High-Precision Vertical Machining Center

NV6000 DCG

www.dmgmori.com
Its accuracy, 
the best in the world.

The NV6000 DCG, with its large Y-axis travel of 600 mm (23.6 in.), has joined the NV Series, which has been well received by our customers worldwide as the next generation of vertical machining centers since release in 2002. The NV6000 DCG is an ideal machine that offers all the features required for a vertical machining center, such as high precision, high speed and high efficiency, contributing to greater profits for our customers.
Basic structure

The NV6000 DCG incorporates the DCG on all axes. Also, DMG MORI SEIKI’s original structure made it possible to eliminate spindle and table overhang.

Driven at the Center of Gravity

Our DCG technology controls vibration, which is one of the main enemies of high speed and high precision, by driving structural parts at their center of gravity.

Features of DCG

- Improved surface quality
- Outstanding acceleration
- Improved roundness
- Longer tool life

Rapid traverse rate <X, Y and Z axes>

NV6000 DCG
42 m/min (1,653.5 ipm)

Feedrate <X, Y and Z axes>

NV6000 DCG
42 m/min (1,653.5 ipm)
(with AI contour control)

Machine size

<table>
<thead>
<tr>
<th>NV6000 DCG/40</th>
<th>NV6000 DCG/50</th>
</tr>
</thead>
<tbody>
<tr>
<td>(W) 2,814 mm</td>
<td>(W) 4,433 mm*1</td>
</tr>
<tr>
<td>(D) 3,305 mm</td>
<td>(D) 4,189 mm*2</td>
</tr>
<tr>
<td>(H) 3,015 mm</td>
<td>(H) 3,169 mm</td>
</tr>
<tr>
<td>(110.8 in.)</td>
<td>(174.5 in.)</td>
</tr>
<tr>
<td>(130.1 in.)</td>
<td>(164.9 in.)</td>
</tr>
<tr>
<td>(118.7 in.)</td>
<td>(124.8 in.)</td>
</tr>
</tbody>
</table>

*1 Including a 1,203 mm (47.4 in.) step for the magazine and a 416 mm (16.4 in.) oil cooler.
*2 Including a 884 mm (34.8 in.) oil cooler.

Working area

Despite its compact body, the NV6000 DCG ensures a large work envelope suitable for various workpieces.

Table working surface

1,000×600 mm
(39.4×23.6 in.)

Table loading capacity

800 kg (1,760 lb.)
ATC, Magazine

By using the ATC, which allows high-speed tool change, non-cutting time is dramatically reduced.

### Tool changing time

**Cut-to-cut (chip-to-chip)**

<table>
<thead>
<tr>
<th>Tool changing time</th>
<th>NV6000 DCG/40</th>
<th>NV6000 DCG/50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. &lt;ISO&gt;</td>
<td>5.9 sec.</td>
<td>14.9 sec.</td>
</tr>
<tr>
<td>Min. &lt;ISO&gt;</td>
<td>4.2 sec.</td>
<td>9.0 sec.</td>
</tr>
<tr>
<td>&lt;MAS&gt;</td>
<td>4.3 sec.</td>
<td>9.0 sec./10.3 sec.*</td>
</tr>
</tbody>
</table>

ISO 10791-9 JIS B6336-9

* For a tool of 10 kg (22 lb.) or heavier.

- Depending on the arrangement of tools in the magazine, the cut-to-cut (chip-to-chip) time may be longer.

**Tool-to-tool**

<table>
<thead>
<tr>
<th>NV6000 DCG/40</th>
<th>NV6000 DCG/50</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.6 sec.</td>
<td>2.8 sec./3.9 sec.*</td>
</tr>
</tbody>
</table>

* For a tool of 10 kg (22 lb.) or heavier.

ISO: International Organization for Standardization
JIS: Japanese Industrial Standard

- The time differences are caused by the different conditions (travel distances, etc.) for each standard.

- Depending on the arrangement of tools in the magazine, the cut-to-cut (chip-to-chip) time may be longer.

### Spindle

A DDS (Direct Drive Spindle) motor has been used for the spindle drive, with a gearless, variable speed design to bring out full power at all speeds.

