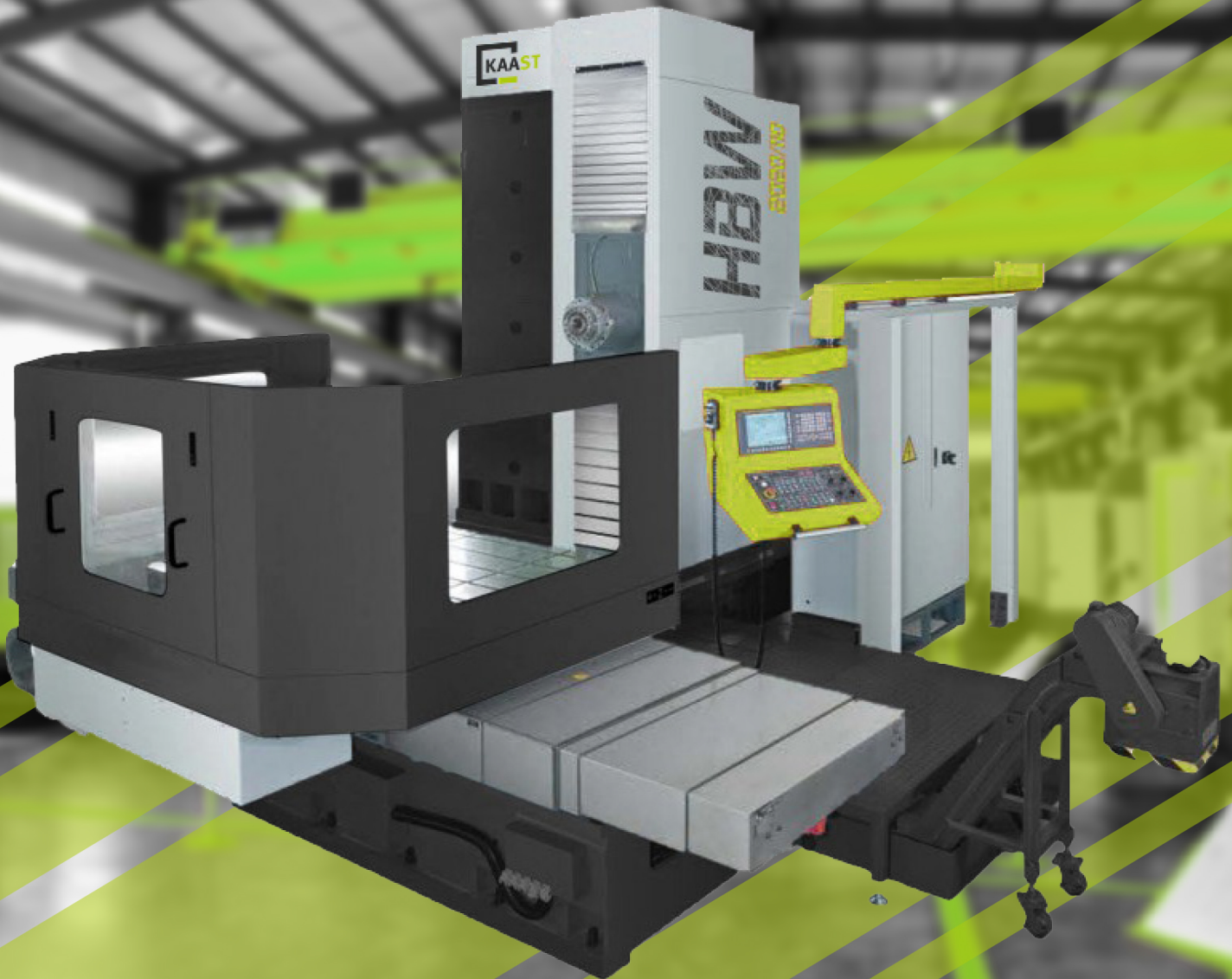


# TECHNICAL DATASHEET

**HBW-FC · HBW · HBW-F · HFW · FBH Series**

*CNC HORIZONTAL BORING & MILLING MACHINES*





## FIXED COLUMN WITH B-AXIS

CNC HORIZONTAL BORING & MILLING MACHINE

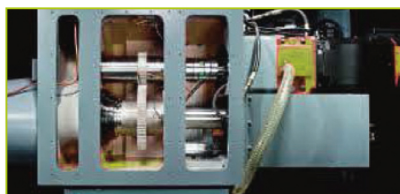
- Fixed column construction
- Spindle is driven by a gearbox
- 0.001° indexing rotary table
- Linear scales on X, Y, Z-axis
- 40 tools chain type magazine
- FANUC OiMD CNC control.



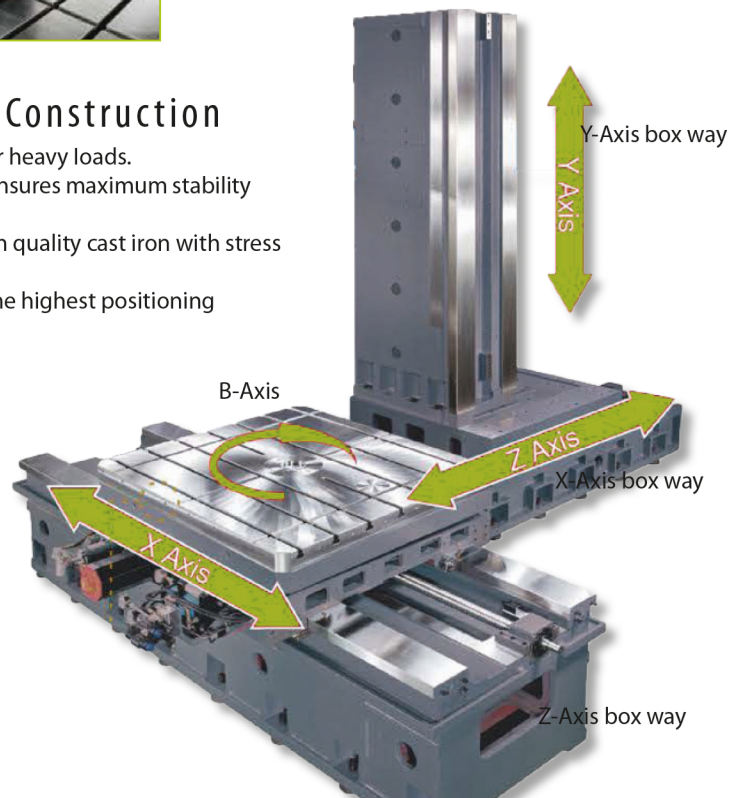
Minimum deflection of spindle extension (W-axis)

## Maximize Stability with Rugged Construction

- Massive base construction provides a solid support for heavy loads.
- Heavy column supports the spindle head firmly and ensures maximum stability when performing heavy cutting.
- The entire structural parts are manufactured from high quality cast iron with stress relief for deformation-free performance
- X, Y, Z-axes are equipped with linear scales to assure the highest positioning accuracy
- Box ways on X and Y-axis.
- 4-linear guide way on Z-axis.



