



# JH Series



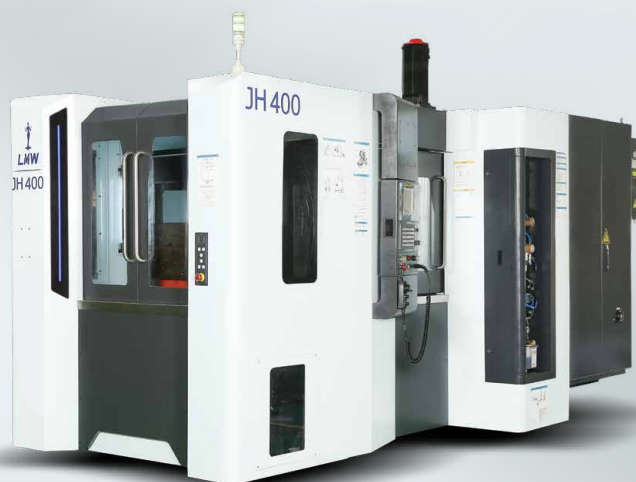
HORIZONTAL MACHINING CENTER

## JHM 40



## JH 400

NEW



## JH 500 / JH 550

NEW



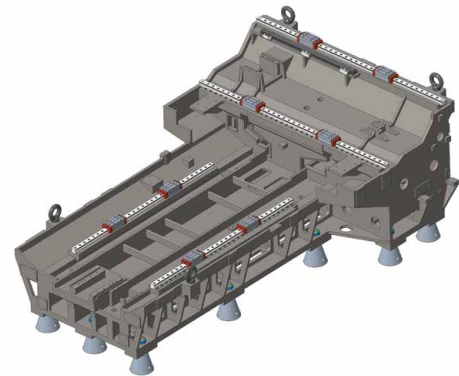
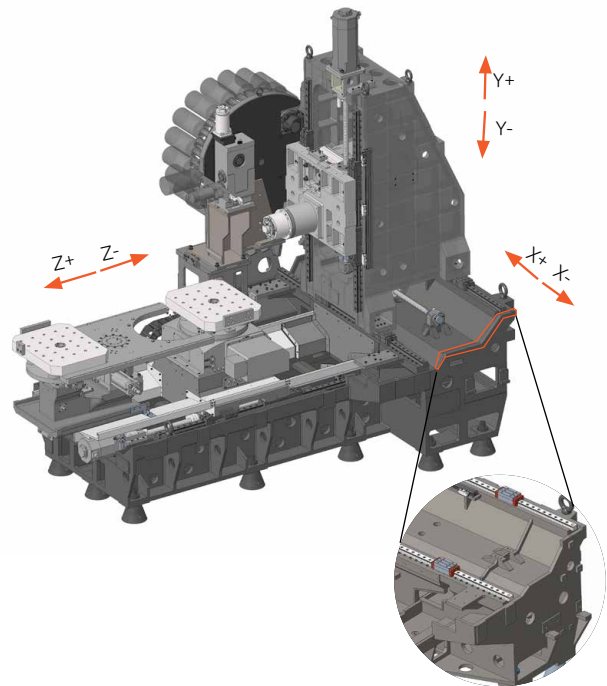
## JH SERIES

JH Series is equipped with everything required for machining of large and difficult to cut workpieces, such as high rigidity structure and superior cutting capabilities. The step up column structure is optimal for excellent production capabilities for machining various materials from steel to non-ferrous metal parts. JH Series is suitable for various industrial applications such as Automobile, Pump and Valves, industrial machinery, oil & Gas, railways and General Engineering etc...

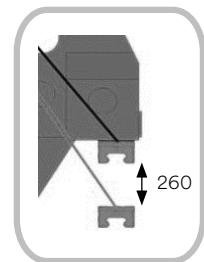
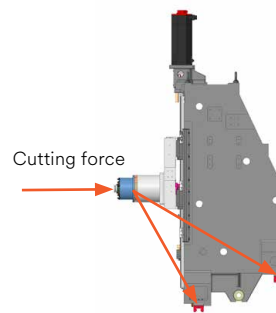
## MACHINE STRUCTURE

- Robust machine structure, every prime element like bed, column, table and spindle head are made of FG 300 grade cast iron and thoroughly stress relieved, imparting long lasting accuracy and vibration free machining.

| Model                         | JHM 40 | JH 400 | JH 500 | JH 550 |
|-------------------------------|--------|--------|--------|--------|
| Travel Distance X - axis (mm) | 500    | 600    | 800    | 800    |
| Travel Distance Y - axis (mm) | 500    | 600    | 800    | 800    |
| Travel Distance Z - axis (mm) | 500    | 640    | 800    | 850    |



- The entire structure passes through FEA analysis for an elaborate check to avoid possible distortions during heavy machining.
- Symmetrically designed structure for better thermal management.
- Single piece bed supports heavy duty cutting to increase rigidity.
- The optimized rib distribution of robust T-Shaped bed and column transfer and absorb vibration during machining to get an excellent machining surface.
- The step-up column structure provide high cutting capabilities and supports higher productivity



Step up Column for better rigidity

## SPINDLE

- Designed and manufactured in house in dust free and temperature-controlled environment to achieve high rigidity and consistency for better working life.
- High power/torque spindle enables heavy duty cutting from various materials from steel to non ferrous metal parts
- Rapid acceleration & deceleration results to minimize vibration and thermal error.
- Cartridge type design of spindle ensures ease of maintenance and replacement.

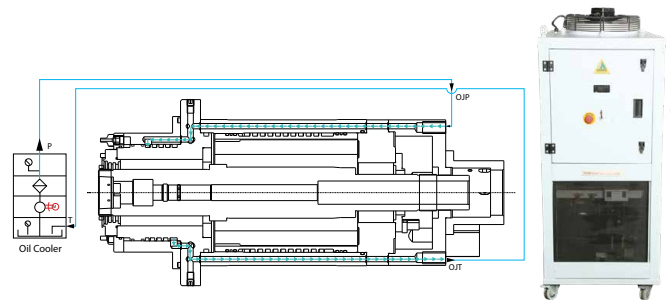


| Model              | JHM 40    | JH 400 / JH 500 |             |         | JH 550      |
|--------------------|-----------|-----------------|-------------|---------|-------------|
| Spindle Type       | BDS       | BDS             | DCS         | BMS     | BDS         |
| Max. Speed (rpm)   | 5000      | 6000            | 12000       | 15000   | 6000        |
| Spindle Motor (kW) | 11/15     | 13/22           | 22/26/35    | 15/18.5 | 22/26/30    |
| Output Torque (Nm) | 52.5/95.5 | 310/525         | 140/166/223 | 133/164 | 365/498/615 |

Note: Spindle speed ranges available from 5000rpm to 15000rpm

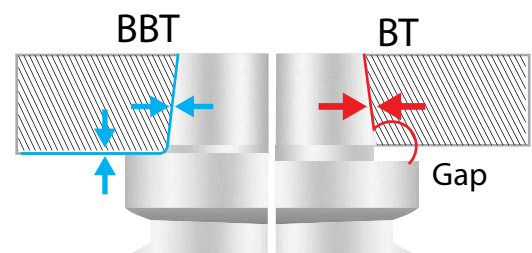
## SPINDLE COOLING SYSTEM

- For proper functioning and durability of the spindle, it is very essential to remove this excess heat. Advance Cooling chillers keep the spindle cool so as to control spindle and head growth.
- The oil is cooled down in the cooler before circulating around the spindle bearings and built in motor to minimize thermal error and deliver high precision cutting.



## DUAL FACE TOOL LOCKING SYSTEM

- The BBT dual contact spindle ensures the spindle taper and face maintain contact with the tool holder to better meet the need of heavy cutting.
- HSK spindle (option) provides dual contact between the taper and the spindle face, providing high rigidity and high speed.



