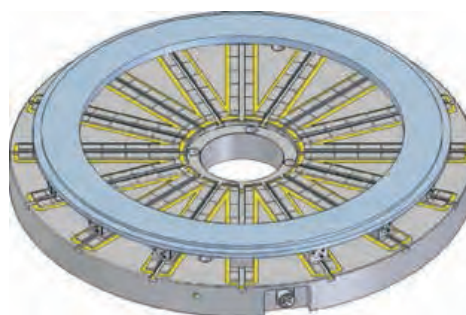
Suitable to use on vertical lathe, CNC 5 axis machining center, etc.

### WORKING EXAMPLE

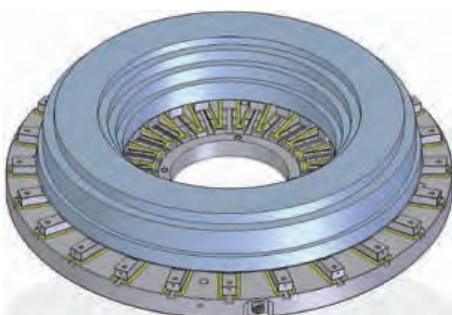
Round type workpiece for surface, ID and OD machining by **induction block**.



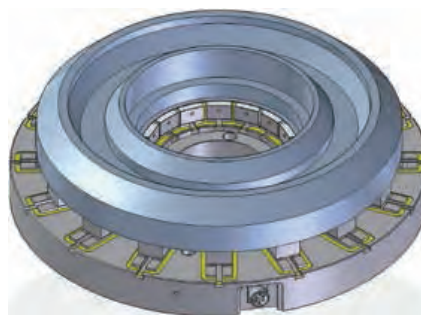
Irregular and thin workpiece for ID and OD machining by **spring block**.



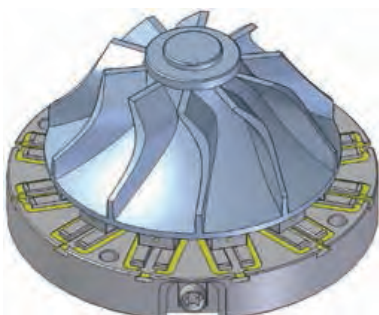
Round type workpiece positioning by OD for ID machining by **induction block**.



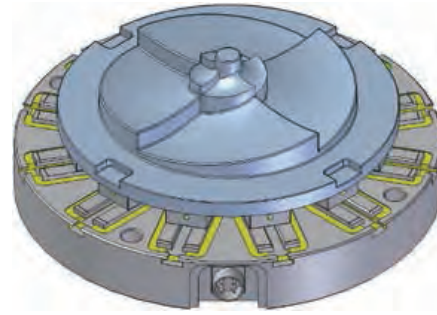
Round type workpiece positioning by ID for OD machining by **induction block**.



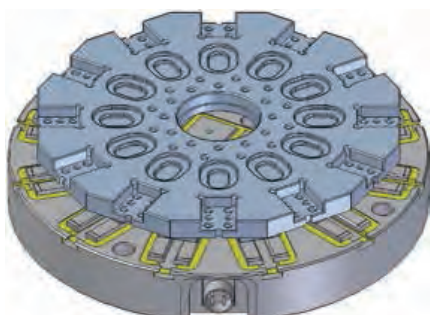
Round type spiral workpiece for complex machining by **induction block**.



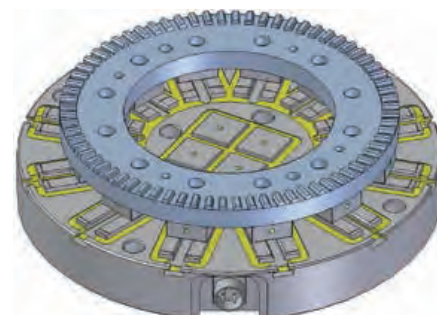
Round type spiral workpiece for complex machining by **induction block**.



Multi-angle workpiece for 5 sides complex machining by **induction block**.



Round type gear workpiece for 5 sides complex machining by **induction block**.



