



*KEY to productivity*

# VMT1000 Series

You Ji Machine Industrial Company Limited  
CNC Turn-Mill Machine



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Distributor



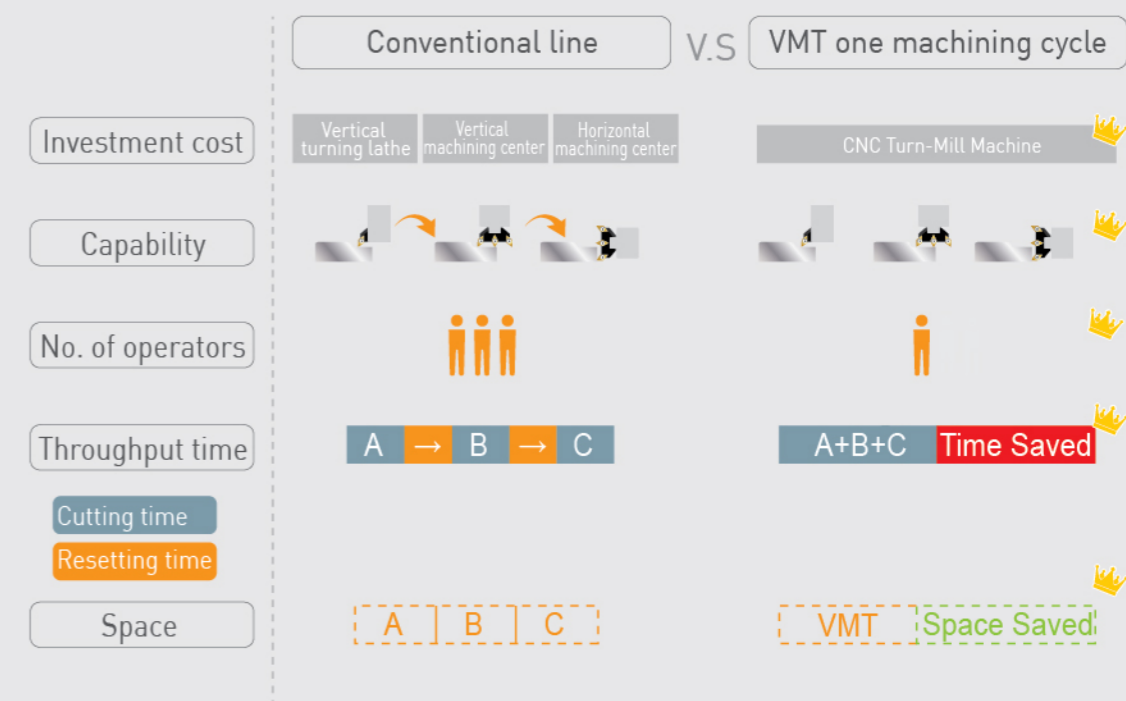
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## VMT1000 Series CNC Turn-Mill Machine



