MORI SEIKI
THE MACHINE TOOL COMPANY

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Press Release

September 14, 2010

The NTX1000 high-precision, high-efficiency integrated mill turn center joins the X-class

Mori Seiki Co., Ltd. has announced the debut of the X-class, which fills the needs of the times. We start taking orders for the **NTX1000** integrated mill turn center on September 14, 2010.

The NTX1000 is an ideal choice for machining small precision parts for medical equipment and measuring instruments, which have complex shapes but need high-precision and high-efficiency machining. The machine is designed to meet the diversified needs of our customers with features including (1) original technologies, (2) high operability, (3) space saving, (4) measures against thermal displacement, (5) MAPPS IV + ESPRIT, and (6) a wide variety of models.

(1) Original Technologies

The NTX1000 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 of small precision parts.

(2) High operability

The NTX1000 uses a rounded cover design, which is commonly used by the X-class machines. Additionally, it offers improved operability by using a slanted keyboard.

(3) Space saving

The installation area has been reduced by approximately 40% compared to our conventional models. The NTX1000 offers dramatically improved productivity per unit area.

(4) Measures against thermal displacement

As one of measures against thermal displacement, the NTX1000's Spindle 1 is designed to always maintain its center in the same position, and its headstock structure is symmetrical to the X- and Y-axis directions from an anterior view. In addition, the slideways of the ORC are located diagonally opposite each other so that their distortion in response to heat becomes symmetrical. Since thermal displacement in the slideways is offset, the machine can maintain the center of the moving parts in the same position, achieving high-precision machining.

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(5) MAPPS IV + ESPRIT

The NTX1000 uses the MAPPS IV high-performance operating system for its 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 interference between spindles, workpieces, soft jaws, tools, holders, and turrets in 3D. If interference is detected, the machine stops, in both automatic and manual modes. This offers the world's best protection against interference.

(6) A wide variety of models

Eight models for different machining needs are available. Although they are general-purpose machines, each of them flexibly handles machining that is usually performed on special machines. They can be used instead of special machines.

■ **A variety of models (Total 8 models)**

<table>
<tr><th>Chucker
(C type)</th><th>Tailstock
(T type)</th><th>Spindle 2
(S type)</th><th>Turret 2 (Z type)
Milling (M type)</th><th>Workpiece discharge unit
(W type)</th></tr>
<tr><td rowspan="4">NTX1000/C</td><td rowspan="4">NTX1000/T</td><td colspan="2">NTX1000/SZ</td><td rowspan="2">NTX1000/W</td></tr>
<tr><td colspan="2">NTX1000/SZM</td></tr>
<tr><td rowspan="2">NTX1000/S</td><td colspan="2">NTX1000/WZ</td></tr>
<tr><td colspan="2">NTX1000/WZM</td></tr>
</table>

Mori Seiki will continue to improve our product line-up and to create machines that meet the needs of our customers.

Type	High-precision, High-efficiency Integrated Mill Turn Center
Model	NTX1000
Market	Precision parts including medical equipment, watches and measuring instruments
Orders start	September 14, 2010
Production	15 units/month

■ **Major specifications (NTX1000/SZ)**

	NTX1000/SZ
Max. turning diameter (Tool spindle/Turret 2)	φ 370 mm/φ 270 mm
Max. turning length	424 mm
Tool spindle travel (X/Y/Z)	380/210/460 mm
Max. spindle speed for Spindle 1 and 2	6,000 min^{-1}
Max. tool spindle speed	12,000 [20,000] min^{-1}
Tool storage capacity	38 [76]
Tool changing time (chip-to-chip)	5 sec.
Type of tool shank	Capto C5 [HSK-A50(T50)]
Number of tool stations on Turret 2	10
Rapid traverse rate (X/Y/Z)	40/40/50 m/min
Machine size (width/depth/height)	2,425/2,705/2,400 mm

[ ] Option

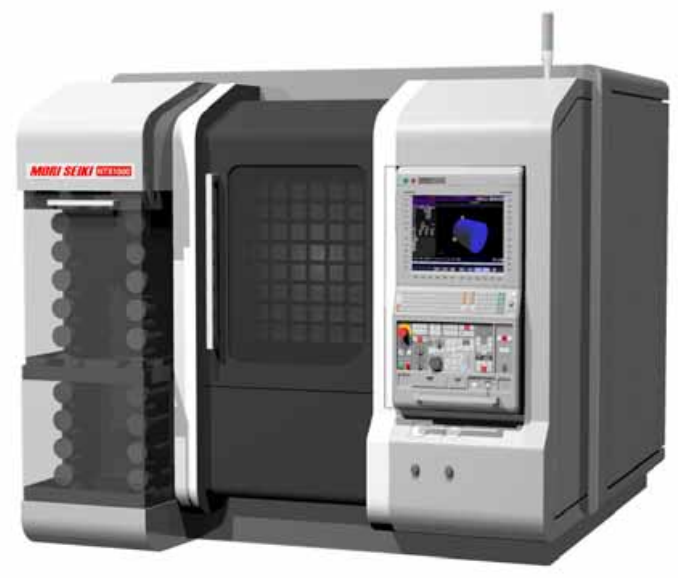

Fig. 1 Exterior

Fig. 2 Example of target workpiece (artificial bone)

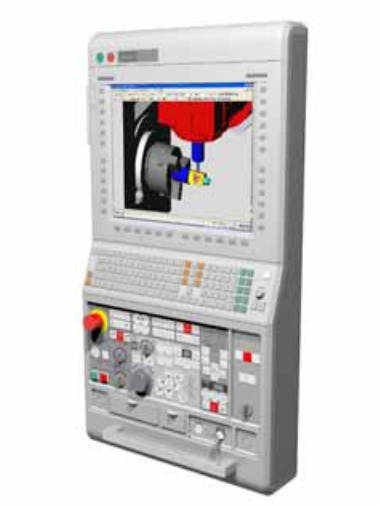

Fig. 3 MAPPS IV + ESPRIT