www.dmgmori.com

DMG MORI

High-Precision, High-Speed Vertical Machining Center

NVX7000

NVX7000
NVX7000 HSC

Vertical Machining Center with Large Axis Travels, Suitable for Medium and Large Parts Machining

The NVX7000 has improved its rigidity by employing guideways 2.4 times wider than the conventional machine, and offers superior damping performance with the use of slideways in all axes.
The NVX7000 also achieves an 18% larger work envelope than the conventional model while reducing the floor space by 15%. Additionally, it has three spindle variations to meet a wide range of machining needs from high-speed machining to heavy-duty cutting.
The NVX7000, an ideal solution for various industries such as automobiles, industrial machines, aircraft and dies and molds, contributes to greater profits for our customers.

NVX7000

Main features

Basic structure

The NVX7000 offers improved vibration damping performance and dynamic rigidity by using slideways on all axes. The machine features a wide work envelope and high-speed machining, while maintaining high rigidity.

Travel

X-axis 1,540 mm (60.6 in.)

Y-axis 760 mm (29.9 in.)

Z-axis 660 mm (26.0 in.)

Rapid traverse rate

X/Y/Z-axis 20 m/min (65.6 fpm)

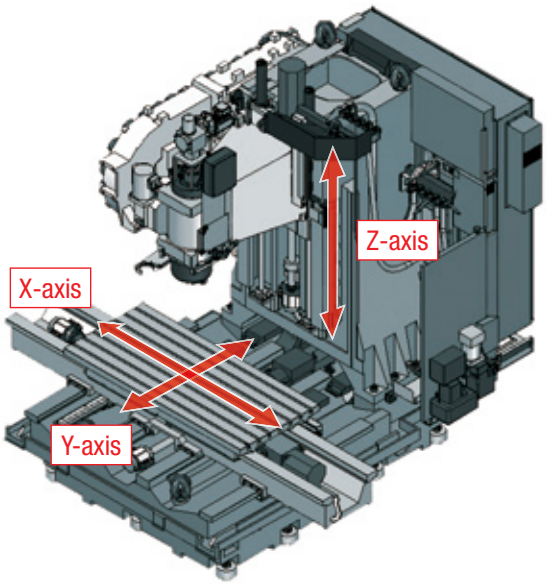
Max. acceleration

Z-axis 0.71 G (6.96 m/s^2)

Slideway width

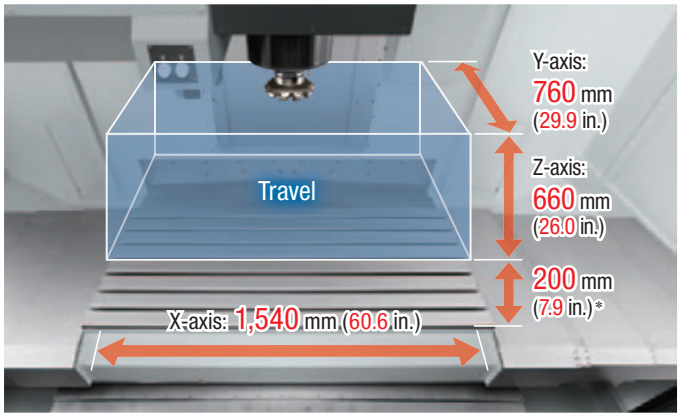
X-axis 100 mm (3.9 in.)

Y-axis 120 mm (4.7 in.)



Slideways are used for all axes

Working area



* The area from the table surface to 200 mm (7.9 in.) above the surface is outside the stroke range.

Table working surface

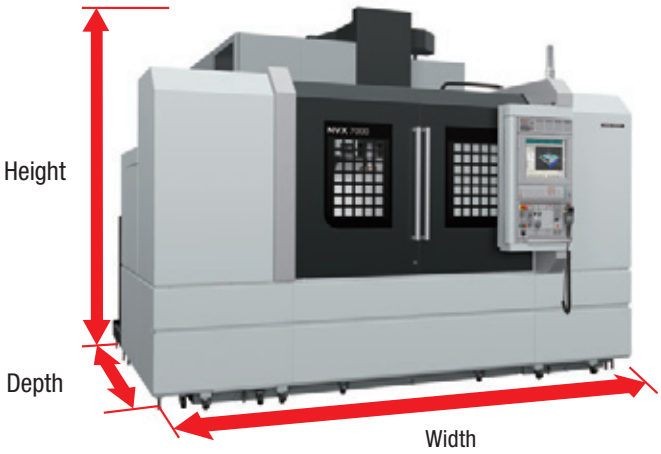
1,700 mm × 760 mm (66.9 in. × 29.9 in.)

Table loading capacity

2,000 kg (4,400 lb.)

Machine size

<Chip bucket front discharge specifications>



Machine height

3,167 mm (124.7 in.)

Machine width

4,280 mm (168.5 in.)

Machine depth

3,644 mm (143.5 in.)

