NHX 5500 2\textsuperscript{nd} Generation
NHX 6300 2\textsuperscript{nd} Generation
The NHX 5500 2nd Generation and NHX 6300 2nd Generation are horizontal machining centers with a high rigidity construction designed exclusively for No. 50 taper spindles. The models are equipped with a diverse range of functions and suited to a wide variety of machining in many different fields including automotive and construction machinery. The model mounting the powerful and high-performance spindle powerMASTER and super-high rigidity bed suited for heavy duty cutting has evolved with higher cutting capabilities than that of the existing machine. An ideal machine has been achieved by a design with great attention down to the detail including the exterior.
Figures in inches were converted from metric measurements.

Automobiles
1. Gear box housing
2. Cylinder head
3. Cylinder block
4. Transmission case
5. Crankcase

Construction machinery
6. Gear housing
7. Control valve

Motorcycle
8. Case

Hydraulic & Pneumatic equipment
9. Pump casing

Industrial machinery
10. Differential housing
The NHX 5500 2nd Generation and NHX 6300 2nd Generation achieve the highest rigidity and accuracy expected of horizontal machining centers. The ergonomically designed cover leads to outstanding operability and beautiful form. The models are equipped with the cutting-edge operation system, CELOS, which flexibly handles any conceivable scene in production processes.

### Highest Rigidity and Accuracy

**Applications and Parts**

**Highlights**

**Machine and Technology**

**Others**

**Machine Specifications**

#### High-speed
- Rapid traverse rate <X, Y and Z axes>: 68 m/min (2,362.2 ipm)
- Cutting feedrate <X, Y and Z axes>: 60 m/min (2,362.2 ipm)*

#### High rigidity
- Thick, high-rigidity bed
- The 3-point support structure ensures a stable machine installation
- Machining with shorter tools

#### High-precision equipment
- High-resolution full closed loop control (Scale feedback)
- Draw-back function for through-spindle coolant

**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**
- Function for energy-saving and visualization of the effect

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* When using high-precision control (look-ahead control)

CELOS: Control Efficiency Lead Operation System
No. 50 Taper Machine (HSK-A100*)
Best Suited for Mass Production of Large Workpieces

+ Pallet size:
  - NHX 5500 // 500 × 500 mm (19.7 × 19.7 in.)
  - NHX 6300 // 630 × 630 mm (24.8 × 24.8 in.)

+ Max. weight per station:
  - NHX 5500 // 1,000 kg (2,200 lb.)
  - NHX 6300 // 1,500 kg (3,300 lb.)

* Available as an option. The standard is BT50.
Max. tool diameter: 320 mm (12.5 in.) <without adjacent tools>

NHX 6300
Highest rigidity with a robust bed and powerful table/pallet clamping force

<table>
<thead>
<tr>
<th>Max. workpiece swing diameter: A</th>
<th>Max. workpiece height: B</th>
<th>Length of one side of a workpiece²: C</th>
</tr>
</thead>
<tbody>
<tr>
<td>NHX 5500 800 (31.4)</td>
<td>NHX 5500 1,100 (43.3)</td>
<td>NHX 6300 742 (29.2)</td>
</tr>
<tr>
<td>NHX 6300 1,050 (41.3)</td>
<td>NHX 6300 1,300 (51.1)</td>
<td>NHX 6300 742 (29.2)</td>
</tr>
</tbody>
</table>

*1 LPP specifications either 1,000 mm (39.3 in.) or 1,100 mm (43.3 in.) can be selected

*2 Length of one side of a square inscribed in a max. workpiece swing diameter range

LPP: Linear Pallet Pool
A robust bed is an essential machine structure for stable and high-quality machining. The NHX 5500 2nd Generation and NHX 6300 2nd Generation exclusively designed for a No. 50 taper spindle (HSK-A100\textsuperscript{*}) have high-quality beds with a thicker wall and higher rigidity to minimize vibration generated during machining. What’s more, the models come standard with the high-rigidity spindle powerMASTER with overwhelmingly powerful cutting capabilities to achieve stable heavy-duty cutting.

\* Available as an option. The standard is BT50.

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1. **High-rigidity bed**
   - The X-axis guideways with a step difference made high-rigidity bed possible
   - Thicker wall thickness than that of the existing machine to improve rigidity

2. **3-point support structure**
   - 3-point support machine structure for easy horizontal adjustment drastically reduces installation time
   - Not affected by ground conditions or gradual changes
3. **Spindle structure with higher rigidity**
   - The powerMASTER that achieves overwhelmingly powerful cutting performance as standard
   - Spindle bearings lined up in four rows

4. **Machining with shorter tools**
   - Distance between the spindle end face and the center of the pallet set to 50 mm (2.0 in.)
   - "Half that of the conventional machine" (NHX 6300)

5. **High-rigidity roller guides**
   - Roller type with large contact areas with the rail surfaces to achieve high rigidity
Perfect Equipment for Ultimate Machining Accuracy

The NHX 5500 2nd Generation and NHX 6300 2nd Generation models are equipped with everything required for stable high-precision machining. In addition to perfect spindle cooling, a highly reliable SmartSCALE (Magnescale) with extreme accuracy is employed on all axes as standard to ensure the best positioning accuracy for a long period of time.

Full closed loop control (Scale feedback) as standard on all axes (SmartSCALE)

Simple non-contact structure
- Saves space bearingless compact design
- Can be mounted in proximity to workpieces, enabling easy installation of multiple scales on one axis

High resolution of 0.01 µm
- Newly developed algorithm employed to improve the high-performance arithmetic processing circuit

No air purge necessary thanks to the sealing structure with a protection degree of IP67
- The magnetic scale and the detection device surfaces completely covered with a metal cover for even higher durability against coolant and chips
**Draw-back function for through-spindle coolant**

Any remaining coolant in the spindle is drawn back into the tank when the coolant flow is stopped, which minimizes the residue to ensure stable machining accuracy.

