Tongtai

Trust & Technology

Vertical Machining Center

TMV-850QII/1050QII

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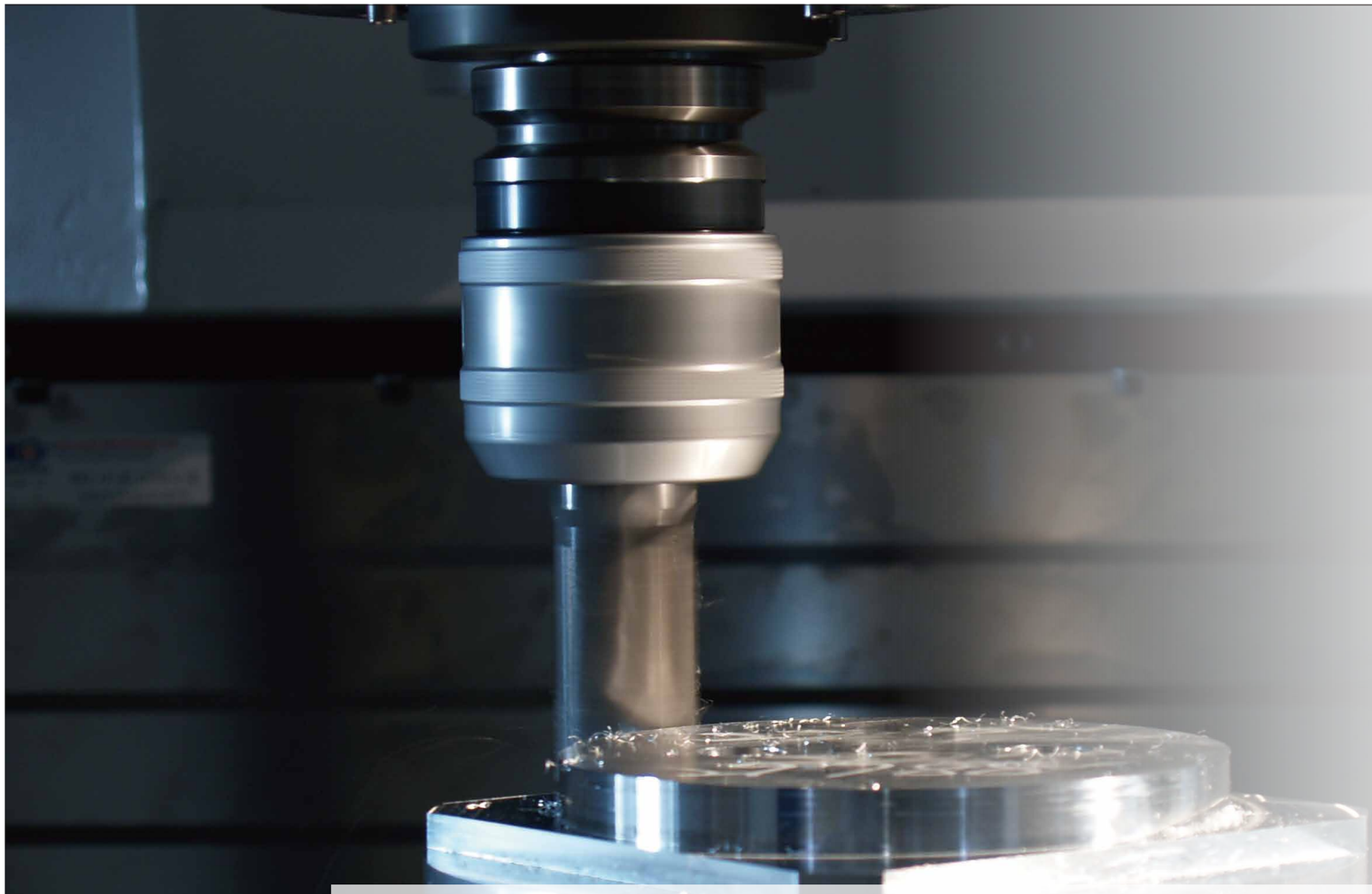
TMV-850QII/1050QII



- TMV-850QII and TMV-1050QII are the upgraded versions that allow the rapid traverse of up to 48 m/min. The rapid automatic tool changer shortens the T to T time less than 2 seconds. These features will provide the best investment return to the customers.
- Excellent C type mechanical structure design provides high machine rigidity. It also assures excellent positioning accuracy during high speed and precision machining.
- The integrated ergonomic working table design and friendly operating panel improves operating efficiency.
- Spindle thermal distortion compensation is available. It not only monitors the temperature change in machine structure and feeding axis, but also engages the compensation in spindle to enhance the machining stability.

