

Press Release

October 5, 2006

We will start accepting orders for the “NMV5000 DCG” 5-Axis Control Vertical Machining Center from November 1.

From Japan, the best high-precision, high-operability 5-axis control machining center in the world, with a rotary drive 100 times faster than conventional machines.

From November 1, Mori Seiki will start accepting orders for our 5-axis control vertical machining center, the **NMV5000 DCG** which is the embodiment of our original, elemental technologies.

In recent years there has been growing demand for a 5-axis control machining center which offers both high-speed, high-precision machining and ease of use, due to the increasing complexity of shapes and the need for high added value in the parts machining and die and mold industries. In response to these requests, Mori Seiki will release our NMV5000 DCG 5-axis control machining center, which allows machining which could not be done on 3-axis control machines, as well as process integration during high-speed machining with 5 axes.

The NMV5000 DCG achieves high rigidity and high precision by using Mori Seiki’s original technologies, **DCG™ (Driven at the Center of Gravity)** and **Top Box-in-Box Construction**. The **DD (Direct Drive) Motors** on the B and C axes which turn the table eliminate backlash and allow high-precision positioning. Turning is also possible, with a **C-axis rapid traverse rate of 120 min⁻¹ as standard and 500 min⁻¹, 1,200 min⁻¹ as options**, dramatically increasing productivity through multi-axis machining. What’s more, as well as improving basic performance, we overcame the difficulty with setup which is characteristic of 5-axis control machines by paying particular attention to the operator’s **access to the table**, achieving excellent operability.

As a support function to make 5-axis control machining even more efficient, it uses the new generation **MAPPSⅢ** operating system, which offers a real-time interference checking function and specialized high-speed canned cycles for multi-axis machining. As a result, setup and programming time have been significantly reduced.

The NMV5000 DCG will be displayed at **JIMTOF 2006** which will be held at Tokyo Big Sight from November 1 – 8, 2006. Mori Seiki continues to lead the 5-axis control machining field with the NMV5000 DCG 5-axis control machining center, which combines all our original technologies for high-speed, high-precision machining and ease of use.

Type	5-axis control vertical machining center
Model	NMV5000 DCG
Market	Die and mold, aircraft, automobile parts, etc.
Orders from	November 1, 2006

■ Main Features

1. DCG™ and Top Box-in-Box Construction
2. DD motors on the rotary axes
3. Superior accessibility
4. MAPPSⅢ next generation operating system

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■ Features

1. DCG™ and Top Box-in-Box Construction

The NMV5000 DCG uses DCG™ for the Y- and Z-axis drives. Vibration, one of the main enemies of high speed and high precision, is essentially controlled by pushing moving structural parts using twin ball screws placed equidistant from the center of gravity. As a result, machining accuracy is improved, machining time is reduced and tool life is extended. Also, by using a Top Box-in-Box Construction for the upper part of the machine, we achieved a structure with zero overhang, so that the guideways and drives are well balanced, allowing stable feed even at high speeds.

2. DD motors on the rotary axes

The NMV5000 DCG uses DD motors for the B and C axes which turn the table. Because power is transmitted directly, without using gears, there is no backlash, and because there are no parts to wear out, there is less maintenance and longer machine life. Also, rigidity is improved by using ultra-large diameter bearings on the B and C axes (φ740 mm and φ500 mm respectively). The standard C-axis rapid traverse rate is 120 min⁻¹, and options of 500 min⁻¹ and 1,200 min⁻¹ are also available. Machining and turning can be done with one machine.

3. Superior accessibility

The door opening is 920 mm, and the distance from the center of the table to the front of the cover during setup is 500 mm, offering outstanding access. Accessibility is not lost even when the APC is attached, since the workpieces are delivered from the sides of the machine.

4. MAPPSⅢ next generation operating system

The NMV5000 DCG uses MAPPSⅢ as a support function for 5-axis control machining. It offers improved hardware specifications, improved operability and shorter programming time. With the real-time interference checking function and the high-speed canned cycles, the setup for 5-axis control machining, which many people think is difficult, runs smoothly.

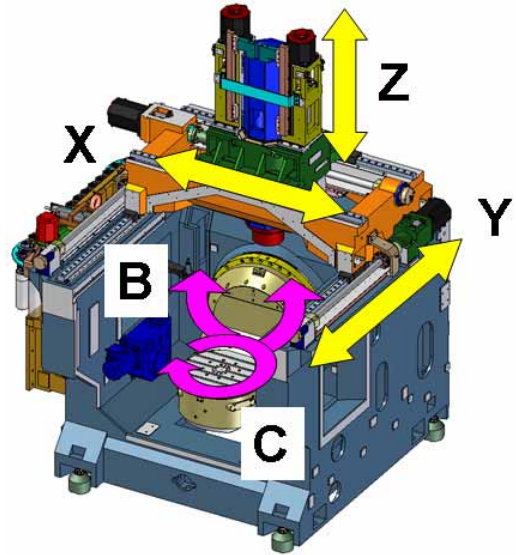
■ Main Specifications

Axis travel	X, Y, Z axes: 730 mm, 510 mm, 510 mm C-axis: 360° B-axis: ±170°
Table working surface	φ500 mm
Max. spindle speed	12,000 [20,000] min ⁻¹
Spindle drive motors (15 min./cont.)	18.5/15 [22/18.5] kW
Rapid traverse rate	X,Y axes: 50,000 mm/min Z-axis: 40,000 mm/min C-axis: 120 [500] [1,200] min ⁻¹
Tool storage capacity	31 [61, 91, 121, 181] tools
Type of tool shank	BT40 [HSK-A63]

[] Option



NMV5000 DCG



Machine structure