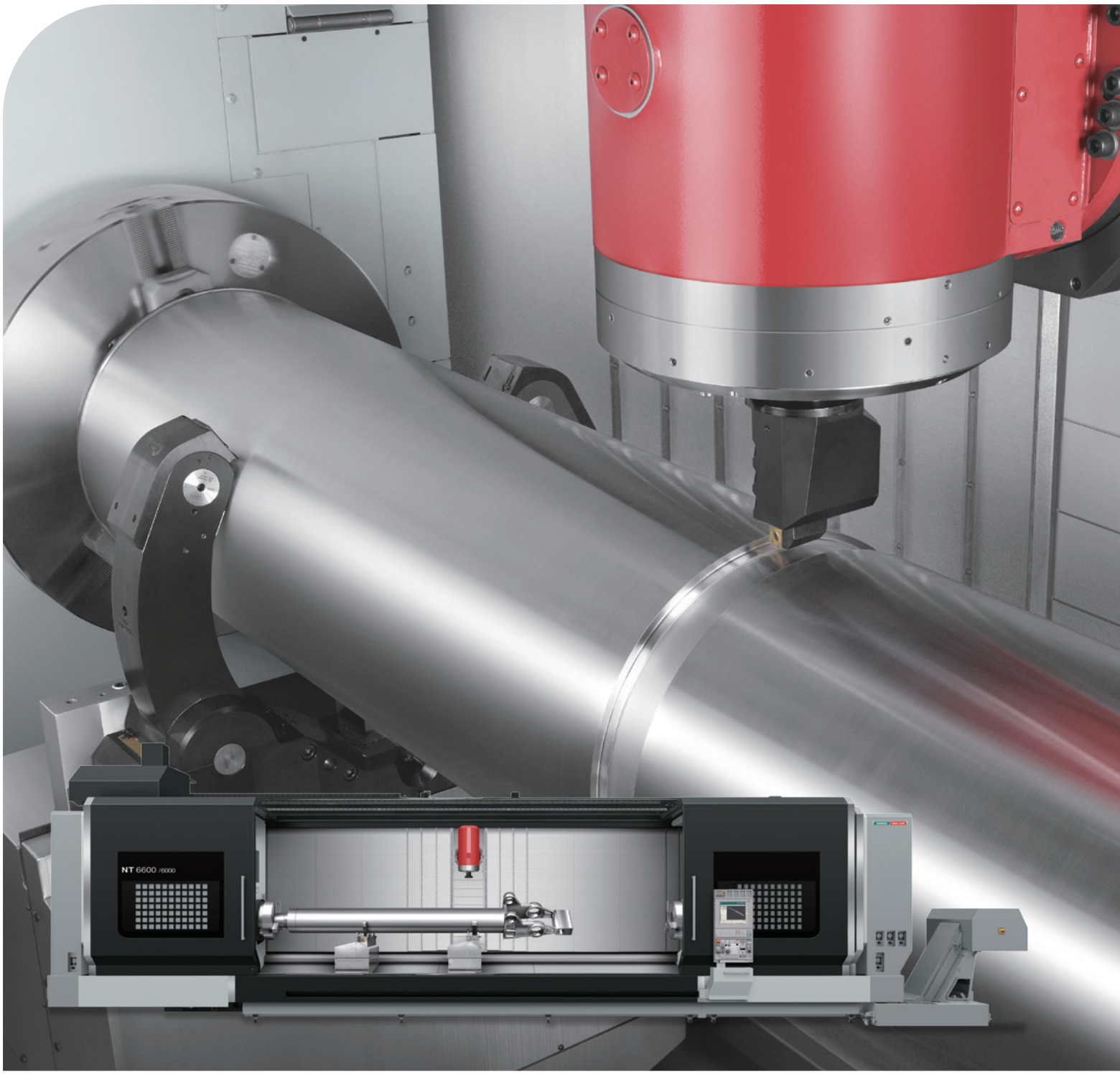
www.dmgmori.com

DMG MORI

High-Precision, High-Efficiency Integrated Mill Turn Center

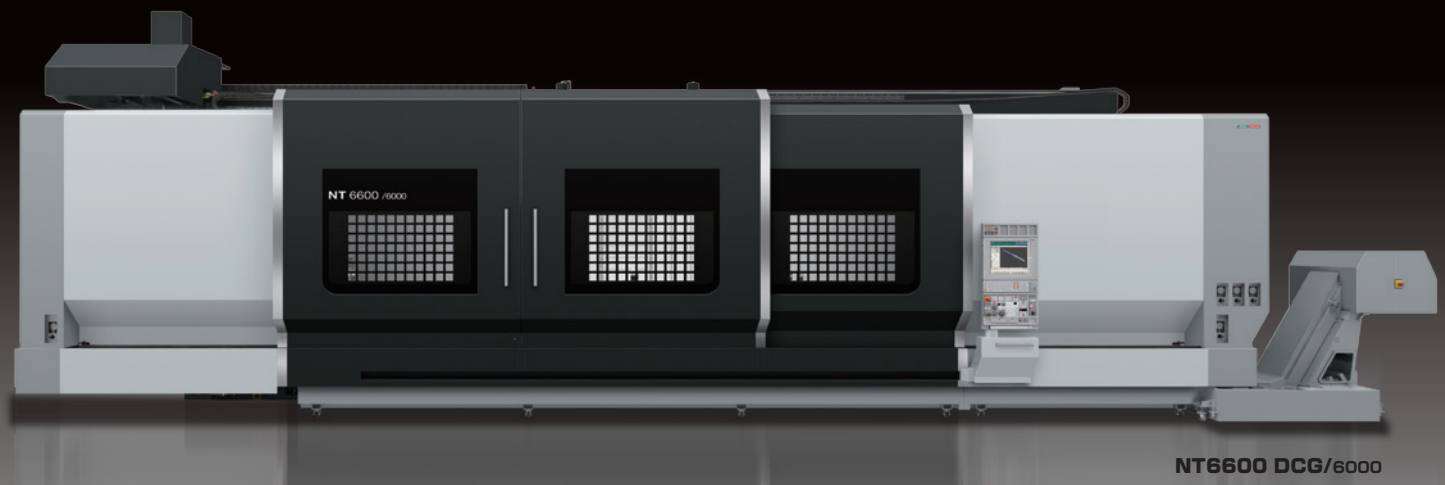
NT6600 DCG

NT6600 DCG



Largest Y-axis Travel in its Class Ultimate Integrated Mill Turn Center Capable of Handling Long and Large-diameter Workpieces

The "NT series" of the ultimate integrated mill turn centers achieves machining capabilities superior to those of machining centers and lathes by gathering DMG MORI SEIKI original and cutting-edge technologies. Featuring the largest Y-axis travel in its class, the NT6600 DCG is capable of handling long and large-diameter workpieces. The machine ensures the highest productivity ever achieved by thoroughly pursuing improvement of productivity in a fundamental cutting process.



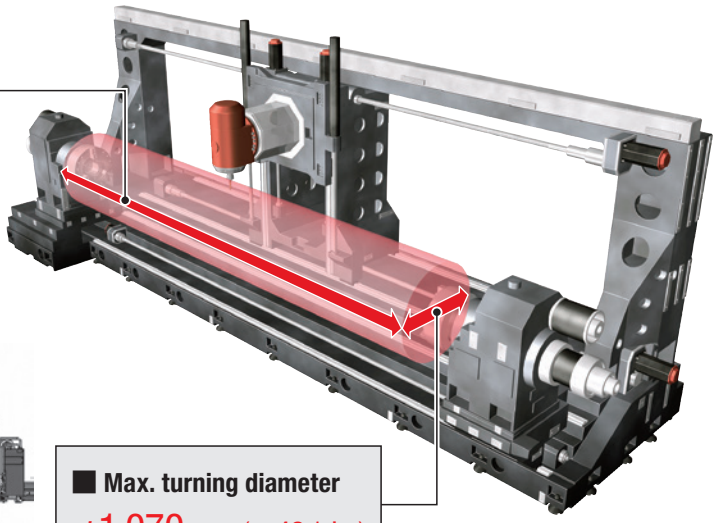
NT6600 DCG/6000

Features of machine

Max. workpiece size

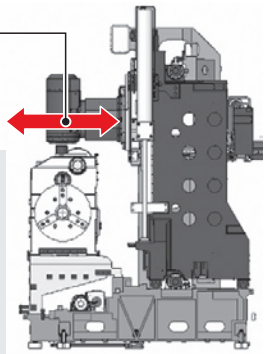
■ Max. turning length

NT6600 DCG/3000: 3,076 mm (121.1 in.)
NT6600 DCG/4000: 4,076 mm (160.4 in.)
NT6600 DCG/6000: 6,076 mm (239.2 in.)