Machine main specifications

Item	Unit	TMV-850QII	TMV-1050QII
X/Y/Z travel	mm	850 / 600 / 530	1,050 / 600 / 530
Spindle speed	rpm	8,000 / 10,000	
Rapid traverse	m/min	48 / 48 / 48	
Table size	mm	950 x 600	1,100 x 600
Max. loading capacity	kg	800	
Servo motor	kW	4.5 / 4.5 / 5.5	
Max. tool weight	kg	7	
Tool capacity	pc	24	

CONTENTS

Main structure

X/Y/Z axis specification

Travel

X/Y/Z axis

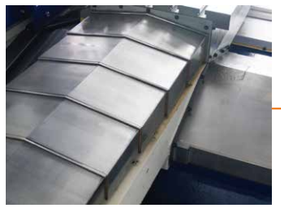
TMV-850QII 850 / 600 / 530 mm

TMV-1050QII 1,050 / 600 / 530 mm

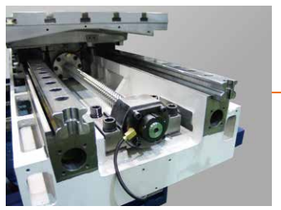
Rapid traverse

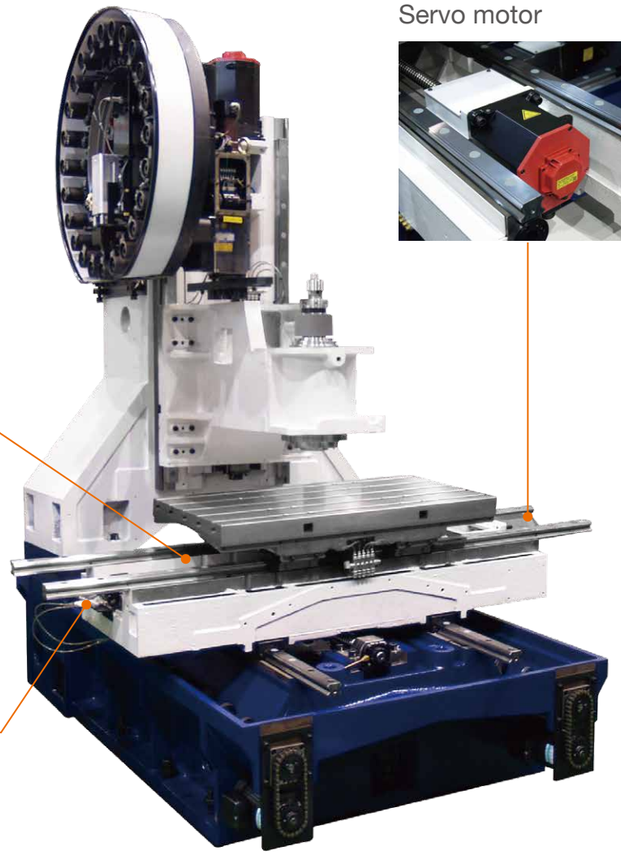
X/Y/Z axis 48/48/48 m/min

Chip-proof telescopic cover



Ball screw & rigid linear guide way

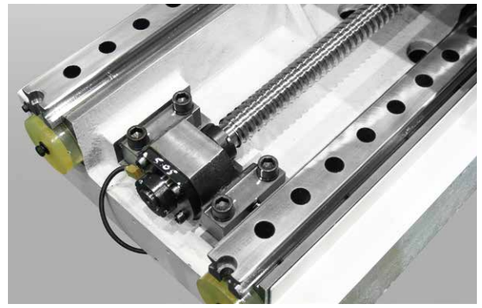




Servo motor

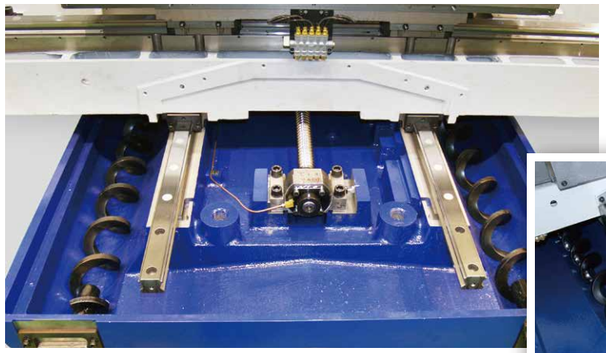
Preloaded Ball Screws

All ball screws of X/Y/Z axis are preloaded to reduce thermal distortion and ensure the machine's continuous performance and accuracy. Axis thrust bearings are automaticly lubricated for long life.



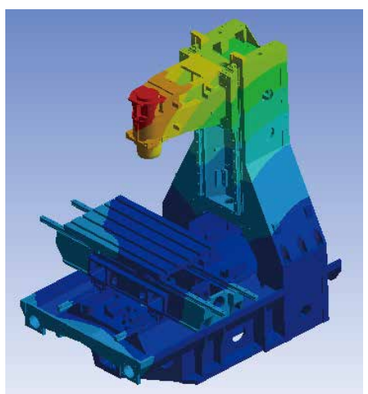
Chips removal design

Dual chip augers are standard and the flushing system is optional for increasing the ability of chip disposal and decreasing the cleansing time.



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



Ergonomic design

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

