
CMX 600 V

CMX 800 V

CMX 1100 V

Basic Vertical Milling Machine for a Broad Range of Manufacturing

CMX V Series



CMX V Series

Solution-based Machine for Every Shop Floor

DMG MORI has developed the CMX V Series, with the aspiration to provide robust machines that can serve for many years to a greater number of customers. The CMX V models can handle a wide range of workpieces for all kinds of fields thanks to their great versatility. The models achieve high reliability with the meticulous design to the details, realizing the new machines that serve as the foundation for vertical machining centers.

+ Varieties of standard options and custom-design specifications available

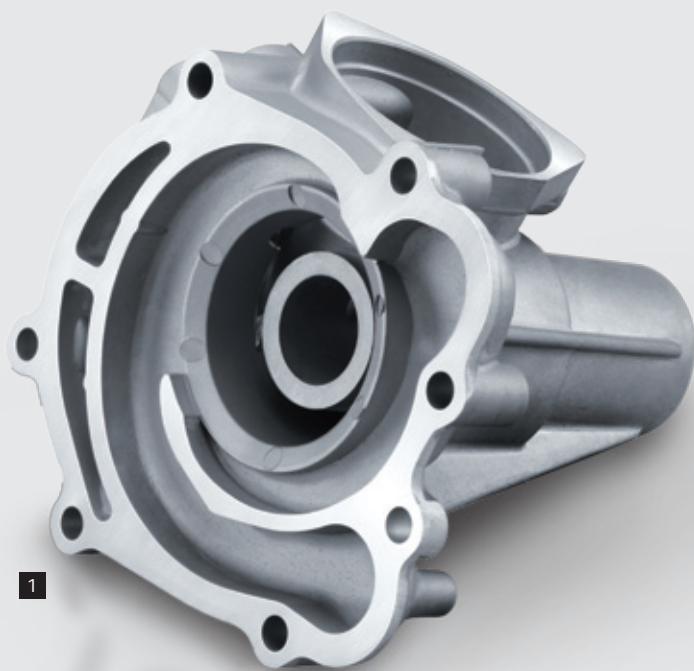


CMX

Compact...Space-saving design

Competitive...High-productivity

Customized...Varieties of standard options



Automobiles

- 1 Pump body
- 2 Pump housing

Electrical & Communication equipment

- 3 Scroll

Industrial machinery

- 4 Adapter plate
- 5 Connector plate



CMX V Series

Flexible Combinations to Build Up Best Machine

The CMX V Series offers some 290 types of options to respond to a wide range of customer needs. Various combinations of options streamline each process to reduce operators' work time and drastically improve productivity. The CMX V Series with flexible combinations of options and high capability delivers machining performance one level higher.

Handling

APC

Manual pallet changer

Robot system (module unit)

Workstocker
In-machine measuring system
Air blow
Deburring unit
Workpiece turnover unit

Shaping

smartTilt
(rotary table)Through-spindle coolant
system 7 MPa (1,015 psi)External chip scraping chute
(rear disposal)

Chip conveyor

Measuring

W setter

Geometry + Tool length
measurement (BLUM)Geometry + Tool length
measurement (RENISHAW)Tool length measurement
(Magnescale)

