

# NH 630B

High Precision Horizontal Machining Center



# NH 630B

**Introducing the brand new NH 630B High Precision Horizontal Machining Center. The NH 630B incorporates the state-of-the-art dual drive technology along with the utmost rigid structural design to satisfy high accuracy applications. The machine can perform multi-face machining applications to reduce fixture clamping and machining time. The NH 630B is specially designed to meet high precision and high performance machining demands.**

## High Rigidity Structural Design

- One piece T-base foundation with rib construction for unprecedented rigidity
- Spindle headstock is made of one piece casting to ensure cutting rigidity and accuracy during long-period machining
- Stepped castings design on X-axis to increase the cutting rigidity
- Dual-wall column design for eliminating possible thermal deformation

## Y-axis Dual Drive System

- Headstock is driven at the center of the gravity to minimize vibration. The dual-driven design restrains vibration and delivers high speed, high quality machining ability while increasing machine performance and tool life

## High Performance Built-in Motorized Spindle

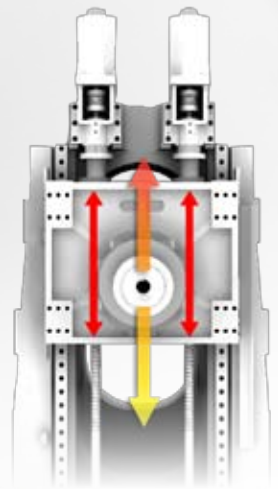
- Built-in motorized spindle reduces vibration during high-speed machining and ensures spindle life
- 10,000 rpm maximum spindle speed with 45 kW output delivers 623 Nm torque
- Micro oil-air lubrication for angular ceramic ball bearings prolongs spindle life
- Circulated oil jacket cooling system minimize thermal deformation, ensuring high accuracy
- Easy spindle unit replacement reduces maintenance time

## High Capacity Machining Space

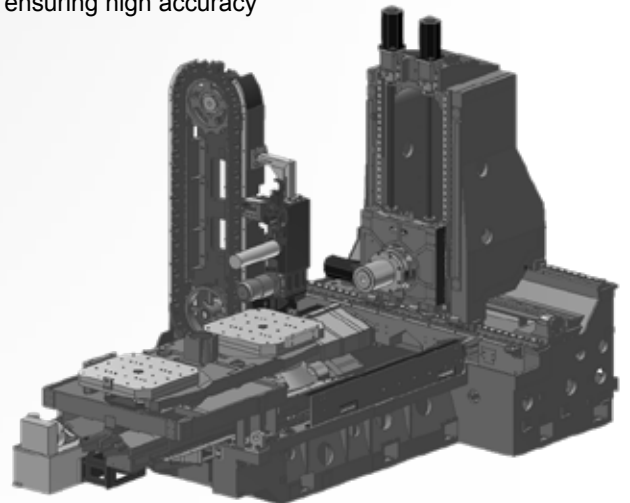
- $\varnothing 1,100$  mm x 1,000 mm largest working envelope within its rank
- 1,200 kg maximum loading capacity on each pallet

## High Rigidity Roller Guideways

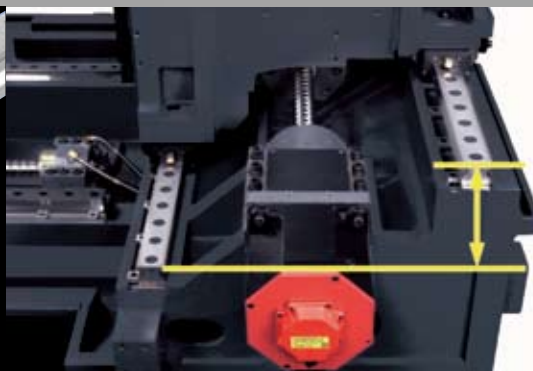
- Oversize roller guideways increase rigidity and precision
- High dynamic AC servo driven pre-tensioned ball delivering high control qualities
- 60 m/min. rapid feedrate increase machining efficiency