Main structure

Automatic Tool Changer

In TMV-850QII and TMV-1050QII series, the standard capacity of the tool magazine is 24 pieces. It uses a rapid tool changer to shorten idle time and achieves the goal of high efficiency machining.

Tool capacity 24 pcs

Tool changing time

T to T : 2.0 sec
C to C : 3.4 sec

Belt type spindle

Standard

Belt-type : 8,000 rpm

Optional

Belt-type : 10,000 rpm

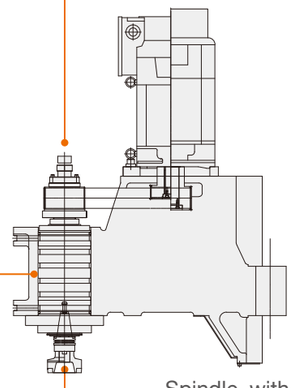
- Spindle is connected with motor by belt
- Coolant through spindle is available
- Spindle cooler is available

Spindle cooler (Opt.)

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

Coolant through spindle (C.T.S) (Opt.)

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 with air purge and labyrinth design avoids coolant and metal chips into the spindle.

Direct-drive type (Opt.)

Direct-drive type : 8,000 rpm、10,000 rpm

- Spindle is connected with motor by coupling
- Spindle cooler is available
- Coolant through spindle is available (αT8 motor only)

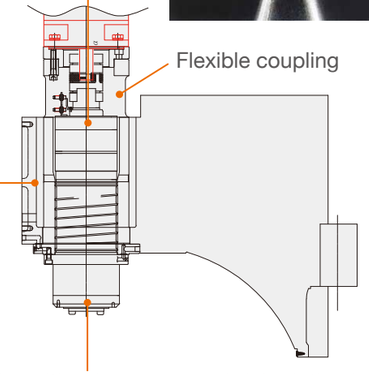
Direct-drive motor

Spindle cooler (Opt.)

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

Coolant through spindle (C.T.S) (Opt.)

αT8 motor only



Flexible coupling

Spindle with air purge and labyrinth design avoids coolant and metal chips into the spindle.

