

# EV1020A

HIGH EFFICIENCY VERTICAL MACHINING CENTER



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MACHINING CENTER

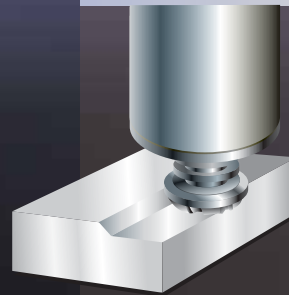


EV1020A is built with state-of-the-art technology in mind and packed with features at price you can afford. With all the features loaded on the EV1020A, this machine will diversify your machining capabilities and minimize manufacturing costs. EV1020A is suitable for automotive, job shops, aerospace, electronics and medical applications.



### FACE MILL

S45C Steel



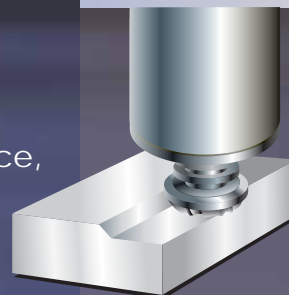
Material Removal Rate

**138** cc/min.

Tool  $\phi$ 63mm x 6T  
 Spindle speed 1,500rpm  
 Feedrate 2,880mm/min.  
 Width of cut 60mm  
 Depth of cut 0.8mm  
 Spindle load 145%

### FACE MILL

S45C Steel



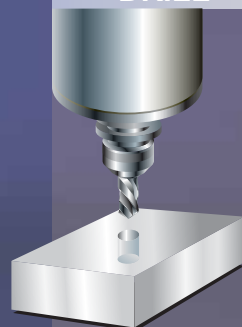
Depth of Cut

**2.8** mm

Tool  $\phi$ 80mm x 6T  
 Spindle speed 760rpm  
 Feedrate 684mm/min.  
 Width of cut 60mm  
 Material removal rate 80cc/min.  
 Spindle load 140%

### DRILL

S45C Steel



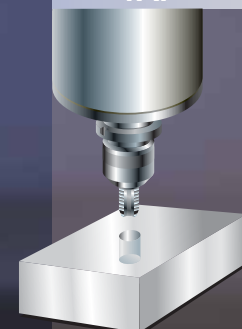
Tool Dimension

**$\phi$ 34** mm

Spindle speed 1,500rpm  
 Feedrate 150mm/min.  
 Material removal rate 136.2cc/min.  
 Spindle load 97%

### TAP

S45C Steel



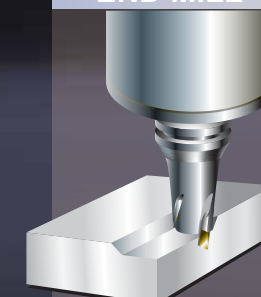
Max. Tapping

**M20**

Tool M20, 2.5P  
 Spindle speed 80rpm  
 Feedrate 200mm/min.  
 Spindle load 127%

