

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) (15000) | |
| 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 (30) | |

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Main structure

X/Y/Z axis specification

Travel

X/Y/Z axis

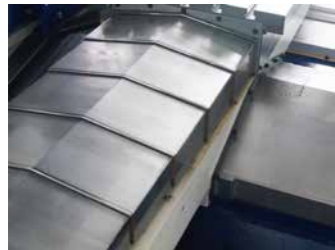
TMV-850QII 850 / 600 / 530 mm

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

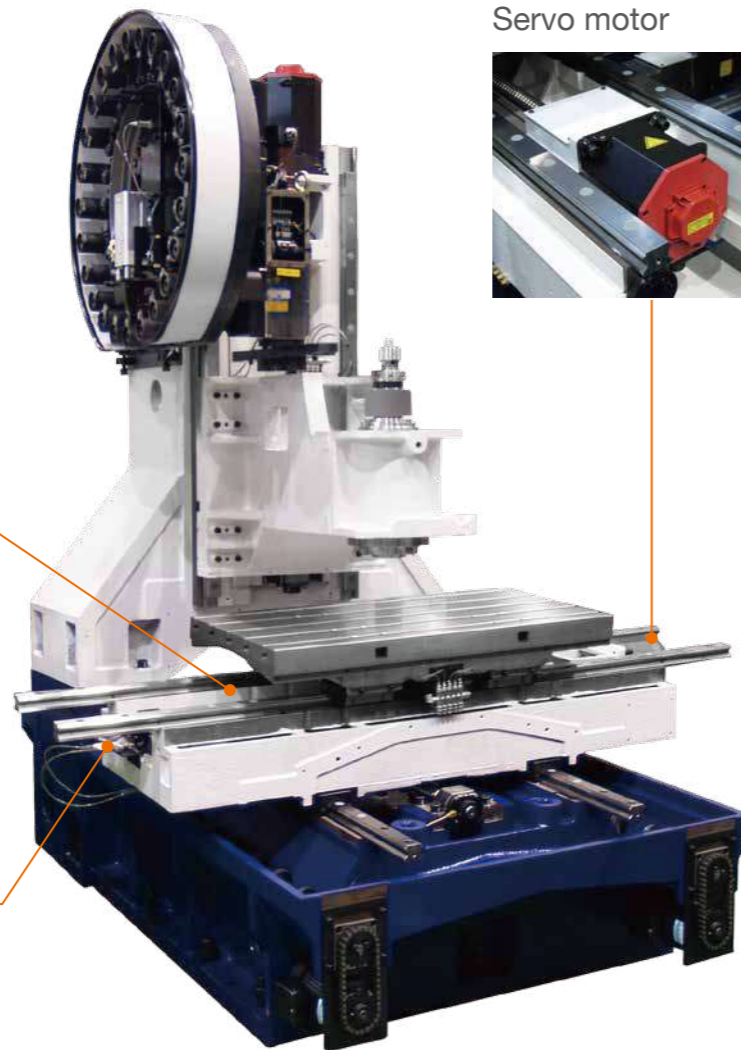
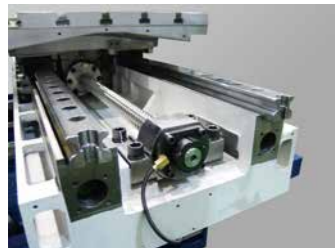
Rapid traverse