+ Prevent coolant from adhering to the spindle taper during ATC
+ Prevent mounting errors and rust caused by chips
+ Prevent coolant from entering the magazine

This function is included in the through-spindle coolant specification.

**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 high-pressure coolant system, please be sure to consult our sales representative.

+ Machining with required accuracy of less than 20 µm
+ High-precision machining that requires a large amount of high-pressure coolant
+ Machining that requires oil-based coolant

We cannot guarantee that this unit will completely control the coolant temperature. It is designed to help prevent oil temperature increases.
The high-performance spindle powerMASTER with DMG MORI’s cutting-edge technologies and know-how. The powerMASTER with overwhelmingly high-power achieves a torque of up to 807 N・m (595.2 ft・lbf) as standard, and delivers superb performance especially in heavy-duty cutting that requires rigidity. The spindle offers varieties of specifications including the high-speed <16,000 min⁻¹> as an option.

NHX 5500 2nd Generation / NHX 6300 2nd Generation

Outstanding Machining Capability
High-power Spindle powerMASTER

The high-performance spindle powerMASTER with DMG MORI’s cutting-edge technologies and know-how. The powerMASTER with overwhelmingly high-power achieves a torque of up to 807 N・m (595.2 ft・lbf) as standard, and delivers superb performance especially in heavy-duty cutting that requires rigidity. The spindle offers varieties of specifications including the high-speed <16,000 min⁻¹> as an option.

- Sophisticated spindle labyrinth structure
  + The labyrinth structure has been enhanced, taking into account frequent use of high-pressure coolant
  + Prevent coolant entry and improve spindle durability

- Spindle with point-symmetric structure
  + Fixing bolts and pipes to supply coolant and cooling oil to the spindle are arranged symmetrically relative to the center of the spindle, enabling the machine to achieve high-precision machining without being affected by thermal displacement

- Two-face contact specification (option)
  + Coming into contact with both spindle taper and spindle nose, a tool achieves greater flexural rigidity and longer useful life
Cutting-edge spindle technologies

**powerMASTER**

+ No. 50 taper spindle achieves overwhelming heavy-duty cutting
+ High-speed machining with the maximum spindle speed of 16,000 min⁻¹ (option)
+ Thermal expansion compensation by Spindle Growth Sensor <SGS> (option)
+ Advanced spindle labyrinth structure prevents coolant from entering the spindle

**Spindle: 3-year warranty**

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**No. 50 taper spindle**

+ Type of tool shank: BT50<sup>1</sup>, CAT50, DIN50, HSK-A100
+ Max. spindle speed: 12,000 min⁻¹<sub>high speed</sub>
  8,000 min⁻¹<sub>high torque</sub><sup>2</sup>
+ Output: 55 / 30 kW (75 / 40 HP) <15%ED / cont> 37 / 26 kW (50 / 34.7 HP) <25%ED / cont> (high speed) 55 / 45 kW (75 / 60 HP) <25%ED / cont> (high torque)<sup>2</sup> 90 / 50 kW (120 / 66.7 HP) <S6 10% / cont> <SIEMENS> 100 / 55 kW (133.3 / 75 HP) <S6 10% / cont> (high speed) <SIEMENS> 80 / 45 kW (106.7 / 60 HP) <S6 10% / cont> (high torque)<sup>2</sup> <SIEMENS>
+ Max. spindle torque: 807 N·m (595.2 ft·lbf) <10%ED> 528 N·m (389.4 ft·lbf) <10%ED> (high speed) 1,413 N·m (1,042.2 ft·lbf) <10%ED> (high torque)<sup>2</sup> 808 N·m (595.9 ft·lbf) <S6 10%> <SIEMENS> 548 N·m (404.2 ft·lbf) <S6 10%> (high speed) <SIEMENS> 1,414 N·m (1,042 ft·lbf) <S6 10%> (high torque)<sup>2</sup> <SIEMENS>

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<sup>1</sup> When the two-face contact specification is selected, a two-face contact tool and other tools cannot be used together.
<sup>2</sup> NHX 6300 only.

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Unprecedented level of reliability!
NHX 5500 2nd Generation / NHX 6300 2nd Generation

Outstanding Standard Specification
Fully Ready for Automation

The models come standard with hydraulic / pneumatic interfaces, which used to be options, to facilitate the performance of hydraulic / pneumatic fixtures. This can fully accommodate system automation and greatly improve customers’ productivity. The standard rotary table uses a high-speed rotary axis drive system DDM (Direct Drive Motor) that achieves zero backlash.

Direct Drive Motor
Until now, gears have been used to transmit the drive power to the rotary axes, but this drive system had a negative effect on drive speed and precision. By transmitting the drive power to the rotary axes directly without using gears, DDM offers outstanding transmission efficiency and high-speed feed. DDM also achieves zero backlash for highest accuracy.

+ High-speed rotation (B-axis max. rotational speed: 100 min⁻¹)
+ High-precision indexing
+ Less maintenance
+ Longer product life

NHX 5500: 500 × 500 mm (19.7 × 19.7 in.)
NHX 6300: 630 × 630 mm (24.8 × 24.8 in.)
Hydraulic / pneumatic interfaces essential for automation equipped as standard

Easy automation integration with standard hydraulic and pneumatic interface.

- Setup station: 6 ports
- Machining table: 2 ports

1. Hydraulic 2 circuits 4 ports, workpiece seating detection 2 circuits 2 ports
2. For keeping clamp force of the hydraulic fixture

- Automatic workpiece clamping / unclamping by hydraulic pressure
- Pallet through type
- Hydraulic / pneumatic pressure can be supplied from above (option)

Hydraulic / pneumatic fixtures

Offer optimal hydraulic / pneumatic fixtures based on our extensive experience and machining know-how.

