

## MACHINE SPECIFICATIONS

		Unit	TR-100A	TR-100E	TR-100AB	TR-100EB
TRAVEL	X - axis	mm	1100		1050	
	Y - axis	mm	550		600	
	Z - axis	mm	550		550	
	Table to spindle nose	mm	170~720		160~710	
	Spindle center to column slide face	mm	680		610	
GUIDEWAY	Slide way type		Linear way		Box way	
	X - axis guideway span / width	mm	325 / #35		415	
	Y - axis guideway span / width	mm	650 / #35		790	
	Z - axis guideway span / width	mm	412 / #45		540	
TABLE	Table area	mm	1200 x 550			
	T slot	mm	18 x 4 x 125			
	Max. load	kgs	600			
SPINDLE	Spindle speed	rpm	60 ~ 8000			
	Transmission		Direct drive			
	Spindle taper		7/24 NO:40			
FEED RATE	Rapid traverse	m/min	36 / 36 / 30		24 / 24 / 18	
	Cutting feedrate	m/min	1 ~ 10			
MAGAZINE	Magazine type		Arm	Armless	Arm	Armless
	Tool shank		BT#40			
	Tool capacity	pcs	24			
	Tool weight	kgs	7			
	Max. tool length	mm	250			
	Max. tool diameter	mm	80			
MOTOR	X / Y / Z - axis servo motor	kw	2 / 2 / 3			
	Spindle motor	kw	11 / 7.5			
MACHINE SPECIFICATIONS	W x D x H	mm	2800 x 2470 x 2900			
	Net weight	kgs	6200	6100	6300	6100

• All specifications, dimensions and design characteristics are subject to change without notice.

## CONTROL SPECIFICATIONS

	Mitsubishi		Fanuc
	70M-B	70M-A	0i-MD
CPU	64 bit		32 bit
Max. controlled axes	4	6	5
Max. simultaneous axes	4	4	4
Program storage length	600 M		320 M
Macro variables common	400	400	600
Tool offset sets	200	200	200
Conversational programming	○	○	○
Display	8.4" TFT LCD		
Multi-language display	○		○
Servo system with ABS. encoder	○		○
Memory card	○		○
Ethernet	○		○
High speed and accuracy machining code	G05.1 Q1	G05 P10000	G05.1 Q1
RS-232 interface	○		○
Program route simulation	○		○
Handwheel feed program simulation	○		X
Program buffer correction	○		X

O:Standard X:None OP:Option

### STANDARD ACCESSORIES

- ▶ Fully enclosed guard
- ▶ Double layer fully enclosed electric cabinet with heat exchanger
- ▶ Spindle air blow device
- ▶ Dual color LED alarm light
- ▶ Dual PL work light
- ▶ Tool kits
- ▶ Movable control box
- ▶ Screw-type chip conveyor
- ▶ Floor flush device

### OPTIONAL ACCESSORIES

- ▶ Spindle speed 10,000 / 12,000 / 15,000 rpm
- ▶ 4th / 5th axis
- ▶ Automatic tool length measurement with breakage detection
- ▶ Automatic door
- ▶ Coolant through spindle (20BAR)
- ▶ CAT / DIN tool shank
- ▶ Thermal compensation