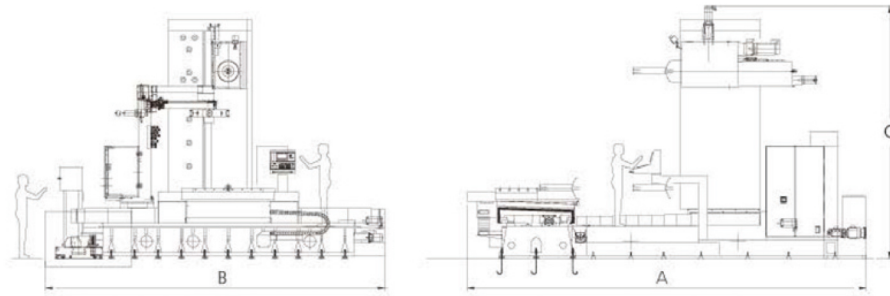
- FANUC A15/7000 with GERMAN ZF gear box 1:8 gear ratio



\*Specifications above are subject to change without notice, no liability for printing errors. The machine can be shown with optional equipment.

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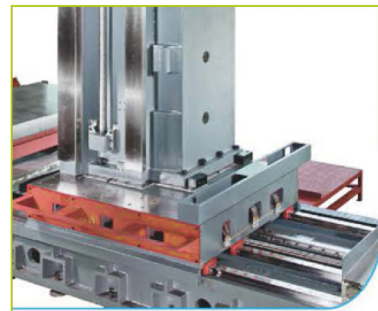


| Dimensions | (A) Length | (B) Width | (C) Height |
|------------|------------|-----------|------------|
| 2017/110   | 6200       | 4700      | 4200       |



### Four Linear Ways on Base (Z-axis)

- The table moves on four heavy duty roller type linear ways, which help to optimize moving rigidity and maintain constant accuracy



### 0.001° Indexing Rotary Table

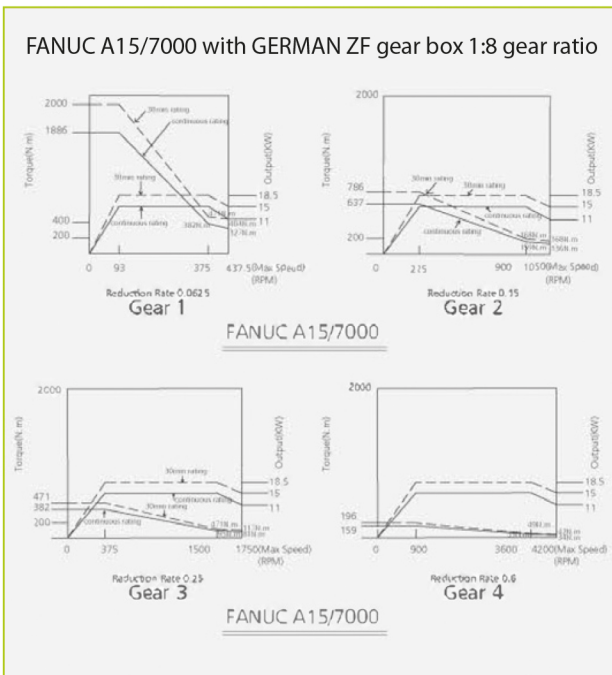
- The direct drive rotary table measures 1.250 x 1.250 mm
- 0.001° indexing accuracy
- Automatic positioning at every 90°

### Standard configuration:

- ✓ Linear scales on X, Y, Z axes
- ✓ Spindle oil cooler
- ✓ Automatic power off
- ✓ Hydraulic system
- ✓ Coolant system
- ✓ Lubricator system
- ✓ Alarm lamp
- ✓ Work lamp
- ✓ M.P.G.
- ✓ RS232 interface
- ✓ Heat exchanger
- ✓ Chip conveyor and cart
- ✓ Leveling bolts & pads
- ✓ Controller manuals and circuit diagram
- ✓ Operation manuals
- ✓ Machine inspection lists
- ✓ Splash guards (around the table)
- ✓ Toolbox with spanners & wrenches
- ✓ FANUC OiMD
- ✓ ATC: 40 Tools

### Options:

- ATC: 60 Tools
- Oil mist device
- Variety of controllers (FANUC / MELDAS / SIEMENS / HEIDENHAIN / SELCA)
- Various auxiliary work tables are available
- Air conditioner in cabinet
- Extension sleeve (250 mm / 300 mm)
- Coolant through spindle
- Indexing table 1200x1200x360D (with X-Axis linear guide way)



| Technical specifications            |     | HBW-FC 2017/110          |
|-------------------------------------|-----|--------------------------|
| <b>Table</b>                        |     |                          |
| Table size                          | mm  | 1250x1250x0.001°         |
| T-slots                             | mm  | 22x7                     |
| Max. load                           | kg  | 5000                     |
| <b>Travel</b>                       |     |                          |
| X-axis                              | mm  | 2000                     |
| Y-axis                              | mm  | 1700                     |
| Z-axis                              | mm  | 1400                     |
| W-axis                              | mm  | 400 (500)                |
| <b>Spindle</b>                      |     |                          |
| Diameter                            | mm  | Ø 110                    |
| Speed                               | rpm | 10-2500                  |
| Taper                               |     | 7/24 taper ISO 50, BT-50 |
| <b>Distances</b>                    |     |                          |
| Spindle center to table             | mm  | 0-1700                   |
| Spindle nose to table center        | mm  | 60-1860 (0-1820)         |
| Height from ground to table surface | mm  | 1280                     |
| <b>Motor</b>                        |     |                          |
| Spindle motor const./30 min.        | kW  | 15/18.5 (22/26)          |
| X / Y / Z / W / B Axial motor       | kW  | 7/7/7/4/7                |
| <b>Others</b>                       |     |                          |
| Coolant tank volume                 | L   | 400                      |
| Power Requirement                   | kva | 45                       |
| Weight                              | kg  | 26000                    |

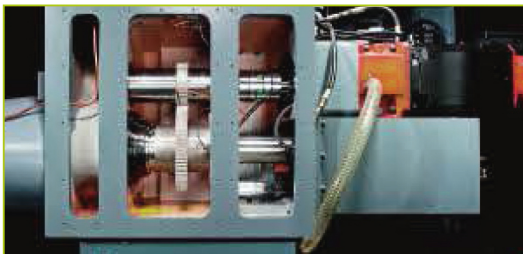
\*Specifications above are subject to change without notice, no liability for printing errors. The machine can be shown with optional equipment.