■ Dual Drive Y-axis



■ High rigidity roller guideways



■ Stepped casting design on X-axis with large span



■ Discharging air jet pallet indexing system

## High Precision B-axis Rotary Table

- Disc brake with damped clamping system
- High precision in-house pallet indexing system
- Discharging air jet pallet indexing system

## Automatic Pallet Change

- 12-second pallet change
- Servo motor driven
- Simple structural design, fast reliable movement and easy maintenance

## Reliable Automatic Tool Change

- Servo motor driven tool magazine shortens tool search time
- Short tool change arm with low moment of inertia design
- Servo motor and backlash free reducer driven tool magazine
- Hydraulic tool unclamping magazine

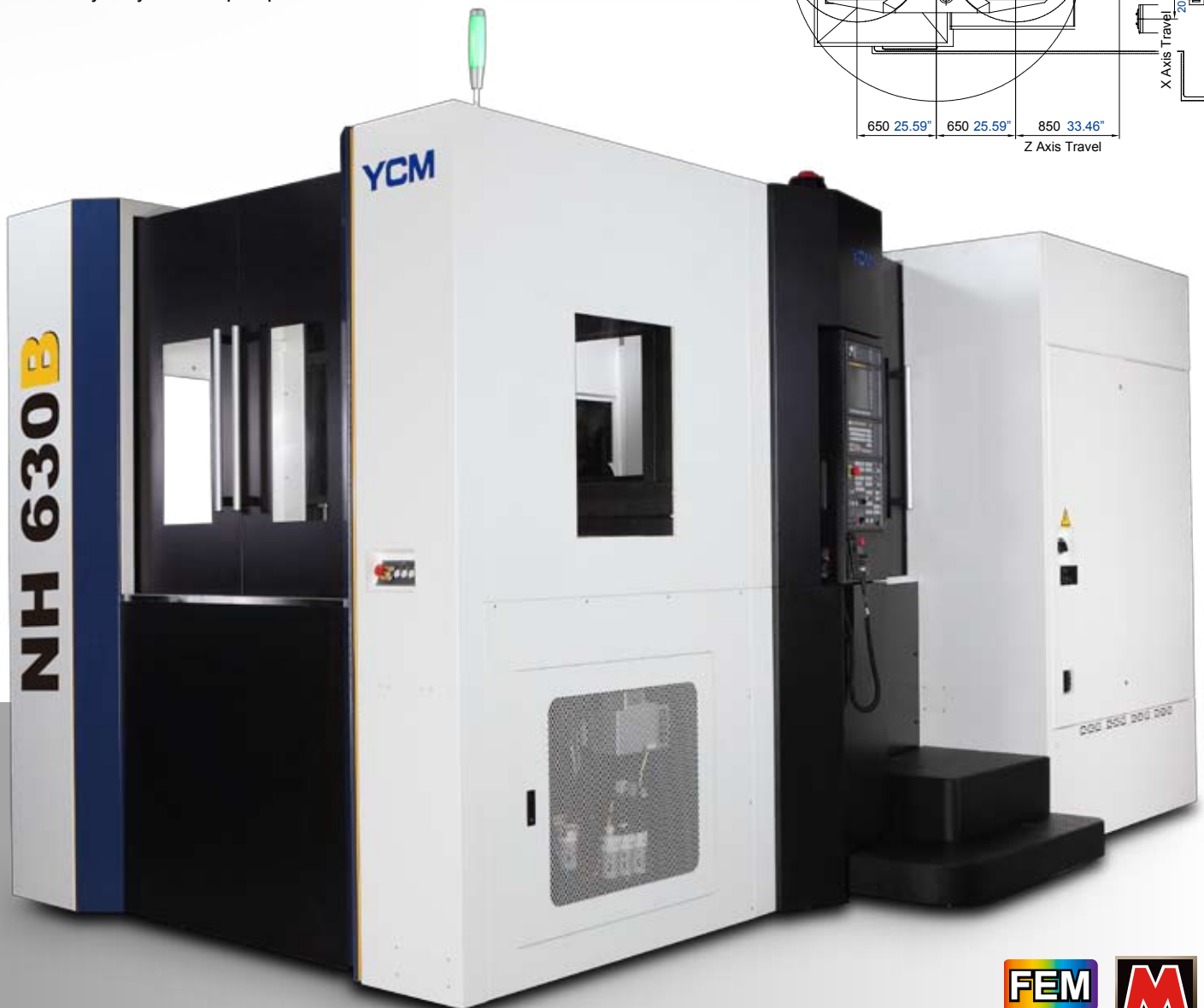
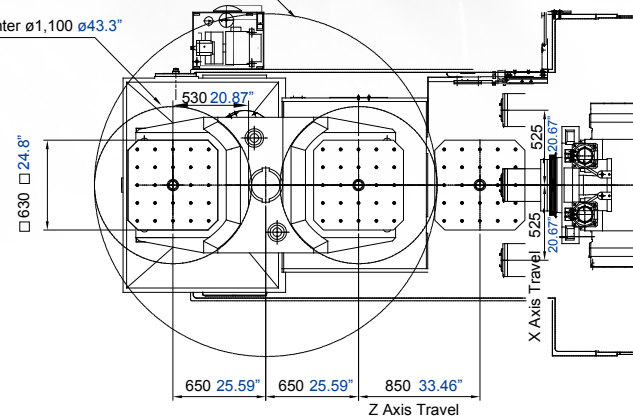
## Central Chip Disposal System

