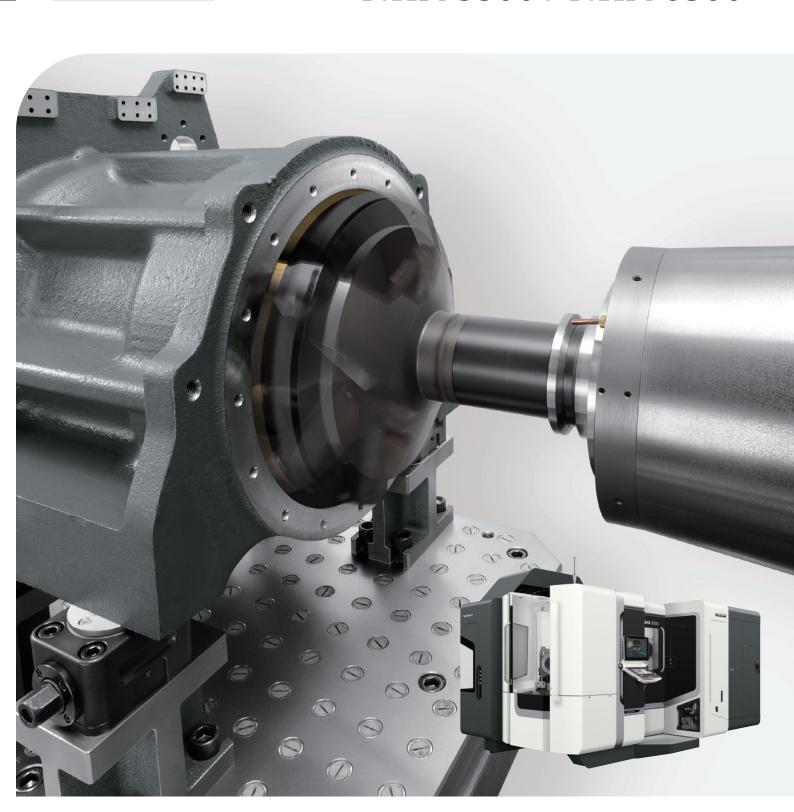


High-Precision, High-Speed Horizontal Machining Center

NHX 5500 NHX 6300

# NHX 5500 / NHX 6300



# The Best Horizontal Machining Center NHX 5500 and NHX 6300 Coming with the New DMG MORI Design

The NHX 5500 and NHX 6300, which features unparalleled rigidity and durability, has further evolved by incorporating CELOS, a touch screen user interface with process-oriented applications.

The new, ergonomically designed machine cover offers greater user-friendliness.

The new NHX 5500 and new NHX 6300 meet each and every customer's machining requirements with its high accuracy, high quality and high reliability.



## Main features

#### Basic structure



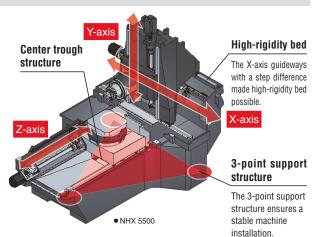
## Up to 38% increase in machine rigidity (NHX 5500)

#### Machine designed specifically for No. 50 taper spindle



The machine structures of the NHX 5500 and NHX 6300 have been designed exclusively for the No. 50 taper spindle to fully exploit its abilities. This realizes high rigidity required for heavy-duty cutting.

The photo shows the NHX 5500.





#### Rapid traverse rate increased by 20%

Rapid traverse rate <X, Y and Z axes>

NHX 5500/NHX 6300 Previous model

50 m/min • 60 m/min 20% up (1,968.5 ipm)

(2,362.2 ipm)

Cutting feedrate <X, Y and Z axes>

Previous model

NHX 5500/NHX 6300

50 m/min (1,968.5 ipm)

60 m/min 20% up (2,362.2 ipm)

{when using high-precision control <look-ahead control>}

Max. acceleration <X/Y/Z axes>

NHX 5500

NHX 6300

0.73/0.80/0.93 G

0.64/0.93/0.70 g

{7.2/7.8/9.1 m/s² (23.6/25.6/29.9 ft/s²)}

{6.3/9.1/6.9 m/s² (20.7/29.9/22.6 ft/s²)}

#### Working area

Machine type	Max. workpiece height	Max. workpiece swing diameter	Pallet loading capacity
NHX 5500	Previous model 1,000 mm 1,100 mm* (39.3 in.) (43.3 in.) (10% up)	800 mm (31.4 in.)	500 kg (1,100 lb.) [700 kg (1,540 lb.)]
NHX 6300	1,300 mm (51.1 in.)	1,050 mm (41.3 in.)	1,500 kg (3,300 lb.)

