

DMG MORI

Rigid and Precise Turning Center

NLX 6000 | 1000
NLX 6000 | 2000

NLX 6000



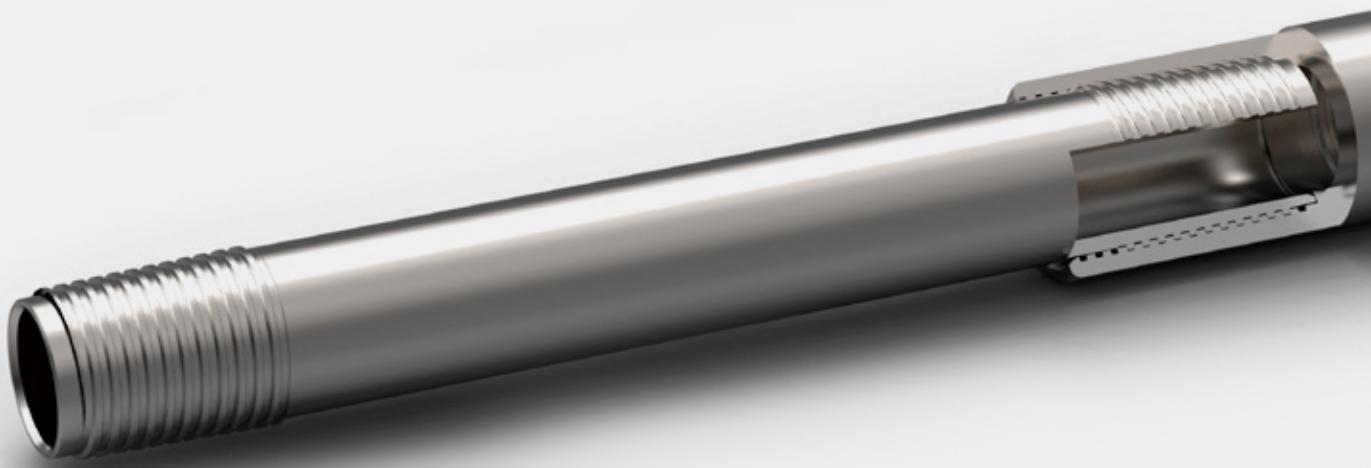
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NLX 6000

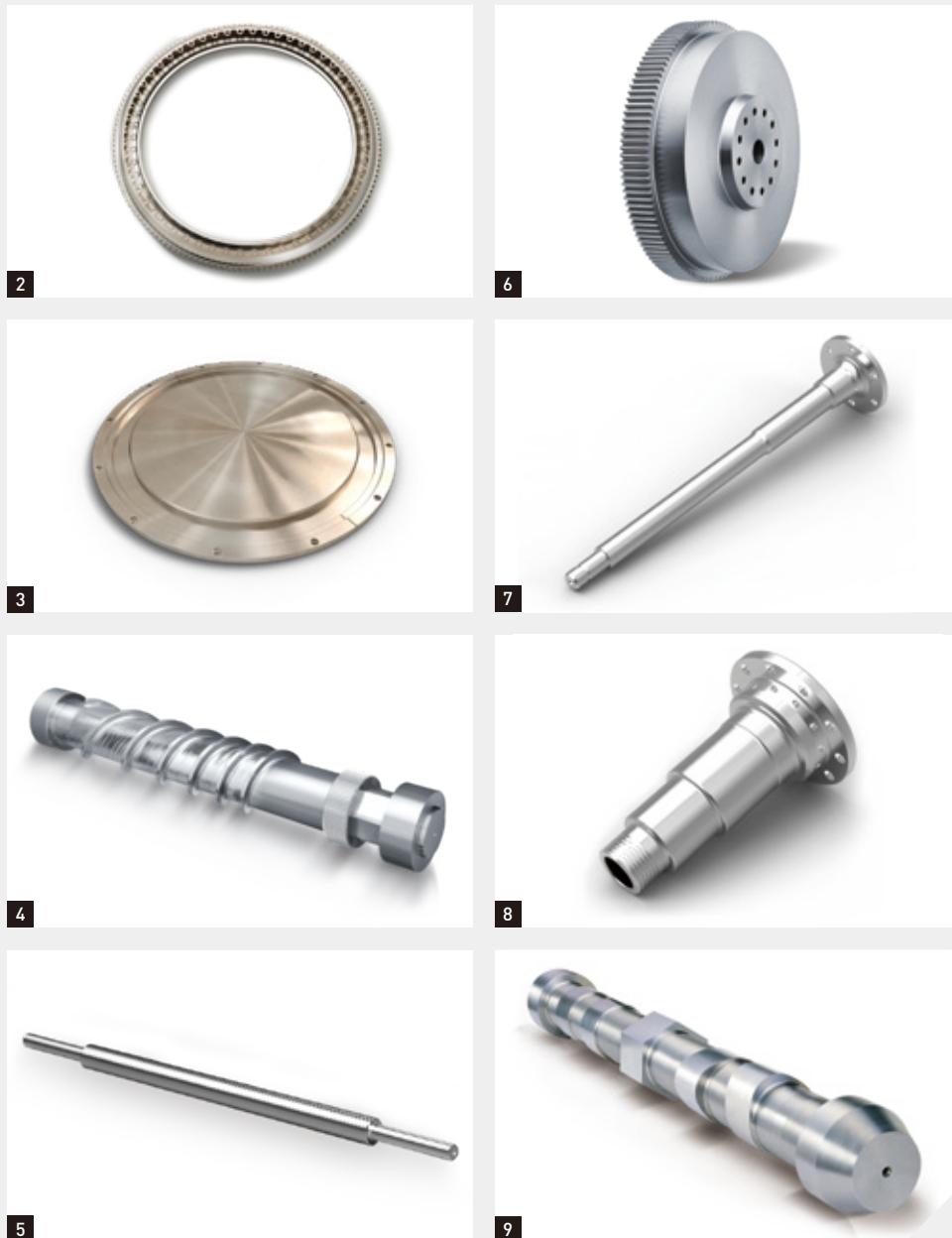
Highly Added Value Machining of Shafts and Large-diameter Workpieces with High Rigidity and High Accuracy Required of Large Turning Centers

The NLX 6000 is a high-rigidity, high-precision turning center capable of handling workpieces from large flanges to long shafts by making the most of its large-diameter spindle and generous machining area. Equipped with ample experience and advanced technologies, the model takes advantage of its heavy-duty cutting power to support the construction machinery industry and the energy industry where an oil well pipe is represented as the typical workpiece.

02



1

**Oil well**

- 1** Oil well pipe
 $\varnothing 245 \text{ mm} (\varnothing 9.6 \text{ in.})$

Aerospace

- 2** Low-pressure turbine disk
 $\varnothing 780 \text{ mm} (\varnothing 30.7 \text{ in.})$

Semiconductors

- 3** Sputtering target
 $\varnothing 500 \times 25 \text{ mm}$
 $(\varnothing 19.7 \times 1.0 \text{ in.})$

Industrial machinery

- 4** Screw shaft
 $\varnothing 250 \times 1,250 \text{ mm}$
 $(\varnothing 9.8 \times 49.2 \text{ in.})$
- 5** Ball screw
 $\varnothing 70 \times 1,100 \text{ mm}$
 $(\varnothing 2.8 \times 43.3 \text{ in.})$

- 6** Flywheel
 $\varnothing 505 \times 120 \text{ mm}$
 $(\varnothing 19.9 \times 4.7 \text{ in.})$

Automobiles

- 7** Axle shaft
 $\varnothing 200 \times 800 \text{ mm} (\varnothing 7.9 \times 31.5 \text{ in.})$

Construction machinery

- 8** Spindle
 $\varnothing 300 \times 400 \text{ mm} (\varnothing 11.8 \times 15.7 \text{ in.})$

Boats & Ships

- 9** Cam shaft
 $\varnothing 200 \times 650 \text{ mm} (\varnothing 7.9 \times 25.6 \text{ in.})$

Applications and Parts

Highlights

Machine and Technology

Others

Machine Specifications

NLX 6000

Unrivalled Cutting Capability Achieved by Overwhelming Power

The NLX 6000 has been designed and developed using the latest digital technology, realizing the rigidity and high precision required for machining of large-diameter shafts. Ergonomic design is applied to every detail of the machine including the door handle. The NLX 6000 is an operator- and environmentally-friendly machine with improved energy-saving efficiency and low environmental impacts.

Improved milling power

- + BMT (Built-in Motor Turret) installed in the turret
- + Milling capacity rivalling machining centers with a No. 40 taper spindle

High precision

- + Improved machining accuracy by the machine structure that suppresses thermal displacement

High rigidity

- + Slideways on X-, Y-, and Z-axis for higher vibration damping performance and dynamic rigidity
- + Wide slideways
- + Large-diameter ball screws adopted

CELOS

- + Consistent administration, documentation and visualization of order, process and machine data
- + Extension of functions possible by adding applications, and high compatibility with existing information infrastructure and software

Reliability

- + Improved chip disposal
(Chip discharge space expanded by 150% compared to the conventional machine)
- + Steady rest quick change system with no readjustment or troublesome attachment required (option)

BMT: Built-in Motor Turret

CELOS: Control Efficiency Lead Operation System

For various types of machining

- + Suited for machining of large-diameter and long workpieces and high-torque milling



Machining of large-diameter workpieces



Machining of long workpieces



High-torque milling



Thread cutting on a pipe



Scan the QR code to watch NLX 6000's cutting performance.
<https://www.youtube.com/watch?v=FxU2aGN4YHU>

NLX 6000

Best Solutions for Your Shop Floor

The NLX 6000 provides solutions for higher machining accuracy, higher production efficiency by automation, better chip disposal, maintainability and setup performance. With various cutting-edge solutions, the NLX 6000 demonstrates its capabilities to the full extent and achieves a higher level of machining. DMG MORI offers the best solutions that solve your shop issues.

1**Long workpieces**

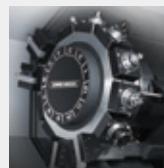
Chatter control



Alternating speed

Hydraulic steady rest
(quick-change system)**2****Turret**

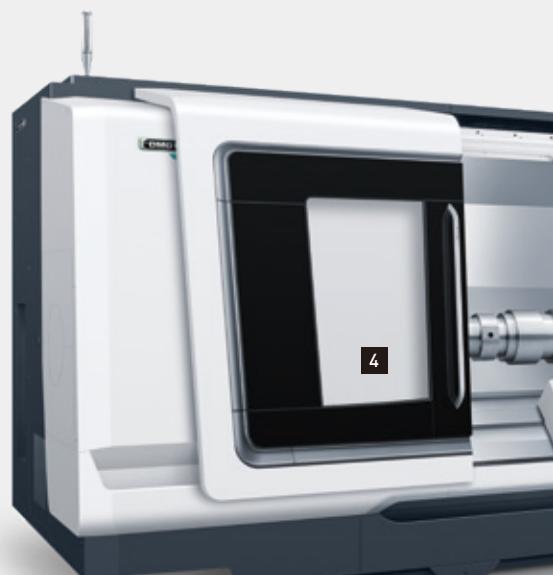
For various types of machining



12-station

Quick-change type
(CAPTO)

High torque milling

For SL holder (only available for 1000 type
<turning specification>)**10****3****Workpiece support**

Workpiece support suitable for your workpiece and machining



Quick change chuck



Air chuck (front)



Air chuck (rear)



MT5 (Built-in center)

4**Spindle output**

For heavy-duty cutting

**5****Maintenance**

Improved production efficiency by preventive maintenance



my DMG MORI



DMG MORI Messenger



Air dryer



Oil skimmer

6 Monitoring
Monitors the temperature and flow rate

Electrical cabinet chiller Coolant chiller Coolant flow switch

7 Machining accuracy
Employs the SmartSCALE

SmartSCALE

8 Better setup performance
Drastically shortened setup time

In-machine tool presetter (pivoting type / removable type)

9 Cutting technology
Improving machining efficiency with Technology Cycles all at once

Gear hobbing Eccentric machining gearSKIVING Multi-threading

10 Mass production, automation
Automation for labor saving and high productivity

High-pressure steel pipe transfer system for the energy industry*

Robot system*

* Consultation is required

11 Chip disposal
Higher cutting performance

External chip conveyor (inclination angle: 45° / 60°) Chip conveyor (hinge type) Chip conveyor (scraper type) Zero sludge coolant tank* Super-high-pressure coolant system

Coolant gun Coolant line filter Chuck top coolant Air blow for tool tip

* Consultation is required

● The chip conveyor in the picture complies with the EN.

