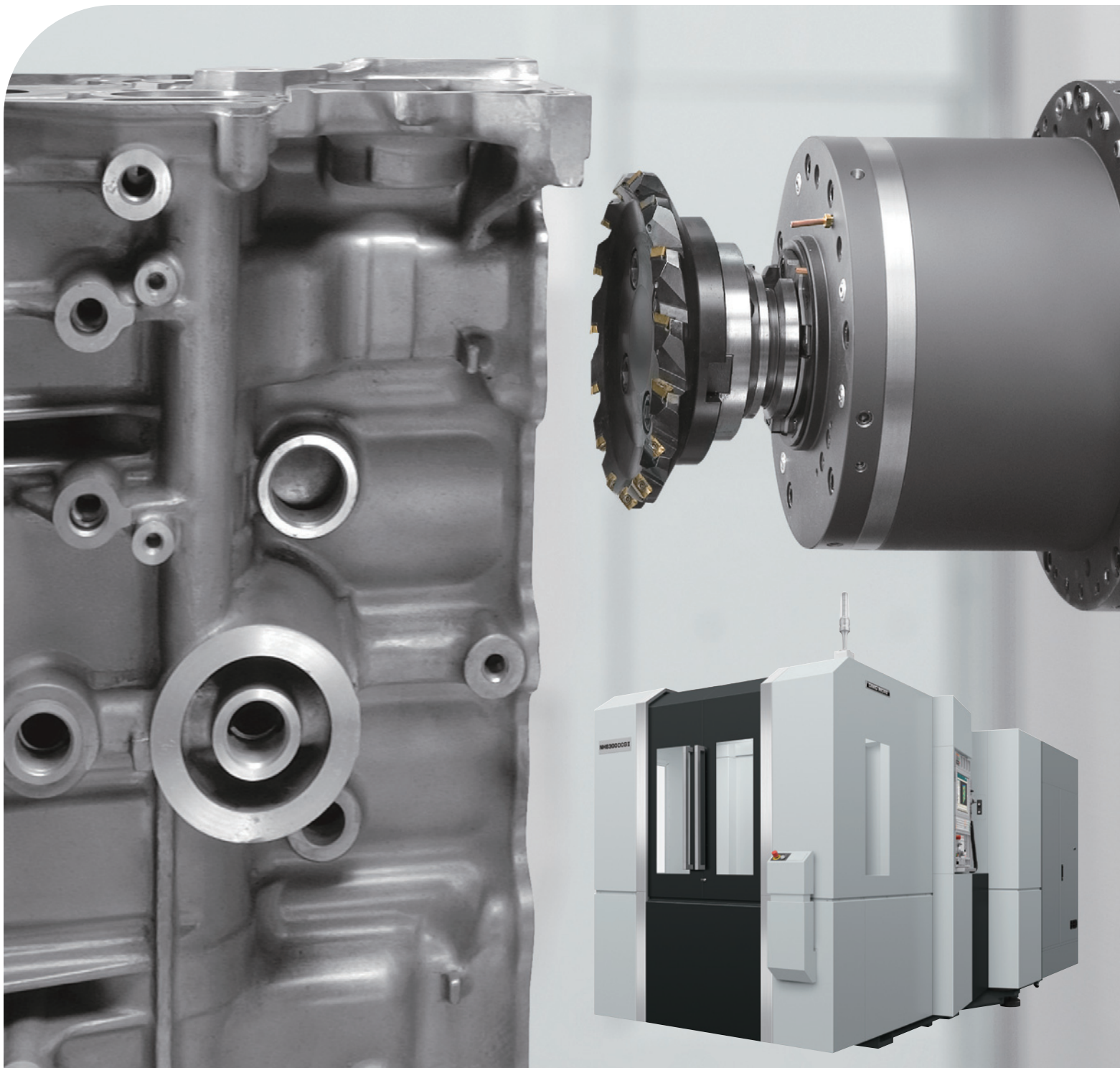


High-Precision Horizontal Machining Center

NH6300 DCG II

NH6300 DCG II



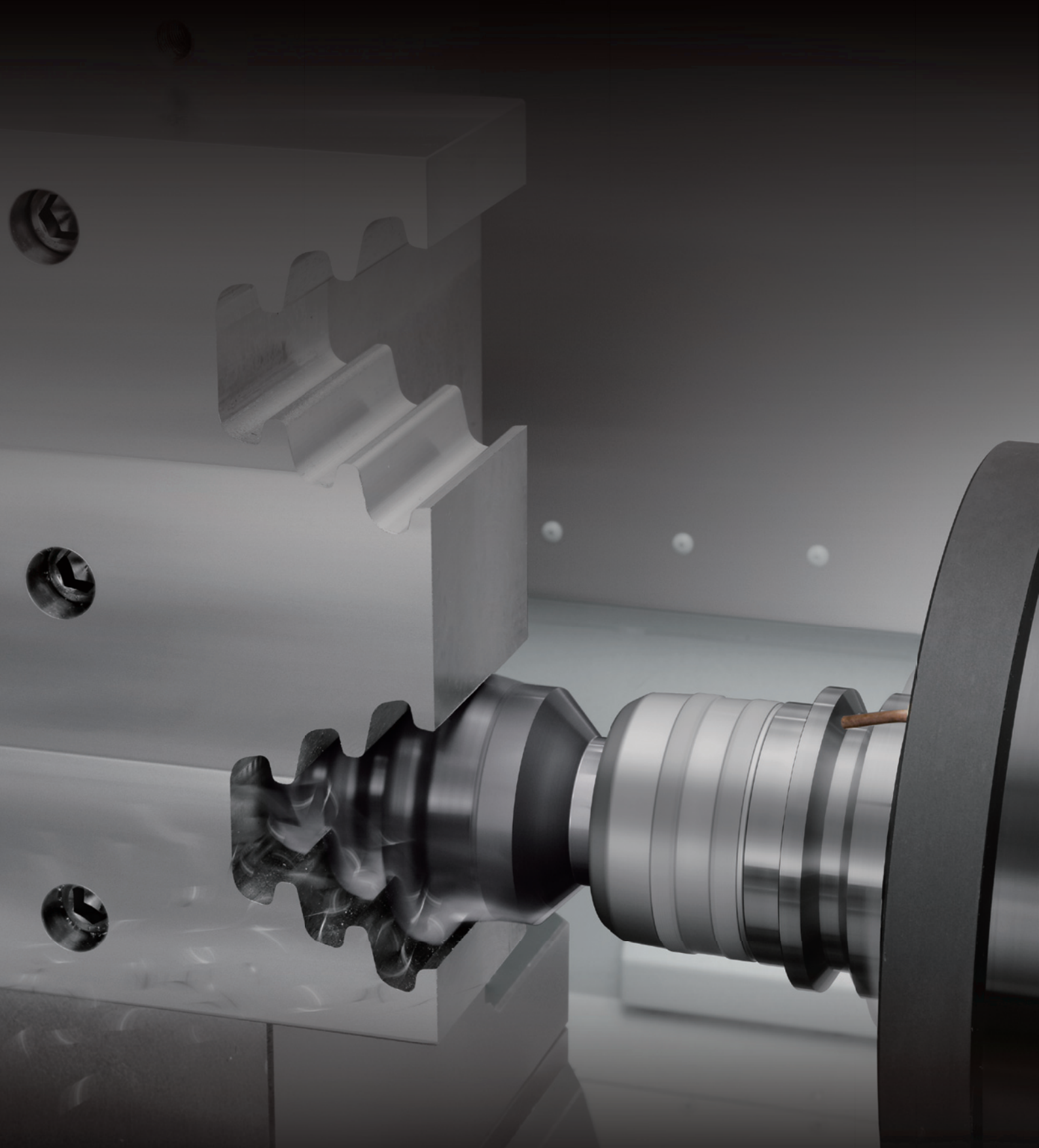
Horizontal machining center answering a wide range of requirements from heavy-duty cutting to high-speed cutting

Equipped with 630-mm-square pallets, the NH6300 DCG II offers a generous work envelope of $\phi 1,050 \text{ mm} \times 1,300 \text{ mm}$ ($\phi 41.3 \text{ in.} \times 51.1 \text{ in.}$) while achieving space savings.