## VMT series would be a smart choice



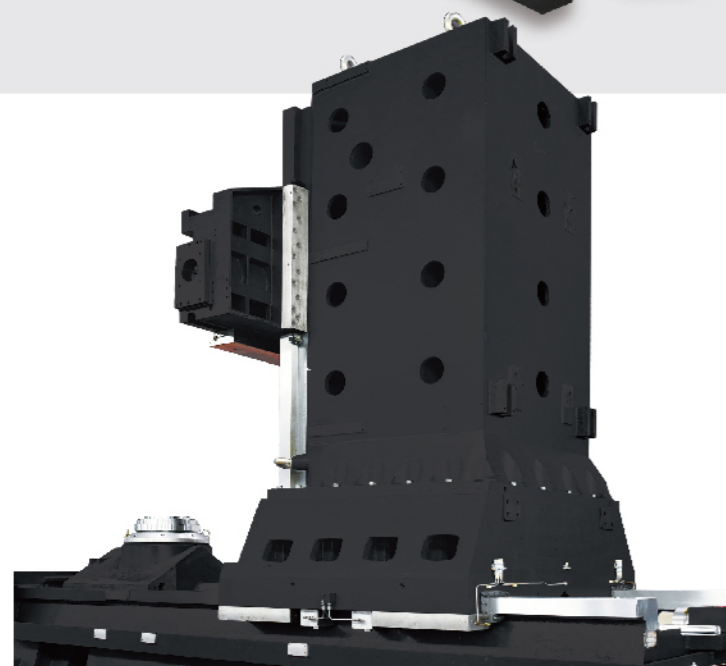
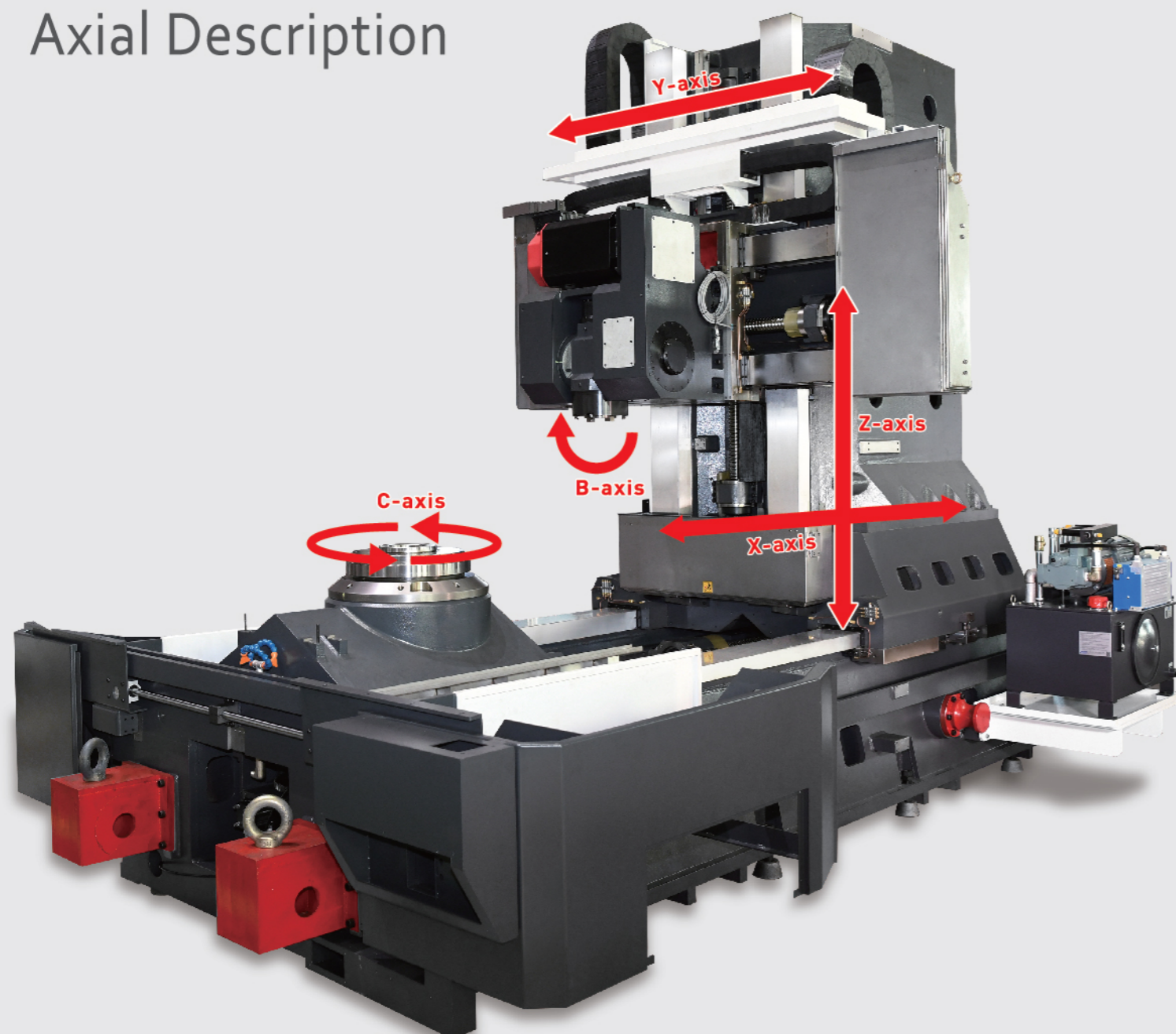
### Machine Definition