EN: European Norm (European Standards)

NLX 6000

Full Range of Variations

The NLX 6000 offers three types of spindles suited for machining of large-diameter workpieces, and two types of distances between centers of 1,000 mm (39.4 in.) and 2,000 mm (78.7 in.).

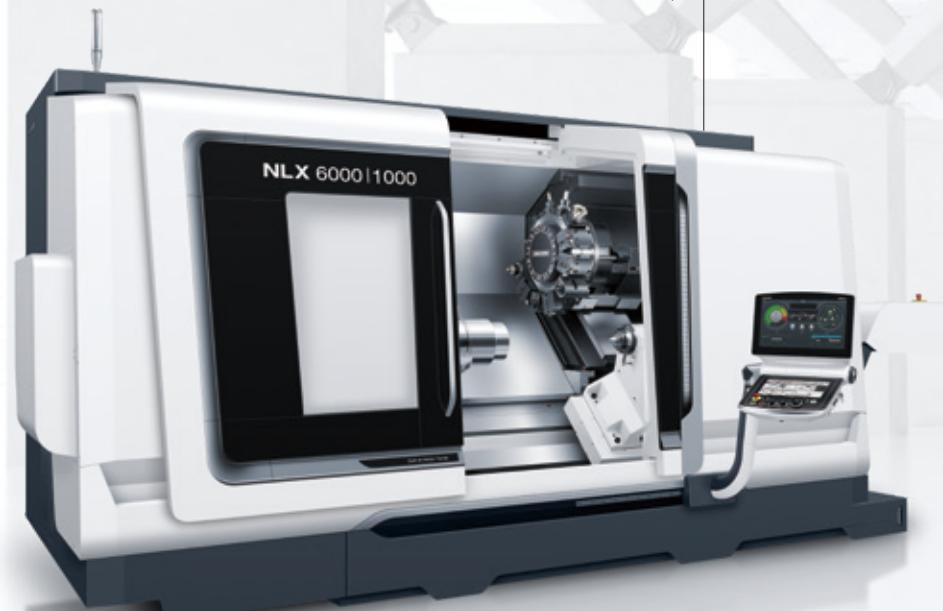
The chuck sizes of 18, 21, and 24 inches are available.

The Turning specification, Milling specification and Y-axis specification are available. Powerful milling performance by the BMT (Built-in Motor Turret) enables multi-axis machining. The model is capable of machining a wide range of workpieces in diverse fields of industry.

BMT: Built-in Motor Turret

NLX 6000 | 1000

Distance between centers 1000 type
9 variations in the lineup



NLX 6000 | 1000

<Through-spindle hole diameter 285 mm (11.2 in.) + Milling + Y-axis>

Variations of through-spindle holes



- + Through-spindle hole diameter: 185 mm (7.3 in.)
- + Torque: 7,021 N·m (5,178.4 ft·lbf)
<Approx. 90% up compared to conventional machines>
- + 1,600 min⁻¹
- + 45 / 37 kW (60 / 50 HP)
- + 75 / 55 kW (100 / 75 HP) <high output>



- + Through-spindle hole diameter: 285 mm (11.2 in.)
- + Torque: 12,069.1 N·m (8,901.7 ft·lbf)
<Approx. 54% up compared to conventional machines>
- + 1,000 min⁻¹
- + 45 / 37 kW (60 / 50 HP)
- + 75 / 55 kW (100 / 75 HP) <high output>

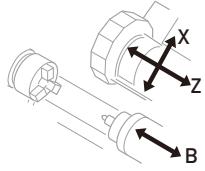


- + Through-spindle hole diameter: 375 mm (14.8 in.)
- + Torque: 12,082.2 N·m (8,911.3 ft·lbf)
<Approx. 45% up compared to conventional machines>
- + 500 min⁻¹
- + 45 / 37 kW (60 / 50 HP)

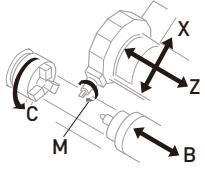
T: Turret **M**: Milling (option)
TS: Tailstock **Y**: Y-axis (option)
 The basic model is equipped with **T** and **TS**.

Variations

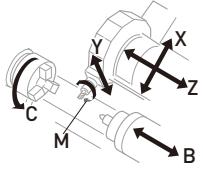
T TS Turret (turning) + Tailstock



T M CT S Milling + Tailstock



T MD Y TS Milling + Y-axis + Tailstock



NLX 6000 | 2000

Distance between centers 2000 type
9 variations in the lineup



NLX 6000 | 2000

<Through-spindle hole diameter 185 mm (7.3 in.) + Milling + Y-axis>

• The chip conveyor in the picture complies with the EN.

EN: European Norm (European Standards)

NLX 6000 | 1000 / NLX 6000 | 2000

Through-spindle hole diameter	mm (in.)	185 (7.3)	285 (11.2)	375 (14.8)
Standard chuck size*			18, 21, 24 inches	
Number of tool stations			12	
Max. milling spindle speed	min ⁻¹		8,000 <Millig specification>	
Travel	X- / Z-axis	mm (in.)	1000 type: 485 / 1,150 (19.1 / 45.3) 2000 type: 485 / 2,150 (19.1 / 84.6)	
	Y-axis	mm (in.)	200 <±100> (7.9 <±3.9>) <Y-axis specification>	

* The chuck is optional.

NLX 6000

Robust Construction Supporting Heavy-duty Cutting

The NLX 6000 is capable of high-efficiency, high-precision machining of ultra-heavy workpieces with a turning diameter of up to 920 mm (36.2 in.) and a turning length of up to 2,000 mm (78.7 in.) <distance between centers 2000 type>. We carry out simulations for torsional rigidity using the FEM analysis to produce a high-rigidity body with DMG MORI technologies applied to every detail. The model employs slideways on the X-, Y- and Z-axis for higher vibration damping performance and dynamic rigidity, which realizes outstanding cutting capabilities. In addition, each unit mechanism is designed in such a way that thermal displacement is minimized, which leads to 47% less thermal displacement than the conventional machine.

1 In-house manufactured high-rigidity spindles

- + Highly reliable spindles with controlled thermal displacement
- + Built-in and beltless drive motor
- + High output and high torque through gears

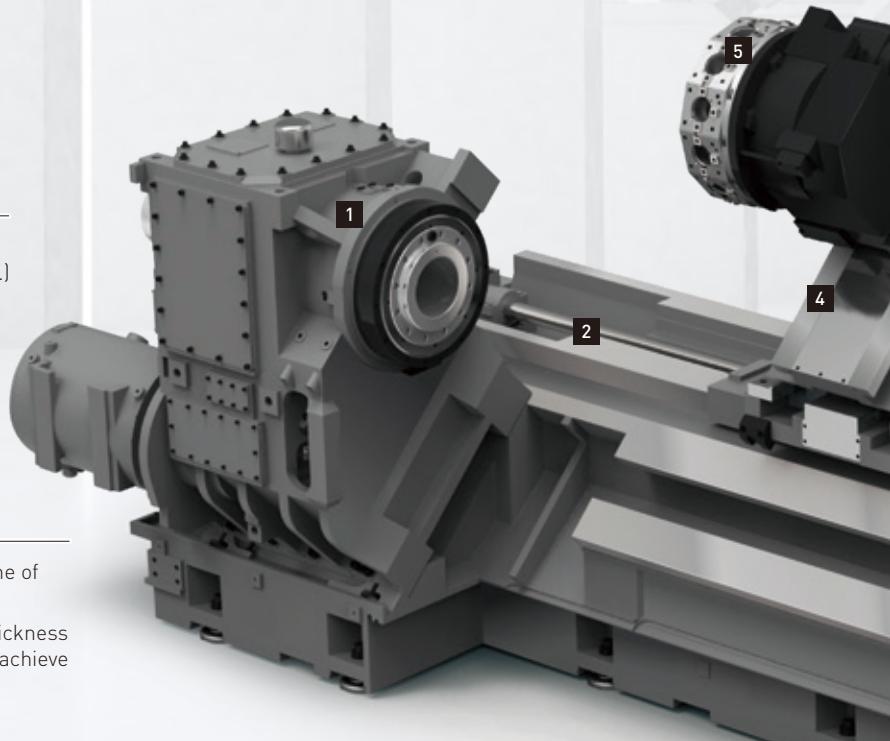
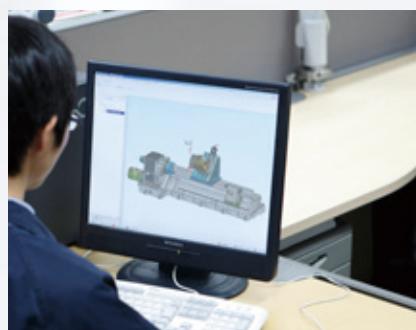
2 Spacious work area

- + Travel: X-axis 485 mm (19.1 in.)
- + Y-axis 200 < ± 100 > mm (7.9 < ± 3.9 > in.)
<Y-axis specification>
- + Z-axis 1,150 / 2,150 mm (45.3 / 84.6 in.)
<1000 type / 2000 type>

3 FEM analysis

- + Simulation of structural deformation at the time of load application
- + Fine adjustment to every part, including the thickness of the bed, the shape and layout of the ribs, to achieve a high level of flexural rigidity

FEM: Finite Element Method



4 High-speed and high-rigidity feed axes

- + Large-diameter ball screws on the X-axis for torsional rigidity 240% higher than that of the conventional model
- + Rapid traverse rate:
X-axis 20 m/min (787.4 ipm)
Y-axis 10 m/min (393.7 ipm)
<Y-axis specification>
Z-axis 24 m/min (944.9 ipm)
<compared with conventional machine 120%>



5 Turret

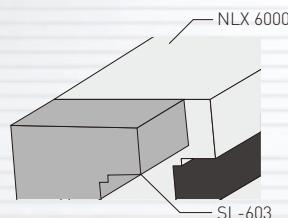
Milling specification

- + High-output, high-torque milling spindle
- + Employs the BMT with a high energy transmission efficiency that controls heat generation and vibration

BMT: Built-in Motor Turret

6 Wide slideways (X- / Y- / Z-axis)

- + Improved vibration damping and dynamic rigidity
- + Consistent high-precision machining
- + Cross-sectional area: compared with conventional machine 147%



11

7 High-rigidity tailstock

- + Programmable tailstock:
Easy positioning to any predetermined position
- + Tailstock travel: 1,100 / 2,100 mm (43.3 / 82.7 in.)
<1000 type / 2000 type>



