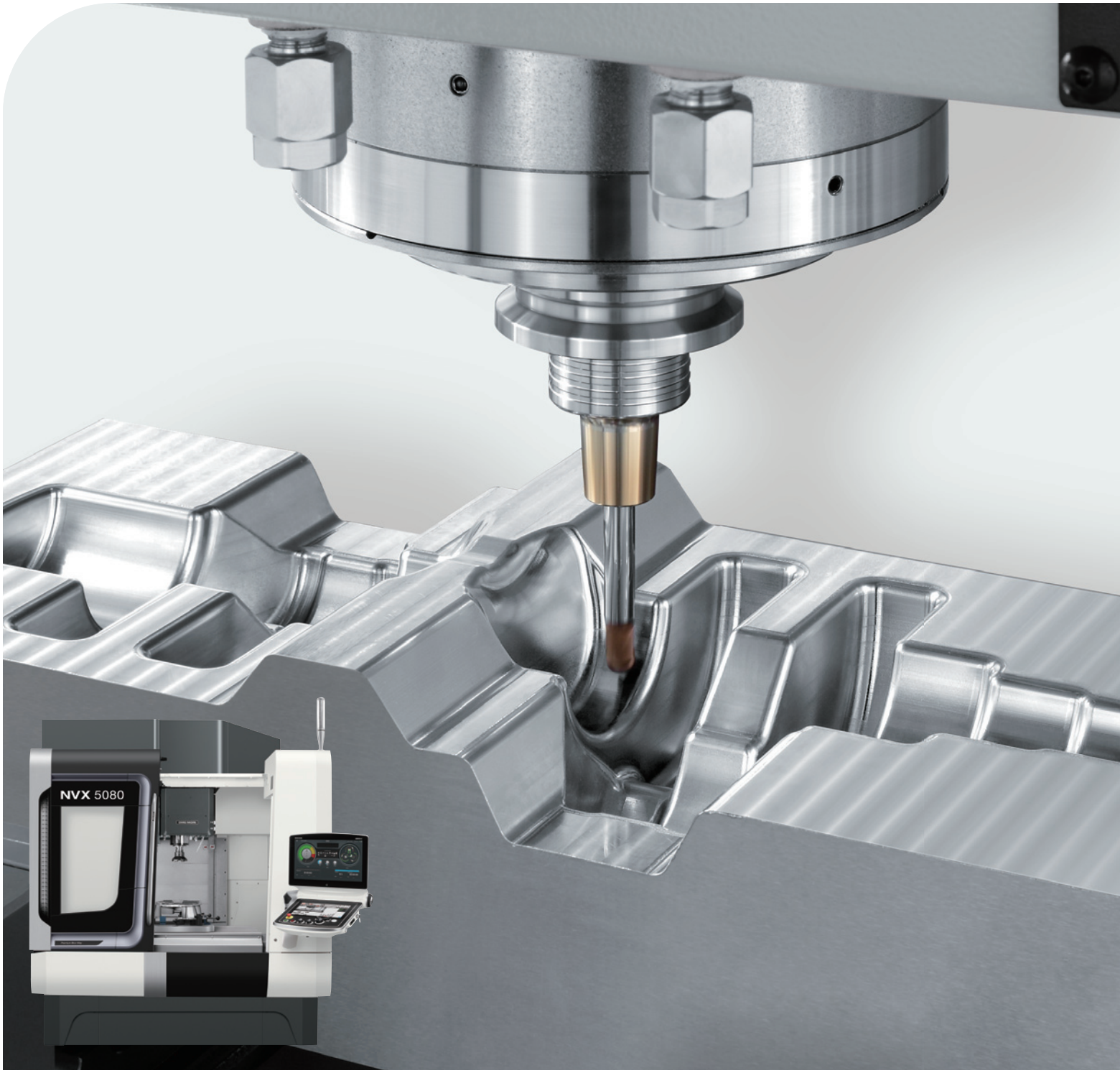
www.dmgmori.com

DMG MORI

NVX 5060
NVX 5080
NVX 5100

High-Precision, High-Speed Vertical Machining Center

NVX 5000 Series



The Best Vertical Machining Center NVX 5000 Series Coming with the New DMG MORI Design

The NVX 5000 Series, 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 NVX 5000 Series meets each and every customer's machining requirements with
its high accuracy, high quality and high reliability.

● The photo shows the NVX 5080.

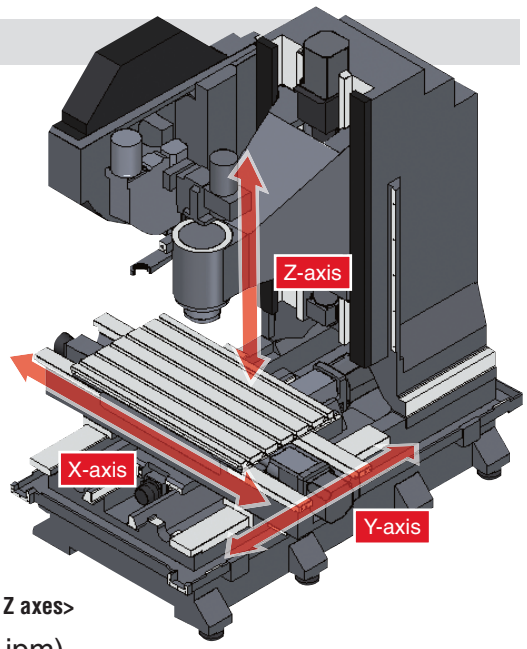
Main features

Basic structure

Feature

Slideways on all axes

By using slideways for all axes, the NVX 5000 Series offers improved vibration damping performance and dynamic rigidity. The machine features a wide work envelope and high-speed machining, while maintaining high rigidity.