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

Chip-proof telescopic cover



Ballscrew & rigid linear guide way

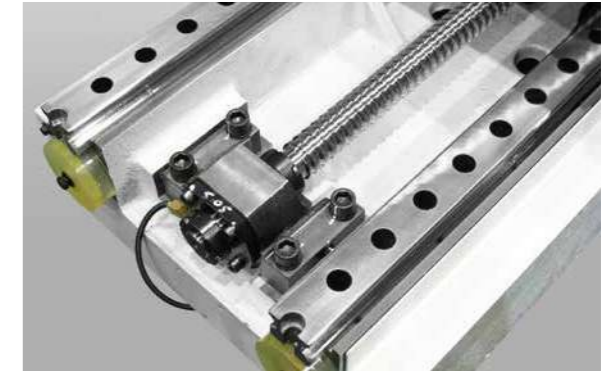


Servo motor



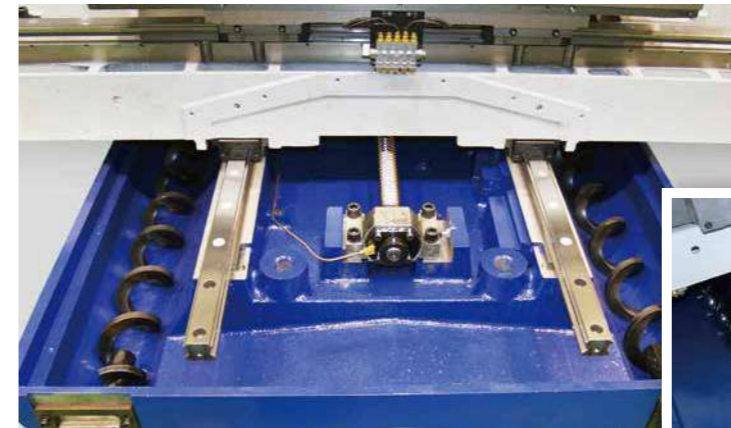
Preloaded Ballscrews

We make pre-tensions on ball screws to maintain the positioning precision under the influence of thermal expansion effect on ball screws and meanwhile to decrease the bearing loads on ball screws.



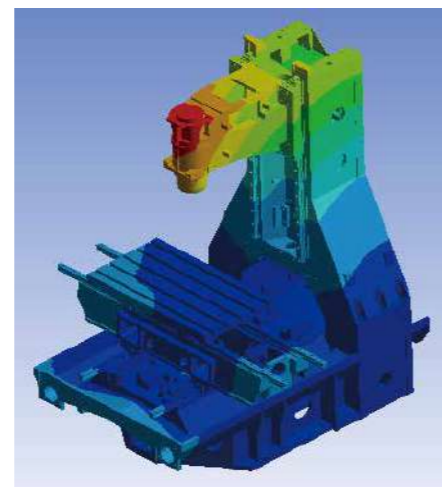
Chips removal design

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 applied in the machine design to ensure structural integrity. It benefits on high rigidity, high accuracy, and excellent 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 (30) 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

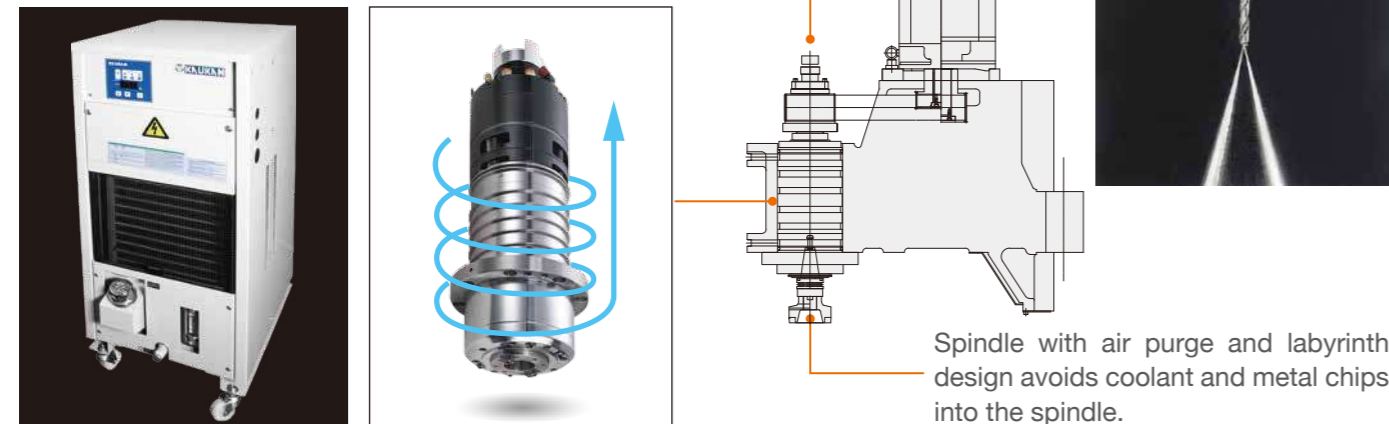


Coolant through spindle (C.T.S) (Opt.)

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 cooler (Opt.)

To reduce the thermal displacement, spindle chiller is available as optional equipment, which could automatically adjusted spindle temperature according to machine temperature.



Direct-drive type (Opt.)

