

Vertical Machining Center

# TMV-720A



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## ULTRA-HIGH PERFORMANCE! EXCEEDING EXPECTATION!

Rigid and compact structure design. X/Y/Z axis rapid traverse reaches 48 m/min. With various spindles, The TMV-720A allows different machining applications.

- ▶ TMV-720A is designed for high speed machining. The high speed 40 taper spindle with integrated spindle cooler allows long-term accurate machining. (Coolant through spindle optional).
- ▶ Long-neck type spindle decreases the interference range with 4th axis table. Furthermore, high rigidity machine structure ensures excellent positioning accuracy during high speed and precision machining.
- ▶ Arm type rapid automatic tool changer shortens the tool changing time and increases productivity.

## Machine structure

Stroke (X/Y/Z axis):

720/480/530 mm

Rapid traverse (X/Y/Z axis):

48/48/48 m/min

**Wide Span Column**

1,140 mm

Chip-proof telescopic cover



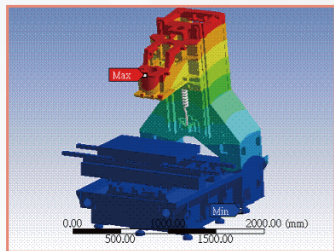
Ball screw & rigid linear guide way



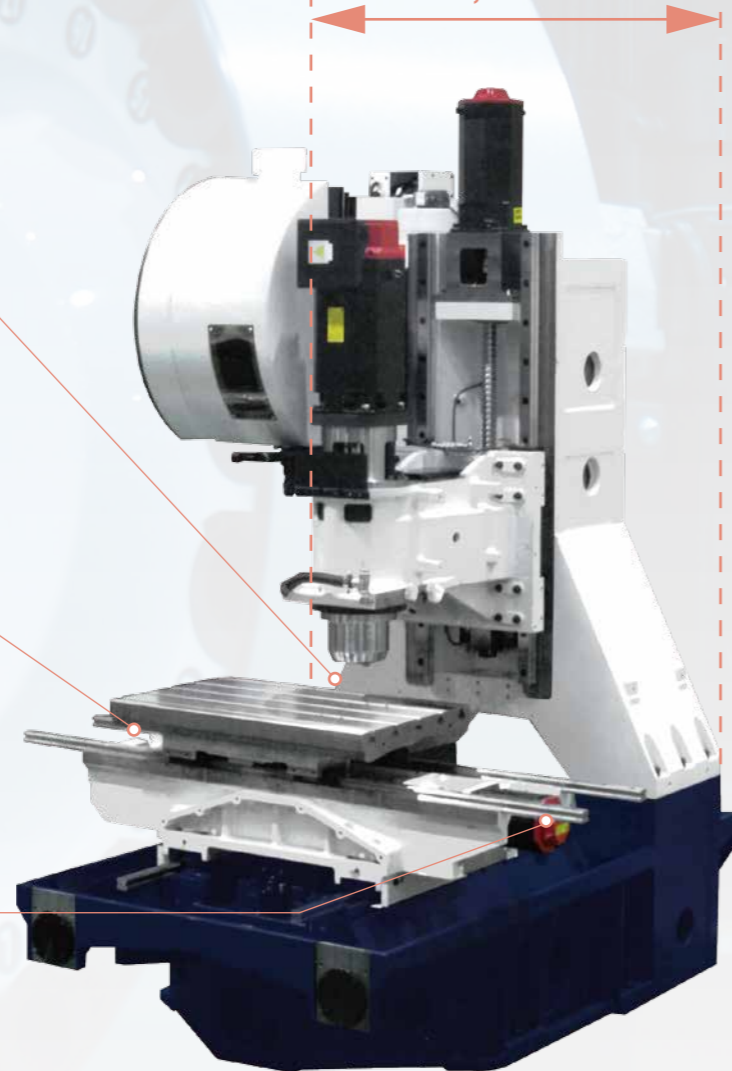
Servo motor



Finite Element Analysis – FEA



FEA is employed in the machine design to ensure structural integrity. The result is high rigidity, high accuracy, and excellent machine productivity



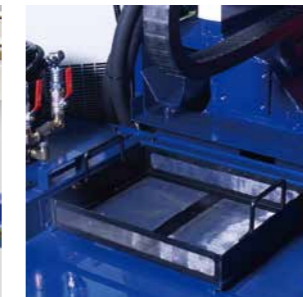
## Ball screw preloaded

The preloaded ball screw reduces thermal distortion and ensures the machine's continuous performance and precision.