## FEED AXIS

- All three axes are equipped with Roller type LM guideways and 3 row angular thrust bearings at both ends to improve structural reliability.
- Roller type LM guideways for better rigidity & sustained accuracies.
- High precision ball screws are pre-tensioned to counter deformation due to thermal expansion.
- Line contact with the guide surface for higher load carrying capacity >1000kg

| Model                                | JHM 40 | JH 400 | JH 500 | JH 550 |
|--------------------------------------|--------|--------|--------|--------|
| Rapid traverse rate<br>- X axis (mm) |        | 48     |        |        |
| Rapid traverse rate<br>- Y axis (mm) | 32     | 48     |        |        |
| Rapid traverse rate<br>- Z axis (mm) |        | 48     |        |        |

## AUTOMATIC TOOL CHANGER

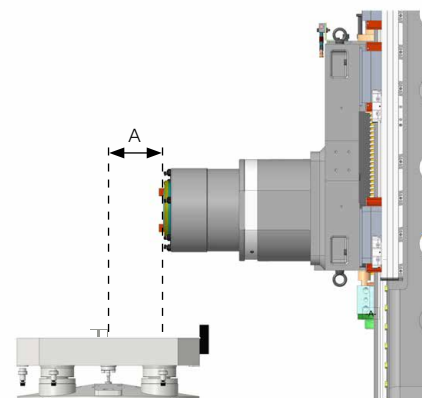
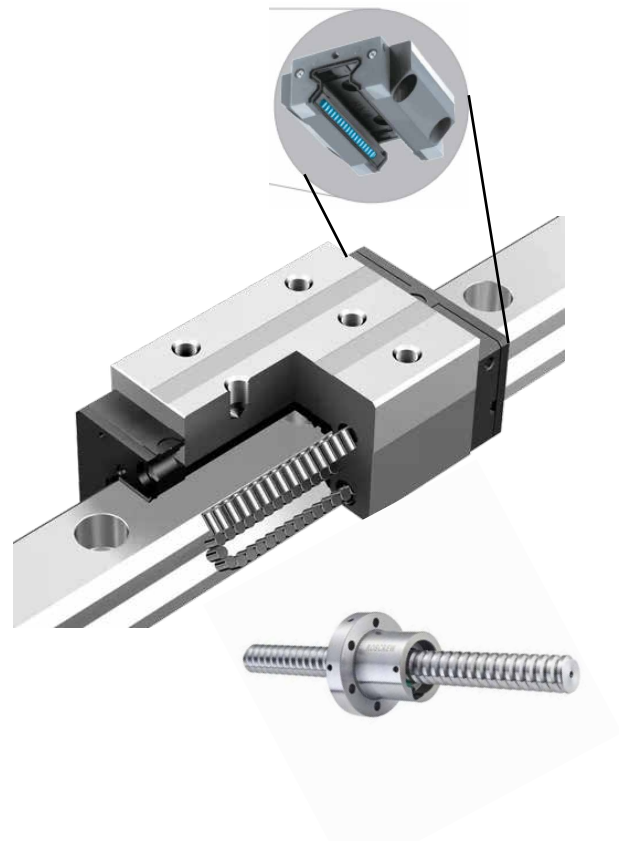
- The servo driven Twin Arm type ATC provides high stability and minimize non cutting time.
- The servo driven tool magazine with 40 tools can offered for larger capacity tool loading and unloading.
- High speed ATC for faster tool change can handle upto 30 kg.
- Rapid tool clamp and declamp arrangement

| Model                            | JHM 40 | JH 400 | JH 500 | JH 550 |
|----------------------------------|--------|--------|--------|--------|
| Tool Shank (Type)                | BT40   | BBT40  |        | BBT 50 |
| Tool Capacity (Nos.)             |        | 40     |        |        |
| Tool to Tool Change Time (Secs.) | 3      | 2.4    |        | 3.5    |

Note: 30, 60 & 72 tools are also available.

## Convenient Short tool cutting

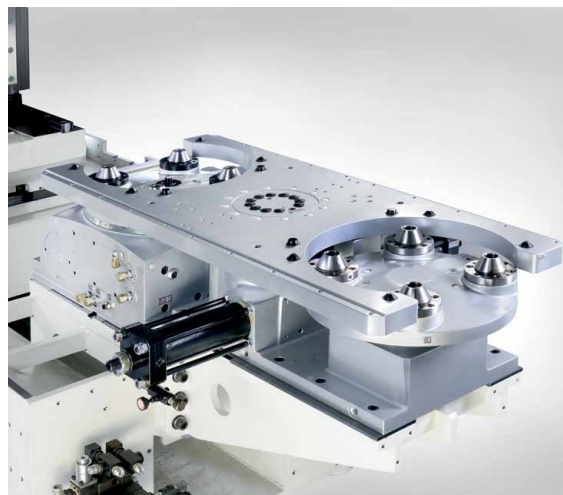
- The distance between the spindle and the center of the pallet has been reduced for heavier duty cutting with shorter tools.



## AUTOMATIC PALLET CHANGER

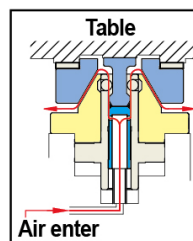
- Rotary type Servo driven Automatic Pallet Changer with fast and accurate pallet change irrespective of load.
- Enhanced chip removal system with air blast blower

| Model                      | JHM 40 | JH 400 | JH 500 | JH 550 |
|----------------------------|--------|--------|--------|--------|
| Pallet changing Time (sec) | 15     | 12     | 12     | 12     |



## Cone Air Blower / Air Clearing system

- During the pallet change cycle, strong air blasts from the taper cones on the machine table help to remove chips and provide clean surfaces for locating the pallet.
- This ensures high accuracy of pallet positioning and guarantees optimum rigidity.



- ▲ The function of cones :
- ① Precise positioning
  - ② Air blast for chip removal
  - ③ Airtight testing



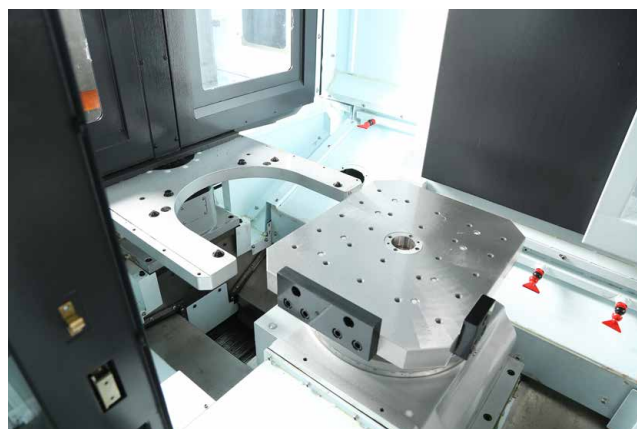
- ▲ Cones: Powerful hydraulic clamping

## TABLE

### B-AXIS ROTARY TABLE

- High precision positioning cones with hydraulic locking devices, generating superior clamping force to ensure the table stability during machining.
- Index table with 1deg x 360 division positioning with hirth coupling of +1 arc secs accuracy.

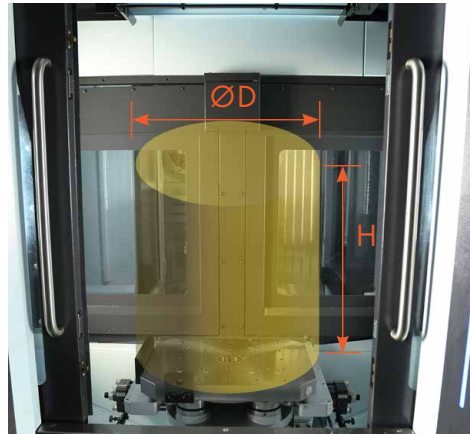
| Model                 | JHM 40 | JH 400 | JH 500 | JH 550 |
|-----------------------|--------|--------|--------|--------|
| Max. Table Load (kgs) | 400    | 400    | 500    | 500    |



## LARGE WORKPIECE MACHINING

JH Series provides more space for heavier and larger workpieces.

| Specification | JHM 40 | JH 400 | JH 500 | JH 550 |
|---------------|--------|--------|--------|--------|
| Depth (mm)    | Ø 600  | Ø 630  | Ø 800  | Ø 800  |
| Height (mm)   | 600    | 700    | 900    | 900    |



## CHIP MANAGEMENT

- Efficient chip disposal with chip conveyor inside the bed.
- Direct chip disposal from stocker side
- Oil skimmer to remove oil content by improve coolant life.
- CTS as option to increases the efficiency of chip disposal and extends the tool life by cooling of machining points.
- Ample shower wash facility to avoid chip accumulation 20/40/50 bar coolant thru pressure with drum and cyclone filtration system.