- Improve setup accuracy and reduce operators’ burden compared to hand tightening fixtures
- No variation in setup work according to operators
- Prevent clamp errors with the seating detection function
- Clamp / unclamp a workpiece with one push of a button

Pallet through specification

Easily transfer the pallets between the setup station and the work area and avoid external hoses and couplers.

- The hydraulic / pneumatic interfaces make it possible to supply hydraulic / pneumatic pressure to the table of the APC-equipped machines

Supply of hydraulic / pneumatic pressure from above (option)

Supplying from above the machine allows more ports to be added as needed by your fixture. Suitable for machining that requires high-pressure coolant and a number of ports. Capable of clamping and unclamping workpieces inside the machine to achieve flexible machining.

Hydraulic / pneumatic interfaces make it possible to supply hydraulic / pneumatic pressure to the machine table of the APC-equipped machines

+ Automatic workpiece clamping / unclamping by hydraulic pressure
+ Pallet through type
+ Hydraulic / pneumatic pressure can be supplied from above (option)

Optimal acceleration / deceleration for each workpiece

Servo Sense for Workpiece (Z-axis, B-axis)

Drastically decrease overall cycle time by automatically finding the optimal acceleration / deceleration for each pallet (Z-axis and B-axis). The auto servo tuning function allows for efficient and smooth acceleration / deceleration, as well as ensuring stable positioning and higher machining accuracy. It automatically controls machine vibration and caused by gradual change in the machine and unbalanced fixtures.

- Optimized acceleration / deceleration for reduction of machining time
- Improved positioning accuracy
- Reduced machine vibration

Example: Reduction in the B-axis indexing time

Increase acceleration according to workpiece mass and reduce positioning and machining time

Comparison of 180 degree indexing time (NHX 6300): Workpiece mass 500 kg (1,100 lb.)

Optimized settings: 180 degree indexing time reduced by 40%!
Variety of Magazines

The smooth, high-speed indexing, ring type magazine [60-tool specification] is offered as standard. Three types of magazines (ring type, chain type, and rack type) are available with a max. tool storage capacity of up to 330*, so the customers can choose the one that best suits their production needs.

- Tool storage capacity <ring-type / chain-type / rack-type*>:
  - 60 tools / 100, 120 tools / 180*, 240*, 330* tools
- Max. tool length: 550 mm [21.6 in.] <NHX 5500> / 630 mm [24.8 in.] <NHX 6300>
- Max. tool mass: 30 kg [66 lb.]
- Max. tool diameter: 320 mm [12.5 in.] <without adjacent tools> / 110 mm [4.3 in.] <with adjacent tools>

* For machines with the FANUC NC unit only.
- Chain-type magazines (100- or 120-tool capacity) incorporate a pot tilting mechanism and the tool capacity includes one tool at the spindle side. (For machines with the FANUC NC unit only)
- Rack-type magazines (180-, 240-, or 330-tool capacity) incorporate a pot transfer mechanism and the tool capacity includes one tool at the spindle side.
- The maximum tool diameter is limited to 230 mm (9.0 in.) or less when using the spindle at 10,000 min⁻¹ or higher.

Reliable tool change

The ATC arm equipped with a holding lever for securing a tool tightly holds a long and heavy tool, offering reliable tool change.

<table>
<thead>
<tr>
<th></th>
<th>NHX 5500</th>
<th>NHX 6300</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cut-to-cut (chip-to-chip)*</td>
<td>Max. &lt;ISO&gt; sec.</td>
<td>10.0</td>
</tr>
<tr>
<td></td>
<td>Min. &lt;ISO&gt; sec.</td>
<td>4.4</td>
</tr>
<tr>
<td></td>
<td>&lt;MAS&gt; sec.</td>
<td>4.4</td>
</tr>
<tr>
<td>Tool-to-tool</td>
<td>sec.</td>
<td>1.97</td>
</tr>
</tbody>
</table>

A maximum tool length exceeding the pallet size

On the NHX 5500 2nd Generation the maximum tool length is greater than the pallet size, and on the NHX 6300 2nd Generation it is the same as the pallet size. So deep hole boring up to the maximum tool length is now possible without reversing the table. It also contributes to reducing cutting time and achieving high-precision machining.

- Max. tool length: 550 mm [21.6 in.] <NHX 5500> / 630 mm [24.8 in.] <NHX 6300>

- Depending on condition, machining may not always be possible.
NHX 5500 2nd Generation / NHX 6300 2nd Generation

Cutting-edge Chip Disposal Solution

Chips can be one of the main causes leading to machining failure and machine stop. DMG MORI conducted an in-depth study on them by carrying out various experiments and analyses, and achieved outstanding chip disposal performance. Inside the machine, for example, coolant is sprayed not only from the ceiling but from the lower part of the machine, allowing the machine to prevent chip accumulation more reliably than conventional machines. We offer optimal chip disposal solutions according to a machining condition of each customer.

New technology!

Zero sludge coolant tank

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

- Coolant nozzle
- Inlet filter pump
- Cyclone filter
- Stirring nozzle coolant pump
- Clean coolant tank (from cyclone filter)
- Through-spindle coolant pump

- Not compatible with oil-based coolant.

Click here to watch the video of the zero sludge coolant tank.
Through-spindle coolant system (option)
+ Coolant to be supplied to the tip through the holes of the spindle and tool
+ Effective for chip removal, cooling of machining points and extension of tool life

<table>
<thead>
<tr>
<th></th>
<th>Unit on coolant tank</th>
<th>Separate type</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Discharge pressure MPa [psi]</strong></td>
<td>1.5 / 7.0 / 7.0 (217.5 / 1,015)</td>
<td>7.0 (1,015)</td>
</tr>
<tr>
<td><strong>Installation space (width × depth) mm (in.)</strong></td>
<td>Not necessary</td>
<td>780 × 1,190 (30.7 × 46.9)</td>
</tr>
<tr>
<td><strong>Water-soluble coolant</strong></td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td><strong>Oil-based coolant</strong></td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td><strong>Coolant filtration accuracy µm</strong></td>
<td>20</td>
<td>●</td>
</tr>
</tbody>
</table>

* Oil-based coolant may not be filtered appropriately depending on its viscosity. In such cases it is advisable to select the high-pressure coolant unit (special option), which uses a ceramic backwashing filter in the filtration system instead of a regular cyclone filter. 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 breakdown if ignited. If you have to use a flammable coolant for any reason, please be sure to consult our sales representative.