Max. acceleration

NVX 5080 | 40

X-axis 0.51 G
{5.00 m/s² (16.41 ft/s²)}

Y-axis 0.38 G
{3.68 m/s² (12.07 ft/s²)}

Z-axis 0.43 G
{4.17 m/s² (13.68 ft/s²)}

Rapid traverse rate <X, Y and Z axes>

30 m/min (1,181.1 ipm)

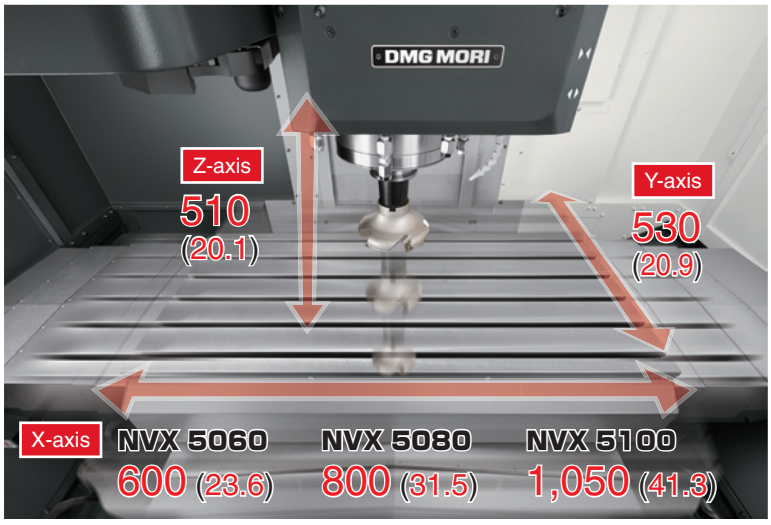
Travel

NVX 5080

X-axis 800 mm (31.5 in.)
Y-axis 530 mm (20.9 in.)
Z-axis 510 mm (20.1 in.)

Working area, Variations

Despite its compact body, the NVX 5000 ensures a large work envelope suitable for various workpieces.
The X-axis travel is available in three variations to suit different workpiece sizes.



mm (in.)

Table working surface

NVX 5060 900×600 mm
(35.4×23.6 in.)

NVX 5080 1,100×600 mm
(43.3×23.6 in.)

NVX 5100 1,350×600 mm
(53.1×23.6 in.)

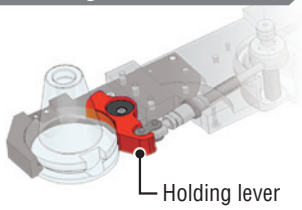
Table loading capacity

NVX 5060 800 kg (1,760 lb.)

NVX 5080 1,000 kg (2,200 lb.)

NVX 5100 1,200 kg (2,640 lb.)

ATC, Magazine



Feature

Reliable ATC

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

The ATC shutter is provided as standard to prevent chips from entering the magazine.

Tool changing time

Cut-to-cut (chip-to-chip)

Tool changing time	No. 40 taper		No. 50 taper	
	ATC standby mode OFF	ATC standby mode ON	ATC standby mode OFF	ATC standby mode ON
Adjacent <DIN>	3.49 sec.	2.98 sec.	6.40 sec.	4.41 sec.
Farthest <DIN>	3.49 sec.	2.96 sec.	7.79 sec.	7.69 sec.
<MAS>	3.45 sec.	2.98 sec.	6.49 sec.	4.32 sec.

- The time differences are caused by the different conditions (travel distances, etc) for each standard.
- Depending on the arrangement of tools in the magazine, the cut-to-cut (chip-to-chip) time may be longer.
- ATC standby mode: open the ATC shutter using M code commands beforehand.

Tool-to-tool

No. 40 taper	No. 50 taper
1.3 sec.	2.34 sec.

Tool storage capacity

(tools)

No. 40 taper	30	60 OP	90 OP
No. 50 taper	30	60 OP	—

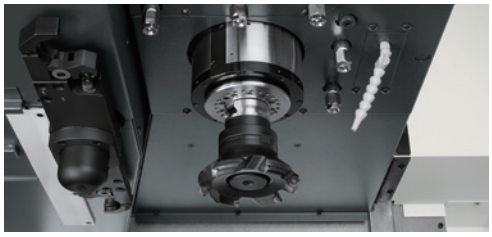
Max. tool diameter

mm (in.)

	Without adjacent tools	With adjacent tools
No. 40 taper	150 (5.9)	80 (3.1)
	100 (3.9)*	
No. 50 taper	240 (9.4)	120 (4.7)

* NVX 5000 HSC Series HSC: High Speed Cutting

Spindle



Spindle bearing inner diameter

Spindle	Previous model	NVX 5000 Series
No. 40 taper mm (in.)	65 (2.6)	80 (3.1) Approx. 23%UP
No. 50 taper mm (in.)	100 (3.9)	120 (4.7)* 20% UP

* ϕ 100 mm (3.9 in.) for the high-speed specification.

Feature

Spindle bearings with larger inner diameters adopted

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.

Feature

Spindle with point-symmetric structure

The machine uses a spindle in which air and cooling oil pipes are arranged symmetrically with respect to the center of the spindle. This heat-symmetrical structure minimizes thermal displacement in the spindle by dispersing heat evenly. We have also taken measures against heat sources, with coolant piping around the spindle and coil end cooling for the motor.

Feature

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.