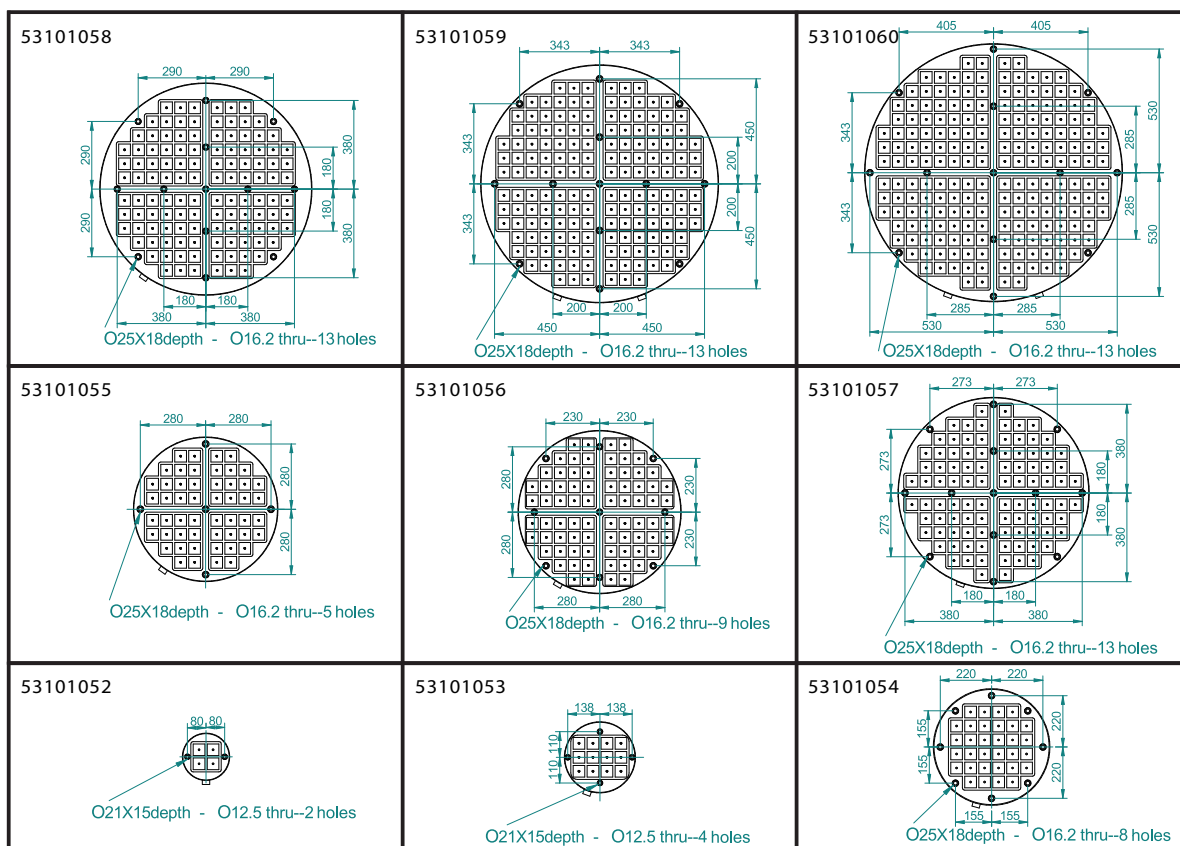
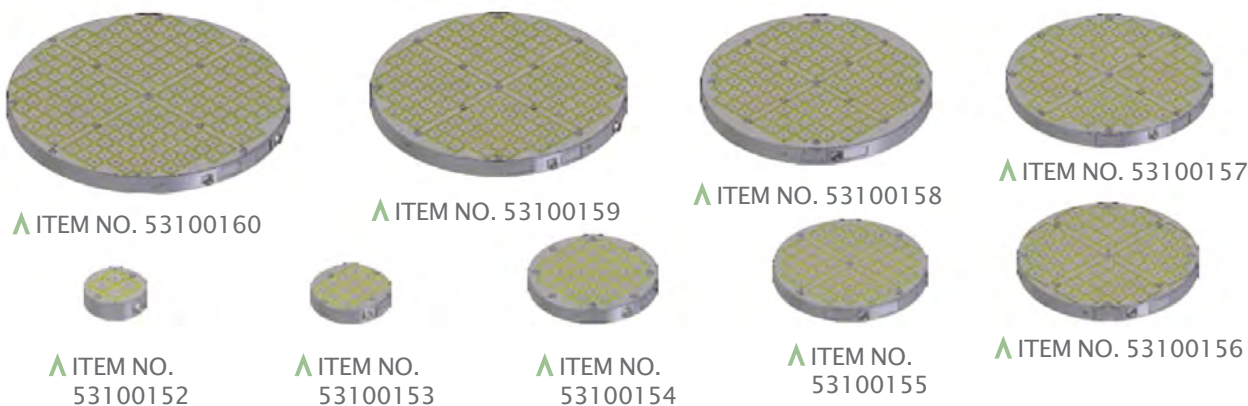
# B “ TOOLS OF WORKHOLDING & PRECISION TOOLS FOR MILLS & VMCS



## ELECTRO-PERMANENT MAGNETIC CHUCKS

Suitable to use with rotary type surface grinding machine, CNC 5 axis machining center, etc.