Mist collector
Powerful vacuum sucks out dust and oil mist that accumulate inside the machine.

Chip conveyor outside machine (rear discharge, drum filter type)
+ Regardless of shapes or materials, any types of chips including long / short chips can be transferred using one conveyor
+ Suitable for discharging various types of chips
+ Tank capacity: 1,025 L (270.6 gal.) <NHX 5500> / 1,200 L (316.8 gal.) <NHX 6300>
+ Depth of tank: 400 mm (15.7 in.)

<table>
<thead>
<tr>
<th>Workpiece material</th>
<th>Steel</th>
<th>Cast iron</th>
<th>Aluminum / non-ferrous metal</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Chip size</strong></td>
<td>Long</td>
<td>Short</td>
<td>Powdery</td>
</tr>
<tr>
<td>Scraper type (drum filter type)</td>
<td>○&lt;sup&gt;1&lt;/sup&gt;</td>
<td>○&lt;sup&gt;1&lt;/sup&gt;</td>
<td>○&lt;sup&gt;2&lt;/sup&gt;</td>
</tr>
<tr>
<td>Hinge + Scraper 2-stage chip discharge (drum filter type)</td>
<td>○&lt;sup&gt;1&lt;/sup&gt;</td>
<td>○&lt;sup&gt;1&lt;/sup&gt;</td>
<td>○&lt;sup&gt;2&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

<sup>1</sup> For long chips <100 mm (3.9 in.) or longer, select the optional “Hinge + Scraper 2-stage chip discharge (with drum filter)”
<sup>2</sup> Depending on the size, some chips may pass through the drum filter and accumulate in the coolant tank.

The optimized APC cover shape facilitates chip disposal. It also prevents chip accumulation in the cover gaps and other areas where chips tend to accumulate.

Chip disposal groove (setup station)

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

The NHX Series is designed with the priority on operability. The models have larger windows to improve visibility and take an ingenious approach to every part of the machine to enhance workability with a completely workability-oriented concept. What’s more, equipment including the hydraulic & pneumatic units are located together at a easy-to-access location to ensure easy maintainability.
CELOS / ERGOline Touch

Improved access to the spindle and workpieces thanks to the touch screen operation panel with a turning mechanism.

Swivel angle: 120° (NHX 5500) 135° (NHX 6300)

Access to the machining chamber

The machine offers improved accessibility from the operation door to the spindle.

Distance from the spindle center to the right side wall:
- 308 mm (12.1 in.) <NHX 5500>
- 270 mm (10.6 in.) <NHX 6300>

Distance below the door opening (from the top of the step):
- 956 mm (37.6 in.) <NHX 5500>
- 949 mm (37.4 in.) <NHX 6300>

Setup station

With excellent access to the table and a wide door opening, setup operations such as fixture adjustment can be done smoothly.

Distance to the center of the pallet:
- 520 mm (20.5 in.) <NHX 5500> / 600 mm (23.6 in.) <NHX 6300>

Distance from floor surface to pallet surface:
- 1,200 mm (47.2 in.) <NHX 5500> / 1,250 mm (49.2 in.) <NHX 6300>

Door opening:
- 815 mm (32.1 in.) <NHX 5500> / 1,064 mm (41.9 in.) <NHX 6300>

Centralized layout of devices

Peripherals requiring periodic maintenance are located in one place, which contributes to improving operators’ work efficiency.

Replacement of spindle unit

By changing the spindle unit to a cartridge, which even includes the rear bearings, we have dramatically reduced replacement time.

Display of Manuals

As well as viewing operation manuals on the CELOS screen, you can perform full-text search with keyword and jump to links in the same way as you do on a PC. This is particularly convenient when searching for information during maintenance.

CELOS: Control Efficiency Lead Operation System
Flexible Automation Solutions

DMG MORI provides number of proven automation solutions for our customer diverse production requirements. We have installed automation systems around the world. With the advanced know-how we provide our customers with modular of fully customized solutions best suited for your floor.

1. RPS system (Rotary Pallet Storage)
   This system features outstanding space savings and setup capabilities, and can hold more pallets per unit area than any other pallet pool system. (NHX 5500 only)

2. CPP system (Carrier Pallet Pool)
   With its simple construction provided in predefined packages, this system is easy to introduce. For the system configuration, the customer can select from 8 packages to provide the optimum specifications for their needs.
Simple Control System

**PALLET MANAGER**

- MAPPS V function, available to RPS and CPP only.

**Easy check of pallet status on CELOS**

- Displays the entire system layout in an easy-to-see manner
- Able to check the latest pallet status and shorten setup time
- Able to transfer pallets by drag and drop of the pallet icon on the screen

**Tool check to prevent troubles in advance**

- Automatically identifies and displays tools that are not suitable for machining by central tool management
- Prevents machining failure and troubles caused by tool breakage
- Improves productivity by minimizing problem-caused rework

**MCC-LPS III (Linear Pallet Pool Control System)**

- Easy operation / management of the pallet transfer system
- Machining programs can be managed and automatically downloaded
- Able to flexibly change production priority in response to urgent requests

**MCC-TMS (The Tool Management System)**

- Improves the system operating rate through highly efficient, centralized tool management
- Compatible with ID tags
- Compatible with tool presetter interface

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*MCC-LPS III (Linear Pallet Pool Control System)

- Not applicable with the SIEMENS NC unit.