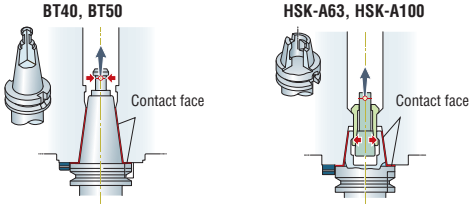
Spindle variations	NVX5060 | 40 NVX5080 | 40 NVX5100 | 40		NVX5060 | 40 HSC NVX5080 | 40 HSC NVX5100 | 40 HSC	NVX5060 | 50 NVX5080 | 50 NVX5100 | 50	
	Standard	High torque OP	Standard	Standard	High speed OP
Max. spindle speed	15,000 min^{-1}	12,000 min^{-1}	20,000 min^{-1}	8,000 min^{-1}	15,000 min^{-1}
Spindle drive motor	27/16 kW (36/21.3 HP) <20%ED/cont>	30/22 kW (40/30 HP) <25%ED/cont>	—	30/22 kW (40/30 HP) <25%ED/cont>	

HSC: High Speed Cutting

Two-face contact specification OP

Tool rigidity has been improved by contact of both the spindle taper and the tool flange. This extends the useful life of a tool, raises cutting power and improves the machining precision.

- All DMG MORI spindles are made in-house to better meet our customer needs. For details, please consult with our sales representative.
- When the two-face contact specification is selected, a two-face contact tool and other tools cannot be used together.



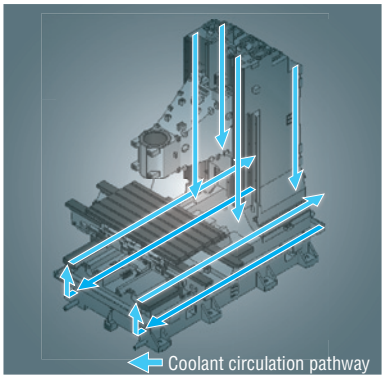
High-precision equipment

Environmental thermal displacement control device OP

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

Effects of environmental thermal displacement control device

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



Oil cooler (separate type) OP

An energy-saving oil cooler is used that delivers very little temperature fluctuation.

Coolant cooling system (separate type) OP

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.

When using oil-based coolant, please be sure to consult with our sales representative.

- 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.

Direct scale feedback OP

The absolute magnetic linear scale (full closed-loop control) made by Magnescale is effective for high-precision positioning, and is available as an option.

Resolution

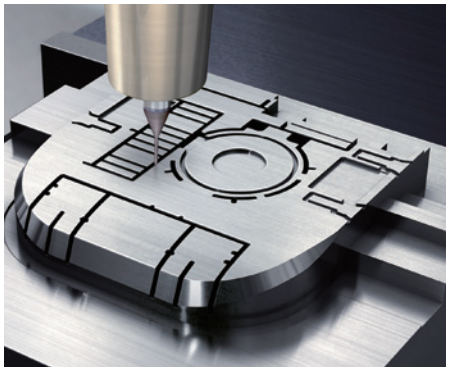
0.01 μm

Magnescale

High accuracy absolute scale

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

Die & Mold Specifications



Die and mold package OP

This package includes recommended options for high-quality die and mold machining.

1 Direct scale feedback

2 Environmental thermal displacement control device

3 Coolant cooling system

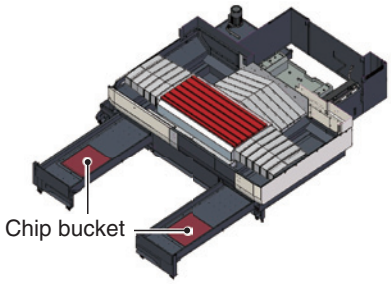
4 NC options
- ·High-speed and high-precision control Ⅱ
- ·SSS control

- The oil cooler (separate type) is necessary.
- It is possible to select 4 NC options only.
- Please contact our sales representative for details.

Peripheral equipment

Chip bucket

Large capacity chip buckets are standard.



Tank capacity

NVX 5080: 319 L (84.2 gal.)
<chip bucket specifications>

584 L OP
(154.2 gal.)
<external chip conveyor specifications>
(drum filter type + cyclone filter)

Previous model : 230 L (60.7 gal.)

- The chip buckets cannot be cleaned while the machine is running.

Shower coolant OP

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

Feature External chip conveyor OP

This conveyor can handle various types and length of chips.

The coolant tank has a rectangular shape that makes cleaning easy.

- 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.
- In addition to a drum filter, the machine uses a cyclone filter that is capable of collecting fine sludge particles, dramatically reducing the frequency of cleaning inside the tank.

Drum filter type + cyclone filter

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.

◎: Ideal ○: Suitable ×: Not suitable

Specifications	Workpiece material and chip size						
	Steel			Cast iron	Aluminum/non-ferrous metal		
	Long	Short	Powdery	Short	Long	Short	Powdery
Drum filter type + cyclone filter	○	◎	○*1	○	○	◎	○*1
Hinge type + drum filter typ	◎	◎	○*1	○	◎	◎	○*1
Magnet scraper type	×	○	◎	◎	×	×	×
Hinge type*2	○	×	×	×	○	×	×

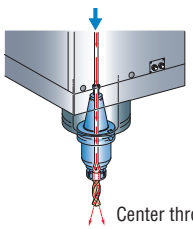
*1 Please contact our sales representative for details.
*2 Short or dust-like chips may flow into the tank, causing frequent cleaning.

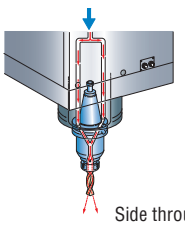
- Chip size guidelines
  Short: chips 50 mm (2.0 in.) or less in length, bundles of chips ϕ 40 mm (ϕ 1.6 in.) or less
  Long: bigger than the above
- The options table shows the general options when using coolant. Changes may be necessary if you are not using coolant, or depending on the amount of coolant, 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.

