

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 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

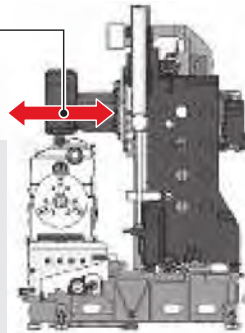
- NT6600 DCG/3000:** 3,076 mm (121.1 in.)
- NT6600 DCG/4000:** 4,076 mm (160.4 in.)
- NT6600 DCG/6000:** 6,076 mm (239.2 in.)

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)

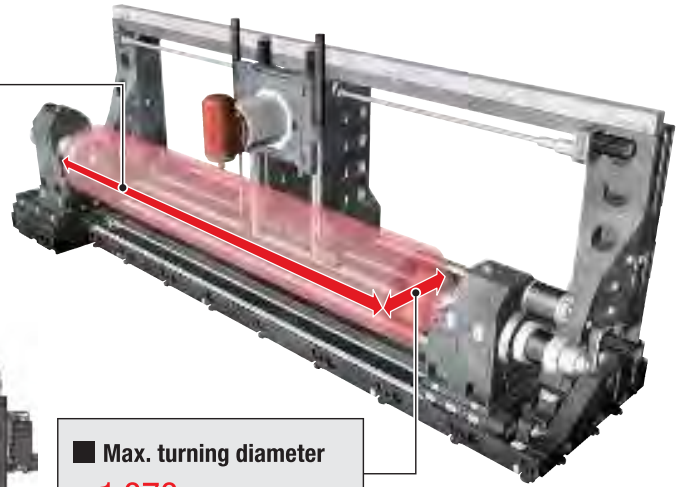


Max. turning diameter

$\phi 1,070$ mm ($\phi 42.1$ 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

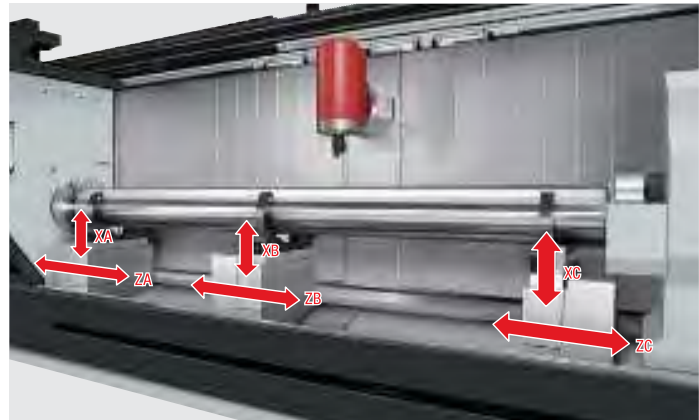
Steady rest setup time

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

X-axis travel

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

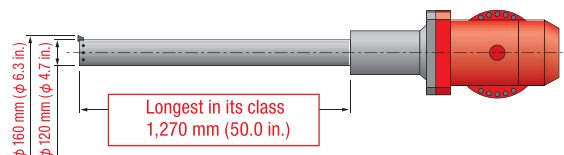
Servo motors are equipped as standard on the X and Z axes, dramatically reducing setup time



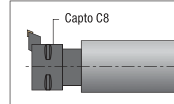
Long boring bar

OP

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

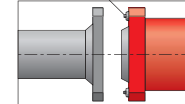


Tool-tip ATC specifications



※Only available with Capto C8.

Cone couplings (4 places)

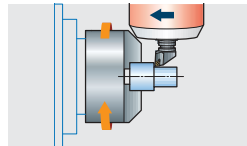


Uses a cone coupling clamping system

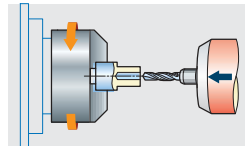
- Long boring bar with a diameter of 120 mm (4.7 in.) cannot be arranged by customers. Please consult with our sales representative for details.