## VMT1000

Max. turning / swing diameter : 1000mm

CNC Turn-Mill Machine

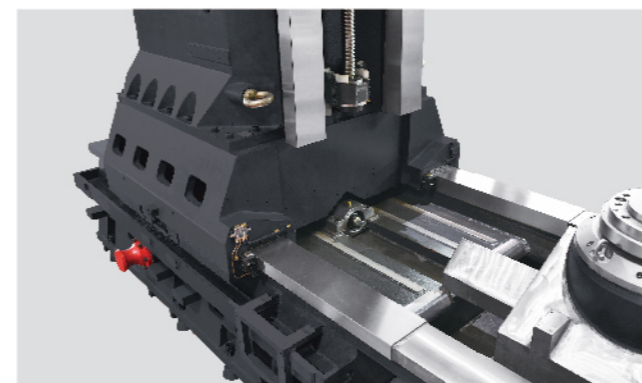
## Axial Description



### Box Type Structure

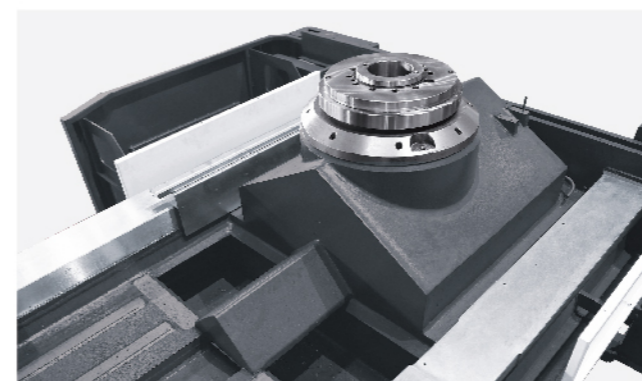
The structure adopts a box-shaped design and increases the thickness of the inner rib to strengthen the structural rigidity. The structure is close to a square shape, which can reduce the thermal displacement and vibration influence to a minimum.

## High Rigidity Structure



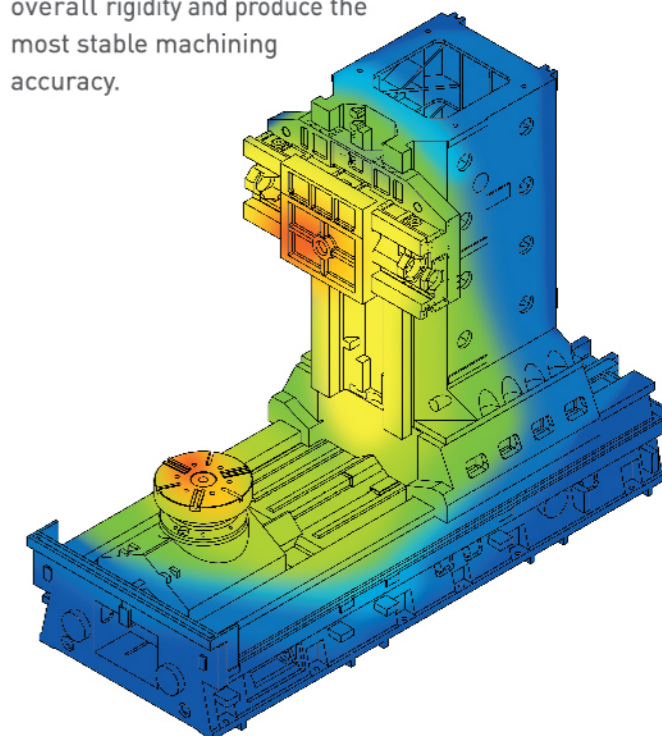
### Box Guideway Structure

The span between the guides is wide and width is even wider than the maximum cutting diameter, forming a module structure. When people are doing machining inside, the frame and the deformation is low, promising better stability.



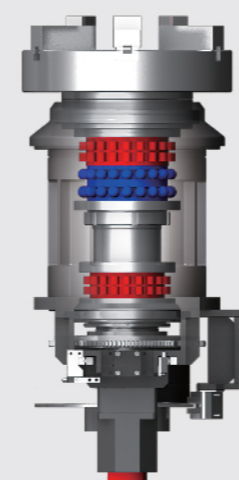
### High Rigidity Structure

For You Ji VMT series turn mill machines, all structural components were optimized using finite element method (FEM) and analysis of thermal displacements that increases overall rigidity and produce the most stable machining accuracy.



### One-piece Structure

The machine base and turning spindle is one-piece structure, this design minimizes the thermal distortion, and ensures high rigid and stable machine assembly.



NN bearings

### NN bearings

- Transmission method : Belt transmission
- Bearing arrangement :  
The front side is fitted with NN cylindrical roller bearings and angular contact ball bearings which are used to withstand radial and axial loads during machining. The rear side is fitted with NN cylindrical roller bearings which are used to withstand the belt tension.
- Features :  
The spindle design construction is a high speed, high precision, and high rigidity concept, incorporating NN series bearings which are used to withstand radial and axial loads during heavy cutting conditions, trouble free, long-term high accuracy turning is a major feature.