<sup>\*</sup> LPP specifications: either 1,000 mm (39.3 in.) or 1,100 mm (43.3 in.) can be selected





[ ] Option

Max. workpiece height

#### Spindle



#### Large spindle bearing I.D. + compact spindle O.D.

The spindle has been optimized through structural analysis; the spindle bearing I.D. was increased to achieve high rigidity, while the spindle O.D. was reduced to offer better access to the workpiece and fixtures. The spindle drive uses DDS (Direct Drive Spindle) motor gearless technology to bring out its full power at all speeds.

#### Compact spindle O.D.

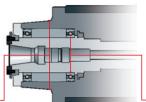
Previous model

*∮* 250 mm (*∮* 9.8 in.)



\$\phi \quad \text{235} \text{ mm (\$\phi \quad 9.3 in.)}\$

6% DOWN



# Spindle bearings with the largest inner diameter in the class

Previous model

*∮* 100 mm (*∮* 3.9 in.)

NHX 5500/NHX 6300

φ **120** mm (φ **4.7** in.)





• The photo shows the NHX 6300.



#### Spindle with point-symmetric structure

Spindle bearings with larger inner diameters are used to improve rigidity. The spindle drive uses DDS (Direct Drive Spindle) motor gearless technology to bring out its full power at all speeds.



## Sophisticated spindle labyrinth

We have enhanced the labyrinth structure by taking the frequent use of high-pressure coolant into account. The new structure prevents the infiltration of coolant into the spindle and improves spindle durability.

Spindle variations		NHX 5500			NHX 6300	
Spiriule variations	Standard High torque OP		High speed OP	Standard	High torque OP	High speed OP
Max. spindle speed	8,000 min <sup>-1</sup>	8,000 min <sup>-1</sup>	15,000 min <sup>-1</sup>	8,000 min <sup>-1</sup>	8,000 min <sup>-1</sup>	15,000 min <sup>-1</sup>
Spindle drive motor <30 min/cont>	30/22 kW (40/30 HP)	30/25 kW (40/33.3 HP)	30/25 kW (40/33.3 HP)	30/25 kW (40/33.3 HP)	37/30 kW (50/40 HP)	30/25 kW (40/33.3 HP)

#### Table

A one-degree indexing table is standard, and a full indexing table equipped with DDM (Direct Drive Motor) is available as an option. These have significant advantages for machining of workpieces that require high speed and high positioning accuracy.



The photo shows the NHX 6300.

#### Selection of tables

Table type	1° indexing table	Full 4th axis rotary table
Minimum pallet indexing angle	<b>1</b> °	0.001°
Pallet indexing time (90°)	Previous model  1.57 sec.   NHX 5500  1.30 sec.  Approx. Reduced by 17% [1.45 sec.*]	NHX 5500 1.54 sec.
and unclamping time>	$\begin{array}{c} \text{Previous model} \\ \text{2.0 sec.} \end{array} \longrightarrow \begin{array}{c} \text{NHX 6300} \\ \text{1.48 sec.} \end{array}$	NHX 6300 2.09 sec.

<sup>\*</sup> Pallet loading capacity 700 kg (1,540 lb.).

## Main features

#### Magazine



A high-speed indexing, ring type magazine (60-tool specifications) is installed on the machine as standard. Ring type, chain type, and rack type magazines are available, so you can choose the one that best suits your production needs.

#### ■ Tool storage capacity

Ring-type

60 tools\*

Chain-type

100 tools op

120 tools op

Rack-type

180 tools op 240 tools op 330 tools op

\*The 60-tool specification (ring-type magazine) cannot be selected with the RPP, CPP and LPP specifications.