Monitoring

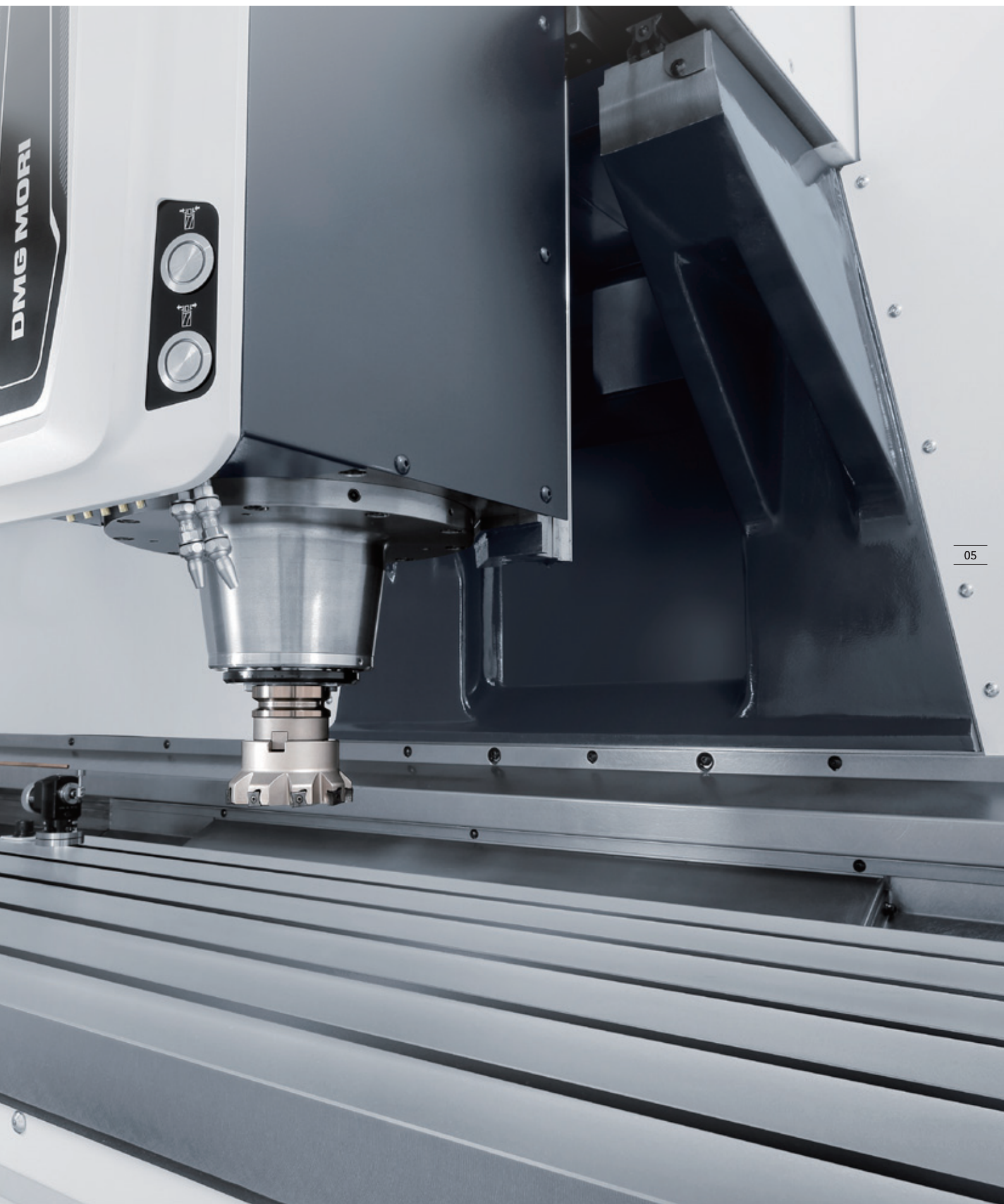
DMG MORI
Messenger

Progress line

Multi-counter display

Workpiece holding detection

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



CMX V Series

Choose the Best Model by Workpiece Size

The CMX V Series has a wide work envelope despite its compact body, offering three types of table sizes for different workpieces. The CMX 600 V achieves a machine width of 1,868 mm (73.5 in.)* in pursuit of compactness. The largest of the series models, the CMX 1100 V has a table size of 1,400 × 560 mm (55.1 × 22.0 in.) to handle wide workpieces. You can choose the best machine from three different types according to the workpiece of your shop floor.

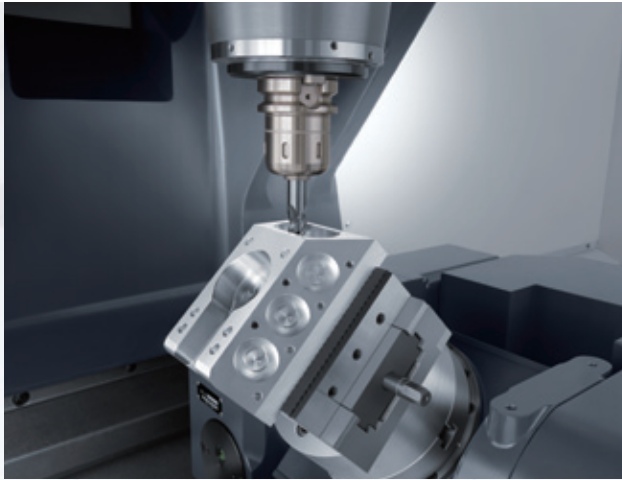
* Rear discharge type chip conveyor (option) <for machines with the FANUC NC unit>



● The machine in the picture is equipped with a magazine door (option).