### DIMENSION OF SCREW HOLES FOR SETTING UP



UNIT: mm

| ITEM NO. | TYPE  | DIMENSION DIA | H  | PITCH | POLE | NO.OF POLE | CHUCK N.W. | VOLTAGE (Single Phase) | CURRENT AMP | CONTROLLER (included) | VOLTAGE (Single Phase) | CURRENT AMP | CONTROLLER (included) |
|----------|-------|---------------|----|-------|------|------------|------------|------------------------|-------------|-----------------------|------------------------|-------------|-----------------------|
| 53101052 | S200  | ø203          | 70 |       |      | 4          | 16 kgs     |                        | 16A         | C1                    |                        | -           | -                     |
| 53101053 | S300  | ø305          | 70 |       |      | 12         | 35 kgs     |                        | 18A         | C1                    |                        | 6A          | C1                    |
| 53101054 | S500  | ø500          | 70 |       |      | 32         | 97 kgs     |                        | 31A         | C1                    |                        | 15A         | C1                    |
| 53101055 | S600  | ø620          | 70 |       |      | 52         | 150 kgs    |                        | 25A         | C2                    |                        | 15A         | C2                    |
| 53101056 | S700  | ø700          | 70 |       |      | 76         | 191 kgs    |                        | 16A         | C4                    |                        | 14A         | C4                    |
| 53101057 | S800  | ø820          | 70 |       |      | 96         | 262 kgs    |                        | 25A         | C4                    |                        | 15A         | C4                    |
| 53101058 | S900  | ø910          | 80 |       |      | 120        | 362 kgs    |                        | 30A         | C4                    |                        | 15A         | C4                    |
| 53101059 | S1000 | ø1020         | 80 |       |      | 164        | 464 kgs    |                        | 25A         | C8                    |                        | 15A         | C8                    |
| 53101060 | S1100 | ø1106         | 80 |       |      | 204        | 546 kgs    |                        | 24A         | C8                    |                        | 20A         | C8                    |



## ELECTRO-PERMANENT MAGNETIC CHUCKS

Suitable to use with rotary type surface grinding machine, CNC 5 axis machining center, etc.

### FEATURES:

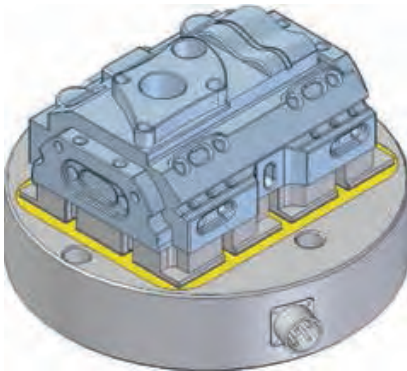
1. Super power magnetic force 1250 kgf/100cm<sup>2</sup>±5%. (4 poles)
2. 3~15 seconds control for power ON & OFF. No electric power supply required to keep the magnetic chuck ON. Cable can be taken off for turning freely while machining or grinding.
3. Can do 5 side machining, un-obstructed movement of cutters during machining. One cycle to finish a workpiece, helps in achieving best machining accuracy and increases efficiency a lot.

### APPLICATIONS:

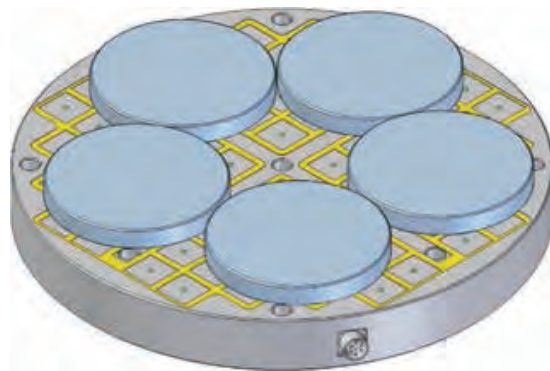
1. Suitable to use with rotary type surface grinding machine, CNC 5 axis machining center, etc.
2. Minimum thickness of workpiece required : 10 mm
3. Minimum size of workpiece required as 4 alternate magnetic square poles and above contacts is necessary for optimum clamping.
4. More functions to cooperate with induction block and spring block. (See the detail of Optional Accessories)

## WORKING EXAMPLE

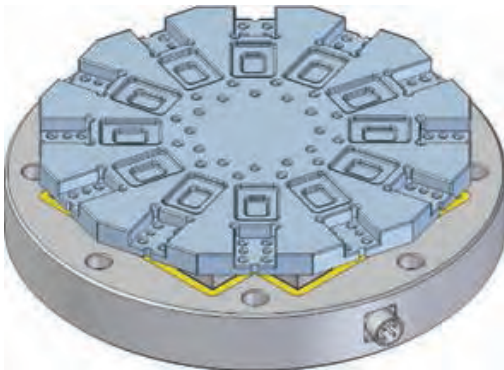
Multi-form workpiece for 5 side machining by induction block.



