

MACHINE SPECIFICATIONS

MODEL		TS-45	TR-563S	TR-56S		
TRAVEL	X-Travel	mm	450	560		
	Y-Travel	mm	320	400		
	Z-Travel	mm	330	400		
	Spindle Nose to Working Table	mm	180~510	150~550		
TABLE	Table Size	mm	500x325x2PCS	600x425x2PCS		
	Max. Loading Capacity	kgs	200x2PCS	200x2PCS		
	Max. Workpiece Height		290	300		
	T Slots	mm	14x100x3	M12		
SPINDLE	Spindle Speed	rpm	10000	10000	8000	
	Max. Tapping Speed	rpm	5000	5000	3000	
	Spindle Taper		7/24 NO.30	7/24 NO.30	7/24 NO.40	
	Transmission		Direct Drive	Direct Drive		
FEED RATE	Rapid Traverse (G00)	m/min	48/48/60	48/48/48		
	Machining Speed (G01)	mm/min	10000	10000		
ATC SYSTEM	Tool Shank		BT#30	BT#30	BT#40	
	ATC Type		Armless	Arm		
	Magazine Capacity		14	20+1	24+1	
	Max. Tool Length	mm	200	200	250	
	Max. Tool Diameter	mm	100	80	80	
	Max. Tool Weight	kgs	2.5	3	4	
	Tool Change Time	T-T	Sec.	1.5	1.2	1.7
		C-C	Sec.	2.1	3.2	3.5
MOTOR	X-axis	kw	2.2(Mitsubishi)/1.8(Fanuc)	2.2(Mitsubishi)/1.8(Fanuc)		
	Y-axis	kw	1.5(Mitsubishi)/1.8(Fanuc)	2.2(Mitsubishi)/1.8(Fanuc)		
	Z-axis	kw	2.2(Mitsubishi)/2.5(Fanuc)	3.0(Mitsubishi)/2.5(Fanuc)		
	Spindle	kw	3.7 / 2.2	3.7 / 2.2	7.5 / 5.5	
MACHINE SPECIFICATIONS	W x D x H	mm	1755 x 3027 x 2523	2185 x 3328 x 2617	2320 x 3328 x 2617	
	N. W.	kgs	4000	5300	5500	
OPTIONAL ACCESSORIES	High Speed Spindle Upgrade		12K 15K 20K 24K	12K 15K 20K 24K	10K 12K 15K	
	Armless Type 21T Magazine (21T with Servo Drive)		△	×	×	
	Arm Type 30T Magazine (Servo Drive)		×	×	△	
	HSK63 Magazine & Spindle		×	×	△	
	Extra Low Inertia Spindle Motor (Mitsubishi)		△	△	△	
	Spindle Power Upgrade		5.5 kw	5.5kw	11 kw	
	Work Table T Slots -14mm		○	△	△	
	Connection For Table -Hydraulic		△	△	△	
	Three Axis Linear Scale		△	△	△	
	Chip Conveyor -Rear Type (Filter/Scraper/Chain Type)		△	△	△	
	Z Axis Travel Extra 120mm		×	×	△	
	High Pressure Coolant Through Spindle		△	△	△	
	Automatic Tool Length Measurement With Breakage Detection		△	△	△	
	4th Axis Rotary Table (Single or Dual)		△	△	△	
	Transformer , Voltage regulator		△	△	△	

● All specification subject to change without notice.

○: Standard △: Optional ×: Not available

STANDARD ACCESSORIES

- Spindle air blow device.
- Independent PL lamp for loading and cutting area.
- Tool coolant system and high flow chip flushing system.
- Pressure detected automatic lubrication system and high efficiency lubrication oil fitter.
- Dual-color LED alarm light.
- One-piece dual layer insulated electric cabinet.
- Tool kits and tools.
- Table with twin work area.
- Independent air connection for each work table.