8 High-rigidity bed

- + Slideways on the X-, Y- and Z-axis for stable heavy-duty cutting

NLX 6000

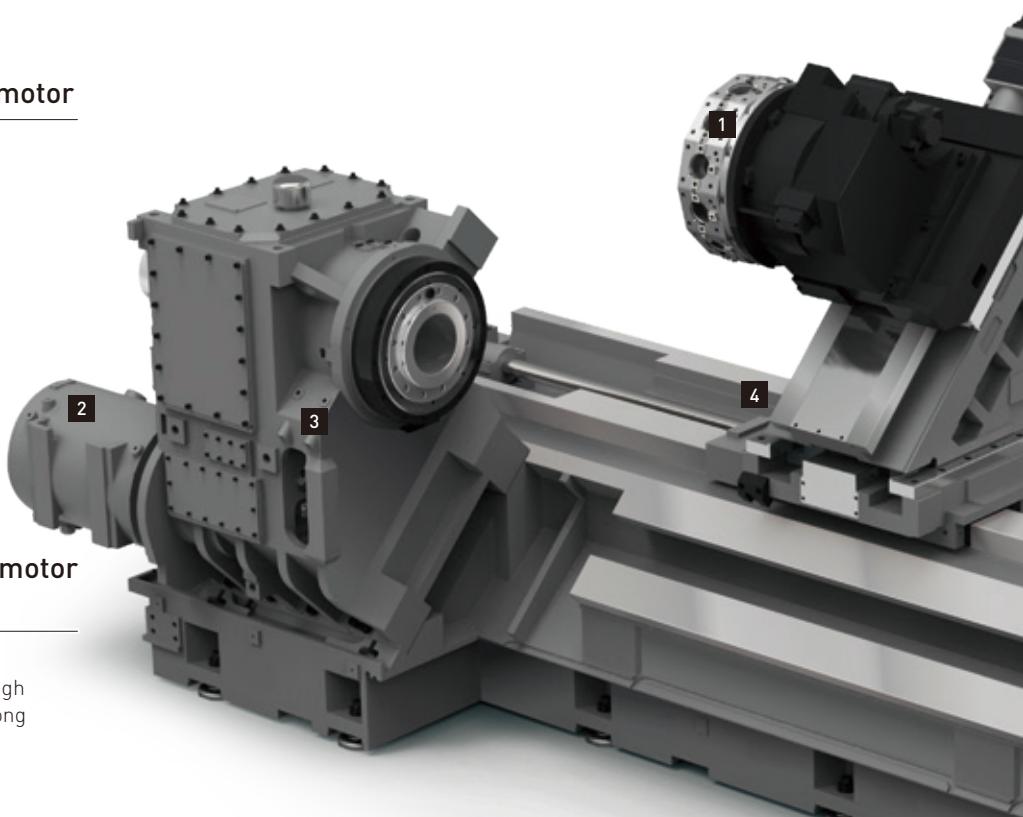
Thoroughly Controlled Thermal Displacement

There are varieties of factors leading to thermal displacement that has a major influence on machining accuracy, including heat generation during machine operation, changes in room temperature and increase in coolant temperature.

DMG MORI tackles each of the factors by taking its original measures from every angle.

1 Cooling of the milling motor

- + Oil jacket cooling around the built-in motor suppresses temperature rises



2 Cooling of the spindle motor (Milling specification)

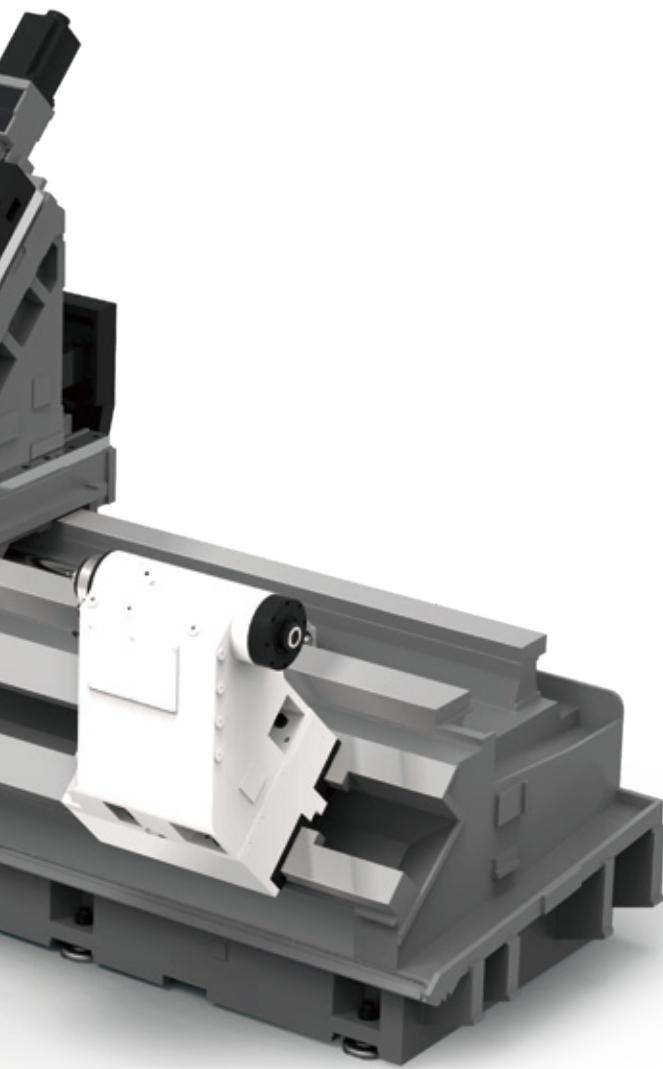
- + Oil jacket cooling around the spindle drive motor maintains high accuracy machining even over long hours

3 Headstock cooling

- + Oil / air lubrication method adopted for spindle bearings
- + Wear and heat generation of gears suppressed by oil lubrication
- + Heat generation suppressed by circulating cooling oil inside the headstock casting

4 Z-axis ball nut cooling

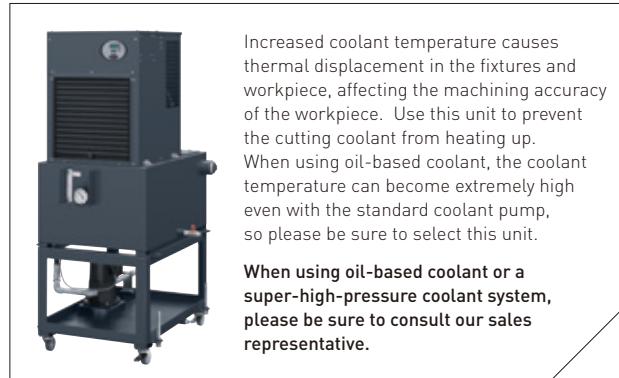
- + Cooling oil circulated around the Z-axis ball nut



NLX 6000 | 2000

<Through-spindle hole diameter 185 mm (7.3 in.) + Milling + Y-axis>

Coolant chiller <separate type> (option)



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

Full closed loop control (Scale feedback) <Magnescale> (option)

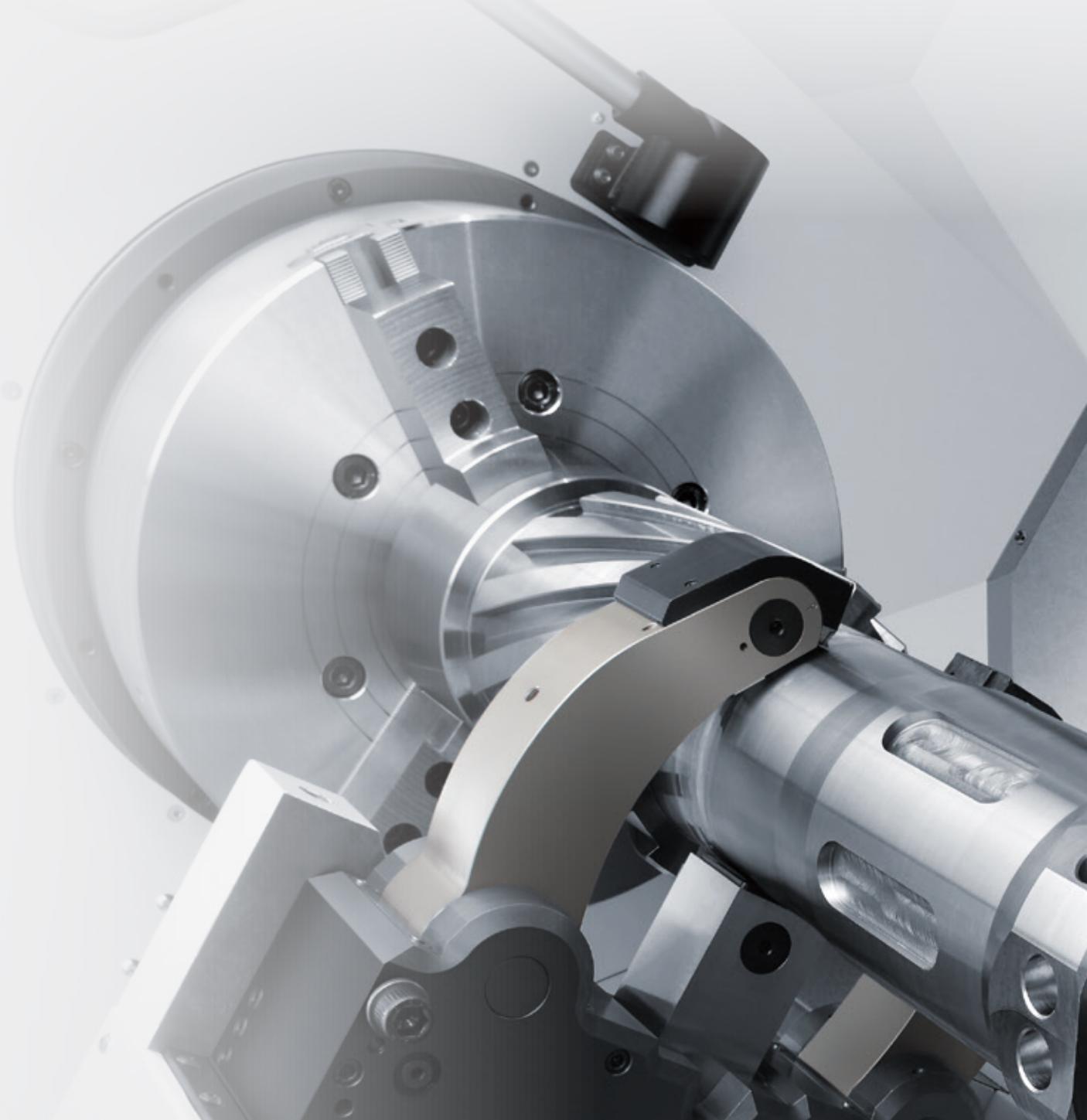


- + Full closed loop control (Scale feedback) SmartSCALE as an option: Enhanced positioning accuracy
- + High-accuracy machining is ensured by a scale with the same thermal expansion rate as the cast iron machine structure

NLX 6000

Large-diameter, High-rigidity Spindle

The NLX 6000 is equipped with a highly reliable spindle that takes thermal displacement into account. The model enables high-output, high-torque machining by employing the robust mechanism equipped with a built-in, beltless drive motor, solving problems unique to the belt drive, such as noise and vibration. The model provides the optimal spindle suited for the needs of each and every customer. Three variations of through-spindle diameters of 185 mm (7.3 in.), 285 mm (11.2 in.) and 375 mm (14.8 in.) are available.





Scan the QR code to view the video of the Spindle Plant.
https://www.dmgmori.co.jp/en/movie_library/movie/id=3458

Sophisticated spindle labyrinth + Air purge for spindle

- + The labyrinth structure has been enhanced, taking into account frequent use of high-pressure coolant
- + Spindle air purge offered as standard*1
- + Prevent coolant entry and improve spindle durability
- + Standard chuck size*2: 18, 21, 24 inches
- + Max. turning diameter: 920 mm (36.2 in.)

*1 Optional for through-spindle hole diameter 375 mm (14.8 in.).

*2 The chuck is optional.