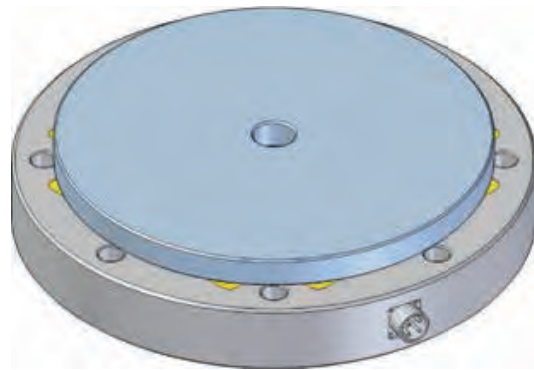
Multi-round type workpiece for precision grinding.



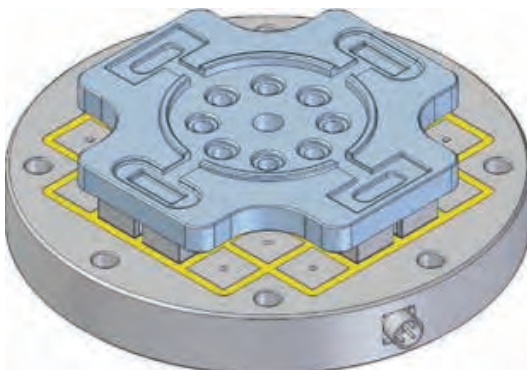
Multi-angle workpiece for 5 side machining by induction block.



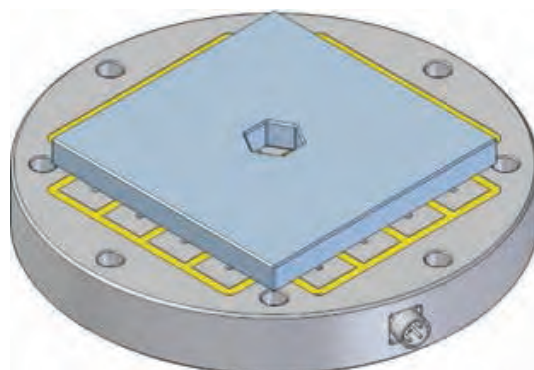
Round type workpiece for precision grinding.



Irregular form workpiece for 5 side machining by induction block.



Square workpiece for precision grinding.

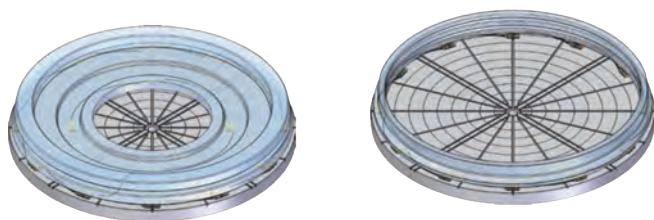


# B “ TOOLS OF WORKHOLDING & PRECISION TOOLS FOR MILLS & VMCS

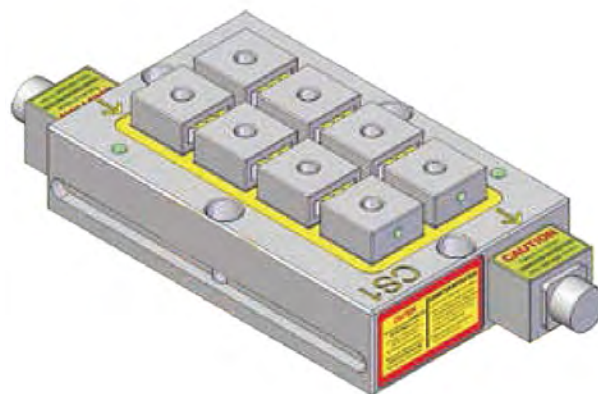
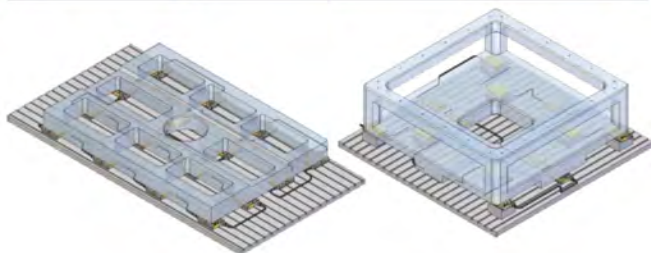
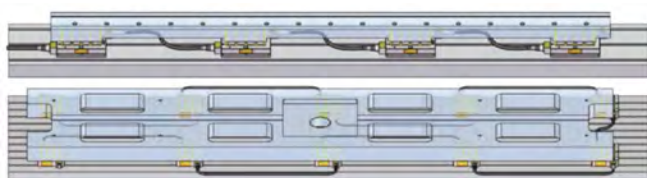


## ELECTRO-PERMANENT MAGNETIC CHUCKS – CONNECTION TYPE

Example of Vertical Lathe on Large Workpiece



Example of Double Column Machining Center and  
CNC Machining Center on Large Workpiece