## Z-AXIS TRAVEL COLUMN WITH B-AXIS CNC HORIZONTAL BORING & MILLING MACHINE

- Traveling column construction
- Spindle is driven by a gearbox
- 0.001° indexing rotary table
- Linear scales on X, Y, Z-axis
- 40 tools chain type magazine
- FANUC OiMD CNC control



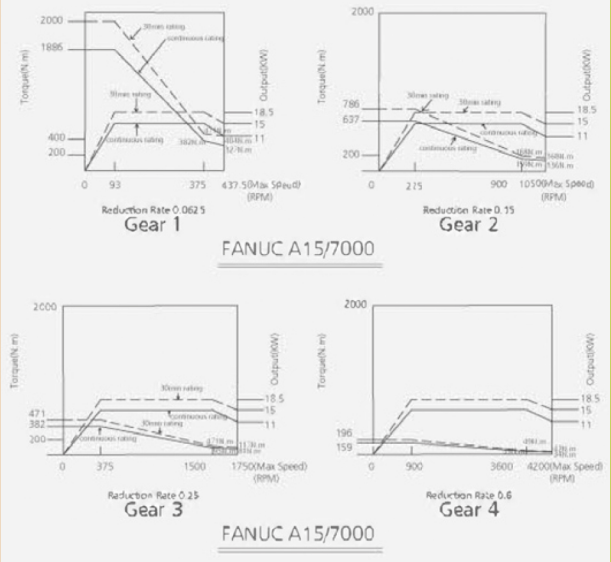
Minimum deflection of spindle extension (W-axis)



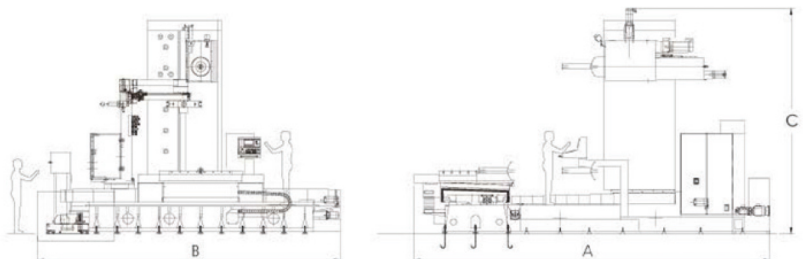
- HBW xxxx/110 - FANUC A15 / 7000 with TAIWAN-made gear box 1:10 gear ratio
- HBW xxxx/130 - FANUC A15 / 7000 with GERMAN ZF gear box 1:16 gear ratio

HBW xxxx/110 - FANUC A15 / 7000 with TAIWAN made gear box 1:10 gear ratio

HBW xxxx/130 - FANUC A15 / 7000 with GERMAN ZF gear box 1:16 gear ratio



| Dimensions | (A) Length | (B) Width | (C) Height |
|------------|------------|-----------|------------|
| 2020/110   | 7200       | 6100      | 4500       |
| 2520/110   | 7200       | 6600      | 4500       |
| 3220/110   | 7200       | 7300      | 4500       |
| 4220/110   | 7200       | 8300      | 4500       |
| 3225/130   | 8500       | 7800      | 5500       |
| 4225/130   | 8500       | 9000      | 5500       |



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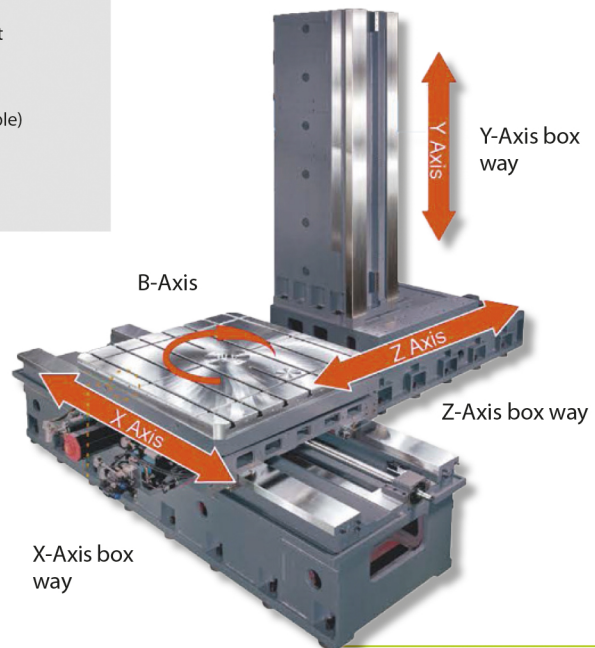


### Standard configuration:

- ✓ Linear scales on X, Y, Z axes
- ✓ Spindle oil cooler
- ✓ Automatic power off
- ✓ Hydraulic system
- ✓ Coolant system
- ✓ Lubricator system
- ✓ Alarm lamp
- ✓ Work lamp
- ✓ M.P.G.
- ✓ RS232 interface
- ✓ Heat exchanger
- ✓ Chip conveyor and cart
- ✓ Leveling bolts & pads
- ✓ Controller manuals and circuit diagram
- ✓ Operation manuals
- ✓ Machine inspection lists
- ✓ Splash guards (around the table)
- ✓ Toolbox with spanners & wrenches
- ✓ FANUC OiMD
- ✓ ATC: 40 Tools

### Standard configuration:

- ✓ FANUC Oi-MF controller
- ✓ ATC: 40 Tools
- ✓ Linear scales on X, Y, Z axes
- ✓ Spindle oil cooler
- ✓ Automatic power off
- ✓ Hydraulic system
- ✓ Coolant system
- ✓ Autom. lubrication system
- ✓ Alarm lamp
- ✓ Work lamp
- ✓ M.P.G.
- ✓ RS232 interface
- ✓ Heat exchanger
- ✓ Chip conveyor and chart
- ✓ Leveling bolts & pads
- ✓ Controller manuals and circuit diagram
- ✓ Operation manuals
- ✓ Machine inspection lists
- ✓ Splash guards (around the table)
- ✓ Toolbox with spanners & wrenches

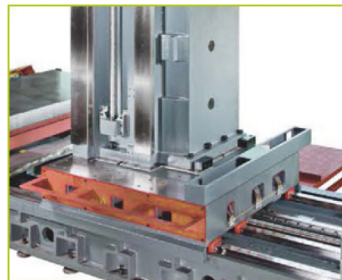


Z-Axis 3-MRD 65 Schneeberger  
Roller Type Linear Guide Way



### Column Moves on Three Linear Ways (Z-axis)

- Three heavy duty roller type linear ways are mounted on the column sideways (Z-axis), which improve positioning accuracy due to reduced stick slip and low coefficient of friction



### Traveling Column

- The box type column is a rugged construction in combination with internal rib reinforcement to dampen vibration, while ensuring machining accuracy