■ Y-axis travel

660 mm (26.0 in.)



■ Rapid traverse rate

X-axis 40 m/min (131.2 fpm)
Y-axis 30 m/min (98.4 fpm)
Z-axis 32 m/min (105.0 fpm)

■ Max. turning diameter

ϕ1,070 mm (ϕ42.1 in.)

■ Max. workpiece mass (Both-end chucking)

B-type 3,500 kg (7,700 lb.) C-type 7,000 kg (15,400 lb.)

Steady rest

OP

■ Number of steady rests

NT6600 DCG/6000
Up to 3

NT6600 DCG/3000, 4000
Up to 2

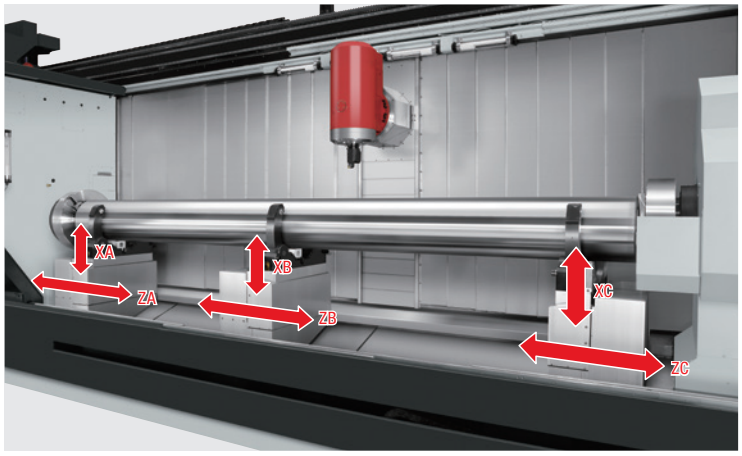
■ Steady rest setup time

Other company's machine ▶ **NT6600 DCG**
30 min. or more ▶ 5 min. or less

■ X-axis travel

60 mm (2.4 in.) <25 mm (1.0 in.): SLU-6Z, K6.1 specifications>

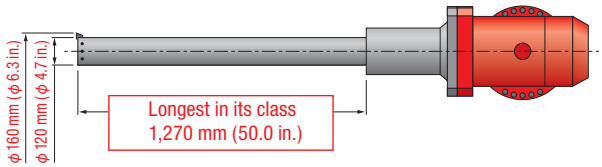
Servo motors are equipped as standard on the X and Z axes, dramatically reducing setup time



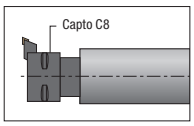
Long boring bar

OP

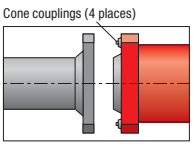
Separate consultation is required when the specification for machining with a long boring bar on the Spindle 2 side is selected.



Tool-tip ATC specifications



※Only available with Capto C8.

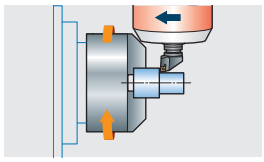


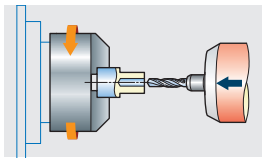
Uses a cone coupling clamping system

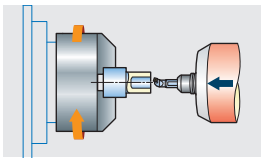
● Long boring bar with a diameter of 120 mm (4.7 in.) cannot be arranged by customers. Please consult with our sales representative for details.

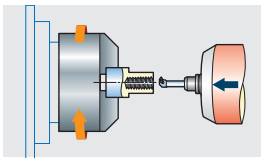
Machining variations

■ Turning

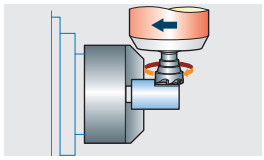

O.D. cutting

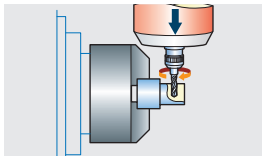

Drilling

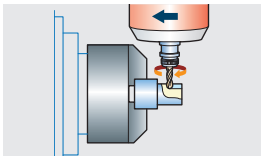

I.D. cutting

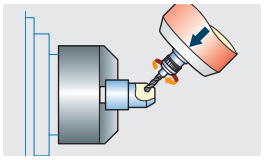

I.D. threading

■ Milling

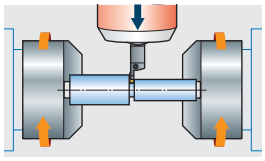

O.D. milling

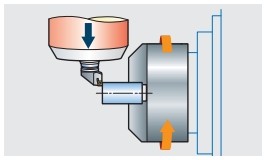

O.D. hole machining

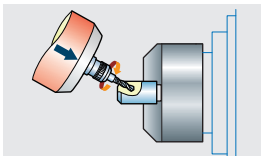

Ball-end milling

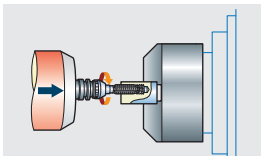

Angular machining

■ Spindle 2


Cut-off

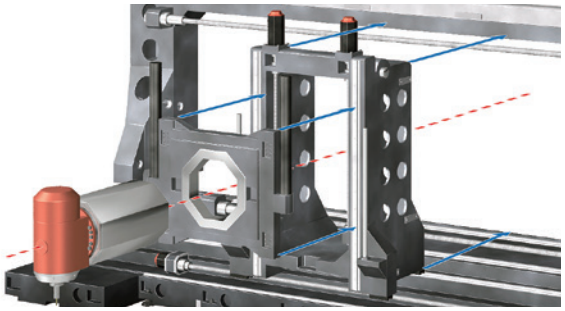

Face cutting


Angular machining


End face hole machining and tapping

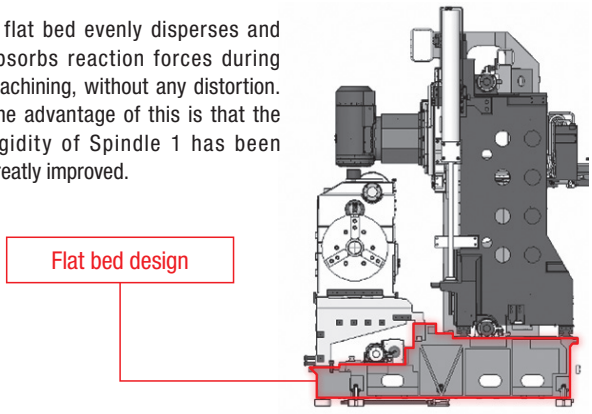
Box-in-Box Construction

The Box-in-Box Construction supports the saddle at both ends, guiding the axes at the centers of gravity, creating a balanced environment for unprecedented high-speed acceleration.



Flat bed design

A flat bed evenly disperses and absorbs reaction forces during machining, without any distortion. The advantage of this is that the rigidity of Spindle 1 has been greatly improved.

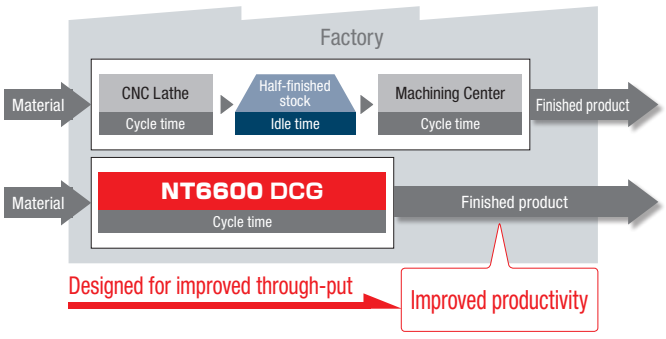


Process integration with a multi-axis machine

It can do various types of machining on one machine, reducing the number of unfinished products and eliminating downtime during transfer of workpieces between machines. The machining flow (through-put) from material to finished product has been improved, and productivity is dramatically increased.