<table>
<thead>
<tr>
<th>NV6000 DCG/40</th>
<th>NV6000 DCG/40 HSC</th>
<th>NV6000 DCG/50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. spindle speed</td>
<td>12,000 min⁻¹</td>
<td>20,000 min⁻¹</td>
</tr>
<tr>
<td>30,000 min⁻¹</td>
<td>15,000 min⁻¹</td>
<td></td>
</tr>
<tr>
<td>Spindle acceleration time</td>
<td>1.30 sec.</td>
<td>2.52 sec.</td>
</tr>
<tr>
<td>(0 → 12,000 min⁻¹)</td>
<td>(0 → 20,000 min⁻¹)</td>
<td>(0 → 8,000 min⁻¹)</td>
</tr>
<tr>
<td>Spindle deceleration time</td>
<td>1.17 sec.</td>
<td>2.31 sec.</td>
</tr>
<tr>
<td>(12,000 min⁻¹ → 0)</td>
<td>(20,000 min⁻¹ → 0)</td>
<td>(8,000 min⁻¹ → 0)</td>
</tr>
</tbody>
</table>

### Spindle cooling

Stator coil in DDS motor: the coolant supplied by the oil cooler minimizes heat diffusion by circulating through an oil jacket, which is placed around the stator coil.

### Tool clamp power

NV6000 DCG/40 13,500 N (3,034.8 lbf)

### Two-face contact specifications

Tool rigidity has been improved by contact of both the spindle taper and the tool flange. This extends the useful life of a tool, raises cutting power and improves the machining precision.

- BT40*, BT50*
- HSK-A63, HSK-A100
- HSK-F63 (NV6000 DCG/40 HSC 30,000 min⁻¹ specifications only)
- Capto C6

* When the two-face contact specification is selected, a two-face contact tool and other tools cannot be used together.

- See the page 21 for details.

- All DMG MORI SEIKI spindles are made in-house to better meet our customer needs. For details, please consult with our sales representative.
High precision equipment

**Direct scale feedback**

The absolute magnetic linear scale (full closed-loop control) made by Magnescale is effective for high-precision positioning, and is available as an option.

- **Resolution**
  - 0.01 μm

![Magnescale](image)

High accuracy absolute scale

**Oil cooler (separate type)**

An energy-saving is used that delivers very little temperature fluctuation.

**Coolant cooling system (separate type)**

Raised coolant temperature causes thermal displacement in the fixtures and workpiece, affecting the machining accuracy of the workpiece. Use this unit to prevent the coolant from heating up. When using oil-based coolant, the coolant temperature can become extremely high even with the standard coolant pump, so please be sure to select this unit.

![Coolant cooling system](image)

- **When using oil-based coolant, please be sure to consult with our sales representative.**

- While this unit is not the only way to completely control the temperature of the coolant, it makes a major contribution to preventing increases in the oil temperature.

**Z-axis drop prevention function ideal for blackouts**

Raising the spindle slightly during blackouts prevents any contact between the tool and the workpiece caused by the spindle dropping.

- **The Z-axis drop prevention function is not available in the following situations.**
  1. When the feed axis servo alarm has gone off.
  2. When the power supply module alarm has gone off.
  3. When the communication alarm between the CNC and the amp has gone off.

![Z-axis drop prevention](image)

Re-machined surface

- **Power off**
Improved workability

Excellent access to the table and a smoothly opening roof for easier setup when using a crane. The NV6000 DCG was designed as a vertical machining center with maximum ease of use and setup.

### Swivel-type operation panel
The operation panel which can swivel from 0 degree to 90 degrees improves operability and visibility.

### The open/close ceiling
The top panel can be opened and closed, making crane accessibility quick and easy.

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**Accessibility**
With excellent access to the table and a wide door opening, setup operations such as fixture adjustment can be done smoothly.

Distance from table 161 mm (6.3 in.)
Height of table top surface 975 mm (38.4 in.)

Door opening 910 mm (35.8 in.)

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**Maintenance**

The NV6000 DCG is designed with features for ease of maintenance to increase the machine operating rate.

### Slimmer electrical cabinet
A slim electrical cabinet closes the proximity between you and the insides of the machine during maintenance.

300 mm (11.8 in.) <including doors>

### Replacement of spindle unit
By changing the spindle unit to a cartridge, which even includes the rear bearings, we have dramatically reduced replacement time.

### Access to equipment
Visibility of the magazine has been improved with the addition of a door with a window. In addition, the coolant tank can be used as steps to facilitate access to gauges and other instruments.