## COOLANT MANAGEMENT

A coolant filtration system is also recommended to avoid chip & dirt getting into the coolant passage of the spindle, for better finish, tool life and chip management.

| Model                        | JHM 40 | JH 400 | JH 500 | JH 550 |
|------------------------------|--------|--------|--------|--------|
| Coolant Tank capacity (Itrs) | 500    | 500    | 700    | 700    |



## USER CONVENIENCE

### Swivel-type Operator Panel

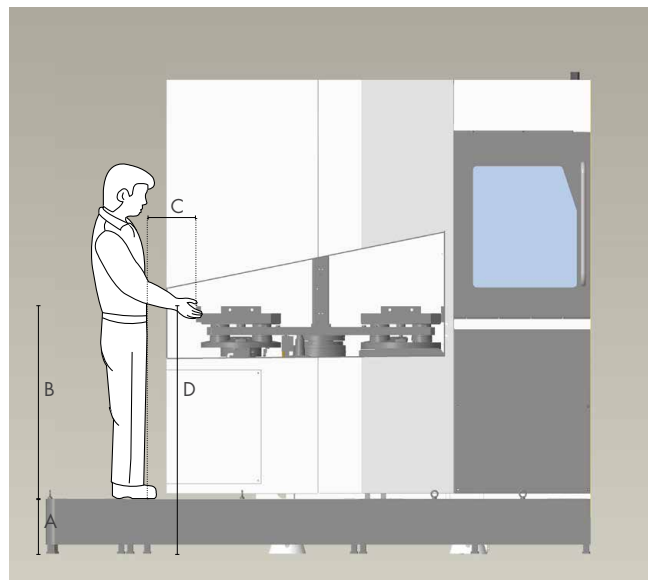
- The operator panel can swivel from 0° to 90° with six intermittent stop arrangement
- Improved access to the spindle and workpieces
- Display various alarm messages concerning machine and controller error, enhancing the operator's convenience.



### Setup station

- With the excellent access to the table and a wide door opening. Setup operations such as fixture adjustment can be done smoothly.

| Model  | JHM 40 | JH 400 | JH 500 | JH 550 |
|--------|--------|--------|--------|--------|
| A (mm) | -      | 275    | 200    | 480    |
| B (mm) | -      | 925    | 1095   | 780    |
| C (mm) | 510    | 370    | 280    | 530    |
| D (mm) | 1170   | 1200   | 1295   | 1320   |

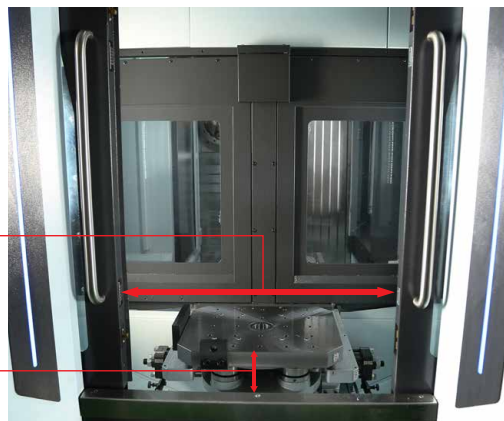


- The wide door panel opening provides convenient workpiece loading/unloading this improves the operator work life

| Model  | JHM 40 | JH 400 | JH 500 | JH 550 |
|--------|--------|--------|--------|--------|
| A (mm) | -      | 700    | 900    | 900    |
| B (mm) | -      | 25     | 55     | 55     |

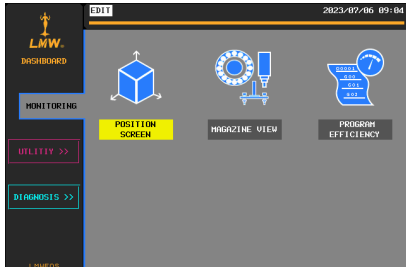
WIDER DOOR OPENING

SHORTER DISTANCE FROM DOOR TO TABLE



## EASY OPERATING SCREEN (LMW-EOS)

### DASHBOARD VIEW



Our Dashboard is classified into three categories mainly Monitoring, Utility and Diagnosis.

Monitoring - To know information for basic machine operation.

Utility - To explore the features for improve the machining and planning.

### CUSTOMIZED POSITION SCREEN



This screen helps end user to see the Machine Positions, Override, Spindle tool information, Spindle Speed & Feed rates

### QUICK MAGAZINE VIEW



Quick Magazine View screen helps customer to check the availability of tools in Magazine, spindle tool, waiting tool, and Big Tool & Fixed Tool details.

### TOOL DATA MANAGEMENT

| TOOL NO. | TOOL NAME | TOOL TYPE | TOOL STATUS | TOOL LOAD | TOOL OFFSET |
|----------|-----------|-----------|-------------|-----------|-------------|
| 01       | DRILL     | DRILL     | OK          | 0.00      | 0.00        |
| 02       | DRILL     | DRILL     | OK          | 0.00      | 0.00        |
| 03       | DRILL     | DRILL     | OK          | 0.00      | 0.00        |
| 04       | DRILL     | DRILL     | OK          | 0.00      | 0.00        |
| 05       | DRILL     | DRILL     | OK          | 0.00      | 0.00        |
| 06       | DRILL     | DRILL     | OK          | 0.00      | 0.00        |
| 07       | DRILL     | DRILL     | OK          | 0.00      | 0.00        |
| 08       | DRILL     | DRILL     | OK          | 0.00      | 0.00        |
| 09       | DRILL     | DRILL     | OK          | 0.00      | 0.00        |
| 10       | DRILL     | DRILL     | OK          | 0.00      | 0.00        |
| 11       | DRILL     | DRILL     | OK          | 0.00      | 0.00        |
| 12       | DRILL     | DRILL     | OK          | 0.00      | 0.00        |
| 13       | DRILL     | DRILL     | OK          | 0.00      | 0.00        |
| 14       | DRILL     | DRILL     | OK          | 0.00      | 0.00        |
| 15       | DRILL     | DRILL     | OK          | 0.00      | 0.00        |
| 16       | DRILL     | DRILL     | OK          | 0.00      | 0.00        |
| 17       | DRILL     | DRILL     | OK          | 0.00      | 0.00        |
| 18       | DRILL     | DRILL     | OK          | 0.00      | 0.00        |
| 19       | DRILL     | DRILL     | OK          | 0.00      | 0.00        |
| 20       | DRILL     | DRILL     | OK          | 0.00      | 0.00        |
| 21       | DRILL     | DRILL     | OK          | 0.00      | 0.00        |
| 22       | DRILL     | DRILL     | OK          | 0.00      | 0.00        |
| 23       | DRILL     | DRILL     | OK          | 0.00      | 0.00        |
| 24       | DRILL     | DRILL     | OK          | 0.00      | 0.00        |
| 25       | DRILL     | DRILL     | OK          | 0.00      | 0.00        |
| 26       | DRILL     | DRILL     | OK          | 0.00      | 0.00        |
| 27       | DRILL     | DRILL     | OK          | 0.00      | 0.00        |
| 28       | DRILL     | DRILL     | OK          | 0.00      | 0.00        |
| 29       | DRILL     | DRILL     | OK          | 0.00      | 0.00        |
| 30       | DRILL     | DRILL     | OK          | 0.00      | 0.00        |

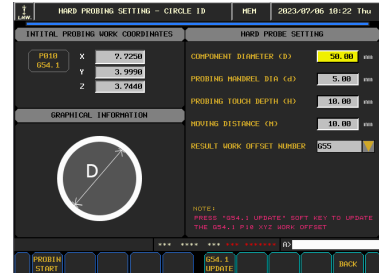
This screen displays tool data overview like Tool name & number / Pot number, Tool type (Big tool / Fixed tool), Spindle tool status, Load setting for each tool.

### INTELLIGENT FEED CONTROL



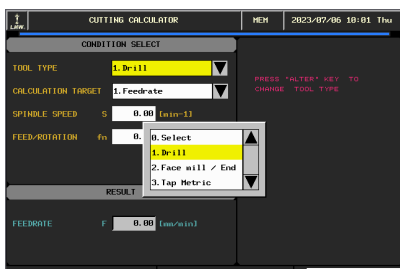
Controlling feed-rate in roughing depending upon spindle load and temperature to achieve a good balance between cycle time reduction and overheat.

### HARD PROBING



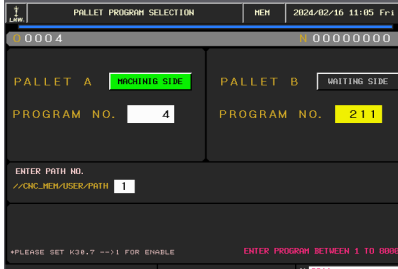
Hard probing is a process which is used to measure the centre of inner and outer wall of circle and rectangle by using rigid tool without probe

### CUTTING CALCULATOR



This screen helps operator to identify the Material removal rate and power consumption details by providing cutting speed, Depth of cut, Feed/ Tooth and Spindle cutting resistance details

### PALLET PROGRAM SELECTION



This screen helps CNC to automatically change the Pallet program based on the pallet confirmation signal without requiring a cycle start signal, and it also provides an alarm when the wrong program is selected

### MAINTENANCE DISPLAY



Maintenance display check the Feedback signal status easily in single screen navigation and reduces Diagnosis & Maintenance Time by end user.