Benefits of process integration

- Eliminates waiting time between processes
- Reduction in half-finished stock
- Reduction in fixture manufacturing costs
- Reduces setup time
- Shortens lead time
- Reduces fixture manufacturing costs
- With no setup changes, machining accuracy is maintained



Original technology/Mechanism

Driven at the Center of Gravity

DCG® Driven at the Center of Gravity

The 24th Technology Development Award from the Japan Society for Precision Engineering

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

■ Max. acceleration

X-axis 0.23 G {2.3 m/s² (7.5 ft/s²)}
Y-axis 0.40 G {3.9 m/s² (12.8 ft/s²)}
Z-axis 0.18 G {1.8 m/s² (5.9 ft/s²)}

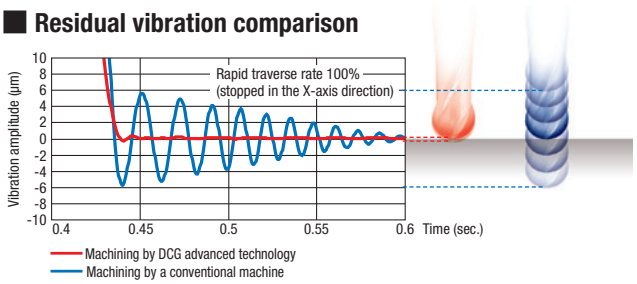
■ Effects of DCG

- Improved surface quality
- Outstanding acceleration
- Improved roundness

Vibration Control

DCG quickly eliminates vibration after a sudden stop. Machining with conventional machines, on the other hand, produces vibration for a sustained period of time. Rotational vibration, occurring at all acceleration start points, is reduced to an amount proportionate to the distance between the drive point and the center of gravity. The reduction prevents deterioration in the quality of the machined surface.

■ Residual vibration comparison

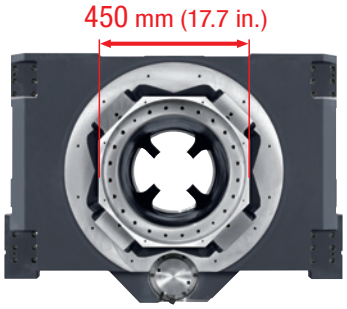


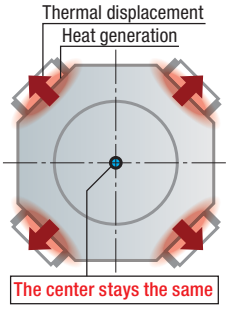
DCG: Driven at the Center of Gravity

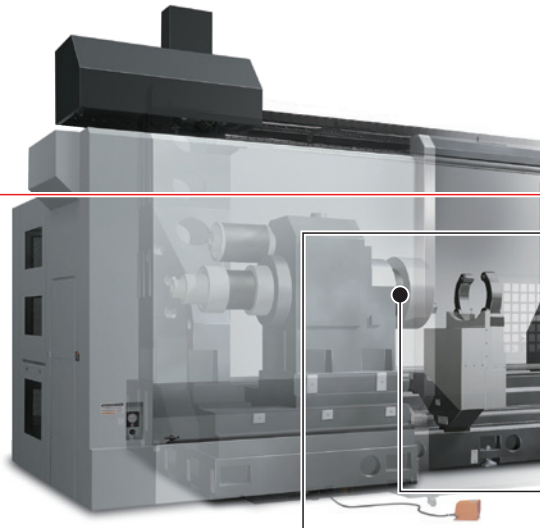
Octagonal Ram Construction

ORC® Octagonal Ram Construction

The 4 guideways are located diagonally from each other, so they distort symmetrically in response to the heat generated by high-speed travel. This means that the center stays in the same position, offering high-speed, high-precision feed.







ORC: Octagonal Ram Construction

Tool spindle

Uses a DDS (Direct Drive Spindle) motor which turns the spindle directly. A spindle motor placed inside the spindle headstock enables the spindle to be smaller/lighter, and to offer high output while controlling vibration.

■ Max. tool spindle speed

8,000 min⁻¹

■ Tool spindle acceleration time

1.8 sec. (0→8,000 min⁻¹)

■ Tool spindle deceleration time

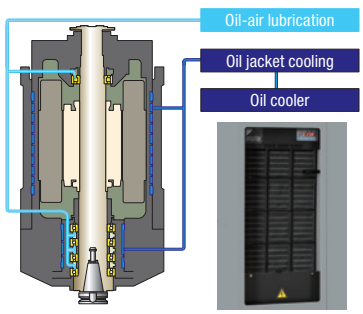
2.6 sec. (8,000→0 min⁻¹)

■ Tool-clamping force

44,000 N (9,891.1 lbf)

Spindle lubrication

An oil-air lubrication method is used for spindle lubrication. As well as minimizing the amount of lubricant used for reducing the resistance to stirring, this prevents dust infiltration by using the air purge. Also, the oil jacket cooling system controls thermal displacement.



DDS: Direct Drive Spindle

Direct Drive Motor OP

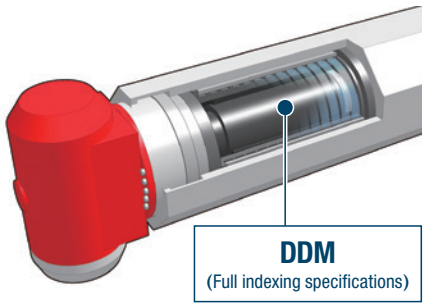
DDM® Direct Drive Motor

Transmitting the drive power directly to the rotary axes without using gears eliminates backlash. Compared with conventional worm gear systems, this dramatically improves transmission efficiency and offers high-speed feed.

■ **B-axis indexing time (90˚)**
0.55 sec.

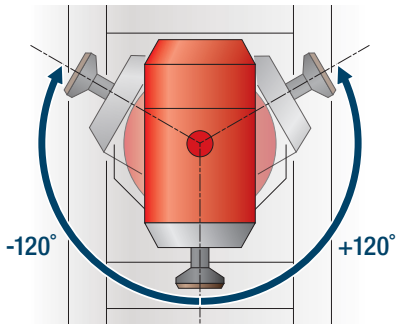
■ **B-axis rotational speed**
80 min^{-1}

■ **Min. indexing increment**
0.0001˚



DDM
(Full indexing specifications)

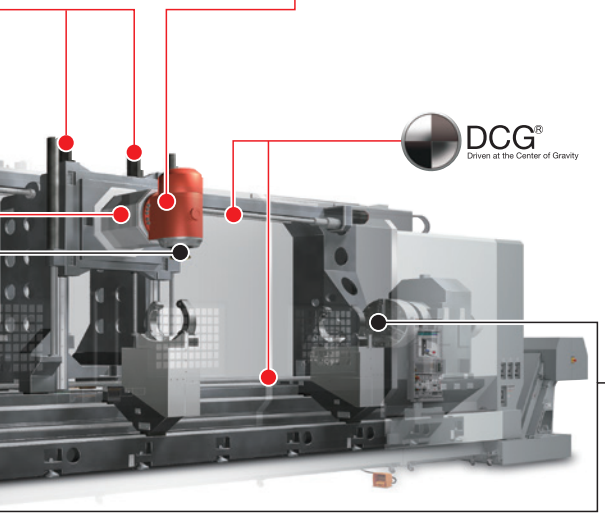
High-Flexibility B-axis



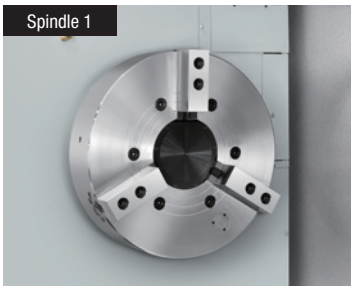
■ **B-axis rotation range**
±120˚

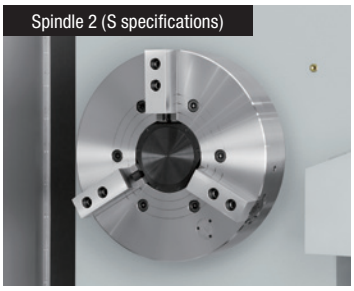
DDM: Direct Drive Motor

●Full indexing specification B-axis: with the F31iA, up to four axes can be controlled simultaneously. For simultaneous 5-axis control, please use the F31iA5.



Spindle





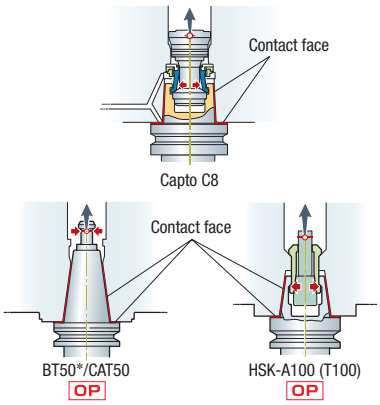
■ **Max. spindle speed**

B-type 1,500 min^{-1} C-type 1,000 min^{-1}

■ **Min. spindle indexing increment**

B-type, C-type
0.0001˚

Two-face contact specification



* When selecting the two-face contact tool specification, be sure to use a two-face contact tool.