### END MILL

A6061 Aluminum



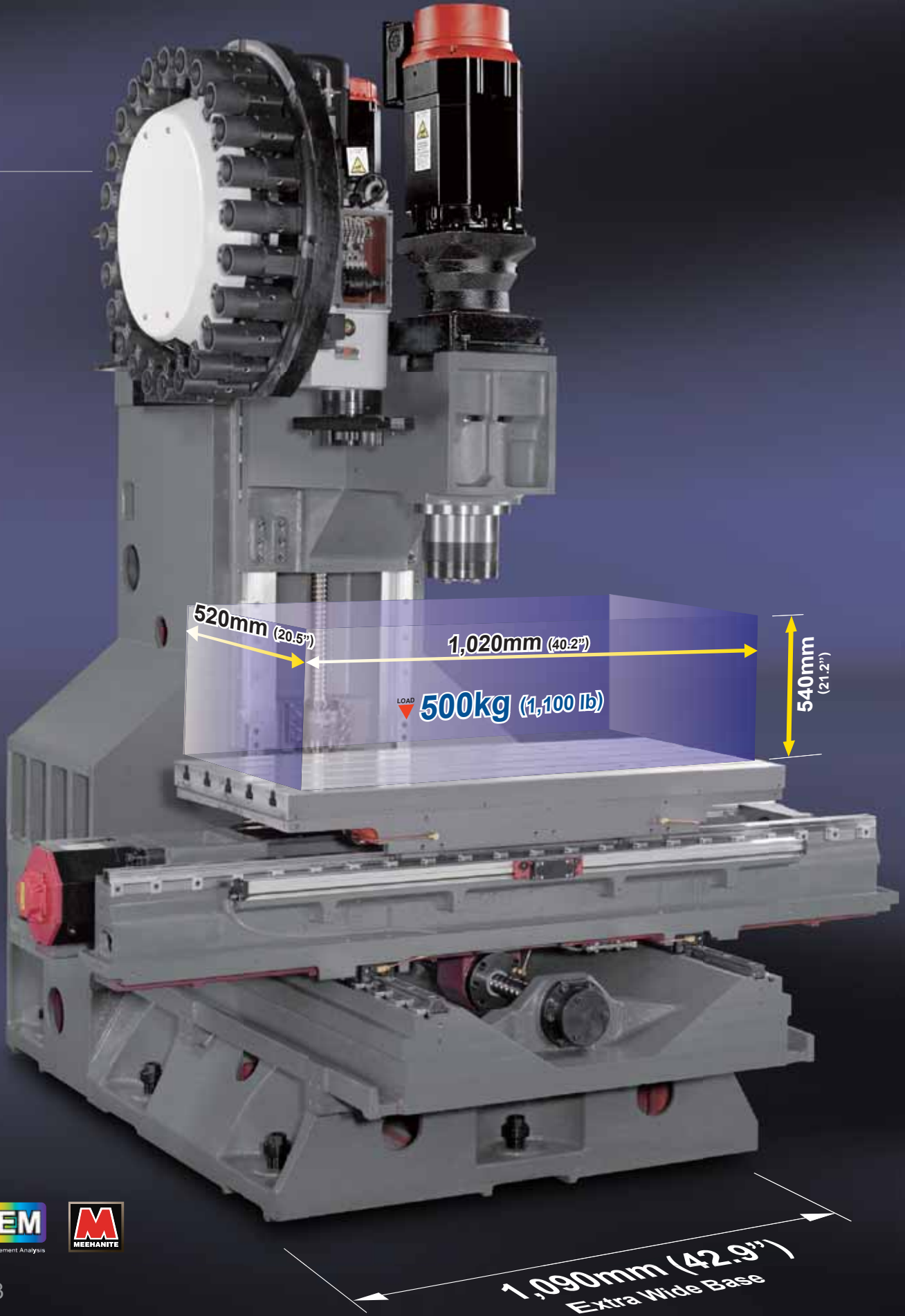
Material Removal Rate

**735** cc/min.

Tool  $\phi$ 40mm x 4T  
 Spindle speed 4,500rpm  
 Feedrate 1,000mm/min.  
 Spindle load 147%

Rapid Feedrate EV1020A

<b>X</b>	36 m/min.	1,417 ipm
<b>Y</b>	36 m/min.	1,417 ipm
<b>Z</b>	24 m/min.	945 ipm



# OPTIMUM RIGIDITY

The rigid body construction of EV1020A makes for uncompromising precision and rigidity. Finite Element Method (FEM) analysis is adopted to simulate the structural deformation of the body under various condition. This helps to ensure the best mass arrangement and rib construction of the machine for constant stability under the intensive load of heavy-duty cutting.