		CMX 600 V	CMX 800 V	CMX 1100 V
Type of spindle taper hole		No. 40		
Travel (X- / Y- / Z-axis)	mm (in.)	600 / 560 / 510 (23.6 / 22.0 / 20.1)	800 / 560 / 510 (31.5 / 22.0 / 20.1)	1,100 / 560 / 510 (43.3 / 22.0 / 20.1)
Working surface	mm (in.)	900 × 560 (35.4 × 22.0)	1,100 × 560 (43.3 × 22.0)	1,400 × 560 (55.1 × 22.0)
Table loading capacity	kg (lb.)	600 (1,320)	800 (1,760)	1,000 (2,200)
Floor space (width × depth)	mm (in.)	2,163 × 2,742 (85.2 × 108.0)	2,559 × 2,742 (100.7 × 108.0)	3,190 × 2,742 (125.6 × 108.0)
		1,868 × 3,578 (73.5 × 140.9)*]	2,118 × 3,578 (83.4 × 140.9)*]	2,750 × 3,578 (108.3 × 140.9)*]

[] Option
* Rear discharge type chip conveyor



CMX 1100 V



CMX V Series

High-rigidity Structure and Largest Y-axis Travel in its Class of 560 mm (22.0 in.)

The CMX V Series achieves a sophisticated, lean and high-rigidity machine structure by using FEM analysis from the fundamental design stage for analysis of various operating conditions and environmental changes.

Many other features to maximize the machine's performance, such as a large work envelope in a compact body, are incorporated into the CMX V design.



1 Largest Y-axis travel in its class of 560 mm (22.0 in.)

- + Y-axis stroke 30 mm (1.2 in.) longer than existing model to handle wide workpieces
- + Space-saving design & wide work envelope
- + Travel <X- / Y- / Z-axis>:
CMX 600 V // 600 / 560 / 510 mm (23.6 / 22.0 / 20.1 in.)
CMX 800 V // 800 / 560 / 510 mm (31.5 / 22.0 / 20.1 in.)
CMX 1100 V // 1,100 / 560 / 510 mm (43.3 / 22.0 / 20.1 in.)