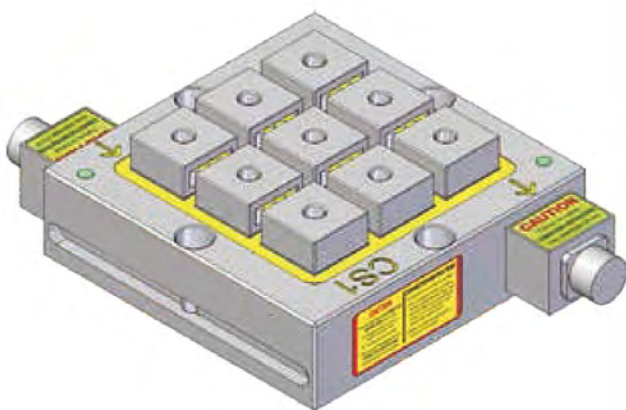


**HOLDING POWER OF EACH CHUCK:**

**2500 ±5% kgf**

▲ ITEM NO. 53101061 (220V)

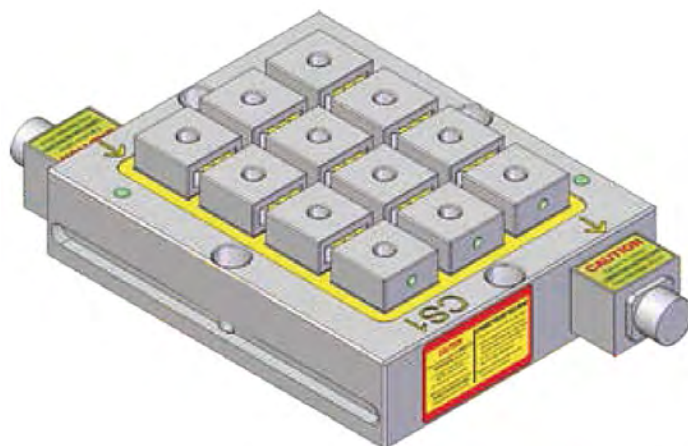
### APPLICATION & SPECIFICATION



**HOLDING POWER OF EACH CHUCK:**

**2800 ±5% kgf**

▲ ITEM NO. 53101062 (220V)



**HOLDING POWER OF EACH CHUCK:**

**3800 ±5% kgf**

▲ ITEM NO. 53101063 (380~440V)



## ELECTRO-PERMANENT MAGNETIC CHUCKS – CONNECTION TYPE

Suitable to use on large vertical lathe, double column machining center and CNC machining center, etc.

### FEATURES:

1. Super power magnetic force 1250 kgf/100cm<sup>2</sup> ±5% (4 poles), can meet various machining process.
2. Structure of electro-permanent magnetic chuck, no electric power supply required to keep the chuck ON. It could be used for long time and never get temperatures to affect the accuracy of workpiece.
3. Using innovation series and parallel connection modular system, 53101061~3 provides a more economic solution to hold various size of workpiece. Flexible units could be deployed with various quantities, locations, and distance to each other depending on customers' various workpiece shapes. Save time and cost during machining and increase the accuracy that makes the goods have higher quality and value.
4. According to the size of the workpiece [point] hold the workpiece, changing the magnetic fixture [surface] clamp the workpiece allows 100% use of the chuck in an all-round way. Can reduce equipment costs and increase more profits.
5. Without any obstructed movement of cutter during machining. Can do 5-sides machining, drilling, tapping, grooving and forming all in one cycle. This greatly enhances work efficiency, and reduces repeated

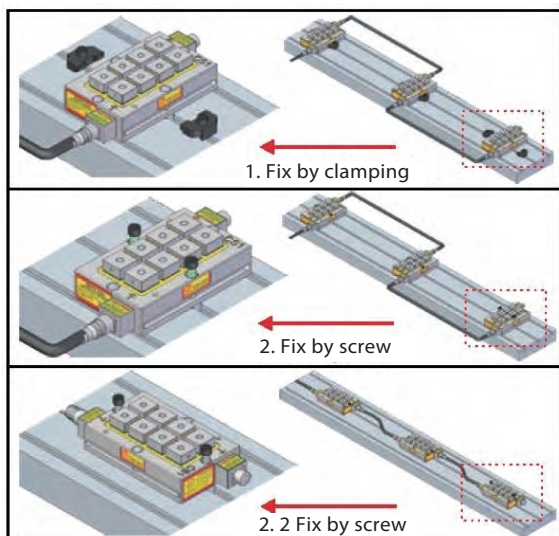
### DESCRIPTION:

Customer can choose 53101061~3 series by following steps:

1. Choose number of chucks according to voltage and workpiece required.
2. Choose chuck controller.
3. Choose chuck connection cables  
(Length : 300 mm; 500 mm; 1000 mm; 1500 mm)