Spindle C-axis positioning accuracy

- + High-accuracy encoder to reduce positioning accuracy errors on the C-axis down to half the amount of the conventional model

Max. spindle speed <30 min / cont>

- + Through-spindle hole diameter 185 mm (7.3 in.):
1,600 min⁻¹ <45 / 37 kW (60 / 50 HP)>
<75 / 55 kW (100 / 75 HP)> <high output>
- + Through-spindle hole diameter 285 mm (11.2 in.):
1,000 min⁻¹ <45 / 37 kW (60 / 50 HP)>
<75 / 55 kW (100 / 75 HP)> <high output>
- + Through-spindle hole diameter 375 mm (14.8 in.):
500 min⁻¹ <45 / 37 kW (60 / 50 HP)>

Spindle torque <30 min / cont>

- + Through-spindle hole diameter 185 mm (7.3 in.):
7,021 / 5,329 N·m (5,178.4 / 3,930.5 ft·lbf)
6,570 / 5,747 N·m (4,845.8 / 4,238.8 ft·lbf) <high output>
- + Through-spindle hole diameter 285 mm (11.2 in.):
12,069.1 / 9,160.2 N·m (8,901.7 / 6,756.2 ft·lbf)
11,298.7 / 9,874.7 N·m (8,333.5 / 7,283.2 ft·lbf) <high output>
- + Through-spindle hole diameter 375 mm (14.8 in.):
12,082.2 / 9,170.1 N·m (8,911.3 / 6,763.5 ft·lbf)



- + Through-spindle hole diameter:
185 mm (7.3 in.)



- + Through-spindle hole diameter:
285 mm (11.2 in.)



- + Through-spindle hole diameter:
375 mm (14.8 in.)

○: Option ☆: Consultation is required

NLX 6000 | 1000 / NLX 6000 | 2000

Through-spindle hole diameter	mm (in.)	185 (7.3)	285 (11.2)	375 (14.8)
Type of spindle nose		JIS A ₂ -15	JIS A ₂ -20	JIS A ₂ -20
Max. spindle speed	min ⁻¹	1,600	1,000	500
	18 inches	○	☆	☆
	21 inches	○	☆	☆
	24 inches	○	○	☆
Hydraulic chuck	18 inches (quick change chuck)	○	☆	☆
	21 inches (quick change chuck)	○	☆	☆
	24 inches (quick change chuck)	○	○	☆

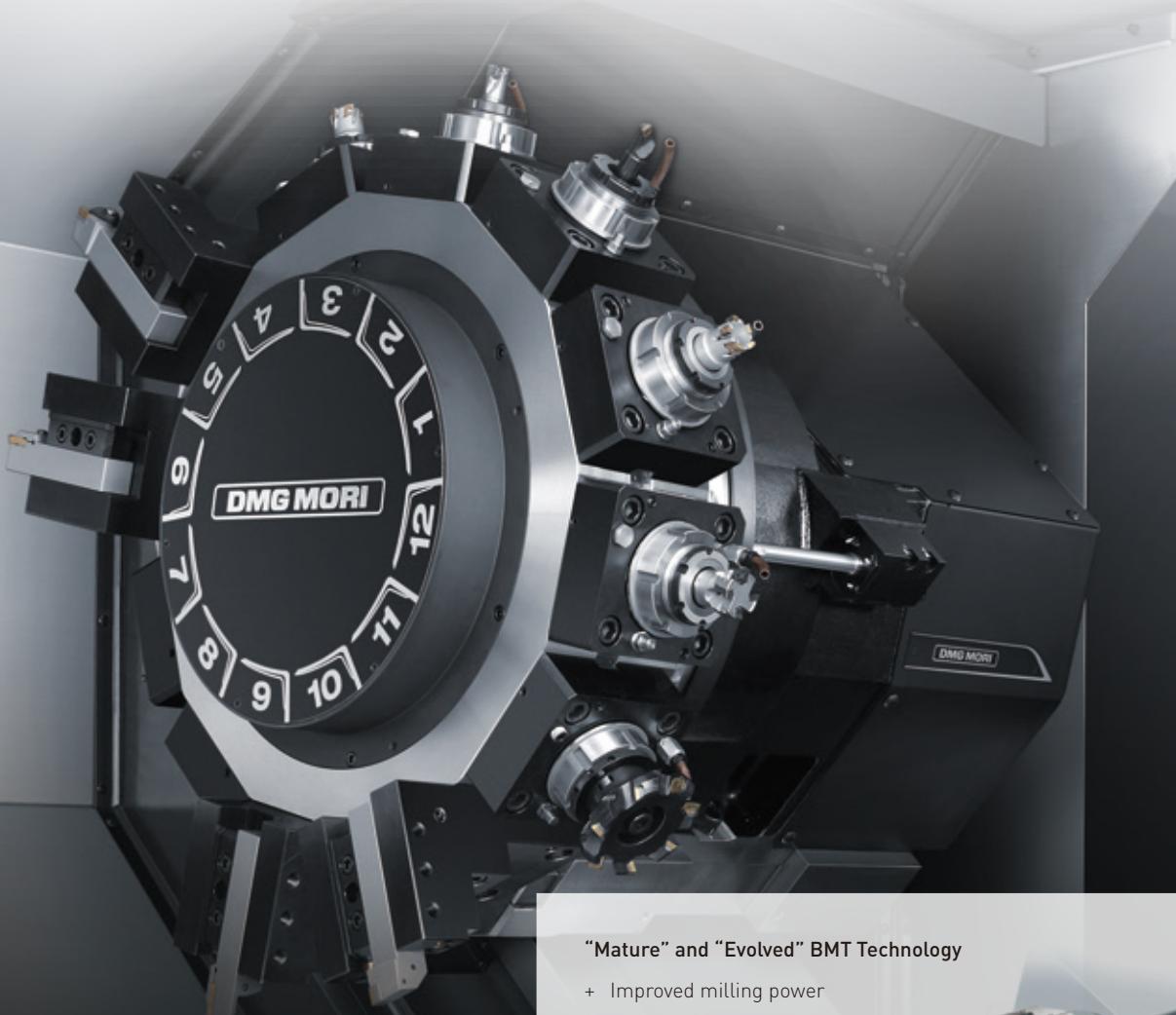
NLX 6000

BMT (Built-in Motor Turret) for Outstanding Milling

The turrets of the milling / Y-axis specifications are equipped with BMT.

The built-in motor construction of the BMT eliminates heat-generating transmission mechanisms, while also suppressing thermal displacement with jacket cooling.

This has improved milling accuracy and achieved cutting forces rivaling those of a machining center with a No. 40 taper spindle.



"Mature" and "Evolved" BMT Technology

- + Improved milling power
- + Improved milling accuracy
- + Controls the turret's heat and vibration
- + Reduced energy loss



The turret with an optimum center of gravity location offers significantly improved tool tip rigidity.

- + Max. milling spindle speed <10% ED / 50% ED / cont>: 8,000 min⁻¹ <11 / 11 / 7.5 kW (15 / 15 / 10 HP)>
8,000 min⁻¹ <13.2 / 13.2 / 7.5 kW (17.6 / 17.6 / 10 HP)> <high torque>
- + Milling spindle torque <10% ED / 50% ED / cont>: 117 / 84 / 62.3 N·m (86.3 / 62.0 / 45.9 ft·lbf)
140 / 84 / 62.3 N·m (103.3 / 62.0 / 45.9 ft·lbf) <high torque>
- + Number of tool stations: 12 tools
- + Max. milling spindle speed: 8,000 min⁻¹
- + Turret indexing time <1-station>: 1.18 sec.
- + Overhang of O.D. cutting rotary tool: 72 mm (2.8 in.)

High-torque milling



- + Max. milling spindle torque:
140 N·m (103.3 ft·lbf) <10%ED>

High-precision quick change tool holders (option)

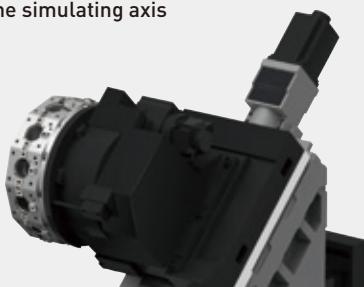
- + High-rigidity, high-precision quick change type tool holders compatible with the CAPTO tools



For milling

Y-axis specification

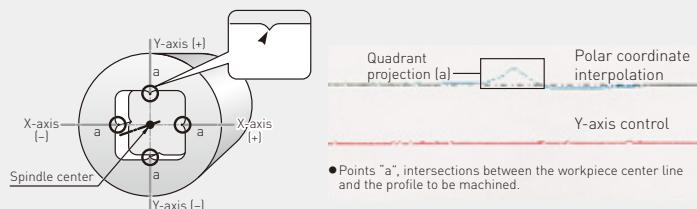
Combination of the X-axis and the simulating axis



We also independently developed a powerful platform for maximizing performance in the Y-axis specification. This has achieved rigidity between the spindle and the tool tip that exceeds that of conventional two-axis turning centers.

- + Y-axis travel: ±100 mm (3.9 in.)

Comparison between polar coordinate interpolation and Y-axis control (contouring)



With polar coordinate interpolation, the X-axis movement reverses at the intersections [a] between the workpiece center line and the profile, which changes cutting conditions and affects form accuracy.

- + Y-axis control: High form accuracy is achieved as machining surfaces are not affected by cutting condition changes

Turning specification



1000 type

SL type holder used.



2000 type

NL type holder used.

NLX 6000

Various Chip Disposal Solutions Available According to Machining Conditions

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.

• The chip conveyor in the picture complies with the EN.

EN: European Norm (European Standards)

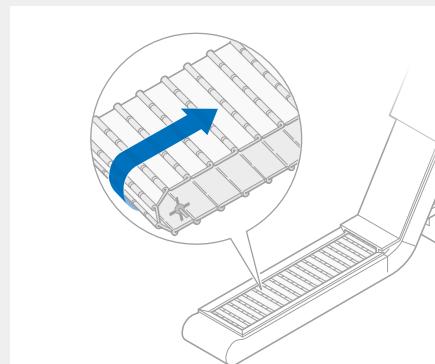


Chip flushing coolant (option)



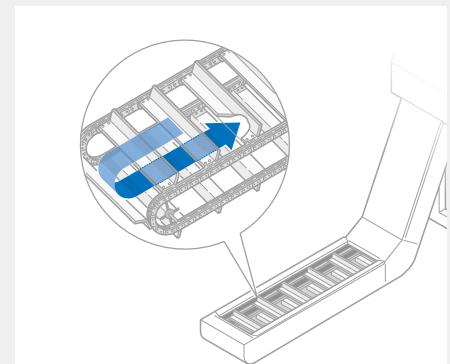
Chip flushing coolant is featured as standard at the base of the tailstock, improving chip processing capability.

Chip conveyor <hinge type> (option)



The hinge plate carries and discharges chips to the outside of the machine. Particularly effective for long chips.

Chip conveyor <scraper type> (option)



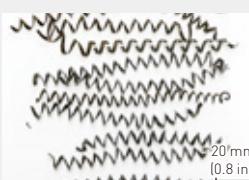
Chips accumulated on the bottom of the chip conveyor are scraped up by a scraper and discharged to the outside. Suitable for short or powdery chips.

Chip conveyor*

Handles various types of chips and ejects them in a highly efficient way.

Workpiece material

Steel



Chip form

Long

Short

Powdery

Chip size



Hinge type



Scraper type



*1 Consultation is required

*2 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.

• <Chip size guidelines> Short: chips 50 mm (2.0 in.) or less in length, bundles of chips Ø 40 mm (Ø 1.6 in.) or less

Long: bigger than the above

Powdery: minute particles

* Distance between centers 1000 type: option

Zero sludge coolant tank (option)*

Multiple coolant nozzles are arranged to stir coolant and efficiently collect fine casting sludge with a highly accurate cyclone filter.

- + Reduce cleaning work of the coolant tank dramatically
- + Prevent clogging of pipes / coolant nozzles and pump breakage
- + Expand coolant life

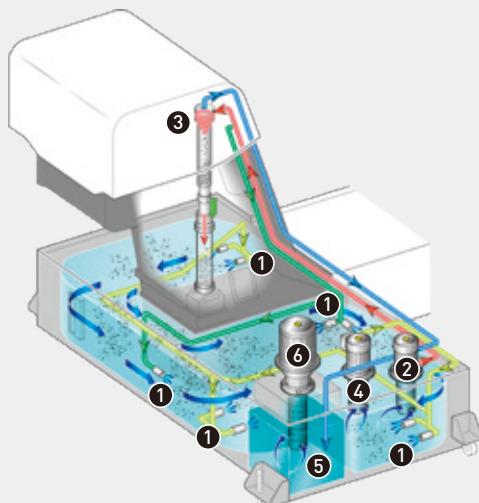
- ① Coolant nozzle
- ② Inlet filter pump
- ③ Cyclone filter
- ④ Stirring nozzle coolant pump
- ⑤ Clean coolant tank (from cyclone filter)
- ⑥ Through-spindle coolant pump

* Consultation is required
● Not compatible with oil-based coolant.