Floor space

15.6 m² (167.9 ft²)

ATC·Tool magazine

Tool-to-tool

NVX7000/40 2.1 sec. <2.9 sec. (Tools weighing 8 kg (17.6 lb.) or more)>

NVX7000/50 2.5 sec. <3.1 sec. (Tools weighing 10 (22 lb.) kg or more)>

Tool storage capacity

NVX7000/40 30 tools 60 tools OP

NVX7000/50 30 tools 40 tools OP 60 tools OP

Max. tool diameter

	NVX7000/40	NVX7000/40 HSC	NVX7000/50
With adjacent tools	ϕ 95 mm (ϕ 3.7 in.)		ϕ 120 mm (ϕ 4.7 in.)
Without adjacent tools	ϕ 160 mm (ϕ 6.2 in.)	ϕ 125 mm (ϕ 4.9 in.)	ϕ 240 mm (ϕ 9.4 in.)

● The maximum tool diameter is limited to 170 mm (6.7 in.) when using a No. 50 taper spindle at 10,000 min⁻¹ or higher.

Max. tool length

450 mm (17.7 in.)

Max. tool mass

NVX7000/40 12 kg (26.4 lb.)

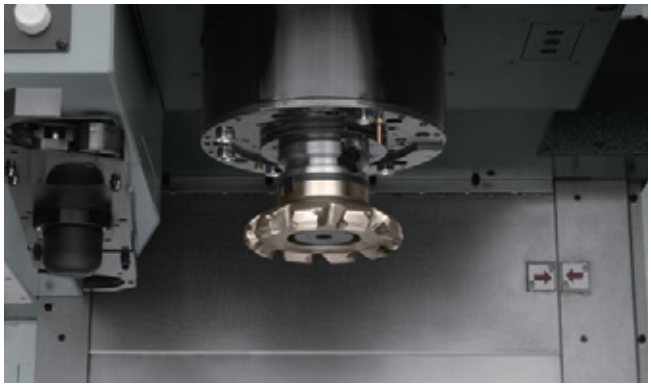
NVX7000/50 20 kg (44.0 lb.)

HSC: High Speed Cutting

Main features

Spindle

We have prepared various spindle specifications to meet a wide range of machining needs, from high-speed machining to heavy-duty cutting. Adoption of DDS (Direct Drive Spindle) solves the noise problem of gear spindles and reduces spindle stop time during high/low speed switching.



	NVX7000/40	NVX7000/40 HSC	NVX7000/50	
Max. spindle speed	14,000 min^{-1}	20,000 min^{-1}	10,000 min^{-1} 15,000 min^{-1} OP	6,000 min^{-1} OP
Spindle bearing inner diameter	ϕ 65 mm (ϕ 2.6 in.)		ϕ 100 mm (ϕ 3.9 in.)	ϕ 120 mm (ϕ 4.7 in.)
Spindle acceleration/ deceleration time	1.50 sec. (0→14,000 min^{-1}) 1.19 sec. (14,000→0 min^{-1})	2.57 sec. (0→20,000 min^{-1}) 2.27 sec. (20,000→0 min^{-1})	3.33 sec. (0→10,000 min^{-1}) 3.09 sec. (10,000→0 min^{-1})	

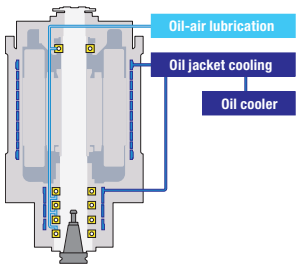
Spindle lubrication

[Oil-air lubrication]

For bearing lubrication, we have adopted a oil-air lubrication system, which supplies minimum amount of lubricating oil and reduces heat generation caused by resistance to stirring. Air enables effective cooling, and the air purge which increases air pressure for bearings prevents foreign matter from getting inside.

[Oil jacket cooling]

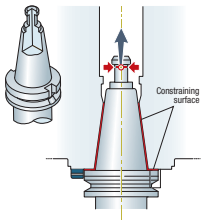
An oil jacket is placed around a spindle to suppress thermal displacement.



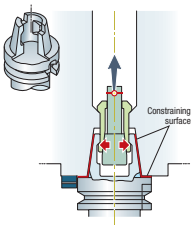
Two-face contact specifications OP

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



- When the two-face contact specification is selected, two-face contact tools and non-two-face contact tools cannot be used together.
- When using spindle No. 40 taper at 15,000 min^{-1} or higher, or spindle No. 50 taper at 10,000 min^{-1} or higher, please use dual Contact tools.
- All spindles are made in-house to better meet our customer needs. For details, please consult with our sales representative.

HSC: High Speed Cutting DDS: Direct Drive Spindle

High-precision equipment

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.

Magnescale

Resolution

0.01 μm

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

Coolant cooling system (separate type) OP

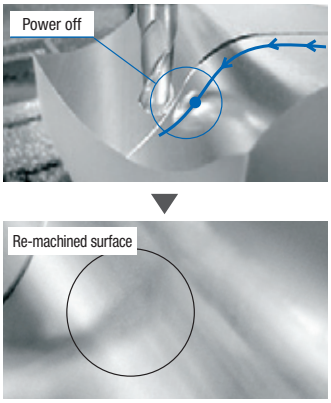
Raised coolant temperature causes thermal displacement in the fixtures and workpiece, affecting the machining accuracy of the workpiece. Use this unit to prevent the coolant from heating up. When using oil-based coolant, the coolant temperature can become extremely high even with the standard coolant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

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

● We cannot guarantee that this unit will completely control the coolant temperature. It is designed to help prevent oil temperature increases.