Machining variations

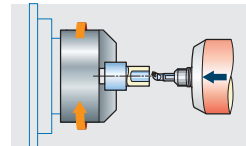
Turning



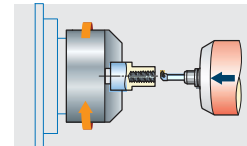
O.D. cutting



Drilling

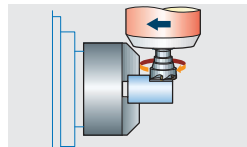


I.D. cutting

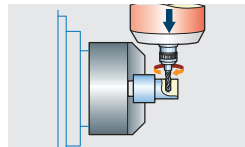


I.D. threading

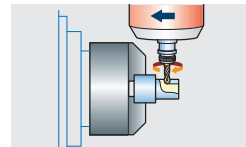
Milling



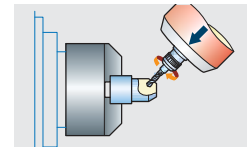
O.D. milling



O.D. hole machining

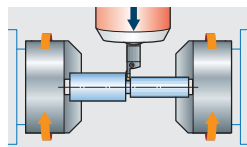


Ball-end milling

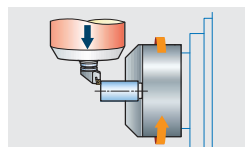


Angular machining

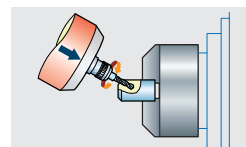
Spindle 2



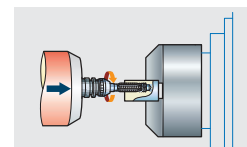
Cut-off



Face cutting



Angular machining



End face hole machining and tapping

Box-in-Box Construction

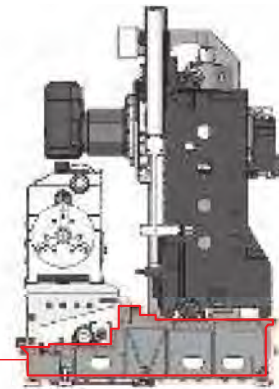
The Box-in-Box Construction supports the saddle at both ends, guiding the axes at the centers of gravity, creating a balanced environment for unprecedented high-speed acceleration.



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.

Flat bed design

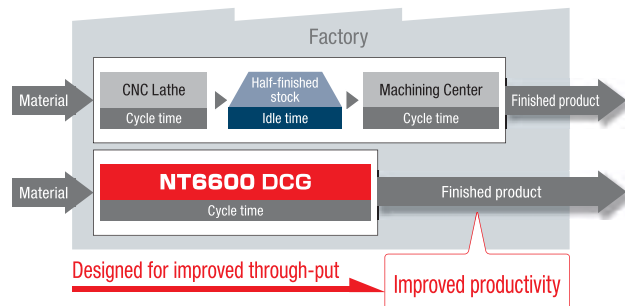


Process integration with a multi-axis machine

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
- Shortens lead time
- With no setup changes, machining accuracy is maintained
- Reduces setup time
- Reduces fixture manufacturing costs



Original technology/Mechanism

Driven at the Center of Gravity



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

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)}

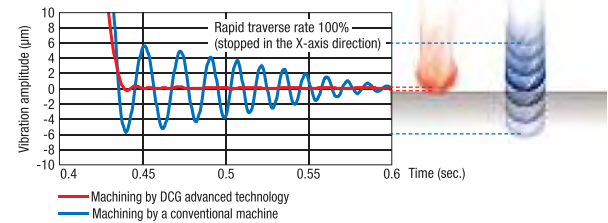
Effects of DCG

- 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

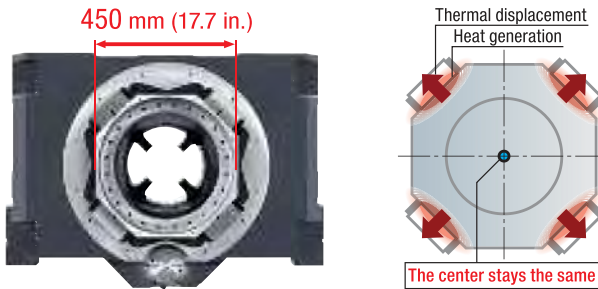


DCG: Driven at the Center of Gravity

Octagonal Ram Construction



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

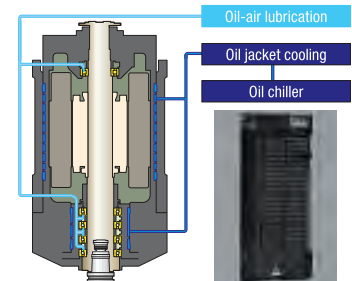
2.6 sec. (8,000→0 min⁻¹)

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



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°)

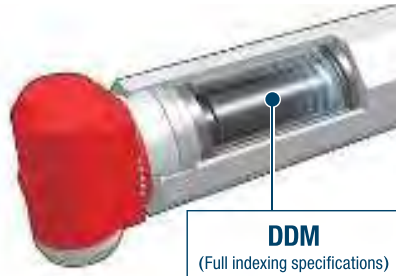
0.55 sec.

