

# NH 630B

High Precision Horizontal Machining Center



**YCM**®

# 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

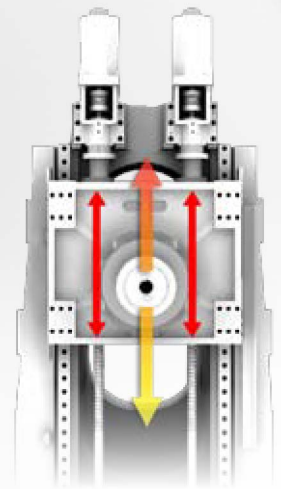
- Built-in motorized spindle reduces vibration during high-speed machining and ensures spindle life
- 10,000 rpm maximum spindle speed with 45 kW output delivers 623 Nm torque
- Micro oil-air lubrication for angular ceramic ball bearings prolongs spindle life
- Circulated oil jacket cooling system minimize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

## High Capacity Machining Space

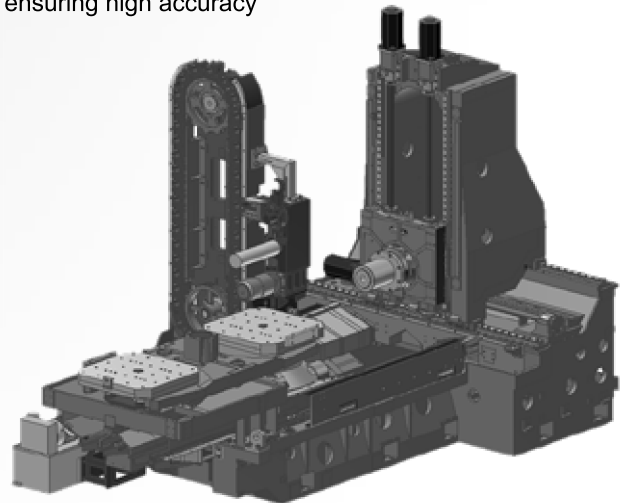
- $\varnothing 1,100$  mm x 1,000 mm largest working envelope within its rank
- 1,200 kg maximum loading capacity on each pallet

## High Rigidity Roller Guideways

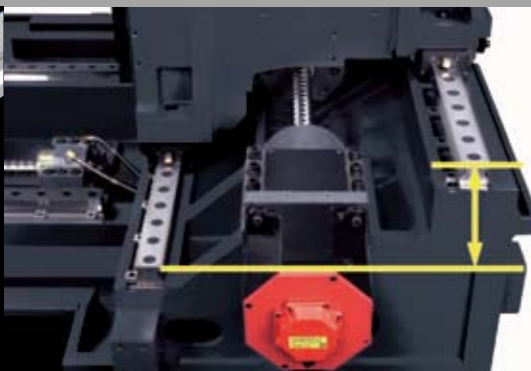
- Oversize roller guideways increase rigidity and precision
- High dynamic AC servo driven pre-tensioned ball delivering high control qualities
- 60 m/min. rapid feedrate increase machining efficiency