- Chip removal design assures the chips to drop directly to the conveyor
- Dual chip augers are utilized for efficient chip removal
- Heavy duty coolant pump



■ 8 spindle coolant nozzles with spindle air blast

Max. Workpiece Rotary Diameter  $\varnothing 2,400$   $\varnothing 94.5"$   
Max. Workpiece Diameter  $\varnothing 1,100$   $\varnothing 43.3"$



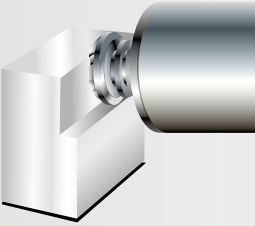
# Cutting Capacity

Spindle Speed 10,000 rpm (63 kgf-m) **STD**

**FACE MILL** **S45C Steel**

Material Removal Rate  
**1,004 cc/min.**

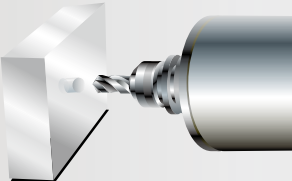
Tool  $\varnothing 125$  mm x 8T  
Spindle Speed 675 rpm  
Feedrate 3,240 mm/min.  
Width of Cut 100 mm  
Depth of Cut 3.1 mm



**U-DRILL** **S45C Steel**

Drilling (Max.)  
 **$\varnothing 65$  mm**

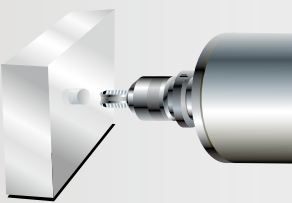
Tool  $\varnothing 65$  mm x 1T  
Spindle Speed 800 rpm  
Feedrate 80 mm/min.  
Depth of Cut 60 mm



**TAP** **S45C Steel**

Tapping (Max.)  
**M48**

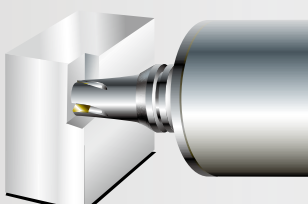
Tool M48 x 5P  
Spindle Speed 34 rpm  
Feedrate 170 mm/min.  
Depth of Cut 40 mm