Through-spindle coolant system (unit on coolant tank) OP


Unit on coolant tank

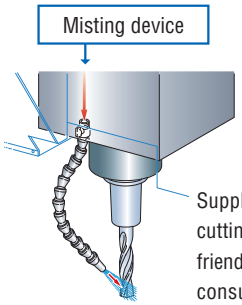
The through-spindle coolant system effectively eliminates chips, cooling the machine point, and lengthening the lives of your tools.


Center through


Side through

⚠ Do not use a flammable coolant or oil-based coolant because it may ignite and cause fire or machine breakage. If you have to use a flammable coolant for any reason, please consult with our sales representative.

Semi dry unit OP

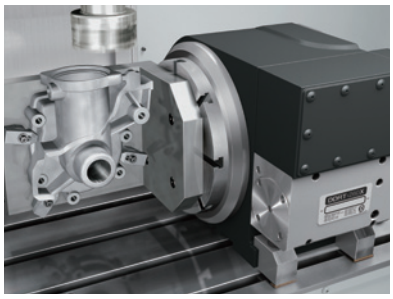


Supplies air and oil mist to the cutting tip. An environmentally friendly device which reduces oil consumption. We recommend using this unit together with a mist collector.

- The colors and configurations shown in the photographs or illustrations may differ from those of the actual product.

Rotary table DDRT OP

DDRT Series



The machine can be equipped with the high-speed, high-accuracy DDRT Series rotary table which incorporates a DDM (Direct Drive Motor). High-efficiency machining using optional axes and high-speed and high-precision indexing realize process integration. (For details on the machining ranges, please consult with our sales representative.)

- Equipped with DDM
- Zero backlash
- Achieves high-precision indexing
- Offers stable machining through powerful clamping
- Allows high-efficiency machining using optional axes

Direct Drive Motor Original technology

DDM® Direct Drive Motor

Transmitting the drive power directly to the rotary axes without using gears eliminates backlash. Compared with conventional worm gear systems, this dramatically improves transmission efficiency and offers high-speed feed.

Features of DDM

·High-speed rotation ·High-precision indexing ·Less maintenance ·Longer product life

Rotational speed of the table

Conventional machine 17 min^{-1} ▶ DDRT-260X 150 min^{-1} Compared with conventional machine Approx. 9 times greater

Positioning accuracy

Conventional machine 20 sec. ▶ DDRT SERIES 5 sec. Compared with conventional machine 1/4

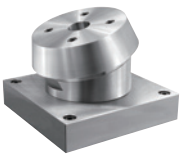
Machine specifications

			DDRT-200X	DDRT-260X	DDRT-300
Table diameter		mm (in.)	200 (7.9)	260 (10.2)	300 (11.8)
Center height		mm (in.)	140 (5.5)	160 (6.3)	180 (7.1)
Nose hole diameter		mm (in.)	65 (2.6) H7	75 (3.0) H7	95 (3.7) H7
Through hole diameter		mm (in.)	50 (2.0)	50 (2.0)	50 (2.0)
Clamp system			Air-hydro unit	Air-hydro unit	Pneumatic
Rotational speed of the table		min^{-1}	150	150	120
Repeatability	Unclamped	sec.	3	3	3
Positioning accuracy	Clamped	sec.	5	5	5
	Unclamped	sec.	5	5	5
Mass of machine <rotary table>		kg (lb.)	115 (253)	160 (352)	200 (440)
Maximum work inertia <vertical>		$kg·m^2$	0.678	0.678	1.6
Table loading capacity	Vertical load	kg (lb.)	100 (220)	150 (330)	175 (385)
Maximum thrust load applicable on the table	Clamp torque	N·m (ft·lbf), F×L	800 (590.0)	1,000 (737.6)	1,000 (737.6)
	Moment load	N·m (ft·lbf), F×L	1,500 (1,106.3)	3,000 (2,212.7)	4,000 (2,950.2)

High-speed, High-precision CNC Tilting Rotary Table

5AX-DDRT200X

CNC tilting rotary table for high-speed, high-precision, simultaneous 5-axis machining



● Workpiece samples

● 5AX-DDRT 200X

- Equipped with DDM
- High-speed, high-precision machining
- Low power consumption
- Lower maintenance than a gear drive system
- DMSQP: 2-year warranty, the same as that of DMG MORI machines*

* A rotary table is guaranteed for 1 year, if you purchase it alone.

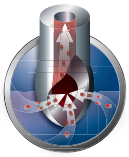
Machine specifications

			5AX-DDRT 200X
Table diameter		mm (in.)	200 (7.9)
Height to the center of the tilting axis		mm (in.)	180 (7.1)
Height to the surface of the table		mm (in.)	250 (9.8)
Tilt angle range			−110° to +110°
Nose hole diameter		mm (in.)	65 (2.6)
Through hole diameter		mm (in.)	50 (2.0)
T-slot width		mm (in.)	12 (0.5)
Clamp system			Air-hydro unit
Clamp Torque	Rotation	N·m (ft·lbf)	800 (590.0)
	Tilt	N·m (ft·lbf)	1,000 (737.6)
Drive torque <cont/max.>	Rotation	N·m (ft·lbf)	60 <S2 4 min>/280 (44.3/206.5)
	Tilt	N·m (ft·lbf)	60 <S2 4 min>/280 (44.3/206.5) <without cooling>, 110/280 (81.1/206.5) <with cooling>
Rotational speed of the table	Rotation	min^{-1}	250
	Tilt	min^{-1}	150
Indexing accuracy	Rotation	sec.	±2.5
	Tilt	sec.	±4
Repeatability	Rotation	sec.	3
	Tilt	sec.	3
Unit mass <rotary table>		kg (lb.)	260 (572)
Table loading capacity		kg (lb.)	30 (66)