# 1020A

## TOOL MAGAZINE SYSTEM

3.5 Sec. Tool to Tool  
5.5 Sec. Chip to Chip



# Unique IDD Spindle Design

Isolated Direct Drive

## 1 Direct Coupling

The spindle motor is directly coupled to the spindle. This design isolates noise, backlash, vibration that are normally found on the spindle driven by belt or gears.

## 2 Powerful Spindle Motor

The spindle is driven by FANUC high torque Vector Drive AC spindle motor.

## 3 Symmetrical Head Stock

The wall of the head stock is symmetrically designed, which allows the entire head stock to homogeneously absorb the thermal expansion and avoids thermal deformation.

## 4 Unclamping Cushion

This unclamping cushion protects the spindle bearings from the tool unclamping force, which extends the spindle life.

## 5 Higher Precision Spindle Encoding Feedback

The CNC controller receives exact feedback of spindle speed to ensure the best performance of rigid tapping.

## 6 Larger Spindle Diameter

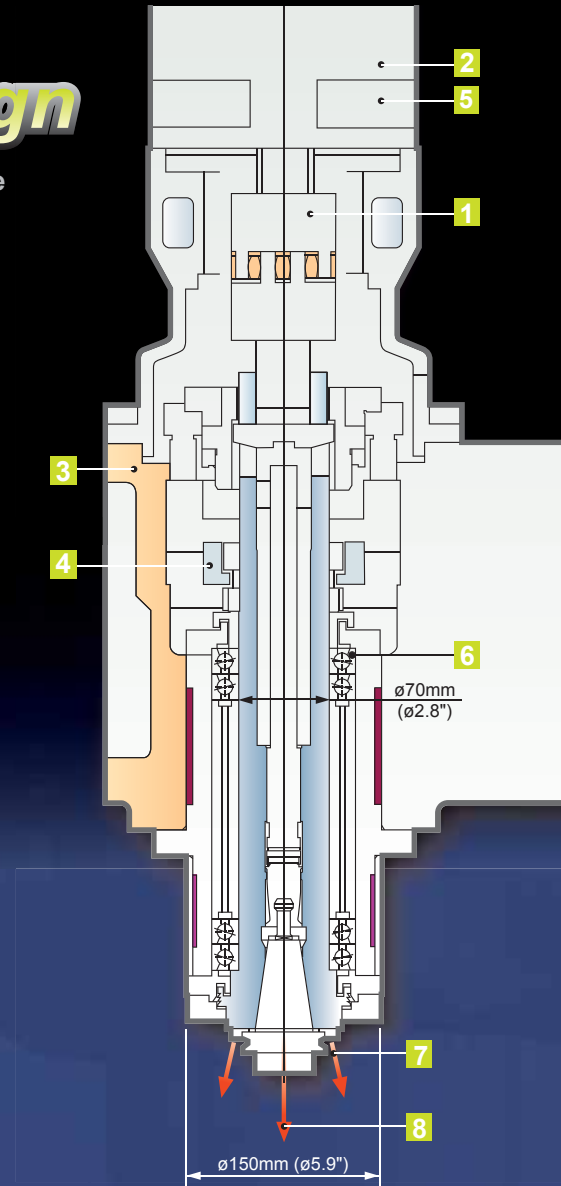
To enhance spindle cutting rigidity, the large spindle is 70mm in diameter and the spindle wall is 12mm in thickness.