60 tools specifications (ring type)

• The photo shows the NHX 6300

Machine type	Max. tool length	Max. tool mass	Max. tool diameter	
iviacilile type	Max. tool length	Max. tool illass	Without adjacent tools	With adjacent tools
NHX 5500	Previous model  500 mm (19.6 in.)  NHX 5500  550 mm (21.6 in.)	30 kg	Previous model  300 mm (11.8 in.)  NHX 5500  320 mm (12.5 in.)  Approx. 7% UP	110 mm (4.3 in.)
NHX 6300	630 mm (24.8 in.)		320 mm (12.5 in.)	()

<sup>•</sup> The maximum tool diameter is limited to 255 mm (10.0 in.) or less when using the spindle at 10,000 min<sup>-1</sup> or higher.

## High-precision equipment



#### Direct scale feedback as standard



Resolution  $0.01 \mu m$ 

Magnescale

High accuracy absolute scale

An absolute magnetic linear scale (full closed-loop control) made by Magnescale is equipped as standard to offer high-precision positioning.

- High accuracy, high resolution
- Greater accuracy than optical scale
- Highly resistant to condensation and oil
- Vibration and impact resistant characteristics

#### Coolant cooling system



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

- ullet Machining with required accuracy of less than 20  $\mu m$
- High-precision machining that requires a large amount of high-pressure coolant
- Machining that requires oil-based coolant
- While this unit is not the only way to completely control the temperature of the coolant, it makes a major contribution to preventing increases in the oil temperature.

## Peripheral equipment

#### Chip conveyor outside machine (rear discharge, drum filter type)

The high-performance external chip conveyor can discharge both long and short chips on one unit with its filter backwashing structure and excellent chip disposal capacity.



- Regardless of shapes or materials, any types of chips including long/short chips can be transferred on one conveyor.
- Suitable for discharging various types of chips on multi-axis machines.
- Regardless of water-soluble or water-insoluble, any types of coolant can be used.

Depth of tank

400 mm (15.7 in.)

Coolant tank capacity Previous model

680 L (179.5 gal.)

NHX 5500

(211.2 gal.)

Previous model 930 L (245.5 gal.)

**NHX 6300** 1.085 L

• The photo shows the NHX 6300

						<b>○:10</b>	eai ∪: Suitable
	Workpiece material and chip size						
Specifications		Steel			Alumii	num/non-ferrous	metal
	Long	Short	Powdery	Short	Long	Short	Powdery
Rear discharge, drum filter type			$\circ$	$\circ$			

- Chip size guidelines Short: chips 50 mm (2.0 in.) or less in length, bundles of chips  $\phi$  40 mm ( $\phi$  1.6 in.) or less Long: bigger than the above
- The options table shows the general options when using coolant. Changes may be necessary if you are not using coolant, or depending on the amount of coolant, compatibility with machines, or the specifications required.
- Please select a chip conveyor to suit the shape of your chips. When using special or difficult-to-cut material (chip hardness HRC45 or higher), please consult with our sales representative.
- Chip conveyors are available in various types for handling chips of different shape and material. For details, please consult with our sales representative.

#### Chip disposal groove (setup station)

A chip disposal groove is also included on the setup station.



• The photo shows the NHX 6300

Chip disposal groove

#### Shower coolant

As well as preventing chips from scattering during machining, this allows them to fall smoothly into the center conveyor.

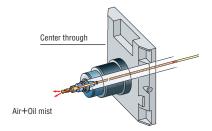
- When using shower coolant, it is used at the same time as spindle
- The photo shows the NHX 6300.

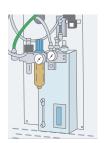


#### Semi dry unit

OP Consultation is required

Supplies air and oil mist to the cutting tip. An environmentally friendly device which reduces oil consumption. We recommend using this unit together with a mist collector.





Misting device

# Transfer systems ...



#### The versatile systems resolve production issues.

An optimum transfer system for your production needs can be selected for NHX 5500 and NHX 6300.

#### ■ Characteristics of each system Large CPP Production size RPP\* Stand-alone Small Types of workpieces → Large Small **∠**

machined

#### Key points when selecting a system

	RPP*	CPP	LPP
Number of machines	1 unit	Up to 4 units	Up to 8 units
Number of workpiece setup stations	1 station	Up to 2 stations	Up to 5 stations
Number of pallet stations	4 stations	Up to 29 stations	Up to 99 stations
Number of pallet shelves	1 level	1 level	2 levels

#### RPP system (Round Pallet Pool System)\*



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.
- The 60-tool specification (ring-type magazine) cannot be selected with the RPP, CPP and LPP specifications.
- Please contact our sales representative for details.