Main structure

Table size (L×W)

	850QII	1050QII
L	950	1,100
W	600	600

Unit : mm

Working area (L×W×H)

	850QII	1050QII
L	850	1,050
W	600	600
H	530	530

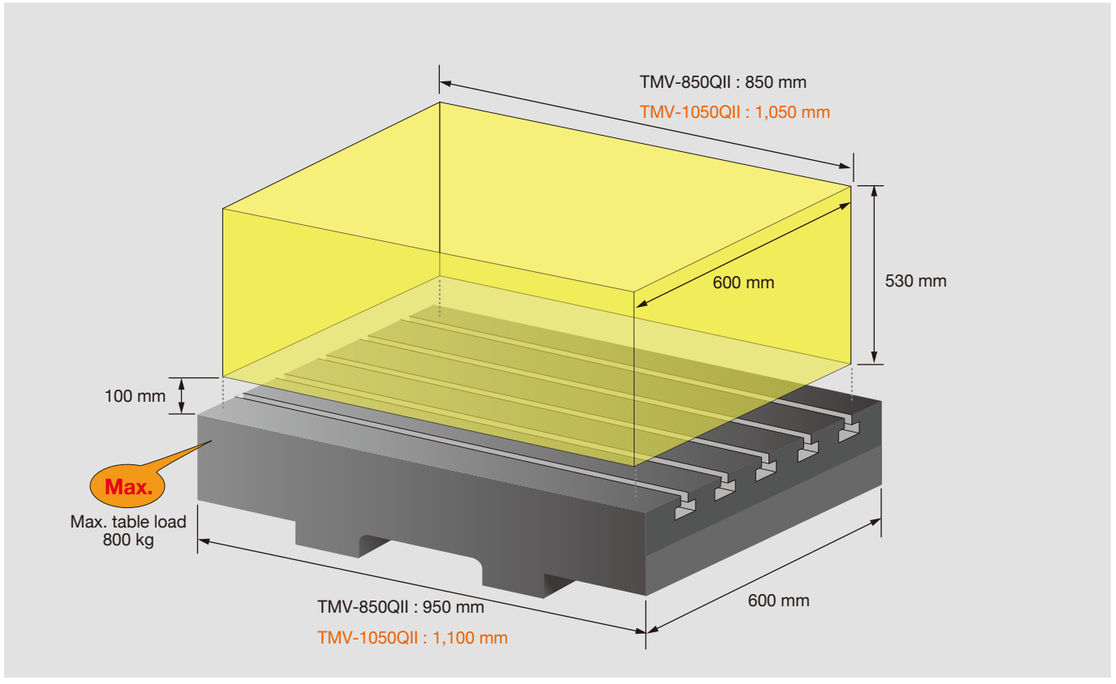
Unit : mm

Fine ground table surface with excellent flatness.