Power failure Z-axis drop prevention function

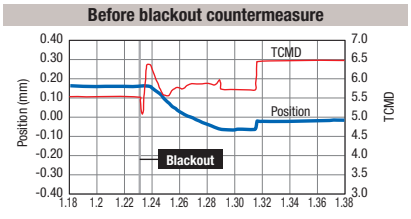
Raising the spindle slightly during blackouts prevents any contact between the tool and the workpiece caused by the spindle dropping.



※ The Z-axis drop prevention function is not available in the following situations.

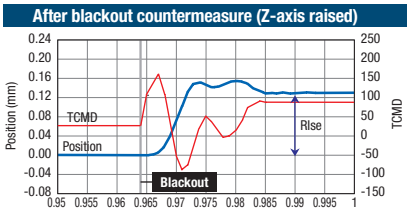
1. When a servo alarm for the feed shaft is set off.
2. When a power supply module alarm is set off.
3. When the communication alarm between the CNC and the amp has gone off.

Before blackout countermeasure



TCMD: Torque command

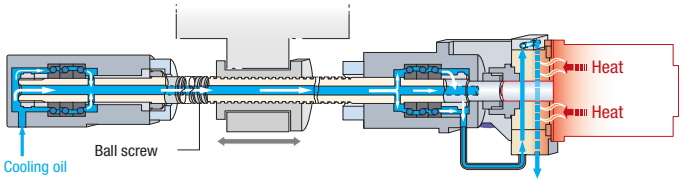
After blackout countermeasure (Z-axis raised)



● Depending on how voltage drops (slowly or suddenly), it may not always be possible to detect a blackout.

Ball screw core cooling

As well as ball screw core cooling and feed box cooling (Z-axis) to control thermal displacement, we have adopted a doubleanchor support to offer highly rigid feed, making it possible to maintain high-precision machining.



OP Option

Improved workability

Easier setups

Distance from table

325 mm (12.8 in.)

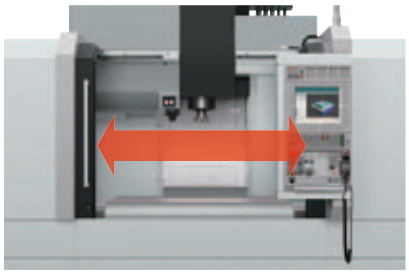
Door opening width

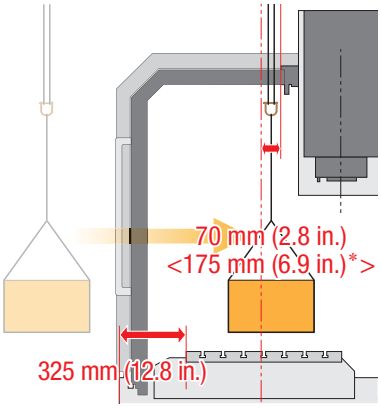
1,725 mm (67.9 in.)

Height of table top surface

1,000 mm (39.4 in.)

When the table is moved closer to the operator side, the distance from the table center (Y-axis direction) to the front door rail is 70 mm (2.8 in.). This allows smooth setup changes with a crane. In the middle part, the distance from the table center to the front of the spindle head is 175 mm (6.9 in.), which was achieved by dividing the rail between the left and right sides.In addition, the distance from the front of the machine to the table is 325 mm (12.8 in.), offering excellent accessibility.





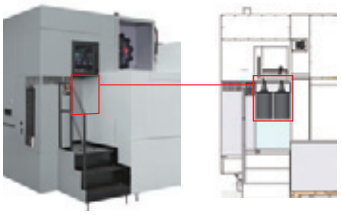
※ In the middle part, division of the rail allows 175 mm (6.9 in.) of the distance from the table center to the front of the spindle head.

Smooth workpiece loading/unloading

Improved access to the table

Table for temporary placement of tools

A table for temporary placement of tools is installed at the magazine steps to improve safety during heavy tool change.



Tool Pusher <NVX7000/50>

Tool Pusher that allows the operator to push out tools with a foot switch is mounted on the tool magazine as a standard equipment, improving ease of setup for tool change. Since tool change can be done with both hands, safety is also improved.

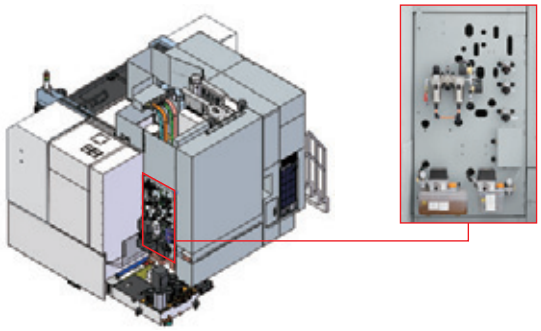
Front steps OP

It is possible to install the front steps with a height of 500 mm (19.7 in.) as option. The height of the operation panel can be chosen from 1,820 mm (71.7 in.) and 1,570 mm (61.8 in.).

