

DMG MORI

NLX 4000 | 750
NLX 4000 | 1500

Rigid and Precise Turning Center

NLX 4000



DMGMORI.COM

NLX 4000

Elaborate and Dynamic Parts Machining

The NLX 4000 is a totally new large turning center that meets the needs of the times when multiple characteristics are demanded. The model is capable of performing various types of machining from heavy-duty cutting with its high-torque power to high-precision machining of elaborate parts that requires super-high precision. The model able to perform integrated machining of turning and milling as well as turning, the basic function of turning centers, is suited to parts machining in a broad range of industries.





Industrial machinery

1 Flange

2 Pulley

3 Ball screw

Automobiles

4 Axle shaft

Oil well

5 Coupling

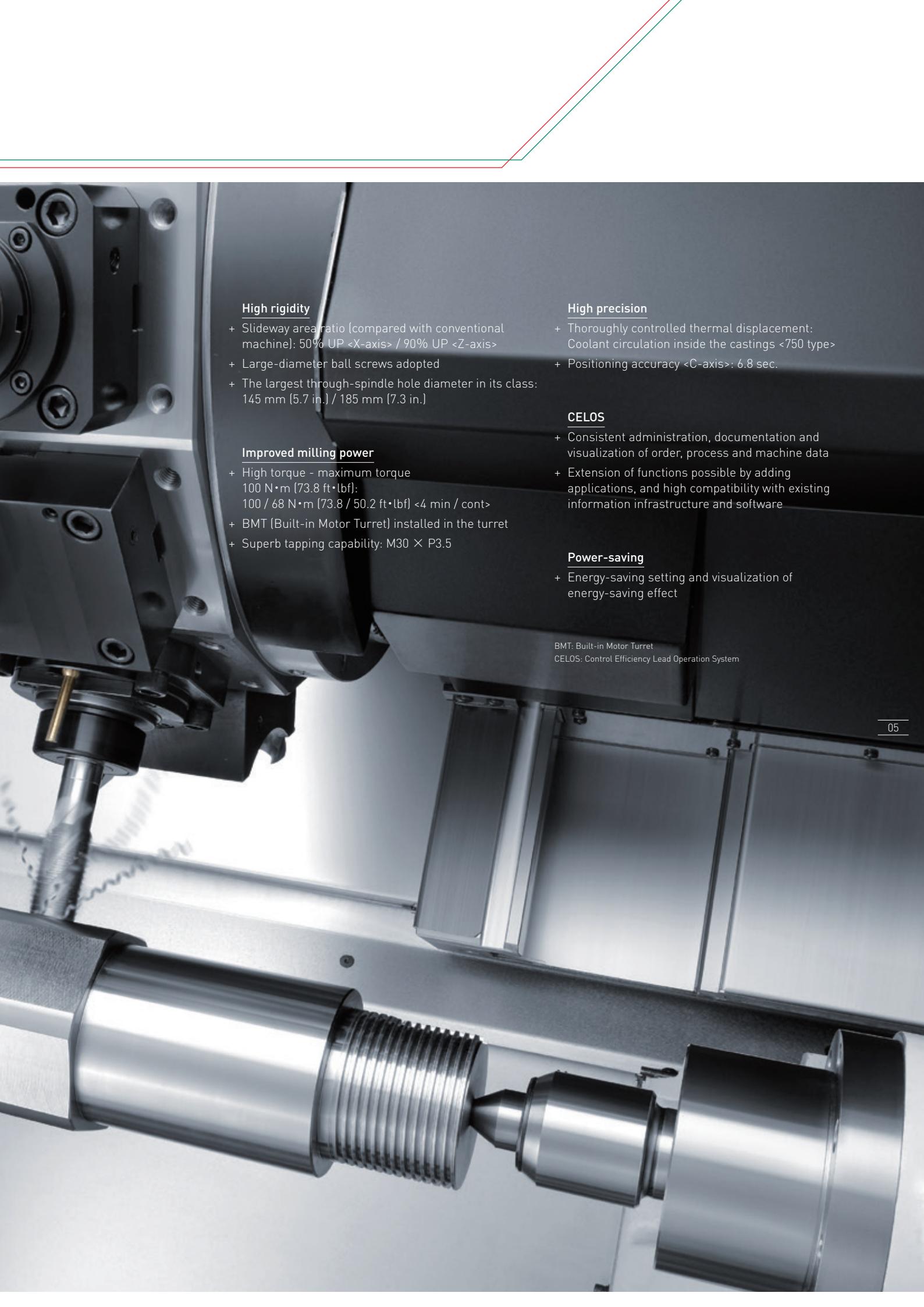
NLX 4000

Innovative Concept Leading Large Turning Centers

The main feature of the NLX 4000 is the combination of powerful machining of large-diameter workpieces with the largest through-spindle hole diameter in its class and high-precision machining realized by a highly rigid structure with controlled thermal displacement.

The ergonomically designed new cover minimizes operators' work load. The NLX 4000 is also environmentally friendly with improved energy-saving performance enabled by the cutting-edge operation system CELOS application.





High rigidity

- + Slideway area ratio (compared with conventional machine): 50% UP <X-axis> / 90% UP <Z-axis>
- + Large-diameter ball screws adopted
- + The largest through-spindle hole diameter in its class: 145 mm (5.7 in.) / 185 mm (7.3 in.)

Improved milling power

- + High torque - maximum torque 100 N·m (73.8 ft·lbf): 100 / 68 N·m (73.8 / 50.2 ft·lbf) <4 min / cont>
- + BMT (Built-in Motor Turret) installed in the turret
- + Superb tapping capability: M30 X P3.5

High precision

- + Thoroughly controlled thermal displacement: Coolant circulation inside the castings <750 type>
- + Positioning accuracy <C-axis>: 6.8 sec.

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

Power-saving

- + Energy-saving setting and visualization of energy-saving effect

BMT: Built-in Motor Turret

CELOS: Control Efficiency Lead Operation System

NLX 4000

Best Solutions for Your Shop Floor

The NLX 4000 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 4000 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



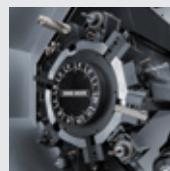
Alternating speed

Hydraulic steady rest

2

Turret

For various types of machining



12-station (for milling)
100 N·m (73.8 ft·lbf)
torque

3

Bar work capacity

Enough for
large-diameter pipes



Bar work capacity
ø 164 mm (ø 6.4 in)

4

Workpiece support

Workpiece support suitable for your workpiece and machining



Chuck



Air chuck (front)



Air chuck (rear)



Thread cutting on a pipe

10



5

Maintenance

Improved production efficiency by preventive maintenance



DMG MORI Messenger



Air dryer



Oil skimmer



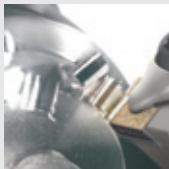
Mist collector



• The photo shows the machine equipped with options.

6 Spindle torque

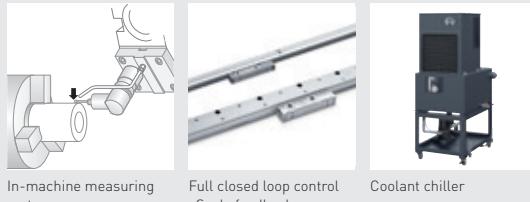
For heavy-duty cutting



37 / 30 kW (50 / 40 HP)
3,225 / 2,616 N·m
(2,378.6 / 1,929 ft·lbf)
<30 min / cont>

7 Machining accuracy

Meeting high accuracy requirements



In-machine measuring system

Full closed loop control
<Scale feedback>



Coolant chiller

8 Better setup performance

Drastically shortened setup time



In-machine tool presetter

9 Cutting technology

Improving machining efficiency with Technology Cycles all at once



Excentric machining

Multi-threading

10 Mass production, automation

Versatility, labor saving, quick setup changes



Robot interface



Bar feeder interface

11 Chip disposal

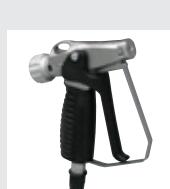
Higher cutting performance



External chip conveyor



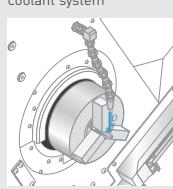
Super-high-pressure coolant system



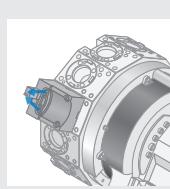
Coolant gun



Through-spindle coolant system



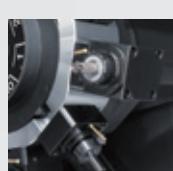
Chuck top coolant



Air blow for tool tip

12 Tool holders

Improving efficiency with holders designed for each machining

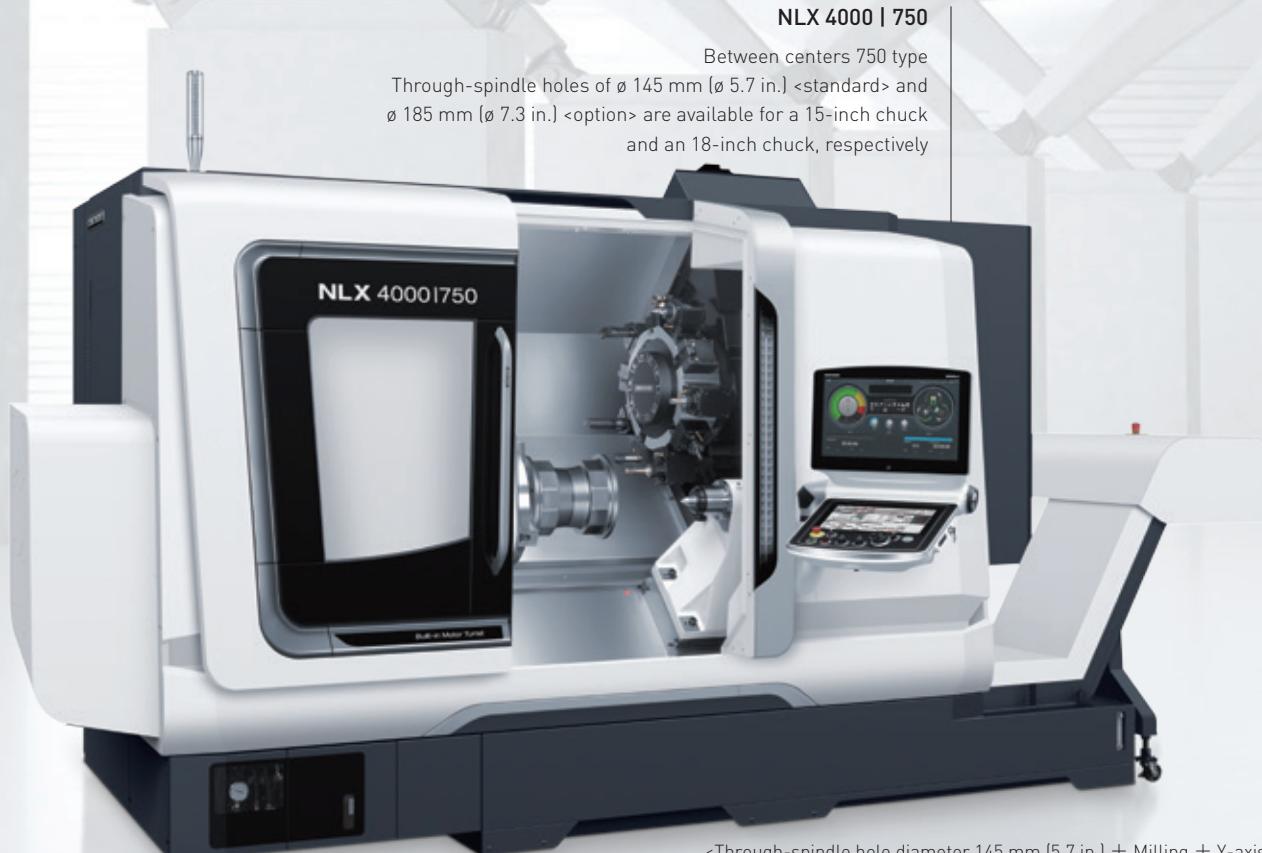


Milling holders

NLX 4000

12 Specifications to Meet Various Needs

The NLX 4000 offers two variations of distances between centers of 750 mm (29.5 in.) and 1,500 mm (590.1 in.), three variations of turrets including the milling specification and the Y-axis specification with the Y-axis travel of 120 mm (4.7 in.), and two spindle types with different sizes of through-spindle holes.