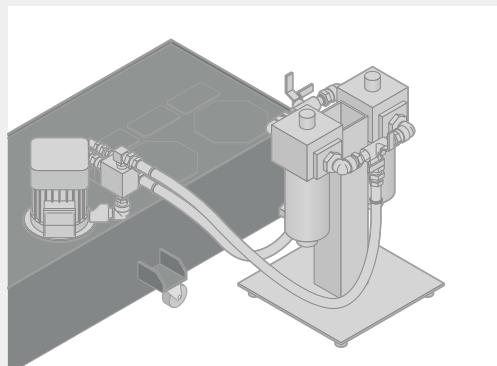


Scan the QR code to view the video of the zero sludge coolant tank.
[https://www.dmgmori.co.jp/en/theme/movie/
id=3021](https://www.dmgmori.co.jp/en/theme/movie/id=3021)

Image of sludge collection

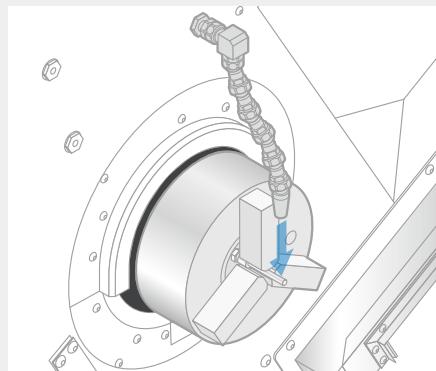


Coolant line filter (option)



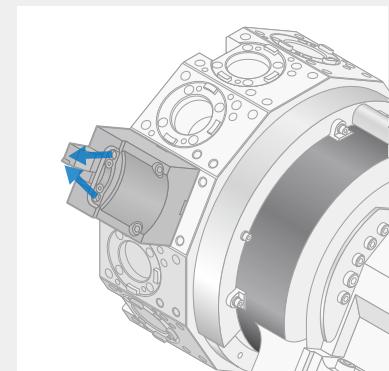
It removes foreign matter in the coolant coming from the coolant pump. The filter clogging detection function is available.

Chuck top coolant (option)



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

Air blow for tool tip (option)



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

○: Suitable △: Consideration required —: Not suitable

Cast iron		Aluminum / non-ferrous metal				
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.

● Be sure to select a chip conveyor that suits 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.

NLX 6000

Pursuit of Usability

The NLX 6000 is designed with features for ease of maintenance to increase the machine operating rate. The NLX 6000 achieves shorter MTTR (Mean Time To Repair) by thorough analyses of customers' demands such as a wider door opening for better work efficiency and maintainability. This ensures the machine is always in the best condition, thereby bringing greater productivity to the customer.

1 Pneumatic equipment / Lubricating oil (for sliding surfaces) tank

- + The pneumatic equipment and tank of lubricating oil for slideways are placed at the back of the machine for easy maintenance



2 Oil chiller / Hydraulic unit

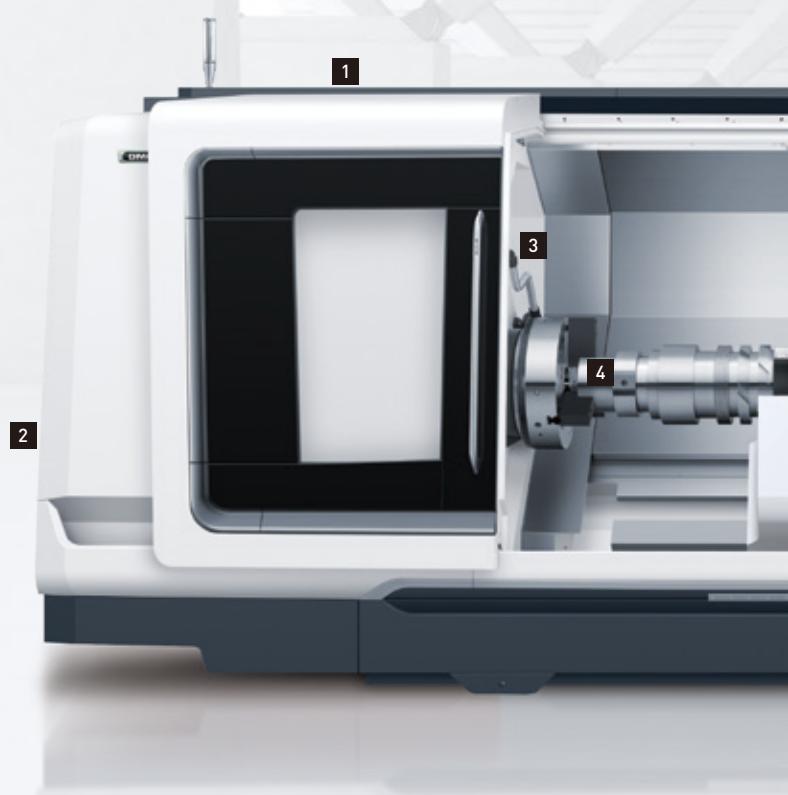


- + The oil chiller and hydraulic unit are arranged at the left side of the machine for easy access

3 Interference prevention pocket

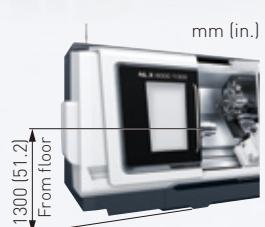


- + The chuck cover is provided with a pocket to accommodate tool overhang, preventing interference



4 Spindle center height NLX 6000 | 1000 (turning specification)

- + Because the machine has the same spindle center height <1,300 mm [51.2 in.]>*> as that of SL-603, peripherals such as a bar feeder for SL-603 can be used

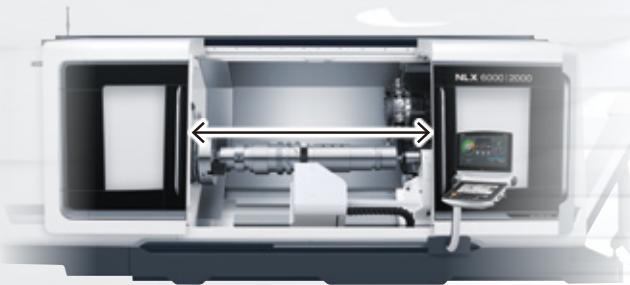


5 Visibility inside the machine during machining

- + Large window for better visibility inside the machine
- + In-machine LED lighting for higher visibility of machining points
- + Number of lights: 2 <1000 type>
3 <2000 type>

6 Wide door opening

- + A wide door opening improves efficiency of setups



- + Door opening: 1,280 mm (50.4 in.) <1000 type>
2,600 mm (102.4 in.) <2000 type>

7 Hydraulic steady rest (option)



NLX 6000 | 2000

<Through-spindle hole diameter
185 mm (7.3 in.) + Milling + Y-axis>

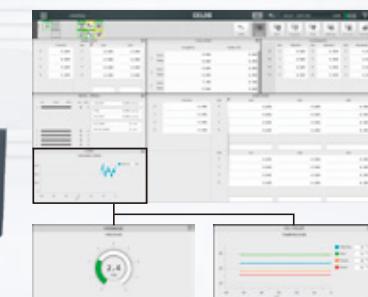
10 In-machine step

- + Removable
- + Higher workability and safety inside the machine



• The chip conveyor in the picture complies with the EN.

EN: European Norm (European Standards)



CELOS: Control Efficiency Lead Operation System

9 Pull out the coolant tank in front

- + It does not take extra space to clean the coolant tank because it can be pulled to the front when it is moved 380 mm (15.0 in.) to the right



NLX 6000

Solutions Best Matched to Customers' Needs

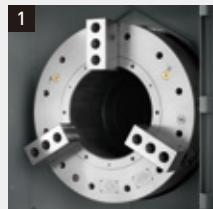
Automation systems and solutions for machining of long and large-diameter workpieces are available.



Machining of high-pressure steel pipes for the energy industry

Machining of high-pressure steel pipes for the energy industry <Air chuck (front, rear), Centering chuck> (option)

- + High-accuracy machining by powerful gripping of the front and rear chucks



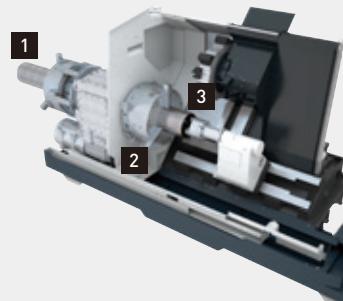
Air chuck (rear)



Air chuck (front)

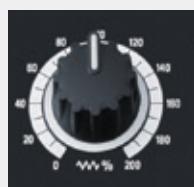


Work stopper, centering chuck



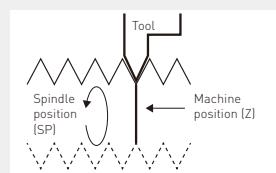
Thread cutting support function

Thread cutting override (option)



- + Capable of changing the spindle rotation speed during thread cutting
- + Magnescale-made encoder for high-accuracy responsiveness to the feeding

Thread re-cutting (option)



- + When pressing the teaching button on the screen after bringing a tool tip to a thread groove manually, the spindle position and machine coordinate data are stored, which allows workpieces to be re-chucked for re-threading

High-pressure coolant system

- + Chips are cut with high-pressure coolant to prevent chip entanglement



Scan the QR code to watch NLX 6000 with a high-pressure steel pipe transfer system used in the energy industry.
<https://www.youtube.com/watch?v=DPBoZXZ0ifo>

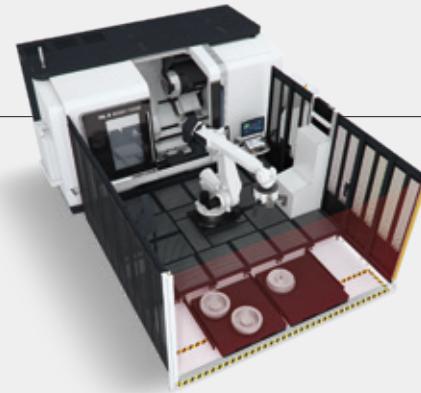


Robot system <Consultation is required>

- + Highly efficient workpiece loading / unloading for higher productivity



Robot loading

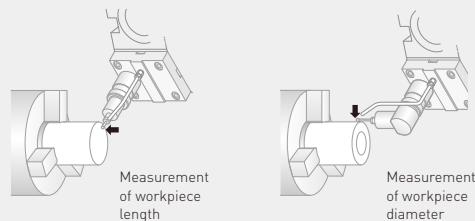


Scan the QR code to watch NLX 6000 with a robot system.
<https://www.youtube.com/watch?v=HgQbDVJNvBU>

Support for automation

In-machine measuring system (option)

- + Possible to automatically carry out measurement, offset input and re-machining of areas that have been cut with high accuracy



Easier setups

(Left spindle) Automatic in-machine tool presetter <pivoting type, with sensor air blow> (option)



- + Perform tool measurement more efficiently, thereby improving setup
- + Tool breakage detection

Quick jaw change (option)



- + Built-in quick change jaw system to ensure highly accurate and highly efficient jaw changes
- + High performance in high-mix low-volume production

Steady rest for shaft machining

Steady rest <tool passing type> (option)



- + Thanks to an opening of the steady rest, the saddle can pass without sliding back in the X-axis direction

- + Manual opening / closing possible without a crane

Hydraulic steady rest (option)



- + Quick-change system
- + Powerful gripping force and high repeatability

NLX 6000



One Stop Service for Various Needs DMG MORI Qualified Products

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.