■ B-axis rotational speed

80 min⁻¹

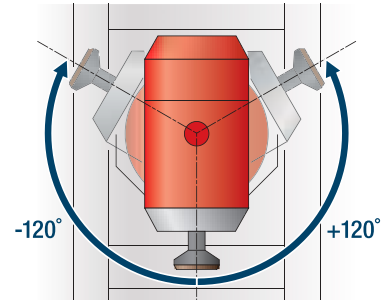
■ Min. indexing increment

0.0001°



DDM
(Full indexing specifications)

High-Flexibility B-axis

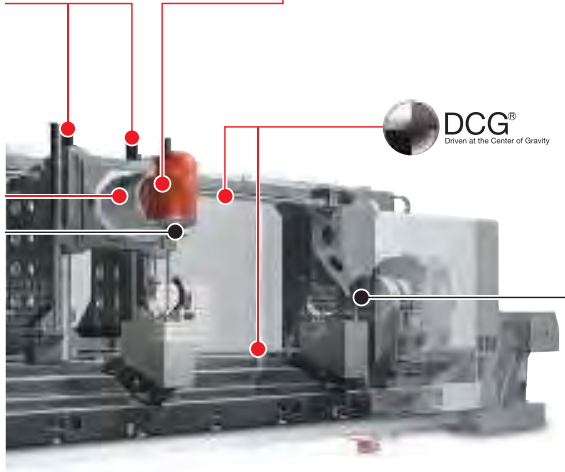


■ B-axis rotation range

±120°

DDM: Direct Drive Motor

● Full indexing specification B-axis: with the F31B, up to four axes can be controlled simultaneously. For simultaneous 5-axis control, please use the F31B5.



Spindle



Spindle 1



Spindle 2 (S specifications)