MAPPS: Mori Advanced Programming Production System
CELOS: Control Efficiency Lead Operation System

*NHX 5000 3rd Generation

- Not applicable with the SIEMENS NC unit.

Max. workpiece height: either 1,000 mm (39.3 in.) or 1,100 mm (43.3 in.) can be selected. For details, please consult our sales representative.
The DMG MORI Qualified Products (DMQP) program 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

**Handling**
- Robot system
- Chip conveyor (external)

**Measuring**
- In-machine measuring system (tool)
- Tool presetter
- In-machine measuring system (workpiece)
- Surface roughness measuring system

**Shaping**
- Mist collector
- Oil skimmer
- Rotary window
- High-pressure coolant system

**Monitoring**
- Electrical cabinet chiller
- Coolant chiller
- Coolant float switch
- Signal Lamp

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

DMQP: DMG MORI Qualified Products
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.
Interpolation turning*1

DMG MORI gearMILL*2

MVC (Machine Vibration Control)*1*3

ATC (Application Tuning Cycle)

MPC (Machine Protection Control)*1

Efficient Production Package
(High-speed canned cycle)*1

Easy programming of interpolation turning

Integrating gear cutting into milling

Selects optimum conditions for preventing chatter

Easy setting of optimum feed according to the machining operation

Minimizing load to the spindle when interference occurs

Easy inputting of various machining patterns

*1 Option  *2 Consultation is required  *3 For machines with the SIEMENS NC unit, it is not available.
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: Control Efficiency Lead Operation System
APP menu:
Central access to all available applications

ERGOnline operation panel with 21.5-inch multi-touch screen and NC unit from FANUC or SIEMENS

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
NHX 5500 2nd Generation / NHX 6300 2nd Generation

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 advocate.

Digital Factory
Your office

CELOS Manufacturing
Your plant

CELOS Machine
Your machines

MPC (Machine Protection Control)

- Minimizing the effect on the machine by stopping the spindle within 0.01 seconds after vibration of a certain level or higher is detected
- Learning tool-dependent machining vibration in advance to compare the data with the actual value and determine abnormal vibration at the time of mass-production
- Diagnosing the spindle bearing status for preventive maintenance

MVC (Machine Vibration Control)

- Automatically calculating the optimal cutting conditions to control chatter by detecting it with the sensor mounted on the spindle
- No advanced skill necessary due to easy operation with a button
- Capable of reflecting the automatically calculated optimal cutting conditions in the NC program right away
**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.

**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 release time in your country.*

**CELOS Club** Continuously supporting your productivity improvements

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

**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.*
NHX 5500 2nd Generation / NHX 6300 2nd Generation

High-Performance Operation Systems

MAPPS V is a high-performance, smart operation system mounted on CELOS. It enables operators to easily control machine operation with touch operation. SIEMENS 840D solutionline: This powerful state-of-the-art operation system with a variety of functions as standard will ensure optimal productivity.

The 6-window display provides access to a variety of information at the same time »»

The screen combinations can be freely customized »»
CELOS with FANUC

+ User memory area with large capacity of 6 GB as standard
+ Equipped with simple and easy-to-follow conversational programming function
+ Quick access to necessary information in manual data by searching function
+ Two multi-touch panels
+ 3D machining simulation for easy geometry check
+ 6-window display for checking necessary machine information all at once
+ Improved setups by displaying necessary machine information according to operation

CELOS with SIEMENS

+ Highly simplified interactive programming
+ SINUMERIK Operate new user interface
+ ATC*, 3D quickSET*
+ Fast block processing time of approx. 0.6 ms
+ Look-ahead function for up to 150 NC blocks (capable of parameterisation)
+ Graphic simulation of the machining process with overhead view, triple-plane display and 3D display; synchronised display during the machining process
+ 3D machining, optional 3D tool correction via the surface normal vector

* Option
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 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
- Accumulator pressure-keeping 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
- Reduce machining power by energy-saving pecking cycles
- Quicken standard M codes
- Simultaneous acceleration / deceleration of the spindle and feed axes
- Inverter-controlled coolant supply

CELOS: Control Efficiency Lead Operation System

The photo shows CELOS (FANUC).
NHX 5500 / NHX 6300 2nd Generation

### Machine Size

**NHX 5500**

**Front view**

**Side view**

- The diagrams show the machine with FANUC (60 tools).

**Tool storage capacity**

<table>
<thead>
<tr>
<th>Height X width X depth**</th>
<th>Ring type: 60</th>
<th>Chain-type: 100, 120</th>
<th>Rack-type**: 180</th>
<th>Rack-type**: 240</th>
<th>Rack-type**: 330</th>
</tr>
</thead>
<tbody>
<tr>
<td>mm (in.)</td>
<td>3,200 X 3,748 X 5,645</td>
<td>3,260 X 3,470 X 5,962</td>
<td>3,300 X 4,203 X 5,645</td>
<td>3,300 X 4,203 X 5,723</td>
<td>3,300 X 4,203 X 6,803</td>
</tr>
</tbody>
</table>

**NHX 6300**

**Front view**

**Side view**

- The diagrams show the machine with FANUC (60 tools).