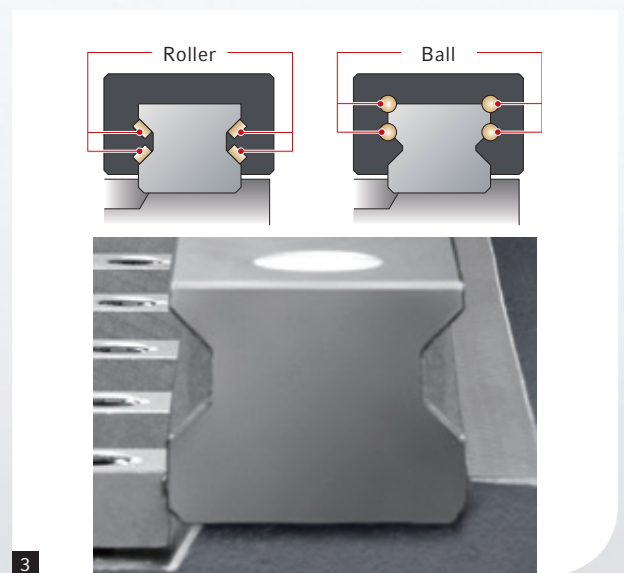
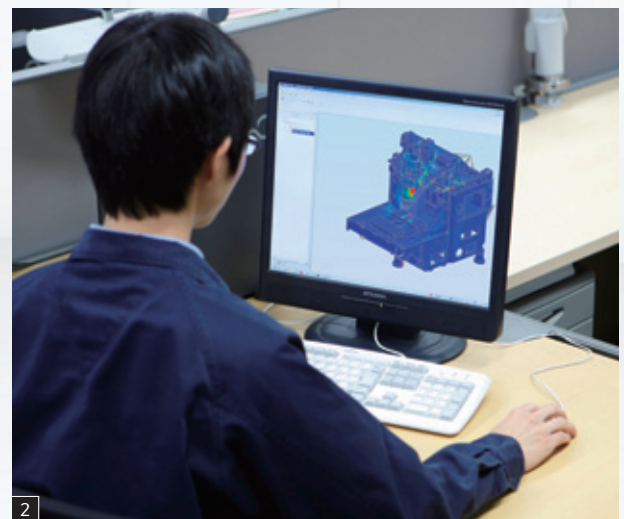
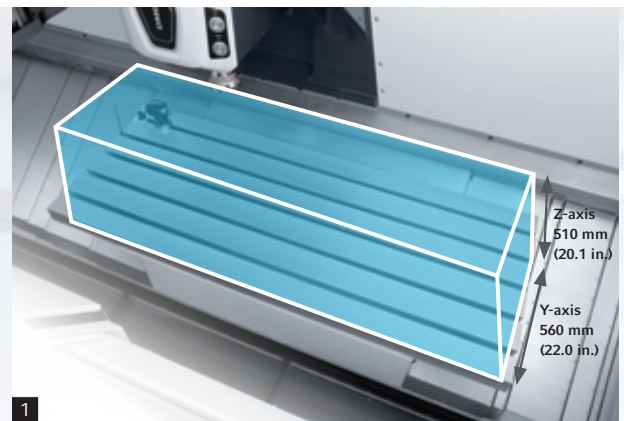
2 FEM analysis determines rigid body design

- + Simulation of structural deformation at the time of load application
- + Fine adjustment to every part, including the thickness of the bed, the shape and layout of the ribs, to achieve a high level of flexural rigidity

FEM: Finite Element Method

3 Roller guides <Y- / Z-axis>

- + Roller guides with little elastic deformation against load
- + A large number of rollers are incorporated inside the slide unit, achieving high rigidity