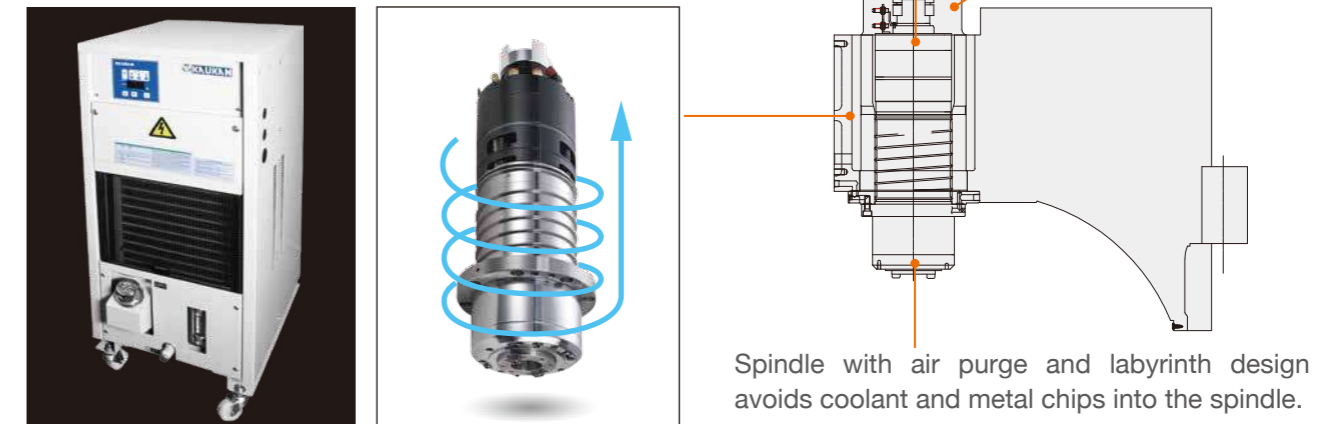
Direct-drive type : 8,000 rpm \ 10,000 rpm

Direct-drive motor



Spindle cooler (Opt.)

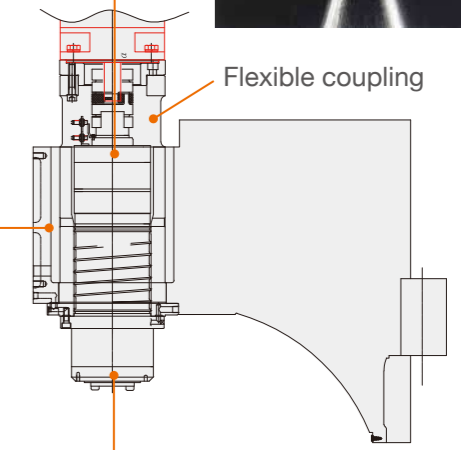
To reduce the thermal displacement, spindle chiller is available as optional equipment, which could automatically adjusted spindle temperature according to machine temperature.



- Spindle is connected with motor by coupling
- Spindle cooler is available
- Coolant through spindle is available (α T8 motor only)