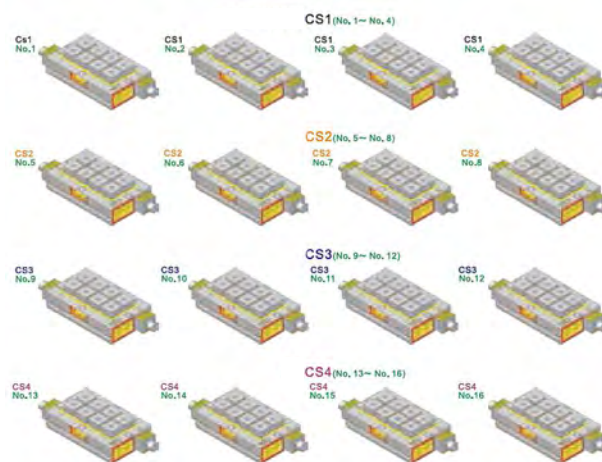
Note: A maximum of 16 chucks can be connected to one controller. If the workpiece dimension requests more than 16 chucks, please choose two groups.

### INSTALLATION:

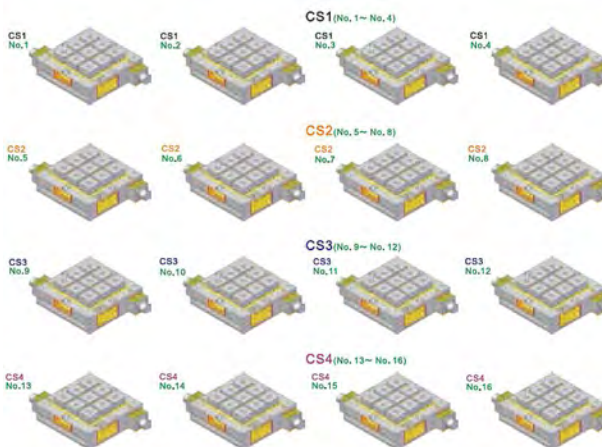


### ITEM NO. 53101061

### VOLTAGE 220V SERIES

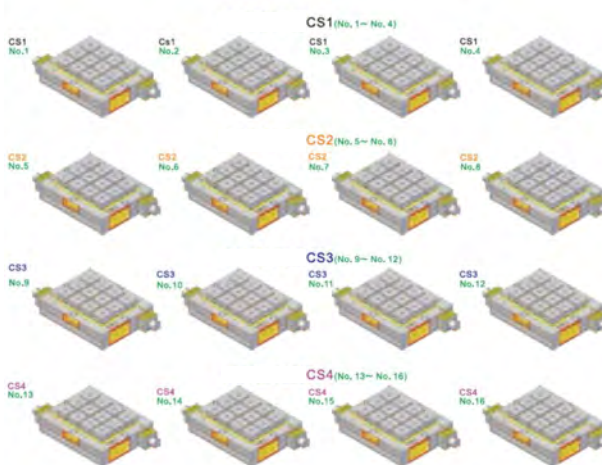


### ITEM NO. 53101062



### ITEM NO. 53101063

### VOLTAGE 380V~440V SERIES



# B “ TOOLS OF WORKHOLDING & PRECISION TOOLS FOR MILLS & VMCS



## ELECTRO-PERMANENT MAGNETIC CHUCKS – CONNECTION TYPE (53101061 SERIES)

Suitable to use on large vertical lathe, double column machining center and CNC machining center, etc.



▲ TYPE-C4C

### CHUCK CONTROLLER

The controller TYPE-C4C can control 1 to 4 pieces of TYPE-CS1, CS2, CS3, CS4 at the same time and with detection of abnormal function.

UNIT: mm

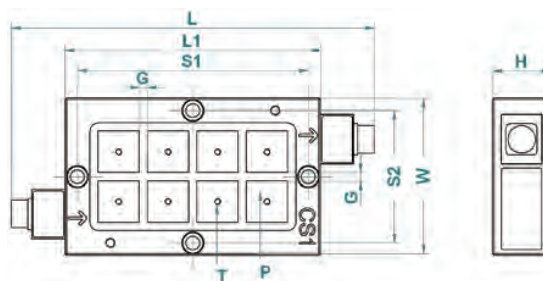
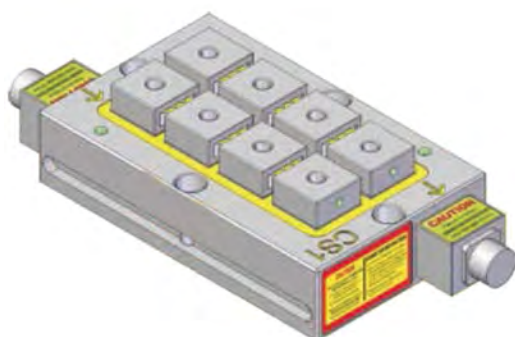
| TYPE | VOLTAGE<br>(Single Phase) | DIMENSION |     |     | CONNECTION AVAILABLE                                                   |
|------|---------------------------|-----------|-----|-----|------------------------------------------------------------------------|
|      |                           | L         | W   | H   |                                                                        |
| C4C  | AC<br>220V                | 370       | 220 | 125 | 3~16 Chucks (CS1x 1-4pcs, CS2 x 1~4 pcs, CS3 x 1-4 pcs, CS4 x 1~4 pcs) |