<Through-spindle hole diameter 145 mm (5.7 in.) + Milling + Y-axis>

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Through-spindle hole diameter	mm (in.)	ø 145 (ø 5.7)	ø 185 (ø 7.3)
Distance between centers		750 type / 1500 type	
Standard chuck size*1		15 inches	18 inches
Bar work capacity	mm (in.)	ø 117 (ø 4.6)*2	ø 117 (ø 4.6)*2, ø 164 (ø 6.4) <consultation is required>
Number of tool stations		10, 12	
Travel	X-axis	mm (in.)	365 (14.4) 315 (12.4) <Y-axis specification>
	Y-axis	mm (in.)	120 <±60> (4.7 <±2.4>) <Y-axis specification>
	Z-axis	mm (in.)	875 (34.4) <750 type> / 1,685 (66.3) <1500 type>

*1 The chuck is optional.

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

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



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Distance between centers of 1,500 mm (59.1 in.)

for long and large-diameter shaft workpieces
Through-spindle holes of Ø 145 mm (Ø 5.7 in.) <standard> and
Ø 185 mm (Ø 7.3 in.) <option> are available for a 15-inch chuck
and an 18-inch chuck, respectively



09

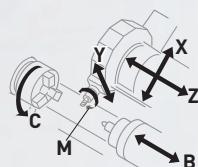
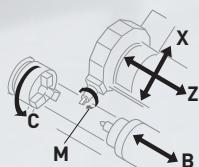
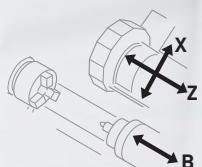
<Through-spindle hole diameter 185 mm (7.3 in.) + Milling + Y-axis>

Variations

T TS Turret (turning) +
Tailstock

T MC TS Milling + Tailstock

T MC Y TS Milling + Y-axis + Tailstock



NLX 4000

Incomparably Rigid Structure Supporting Heavy-duty Cutting

We carry out simulations for torsional rigidity by the FEM analysis at the development stage to produce a robust machine body that reflects the DMG MORI technologies in every part of it.

The NLX 4000 employs slideways on the X-, Y-, and Z-axis with an extended width twice as long as the conventional model. As a result, the model achieves high-rigidity and great damping performance that sufficiently supports cutting reaction force during machining of large workpieces.

Milling turret

- + BMT with high energy transmission efficiency controls heat generation and vibration.

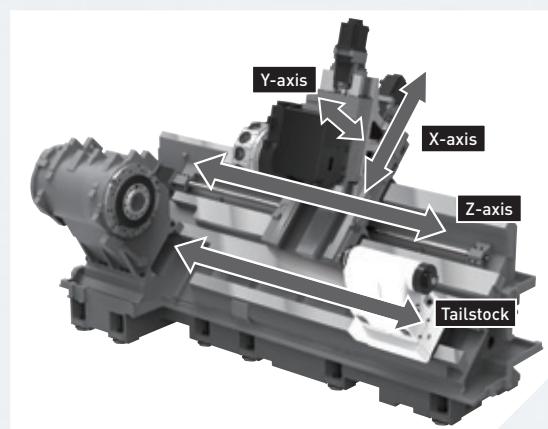
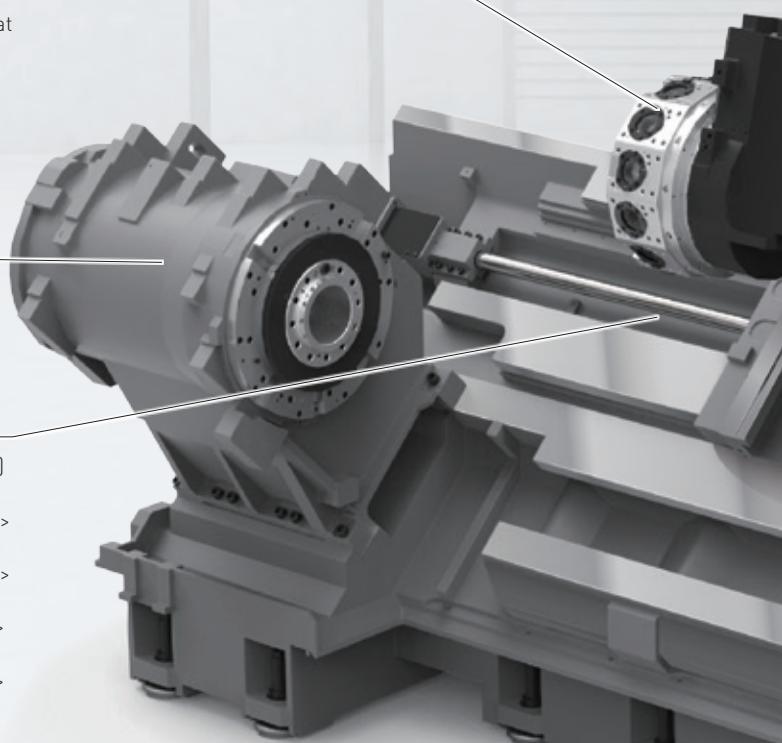
BMT: Built-in Motor Turret

In-house manufactured high-rigidity spindles

- + Highly reliable spindles with controlled thermal displacement

Spacious work area

+ Travel: X-axis	365 $<300 + 65>$ mm (14.4 $<11.8 + 2.6>$ in.)
	315 $<250 + 65>$ mm (12.4 $<9.8 + 2.6>$ in.)
	<Y-axis specification>
Y-axis	120 ± 60 mm (4.7 ± 2.4 in.)
	<Y-axis specification>
Z-axis	875 mm (34.4 in.) <750 type>
	1,685 mm (66.3 in.) <1500 type>
Tailstock	734 mm (28.9 in.) <750 type>
	1,540 mm (60.6 in.) <1500 type>



Wide slideways

- + Slideways on the X-, Y- and Z-axis
- + Improved damping performance by the widest slideway width in the class

Axis rigidity

- + High-rigidity bed with large-diameter ball screws for feed rigidity
- + Rapid traverse rate: X-axis 30 m/min (1,181.1 ipm)
Y-axis 10 m/min (393.7 ipm) <Y-axis specification>
Z-axis 30 m/min (1,181.1 ipm)
Tailstock <forward / backward>
7 / 20 m/min (275.6 / 787.4 ipm) <750 type>
7.5 / 7.5 m/min (295.3 / 295.3 ipm) <1500 type>

11

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



NLX 4000

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 the factors one by one with the original method for thoroughly controlling thermal displacement from every aspect. For the spindle, which is the prime heat source, we spirally arrange the oil jacket around the spindle unit to regulate the temperature increase.



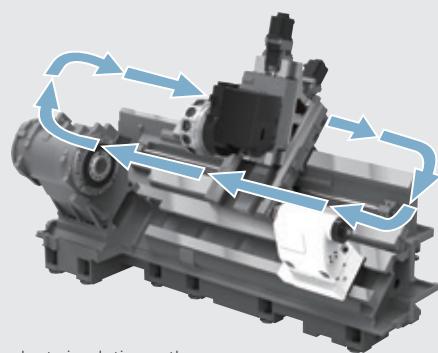
Milling turret designed to control thermal displacement (BMT)



- + Turret temperature increases (compared with conventional machine): 1/10 or less

BMT: Built-in Motor Turret

Coolant circulation for casting parts (NLX 4000 | 750)



DMG MORI has developed a new technology to circulate coolant through the casting parts as a measure against thermal displacement that directly affects machining accuracy. Thermal displacement is caused by various factors including non-uniform expansion and contraction due to difference in thickness of the casting; uneven heat generation in the slideways; operating environment; and changes in ambient temperature due to season and time of day. The coolant circulation maintains a uniform temperature inside the casting parts, and minimizes deformation in the machine.

- + Uniform thermal displacement
- + Resistance to changes in ambient temperature
- + High-accuracy long-term machining



[NLX 2500]

Coolant chiller <separate type> (option)



Increased coolant temperature causes thermal displacement in the fixtures and workpiece, affecting the machining accuracy of the workpiece. Use this unit to prevent the cutting 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.

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



- + Superior precision with 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 450 m/s² [17,716.5 in./s²]
- + Vibration resistance of 250 m/s² [9,842.5 in./s²]
- + High-accuracy machining is ensured by a scale with the same thermal expansion rate as the cast iron machine structure

NLX 4000

High-precision Machining of Large-diameter Workpieces

Spindles with two sizes of through-spindle holes of Ø 145 mm (Ø 5.7 in.) <standard> and Ø 185 mm (Ø 7.3 in.) <option> available.

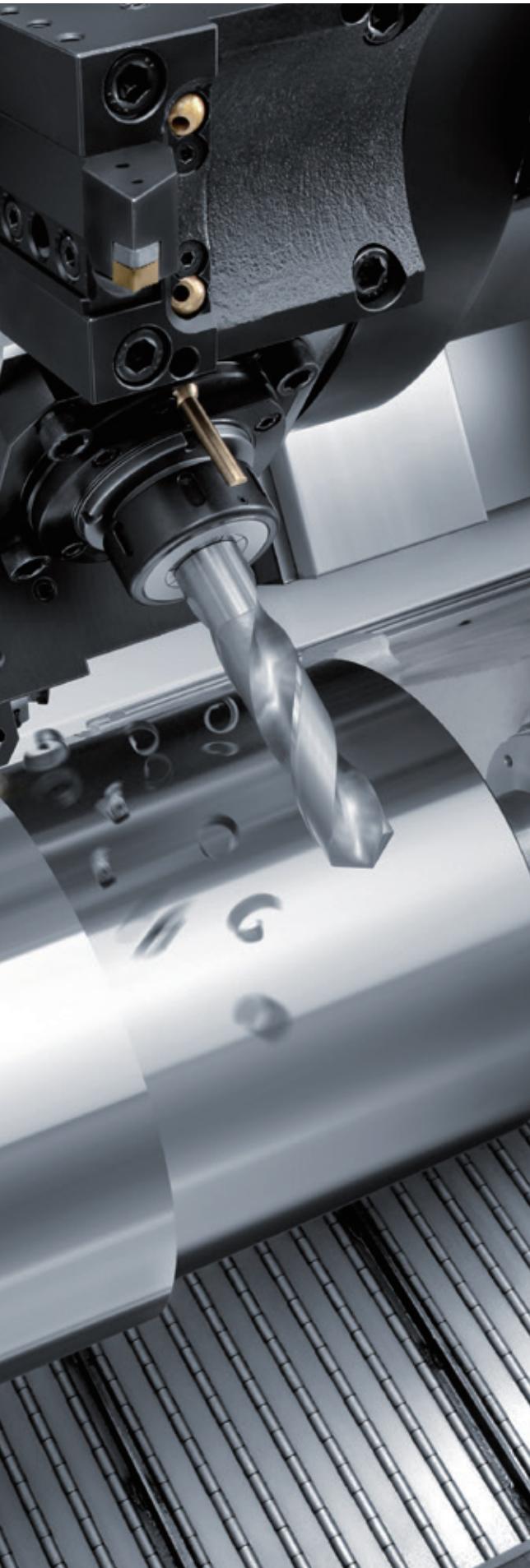
The model can handle bar materials with a diameter of up to 117 mm (4.6 in.) <standard> and up to 164 mm (6.4 in.) as an option*.