Maintenance

Devices requiring maintenance

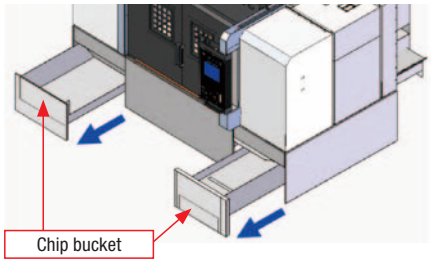
Devices which require frequent maintenance are located at the right rear of the machine for easier maintenance.



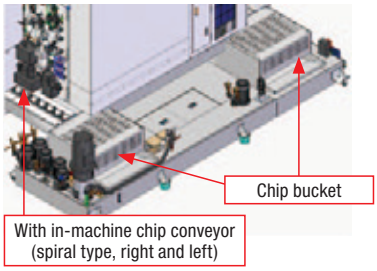
Peripheral equipment

Chip disposal

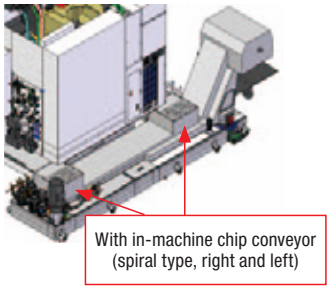
■ Chip bucket front discharge specifications



■ Chip bucket rear discharge specifications OP



■ External chip conveyor specifications OP



External chip conveyor OP

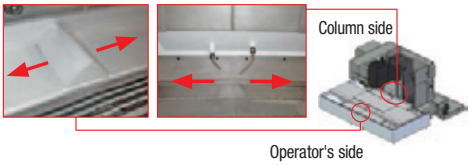
Specifications	Workpiece material and chip size ◎: Optimum ○:Suitable ×: Not suitable				
	Steel		Cast iron	Aluminum, Non-ferrous metal	
	Long	Short	Short	Long	Short
Hinge type+Scraper type+Drum filter type	○	○	○	○	○
Magnet scraper type	×	○	◎	×	×

● Chip size guidelines
Short: chips 50 mm (2.0 in.) or less in length, bundles of chips ϕ 40 mm (1.6 in.) or less
Long: bigger than the above

- The options table below 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.
- We have prepared several options for different chip shapes and material. For details, please consult with our sales representative.

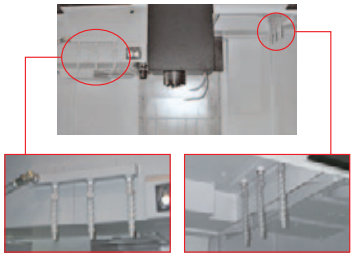
Chip flushing coolant

Chip flushing coolant equipped as standard prevents chip accumulation, improving ease of maintenance.



Shower coolant OP

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



Through-spindle coolant system (Unit on coolant tank) OP

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

Rotary table DDRT Series OP

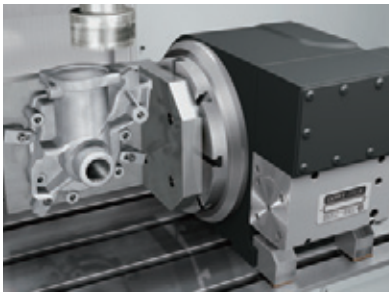


Photo: DDRT-260X

For these models

4-axis: DDRT-200X, 260X, 300, 400
5-axis: 5AX-DDRT200X Consultation is required

It is possible to equip the machine with the high-speed, high-accuracy DDRT SERIES rotary table which incorporates the DDM (Direct Drive Motor). The high-efficiency machining using 4 axes and high-speed and high-precision indexing realize process integration. (For details on the machining ranges, please consult with our sales representative.)

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

■ Features of DDMs

DDM® Direct Drive Motor

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

Rotational speed of the table

Conventional machine 17 min^{-1} ▶ DDRT-260 150 min^{-1}

Compared with conventional machine: 9 times greater

Positioning accuracy

Conventional machine 20sec. ▶ DDRT SERIES 5 sec.

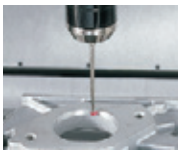
Compared with conventional machine: 1/4

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 OP

In-machine measuring system (spindle)



- Automatic centering and automatic measurement are possible.
- Automatic measurement applications are included.

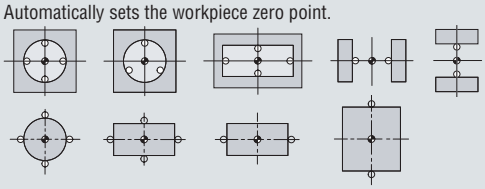
In-machine measuring system (table)

- Automatic tool length measurement and automatic breakage detection are possible.
- Automatic measurement applications are included.

Automatic measurement applications

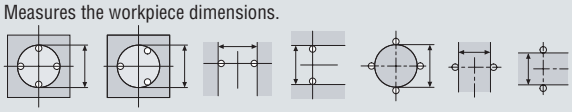
■ **Centering**

Automatically sets the workpiece zero point.



■ **Measurement**

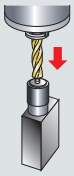
Measures the workpiece dimensions.



Automatic measurement applications

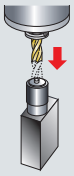
■ **Tool length measurement**

Measures tool length automatically.