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# TR-100

## Fully exhibits exceptional stability!



**TR-100A / TR-100E**  
Three Axes Linearways

**TR-100AB / TR-100EB**  
Three Axes Boxways

# TR-100

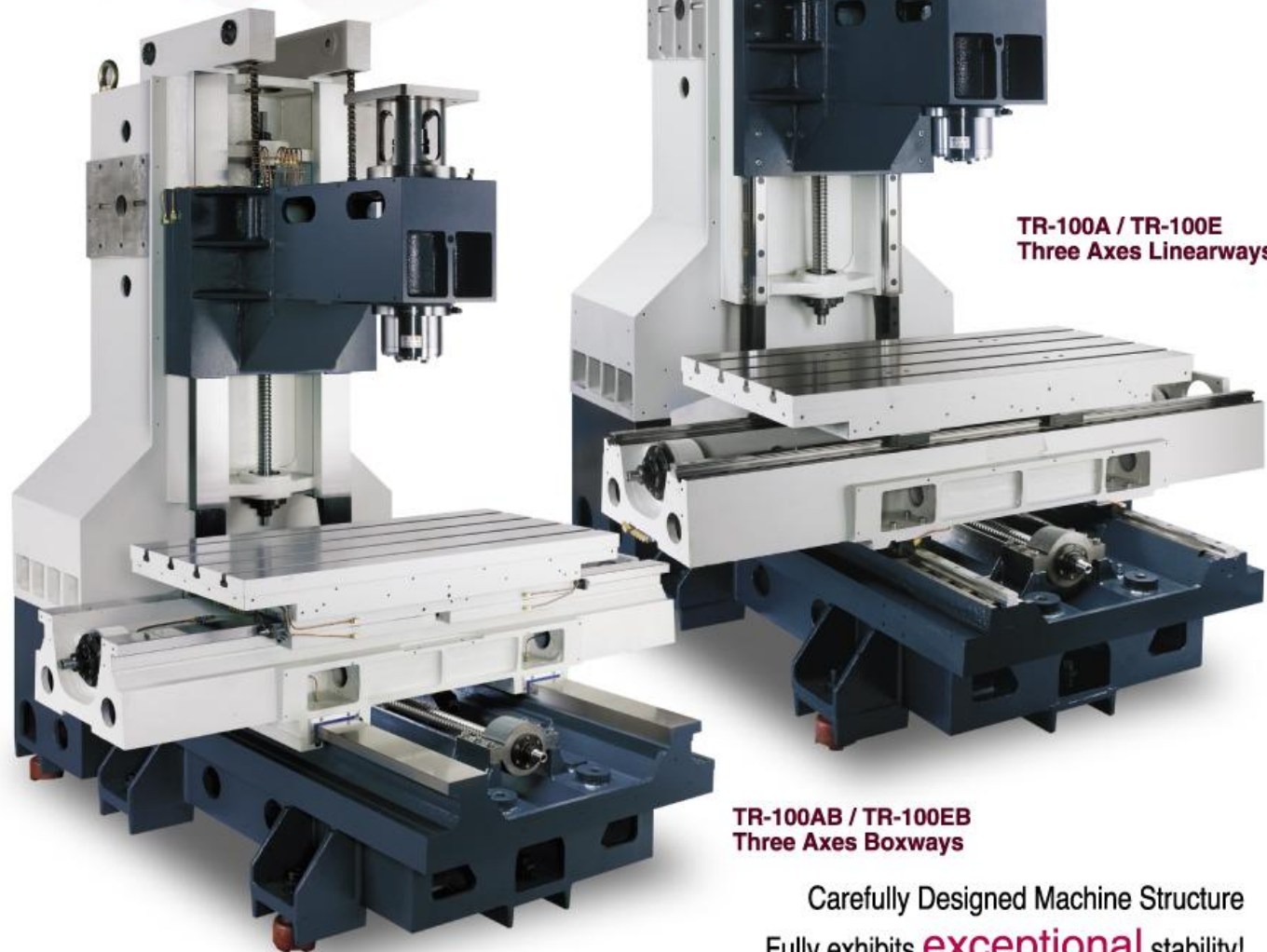
## Vertical Machining Center

TR-100

### A Perfect Combination of Precision and Efficiency!

- ◆ The main structural parts are manufactured from high quality Meehanite cast iron, then tempered to relieve internal stress. The structural parts are reinforced by ribs, ensuring superior rigidity of structure and maximum stability during high speed machining.
- ◆ The main structural parts are analyzed by Finite Element Analysis (FEM) and carefully designed to assure outstanding rigidity. Maximum stability is guaranteed during high speed machining.
- ◆ The box ways are processed with heat treatment for exceptional hardness, precisely ground and scraped. The surfaces are coated with Turcite-B for high resistance. All these processes ensure smooth travels on the box ways.
- ◆ Three axes employ class C3 precision ball screws for transmission. All ball screws are pretensioned to eliminate backlash problem, while ensuring high feed accuracy and stability.
- ◆ The motor bases and bearing housings on column and saddle are specially designed with one-piece construction. This outstanding feature not only enhances structural rigidity, but also upgrades stability and machining accuracy.