Customers can select the model most suited to their machining needs.

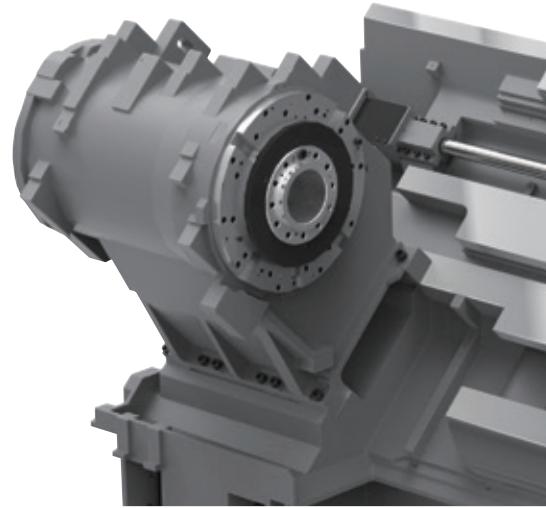
* Through-spindle hole diameter 185 mm (7.3 in.) <consultation is required>

- + Spindle air purge offered as standard <Through-spindle hole diameter 145 mm (5.7 in.)>
- + Standard chuck size*: 15 inches <Through-spindle hole diameter 145 mm (5.7 in.)> / 18 inches <Through-spindle hole diameter 185 mm (7.3 in.)>

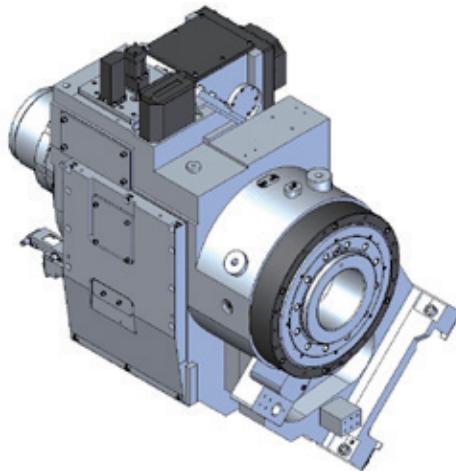
* The chuck is optional.



Largest through-spindle hole diameter in its class



- + Through-spindle hole diameter: 145 mm [5.7 in.]



- + Through-spindle hole diameter: 185 mm [7.3 in.]

Max. spindle speed

- + Through-spindle hole diameter 145 mm [5.7 in.]:
2,000 min⁻¹ <37 / 30 kW {50 / 40 HP}> {30 min / cont}
- + Through-spindle hole diameter 185 mm [7.3 in.]:
1,500 min⁻¹ <37 / 30 kW {50 / 40 HP}> {30 min / cont}

Spindle torque

- + Through-spindle hole diameter 145 mm [5.7 in.]:
1,910 / 1,401 N·m (1,408.7 / 1,033.3 ft·lbf) <30 min / cont>
- + Through-spindle hole diameter 185 mm [7.3 in.]:
3,225 / 2,616 N·m (2,378.6 / 1,929.5 ft·lbf) <30 min / cont>

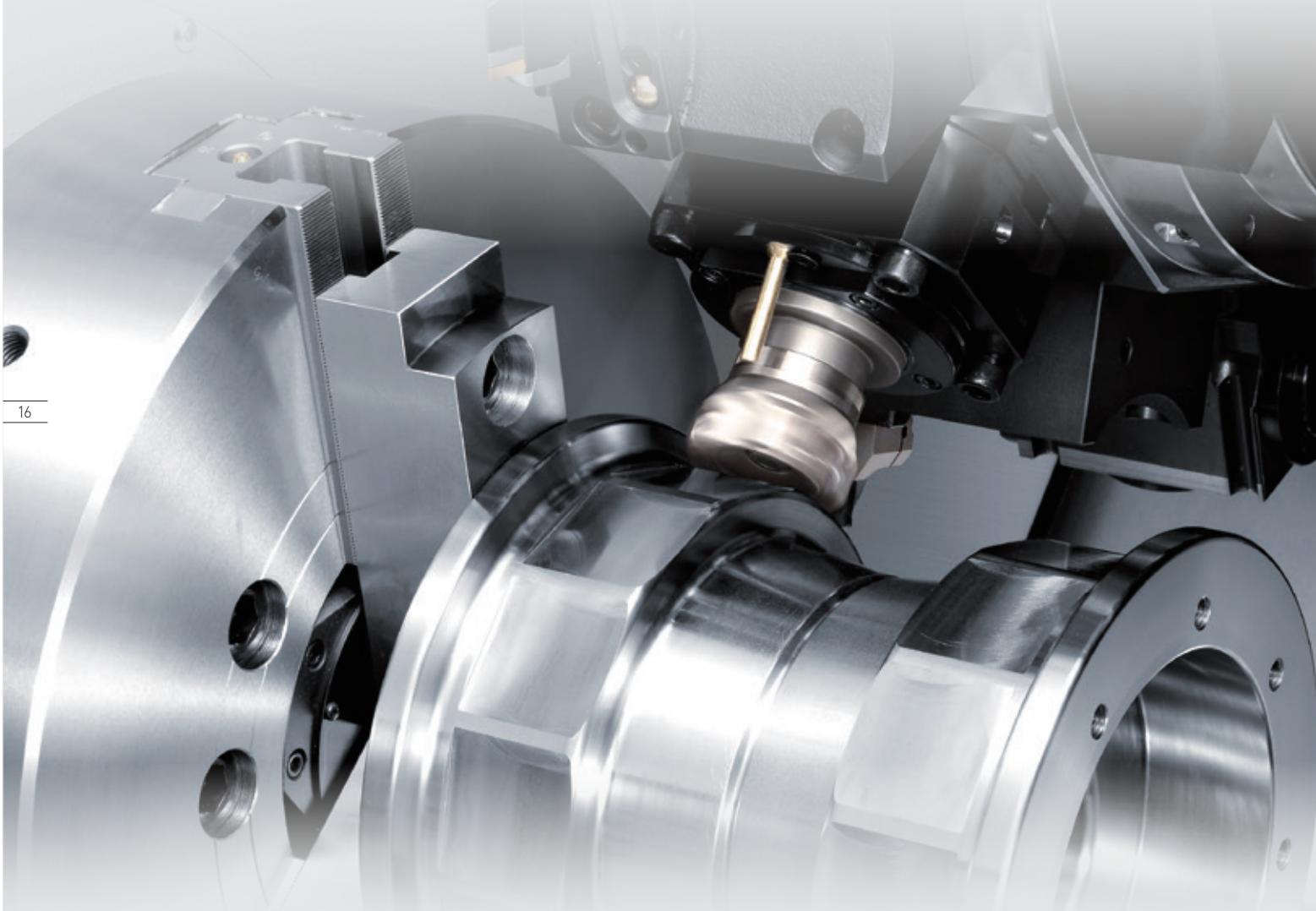
NLX 4000

Overwhelming Milling Performance

The Milling specification is equipped with the BMT (Built-in Motor Turret) as standard.

The further evolved BMT enables high-speed machining with a maximum rotation speed of $10,000 \text{ min}^{-1}$ (option), while achieving vibration amplitude of one third or less compared with conventional machines.

The high-torque specification (option) with a maximum torque of $100 \text{ N}\cdot\text{m}$ (73.8 ft \cdot lbf) delivers powerful milling performance equivalent to a machining center with a No. 40 taper spindle.

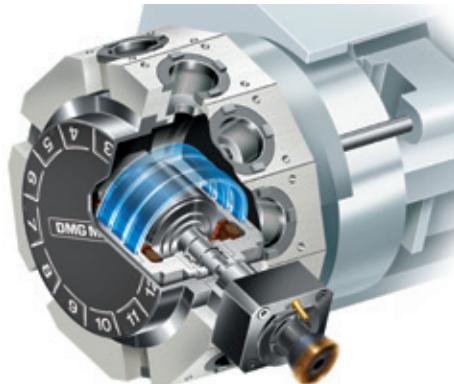


+ Max. rotary tool spindle speed: $10,000 \text{ min}^{-1}$ <5.5 / 5.5 / 3.7 kW (7.5 / 7.5 / 5 HP)> {3 min / 5 min / cont}

High torque: $4,000 \text{ min}^{-1}$ <10.0 / 6.0 kW (13.3 / 8 HP)> {4 min / cont}

+ Rotary tool spindle torque: 40 / 30 / 14 N \cdot m (29.5 / 22.1 / 10.3 ft \cdot lbf) <3 min / 5 min / cont>

High torque: 100 / 68 N \cdot m (73.8 / 50.2 ft \cdot lbf) <4 min / cont>



BMT: Built-in Motor Turret

"Mature" and "Evolved" BMT Technology

- + Improved milling power
 - + Improved milling accuracy
 - + Controls the turret's heat and vibration
 - + Reduced energy loss
-
- + Displacement amount: $3.05 \mu\text{m}$
(previous model / $5,000 \text{ min}^{-1}$)
 $\rightarrow 0.43 \mu\text{m}$ [NLX 2500 / $10,000 \text{ min}^{-1}$]
 - + Turret temperature increases: 1/10 or less
(compared with conventional machine)
 - + Vibration amplitude: 1/3 or less
(compared with conventional machine)



10-station turret head



12-station turret head (option)

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

- + Number of tool stations: 10 tools, 12 tools
- + Turret indexing time (1-station): 0.5 sec.
- + Overhang of O.D. cutting rotary tool: 120 mm (4.7 in.)

Rotary tool spindle / standard (option)

Ideal for high-speed cutting of aluminum and large-diameter workpieces.

- + Max. rotary tool spindle speed: $10,000 \text{ min}^{-1}$
- + Rotary tool spindle drive motor: 5.5 / 5.5 / 3.7 kW (7.5 / 7.5 / 5 HP)
 $<3 \text{ min} / 5 \text{ min} / \text{cont}>$
- + Rotary tool spindle torque: 40 / 30 / 14 N·m (29.5 / 22.1 / 10.3 ft·lbf)
 $<3 \text{ min} / 5 \text{ min} / \text{cont}>$

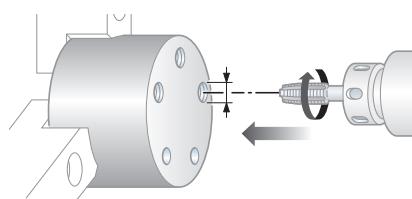
Rotary tool spindle / high torque (option)

Suited to heavy-duty cutting applications like hard milling.