DMSQP: DMG Mori Seiki Qualified Products

Zerochip® <Available for No. 40 taper spindle machines> OP

Zerochip®



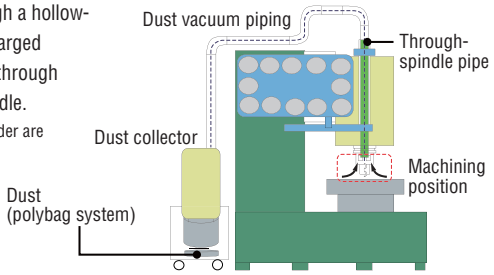
ZEROCHIP®

The ZEROCHIP® is a device to suck and collect a large amount of dust generated during machining of graphite and CFRP (Carbon Fiber Reinforced Plastic) from and around a tool tip. It dramatically reduces time for cleaning inside of the machine and prevents operators' health problems. Collected dry dust can be recycled and easily disposed. The ZEROCHIP® is available for dry machining.

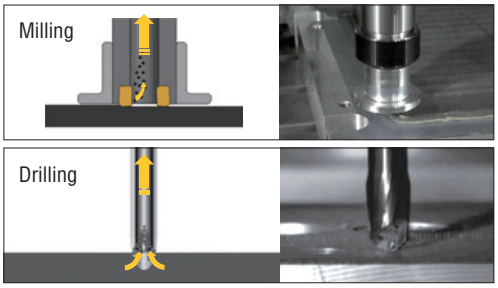
Recommended materials*1	・Graphite ・CFRP (Carbon Fiber Reinforced Plastics) ・GFRP (Glass Fiber Reinforced Plastics)

1 Spindle vacuuming type

Dust is sucked through a hollow-center tool and discharged outside the machine through the center of the spindle.
(The special tool and holder are separately required*2)

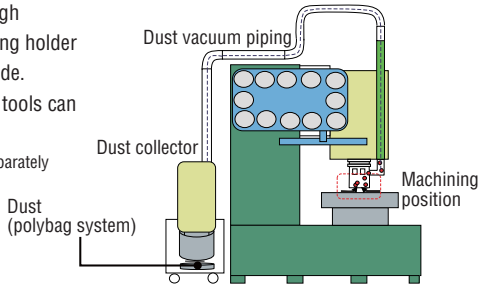


■ Flow of dust

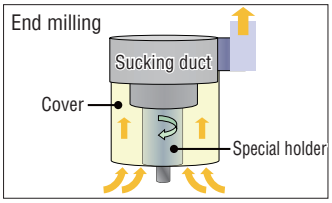


2 External vacuuming type

Dust is sucked through the external vacuuming holder and discharged outside.
Advantage: standard tools can be used.
(The special holder is separately required*2)



■ Flow of dust



■ For external vacuuming holder
ϕ 10 mm (0.4 in.) end mill

3 Spindle vacuuming type + External vacuuming type (1 + 2)

Dust is sucked from the center hole of the tool and the external vacuuming holder and discharged outside the machine.

Effects of Zerochip®

● Improves environment
- Eliminates dust dispersion in the air, resulting in cleaner air and machining environment
- Reduces the risk of breathing in dust particles
- Enables dry machining of CFRTP (Carbon Fiber Reinforced Thermoplastic) <No need to separate coolant and dust as no coolant is used>

● Easy chip removal
- Improves efficiency due to easy dust disposal and cleaning of fixtures and inside of the machine after machining

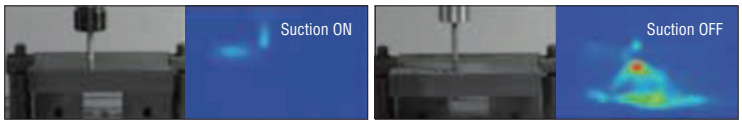
● Reduces mechanical/electrical malfunctions
- Reduces mechanical or electrical malfunctions caused by dust

● Cooling effect (tool life/material deformation)
- Minimizes temperature rise at the cutting point by sucking dust while cutting
- Minimizes temperature rise by discharging high-temperature dust outside the machine.

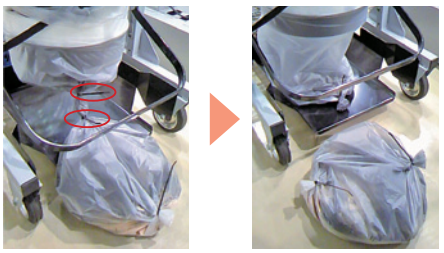
● Cost reduction
- Reduces time and cost for dust disposal as collected dust is dry and does not include oil

● Energy-saving effect
- Reduces power consumption because it requires only a dust collector (No filtration device or mist collector are required because of no coolant use)

■ Comparison of temperature with thermography



■ Dust disposal (polybag system)



Tie both ends of a polybag with cable ties

Pull down polybag for a next dust accumulation space

*1 Please consult with our sales representative about the use of materials other than the recommended ones.
*2 Please consult with our sales representative about the special tool and holder.

CELOS 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

CELOS with 21.5" ERGO*line* Touch®

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.

SMART*key*®

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.

JOB MANAGER

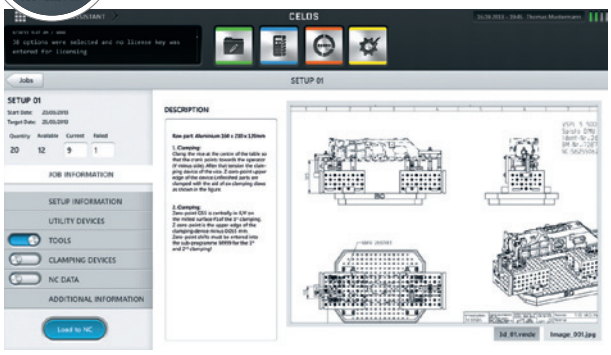
Systematic planning, administration and preparation of orders

> 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.