### Options:

- ATC: 60 Tools
- Oil mist device
- Variety of controllers (FANUC / MELDAS / SIEMENS / HEIDENHAIN / SELCA)
- Various auxiliary work tables are available
- Air conditioner in cabinet
- Extension sleeve (260mm / 300mm / 500mm)
- Coolant through spindle
- Various work tables available  
HBW xxxx/110: 1800 x 1600  
HBW xxxx/130: 2200 x 2000,  
2400 x 2200
- Manual 90° angular milling head
- Facing head

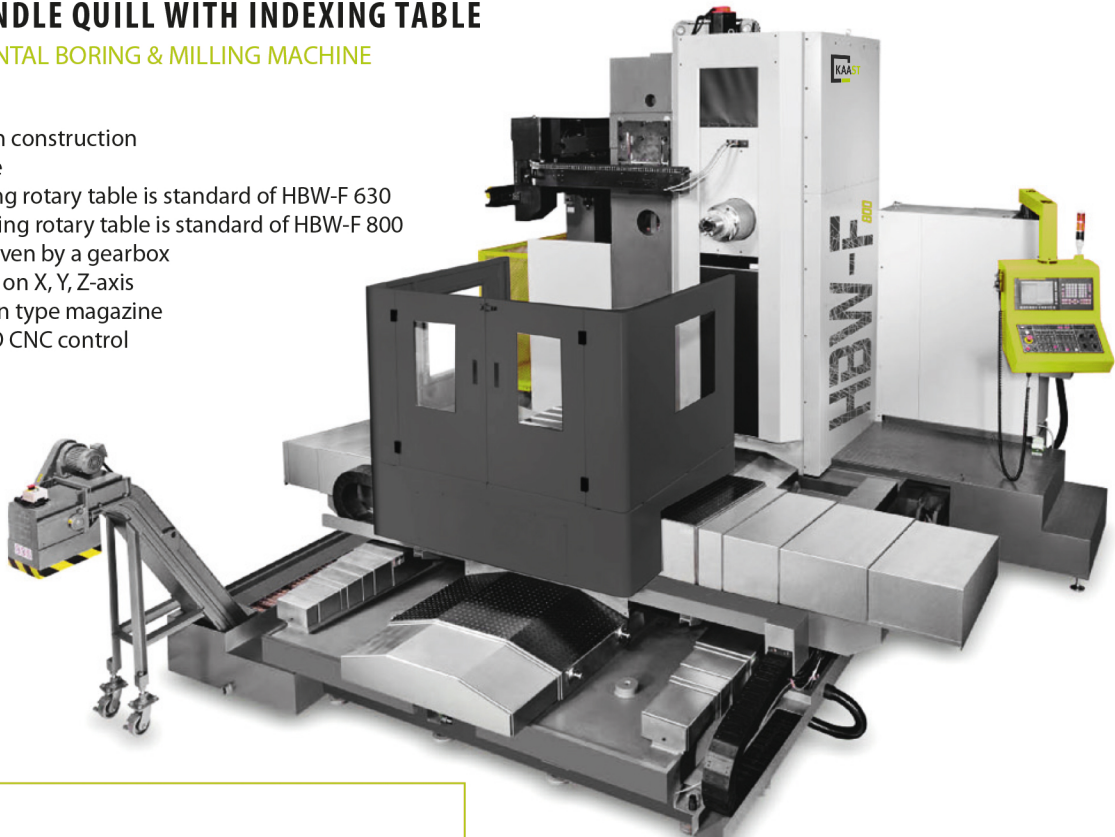
| Technical specifications            |     | 2020/110                  | 2520/110       | 3220/110       | 4220/110       | 3225/130                  | 4225/130       | 5230/130         |
|-------------------------------------|-----|---------------------------|----------------|----------------|----------------|---------------------------|----------------|------------------|
| <b>Table</b>                        |     |                           |                |                |                |                           |                |                  |
| Table size                          | mm  | 1600x1400x0.001°          |                |                |                | 2000x1800x0.001°          |                | 2200x2500x0.001° |
| T-slots                             | mm  | 24x7                      |                |                |                | 28x9                      |                | 28x11            |
| Max. load                           | kg  | 8000                      |                |                |                | 15.000 (20.000)           |                | 30.000           |
| <b>Travel</b>                       |     |                           |                |                |                |                           |                |                  |
| X-axis                              | mm  | 2000                      | 2500           | 3200           | 4200           | 3200                      | 4200           | 5200             |
| Y-axis                              | mm  | 2000 (2500)               |                |                |                | (2000) 2500 (3000)        |                | 3000             |
| Z-axis                              | mm  | 1700                      |                |                |                | 2000                      |                | 2500             |
| W-axis                              | mm  | 550                       |                |                |                | 700 (900)                 |                | 900              |
| <b>Spindle</b>                      |     |                           |                |                |                |                           |                |                  |
| Diameter                            | mm  | Ø 110                     |                |                |                | Ø 130                     |                |                  |
| Speed                               | rpm | 10-2500                   |                |                |                | 10-2000                   |                |                  |
| Taper                               |     | 7/24 taper, ISO 50, BT-50 |                |                |                | 7/24 taper, ISO 50, BT-50 |                |                  |
| <b>Distances</b>                    |     |                           |                |                |                |                           |                |                  |
| Spindle center to table             | mm  | 0-2000 (2500)             |                |                |                | (0-2000) 0-2500 (0-3000)  |                |                  |
| Spindle nose to table center        | mm  | 0-2250                    |                |                |                | 50-2750                   |                | -50-2850         |
| Height from ground to table surface | mm  | 1225                      |                |                |                | 1420                      |                | 1520             |
| <b>Motor</b>                        |     |                           |                |                |                |                           |                |                  |
| Spindle motor const./30 min.        | kW  | 15/18.5 (22/26)           |                |                |                | 15/18.5                   |                | 22/26            |
| X / Y / Z / W / B Axial motor       | kW  | 7/7/7/4/7                 |                |                |                | 9/7/9/4/7                 |                | 9/7/9/4/9        |
| <b>Others</b>                       |     |                           |                |                |                |                           |                |                  |
| Coolant tank volume                 | L   | 400                       |                |                |                |                           |                |                  |
| Power Requirement                   | kva | 55                        |                |                |                | 55                        |                | 65               |
| Item-No.                            |     | <b>2630011</b>            | <b>2630012</b> | <b>2630013</b> | <b>2630014</b> | <b>2630028</b>            | <b>2630015</b> | <b>2630016</b>   |

\*Specifications above are subject to change without notice, no liability for printing errors. The machine can be shown with optional equipment.