### Centralized layout of devices
Devices which need to be inspected every day are gathered together at the rear of the machine.
Peripheral equipment

**Chip conveyor**

Chips that fall from the Y-axis tilted panel down into the center trough are automatically discharged out of the machine by the chip conveyor. This design prevents chips from accumulating.

![Chip conveyor diagram]

**Specifications**

<table>
<thead>
<tr>
<th>Workpiece material and chip size</th>
<th>Steel</th>
<th>Cast iron</th>
<th>Aluminum/iron-ferrous metal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long</td>
<td>○</td>
<td>×</td>
<td>○</td>
</tr>
<tr>
<td>Short</td>
<td>○</td>
<td>x</td>
<td>×</td>
</tr>
</tbody>
</table>

**Chip transport route**

- **Hinge type**
  - Suitable: ○
  - Not suitable: ×

- **Scraper type + drum filter type**
  - Suitable: ○
  - Not suitable: ×

- **Magnet scraper type**
  - Suitable: ○
  - Not suitable: ×

**Chip size guidelines**

- Short: chips 50 mm (2.0 in.) or less in length, bundles of chips < 40 mm (1.6 in.) or less
- Long: longer than the above

**Through-spindle coolant system**

The through-spindle coolant system effectively eliminates chips, cooling the machine point, and lengthening the lives of your tools.

![Through-spindle coolant system diagram]

**Workpiece material and chip size**

<table>
<thead>
<tr>
<th>Specifications</th>
<th>Long</th>
<th>Short</th>
<th>Short</th>
<th>Long</th>
<th>Short</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hinge type + drum filter type</td>
<td>○</td>
<td>○</td>
<td>x</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Hinge type</td>
<td>○</td>
<td>○</td>
<td>x</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Scraper type + drum filter type</td>
<td>×</td>
<td>○</td>
<td>x</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Magnet scraper type</td>
<td>×</td>
<td>○</td>
<td>x</td>
<td>○</td>
<td>×</td>
</tr>
</tbody>
</table>

**Consultation is required**

- Chip size guidelines
- Please select a chip conveyor to suit the shape of your chips. When using special or difficult-to-cut material (chip hardness HRC45 or higher), please consult with our sales representative.
- Chip conveyors are available in various types for handling chips of different shape and material. For details, please consult with our sales representative.

**Through-spindle coolant system**

- **Discharge pressure**: MPa (psi)
  - Unit on coolant tank: 1.5 (217.5)
  - Separate type: 1.5/2.8 (217.5/507.5/1,015)
- **Installation space (<width x depth>)**: mm (in.)
  - Unit on coolant tank: 360 x 360 (14.2 x 14.2)
  - Separate type: 780 x 1,085 (30.7 x 42.7)

**Coolant filtration accuracy**

- 40 μm
- 20 μm

**Oil-based coolant may not be filtered appropriately depending on its viscosity. In such cases it is advisable to select the high-pressure coolant unit (special option), which uses a ceramic backwashing filter in the filtration system instead of a regular cyclone filter. Please consult our sales representative for details.**

**Features of DDM**

- High-speed rotation
- High-precision indexing
- Less maintenance
- Longer product life

**Rotary table DDRT Series**

- Equipped with DDM
- Zero backlash
- Achieves high-precision indexing
- Offers stable machining through powerful clamping
- Allows high-efficiency machining using 4 axes

**Rotational speed of the table**

<table>
<thead>
<tr>
<th>Conventional machine</th>
<th>DDRT-260</th>
<th>Compared with conventional machine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conventional machine</td>
<td>17 min⁻¹</td>
<td>150 min⁻¹</td>
</tr>
<tr>
<td>DDRT-260</td>
<td>9 times greater</td>
<td></td>
</tr>
</tbody>
</table>

**Positioning accuracy**

<table>
<thead>
<tr>
<th>Conventional machine</th>
<th>DDRT-260</th>
<th>Compared with conventional machine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conventional machine</td>
<td>20 sec.</td>
<td>5 sec.</td>
</tr>
<tr>
<td>DDRT-260</td>
<td>1/4</td>
<td></td>
</tr>
</tbody>
</table>

**Features of DDM**

- High-speed rotation
- High-precision indexing
- Less maintenance
- Longer product life

**The colors and configurations shown in the photographs or illustrations may differ from those of the actual product.**
# Measurement

For the measuring devices, an automatic measuring function can be selected alone or in combination with manual measuring functions. Select the right devices for your use.

