DMG MORI

HIGH-PRECISION, HIGH-EFFICIENCY INTEGRATED MILL TURN CENTER

NTX 2000 3rd Generation
NTX 2500 3rd Generation
NTX 3000 3rd Generation

NTX 2000
NTX 2500
NTX 3000

NTX 2000 3rd Generation / NTX 2500 3rd Generation / NTX 3000 3rd Generation

Overwhelming Quality by Perfect Performance

The NTX 2000 3rd Generation / NTX 2500 3rd Generation / NTX 3000 3rd Generation are all-round machines capable of cutting complex-shaped workpieces with high accuracy and efficiency for the aircraft, medical equipment, automotive, die & mold and precision equipment industries. The models are equipped with a large machining envelop as well as flexible cutting abilities by combined features of a turning center and a machining center. This ensures a wide range of machining from micro machining to cutting of large workpieces.
The 2nd Generation models will bring great profit for you by efficiently integrating processes of the high-mix, low-volume production and mass production.

1

2

3

4

5

6

7

8

9

10

Aerospace

1 Landing gear
2 Turbine blade
3 Propeller

Medical equipment

4 Artificial knee joint
5 Artificial hip joint

Automobiles

6 Cylinder head
7 Crank shaft
8 Axle housing
9 Steering gear box

Industrial equipment

10 Drive shaft

● Figures in inches were converted from metric measurements.

NTX 2000 3rd Generation / NTX 2500 3rd Generation / NTX 3000 3rd Generation

Integrated Mill Turn Center at Highest Level of Accuracy and Efficiency

The NTX 2000 3rd Generation / NTX 2500 3rd Generation / NTX 3000 3rd Generation equipped with DMG MORI's new technologies are capable of integrating various machining processes with high accuracy, superb cutting abilities and wide machining envelops.
The models enable 6-face machining with the Right Spindle and complete a whole process of part machining on one machine.
The user interface "ERGO*line* X" utilizes a touch panel screen and keyboard to easily set up complex turn-mill operations.
The NTX 2000 3rd Generation / NTX 2500 3rd Generation / NTX 3000 3rd Generation provides the highest level of performance, making it the ideal solution for customers aiming for higher efficiency and cost reduction in their production processes.

Simultaneous 5-axis machining

+ Simultaneous 5-axis machining of complex parts with the direct drive motor (DDM) installed in the B-axis

High productivity

+ Higher machining flexibility by the compactMASTER with a full length of only 350 mm (13.8 in.)
+ Y-axis on Turret 2 (Option) for various use <±40 mm (±1.5 in.)>
+ The B-axis rotation range of 240° and rotation speed of 100 min^{-1}, the X-axis travel of 675 mm (26.5 in.) <-125 - +550 mm (4.9 - +21.6 in.)>, the Y-axis travel of 300 mm (11.8 in.)<±150 mm (±5.9 in.)>
+ Equipped with a Capto C6 turn-mill spindle as standard, max. spindle speed of 12,000 min^{-1}, 20,000 min^{-1} (Option)
+ Right spindle (Option) for 6-face machining, and complete machining of parts on one machine

High precision

+ Thoroughly controlled thermal displacement by cooling water circulation in the body
+ Full-closed loop control on B- / C-axis <Scale feedback> equipped as standard

High rigidity

+ High-rigidity bed and roller guides

CELOS X Operation System

+ Comprehensive management, documentation and visualization of jobs, machining processes and machine data
+ Expansion of functions possible by adding applications. High affinity with existing information infrastracture and software

Unique energy-saving function

+ GREENmode for visualizing power saving settings and saving effect

CELOS: Control Efficiency Lead Operation System

NTX 2000 3rd Generation / NTX 2500 3rd Generation / NTX 3000 3rd Generation

Best Solutions for Your Shop Floor

The NTX 2000 3rd Generation / NTX 2500 3rd Generation / NTX 3000 3rd Generation provide solutions for higher machining accuracy, higher production efficiency by automation, better chip disposal, maintainability and setup performance. With various cutting-edge solutions, both machines demonstrate their capabilities to the full extent and achieve a higher level of machining.
DMG MORI offers the best solutions that solve your shop issues.

1

Turn-mill spindle

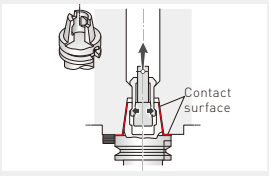
For high-speed rotation

20,000 min^{-1}
High-speed

2

Tool Holder

HSK-A63 (T63) also available



Taper hole of turn-mill spindle
HSK-A63 (T63)

3

Turret 2

Greater machining efficiency

10-station Turret
Milling

4

Spindle output

For heavy-duty cutting

turnMASTER spindle

5

Workpiece support

Workpiece support suitable for your workpiece and machining

Chuck

Center on Right spindle

Center on Turret 2

6

Long workpieces

Chatter control

Alternating speed

Steady rest on Turret 2

7 Cutting technology

Improving machining efficiency with Technology Cycles all at once


Efficient Production Package (High-speed canned cycle)


gearSKIVING


MVC (Machine Vibration Control)

8 Mass production, automation

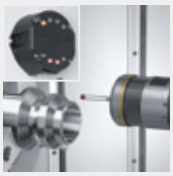
Various automation / mass-production solutions


Bar feeder


Workpiece unloader (Right spindle side)

9 Machining accuracy

Meeting high accuracy requirements


In-machine measuring system


Full closed loop control (Scale feedback)


Tool balancer


Coolant chiller

10 Better setup performance

Drastically shortened setup time


Automatic in-machine tool presetter


3D quickSET


External tool presetter


Tool measurement (Tool Visualizer)

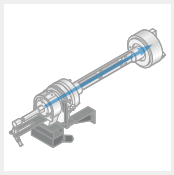
11 Chip disposal

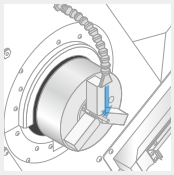
Higher cutting performance

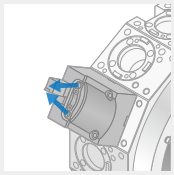

Chip conveyor


Super-high pressure coolant system


Zero sludge coolant tank (standard equipment)


Through-spindle coolant system


Coolant in upper part of chuck


Air blow (Tool tip)

12 Maintenance

Improved production efficiency by preventive maintenance


DMG MORI Messenger

MPC (Machine Protection Control)

my DMG MORI


Air dryer


*zero*FOG

NTX 2000 3rd Generation / NTX 2500 3rd Generation / NTX 3000 3rd Generation

Various Functions Available for Your Best Choice

The Turret 2 (Option) is available for the Right spindle (Option) and the tailstock specifications, and the milling function and the Y-axis function are available for the Turret 2 as an option. With the wide range of options, Turret 2 can offer eight different configurations to meet every customer's needs.

NTX 2000 3rd Generation
NTX 2500 3rd Generation
NTX 3000 3rd Generation

● Photo: Tool storage capacity 76 tools, Right spindle and Turret 2
✻ NTX 2500 3rd Generation, Control unit for FANUC, Tool storage capacity 38 tools, Including the chip conveyor

■ : Standard　□ : Option

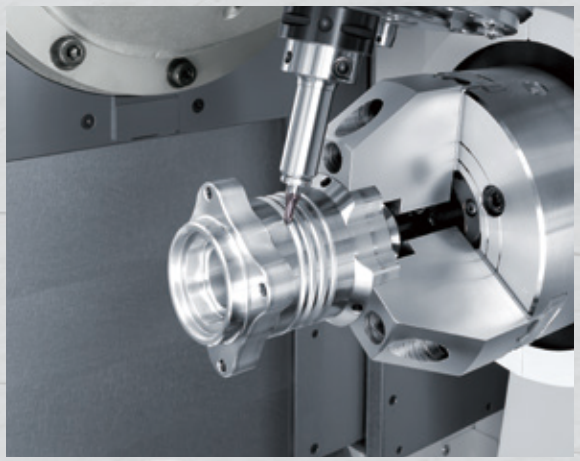
T1 : Turn-mill spindle　**T2** : Turret 2　**LS** : Left spindle

MC1 : Turn-mill spindle (Milling)　**MC2** : Turret 2 (Milling)　**RS** : Right spindle

Y1 : Turn-mill spindle (Y-axis)　**Y2** : Turret 2 (Y-axis)　**TS** : Tailstock

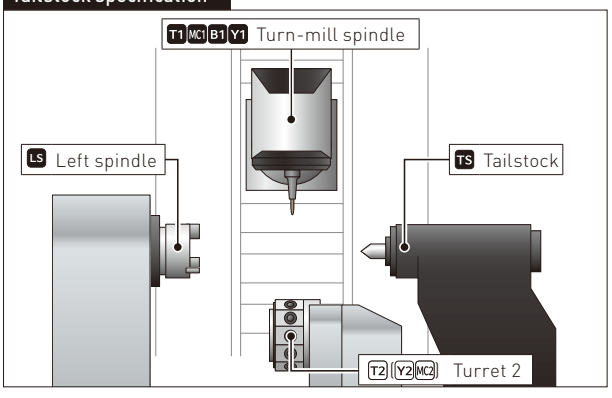
B1 : Turn-mill spindle (B-axis)

● The Right spindle specification (RS) is not equipped with a tailstock (TS).

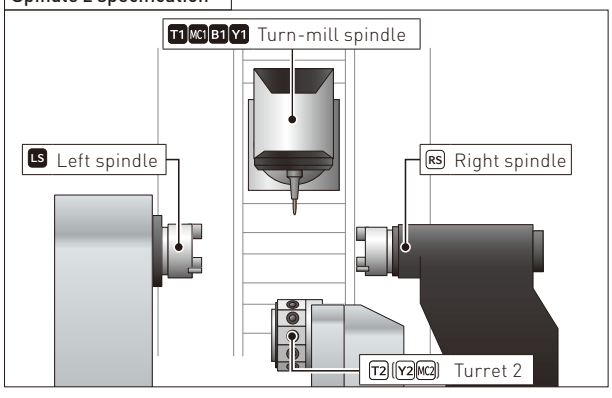


Specifications

Tailstock specification



Spindle 2 specification



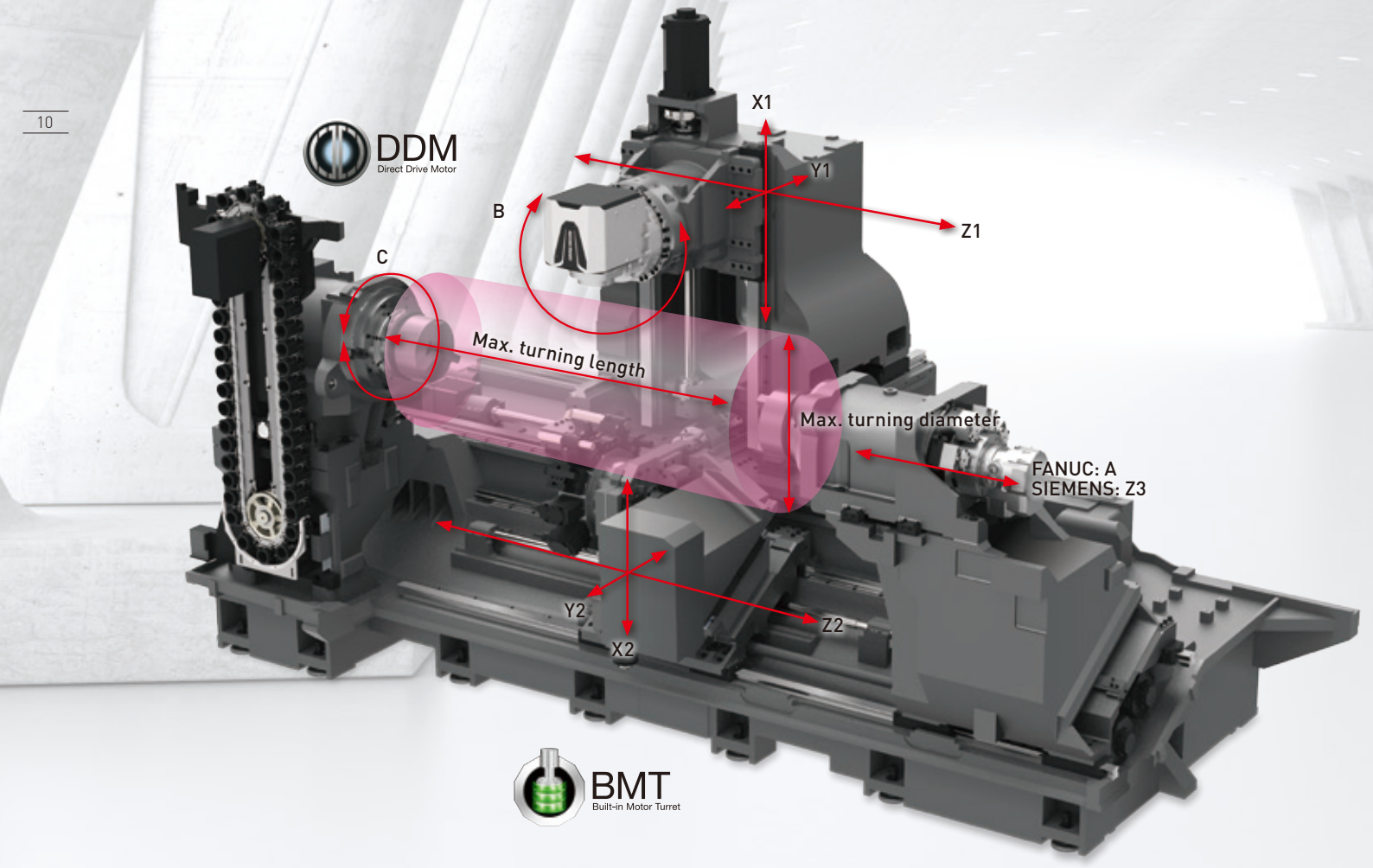
	NTX 2000 / NTX 2500 / NTX 3000							
Basic specification	T1 MC1 B1 Y1 LS TS							
Optional specifications	—	T2	T2 MC2	T2 MC2 Y2	RS	T2 RS	T2 MC2 RS	T2 MC2 Y2 RS
Turn-mill spindle / Left spindle	●	●	●	●	●	●	●	●
Right spindle	—	—	—	—	○	○	○	○
Turret 2 (Without the milling function)	—	○	—	—	—	○	—	—
Turret 2 (Milling specifications)	—	—	○	○	—	—	○	○
Turret 2 (Y-axis specifications)	—	—	—	○	—	—	—	○
Tailstock	●	●	●	●	—	—	—	—

●: Standard　○: Option　—: Not applicable

NTX 2000 3rd Generation / NTX 2500 3rd Generation / NTX 3000 3rd Generation

Perfect Specifications for Every Workpiece

The NTX 2000 3rd Generation / NTX 2500 3rd Generation / NTX 3000 3rd Generation provide a wide range of specifications. Options are available according to your needs. Please select optimal specifications and options suitable for your machining and workpiece sizes.



DDM: Direct Drive Motor
BMT: Built-in Motor Turret

■ : Standard　□ : Option

T1 : Turn-mill spindle　**T2** : Turret 2　**LS** : Left spindle

MC1 : Turn-mill spindle (Milling)　**MC2** : Turret 2 (Milling)　**RS** : Right spindle

Y1 : Turn-mill spindle (Y-axis)　**Y2** : Turret 2 (Y-axis)　**TS** : Tailstock

B1 : Turn-mill spindle (B-axis)

●The Right spindle specification (RS) is not equipped with a tailstock (TS).