- ◆ The Y-shaped column construction effectively increases rigidity and stability of the machine.
- ◆ The three axes slideways are mounted with precision linear ways that ensure high smoothness of traveling. Also, ideal for high speed machining (for models TR-100A, TR-100E only).
- ◆ Coolant jets around spindle offers outstanding cooling effect on workpiece and cutting tool, effectively preventing workpiece deformation during machining.
- ◆ A laser unit is employed for inspecting positioning accuracy for calibration reference. Inspection is conducted according to Germany VD 3441 standards. In addition, a ball bar tester is also employed for inspecting static and dynamic circularity accuracy, servo error and geometric error.
- ◆ The machine is equipped with a pressure relief oil distributor incorporated with bronze tubes, ensuring the best lubrication performance and long service life.
- ◆ The TR series is available to use directly coupled or built-in type high speed spindle, making the machine ideal for high speed machining and precision machining.

### Optimal Structure Design! Guaranteed Rigidity and Stability!



TR-100A / TR-100E  
Three Axes Linearways

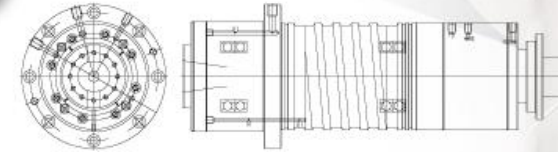
TR-100AB / TR-100EB  
Three Axes Boxways

Carefully Designed Machine Structure  
Fully exhibits **exceptional** stability!



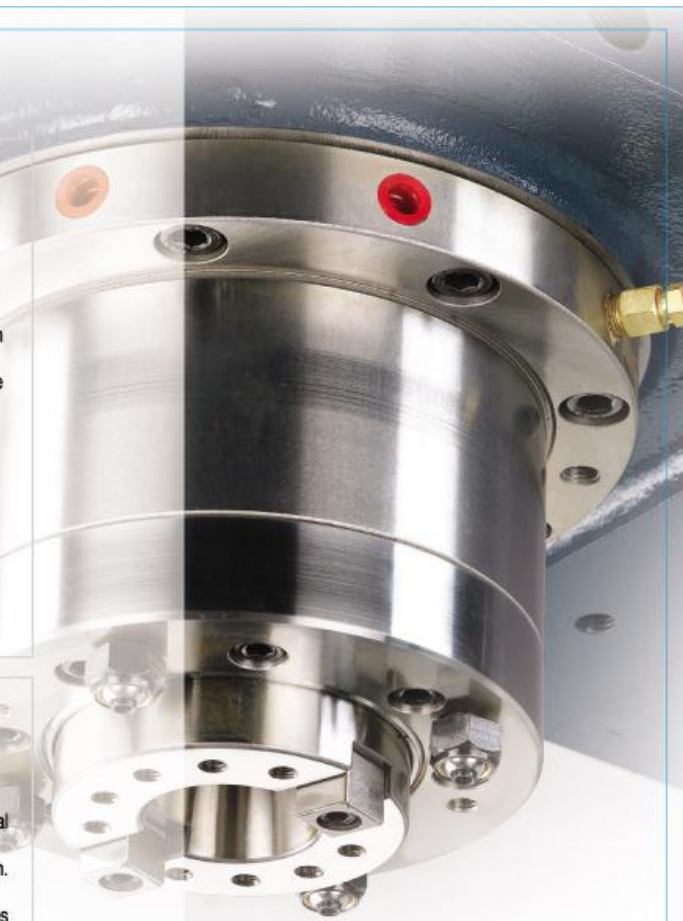
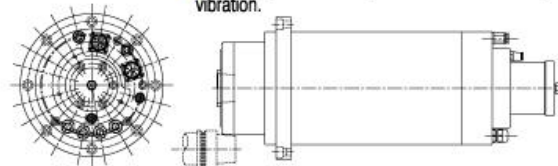
#### DIRECTLY COUPLED SPINDLE