## Automatic measurement

<table>
<thead>
<tr>
<th>Touch sensor (spindle)</th>
<th>Touch sensor (table)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automatic centering and automatic measurement are possible.</td>
<td>Automatic tool length measurement and automatic breakage detection are possible.</td>
</tr>
<tr>
<td>Automatic measurement applications are included.</td>
<td>Automatic measurement applications are included.</td>
</tr>
</tbody>
</table>

### Automatic measurement applications

<table>
<thead>
<tr>
<th>Function</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Centering</td>
<td>Automatically sets the workpiece zero point.</td>
</tr>
<tr>
<td>Measurement</td>
<td>Measures the workpiece dimensions.</td>
</tr>
</tbody>
</table>

### Manual measurement functions

Manual measurement applications can be added to the automatic measurement function.

## Workpiece measurement function

<table>
<thead>
<tr>
<th>In-machine measuring system (spindle)</th>
<th>Worksetter function (manual measurement application)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Optical type touch sensor</td>
<td>Reference plane measurement</td>
</tr>
<tr>
<td></td>
<td>The machining reference point can be calculated simply by applying the sensor from the Z, X and Y-axis directions.</td>
</tr>
<tr>
<td>In-machine measuring system (spindle)</td>
<td>Reference hole measurement</td>
</tr>
<tr>
<td>Inductive type touch sensor</td>
<td>Centering a boss, hole, groove or width can be done at any two or three points, simply by applying the sensor.</td>
</tr>
<tr>
<td></td>
<td>Coordinate rotation measurement</td>
</tr>
<tr>
<td></td>
<td>Machining can be done without changing the program even if the workpiece is attached crookedly, simply by performing this operation within the X-axis and Y-axis plane.</td>
</tr>
</tbody>
</table>

## Tool measurement function

<table>
<thead>
<tr>
<th>In-machine measuring system (table)</th>
<th>Toolsetter function (manual measurement application)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Touch sensor (tool length)</td>
<td>Tool length measurement</td>
</tr>
<tr>
<td></td>
<td>The tool length value can be registered automatically to the designated tool offset number.</td>
</tr>
<tr>
<td></td>
<td>Tool diameter measurement</td>
</tr>
<tr>
<td></td>
<td>The tool diameter value can be registered automatically to the designated tool offset number.</td>
</tr>
</tbody>
</table>
Transfer systems

2-station turn-type APC (NV6000 DCG/40)

- The APC uses a 2-station turn-type design. Cycle time is shorter than that of a shuttle-type machine.
- A new design allows access from the back of the machine when setting up the APC. This contributes to space savings.

Machine front

Machine rear

Chip conveyor (external)

Setup station

Pallet changing time

- 25 sec.
- To prevent APC interference, this specification includes time required for the spindle protection tool to be moved until after the APC turning is complete.
- When there are adjacent tools. Depending on the arrangement of tools in the magazine, the APC time may be longer.
- Without ATC shutter

Pallet size

900×600 mm (35.4×23.6 in.)

Tool storage capacity

- 40/60 tools
- For APC specificat ons, a dummy tool which is mounted on the spindle during APC operation is included.

Workpiece transfer robot

Consultation is required

Robots make workpiece loading and unloading more efficient, improving productivity.

Chip bucket

Reduction in environmental burden

Eco-friendly design

Reduced consumption of lubricating oil

- Oil-bath ATC
  An oil-bath design has been integrated into the ATC unit design. Compared with conventional oil drip designs, the amount of lubricating oil used has been radically reduced.

Power-saving function

- Automatic sleep function
  If the keyboard is not touched after a certain amount of time and NC operation is not being performed, power is cut off to the servo motor, the spindle, the coolant pump and the chip conveyor, thereby saving energy.

- Automatic machine light function
  If the operation panel is not touched for a certain amount of time, the interior light automatically turns off. This saves energy and lengthens the life of the machine lights.
The DMSQP program is designed to certify peripherals that meet DMG MORI SEIKI standards in quality, performance and maintainability. DMSQP provides customers with even greater peace of mind.

**Examples of qualified products (NV6000 DCG)**

- **Through-spindle coolant system**
  Coolant is supplied to the tool tip through the center of the tool and spindle.