- + Max. rotary tool spindle speed: $4,000 \text{ min}^{-1}$
- + Rotary tool spindle drive motor: 10.0 / 6.0 kW (13.3 / 8 HP)
 $<4 \text{ min} / \text{cont}>$
- + Rotary tool spindle torque: 100 / 68 N·m (73.8 / 50.2 ft·lbf)
 $<4 \text{ min} / \text{cont}>$

Tapping capacity

- + M30 X P3.5

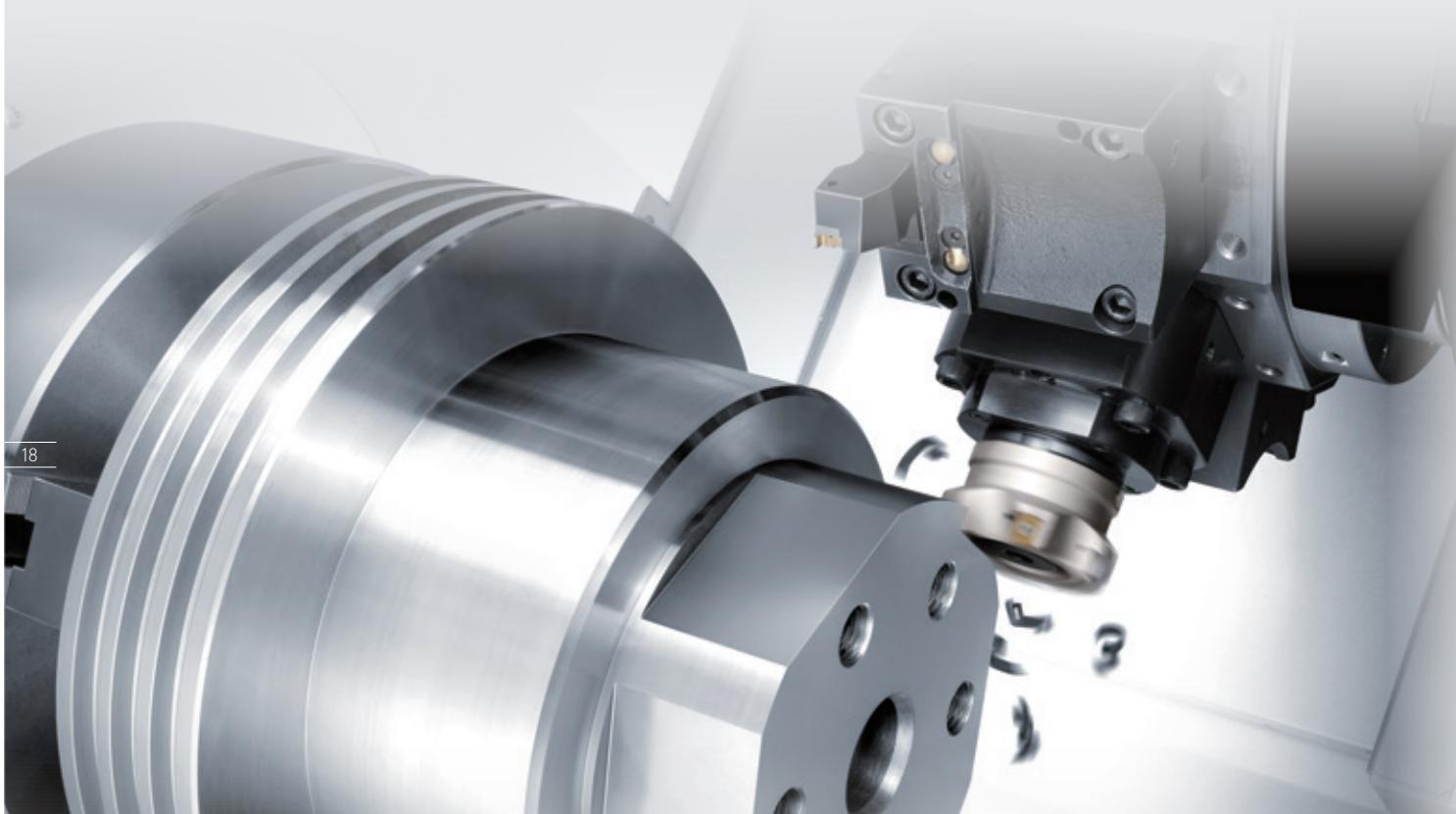


NLX 4000

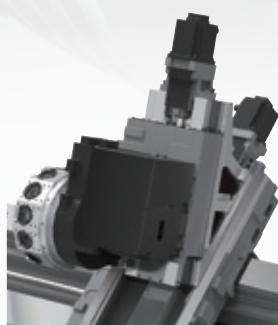
Y-axis Specification Achieving High-precision Machining

The NLX 4000 with the Y-axis + Milling specification enables high-efficiency, high-precision machining of complex-shaped workpieces.

With the Y-axis control, unlike polar coordinate interpolation, machining surfaces are not affected by cutting condition changes led by reverse movements of the X-axis during grooving and contouring.



Y-axis specification

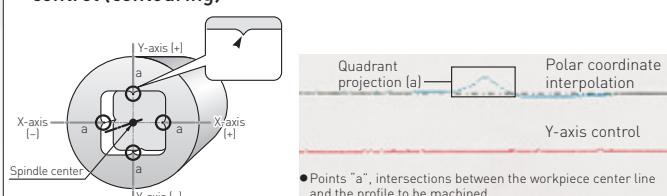


We also independently developed a powerful platform for maximizing performance in the Y-axis specification. This has achieved rigidity between the spindle and the tool tip that exceeds that of conventional two-axis turning centers.

- + Y-axis travel: ± 60 mm (± 2.4 in.)

The Y-axis is created by linking the feed of the X-axis and the simulating axes. We have made the axis unit compact and restricted the height of the machine.

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

NLX 4000

Tailstock that Maximizes Setup Efficiency

The tailstock can be moved easily to any position, which shortens setup time between differing workpiece sizes.



Digital tailstock <NLX 4000 | 750>

The high-rigidity digital tailstock driven by a servo motor significantly reduces setup time.

- + Fewer steps requiring operation of the tailstock
- + Setup time: Reduced by over 50%
- + Tailstock spindle operating time: Reduced by over 20%
- + Variable pressure control using program instructions
- + Simple operation using MAPPS



Programmable tailstock <NLX 4000 | 1500>

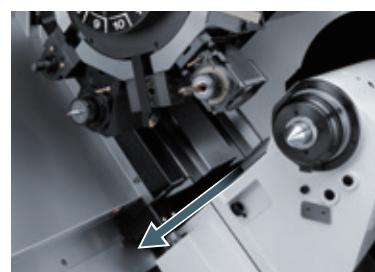
The tailstock is connected with the carriage and moved to any given position by a program command.

- + Tailstock travel: 1,540 mm (60.6 in.)
- + Tailstock spindle diameter: 150 mm (5.9 in.)



MAPPS: Mori Advanced Programming Production System

Chip flushing coolant



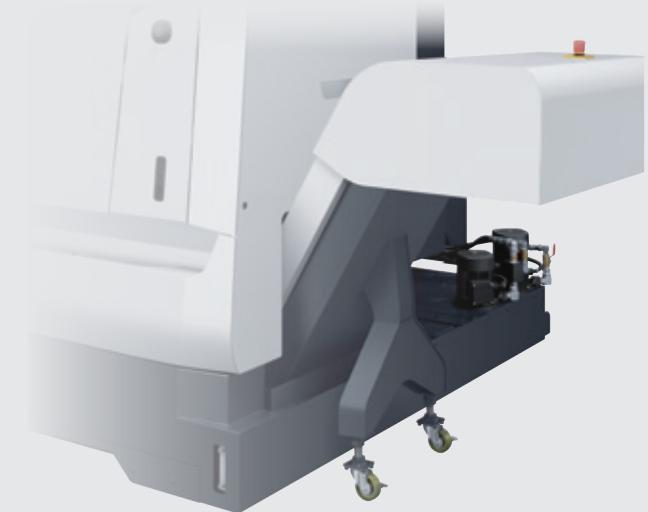
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Coolant for the tailstock base is available as standard for better chip disposal.

NLX 4000

Cutting-edge Chip Disposal Solution

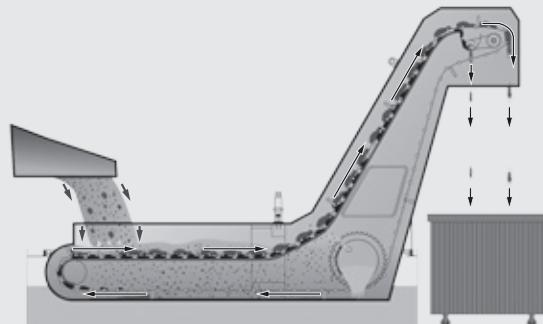
Chips can be one of the main causes leading to machining failure and machine stop. DMG MORI conducted an in-depth study on them by carrying out various experiments and analyses, and achieved outstanding chip disposal performance. We offer optimal chip disposal solutions according to a machining condition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



Chip disposal solutions suited for various types of chips and coolant treatments (option)

20

Many types of chips can be processed regardless of their materials and lengths. Through a filter with a built-in maintenance-free automatic flushing device, the coolant can be processed at a high degree of filtration accuracy.



Chip conveyor (option)

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

Workpiece material	Steel		
Chip form			
Chip size	Long	Short	Powdery
Right discharge, hinge type + drum filter type*1	○	○	△*2
Hinge type	○	—	—
Hinge type <aluminum>	—	—	—
Scraper type	—	○	△*2
Magnet scraper type	—	○	△*2

*1 Consultation is required

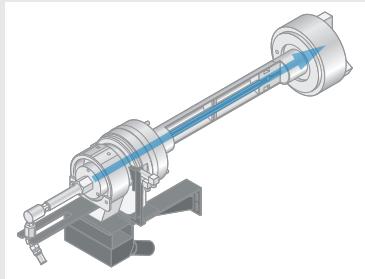
*2 Depending on chip size, chips may pass through the filter and the conveyor and accumulate in the coolant tank. Due to possible effect on machining accuracy, a second filtration device may need to be considered.

• <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

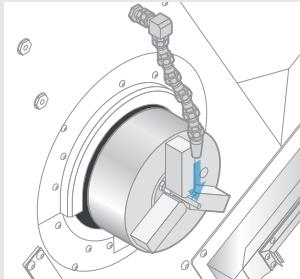
Powdery: minute particles

Through-spindle coolant system*



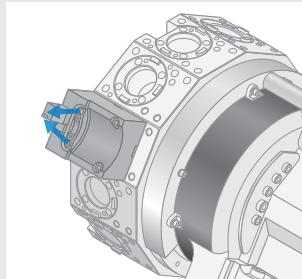
Coolant supplied through the center of the chuck removes chips generated during I.D. machining.