ATC, Magazine

■ **ATC position**

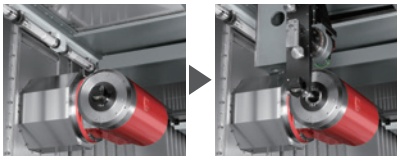
NT6600 DCG/6000
3 places

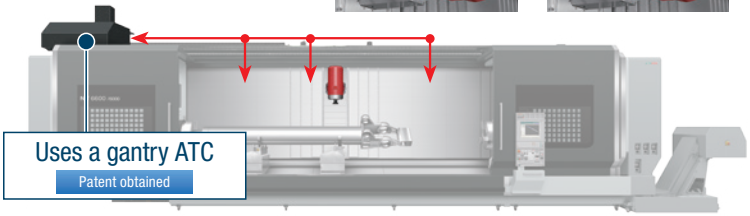
NT6600 DCG/4000
2 places

NT6600 DCG/3000
1 places

■ **Tool storage capacity**

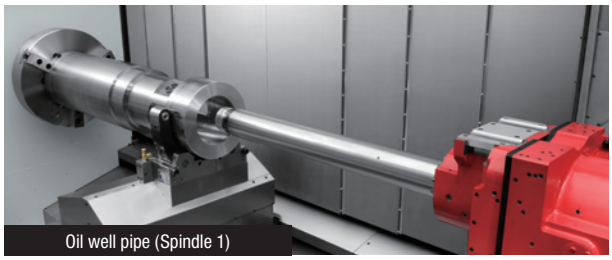
50 tools
100, 140, 180 tools OP

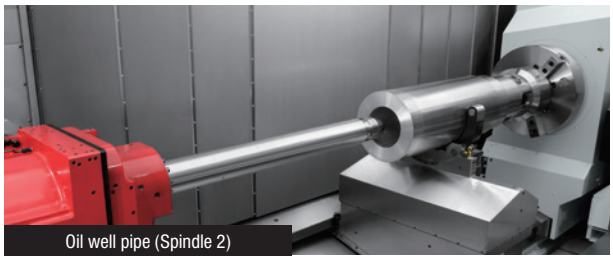


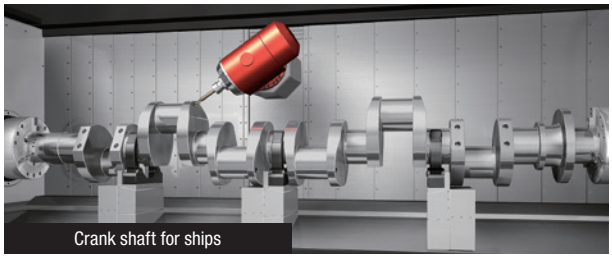


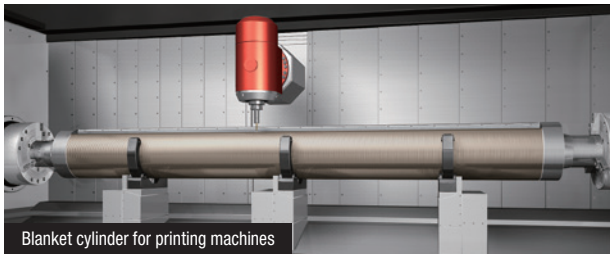
Uses a gantry ATC
Patent obtained

Workpiece samples


Oil well pipe (Spindle 1)


Oil well pipe (Spindle 2)

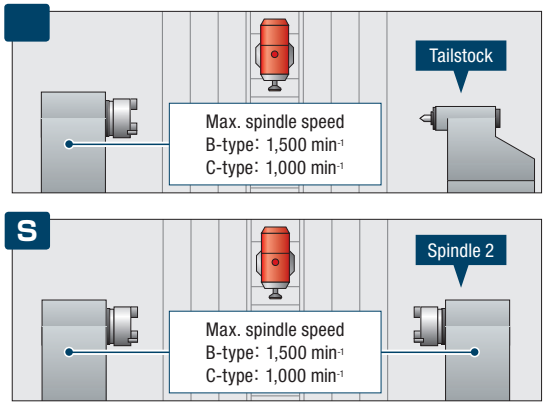

Crank shaft for ships


Blanket cylinder for printing machines

Separate consultation is required when the specification for machining with a long boring bar on the Spindle 2 side is selected.

Variations

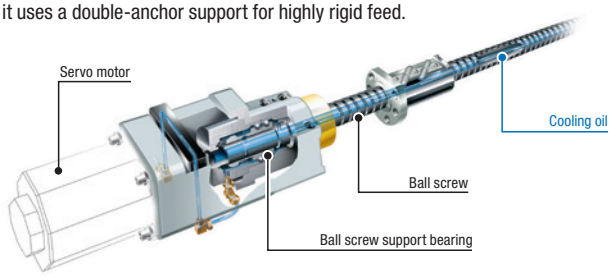
Machine type	Z-axis travel	Number of steady rests	type	Tailstock/Spindle 2
NT6600 DCG /3000	Tool spindle 3,150 mm (124.0 in.)	without/1/2	B-type	■ / S
			C-type	■ / S
NT6600 DCG /4000	Tool spindle 4,150 mm (163.4 in.)	without/1/2	B-type	■ / S
			C-type	■ / S
NT6600 DCG /6000	Tool spindle 6,150 mm (242.1 in.)	2/3	B-type	■ / S
			C-type	■ / S



High-precision equipment

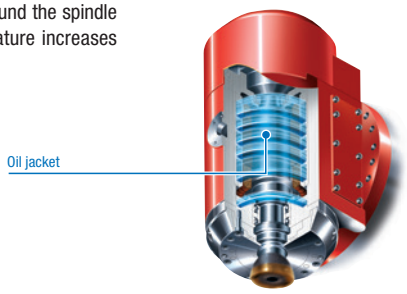
Ball screw core cooling

As well as ball screw core cooling,
it uses a double-anchor support for highly rigid feed.



Tool spindle cooling

The oil jacket placed around the spindle unit suppresses temperature increases in the tool spindle.



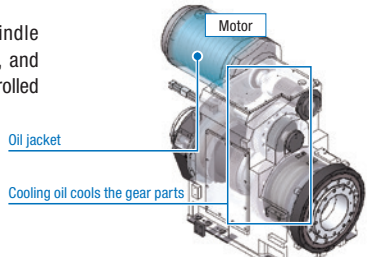
Direct scale feedback OP

A magnetic-type absolute positioning scale is used for the X and Y axes, and an electromagnetic induction type for Z-axis. This offers outstanding positioning accuracy.

■ **Resolution** 0.1 μm

Tool spindle cooling

Heat generated by the Spindle 1 and Spindle 2 is released, and thermal displacement is controlled by the oil jacket.



Coolant cooling system (separate type) OP

The temperature of the coolant rises because of heat generated during machining. Circulating the coolant also raises the temperature. This increase has a big effect on the themal displacement of the machine and the dimensional accuracy of the workpiece. We have prepared this unit to control temperature increases in the coolant. Please choose this option when using oil-based coolant, as it can get extremely hot even with a standard coolant pump.

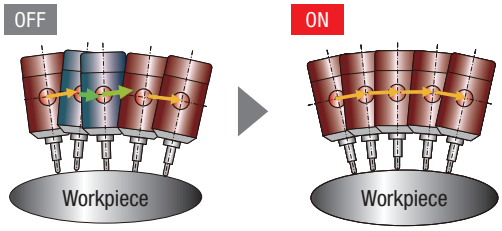
When using oil-based coolant, please be sure to consult with our sales representative.

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

SVC function (Standard features for F31iA5)

The SVC function, in which the program commands for tool tip control are read in advance and compensation is automatically applied to achieve smooth tool feed, is equipped as standard. By combining this function with DDM (Direct Drive Motor), the machine offers greatly improved surface quality and reduced cycle time during 5-axis machining.

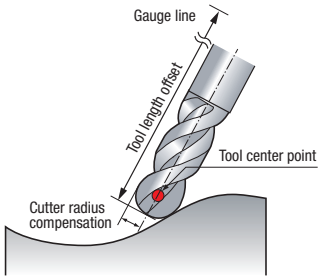
Motion of the SVC function

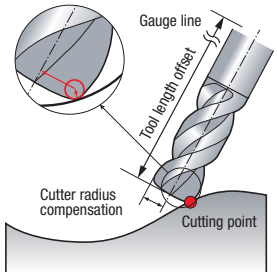


The SVC function includes the following functions:

- AI contour control Ⅱ
- Nano smoothing Ⅱ
- Smooth TCP
- Machining mode selection
- G332 tolerance command

Tool center point control/Cutting point command (Standard features for F31iA5)





Tool center point control

Main features

- The tool path can be controlled from the tool center point.
- No reprogramming is needed when the tool length and the tool diameter are changed.
- NC automatically calculates cutter radius compensation and tool length offsets based on the program commands for tool tip control.