## 7 Spindle Air Curtain

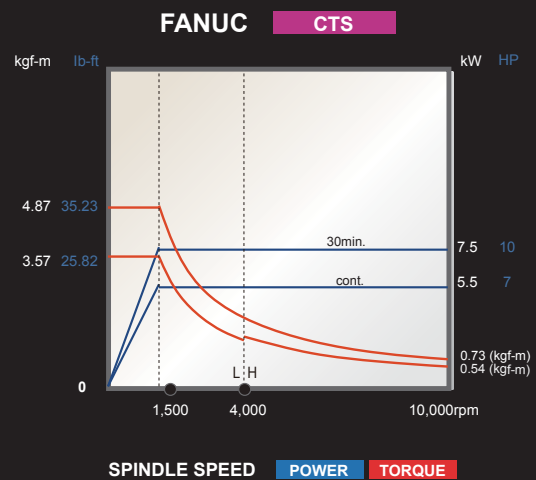
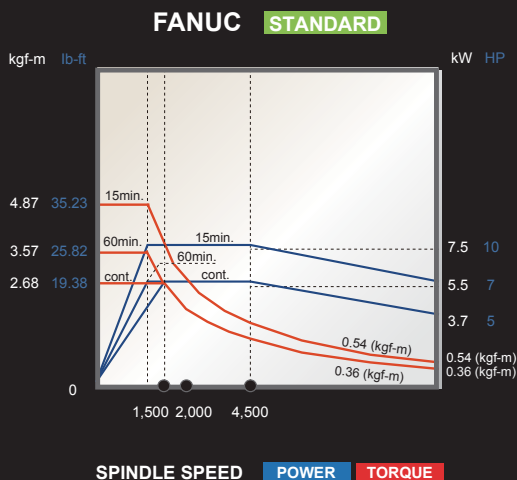
This newly developed technology prevents the spindle bearings from being contaminated by coolant mist and fine chips during high speed cutting with positive air flow.