### Standard Accessories: Induction soft block (TYPE - IB425 \* 2PCS)



▲ TYPE-IB425

**Convenience and Accuracy :** The induction blocks screwed on the magnetic chuck are replaceable and consumable accessories. You can fine grinding the surface or form induction blocks according to the requirements of workpiece by the machine directly. The parallelism of induction blocks can be 100% fitted with the machine, and the 5-sided machining can be easily conducted.



53101061 SERIES

UNIT: mm

| TYPE | VOLTAGE<br>(Single Phase) |     |     | DIMENSION |     |     |    |    |    | PITCH<br>(G) | POLE<br>(P) | NO.OF<br>POLE   | HOLDING<br>POWER | CHUCK<br>N.W. |
|------|---------------------------|-----|-----|-----------|-----|-----|----|----|----|--------------|-------------|-----------------|------------------|---------------|
|      |                           | W   | L   | L1        | S1  | S2  | H  | T  |    |              |             |                 |                  |               |
| CS1  | DC 220V                   | 190 | 425 | 310       | 280 | 160 | 70 | M8 | 10 | 50 x 50      | 8           | 2500 kgf<br>±5% | 33.5 kgs         |               |
| CS2  |                           |     |     |           |     |     |    |    |    |              |             |                 |                  |               |
| CS3  |                           |     |     |           |     |     |    |    |    |              |             |                 |                  |               |
| CS4  |                           |     |     |           |     |     |    |    |    |              |             |                 |                  |               |

### Chuck Connection Cable (4 types for options):



MODEL NO. TYPE-CC03: 300 mm; TYPE-CC05: 500 mm; TYPE-CC10: 1000 mm; TYPE-CC15: 1500 mm.



## ELECTRO-PERMANENT MAGNETIC CHUCKS – CONNECTION TYPE (53101062 SERIES)

Suitable to use on large vertical lathe, double column machining center and CNC machining center, etc.



▲ TYPE-C4C

### CHUCK CONTROLLER

The controller TYPE-C4C can control 1 to 4 pieces of TYPE-CS1, CS2, CS3, CS4 at the same time and with detection of abnormal function.

UNIT: mm

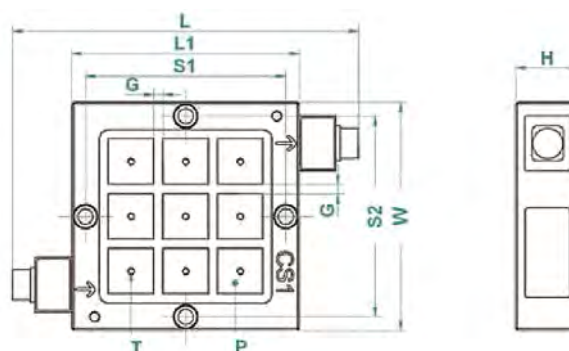
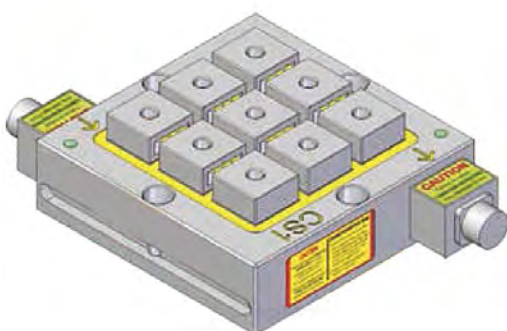
| TYPE | VOLTAGE<br>(Single Phase) | DIMENSION<br>L W H | CONNECTION AVAILABLE                                                   |
|------|---------------------------|--------------------|------------------------------------------------------------------------|
| C4C  | AC<br>220V                | 370 220 125        | 3~16 Chucks (CS1x 1-4pcs, CS2 x 1~4 pcs, CS3 x 1-4 pcs, CS4 x 1~4 pcs) |

### Standard Accessories: Induction soft block (TYPE - IB325 x 3PCS)



▲ TYPE-IB325

**Convenience and Accuracy :** The induction blocks screwed on the magnetic chuck are replaceable and consumable accessories. You can fine grinding the surface or form induction blocks according to the requirements of workpiece by the machine directly. The parallelism of induction blocks can be 100% fitted with the machine, and the 5-sided machining can be easily conducted.