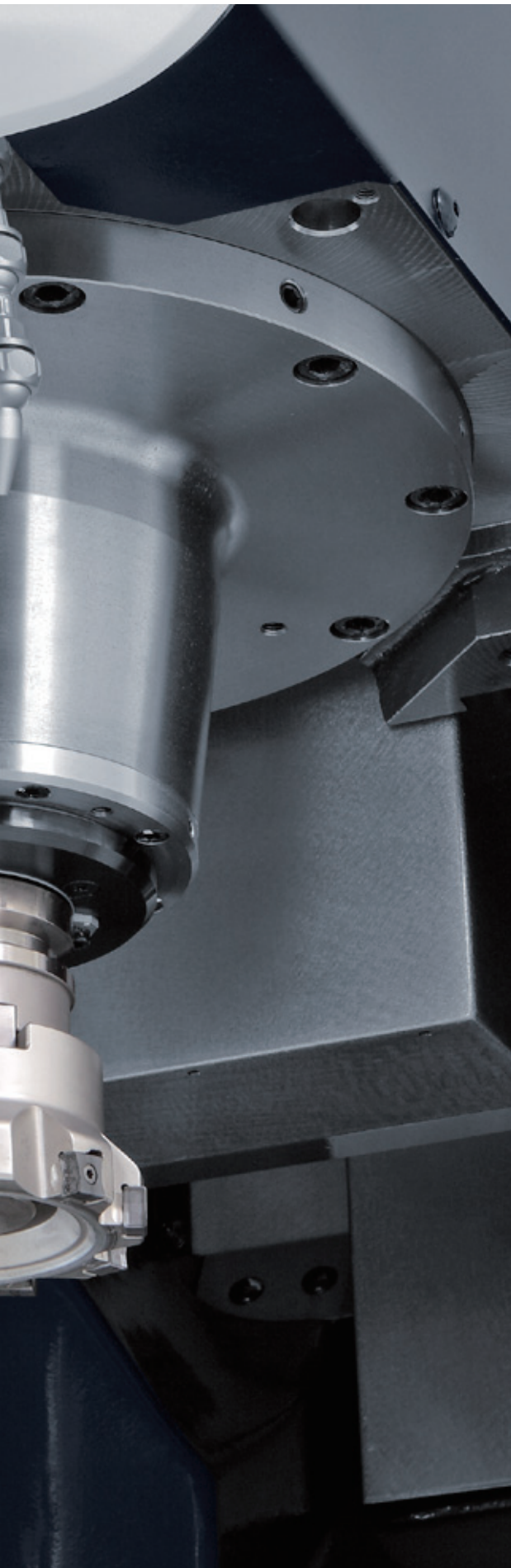


CMX V Series

High-quality Machining Supported by High-performance Spindle

The CMX V Series machines are equipped with a high-performance spindle with a maximum speed of 12,000 min⁻¹, whose design is optimized through structural analysis to cover a wide range of machining, as standard. The high durability and high speed of the spindle allow high quality machining.





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

Stable & lasting clamp force

- + Extended disk spring life allows the spindle to maintain long period consistent clamp force on the tool

No. 40 taper spindle

- + Type of tool shank: BT40 [CAT40] [DIN40] <FANUC>
DIN40 [BT40] [CAT40] <SIEMENS, HEIDENHAIN>
- + Max. spindle speed: 12,000 min⁻¹ <FANUC> <SIEMENS, HEIDENHAIN>
[15,000 min⁻¹ <high speed>] <FANUC>
[20,000 min⁻¹ <high speed, high output>] <FANUC>
- + Output: 15 / 11 kW (20 / 15 HP) <25%ED / cont> <FANUC>
[15 / 11 kW (20 / 15 HP) <25%ED / cont> {high speed}] <FANUC>
[37 / 18.5 kW (50 / 24.7 HP) <15%ED / cont>
{high speed, high output}] <FANUC>
13 / 9 kW (17.3 / 12 HP) <40%ED / 100%ED> <SIEMENS, HEIDENHAIN>
- + Max. spindle torque: 119 N·m (87.8 ft·lbf) <25%ED> <FANUC>
[119 N·m (87.8 ft·lbf) <25%ED> {high speed}] <FANUC>
[221 N·m (163.0 ft·lbf) <10%ED>
{high speed, high output}] <FANUC>
83 N·m (61.2 ft·lbf) <40%ED> <SIEMENS, HEIDENHAIN>

[] Option

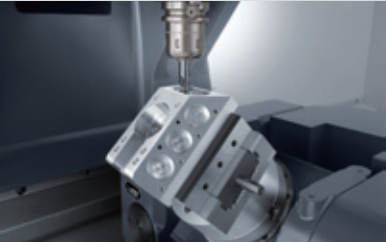
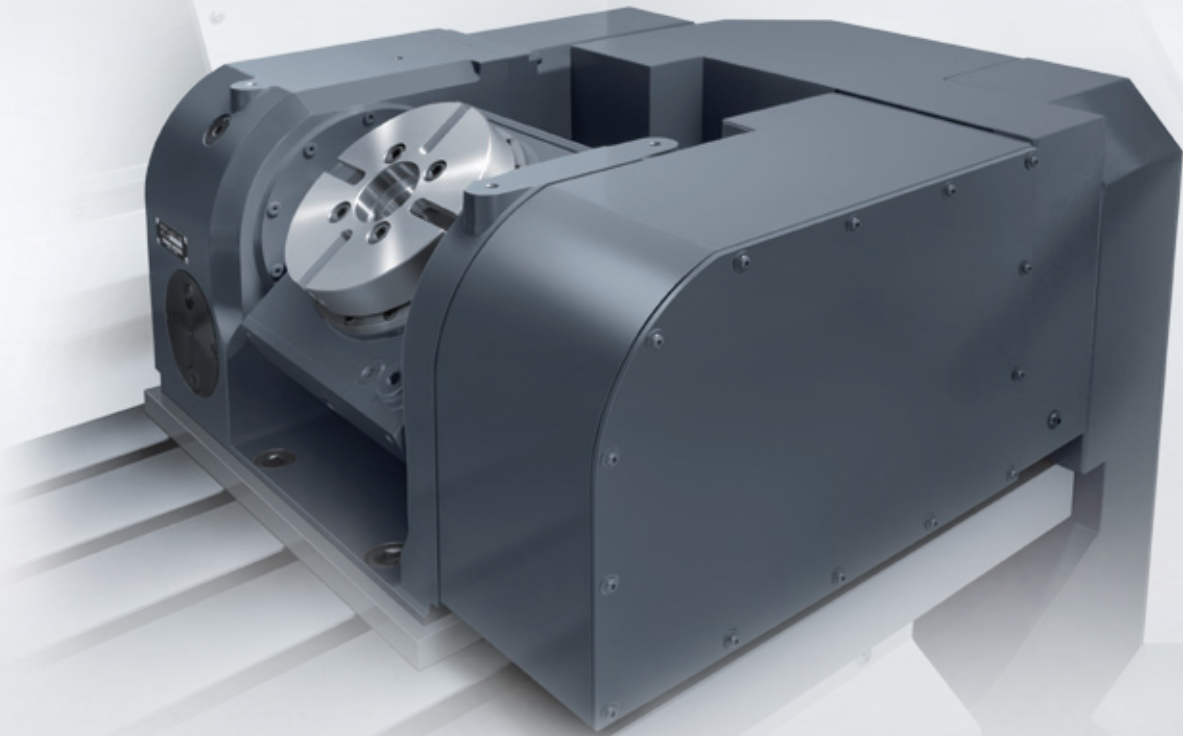
CMX V Series