NN cylindrical roller bearings

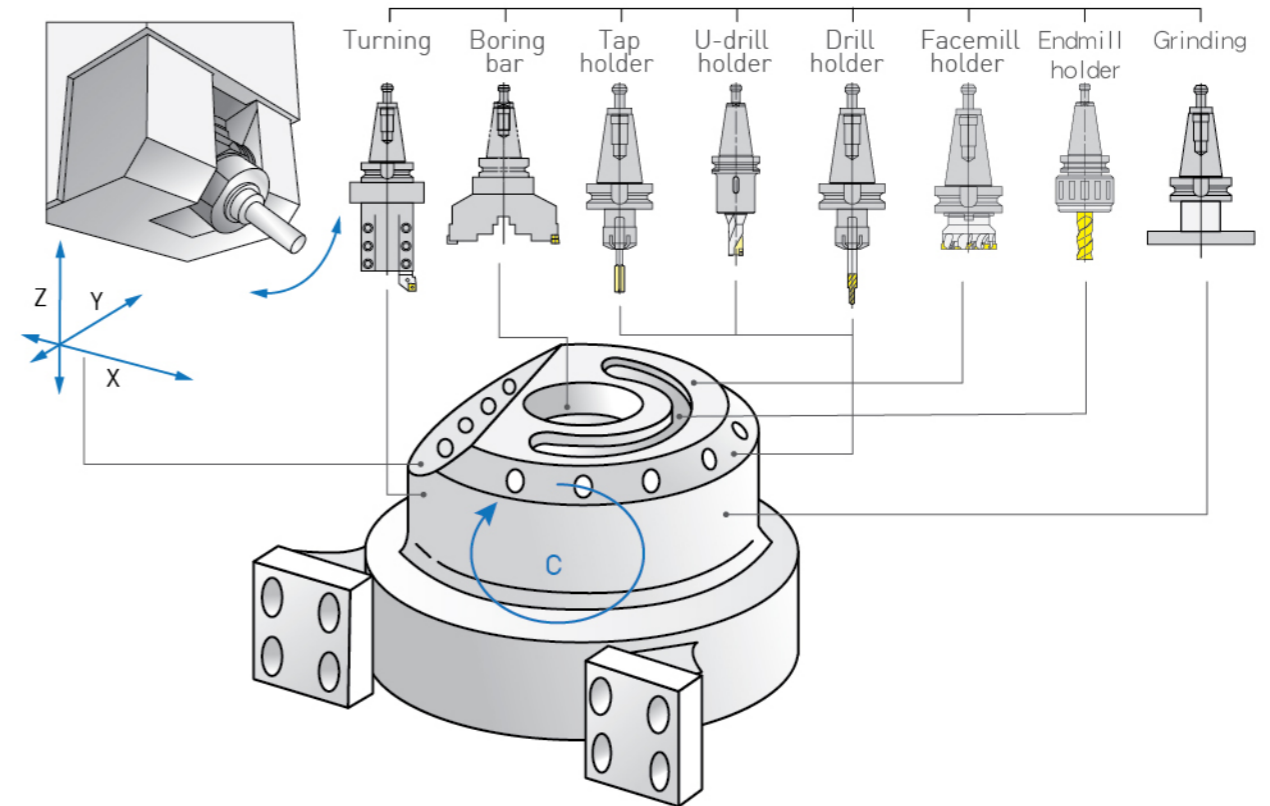
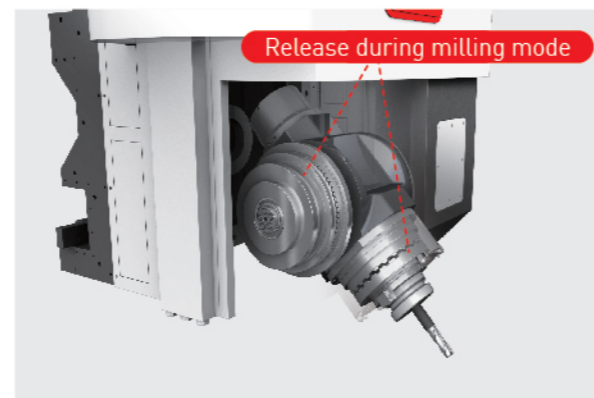
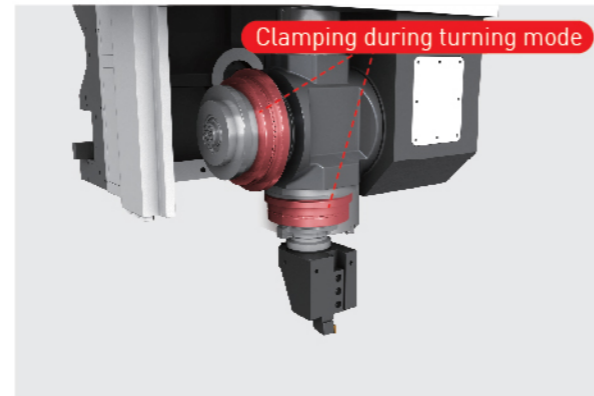