#### **CPP system (Carrier Pallet Pool System)**



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.



MCC-LPS III is available as an option.

#### LPP system (Linear Pallet Pool System)



It is a system with a high level of automation, equipped with multi-level pallet racks. The system construction can also be customized however you wish, achieving the optimum productivity and operation rate.



The NHX Series machine can be incorporated into your existing CPP or LPP system for the NH Series machine.

#### **Applications**

#### **Linear Pallet Pool Control System**



- DMG MORI's original, highly reliable system allows easy operation/management of the pallet transfer system.
- Machining programs can be managed and automatically downloaded.
- Urgent production requests will be flexibly prioritized.

## The Tool Management System



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



 $\bullet$  MCC-LPS  ${\rm I\hspace{-.1em}I\hspace{-.1em}I}$  is installed in the specialized cell controller and MCC-TMS can be installed in the controller and your PC.



# **CELIS** Uniform user interface with touch operation

# From the idea to the finished product

Simplifies every process from the idea to the finished product to facilitate operations.

- ► A wide variety of pre-installed applications
- New operating comfort with touch monitors
- ▶ 21.5" and 15.6" dual wide monitor

#### **CELOS STATUS MONITOR**

Here CELOS visualises the current condition of the machine regarding the process, provides important key figures about the current order and order progress and informs the operator with special icons and text messages about possible NC errors or imminent maintenance work

#### 21.5"

ERGO*line®* control panel with multi-touch monitor



Infinitely variable adjustment of the screen and the keyboard

#### **MULTI-TOUCH-CONTROL PANEL**

The combination of advanced software and hardware enables excellent usability and distinctive functionality.



#### SMARTkey®

Customised user authorisation. Individually adapted access privileges to the control system and the machine. NEW // with internal USB memory

Keys for the selection of operating mode

Release button for machine functions in operating mode

#### **COMPATIBLE**

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

#### **UNIFORM**

Uniform, intuitive user interface for all high-tech machines from DMG MORI.

#### CONSISTENT

Consistent administration, documentation and visualisation of order, process and machine data.

## **CELOS APPs simplify fast and easy operation**

#### **CELOS – APP MENU: Central access to all available applications.**

CELOS supports the user in daily practice with a process-oriented menu structure. Thanks to the touch functionality of the user gets to the "APP MENU" with one single touch. Similar to a smart phone or tablet PC, the user has got direct access to all available APPs, which are differentiated according to their application field and can be selected with a single touch via the "APP MENU". For instance, CELOS APPs like the "JOB MANAGER" or "JOB ASSISTANT" support machine operators with the network-integrated preparation, optimisation and systematic processing of production orders (with workpieces, equipment and NC programmes).



#### **WORKSHOP OF THE FUTURE**

With its open structure and integration ability, CELOS offers unique opportunities for the expansion of functionality with targeted applications.



#### Systematic planning, administration and preparation of orders

- > Machine-related creation and configuration of new orders
- > Structured saving of all production-related data and documents
- > Visualisation of orders, including NC programme, equipment, etc.



#### **Choosing and processing orders**

- > Menu-guided set-up of the machine and processing of production orders in the dialogue
- > Reliable error prevention thanks to work instructions with binding check list



#### Visualise workpieces and optimise programme data

- > Direct remote access to external CAD / CAM workstations
- > Central master data as basis for component visualisation
- > Immediate change options for machining steps, NC programmes and CAM strategies, directly in the control system