Chuck top coolant*



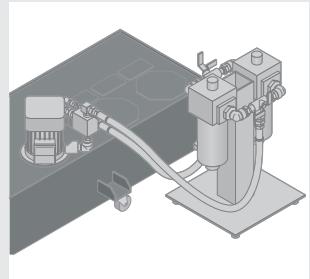
Coolant supplied from above the chuck removes chips and minimizes heat generation in the workpiece.

Air blow for tool tip*



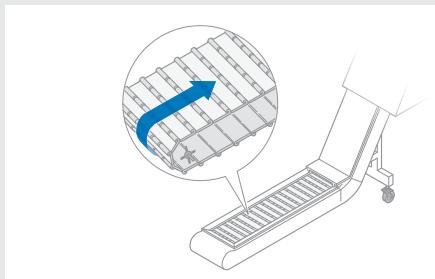
Air is blown toward the tool tip to blow away chips adhering to the tool.

Coolant line filter*



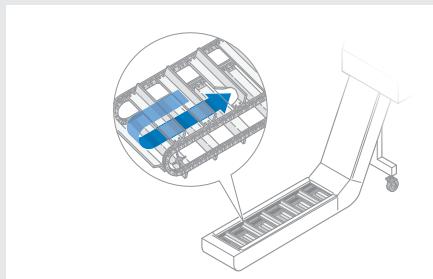
It removes foreign matter in the coolant coming from the coolant pump. The filter clogging detection function is available.

Chip conveyor (hinge type)*



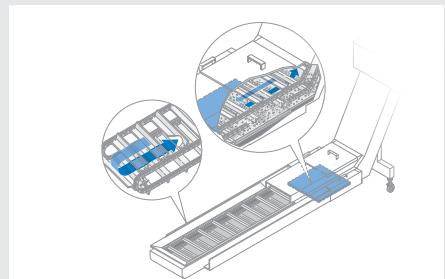
The hinge plate carries and discharges chips to the outside of the machine. Particularly effective for long chips.

Chip conveyor (scraper type)*



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 (magnet scraper type)*



Chips are forcibly precipitated by the magnet plate at the bottom of the tank and are scraped up by a scraper and discharged to the outside. Suitable for fine magnetic chips such as casting chips.

* Option

○: Suitable △: Consideration required —: Not suitable

Cast iron		Aluminum / non-ferrous metal		
Short	Powdery	Long	Short	Powdery
○	△ ^{*2}	○	○	△ ^{*2}
—	—	○	—	—
—	—	—	○	—
○	—	—	—	—
○	—	—	—	—

● 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 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 4000

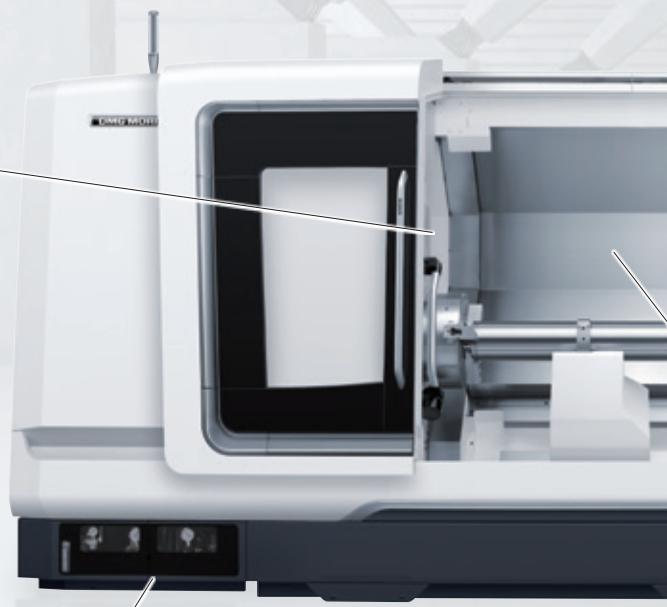
Pursuit of Usability

The NLX 4000 is designed with features for ease of maintenance to increase the machine operating rate. The NLX 4000 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.

Interference prevention pocket



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



Lubricating oil (for sliding surfaces) tank / Chuck pressure gage

- + The supply hole for the lubricant tank for the slideway is located in the front of the machine for easy refilling
- + Chuck pressure can also be adjusted from the front side



NLX 4000 | 750



NLX 4000 | 1500

Layout of pneumatic equipment

- + The air equipment is located on the right side of the machine in order to facilitate maintenance



Oil chiller / Hydraulic unit

- + The oil chiller and hydraulic unit are placed on the right and the rear of the machine to offer better accessibility for operators



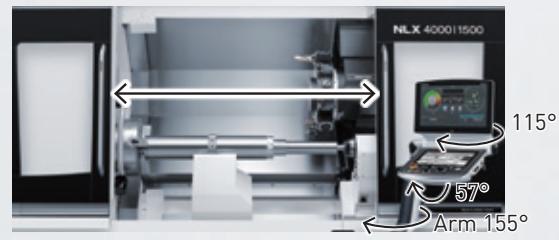
NLX 4000 | 1500

Wide door opening

- + A wide door opening improves efficiency of setups



+ Door opening: 900 mm (35.4 in.)



+ Door opening: 1,885 <940 + 945> mm
(74.2 <37.0 + 37.2> in.)

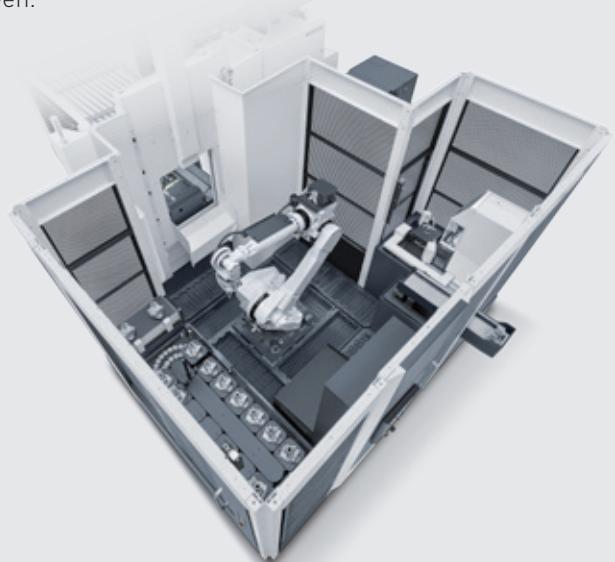
NLX 4000

No Programming Required! New Robot System MATRIS

DMG MORI has developed an all-new robot system MATRIS that requires no special knowledge for its operation based on the wealth of experience and expertise DMG MORI has cultivated over the years. With modularized peripherals, a robot and MAPPSconnected, a dedicated system to connect peripherals and machines, MATRIS eliminates complex program editing and achieves easy system setups on a simple operation screen.

Advantages of MATRIS

- + Typical systems available as pre-defined packages
- + Standardized peripherals ensure easy customization to meet your specific needs
- + Flexibly accommodate system changes even after installation
- + Simple and easy programming with MAPPSconnected



Structure of robot system

MAPPSconnected



- + A system controller that offers integrated control of the whole automation system, including a robot, each module and machine
- + Monitoring, schedule management and operation control of the whole automation system possible



Robot



Modules



Modules



Machine

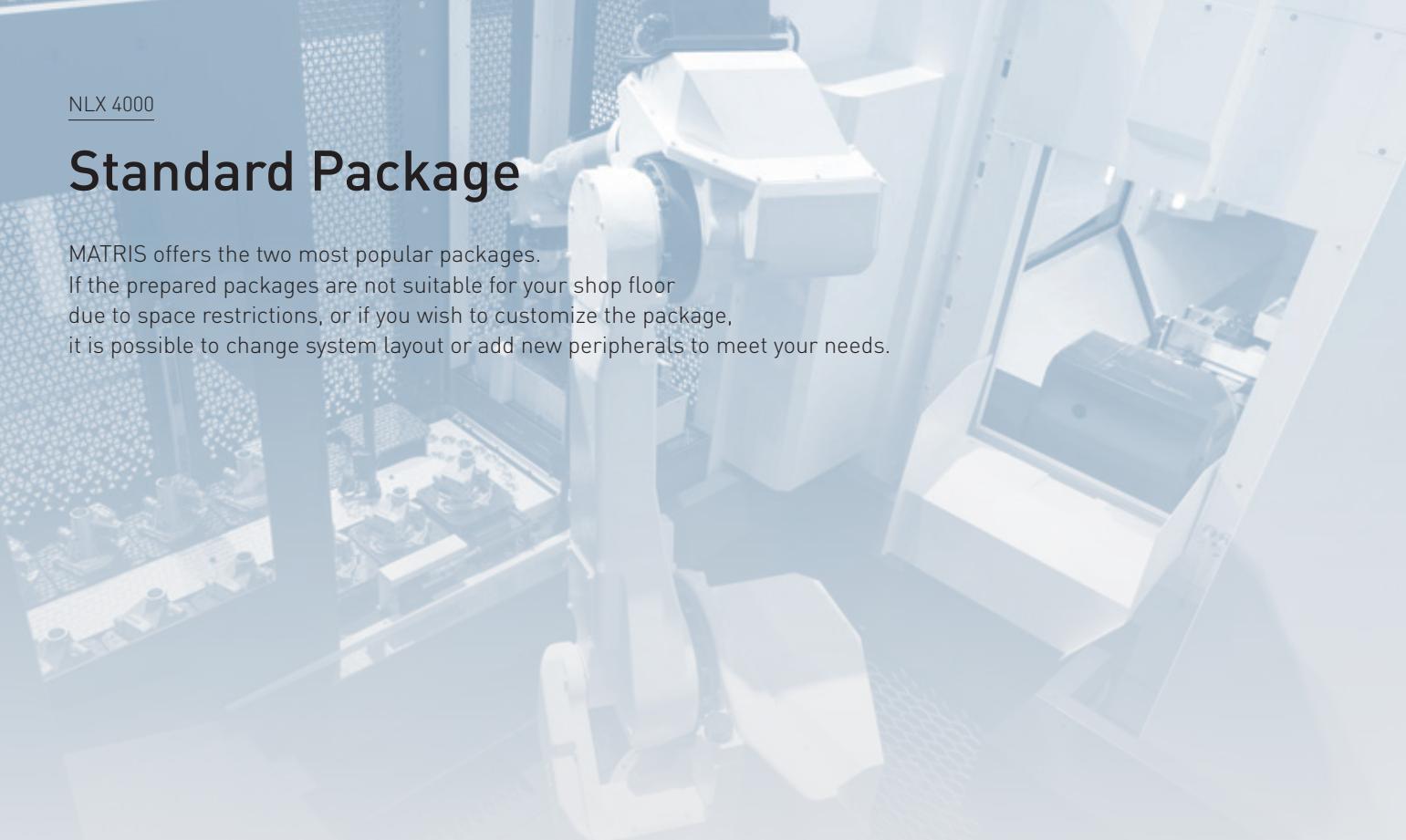


NLX 4000

Standard Package

MATRIS offers the two most popular packages.

If the prepared packages are not suitable for your shop floor due to space restrictions, or if you wish to customize the package, it is possible to change system layout or add new peripherals to meet your needs.