## SPECIFICATIONS

| TITLE                           | DESCRIPTION                              |                                                      | UNIT         | JHM 40             | JH 400             | JH 500             | JH 550             |
|---------------------------------|------------------------------------------|------------------------------------------------------|--------------|--------------------|--------------------|--------------------|--------------------|
| Capacity                        | X axis                                   |                                                      | mm           | 500                | 600                | 800                | 800                |
|                                 | Y axis                                   |                                                      | mm           | 500                | 600                | 800                | 800                |
|                                 | Z axis                                   |                                                      | mm           | 500                | 640                | 800                | 850                |
|                                 | Spindle center to pallet top             |                                                      | mm           | 100-600            | 80-680             | 100-900            | 100-900            |
|                                 | Spindle nose to pallet center            |                                                      | mm           | 100-600            | 100-740            | 100-900            | 100-950            |
|                                 | Max. Work piece diameter                 |                                                      | mm           | 600                | 630                | 800                | 800                |
|                                 | Max. Work piece length                   |                                                      | mm           | 600                | 700                | 900                | 900                |
| Pallet                          | Pallet size                              |                                                      | mm           | 400 × 400          | 400 × 500          | 500 × 630          | 500 × 630          |
|                                 | No. of Pallets                           |                                                      | nos.         | 2                  |                    |                    |                    |
|                                 | Pallet change                            |                                                      | type         | Rotary             |                    |                    |                    |
|                                 | Maximum indexing angle                   |                                                      | deg          | 1°                 |                    |                    |                    |
|                                 | Pallet change time                       |                                                      | sec.         | 15                 | 12                 | 12                 | 12                 |
|                                 | Max. load on pallet (Each)               |                                                      | kgs          | 400                | 400                | 500                | 500                |
| Spindle                         | Spindle bore taper                       |                                                      | type         | BT 40              | BBT40              |                    | BBT 50             |
|                                 | BDS                                      | Spindle speed                                        | rpm          | 5000               | 6000               |                    | 6000               |
|                                 |                                          | Motor power (Cont./S2 15 min S3 25% S3 15%)          | kW           | 11/15              | 13/22              |                    | 22/26/30           |
|                                 |                                          | Max. Spindle Torque (Cont. / S2 15min S3 25%/S3 15%) | Nm           | 52.5/95.5          | 310/525            |                    | 365/498/615        |
|                                 | DCS                                      | Spindle speed                                        | rpm          | -                  | 12000              |                    | -                  |
|                                 |                                          | Motor power (Cont./S2 15 min S3 25% S3 15%)          | kW           | -                  | 22/26/35           |                    | -                  |
|                                 |                                          | Max. Spindle Torque (Cont. / S2 15min S3 25%/S3 15%) | Nm           | -                  | 140/166/223        |                    | -                  |
|                                 | BMS                                      | Spindle speed                                        | rpm          | -                  | 15000              |                    | -                  |
|                                 |                                          | Motor power (Cont./S2 15 min S3 25% S3 15%)          | kW           | -                  | 15/18.5            |                    | -                  |
|                                 |                                          | Max. Spindle Torque (Cont. / S2 15min S3 25%/S3 15%) | Nm           | -                  | 133/164            |                    | -                  |
|                                 | Feed                                     | Cutting feed rate                                    |              | m/min.             | 10                 |                    | 20                 |
| Rapid traverse rate – X / Z / Y |                                          | m/min.                                               | 48 / 32 / 48 | 48/48/48           |                    |                    |                    |
| Dia. x Pitch of ball screw      |                                          | mm                                                   | Ø40 × 16     |                    |                    | Ø50 × 16           |                    |
| Guideways on all axes           |                                          | Type                                                 | Roller LM    |                    |                    |                    |                    |
| Automatic Tool Changer          | No. of tools in ATC                      |                                                      | nos.         | 40                 |                    |                    |                    |
|                                 | Tool shank configuration                 |                                                      | type         | BT-40              | BBT-40             |                    | BBT 50             |
|                                 | Max. tool diameter with adjacent tool    |                                                      | mm           | Ø75                |                    |                    | Ø125               |
|                                 | Max. tool diameter without adjacent tool |                                                      |              | Ø140               |                    |                    | Ø315               |
|                                 | Max. tool length                         |                                                      | mm           | 300                |                    |                    | 500                |
|                                 | Max. tool weight                         |                                                      | kgs          | 7                  | 8                  |                    | 30                 |
|                                 | Tool change time (tool to tool)          |                                                      | sec.         | 3                  | 2.4                |                    | 3.5                |
|                                 | CNC System                               | Controller                                           |              | –                  | Fanuc              |                    |                    |
| Machine size                    | Front x Side x Height                    |                                                      | mm           | 2800 × 5800 x 2730 | 3200 × 5450 × 2935 | 2850 × 5610 x 3440 | 3300 × 6300 x 3600 |
|                                 | Weight                                   |                                                      | kgs          | 9000               | 10000              | 12000              | 13000              |

\*May vary depending upon make and model.