■ **Tool breakage detection**

Prevent further damage with the automatic tool breakage detection.



Automatic measurement + Manual measurement functions OP

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

Workpiece measurement function OP

In-machine measuring system (spindle)
Optical type touch sensor

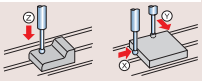
+

Work setter function (manual measurement application)

* The work setter and tool setter functions are not available with F0iMD.

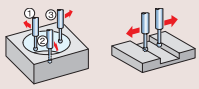
■ **Reference plane measurement**

The machining reference point can be calculated simply by applying the sensor from the Z, X and Y-axis directions.



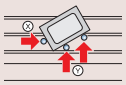
■ **Reference hole measurement**

Centering a boss, hole, groove or width can be done at any two or three points, simply by applying the sensor.



■ **Coordinate rotation measurement**

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.



Tool measurement function OP

In-machine measuring system (table)
Touch sensor (tool length)

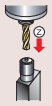
+

Tool setter function (manual measurement application)

* The work setter and tool setter functions are not available with F0iMD.

■ **Tool length measurement**

The tool length value can be registered automatically to the designated tool offset number.



In-machine measuring system (table)
Touch sensor (tool length/tool diameter)

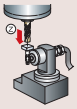
+

Tool setter function (manual measurement application)

* The work setter and tool setter functions are not available with F0iMD.

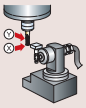
■ **Tool length measurement**

The tool length value can be registered automatically to the designated tool offset number.



■ **Tool diameter measurement**

The tool diameter value can be registered automatically to the designated tool offset number.



Transfer systems

2-station shuttle-type APC

OP

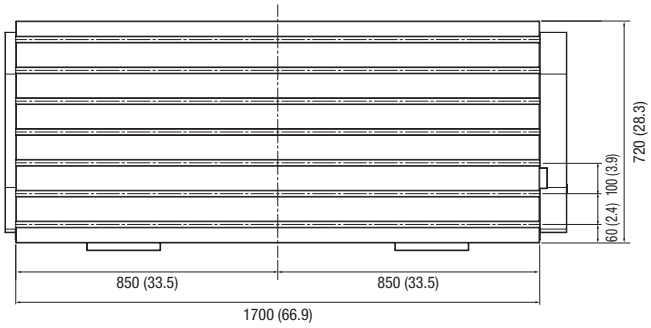
pallet size

1,700 × 720 mm (66.9 × 28.3 in.)

Pallet change time

45 sec.

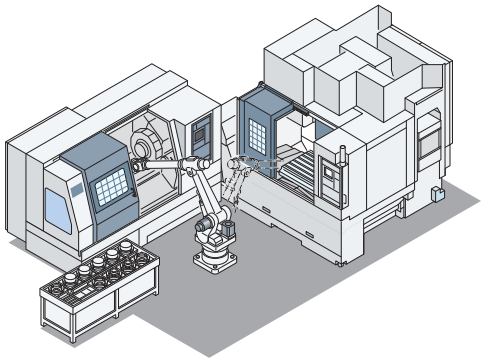
● Round trip time between the center position of the X- and Y-axis travels inside the machine and the A pallet (or B pallet) position



Workpiece transfer robot

OP Consultation is required

Introduction of the robot enables high-efficiency transfer of workpieces for better productivity.



● The actual colors and shapes may differ from those in the photo and illustration.

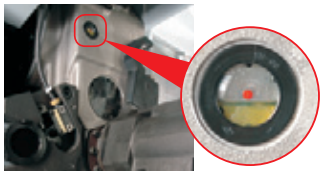
Reduction in environmental burden

Eco-friendly design

Reduction of oil consumption

Oil-bath ATC

The ATC unit adopts the oil bath method.
This reduces the oil consumption to zero.



Power-saving function

Power-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.

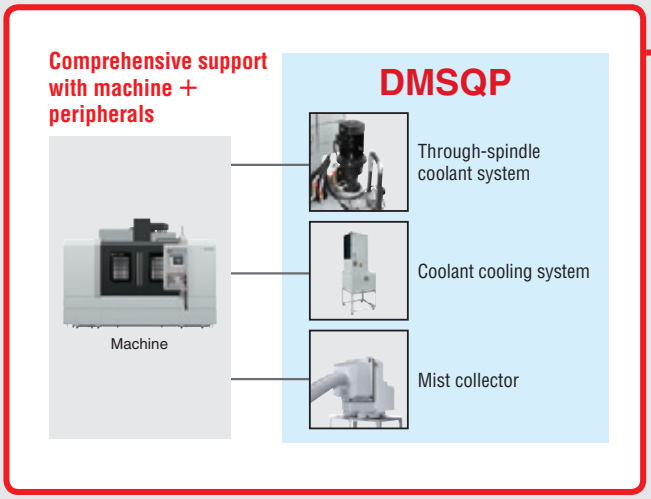
DMSQP (DMG Mori Seiki Qualified Products) OP

Selected peripherals with superior quality, performance and maintainability.

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.