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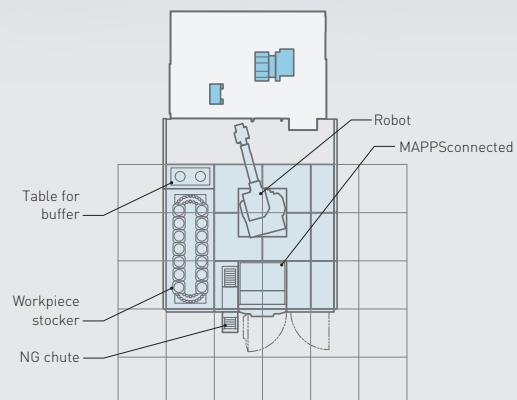
01 Handling package

- + A 14-station rotary stocker compatible with flange workpieces is equipped as standard
- + Various stockers can also be used, including 20-station and 26-station stockers, tray changer, IN / OUT conveyor

02 Measuring package

- + High-accuracy measurement and acceptance / rejection judgment of workpieces with an external measuring system
- + Measuring results to be fed back to a machine
- + Set multiple measuring points at different levels on a cylindrical workpiece
- + It enables various measurements such as outer and inner diameter measurement and three-dimensional measurement

Example of layout



Example: Handling package

- Custom design is available according to workpiece shapes.
For details, please consult our sales representative.
- For details, please refer to the MATRIS catalog.

NLX 4000



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.

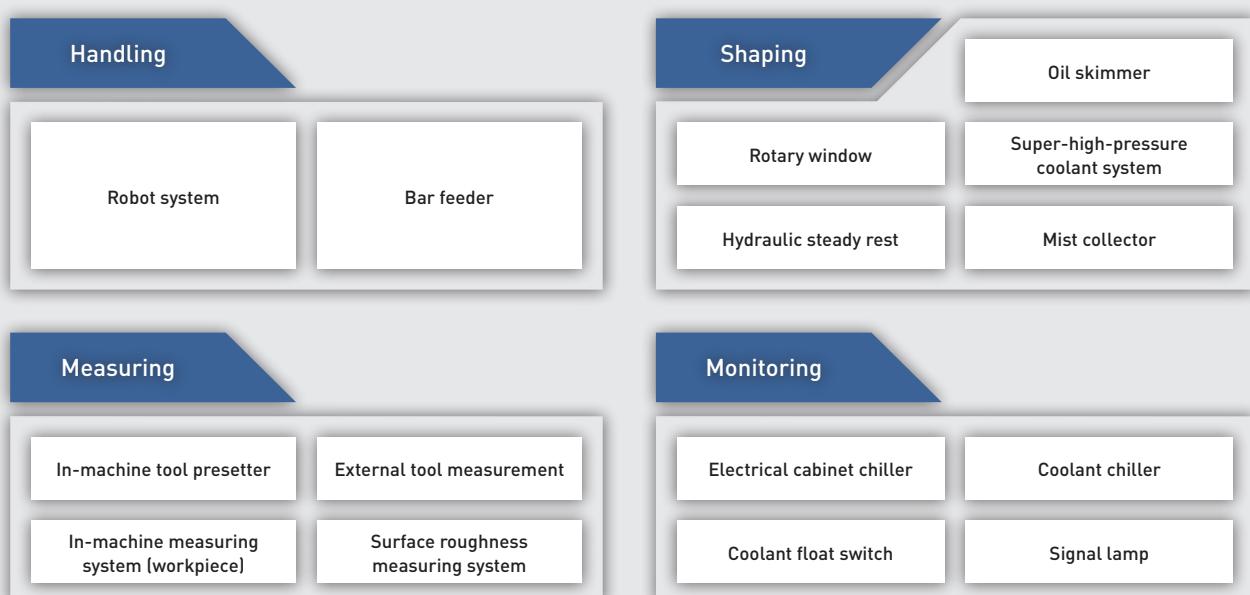
We take care of the arrangement from selection to installation to support best-quality machining.

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



Four DMQP categories



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

DMQP: DMG MORI Qualified Products

Chuck



Hydraulic steady rest



Mist collector



Super-high-pressure coolant system



External chip conveyor



Coolant chiller



Air dryer



Air compressor



Tool cabinet



Robot system



Coolant flow switch



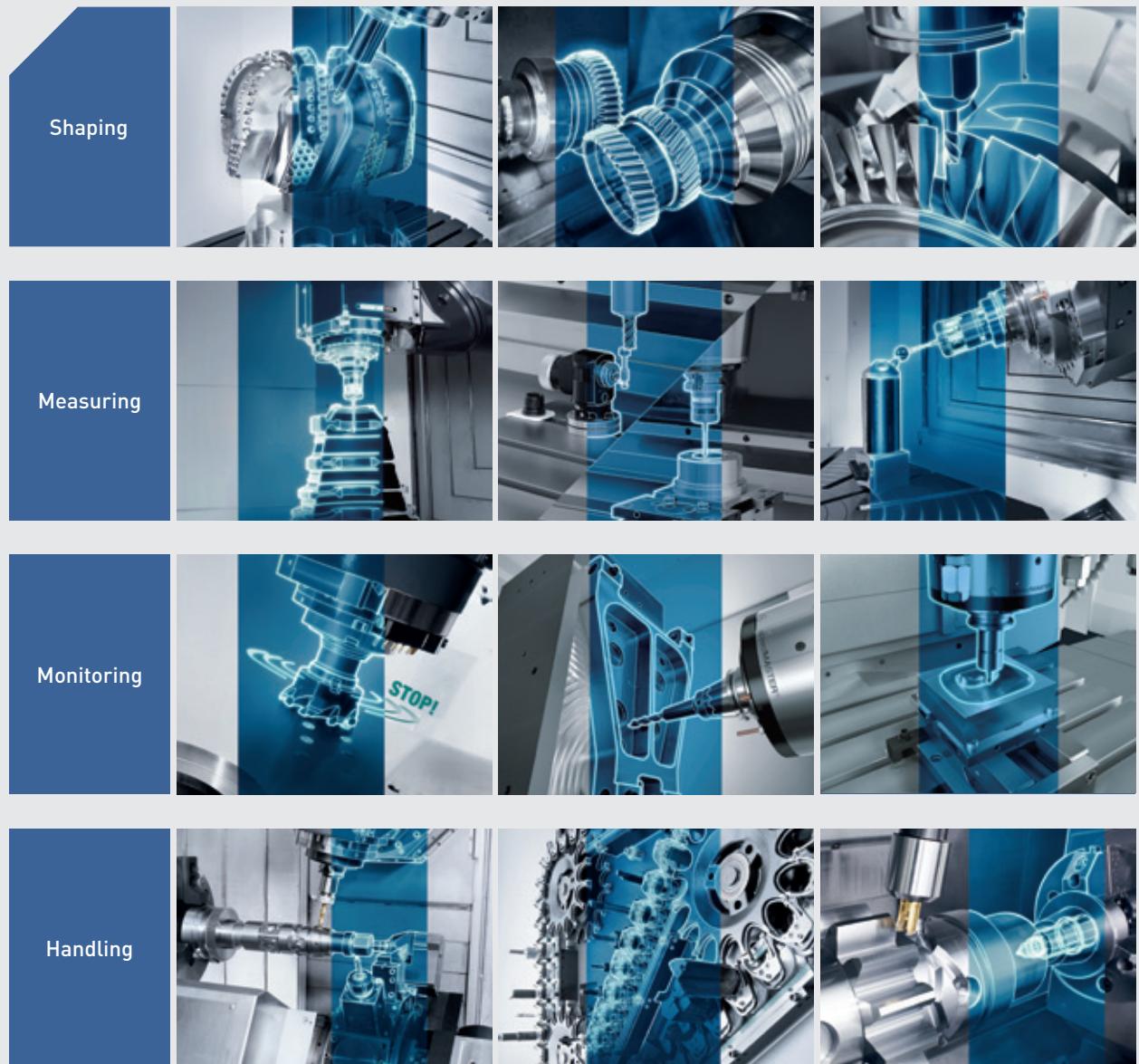
Oil skimmer



NLX 4000

DMG MORI Technology Cycles

Technology Cycles (optional) 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.



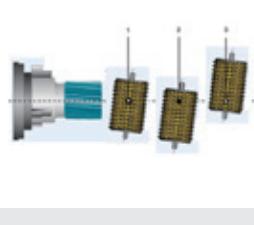
- The availability of the functions differ depending on the machine. For details, please consult our sales representative.
- The above is an image picture.

Respond to Various Technology Cycles

Shaping

Gear hobbing

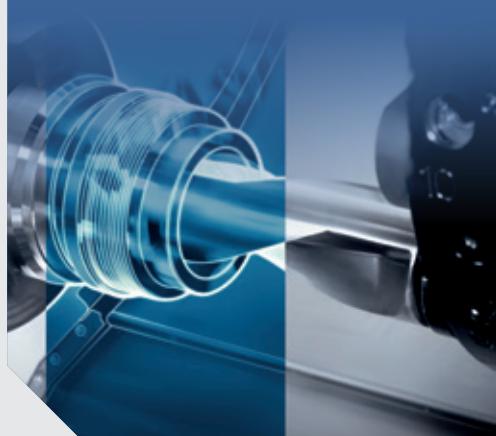


Issue (before introduction)	Results (after introduction)
 * 	 <ul style="list-style-type: none">+ Hobbing program can be easily created by conversational input  <ul style="list-style-type: none">+ Hob cutter's machining position can be changed, maximizing the tool life  <ul style="list-style-type: none">+ 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



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



Issue (before introduction)

- + Models with the Y axis or Spindle 2 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



Shaping

Multi-threading

Cutting special thread



Efficient

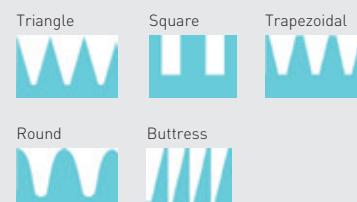


Issue (before introduction)

- + 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



Shaping

Excentric machining

Easy programming of excentric machining



Efficient High-precision

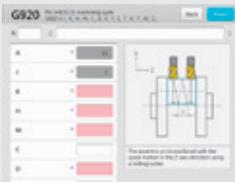


Issue (before introduction)

- + 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

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)

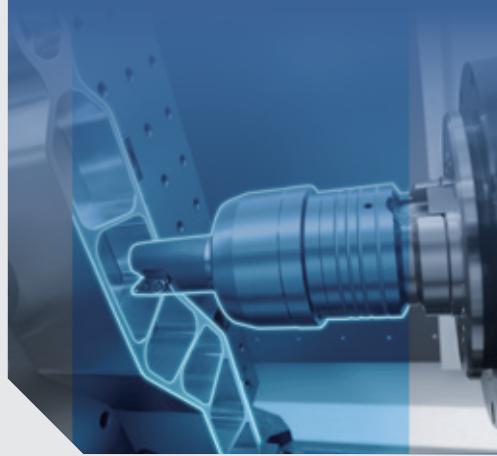
- + Can easily program a machining technique called gear skiving
- + Internal teeth that cannot be machined by hobbing can be cut
- + Consolidation of processing operations into the general-purpose machine reduces setup time and enhances accuracy such as concentricity due to no setup change



Shaping

Efficient Production Package (High-speed canned cycle)

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



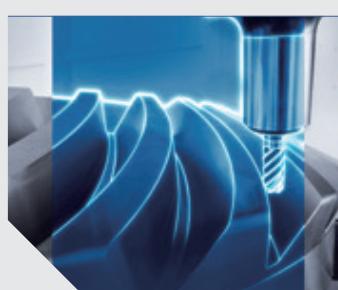
Automation allows for easy return to the zero return position without errors

- + 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

Efficient
Safe

Shaping

DMG MORI gearMILL



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

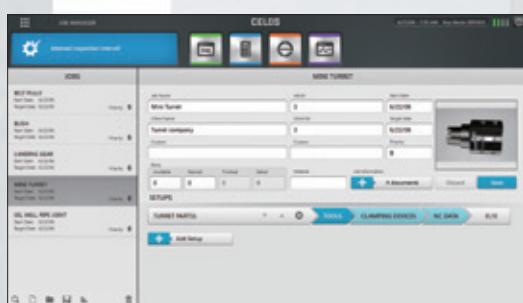
Efficient
High-precision

NLX 4000

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.