JOB ASSISTANT

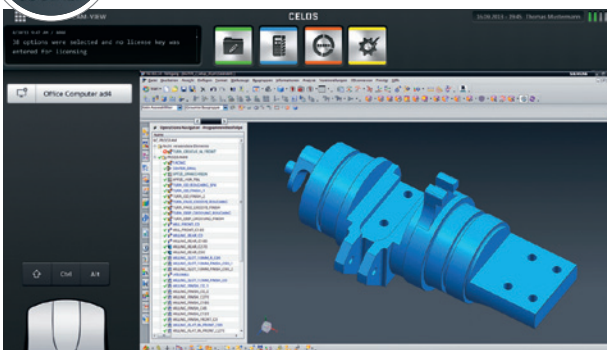


Choosing and processing orders

> 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

CAD-CAM VIEW



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

Item				NVX 5060 | 40	NVX 5080 | 40	NVX 5100 | 40
Travel	X-axis travel <longitudinal movement of table>		mm (in.)	600 (23.6)	800 (31.5)	1,050 (41.3)
	Y-axis travel <cross movement of saddle>		mm (in.)	530 (20.9)		
	Z-axis travel <vertical movement of spindle head>		mm (in.)	510 (20.1)		
	Distance from table surface to spindle gauge plane		mm (in.)	150—660 (5.9—26.0)		
Table	Distance from table surface to floor surface		mm (in.)	900 (35.4)		
	Working surface		mm (in.)	900×600 (35.4×23.6)	1,100×600 (43.3×23.6)	1,350×600 (53.1×23.6)
	Table loading capacity		kg (lb.)	800 (1,760)	1,000 (2,200)	1,200 (2,640)
	Table surface configuration <T slots width×pitch×No. of T slots>			18 mm×100 mm×6 (0.7 in.×4 in.×6)		
Spindle	Max. spindle speed		min^{-1}	15,000 [12,000]		
	Number of spindle speed ranges			1		
	Type of spindle taper hole			No. 40		
	Spindle bearing inner diameter		mm (in.)	80 (3.1)		
Feedrate	Rapid traverse rate		mm/min (ipm)	X, Y, Z: 30,000 (1,181.1)		
	Cutting feedrate		mm/min (ipm)	1—30,000 (0.04—1,181.1) {when using high-precision control <look-ahead control>}		
	Jog feedrate		mm/min (ipm)	0—5,000 (0—197.0) <20 steps>		
ATC	Type of tool shank			BT40 [CAT40] [DIN40] [HSK-A63] <when the two-face contact specification is selected, a two-face contact tool and other tools cannot be used together>		
	Type of retention knob			DMG MORI SEIKI 90° type [45°(MAS-Ⅰ)] [60°(MAS-Ⅱ)] [DIN] [HSK]		
	Tool storage capacity			30 [60] [90]		
	Max. tool diameter	With adjacent tools	mm (in.)	80 (3.1)		
		Without adjacent tools	mm (in.)	150 (5.9)		
	Max. tool length		mm (in.)	300 (11.8)		
	Max. tool mass		kg (lb.)	8 (17.6) [12 (26.4)]		
	Max. tool mass moment <from spindle gauge line>		N·m (ft·lbf)	11 (8.1) <a tool with a mass moment greater than the maximum tool mass moment may cause problems during ATC operations even if it satisfies other conditions>		
	Method of tool selection			Technical memory random		
	Tool changing time ● The time differences are caused by the different conditions (travel distances, etc.) for each standard. ● Depending on the arrangement of tools in the magazine, the Cut-to-cut (chip-to-chip) time may be longer.	Tool-to-tool	s	1.3		
		Cut-to-cut (chip-to-chip) <ATC standby mode OFF> <DIN>	s	Adjacent: 3.49 Farthest: 3.49		
		Cut-to-cut (chip-to-chip) <ATC standby mode OFF> <MAS>	s	3.45		
		Cut-to-cut (chip-to-chip) <ATC standby mode ON> <DIN>	s	Adjacent: 2.98 Farthest: 2.96		
		Cut-to-cut (chip-to-chip) <ATC standby mode ON> <MAS>	s	2.98 <ATC standby mode: Open the ATC shutter using M code commands beforehand>		
Motor	Spindle drive motor	15,000 min^{-1}	kW (HP)	27/16 (36/21.3) <20%ED/cont>		
		12,000 min^{-1}	kW (HP)	[30/22 (40/30) <25%ED/cont>]		
	Feed motor		kW (HP)	X, Y: 3.0 (4) Z: 4.5 (6)		
	Coolant pump motor <50/60 Hz>		kW (HP)	0.73/1.21 (0.97/1.61)		
Power sources <standard>	Electrical power supply <cont>		I94320B01 kVA	33.0		
	Compressed air supply		MPa (psi), L/min (gpm)	0.5 (72.5), 300 (79.2) {when the tool tip air blow is regularly used, air supply of 300 L/min (79.2 gpm) is required} <ANR>		
Tank capacity	Coolant tank capacity		L (gal.)	317 (83.7) [442 (116.7)*1] [584 (154.2)*2]	319 (84.2) [442 (116.7)*1] [584 (154.2)*2]	435 (114.8) [494 (130.4)*1] [636 (167.9)*2]
Machine size	Machine height		mm (in.)	2,597 (102.2) [2,761 (108.7)*3]		
	Floor space <width×depth>*4		mm (in.)	3,404 (134.0)×4,061 (159.9)	3,527 (138.9)×4,061 (159.9)	4,088 (160.9)×3,958 (155.8)
	Mass of machine		kg (lb.)	6,000 (13,200)	6,350 (13,970)	7,000 (15,400)

[ ] Option

*1 External chip conveyor specifications *2 External chip conveyor specifications (drum filter type) *3 High torque *4 Including chip conveyor

- Max. spindle speed: depending on restrictions imposed by the workpiece clamping device, fixture and tool used, it may not be possible to rotate at the maximum spindle speed.
- 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.