Easy Process Integration by High-efficiency Machining with Additional Axis

The CMX V Series equipped with the rotary table (option) enables process integration through high-efficiency machining and high-speed / high-accuracy indexing, while saving the capital investment cost. The DDRT Series with the DDM (Direct Drive Motor) and the smartTilt for the CMX V Series are available.

DDM: Direct Drive Motor

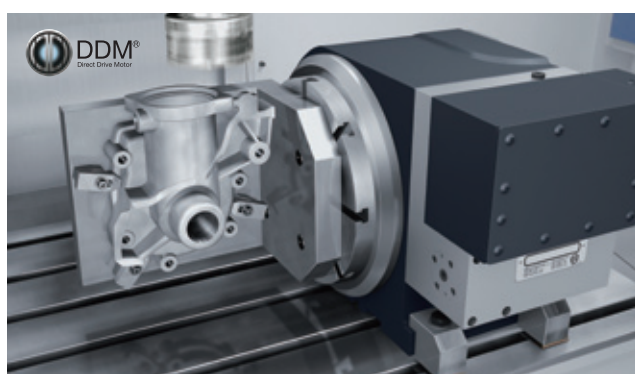
- + Rotary table for the CMX V Series
- + 5-axis, indexing machining
- + Process integration with less capital investment cost



			smartTilt
Tilt angle range			-30° — +110°
Table diameter		mm (in.)	160 (6.3)
Center hole diameter	Nose hole / Through hole	mm (in.)	50 (2.0) H7 / 40 (1.6)
Clamp system			Pneumatic
Unit mass		kg (lb.)	130 (286)
Table loading capacity		kg (lb.)	40 (88)

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.



- + 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*

Gears have been used to transmit the drive power to the rotary axes until now.

With the DDM, the drive power is directly transmitted to the rotary axes, so it ensures outstanding transmission efficiency and high-speed feed. DDM also achieves zero backlash for highest accuracy.

* DDRT Series only

		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)		
Clamp system		Air-hydro unit		Pneumatic
Rotational speed of the table	min ⁻¹	150		120
Repeatability	Unclamped	3		
Positioning accuracy	Clamped	5		
	Unclamped	5		
Mass of machine <rotary table>	kg (lb.)	115 (253)	160 (352)	200 (440)
Maximum work inertia <vertical>	kg·m ²	0.678		1.6
Table loading capacity	Vertical load	100 (220)	150 (330)	175 (385)
Maximum thrust load	Clamp torque	800 (590.0)	1,000 (737.6)	
applicable on the table	Moment load	1,500 (1,106.3)	3,000 (2,212.7)	4,000 (2,950.2)

- The cover protecting the DDRT cable / pipe joints is placed in the interference area on the table. So, when machining is performed without DDRT, extra care should be taken to prevent interference between fixtures and the cover.
- For details on the machining ranges, please consult our sales representative.
- For machines with the FANUC NC unit only.