## Chip removal design

Excellent dual-track chip disposal design with flushing system improves chip flow. The optional chip augers speed up the chip disposal and decrease the cleaning time.



## Ergonomic design

The ergonomic design facilitates the operator in monitoring the production process during program editing. It reduces mistakes and improves the working efficiency.



# Spindle

## Belt type

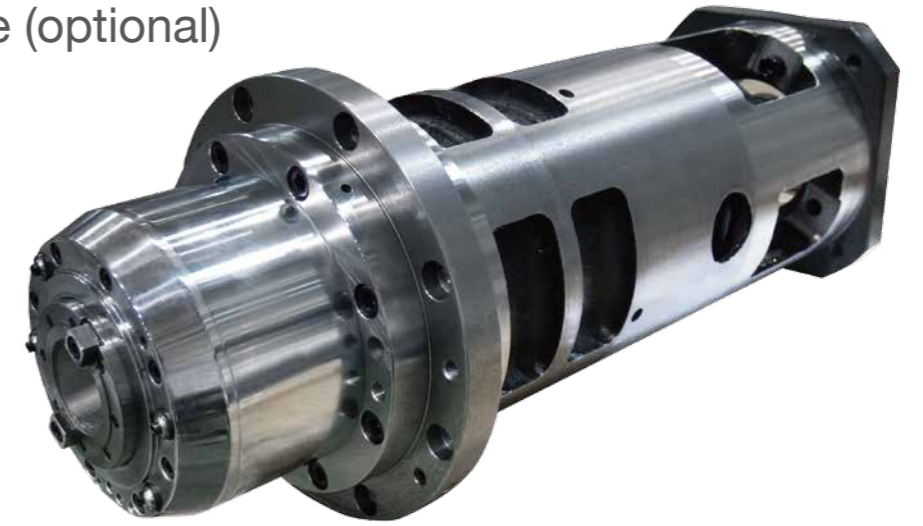
Standard  
Belt type : **8,000** rpm

Optional  
Belt type : **10,000** rpm



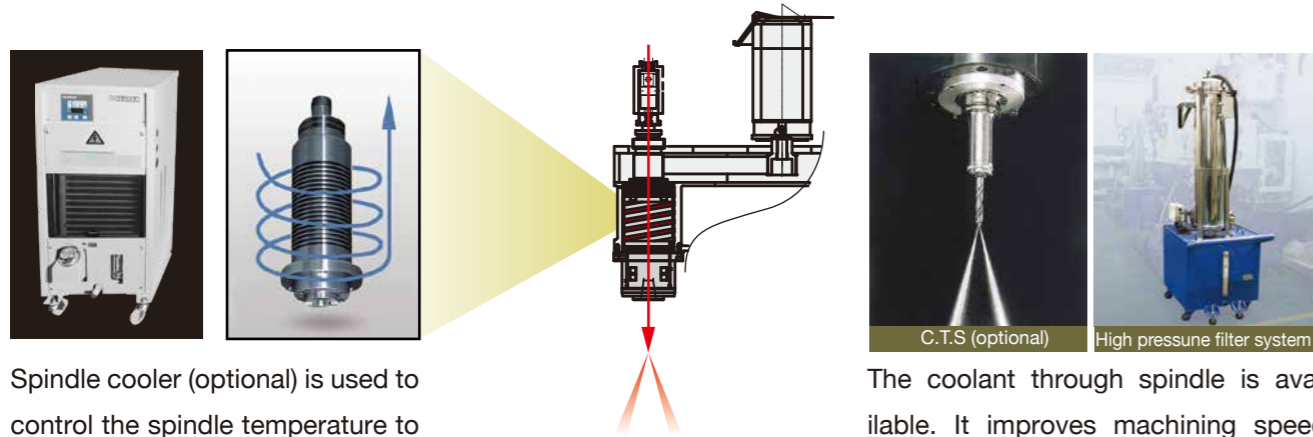
## Direct-drive type (optional)