- **Coolant cooling system**
  It cools down coolant to offer better cutting performance and minimize thermal displacement in the workpiece.

- **Mist collector**
  It removes mist, smoke, etc. generated inside the machine.

- **Chip bucket**
  Chips discharged from the chip conveyor are collected into this bucket.

- **Refrigerating type air dryer**
  This unit removes moisture contained in the compressed air supplied by the compressor, preventing moisture-related problems in the pneumatic equipment.

- **Tool wagon**
- **Tool cabinet**
- **Basic tooling kit**

For more details on DMSQP items, please contact our sales representative.
High-performance operating system that pursues ease of use, and combines the best hardware in the industry with the advanced application/network systems.

- **Outstanding operability thanks to upgraded hardware**
- **Enhanced functionality by using CAM software (option)**
- **New functions for easier setup and maintenance**
- **Various types of monitoring, including internal monitoring, are possible on the screen (option)**
- **In the event of trouble, DMG MORI SEIKI’s remote maintenance service solves it smoothly**

### Outstanding operability

**Vertical soft-keys**
The vertical soft-keys can be used as option buttons or shortcut keys to which you can assign your desired screens and functions, allowing you to quickly display the screen you want.

**Keyboard**
A PC-type keyboard is used as standard, making key input easy. A keyboard with a conventional key layout is also available as an option.

---

**Advanced hardware**

**Reduction of drawing time**
Shorter drawing time was achieved thanks to increased CPU performance.

| MAPPS III | 68 sec. |
| MAPPS IV | 45 sec. |
| **Reduced by** | **33%** |

**Main specifications**

<table>
<thead>
<tr>
<th>Component</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main memory</td>
<td>2 GB</td>
</tr>
<tr>
<td>User area</td>
<td>Standard: 6 GB</td>
</tr>
</tbody>
</table>
| Interface   | - USB 2.0: 6 ports  
              (Screen side: 2, Bottom of operation panel: 1, Back of operation panel: 3)  
              - LAN: 2 ports (1000BASE-T)  
              - RS-232-C port |
| Soft-keys   | Left/right 12 keys  
              Bottom 12 keys |

**Improved ease of setup**

**File display and Memo function**
Data necessary for setups such as operating instructions, drawing data and text data can be viewed on MAPPS. Text data is editable.

- **Viewable file types**
  - PDF  
  - TXT (Editable)  
  - Any file that can be displayed with Internet Explorer is available

**Examples of camera locations**
- Inside machine (to check machining)  
- Tool magazine (to check cutting tools)  
- Chip bucket (to check chip accumulation)

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**Improved ease of maintenance**

**Alarm help function**
When an alarm occurs, MAPPS identifies the cause of the trouble and provides solutions.

**Improved work efficiency**

**Fixed-point in-machine camera**
Images taken by cameras installed inside/outside the machine can be viewed on the programming screen. This function is useful for maintenance.

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**MAPPS IV**
High-Performance Operating System for Machining Centers

MAPPS: Mori Advanced Programming Production System
Conversational automatic programming

This function allows users to create programs simply by following the guidance on the screen. Much of the programming process has been simplified due to the minimal key entry required for even the most complex shapes.

Machining menu
List display function
Contour input
Islands, open pockets

MORI-POST advanced mode
DXF import function

MORI Automatic Programming System for Machining Center

ESPRIT® allows you to create complex 3D programming with high-added value. By just installing the software on your PC with connection to LAN, you will be able to use it. (Once the software is started on the computer, it can be used for up to 7 days without LAN connection)

• Postprocessor as standard
• CAM software will be ready to use once your machine is installed
• Cost for introducing CAM software can be saved
• ESPRIT® data can be modified on the machine (through Remote Desktop connection*)
• The software can be installed on multiple PCs on the network (It cannot be simultaneously started up on more than one PC)
• 2-year warranty support (including free update)

● Remote Desktop <Patent pending>
ESPRIT® installed on your PC can be operated from your machine via LAN.*3 (It cannot be simultaneously started up on more than one PC)

● License borrowing system
By borrowing the ESPRIT® license from the machine over LAN, ESPRIT® can be run on the PC up to 7 days without LAN connection (or turning on the machine).

● Support system
Distributors/Trading companies, DMG MORI SEIKI Technical Centers and ESPRIT® Support Team will answer inquiries about the CAM software.