**Tool storage capacity**

<table>
<thead>
<tr>
<th>Height X width X depth**</th>
<th>Ring type: 60</th>
<th>Chain-type: 100, 120</th>
<th>Rack-type**: 180</th>
<th>Rack-type**: 240</th>
<th>Rack-type**: 330</th>
</tr>
</thead>
<tbody>
<tr>
<td>mm (in.)</td>
<td>3,260 X 4,028 X 5,917</td>
<td>3,260 X 4,093 X 6,419</td>
<td>3,300 X 4,405 X 6,135</td>
<td>3,300 X 4,405 X 7,215</td>
<td>3,300 X 4,405 X 7,715</td>
</tr>
</tbody>
</table>

**NHX 5500 2nd Generation / NHX 6300 2nd Generation**

**Dimensions**

<table>
<thead>
<tr>
<th>Height X width X depth**</th>
<th>Ring type: 60</th>
<th>Chain-type: 100, 120</th>
<th>Rack-type**: 180</th>
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<td>3,300 X 4,203 X 5,723</td>
<td>3,300 X 4,203 X 6,803</td>
</tr>
</tbody>
</table>

**NHX 6300**

**Dimensions**

<table>
<thead>
<tr>
<th>Height X width X depth**</th>
<th>Ring type: 60</th>
<th>Chain-type: 100, 120</th>
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<th>Rack-type**: 240</th>
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<tr>
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<td>3,260 X 4,093 X 6,419</td>
<td>3,300 X 4,405 X 6,135</td>
<td>3,300 X 4,405 X 7,215</td>
<td>3,300 X 4,405 X 7,715</td>
</tr>
</tbody>
</table>

**Notes:**

- For machines with the SIEMENS NC unit, it is not available.
- Please consult our sales representative when the Hinge + Scraper 2-stage chip conveyor (with drum filter) is selected.
# Machine Specifications

<table>
<thead>
<tr>
<th>Travel</th>
<th>NHX 5500</th>
<th>NHX 6300</th>
</tr>
</thead>
<tbody>
<tr>
<td>X-axis travel (longitudinal movement of saddle)</td>
<td>800 (31.5)</td>
<td>1,050 (41.3)</td>
</tr>
<tr>
<td>Y-axis travel (vertical movement of spindle head)</td>
<td>800 (31.5)</td>
<td>900 (35.4)</td>
</tr>
<tr>
<td>Z-axis travel (cross movement of pallet)</td>
<td>880 (34.6)</td>
<td>1,030 (40.6)</td>
</tr>
<tr>
<td>Distance from pallet center to spindle gauge plane</td>
<td>70—950 (3.9—35.4)</td>
<td>50—1,080 (2.0—42.5)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pallet</th>
<th>NHX 5500</th>
<th>NHX 6300</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pallet working surface</td>
<td>500 × 500 (19.7 × 19.7)</td>
<td>630 × 630 (24.8 × 24.8)</td>
</tr>
<tr>
<td>Pallet loading capacity</td>
<td>1,000 (2,200)</td>
<td>1,500 (3,300)</td>
</tr>
<tr>
<td>Max. workpiece swing diameter</td>
<td>800 (31.4)</td>
<td>1,050 (41.3)</td>
</tr>
<tr>
<td>Max. workpiece height</td>
<td>1,100 (43.3)**</td>
<td>1,300 (51.1)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Spindle</th>
<th>NHX 5500</th>
<th>NHX 6300</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. spindle speed</td>
<td>12,000</td>
<td>12,000</td>
</tr>
<tr>
<td></td>
<td>16,000 (high speed)</td>
<td>16,000 (high speed)</td>
</tr>
<tr>
<td></td>
<td>8,000 (high torque)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Feedrate</th>
<th>NHX 5500</th>
<th>NHX 6300</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rapid traverse rate</td>
<td>X, Y, Z: 60,000 (2,362.2)</td>
<td>X, Y, Z: 60,000 (2,362.2)</td>
</tr>
<tr>
<td>Cutting feedrate</td>
<td>X, Y, Z: 0—60,000 (0—2,362.2)</td>
<td>(when using high-precision control)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ATC</th>
<th>NHX 5500</th>
<th>NHX 6300</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of tool shank</td>
<td>BT50**, CAT50, DIN50, HSK-A100</td>
<td></td>
</tr>
<tr>
<td>Tool storage capacity</td>
<td></td>
<td>Ring-type: 60</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Chain-type: 100, 120</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rack-type**: 180, 240, 330</td>
</tr>
<tr>
<td>Max. tool diameter (with adjacent tools)</td>
<td>mm (in.)</td>
<td>110 (4.3)</td>
</tr>
<tr>
<td>Max. tool diameter (without adjacent tools)</td>
<td>mm (in.)</td>
<td>320 (12.5): ring-type</td>
</tr>
<tr>
<td>Max. tool length</td>
<td>mm (in.)</td>
<td>550 (21.6)</td>
</tr>
<tr>
<td>Max. tool mass</td>
<td>kg (lb.)</td>
<td>630 (24.8)</td>
</tr>
<tr>
<td>Max. tool diameter (without adjacent tools)</td>
<td>mm (in.)</td>
<td>320 (12.5): ring-type</td>
</tr>
<tr>
<td>Tool changing time</td>
<td>s</td>
<td>1.97</td>
</tr>
<tr>
<td>Tool-to-tool</td>
<td></td>
<td>2.05</td>
</tr>
<tr>
<td>Cut-to-cut (chip-to-chip)</td>
<td></td>
<td>4.4: 60 tools (ring-type)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4.8: 60 tools (ring-type)</td>
</tr>
<tr>
<td>Tool changing time*</td>
<td></td>
<td>4.4: 60 tools (ring-type)</td>
</tr>
<tr>
<td>APC</td>
<td>NHX 5500</td>
<td>NHX 6300</td>
</tr>
<tr>
<td>Number of pallets</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Pallet changing time*</td>
<td>s</td>
<td>15.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>20.0</td>
</tr>
</tbody>
</table>
1. LPP specifications: either 1,000 mm (39.3 in.) or 1,100 mm (43.3 in.) can be selected.

2. When the two-face contact specification is selected, two-face contact tools and non-two-face contact tools cannot be used together.

3. For machines with the SIEMENS NC unit, it is not available.

4. When equipped with the auto-coupler, time taken to shut off / supply hydraulic pressure to the fixture is not included.

5. Floor space may differ between different control versions.

6. Please consult our sales representative when the Hinge Scraper 2-stage chip conveyor (with drum filter) is selected.

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.

Max. tool diameter: the maximum tool diameter is limited to 230 mm (9.0 in.) or less when using the spindle at 10,000 min⁻¹ or higher.