Angular contact ball bearings

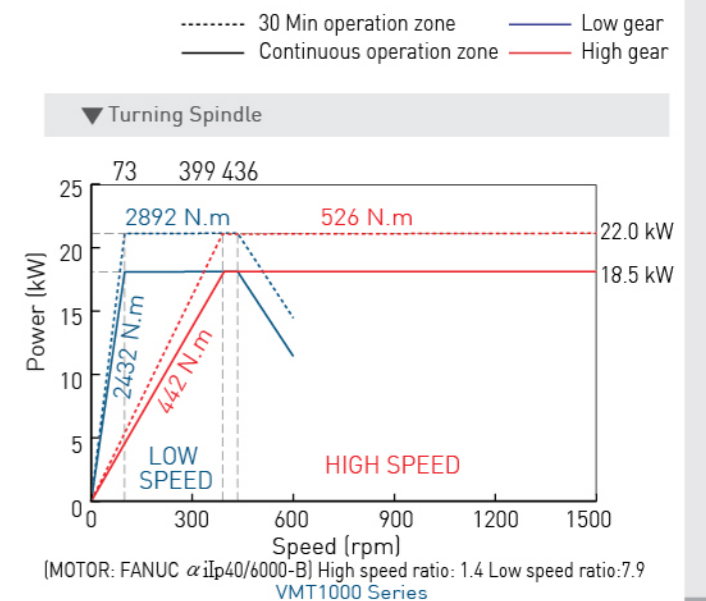
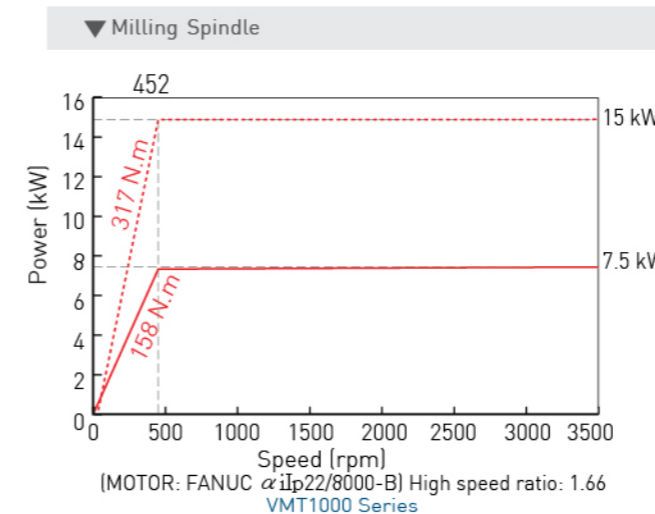
# Milling Spindle ( Live tools )

## Milling spindle ( B axis )

- The milling spindle (B axis) features a curvic coupling to lock the head position in place. Cutting force is absorbed by curvic coupling without transferring to spindle bearing, greatly increase spindle life.
- 4 axes (X/Y/Z/C axis) simultaneously control, coupled with B axis, all operations can be done in one machine including turning, milling , drilling, tapping, and grinding.
- A 5° index is standard for horizontal / vertical milling.
- Reduces the time required for setup, eliminates installation error, and improves accuracy.



## Spindle torque chart



## Y axis Design

Y axis capability is an enhancement to a turn/mill machine tools. The constraint of two axes of linear motion is unacceptable on some applications, While there are techniques, such as polar coordinate programming, which use axis interpolation to get three-axis like cuts, there remain some workpiece features that simply can't be cut using the two linear axes available on a standard turn/mill machine.

## HMI - Human Machine Interface (Option)

### Tool monitoring system

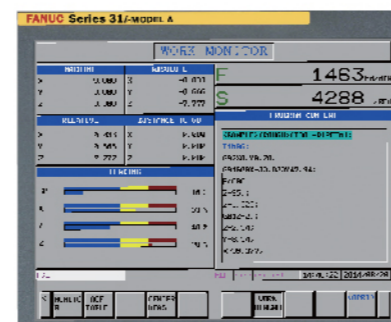
Tool monitoring system is one of the safety functions to protect the tool and spindle against possible damages caused by tool wear, breakage, or any other factors lead to abnormal load. This system is developed with following feature:

- Easy operation
- Optimum feedrate control
- Longer tool life
- Higher efficiency

### Multi-function integrated screen

All-in-one screen shows all the work-related information in one screen, displayed information are including:

- Parts program
- Mechanical coordinates
- Spindle load
- Axes load
- Real-time cut monitoring

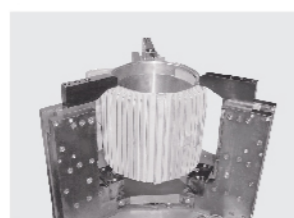


## Applications

- All in one function, including turning, milling, drilling, grinding and inclined surface machining
- Vertical, horizontal, and slope machining made possible by the milling spindle ( 0~90 degree )
- Flexible tooling application



Motor end cover



Motor housing held in fixture



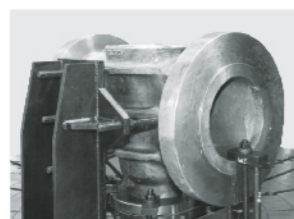
Cradle held in fixture



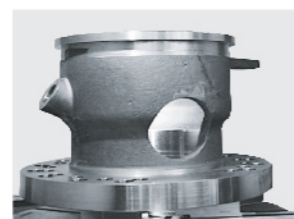
Gearbox



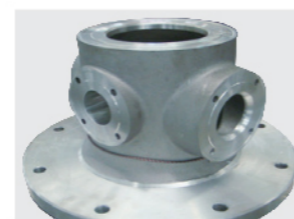
Four-way valve



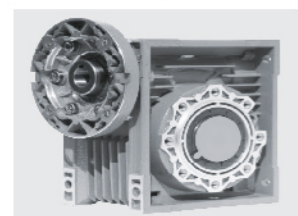
Three-way valve



Valve body



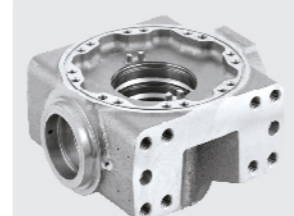
Valve body



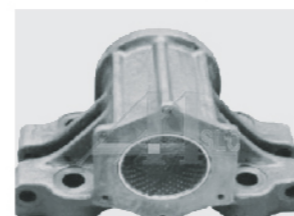
Reducer box



Machine parts



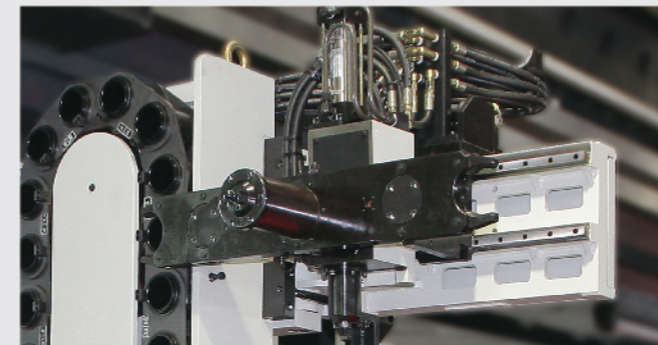
Machine parts



Truck component

## Automatic Tool Changer

Flexible floor type ATC, it is separated from the machine column, and the ATC system doesn't interfere with the machining accuracy



### Tool Arm

Adopts high efficiency arm type tool change system for quick tool change, and grips the heavy turning tool holder stably.

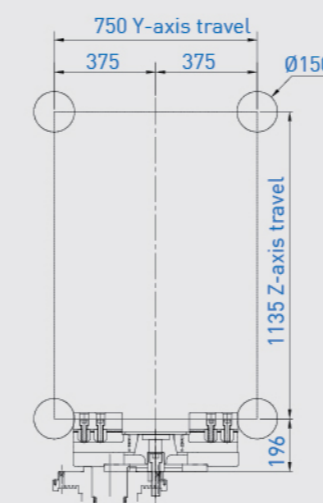


### Multi-position Tool Magazine (Option)

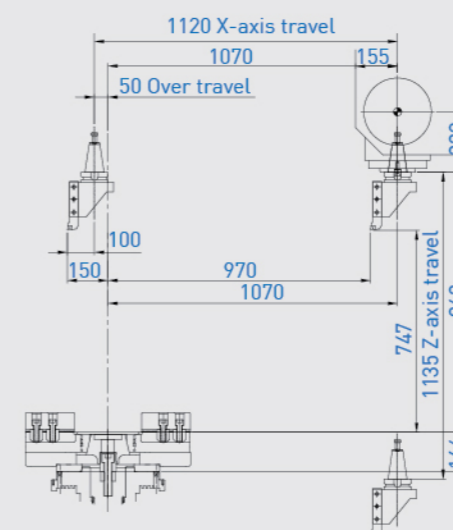
The standard is 40 tools position ATC ( it is available with 120 tools position as options ). This design of ATC has shortest route bi-directional tool selection that reduces tool change time whilst increasing production efficiency.