Travel

			NTX 2000 / NTX 2500 / NTX 3000							
Basic specification			T1 MC1 B1 Y1 LS TS							
Optional specifications			—	T2	T2 MC2	T2 MC2 Y2	RS	T2 RS	T2 MC2 RS	T2 MC2 Y2 RS
Turn-mill spindle	X1-axis	mm (in.)	675 (26.5)<-125 - +550 (-4.9 - +21.6)>							
	Y1-axis	mm (in.)	300 (11.8) <±150 (±5.9)>							
	Z1-axis	mm (in.)	1,562 (61.4) + 164 (6.4) <For ATC>							
	B-axis		240°							
Turret 2	X2-axis	mm (in.)	—	225 (8.8)			—	225 (8.8)		
	Y2-axis	mm (in.)		—		80 (3.1) <±40 (±1.5)>		—		80 (3.1) <±40 (±1.5)>
	Z2-axis	mm (in.)	—	1,542 (60.7)			—	1,542 (60.7)		
Left spindle / Right spindle	C-axis		360°				360° / 360°			
Tailstock, Right spindle	FANUC: A-axis SIEMENS: Z3-axis	mm (in.)	1,542 (60.7), 1,542 (60.7)							

Workpiece size

			NTX 2000	NTX 2500	NTX 3000
Max. distance between centers		mm (in.)	1,822 (71.7)	1,842 (72.5)	1,862 (73.3)
Max. turning diameter (Turn-mill spindle)		mm (in.)	ϕ670 (ϕ26.3)		
Max. turning diameter, Turret 2		mm (in.)	ϕ365 (ϕ14.3)<12-station>, ϕ325 (ϕ12.7) <10-station>		
Max. turning length		mm (in.)	1,538 (60.5)	1,530 (60.2)	1,519.3 (59.8)
Bar work capacity*1*2	Left spindle	mm (in.)	ϕ65 (ϕ2.5)	ϕ80 (ϕ3.1)	ϕ102 (ϕ4.0)
	Right spindle	mm (in.)	ϕ65 (ϕ2.5)	ϕ80 (ϕ3.1)	ϕ80 (ϕ3.1)

*1 Bar work capacity: Depending on the chuck / cylinder used and its restrictions, it may not be possible to reach full bar work capacity.

*2 When a specific chuck / cylinder is selected.

NTX 2000 3rd Generation / NTX 2500 3rd Generation / NTX 3000 3rd Generation

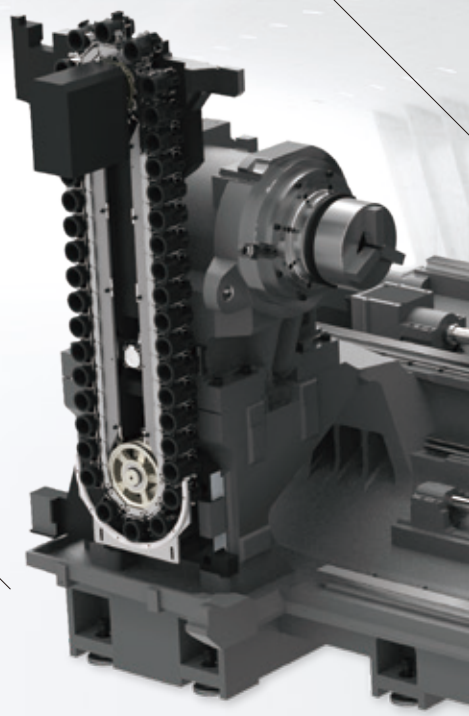
Ultimately High-Rigidity Structure to Bring Best Performance

DMG MORI pursues high-rigidity machines from the basic designing stage by FEM analysis. The NTX 2000 3rd Generation / NTX 2500 3rd Generation / NTX 3000 3rd Generation are equipped with a thick, high-rigidity bed to stably support the turnMASTER, a high-rigidity spindle; compactMASTER with a wide range of motion; and Turret 2 for heavy-duty cutting, and maximize the machining performance. The models have aging resistance, maintaining high-accuracy machining for a long period of time.

High-rigidity Machine Body

+ Thick and high-rigidity bed to stably support the moving units
+ Four sliders at the front bottom of the column
+ High-rigidity body designed using FEM analysis
+ Machine body with high vibration resistance designed by frequency response analysis
+ Roller guides allowing smooth movement and high rigidity for higher positioning accuracy
+ The double anchor method is employed for ball screws and support bearings, which ensures high rigidity for heavy-duty machining and high-accuracy machining

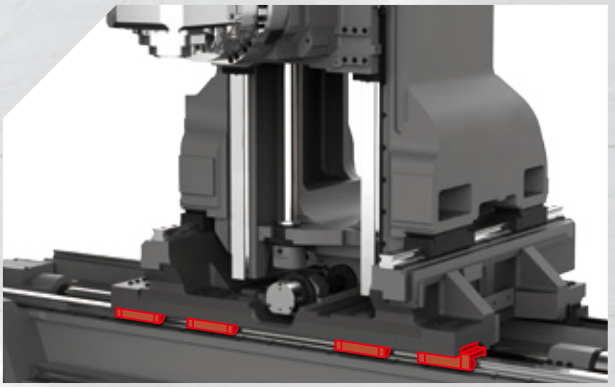
FEM: Finite Element Method



High Accuracy for Long Time

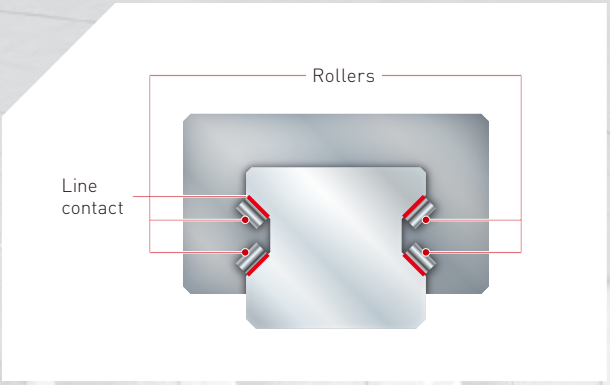
+ Circularity <Turning>
  Left spindle - Turn-mill spindle: 0.532 µm (Actual results)
  Material: Brass
+ Circularity <Milling>
  X – Y plane: 1.8 µm (Actual results)
  X – Z plane: 1.3 µm (Actual results)
  X – Y - Z plane: 2.2 µm (Actual results)
  Material: Aluminum

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

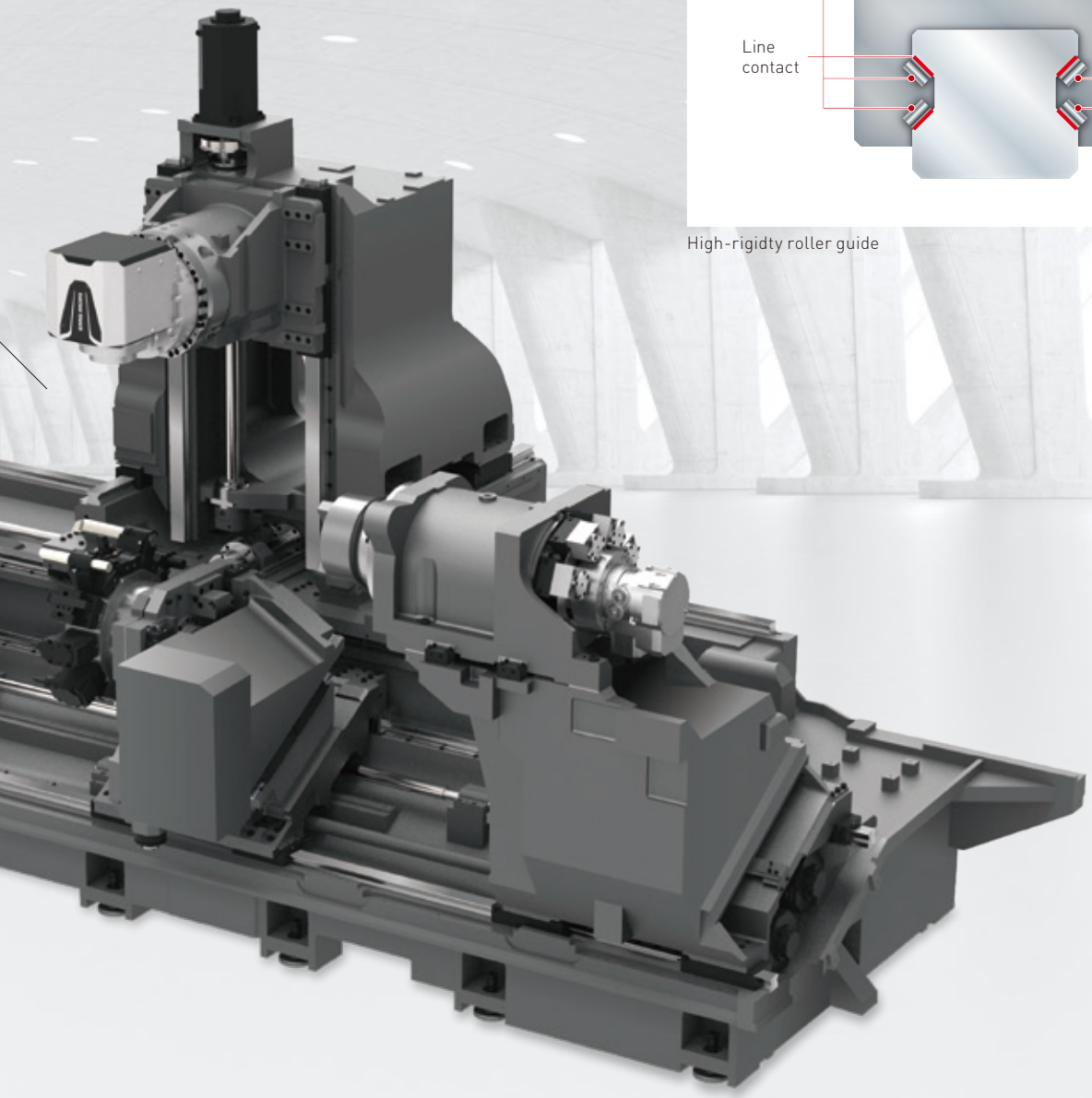


Four sliders at the front bottom of the column

turnMASTER



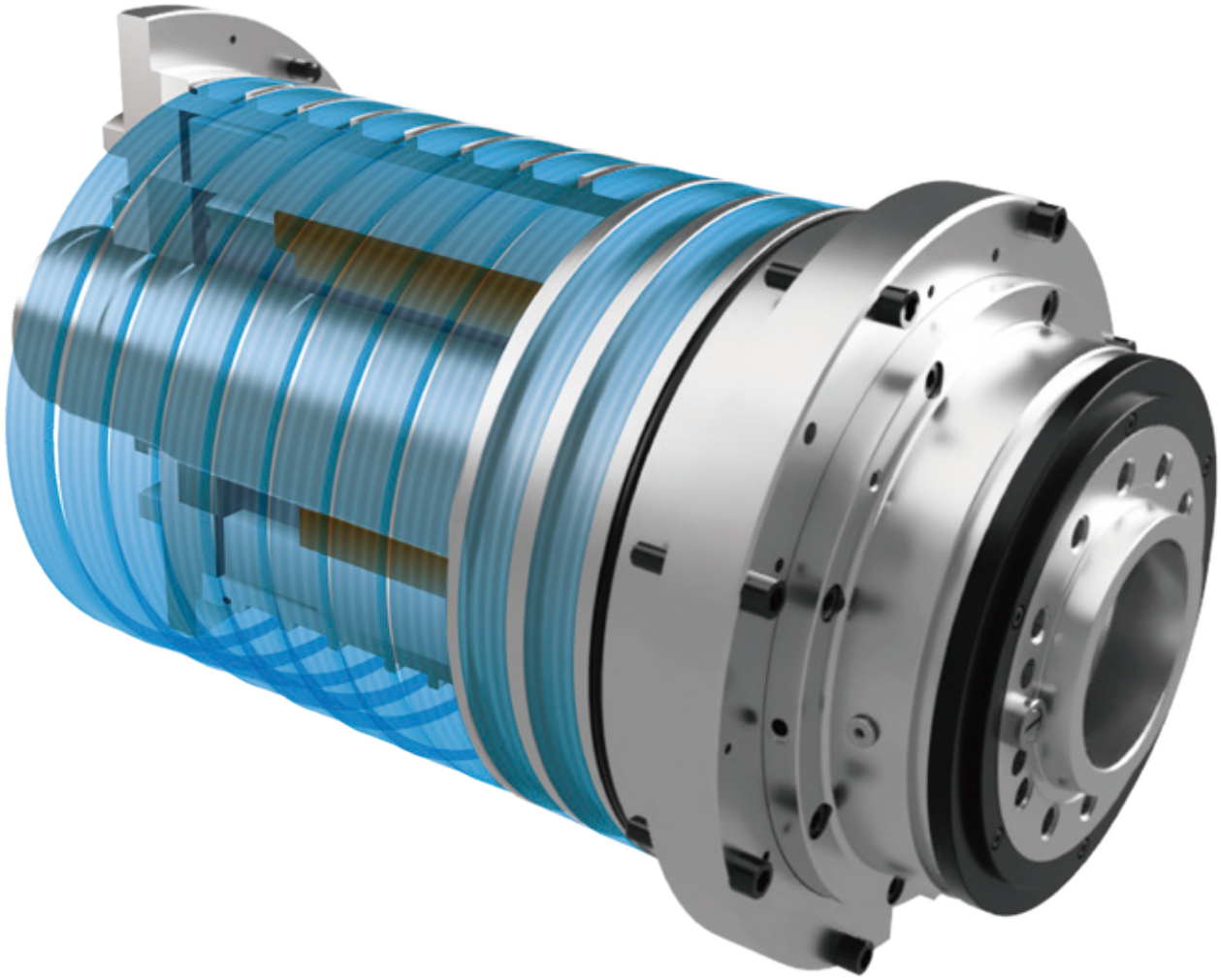
High-rigidty roller guide



NTX 2000 3rd Generation / NTX 2500 3rd Generation / NTX 3000 3rd Generation

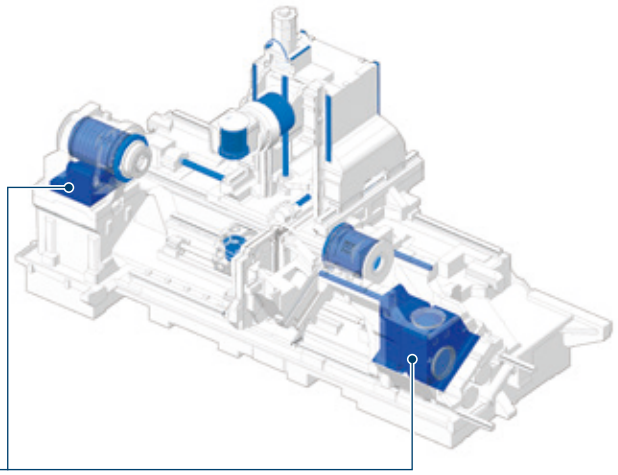
High-accuracy Machining by Thermal Displacement Control

The 3rd Generation models contrive innovative ways to achieve stable and high-accuracy machining. The models control thermal displacement by the cooling water circulating function that circulates cooling water around heat sources such as motors of the spindle, turn-mill spindle and turret; ball screws and ball nuts. The optimized casting form can also help control the thermal displacement of the machine.



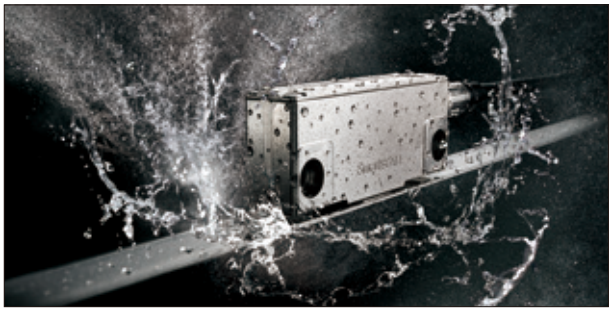
Cooling water circulation in the machine body

DMG MORI developed a new technology "Cooling water circulation in the machine body" as a countermeasure against thermal displacement that directly affects machining accuracy. Cooling water circulated to heat sources, which are motors of the spindle, turn-mill spindle and turret; ball screws and ball nuts minimizes thermal displacement and contributes to high-accuracy machining.