**END MILL** **S45C Steel**

Depth of Cut  
**25 mm**

Tool  $\varnothing 63$  mm x 4T  
Spindle Speed 750 rpm  
Feedrate 300 mm/min.  
Width of Cut 63 mm

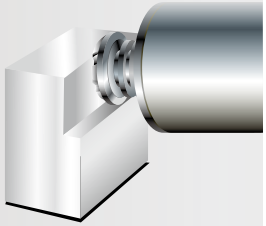


Spindle Speed 8,000 rpm (120 kgf-m) **OPT**

**FACE MILL** **S45C Steel**

Material Removal Rate  
**1,134 cc/min.**

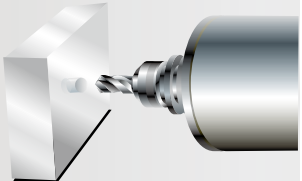
Tool  $\varnothing 125$  mm x 8T  
Spindle Speed 675 rpm  
Feedrate 3,240 mm/min.  
Width of Cut 100 mm  
Depth of Cut 3.5 mm



**U-DRILL** **S45C Steel**

Drilling (Max.)  
 **$\varnothing 80$  mm**

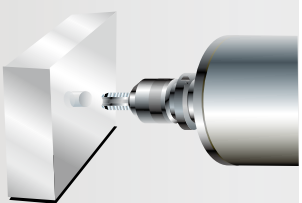
Tool  $\varnothing 80$  mm x 1T  
Spindle Speed 480 rpm  
Feedrate 96 mm/min.  
Depth of Cut 50 mm



**TAP** **S45C Steel**

Tapping (Max.)  
**M48**

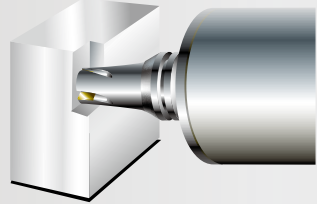
Tool M48 x 5P  
Spindle Speed 38 rpm  
Feedrate 190 mm/min.  
Depth of Cut 40 mm



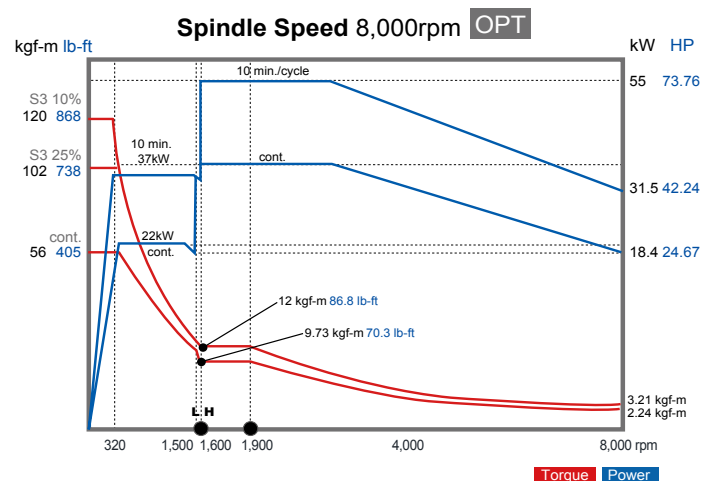
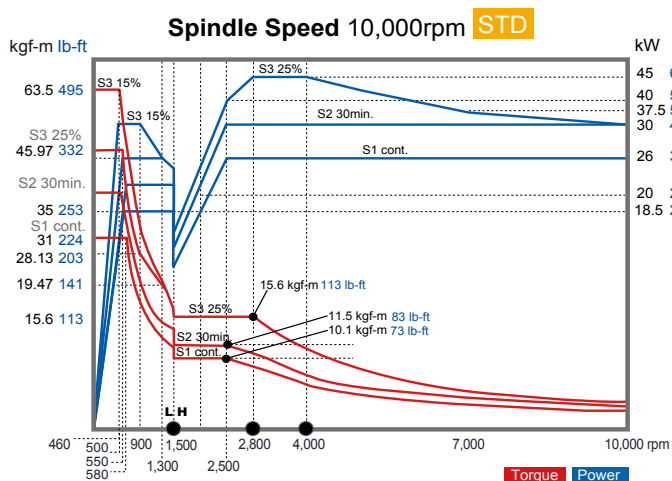
**END MILL** **S45C Steel**