# Machine specifications (NHX 5500)

	Item			NHX 5500	
	X-axis travel <longitudinal movement<="" td=""><td>of saddle&gt;</td><td>mm (in.)</td><td>800 (31.5)</td></longitudinal>	of saddle>	mm (in.)	800 (31.5)	
	Y-axis travel <vertical movement="" of="" st<="" td=""><td></td><td>mm (in.)</td><td>800 (31.5)</td></vertical>		mm (in.)	800 (31.5)	
Travel	Z-axis travel <cross movement="" of="" pall<="" td=""><td></td><td>mm (in.)</td><td>880 (34.6)</td></cross>		mm (in.)	880 (34.6)	
	Distance from pallet surface to spindl		mm (in.)	100-900 (3.9-35.4)	
	Distance from pallet center to spindle		mm (in.)	70-950 (2.8-37.4)	
		/	. ,	, ,	
	Distance from floor surface to pallet s	surrace	mm (in.)	1,200 (47.2)	
	Pallet working surface		mm (in.)	500×500 (19.7×19.7)	
	Pallet loading capacity		kg (lb.)	500 (1,100) [700 (1,540)]	
	Max. workpiece swing diameter		mm (in.)	800 (31.4)	
Pallet	Max. workpiece height		mm (in.)	1,100 (43.3) [Either 1,000 (39.3) or 1,100 (43.3) can be selected <lpp specifications="">]</lpp>	
	Pallet surface configuration			M16 (1/2-13 UNC) Tap: 24 holes Pitch 100 mm (4 in.)	
	Minimum pallet indexing angle			1° [0.001° <full 4th="" axis="" rotary="" table="">]</full>	
	Pallet indexing time <including clamping<="" td=""><td>g and unclamping ti</td><td>me&gt; (90°) s</td><td>1.30 [1.45 <max. (1,540="" 700="" capacity="" kg="" lb.)="" loading="">] &lt;1<math>^{\circ}</math> indexing&gt; [1.54 <full 4th="" axis="" rotary="" table="">]</full></max.></td></including>	g and unclamping ti	me> (90°) s	1.30 [1.45 <max. (1,540="" 700="" capacity="" kg="" lb.)="" loading="">] &lt;1<math>^{\circ}</math> indexing&gt; [1.54 <full 4th="" axis="" rotary="" table="">]</full></max.>	
	Max. spindle speed		min <sup>-1</sup>	8,000 [8,000 < high torque>] [15,000 < high speed>]	
	Number of spindle speed ranges			2	
Spindle	Type of spindle taper hole			No. 50	
	Spindle bearing inner diameter		mm (in.)	120 (4.7)	
	Rapid traverse rate		mm/min (ipm)	X, Y, Z: 60,000 (2,362.2)	
Feedrate	Cutting feedrate		mm/min (ipm)	0-60,000 (0-2,362.2) {when using high-precision control <look-ahead control="">}</look-ahead>	
i courato	Jog feedrate		mm/min (ipm)	0-5,000 (0-197.0) <20 steps>	
	Jog recurate		min/min (ipin)		
	Type of tool shank			BT50 [CAT50] [DIN50] [HSK-A100] <when a="" and="" be="" cannot="" contact="" is="" other="" selected,="" specification="" the="" together="" tool="" tools="" two-face="" used=""></when>	
	Type of retention knob			DMG MORI SEIKI 90° type [45° (MAS-I)] [60° (MAS-II)] [CAT] [DIN]	
	Tool storage capacity			Ring-type: 60 Chain-type: [100] [120] Rack-type: [180] [240] [330] {The 60-tool specification <ring-type magazine=""> cannot be selected with the RPP, CPP and LPP specifications}</ring-type>	
	Max. tool diameter <with adjacent="" td="" too<=""><td>ıls&gt;</td><td>mm (in.)</td><td>110 (4.3)</td></with>	ıls>	mm (in.)	110 (4.3)	
	Max. tool diameter <without adjacent<="" td=""><td>tools&gt;</td><td>mm (in.)</td><td>320 (12.5): Ring-type</td></without>	tools>	mm (in.)	320 (12.5): Ring-type	
	Max. tool length		mm (in.)	550 (21.6)	
	Max. tool mass		kg (lb.)	30 (66)	
ATC	Max. tool mass moment <from gauge="" line="" spindle=""> N·m (ft·lbf)</from>			29.4 (21.6) <a a="" cause="" during<="" greater="" mass="" maximum="" may="" moment="" problems="" td="" than="" the="" tool="" with=""></a>	
	max tool mass moment anom spinor			ATC operations even if it satisfies other conditions>	
	Method of tool selection			Technical memory random: 60 tools <ring-type> Fixed address, shorter route access: [100, 120 tools <chain-type>] Fixed address: [180, 240, 330 tools <rack-type>]</rack-type></chain-type></ring-type>	
		Tool-to-tool	S	1.95	
	Tool changing time	1001-10-1001	<mas> s</mas>	4.4: 60 tools <ring-type></ring-type>	
	<ul> <li>The time differences are caused by the different conditions (travel distances, etc.) for each standard.</li> </ul>	Cut-to-cut (chip-to-chip)	ISO 10791-9 JIS B6336-9	4.4. 60 tools <a href="https://doi.org/10.0/4.4">4.4. 60 tools <a href="https://doi.org/10.0/4.4">10.0/4.4</a> (max./min.)</a>	
	Number of pallets		313 80330-9	2	
APC	Method of pallet change			Z Turn-type	
Al U	, -			9,0 [14,5 <max. (1,540="" 700="" capacity="" kg="" lb.)="" loading="">]</max.>	
	Pallet changing time	8,000 min <sup>-1</sup>	kW (HP)	9.0 [14.5 < max. loading capacity 700 kg (1,540 lb.)>]  30/22 (40/30) < 30 min/cont>	
	Onlindle drive metals				
	Spindle drive motor		th torque> kW (HP)	[30/25 (40/33.3) <30 min/cont>]	
Motor			igh speed> kW (HP)	[30/25 (40/33.3) <30 min/cont>]	
	Feed motor	X/Y/Z axes	kW (HP)	4.5/4.5/4.5 (6/6/6)	
		B-axis	kW (HP)	3.0 (4) [5.3 (7.1) <full 4th="" axis="" rotary="" table="">]</full>	
	Coolant pump motor		kW (HP)	1.21 (1.61) <spindle>, 1.21 (1.61)  base coolant&gt;, 1.21 (1.61) <shower coolant=""></shower></spindle>	
Power sources	Electrical power supply <cont></cont>		194335A01 kVA	47.4	
	1	MD	a (psi), L/min (gpm)	0.5 (72.5), 600 (158.4)	
<standard></standard>	Compressed air supply	IVIP	(p3i), L/IIIII (gpiii)	(when the tool tip air blow is regularly used, air supply of more than 300 L/min (79.2 gpm) is separately required <anr></anr>	
<standard> Tank capacity</standard>	Compressed air supply  Coolant tank capacity	IVIP	L (gal.)	(when the tool tip air blow is regularly used, air supply of more than 300 L/min (79.2 gpm) is separately required (ANK) 800 (211.2)	
		MP		, , , , , , , , , , , , , , , , , , , ,	