Optional  
Direct-drive type :  
**10,000** rpm



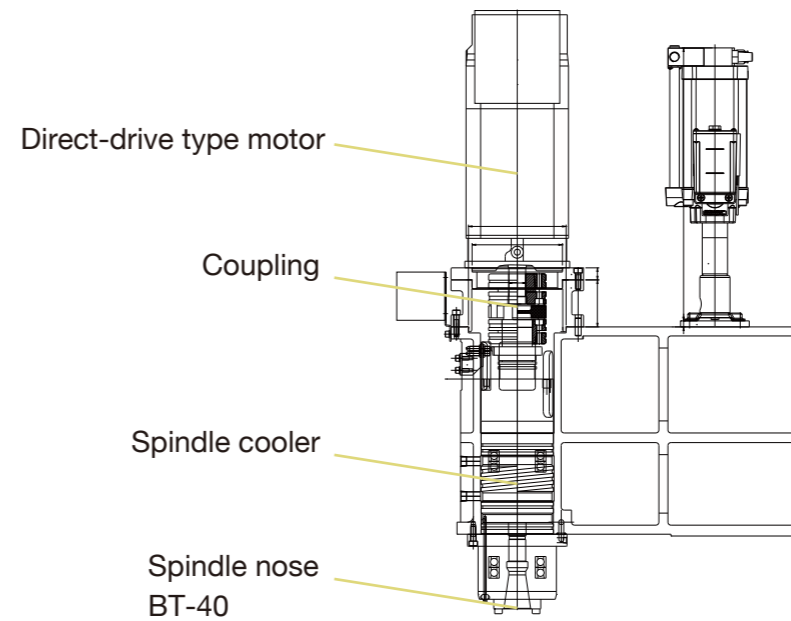
## Belt type spindle (optional coolant through spindle)

- Spindle is connected with motor by belt

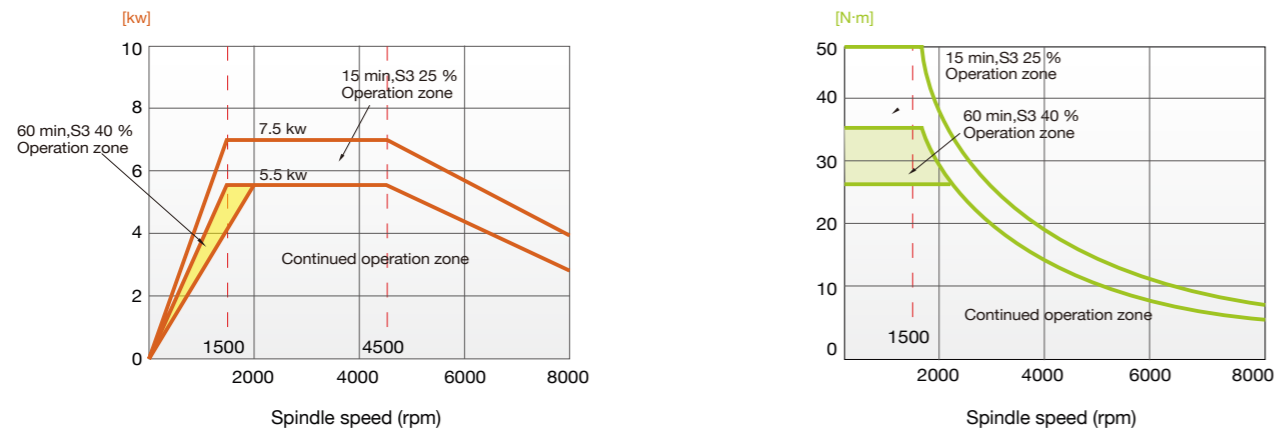


Spindle cooler (optional) is used to control the spindle temperature to match the machine temperature. This prevents the spindle from overheat, thus minimizing thermal distortion.