The rate of acceleration on all axes has been increased by 30% or more, substantially shortening machining times and further increasing productivity.

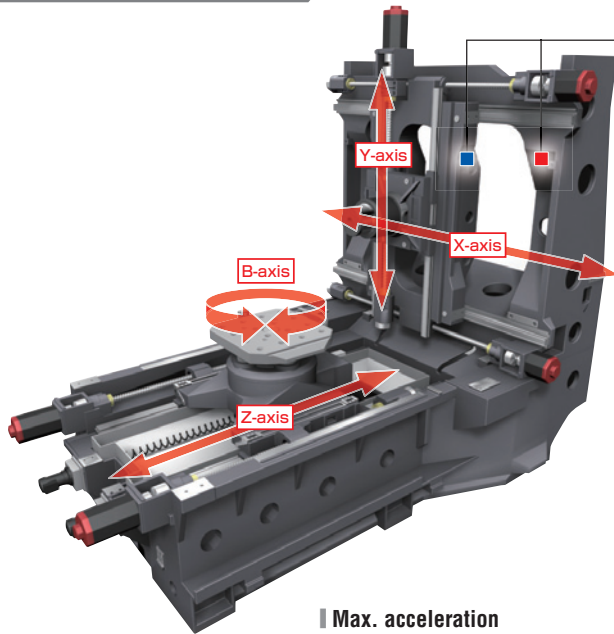
This is a high-speed, high-precision horizontal machining center perfect for machining medium and large sized workpieces and difficult-to-cut materials, for example in the automobile, construction machinery and aircraft fields.





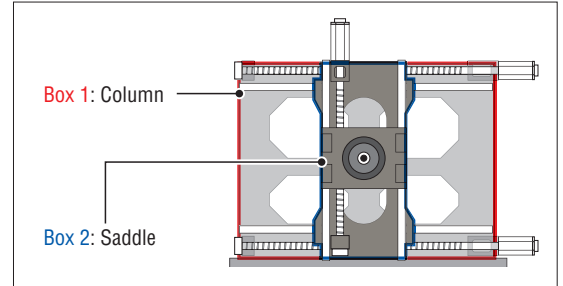
Principal mechanisms

Basic structure



Box-in-Box Construction

The Box-in-Box design, which supports the saddle from both sides, guides and drives the moving parts by its center of gravity in a more balanced manner.



Max. acceleration

X-axis **0.71 G** {7.0 m/s² (23.0 ft/s²)}

Y-axis **1.00 G** {9.8 m/s² (32.2 ft/s²)}

Z-axis **0.76 G** {7.5 m/s² (24.6 ft/s²)}

Rapid traverse rate <X, Y and Z axes>

50 m/min (1,968.5 ipm)

• The rapid traverse rate on the Y-axis is 40 m/min (1,574.8 ipm) when using the spindle with the 6,000 min⁻¹/8,000 min⁻¹ specifications <option>.

Feedrate <X, Y and Z axes>

50 m/min (1,968.5 ipm)

• Look-ahead control

Driven at the Center of Gravity



Original technology

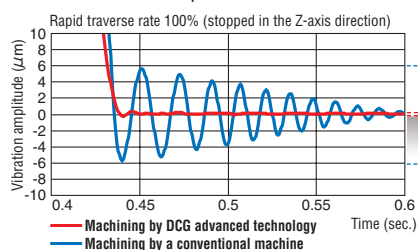
Our DCG (Driven at the Center of Gravity) technology controls vibration, which is one of the main enemies of high speed and high precision, by driving structural parts at their center of gravity.

Vibration Controlled

For positioning, machines with DCG virtually eliminate vibration, while machines without DCG continue to vibrate for a long time.

DCG controls the rotational vibration which appears at every acceleration start point, and which is proportional to the distance between the drive point and the center of gravity. This prevents deterioration of the quality of the machined surface.

Residual vibration comparison

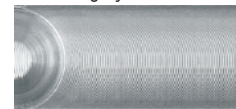


Machining by DCG advanced technology

Machining by a conventional machine

(machine type: NV4000 DCG)

Machining by DCG advanced technology



Machining by a conventional machine



Features of DCG

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

Space-saving design

Customers can choose a magazine with the ideal number of tools to suit their needs, while keeping the machine width as it is.

■ **Machine height**
(chain-type: 60 tools)
3,414 mm
(134.4 in.)

■ **Machine width×machine depth**
(chain-type: 60 tools)
3,370×5,957 mm (132.7×234.5 in.)

Machine width

60, 80, 100, 120 tools (chain-type)	180, 240, 330 tools (rack-type)
3,370 mm (132.7 in.)	4,098 mm (161.3 in.)

- The machine depth is for hinge type chip conveyor specifications.
- Chain-type magazines (60-, 80-, 100- or 120-tool capacity) incorporate a pot tilting mechanism and the tool capacity includes one tool at the spindle side.
- Rack-type magazines (180-, 240- or 330-tool capacity) incorporate a pot transfer mechanism and the tool capacity includes one tool at the spindle side.

Machine depth

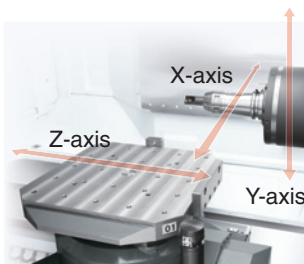
Chain-type

60 tools (standard)	80 tools	100, 120 tools
4,850 mm (190.9 in.)	6,000 mm (236.2 in.)	6,400 mm (252.0 in.)

Rack-type

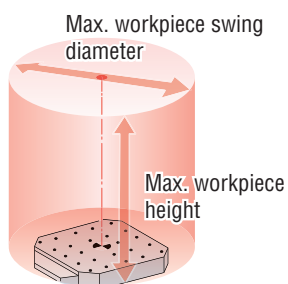
180 tools	240 tools	330 tools
5,435 mm (214.0 in.)	6,155 mm (242.3 in.)	7,235 mm (284.8 in.)

Travel <X, Y and Z axes>



X-axis	Y-axis	Z-axis
1,050 mm (41.3 in.)	900 mm (35.4 in.)	980 mm (38.6 in.)

Working area



Max. workpiece swing diameter	Max. workpiece height	Pallet loading capacity
1,050 mm (41.3 in.)	1,300 mm (51.1 in.)	1,500 kg (3,300 lb.)

Principal mechanisms

Spindle



Max. spindle speed

10,000 min⁻¹ 15,000 min⁻¹ **OP**
 8,000 min⁻¹ **OP**
 6,000 min⁻¹ **OP**

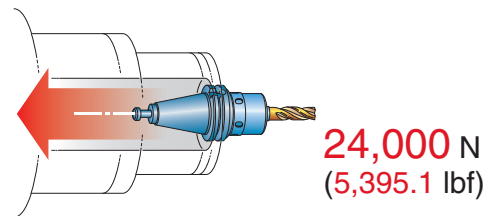
Spindle acceleration time/Spindle deceleration time (0→10,000 min⁻¹/10,000 min⁻¹→0)

2.90 sec./**2.90** sec.

For the spindle drive, we use the high-efficiency DDS (Direct Drive Spindle) motor which extracts full power over a wide range, from high-speed machining to heavy-duty cutting. This machine handles all types of materials from steel to aluminum and other non-ferrous metals.

Tool clamp power

Using the newly developed collet, clamping power on the tool has been increased. The ability to control vibration during spindle rotation ensures high-accuracy machining.

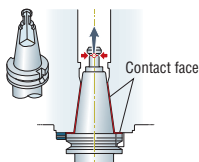


● Please use a two-face contact tool when cutting at higher than 10,000 min⁻¹.

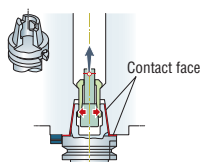
Two-face contact specification **OP**

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.