- [ ] Option ISO: International Organization for Standardization JIS: Japanese Industrial Standard

   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 255 mm (10.0 in.) or less when using the spindle at 10,000 min<sup>-1</sup> or higher.
- ANR: ANR refers to a standard atmospheric state; i.e., temperature at 20 °C (68 °F), absolute pressure at 101.3 kPa (14.7 psi) and relative humidity at 65%.
- Power sources, machine size: the actual values may differ from those specified in the catalogue, depending on the optional features and peripheral equipment.
   Compressed air supply: please be sure to supply clean compressed air <a i pressure: 0.7 MPa (101.5 psi), pressure dew point: 10 °C (50 °F) or below>.
- A criterion capacity to select a compressor is 90 L/min (23.8 gpm) per 0.75 kW (1 HP).
- However, this figure may differ depending on the type of compressors and options attached. For details, please check the compressor specifications.
- The information in this catalog is valid as of May 2014.

# Machine specifications (NHX 6300)

	Item			NHX 6300			
	X-axis travel <longitudinal movement<="" td=""><td>of saddle&gt;</td><td>mm (in.)</td><td>1,050 (41.3)</td></longitudinal>	of saddle>	mm (in.)	1,050 (41.3)			
	Y-axis travel <vertical movement="" of="" sp<="" td=""><td>oindle head&gt;</td><td>mm (in.)</td><td>900 (35.4)</td></vertical>	oindle head>	mm (in.)	900 (35.4)			
Travel	Z-axis travel <cross movement="" of="" pall<="" td=""><td></td><td>mm (in.)</td><td>1,030 (40.6)</td></cross>		mm (in.)	1,030 (40.6)			
	Distance from pallet surface to spindl	e center	mm (in.)	100-1,000 (3.9-39.4)			
	Distance from pallet center to spindle		mm (in.)				
	Distance from floor surface to pallet s		mm (in.)				
	Pallet working surface		mm (in.)				
	Pallet loading capacity		kg (lb.)				
	Max. workpiece swing diameter		mm (in.)				
Pallet	Max. workpiece height		mm (in.)				
	Pallet surface configuration						
	Minimum pallet indexing angle						
	Pallet indexing time <including clamping<="" td=""><td>and unclamping ti</td><td>me&gt; (90°) s</td><td></td></including>	and unclamping ti	me> (90°) s				
	Max. spindle speed	g and anotamping a	min <sup>-1</sup>				
	Number of spindle speed ranges						
Spindle	Type of spindle taper hole			·			
			mm (in )	DMG MORI SEIKI 90° type [45° (MAS-I)] [60° (MAS-II)] [CAT] [DIN]  Ring-type: 60 Chain-type: [100] [120] Rack-type: [180] [240] [330] {The 60-tool specification <ring-type magazine=""> cannot be selected with the CPP and LPP specifications}  110 (4.3)  320 (12.5): Ring-type 630 (24.8) 30 (66)  29.4 (21.6) <a a="" atc="" cause="" conditions="" during="" even="" greater="" if="" it="" mass="" maximum="" may="" moment="" operations="" other="" problems="" satisfies="" than="" the="" tool="" with="">  Technical memory random: 60 tools <ring-type> Fixed address, shorter route access: [100, 120 tools <chain-type>] Fixed address: [180, 240, 330 tools <rack-type>]  2.05  4.8: 60 tools <ring-type> 60 tools <ring-type> 60 tools <ring-type>: 10.2/4.7 (max./min.)</ring-type></ring-type></ring-type></rack-type></chain-type></ring-type></a></ring-type>			