*Patent obtained in Japan, Germany, the U.S. and China

Full closed loop control <Scale feedback> (Standard features)



+ Superior precision with the Magnescale full closed loop control (Scale feedback)
+ Magnetic measuring system with a high resolution of 0.01 µm
+ Resistance to oil and condensation due to a magnetic detection principle
+ Impact resistance of 980 m/s^2 (38,582.6 in./s^2)
+ Vibration resistance of 250 m/s^2 (9,842.5 in./s^2)
+ High-accuracy machining achieved by the scale with the thermal expansion coefficient equivalent to the machine castings
+ Protection level of IP67 and bearingless non-contact structure for high reliability

Coolant chiller <Separate type> (Standard features)

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

When using oil-based coolant or a super-high-pressure coolant system, please be sure to consult our sales representative.

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

NTX 2000 3rd Generation / NTX 2500 3rd Generation / NTX 3000 3rd Generation

World's Highest Class Performance Spindle turnMASTER

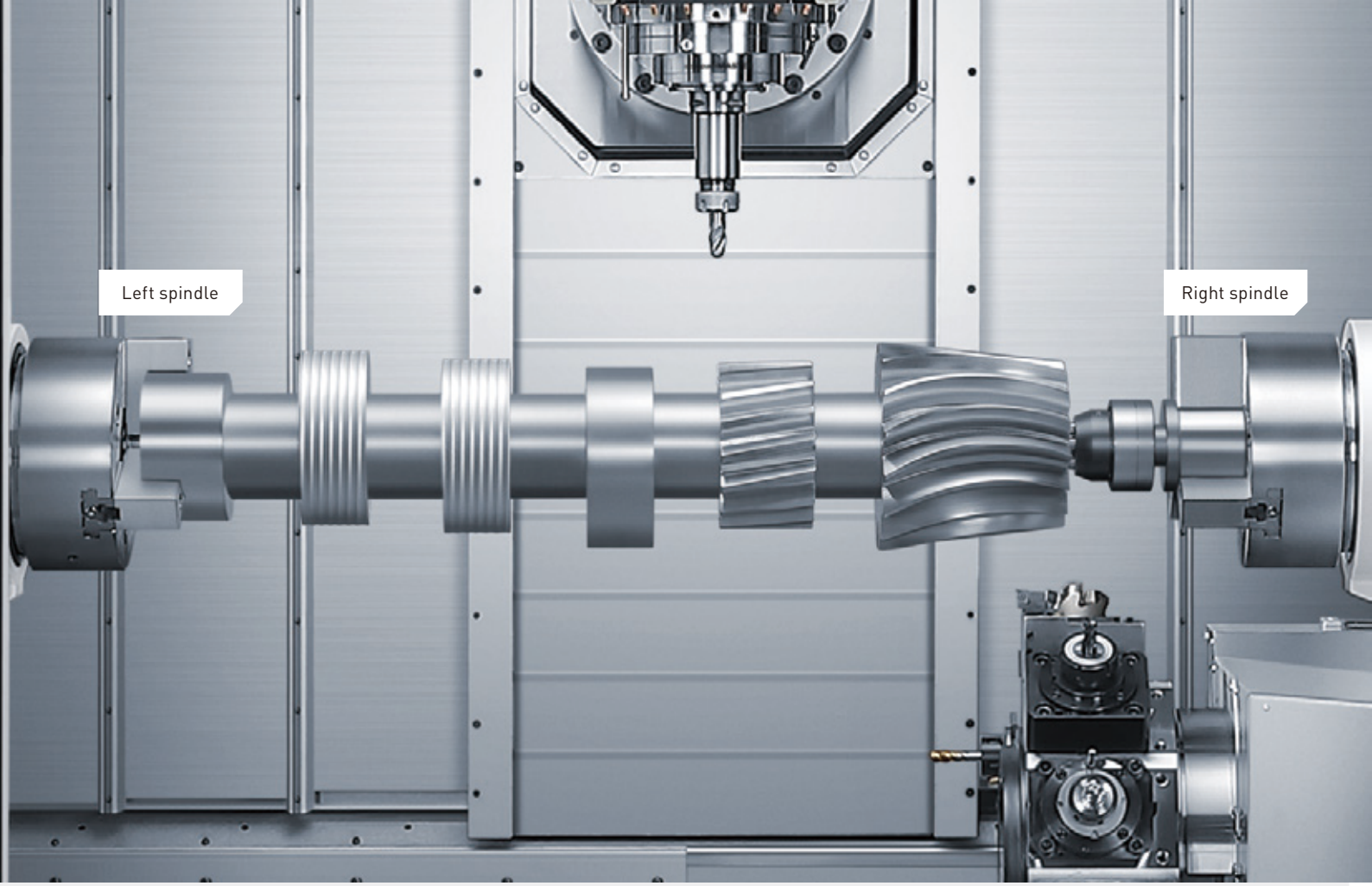
3-year spindle warranty*

The in-house manufactured spindle with the company's long years of expertise and know-how delivers overwhelming performance in heavy-duty cutting that requires rigidity.
The high-performance spindle equipped with outstanding cutting capabilities and durability contributes to increasing your shop floor productivity.

* No operation hour limit

Sophisticated spindle labyrinth structure

+ More sophisticated labyrinth structure designed for frequent use of high-pressure coolant, and coolant ingress into the spindle prevented by featuring spindle air purge as standard, realizing high spindle durability



Chuck size <Left spindle / Right spindle>

+ NTX 2000: 8-inch, 10-inch / 8-inch, 10-inch
+ NTX 2500: 10-inch, 12-inch / 10-inch, 12-inch
+ NTX 3000: 12-inch, 15-inch / 10-inch, 12-inch

Max. spindle speed <Left spindle / Right spindle>

+ NTX 2000: 5,000 min^{-1} / 5,000 min^{-1}
+ NTX 2500: 4,000 min^{-1} / 4,000 min^{-1}
+ NTX 3000: 3,000 min^{-1} / 4,000 min^{-1}

Spindle output <FANUC>

+ NTX 2000: 30 / 26 / 22 kW (40 / 34.7 / 30 HP) <10%ED / 40%ED / cont> <Left spindle>
  30 / 26 / 22 kW (40 / 34.7 / 30 HP) <10%ED / 40%ED / cont> <Right spindle>
+ NTX 2500: 26 / 22 / 15 kW (34.7 / 30 / 20 HP) <10%ED / 40%ED / cont> <Left spindle>
  26 / 22 / 15 kW (34.7 / 30 / 20 HP) <10%ED / 40%ED / cont> <Right spindle>
+ NTX 3000: 36 / 30 / 25 kW (48.0 / 40 / 33.3 HP) <10%ED / 30 min / cont> <Left spindle>
  26 / 22 / 15 kW (34.7 / 30 / 20 HP) <10%ED / 40%ED / cont> <Right spindle>

Spindle output <SIEMENS>

+ NTX 2000: 26 / 22 kW (34.7 / 30 HP) <40%ED / cont> <Left spindle>
  26 / 22 kW (34.7 / 30 HP) <40%ED / cont> <Right spindle>
+ NTX 2500: 26 / 22 / 15 kW (34.7 / 30 / 20 HP) <10%ED / 40%ED / cont> <Left spindle>
  26 / 22 / 15 kW (34.7 / 30 / 20 HP) <10%ED / 40%ED / cont> <Right spindle>
+ NTX 3000: 36 / 30 / 25 kW (48.0 / 40 / 33.3 HP) <10%ED / 30 min / cont> <Left spindle>
  26 / 22 / 15 kW (34.7 / 30 / 20 HP) <10%ED / 40%ED / cont> <Right spindle>

● The chuck is optional.

NTX 2000 3rd Generation / NTX 2500 3rd Generation / NTX 3000 3rd Generation

The compactMASTER, the Most Compact Turn-mill Spindle in its class of only 350 mm (13.8 in.) with high rigidity

The compactMASTER, a high-rigidity spindle with a compactness of only 350 mm (13.8 in.) in length is equipped with the DDS (Direct Drive Spindle). It is the smallest in its class, yet ensures a wide machining envelop. The spindle can handle a wider range of workpieces to further achieve process integration, contributing to boosting your productivity.

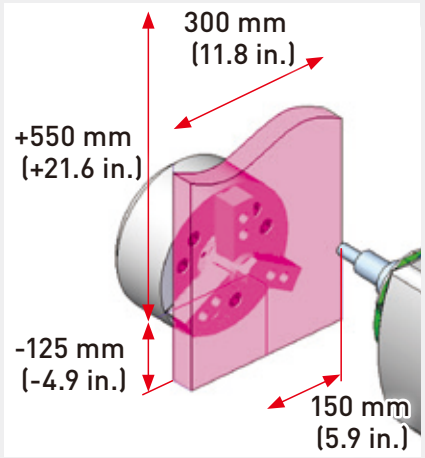
+ A direct drive spindle (DDS) adopted as the turn-mill spindle
+ Max. turn-mill spindle speed: 12,000 min^{-1}, 20,000 min^{-1}
+ B-axis driven by a direct drive motor (DDM)
+ Full-closed loop control on B-axis (Scale feedback)
+ Highly rigid two-face contact specification: Capto C6, HSK-A63
+ Tool storage capacity: 38 tools, 76 tools, 114 tools, 194 tools, 246 tools
+ Max. tool diameter: ϕ130 mm (ϕ5.1 in.) <Without adjacent tools>, ϕ70 mm (ϕ2.8 in.) <With adjacent tools>

compactMASTER

The spindle unit employs new bearings effective for continuous high-speed rotations of the turn-mill spindle, and the labyrinth structure is enhanced for heavy use of high-pressure coolant. The air purge is provided as standard to prevent coolant from entering the turn-mill spindle, ensuring high durability.

X-axis travel in the negative direction

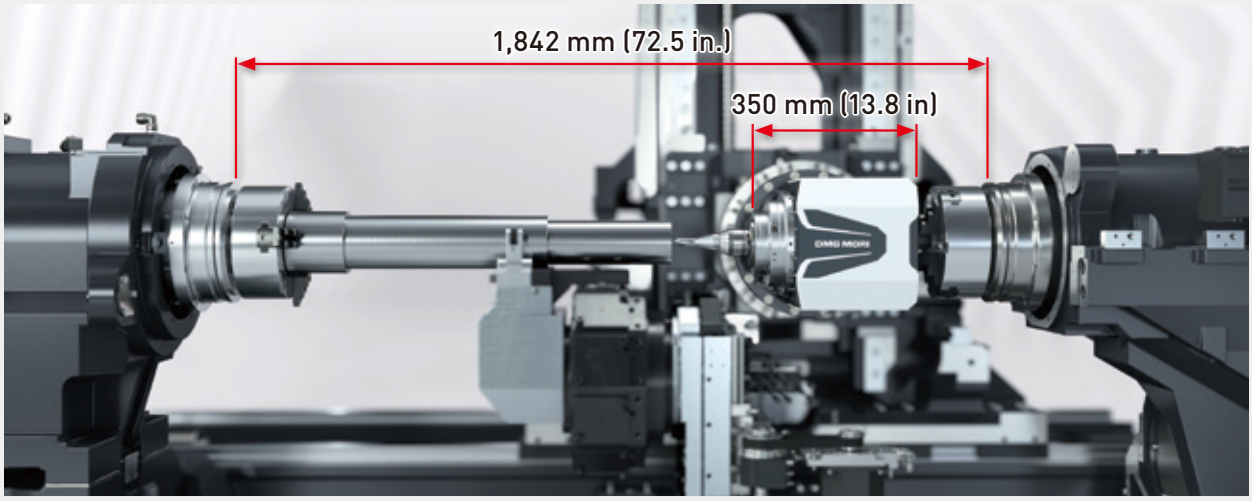
Thanks to the 125 mm (4.9 in.) X-axis stroke in the negative direction, the spindle can accurately machine to the lower side of the chuck only with the linear axis and no polar coordinate interpolation. Machining can be done with the X- / Y- / Z- / B-axis, and no C-axis is used, so operators can create programs in the same way as they do for machining centers.



Workpiece samples: Housing
Workpiece size: ϕ300 mm (ϕ11.8 in.)
Machining possible without the C-axis

Compact turn-mill spindle with less interference with the machining envelop of Turret 2

Sufficient area is secured for machining even when the turn-mill spindle is located in-between left spindle and right spindle.



Zero backlash achieved by high-speed turning 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.

DDM Direct Drive Motor

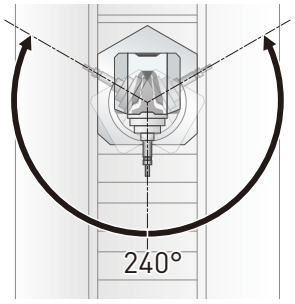
Effects of DDM

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

DDM: Direct Drive Motor

		NTX 2000 NTX 2500 NTX 3000
B-axis rotation range		240°
B-axis rotational speed	min^{-1}	100
Min. indexing increment		0.0001°

High-Flexibility B-axis

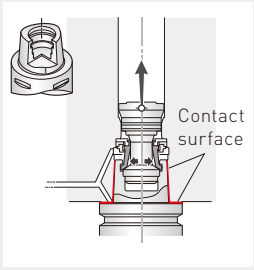


Flange contact specifications

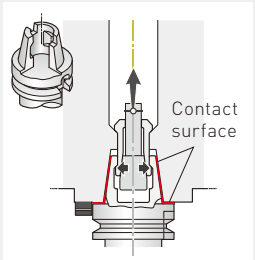
Flexural rigidity of tools has been improved by the contact with both the spindle taper and the end face.
This extends tool life and improves cutting performance and machining accuracy.

● DMG MORI manufactures all the spindles in- house, including the two-face contact specification.

Capto Specifications



HSK Specifications (Option)



Tool magazine

			NTX 2000 / NTX 2500 / NTX 3000
Tool storage capacity			38, 76, 114, 194, 246
Max. tool diameter	Without adjacent tools	mm (in.)	ϕ130 (ϕ5.1)
	With adjacent tools	mm (in.)	ϕ70 (2.7)
Max. tool length		mm (in.)	400 (15.7)
Max. tool mass		kg (lb.)	8 (17.6), 10 (22.0) <specification for 10 kg (22.0 lb.)>
Max. tool mass moment (From spindle gage line)		N • m (ft • lbf)	7.84 (5.78)

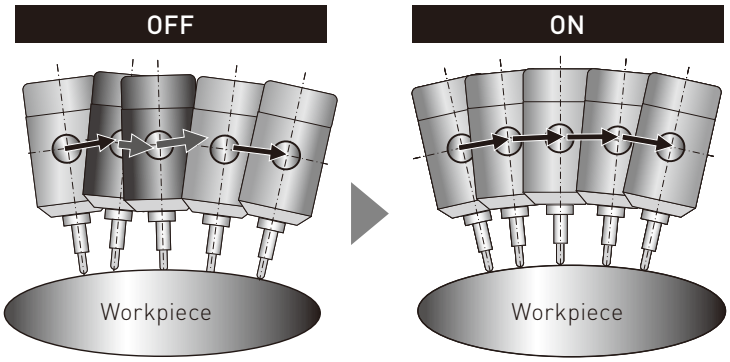
● Photo: Tool storage capacity 76 tools

Function for supporting simultaneous 5-axis machining

SVC function<FANUC> / Advanced Surface (CYCLE832) <SIEMENS>

The SVC function reads the program commands for tool tip control in advance and performs automatic compensation to achieve smooth tool feed. The combination use with the DDM (Direct Drive Motor) ensures higher surface quality and shorter cycle time in 5-axis machining.