BT specifications



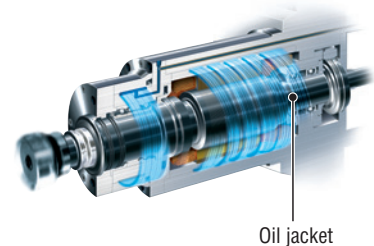
HSK specifications



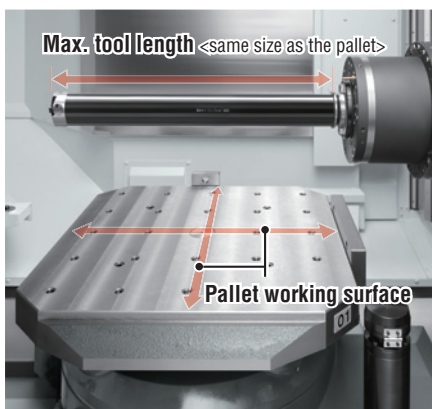
- All DMG MORI spindles are made in-house to better meet our customer needs. For details, please consult with our sales representative.
- When the two-face contact specification is selected, a two-face contact tool and other tools cannot be used together.

Spindle cooling

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



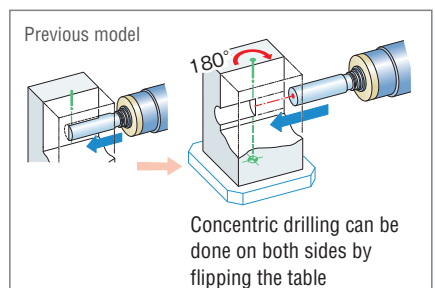
Tool, Boring



The maximum tool length is the same as the pallet size. Deep hole boring up to the maximum tool length can be done without turning the table around, reducing cutting time and achieving high-precision machining.

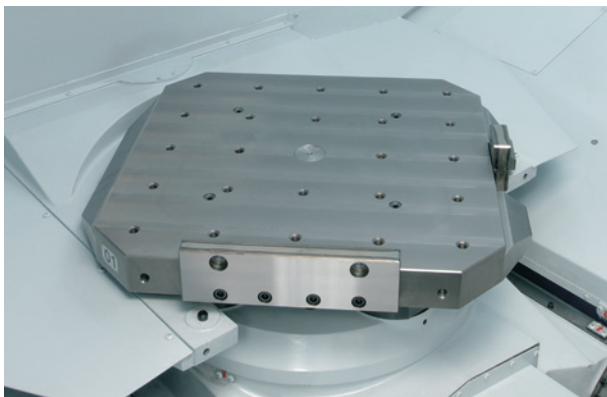
- Depending on condition, machining may not always be possible.

Max. tool length
630 mm (24.8 in.)





Pallet working surface
630×630 mm (24.8×24.8 in.)

Table



A one-degree indexing table is standard, and a full indexing table equipped with DDM is available as an option. These have significant advantages for machining of workpieces that require high speed and high positioning accuracy.

Selection of tables

Table type	1° indexing table	Full 4th axis rotary table  
Minimum pallet indexing angle	1°	0.001°
Pallet indexing time (90°) <including clamping and unclamping time>	2.0 sec.	1.8 sec.

Direct Drive Motor

OP

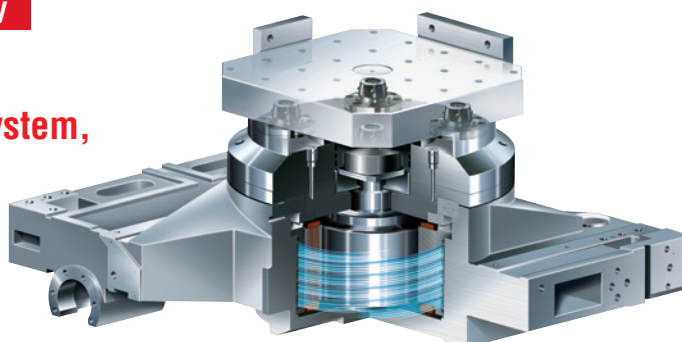


DDM[®]
Direct Drive Motor

Original technology

The world's fastest rotary axis drive system, which achieves zero backlash.

Until now, gears have been used to transmit the drive power to the rotary axes, but this drive system had a negative effect on drive speed and precision. By transmitting the drive power to the rotary axes directly without using gears, DDM offers outstanding transmission efficiency and high-speed feed. DDM also achieves zero backlash.



Features of DDM

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

B-axis max. rotational speed

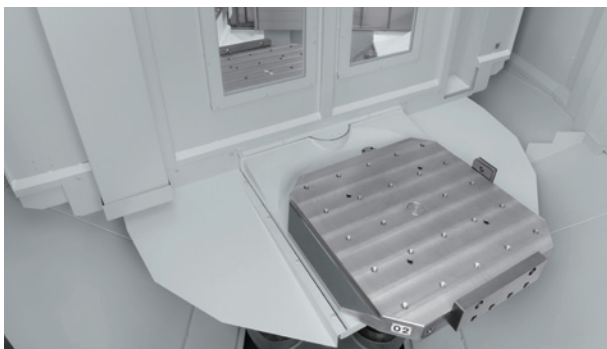
Previous model
(worm gear system)

NH6300 DCG II (DDM)

16.7 min⁻¹ ► 100 min⁻¹

Approx. 6.0 times faster

APC



It uses a front 2-station turn-type APC.
This APC offers high-speed pallet change that reduces non-cutting time.

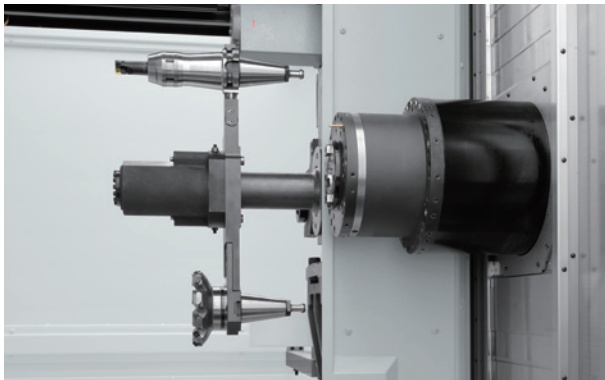
Pallet changing time (2-station turn-type APC)*

15.0 sec.

* Excluding clamping and unclamping time.
When equipped with the auto-coupler, time taken to shut off / supply hydraulic pressure to the fixture is not included.

Principal mechanisms

ATC



By using a double arm, which offers high-speed tool change, non-cutting time is dramatically reduced.

Tool changing time

Cut-to-cut (chip-to-chip) <60 tools>

Max. <ISO>	Min. <ISO>
16.6 sec.	4.5 sec.

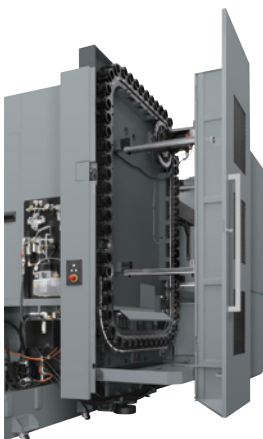
ISO 10791-9 JIS B6336-9 ISO: International Organization for Standardization
JIS: Japanese Industrial Standard

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

Tool-to-tool

1.7 sec.

Magazine



We prepared two types of magazine: a chain type and a rack type. Customers can choose either a chain type or rack type to suit their production needs.

Chain-type magazine

Tool storage capacity

60 tools **80 tools** **OP** **100 tools** **OP** **120 tools** **OP**

Rack-type magazine

Tool storage capacity

180 tools **OP**
240 tools **OP**
330 tools **OP**

Separation of magazine unit

The static precision of the main body is unaffected

Since the magazine is separated from the body of the machine, the weight of the magazine has no effect, ensuring stable static precision for the machine body.

Unaffected by magazine vibration

As a result of the magazine being separated from the body, vibration from the magazine does not create cutter marks in workpieces being machined.