## STANDARD / OPTIONAL ACCESSORIES

● Standard ○ Optional X Not applicable

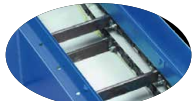
| S.NO | DESCRIPTION          | FEATURES                                                       | JHM 40                 | JH 400 | JH 500 | JH 550 |
|------|----------------------|----------------------------------------------------------------|------------------------|--------|--------|--------|
| 1.   | Tool Shank           | BBT40                                                          | ●                      | ●      | ●      | X      |
|      |                      | BBT50                                                          | X                      | X      | X      | ●      |
|      |                      | HSK                                                            | ○                      | ○      | ○      | ○      |
| 2.   | Tool Magazine        | 30 Tools                                                       | ○                      | ○      | ○      | ○      |
|      |                      | 40 Tools                                                       | ●                      | ●      | ●      | ○      |
|      |                      | 60 Tools                                                       | ○                      | ○      | ○      | ●      |
|      |                      | 72 Tools                                                       | ○                      | ○      | ○      | ○      |
| 3.   | Spindle Speed        | 5000 r/min                                                     | ●                      | X      | X      | X      |
|      |                      | 6000 r/min                                                     | ○                      | ●      | ●      | ●      |
|      |                      | 10000 r/min                                                    | ○                      | ○      | ○      | ○      |
|      |                      | 15000 r/min                                                    | ○                      | ○      | ○      | ○      |
| 4.   | Table type           | Index Table (360 × 1° division)                                | ●                      | ●      | ●      | ●      |
|      |                      | Rotary Table (360 × 0.001° division)                           | ○                      | ○      | ○      | ○      |
| 5.   | Pallet Type          | Tapped Holes                                                   | ●                      | ●      | ○      | ○      |
|      |                      | T-Slot                                                         | ○                      | ○      | ●      | ●      |
| 6.   | Pallet Changer       | Automatic Pallet Changer                                       | ●                      | ●      | ●      | ●      |
|      |                      | Loading Pallet rotation (4×90°)                                | ●                      | ●      | ●      | ●      |
| 7.   | Drive                | Fanuc 0i-MF+ System - Type 3                                   | ●                      | ●      | ●      | ●      |
| 8.   | Display Screen       | 10.4" Color LCD Display                                        | ●                      | ●      | ●      | ●      |
|      |                      | 15" Color LCD Display                                          | ○                      | ○      | ○      | ○      |
| 9.   | Air                  | Air Curtain for Main Spindle                                   | ●                      | ●      | ●      | ●      |
|      |                      | Air Compressor                                                 | ○                      | ○      | ○      | ○      |
|      |                      | Air Gun                                                        | ○                      | ○      | ○      | ○      |
| 10.  | Lubrication          | Automatic Centralized lubrication - Oil                        | ●                      | ●      | ●      | ●      |
|      |                      | Automatic Centralized lubrication - Grease                     | ○                      | ○      | ○      | ○      |
| 11.  | Coolant              | Coolant Tank                                                   | ●                      | ●      | ●      | ●      |
|      |                      | Ring Around Coolant                                            | 4 bar                  | ●      | ●      | ●      |
|      |                      | Coolant Thru Spindle                                           | 20 bar                 | ○      | ○      | ○      |
|      |                      |                                                                | 30 bar                 | ○      | ○      | ○      |
|      |                      |                                                                | 50 bar                 | ○      | ○      | ○      |
|      |                      | Bed Wash                                                       | ●                      | ●      | ●      | ●      |
|      |                      | Coolant Gun                                                    | ○                      | ○      | ○      | ○      |
|      |                      | Coolant Shower                                                 | ○                      | ○      | ○      | ○      |
|      |                      | Coolant Filtration System                                      | ○                      | ○      | ○      | ○      |
|      |                      | Oil Skimmer                                                    | ●                      | ●      | ●      | ●      |
|      |                      | Paper Band Cum Magnetic Coolant Filtration                     | ○                      | ○      | ○      | ○      |
| 12.  | Chip Handling System | Chip Conveyor                                                  | Hinger Steel Belt Type | ○      | ○      | ○      |
|      |                      |                                                                | Scraper Type           | ○      | ○      | ○      |
|      |                      |                                                                | Drum Filter type       | ○      | ○      | ○      |
|      |                      |                                                                |                        | ○      | ○      | ○      |
| 13.  | Machine Color        | MTD Grey & MTD Off White                                       |                        | ●      | ●      | ●      |
|      |                      | Special Machine Color                                          |                        | ○      | ○      | ○      |
| 14.  | Fixture              | Hydraulic Port For Fixture On Both Pallet (8 ports per pallet) |                        | ○      | ○      | ○      |
| 15.  | MPG                  | Hand Held Manual Pulse Generator                               |                        | ○      | ○      | ○      |
| 16.  | Others               | Pull Stud-40 Nos.                                              |                        | ●      | ●      | ●      |
|      |                      | Roller LM Guides                                               |                        | ●      | ●      | ●      |
|      |                      | Swivel Type Operator Panel                                     |                        | ●      | ●      | ●      |
|      |                      | Linear Measuring Scale ( X, Y, & Z Axes)                       |                        | ○      | ○      | ○      |
|      |                      | Spindle & Axis Motor Flange Cooling Unit                       |                        | ○      | ○      | ○      |
|      |                      | Safety Precaution Stickers                                     |                        | ●      | ●      | ●      |
|      |                      | Machine Lamp -LED                                              |                        | ●      | ●      | ●      |
|      |                      | Safety Interlock For Doors                                     |                        | ●      | ●      | ●      |
|      |                      | Pitch Error Compensation                                       |                        | ●      | ●      | ●      |
|      |                      | Auto power OFF                                                 |                        | ●      | ●      | ●      |
|      |                      | Graphics display                                               |                        | ●      | ●      | ●      |
|      |                      | Rigid Tapping                                                  |                        | ●      | ●      | ●      |
|      |                      | USB Port Interface                                             |                        | ●      | ●      | ●      |
|      |                      | Absolute Encoders For Axes Motors                              |                        | ●      | ●      | ●      |
|      |                      | Electrical Circuit & Parameter list -1 Set                     |                        | ●      | ●      | ●      |
|      |                      | Tool life Monitoring On Screen                                 |                        | ●      | ●      | ●      |
|      |                      | Backlash Compensation                                          |                        | ●      | ●      | ●      |
|      |                      | Auto Tool Length Measuring (ATLM)                              |                        | ○      | ○      | ○      |
|      |                      | Auto Work Measurement (AMW)                                    |                        | ○      | ○      | ○      |
|      |                      | Flash Memory Card-2GB                                          |                        | ○      | ○      | ○      |
|      |                      | Voltage Stabilizer                                             |                        | ○      | ○      | ○      |
|      |                      | One Set of Service Tools                                       |                        | ●      | ●      | ●      |

\*May vary depending upon make and model.

## ACCESSORIES

### STANDARD & OPTIONAL ACCESSORIES

#### Chip Conveyor



Scrapper type



Hinge type



Drum Filter type



#### POT Type ATC



#### Lubrication Unit



#### Oil Cooler



#### Oil Skimmer



#### Mist collector



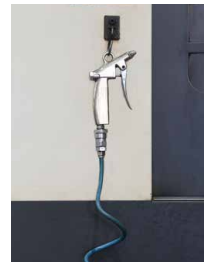
#### Index Table / Rotary Table



#### Inline Filtration unit



#### Air Gun



#### Coolant Management



Flushing Coolant



Flood Coolant



Shower Coolant



Ring around coolant



Spindle through coolant



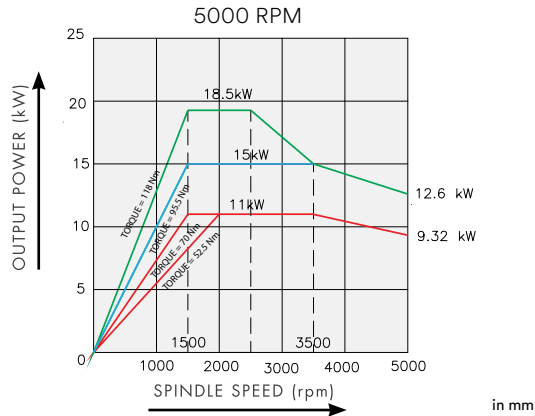
Coolant gun

\*Accessories shown may vary depending upon make and model.

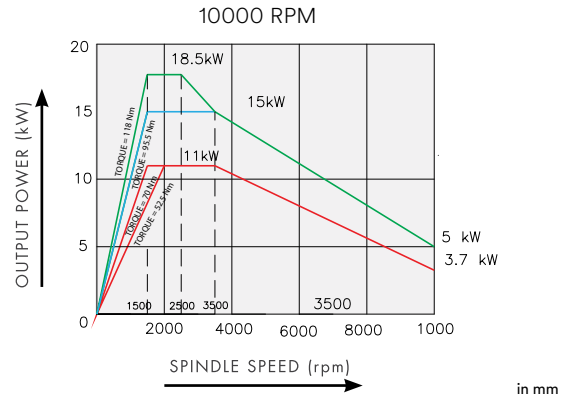
## SPEED POWER CURVE

### JHM 40

#### Belt Driven spindle

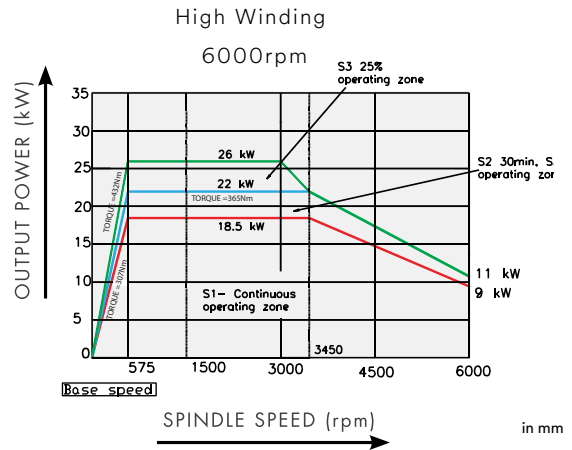
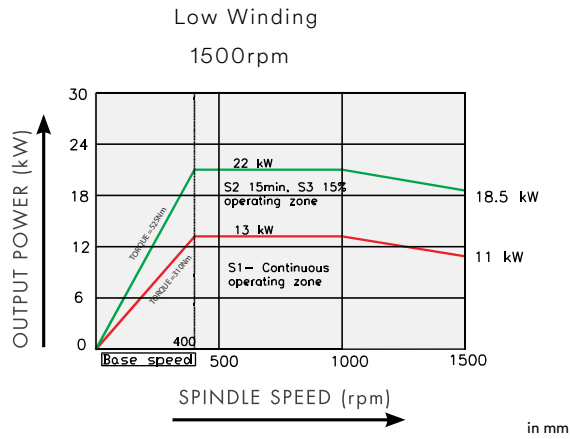