## FIXED SPINDLE QUILL WITH INDEXING TABLE

### CNC HORIZONTAL BORING & MILLING MACHINE

- Fixed column construction
- Fixed spindle
- 5°/72 indexing rotary table is standard of HBW-F 630
- 1°/360 indexing rotary table is standard of HBW-F 800
- Spindle is driven by a gearbox
- Linear scales on X, Y, Z-axis
- 40 tools chain type magazine
- FANUC OiMD CNC control



#### Options:

- ATC: 60 Tools
- Oil mist device
- Variety of controllers (FANUC / MELDAS / SIEMENS / HEIDENHAIN / SELCA)
- Various auxiliary work tables are available
- Air conditioner in cabinet
- Coolant through spindle
- Various work tables are available
  - For model HBW-F 630 (700 x 700, 700 x 900)
  - For model HBW-F 800 (800 x 1000, 1000 x 1000)
- Indexing table 0.001° (For model HBW-F 630)
- Oil-feed holder
- Spindle nose extended 50 mm

#### Standard configuration:

- ✓ Linear scales on X, Y, Z axes
- ✓ Spindle oil cooler
- ✓ Automatic power off
- ✓ Hydraulic system
- ✓ Coolant system
- ✓ Lubricator system
- ✓ Alarm lamp
- ✓ Work lamp
- ✓ M.P.G.
- ✓ RS232 interface
- ✓ Heat exchanger
- ✓ Chip conveyor and cart
- ✓ Leveling bolts & pads
- ✓ Controller manuals and circuit diagram
- ✓ Operation manuals
- ✓ Machine inspection lists
- ✓ Splash guards (around the table)
- ✓ Toolbox with spanners & wrenches
- ✓ FANUC OiMD
- ✓ ATC: 40 Tools



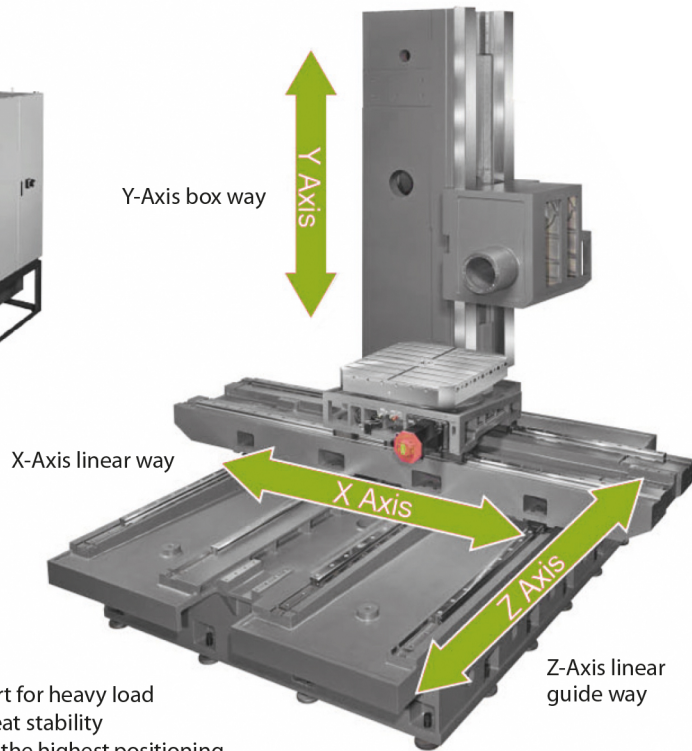
FANUC A12 / 7000 with GERMAN ZF gear box 1:4 gear ratio



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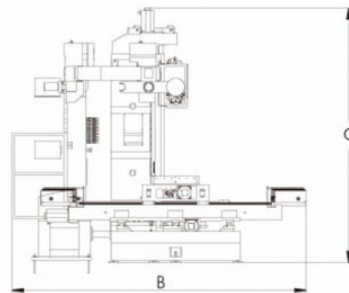
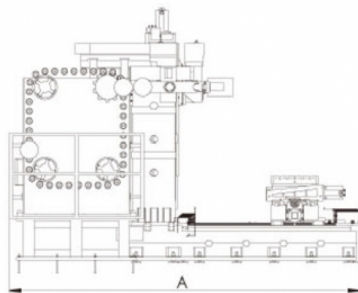
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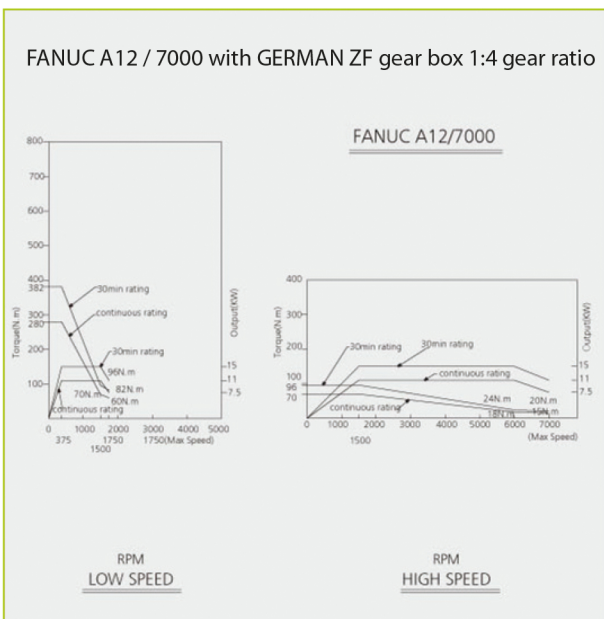


## Heavy Duty Construction Helps to Boost Stability

- Linear guide way on X, Z-axis
- Four linear ways on the base provide stable support for heavy load
- Box ways on Y-axis allow for heavy cutting with great stability
- X, Y, Z-axes are equipped with linear scales to assure the highest positioning accuracy



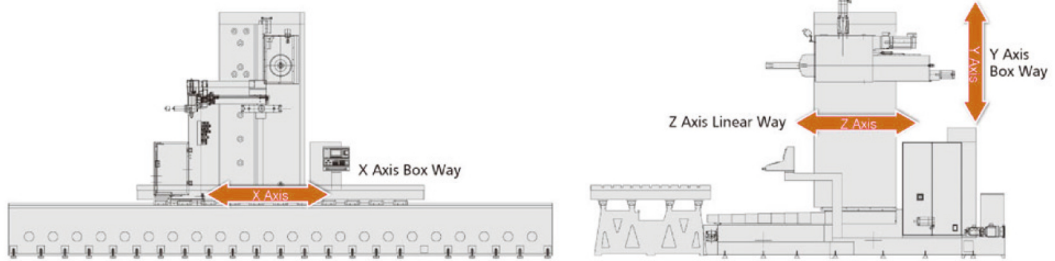
| Dimensions | (A) Length | (B) Width | (C) Height |
|------------|------------|-----------|------------|
| 630        | 6100       | 4400      | 3500       |
| 800        | 6200       | 4700      | 3900       |