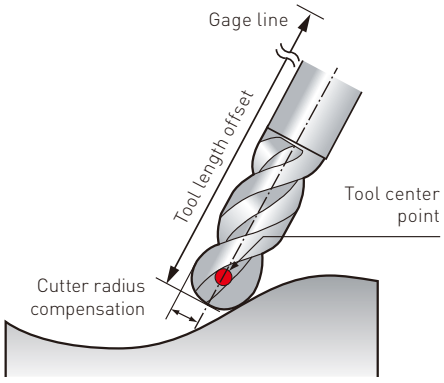
Motion of the SVC function



The SVC function includes the following functions:

+ AI contour control II
+ Nano smoothing II
+ Smooth TCP
+ G332 tolerance command

Tool center point (TCP) control <FANUC> / TRAORI <SIEMENS>



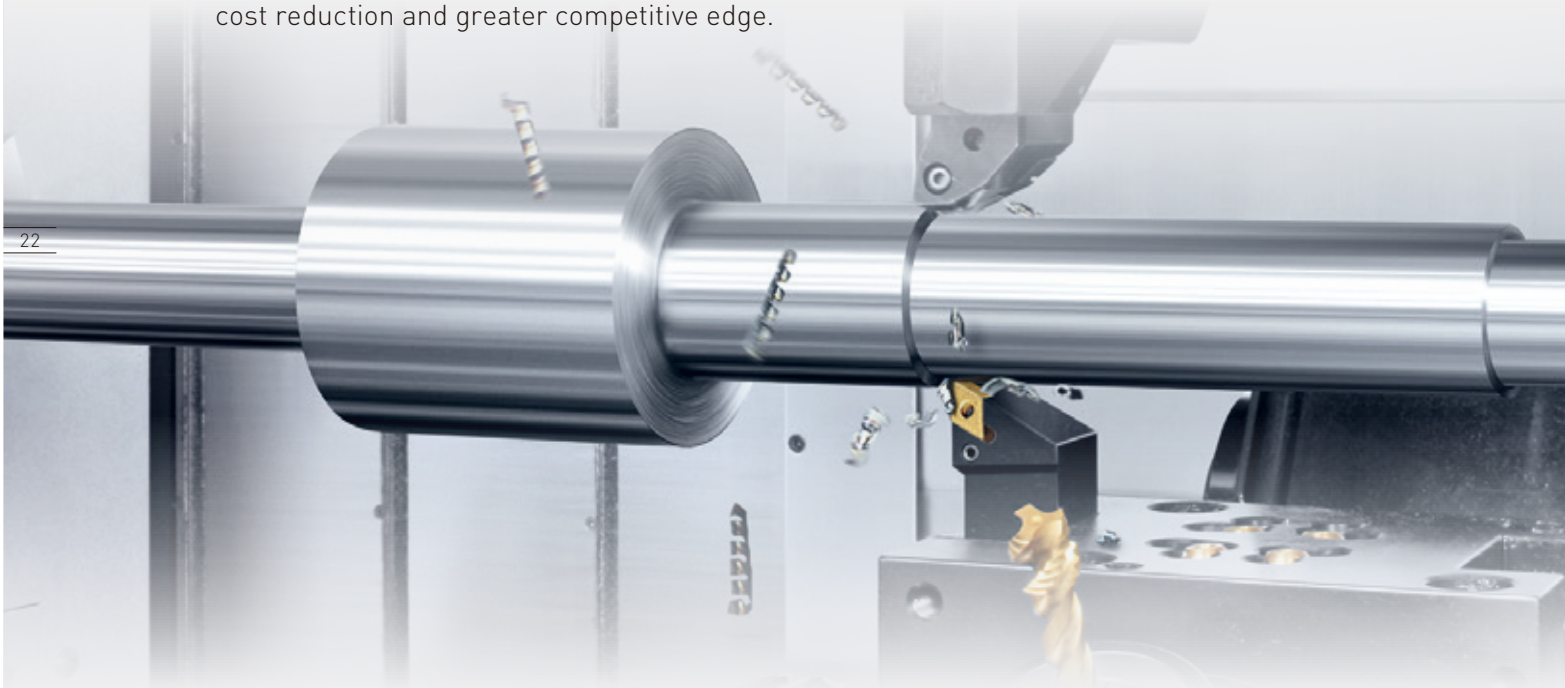
Main features

+ 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.

NTX 2000 3rd Generation / NTX 2500 3rd Generation / NTX 3000 3rd Generation

High-performance Turret 2 Broadens Machining Capabilities with Y-axis

By employing the high-performance Turret 2 (Option) that combines technologies and expertise DMG MORI has cultivated through turning center development, the machine achieves efficient and flexible turning, secondary processing and rear machining and reduces cycle times.
The milling specification model is equipped with the BMT (Built-in motor turret) which controls heat generation by jacket cooling, achieving outstanding machining accuracy.
The Y-axis specification with an axis travel of ±40 mm (±1.5 in.) is also available to allow for machining that has not been possible with the conventional Turret 2, thereby greatly contributing to cost reduction and greater competitive edge.

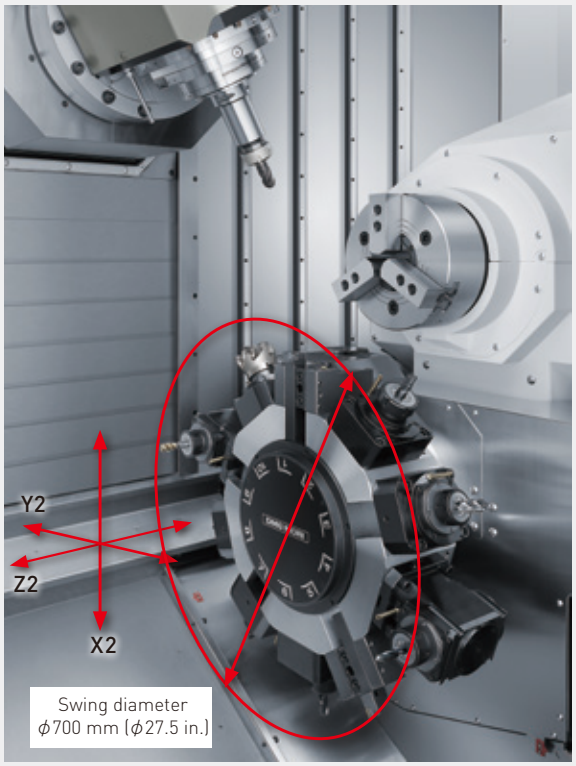


Turret 2 featuring BMT technology (Option)

+ Number of tool stations: 12 tools, 10 tools
+ Max. milling spindle speed: 12,000 min^{-1}, 6,000 min^{-1}
+ The Y-axis specification (Option) with an axis travel of ±40 mm (±1.5 in.) offers hobbing with the turn-mill spindle and turret 2 synchronized

Large indexing diameter and tool holders for milling operation on the Right spindle side (Option)

The 12-station turret with a swing diameter of 700 mm (27.5 in.) offers less interference with adjacent tools and achieves flexible tooling.
An end face milling holder can be mounted on Turret 2 to carry out end face milling on the Right spindle side, which leads to shorter cycle times.

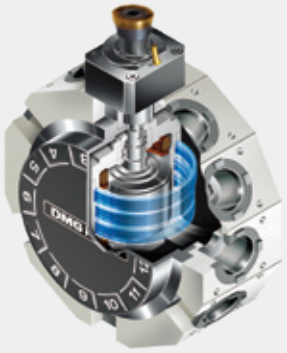


Turret 2 with Y-axis (Option)

Turret 2 is equipped with the Y-axis.
The ±40 (±1.5 in.) mm axis travel enables not only machining with Turret 2, but also heavy-load hobbing with the synchronized turn-mill spindle and Turret 2.

"Mature" and "Evolved" BMT Technology <Turret 2 milling specification> (Option)

BMT
Built-in Motor Turret



The built-in structure, in which the motor is placed inside the turret, minimizes heat generation and vibration, improves transmission efficiency and significantly increases cutting power, speed and accuracy.

Effects of the BMT

+ Improved milling power
+ Improved milling accuracy
+ Controls the turret' s heat and vibration
+ Reduced energy loss
+ Turret temperature increases: Compared with conventional machine 1/10 or less
+ Vibration amplitude: Compared with conventional machine 1/3 or less

BMT: Built-in Motor Turret

Holders for existing machines can be used

DMG MORI's holders are compatible with each other so that holders for existing machines can be used on a new machine. Please consult our sales representative for more details.

Compatible holders	
12-station Turret (Standard)	: NTX 1000 2nd Generation, NTX 2000
10-station Turret (Option)	: NT 4000 Series, NL Series

NTX 2000 3rd Generation / NTX 2500 3rd Generation / NTX 3000 3rd Generation

Cutting-edge Chip Disposal Solution

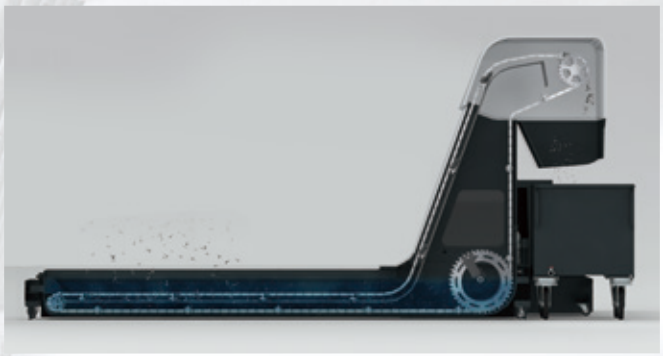
Chips can be one of the main causes leading to machining failure and machine stop.
DMG MORI conducted an in-depth study on them by carrying out various experiments and analyses, and achieved outstanding chip disposal performance.
We offer optimal chip disposal solutions according to a machining condition of each customer.

Coolant tank

The coolant tank can be pulled out to the front, minimizing the space for maintenance.

Handling of different types of chips and coolant filtration (Standard features)

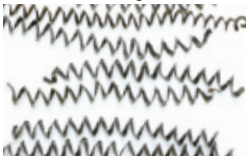
With the hinge type conveyor for long chips and the cleats (Scrapers) on the hinge belt for short and fine chips, the conveyor can handle any type of chip regardless of size and material. The filter with the low-maintenance automatic washing function ensures high accuracy coolant filtration.



Hinge type + Drum filter type chip conveyor

Chip conveyor (Standard features)

+ Provides highly efficient chip disposal

	Workpiece material and chip size		
	Steel		20 mm (0.8 in.)
	Long	Short	Powdery
			
Hinge type + Drum filter type	○	○	△*

* Depending on chip size, chips may pass through the filter and the conveyor and accumulate in the coolant tank. Due to possible effect on machining accuracy, a second filtration device may need to be considered.

- Please consult our sales representative if the chip length exceeds 200 mm (7.9 in.).
- [Chip size criteria] Powdery: minute particles / Short: 50 mm (2.0 in.) or less in length, ϕ40 mm (ϕ1.6 in.) or less in diameter (A lump of chips) / Long: over 50 mm (2.0 in.)

Chip flushing coolant

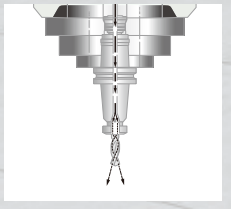
The standard chip flush coolant ensures better chip disposal directly beneath the spindle.

Shower coolant

Washes chips off the machining chamber walls & allows them to flow smoothly into the chip conveyor.

Through-spindle coolant system <Turn-mill spindle>

+ Coolant to be supplied to the tip through the holes of the spindle and tool
+ Effective for chip removal, cooling of machining points and extension of tool life

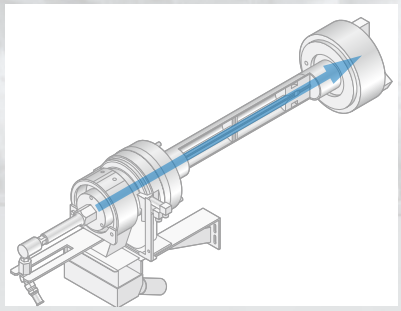


Center through

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

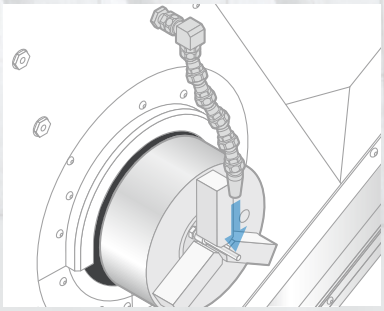
Through-spindle coolant system <Spindle1, 2> (Option)

Coolant supplied through the center of the chuck removes chips generated during I.D. machining.



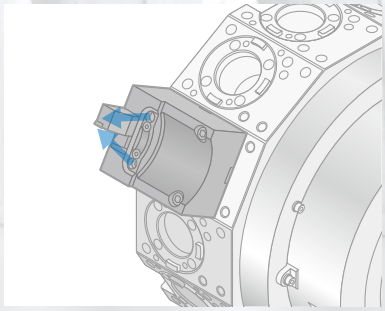
Coolant in upper part of chuck (Option)

Coolant supplied from above the chuck removes chips and minimizes heat generation in the workpiece.

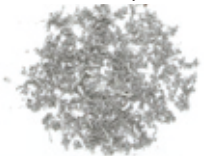


Air blow <Tool tip> (Option)

Air is blown toward the tool tip to blow away chips adhering to the tool.



○: Suitable △: Consideration required —: Not suitable

Workpiece material and chip size					
Cast iron		20 mm (0.8 in.)	Aluminum, non-ferrous metal		20 mm (0.8 in.)
Short	Powdery		Long	Short	Powdery
					
○	△*		○	○	△*

- 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 our sales representative.
- Chip conveyors are available in various types for handling chips of different shape and material. For details, please consult our sales representative.

Unique Solutions against Chip, Coolant, Mist Troubles to Advance Process Integration & Automation

Chips, coolant, and mist generated during machining can cause severe machine troubles and are major hindrances to automation.
The NTX 2000 3rd Generation / NTX 2500 3rd Generation / NTX 3000 3rd Generation adopt state-of-the-art technology to eliminate such problems, enabling long unmanned machine utilization for maximized automation effects.

● 3 machining troubles: Cutting chips, coolant, and mist hinder stable and continuous production and deteriorate the factory environment.

*zero-sludge*COOLANT *pro*

Access here for the video

Innovative Vertical Coolant Tank

The newly developed vertical coolant tank is compact in size, energy-saving and offers high capacity. This makes it the optimal coolant solution for continuous operation of highly productive automation systems.

