

J-A01516* NHX 5000
Horizontal machining centre
Travel X/Y/Z: 730/730/880 mm
28.7/28.7/34.6 in.
Pallet size: 500x500 mm
19.7x19.7 in.
Pallet surface: Tap (metric, inch)
Chip conveyor (Rear discharge)
Direct scale feedback

Control

J-004148* Control M730UM with CELOS
J-003261* CELOS - ERGOline Touch
to facilitate machine operation
incl. 21.5 " ERGOline Touch ® control
with multi touch screens
Uniform management, documentation
and visualization of order,
process - and machine data
Networkable with CAD / CAM
User friendly and productive
MAPPS system

Spindle

J-004483 Motor spindle speedMASTER®
7/24 Taper #40 (two-face contact specifications)
Spindle speed 35 - 15,000 min-1
Output 30.7 kW / 18.5 kW
(41.0 HP / 24.7 HP)
Torque 207 N•m / 95.5 N•m
(152.7 ft•lbf / 70.4 ft•lbf)
(10 / 100 % duty cycle)

Options for Table

J-002065 Full 4th axis rotary table
Minimum pallet indexing angle is changed to 0.001°
from the standard 1°.

- J-000287 Tool storage capacity 60 tools
(7/24 Taper #40, Ring type)
Providing a ring type 60-tool magazine.
* Tool selection method: Technical memory random
* Tool storage capacity: 60
* Max. tool diameter:
- With adjacent tools: $\phi 70$
- Without adjacent tools: $\phi 170$
* Max. tool length: 450 mm
* Tool changing time (Tool to tool): 0.9 sec.

Coolant supply / Chip removal

- J-001944 Coolant gun for setup station side of 2-st APC
A coolant gun is equipped on the setup station door for cleaning chips adhering to the workpiece or the fixtures.
When you pull the coolant gun from its holder, the special pump turns on, and when you pull the trigger, the coolant discharges. When you return the coolant gun to its holder, the pump turns off.
- J-G00833 Through-spindle coolant system I/F
(*side through*, 7.0 MPa) (KNOLL)
This is the I/F for mounting the high pressure coolant system manufactured by Knoll (separate type) (7.0 MPa).
The coolant path to the tool tip is a side through type.
The high pressure coolant system manufactured by Knoll (separate type) has eight pressure levels.
(*The high pressure coolant system is not included, so please purchase it separately.*)

Measuring / Monitoring

- J-001957 In-machine measuring system (table) touch sensor (METROL) + tool setter function (tool length only)
Mounting the touch sensor manufactured by Metrol makes it possible to measure tool length and detect tool breakage. By manually setting an error between the programmed tool length and the actual value, the tool length is automatically offset thereafter. During machining, the touch sensor is stored under the special cover to prevent it from being covered with chips. Chips or coolant on the receiver can be removed by air blow.
• Inductive signal type • Touch sensor measuring surface: $\phi 20$ mm • Automatic measurement, manual measurement - Measurement object: tool length
- Measuring direction: Z-axis • Tool breakage detection
T25H-02-02 (METROL)

J-004166 Signal light 4 layers (Red, yellow, green, blue)

General Options

J-002750 Black specification

J-000169 Manual pulse generator (separate type)
Adding handy type pulse handle improves operability during set-up operation.
The switch on the operation panel can change which pulse handle is used on the operation panel or handheld side.
Handheld pulse handle of this specification is connected to the operation panel with a curl cord.
This manual pulse handle has a magnet on the rear surface to be attached at the desired positions on the machine.
This separate-type manual pulse generator is also equipped with super luminosity white LED as standard, so it can be used as a handy light to illuminate the surface of the workpiece and shadowed area of the machine light.

Options for Control

J-004359 Islands, open pockets
Islands
• Programming process can be greatly simplified because minimum input operation is required even for the complex machining.
Open pockets
Definition of open pockets eliminates tool paths with no machining allowance, making it possible to create optimum paths.
• Air cutting has been greatly reduced, making it possible to shorten machining time.
• Machining time can be reduced by 30%.
Available only when milling specification is selected.
【Islands】
Number of island shape definitions: 127

J-004358 High-speed canned cycle
High-speed cutting can be specified with one line of program. This function enables the user to reduce programming time by adding a new cycle that can create a high-speed, time saving complicated programs.