| Technical specifications            | HBW-F 630                | HBW-F 800       |
|-------------------------------------|--------------------------|-----------------|
| <b>Table</b>                        |                          |                 |
| Table size                          | mm 630x630               | 800x800         |
| T-slots                             | mm 20x5                  | 22x7            |
| Max. load                           | kg 1500                  | 2500            |
| Indexing degree                     | mm 5°/72 (1°/360)        | 1°/360          |
| <b>Travel</b>                       |                          |                 |
| X axis                              | mm 1500 (1600)           | 2000            |
| Y axis                              | mm 1200                  | 1400 (1700)     |
| Z axis                              | mm 1000 (1100)           | 1400 (1600)     |
| <b>Spindle</b>                      |                          |                 |
| Speed                               | rpm 4000 (6000)          |                 |
| Taper                               | 7/24 taper ISO.50, BT-50 |                 |
| <b>Distances</b>                    |                          |                 |
| Spindle center to table             | mm 0-1200                | 0-1400 (1700)   |
| Spindle nose to table center        | mm 225-1225 (1325)       | 220-1620 (1820) |
| Height from ground to table surface | mm 1110                  | 1325            |
| <b>Motor</b>                        |                          |                 |
| Spindle motor const./30 min.        | kW 11/15                 | 11/15           |
| X/Y/Z/B axia motor                  | kW 3/3/4/3               | 4/4/4/3         |
| <b>Others</b>                       |                          |                 |
| Coolant tank volume                 | L 300                    | 400             |
| Power Requirement                   | kva 30                   | 45              |
| Weight                              | 11.000                   | 14.500          |

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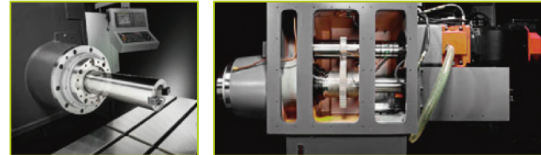
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## Z-AXIS TRAVEL COLUMN / LONG TABLE

### CNC HORIZONTAL BORING & MILLING MACHINE

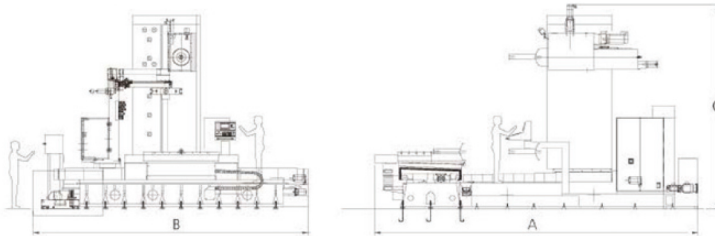
- Traveling column construction
- Extra long table
- Choice of various table sizes
- Spindle is driven by a gearbox
- Linear scales on X, Y, Z-axis
- 40 tools chain type magazine
- FANUC OiMD CNC control



Minimum deflection of spindle extension (W-axis)

HFW xxxx/110 - FANUC A15 / 7000 with TAIWAN-made gear box 1:10 gear ratio

HFW xxxx/130 - FANUC A15 / 7000 with GERMAN ZF gear box 1:16 gear ratio



#### Standard configuration:

- ✓ Linear scales on X, Y, Z axes
- ✓ Spindle oil cooler
- ✓ Automatic power off
- ✓ Hydraulic system
- ✓ Coolant system
- ✓ Lubricator system
- ✓ Alarm lamp
- ✓ Work lamp
- ✓ M.P.G.
- ✓ RS232 interface
- ✓ Heat exchanger
- ✓ Chip conveyor and cart
- ✓ Leveling bolts & pads
- ✓ Controller manuals and circuit diagram
- ✓ Operation manuals
- ✓ Machine inspection lists
- ✓ Splash guards (around the table)
- ✓ Toolbox with spanners & wrenches
- ✓ FANUC OiMD
- ✓ ATC: 40 Tools

| Dimensions | (A) Length | (B) Width | (C) Height |
|------------|------------|-----------|------------|
| 2220/110   | 7200       | 5600      | 4500       |
| 3220/110   | 7200       | 7700      | 4500       |
| 4220/110   | 7200       | 10100     | 4500       |
| 5225/130   | 10000      | 13100     | 6000       |
| 6225/130   | 10000      | 16700     | 6000       |

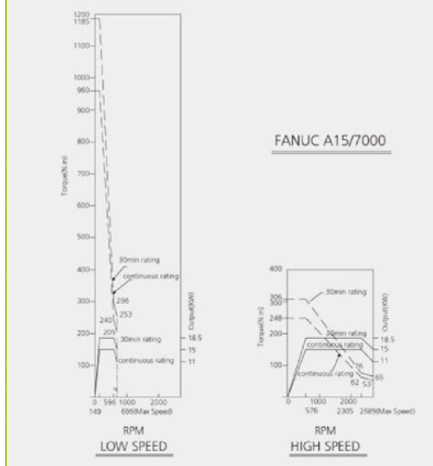
#### Options:

- ATC: 60 Tools
- Oil mist device
- Variety of controllers (FANUC / MELDAS / SIEMENS / HEIDENHAIN / SELCA)
- Various auxiliary work tables are available
- Air conditioner in cabinet
- Extension sleeve (250 mm / 300 mm)
- Coolant through spindle
- Manual 90° angular spindle
- Facing head

| Technical specifications            | HFW      |                      |               |           |                   |           |
|-------------------------------------|----------|----------------------|---------------|-----------|-------------------|-----------|
|                                     | 2220/110 | 3220/110             | 4220/110      | 5225/130  | 6225/130          |           |
| <b>Table</b>                        |          |                      |               |           |                   |           |
| Table size                          | mm       | 2000x1400            | 3000x1400     | 4000x1400 | 5000x2500         | 6000x2500 |
| T-slots                             | mm       |                      | 22            |           |                   | 28        |
| Max. load                           | kg       | 10000                | 12000         | 15000     | 30000             | 40000     |
| <b>Travel</b>                       |          |                      |               |           |                   |           |
| X-axis                              | mm       | 2200                 | 3200          | 4200      | 5200              | 6200      |
| Y-axis                              | mm       |                      | 2000 (2500)   |           | 2500 (3000)       |           |
| Z-axis                              | mm       |                      | 1700          |           | 2000              |           |
| W-axis                              | mm       |                      | 500           |           | 700 (900)         |           |
| <b>Spindle</b>                      |          |                      |               |           |                   |           |
| Diameter                            | mm       |                      | Ø 110         |           | Ø 130             |           |
| Speed                               | rpm      |                      | 10-2500       |           | 10-2000           |           |
| Taper                               |          | 7/24 taper ISO.BT-50 |               |           |                   |           |
| <b>Distances</b>                    |          |                      |               |           |                   |           |
| Spindle center to table             | mm       |                      | 0-2000 (2500) |           | 0-2500 (3000)     |           |
| Spindle nose to table center        | mm       |                      | 0-2250        |           | 200-2900 (0-2900) |           |
| Height from ground to table surface | mm       |                      | 1225          |           | 1420              |           |
| <b>Motor</b>                        |          |                      |               |           |                   |           |
| Spindle motor const./30 min.        | kW       |                      |               | 15/18.5   |                   |           |
| X / Y / Z / W / B Axial motor       | kW       |                      | 7/7/7/4/7     |           | 9/7/9/4/7         |           |
| <b>Others</b>                       |          |                      |               |           |                   |           |
| Coolant tank volume                 | L        |                      |               | 400       |                   |           |
| Power Requirement                   | kva      |                      |               | 55        |                   |           |