1. For continuous unmanned operation over long periods

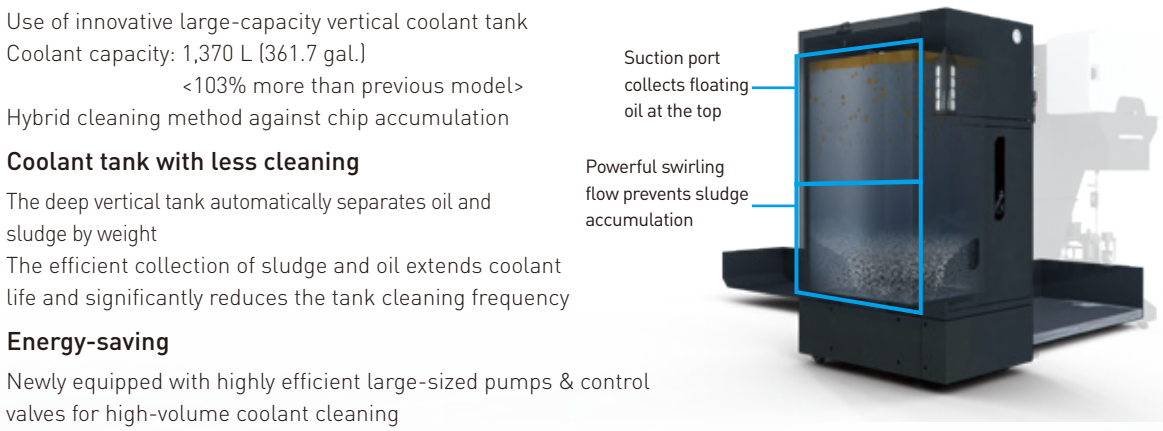
+ Use of innovative large-capacity vertical coolant tank
+ Coolant capacity: 1,370 L (361.7 gal.)
  <103% more than previous model>
+ Hybrid cleaning method against chip accumulation

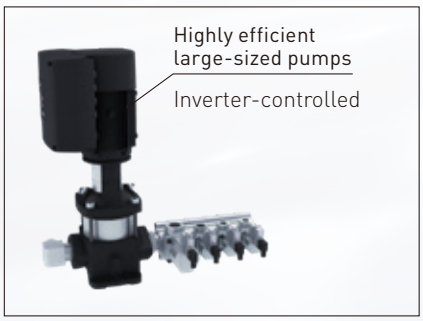
2. Coolant tank with less cleaning

+ The deep vertical tank automatically separates oil and sludge by weight
+ The efficient collection of sludge and oil extends coolant life and significantly reduces the tank cleaning frequency

3. Energy-saving

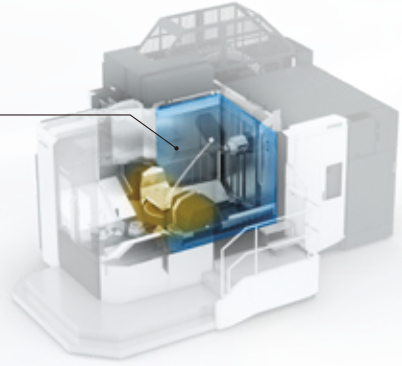
+ Newly equipped with highly efficient large-sized pumps & control valves for high-volume coolant cleaning
+ Inverter adjusts pump to control flow rate and save energy





1. 260 L/min (68.6 gpm)
   High-volume coolant cleaning

+ In-machine cover washing against chip accumulation



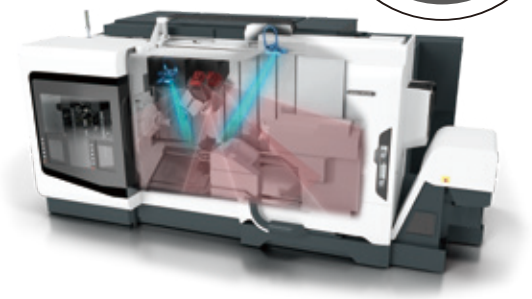
AI chip removal*

AI chip removal uses AI to detect and remove cutting chips from the machining area, workpieces, and fixtures, ensuring smooth automation and high-mix production.

- + Cleaning process tailored to the shape of workpieces and fixtures to prevent chip contamination outside the machining area and ensure smooth automation
- + Efficient cleaning according to chip location and quantity to reduce coolant pump power consumption
- + Efficient operation to reduce coolant consumption

Access here for the video

Also removes chips from workpieces



* Option

Max. discharge pressure 10.0 MPa (1,450 psi) <variable pressure> High-pressure through-spindle coolant system *

- + Discharge pressure can be set for individual tools via command <1.0 to 10.0 MPa (145 to 1,450 psi)>
- + Pressure feedback and inverter control significantly reduce power consumption and coolant heat generation
- + Enables lean chip removal optimized to machining contents

* Option

*zero*FOG*1

Mist collection efficiency of 99.97% or more*2

CLEAN

- + Air quality comparable to household air purifiers
  Mist collection efficiency over 99.97% for 0.3 µm particles
- + Stable collection performance realized by filter clogging monitoring and automatic motor control*3

COMPACT

- + Attachable to the machine body*4.
  No additional floor space necessary.
  Unified design concept with the machine

High maintainability

- + Frequent filter cleaning no longer necessary.
  Automatic cleaning of the primary filter prevents filter clogging
- + Notification of filter exchange timing

ENERGY-SAVING

- + Contribution to SDGs:
  less energy consumption and carbon emission

*zero*FOG

*1 Option
*2 *zero*FOG collects fine particles of 0.3 µm.
*3 Airflow may decrease depending on operating conditions such as mist concentration, oil type, and machining details.
*4 The method of mounting on the machine varies depending on the model and specifications.

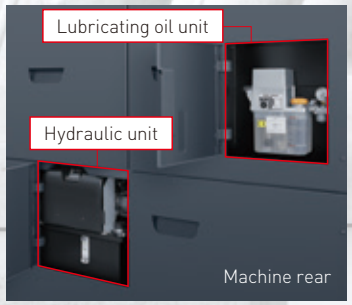
Access here for the video

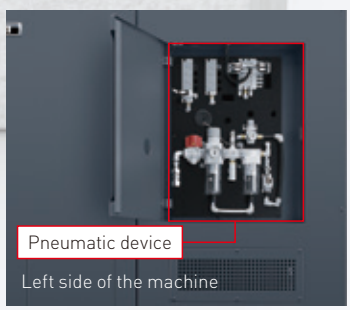
NTX 2000 3rd Generation / NTX 2500 3rd Generation / NTX 3000 3rd Generation

Pursuit of Usability

The NTX 2000 3rd Generation / NTX 2500 3rd Generation / NTX 3000 3rd Generation machines are designed with the highest priority on operator usability.
The usability-focused approach can be seen throughout the machine design, which includes a larger window for greater visibility, and the hydraulic units and other devices in an easily accessible location for better maintainability.

Easy-to-access Units & Devices





The equipment layout is designed for daily operation and maintenance.

● Photo: Right spindle specification

High-rigidity Digital Tailstock <Tailstock specification>

There are two types of tailstocks available: standard MT5 live center (Without center) and optional MT4 built-in center (With center).
The servo motor-driven, high-rigidity digital tailstock helps achieve significant reduction in setup time.

Tool magazine for improved workability

The tool magazine is located at the machine front to enable tool checking at the machine operation position and tool changes in front of the machine. Moreover, operators can easily remove tools by simply pressing a button. The tool magazines with storage capacity of 76 tools (Double chain type) and 114 tools (Triple chain type) are especially suitable for customers who want to attach / detach tools while one magazine is rotating. In addition, with the magazine operation panel, all operations necessary for tool setup can be performed from the magazine side, reducing operators' work time.

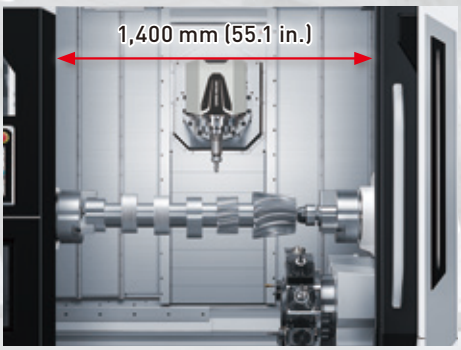
Wide-opening magazine door

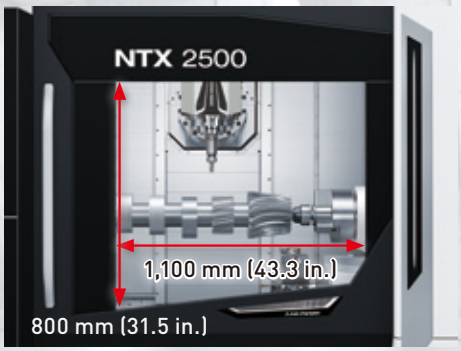
Tool removal with a single push of a button

7-inch touch panel usable with gloves

Find a video about the magazine operation panel here.

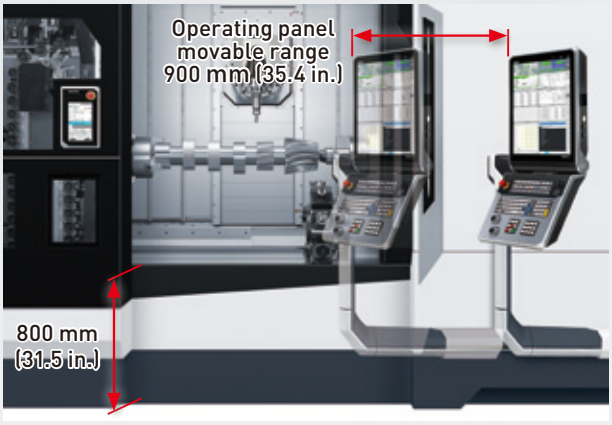
Door with Outstanding Visibility





ERGO*line* X Touch with Superior Operability

The movable, swivel touch-screen operating panel can move 900 mm (35.4 in.) in both the left and right directions to ensure better accessibility to the spindle and the workpiece.



NTX 2000 3rd Generation / NTX 2500 3rd Generation / NTX 3000 3rd Generation

Automation Solutions

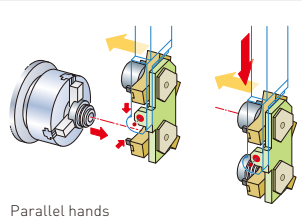
DMG MORI provides a variety of automation systems such as a gantry loader system and a bar feeder system, as well as various automation support functions.
The automation system completes a whole process from provision of materials to discharge of finished products on one machine and reduces non-cutting time, thereby contributing to increasing your profitability.

Large capacity magazine (194 or 246 tools)

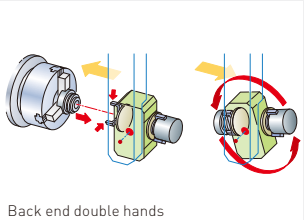
DMG MORI provides flexible solutions such as the large capacity magazine to respond to the increasing high-mix low-volume production of customers. Despite its large capacity, the space-saving design of the tool magazine makes it ideal for automated systems. A bar feeder can also be attached for automatic material loading.

Gantry-type loader system (Option) <Consultation is required>

This is a high-speed mass production system that automates a whole process from provision of materials to discharge of finished products.



Parallel hands



Back end double hands

Gantry loader standard accessory / specification

+ 10-station rotary workstocker (LG-10)
+ Hand airblow
+ Chuck air-blow
+ Automatic power-off system
+ Workpiece counter (PC counter)
+ Spindle orientation
+ Low air pressure detecting switch

				LG-10 (Machine travel type)
Gantry loader	Max. travel speed	X-axis <Hand moves up and down>	m/min (fpm)	90 (295.2)
		Z-axis <Loader moves right and left>	m/min (fpm)	120 (393.7)
Work stocker	Applicable workpiece size	Outer diameter	mm (in.)	ϕ40 (1.6) - 200 (7.8)
	Number of pallet tables			10, 20
	Max. workpiece mass		kg (lb.) / Pallet	75 (165.0)
	Max. workpiece stacked height		mm (in.)	470 (18.5)
Loader hand	Hand type			Back end hands
	Applicable workpiece size	Outer diameter	mm (in.)	ϕ40 (1.6) - 200 (7.8)
		Length	mm (in.)	20 (0.8) - 150 (5.9)
		Max. mass	kg (lb.)	10 (22.0)

● Please consult our sales representative in the case that a workpiece diameter is less than 40 mm (1.6 in.), or a workpiece length is less than 20 mm (0.8 in.).

Workpiece unloader (Option)

It receives a machined workpiece from Right spindle and ejects it to the outside.

Unloader ready position

Unloader deployed

Receive position

Transfer conveyor and workpiece container

Gripper type

Receptor type

Specifications (Gripper type / Receptor type)

Max. transfer mass	kg (lb.)	4 (8.8)
Maximum workpiece diameter	mm (in.)	ϕ75 (ϕ2.9)
Maximum workpiece length	mm (in.)	250 (9.8)
Feed rate (Z-axis direction)	m/min (fpm)	100 (328.1)

Bar feeder system (Option)<Consultation is required>

Integrated machining of bar materials can be achieved in combination with a parts catcher. The workpiece attachment / detachment system nor turnover system is not necessary.

Recommended accessories for bar feeder specification

+ Bar feeder
+ Multi counter
+ Signal lamp
+ Guide bushing
+ Work stopper

Automation Support Options

A wide range of options for the best automation solutions

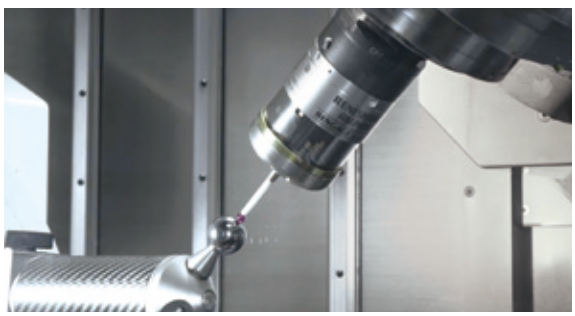
In-machine measuring system (Standard features)

A touch sensor is attached to the turn-mill spindle to measure a machined workpiece.

Automatic in-machine tool presetter (Standard features)

It simplifies complex setup work after changing tools. Tool breakage detection is also possible by the comparison of measured values and setting values.

3D quickSET (Option)



It corrects the rotation center deviation of a rotary axis and the positional deviation caused by thermal displacement or aging of a machine.

NTX 2000 3rd Generation / NTX 2500 3rd Generation / NTX 3000 3rd Generation

DMG MORI Qualified Products One-stop Service for Various Needs

The DMG MORI Qualified Products (DMQP) program <Option> is designed to certify peripherals that meet DMG MORI standards in quality, performance and maintainability. DMG MORI collaborates with our partners in the world and provides customers with peripherals required for their machining. We take care of the arrangement from selection to installation to support best-quality machining. DMG MORI helps customers improve productivity by offering the total solutions including quality peripherals as well as machine tools.

Find detailed information on DMQP here.

+ Offer peripheral equipment optimal for each customer at one stop
+ Provide support including connection and setup of machines and peripheral equipment
+ Achieve efficient connections with optimal interfaces

Four DMQP categories

Handling

- Robot system
- Bar feeder

Shaping

- Rotary window
- Oil skimmer
- Hydraulic steady rest
- Super-high pressure coolant system

Measuring

- External tool measurement
- Surface roughness measuring system

Monitoring

- Electrical cabinet chiller
- Coolant chiller

● The options above are examples. For details, please consult our sales representative.

DMQP: DMG MORI Qualified Products

Bar feeder

Hydraulic steady rest

Chuck

Tool balancer

Shrink fit device

In-machine measuring system (Tool)

Air dryer

Air compressor

Coolant

Rotary window

Tool cabinet

Cutting tool

NTX 2000 3rd Generation / NTX 2500 3rd Generation / NTX 3000 3rd Generation

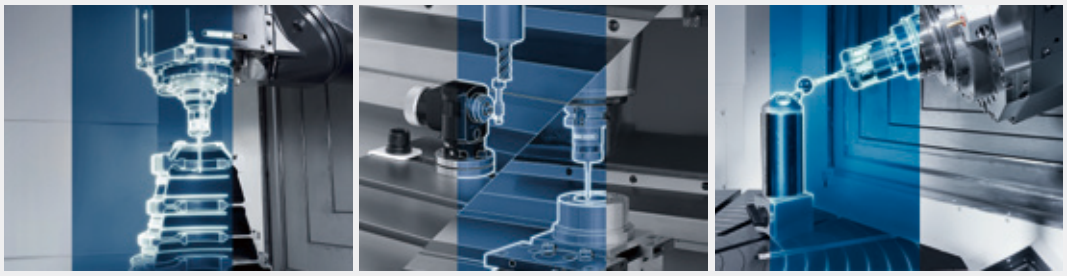
DMG MORI Technology Cycles

Technology Cycles (Option) are total solutions that achieve complex machining easily in a short time. They enable every operator to easily perform high-quality machining, setups and measurement with general-purpose machine tools and standard tools / fixtures, which used to be done with specialized machines, programs and tools.