Maximum table load 800 kg

Table height from floor 900 mm

Working area

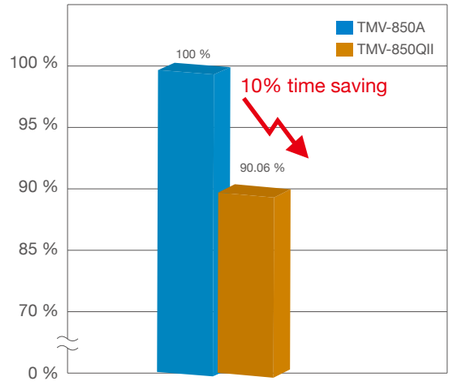


Examples of application

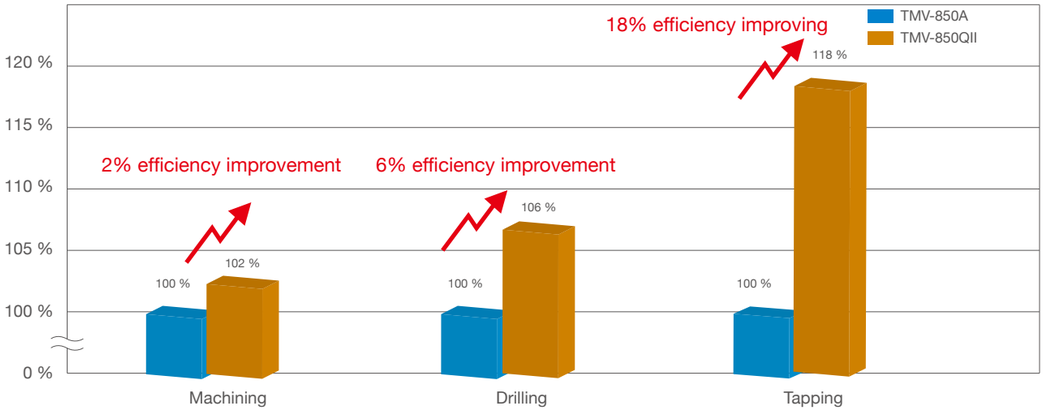
Machining efficiency improvement test

The below graphs show the comparison between TMV-850A and TMV-850QII. In the practical applications, the TMV-850QII saves 10% more machining time than the TMV-850A. Furthermore, to compare the different machining modes, the TMV-850Q has better performance than TMV-850A , especially in tapping.

Cycle time comparison



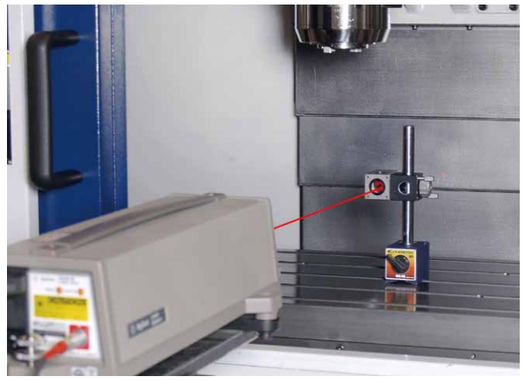
Machining modes comparison



Peripheral accessories

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 follow the lists to ensvre setting and testing for improving the quality of products.



Customization (Opt.)

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

Tongtai- Technical Application Center

The purpose of T-TAC is to take care of customer's machining solution actively. Based on the outstanding technical applications, Tongtai is able and willing to provide advanced machining technologies, machining solutions as well as trial tests to its customers and ensures them of excellent experiences in machine operation, maintenance convenience and machine availabity.

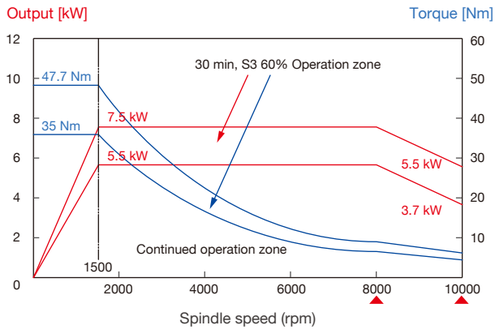
T-TAC technical and machining solutions

Solutions	Contents
Product manufacture test	Through the manufacturing progress and jig & fixture plans, Tongtai's skilled staff will manufacture the first piece for understanding the client's corresponding demands.
Machining technologies	By introducing innovative technologies and adding the extra functions, T-TAC is available to provide brand-new solutions.
Machine technology	Our technical staff will test current problems, which clients have, in the same machine model for processing problem diagnosis and providing possible solutions. Furthermore, our skilled staff is able to provide the services at the client's factory.
Training	T-TAC is open to train current clients, potential customers, agents, teachers/students, and employees and to strengthen their abilities.
Technology exhibits	T-TAC is also an excellent platform to launch new products/technologies by cooperation with software/hardware suppliers. With presentation of highly reliable products/technologies, it's possible to provide higher efficiency and availability solutions than currently existing ones.

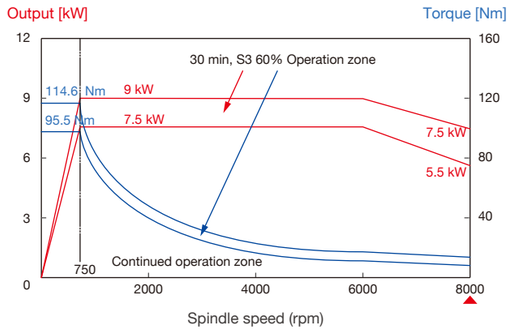
Spindle output and torque chart

Belt type spindle (All series CIS is optional)