■ 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

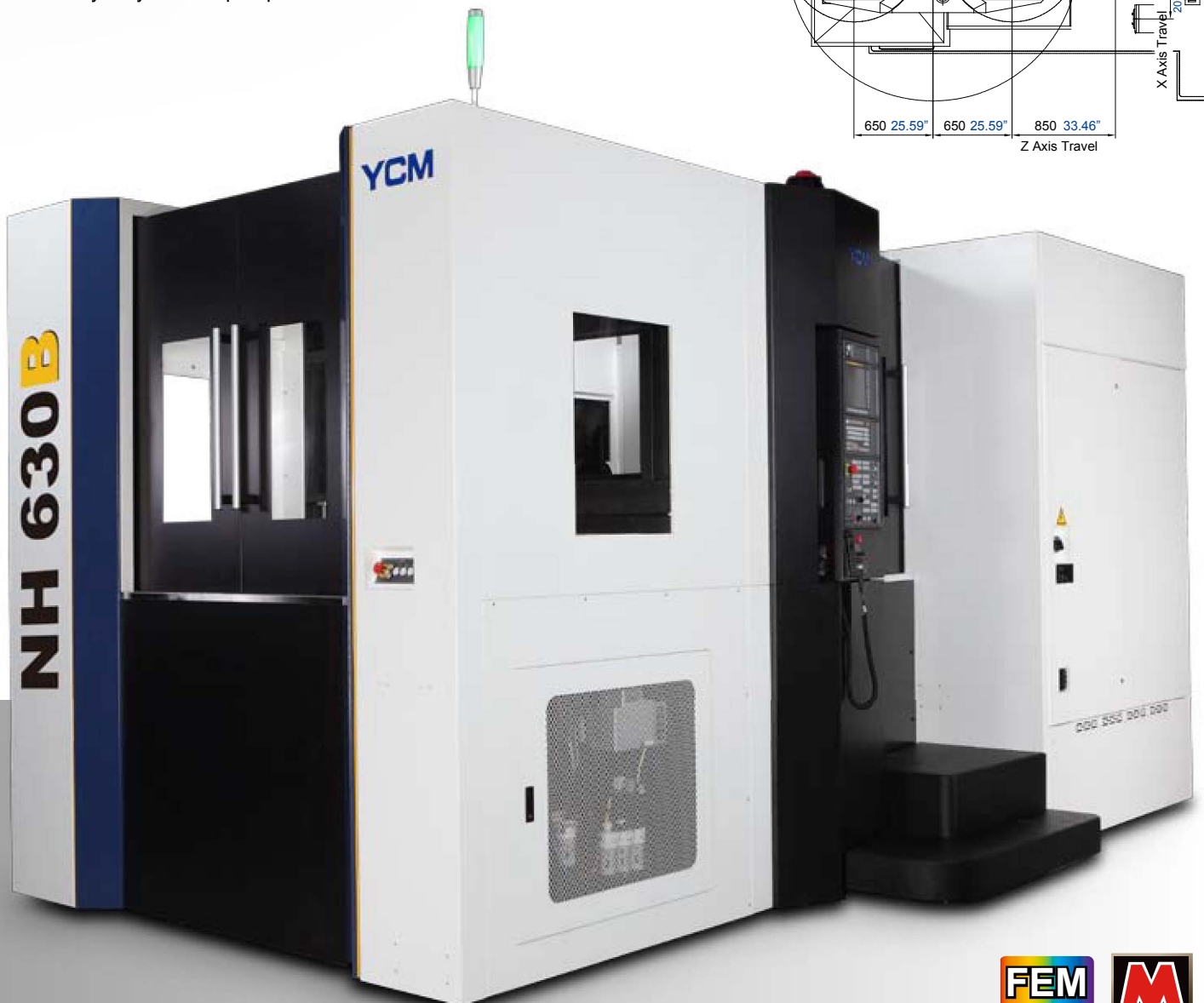
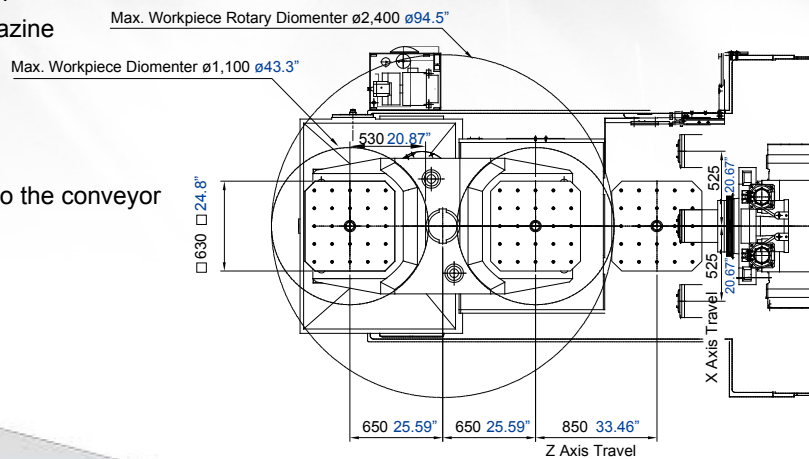
- Servo motor driven tool magazine shortens tool search time
- Short tool change arm with low moment of inertia design
- Servo motor and backlash free reducer driven tool magazine
- Hydraulic tool unclamping magazine

## 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



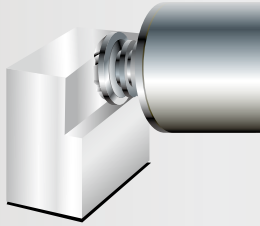
# Cutting Capacity

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

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

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

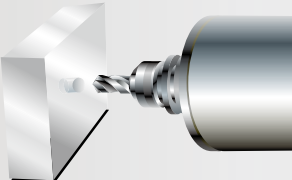
Tool ø125 mm x 8T  
 Spindle Speed 675 rpm  
 Feedrate 3,240 mm/min.  
 Width of Cut 100 mm  
 Depth of Cut 3.1 mm



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

Drilling (Max.)  
**ø65 mm**

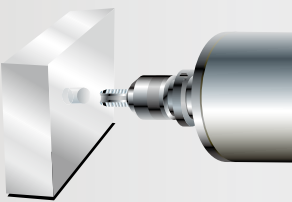
Tool ø65 mm x 1T  
 Spindle Speed 800 rpm  
 Feedrate 80 mm/min.  
 Depth of Cut 60 mm