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

α T8 motor only



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

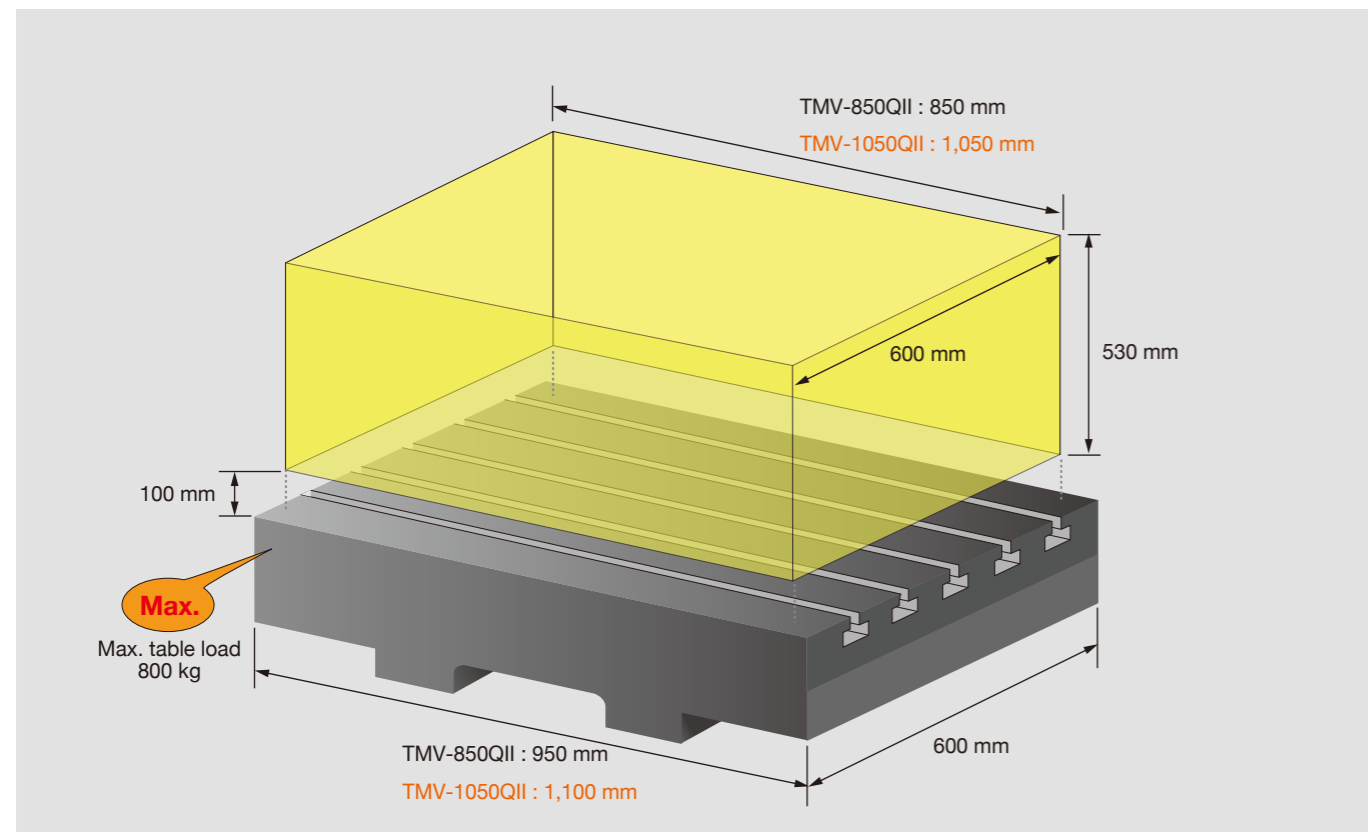


Fine ground table surface with excellent flatness.