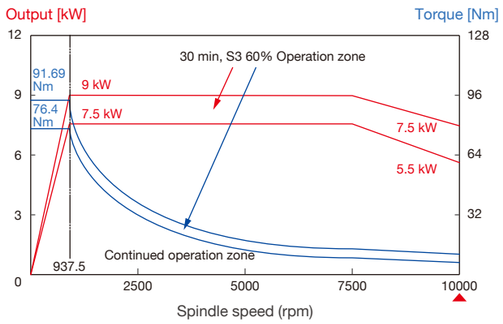
Std. α6 (7.5/5.5 kW) 8,000 rpm (Opt. 10,000 rpm)



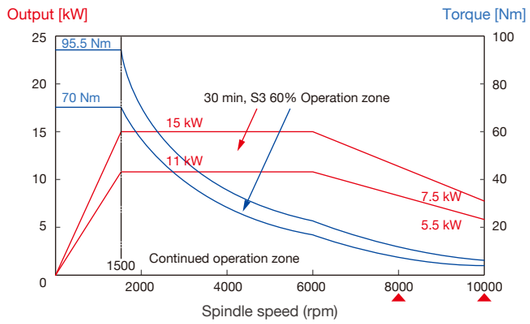
Opt. αP15 (9/7.5 kW) 8,000 rpm



Opt. αP15 (9/7.5 kW) 10,000 rpm

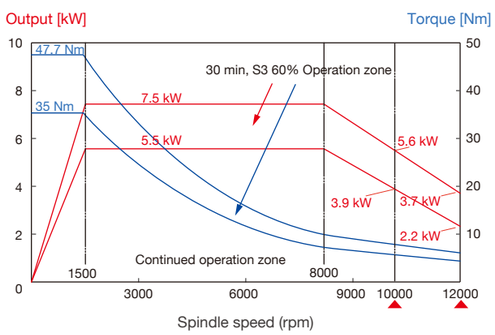


Opt. α12 (15/11 kW) 8,000/10,000 rpm

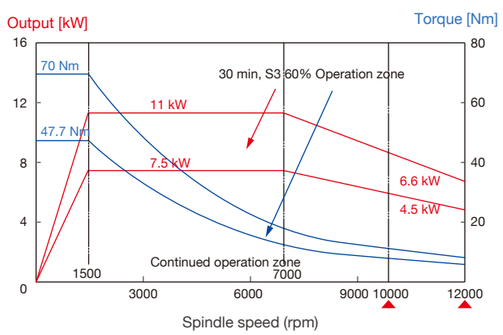


Direct-drive type (All series CIS is optional)