Max. tool diameter: the maximum tool diameter is limited to 230 mm (9.0 in.) or less when using the spindle at 10,000 min⁻¹ or higher.

Tool changing time: the time differences are caused by the different conditions (travel distances, etc.) for each standard.

For details, please check the Detailed Specifications.

The information in this catalog is valid as of December 2019.

ISO: International Organization for Standardization  JIS: Japanese Industrial Standard

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<table>
<thead>
<tr>
<th>Motor</th>
<th>NHX 5500</th>
<th>NHX 6300</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spindle drive motor &lt;FANUC&gt;</td>
<td>12,000 min⁻¹</td>
<td>kW (HP) 55 / 30 (75 / 40) &lt;15%ED / cont&gt;</td>
</tr>
<tr>
<td></td>
<td>16,000 min⁻¹ &lt;high speed&gt;</td>
<td>kW (HP) 37 / 24 (50 / 34.7) &lt;25%ED / cont&gt;</td>
</tr>
<tr>
<td></td>
<td>8,000 min⁻¹ &lt;high torque&gt;</td>
<td>kW (HP) —</td>
</tr>
<tr>
<td>Spindle drive motor &lt;SIEMENS&gt;</td>
<td>12,000 min⁻¹</td>
<td>kW (HP) 90 / 50 (120 / 66.7) &lt;56 10% / cont&gt;</td>
</tr>
<tr>
<td></td>
<td>16,000 min⁻¹ &lt;high speed&gt;</td>
<td>kW (HP) 100 / 55 (133.3 / 75) &lt;56 10% / cont&gt;</td>
</tr>
<tr>
<td></td>
<td>8,000 min⁻¹ &lt;high torque&gt;</td>
<td>kW (HP) —</td>
</tr>
</tbody>
</table>

---

<table>
<thead>
<tr>
<th>Machine size</th>
<th>NHX 5500</th>
<th>NHX 6300</th>
</tr>
</thead>
<tbody>
<tr>
<td>Machine height &lt;from floor&gt;</td>
<td>FANUC mm (in.) 3,200 (126.0)</td>
<td>3,300 (129.9)</td>
</tr>
<tr>
<td></td>
<td>SIEMENS mm (in.) 3,200 (126.0)</td>
<td>3,260 (128.3)</td>
</tr>
<tr>
<td>Floor space*5</td>
<td>FANUC mm (in.) 3,365 × 5,465 (132.5 × 215.2)</td>
<td>3,930 × 5,917 (154.7 × 233.0)</td>
</tr>
<tr>
<td></td>
<td>SIEMENS mm (in.) 3,748 × 5,465 (147.6 × 215.2)</td>
<td>4,028 × 5,917 (158.6 × 233.0)</td>
</tr>
<tr>
<td>Mass of machine &lt;including coolant tank&gt;</td>
<td>kg (lb.) 14,590 (32,098)</td>
<td>18,750 (41,250)</td>
</tr>
</tbody>
</table>

---

<table>
<thead>
<tr>
<th>Control unit</th>
<th>NHX 5500</th>
<th>NHX 6300</th>
</tr>
</thead>
<tbody>
<tr>
<td>FANUC</td>
<td>F31iB</td>
<td></td>
</tr>
<tr>
<td>SIEMENS</td>
<td>SINUMERIK 840D sl</td>
<td></td>
</tr>
</tbody>
</table>

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*2 When the two-face contact specification is selected, two-face contact tools and non-two-face contact tools cannot be used together.

*3 For machines with the SIEMENS NC unit, it is not available.

*4 When equipped with the auto-coupler, time taken to shut off / supply hydraulic pressure to the fixture is not included.

*5 Floor space may differ between different control versions.

*6 Please consult our sales representative when the Hinge Scraper 2-stage chip conveyor (with drum filter) is selected.

*7 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.

*8 Max. tool diameter: the maximum tool diameter is limited to 230 mm (9.0 in.) or less when using the spindle at 10,000 min⁻¹ or higher.

*9 Tool changing time: the time differences are caused by the different conditions (travel distances, etc.) for each standard.

*10 For details, please check the Detailed Specifications.

*11 The information in this catalog is valid as of December 2019.

LPP: Linear Pallet Pool
### Standard & Optional Features

#### Spindle

<table>
<thead>
<tr>
<th>Type of tool shank</th>
<th>NHX 5500</th>
<th>NHX 6300</th>
</tr>
</thead>
<tbody>
<tr>
<td>BT50**1</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>CAT50</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>DIN50</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>HSK-A100</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>

#### Output

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Speed</th>
<th>Power</th>
<th>Efficiency</th>
<th>NHX 5500</th>
<th>NHX 6300</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FANUC</strong></td>
<td>12,000 min⁻¹, 55 / 30 kW (75 / 40 HP) &lt;15%ED / cont&gt;</td>
<td>16,000 min⁻¹, 37 / 26 kW (50 / 34.7 HP) &lt;25%ED / cont&gt;</td>
<td>8,000 min⁻¹, 55 / 45 kW (75 / 60 HP) &lt;25%ED / cont&gt;</td>
<td>● ●</td>
<td>○ ○</td>
</tr>
<tr>
<td><strong>SIEMENS</strong></td>
<td>12,000 min⁻¹, 90 / 50 kW (120 / 66.7 HP) &lt;S6 10% / cont&gt;</td>
<td>16,000 min⁻¹, 100 / 55 kW (133.3 / 75 HP) &lt;S6 10% / cont&gt;</td>
<td>8,000 min⁻¹, 80 / 45 kW (106.7 / 60 HP) &lt;S6 10% / cont&gt;</td>
<td>● ●</td>
<td>○ ○</td>
</tr>
</tbody>
</table>