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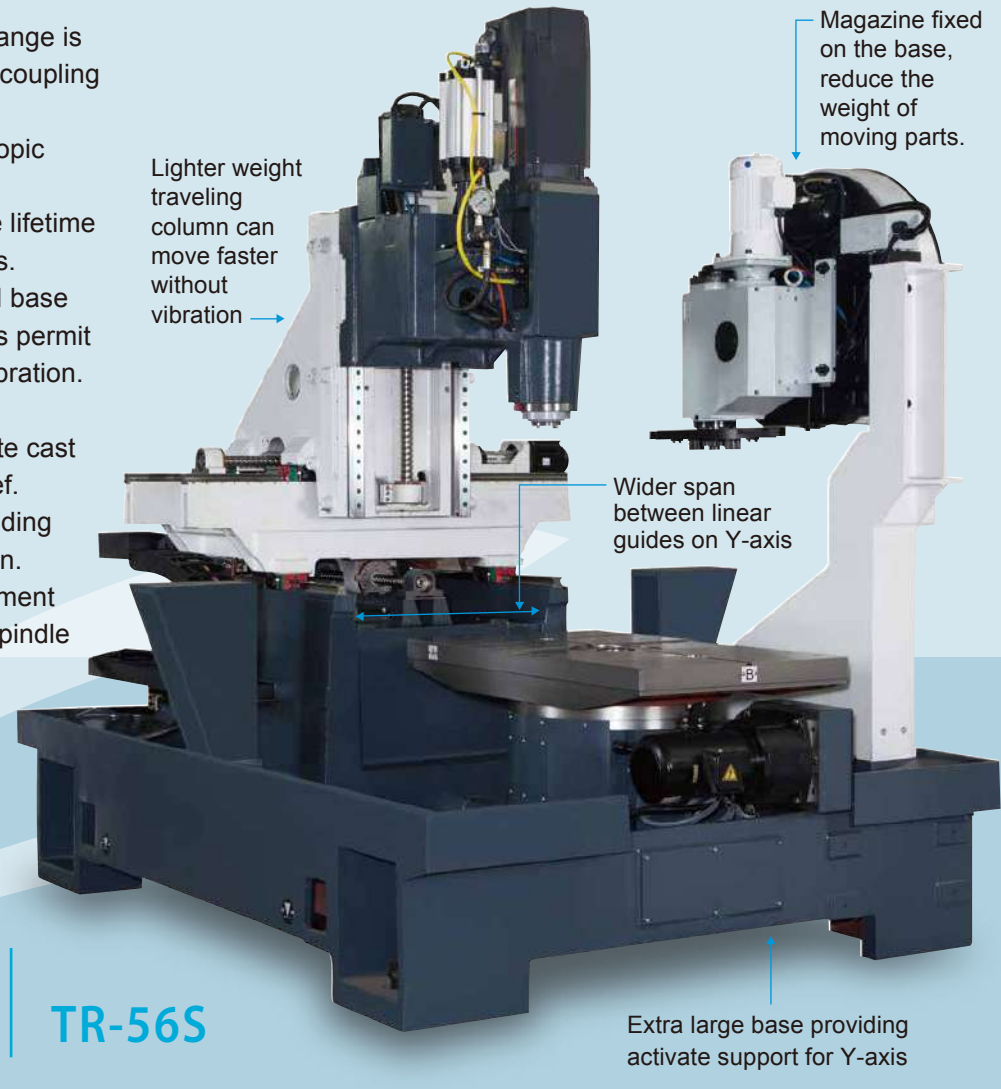
TS-45/TR-56S Series

Column Traveling Vertical Machining Center with APC system

Perfect Structure Design ! High Speed Without Vibration !

Intelligent Automatic Pallet Changing Capability. High Performance!! High Smooth Movement !!

- The high precision pallet change is achieved through a 3-piece coupling positioning mechanism.
- Scales type of X axis telescopic covers, Divide cutting and non-cutting area, extend the lifetime of transmission system parts.
- Traveling column, oversized base and lightweight moving parts permit high-speed travel without vibration.
- All structure elements are manufacture from Meehanite cast iron with through stress relief. This feature creates outstanding structure without deformation.
- Raise up the height of basement to make the distance from spindle to blocks shorten, to ensure more rigidity on cutting.



TR-56S



TS-45

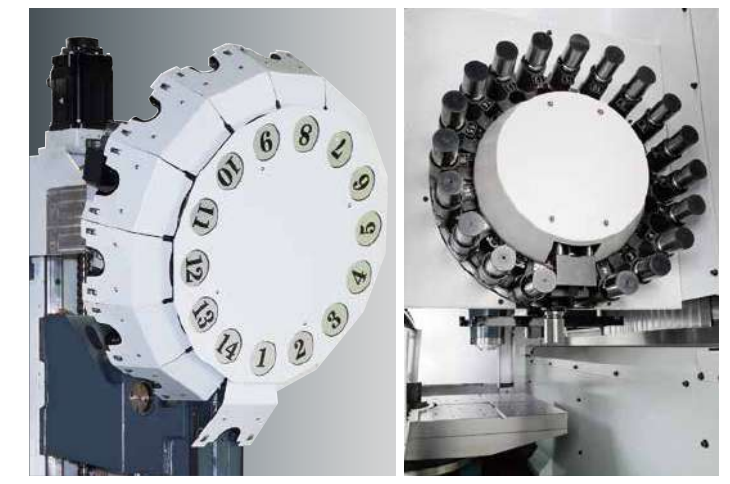
Direct-drive spindle

- The spindle is directly coupled to the motor, no noise, backlash or vibration.
- BT#30 maximum spindle speed 24000 rpm (OP)
- BT#40 maximum spindle speed 15000 rpm (OP)
- It can satisfy High-precision parts of machining requirements.
- High rigidity mechanism, High-speed rotation and low vibration.
- Spindle air curtain, prevent moisture and chips to go into spindle.