## Machine Travel Diagram

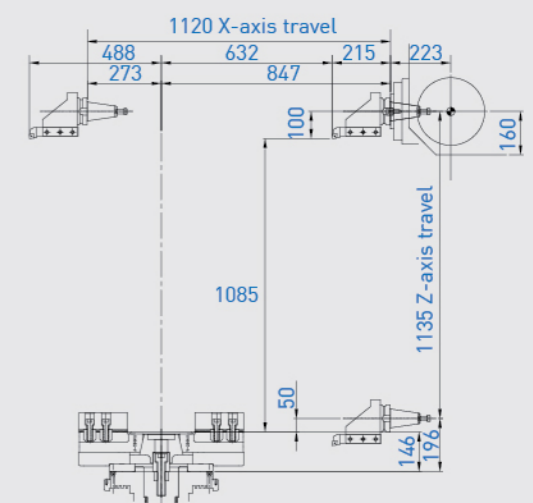
### Y.Z direction



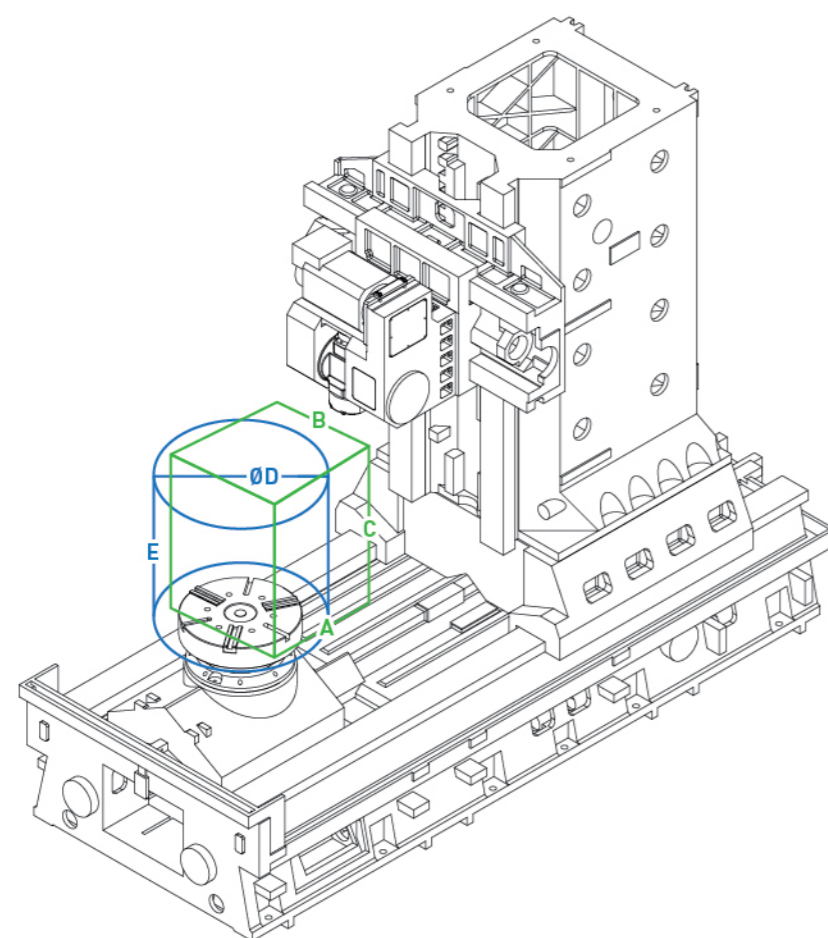
### X.Z direction-axial tool



### X.Z direction-radial tool



# Machining Envelope



## ■ Milling Range

Model	A	B	C
VMT1000	1120	750	1135

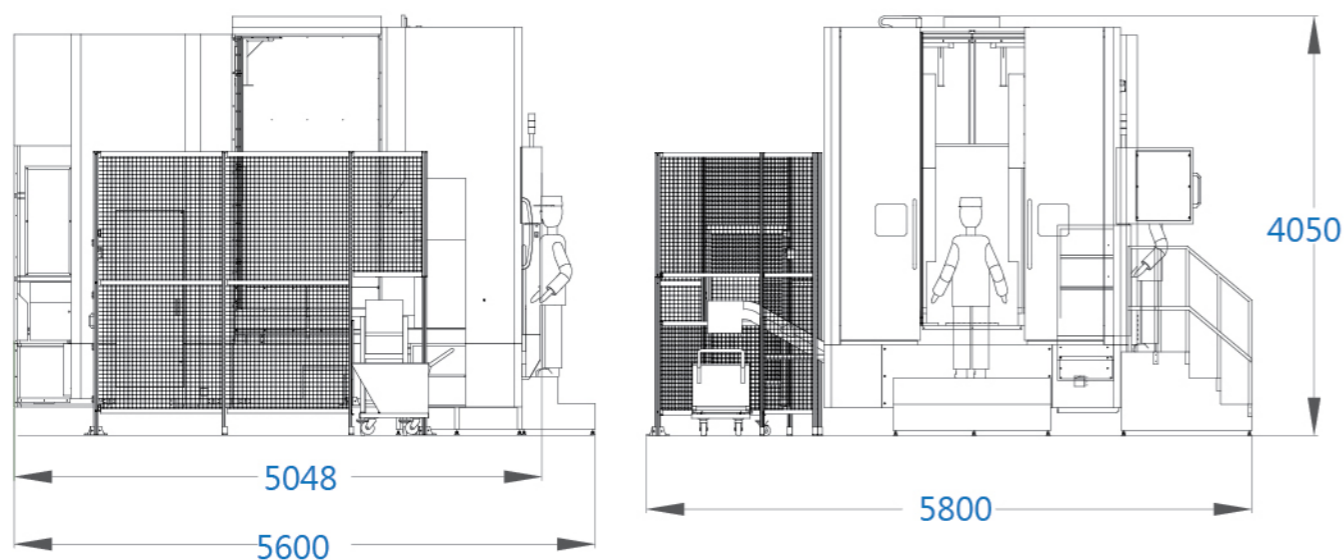
unit: mm

## ■ Turning Range

Model	ØD	E
VMT1000	1000	1000

unit: mm

## Machine Layout Dimension



## Machine specifications

Machine capacity	unit	VMT1000
Chuck size	mm (inch)	Ø610 (24")
Max. swing diameter	mm	Ø1000
Max. turning diameter	mm	Ø1000
Max. turning height	mm	1000
CF axis min. indexing	degree	0.001
Max. loading weight	kg	1200
<b>Spindle</b>		
Spindle nose		A2-11
Spindle motor	kW	18.5/22 (aiF 40/6000)
Spindle speed (2 step)	rpm	20~400 / 400~1500
<b>Milling Spindle</b>		
Type of tool shank		BT50
Milling spindle motor	kW	7.5/11 (aiF 22/8000)
Max. speed	rpm	3500
B axis indexing	degree	0~90(5 degree index)
<b>Travel</b>		
X-axis	mm	-50,+970
Y-axis	mm	±375
Z-axis	mm	1135
<b>Feed rate</b>		
X axis (box guide way)	m/min	10
Y axis (box guide way)	m/min	10
Z axis (box guide way)	m/min	10
<b>ATC Tools</b>		
Number of tools	pcs	40(Standard)/60 ↑ (Optional)
Max. tool diameter	mm	Ø125 / Ø250(without adjacent tools)
Max. tool length of ATC	mm	350