Cutting point command

Main features

- The tool path can be controlled from the cutting point.
- By using cutting point commands, machining using radius end mills or square end mills can be performed without reprogramming when tool length, cutter radius or tool tip corner R are changed.

SVC: Smooth Velocity Control

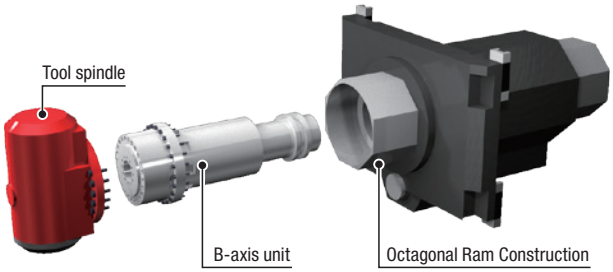
Improved workability, Maintenance

Movable + Swivel-type operation panel

The operation panel moves from side to side, so that it is always close to the operator during setup.

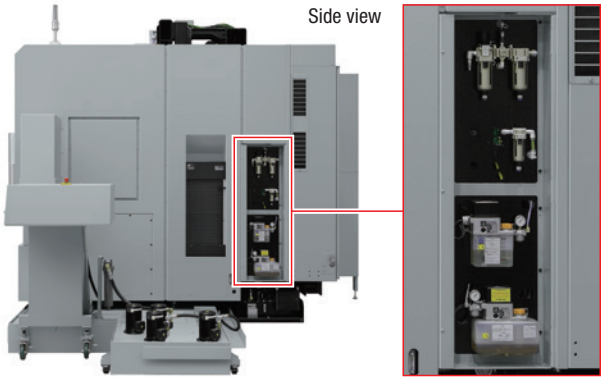
B-axis unitization

Using a unit type B-axis allows easy removal as well as separate replacement of the B-axis unit.



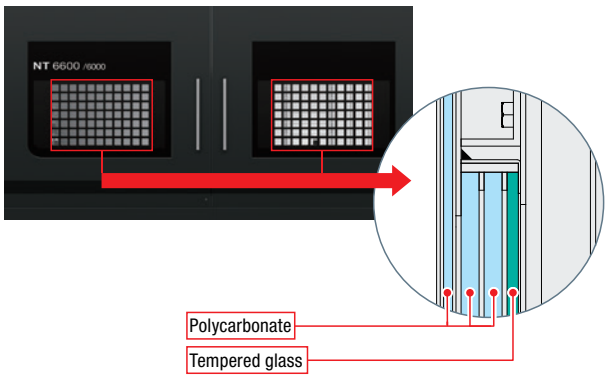
Daily maintenance & inspection

Devices which require frequent inspection are placed together, and the lubricating oil supply port is located at the bottom of the machine for easier oil supply.



Highest level of safety in the world

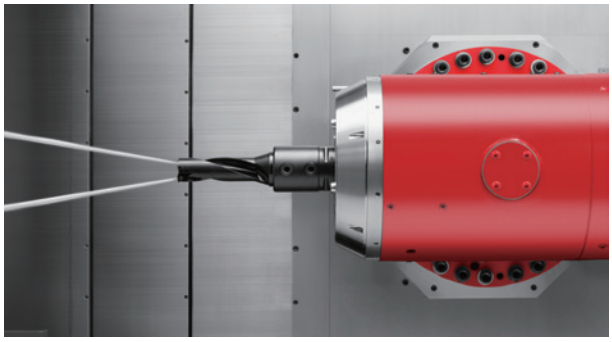
We have used a multi-layered lattice window and PC panel to ensure the world's highest level of operator safety.



Chip disposal

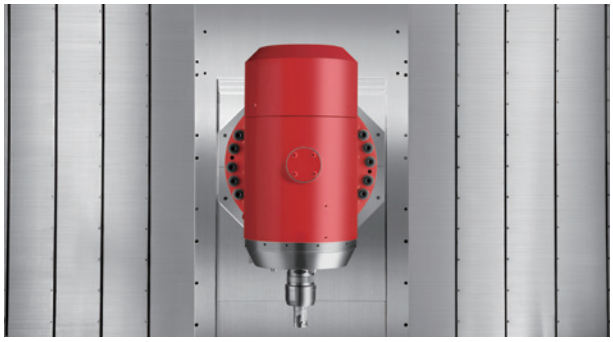
Through-spindle coolant system

Coolant is supplied to the tool tip via a path passing through the middle of the Tool spindle and tool.



Z-axis protector

By using a vertical Z-axis protector, chips fall straight down into the chip conveyor.



Peripheral equipment

External chip conveyor OP

Two types of chip conveyor have been made available for selection based upon chip shape and material.
Please choose one suited to the type of machining you conduct.

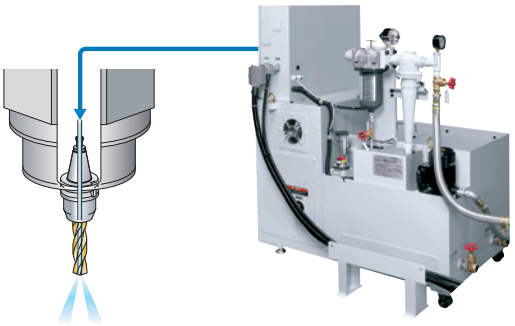
Specifications	Workpiece material and chip size ○: Suitable ×: Not suitable						
	Steel			Cast iron	Aluminum, non-ferrous metal		
	Long	Short	Powdery	Short	Long	Short	Powdery
Hinge type + Scraper type + Drum filter	○	○	○	○	○	○	○
Hinge type	○	×	×	×	○	×	×

Chip size guidelines
Short: chips 50 mm (2.0 in.) or less in length, bundles of chips ϕ40 mm (ϕ1.6 in.) or less
Long: bigger than the above

- The chip conveyor is right disposal only.
- 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.

Through-spindle coolant system (super-high pressure coolant system) OP

The through-spindle coolant system supplies coolant to the tool tip through the through-hole of the tool spindle and tool.
It is effective in eliminating chips, cooling the machining point and lengthening the lives of your tools.

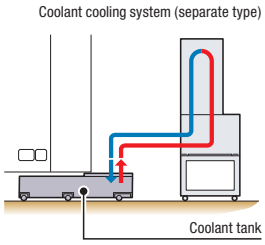


Center-through　　Super-high pressure coolant system

Rated pressure: 3.5 MPa (507.5 psi), 7.0 MPa (1,015 psi)

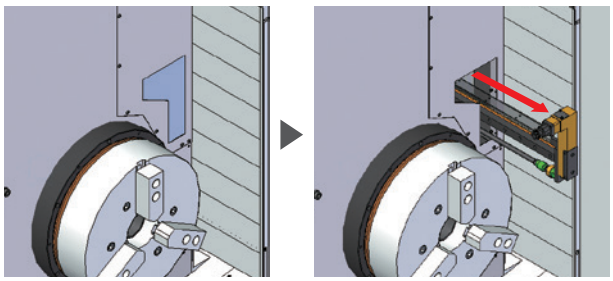
Recommended equipment　Coolant cooling system (separate type)

The super-high pressure coolant unit generates a lot of heat because it discharges coolant at high pressure. The coolant cooling unit controls the temperature of the coolant and suppresses temperature increases in the workpiece, tools and table, ensuring stable machining accuracy. This is essential equipment when using super-high pressure coolant. A unit with a heater will be customized.



Automatic in-machine tool presetter (tool spindle)

Allows highly efficient tool measurement and easer setups.



B-axis full indexing specification OP

Minimum indexing increment of 0.0001° offers high-precision machining.

■ **Min. indexing increment**
0.0001°

MAPPS Ⅳ

A New High-Performance Operating System
for Integrated Mill Turn Centers

● 19-inch operation panel

A new 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**
- **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.

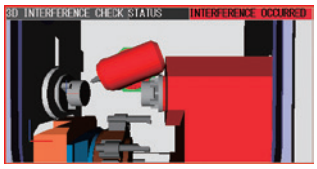
Keyboard

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.