Depth of Cut  
**30 mm**

Tool  $\varnothing 63$  mm x 4T  
Spindle Speed 750 rpm  
Feedrate 300 mm/min.  
Width of Cut 63 mm



# Power Chart





## Specifications

|                                                                                            |   | NH 630B                                                                                                  |                                                                |
|--------------------------------------------------------------------------------------------|---|----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|
| <b>SPINDLE</b>                                                                             |   |                                                                                                          |                                                                |
| Spindle Speed (opt.)                                                                       |   | 10,000 rpm (8,000 rpm)                                                                                   |                                                                |
| Spindle Power (opt.)                                                                       |   | 45 kW <b>60HP</b> (55 kW <b>74HP</b> )                                                                   |                                                                |
| Spindle Torque (opt.)                                                                      |   | 63 kgf-m <b>455.7 lb-ft</b> (122 kgf-m <b>882.4 lb-ft</b> )                                              |                                                                |
| Spindle Taper                                                                              |   | BBT50                                                                                                    |                                                                |
| <b>TRAVEL</b>                                                                              |   |                                                                                                          |                                                                |
| X-axis Travel                                                                              |   | 1,050 mm <b>41.34"</b>                                                                                   |                                                                |
| Y-axis Travel                                                                              |   | 850 mm <b>33.46"</b>                                                                                     |                                                                |
| Z-axis Travel                                                                              |   | 850 mm <b>33.46"</b>                                                                                     |                                                                |
| Distance Between Spindle Nose and Table Center                                             |   | 150~1,000 mm <b>5.91"~39.37"</b>                                                                         |                                                                |
| <b>TABLE</b>                                                                               |   |                                                                                                          |                                                                |
| Pallet Size                                                                                |   | 630 mm x 630 mm <b>24.8" x 24.8"</b>                                                                     |                                                                |
| Max. Load on Table                                                                         |   | 1,200 kg <b>2,646 lb</b>                                                                                 |                                                                |
| Pallet Surface Continguration                                                              |   | M16 x 24 mm x 160 mm <b>M16 x 0.94" x 6.3"</b>                                                           |                                                                |
| Pallet top height (from the floor)                                                         |   | 1,300 mm <b>51.2"</b>                                                                                    |                                                                |
| Pallet Index (opt.)                                                                        |   | 1° (0.001°)                                                                                              |                                                                |
| Pallet Change Time                                                                         |   | 12 sec.                                                                                                  |                                                                |
| <b>FEEDRATE</b>                                                                            |   |                                                                                                          |                                                                |
| Rapid Feedrate X/Y/Z                                                                       |   | 60 / 60 / 60 m/min. <b>2,362 / 2,362 / 2,362 ipm</b>                                                     |                                                                |
| Cutting Feedrate                                                                           |   | 1~30,000 mm/min. <b>0.04~118 ipm</b>                                                                     |                                                                |
| <b>ACCURACY</b>                                                                            |   | ISO 10791-4                                                                                              | YCM*                                                           |
| Axial Travel                                                                               |   | Full Length                                                                                              |                                                                |
| Positioning (X/Y/Z)                                                                        | A | 0.042 / 0.032 / 0.032 mm<br><b>0.0017" / 0.0013" / 0.0013"</b>                                           | 0.014 / 0.014 / 0.014 mm<br><b>0.0005" / 0.0005" / 0.0005"</b> |
| Repeatability (X/Y/Z)                                                                      | R | 0.020 / 0.018 / 0.018 mm<br><b>0.0008" / 0.0007" / 0.0007"</b>                                           | 0.01 / 0.01 / 0.01 mm<br><b>0.0004" / 0.0004" / 0.0004"</b>    |
| *All values shown above are measured for the machine in good air-conditioned environments. |   |                                                                                                          |                                                                |
| <b>ATC</b>                                                                                 |   |                                                                                                          |                                                                |
| Tool Magazine Capacity (opt.)                                                              |   | 40T (60T / 120T)                                                                                         |                                                                |
| Max. Tool Weight                                                                           |   | 25 kg <b>55 lb</b>                                                                                       |                                                                |
| Max. Tool Dimensions (W/O Adjacent Tools)                                                  |   | ø125 mm x 500 mm <b>ø4.92" x 19.69"</b><br>(ø250 mm x 500 mm <b>ø9.84" x 19.69"</b> )                    |                                                                |
| <b>GENERAL</b>                                                                             |   |                                                                                                          |                                                                |
| Pneumatic Pressure                                                                         |   | 5.5 kg/cm <sup>2</sup> <b>78.2psi</b>                                                                    |                                                                |
| Power Consumption (Transformer)                                                            |   | 84 kVA (100 kVA)                                                                                         |                                                                |
| Machine Weight (opt.)                                                                      |   | 40T: 26,000 kg <b>57,320 lb</b><br>(60T: 26,500 kg <b>58,422 lb</b> / 120T: 27,000 kg <b>59,524 lb</b> ) |                                                                |