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



JOB MANAGER

Systematic planning, administration and preparation of work orders

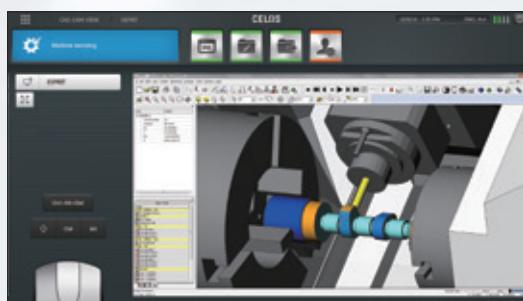
- + Machine related creation and configuration of new work orders
- + Structured storage of all production related data and documents
- + Easy visualization of job information on drawings, models, tools, fixtures, etc.



JOB ASSISTANT

Process-defined orders

- + Menu guided set-up of the machine and conversational processing of production orders
- + Reliable error prevention thanks to windows-based assistance instructions with a mandatory acknowledgement function



CAD-CAM VIEW

Visualize workpieces and improve program data

- + Direct remote access to external CAD / CAM workstations
- + Central master data as basis for component viewing
- + Immediate change options for machining steps, NC programs and CAM strategies, directly in the CNC system



CELOS |

APP menu:
Central access to all available applications



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

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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

PPS: Production Planning and Scheduling System
ERP: Enterprise Resource Planning

NLX 4000

Revolutionary Productivity with Cutting-edge Technology DMG MORI's Connected Industries

By making full use of cutting-edge technology, DMG MORI realizes its Connected Industries* to help improve your productivity and profitability significantly. Our Connected Industries is structured in three layers. Centering around the cutting-edge operation system "CELOS," our Connected Industries networks not just individual machines but also production systems and the entire plant. This network will help clearly define your problems, offering the best and customized solutions.

* An industrial society in which new added value will be created through connected humans, machines, and technologies – A new vision for the future of Japanese industries that the Ministry of Economy, Trade and Industry advocates.



AI-based solutions

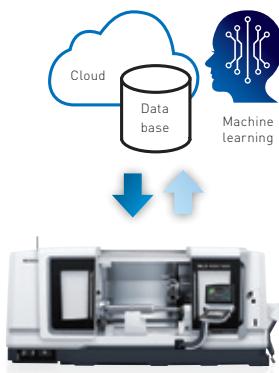
AI-based thermal displacement compensation (Ultra Thermal Precision)

Research is underway toward the practical use of thermal displacement compensation based on AI-based information analysis.

- + In order to improve machining accuracy, AI estimates and compensates thermal displacement by learning the information received from the sensors mounted on the machine
- + The speed of learning is effectively improved by accumulating data from multiple machines in a single server for integrated data management

Machine status monitoring

Various machine data generated by sensors can be easily checked on the CELOS.



The speed of learning is increased by accumulating data from multiple machines in the DMG MORI's server for integrated data management.



Each monitoring value is displayed in an easy-to-understand manner.

CELOS Machine Extremely easy-to-use machine

- + This machine is loaded with the cutting-edge operation system CELOS, offering various applications useful for your machining
- + By accumulating machining know-how on the CELOS, all operators are able to make products at the same level of quality
- + Productivity will be improved by streamlining time-consuming and burdensome setups to reduce the operator's workloads
- + Complex machining, which used to require dedicated machines and technical knowledge, is made simpler and faster with Technology Cycles
- + The use of AI prevents the occurrence of machine problems

* The information needed to machine a workpiece (setups, tools, programs, etc.)



CELOS Manufacturing Connected production processes

- + A CELOS application called "MESSENGER" connects machines in your plant, visualizing the status of machine operation
- + The causes of machine stops will be identified easily, contributing to improved machine operation rates
- + CELOS applications can be upgraded to their latest versions through CELOS Club, allowing for smooth IoT deployment
- + The machine's operational status can be monitored through smartphones and tablets even from outside your plant

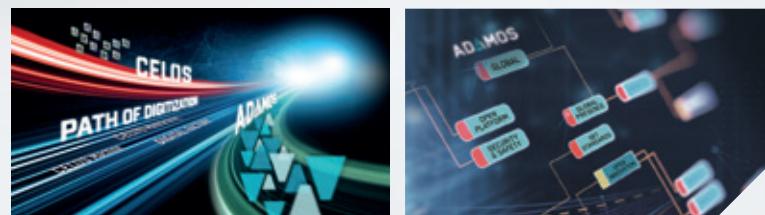
37

Digital Factory Digitization accelerates connected plants

- + Your plant can be connected to external business partners by the utilization of IoT, significantly streamlining the flow of your entire production system
- + CELOS Club can maximize the ability of CELOS
- + ADAMOS* offers an open platform for IoT

* Please consult our sales representative for more detailed information, including the service start time in your country.

CELOS: Control Efficiency Lead Operation System



CELOS Club



Continuously supporting your productivity improvements

- + Latest functions always available through version upgrades
- + Centralized machine management and streamlined programming
- Japan only.

MAPPS: Mori Advanced Programming Production System

WERKBLIQ



Productivity improvements through cutting-edge machine maintenance services

- + Streamlined maintenance work based on digitized plant equipment information
- + Minimizing down time by promptly identifying the cause of machine stop
- + The integrated management of maintenance procedures and standards eliminates dependency on individual operator skills

• Please consult our sales representative for more detailed information, including the release time in your country.

NLX 4000

High-Performance Operation System MAPPS V

MAPPS V 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

- + The 6-window display provides access to a variety of information at the same time
- + The screen combinations can be freely customized

- 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.

[Applications and Parts](#)

[Highlights](#)

[Machine and Technology](#)

[Others](#)

[Machine Specifications](#)

NLX 4000

Unique Energy-saving Function GREENmode



DMG MORI has developed the energy-saving function "GREENmode" to accomplish sustainable development goals (SDGs).

SDGs: Sustainable Development Goals

The machine's power consumption is reduced by cutting unnecessary standby power and using efficient machining programs to shorten machining time.

- + Improve cutting conditions to reduce machining time by bringing the best out of machine tools and cutting tools
- + Reduce unnecessary power consumption during stand-by time by shutting off power of the spindle, chip conveyor and coolant pump at a time of machine stop
- + Visualize power consumption and CO₂ emission amount

GREENmode

GREEN monitoring

- + Visualize power consumption and CO₂ emission amount on the CELOS operation screen



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

CELOS: Control Efficiency Lead Operation System

NLX 4000

Machine Size

NLX 4000 750 Chip conveyor (right discharge)										
Machine type <Through-spindle hole diameter>	mm (in.)									
	Width					Depth			Height	
	Machine only		Including chip conveyor		Including chip conveyor <EN>	Machine only	Machine only <with operation panel swiveled>	Machine only	E1	E2
	A1	A2	B1	B2	B1	B2	C	D	E1	E2
NLX 4000 750 <145 mm (5.7 in.)>	4,236 (166.8)	—	4,914 (193.5)	—	4,906 (193.1)	—	2,166 (85.3)	2,492 (98.1)	2,325 (91.5)	2,539 (100.0)
NLX 4000 750 <185 mm (7.3 in.)>	—	4,567 (179.8)	—	5,244 (206.5)	—	5,237 (206.2)	2,166 (85.3)	2,492 (98.1)	2,325 (91.5)	2,539 (100.0)

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NLX 4000 1500 Chip conveyor (right discharge)										
Machine type	mm (in.)									
	Width					Depth			Height	
	Machine only		Including chip conveyor		Including chip conveyor <EN>	Machine only	Machine only <with operation panel swiveled>	Machine only	E1	E2
	A	B1	B2			C	D	E1	E2	
NLX 4000 1500	5,321 (209.5)	6,172 (243.0)	6,483 (255.2)	2,490 (98.0)	3,245 (127.8)	2,534 (99.8)	2,539 (100.0)			

EN: European Norm (European Standards)

NLX 4000

Machine Specifications

NLX 4000 750					
Basic specification		T TS			
Optional specifications		—	MC	MC(Y)	—
Through-spindle hole diameter	mm (in.)	145 (5.7) <standard>			
Capacity					
Swing over bed	mm (in.)	1,000 (39.4) <interference with front cover 720 (28.3)>			
Swing over cross slide	mm (in.)	780 (30.7)			
Max. turning diameter	mm (in.)	600 (23.6)*1 / 590 (23.2)*2	500 (19.6)*1 / 490 (19.2)*2	600 (23.6)*1 / 590 (23.2)*2	500 (19.6)*1 / 490 (19.2)*2
Max. turning length	mm (in.)	700 (27.5) / 746 (29.3)*3			
Bar work capacity	mm (in.)	ø 117 (ø 4.6)*4			
Travel					
X-axis travel	mm (in.)	365 <300 + 65> (14.4 <11.8 + 2.6>)	315 <250 + 65> (12.4 <9.8 + 2.6>)	365 <300 + 65> (14.4 <11.8 + 2.6>)	315 <250 + 65> (12.4 <9.8 + 2.6>)
Z-axis travel	mm (in.)	875 (34.4)			
Y-axis travel	mm (in.)	—	120 <±60> (4.7 <±2.4>)	—	120 <±60> (4.7 <±2.4>)
Spindle					
Max. spindle speed	min ⁻¹	2,000			
Type of spindle nose		JIS A ₂ -11			
1st: 4-109-333-428 2nd: 15-395-1,202-1,500	JIS A ₂ -15				
Turret					
Number of tool stations		10, 12			
Shank height for square tool	mm (in.)	25 (1), 32 (1 ¹ / ₄)			
Max. rotary tool spindle speed	min ⁻¹	—	10,000, 4,000*5	—	10,000, 4,000*5
Feedrate					
Rapid traverse rate	mm/min (ipm)	X, Z: 30,000 (1,181.1) Y: 10,000 (393.7) Tailstock <forward / backward>: 7,000 / 20,000 (275.6 / 787.4)	X, Z: 30,000 (1,181.1) Y: 10,000 (393.7) Tailstock <forward / backward>: 7,000 / 20,000 (275.6 / 787.4)	X, Z: 30,000 (1,181.1) Y: 10,000 (393.7) Tailstock <forward / backward>: 7,000 / 20,000 (275.6 / 787.4)	X, Z: 30,000 (1,181.1) Y: 10,000 (393.7) Tailstock <forward / backward>: 7,000 / 20,000 (275.6 / 787.4)
Tailstock					
Tailstock travel	mm (in.)	734 (28.9)			
Taper hole of tailstock spindle		Live center <MT5>, Built-in center <MT4>			
Motor					
Spindle drive motor <30 min / cont>	kW (HP)	37 / 30 (50 / 40)			
Rotary tool spindle drive motor	kW (HP)	—	5.5 / 5.5 / 3.7 (7.5 / 7.5 / 5) <3 min / 5 min / cont> 10.0 / 6.0 (13.3 / 8) <4 min / cont>*5	—	5.5 / 5.5 / 3.7 (7.5 / 7.5 / 5) <3 min / 5 min / cont> 10.0 / 6.0 (13.3 / 8) <4 min / cont>*5
Machine size					
Machine height <from floor>	mm (in.)	2,325 (91.5)	2,539 (100.0)	2,325 (91.5)	2,539 (100.0)
Floor space <width × depth>	mm (in.)	4,236 × 2,166 (166.8 × 85.3) 4,914 × 2,166 (193.5 × 85.3)*6			
Mass of machine	kg (lb.)	8,700 (19,140)	8,800 (19,360)	9,100 (20,020)	9,700 (21,340)
Control unit		M730UM			
Mitsubishi Electric					

JIS: Japanese Industrial Standard

*1 For O.D. cutting tool with an overhang of 35 mm (1.37 in.) *2 For O.D. cutting tool with an overhang of 40 mm (1.57 in.) *3 When the turning tool holder (O.D.) T00186 / T00202 is used.