J-016030 NHX5000 case packing

Special constructions services

SK001 Transformer

SK002 Transportation

SK003 Installation

SK004 Training - Operator / Programmer (5 days on site)

SK005 Health Check – DMG MORI UK Limited service personnel will visit for one day, six and twelve months from the installation of the machine (two days in total) and perform a Health Check, to assist in improving the readiness and availability of the machine. Both of the Health Checks must be taken before the end of the factory warranty period or they will be forfeited, with the intention and benefit of attempting to foresee a failure within that warranty period

SK006 Import costs

SK011/17 High Speed Skip function (Retrofit)

SK012 Swarf Bin (Model 500) *MILLER*

SK013/017 OMP60 Renishaw spindle probe (including standard inspection + software)

SK016/017 Modifications to KNOLL type I/F to suit High Pressure (70 Bar*) Coolant unit

SK015/017 High Pressure (70 Bar*) Coolant Unit with twin cartridge filtration system (*only for tool / holder with Max. 2mm orifice - over 2mm will result in a reduction of pressure)

SK020/017 DMG MORI Messenger (Retrofit)

SK021 Extended Work Offsets (Retrofit Mitsubishi)

Basic machine NHX 5000

The specifications below apply to a basic machine without additional options. Specifications in square brackets [] are values or features for a machine with additional options.

Travel

X-axis travel <longitudinal of movement of saddle>	mm (in.)	730 (28.7)
Y-axis travel <vertical movement of spindle head>	mm (in.)	730 (28.7)
Z-axis travel <cross movement of pallet>	mm (in.)	880 (34.6)
Distance from pallet surface to spindle center	mm (in.)	80 – 810 (3.1 – 31.9)
Distance from pallet center to spindle gage plane	mm (in.)	70 – 950 (2.8 – 37.4)

Pallet

Distance from floor surface to pallet surface	mm (in.)	1,200 (47.2)
Pallet working surface	mm (in.)	500 x 500 (19.7 x 19.7)
Pallet loading capacity	kg (lb.)	500 (1,100) [700 (1,540)]
Maximum workpiece swing diameter	mm (in.)	800 (31.4)
Maximum workpiece height	mm (in.)	1,000 (39.4)
Pallet surface configuration		M16 (1/2-13 UNC) Tap: 24 holes Pitch 100 mm (4 in.)
Minimum pallet Indexing angle	deg	1 [0.001 <full 4th axis rotary table>]
Pallet indexing time <90 deg>	sec	1.83 [1.97] <1° indexing table> [0.94] <full 4th axis rotary table>

Spindle

Max. spindle speed:		
- Standard	min ⁻¹	15,000
- High torque	min ⁻¹	[15,000]
- High speed	min ⁻¹	[20,000]
Number of spindle speed ranges		2
Type of spindle taper hole		No. 40
Spindle bearing inner diameter	mm (in.)	80 (3.1)

Feedrate

Rapid traverse rate:		
- X-axis	mm/min (ipm)	60,000 (2,362.2)
- Y-axis	mm/min (ipm)	60,000 (2,362.2)
- Z-axis	mm/min (ipm)	60,000 (2,362.2)
Cutting feedrate <with high precision control>	mm/min (ipm)	0 - 60,000 (0 - 2,362.2)
Jog feedrate	mm/min (ipm)	0 - 5,000 (0 - 197.0) <20-step>

ATC

Type of tool shank		BT40 [CAT40] [DIN40] [HSK-A63]
Type of retention knob		DMG MORI SEIKI 90 deg type [45 deg <MAS-I>] [60 deg <MAS-II>] [DIN] [Special <center through>]
Tool storage capacity:		
- Ring-type	tools	40 [60]
- Chain-type	tools	[120]
- Rack-type	tools	[180] [240]
Maximum tool diameter <with adjacent tools>	mm (in.)	70 (2.7)
Maximum tool diameter <without adjacent tools>:		
- Ring-type	mm (in.)	170 (6.6)
- Chain-type, rack-type	mm (in.)	[140 (5.5)]
Maximum tool length	mm (in.)	550 (21.6)
Maximum tool mass	kg (lb.)	12 (26.4)
Maximum tool mass moment <From spindle gauge line>	N·m (ft·lbf)	7.84 (5.78)
Method of tool selection:		
- Ring-type		Technical memory random
- Chain-type		Fixed address, shorter route access
- Rack-type		Fixed address
Tool changing time <cut-to-cut> <MAS> <ring-type>	sec	2.5