Comprehensive support with machine + peripherals

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



DMG MORI SEIKI Service Center

Advantages of DMSQP

- Qualified peripherals are arranged by DMG MORI SEIKI
- Two-year warranty, the same as machines
  (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)
- Toll-free phone support is available 24 hours a day, 365 days a year (Japan only)

Examples of qualified products (NVX7000)

☐ **Through-spindle coolant system (unit on coolant tank)**

Coolant is supplied to the tool tip through the center of the tool and spindle.

☐ **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.

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**
- **Enhanced functionality by using CAM software (F0iMD: 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 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%

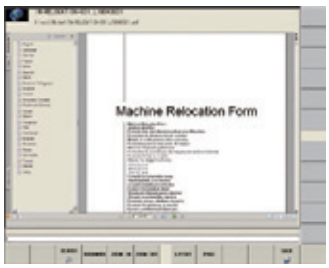
Main specifications

Main memory	2 GB
User area	6 GB
Interface	・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 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)

MAPPS: Mori Advanced Programming Production System

Conversational automatic programming

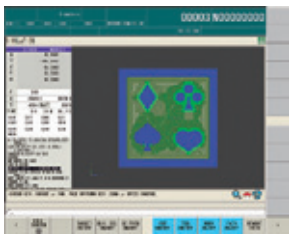
This function allows users to create programs simply by following the guidance on the screen.
Much of the programming process has been simplified due to the minimal key entry required for even the most complex shapes.

Machining menu

List display function

Contour input

Islands, open pockets OP



MORI-POST advanced mode OP

DXF import function OP

MORI Automatic Programming System for Machining Center

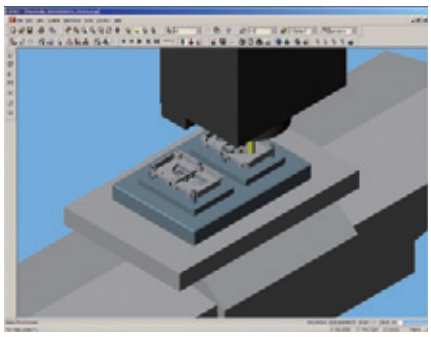
MORI-APM OP

Application systems which let you create machining programs easily on your PC.

- Easy operation, simply by entering the product shapes while following the instructions on the screen.
- Its functions, data and operability are fully compatible with the conversational programming system of the MAPPS Ⅳ operating systems.

CAM software (F0iMD: option)

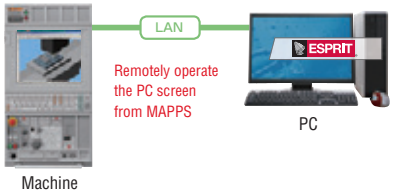
ESPRIT® allows you to create complex 3D programming with high-added value. By just installing the software on your PC with connection to LAN, you will be able to use it. (Once the software is started on the computer, it can be used for up to 7 days without LAN connection)



- **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)

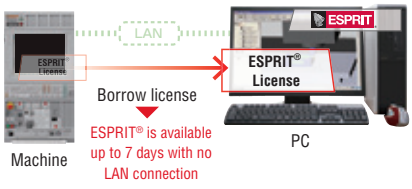
Remote Desktop <Patent pending>

ESPRIT® installed on your PC can be operated from your machine via LAN. (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.

* Applicable Operating Systems: Windows® Vista Business/Ultimate, Windows® 7 Professional/Ultimate
- A PC is required to use ESPRIT®. Please prepare PCs by yourself.

- The photo shown may differ from actual machine.
- Information about the screen is current as of January 2014.

MORI-NETWORK

Network Application Systems
MORI-NET, MORI-SERVER, MORI-MONITOR

For shorter total production time for all our customers

DMG MORI SEIKI's software Line-up

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

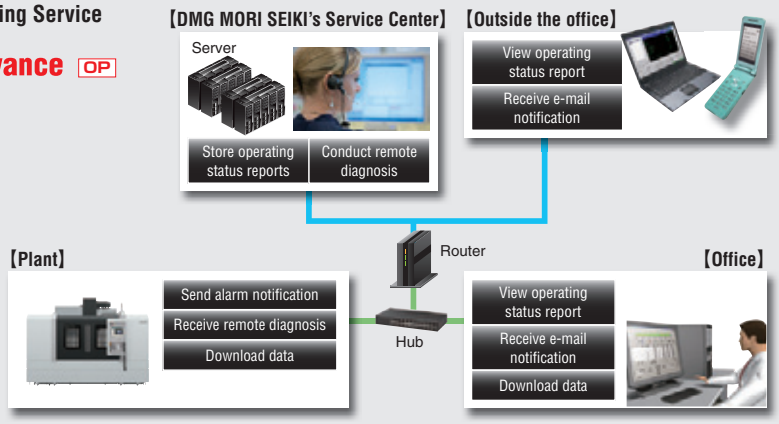
【Internet】
【LAN】

Remote Maintenance/Machine Operation Monitoring Service

MORI-NET Global Edition Advance OP

■ Features

- Remote maintenance service by DMG MORI 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.