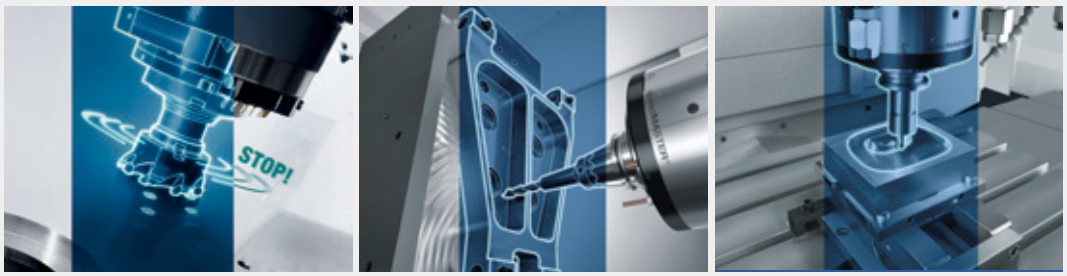
Find detailed information on Technology Cycles here.

Shaping

Measuring



Monitoring



Handling

- The availability of the functions differ depending on the machine. For details, please consult our sales representative.
- The above is an image picture.

Respond to Various Technology Cycles

Shaping

Gear hobbing*1

Optimal programming achieves hobbing with a general-purpose machine

Efficient　High-precision

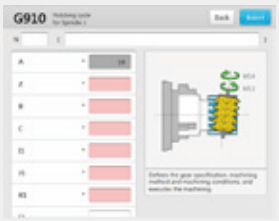
Find detailed information on Gear hobbing here.

Issue (Before introduction)

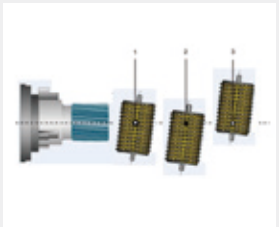
*2

+ A gear machine is needed. After blank machining with a turning machine, gear machining needs to be performed with a gear machine after setup changes
+ Want to extend the tool life of expensive hob cutter

Results (After introduction)



+ **Hobbing program can be easily created by conversational input**



+ **Hob cutter' s machining position can be changed, maximizing the tool life**

+ **Consolidation of machining operations into the general-purpose machine reduces setup time and enhances accuracy such as concentricity due to no setup change**

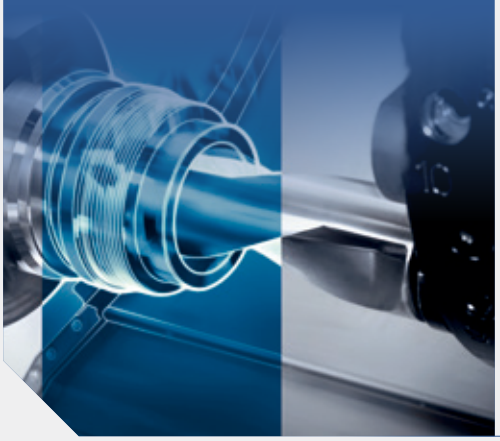
*1 Consultation is required
*2 <Reference> Wikipedia: Hobbing; https://ja.wikipedia.org/wiki/%E3%83%9B%E3%83%96%E7%9B%A4 (Quoted on August 29, 2023)

Monitoring

Easy tool monitoring

Monitoring load of spindle and traveling axes

Efficient Safe



Issue (Before introduction)

+ Abundant experience is needed to set cutting conditions
+ Want to prevent tool breakage and machine failure
+ Difficult to monitor load to the spindle and tools at all times

Results (After introduction)

+ **Conditions can be set in advance, enabling digital cutting management not dependent on experience or expertise**
+ **Can reduce tool breakage and maintenance cost by maximizing the capacities of the tools and machine**
+ **Load to the traveling axis and spindle during machining is monitored at all times, and the machine stops when abnormal values are detected**

Handling

Multi-tool

Maximizing number of tools & minimizing non-cutting time

Efficient

Issue (Before introduction)

+ Models with the Y-axis or Right spindle specification require tools for various cutting operations
+ More than one tool is mounted to one station in some cases, making their management complex
+ Including spare tools, it is necessary to prepare more tools than the number of turret stations

Results (After introduction)

+ **Tool compensation setting and life management can be easily performed for multiple tools of each station**
+ **Operator can set optimum tool information for each tool and maximize the number of tools**
+ **Prevent tool breakage and enhance production efficiency by switching to spare tools according to the operating time of the set tool**

Handling

Alternating speed

Stable machining in which chatter hardly occurs

Efficient　High-precision

Issue (Before introduction)

+ Chatter occurs when using tools under its recommended conditions
+ Vibration in deep hole drilling using a long drill should be suppressed

Results (After introduction)

+ **Cutting resistance is changed by periodically changing the rotation speed of the spindle. This helps suppress chatter and enhance cutting conditions, which lead to shorter machining time**
+ **Surface quality is improved**

Find detailed information on Alternating speed here.

Shaping

Multi-threading 2.0*1

Cutting special thread

Efficient

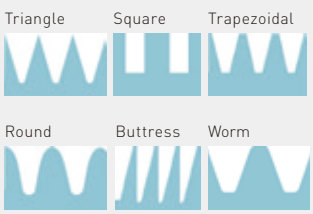
Issue (Before introduction)

+ Hope to cut special thread shapes
+ Hope to simplify complicated programming

Results (After introduction)

+ **Easily create various thread shapes by conversational programming**
+ **Create a machining program of a special shape thread on the machine without CAD / CAM**
+ **Worm machining with involute curve tooth profile*2 is also available**

Find detailed information on Multi-threading 2.0 here.



* Consultation is required
* Equivalent to JIS B 1723 Type 4 (DIN 3975 ZI)

Shaping

Excentric machining*

Find detailed information on Excentric machining here.

Efficient

High precision

Easy programming of excentric machining

+ Reduce setup time by consolidating machining operations performed with a special machine into a general-purpose machine
+ Complicated program for excentric machining can be created using the conversational programming style
+ Compatible with both turning and milling to achieve efficient machining
+ Require no eccentric machining jigs

Shaping

gearSKIVING*

Find detailed information on gearSKIVING here.

Efficient

High precision

High-speed gear cutting including internal teeth

+ Can easily program a machining technique called gear skiving
+ Internal teeth that cannot be machined by hobbing can be cut
+ Consolidation of processing operations into the general-purpose machine reduces setup time and enhances accuracy such as concentricity due to no setup change

Shaping

Keyway broaching

Find a video about Keyway broaching here.

Efficient

Complete keyway broaching process integrated into one machine

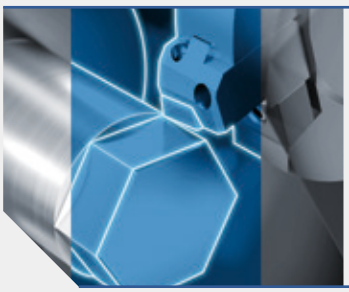
+ Easy programming supported by guidance screen
+ Inner diameter keyway broaching also possible
+ Lower potential for interference than end milling
+ Includes programming for chamfering
+ Y-axis shift function enables various keyway sizes with a one size insert

Shaping

Polygon Cutting

Find a video about Polygon Cutting here.

Efficient



Highly efficient cutting of polygons

+ Easy programming supported by guidance screen
+ Faster cutting time than end milling
+ Lower potential for interference than end milling
+ Chamfering possible with just one tool

* Consultation is required

Handling

Retraction cycle

Efficient Safe

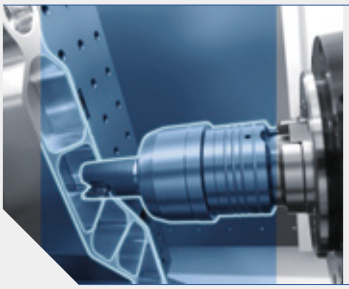
Automation allows for easy return to the zero return position without errors

+ Operational efficiency is enhanced, as one button push will enable return to the zero return position in the preset order
+ Can customize the order of axes to be moved according to the condition
+ Enhance efficiency of setup operation
+ Reduce the risk of accident

Shaping

Efficient Production Package (High-speed canned cycle)

Efficient Safe High precision



Easy inputting of various machining patterns

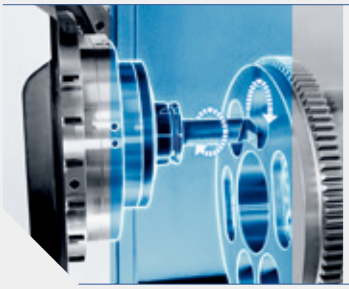
+ A program will be automatically created just by entering a complex shape in a conversational style
+ Safe cutting is ensured by confirming cutting details using the simulation function
+ Optimal tool path and cutting conditions enhance cutting quality

Shaping

Interpolation turning

Find detailed information on Interpolation turning here.

Efficient High precision



Easy programming of interpolation turning

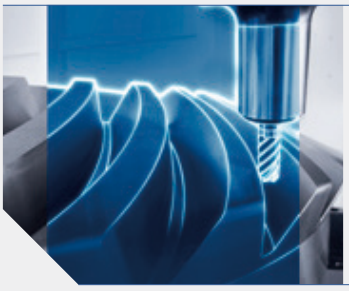
+ Interpolation turning can be programmed using the conversational programming style
+ O-ring groove and sealing surface can be cut
+ Tuning process can be performed at the eccentric position in one chucking, enabling process integration

Shaping

DMG MORI gearMILL*

Find detailed information on DMG MORI gearMILL here.

Efficient High precision



Integrating gear cutting into Turning / Milling

+ PC software for gear cutting
+ All processes of Turning, Milling, and gear cutting are done on one machine
+ Investment cost can be reduced by use of commercially available tools and generalpurpose machines

* Consultation is required

Shaping

Simultaneous 5-axis machining

Efficient High precision

Most suited for simultaneous 5-axis control machining

+ Tool center point (TCP) control
+ Workpiece setting error offset
+ Tool radius offset for 5-axis control machining
+ High-speed, high-precision machining II
+ Tilted Working Plane Command
+ SSS Control package

Measuring

3D quickSET

Find detailed information on 3D quickSET here.

Efficient High precision

Easy offset of deviation of rotary / Tilted axes on 5-axis control machine

+ Automatic offset with the dedicated program
+ Easy programming in accordance with guidance
+ Possible to offset even while fixtures and workpieces are being mounted*
+ Higher accuracy by minimized deviation of rotary / Tilted axes

*Be cautious about interference which may occur depending on the mounting position of the calibration sphere

Handling

Application Tuning Cycle

Efficient

Easy setting of optimum feed according to the machining operation

+ Only by selecting either the time priority mode or accuracy priority mode, smoothness of look-ahead interpolation can be changed
+ Feedrate can be changed freely while programs are running, and optimum machining method can be set according to surfaces to be machined

Handling

Tailstock for turret

Find detailed information on Tailstock for turret here.

Efficient

Support for programming of the tailstock operation when the tailstock is mounted on Turret 2

+ Simple operation by the guidance screen
  - Setting of tailstock pressures
  - Tailstock movement from the retract position to approach position, and then the workpiece support position
  - Tailstock retraction

Handling

Steady rest for turret

Find detailed information on Steady rest for turret here.

Efficient

Support for programming of the steady rest operation when the automatic centering steady rest is mounted on Turret 2

+ Approach and clamp / unclamp of steady rest can be executed in the same cycle

Handling

Counter spindle tip

Efficient

Support for programming when Right spindle is used as a tailstock for long workpieces

+ Simple operation by the guidance screen
  - Setting of tailstock pressures
  - Tailstock movement from the retract position to approach position, and then the workpiece support position
  - Tailstock retraction
  - Calling the center from the magazine and chucking it to the right spindle

Monitoring

MVC (Machine Vibration Control)

Find detailed information on MVC here.

Efficient

Vibration data of the spindle-mounted sensor analyzed to suggest optimal conditions for preventing chatter on the screen

+ Automatic calculation of efficient cutting conditions for preventing chatter
+ Quick and easy reflection of recommended cutting conditions to a program
+ Less time and effort because optimal conditions can be determined by one trial machining

Monitoring

MPC (Machine Protection Control)

Efficient Safe

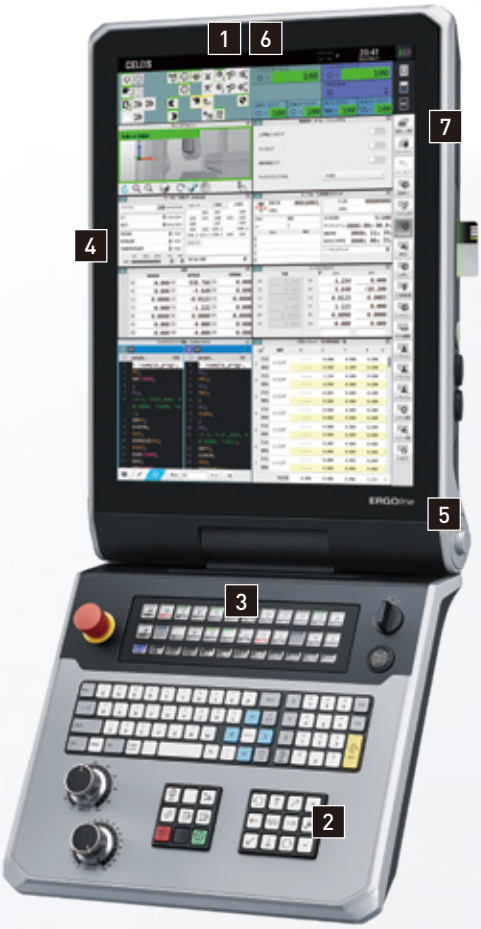
Turn-mill spindle vibration detected by the sensor

+ Preventive maintenance by regular diagnosis of bearings
+ Detection of subtle changes in vibration caused by tool chipping
+ Quick stop when excessive vibration is detected
+ Minimized load on the spindle at the time of interference

NTX 2000 3rd Generation / NTX 2500 3rd Generation / NTX 3000 3rd Generation

ERGOline X with CELOS X Smooth and Time-saving Operation

The refined ergonomic design ensures easy usage down to the smallest detail.
The dustproof and waterproof design (IP54 rating) is ideal for factory environments and realizes comfortable and safe operation.
(CE Marking acquired for European safety standards)



1 Large touch screen
Superior visibility and intuitive operation.

+ 10% larger screen and increased text size
+ All necessary information displayed on one screen for higher work efficiency
+ Remote access: machining programs on office PCs are visible on the shop floor as well
+ Can also be operated with touch pen*

* Option

Electrostatic touch panel

Can also be operated with gloves on

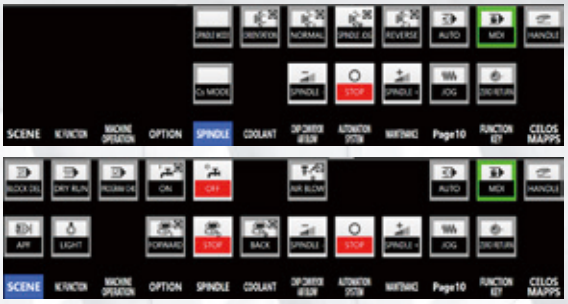
CELOS: Control Efficiency Lead Operation System

2 Hardware buttons that are easy to press Ideal for program input where accuracy is required.

+ Dustproof, waterproof and durable design
+ Optimized button ergonomics for comfort pressing

3 HYBRID BAR

Only displays the buttons that are necessary for the current operation. Prevents errors and improves workability.