CMX V Series

Accommodating Tools up to 125 mm (4.9 in.) in Diameter and 300 mm (11.8 in.) in Length

The high-performance magazine and ATC achieve quick tool change to minimize non-cutting time. The highly reliable magazine and ATC that cover a wide range of tools ensure solid tool changes and flexible machining.

- + Tool storage capacity: 30 tools [60 tools*¹]
- + Max. tool diameter <without adjacent tools / with adjacent tools>: 125 mm / 80 mm (4.9 in. / 3.1 in.) <FANUC>
130 mm / 80 mm (5.1 in. / 3.1 in.) <SIEMENS, HEIDENHAIN>
- + Max. tool mass: 8 kg (17.6 lb.)

[] Option

*¹ For machines with the FANUC NC unit only. Magazine door (option) is essential.



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.

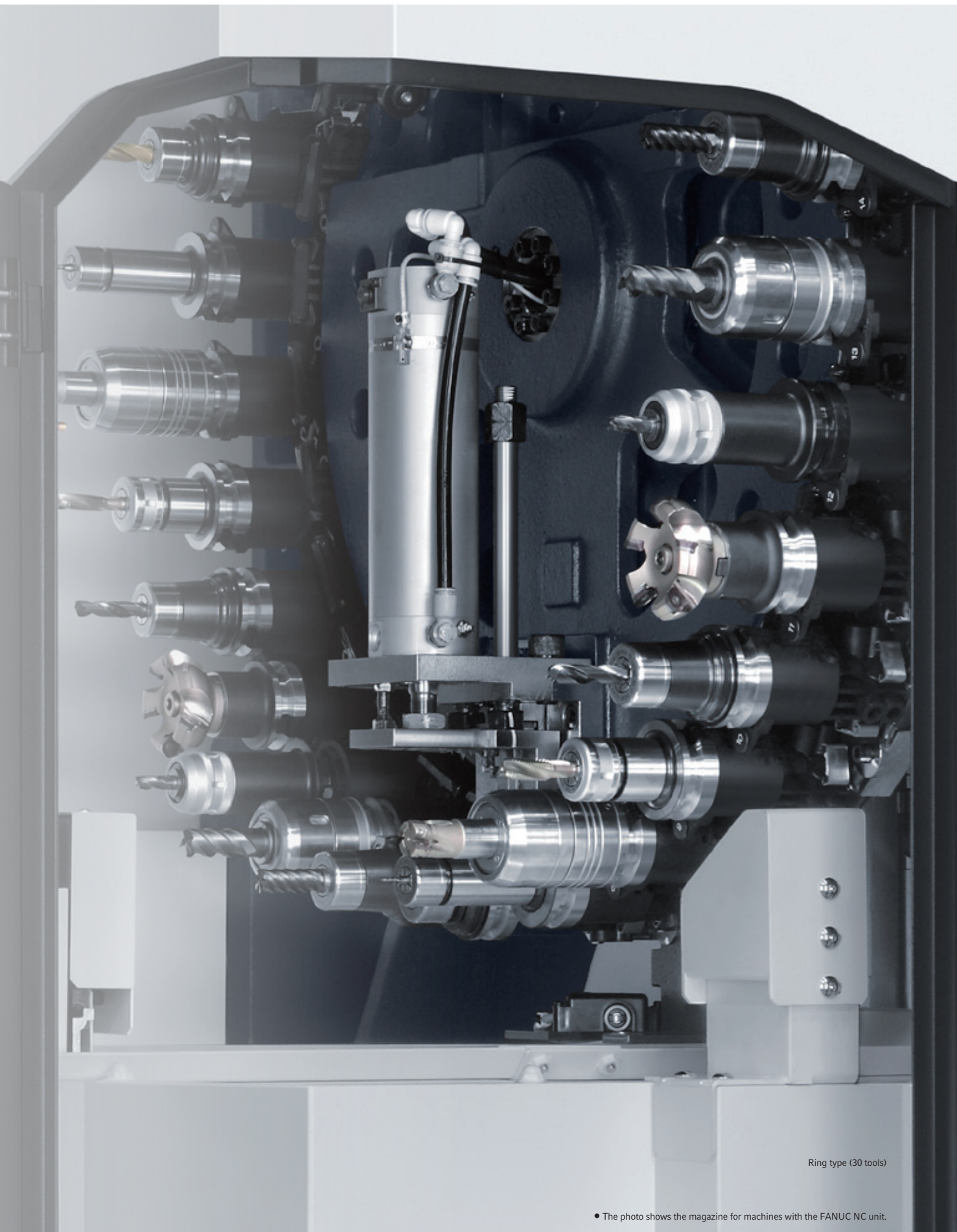
The ATC shutter is provided as standard to prevent chips from entering the magazine (for machines with the FANUC NC unit only).

