MORI SEIKI
THE MACHINE TOOL COMPANY

Mori Seiki Co., Ltd.
Head Office: 2-35-16 Meieki, Nakamura-ku,
Nagoya City 450-0002, Japan
TEL：+81(0)52-587-1811　FAX：+81(0)52-587-1818

Press Release

March 11, 2008

Announcing the long-awaited large model in the NMV Series, which takes high-precision machining and ease of use to the ultimate.

We start accepting orders for the NMV8000 DCG.

Mori Seiki Co., Ltd. will start accepting orders for the **NMV8000 DCG** high-precision, 5-axis control vertical machining center, **the ideal model for machining large, complex-shaped workpieces**, from March 11, 2008.

In recent years, workpieces in the manufacturing industry have been becoming larger and more complicated, and so the demand for 5-axis control machine tools which can machine them has also increased. In response to this trend, Mori Seiki have developed the NMV8000 DCG, the latest model in our NMV Series of 5-axis control vertical machining centers.

For the NMV Series, we started with the aim of developing the ideal 5-axis control machine, which combines **high-precision machining** and **ease of use**. By incorporating Mori Seiki's original technologies, **DCG® (Driven at the Center of Gravity)**, **DDM™ (Direct Drive Motor)** and **ORC™ (Octagonal Ram Construction)**, into the machine's structure, we achieved high-speed, high-precision machining. The NMV5000 DCG (workpiece swing diameter: φ700 mm, loading capacity: 300 kg), which was released as the first model in the Series in November 2006, boasts orders of about 20 units per month. Its performance and operability have received high praise from many customers in the automobile and aircraft industries, among others.

The second model in the Series, the NMV8000 DCG, has a **workpiece swing diameter of 1,000 mm** and a **loading capacity of 1,000 kg**. As well as the No. 40 taper which was available for the NMV5000 DCG, we have also prepared a No. 50 taper. The fact that customers can choose the ideal spindle for their target workpieces is one of the machine's main attractions.

In addition to allowing machining of large workpieces, we have also preserved the **outstanding operability** offered by the NMV5000 DCG. Not only does it offer excellent visibility and access to the table, but we have also strengthened its **automation operation support** with the APC specifications and pallet pool systems. What's more, the MAPPS Ⅲ operating system is equipped with the **3D interference checking function**, so that even people who are using a 5-axis control machine for the first time can operate it with peace of mind.

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

[Contact] Marketing Strategy Department　users@moriseiki.co.jp

Type	High-precision, 5-axis control vertical machining center
Models	NMV8000 DCG/40 NMV8000 DCG/50
Market	Aircraft, construction machinery, automobiles, dies and molds, etc.
Orders start	March 11, 2008
Production	10 units/month

■ **Features**

1. Uses Mori Seiki's original technologies (DCG®, DDM™, ORC™)

For the drive system on the Y and Z linear axes, it uses DCG®, which pushes moving parts at their center of gravity using two ball screws. This controls vibration, the main factor preventing high-speed, high-precision machining, and offers greater machining accuracy, shorter machining time and longer tool life. And the Z-axis uses ORC™, which offsets thermal displacement because of its octagonal ram structure, ensuring superior straightness even when the guideways heat up as a result of high-speed travel.

The DDM™ drive system transmits power to the B and C rotary axes without using gears, achieving improved transmission efficiency and zero backlash. The standard C-axis spindle speed is 50 min^{-1}, and the 300 min^{-1} option allows turning as well.

2. Specifications suitable for large workpieces

The NMV8000 DCG has a workpiece swing diameter of 1,000 mm and a loading capacity of 1,000 kg. Large-diameter bearings are used for the table, achieving stable machining accuracy. Customers can choose the type of spindle which is most suitable for their target workpieces: No. 40 taper for high-speed machining or No. 50 for heavy-duty cutting of difficult-to-cut materials. We have prepared variations with different spindle speeds and output for each spindle.

3. Superior operability

We have paid close attention to the access to the spindle and table, so setup operations are easy. And since you can see the inside of the machining chamber from the front of the machine, there is good visibility during machining. What's more, opening and closing the Y-axis protector at the top of the machine allows large workpieces to be loaded smoothly using a crane.

4. Automatic operation support

We have prepared APC specifications and pallet pool systems which can be customized to meet the customers' needs, allowing long-term, unmanned operation. Because the APC is attached to the side, it can be used without losing visibility or access to the inside of the machine.

5. 3D interference checking function for greater safety

The 3D interference checking function is equipped as standard in MAPPS Ⅲ. Since it checks for interference in 3D during both automatic and manual operation, you can use the machine with peace of mind. It checks for interference between all items such as spindles, workpieces, tables, tools and fixtures, and if interference is detected it stops the machine immediately, preventing collisions.

■ **Major Specifications**

	NMV8000 DCG/40	NMV8000 DCG/50
Axis travel (X/Y/Z) (B/C)	1,200/920/610 mm +160~ -180/360˚	
Table working surface	φ800 mm	
Max. spindle speed	12,000 [20,000] min^{-1}	10,000 [15,000] min^{-1}
Spindle drive motor	12,000 min^{-1}: 18.5/15 kW (30 min/cont) [12,000 min^{-1}: 22/18.5 kW (15 min/cont)] [20,000 min^{-1}: 22/18.5 kW (15 min/cont)]	10,000 min^{-1}: 30/25 kW (30 min/cont) [10,000 min^{-1}: 30/25 kW (30 min/cont)]※1 [15,000 min^{-1}: 30/25 kW (30 min/cont)]
Rapid traverse rate (X/Z/Y)	40,000/40,000/40,000 mm/min	
Table max. rotational speed (B/C)	25/ 50 [300※2] min^{-1}	
Tool storage capacity	31 [61, 91, 121, 181]	31 [61, 91, 121]
Type of tool shank	BT40	BT50

[ ] Option
※1: High-torque specifications
※2: Available from the summer of 2008

Fig. 1. Exterior

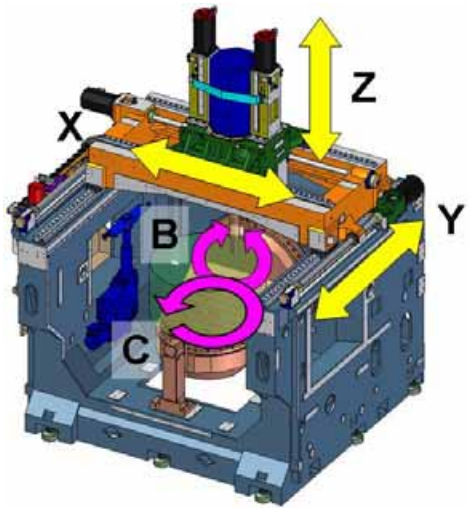

Fig. 2. Axis structure

Fig. 3. Machining example (blisk)