Example of displayed buttons

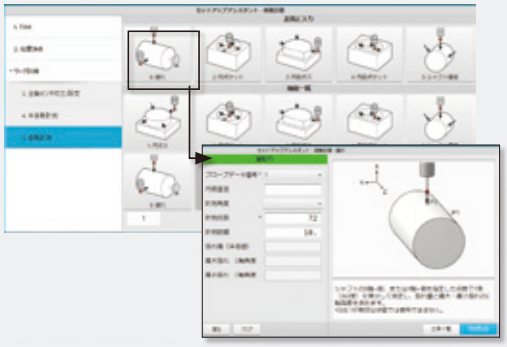
+ Switches displayed buttons automatically to suit your current operation
+ LCD panel with comfortable push sensation
+ Synchronized with open programs on the touch screen

4 Useful applications that reinforce your production processes

5 Upper and lower panel can be adjusted to your optimal viewing angle Operate the machine in your most comfortable position by adjusting the panel angles.

+ Upper panel: Front 10° , Back 20°
+ Lower panel: 0 to 84° (adjustable in 7 steps at 12° each)

6 Simple input screen for smooth completion of setup



+ Easy-to-understand animations and diagrams guide you through the setup
+ For tool change, simply select a tool from the list
+ Enables anybody to safely perform tool change or measuring
+ Significantly reduces setup time

7 Drawing and complex machining simulations are processed in high speed.

+ CPU: Intel Core i5
+ Memory 32 GB
+ 6 GB program storage area
+ USB 2 ports

Drawing simulation

* Based on actual results. Figure may differ depending on the machining program.

NTX 2000 3rd Generation / NTX 2500 3rd Generation / NTX 3000 3rd Generation

Digital Solutions Promoting the Digital Transformation of Your Shopfloor

DMG MORI's digital solutions visualize production-related information and eliminate inefficient work. The power of digital technology supports workers on the shopfloor, improving overall productivity and promoting work style innovation.

Digital Transformation of programming
Program Creation in CAD / CAM

+ Ideal for machining complex shapes with 5-axis machines and mill-turn centers
+ Toolpath optimization increases machining efficiency and accuracy
+ Post processor translation ensures easy programming with different NC controls
+ DMG MORI proposes the optimal CAM for each customer's needs

CELOS DYNAMICpost *1

Access here for the video

Post Processor / NC Simulation / Cutting Force Optimization integrated in one software
Reliable bridge between CAM and machine tools

+ DMG MORI post processors maximize machine capacity
+ Interference check for safe and secure processing
+ Cutting force optimization reduces cutting time by 20% *2 and tool breakage during roughing
+ Free trial available

*1 Option
*2 Listed figures may not be achieved depending on the type of machining.

TULIP

Supports the digitization of your factory.
Eliminates all redundancies from your shopfloor.

+ Easily create work procedure manuals with applications and make your shopfloor paperless
+ Real-time visualization of on-site production processes
+ Linkage with existing internal systems to manage data in one place

Access here for the detail of TULIP

MESSENGER

Visualize machine conditions that were previously unknown. Share information in the team and derive concrete measures for improvement

+ View the machine operation status in real-time
+ Check the operation status history
+ Visualized operation rates help you to improve production processes
+ Email notifications for alarms and job completion

Access here for the video

NET*service*

Quickly recover from any problems!

+ DMG MORI's service engineer can check your machine remotely*
+ Quick and accurate understanding of your machine status
+ Minimizes machine downtime

* DMG MORI's service engineer will only access your machine based on your request.

Robust security

Securely connect machines to the network and prevent problems and accidents caused by cyber attacks.

+ Only executes programs registered in the whitelist to prevent malicious programs
+ Prevents virus infection through machine bodies by blocking the execution of malicious programs in the first place

Whitelist security software

NTX 2000 3rd Generation / NTX 2500 3rd Generation / NTX 3000 3rd Generation

Network Construction and Connection Services for Factories DMG MORI GATEWAY

Access here for the video

DMG MORI GATEWAY provides a one-stop cloud connection for machines of all makes and ages, allowing you to monitor the shop floor status in real time.
The implementation requires no effort on the part of customers and can be completed by DMG MORI engineers.
The IoT-based, real-time shop floor visualization will help you make better business decisions and maximize production efficiency.

DMG MORI GATEWAY

Connectable to third-party machines and peripherals

Data stored in the DMG MORI cloud

Shop floor network built by DMG MORI engineers

Data accessible from PCs, tablets, and smartphones

● DMG MORI GATEWAY service is available only in Japan. (As of September 2023) We plan to begin offering this service for overseas markets in due course.

Your Contact for After-sales and Service: *my* DMG MORI

Access here for the video

my DMG MORI is a web-based platform that facilitates communication between customers and DMG MORI during repair and maintenance work.
Unlike phone calls, the digital communication allows both parties to exchange detailed information.
You can also view the updated status and history anytime, anywhere.

MORE SERVICE

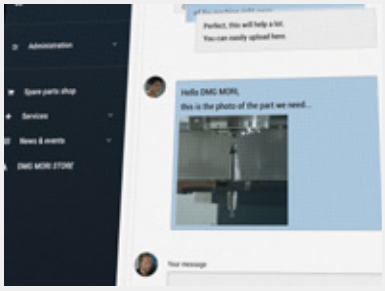
+ No queue: Simple online problem description
+ Pre-filled service inquiries: Send machine details, photos or videos
+ Immediate processing: The "right" service expert will process the inquiry with priority

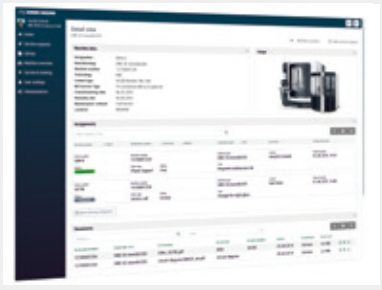
MORE KNOWLEDGE

+ Full machine history: All machine events are retrievable in a structured format
+ All documents digital: Library for technical and commercial documents available
+ Real-time access to processing status: More transparency for service and spare part inquiries

MORE AVAILABILITY

+ Free access, 24/7:
  From anywhere, at any time
+ Your portal, your rules:
  The customer controls who sees what
+ On any device : Computer, Smart-phone or via CELOS





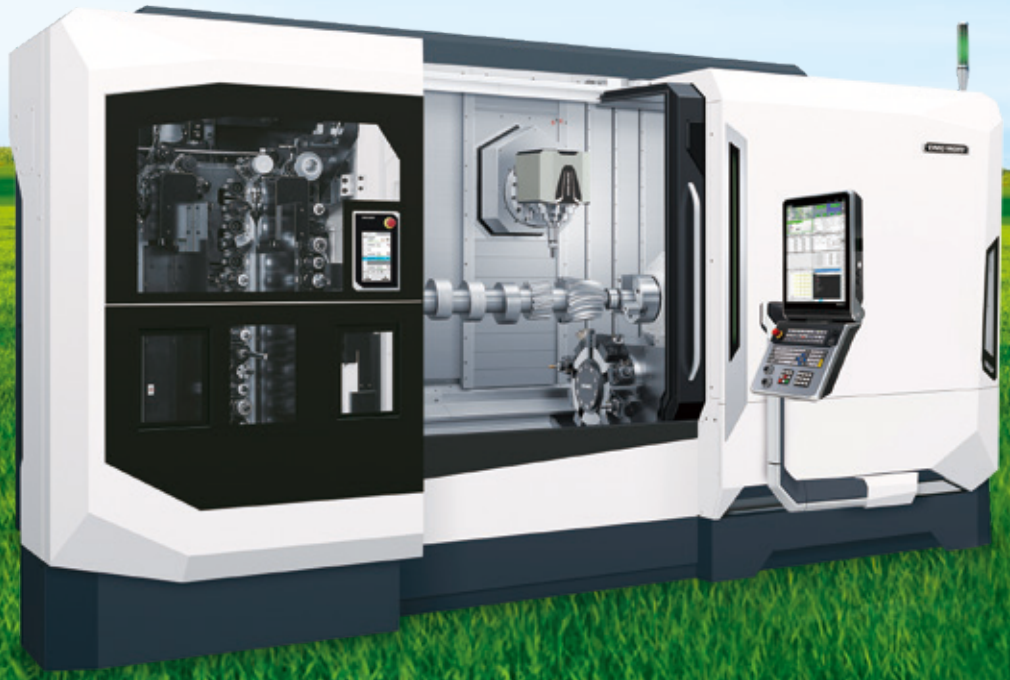
For Sustainable Production

The NTX 2000 3rd Generation / NTX 2500 3rd Generation / NTX 3000 3rd Generation is designed to save energy and reduce CO_2 emissions through process integration, automation and digitization, allowing for energy-efficient and sustainable production. DMG MORI is committed to reduce CO_2 emissions across the entire supply chain and has been certified by SBT in 2021*.

* Abbreviation for Science Based Targets. Greenhouse gas emissions reduction targets set by companies for the next 5-15 years in accordance with the levels required by the Paris Agreement (limit global temperature increase to below 2 °C or 1.5 °C compared to pre-industrial levels).

Scan the QR code for DMG MORI's approach towards sustainability.

https://www.dmgmori.co.jp/corporate/sustainability/en/



SUSTAINABLE MANUFACTURING

SUSTAINABLE PRODUCTS

DMG MORI GREEN MACHINE

SUSTAINABLE CORPORATE ACTIVITIES

SUPPLIERS + DMG MORI

Unique energy-saving function
GREENMODE

GREENMODE, an energy-saving function developed to achieve the Sustainable Development Goals (SDGs), significantly reduces your machine's power consumption by keeping standby power low and by shortening machining times through efficient machining programs.

Monitoring of power consumption and CO_2 emissions on the CELOS operation panel screen

GREENMODE

GREEN monitoring

+ Visualize power consumption and CO_2 emission amount on the CELOS operation screen

GREEN device

+ High-brightness LED light

GREEN idle reduction

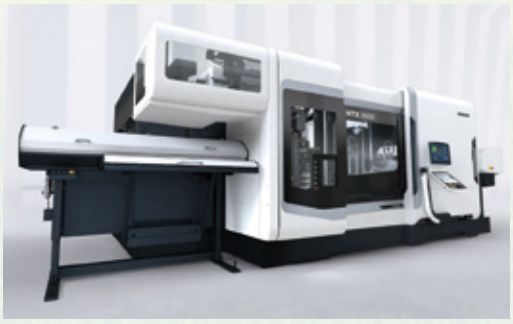
+ Shuts off power to servo motors, spindles, coolant pumps, etc. when the machine is stopped
+ Turns off the operation panel screen when there is no machine operation for a certain period of time

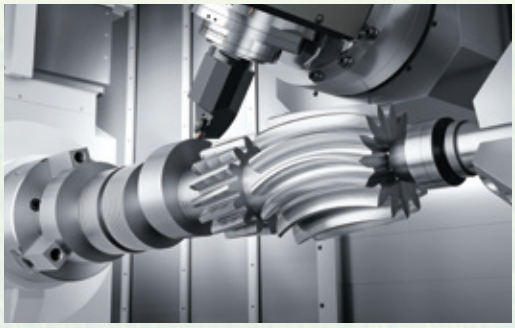
GREEN control

+ Reduce machining power by energy-saving pecking cycles
+ Quicken standard M codes
+ Simultaneous acceleration / deceleration of the spindle and feed axes
+ Controls coolant discharge amount with inverter

Contributing to sustainable production
Reducing CO_2 by 5-axis machining, process integration and automation

5-axis machines and automation systems reduce lead times with highly efficient production.
They also contribute to less CO_2 emissions and power consumption and improve customers' productivity.





MACHINE UTILIZATION

MORE EFFIIENT ENERGY AND EMISSIONS MACHINE OPERATION

1. CELOS apps for transparency and optimization of energy consumption
2. Intelligent, demand-oriented control
3. Consumption-optimized components
4. Energy recovery during braking

TECHNOLOGY EXCELLENCE FOR GREEN TECHNOLOGIES

1. Green technologies like wind power and electromobility are the most important leverage against climate change
2. DMG MORI is the innovation driver for the production of green technologies

CUSTOMERS

NTX 2000 3rd Generation / NTX 2500 3rd Generation / NTX 3000 3rd Generation

Machine specifications (FANUC F31iB5)

		NTX 2000 / NTX 2500 / NTX 3000							
Basic specification		T1 MC1 B1 Y1 LS TS							
Optional specifications		—	T2	T2 MC2	T2 MC2 Y2	RS	T2 RS	T2 MC2 RS	T2 MC2 Y2 RS
Capacity									
Swing over cross slide	mm (in.)	ϕ700 (ϕ27.5)							
Max. turning diameter (Turn-mill spindle / Turret 2)	mm (in.)	ϕ670 (ϕ26.3)	ϕ670 (ϕ26.3) / ϕ315 (ϕ14.3)<12-station>, ϕ325 (ϕ12.7) <10-station>			ϕ670 (ϕ26.3)	ϕ670 (ϕ26.3) / ϕ315 (ϕ14.3)<12-station>, ϕ325 (ϕ12.7) <10-station>		
Max. turning length	mm (in.)	1,620 (63.7) <NTX 2000> 1,616 (63.6) <NTX 2500> 1,605 (63.1) <NTX 3000>				1,538 (60.5) <NTX 2000> 1,530 (60.2) <NTX 2500> 1,519.3 (59.8) <NTX 3000>			
Bar work capacity*1 *2	mm (in.)	ϕ65 (ϕ2.5) <NTX 2000> ϕ80 (ϕ3.1) <NTX 2500> ϕ102 (ϕ4.0) <NTX 3000>							
Travel									
X1-axis (Turn-mill spindle)	mm (in.)	675 (26.5) <-125 - +550 (-4.9 - +21.6)>							
Y1-axis travel (Turn-mill spindle)	mm (in.)	300 (11.8) <±150 (±5.9)>							
Z1-axis (Turn-mill spindle) + for ATC	mm (in.)	1,562 (61.4) + 164 (6.4) <For ATC>							
B-axis (Turn-mill spindle)		240° (±120°)							
Left spindle									
Max. spindle speed	min-1	5,000 <NTX 2000> 4,000 <NTX 2500> 3,000 <NTX 3000>							
Right spindle									
Max. spindle speed	min-1	—				5,000 <NTX 2000> 4,000 <NTX 2500> 4,000 <NTX 3000>			
Turn-mill spindle (Turret 1)									
B-axis min. indexing increment		0.0001°							
Turn-mill spindle max. speed	min-1	12,000, 20,000 (High-speed)							
Turn-mill spindle taper hole		Capto C6, HSK-A63 (T63)							
Tool storage capacity		38, 76, 114, 194, 246							
Max. tool diameter (With adjacent tools)	mm (in.)	ϕ70 (ϕ2.7)							
Max. tool diameter (Without adjacent tools)	mm (in.)	ϕ130 (ϕ5.1)							
Max. tool length	mm (in.)	400 (15.7)							
Max. tool mass	kg (lb.)	8 (17.6), 10 (22.0) <specification for 10 kg (22.0 lb.)>							
Turret 2									
Number of tool stations		—	12, 10			—	12, 10		
Shank height for square tool	mm (in.)	—	20 (0.8), 25 (1.0)			—	20 (0.8), 25 (1.0)		
Max. milling spindle speed	min-1	—	12,000, 6,000			—	12,000, 6,000		
Tailstock									
Taper hole of tailstock spindle		Live center (MT5), Built-in center (MT4)				—			
Motors									
Left spindle drive motor	kW (HP)	30 / 26 / 22 (40 / 34.7 / 30) <10%ED / 40%ED / cont> <NTX 2000> 26 / 22 / 15 (34.7 / 30 / 20) <10%ED / 40%ED / cont> <NTX 2500> 36 / 30 / 25 (48.0 / 40 / 33.3 HP) <10%ED / 30 min / cont> <NTX 3000>							
Right spindle drive motor	kW (HP)	—				30 / 26 / 22 (40 / 34.7 / 30) <10%ED / 40%ED / cont> <NTX 2000> 26 / 22 / 15 (34.7 / 30 / 20) <10%ED / 40%ED / cont> <NTX 2500> 26 / 22 / 15 (34.7 / 30 / 20) <10%ED / 40%ED / cont> <NTX 3000>			
Turn-mill spindle drive motor <40%ED / cont>	kW (HP)	28 / 26 (37.3 / 34.7), 26 / 22 (34.7 / 30)							
Turret 2 milling spindle drive motor <15%ED / 25%ED / cont>	kW (HP)	—		7.5 / 5.5 / 3.7 (10 / 7.5 / 5) 16 / 16 / 11.5 (21.3 / 21.3 / 15.3) <25%ED / 40%ED / cont>		—		7.5 / 5.5 / 3.7 (10 / 7.5 / 5) 16 / 16 / 11.5 (21.3 / 21.3 / 15.3) <25%ED / 40%ED / cont>	

*1 Bar work capacity: Depending on the chuck / cylinder used and its restrictions, it may not be possible to reach full bar work capacity.