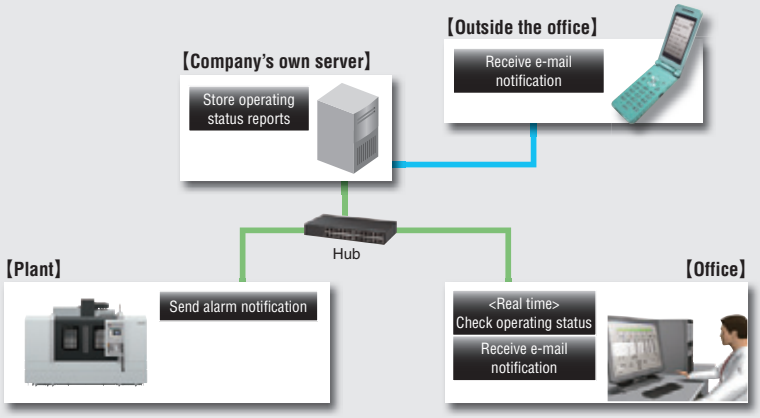
- This service may not be available in some areas. Please contact our sales representative for details.

Machine Operation Monitoring System

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 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.

【Internet】
【LAN】

Industrial Network for Peripheral Equipment Control

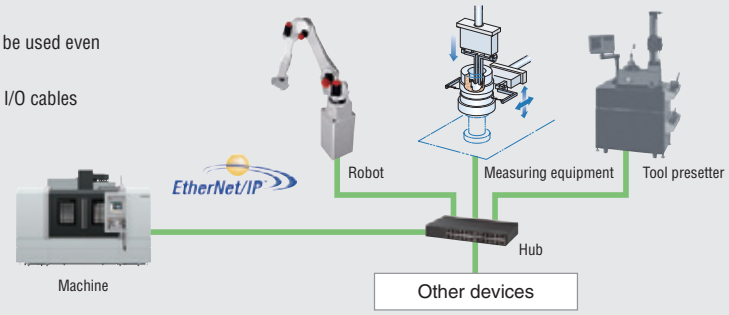
MAPPS EtherNet/IP I/F OP

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

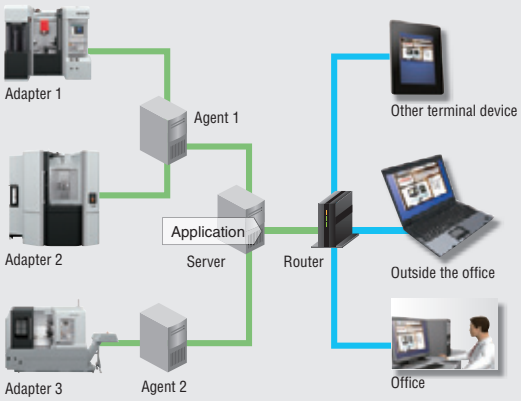
MAPPS MTConnect I/F

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.