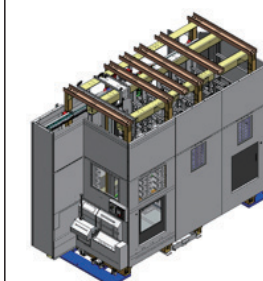
Reduction of tool preparation time

2-axis servo drive

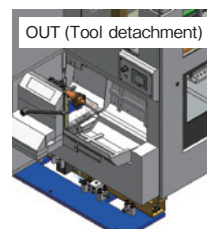
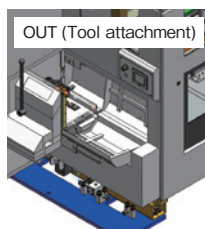
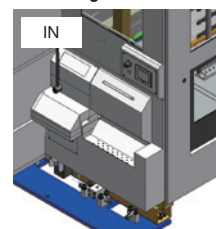
Improved tool transport speed thanks to the 2-axis servo drive.

180 tools

OP



Setting tools



Max. tool length	Max. tool mass	Max. tool diameter		Max. tool mass moment <from spindle gauge line>
630 mm (24.8 in.)	30 kg (66 lb.)	110 mm (4.3 in.) <with adjacent tools>	320 mm (12.5 in.) <without adjacent tools>	29.4 N · m (21.6 in.)*

* A tool with a mass moment greater than the maximum tool mass moment may cause problems during ATC operations even if it satisfies other conditions.

● The maximum tool diameter is limited to 255 mm (10.0 in.) or less when using the spindle at 10,000 min⁻¹ or higher.

High-precision equipment

Coolant chiller (separate type)

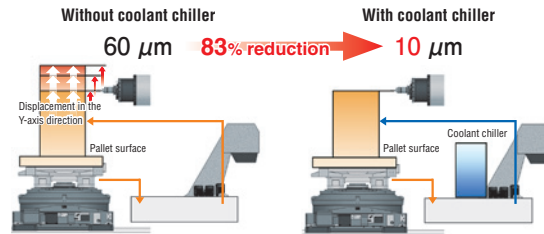
OP

Increase in the oil temperature, which is caused by heat generation during machining or by coolant circulation, causes thermal displacement in the fixtures and workpiece, affecting the dimensional accuracy of the workpiece. Please use this unit to prevent the coolant from heating. For the machining described below, this unit must be selected.

- Machining with required accuracy of less than $20\ \mu\text{m}$
- High-precision machining that requires a large amount of high-pressure coolant
- Machining that requires oil-based coolant

<Thermal displacement of the Y-axis tombstone>

As an example, when a coolant chiller is used, thermal displacement in the Y-axis plus direction decreases by 83% to $10\ \mu\text{m}$.



- 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.

Direct scale feedback

OP

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
 $0.01\ \mu\text{m}$

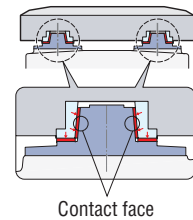
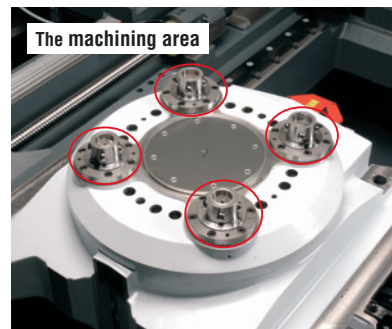
Magnescale

High accuracy absolute scale

- High accuracy, high resolution
- Greater accuracy than optical scale
- Highly resistant to condensation and oil
- Vibration and impact resistant characteristics

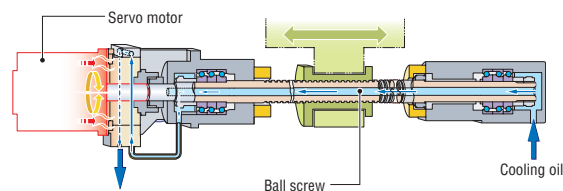
Pallet clamp system

The two-face contact taper cone pallet stabilizes the pallet with its powerful clamping force, and improves the repeatability.



Ball screw center cooling

In order to control thermal displacement and to keep high-accuracy positioning, the ball screw core cooling system in which cooling oil circulates through the support bearings is used.



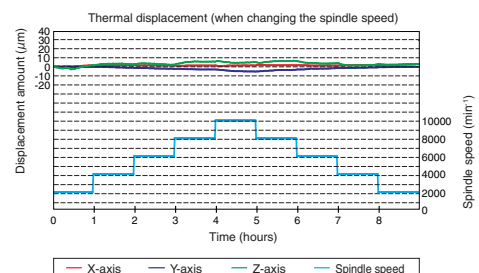
High-accuracy data

X, Y, Z-axes thermal displacement

We measured the thermal displacement on each axis when changing the spindle speed.

Displacement amount

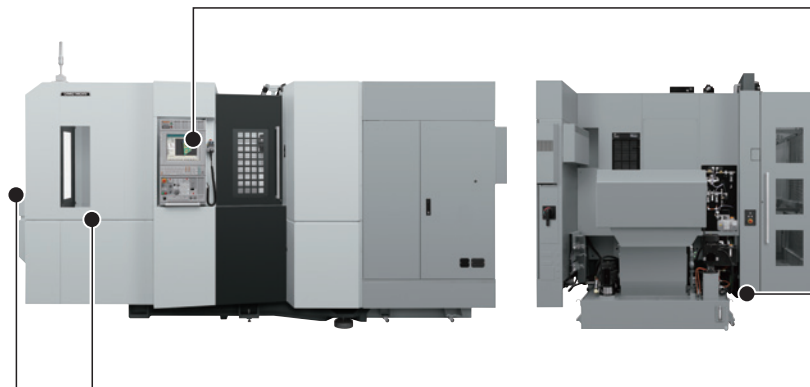
$7\ \mu\text{m}$
(actual result)



- The cutting test results indicated in this catalog are provided as examples. The results indicated in this catalog may not be obtained due to differences in cutting conditions and environmental conditions during measurement.

Improved workability

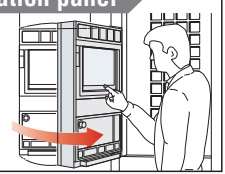
For the NH6300 DCG II, we have installed features throughout the machines to improve the operability based on the complete operator-centered concept.



Swivel-type operation panel

Swivel range

90°



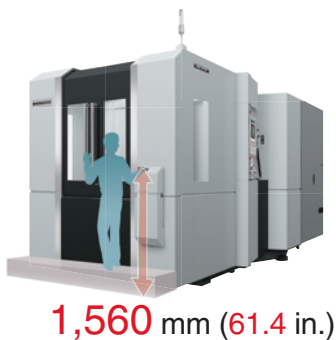
Foot pedal

The chain type magazine has a foot pedal so that an operator can hold a tool with both hands.



Setup station button

Redesigning the machine, we have placed the setup button at the ideal height so that an operator can use the machine comfortably.



1,560 mm (61.4 in.)

● A step is needed.

Setup station

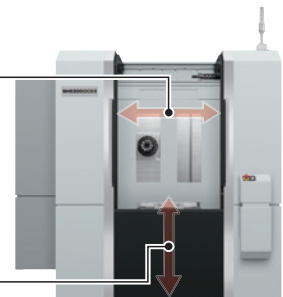
The open/close ceiling for easier loading/unloading of large workpieces and the wide door opening offer excellent operability.

Door opening

1,060 mm (41.7 in.)

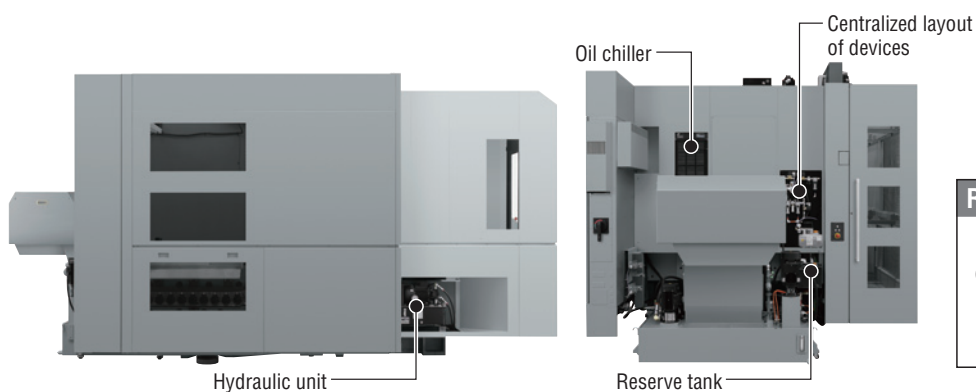
Distance from floor surface to pallet surface

1,250 mm (49.2 in.)