*4 Depending on the chuck / cylinder used and its restrictions, it may not be possible to reach full bar work capacity. *5 High torque *6 Including chip conveyor

● 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 October 2018.

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

NLX 4000 | 1500

Basic specification		NLX 4000 1500					
Optional specifications		TS		MC			
Through-spindle hole diameter	mm (in.)	145 (5.7) <standard>		185 (7.3) <option>			
Capacity							
Swing over bed	mm (in.)	1,000 (39.4) <interference with front cover 849 (33.4)>					
Swing over cross slide	mm (in.)	780 (30.7)					
Max. turning diameter	mm (in.)	600 (23.6)*1 / 590 (23.2)*2	500 (19.6)*1 / 490 (19.2)*2	600 (23.6)*1 / 590 (23.2)*2	500 (19.6)*1 / 490 (19.2)*2		
Max. turning length	mm (in.)	1,538 (60.5) / 1,584 (62.3)*3		1,506 (59.2) / 1,552 (61.1)*3			
Bar work capacity	mm (in.)	ø 117 [<ø 4.6>*4]		ø 117 [<ø 4.6>*4], ø 164 [<ø 6.4]*4] <Consultation is required>			
Travel							
X-axis travel	mm (in.)	365 <300 + 65> (14.4 <11.8 + 2.6>)	315 <250 + 65> (12.4 <9.8 + 2.6>)	365 <300 + 65> (14.4 <11.8 + 2.6>)	315 <250 + 65> (12.4 <9.8 + 2.6>)		
Z-axis travel	mm (in.)	1,685 (66.3)					
Y-axis travel	mm (in.)	—	120 <±60> (4.7 <±2.4>)	—	120 <±60> (4.7 <±2.4>)		
Spindle							
Max. spindle speed	min ⁻¹	2,000		1st: 4-109-333-428 2nd: 15-395-1,202-1,500			
Type of spindle nose		JIS A ₂ -11		JIS A ₂ -15			
Turret							
Number of tool stations		10, 12					
Shank height for square tool	mm (in.)	25 (1), 32 (1 1/4)					
Max. rotary tool spindle speed	min ⁻¹	—	10,000, 4,000*5	—	10,000, 4,000*5		
Feedrate							
Rapid traverse rate	mm/min (ipm)	X, Z: 30,000 (1,181.1) Tailstock <forward / backward>: 7,500 / 7,500 (295.3 / 295.3)	X, Z: 30,000 (1,181.1) Y: 10,000 (393.7) Tailstock <forward / backward>: 7,500 / 7,500 (295.3 / 295.3)	X, Z: 30,000 (1,181.1) Tailstock <forward / backward>: 7,500 / 7,500 (295.3 / 295.3)	X, Z: 30,000 (1,181.1) Y: 10,000 (393.7) Tailstock <forward / backward>: 7,500 / 7,500 (295.3 / 295.3)		
Tailstock							
Tailstock travel	mm (in.)	1,540 (60.6)					
Taper hole of tailstock spindle		Built-in center <MT5>					
Motor							
Spindle drive motor <30 min / cont>	kW (HP)	37 / 30 (50 / 40)					
Rotary tool spindle drive motor	kW (HP)	—	5.5 / 5.5 / 3.7 (7.5 / 7.5 / 5) <3 min / 5 min / cont> 10.0 / 6.0 (13.3 / 8) <4 min / cont>*6	—	5.5 / 5.5 / 3.7 (7.5 / 7.5 / 5) <3 min / 5 min / cont> 10.0 / 6.0 (13.3 / 8) <4 min / cont>*6		
Machine size							
Machine height <from floor>	mm (in.)	2,534 (99.8)	2,539 (100.0)	2,534 (99.8)	2,539 (100.0)		
Floor space <width X depth>	mm (in.)	5,321 × 2,490 (209.5 × 98.0), 6,172 × 2,490 (243.0 × 98.0)*4					
Mass of machine	kg (lb.)	12,500 (27,500)	12,600 (27,720)	12,900 (28,380)	13,500 (29,700)		
Control unit		Mitsubishi Electric					
		M730UM					

JIS: Japanese Industrial Standard *1 For O.D. cutting tool with an overhang of 35 mm (1.37 in.) *2 For O.D. cutting tool with an overhang of 40 mm (1.57 in.) *3 When the turning tool holder (O.D.) T00186 / T00202 is used.

*4 Depending on the chuck / cylinder used and its restrictions, it may not be possible to reach full bar work capacity. *5 High torque *6 Including chip conveyor

• 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 October 2018.

NLX 4000

Standard & Optional Features

●: Standard features ○: Options
 ◇: Select one ☆: Consultation is required
 -: Not applicable

	NLX 4000 750			NLX 4000 1500			
	T	TS		T	TS		
Basic specification	-	MC	MC(Y)	-	MC	MC(Y)	
Optional specifications							
Spindle							
2,000 min ⁻¹ : 37 / 30 kW (50 / 40 HP) <30 min / cont>	●	●	●	●	●	●	
1,500 min ⁻¹ : 37 / 30 kW (50 / 40 HP) <30 min / cont>	○	○	○	○	○	○	
Turret							
10-station bolt-tightened turret for NL holders	●	●	●	●	●	●	
12-station bolt-tightened turret for NL holders	○	○	○	○	○	○	
10-station VDI quick-change turret	○	○	○	○	○	○	
Workpiece pusher	○	○	○	☆	☆	☆	
	10,000 min ⁻¹ : 5.5 / 5.5 / 3.7 kW (7.5 / 7.5 / 5 HP) <3 min / 5 min / cont> {standard}	-	◇	◇	-	◇	◇
Rotary tool spindle	-	◇	◇	-	◇	◇	
	4,000 min ⁻¹ : 10.0 / 6.0 kW (13.3 / 8 HP) <4 min / cont> {high torque}	-	◇	◇	-	◇	◇
Tailstock							
Tailstock spindle live center ^{*1}	MT5	●	●	●	-	-	-
Tailstock spindle built-in center ^{*2}	MT4	○	○	○	-	-	-
	MT5	-	-	-	●	●	●
Fixture / Steady rest							
Fixed steady rest	ø 20 – ø 240 mm (ø 0.8 – ø 9.4 in.) ø 180 – ø 350 mm (ø 7.1 – ø 13.8 in.)	○	○	○	○	○	○
Hydraulic steady rest (bolt-tightened) ^{*3}	Interface ^{*4}	○	○	○	○	○	○
Hydraulic steady rest (carriage direct-coupled) ^{*3}	Interface ^{*4}	○	○	○	○	○	○
Coolant							
Coolant system	0.20 / 0.30 MPa (29 / 43.5 psi) ^{*5} , 350 / 550 W <50 / 60 Hz>	●	●	●	●	●	●
High-pressure coolant system	0.45 / 0.65 MPa (65.3 / 94.3 psi) ^{*5} , 800 / 1,100 W <50 / 60 Hz>	○	○	○	○	○	○
	1 / 1.5 MPa (145 / 217.5 psi), 1.1 / 2.2 kW (1.5 / 3 HP) <50 / 60 Hz>	○	○	○	○	○	○
Super-high-pressure coolant system (separate type) ^{*7}	3.5 MPa (507.5 psi) 7 MPa (1,015 psi) Interface <7.0 MPa (1,015 psi)>	○ ^{*6}					
Chip disposal							
Chip conveyor	Right discharge, hinge type Right discharge, scraper type Right discharge, magnet scraper type Right discharge, hinge type + drum filter type Right discharge, hinge type (aluminum) Rear discharge, hinge type Rear discharge, scraper type Rear discharge, magnet scraper type	○	○	○	○	○	○

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

●: Standard features ○: Options
 ◇: Select one ☆: Consultation is required
 -: Not applicable

	NLX 4000 750			NLX 4000 1500		
	T	TS		T	TS	
Basic specification						
Optional specifications	-	○ MC	○ MC Y	-	○ MC	○ MC Y
Measurement						
Manual in-machine tool presetter	Pivoting type	●	●	●	●	●
	Removable type	○	○	○	○	○
Automatic in-machine tool presetter	Pivoting type	○	○	○	○	○
In-machine workpiece measuring system*8	Touch sensor (optical signal transmission type)	○	○	○	○	○
Improved accuracy						
Full closed loop control (Scale feedback)	X-axis	○	○	○	○	○
	Y-axis	-	-	○	-	○
	Z-axis	○	○	○	○	○
Automation						
Auto power off		●	●	●	●	●
Other						
Signal lamp	4 colors (LED type: red, yellow, green, blue)	○	○	○	○	○
Signal lamp buzzer		○	○	○	○	○
Foot switch for tailstock		○	○	○	○	○
Built-in worklight (LED) (2 pieces for the model with a distance between centers of 1,500 mm [59.1 in.] <standard>)		●	●	●	●	●
Additional in-machine light (at right)	LED type	○	○	○	-	-

*1 The center is optional.

*2 The center is standard.

*3 SLU-X2Z, SLU-X3Z, SLU-X3.1Z <750 type / 1500 type> / SLU-X3.2Z, SLU-X4Z, SLU-X5Z, SLU-X5.1Z <1500 type>

*4 Excluding installation fee.

*5 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.

*6 DMQP (DMG MORI Qualified Products)

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

*8 Certain workpiece shapes cannot be measured.

● DMQP: Please see Page 26 for details.

● For details, please check the Detailed Specifications.

● The information in this catalog is valid as of October 2018.

● 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.

<Precautions for Machine Relocation>

EXPORTATION:

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

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

+ The information in this catalog is valid as of October 2018. Designs and specifications are subject to changes without notice.

+ The machines shown in the catalog may differ from the actual machines. The location and the size of the nameplates may also differ from the actual machines, or the nameplates may not be attached to some machines.

+ DMG MORI is not responsible for differences between the information in the catalog and the actual machine.

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