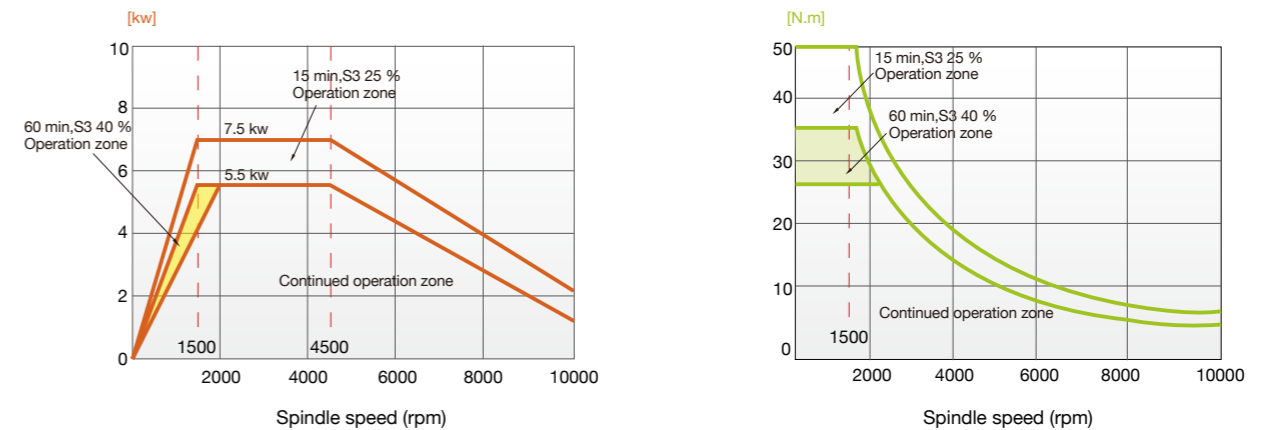
The coolant through spindle is available. It improves machining speed and extends the tool life. Moreover, it allows efficient metal chip removal during deep hole machining and improves the workpieces' precision.



## Spindle output and torque chart Standard-8000 rpm



## Spindle output and torque chart Optional-10000 rpm





## Automatic Tool Changer

Tool capacity **24** tools

Tool changing time T to T : **3.0** sec

C to C : **4.0** sec



The maximum capacity of tool magazine is 24 tools. It uses an arm type rapid tool changer to shorten idle time and achieves the goal of high efficiency machining.