Maintenance

For the NH6300 DCG II the maintenance is improved by placing the oil chiller, hydraulic unit, and pneumatic instruments all in one place and offering better accessibility for operators.



Replacement of spindle unit

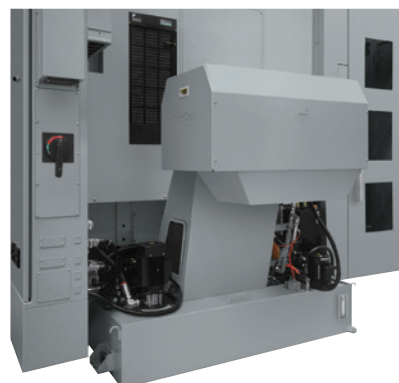
By changing the spindle unit to a cartridge, which even includes the rear bearings, we have dramatically reduced replacement time.

Peripheral equipment

Chip conveyor outside machine (Hinge type+drum filter type)

A high-performance external chip conveyor, which is used as standard, can discharge both long and short chips on one unit with its filter backwashing structure and excellent chip disposal capacity.

- Regardless of shapes or materials, any types of chips including long/short chips can be transferred on one conveyor.
- Suitable for discharging various types of chips on multi-axis machines.
- Regardless of water-soluble or water-insoluble, any types of coolant can be used.
- The built-in tank drum filter greatly reduces efforts and times for cleaning the inside of the tank.

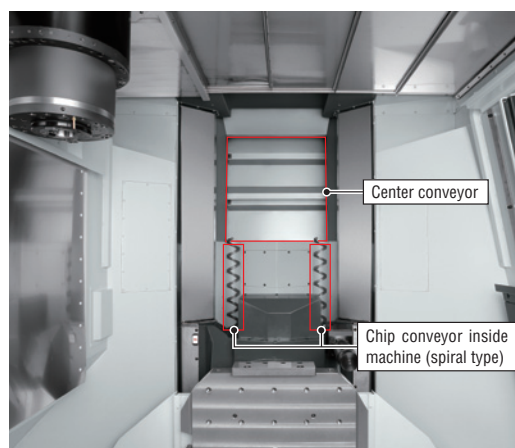
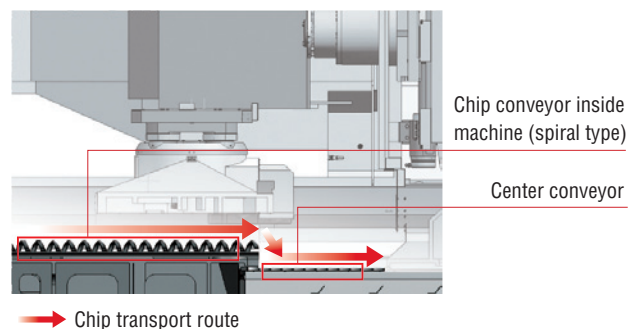


Specifications	Workpiece material and chip size						○: Suitable ✕: Not suitable
	Steel			Cast iron	Aluminum/non-ferrous metal		
	Long	Short	Powdery	Short	Long	Short	Powdery
Hinge type+drum filter type	○	○	○	○	○	○	○
Scraper type+drum filter type OP	✕	○	○	○	✕	○	○

- Chip size guidelines
Short: chips 50 mm (2.0 in.) or less in length, bundles of chips ϕ 40 mm (ϕ 1.6 in.) or less
Long: bigger than the above
- The options table shows the general options when using coolant. Changes may be necessary if you are not using coolant, or depending on the amount of coolant, compatibility with machines, or the specifications required.
- 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.

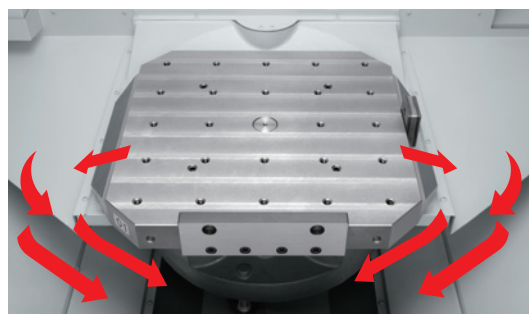
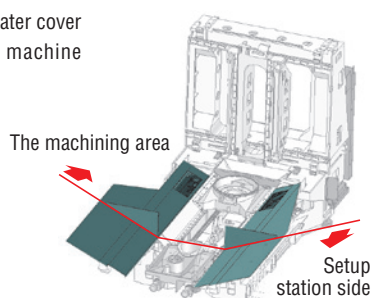
Chip conveyor inside machine (spiral type)

Chips under the table, which cannot be completely eliminated by coolant, are forcibly discharged using a spiral conveyor. This contributes to long-term, unmanned operation. It is also suitable for dry machining, when coolant is not used.



Slanted cover

The center trough structure with greater cover inclined angle than the previous machine improves the chip disposal capacity.



Peripheral equipment

Shower coolant

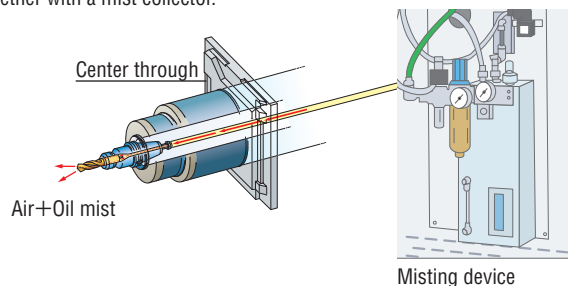
As well as preventing chips from scattering during machining, this allows them to fall smoothly into the center conveyor.



Semi dry unit

OP Consultation is required

Supplies air and oil mist to the cutting tip. An environmentally friendly device which reduces oil consumption. We recommend using this unit together with a mist collector.



Through-spindle coolant system

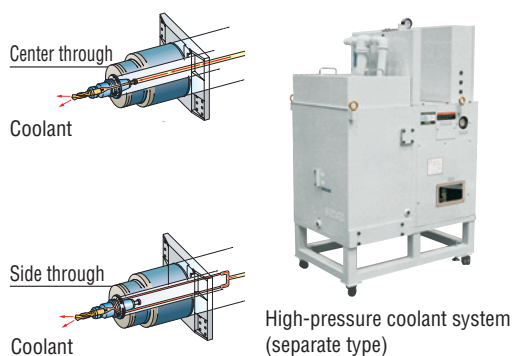
OP

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

	Unit on coolant tank	Separate type
Discharge pressure	1.5 MPa (217.5 psi)	1.5/3.5/7.0 MPa (217.5/507.5/1,015 psi)
Installation space (width×depth)	—	820×1,120 mm (32.3×44.1 in.) <High-pressure coolant system>
Water-soluble coolant	○	○
Oil-based coolant	×	○*
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 contact our sales representative for details.

⚠ Flammable coolant such as oil-based coolant has a high risk of ignition, and will cause fire or machine breakage if ignited. If you have to use a flammable coolant for any reason, please consult with our sales representative.