#### Direct Coupled spindle

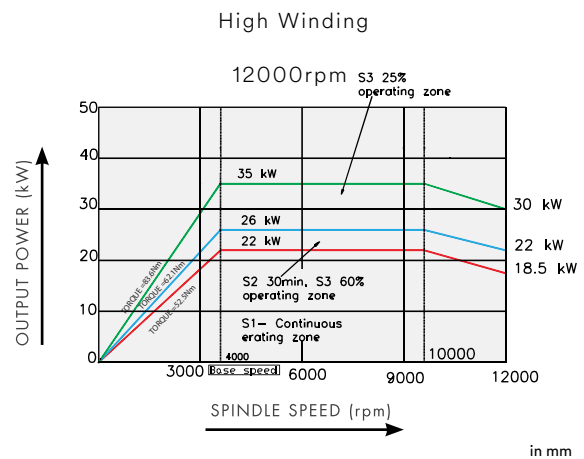
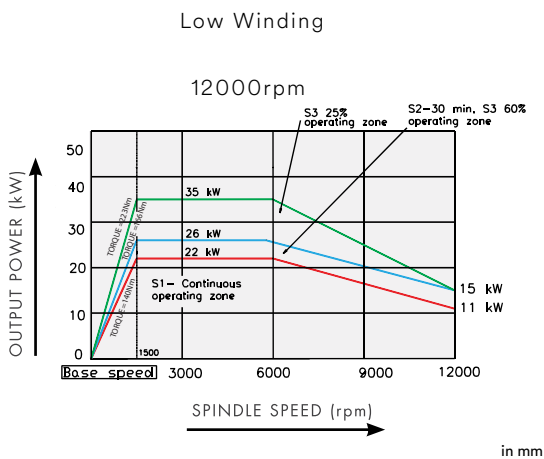


### JH 400 / JH 500

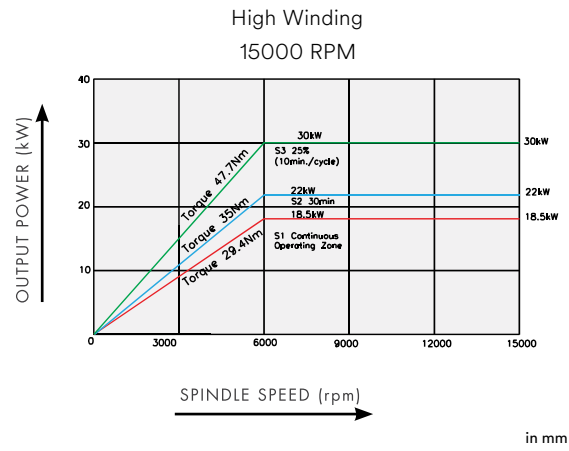
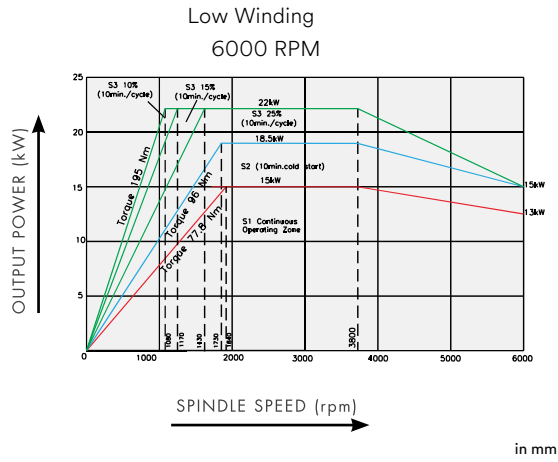
#### Belt Driven spindle



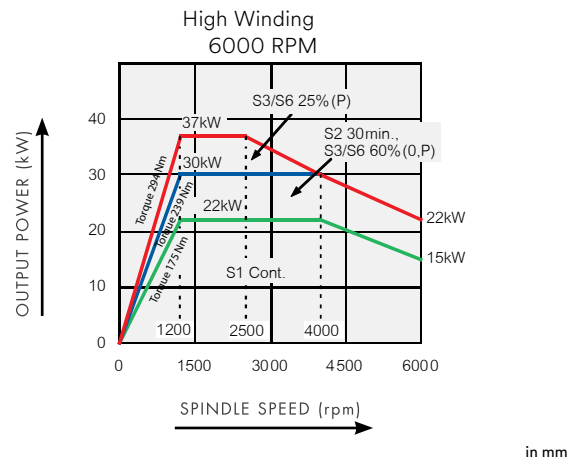
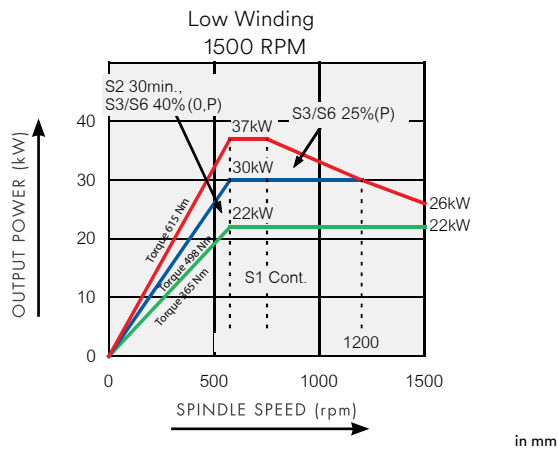
#### Direct Coupled spindle



## Built in Motor spindle

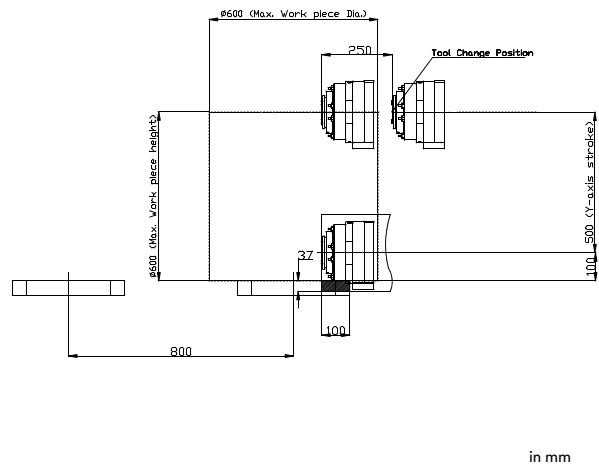
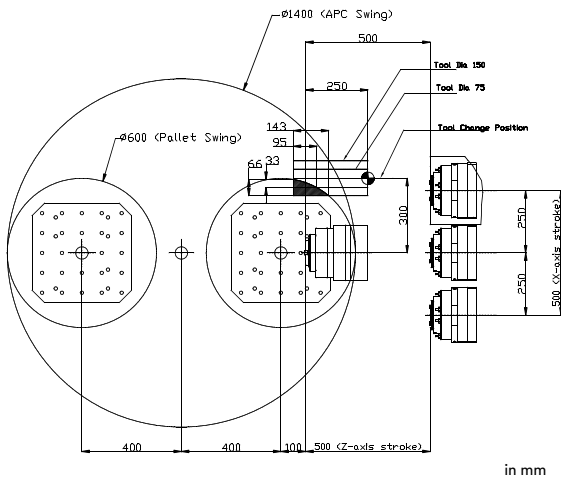


## JH 550 Belt Driven spindle

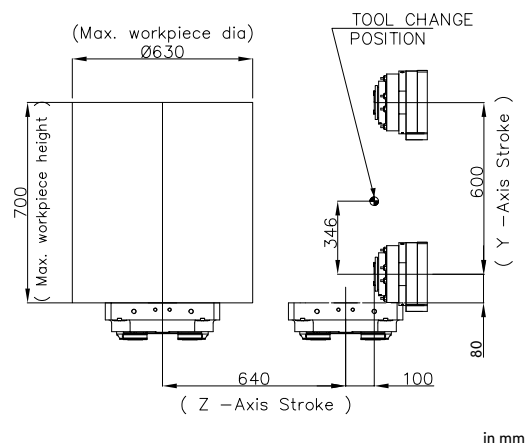
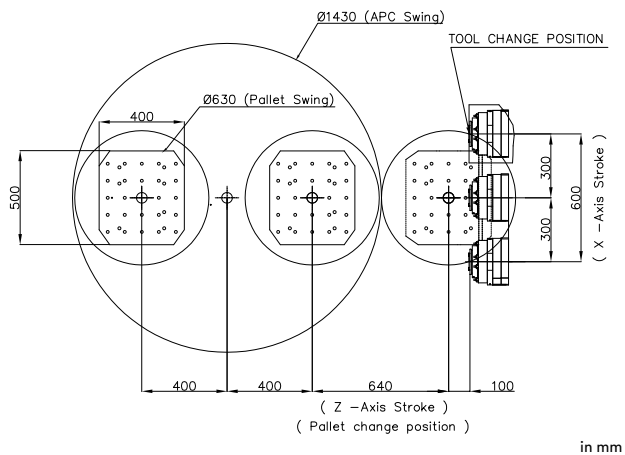