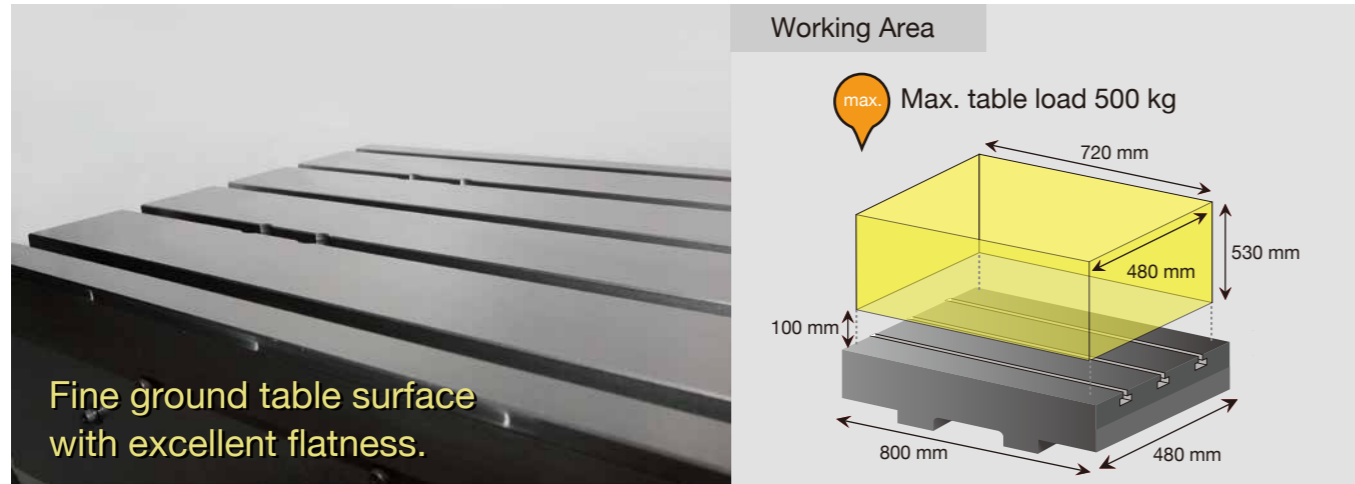
## Table

Table size  
800×480 mm

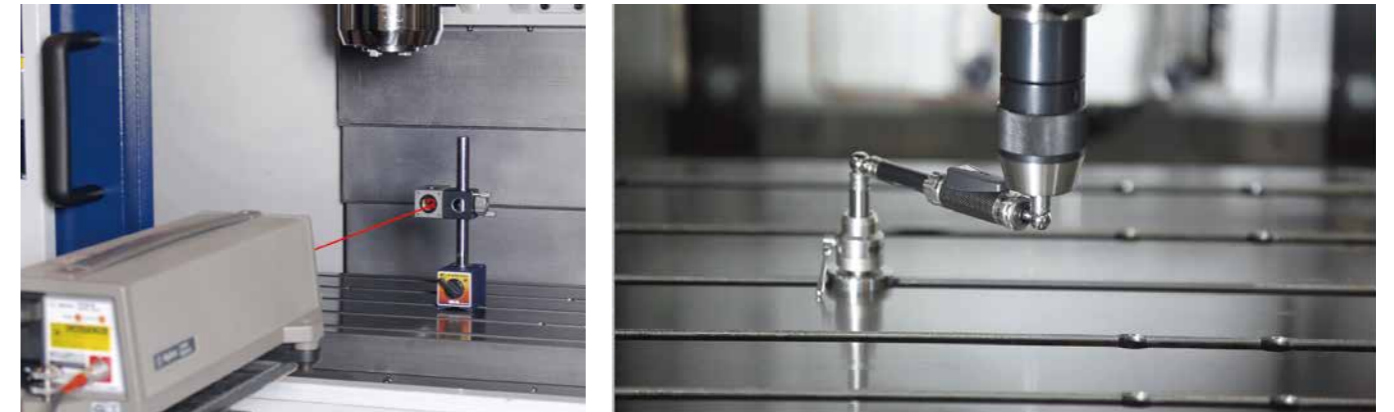
Working area (L×W×H)  
720×480×530 mm

Maximum table load  
500 kg

Table height from floor  
900 mm



## Precision testing



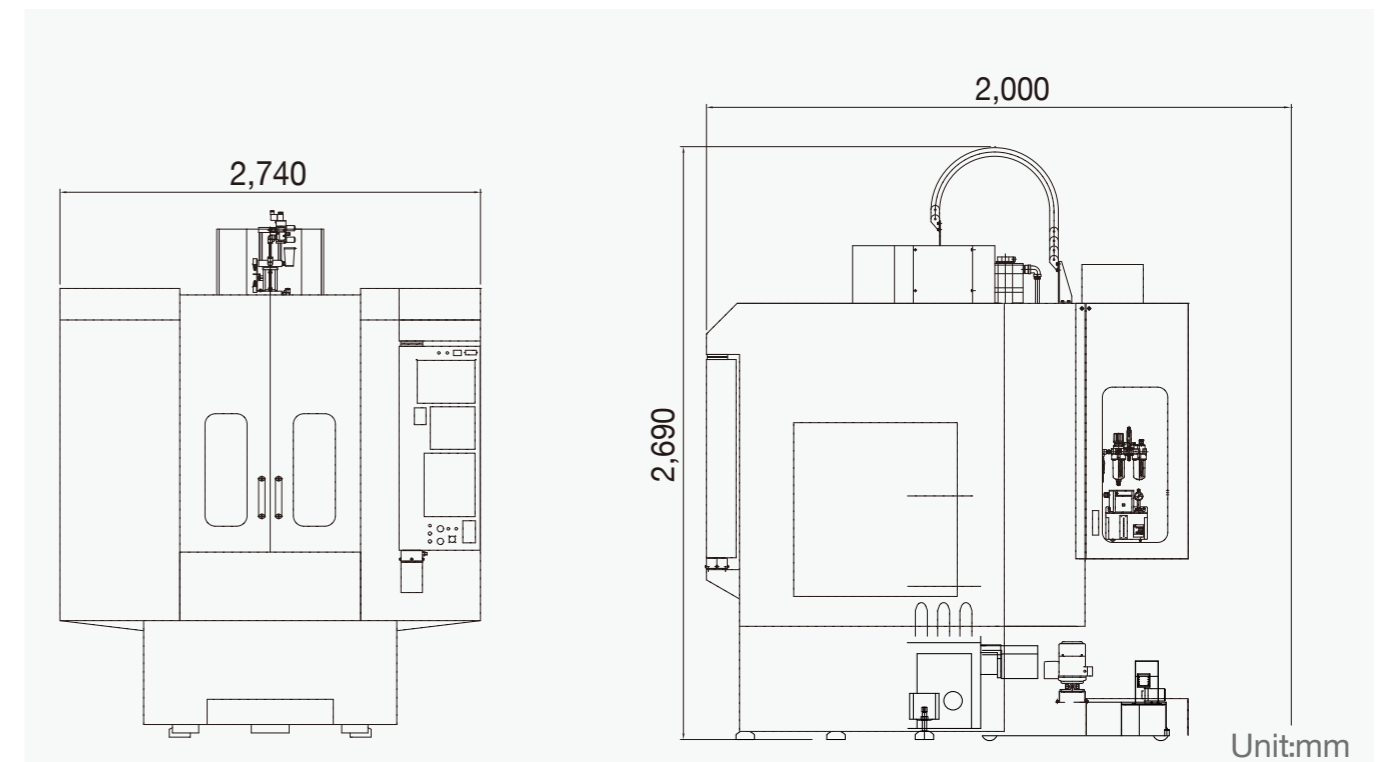
For assuring assembly precision, Tongtai not only sets internal controls through standard operating procedures, but also has established self-checking lists for each machine assembly. Engineers can follow the lists to enforce setting and testing tasks for approving the quality of products.