## 8 Spindle Air Blast

Automatic air blast through the spindle is standard to clean the spindle taper on every tool change.



## POWER CHART

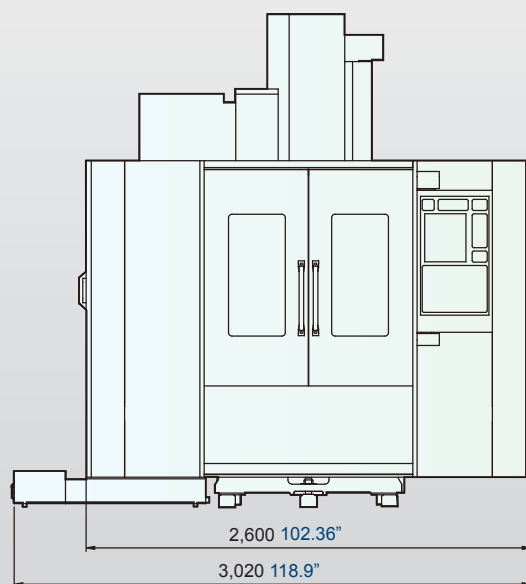
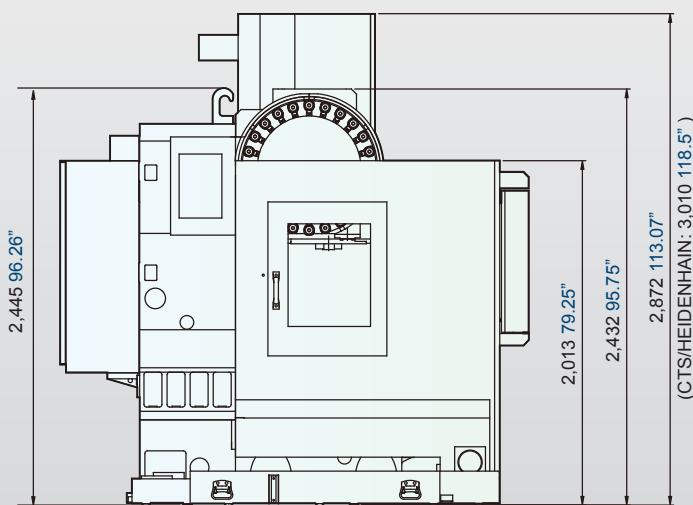
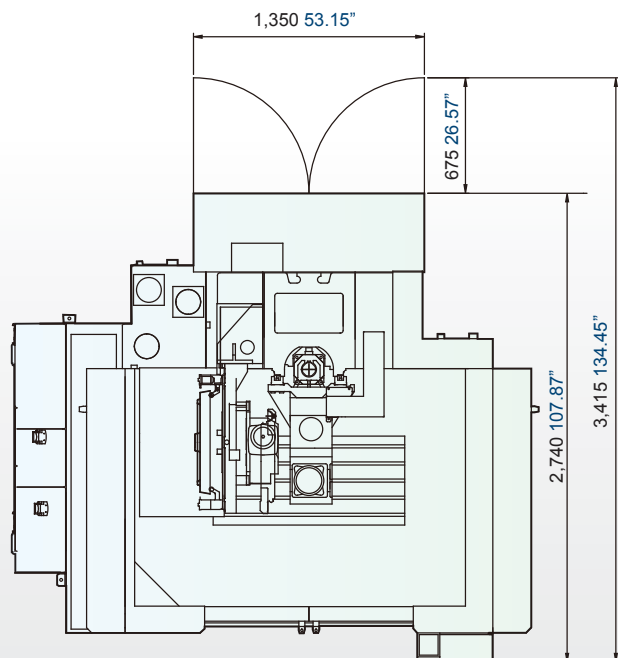
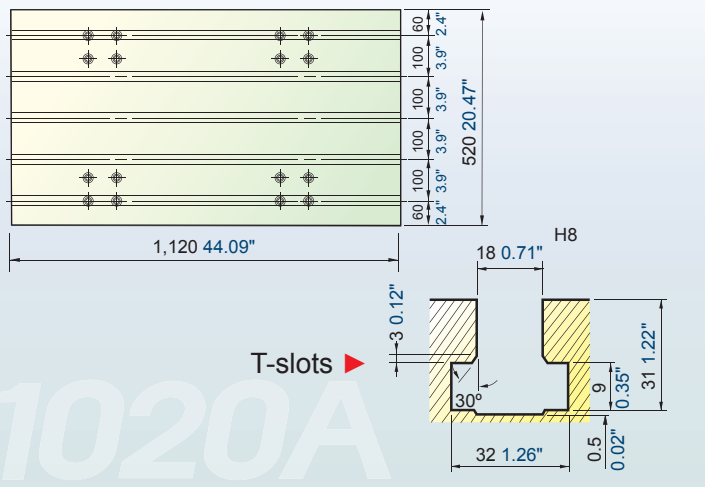