- + 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

Scan the QR code to check DMQP.
<https://www.dmgmori.co.jp/sp/dmqp/en/index.html>

Four DMQP categories

Handling

Robot system

Chip conveyor

Shaping

Oil skimmer

Rotary window

Super-high-pressure coolant system

Hydraulic steady rest

Mist collector

Measuring

In-machine tool presetter

External tool measurement

In-machine measuring system (workpiece)

Surface roughness measuring system

Monitoring

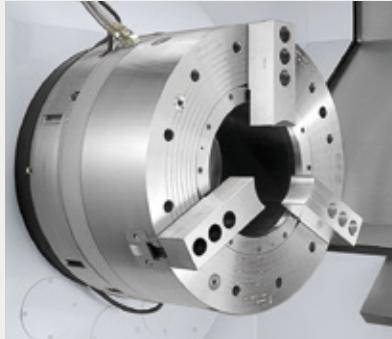
Electrical cabinet chiller

Coolant chiller

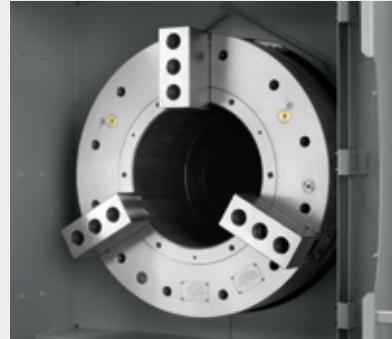
Coolant float switch

Signal lamp

Air chuck (front)



Air chuck (rear)



Hydraulic steady rest



Signal lamp



Mist collector



Super-high-pressure coolant system



Coolant chiller



Air dryer



Air compressor



Coolant gun



Oil skimmer



Electrical cabinet chiller



NLX 6000

DMG MORI Technology Cycles

Technology Cycles are complete solutions that achieve complex machining easily in a short time. They enable every operator to easily perform high-quality machining, setups and measurements with general-purpose machine tools and standard tools / fixtures, which used to require specialized machines, programs and tools.

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.



Scan the QR code for more information about Technology Cycles.
https://www.dmgmori.co.jp/en/movie_library/movie_tc_001.html

Respond to Various Technology Cycles

Shaping

Gear hobbing^{*1}

Optimal programming achieves hobbing with a general-purpose machine

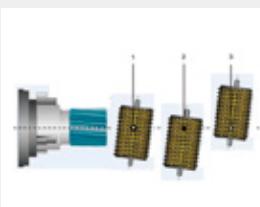
Efficient High-precision

Issue (before introduction)



- + 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

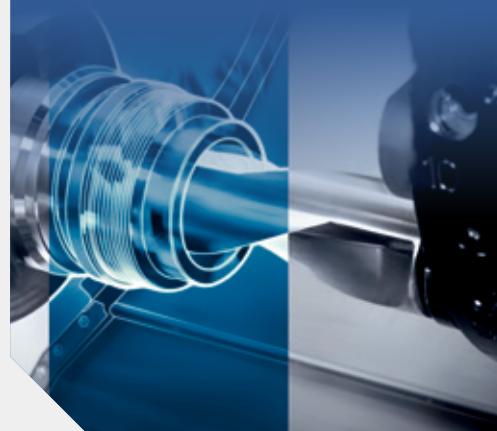
- + Consolidation of machining operations into the general-purpose machine reduces setup time and enhances accuracy such as concentricity due to no setup change

Monitoring

Easy tool monitoring

Monitoring load of spindle and traveling axes

 Efficient  Safe

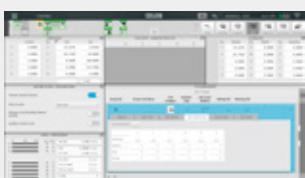


Issue (before introduction)

- + 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^{*2}

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




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Shaping

Multi-threading^{*1}

Cutting special thread



Efficient



Issue (before introduction)

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

Results (after introduction)

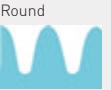
- + Easily create various thread shapes by conversational programming
- + Create a machining program of a special shape thread on the machine without CAD / CAM




Triangle


Square


Trapezoidal


Round


Buttress

Shaping

Excentric machining*¹

Easy programming of excentric machining



Efficient High-precision



Issue (before introduction)

- + Hope to perform excentric machining processes on one machine
- + Expensive jigs for excentric machining are necessary

Results (after introduction)

- + 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*¹

High-speed gear cutting including internal teeth



Efficient High-precision



Issue (before introduction)

- + Not sure how to create a program because it involves a special machining technique
- + Require multiple processes with a gear machine and a cutting machine

Results (after introduction)

- + 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



*1 Consultation is required

Shaping

Efficient Production Package (High-speed canned cycle)*2

Easy inputting of various machining patterns



Efficient
Safe
High-precision

Issue (before introduction)

- + Taking much time to create programs for complicated shapes and many holes
- + Mistakes resulting from large quantity of calculation

Results (after introduction)

- + 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




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Handling

Retraction cycle



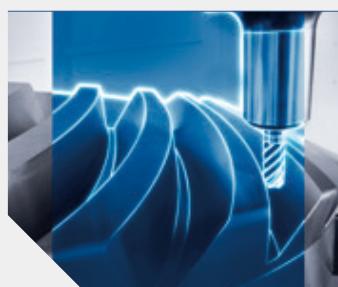
Automation allows for easy return to the zero return position without errors

- + 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

DMG MORI gearMILL*1



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 general-purpose machines



NLX 6000

From the Idea to the Finished Product

DMG MORI's cutting-edge operation system, CELOS, enables consistent management, documentation and visualization of orders, processes and machine data. CELOS can be extended with apps and is also compatible with your company's existing infrastructures and programs.



ERGOline operation panel with
21.5-inch multi-touch screen
and NC unit from SIEMENS*

CELOS

APP menu:

Central access to all available applications



CELOS APPs facilitate quick and easy operation: four examples »»



STATUS MONITOR

Monitor machine and machining status



JOB MANAGER

Systematic planning, administration and preparation of work orders



CAD / CAM VIEW

Visualize workpieces and improve program data



JOB ASSISTANT

Menu guided set-up of the machine and conversational processing of production orders



ERGOline operation panel with 21.5-inch multi-touch screen and NC unit from FANUC

STANDARD

- + Standard user interfaces for all new high technology machines from DMG MORI

CONSISTENT

- + Consistent administration, documentation and visualization of order, process and machine data

COMPATIBLE

- + Compatible with PPS and ERP systems
Can be networked with CAD / CAM products
Open to trendsetting CELOS APP extensions

NLX 6000

DMG MORI Digital Factory

PLANNING

Production planner

PREPARATION

Process designer

PRODUCTION

Operator

CELOS / CELOS PC Version

CELOS PC Version (PC)



CELOS (on-machine)



JOB MANAGER

(on-machine and PC)

- + Registration of workpiece information (drawings, materials)



JOB SCHEDULER

(on-machine and PC)

- + Creation and change of work schedule by setting start / end dates of machining



ORGANIZER

(on-machine and PC)

- + Setting of memos and alarms

CAD / CAM VIEW

(on-machine and PC)



- + Remote connection with CAD / CAM, operation and check on CELOS



JOB MANAGER

(on-machine and PC)

- + Registration of cutting tools, clamping fixtures, machining programs, work instructions and setup procedures to centrally manage workpiece information



TECHNOLOGY CYCLE

(on-machine only)

- + Complex machining easily realized in a short time

CELOS Machine



- + A wide variety of apps facilitate machining operation



JOB ASSISTANT

(on-machine only)



- + The operator can check the information registered in JOB MANAGER and do setups for machining

- + NC data and information about tools and a clamping device are transferred to the machine



TOOL HANDLING

(on-machine only)

- + Tool management by checking and registering tools to be used

DMG MORI realizes "Digital Factory" that drastically improves customer productivity and profits, using the cutting-edge technologies. The DMG MORI Digital Factory largely consists of five steps. Our cutting-edge operating system "CELOS" connects humans, machines and factories, enabling visualization and analysis of information which were difficult before. We make clear customers' production issues by shop digitization and provide optimal solutions for them.

MONITORING

Factory manager

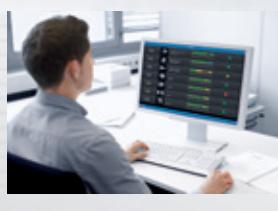
SERVICE

Service engineer

CELOS / CELOS PC Version



MESSENGER (on-machine and PC)



- + Visualizes operating status of networked machines
- + Collects alarm history and identifies reasons for machine stops
- + Possible to check from a machines, PC or smartphone anytime, anywhere

myDMG MORI



Your online service manager

- + Visualize service history
- + Manage documents digitally
- + Order services online
- + Track & Trace order status



CONDITION ANALYZER

(on-machine only)



- + Allows for early identification of machine and machining problems based on machine data recorded by on-machine sensors



IoTconnector

- + Compatible with widely used communication protocols (MTConnect, OPC UA, MQTT, etc.)
- + Communication PC equipped with the enhanced data connection function to boost the machine's network performance



WERKBLIQ



Integral solution for the digital shop floor, available for both DMG MORI & 3rd party products

- + Manage documents centrally
- + Control service precisely
- + Implement service sustainably
- + Learn continuously with analyses



NET SERVICE

(on-machine only)

- + Remote support by DMG MORI Service Center minimizes machine downtime caused by machine trouble



SERVICE AGENT

(on-machine and PC)

- + Regular machine maintenance in an accurate and attentive manner

Use of AI (under development)

- + AI learns information sent from a sensor and estimates & corrects thermal displacement to achieve higher machining accuracy
- + Preventive maintenance to prevent machine problems in advance

• These functions may differ in your country. Please consult our local sales representative for more detailed information.

NLX 6000

High-Performance Operation System MAPPS

MAPPS is a high-performance, smart operation system mounted on CELOS.

It enables operators to easily control machine operation with touch operation.



Lower Touch Panel Screen Layout

- ① Individual function operation area : Displays function buttons at all times regardless of the operation mode.
- ② Operation mode selection area : Displays mode selection buttons at all times.
- ③ Status display area : Displays the override status.
- ④ Machine operation area : Displays buttons related to spindle / turret operation and optional functions over multiple pages.
- ⑤ Mode-by-mode operation area : Displays buttons related to axis feed, zero return or automatic operation over multiple pages. The available buttons will change depending on the mode selected.
- ⑥ In-machine display area : Displays the machine model view.

NLX 6000

Assist for Programming SIEMENS*

Automatic programming by interactive guidance and easy-to-understand illustrations to reduce programming time by 60%.

* Consultation is required



Without Technology Cycle

Program using DIN code

With Technology Cycle

Interactive programming

DMG MORI Achieved Carbon Neutral Production Worldwide

We achieved carbon neutrality throughout the entire production process from parts procurement to product shipment. As a proof of being produced carbon neutral, our products are shipped with the "GREEN MACHINE" mark on them.



Scan the QR code for DMG MORI's approach towards sustainability.
<https://www.dmgmori.co.jp/corporate/sustainability/en/>

100% CLIMATE NEUTRAL MACHINE MANUFACTURING

NEUTRAL PRODUCT CARBON FOOTPRINT



NEUTRAL COMPANY CARBON FOOTPRINT



SUPPLIERS + **DMG MORI**

Energy saving achieved by GREENMODE functions and higher machine performance

Besides the GREENMODE functions, higher machine performance contributes to shorter machining time and less power consumption.

Higher machine performance

- + Rapid traverse rate (Z-axis): 20 m/min (787.4 ipm) → 24 m/min (944.9 ipm) <20% UP>
- + Cutting capability: Higher cutting conditions by high machine rigidity and high-output motor

GREENmode

GREEN monitoring

- + Visualization of power consumption and CO₂ emissions

GREEN device

- + High-brightness LED light
- + Inverter-equipped hydraulic pump

GREEN idle reduction

- + Shut off the power of the servo motor, spindle and coolant pump at a time of machine stop
- + Turn off the operation panel screen when a machine is not in operation for a certain time

GREEN control

- + Quicken standard M codes
- + Inverter-controlled coolant supply

Energy-saving effects (compared with conventional machine)

O.D. machining of flywheels (1,000 pcs.)