Maximum table load **800 kg**

Table height from floor **900 mm**

Working area



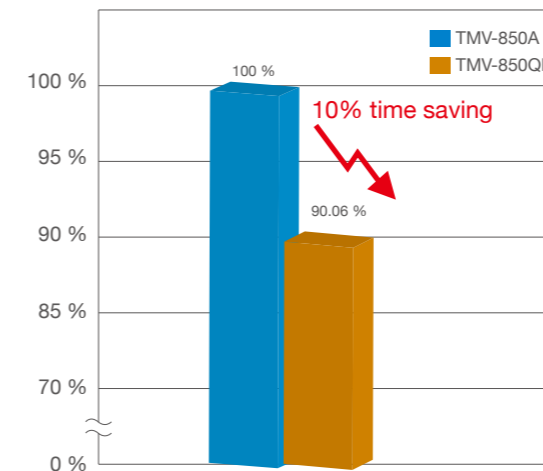
Examples of application



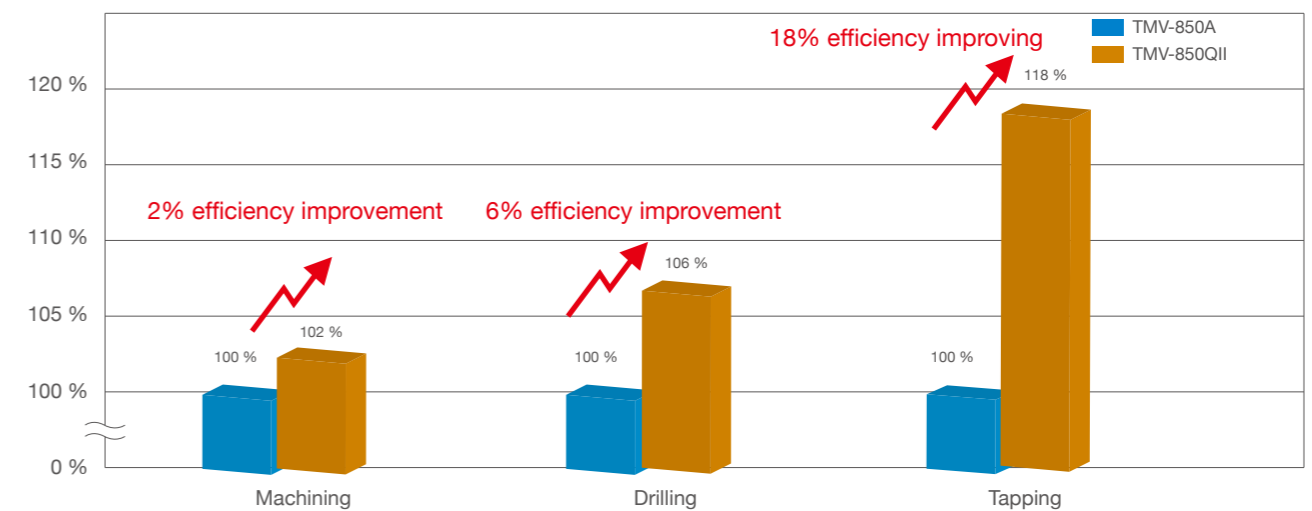
Machining efficiency improvement test

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 ensure setting and testing for improving the quality of products.



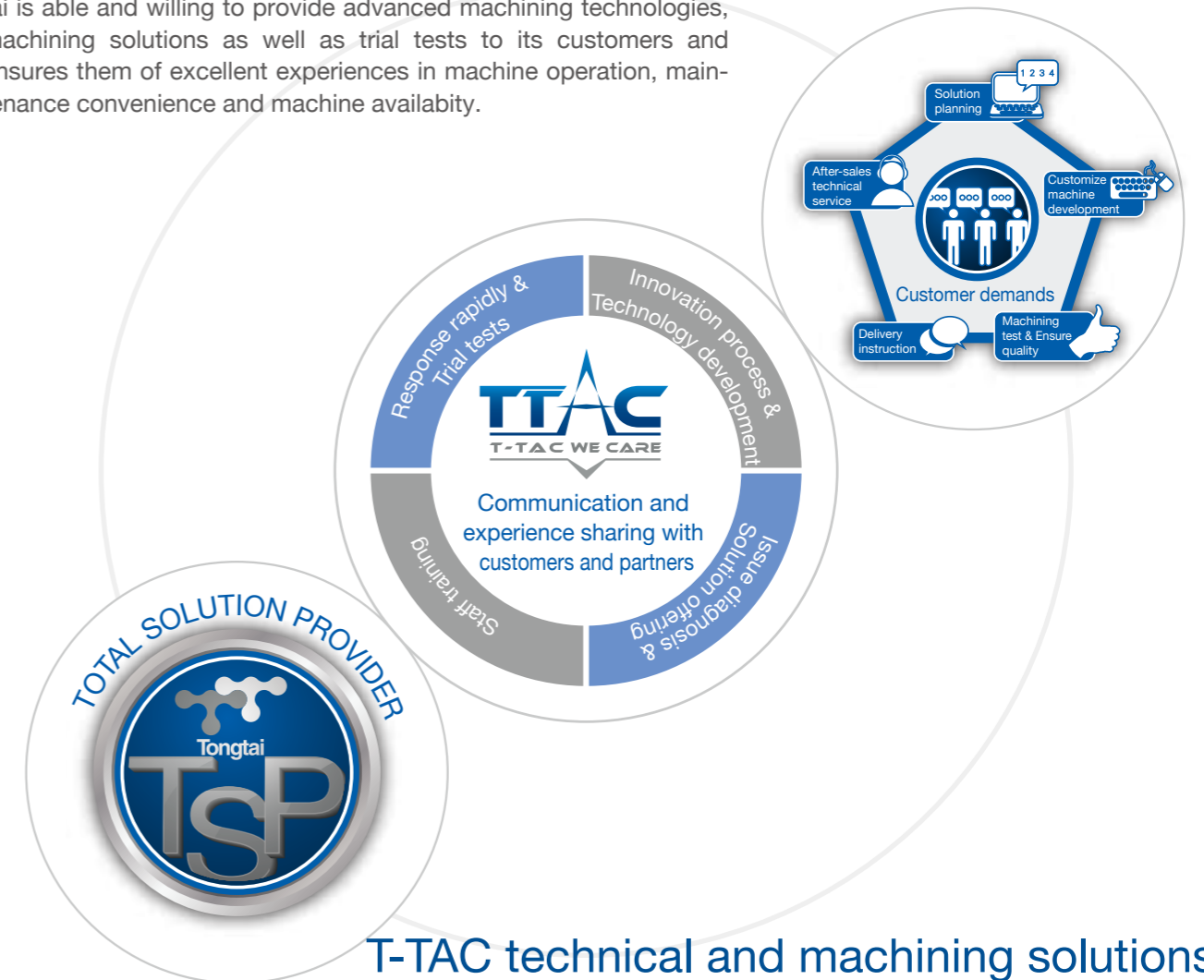
Customization (Opt.)