- ◆ Excellent for IT parts machining and precision mold engraving.
- ◆ The spindle features floating locking.
- ◆ The spindle has labyrinth circuit that prevents coolant or other dusts from entering into the spindle, which can result in damage.
- ◆ Integrated tool knocking cylinder allows for considerable time saving in spindle installation and dismantling.
- ◆ Coolant through spindle (optional).



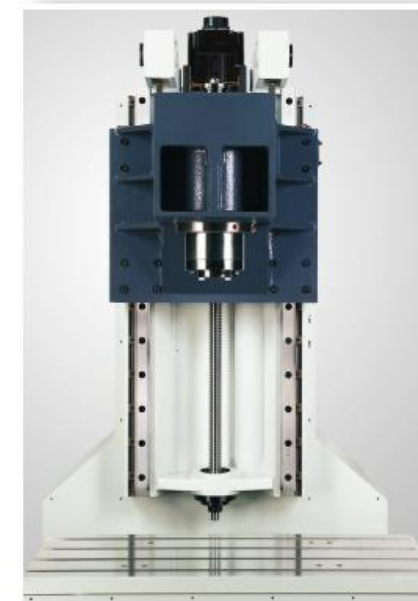
#### 16,000/24,000/30,000 RPM BUILT-IN TYPE SPINDLE (OPTIONAL)

- ◆ Choice of spindle speeds - 16,000 / 24,000 or 30,000 rpm. 17W, HSK E50. Oil mist lubrication.
- ◆ Compact structure, low power consumption, low thermal displacement.
- ◆ Excellent dynamic rotating accuracy. Minimum vibration.
- ◆ Convenient and quick to install and maintain spindle.
- ◆ High efficiency internal circulated cooling feature assures long service life of bearings.
- ◆ High machining efficiency and increased product value.
- ◆ Reduced spindle rotating inertia that minimizes spindle vibration.



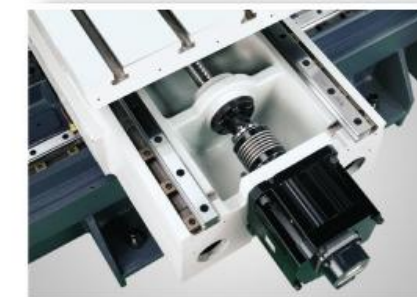
#### COOLANT JETS AROUND SPINDLE

The coolant jets around spindle are designed to solve interference problem in the cutting area caused by conventional nozzles. It also may upgrade cooling effect for the workpiece.



#### SYMMETRICAL SPINDLE HEAD LAYOUT

The spindle head layout is completely symmetrical, eliminating the spindle head tilting problem during machining. Another benefit is to prevent instability caused by heat transfer from the spindle motor.



#### ONE-PIECE CONSTRUCTED SCREW SUPPORT

The motor base bearing housing and the structural part are specially designed with one-piece construction. This results in greater rigidity and stability of feed transmission.



#### BEAUTIFIED MACHINE BACK MORE NEAT! MORE BEAUTIFUL!

All piping located at the machine back is concealed in the enclosure making the machine's back look neat and beautiful. In addition, it also prevents piping from being damaged due to outside exposure, while providing added convenience of machine maintenance.



#### 24 TOOLS ARM TYPE MAGAZINE

The magazine loading capacity is 24 tools. Bi-directional, random tool selection.



#### 24 TOOLS ARMLESS TYPE MAGAZINE

The magazine loading capacity is 24 tools. Bi-directional, random tool selection.