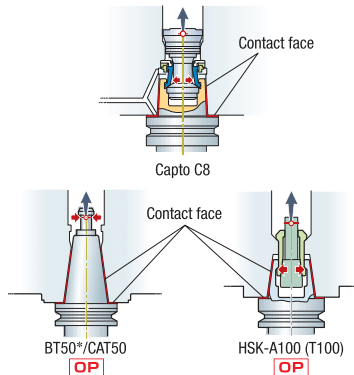
■ Max. spindle speed

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

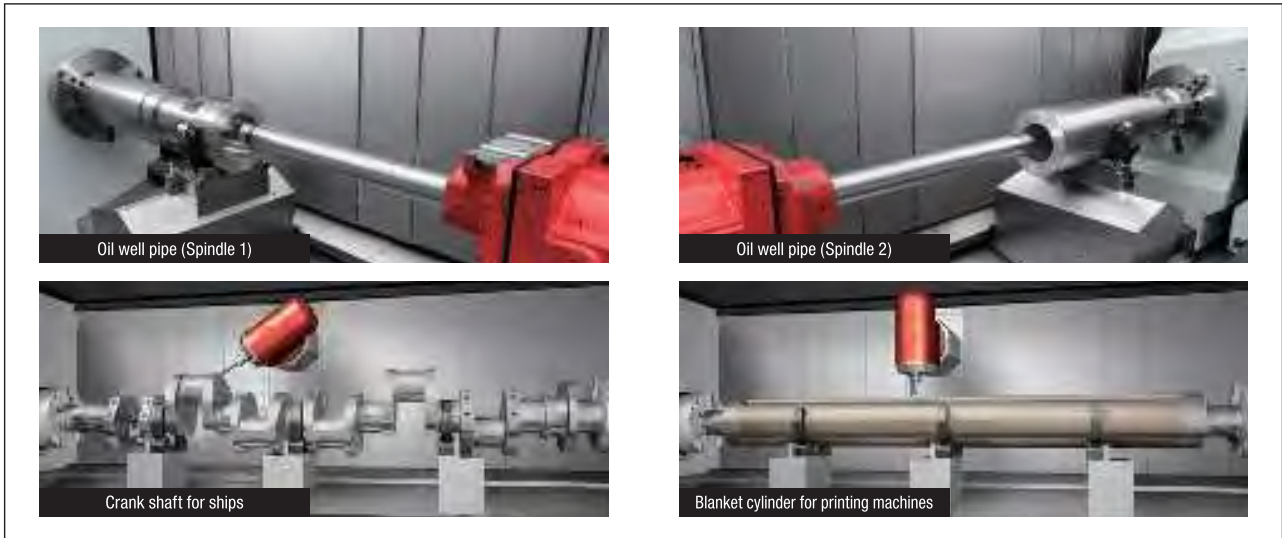
50 tools
 100, 140, 180 tools OP



Uses a gantry ATC

Patent obtained

Workpiece samples



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

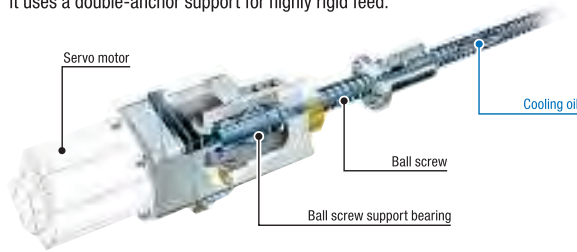
Variations

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	<input type="checkbox"/> / <input checked="" type="checkbox"/> S
			C-type	<input checked="" type="checkbox"/> / <input type="checkbox"/> S
NT6600 DCG /4000	Tool spindle 4,150 mm (163.4 in.)	without/1/2	B-type	<input type="checkbox"/> / <input checked="" type="checkbox"/> S
			C-type	<input checked="" type="checkbox"/> / <input type="checkbox"/> S
NT6600 DCG /6000	Tool spindle 6,150 mm (242.1 in.)	2/3	B-type	<input type="checkbox"/> / <input checked="" type="checkbox"/> S
			C-type	<input checked="" type="checkbox"/> / <input type="checkbox"/> S

High-precision equipment

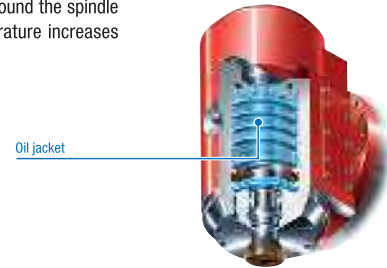
Ball screw core cooling

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

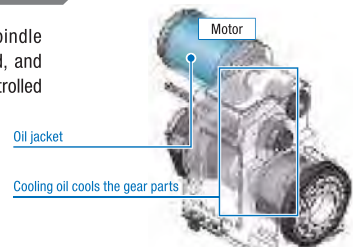


A magnetic-type absolute positioning scale is used for the X and Y axes, and an electromagnetic induction type for Z-axis. This offers outstanding positioning accuracy.

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 chiller (separate type)



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 thermal 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.

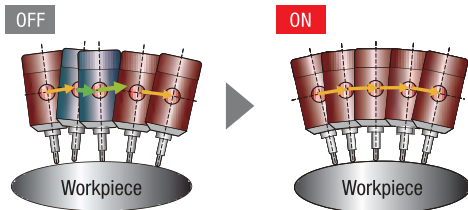
● We cannot guarantee that this unit will completely control the coolant temperature. It is designed to help prevent oil temperature increases.



SVC function (Standard features for F31iB5)

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.

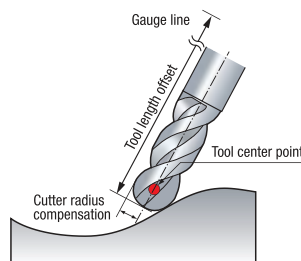
Motion of the SVC function



The SVC function includes the following functions:

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

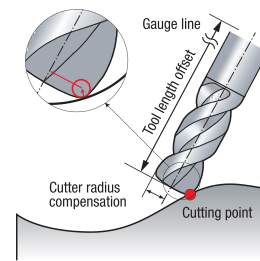
Tool center point control/Cutting point command (Standard features for F31iB5)



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.