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 availability.



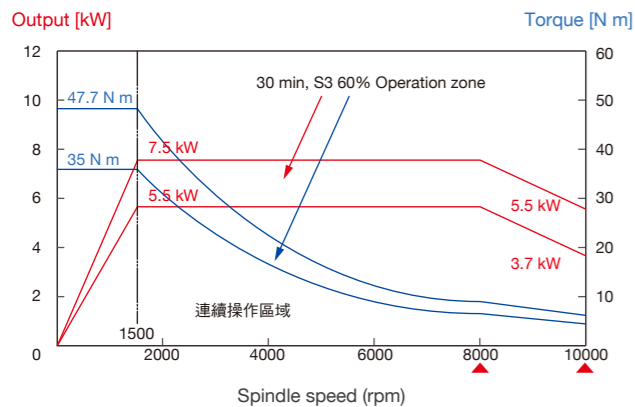
T-TAC technical and machining solutions

| 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. |

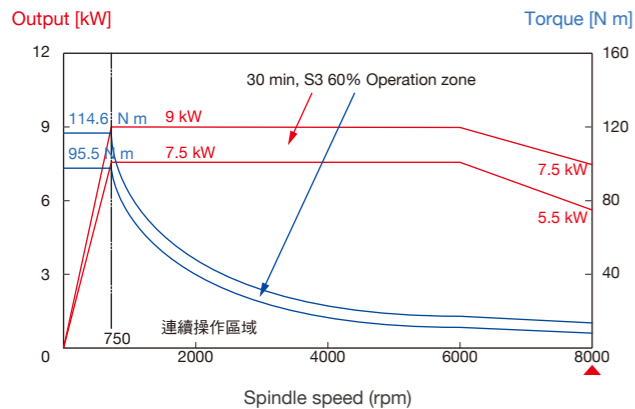
Spindle output and torque chart

Belt type spindle (All series CTS is optional)

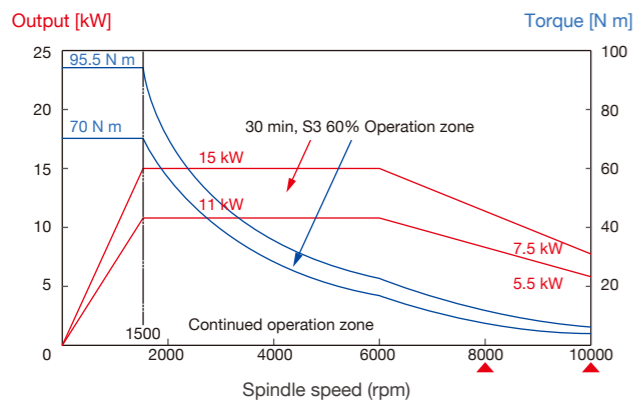
Std. α6 (7.5/5.5 kW) 8,000 rpm (Opt. 10,000 rpm)



Opt. αP15 (9/7.5 kW) 8,000 rpm

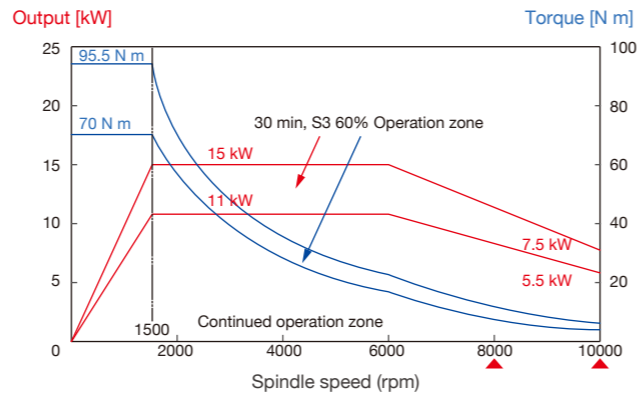


Opt. α12 (15/11 kW) 10,000 rpm

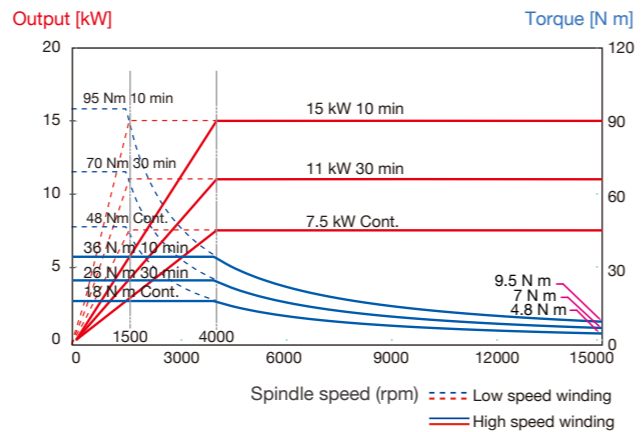


Direct-drive type (All series CTS is optional)