*1 A mouse is required. Please prepare a mouse by yourself.

ESPRIT® is available up to 7 days with no LAN connection

● The photo shown may differ from actual machine.
● Information about the screen is current as of November 2013.

*3 A mouse is required. Please prepare a mouse by yourself.
This is an application which allows you to remotely operate and view the MAPPS screens from your office computer. This enables high-speed transfer of programming data between your office computer and machine, reducing the lead time of pre-machining processes.

DMG MORI SEIKI's software Line-up

For shorter total production time for all our customers

Remote Maintenance/Machine Operation Monitoring Service

Features
- Remote maintenance service by DMG MORI SEIKI Service Center
- Internet-based, high speed (max. 1 Gbps), large capacity network
- No server installation is required — reduction in initial cost
- Download various data from the server located at DMG MORI SEIKI

Remote alarm support

When an alarm goes off, an alarm notification will be sent to the DMG MORI SEIKI Service Center simply by pressing the "Send e-mail" button on MAPPS. DMG MORI SEIKI service personnel will remotely diagnose the cause of the problem, and quickly provide solutions for machine recovery.

- This service may not be available in some areas. Please contact our sales representative for details.

Machine Operation Monitoring System

Features
- Intra-corporate network system
- Up to 30 machines can be connected with one server
- The operating status of your machines can be centrally managed in real time

Application for Data Transmission

This enables high-speed transfer of programming data between your office computer and machine, reducing the lead time of pre-machining processes.

MORI-SERVER [Standard features]

MORI-MONITOR

This is an application which allows you to remotely operate and view the MAPPS screens from your office computer.
DMG MORI SEIKI’s new proposal, ACT, is designed to strengthen connections between machine tools and peripheral equipment by standardizing communication and software of the entire system. With ACT, standardization of interfaces of peripherals, simplified wiring, and labor saving can be achieved.

This industrial network using the standard Ethernet (TCP/IP) offers high speed and reliable connection. Simple Plug and Play connections, which are made available just by connecting to the hub through MAPPS, enable you to build a system easily. The use of standard cables also helps to reduce costs.

MTConnect, which was introduced by the Association for Manufacturing Technology (AMT) in 2008, is a new XML (Extensible Markup Language) based communication protocol that offers an open interface. This interface allows you to build a system to monitor the operating status of your machines.

**MAPPS EtherNet/IP I/F**

This industrial network using the standard Ethernet (TCP/IP) offers high speed and reliable connection. Simple Plug and Play connections, which are made available just by connecting to the hub through MAPPS, enable you to build a system easily. The use of standard cables also helps to reduce costs.

**Features**
- Connections between a machine and peripheral equipment become easy because standard LAN cables are used
- Thanks to increased versatility, your peripheral equipment can be used even when the machine tools are replaced by new ones
- Reliability is significantly increased by reducing the number of I/O cables

- Easy system construction
- Connection with existing devices
- Inexpensive devices

**MAPPS MTConnect I/F**

MTConnect, which was introduced by the Association for Manufacturing Technology (AMT) in 2008, is a new XML (Extensible Markup Language) based communication protocol that offers an open interface. This interface allows you to build a system to monitor the operating status of your machines.

**Features**
- Open communication interface allows you to access to your company’s system
- This makes it possible for you to build a system to monitor the operating status of your machines via the Internet

**Application examples**
- Operating status can be checked in real time.
- You can check the operating history on the Gantt chart screen.
Machine specifications