APC

Number of pallets		2
Method of pallet change		Turn type
Pallet changing time	sec	9.0 [12.5]

Motor

Spindle drive motor <15%ED/30 min/cont>: - Standard	kW (HP)	30.7/26/18.5 (41.0/34.7/24.7)
- High torque	kW (HP)	[37/26/22 (50/34.7/30)]
- High speed	kW (HP)	[37/26/18.5 (50/34.7/24.7)]
Feed motor: - X-axis	kW (HP)	3.5 (4.7)
- Y-axis	kW (HP)	3.5 (4.7)
- Z-axis	kW (HP)	3.5 (4.7)
- B-axis	kW (HP)	3.0 (4.0) [3.5 (4.7) <full 4th axis rotary table>]
Coolant pump motor	kW (HP)	1.2 + 1.2 (1.6 + 1.6)

Power source

Power sources <cont>	kVA	40.40 (NHX51150411)
Compressed air supply	MPa (psi), L/min (gpm)	0.5 (72.5), 420 (110.9)

Tank capacity

Coolant tank capacity	L (gal.)	800 (211.2)
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Machine Size

Machine height <from floor>	mm (in.)	2,852 (112.3)
Floor space <width x depth>	mm (in.)	3,078 x 4,784 (121.2 x 188.3)
Mass of machine <with coolant tank>	kg (lb.)	12,000 (26,400)

J-004148

NC Unit M730UM

Controlled axis

Controlled axis	X, Y, Z, B
Simultaneously controllable axes	4 axes
Least input increment	0.001 mm (0.0001 in.)
Max commandable value	±99,999.999 mm (±9,999.9999 in.)
Inch/metric conversion	
Machine lock	
Overtravel	
Load monitoring function	

Operation

Dry run	
Single block	
Jog feed	0 - 5,000 mm/min (0 - 196.85 ipm) <20 steps>
Manual return to reference position	
Manual handle feed	Manual pulse generator: 1 unit x1, x10, x50, x100 <per pulse> x1, x10, x50, x100
Pulse handle feed	
Z-axis neglect	
Synchronous peck tapping	

Interpolation functions

Nano interpolation	
Positioning	
Uni-directional approach/unidirectional positioning	
Exact stop mode	
Tapping mode	
Cutting mode	
Exact stop	
Helical interpolation	Optional 2 axes and other 1 axis
Return to reference position	
Reference position return check	
Return from reference position	
Return to second reference position	

Feed functions

Rapid traverse rate	Max. 60,000 mm/min
Feed per minute/cutting federate <when using high-precision control {look-ahead control}>	1 – 60,000 mm/min (0.01 – 2,362.2 ipm)
Rapid traverse override	F0 – 100% <20 steps>
Feed per minute	
Constant tangential feedrate control	
Feedrate override	0 – 200% (10% increments)
Feedrate override cancel	
High-precision control (look-ahead control)	

Program input

Optional block skip	
Max. command value	±8 digits
Program number	32 arbitrary characters (specify 8 or less numerical characters for the subprograms)
Absolute/incremental command	
Decimal point programming	Electrical calculator type decimal point programming is changeable using parameter.
Diameter/radius programming	
Plane selection	
Rotary axis designation	
Rotary axis roll-over	
Coordinate system setting	
Automatic coordinate system setting	
work coordinate system	
Programmable data input	
Sub-program call	Up to 8 nestings
Drilling cycle	
Programmable mirror image	
Custom macro common variables <in total>	200 variables (#100 - #199, #500 - #599)

Miscellaneous function/spindle speed function

Miscellaneous function <M function>	M4-digit
Auxiliary function lock	
Spindle speed function <S function>	S5-digit
Spindle override	50 - 150% <10% increments>
Spindle orientation	
Synchronous tapping	