HFW xxxx/110 - FANUC A15 / 7000 with TAIWAN-made gear box 1:10 gear ratio

HFW xxxx/130 - FANUC A15 / 7000 with GERMAN ZF gear box 1:16 gear ratio

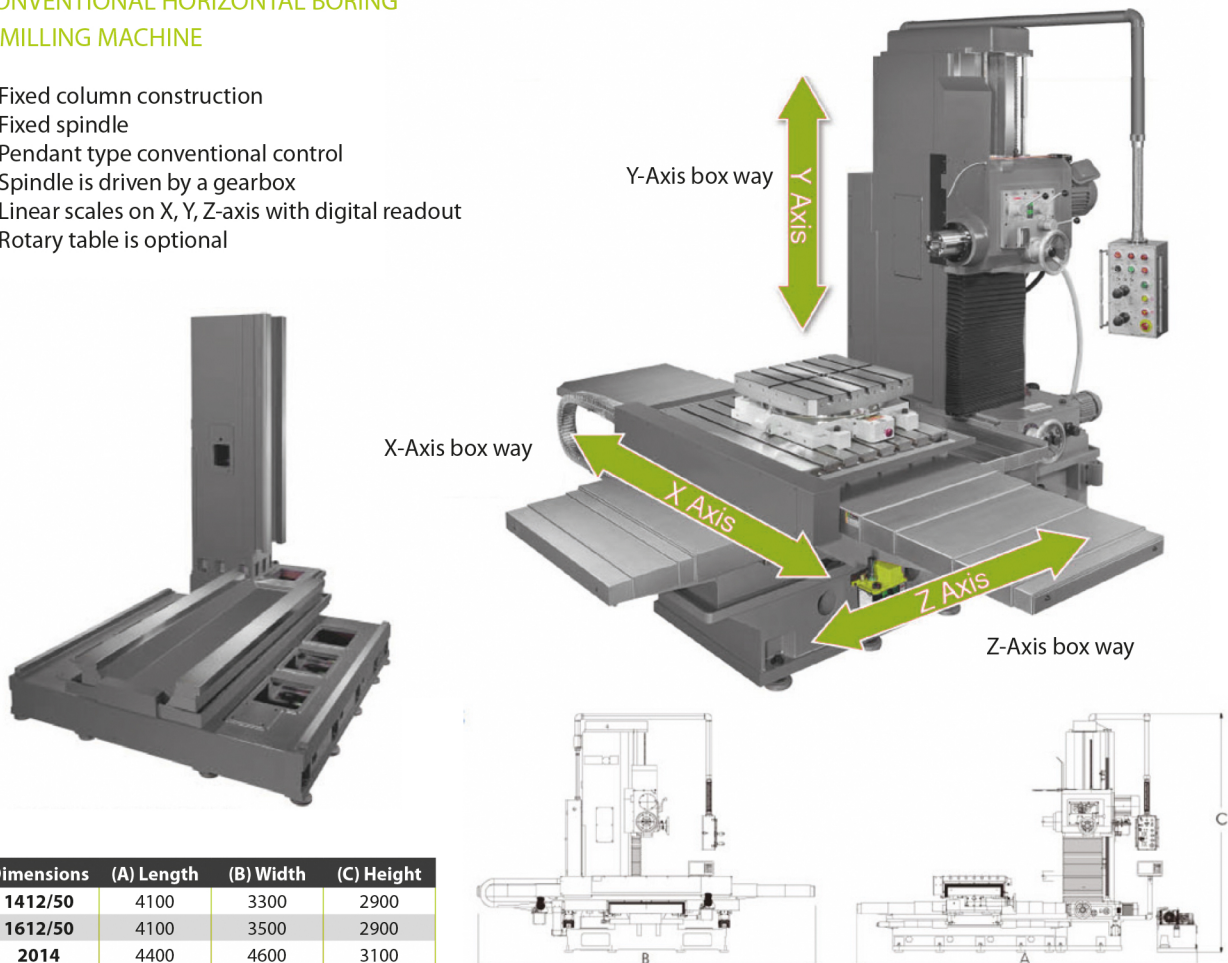


\*Specifications above are subject to change without notice, no liability for printing errors. The machine can be shown with optional equipment.



## CONVENTIONAL HORIZONTAL BORING & MILLING MACHINE

- Fixed column construction
- Fixed spindle
- Pendant type conventional control
- Spindle is driven by a gearbox
- Linear scales on X, Y, Z-axis with digital readout
- Rotary table is optional



| Dimensions | (A) Length | (B) Width | (C) Height |
|------------|------------|-----------|------------|
| 1412/50    | 4100       | 3300      | 2900       |
| 1612/50    | 4100       | 3500      | 2900       |
| 2014       | 4400       | 4600      | 3100       |

## Robust Structure Assures Outstanding Stability

- X, Y, Z-axis are box ways with large span between ways for increased rigidity and stability
- Box ways are hardened and coated with Turcite-B and precision scraped
- Linear scales on X, Y, Z-axis combined with display for high positioning accuracy
- All structural parts are ruggedly constructed with rib reinforcement for deformation-free performance