<table>
<thead>
<tr>
<th>Item</th>
<th>NV6000 DCG/40</th>
<th>NV6000 DCG/40 HSC</th>
<th>NV6000 DCG/50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Travel</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X-axis travel &lt;longitudinal movement of table&gt;</td>
<td>mm (in.)</td>
<td>900 (35.4)</td>
<td>600 (23.6)</td>
</tr>
<tr>
<td>Y-axis travel &lt;cross movement of saddle&gt;</td>
<td>mm (in.)</td>
<td>500 (19.7)</td>
<td>500 (19.7)</td>
</tr>
<tr>
<td>Z-axis travel &lt;vertical movement of spindle head&gt;</td>
<td>mm (in.)</td>
<td>450 (17.7)</td>
<td>450 (17.7)</td>
</tr>
<tr>
<td>Distance from table surface to spindle gauge plane</td>
<td>mm (in.)</td>
<td>200 〜 650 (7.9 〜 25.6)</td>
<td>200 〜 650 (7.9 〜 25.6)</td>
</tr>
<tr>
<td>Table</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Table surface configuration</td>
<td>18 mm x 100 mm × 6 (0.7 in. x 3.9 in. x 6)</td>
<td>18 mm x 100 mm × 6 (0.7 in. x 3.9 in. x 6)</td>
<td>18 mm x 100 mm × 6 (0.7 in. x 3.9 in. x 6)</td>
</tr>
<tr>
<td>Number of spindle speed ranges</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Type of spindle bore hole</td>
<td>No. 40</td>
<td>No. 50</td>
<td>No. 50</td>
</tr>
<tr>
<td>Max. spindle speed</td>
<td>min⁻¹</td>
<td>12,000</td>
<td>20,000</td>
</tr>
<tr>
<td>Max. tool length</td>
<td>mm (in.)</td>
<td>70 (2.8)</td>
<td>70 (2.8)</td>
</tr>
<tr>
<td>Max. tool diameter</td>
<td>kg (lb.)</td>
<td>300 (11.8)</td>
<td>300 (11.8)</td>
</tr>
<tr>
<td>Max. tool mass</td>
<td>kg (lb.)</td>
<td>8 (17.6)</td>
<td>8 (17.6)</td>
</tr>
<tr>
<td>Max. tool mass moment (from spindle gauge line)</td>
<td>N·m (ft·lb)</td>
<td>11 (6.1)</td>
<td>11 (6.1)</td>
</tr>
<tr>
<td>Tool-to-tool</td>
<td>s</td>
<td>1.6</td>
<td>2.8/3.9</td>
</tr>
<tr>
<td>ATC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type of tool shank BT40° [HSK-A63] (DIN140) [Cat40] (Capto C6)</td>
<td>mm (in.)</td>
<td>20 (0.8)</td>
<td>30 (1.2)</td>
</tr>
<tr>
<td>Type of tool shank BT40° [HSK-A63] (DIN140) [Cat40] (Capto C6)</td>
<td>mm (in.)</td>
<td>20 (0.8)</td>
<td>30 (1.2)</td>
</tr>
<tr>
<td>Type of tool shank BT50° [HSK-A100] (DIN50) [Cat50]</td>
<td>mm (in.)</td>
<td>30 (1.2)</td>
<td>30 (1.2)</td>
</tr>
<tr>
<td>Type of tool shank HSK [80° (MAS-1)] [80° (MAS-2)] [HSK]</td>
<td>mm (in.)</td>
<td>30 (1.2)</td>
<td>30 (1.2)</td>
</tr>
<tr>
<td>Type of retention knob DMG MORI SEIKI 90° type [45° (MAS-1)] [80° (MAS-2)] [HSK]</td>
<td>mm (in.)</td>
<td>30 (1.2)</td>
<td>30 (1.2)</td>
</tr>
<tr>
<td>Tool storage capacity</td>
<td>s</td>
<td>4.3</td>
<td>9.0/10.3</td>
</tr>
<tr>
<td>Spindle drive motor 20,000 min⁻¹</td>
<td>kW (HP)</td>
<td>18.5/15/11 (24.7/20/15)</td>
<td>18.5/15/11 (24.7/20/15)</td>
</tr>
<tr>
<td>Motor</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compressed air supply MPa (psig), L/min (gpm)</td>
<td>0.5 (72.5), 200 (52.8)</td>
<td>0.5 (72.5), 200 (52.8)</td>
<td>0.5 (72.5), 200 (52.8)</td>
</tr>
<tr>
<td>Tank capacity</td>
<td>L (gal.)</td>
<td>345 (91.1)</td>
<td>345 (91.1)</td>
</tr>
<tr>
<td>Machine height</td>
<td>mm (in.)</td>
<td>3,015 (118.7)</td>
<td>3,169 (124.8)</td>
</tr>
<tr>
<td>Machine size</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Machine size</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Noise data:
A-weighted, time-average radiated sound dB | 61 〜 80 (Measurement uncertainty is 4 dB)
DMG MORI

2-year warranty, twice the peace of mind.

For machines delivered outside of Japan, parts relating to machine breakdown will be guaranteed free for 2 years from the date of installation, and labor costs to repair will be free for 1 year. Please contact our sales representative for details.

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