

Press Release

June 14, 2006

We Start Accepting Orders for the High-Speed, High-Precision Horizontal Machining Center, the “NH5000 DCG”

Reducing machining time by 30%. All models in the NH Series are now equipped with DCG™ (Driven at the Center of Gravity)

Mori Seiki Co., Ltd. will start accepting orders for our high-speed, high-precision horizontal machining center, the “NH5000 DCG,” which uses DCG™ (Driven at the Center of Gravity) theory.

Ever since we released our high-precision horizontal machining center, the NH 4000 DCG with DCG™ theory, in September 2003, the series of horizontal machining centers with DCG™ has grown to be our best-selling machines. Now, by unveiling the NH5000 DCG, we have completed the line-up, which also includes the NH4000 DCG, the NH6300 DCG and the NH8000 DCG.

The earlier NH5000, in which we pursued an improved operating rate, has been a best-selling core machine since its release 3 years and 9 months ago, and 1,300 units have been sold. By adopting DCG™ theory in a machine of this size and completely changing the machine structure, we have achieved dramatic improvements in machining speed, surface quality, contouring accuracy and tool life. Machining time has been reduced by 30%.

What is remarkable about this machine is its high speed, and the feed accelerations on the X, Y, Z axes are 1.0 G, 1.1 G, 0.7 G, twice as fast as before. Also, the B-axis full indexing specifications use the “DD motor system,” allowing the industry’s fastest 90° indexing time of 0.62 sec. The maximum tool length is set to 500 mm, and it displays its full power by machining with a long boring bar without the need for turnover machining. Spindles can be selected from the No. 40 taper type (NH5000 DCG/40) and the No. 50 taper type (NH5000 DCG/50).

Mori Seiki Co., Ltd. presents a high-precision horizontal machining center, which dramatically reduces machining time and achieves high accuracy, to the automobile parts and parts mass production industries.

Type	High-precision horizontal machining center
Model	NH5000 DCG
Market	Automobile, construction machinery, airplane, general machine parts
Production	40 units/month
Orders from	June 15, 2006

■ Main features

1. Equipped with DCG™ (Driven at the Center of Gravity)
2. High speed (rapid traverse rate and high-speed acceleration)
3. Large axis travel and small floor space required
4. High-speed table (B-axis)
5. Spindle taper No. 40 and No. 50 specifications

■ Features

1. Equipped with DCG™ (Driven at the Center of Gravity)

The NH5000 DCG is equipped with DCG™ (Driven at the Center of Gravity) theory and Box-in-Box Construction. This achieves better machining accuracy and machined surface quality, longer tool life and a reduction in machining time. The NH5000 DCG also has a lineup of □400, □500, □630, and □800 pallets.

2. High speed (rapid traverse rate and high-speed acceleration)

The adoption of DCG™ theory reduced residual vibration, and this helped the machine achieve a rapid traverse rate of 50 m/min and high-speed acceleration of 1.0 G on the X-axis, 1.1 G on the Y-axis and 0.7 G on the Z-axis.

3. Large axis travel and small floor space required

Axis travels are set at 730 mm for the X and Y axes, and 850 mm for the Z-axis. The maximum tool length is set at 500 mm. Although the NH5000 DCG has larger axis travels and tool length than conventional machines, its floor space is about the same space-saving size.

Reference: conventional NH5000 (with No. 40 taper) X-, Y-, Z-axis travel: 630 mm, 600 mm, 670 mm

4. High-speed table (B-axis)

With the table 1° indexing specification, 90° indexing is 1.4 sec. As for the optional full indexing specifications, a DD motor is used to achieve high-speed 90° indexing of 0.62 sec., high precision and high efficiency.

By using the DD motor system, the machine conducts high-precision machining with no backlash and high responsiveness. Also, since there is no wear and tear on the drive unit parts, the machine will last a long time.

5. Spindle taper No. 40 and No. 50 specifications

The spindle taper can be selected from No. 40 or No. 50 specifications. It is possible to construct a system in which machines with different spindles (No.40 and No. 50) can use the same pallets, which allows a combination of various types of machining, as well as unmanned operation.

■ Main Specifications

Model	NH5000 DCG/40	NH5000 DCG/50
Travel (X-, Y-, Z- axis)	730 mm, 730 mm, 850 mm	
Table working surface	500 x 500 mm	
Table loading capacity	500 kg [700 kg]	
Max. workpiece swing dia.x height	φ800 x 1,000 mm	
Max. spindle speed	14,000 [20,000] min ⁻¹	8,000 [15,000] min ⁻¹
Spindle drive motors	22/18.5 kW (15 min./cont.)	30/22 kW (30 min./cont.)
Rapid traverse rate	50,000 mm/min	
Tool storage capacity	40 [60] [120][180][240] tools	54[100] [140][180] tools
Type of tool shank	BT40 [HSK A63]	BT50 [HSK A100]
Max. tool dia. (without adjacent tools)	φ70 mm (φ140 mm)	φ110 mm (φ300 mm)
Max. tool length	500 mm	
Max. tool mass	8 kg (12 kg)	30 kg
Floor space (width x depth)	2,650 mm x 4,610 mm	3,362 mm x 4,796 mm

[] Option

■ Other

1. The machine will be displayed at the “Summer Productivity Show 2006” at our Iga Campus from June 22 to June 24, 2006.
2. The DCG™ theory (Driven at the Center of Gravity) received the 24th Technology Development Award from the Japan Society for Precision Engineering.



NH5000 DCG