Max. tool weight	kg	25
<b>FANUC motor</b>		
<b>Motor</b>		
X axis servo motor	kW	6 (aiF 40/3000)
Y axis servo motor	kW	4 (aiF 22/3000)
Z axis servo motor	kW	9 (aiF 40/3000)FAN-B
CF axis servo motor	kW	3(aiF12/4000)
<b>Machine dimension</b>		
Floor space	mm	5800x5600
Machine height	mm	4050
Machine weight	kg	22000

★ Specification is subject to change without prior notice

## Standard Accessories

- FANUC 31i-B 10.4" LCD controller
- Spindle motor
- Dual speed gearbox for turning spindle
- 24" 3 jaws hydraulic chuck
- 1 set of hard jaw, 2 set of soft jaws
- Coolant pump
- Hydraulic system
- Auto lubrication system
- CF axis
- Front/Side manual door
- 40 tools ATC
- Milling spindle (B axis head)
- Door interlock
- Chip conveyor
- Chip bucket
- Full enclosure guarding
- 3-stage signal light
- Work lamp
- Operation manual
- Coolant level detector

## Optional Accessories

- X/Y/Z axis linear scale
- Programmable dual pressure control (Chuck)
- Oil skimmer
- Coolant chiller
- Oil mist collector
- Tool presetter
- Work-piece probe
- Auto door
- Air conditioner for electric cabinet
- Transformer
- Overload monitoring system
- Hydro separator
- Grinding wheel dresser (manual)
- CTS 12,20,70 bar
- Tool holder
- Spin window
- Tool life management