	Spindle bearing inner diameter		mm (in.)				
Feedrate	Rapid traverse rate		mm/min (ipm)				
reeurate	Cutting feedrate		mm/min (ipm)				
	Jog feedrate		mm/min (ipm)				
	Type of tool shank			BT50 [CAT50] [DIN50] [HSK-A100] <when a="" and="" be="" cannot="" contact="" is="" other="" selected,="" specification="" the="" together="" tool="" tools="" two-face="" used=""></when>			
	Type of retention knob			DMG MORI SEIKI 90° type [45° (MAS-I)] [60° (MAS-II)] [CAT] [DIN]			
	Tool storage capacity						
	Max. tool diameter <with adjacent="" tools=""> mm (in.)</with>			110 (4.3)			
	Max. tool diameter <without adjacent<="" td=""><td></td><td>mm (in.)</td><td></td></without>		mm (in.)				
	Max. tool length		mm (in.)	, , , ,			
	Max. tool mass		kg (lb.)				
ATC	Max. tool mass moment <from spind<="" td=""><td>e gauge line&gt;</td><td>N•m (ft•lbf)</td><td colspan="3">29.4 (21.6) <a a="" cause="" du<="" greater="" mass="" maximum="" may="" moment="" problems="" td="" than="" the="" tool="" with=""></a></td></from>	e gauge line>	N•m (ft•lbf)	29.4 (21.6) <a a="" cause="" du<="" greater="" mass="" maximum="" may="" moment="" problems="" td="" than="" the="" tool="" with=""></a>			
	Method of tool selection			Fixed address, shorter route access: [100, 120 tools <chain-type>]</chain-type>			
	Tool changing time	Tool-to-tool	S	2.05			
	• The time differences are caused by the		<mas> s</mas>	4.8: 60 tools <ring-type></ring-type>			
	different conditions (travel distances, etc.) for each standard.	Cut-to-cut (chip-to-chip)	ISO 10791-9 JIS B6336-9	60 tools <ring-type>: 10.2/4.7 (max./min.)</ring-type>			
	Number of pallets			2			
APC	Method of pallet change			Turn-type			
	Pallet changing time		S	20.0			
		8,000 min <sup>-1</sup>	kW (HP)	30/25 (40/33.3) <30 min/cont>			
	Spindle drive motor	8,000 min <sup>-1</sup> <hig< td=""><td>h torque&gt; kW (HP)</td><td>[37/30 (50/40) &lt;30 min/cont&gt;]</td></hig<>	h torque> kW (HP)	[37/30 (50/40) <30 min/cont>]			
Motor		15,000 min <sup>-1</sup> <h< td=""><td>igh speed&gt; kW (HP)</td><td>[30/25 (40/33.3) &lt;30 min/cont&gt;]</td></h<>	igh speed> kW (HP)	[30/25 (40/33.3) <30 min/cont>]			
Motor	Food mateu	X/Y/Z axes	kW (HP)	4.5/7.0/7.0 (6/9.3/9.3)			
	Feed motor	B-axis	kW (HP)	2.2 (3) [8.3 (11.1)/6.5 (8.7) <max. cont=""> {full 4th axis rotary table}]</max.>			
	Coolant pump motor		kW (HP)	1.21 (1.61) <spindle>, 1.21 (1.61) <base coolant=""/>, 1.8 (2.4) <shower coolant=""></shower></spindle>			
	Electrical power supply <cont></cont>		194336A01 kVA	57.7			
Power sources <standard></standard>	Compressed air supply	MPa	a (psi), L/min (gpm)	0.5 (72.5), 600 (158.4) (when the tool tip air blow is regularly used, air supply of more than 300 L/min (79.2 gpm) is separately required) <anr></anr>			
Tank capacity	Coolant tank capacity		L (gal.)	1,085 (286.4)			
	Machine height <from floor=""></from>		mm (in.)	3,314 (130.5)			
Machine size	Floor space <width depth="" ×=""></width>		mm (in.)	3,930×5,824 (154.7×229.3)			
			()	-,, (10 11 - 12200)			