## MOVING RANGE

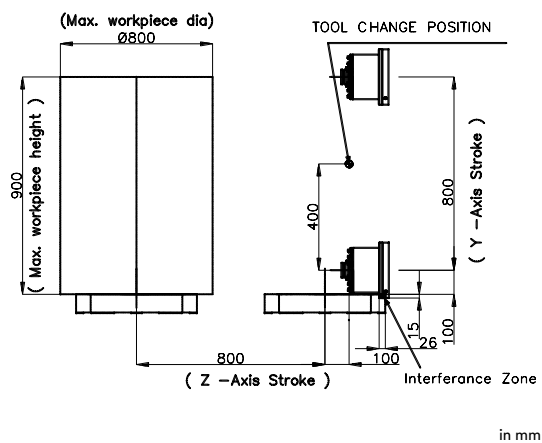
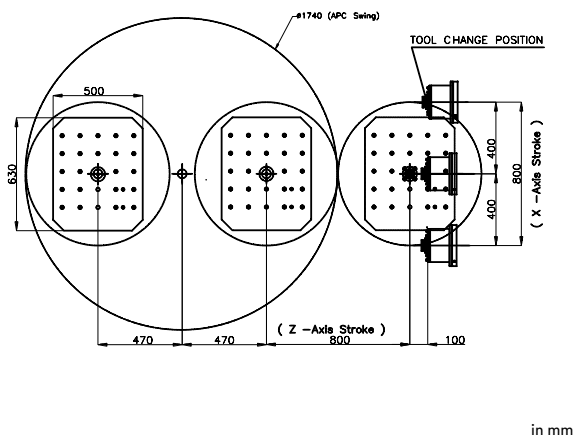
### JHM 40



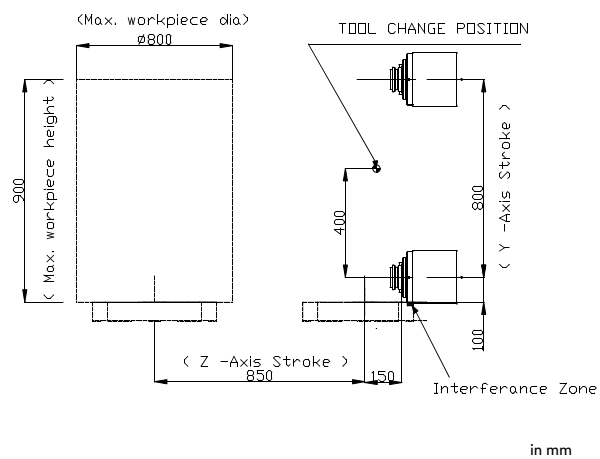
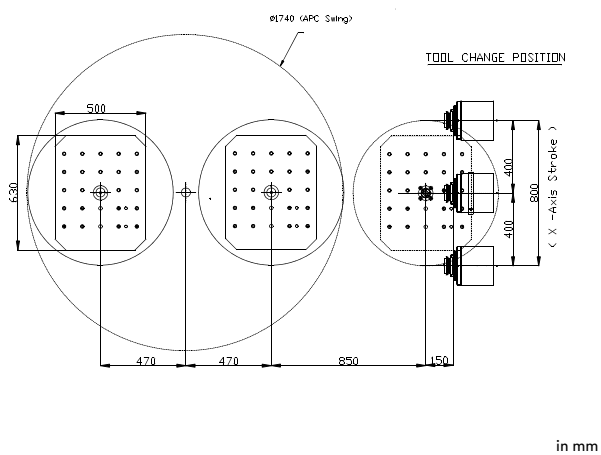
## JH 400