Functions for multi-axis machining

3D interference checking function

Interference between items such as the spindle, workpiece, soft jaw, tool, holder and turret can be checked in 3D. If interference is detected, the machine will stop operation regardless of whether it is in the automatic or manual mode, providing the highest level of protection against interference.



Interference detected
↓
Machine stops automatically
↓
Collisions can be avoided not only during program operation but also during setup.

- The 3D interference checking function will check for interference accurately as long as the 3D model exactly matches the actual configuration of the spindles, workpieces, soft jaws, tools, holders and turrets.
- Customized design is required for special shape. For details, please refer to the description of "3D interference checking function" in the NC control unit specifications.
- A cutting simulation that shows how material is removed as machining proceeds cannot be carried out during a 3D interference check.

Faster creation of programs

CAM software ESPRIT

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.)

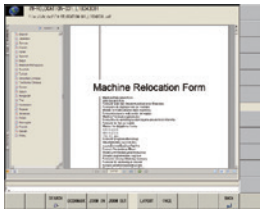
- **Postprocessor as standard**
- **CAM software will be ready to use once your machine is installed**
- **Cost for introducing CAM software can be saved**
- **ESPRIT® data can be modified on the machine** (through Remote Desktop connection*)
- **The software can be installed on multiple PCs on the network**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

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

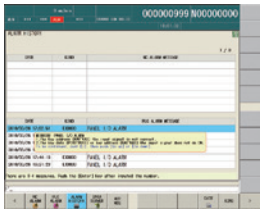
Improved ease of setup and maintenance

MAPPS Ⅳ is packed with new functions for easier setup and maintenance, including the File Display and Memo function that displays operating instructions and manuals on the screen and the Alarm help function that provides instructions when alarms occur.

File display and Memo function



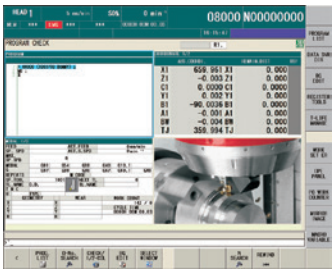
Alarm help function



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

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

Machine specifications

Item				NT6600 DCG/3000			
				B	BS	C	CS
Capacity	Max. swing of workpiece		mm (in.)	1,070 (42.1)			
	Swing over cross slide		mm (in.)	1,070 (42.1)			
	Max. distance between centers		mm (in.)	3,620 (142.5)	3,510 (138.1)	3,620 (142.5)	3,510 (138.1)
	Max. turning diameter		mm (in.)	ϕ1,070 (ϕ 42.1)			
	Max. turning length		mm (in.)	3,076 (121.1)			
	Bar work capacity		mm (in.)	164 (6.4)	164 (6.4)/164 (6.4) <Spindle 2>	＊1	
Travel	X-axis travel <Tool spindle>		mm (in.)	1,040 (40.9) <1,000(39.4)＋40(1.6)>			
	Y-axis travel <Tool spindle>		mm (in.)	±330 (13.0)/ ＋330 — －280 (13.0—11.0) <LBB specifications>			
	Z-axis travel <Tool spindle>		mm (in.)	3,150 (124.0)			
	B-axis rotation range <Tool spindle>			±120°			
	Z-axis travel (Spindle 2) <Steady rest>		mm (in.)	—	2,500 (98.4) <without> 2,440 (96.1) <1> 1,870 (73.6) <2>	—	2,500 (98.4) <without> 2,440 (96.1) <1> 1,870 (73.6) <2>
	Z-axis travel (Tailstock) <Steady rest>		mm (in.)	2,500 (98.4) <without, 1> 1,930 (76.0) <2>	—	2,500 (98.4) <without, 1> 1,930 (76.0) <2>	—
	XA, XB, XC-axis <Steady rest>		mm (in.)	60/25 (2.4/1.0) <SLU-6Z, K6.1 specifications>			
	ZA, ZB, ZC-axis <Steady rest>		mm (in.)	2,440 (96.1) <1> 1,870 (73.6) <2>			
Spindle 1	Max. spindle speed		min^{-1}	1,500		1,000	
	Number of spindle speed ranges			2 (winding change-over speed)			
	Type of spindle nose			JIS A_2-15		JIS A_1-20	
	Through-spindle hole diameter		mm (in.)	185 (7.3)		275 (10.8)	
	Min. spindle indexing increment			0.0001°			
	Spindle bearing inner diameter		mm (in.)	260 (10.2)		360 (14.2)	
	Spindle torque	Low speed	N·m (ft·lbf)	3,254/2,386 (2,400.0/1,759.8) <25%ED/cont>		6,784/5,574 (5,003.6/4,111.2) <30 min/cont>	
		High speed	N·m (ft·lbf)	1,447/1,061 (1,067.2/782.6) <25%ED/cont>		3,016/2,481 (2,224.5/1,830.0) <30 min/cont>	
Spindle 2	Max. spindle speed		min^{-1}	—	1,500	—	1,000
	Number of spindle speed ranges			—	2 (winding change-over speed)	—	2 (winding change-over speed)
	Type of spindle nose			—	JIS A_2-15	—	JIS A_1-20
	Through-spindle hole diameter		mm (in.)	—	185 (7.3)	—	275 (10.8)
	Min. spindle indexing increment			—	0.0001°	—	0.0001°
	Spindle bearing inner diameter		mm (in.)	—	260 (10.2)	—	360 (14.2)
	Spindle torque	Low speed	N·m (ft·lbf)	—	3,254/2,386 (2,400.0/1,759.8) <25%ED/cont>	—	6,784/5,574 (5,003.6/4,111.2) <30 min/cont>
		High speed	N·m (ft·lbf)	—	1,447/1,061 (1,067.2/782.6) <25%ED/cont>	—	3,016/2,481 (2,224.5/1,830.0) <30 min/cont>
Tool spindle	Number of tool stations			1			
	B-axis indexing time		s	0.85 [0.55]/ 90°			
	Min. B-axis indexing increment			1° [0.0001°]			
	Max. tool spindle speed		min^{-1}	8,000			
	Taper hole of rotary tool spindle			Capto C8 [BT50*2] [CAT50] [HSK-A100 (T100)]			
	Type of retention knob			[DMG MORI SEIKI 90°, Center through <MAS DMG MORI SEIKI 90°, CAT, DIN DMG MORI SEIKI 90°> (BT50 only)]			
	Inner diameter of rotary tool spindle bearing		mm (in.)	100 (3.9)			
	Tool storage capacity			50 [100, 140, 180]			
	Max. tool diameter	With adjacent tools	mm (in.)	ϕ 120 (ϕ 4.7)			
		Without adjacent tools	mm (in.)	ϕ 250 (ϕ 9.8)			
	Max. tool length		mm (in.)	600 (23.6)			
	Max. tool mass		kg (lb.)	30 (66)			
	Max. tool mass moment <from spindle gauge line>		N·m (ft·lbf)	29.4 (21.6) (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.)			
	Spindle torque <15%ED/15 min/cont>		N·m (ft·lbf)	302/175/147 (222.7/129.1/108.4)			
Tailstock	Tailstock spindle diameter		mm (in.)	150 (5.9) [180 (7.1)]	—	150 (5.9) [180 (7.1)]	—
	Taper hole of tailstock spindle			MT5 [MT6] <Built-in>	—	MT5 [MT6] <Built-in>	—
	Tailstock spindle travel		mm (in.)	150 (5.9)	—	150 (5.9)	—
Feedrate	Rapid traverse rate		m/min (fpm)	Tool spindle X: 40 (131.2), Y: 30 (98.4), Z: 32 (105.0) Spindle 2 A: 15 (49.2) Tailstock A: 8 (26.2) Steady rest XA, XB, XC: 1.6 (5.2) ZA, ZB, ZC: 8 (26.2)			
			min^{-1}	B: 23.8 [80 <Full indexing specifications>] C: 70			
Motors	Spindle 1 drive motor		kW (HP)	30/26/22 (40/34.7/30) <25%ED/30 min/cont>		45/37 (60/50) <30 min/cont>	
	Spindle 2 drive motor		kW (HP)	—	30/26/22 (40/34.7/30) <25%ED/30 min/cont>	—	45/37 (60/50) <30 min/cont>
	Tool spindle drive motor <30 min/cont>		kW (HP)	30/22 (40/30)			
	Coolant pump motor <60/50Hz>		kW (HP)	1.21 (1.61) <0.73 (0.97)>×1 1.040 (1.39) <0.635 (0.85)>×1 1.5 (2.0) <0.75 (1.0)>×1			
Power sources (Standard)	Electrical power supply <cont>		kVA	67.2	96.6	84.5	131.4
	Compressed air supply		MPa (psi), L/min (gpm)	0.5 (72.5), 900 (237.6) <ANR>			
Tank capacity	Coolant tank capacity		L (gal.)	1,250 (330.0)			
Machine size	Machine height <from floor>		mm (in.)	[Hinge type: 4,281 (168.5)] [Hinge type＋Scraper type＋Drum filter: 4,316 (169.9)]			
	Floor space <width×depth>		mm (in.)	9,265 (364.8)×4,629 (182.2)			
	Mass of machine		kg (lb.)	44,000 (96,800)	46,000 (101,200)	44,500 (97,900)	47,000 (103,400)
Noise data	A-weighted, time-average radiated sound pressure level		dB	56—79 (measurement uncertainty is 4 dB)			

[ ] Option

NT6600 DCG (130617)

＊1 For the specifications of C-type, please contact DMG MORI SEIKI.