Note: The manufacturer reserves the right to modify the design, specifications, mechanisms, etc., to improve the performance of the machine without notice. All the specifications shown above are just for reference.

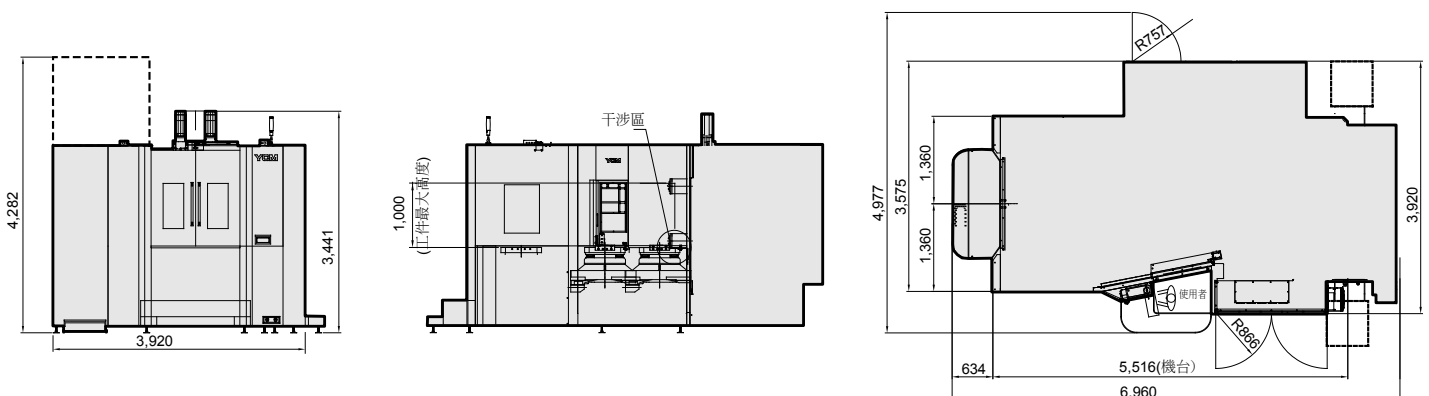
## STANDARD ACCESSORIES

- Full Chip Enclosure
- Spindle Air Blast
- Guideway Cover
- Sealed Electrical Cabinet
- Heat Exchanger for Electrical Cabinet
- Central Lubrication System
- Coolant Equipment System
- Coolant Equipment System (With Coolant Shower)
- Spindle Cooling System
- Chip Auger
- Cutting Air Blast
- Spindle Air Seal
- Spindle Air Blast
- Oil Skimmer
- Safety Door
- Pilot Lamp
- Work Lamp
- Leveling Blocks and Bolts
- Tool Kit
- Mechanical, Electrical & Operating Manuals

