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Press Release

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Mori Seiki Enters the Field of High-Speed, High-Precision, Large Bridge-Type Machining Centers

We will launch 7 models,14 types of machine with a bridge width of 2,050 - 3,550 mm in spring next year

Mori Seiki Co., Ltd. has started developing high-speed, high-precision, large bridge-type machining centers, aiming to launch them in spring next year.

We are simultaneously developing a total of 7 models, 14 types of machines. The models include the **"NB Series"** which consists of 3 axes (X, Y, and Z) and the **5-axis type "NMB Series"** which has a tilting B-axis and C-axis.

We have started developing these series so that we can launch them as early as possible, in order to meet the continuously increasing demands for machining of dies and molds for automotive parts, which are getting larger due to parts integration, machining of dies and molds for LTD display related parts, whose screens are getting larger, machining of semiconductors, aircraft parts, and large cast metal machining. These large machines usually take 1 to 1.5 years until delivery due to the large raw materials and complex manufacturing, causing a time lag between the market's demand and the actual delivery times. This may cause a risk that our customers' busy periods and the machines' delivery periods do not match. Therefore, simultaneously with the machine development, we are going to establish a system which allows us to deliver large machines to our customers within 6 months of receiving an order in order to avoid this risk.

In 2004, Mori Seiki developed a super-large bridge-type machining center, the "NK3035." We will use the technology and skills we used then for the next-generation of strategic machines, the "NB" and the "NMB" Series. The NK3035 weighs 200 tons, and its length is 32 m. It is currently used for the machining of railroad vehicles. Based on the experience and know-how we gained from the development of this large machine, we have incorporated the latest technologies, such as structural analysis using CAE, thermal displacement analysis, no backlash on the tilting-type rotary axis and high-precision DD (Direct Drive) motors, into our new Series.

The main specifications include a "**bridge width of 2,050 - 3,550 mm,** an X-axis stroke of 3,200 - 5,200 mm, a No.50 taper spindle and a high-speed spindle with max. spindle speed of 10,000 min^{-1}. Customers can choose from optional high-speed specifications with a 15,000 min^{-1} spindle, or high-torque specifications with an 8,000 min^{-1} spindle. The **rapid traverse rate is 30 m/min on each axis,** which is three times faster at the maximum than other companies' machines, reducing the non-cutting time which is often a problem with large machines, such as tool changing time. Also, for die and mold machining, in addition to the AI nano high-precision contour control and tool tip control software options, the series achieves high-precision, high-quality machining which is not affected by changes in environmental temperature thanks to the thermal displacement control function. The NB Series will be unveiled at JIMTOF in November 2006, and we are planning to start delivering to customers in May 2007.

Mori Seiki will join the field of bridge-type machining centers, with the line-up of 14 types of high-speed, high-precision, bridge-type machining centers delivered in the shortest possible time.

Type	Large bridge-type machining center
Model	NB Series NMB Series
Market	Dies and molds for automobiles and electronics, aircrafts and large cast metal parts

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■ Features

1. Significant reduction in non-cutting time

The rapid traverse rate on all axes is set at 30 m/min, significantly reducing non-cutting time such as tool changing time and travel to the next machining point, which can be a problem when machining large workpieces. This rapid traverse rate is 3 times as fast as other companies' machines.

2. DD motors are used for the NMB Series' rotary axes

In the NMB Series for 5-axis machining, DD (Direct Drive) motors are used for the spindle's tilting type B-axis and C-axis. With no backlash and high precision, and because it has fewer parts to wear out, the drive motor is designed to be maintenance-free and to last for a long time.

■ Main Specifications (NB Series)

<table>
<tr><th colspan="2"></th><th>NB2030</th><th>NB2040</th><th>NB2050</th><th>NB2530</th><th>NB2540</th><th>NB2550</th><th>NB3550</th></tr>
<tr><td rowspan="3">Axis Travel</td><td>Effective width between columns (mm)</td><td colspan="3">2,050</td><td colspan="3">2,550</td><td>3,550</td></tr>
<tr><td>X-axis (mm)</td><td>3,200</td><td>4,200</td><td>5,200</td><td>3,200</td><td>4,200</td><td>5,200</td><td>5,200</td></tr>
<tr><td>Y-axis (mm)</td><td colspan="3">2,500</td><td colspan="3">3,000</td><td>4,000</td></tr>
<tr><td rowspan="2">Spindle</td><td>Max. spindle speed (min^{-1})</td><td colspan="7">10,000 [15,000, 8,000]</td></tr>
<tr><td>Type of tool shank</td><td colspan="7">BT50</td></tr>
<tr><td>Feedrate</td><td>Rapid traverse rate (m/min)</td><td colspan="7">30</td></tr>
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