## JH 500

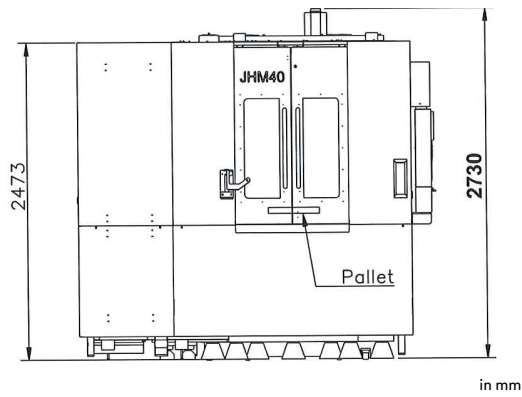


## JH 550

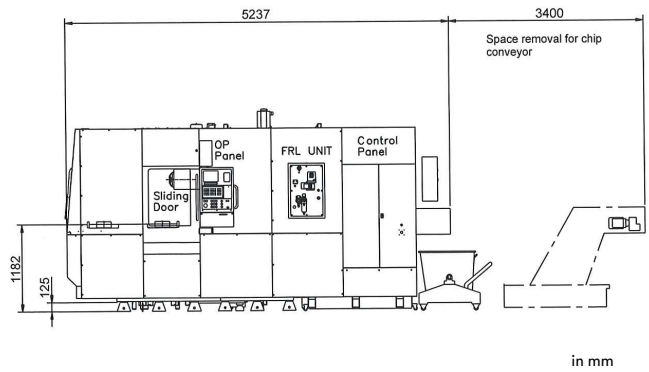


## INSTALLATION DIAGRAM JHM 40

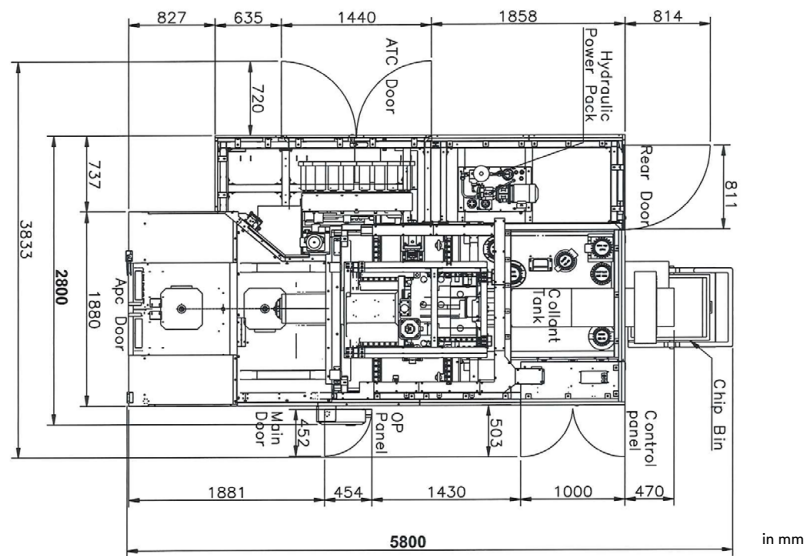
FRONT VIEW



SIDE VIEW

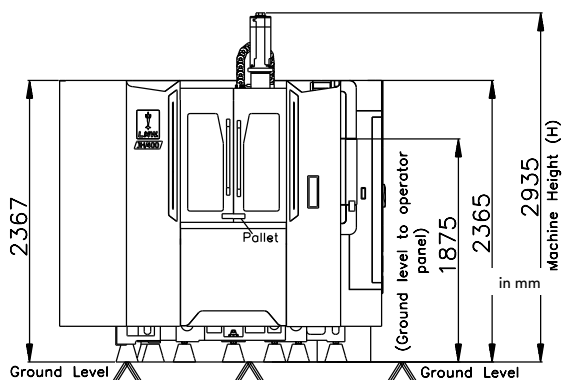


TOP VIEW

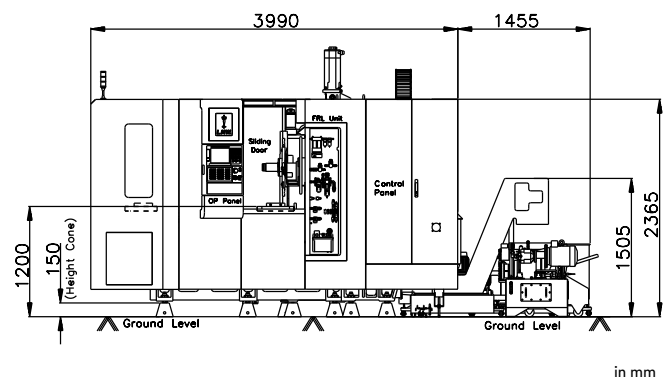


## JH 400

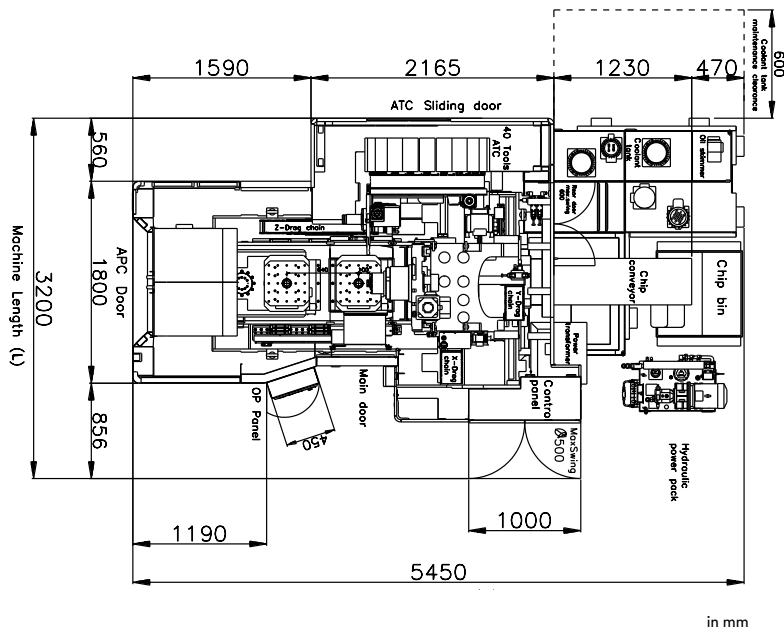
FRONT VIEW



SIDE VIEW

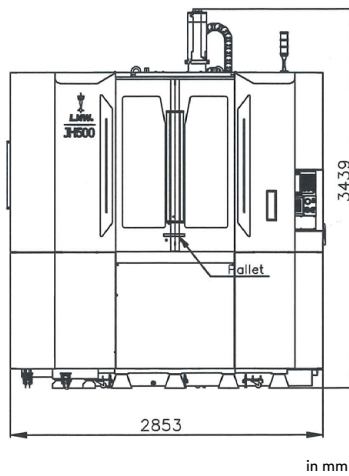


TOP VIEW

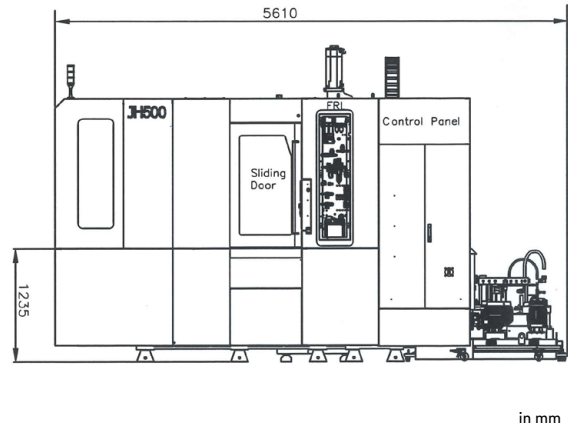


JH 500

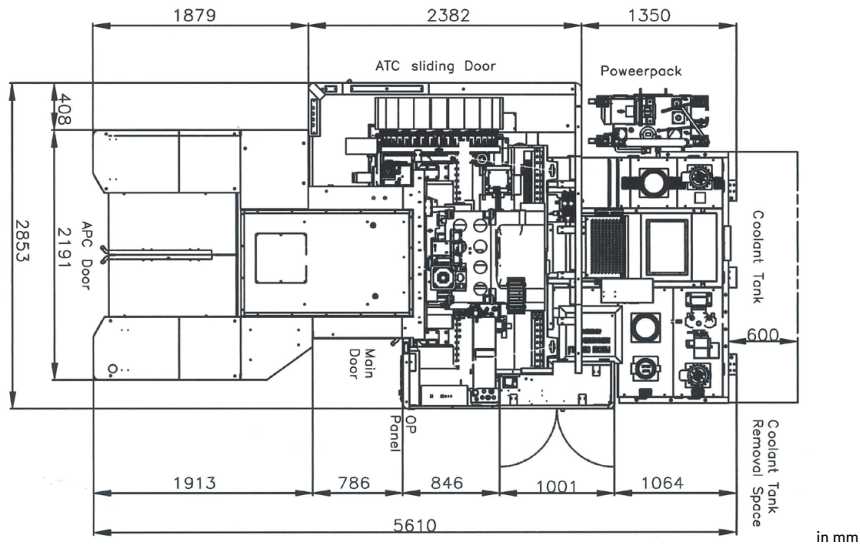
FRONT VIEW



SIDE VIEW

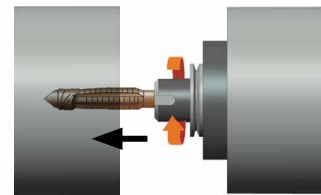
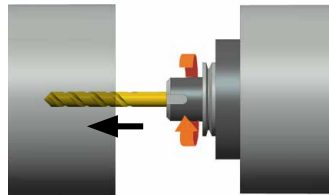
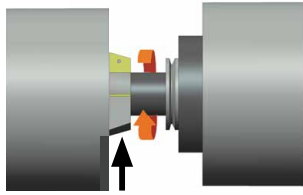


TOP VIEW



## MATERIAL REMOVAL RATE (MRR)

### STEEL C45



#### FACE MILLING

| Parameter     | Unit   | JH 500 |
|---------------|--------|--------|
| Cutter Size   | mm     | 80x6z  |
| Spindle Speed | Rpm    | 1000   |
| Feed          | mm/min | 1500   |
| Depth of cut  | mm     | 5      |
| Width of cut  | mm     | 64     |
| Capacity      | cc/min | 480    |

#### DRILLING

| Parameter     | Unit   | Max   | Min  |
|---------------|--------|-------|------|
| Cutter Size   | mm     | 60x2z | 1.6  |
| Spindle Speed | rpm    | 800   | 5000 |
| Feed          | mm/min | 160   | 60   |
| Depth of cut  | mm     | 35    | 15   |
| Spindle Load  | %      | 85    | 12   |

#### TAPPING

| Parameter     | Unit   | Max   | Min    |
|---------------|--------|-------|--------|
| Cutter Size   | mm     | M36x4 | M2x0.4 |
| Spindle Speed | rpm    | 100   | 1600   |
| Feed          | mm/min | 400   | 640    |
| Depth of cut  | mm     | 30    | 4      |

Note : Values shown are in test conditions, may vary depending on tools, materials and cutting parameters / conditions.

## BALL BAR TEST

### Volumetric Ballbar diagnostics (μm)

Machine: JH 500

#### Test Parameters

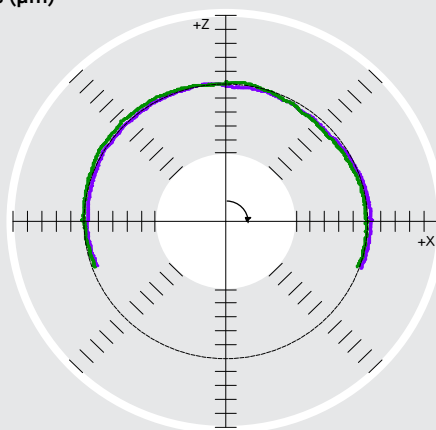
Radius 100.0000mm  
Feedrate 1000.0mm/min

#### Volumetric Test Results

Maximum deviation 3.5μm  
YZ Plane @ 16.5°  
Minimum deviation -3.0μm  
XY Plane @ 12.9°  
Sphericity 6.5μm

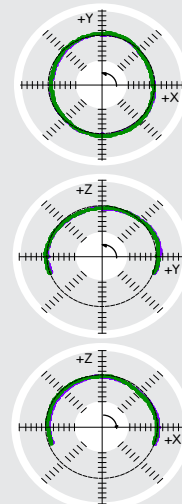
#### Circularity

XY 6.4μm  
YZ 6.4μm  
ZX 4.6μm



Run 1  
Run 2

5.0μm/div



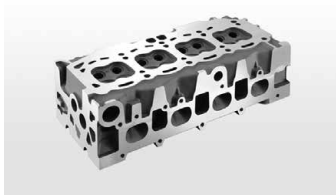
Note : Values shown are in test conditions, may vary depending on tools, materials and cutting parameters / conditions

## SOLUTIONS

## ENGINE &amp; TRANSMISSION



Cylinder Block



Cylinder Head



Controller Housing



Rear Axle Housing



Differential Housing



Gearbox Housing

## OIL &amp; GAS



Ball Valve



Butterfly Valve Body



Pump Body

Rotary plug  
Valve body

Air Lock Housing

## PUMPS, VALVES &amp; MOTORS

Centrifugal Pump  
housing

Manifold

Reciprocating  
Pump Housing

Valve Housing



Motor Body

## GENERAL ENGINEERING



Bearing housing



Battery Casing



Generator housing



Wagon coupler

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