Improved workability, Maintenance

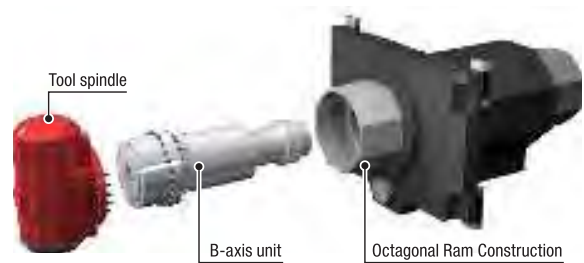
Movable + Swivel-type operation panel

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



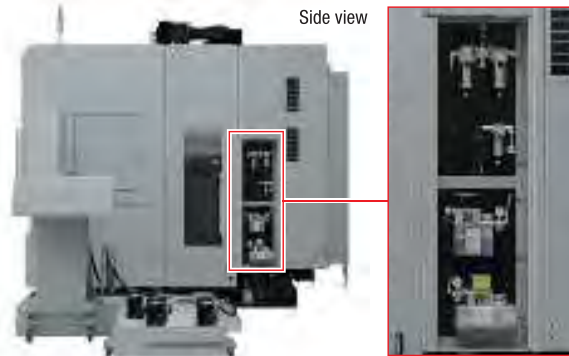
B-axis unitization

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



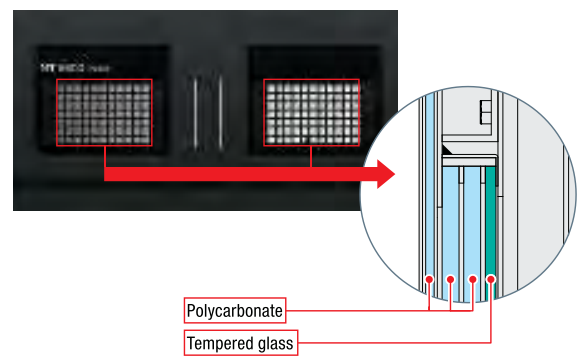
Daily maintenance & inspection

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

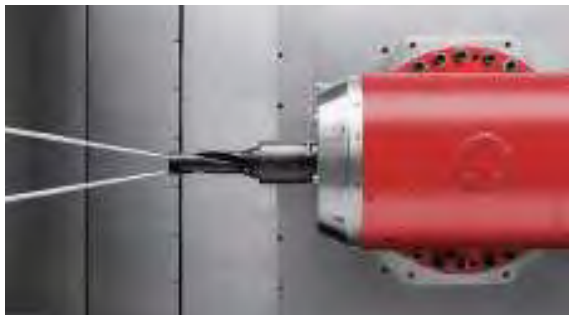
We have used a multi-layered lattice window and PC panel to ensure the world's highest level of operator safety.



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 ϕ 40 mm (ϕ 1.6 in.) or less

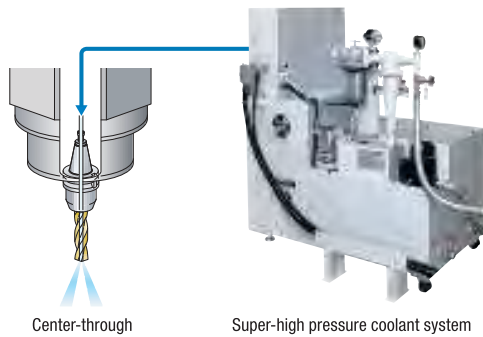
Long: bigger than the above

- The chip conveyor is right disposal only.
- The options table shows the general options when using coolant. Changes may be necessary if you are not using coolant, or depending on the amount of coolant, compatibility with machines, or the specifications required.
- Please select a chip conveyor to suit the shape of your chips. When using special or difficult-to-cut material (chip hardness HRC45 or higher), please consult with our sales representative.
- 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

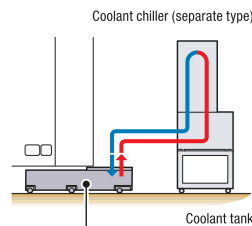
The through-spindle coolant system supplies coolant to the tool tip through the through-hole of the tool spindle and tool. It is effective in eliminating chips, cooling the machining point and lengthening the lives of your tools.