	Cutting time (sec.)	Standby power (kW)	Power consumption (kWh)	CO ₂ emissions <kg (1b.)>
Conventional machine	204,000	140	310	198 (435.6)
NLX 6000	150,000	105	220	143 (314.6) 



Workpiece: Flywheel
Size: ø 505 × 120 mm
(ø 19.9 × 4.2 in.)
Material <JIS>: S45C*
S45C: Carbon steel
JIS: Japanese Industrial Standard

Contribution to sustainable production

Reduction in CO₂ emissions by process integration and automation

Process integration and automation can ensure highly efficient production and shorter lead time.



Example of cycle time (machining of a fly wheel)

Conventional machining (Lathe, Machining Center, Hobbing machine)	287.5 min
NLX 6000 (Process integration)	189.5 min 
NLX 6000 + Automatic operation	174.0 min 

* 1045, 1046 (ANSI), C45, C45E, C45R (BS, DIN), 45 (GB)

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MACHINE UTILIZATION



MORE EFFICIENT 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

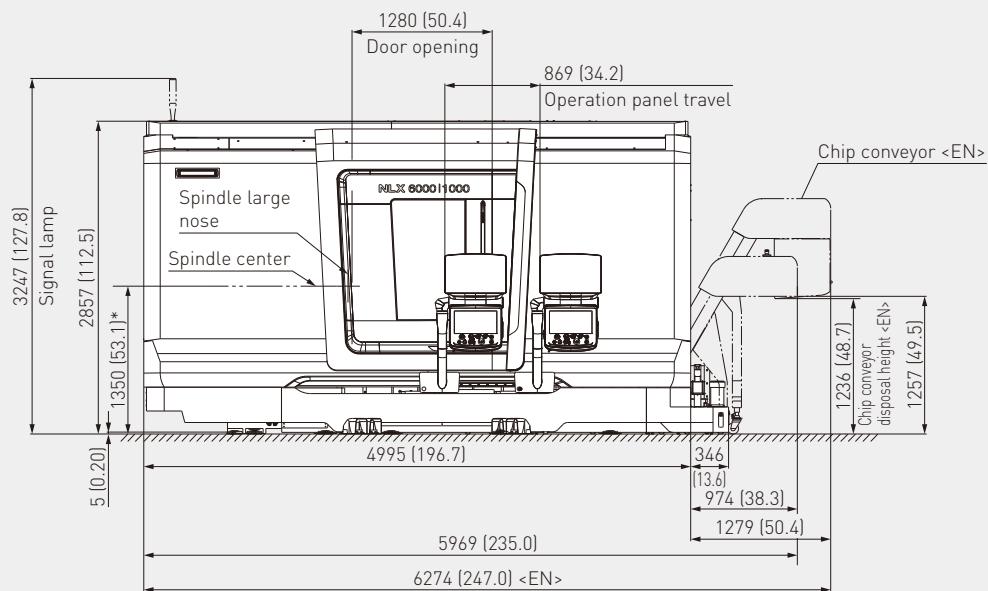
NLX 6000

Machine Size

NLX 6000 | 1000

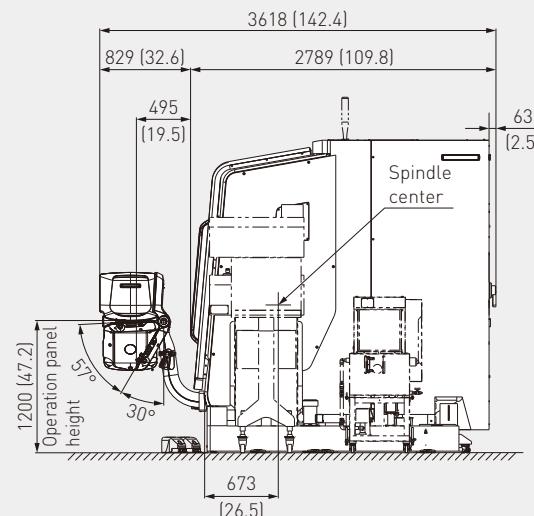
mm (in.)

Front view



* Turning specification: 1,300 mm (51.2 in.)

Side view

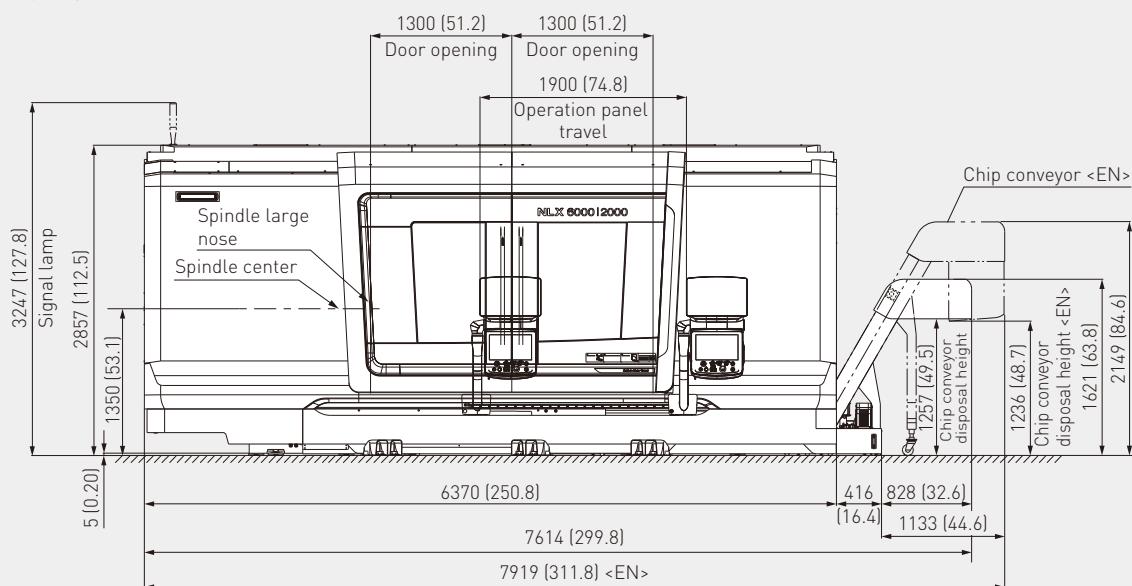


EN: European Norm (European Standards)

mm [in.]

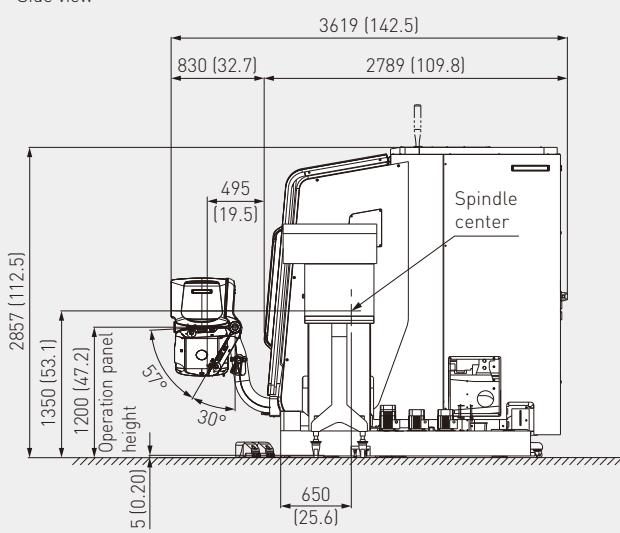
NLX 6000 | 2000

Front view



41

Side view



EN: European Norm (European Standards)

Q56327A03

NLX 6000

Machine Specifications

NLX 6000 1000 / NLX 6000 2000				
	T	TS		
Basic specification	—	MC	MC(Y)	
Optional specifications				
Through-spindle hole diameter	mm (in.)	185 (7.3) <standard>		
Capacity				
Swing over bed	mm (in.)	1,360 [53.5] <interference with front cover 1,110 [43.7]> 1,325 [52.2] <interference with front cover 1,039 [40.9]> ^{*1}		
Swing over cross slide	mm (in.)	772 [30.4]	733 [28.9] / 480 [18.9] <Y = 0 / Y = +100 [+3.9]>	
Max. turning diameter	mm (in.)	920 [36.2] <900 [35.4]*1>		
Max. turning length	mm (in.)	1,000 [39.3] / 2,000 [78.7]		
Bar work capacity*2	mm (in.)	Ø 116 [Ø 4.5]		
Travel				
X-axis travel	mm (in.)	485 [19.1]		
Y-axis travel	mm (in.)	—	200 <±100> [7.9 <±3.9]>	
Z-axis travel	mm (in.)	1,150 [45.3] / 2,150 [84.6]		
Spindle				
Max. spindle speed	min ⁻¹	1,600		
Type of spindle nose		JIS A ₂ -15		
Turret				
Number of tool stations		12		
Shank height for square tool	mm (in.)	32 [1 1/4]		
Max. milling spindle speed	min ⁻¹	—	8,000	
Feedrate				
Rapid traverse rate	mm/min (ipm)	X: 20,000 [787.4] Z: 24,000 [944.9]	X: 20,000 [787.4] Y: 10,000 [393.7] Z: 24,000 [944.9]	
Tailstock				
Tailstock travel	mm (in.)	1,100 [43.3] / 2,100 [82.7]		
Taper hole of tailstock spindle		Built-in center <MT5>		
Motor				
Spindle drive motor <30 min / cont>	kW (HP)	45 / 37 [60 / 50], 75 / 55 [100 / 75] <high output>		
Milling spindle drive motor <50%ED / cont>	kW (HP)	—	11 / 7.5 [15 / 10], 13.2 / 7.5 [17.6 / 10] <high torque>	
Machine size				
Machine height <from floor>	mm (in.)	2,857 [112.5]		
Floor space <width × depth>	mm (in.)	1000 type: 5,341 × 3,284 [210.3 × 129.3] <without chip conveyor> 5,969 × 3,284 [235.0 × 129.3] ^{*3} 6,274 × 3,284 [247.0 × 129.3] ^{*3} <EN> 2000 type: 7,614 × 3,284 [299.8 × 129.3] ^{*3} 7,919 × 3,284 [311.8 × 129.3] ^{*3} <EN>		
Mass of machine	kg (lb.)	18,000 [39,600] / 19,000 [41,800]	18,100 [39,820] / 19,100 [42,020]	18,900 [41,580] / 19,900 [43,780]
Control unit				
Mitsubishi Electric		M730UM		

JIS: Japanese Industrial Standard EN: European Norm (European Standards)

*1 1000 type (Turning specification)

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

*3 Including chip conveyor. Swivel radius of the operation panel not included.

● 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.

● For details, please check the Detailed Specifications.

● The information in this catalog is valid as of May 2021.