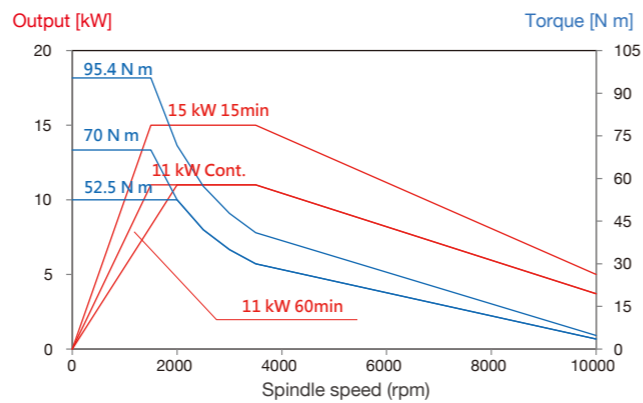
Opt. α12 (15/11 kW) 10,000



Opt. αT8 (11/7 kW) 10,000/15,000 rpm

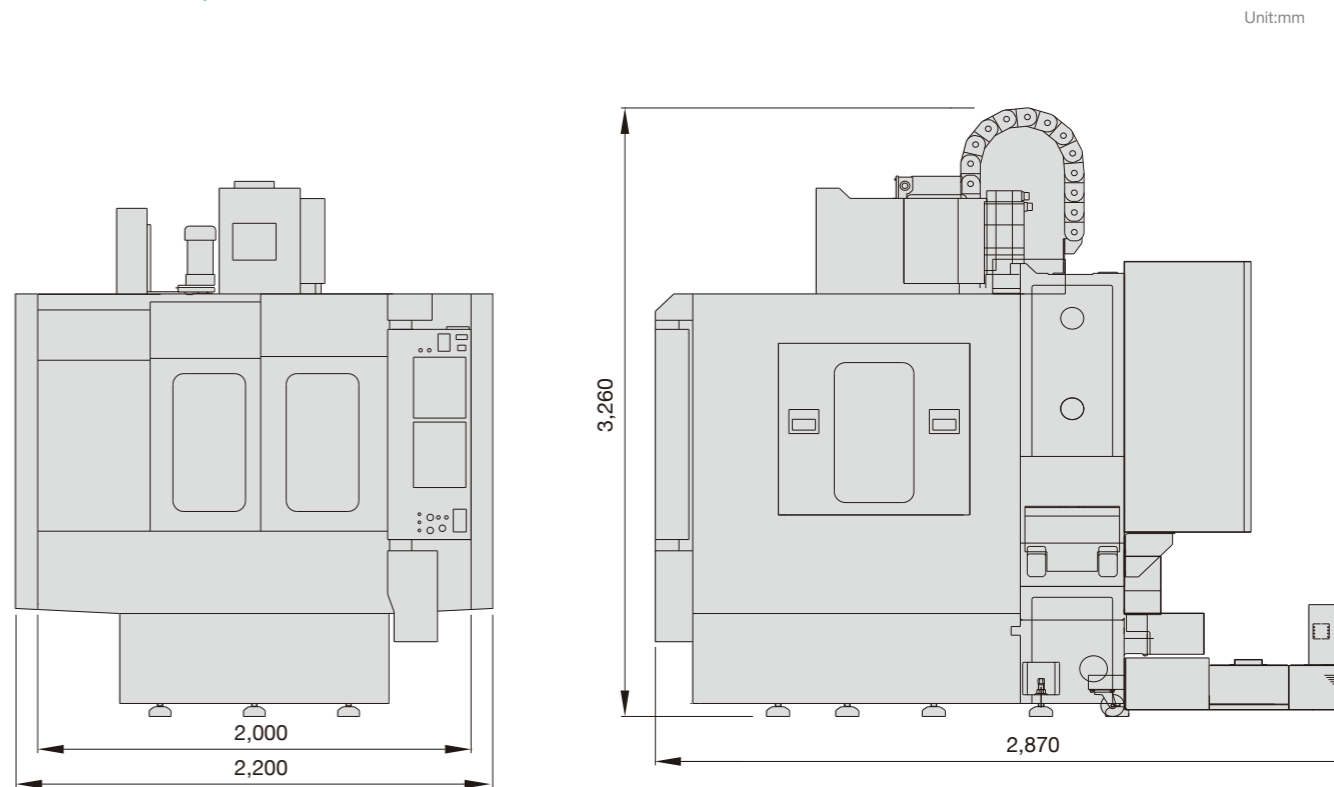


Opt. βiT12 10,000 rpm

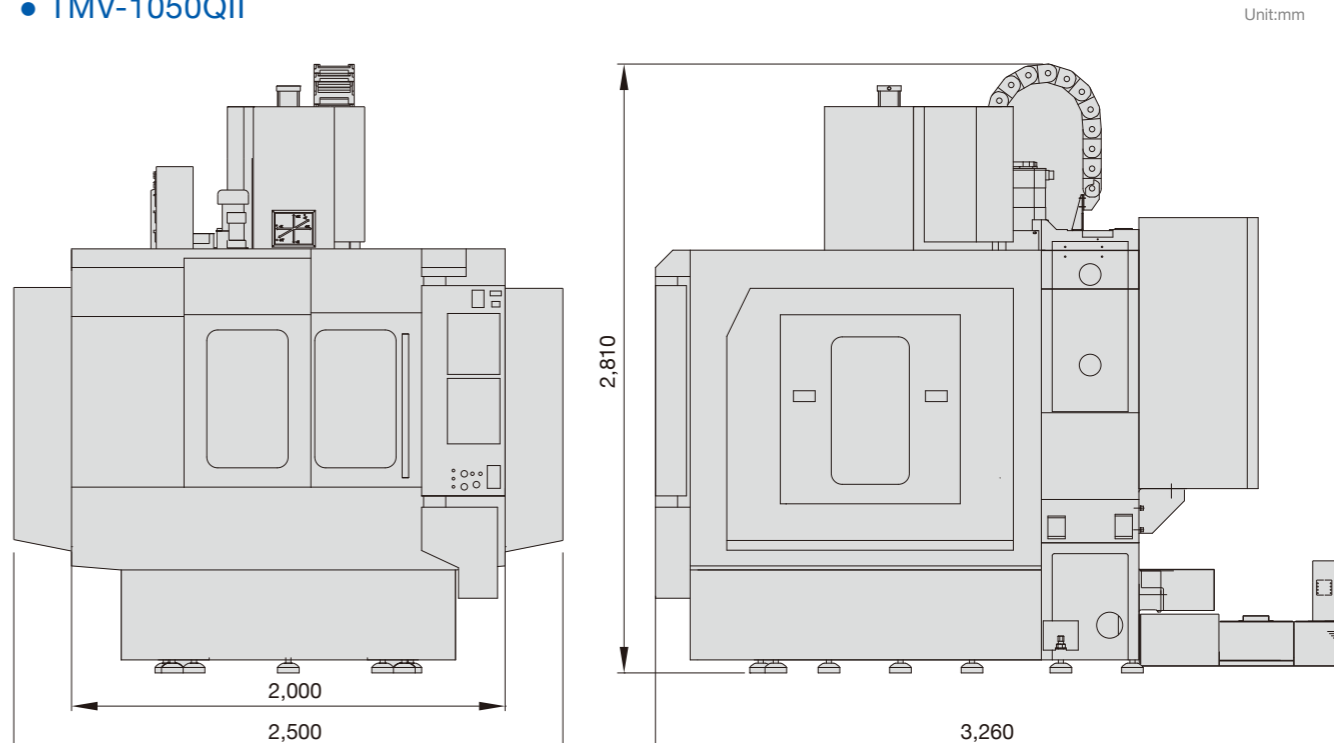


Machine dimension

• TMV-850QII



• TMV-1050QII



Optional accessories

Coolant through spindle



Spindle chiller



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 | 8,000 (10,000) (15,000) | |
| 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 (30) | |
| | Max. tool diameter | mm | Ø89 | |
| | Max. tool diameter (w/o adjacent tool) | mm | Ø125 | |
| | Max. tool length | mm | 250 | |
| | Max. tool weight | kg | 7 | |
| Motors | Spindle motor (50% ED) | kW | 7.5/5.5 (9/7.5) (15/11) | |
| | X/Y/Z axis servo motor | kW | 4.5/4.5/5.5 | |
| 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 |
| Controller | | | FANUC 0i-MF | |

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