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

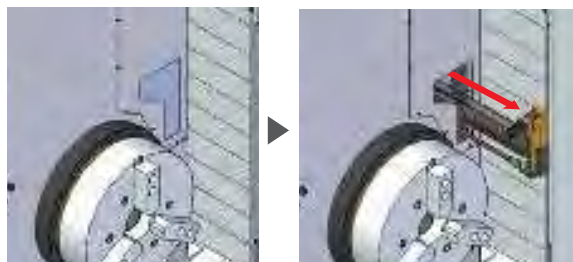
Recommended equipment Coolant chiller (separate type)

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 easier setups.



B-axis full indexing specification

OP

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

■ Min. indexing increment
0.0001°



MAPPS IV

High-Performance Operating System
for Integrated Mill Turn Centers



● 19-inch operation panel

High-performance operating system that pursues ease of use, and combines the best hardware in the industry with the advanced application/network systems.

- ▶ **Outstanding operability thanks to upgraded hardware**
- ▶ **New functions for easier setup and maintenance**
- ▶ **Various types of monitoring, including internal monitoring, are possible on the screen (option)**
- ▶ **In the event of trouble, DMG MORI's remote maintenance service solves it smoothly **MORI-NET Global Edition Advance** OP**

Outstanding operability

Vertical soft-keys

Vertical soft-keys are arranged on the left and right sides of the screen. The vertical soft-keys can be used as option buttons or shortcut keys to which you can assign your desired screens and functions, allowing you to quickly display the screen you want.

Keyboard

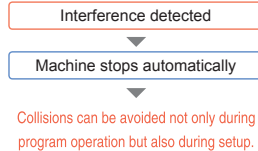
A PC-type keyboard is used as standard, making key input easy. A keyboard with a conventional key layout is also available as an option.



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.



- 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.

Improved ease of maintenance

Alarm help function

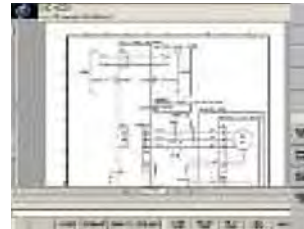
When an alarm occurs, MAPPS identifies the cause of the trouble and provides solutions.



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 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)

DMG MORI

<Precautions for Machine Relocation>

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

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- The information in this catalog is valid as of September 2015. Designs and specifications are subject to changes without notice.
- The machines shown in the catalog may differ from the actual machines. The location and the size of the nameplates may also differ from the actual machines, or the nameplates may not be attached to some machines.
- DMG MORI is not responsible for differences between the information in the catalog and the actual machine.

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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.)	φ 1,070 (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 (11.0—11.0) <LBB specifications>				
	Z-axis travel <Tool spindle>	mm (in.)	3,150 (124.0)				
	B-axis rotation range <Tool spindle>		± 120°				
	A-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>	
	A-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-15		JIS A-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)				
	Type of spindle nose		JIS A-15		JIS A-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>		
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 [†]) [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 (tpm)	Tool spindle X: 40 (131.2), Y: 30 (98.4), Z: 32 (105.6) Spindle 2 A: 15 (48.2) Tailstock A: 8 (26.2) Steady rest XA, XB, XC: 1.8 (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>	electrical kVA	57.9	95.7	79.4	139.2	
Tank capacity	Compressed air supply	MPa (psi), L/min (gpm)	0.5 (72.5), 900 (237.6) <ANR>				
	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

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

*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°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.

● 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.

● Noise data: the measurement was performed at the front of the NT6600 DCG/3000 machine with a maximum spindle speed of 1,400 min⁻¹. For details, please consult with our sales representative.

Specifications

Machine specifications

			NT6600 DCG/4000			
Item			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°			
	A-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>
	A-axis travel (Tailstock) <Steady rest>	mm (in.)	3,500 (137.8) <without, 1> 2,830 (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-15		JIS A-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-15		JIS A-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>		
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**] [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 (105.8) 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)	—		—	
	Tool spindle drive motor <30 min/cont>	kW (HP)	30/26/22 (40/34.7/30) <25%ED/30 min/cont>			
	Coolant pump motor <60/50Hz>	kW (HP)	30/22 (40/30)			
Power sources (Standard)	Electrical power supply <cont>	④413.0① kVA	57.9	95.7	79.4	139.2
	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

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

*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°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
- 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
- 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 April 2014.