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Press Release

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The NTX2000 high-precision, high-efficiency integrated mill turn center joins the X-class

Mori Seiki starts taking orders for the **<u>NTX2000</u>** integrated mill turn center on January 13, 2011. This machine is a new model in the range of the X-class machines that have been designed to meet today's needs.

The NTX2000 is a compact integrated mill turn center with a maximum workpiece size of ϕ 660 mm x 1,540 mm. This machine is suitable for complex and high-precision machining, which is required to cut parts used in the aerospace, medical equipment and semiconductor industries. The machine meets different needs with extensive features including (1) Mori Seiki's original technologies, (2) high productivity, (3) space saving, (4) high precision, (5) MAPPS IV + ESPRIT, and (6) a wide choice of models.

(1) Mori Seiki's original technologies

The NTX2000 uses Mori Seiki's original **DDM (Direct Drive Motor)**, **ORC (Octagonal Ram Construction)** and **BMT (Built-in Motor Turret)** technologies, offering high-precision complete machining on small to medium sized parts.

(2) High productivity

- Since the Spindle 2 of the NTX2000 has the same specifications with the Spindle 1, machining processes can be flexibly assigned to each spindle. The high-speed drive of a tool spindle with a feedrate of 40 m/min maximizes the advantage of a distance between centers of 1,500 mm.
- The ORC (Octagonal Ram Construction) supports the tool spindle movement in the Y-axis direction. Since the Y-axis structure located close to the cutting point consists of slideways, heavy-duty cutting can be performed with less vibration.
- The tool spindle is equipped with a built-in motor with output of 18.5/11 kW, which is equivalent to that of a No. 40 taper machining center. The NTX2000 machine with the tool spindle offers the highest level of milling.
- The NTX2000 machine uses a rounded cover design of the X-class machines, as well as a slanted keyboard that offers improved operability.

(3) Space saving

Although the standard distance between centers is 1,500 mm, the machine width has been shortened by 1,000 mm and the installation area has been reduced by approximately 30% from our conventional machines.

*DDM, ORC and BMT are trademarks or registered trademarks of Mori Seiki Co., Ltd. in Japan, the USA and other countries.

(4) High-precision

To prevent thermal displacement in the spindle center, the Spindle 1 of the NTX2000 is designed to maintain its center in the same position, with a headstock whose front shape is symmetrical to the X- and Y-axis directions. Additionally, the slideways of the ORC, which are located diagonally opposite each other, distort symmetrically in response to heat, keeping the center of the moving parts in the same position. Thanks to these measures against thermal displacement, the NTX2000 machine can offer high-precision machining.

The NTX2000 also uses the three-point support. It is rare to use three-point support for a multi-axis machine, but this was made possible because of the robust NTX2000 bed. The NTX2000 machine offers long-term, high-precision machining with the three-point support structure, which is less affected by secular change.

(5) MAPPSIV + ESPRIT

The MAPPS IV high-performance operating system has been installed on the operation panel. The combination of automatic programming software (standard) and ESPRIT CAM software (standard) allows the machine to handle complex machining programming and to flexibly meet customer needs. In addition, the 3D interference checking function (standard) checks collisions between spindles, workpieces, soft jaws, tools, holders, and turrets in 3D. If an interference is detected, it stops the machine in both automatic and manual modes. This offers the world's best protection against interference.

(6) A wide choice of models

There are six models available to meet different machining needs. These machines are general purpose, but each of them flexibly handles machining that is usually performed on special machines. They can replace special machines.

Turret 2 specifications	Tailstock specifications	Spindle 2 (S type)
Turret 2 specifications are not available	NTX2000/1500T	NTX2000/1500S
Turret 2 specifications are available	NTX2000/1500TZ	NTX2000/1500SZ
(Only turning is available)		
Turret 2 specifications + milling ability	NTX2000/1500TZM	NTX2000/1500SZM
(ZM type) are available		

■ Variations (A total of 6 models)

Mori Seiki will continue to improve our product line-up and work hard to meet the needs of more customers.

Туре	High-Precision, High-Efficiency Integrated Mill Turn Center
Model	NTX2000
Market	Aerospace, Medical equipment, semiconductor, etc.
Orders start	January 13, 2011
Production	20 units/month

■ Specifications (for the NTX2000/1500SZ)

	NTX2000/1500SZ
Max. turning diameter (Tool spindle / Turret 2)	φ 610 (when B-axis is at 90°: 660) / φ 270 mm
Max. turning length	1,540 mm
Tool spindle travel (X/Y/Z)	495/250/1,560 mm
Spindle 1, Spindle 2 max. speed	5,000 min ⁻¹
Max. tool spindle speed	12,000 min ⁻¹
Tool storage capacity	38 [76] tools
Tool changing time (tool-to-tool)	1.25 sec.
Type of tool shank	BT40 [Capto C6] [HSK-A63(T63)]
Number of tool stations on Turret 2	10
Tool spindle rapid traverse rate (X/Y/Z)	40/40/40 m/min
Machine size (width / depth / height)	4,076/2,980/2,626 mm

[] Option



Fig. 1 Exterior view



Fig. 2 Interior view



Fig. 3 MAPPS IV + ESPRIT