Tool function/Tool offset function

Tool function <T function>	T8-digit
Number of tool offsets	200 sets <A set is defined as radius and length combination. If radius and length offset data are set individually, the value indicates the number of data.>
Tool offset data memory C	D/H code, geometry and wear offset data
Tool length correction	
Tool radius offset	
Tool position offset	
Tool management system	

Mechanical accuracy compensation

Backlash compensation	±9,999,999 pulses
Rapid traverse/cutting feed backlash compensation	
Stored pitch error compensation	
Interpolation type pitch error compensation	

Editing function

Background editing
Undo/Redo function
Line number display

Setting and display

Status display	
Clock function	
Position read-out, position display	
Program comment display	48 characters
Parameter setting display	
Message list display	
Sensor information display	Power consumption
Message history display	
Running time display/No. of parts display	
Actual feedrate display	
Operating monitor screen	Load meter display etc.
Trouble shooting	
Self-diagnosis function	includes alarm display, I/O signal diagnosis, ladder diagram
Operation panel: Display section	21.5-inch + 15.6-inch TFT color LCD

I/O functions and units

I/O interface	USB, Network
6 GB Program storage area	Files up to 10 MB in size can be edited

Standard Equipment M730UM

Pallet/Pallet changing system

- 2-station turn-type APC
- Form of pallet - tap <metric, inch>
- 1° indexing table

Spindle

- Spindle drive motor is 30.7/26/18.5 kW (41.0/34.7/24.7 HP) <15%ED/30 min/cont.> and max. spindle speed is 15,000 min⁻¹.
- Type of tool shank BT40
- Type of retention knob – DMG MORI 90° type
- Tool storage capacity is 40 tools. <ring type>

Coolant

- Coolant system
- Shower coolant <used at the same time as spindle coolant>
- Coolant float switch <lower limit detection>

Chip disposal

- Chip conveyor <Rear discharge, drum filter type + cyclone filter>
- Air blow for tool tip <when the tool tip air blow is regularly used, air supply of more than 300 L/min (79.2 gpm) is separately required>

High accuracy positioning

- Direct scale feedback <X-axis, Y-axis, Z-axis>

Safety features

- Full cover
- Door interlock system: front door/ set up station door/ magazine door/ electrical cabinet door
Mechanical lock: front door/ set up station door/ magazine door
- Low hydraulic pressure detecting switch
- Low air pressure detecting switch
- Residual pressure exhaust valve

Others

- Automatic power-off system
- LED worklight
- Pallet seating confirmation
- Leveling jack specification
- Hand tools
- One set of operation and programming manuals
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J-003261

CELOS to facilitate machine operation.

Can be networked with CAD / CAM products.

Open to forward-looking CELOS APP extensions.

Uniform interface for all the new high-tech machines from DMG MORI SEIKI.

Integrated management, documentation and visualization of order, process - and machine data.

Screen / Panel:	21.5 "ERGOline Touch ® control with multi touch screen Multi touch machine control panel for pioneering operating comfort Stepless adjustment of screen and machine control panel Display of access permission
SMARTkey ®:	Personalized authorization of the operator. Customized access rights to the control and the machine. Internal USB memory
APP SELECTOR:	Central selection mask for direct access by means of intuitive touch control and access to all available applications, divided into five major groups: Production, Accessories, Support, Monitoring, Configuration
APPs "Production": CONTROL:	MAPPSV system with touch screen operation 6 function window-set for easy access to the machine information. Machine operation scene-based automatic window-set change allows users to access the necessary information for each operation easily
JOBMANAGER:	Systematic planning, managing and preparing orders Machine-related creation and configuration of new orders Structured storage of all production-relevant data and documents Simple visualization of jobs including NC programs and resources
JOB ASSISTANT:	complete jobs / processing of orders Menu driven set-up of the machine and processing of Production orders in the dialog Reliable error prevention through notes with binding acknowledgement function
APPs "accessories": TECH CALCULATOR:	calculating of technology data, dimensions and values Material - and process-dependent calculation process optimized Data for example for speed, feed, or spindle load Standards-conforming discovery defined dimensions, Providing data/dimensions as required by the standards for example, for Fits or thread Scientific calculator