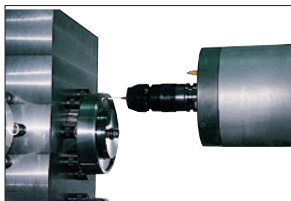


Automatic measurement

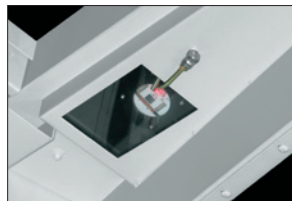
OP

In-machine measuring system (spindle)

Optical type touch sensor



Sensor



Receiver

Automatic

- Centering
- Measurement

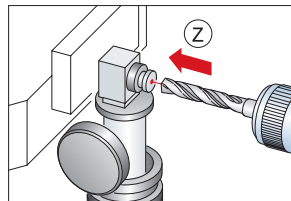
Manual

The workpiece setter function can be added

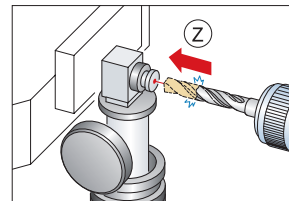
Workpiece zero point setting and centering are possible

In-machine measuring system (table)

Touch sensor



Tool length measurement



Tool breakage detection

Automatic

- Tool length measurement
- Tool breakage detection

Manual

The tool setter function can be added

Tool length offset is possible

Automatic measurement+Manual measurement functions

OP

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

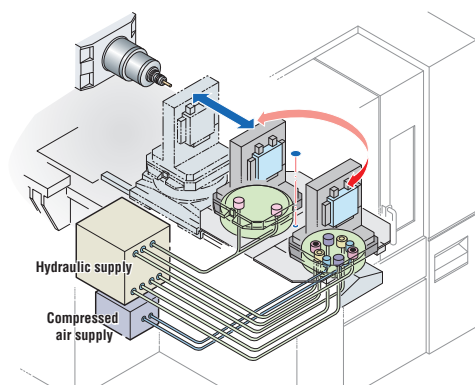
Fixture interface

Fixture interface

OP

Auto-coupler fixture interface

Easily transfer the pallets between the setup station and the work area and avoid external hoses and couplers.

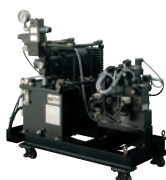
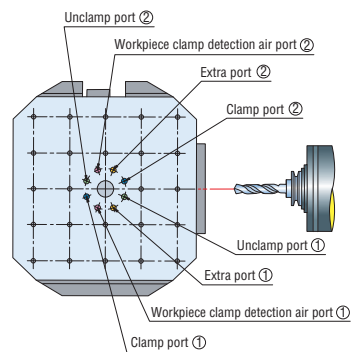


Compressed air is supplied to the setup station. Hydraulic fluid is supplied to both the setup station and the machining table.

- Hydraulic fluid is supplied to the machining table through two ports that diverge from one circuit.

Check list (for hydraulic/pneumatic fixtures)

- Pressure source
 - ☐ Hydraulic
 - ☐ Pneumatic
- Supplied pressure _____ MPa
- No. of circuits
 - Hydraulic × _____
 - Pneumatic × _____
 - For workpiece holding detection × _____
- Others
 - ☐ Clamp check system
 - ☐ Fixture washing coolant system
 - ☐ Fixture air blow system



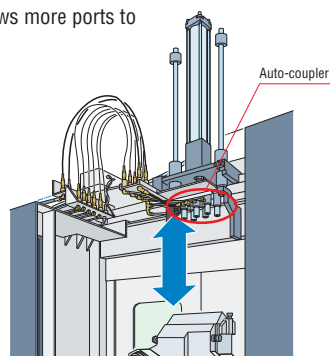
Separate hydraulic unit for the auto coupler



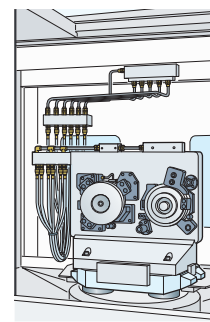
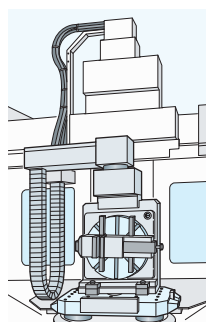
Fixture grip check

Interface specified for supply on the upper part of the coupler

Supplying from above the machine allows more ports to be added as needed by your fixture.



Custom fixture interfaces are available for connecting any fixture, either part time or full time



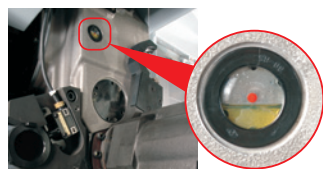
Reduction in environmental burden

Eco-friendly design

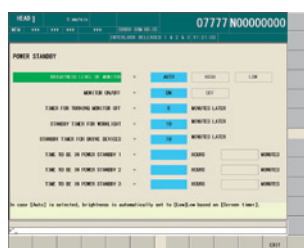
Reduced consumption of lubricating oil

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



Energy-saving settings screen

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.

Transfer systems OP

The versatile systems resolve production issues.

CPP system (Carrier Pallet Pool System)

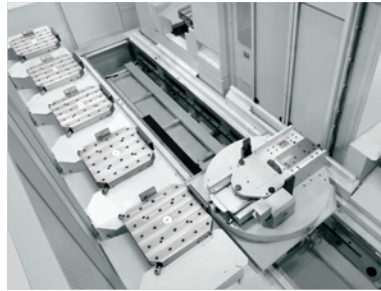
With its simple construction provided in predefined packages, this system is easy to introduce.
For the system configuration, the customer can select from 8 packages to provide the optimum specifications for their needs.

Controller

Handy controller
(Standard features)



- MCC-LPS III is available as an option.
- When the number of machines or workpiece setup stations is two or more, the MCC-LPS III is required.
- For models and systems, please consult with our sales representative.



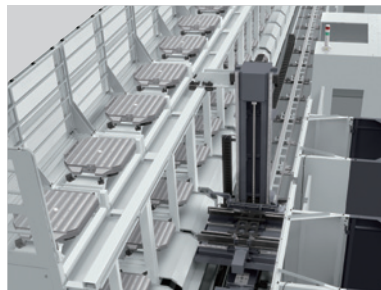
● System example

LPP system (Linear Pallet Pool System)

It is a system with a high level of automation, equipped with multi-level pallet racks.
The system construction can also be customized however you wish, achieving the optimum productivity and operation rate.

Controller

MCC-LPS III (Standard features)



● System example

Applications

Linear Pallet Pool Control System

MCC-LPS III



- DMG MORI's original, highly reliable system allows easy operation/management of the pallet transfer system.
- Machining programs can be managed and automatically downloaded.
- Urgent production requests will be flexibly prioritized.

The Tool Management System

MCC-TMS



- Improves the system operating rate through highly efficient, centralized tool management.
- Compatible with ID chips.
- Compatible with tool presetter interface.



- MCC-LPS III is installed in the specialized cell controller and MCC-TMS can be installed in the controller and your PC.

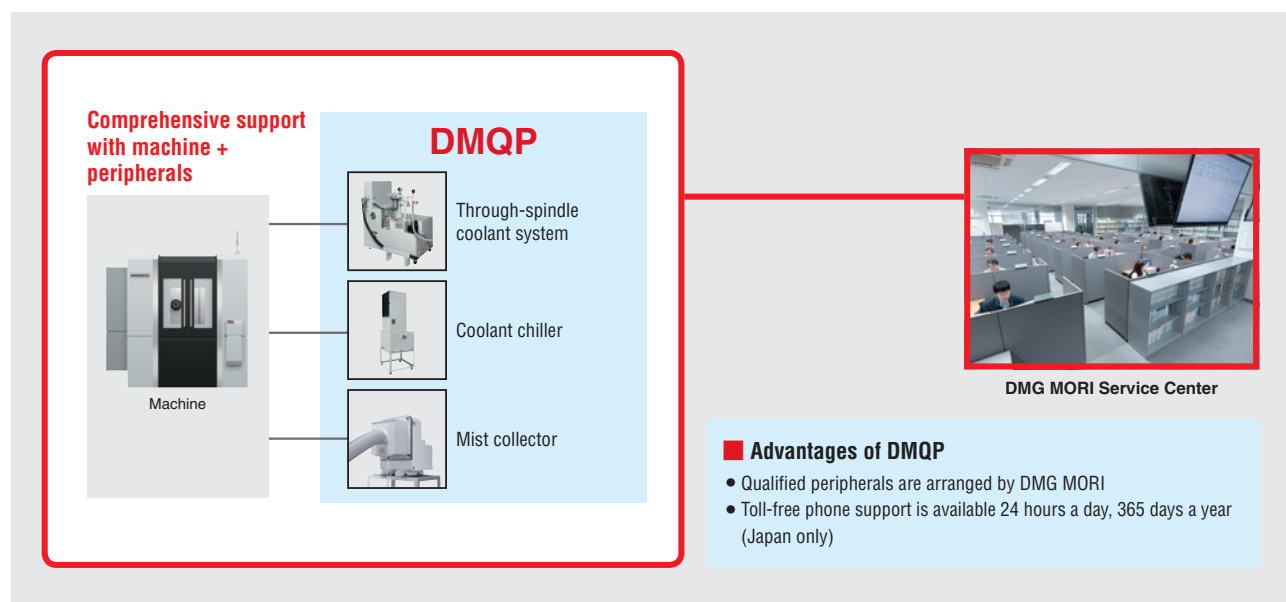
DMQP (DMG MORI Qualified Products)

Selected peripherals with superior quality, performance and maintainability.