＊2 When selecting the two-face contact tool specification, be sure to use a two-face contact tool.

- Bar work capacity: Depending on the chuck/cylinder used and its restrictions, it may not be possible to reach full bar work capacity.
- 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.
- ANR: ANR refers to a standard atmospheric state; i.e., temperature at 20℃ (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.
- Compressed air supply: Please be sure to supply clean compressed air <air pressure: 0.7 MPa (101.5 psi), pressure dew point: 10℃ (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.
- Noise data: the measurement was performed at the front of the NT6600 DCG/6000S machine with a maximum spindle speed of 1,400 min^{-1}. For details, please consult with our sales representative.
- The information in this catalog is valid as of June 2013.

Machine specifications

Item				NT6600 DCG/4000			
				B	BS	C	CS
Capacity	Max. swing of workpiece		mm (in.)	1,070 (42.1)			
	Swing over cross slide		mm (in.)	1,070 (42.1)			
	Max. distance between centers		mm (in.)	4,620 (181.8)	4,510 (177.5)	4,620 (181.8)	4,510 (177.5)
	Max. turning diameter		mm (in.)	ϕ1,070 (ϕ 42.1)			
	Max. turning length		mm (in.)	4,076 (160.4)			
	Bar work capacity		mm (in.)	164 (6.4)	164 (6.4)/164 (6.4) <Spindle 2>	＊1	
Travel	X-axis travel <Tool spindle>		mm (in.)	1,040 (40.9) <1,000(39.4)＋40(1.6)>			
	Y-axis travel <Tool spindle>		mm (in.)	±330 (13.0)/＋330 — −280 (13.0—11.0) <LBB specifications>			
	Z-axis travel <Tool spindle>		mm (in.)	4,150 (163.4)			
	B-axis rotation range <Tool spindle>			±120°			
	Z-axis travel (Spindle 2) <Steady rest>		mm (in.)	—	3,500 (137.8) <without> 3,440 (135.4) <1> 2,870 (113.0) <2>	—	3,500 (137.8) <without> 3,440 (135.4) <1> 2,870 (113.0) <2>
	Z-axis travel (Tailstock) <Steady rest>		mm (in.)	3,500 (137.8) <without, 1> 2,930 (115.4) <2>	—	3,500 (137.8) <without, 1> 2,930 (115.4) <2>	—
	XA, XB, XC-axis <Steady rest>		mm (in.)	60/25 (2.4/1.0) <SLU-6Z, K6.1 specifications>			
	ZA, ZB, ZC-axis <Steady rest>		mm (in.)	3,440 (135.4) <1> 2,870 (113.0) <2>			
Spindle 1	Max. spindle speed		min^{-1}	1,500		1,000	
	Number of spindle speed ranges			2 (winding change-over speed)			
	Type of spindle nose			JIS A_2-15		JIS A_1-20	
	Through-spindle hole diameter		mm (in.)	185 (7.3)		275 (10.8)	
	Min. spindle indexing increment			0.0001°			
	Spindle bearing inner diameter		mm (in.)	260 (10.2)		360 (14.2)	
	Spindle torque	Low speed	N·m (ft·lbf)	3,254/2,386 (2,400.0/1,759.8) <25%ED/cont>		6,784/5,574 (5,003.6/4,111.2) <30 min/cont>	
		High speed	N·m (ft·lbf)	1,447/1,061 (1,067.2/782.6) <25%ED/cont>		3,016/2,481 (2,224.5/1,830.0) <30 min/cont>	
Spindle 2	Max. spindle speed		min^{-1}	—	1,500	—	1,000
	Number of spindle speed ranges			—	2 (winding change-over speed)	—	2 (winding change-over speed)
	Type of spindle nose			—	JIS A_2-15	—	JIS A_1-20
	Through-spindle hole diameter		mm (in.)	—	185 (7.3)	—	275 (10.8)
	Min. spindle indexing increment			—	0.0001°	—	0.0001°
	Spindle bearing inner diameter		mm (in.)	—	260 (10.2)	—	360 (14.2)
	Spindle torque	Low speed	N·m (ft·lbf)	—	3,254/2,386 (2,400.0/1,759.8) <25%ED/cont>	—	6,784/5,574 (5,003.6/4,111.2) <30 min/cont>
		High speed	N·m (ft·lbf)	—	1,447/1,061 (1,067.2/782.6) <25%ED/cont>	—	3,016/2,481 (2,224.5/1,830.0) <30 min/cont>
Tool spindle	Number of tool stations			1			
	B-axis indexing time		s	0.85 [0.55]/ 90°			
	Min. B-axis indexing increment			1° [0.0001°]			
	Max. tool spindle speed		min^{-1}	8,000			
	Taper hole of rotary tool spindle			Capto C8 [BT50*2] [CAT50] [HSK-A100 (T100)]			
	Type of retention knob			[DMG MORI SEIKI 90°, Center through <MAS DMG MORI SEIKI 90°, CAT, DIN DMG MORI SEIKI 90°> (BT50 only)]			
	Inner diameter of rotary tool spindle bearing		mm (in.)	100 (3.9)			
	Tool storage capacity			50 [100, 140, 180]			
	Max. tool diameter	With adjacent tools	mm (in.)	ϕ120 (ϕ 4.7)			
		Without adjacent tools	mm (in.)	ϕ250 (ϕ 9.8)			
	Max. tool length		mm (in.)	600 (23.6)			
	Max. tool mass		kg (lb.)	30 (66)			
	Max. tool mass moment <from spindle gauge line>		N·m (ft·lbf)	29.4 (21.6) (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.)			
	Spindle torque <15%ED/15 min/cont>		N·m (ft·lbf)	302/175/147 (222.7/129.1/108.4)			
Tailstock	Tailstock spindle diameter		mm (in.)	150 (5.9) [180 (7.1)]	—	150 (5.9) [180 (7.1)]	—
	Taper hole of tailstock spindle			MT5 [MT6] <Built-in>	—	MT5 [MT6] <Built-in>	—
	Tailstock spindle travel		mm (in.)	150 (5.9)	—	150 (5.9)	—
Feedrate	Rapid traverse rate		m/min (fpm)	Tool spindle X: 40 (131.2), Y: 30 (98.4), Z: 32 (105.0) Spindle 2 A: 15 (49.2) Tailstock A: 8 (26.2) Steady rest XA, XB, XC: 1.6 (5.2) ZA, ZB, ZC: 8 (26.2)			
			min^{-1}	B: 23.8 [80 <Full indexing specifications>] C: 70			
Motors	Spindle 1 drive motor		kW (HP)	30/26/22 (40/34.7/30) <25%ED/30 min/cont>		45/37 (60/50) <30 min/cont>	
	Spindle 2 drive motor		kW (HP)	—	30/26/22 (40/34.7/30) <25%ED/30 min/cont>	—	45/37 (60/50) <30 min/cont>
	Tool spindle drive motor <30 min/cont>		kW (HP)	30/22 (40/30)			
	Coolant pump motor <60/50Hz>		kW (HP)	1.21 (1.61) <0.73 (0.97)>×1 1.040 (1.39) <0.635 (0.85)>×1 1.5 (2.0) <0.75 (1.0)>×1			
Power sources (Standard)	Electrical power supply <cont>		kVA	67.2	96.6	84.5	131.4
	Compressed air supply		MPa (psi), L/min (gpm)	0.5 (72.5), 900 (237.6) <ANR>			
Tank capacity	Coolant tank capacity		L (gal.)	1,350 (356.4)			
Machine size	Machine height <from floor>		mm (in.)	[Hinge type: 4,281 (168.5)] [Hinge type＋Scraper type＋Drum filter: 4,316 (169.9)]			
	Floor space <width×depth>		mm (in.)	10,265 (404.1)×4,629 (182.2)			
	Mass of machine		kg (lb.)	46,000 (101,200)	48,000 (105,600)	46,500 (102,300)	49,000 (107,800)
Noise data	A-weighted, time-average radiated sound pressure level		dB	56—79 (measurement uncertainty is 4 dB)			

[ ] Option

NT6600 DCG (130617)

＊1 For the specifications of C-type, please contact DMG MORI SEIKI.