Machine specifications

Item				NVX 5060 | 40 HSC	NVX 5080 | 40 HSC	NVX 5100 | 40 HSC
Travel	X-axis travel <longitudinal movement of table>		mm (in.)	600 (23.6)	800 (31.5)	1,050 (41.3)
	Y-axis travel <cross movement of saddle>		mm (in.)	530 (20.9)		
	Z-axis travel <vertical movement of spindle head>		mm (in.)	510 (20.1)		
	Distance from table surface to spindle gauge plane		mm (in.)	150—660 (5.9—26.0)		
Table	Distance from table surface to floor surface		mm (in.)	900 (35.4)		
	Working surface		mm (in.)	900×600 (35.4×23.6)	1,100×600 (43.3×23.6)	1,350×600 (53.1×23.6)
	Table loading capacity		kg (lb.)	800 (1,760)	1,000 (2,200)	1,200 (2,640)
	Table surface configuration <T slots width×pitch×No. of T slots>			18 mm×100 mm×6 (0.7 in.×4 in.×6)		
Spindle	Max. spindle speed		min^{-1}	20,000		
	Number of spindle speed ranges			1		
	Type of spindle taper hole			No. 40		
	Spindle bearing inner diameter		mm (in.)	80 (3.1)		
Feedrate	Rapid traverse rate		mm/min (ipm)	X, Y, Z: 30,000 (1,181.1)		
	Cutting feedrate		mm/min (ipm)	1—30,000 (0.04—1,181.1) {when using high-precision control <look-ahead control>}		
	Jog feedrate		mm/min (ipm)	0—5,000 (0—197.0) <20 steps>		
ATC	Type of tool shank			BT40 [CAT40] [DIN40] [HSK-A63] <when the two-face contact specification is selected, a two-face contact tool and other tools cannot be used together>		
	Type of retention knob			DMG MORI SEIKI 90° type [45°(MAS-Ⅰ)] [60°(MAS-Ⅱ)] [DIN] [HSK]		
	Tool storage capacity			30 [60] [90]		
	Max. tool diameter	With adjacent tools	mm (in.)	80 (3.1)		
		Without adjacent tools	mm (in.)	100 (3.9)		
	Max. tool length		mm (in.)	300 (11.8)		
	Max. tool mass		kg (lb.)	8 (17.6) [12 (26.4)]		
	Max. tool mass moment <from spindle gauge line>		N·m (ft·lbf)	11 (8.1) <a tool with a mass moment greater than the maximum tool mass moment may cause problems during ATC operations even if it satisfies other conditions>		
	Method of tool selection			Technical memory random		
	Tool changing time ● The time differences are caused by the different conditions (travel distances, etc.) for each standard. ● Depending on the arrangement of tools in the magazine, the Cut-to-cut (chip-to-chip) time may be longer.	Tool-to-tool	s	1.3		
		Cut-to-cut (chip-to-chip) <ATC standby mode OFF> <DIN>	s	Adjacent: 3.49 Farthest: 3.49		
		Cut-to-cut (chip-to-chip) <ATC standby mode OFF> <MAS>	s	3.45		
		Cut-to-cut (chip-to-chip) <ATC standby mode ON> <DIN>	s	Adjacent: 2.98 Farthest: 2.96		
		Cut-to-cut (chip-to-chip) <ATC standby mode ON> <MAS>	s	2.98 <ATC standby mode: Open the ATC shutter using M code commands beforehand>		
Motor	Feed motor		kW (HP)	X, Y: 3.0 (4) Z: 4.5 (6)		
	Coolant pump motor <50/60 Hz>		kW (HP)	0.73/1.21 (0.97/1.61)		
Power sources <standard>	Electrical power supply <cont>		I94320B01 kVA	33.0		
	Compressed air supply		MPa (psi), L/min (gpm)	0.5 (72.5), 300 (79.2) {when the tool tip air blow is regularly used, air supply of 300 L/min (79.2 gpm) is required} <ANR>		
Tank capacity	Coolant tank capacity		L (gal.)	317 (83.7) [442 (116.7)*1] [584 (154.2)*2]	319 (84.2) [442 (116.7)*1] [584 (154.2)*2]	435 (114.8) [494 (130.4)*1] [636 (167.9)*2]
Machine size	Machine height		mm (in.)	2,597 (102.2)		
	Floor space <width×depth>*3		mm (in.)	3,404 (134.0)×4,061 (159.9)	3,527 (138.9)×4,061 (159.9)	4,088 (160.9)×3,958 (155.8)
	Mass of machine		kg (lb.)	6,000 (13,200)	6,350 (13,970)	7,000 (15,400)

[ ] Option

*1 External chip conveyor specifications *2 External chip conveyor specifications (drum filter type) *3 Including chip conveyor

- Max. spindle speed: depending on restrictions imposed by the workpiece clamping device, fixture and tool used, it may not be possible to rotate at the maximum spindle speed.
- Please use a flange tool when cutting at 15,000 min^{-1} 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.