## Ergonomic operation

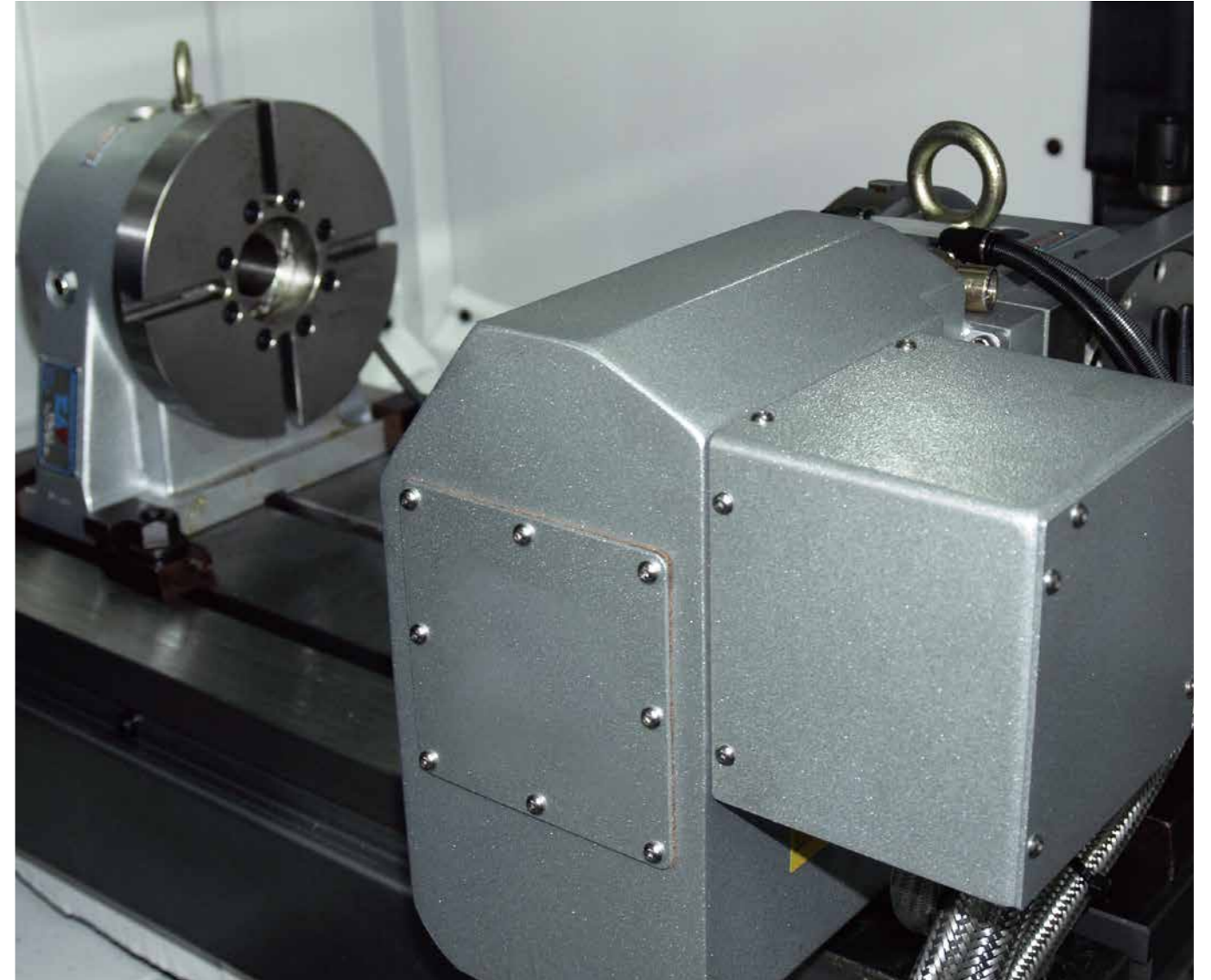
Friendly machine design provides the operator with an ergonomic operation environment by door opening width 800 mm. The height of table from floor is 900 mm and the minimum distance from the table to the front guard is only 185 mm.



## Machine dimensions



## Customization (Optional)

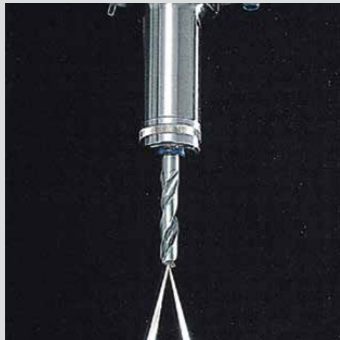


With an excellent R&D team, Tongtai is able to offer customization with optional solutions.

## Examples of application



## Optional accessories



Coolant through spindle



Spindle cooler



4th axis



Tool breakage detector



Oil skimmer



Chip conveyor



Tri-color warning light



Oil mist collector



Coolant gun



A/C for electrical cabinet



Transformer



Sub-operation box

## Specification

Item	Specification	Unit	TMV-720A
Table	Table size	mm	800x480
	Max. loading capacity	kg	500
	Table height from floor	mm	900
	T-slot (size×No.)	mm	18x5
Spindle	Spindle taper		7/24 Taper No.40
	Spindle speed	rpm	10,000
Travel	X/Y/Z axis travel	mm	720/480/530
	Distance from table surface to spindle gage line	mm	100~630
Feed	X/Y/Z axis rapid traverse	m/min	48/48/48
	Cutting feedrate	mm/min	1~10,000
ATC	Tool shank	m/min	BT-40
	Tool capacity	pc	24
	Max. tool diameter	mm	Ø80
	Max. tool diameter(w/o adjacent tool)	mm	Ø125
	Max. tool length	mm	250
Motor	Spindle motor	kw	7.5/5.5
	X/Y/Z axis servo motor	kw	1.8/1.8/3.0
Machine size	Width×depth×height	mm	2,000x2,740x2,690
	Weight	kg	4,400
Controller			Fanuc 0i-MF

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