#### Magazine

<table>
<thead>
<tr>
<th>Tool storage capacity</th>
<th>NHX 5500</th>
<th>NHX 6300</th>
</tr>
</thead>
<tbody>
<tr>
<td>60 tools [ring type]</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>100 tools [chain-type]</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>120 tools [chain-type]</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>180 tools [rack-type]**</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>240 tools [rack-type]**</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>330 tools [rack-type]**</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>

#### Coolant

<table>
<thead>
<tr>
<th>System</th>
<th>NHX 5500</th>
<th>NHX 6300</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Coolant system</strong></td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td><strong>Shower coolant</strong></td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td><strong>Coolant gun</strong></td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Setup station side</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Setup station side and machining side</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Through-spindle coolant / air (switching specifications)</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Through-spindle coolant system [unit on coolant tank]**</td>
<td>1.5 MPa [217.5 psi] &lt;water-soluble&gt;</td>
<td>●</td>
</tr>
<tr>
<td>7.0 MPa [1,015 psi] &lt;water-soluble&gt;</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Through-spindle coolant system [separate type]**</td>
<td>7.0 MPa [1,015 psi]</td>
<td>○*5</td>
</tr>
<tr>
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<td>○</td>
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<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Through-spindle coolant system [separate type]**</td>
<td>7.0 MPa [1,015 psi]</td>
<td>○*5</td>
</tr>
<tr>
<td>Coolant chiller [separate type]</td>
<td>For standard coolant system</td>
<td>○*5</td>
</tr>
<tr>
<td>For through-spindle coolant system</td>
<td>○*5</td>
<td>○*5</td>
</tr>
<tr>
<td>Mist collector HVS-220</td>
<td>Including stand**</td>
<td>○*5</td>
</tr>
<tr>
<td>Mist collector HVS-300</td>
<td>Including stand**</td>
<td>○*5</td>
</tr>
<tr>
<td>Mist collector AFS-1600*7</td>
<td>Including stand</td>
<td>○*5</td>
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</table>
### Chip disposal

<table>
<thead>
<tr>
<th>NHX 5500</th>
<th>NHX 6300</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chip disposal</td>
<td>Rear discharge, scraper type (drum filter type)</td>
</tr>
<tr>
<td></td>
<td>Rear discharge, Hinge + Scraper 2-stage chip discharge (drum filter type)</td>
</tr>
<tr>
<td>Zero sludge coolant tank&lt;sup&gt;*&lt;/sup&gt;</td>
<td>● ●</td>
</tr>
</tbody>
</table>

### Measurement

<table>
<thead>
<tr>
<th>NHX 5500</th>
<th>NHX 6300</th>
</tr>
</thead>
<tbody>
<tr>
<td>In-machine measuring system (table)&lt;sup&gt;**&lt;/sup&gt;</td>
<td>Touch sensor (M)</td>
</tr>
<tr>
<td></td>
<td>Touch sensor (R)</td>
</tr>
<tr>
<td></td>
<td>Touch sensor + tool setter function (tool length + diameter) (M)</td>
</tr>
<tr>
<td></td>
<td>Touch sensor + tool setter function (tool length + diameter) (R)</td>
</tr>
<tr>
<td>In-machine measuring system (spindle)&lt;sup&gt;<strong>&lt;/sup&gt;&lt;sup&gt;</strong>&lt;/sup&gt;</td>
<td>Touch sensor (optical signal transmission type) + workpiece setter function (R)</td>
</tr>
</tbody>
</table>

### Improved accuracy

<table>
<thead>
<tr>
<th>NHX 5500</th>
<th>NHX 6300</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full closed loop control (Scale feedback)</td>
<td>● ●</td>
</tr>
<tr>
<td>Oil chiller</td>
<td>● ●</td>
</tr>
</tbody>
</table>

### Other

<table>
<thead>
<tr>
<th>NHX 5500</th>
<th>NHX 6300</th>
</tr>
</thead>
<tbody>
<tr>
<td>Signal lamp</td>
<td>4 colors (LED type: red, yellow, green, blue)</td>
</tr>
<tr>
<td>Manual pulse generator (separate type)</td>
<td>● ●</td>
</tr>
</tbody>
</table>

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* When the two-face contact specification is selected, a two-face contact tool and other tools cannot be used together.
* For machines with the SIEMENS NC unit, it is not available.
* Zero sludge coolant tank is included.
* Zero sludge coolant tank is included.
* When using oil-based coolant, please consult our sales representative.
* DMQP (DMG MORI Qualified Products)
* Cannot be used in Europe.
* Not compatible with oil-based coolant. If using oil-based coolant, select the HVS-220 or HVS-300.
* Not compatible with oil-based coolant.
* The specifications vary depending on the manufacturer. [M: made by Magnescale : R: made by RENISHAW]
* Equipped with the spindle for which the spindle bearing uses a high wear resistance ceramic ball. So the energization type touch sensor cannot be used.
* DMQP: Please see Page 26 for details.
* For details, please check the Detailed Specifications.
* The information in this catalog is valid as of December 2019.
* 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>

This product is deemed regulated cargo when exported under the Japanese government’s Foreign Exchange and Foreign Control Trade Law. Government authorization is required when exporting this product. The product shipped to you (the machine and accessory equipment) has been manufactured in accordance with the laws and standards that prevail in the relevant country or region. If it is exported, sold, or relocated to a destination in a country with different laws or standards, it may be subject to export restrictions of that country.

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.

++ DCG, DDM, G8C, speedMASTER, powerMASTER, SX-torqueMASTER, DMQP, dort, MATRIS, Robo2Dx, Zero sludge coolant tank, ZEROSHIP, CELIOS, ERGOline, SLIMline, COMPACTline, DMG MORI SMARTkey and names of each Technology Cycle are trademarks or registered trademarks of DMG MORI CO., LTD. in Japan, the USA and other countries.

++ If you have any questions regarding the content, please consult our sales representative.
++ The information in this catalog is valid as of January 2020. 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.