The DMQP program is designed to certify peripherals that meet DMG MORI standards in quality, performance and maintainability. DMQP provides customers with even greater peace of mind.

Comprehensive support with machine + peripherals

DMG MORI provides comprehensive support, from proposal to delivery and maintenance, for high-quality peripherals that offer superior performance and maintainability.



Examples of qualified products (NH6300 DCG II)

- | | |
|--|---|
| <p><input type="checkbox"/> Through-spindle coolant system
Coolant is supplied to the tool tip through the center of the tool and spindle.</p> <p><input type="checkbox"/> Coolant chiller
It cools down coolant to offer better cutting performance and minimize thermal displacement in the workpiece.</p> <p><input type="checkbox"/> Mist collector
It removes mist, smoke, etc. generated inside the machine.</p> <p><input type="checkbox"/> Chip bucket
Chips discharged from the chip conveyor are collected into this bucket.</p> <p><input type="checkbox"/> Electrical cabinet chiller
This prevents temperature rise and dew condensation inside the electrical cabinet.</p> <p><input type="checkbox"/> Rotary window
Coolant scattered on the machining chamber window is removed to check the inside of the machine during machining.</p> | <p><input type="checkbox"/> 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.</p> <p><input type="checkbox"/> CPP
This is a workpiece transfer system with the packaged system configuration that can be easily introduced at your factory.</p> <p><input type="checkbox"/> LPP
This is a workpiece transfer system that can be freely customized for high-level automation.</p> <p><input type="checkbox"/> Tool wagon</p> <p><input type="checkbox"/> Tool cabinet</p> <p><input type="checkbox"/> Basic tooling kit</p> |
|--|---|

● For more details on DMQP items, please contact our sales representative.

MAPPS IV

High-Performance Operating System
for Machining Centers



● 19-inch operation panel

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
- ▶ 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's remote maintenance service solves it smoothly **MORI-NET Global Edition Advance** OP

Outstanding operability

Vertical soft-keys

Vertical soft-keys are arranged on the left and right sides of the screen. 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.

Approx.
Reduced by **33%**

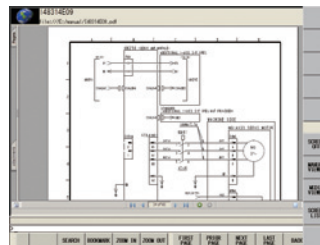
Main specifications

Main memory	2 GB
User area	6 GB
Interface	<ul style="list-style-type: none"> • USB 2.0 3 ports (Screen side: 2, Bottom of operation panel: 1) • LAN 1 port (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

Improved ease of maintenance

Alarm help function

When an alarm occurs, MAPPS identifies the cause of the trouble and provides solutions.

Improved productivity

APC schedule operation function OP

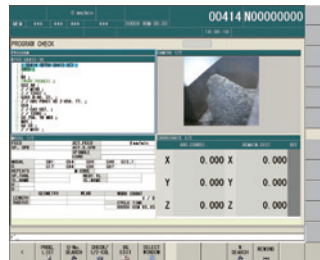
Operation schedule of the APC can be controlled through MAPPS. The ability to set various schedules supports unmanned continuous operation. This function can also handle changes to machining schedules flexibly.



Improved work efficiency

Fixed-point in-machine camera OP Consultation is required

Images taken by cameras installed inside/outside the machine can be viewed on the programming screen. This function is useful for maintenance.



Examples of camera locations

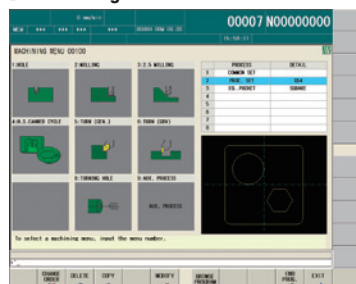
- Inside machine (to check machining)
- Tool magazine (to check cutting tools)
- Chip bucket (to check chip accumulation)

Conversational automatic programming

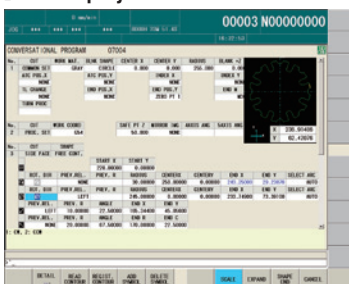
This function allows users to create programs simply by following the guidance on the screen.

Much of the programming process has been simplified due to the minimal key entry required for even the most complex shapes.

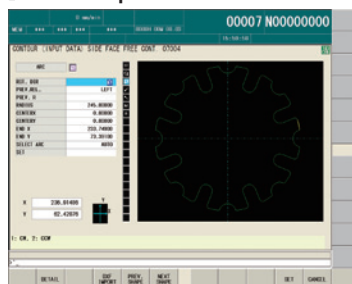
Machining menu



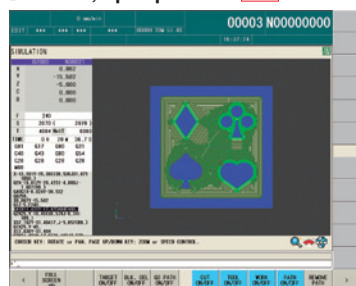
List display function



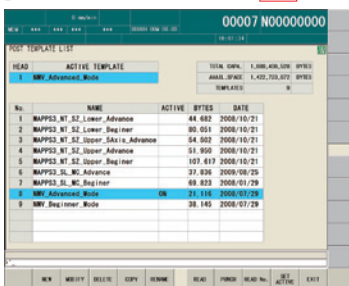
Contour input



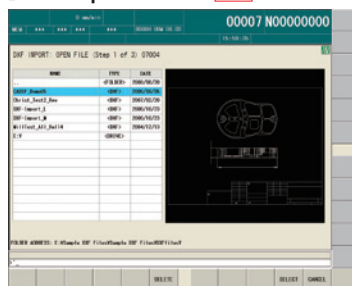
Islands, open pockets*



MORI-POST advanced mode



DXF import function



* For Europe, this specification is provided as standard.

Application System

MORI Automatic Programming System for Machining Center

MORI-APM OP

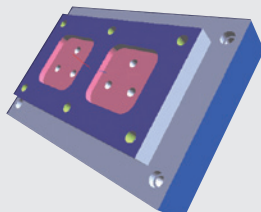
MORI-APM are application systems which let you create machining programs easily on your PC.

1. Simple programming



[Conversational automatic programming]
Easy operation by simply inputting product shapes according to the screen guidance.

2. Reduce programming time



[Supporting complicated programming]
Simply enter the machining shape using conversational automatic programming and the machine automatically selects the necessary tools and cutting conditions.

3. Save costs



[Compatibility with the MAPPS conversational function]
Prepared conversational programs can be converted into NC programs with MAPPS. Cutting conditions can also be changed on MAPPS.

• The photo shown may differ from actual machine.
• Information about the screen is current as of August 2015.

MORI-NETWORK

Network Application Systems

MORI-NET, MORI-SERVER, MORI-MONITOR

For shorter total production time for all our customers

DMG MORI's software Line-up

This network system application achieves fast information sharing and increased production efficiency.