 : Turret  : Milling (option)
 : Tailstock  : Y-axis (option)
 The basic model is equipped with  and 

NLX 6000 1000 / NLX 6000 2000			
	 		
Through-spindle hole diameter	mm (in.)	285 [11.2] <option>	
Capacity			
Swing over bed	mm (in.)	1,360 [53.5] <interference with front cover 1,110 [43.7]> 1,325 [52.2] <interference with front cover 1,039 [40.9]> ^{*1}	
Swing over cross slide	mm (in.)	772 [30.4]	733 [28.9] / 480 [18.9] <Y = 0 / Y = +100 [+3.9]>
Max. turning diameter	mm (in.)	920 [36.2] <900 [35.4]*1>	
Max. turning length	mm (in.)	1,000 [39.3] / 2,000 [78.7]	
Bar work capacity*2	mm (in.)	Ø 116 [Ø 4.5]	
Travel			
X-axis travel	mm (in.)	485 [19.1]	
Y-axis travel	mm (in.)	—	200 <±100> [7.9 <±3.9>]
Z-axis travel	mm (in.)	1,150 [45.3] / 2,150 [84.6]	
Spindle			
Max. spindle speed	min ⁻¹	1,000	
Type of spindle nose		JIS A ₂ -20	
Turret			
Number of tool stations		12	
Shank height for square tool	mm (in.)	32 [1 1/4]	
Max. milling spindle speed	min ⁻¹	—	8,000
Feedrate			
Rapid traverse rate	mm/min (ipm)	X: 20,000 [787.4] Z: 24,000 [944.9]	X: 20,000 [787.4] Y: 10,000 [393.7] Z: 24,000 [944.9]
Tailstock			
Tailstock travel	mm (in.)	1,100 [43.3] / 2,100 [82.7]	
Taper hole of tailstock spindle		Built-in center <MT5>	
Motor			
Spindle drive motor <30 min / cont>	kW (HP)	45 / 37 [60 / 50], 75 / 55 [100 / 75] <high output>	
Milling spindle drive motor <50%ED / cont>	kW (HP)	—	11 / 7.5 [15 / 10], 13.2 / 7.5 [17.6 / 10] <high torque>
Machine size			
Machine height <from floor>	mm (in.)	2,857 [112.5]	
Floor space <width X depth>	mm (in.)	1000 type: 5,341 × 3,284 [210.3 × 129.3] <without chip conveyor> 5,969 × 3,284 [235.0 × 129.3] ^{*3} 6,274 × 3,284 [247.0 × 129.3] ^{*3} <EN> 2000 type: 7,614 × 3,284 [299.8 × 129.3] ^{*3} 7,919 × 3,284 [311.8 × 129.3] ^{*3} <EN>	
Mass of machine	kg (lb.)	18,100 [39,820] / 19,100 [42,020]	18,200 [40,040] / 19,200 [42,240]
Control unit			
Mitsubishi Electric		M730UM	

JIS: Japanese Industrial Standard EN: European Norm (European Standards)

*1 1000 type (Turning specification)

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

*3 Including chip conveyor. Swivel radius of the operation panel not included.

● 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.

● For details, please check the Detailed Specifications.

● The information in this catalog is valid as of May 2021.

NLX 6000

Machine Specifications

NLX 6000 1000 / NLX 6000 2000				
	T	Ts		
Basic specification	—	MC	MC(Y)	
Optional specifications	—	—	—	
Through-spindle hole diameter	mm (in.)	375 (14.8) <option>		
Capacity				
Swing over bed	mm (in.)	1,360 (53.5) <interference with front cover 1,110 (43.7)> {1,325 (52.2) <interference with front cover 1,039 (40.9)>*1}		
Swing over cross slide	mm (in.)	772 (30.4)	733 (28.9) / 480 (18.9) <Y = 0 / Y = +100 (+3.9)>	
Max. turning diameter	mm (in.)	920 (36.2) <900 (35.4)*1>		
Max. turning length	mm (in.)	1,000 (39.3) / 2,000 (78.7)		
Travel				
X-axis travel	mm (in.)	485 (19.1)		
Y-axis travel	mm (in.)	—	200 <±100> (7.9 <±3.9>)	
Z-axis travel	mm (in.)	1,150 (45.3) / 2,150 (84.6)		
Spindle				
Max. spindle speed	min ⁻¹	500		
Type of spindle nose		JIS A ₂ -20		
Turret				
Number of tool stations		12		
Shank height for square tool	mm (in.)	32 (1 ¹ / ₄)		
Max. milling spindle speed	min ⁻¹	—	8,000	
Feedrate				
Rapid traverse rate	mm/min (ipm)	X: 20,000 (787.4) Z: 24,000 (944.9)	X: 20,000 (787.4) Y: 10,000 (393.7) Z: 24,000 (944.9)	
Tailstock				
Tailstock travel	mm (in.)	1,100 (43.3) / 2,100 (82.7)		
Taper hole of tailstock spindle		Built-in center <MT5>		
Motor				
Spindle drive motor <30 min / cont>	kW (HP)	45 / 37 (60 / 50)		
Milling spindle drive motor <50%ED / cont>	kW (HP)	—	11 / 7.5 (15 / 10), 13.2 / 7.5 (17.6 / 10) <high torque>	
Machine size				
Machine height <from floor>	mm (in.)	2,857 (112.5)		
Floor space <width × depth>	mm (in.)	1000 type: 5,341 × 3,284 (210.3 × 129.3) <without chip conveyor> 5,969 × 3,284 (235.0 × 129.3)*2 6,274 × 3,284 (247.0 × 129.3)*2 <EN> 2000 type: 7,614 × 3,284 (299.8 × 129.3)*2 7,919 × 3,284 (311.8 × 129.3)*2 <EN>		
Mass of machine	kg (lb.)	18,100 (39,820) / 19,100 (42,020)	18,200 (40,040) / 19,200 (42,240)	19,000 (41,800) / 20,000 (44,000)
Control unit				
Mitsubishi Electric		M730UM		

JIS: Japanese Industrial Standard EN: European Norm (European Standards)

*1 1000 type (Turning specification)

*2 Including chip conveyor. Swivel radius of the operation panel not included.

● 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.

● For details, please check the Detailed Specifications.

● The information in this catalog is valid as of May 2021.

 : Turret  : Milling (option)
 : Tailstock  : Y-axis (option)
 The basic model is equipped with  and 

NLX 6000

Standard & Optional Features

 : Standard features  : Options
 : Select one  : Consultation is required
 : Not applicable

NLX 6000		
1000 / 2000		
	 	 
Basic specification		
Optional specifications		
Spindle		
1,600 min ⁻¹ : 45 / 37 kW [60 / 50 HP] <30 min / cont>	Through-spindle hole diameter 185 mm [7.3 in.]	  
1,600 min ⁻¹ : 75 / 55 kW [100 / 75 HP] <30 min / cont> {high output}	Through-spindle hole diameter 185 mm [7.3 in.]	  
1,000 min ⁻¹ : 45 / 37 kW [60 / 50 HP] <30 min / cont>	Through-spindle hole diameter 285 mm [11.2 in.]	  
1,000 min ⁻¹ : 75 / 55 kW [100 / 75 HP] <30 min / cont> {high output}	Through-spindle hole diameter 285 mm [11.2 in.]	  
500 min ⁻¹ : 45 / 37 kW [60 / 50 HP] <30 min / cont>	Through-spindle hole diameter 375 mm [14.8 in.]	  
Turret		
12-station bolt-tightened turret	For NL holders <1000 / 2000 type> For SL holders <1000 / 2000 type>	     
Milling spindle <10%ED / 50%ED / cont>	8,000 min ⁻¹ : 11 / 11 / 7.5 kW [15 / 15 / 10 HP], 117 / 84 / 62.3 N·m [86.3 / 62.0 / 45.9 ft·lbf]	  
	8,000 min ⁻¹ : 13.2 / 13.2 / 7.5 kW [17.6 / 17.6 / 10 HP], 140 / 84 / 62.3 N·m [103.3 / 62.0 / 45.9 ft·lbf] <high torque>	  
Tailstock		
Programmable tailstock		  
Tailstock spindle built-in center ^{*2}	MT5 MT6	     
Tailstock with the hydraulic quill		  
Fixture / Steady rest		
Steady rest (bolt-tightened)	ø 100—ø 450 mm (<ø 3.9—ø 17.7 in.) ø 400—ø 600 mm (<ø 15.7—ø 23.6 in.)	     
Hydraulic steady rest (carriage direct-coupled)	Steady rest quick change system	  
Coolant		
Coolant system	0.45 / 0.65 MPa [65.3 / 94.3 psi] ^{*3} , 800 / 1,100 W <50 / 60 Hz>	  
	1 / 1.5 MPa [145 / 217.5 psi] ^{*4} , 1.1 / 2.2 kW [1.5 / 3 HP] <50 / 60 Hz>	  
Super-high-pressure coolant system (separate type) ^{*5}	7.0 MPa [1,015 psi] ^{*4} Interface ^{*4}	     

*1 For the 1000 type turning specification, SL holder is mounted as standard. (NL holder not compatible) For the 2000 type turning specification, NL holder is mounted as standard. (SL holder not compatible)

*2 The center is standard.

*3 In the case that the discharge rate is 30 L/min (7.9 gpm). The values may vary depending on the shape of a tool to be used.

*4 When high-pressure coolant is selected, the standard pump is not attached.

*5 DMQP (DMG MORI Qualified Products)

*6 When super-high-pressure coolant system is used, a coolant chiller is recommended. For details, please consult our sales representative.

● For details, please check the Detailed Specifications.

● The information in this catalog is valid as of May 2021.

● 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.

 : Turret  : Milling (option)
 : Tailstock  : Y-axis (option)
 The basic model is equipped with  and 

NLX 6000

Standard & Optional Features

 : Standard features  : Options
 — : Not applicable

NLX 6000			
1000 / 2000			
	 	 	
Basic specification			
Optional specifications	—		 
Chip disposal			
Chip conveyor	Right discharge, hinge type <1000 type> Right discharge, hinge type <2000 type>	—  	  
Air purge	Right discharge, scraper type Spindle Milling spindle	  —	  
Measurement			
(Left spindle) Automatic in-machine tool presetter	Pivoting type, without sensor air blow, cleaning of presetter required (before measurement)	  	  
(Left spindle) Manual type in-machine tool presetter	Pivoting type, with sensor air blow	  	  
In-machine workpiece measuring system* ⁸	Removable type Touch sensor (radio signal transmission type)* ⁹	  	  
Improved accuracy			
Oil chiller		  	  
Full closed loop control (Scale feedback)	X-axis Y-axis Z-axis	— —   	  
Automation			
Auto power off		  	  
EtherNet/IP interface		  	  
Robot interface (EtherNet/IP)* ¹⁰	Ethernet/IP interface, automatic door, guard fence interface required separately	  	  
Other			
Built-in worklight (LED)	2 <1000 type> 3 <2000 type>	  	  
Signal lamp	4 colors (LED type: red, yellow, green, blue)	  	  
Signal lamp buzzer		  	  
Chuck foot switch	Single Double	  	  

*7 Optional for through-spindle hole diameter 375 mm (14.8 in.).

*8 Certain workpiece shapes cannot be measured.

*9 Please note that there are a few countries where the radio signal transmission type cannot be used because no radiowave license in those countries has been obtained yet.

For details, please consult our sales representative.

*10 The addition of a special interface signal requires design-to-order work.

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If you have to use a flammable coolant for any reason, please be sure to consult our sales representative.

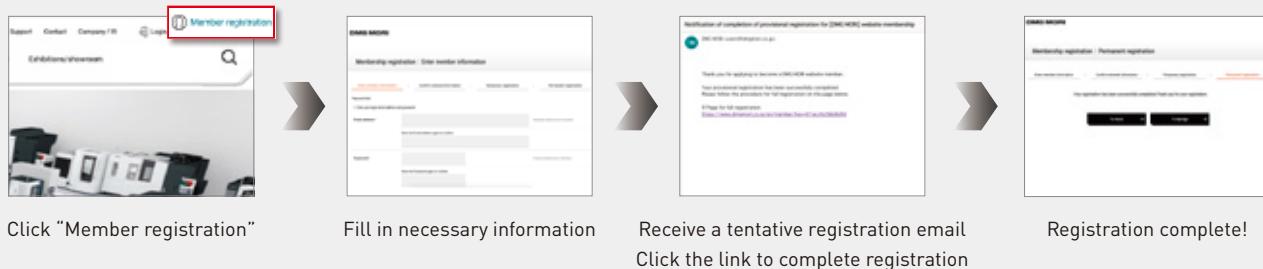
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This product detects machine relocation. Once the machine is relocated, it is not operable unless its legitimate relocation is confirmed by DMG MORI or its distributor representative. If the restart of the machine can result in unauthorized export of cargo or technology or will violate legitimate export controls, DMG MORI and its distributor representative can refuse to restart the machine. In that case, DMG MORI and its distributor representative do not assume any loss due to the inability to operate the machine or any liability during the warranty period.

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