**TAP** **S45C Steel**

Tapping (Max.)  
**M48**

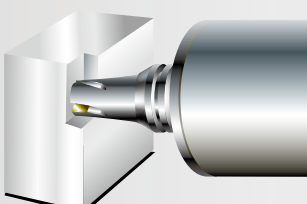
Tool M48 x 5P  
 Spindle Speed 34 rpm  
 Feedrate 170 mm/min.  
 Depth of Cut 40 mm



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

Depth of Cut  
**25 mm**

Tool ø63 mm x 4T  
 Spindle Speed 750 rpm  
 Feedrate 300 mm/min.  
 Width of Cut 63 mm

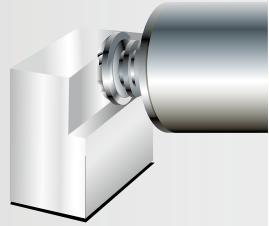


Spindle Speed 8,000 rpm (120 kgf-m) **OPT**

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

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

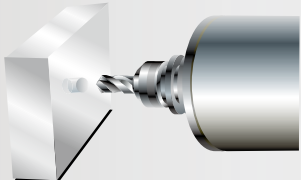
Tool ø125 mm x 8T  
 Spindle Speed 675 rpm  
 Feedrate 3,240 mm/min.  
 Width of Cut 100 mm  
 Depth of Cut 3.5 mm



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

Drilling (Max.)  
**ø80 mm**

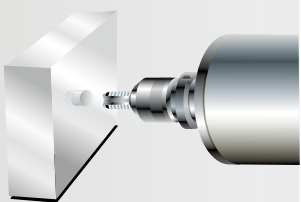
Tool ø80 mm x 1T  
 Spindle Speed 480 rpm  
 Feedrate 96 mm/min.  
 Depth of Cut 50 mm



**TAP** **S45C Steel**

Tapping (Max.)  
**M48**

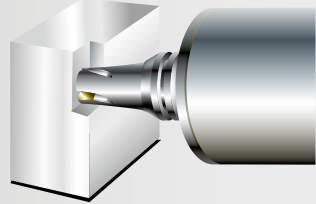
Tool M48 x 5P  
 Spindle Speed 38 rpm  
 Feedrate 190 mm/min.  
 Depth of Cut 40 mm



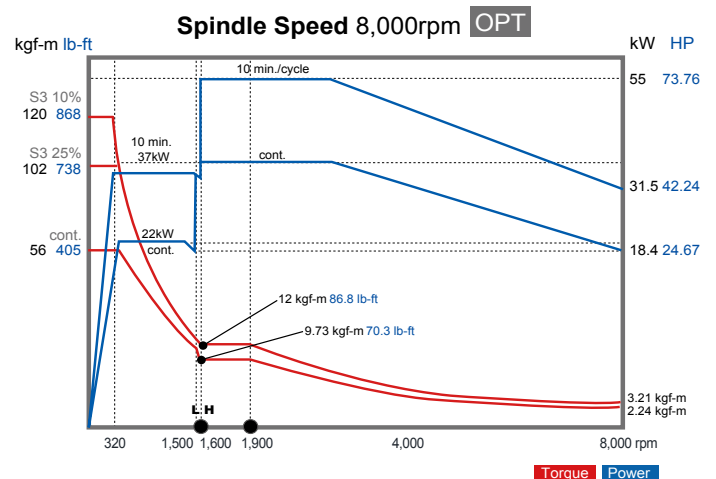
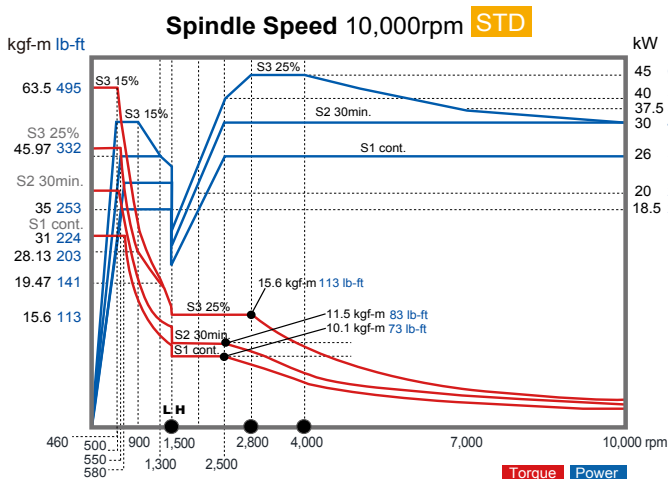
**END MILL** **S45C Steel**

Depth of Cut  
**30 mm**

Tool ø63 mm x 4T  
 Spindle Speed 750 rpm  
 Feedrate 300 mm/min.  
 Width of Cut 63 mm