## OPTIONAL ACCESSORIES

- Coolant Through Spindle System (20 Bar)
- Optical Scale
- Optical Scale on B Axis
- Oil-mist Collector
- Chip Conveyor
- A/C. Cooler for Electrical Cabinet
- 4th Axis Rotary Table (0.001°)
- Workpiece Measurement System
- Auto Tool Length Measurement System
- Laser Tool Length Measurement System
- 60T / 120T Tool Magazine
- Tool Shank
- Pull stud
- Auxiliary Table

## Dimensions Unit: mm inch



## VMC

### Vertical Machining Center

**FP Series** High Precision High Performance Die Mold Vertical Machining Center  
/ High Precision Graphite Vertical Machining Center  
FP55LX, FP66A, FP100A / FP66G

**NXV Series** High Performance Vertical Machining Center  
NXV560A, NXV1020A/AM, NXV1680A

**TV Series** Heavy Duty Vertical Machining Center  
TV116B, TV146A/B, TV158B, TV188B, TV2110B, TV2610B

**NTV Series** High Efficiency T-base Vertical Machining Center  
NTV158A/B

**NMV Series** High Performance High Rigidity Vertical Machining Center  
NMV106A

**WV Series** Ultra Wide High Performance Vertical Machining Center  
WV108A/B

**FX Series** High Performance 5-axis Vertical Machining Center  
FX380A

**NSV Series** Ultra High Performance Vertical Machining Center  
NSV66A, NSV85A, NSV102A, NSV156A

**NDV Series** High Precision Die Mold Vertical Machining Center  
NDV66A, NDV85A, NDV102A

**TCV Series** High Performance Traveling Column Vertical Machining Center  
TCV2000A, TCV3000A, TCV3000A-5AF, TCV3000A-5AX

**DCV Series** Advanced Double Column Vertical Machining Center

DCV2012A/B, DCV3016B, DCV4016B, DCV3021B, DCV4021B, DCV5021B, DCV6021B, DCV3025B, DCV4025B, DCV5025B,  
DCV4030B, DCV5030B, DCV6030B, DCV4035B, DCV5035B, DCV6035B, DCV4030B-5AX, DCV5030B-5AX, DCV6030B-5AX, DCV4030B-5AF

**NDC Series** High Performance Double Column Vertical Machining Center  
NDC2016B, NDC3016B, NDC4016B

## HMC

### Horizontal Machining Center

**H Series** High Production Horizontal Machining Center  
H500A/B, H630B, H800B, H2612B

**NH Series** High Speed High Precision Horizontal Machining Center  
NH450A, NH630B, NH800B

## HBM

### Horizontal Boring Milling Machining Center

**BMP Series** High Accuracy Heavy Duty Boring Machine  
BMP1416B

## CNC LATHES

### CNC Turning Center

**NT Series** High Performance Mill-axis Mill/Turn Center  
NT-2000Y/SY, NT-2500Y/SY

**GT Series** High Performance Geo Turning Center  
GT-200A/B/MA, GT-250A/B/MA/MB, GT-300A/B/LA/LB/MA/MB/LMA/LMB, GT-380A/B/LA/LB

**TC Series** High Performance High Precision CNC Lathe  
TC-16A/B/LA/LB/MA/MB/LMA/LMB, TC-26, TC-26L, TC-36, TC-36W, TC-46, TC-46M

Integrated Operation Control System **iOPERATION**

Spindle Thermal Compensation System **STCPLUS**

Remote Monitoring System **iDirect**

Automation Solutions

INTEGRATION  
AND SOLUTIONS



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