### Standard configuration:

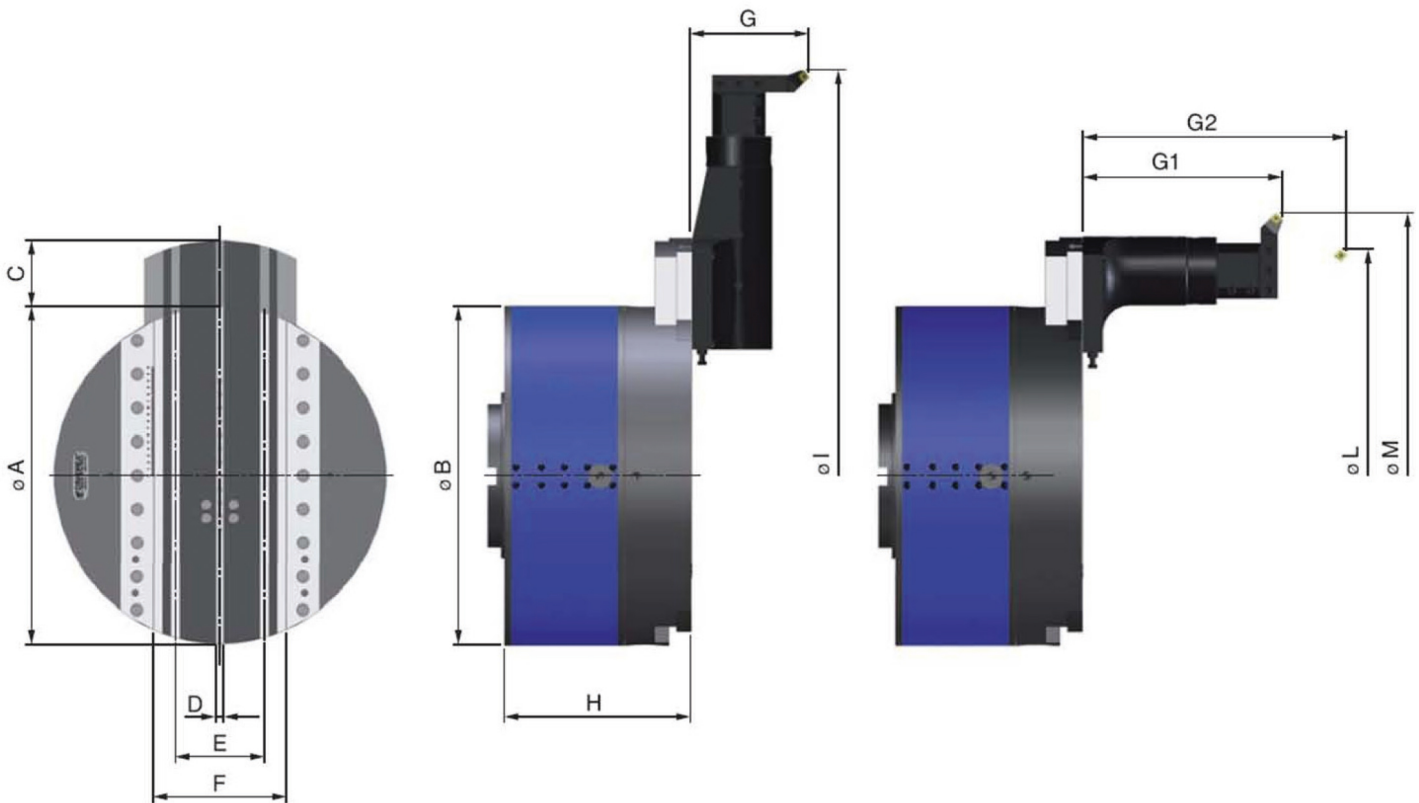
- ✓ Hydraulic pump
- ✓ Lubricator system (for 3 axes guide way)
- ✓ Adjusting tool kit
- ✓ Linear scales & display
- ✓ Air clamping device
- ✓ Tapping (with tapping head)

### Options:

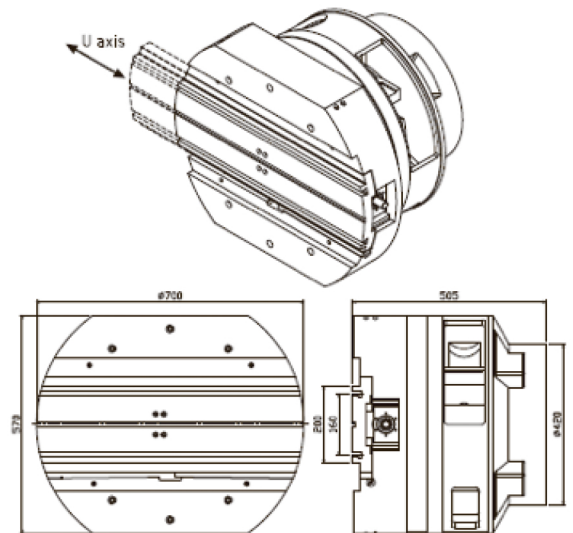
- Various rotary tables are available
  - 600 mm x 600 mm x 720
  - 600 mm x 600 mm x 3600
  - 700 mm x 700 mm x 720
  - 700 mm x 700 mm x 3600
  - 800 mm x 800 mm x 720
  - 800 mm x 800 mm x 3600

| Technical specifications            | FBH     |                           |                     |
|-------------------------------------|---------|---------------------------|---------------------|
|                                     | 1412/50 | 1612/50                   | 2014                |
| <b>Table</b>                        |         |                           |                     |
| Table size                          | mm      | 800x1100                  | 800x1400            |
| T-slots                             | mm      | 20x7                      |                     |
| Max. load                           | kg      | 1500                      | 2000                |
| <b>Travel</b>                       |         |                           |                     |
| X-axis                              | mm      | 1400                      | 1600                |
| Y-axis                              | mm      | 1200 (1400)               | 1400 (1700)         |
| Z-axis                              | mm      | 1000                      | 1200                |
| <b>Spindle</b>                      |         |                           |                     |
| Speed                               | rpm     | 45-1500                   |                     |
| Taper                               |         | NT-50 (BT-50)             |                     |
| <b>Distances</b>                    |         |                           |                     |
| Spindle center to table             | mm      | 0-1200 (0-1400)           | 0-1400 (1700)       |
| Spindle nose to table center        | mm      | 208-1208                  | 300-1500 (300-1700) |
| Height from ground to table surface | mm      | 926                       |                     |
| <b>Motor</b>                        |         |                           |                     |
| Spindle motor const./30 min.        | kW      | 5.5x4P (6P) / 7.5x4P (6P) | 7.5x4P (6P)         |
| X / Y / Z Axial motor               | kW      | 0.75                      |                     |
| <b>Others</b>                       |         |                           |                     |
| Power Requirement                   | kva     | 9                         |                     |
| Weight                              | kg      | 7500                      | 7500                |
|                                     |         |                           | 11500               |

\*Specifications above are subject to change without notice, no liability for printing errors. The machine can be shown with optional equipment.



| Face plate FH 700         |        |             |
|---------------------------|--------|-------------|
| $\varnothing A$           | mm     | 700         |
| $\varnothing B$           | mm     | 570         |
| C                         | mm     | 250         |
| D                         | mm     | 12x4.5      |
| E                         | mm     | 160         |
| F                         | mm     | 200         |
| H                         | mm     | 379         |
| $\varnothing l \times G$  | mm     | 1440x150    |
| $\varnothing L \times G2$ | mm     | 830x540     |
| $\varnothing M \times G1$ | mm     | 1300x2950   |
| Feed                      | mm/min | 1/500       |
| Radial force              | N      | 1000        |
| Max speed                 | rpm    | 180         |
| Torque                    | Nm     | 1000        |
| Weight                    | kg     | 600         |
| Boring accuracy           |        | H7          |
| Repeatability accuracy    | mm     | $\pm 0.005$ |
| Rapid traverse            | mm/min | 300         |



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