HSC: High Speed Cutting

Item				NVX 5060 | 50	NVX 5080 | 50	NVX 5100 | 50
Travel	X-axis travel <longitudinal movement of table>		mm (in.)	600 (23.6)	800 (31.5)	1,050 (41.3)
	Y-axis travel <cross movement of saddle>		mm (in.)	530 (20.9)		
	Z-axis travel <vertical movement of spindle head>		mm (in.)	510 (20.1)		
	Distance from table surface to spindle gauge plane		mm (in.)	150—660 (5.9—26.0)		
Table	Distance from table surface to floor surface		mm (in.)	900 (35.4)		
	Working surface		mm (in.)	900×600 (35.4×23.6)	1,100×600 (43.3×23.6)	1,350×600 (53.1×23.6)
	Table loading capacity		kg (lb.)	800 (1,760)	1,000 (2,200)	1,200 (2,640)
	Table surface configuration <T slots width×pitch×No. of T slots>			18 mm×100 mm×6 (0.7 in.×4 in.×6)		
Spindle	Max. spindle speed		min^{-1}	8,000 [15,000]		
	Number of spindle speed ranges			1		
	Type of spindle taper hole			No. 50		
	Spindle bearing inner diameter		mm (in.)	120 (4.7) <ϕ100 mm (3.9 in.) for the high-speed specification>		
Feedrate	Rapid traverse rate		mm/min (ipm)	X, Y, Z: 30,000 (1,181.1)		
	Cutting feedrate		mm/min (ipm)	1—30,000 (0.04—1,181.1) {when using high-precision control <look-ahead control>}		
	Jog feedrate		mm/min (ipm)	0—5,000 (0—197.0) <20 steps>		
ATC	Type of tool shank			BT50 [CAT50] [DIN50] [HSK-A100] <when the two-face contact specification is selected, a two-face contact tool and other tools cannot be used together>		
	Type of retention knob			DMG MORI SEIKI 90° type [45°(MAS-Ⅰ)] [60°(MAS-Ⅱ)] [DIN] [HSK]		
	Tool storage capacity			30 [60]		
	Max. tool diameter	With adjacent tools	mm (in.)	120 (4.7)		
		Without adjacent tools	mm (in.)	240 (9.4)		
	Max. tool length		mm (in.)	350 (13.7)		
	Max. tool mass		kg (lb.)	20 (44)		
	Max. tool mass moment <from spindle gauge line>		N·m (ft·lbf)	16 (11.8) <a tool with a mass moment greater than the maximum tool mass moment may cause problems during ATC operations even if it satisfies other conditions>		
	Method of tool selection			Technical memory random		
	Tool changing time ● The time differences are caused by the different conditions (travel distances, etc) for each standard. ● Depending on the arrangement of tools in the magazine, the Cut-to-cut (chip-to-chip) time may be longer.	Tool-to-tool		s	2.34	
		Cut-to-cut (chip-to-chip) <ATC standby mode OFF>	<DIN>	s	Adjacent: 6.40 Farthest: 7.79	
			<MAS>	s	6.49	
		Cut-to-cut (chip-to-chip) <ATC standby mode ON>	<DIN>	s	Adjacent: 4.41 Farthest: 7.69	
			<MAS>	s	4.32 <ATC standby mode: Open the ATC shutter using M code commands beforehand>	
Motor	Spindle drive motor			kW (HP)	30/22 (40/30) <25%ED/cont>	
	Feed motor			kW (HP)	X, Y: 3.0 (4) Z: 4.5 (6)	
	Coolant pump motor <50/60 Hz>			kW (HP)	0.73/1.21 (0.97/1.61)	
Power sources <standard>	Electrical power supply <cont>		I94320B01	kVA	40.4	
	Compressed air supply			MPa (psi), L/min (gpm)	0.5 (72.5), 300 (79.2) {when the tool tip air blow is regularly used, air supply of 300 L/min (79.2 gpm) is required} <ANR>	
Tank capacity	Coolant tank capacity			L (gal.)	317 (83.7) [442 (116.7)*1] [584 (154.2)*2]	319 (84.2) [442 (116.7)*1] [584 (154.2)*2]	435 (114.8) [494 (130.4)*1] [636 (167.9)*2]
Machine size	Machine height			mm (in.)	2,755 (108.5)		
	Floor space <width×depth>*3 {dimension installation containing hydraulic unit for tool unclamp system}			mm (in.)	3,404 (134.0)×4,061 (159.9)	3,527 (138.9)×4,061 (159.9)	4,088 (160.9)×3,958 (155.8)
	Mass of machine			kg (lb.)	6,520 (14,344)	6,870 (15,114)	7,520 (16,544)

[ ] Option

∗1 External chip conveyor specifications ∗2 External chip conveyor specifications (drum filter type) ∗3 Including chip conveyor

- Max. spindle speed: depending on restrictions imposed by the workpiece clamping device, fixture and tool used, it may not be possible to rotate at the maximum spindle speed.
- Please use a flange tool when cutting at 10,000 min^{-1} 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.

DMG MORI

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.

2 years Guaranteed peace of mind

<Precautions for Machine Relocation>

EXPORTATION: All contracts are subject to export permit by the Government of Japan. Customer shall comply with the laws and regulations of the exporting country governing the exportation or re-exportation of the Equipment, including but not limited to the Export Administration Regulations. The Equipment is subject to export restrictions imposed by Japan and other exporting countries and the Customer will not export or permit the export of the Equipment anywhere outside the exporting country without proper government authorization. To prevent the illegal diversion of the Equipment to individuals or nations that threaten international security, it may include a "Relocation Machine Security Function" that automatically disables the Equipment if it is moved following installation. If the Equipment is so-disabled, it can only be re-enabled by contacting DMG MORI 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.

- If you have any questions regarding the content, contact our sales representative.
- The information in this catalog is valid as of May 2014. 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 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	Phone: +81-3-5460-3570
Nara Campus	Nara No. 1 Plant	☐ 362 Idono-cho, Yamato-Koriyama City, Nara 639-1183, Japan	Phone: +81-743-53-1121
	Nara No. 2 Plant	☐ 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

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