53101062 SERIES

UNIT: mm

| TYPE | VOLTAGE<br>(Single Phase) | W   | L   | DIMENSION<br>L1 S1 S2 | H  | T  | PITCH<br>(G) | POLE<br>(P) | NO.OF<br>POLE | HOLDING<br>POWER | CHUCK<br>N.W. |
|------|---------------------------|-----|-----|-----------------------|----|----|--------------|-------------|---------------|------------------|---------------|
| CS1  | DC 220V                   | 250 | 380 | 250 220 220           | 60 | M8 | 10           | 50X50       | 9             | 2800 kgf<br>±5%  | 35.0 kgs      |
| CS2  |                           |     |     |                       |    |    |              |             |               |                  |               |
| CS3  |                           |     |     |                       |    |    |              |             |               |                  |               |
| CS4  |                           |     |     |                       |    |    |              |             |               |                  |               |

### Chuck Connection Cable (4 types for options):



MODEL NO. TYPE-CC03: 300 mm; TYPE-CC05: 500 mm; TYPE-CC10: 1000 mm; TYPE-CC15: 1500 mm.



# B “ TOOLS OF WORKHOLDING & PRECISION TOOLS FOR MILLS & VMCS



## ELECTRO-PERMANENT MAGNETIC CHUCKS – CONNECTION TYPE (53101063 SERIES)

Suitable to use on large vertical lathe, double column machining center and CNC machining center, etc.



### CHUCK CONTROLLER

The controller TYPE-C4C can control 1 to 4 pieces of TYPE-CS1, CS2, CS3, CS4 at the same time and with detection of abnormal function.

▲ TYPE-C4C

UNIT: mm

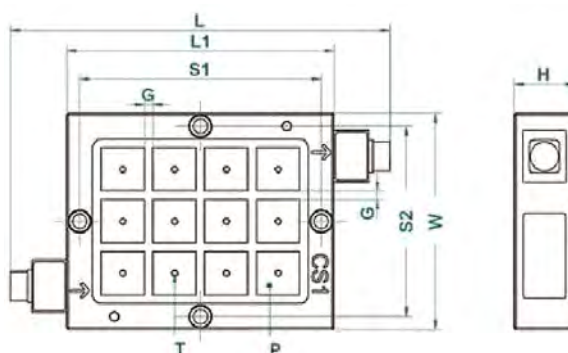
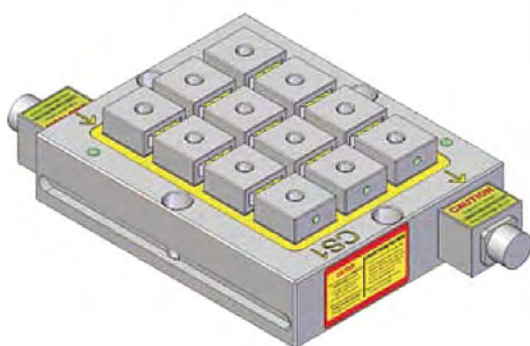
| TYPE | VOLTAGE<br>(Single Phase) | DIMENSION |     |     | CONNECTION AVAILABLE                                                   |
|------|---------------------------|-----------|-----|-----|------------------------------------------------------------------------|
|      |                           | L         | W   | H   |                                                                        |
| C4C  | AC 380V<br>~ 440V         | 370       | 220 | 125 | 3~16 Chucks (CS1x 1-4pcs, CS2 x 1~4 pcs, CS3 x 1-4 pcs, CS4 x 1~4 pcs) |

### Standard Accessories: Induction soft block (TYPE - IB425 x 3PCS)



▲ TYPE-IB425

**Convenience and Accuracy :** The induction blocks screwed on the magnetic chuck are replaceable and consumable accessories. You can fine grinding the surface or form induction blocks according to the requirements of workpiece by the machine directly. The parallelism of induction blocks can be 100% fitted with the machine, and the 5-sided machining can be easily conducted.



53101063 SERIES

UNIT: mm

| TYPE | VOLTAGE<br>(Single Phase) | W   | L   | DIMENSION |    |    | H  | T  | PITCH<br>(G) | POLE<br>(P) | NO.OF<br>POLE | HOLDING<br>POWER | CHUCK<br>N.W. |
|------|---------------------------|-----|-----|-----------|----|----|----|----|--------------|-------------|---------------|------------------|---------------|
| CS1  | DC 380V<br>~ 440V         | 250 | 425 | L1        | S1 | S2 | 60 | M8 | 10           | 50 x 50     | 12            | 3800 kgf<br>±5%  | 44.0 kgs      |
| CS2  |                           |     |     |           |    |    |    |    |              |             |               |                  |               |
| CS3  |                           |     |     |           |    |    |    |    |              |             |               |                  |               |
| CS4  |                           |     |     |           |    |    |    |    |              |             |               |                  |               |

### Chuck Connection Cable (4 types for options):



MODEL NO. TYPE-CC03: 300 mm; TYPE-CC05: 500 mm; TYPE-CC10: 1000 mm; TYPE-CC15: 1500 mm.