＊2 When selecting the two-face contact tool specification, be sure to use a two-face contact tool.

- Bar work capacity: Depending on the chuck/cylinder used and its restrictions, it may not be possible to reach full bar work capacity.
- 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.
- ANR: ANR refers to a standard atmospheric state; i.e., temperature at 20℃ (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.
- Compressed air supply: Please be sure to supply clean compressed air <air pressure: 0.7 MPa (101.5 psi), pressure dew point: 10℃ (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.
- Noise data: the measurement was performed at the front of the NT6600 DCG/6000S machine with a maximum spindle speed of 1,400 min^{-1}. For details, please consult with our sales representative.
- The information in this catalog is valid as of June 2013.

Item				NT6600 DCG/6000			
				B	BS	C	CS
Capacity	Max. swing of workpiece		mm (in.)	1,070 (42.1)			
	Swing over cross slide		mm (in.)	1,070 (42.1)			
	Max. distance between centers		mm (in.)	6,620 (260.6)	6,510 (256.2)	6,620 (260.6)	6,510 (256.2)
	Max. turning diameter		mm (in.)	ϕ1,070 (ϕ 42.1)			
	Max. turning length		mm (in.)	6,076 (239.2)			
	Bar work capacity		mm (in.)	164 (6.4)	164 (6.4)/164 (6.4) <Spindle 2>	＊1	
Travel	X-axis travel <Tool spindle>		mm (in.)	1,040 (40.9) <1,000(39.4)＋40(1.6)>			
	Y-axis travel <Tool spindle>		mm (in.)	±330 (13.0)/＋330 — －280 (13.0—11.0) <LBB specifications>			
	Z-axis travel <Tool spindle>		mm (in.)	6,150 (242.1)			
	B-axis rotation range <Tool spindle>			±120°			
	Z-axis travel (Spindle 2) <Steady rest>		mm (in.)	—	4,870 (191.7) <2> 4,310 (169.7) <3>	—	4,870 (191.7) <2> 4,310 (169.7) <3>
	Z-axis travel (Tailstock) <Steady rest>		mm (in.)	4,930 (194.1) <2> 4,460 (175.6) <3>	—	4,930 (194.1) <2> 4,460 (175.6) <3>	—
	XA, XB, XC-axis <Steady rest>		mm (in.)	60/25 (2.4/1.0) <SLU-6Z, K6.1 specifications>			
	ZA, ZB, ZC-axis <Steady rest>		mm (in.)	4,870 (191.7) <2> 4,310 (169.7) <3>			
Spindle 1	Max. spindle speed		min^{-1}	1,500		1,000	
	Number of spindle speed ranges			2 (winding change-over speed)			
	Type of spindle nose			JIS A_2-15		JIS A_1-20	
	Through-spindle hole diameter		mm (in.)	185 (7.3)		275 (10.8)	
	Min. spindle indexing increment			0.0001°			
	Spindle bearing inner diameter		mm (in.)	260 (10.2)		360 (14.2)	
	Spindle torque	Low speed	N·m (ft·lbf)	3,254/2,386 (2,400.0/1,759.8) <25%ED/cont>		6,784/5,574 (5,003.6/4,111.2) <30 min/cont>	
		High speed	N·m (ft·lbf)	1,447/1,061 (1,067.2/782.6) <25%ED/cont>		3,016/2,481 (2,224.5/1,830.0) <30 min/cont>	
Spindle 2	Max. spindle speed		min^{-1}	—	1,500	—	1,000
	Number of spindle speed ranges			—	2 (winding change-over speed)	—	2 (winding change-over speed)
	Type of spindle nose			—	JIS A_2-15	—	JIS A_1-20
	Through-spindle hole diameter		mm (in.)	—	185 (7.3)	—	275 (10.8)
	Min. spindle indexing increment			—	0.0001°	—	0.0001°
	Spindle bearing inner diameter		mm (in.)	—	260 (10.2)	—	360 (14.2)
	Spindle torque	Low speed	N·m (ft·lbf)	—	3,254/2,386 (2,400.0/1,759.8) <25%ED/cont>	—	6,784/5,574 (5,003.6/4,111.2) <30 min/cont>
		High speed	N·m (ft·lbf)	—	1,447/1,061 (1,067.2/782.6) <25%ED/cont>	—	3,016/2,481 (2,224.5/1,830.0) <30 min/cont>
Tool spindle	Number of tool stations			1			
	B-axis indexing time		s	0.85 [0.55]/ 90°			
	Min. B-axis indexing increment			1° [0.0001°]			
	Max. tool spindle speed		min^{-1}	8,000			
	Taper hole of rotary tool spindle			Capto C8 [BT50＊2] [CAT50] [HSK-A100 (T100)]			
	Type of retention knob			[DMG MORI SEIKI 90°, Center through <MAS DMG MORI SEIKI 90°, CAT, DIN DMG MORI SEIKI 90°> (BT50 only)]			
	Inner diameter of rotary tool spindle bearing		mm (in.)	100 (3.9)			
	Tool storage capacity			50 [100, 140, 180]			
	Max. tool diameter	With adjacent tools	mm (in.)	ϕ120 (ϕ 4.7)			
		Without adjacent tools	mm (in.)	ϕ250 (ϕ 9.8)			
	Max. tool length		mm (in.)	600 (23.6)			
	Max. tool mass		kg (lb.)	30 (66)			
	Max. tool mass moment <from spindle gauge line>		N·m (ft·lbf)	29.4 (21.6) (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.)			
	Spindle torque <15%ED/15 min/cont>		N·m (ft·lbf)	302/175/147 (222.7/129.1/108.4)			
Tailstock	Tailstock spindle diameter		mm (in.)	150 (5.9) [180 (7.1)]	—	150 (5.9) [180 (7.1)]	—
	Taper hole of tailstock spindle			MT5 [MT6] <Built-in>	—	MT5 [MT6] <Built-in>	—
	Tailstock spindle travel		mm (in.)	150 (5.9)	—	150 (5.9)	—
Feedrate	Rapid traverse rate		m/min (fpm)	Tool spindle X: 40 (131.2), Y: 30 (98.4), Z: 32 (105.0) Spindle 2 A: 15 (49.2) Tailstock A: 8 (26.2) Steady rest XA, XB, XC: 1.6 (5.2) ZA, ZB, ZC: 8 (26.2)			
			min^{-1}	B: 23.8 [80 <Full indexing specifications>] C: 70			
Motors	Spindle 1 drive motor		kW (HP)	30/26/22 (40/34.7/30) <25%ED/30 min/cont>		45/37 (60/50) <30 min/cont>	
	Spindle 2 drive motor		kW (HP)	—	30/26/22 (40/34.7/30) <25%ED/30 min/cont>	—	45/37 (60/50) <30 min/cont>
	Tool spindle drive motor <30 min/cont>		kW (HP)	30/22 (40/30)			
	Coolant pump motor <60/50Hz>		kW (HP)	1.21 (1.61) <0.73 (0.97)>×1 1.040 (1.39) <0.635 (0.85)>×1 1.5 (2.0) <0.75 (1.0)>×1			
Power sources (Standard)	Electrical power supply <cont>		kVA	67.2	96.6	84.5	131.4
	Compressed air supply		MPa (psi), L/min (gpm)	0.5 (72.5), 900 (237.6) <ANR>			
Tank capacity	Coolant tank capacity		L (gal.)	1,500 (396.0)			
Machine size	Machine height <from floor>		mm (in.)	[Hinge type: 4,281 (168.5)] [Hinge type＋Scraper type＋Drum filter: 4,316 (169.9)]			
	Floor space <width×depth>		mm (in.)	12,550 (494.1)×4,629 (182.2)			
	Mass of machine		kg (lb.)	53,000 (116,600)	55,000 (121,000)	53,500 (117,700)	56,000 (123,200)
Noise data	A-weighted, time-average radiated sound pressure level		dB	56—79 (measurement uncertainty is 4 dB)			

[ ] Option

NT6600 DCG (130617)

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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.

2 years Guaranteed peace of mind

<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 October 2013. 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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