Efficient Magazine

- TR-56S series is equipped with Inverter ARM type magazine. Induction is fast, stable and no noise. Tool change is quickly accomplished with smooth motion.
 - BT#40 ARM type magazine (24T), T-T 1.7 sec.
 - BT#30 ARM type magazine (20T), T-T 1.2 sec.
- TS-45 series is equipped with Armless type magazine, Strong and accurate clamping, provides stable and reliable tool change.
 - BT#30 ARMLESS type magazine(14/21T). T-T 1.5 sec(14T)



High Precision, Fast Pallet Change

- The high precision pallet change is achieved through a 3-piece coupling positioning mechanism.
- The pallet change is fully motor driven with cam indexing. Pallet change is quickly completed in only 4 (56S)/3.2 (TS-45) sec.
- Each work area can be equipped with one set of air system(hydraulic system optional) for auto fixture.



Control Specifications

	Mitsubishi					Fanuc	
	M70-VB	M70-VA	M80-VB	M80-VA	M720-VS	0i-MF(P3)	0i-MF(P1)
CPU	64 bit					32 bit	
Max. Controlled Axes	9	11	9	11	12	6	9
Max. Simultaneous Axes	4	4	4	4	4	4	4
Program Storage Length	512K	512K	512K	512K	512K	512K	512K
Macro Variables common	700	700	700	700	700	700	700
Tool Offset Sets	400	400	400	400	400	400	400
Conversational Programming	○	○	○	○	○	○	○
Display	8.4" TFT LCD				10.4" TFT LCD	8.4" TFT LCD	
Multi-language Display	○						
Servo System with ABS. Encoder	○						
Memory Card Front-loading	○						
Ethernet	○						
High Speed And Accuracy Machining Code	G05.1 Q1	G05 P10000	SSS	SSS	SSS	G05.1 Q1	
RS-232 Interface	○						
Toolpath Simulation	○	3D				○	
Handwheel Feed Program Simulation	○						
Program Buffer Correction	○						

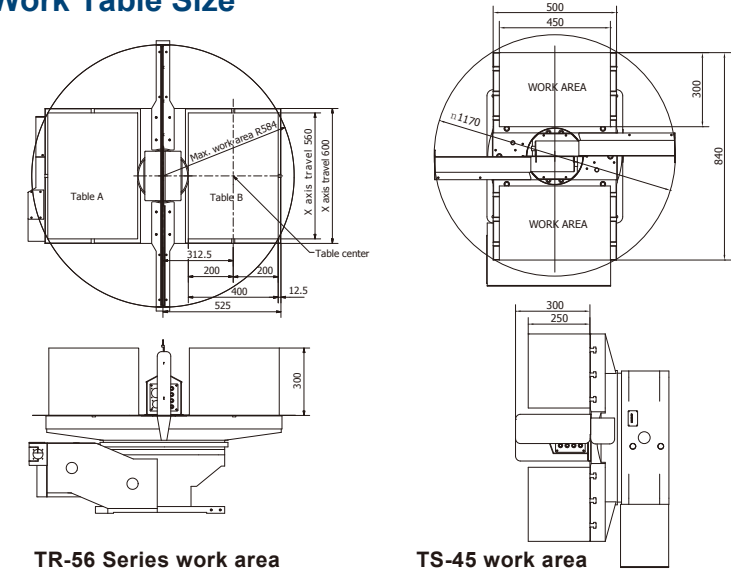
○:Standard X:None



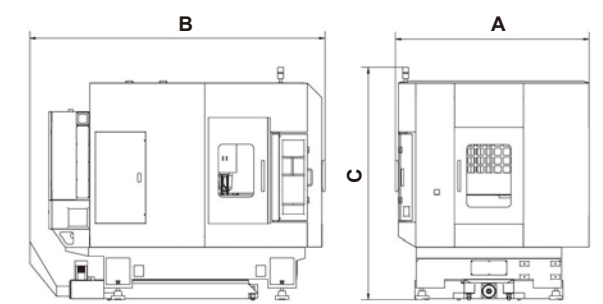
User-Friendly Control Panel

- User friendly control panel design matches ergonomic principles.
- Independent control panel is provided between work area and magazine operation area for more convenience operation.

Work Table Size



Dimensions



Machine Dimension			
Model	A	B	C
TS-45	1755	3027	2523
TR-563S	2185	3328	2617
TR-56S	2320	3328	2617