Machine specifications

Item				NVX7000/40	NVX7000/40 HSC	NVX7000/50
Travel	X/Y/Z-axis travel		mm (in.)	1,540/760/660 (60.6/29.9/26.0)		
	Distance from table surface to spindle gauge plane		mm (in.)	200 – 860 (7.9 – 33.9) [Raised column: 400 – 1,060 (15.7 – 41.7)]		
Table	Height from the floor to the upper face of the table		mm (in.)	1,000 (39.4)		
	Table working surface		mm (in.)	1,700 × 760 (66.9 × 29.9)		
	Table loading capacity		kg (lb.)	2,000 (4,400)		
	Table surface configuration			18 mm (0.7 in.) × Pitch 100 mm (3.9 in.) × 7		
Spindle	Max. spindle speed		min^{-1}	14,000	20,000	10,000 [6,000] [15,000]
	Number of spindle speed ranges			1		
	Type of spindle taper hole			No. 40		No. 50
	Spindle bearing inner diameter	14,000 min^{-1}	mm (in.)	ϕ65 (ϕ2.6)	—	—
		20,000 min^{-1}	mm (in.)	—	ϕ65 (ϕ2.6)	—
		10,000 min^{-1} [6,000 min^{-1}] [15,000 min^{-1}]	mm (in.)	—		ϕ100 (ϕ3.9) [ϕ120 (ϕ4.7)] [ϕ100 (ϕ3.9)]
Feedrate	Rapid traverse rate		mm/min (ipm)	20,000 (787.4)		
	Cutting feedrate		mm/min (ipm)	1– 6,000 (0.04 – 236.2)		
	Jog feedrate		mm/min (ipm)	0 – 5,000 (0 –196.9) <20 steps>		
ATC	Type of tool shank			BT40 [CAT40] [DIN40] [HSK-A63]		BT50 [CAT50] [DIN50] [HSK-A100]
	Type of retention knob			DMG MORI SEIKI 90° [45°(MAS-Ⅰ)] [60°(MAS-Ⅱ)] [DIN] [HSK]		
	Tool storage capacity			30 [60]		30 [40] [60]
	Max. tool diameter	With adjacent tools	mm (in.)	ϕ95 (ϕ3.7)		ϕ120 (ϕ4.7)
		Without adjacent tools	mm (in.)	ϕ160 (ϕ6.2)	ϕ125 (ϕ4.9)	ϕ240 ($\phi\phi$9.4)
	Max. tool length		mm (in.)	450 (17.7)		
	Max. tool mass		kg (lb.)	12 (26.4)		20 (44.0)
	Method of tool selection			Technical memory random		
	Tool changing time	Tool-to-tool	sec.	2.1 <2.9 (Tools weighing 8 kg (17.6 lb.) or more)>		2.5 <3.1 (Tools weighing 10 kg (22.0 lb.) or more)>
		Cut-to-cut (chip-to-chip) <30 tools> ISO10791-9	sec.	Max. tool changing time: 15.4 <16.2 (Tools weighing 8 kg (17.6 lb.) or more)> Min. tool changing time: 7.0 <7.8 (Tools weighing 8 kg (17.6 lb.) or more)>		Max. tool changing time: 16.2 <16.8(Tools weighing 10 kg (22.0 lb.) or more)> Min. tool changing time: 7.6 <8.3 (Tools weighing 10 kg (22.0 lb.) or more)>
Motors	Spindle drive motor (30 min./cont)	14,000 min^{-1}	kW (HP)	22/18.5 (30/24.7)	—	—
		20,000 min^{-1}	kW (HP)	—	15/11 (20/15)	—
		10,000 min^{-1} [6,000 min^{-1}] [15,000 min^{-1}]	kW (HP)	—		30/25 (40/33.3) [37/30 (50/40)] [30/25 (40/33.3)]
	Feed motor		kW (HP)	X: 4.0 (5.3) Y: 4.0 (5.3) Z: 6.0 (8.0)		
	Coolant pump motor (50/60 Hz)		kW (HP)	1.04 (1.38) <Spindle>, 1.04 (1.38) <Chip removal>		
Power sources	Electrical power supply (cont) I94276C01	14,000 min^{-1}	kVA	33.9	—	—
		20,000 min^{-1}	kVA	—	24.9	—
		10,000 min^{-1} [6,000 min^{-1}] [15,000 min^{-1}]	kVA	—		41.5 [47.2] [41.5]
	Compressed air supply (Standard)		MPa(psi), L/min(gpm)	0.5 (72.5), 240 (63.4) <ANR>		
Tank capacity	Coolant tank capacity		L (gal.)	Chip bucket front discha r ge specifications: 750 (198.0) [Chip bucket rear discharge specifications: 900 (237.6)] [External chip conveyor specifications: 1,150 (303.6)]		
Machine size	Machine height (From floor)	14,000 min^{-1}	mm (in.)	3,167 (124.7) [Raised column: 3,367 (132.6)]	—	—
		20,000 min^{-1}	mm (in.)	—	3,167 (124.7) [Raised column: 3,367 (132.6)]	—
		10,000 min^{-1} [15,000 min^{-1}]	mm (in.)	—	—	3,167 (124.7) [Raised column: 3,367 (132.6)]
		[6,000 min^{-1}]	mm (in.)	—	—	3,256 (128.2) [Raised column: 3,456 (136.1)]
	Floor space (Width×Depth)		mm (in.)	Chip bucket front discharge specifications: 4,280 × 3,644 (168.5 × 143.5) [Chip bucket rear discharge specifications: 4,280×4,432 (168.5×174.5)] [External chip conveyor specifications: 5,057×4,512 (199.1×177.6)]		
	Mass of machine		kg (lb.)	11,800 (25,960)		12,000 (26,400)
Noise data	A-weighted, time-average radiated sound pressure level		dB	53-72 (measurement uncertainty is 4 dB)		

[ ] Option

NVX7000 (130205)

- Max. spindle speed: Depending on restrictions imposed by the workpiece clamping device, fixture and tool used, it may not be possible to rotate at the maximum spindle speed.
- When using spindle No. 40 taper at 15,000 min^{-1} or higher, or spindle No. 50 taper at 10,000 min^{-1} or higher, please use dual contact tools.
- The maximum tool diameter is limited to 170 mm (6.7 in.) when using a No. 50 taper spindle at 10,000 min^{-1} or higher.
- Compressed air supply: Please be sure to supply clean compressed air <air pressure: 0.7 MPa (101.5 psi), pressure dew point: 10°C (50°F) or below>.
- A criterion capacity to select a compressor is 90 L/min (23.8 gpm) per 0.75 kW (1 HP).
  However, this figure may differ depending on the type of compressors and options attached. For details, please check the compressor specifications.
- When the tool tip air blow is regularly used, air supply of more than 300 L/min (79.2 gpm) is separately required.
- ANR: ANR refers to a standard atmospheric state; i.e., temperature at 20°C (68°F); absolute pressure at 101.3 kPa (14.7 psi); and relative humidity at 65%.
- Power sources, Machine size: the actual values may differ from those specified in the catalogue, depending on the optional features and peripheral equipment.
- Noise data: the measurement was performed at the front of the machine with a No. 50 spindle taper and a maximum spindle speed of 10,000 min^{-1}. For details, please consult with our sales representative.
- The information in this catalog is valid as of December 2013.

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.

<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 SEIKI or its distributor representative. DMG MORI SEIKI 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 SEIKI and its distributor representative shall have no obligation to re-enable such Equipment. DMG MORI SEIKI 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.

- If you have any questions regarding the content, contact our sales representative.
- The information in this catalog is valid as of January 2014. 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 SEIKI is not responsible for differences between the information in the catalog and the actual machine.

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