# Power Chart



# Specifications

## NH 630B

### SPINDLE

Spindle Speed (opt.)	10,000 rpm (8,000 rpm)
Spindle Power (opt.)	45 kW 60HP (55 kW 74HP)
Spindle Torque (opt.)	63 kgf-m 455.7 lb-ft (122 kgf-m 882.4 lb-ft)
Spindle Taper	BBT50

### TRAVEL

X-axis Travel	1,050 mm 41.34"
Y-axis Travel	850 mm 33.46"
Z-axis Travel	850 mm 33.46"
Distance Between Spindle Nose and Table Center	150~1,000 mm 5.91"~39.37"

### TABLE

Pallet Size	630 mm x 630 mm 24.8" x 24.8"
Max. Load on Table	1,200 kg 2,646 lb
Pallet Surface Continguration	M16 x 24 mm x 160 mm M16 x 0.94" x 6.3"
Pallet top height (from the floor)	1,300 mm 51.2"
Pallet Index (opt.)	1° (0.001°)
Pallet Change Time	12 sec.

### FEEDRATE

Rapid Feedrate X/Y/Z	60 / 60 / 60 m/min. 2,362 / 2,362 / 2,362 ipm
Cutting Feedrate	1~30,000 mm/min. 0.04~118 ipm

### ACCURACY

		ISO 10791-4	YCM*
Axial Travel		Full Length	
Positioning (X/Y/Z)	A	0.042 / 0.032 / 0.032 mm 0.0017" / 0.0013" / 0.0013"	0.014 / 0.014 / 0.014 mm 0.0005" / 0.0005" / 0.0005"
Repeatability (X/Y/Z)	R	0.020 / 0.018 / 0.018 mm 0.0008" / 0.0007" / 0.0007"	0.01 / 0.01 / 0.01 mm 0.0004" / 0.0004" / 0.0004"

\*All values shown above are measured for the machine in good air-conditioned environments.

### ATC

Tool Magazine Capacity (opt.)	40T (60T / 120T)
Max. Tool Weight	25 kg 55 lb
Max. Tool Dimensions (W/O Adjacent Tools)	ø125 mm x 500 mm ø4.92" x 19.69" (ø250 mm x 500 mm ø9.84" x 19.69")

### GENERAL

Pneumatic Pressure	5.5 kg/cm <sup>2</sup> 78.2psi
Power Consumption (Transformer)	84 kVA (100 kVA)
Machine Weight (opt.)	40T: 26,000 kg 57,320 lb (60T: 26,500 kg 58,422 lb / 120T: 27,000 kg 59,524 lb)

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.

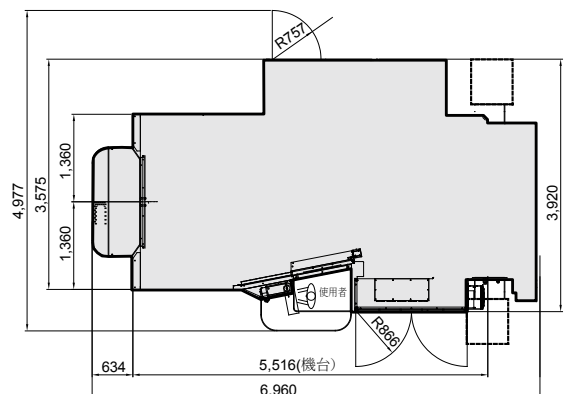
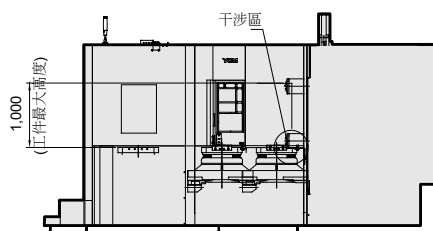
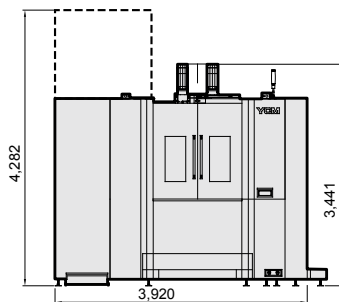
### STANDARD ACCESSORIES

- 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**

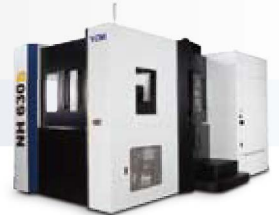


**TCV Series** High Performance Traveling Column Vertical Machining Center  
**TCV2000A, TCV3000A, TCV3000A-5AF, TCV3000A-5AX**

**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**

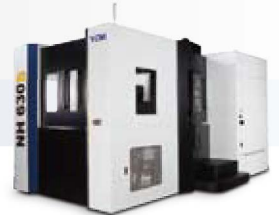


# HMC

## 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**



### INTEGRATION AND SOLUTIONS

Integrated Operation Control System **iOPERATION**

Spindle Thermal Compensation System **STC PLUS**

Remote Monitoring System **iDirect**

Automation Solutions



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