# TABLE SIZE & DIMENSIONS

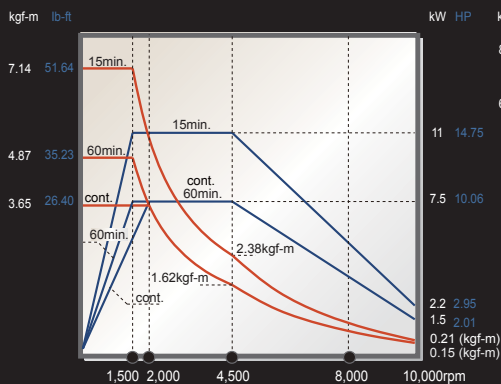
**EV1020A**

Unit : mm inch

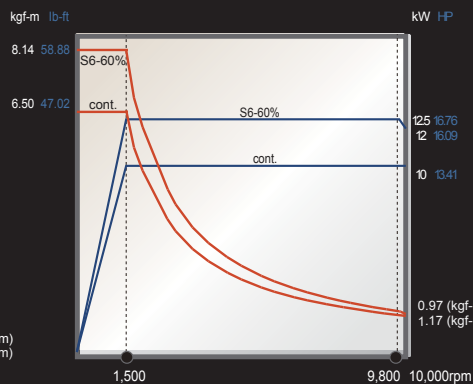
▼ Table size



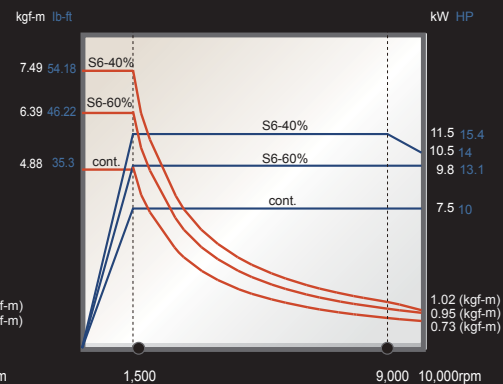
**FANUC** **OPTION**



**HEIDENHAIN** **CTS**



**HEIDENHAIN** **OPTION**



SPINDLE SPEED POWER TORQUE

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## SPECIFICATIONS

### EV1020A

SPINDLE		
Spindle Speed	45~10,000rpm	
Spindle Power (opt.)	5.5/7.5kW (7.5/11kW) 7.4/10HP (10/14.8HP)	
Spindle Taper	BT40	
TRAVEL		
X-axis Travel	1,020mm 40.2"	
Y-axis Travel	520mm 20.5"	
Z-axis Travel	540mm 21.3"	
Distance Between Spindle Nose & Table Top	140mm~680mm 5.5"~26.8"	
TABLE		
Table Size	1,120 x 520mm 44.1" x 20.5"	
No. T-Slots x Size x Pitch	5 x 18mm x 100mm 5 x 0.7" x 3.9"	
Max. Load on Table	500kg 1,100 lb	
FEEDRATE		
Rapid Feedrate	36/36/24 m/min. 1,417/1,417/945ipm	
Cutting Feedrate	1~10,000mm/min. 0.04~394ipm	
ATC		
Tool Magazine Capacity (opt.)	24T (30T)	
Max. Tool Weight (per piece)	6kg 13.2 lb	
Max. Tool Length (opt.)	ø90 x 300mm (ø76 x 300mm) ø3.54" x 11.81" (ø2.99" x 11.81")	
ACCURACY		
	ISO 10791-4	JIS B 6338 (300mm)
Positioning A	0.010mm 0.00039"	0.003mm 0.00012"
Repeatability R	0.007mm 0.00028"	±0.002mm ±0.00008"
GENERAL		
Pneumatic Supplier	5.5kg/cm <sup>2</sup> 78.2psi	
Power Consumption	26.5kVA (30kVA)	
Machine Weight	5,350kg 11,795 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

- Tool Kit
- Work Lamp
- Pilot Lamp
- Hand-held Coolant Gun
- Hand-held Air Gun
- Spindle Air Blast
- Cutting Air Blast
- Spindle Air Seal
- Central Lubrication System
- Guideway Cover on X/Y/Z
- Chip Enclosure
- Screw Type Chip Auger
- Leveling Blocks and Bolts
- Mechanical, Electrical, and Operating Manuals
- Heat Exchanger in Electrical Cabinet

## OPTIONAL ACCESSORIES

- Safety Door
- CE
- Coolant through Spindle System form A/20bar
- Chip Conveyor
- Spindle Cooling System
- 4th Axis Rotary Table
- Automatic Power Off System
- Auto Tool Length
- Measurement System
- Workpiece Measurement System
- Data Server
- Oil Skimmer
- Heavy Duty Coolant System
- Circular Coolant Nozzle
- Full Chip Enclosure
- Optical Scale
- Oil Mist Coolant System
- Oil Hole Holder Function



- 8.4" TFT Color Display
- AI APC with 20 Blocks Look Ahead
- G-Code Mirror Image
- Helical Interpolation
- Rigid Tapping
- Large Program Capacity with 1,280 Meters of Memory
- 400 Pairs Tool Offset
- 400 Total Registered Programs
- 48 Pairs of Workpieces Coordinate System
- HRV Control
- Extended Parts Program Editing (Cut, Copy, and Paste)
- Extensive Alarm Description
- Tool Offset

and More....



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