— [Internet]
— [LAN]

Remote Maintenance/Machine Operation Monitoring Service

MORI-NET Global Edition Advance OP

■ Features

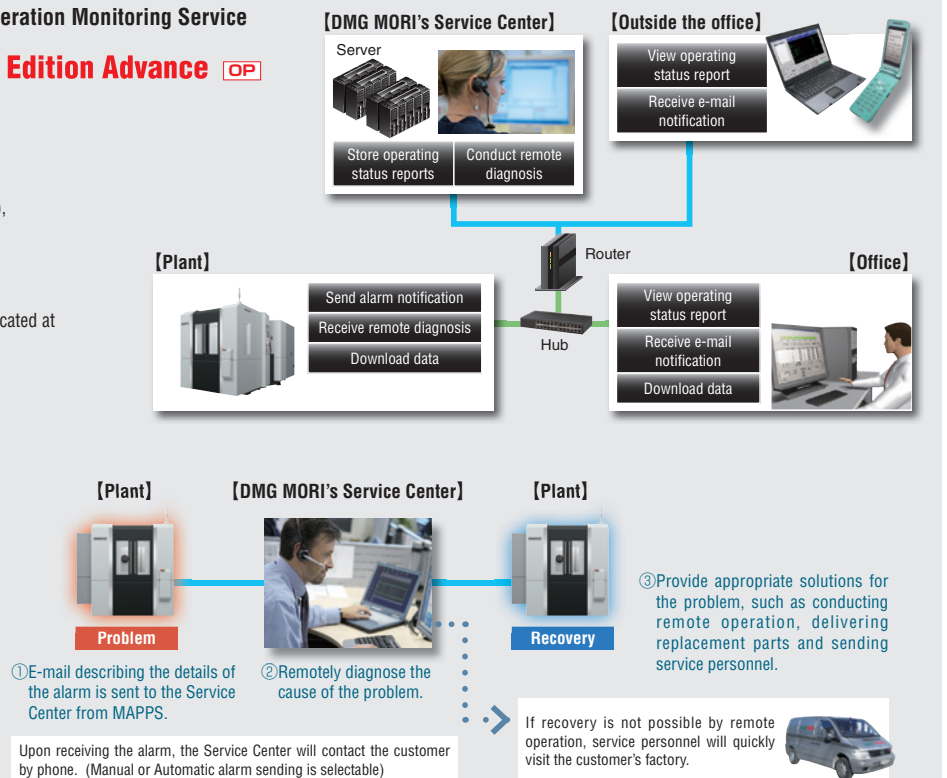
- Remote maintenance service by DMG MORI Service Center
- Internet-based, high speed (max. 1 Gbps), large capacity network
- No server installation is required — reduction in initial cost
- Download various data from the server located at DMG MORI

■ Remote alarm support

When an alarm goes off, an alarm notification will be sent to the DMG MORI Service Center simply by pressing the "Send e-mail" button on MAPPS.

DMG MORI 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.

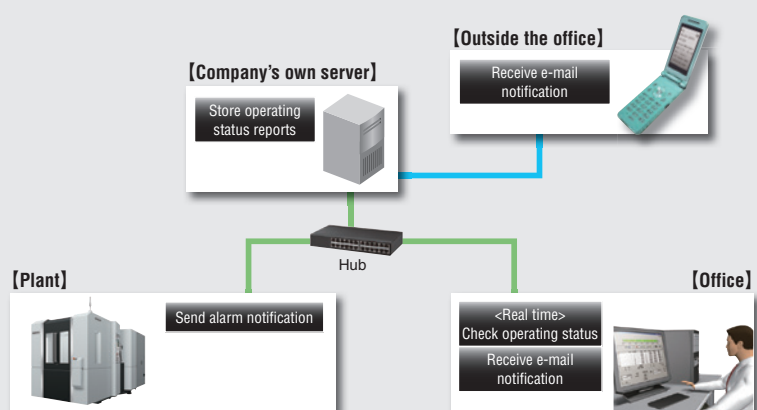


Machine Operation Monitoring System

MORI-NET LAN Edition OP

■ 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

MORI-SERVER [Standard features]

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

MAPPS Screen Remote Control and Browsing Application

MORI-MONITOR OP

This is an application which allows you to remotely operate and view the MAPPS screens from your office computer.

ACT Advanced Communication Technology

Advanced Communication Technology (ACT) connects machine tool and peripheral devices

DMG MORI'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.

— [Internet]
— [LAN]

Industrial Network for Peripheral Equipment Control

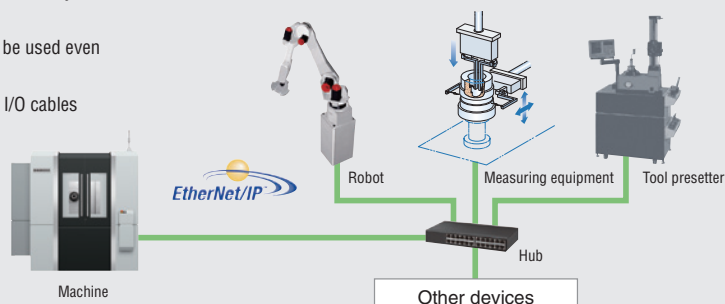
MAPPS EtherNet/IP I/F OP

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



Communication Interface for Monitoring Machine Operation

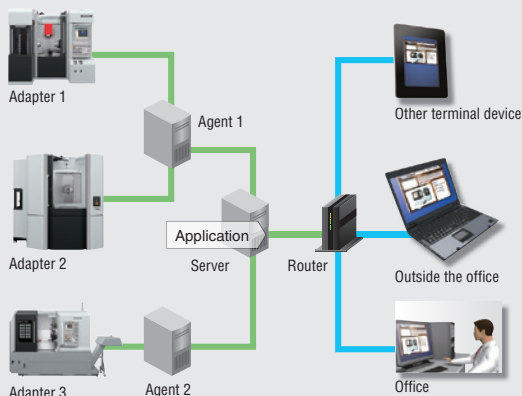
MAPPS MTConnect I/F

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

■ System examples



■ Application examples



Your machines are displayed all at once, allowing you to quickly call up the machine you wish to check.



Operating status can be checked in real time.



You can check the operating history on the Gantt chart screen.

- A server and application must be prepared by the customer.
- For introduction of MTConnect, separate consultation is required.



<Precautions for Machine Relocation>

EXPORTATION: All contracts are subject to export permit by the Government of Japan. Customer shall comply with the laws and regulations of the exporting country governing the exportation or re-exportation of the Equipment, including but not limited to the Export Administration Regulations. The Equipment is subject to export restrictions imposed by Japan and other exporting countries and the Customer will not export or permit the export of the Equipment anywhere outside the exporting country without proper government authorization. To prevent the illegal diversion of the Equipment to individuals or nations that threaten international security, it may include a "Relocation Machine Security Function" that automatically disables the Equipment if it is moved following installation. If the Equipment is so-disabled, it can only be re-enabled by contacting DMG MORI or its distributor representative. DMG MORI and its distributor representative may refuse to re-enable the Equipment if it determines that doing so would be an unauthorized export of technology or otherwise violates applicable export restrictions. DMG MORI and its distributor representative shall have no obligation to re-enable such Equipment. DMG MORI and its distributor representative shall have no liability (including for lost profits or business interruption or under the limited service warranty included herein) as a result of the Equipment being disabled.

- *ecoMill*, DURAVERTICAL, DCG, DDM, ORC, speedMASTER, powerMASTER, 5X-torqueMASTER, ZEROCHIP, CELOS, ERGOline, SLIMline, COMPACTline, DMG MORI SMARTkey, DMG MORI gearMILL and 3D quickSET are trademarks or registered trademarks of DMG MORI CO., LTD. in Japan, the USA and other countries.
- If you have any questions regarding the content, contact our sales representative.
- The information in this catalog is valid as of August 2015. Designs and specifications are subject to changes without notice.
- The machines shown in the catalog may differ from the actual machines. The location and the size of the nameplates may also differ from the actual machines, or the nameplates may not be attached to some machines.
- DMG MORI is not responsible for differences between the information in the catalog and the actual machine.

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