*2 When a specific chuck / cylinder is selected.

- Max. spindle speed, Max. milling 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.
- Power sources, Machine size: the actual values may differ from those specified in the catalogue, depending on the optional features and peripheral equipment.
- The information in this catalog is valid as of July 2024.

■ : Standard　□ : Option

T1 : Turn-mill spindle　**T2** : Turret 2　**LS** : Left spindle
MC1 : Turn-mill spindle (Milling)　**MC2** : Turret 2 (Milling)　**RS** : Right spindle
Y1 : Turn-mill spindle (Y-axis)　**Y2** : Turret 2 (Y-axis)　**TS** : Tailstock
B1 : Turn-mill spindle (B-axis)

● The Right spindle specification (RS) is not equipped with a tailstock (TS).

Standard & optional features (FANUC F31iB5)

●: Standard　○: Option　—: Not applicable

		F31iB5
Fixture		
Automatic centering type steady rest	SLU-X1 <ϕ8 - 70 mm (ϕ0.3 - 2.8 in.)>, SLU-X2 <ϕ11 - 101 mm (ϕ0.4 - 4.0 in.)> <Fixed at Turret 2> <Traveling in clamped state during machining is not possible>*1	○
	SLU-X1 <ϕ8 - 70 mm (ϕ0.3 - 2.8 in.)>, SLU-X2 <ϕ11 - 101 mm (ϕ0.4 - 4.0 in.)>, SLU-X3 <ϕ14 - 152 mm (ϕ0.6 - 6.0 in.)> <Servo-Driven> <Traveling in clamped state during machining is not possible>	○
Coolant		
Chip flushing coolant	800 / 1,100 W (50 / 60 Hz)	●
For turn-mill spindle coolant	800 / 1,100 W (50 / 60 Hz)	●
Through-spindle coolant system (Turn-mill spindle)	Standard pressure (800 / 1,100 W <50/60 Hz>)	●
	High-pressure*2 <1 / 1.5 Mpa (145 / 217.5 psi)> <50 / 60 Hz>	○*
	Super-high-pressure*2 <10 Mpa (1,450 psi) variable>	○*
	Super-high-pressure interface*2	○
*zero-sludge*COOLANT *pro*		●
Coolant chiller		●
Chip disposal		
Chip conveyor	Right discharge, Hinge type + Drum filter type	●
Measurement		
Manual in-machine tool presetter	Left spindle (Removable)*3	○
Tool breakage detector*4	Touch type (Blum)	○
In-machine measuring system (Turn-mill spindle)	Touch sensor (Radio signal transmission type)*5	●
High-precision control		
Full closed loop control (Scale feedback) <Turn-mill spindle>	X1-, Y1-, Z1-axis	○
Automation		
Robot interface		○
Others		
• Built-in worklight (LED)　• Leveling block　• Hand tools		●
Chuck foot switch	1 foot switch	●
	2 foot switches	○
Dry anchor		○
Multi dry filter		●
Signal lamp	4 colors (LED type: Red, Yellow, Green, Blue)	●

Basic specification		T1 MC1 B1 Y1 LS TS							
Optional specifications		—	T2	T2 MC2	T2 MC2 Y2	RS	T2 RS	T2 MC2 RS	T2 MC2 Y2 RS
Measurement									
Manual in-machine tool presetter	Right spindle (Removable)*5	—	—	—	—	—	○	○	○
Automatic in-machine tool presetter (In-out type)	For turn-mill spindle (Renishaw)	●	—	—	—	●	—	—	—
	For turn-mill spindle (Renishaw) + Turret 2 (Renishaw)	—	●	●	●	—	●	●	●
	For turn-mill spindle (Renishaw) + Turret 2 (BLUM)	—	○	○	○	—	○	○	○
High-precision control									
Full closed loop control (Scale feedback) <Turret 2>	X2-, Z2-axis	—	●	●	●	—	●	●	●
	Y2-axis	—	—	—	●	—	—	—	●

＊ DMQP (DMG MORI Qualified Products)
＊1 Not available for Turret 2 with the milling function.
＊2 When ultra-high pressure coolant is selected, the standard pressure pump for through-spindle coolant (turn-mill spindle) is not included.
＊3 In-machine tool presetter is shared between Left spindle and Right spindle. For details, please consult our sales representative.
＊4 When the tool breakage detector is selected, the in-machine tool presetter (automatic) is not available.
＊5 Please note that there are a few countries where the radiowave type cannot be used because no radiowave license in those countries has been obtained yet. For further details, please consult our sales representative.

● DMQP: Please see Page 32 for details.
● The information in this catalog is valid as of July 2024.
● Specifications, accessories, safety device and function are available upon request.
● Some options are not available in particular regions. For details, please consult our sales representative.

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

NTX 2000 3rd Generation / NTX 2500 3rd Generation / NTX 3000 3rd Generation

Machine specifications (SIEMENS 840D sl)

		NTX 2000 / NTX 2500 / NTX 3000							
Basic specification		T1 MC1 B1 Y1 S1 TS							
Optional specifications		—	T2	T2 MC2	T2 MC2 Y2	S2	T2 S2	T2 MC2 S2	T2 MC2 Y2 S2
Capacity									
Swing over cross slide	mm (in.)	ϕ700 (ϕ27.5)							
Max. turning diameter (Turn-mill spindle / Turret 2)	mm (in.)	ϕ670 (ϕ26.3)	ϕ670 (ϕ26.3) / ϕ315 (ϕ14.3)<12-station>, ϕ325 (ϕ12.7) <10-station>			ϕ670 (ϕ26.3)	ϕ670 (ϕ26.3) / ϕ315 (ϕ14.3)<12-station>, ϕ325 (ϕ12.7) <10-station>		
Max. turning length	mm (in.)	1,620 (63.7) <NTX 2000> 1,616 (63.6) <NTX 2500> 1,605 (63.1) <NTX 3000>				1,538 (60.5) <NTX 2000> 1,530 (60.2) <NTX 2500> 1,519.3 (59.8) <NTX 3000>			
Bar work capacity*1 *2	mm (in.)	ϕ65 (ϕ2.5) <NTX 2000> ϕ80 (ϕ3.1) <NTX 2500> ϕ102 (ϕ4.0) <NTX 3000>							
Travel									
X1-axis (Turn-mill spindle)	mm (in.)	675 (26.5) <-125 - +550 (-4.9 - +21.6)>							
Y1-axis travel (Turn-mill spindle)	mm (in.)	300 (11.8) <±150 (±5.9)>							
Z1-axis (Turn-mill spindle) + for ATC	mm (in.)	1,562 (61.4) + 164 (6.4) <For ATC>							
B-axis (Turn-mill spindle)		240° (-30° - +210°)							
Left spindle									
Max. spindle speed	min-1	5,000 <NTX 2000> 4,000 <NTX2500> 3,000 <NTX3000>							
Right spindle									
Max. spindle speed	min-1	—				5,000 <NTX 2000> 4,000 <NTX 2500> 4,000 <NTX 3000>			
Turn-mill spindle (Turret 1)									
B-axis min. indexing increment		0.0001°							
Turn-mill spindle max. speed	min-1	12,000, 20,000 (High-speed)							
Turn-mill spindle taper hole		Capto C6, HSK-A63 (T63)							
Tool storage capacity		38, 76, 114, 194, 246							
Max. tool diameter (With adjacent tools)	mm (in.)	ϕ70 (ϕ2.7)							
Max. tool diameter (Without adjacent tools)	mm (in.)	ϕ130 (ϕ5.1)							
Max. tool length	mm (in.)	400 (15.7)							
Max. tool mass	kg (lb.)	8 (17.6), 10 (22.0) <specification for 10 kg (22.0 lb.)>							
Turret 2									
Number of tool stations		—	12, 10			—	12, 10		
Shank height for square tool	mm (in.)	—	20 (0.8), 25 (1.0)			—	20 (0.8), 25 (1.0)		
Max. milling spindle speed	min-1	—	12,000, 6,000			—	12,000, 6,000		
Tailstock									
Taper hole of tailstock spindle		Live center (MT5), Built-in center (MT4)				—			
Motors									
Left spindle drive motor	kW (HP)	26 / 22 (34.7 / 30) <40%ED / cont> <NTX 2000> 26 / 22 / 15 (34.7 / 30 / 20) <10%ED / 40%ED / cont> <NTX 2500> 36 / 30 / 25 (48.0 / 40 / 33.3) <10%ED / 30 min / cont> <NTX 3000>							
Right spindle drive motor	kW (HP)	—				26 / 22 (34.7 / 30) <40%ED / cont> <NTX 2000> 26 / 22 / 15 (34.7 / 30 / 20) <10%ED / 40%ED / cont> <NTX 2500> 26 / 22 / 15 (34.7 / 30 / 20) <10%ED / 40%ED / cont> <NTX 3000>			
Turn-mill spindle drive motor <40%ED / cont>	kW (HP)	28 / 26 (37.3 / 34.7), 26 / 22 (34.7 / 30)							
Turret 2 milling spindle drive motor <15%ED / 25%ED / cont>	kW (HP)	—	7.5 / 5.5 / 3.7 (10 / 7.5 / 5) 16 / 16 / 11.5 (21.3 / 21.3 15.3) <25%ED / 40%ED / cont>			—	7.5 / 5.5 / 3.7 (10 / 7.5 / 5) 16 / 16 / 11.5 (21.3 / 21.3 15.3) <25%ED / 40%ED / cont>		

*1 Bar work capacity: Depending on the chuck / cylinder used and its restrictions, it may not be possible to reach full bar work capacity.

*2 When a specific chuck / cylinder is selected.

- SIEMENS specifications utilize 400V, so a transformer is required for customers in Japan and other countries.
- Max. spindle speed, Max. milling 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.
- Power sources, Machine size: the actual values may differ from those specified in the catalogue, depending on the optional features and peripheral equipment.
- The information in this catalog is valid as of July 2024.

■ : Standard　□ : Option

T1 : Turn-mill spindle　**T2** : Turret 2　**LS** : Left spindle
MC1 : Turn-mill spindle (Milling)　**MC2** : Turret 2 (Milling)　**RS** : Right spindle
Y1 : Turn-mill spindle (Y-axis)　**Y2** : Turret 2 (Y-axis)　**TS** : Tailstock
B1 : Turn-mill spindle (B-axis)

● The Right spindle specification (RS) is not equipped with a tailstock (TS).

Standard & optional features (SIEMENS 840D sl)

●: Standard　○: Option　—: Not applicable

		F31iB5
Fixture		
Automatic centering type steady rest	SLU-X1 <ϕ8 - 70 mm (ϕ0.3 - 2.8 in.)>, SLU-X2 <ϕ11 - 101 mm (ϕ0.4 - 4.0 in.)> <Fixed at Turret 2> <Traveling in clamped state during machining is not possible>*1	○
	SLU-X1 <ϕ8 - 70 mm (ϕ0.3 - 2.8 in.)>, SLU-X2 <ϕ11 - 101 mm (ϕ0.4 - 4.0 in.)>, SLU-X3 <ϕ14 - 152 mm (ϕ0.6 - 6.0 in.)> <Servo-Driven> <Traveling in clamped state during machining is not possible>	○
Coolant		
Chip flushing coolant	800 / 1,100 W (50 / 60 Hz)	●
For turn-mill spindle coolant	800 / 1,100 W (50 / 60 Hz)	●
Through-spindle coolant system (Turn-mill spindle)	Standard pressure (800 / 1,100 W <50/60 Hz>)	●
	High-pressure*2 <1 / 1.5 Mpa (145 / 217.5 psi)> <50 / 60 Hz>	○*
	Super-high-pressure*2 <10 Mpa (1,450 psi) variable>	○*
	Super-high-pressure interface*2	○
*zero-sludge*COOLANT *pro*		●
Coolant chiller		●
Chip disposal		
Chip conveyor	Right discharge, Hinge type + Drum filter type	●
Measurement		
Manual in-machine tool presetter	Left spindle (Removable)*3	○
Tool breakage detector*4	Touch type (Blum)	○
In-machine measuring system (Turn-mill spindle)	Touch sensor (Radio signal transmission type)*5	●
High-precision control		
Full closed loop control (Scale feedback) <Turn-mill spindle>	X1-, Y1-, Z1-axis	○
Automation		
Robot interface		○
Others		
• Built-in worklight (LED)　• Leveling block　• Hand tools		●
Chuck foot switch	1 foot switch	●
	2 foot switches	○
Dry anchor		○
Multi dry filter		●
Signal lamp	4 colors (LED type: Red, Yellow, Green, Blue)	●

Basic specification		T1 MC1 B1 Y1 LS TS							
Optional specifications		—	T2	T2 MC2	T2 MC2 Y2	RS	T2 RS	T2 MC2 RS	T2 MC2 Y2 RS
Measurement									
Manual in-machine tool presetter	Right spindle (Removable)*5	—	—	—	—	—	○	○	○
Automatic in-machine tool presetter*6 (In-out type)	For turn-mill spindle (Renishaw)	●	—	—	—	●	—	—	—
	For turn-mill spindle (Renishaw) + Turret 2 (Renishaw)	—	●	●	●	—	●	●	●
	For turn-mill spindle (Renishaw) + Turret 2 (BLUM)	—	○	○	○	—	○	○	○
High-precision control									
Full closed loop control (Scale feedback) <Turret 2>	X2-, Z2-axis	—	●	●	●	—	●	●	●
	Y2-axis	—	—	—	●	—	—	—	●

* DMQP (DMG MORI Qualified Products)
*1 Not available for Turret 2 with the milling function.
*2 When ultra-high pressure coolant is selected, the standard pressure pump for through-spindle coolant (turn-mill spindle) is not included.
*3 In-machine tool presetter is shared between Left spindle and Right spindle. For details, please consult our sales representative.
*4 When the tool breakage detector is selected, the in-machine tool presetter (automatic) is not available.
*5 Please note that there are a few countries where the radiowave type cannot be used because no radiowave license in those countries has been obtained yet. For further details, please consult our sales representative.
*6 When the tool breakage detector is selected, the in-machine tool presetter (automatic) is not available.

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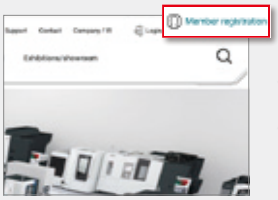

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+ If you have any questions regarding the content, please consult our sales representative.

+ The information in this catalog is valid as of July 2024. 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.

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