Opt. α6 (7.5/5.5 kW) 10,000/12,000 rpm



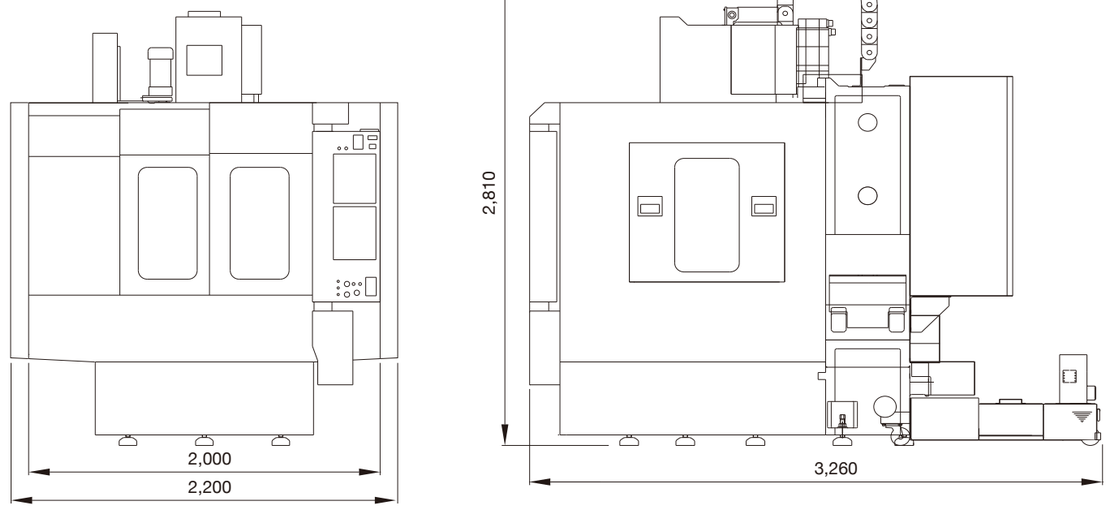
Opt. αT8 (11/7 kW) 10,000/12,000 rpm



Machine dimension

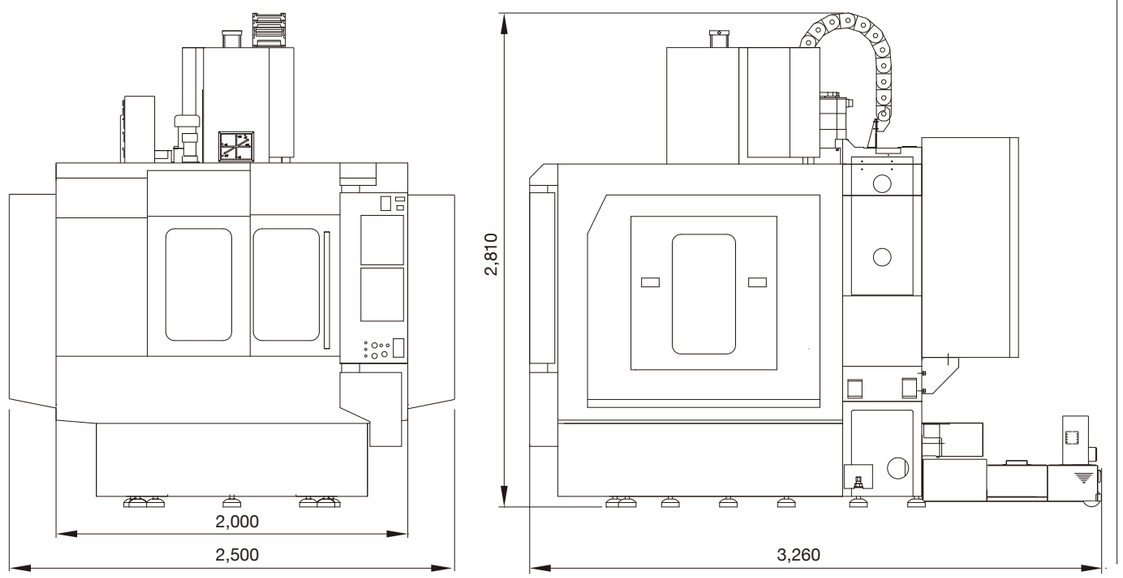
• TMV-850QII

Unit:mm



• TMV-1050QII

Unit:mm



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

Specifications

Item	Specification	Unit	TMV-850QII	TMV-1050QII
Table	Table size (L×W)	mm	950 x 600	1,100 x 600
	Max. table load	kg	800	
	Table height from floor	mm	900	
	T-slot (size×No.)	mm	18x5	
Spindle	Spindle taper		7/24 Taper No.40	
	Spindle speed	rpm	Belt type 8,000 (Opt. 10,000)	Direct drive type (Opt. 12,000)
Travel	X/Y/Z axis Travel	mm	850 / 600 / 530	1,050 / 600 / 530
	Spindle nose to table	mm	100-630	
Feed	X/Y/Z axis rapid traverse	m/min	48 / 48 / 48	
	Cutting feedrate	mm/min	1-12,000	
ATC	Tool shank		BT-40	
	Tool capacity	pc	24	
	Max. tool diameter	mm	Ø89	
	Max. tool diameter (w/o adjacent tool)	mm	Ø125	
	Max. tool lenght	mm	250	
	Max. tool weight	kg	7	
Motors	Spindle motor (50% ED)	kW	7.5/5.5(Opt. 9.0/7.5, 15/11)	
	X/Y/Z axis servo motor	kW	4/4/5.5	
	Coolant motor	kW	0.37	
Controller			FANUC 0i-M(Opt. 31i)	
Machine size	Width x Depth x Height	mm	2,200 x 3,260 x 2,810	2,500 x 3,260 x 2,810
	Weight	kg	5,500	5,900

◎ Specifications may be changed without prior notice