- [ ] Option ISO: International Organization for Standardization JIS: Japanese Industrial Standard

   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 255 mm (10.0 in.) or less when using the spindle at 10,000 min<sup>-1</sup> or higher.
- ANR: ANR refers to a standard atmospheric state; i.e., temperature at 20 °C (68 °F), absolute pressure at 101.3 kPa (14.7 psi) and relative humidity at 65%.
   Power sources, machine size: the actual values may differ from those specified in the catalogue, depending on the optional features and peripheral equipment.
   Compressed air supply: please be sure to supply clean compressed air -air pressure: 0.7 MPa (101.5 psi), pressure dew point: 10 °C (50 °F) or below>.

- A criterion capacity to select a compressor is 90 L/min (23.8 gpm) per 0.75 kW (1 HP).
- However, this figure may differ depending on the type of compressors and options attached. For details, please check the compressor specifications.

  The information in this catalog is valid as of May 2014.



## 2-year warranty, twice the peace of mind.

For machines delivered outside of Japan, parts relating to machine breakdown will be guaranteed free for 2 years from the date of installation, and labor costs to repair will be free for 1 year. Please contact our sales representative for details.



#### <Pre><Pre>cautions 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 SEIKI or its distributor representative. DMG MORI SEIKI 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 SEIKI and its distributor representative shall have no obligation to re-enable such Equipment. DMG MORI SEIKI and its distributor representative shall have no liability (including for lost profits or business interruption or under the limited service warranty included herein) as a result of the Equipment being disabled.

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   The 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 SEIKI is not responsible for differences between the information in the catalog and the actual machine.

### DMG MORI SEIKI CO., LTD.

Nagoya Head Office	🗆 2-35-16 Meieki, Nakamura-ku, Nagoya City, Aichi 450-0002, Japan	Phone: +81-52-587-1811
Tokyo Branch	☐ 18th floor, Shinagawa Intercity Tower A, 2-15-1 Konan Minato-ku, Tokyo 108-6018, Japan	
	lant 🗌 362 Idono-cho, Yamato-Koriyama City, Nara 639-1183, Japan	Phone: +81-743-53-1121
Nara No. 2 F	lant 🔲 106 Kita-Koriyama-cho, Yamato-Koriyama City, Nara 639-1160, Japan	Phone: +81-743-53-1125
Iga Campus	☐ 201 Midai, Iga City, Mie 519-1414, Japan	Phone: +81-595-45-4151
Chiba Campus	☐ 488-19 Suzumi-cho, Funabashi City, Chiba 274-0052, Japan	Phone: +81-47-410-8800