- + Cut-to-cut (chip-to-chip): 3.76 sec.*² (adjacent <DIN>) / 3.76 sec.*² (farthest <DIN>) <FANUC>
6.70 sec. (adjacent <DIN>) / 6.70 sec. (farthest <DIN>) <SIEMENS, HEIDENHAIN>
3.74 sec.*² <MAS> <FANUC>

*² ATC standby mode ON.

- 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: 1.32 sec. <max. tool mass: less than 4 kg (8.8 lb.)> /
1.46 sec. <max. tool mass: 4—8 kg (8.8—17.6 lb.)> <FANUC>
2.40 sec. <SIEMENS, HEIDENHAIN>



Ring type (30 tools)

• The photo shows the magazine for machines with the FANUC NC unit.

CMX V Series

Open Innovation for Maintaining Ideal Machining Quality

We offer a variety of high-performance peripheral equipment according to customer needs and workpieces. The combination of the CMX V machine and high-performance peripheral equipment delivers high-precision machining and excellent durability. We also provide DMG MORI Qualified Products (DMQP) that satisfy DMG MORI standards in quality, performance and maintainability.

DMQP: DMG MORI Qualified Products



Chip conveyor (external) / scraper type (inner pan type) <option>

- + Reduced chip accumulation inside the machine
- + Operator spends less time removing chips

	◎: Ideal ○: Suitable —: Not suitable							
Workpiece material and chip size	Steel			Cast iron		Aluminum / non-ferrous metal		
	Long	Short	Needle	Short	Sludge	Long	Short	Needle
Scraper type (inner pan type)	○	◎	○	◎	—	○	◎	○
Scraper type (inner pan type) + drum filter type*	○	◎	◎	◎	—	○	◎	◎

- * For machines with the FANUC NC unit only.
- [chip size guidelines] Short: chips 50 mm (2.0 in.) or less in length
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 our sales representative.
 - Chip conveyors are available in various types for handling chips of different shape and material. For details, please consult our sales representative.

Through-spindle coolant system (unit on coolant tank) <option>

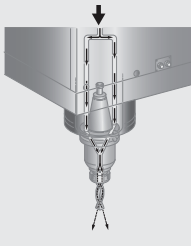
- + Coolant to be supplied to the tip through the holes of the spindle and tool
- + Effective for chip removal, cooling of machining points and extension of tool life



Unit on coolant tank



Center through



Side through*

* For machines with the FANUC NC unit only.

⚠ 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.

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.

- We cannot guarantee that this unit will completely control the coolant temperature. It is designed to help prevent oil temperature increases.

Shower coolant*<option>

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



* For machines with the FANUC NC unit only.

DMQP (option)*

The DMQP program is designed to certify peripherals that meet DMG MORI standards in quality, performance and maintainability. DMQP provides customers with greater peace of mind. We provide total service from proposal to delivery and maintenance of peripheral equipment with outstanding quality, performance and maintainability.

Comprehensive support with machine + peripherals



Service Center

- + Qualified peripherals are arranged by DMG MORI
- + Toll-free phone support is available 24 hours a day, 365 days a year (Japan only)

* For machines with the FANUC NC unit only.

• For more details on DMQP items, please consult our sales representative.

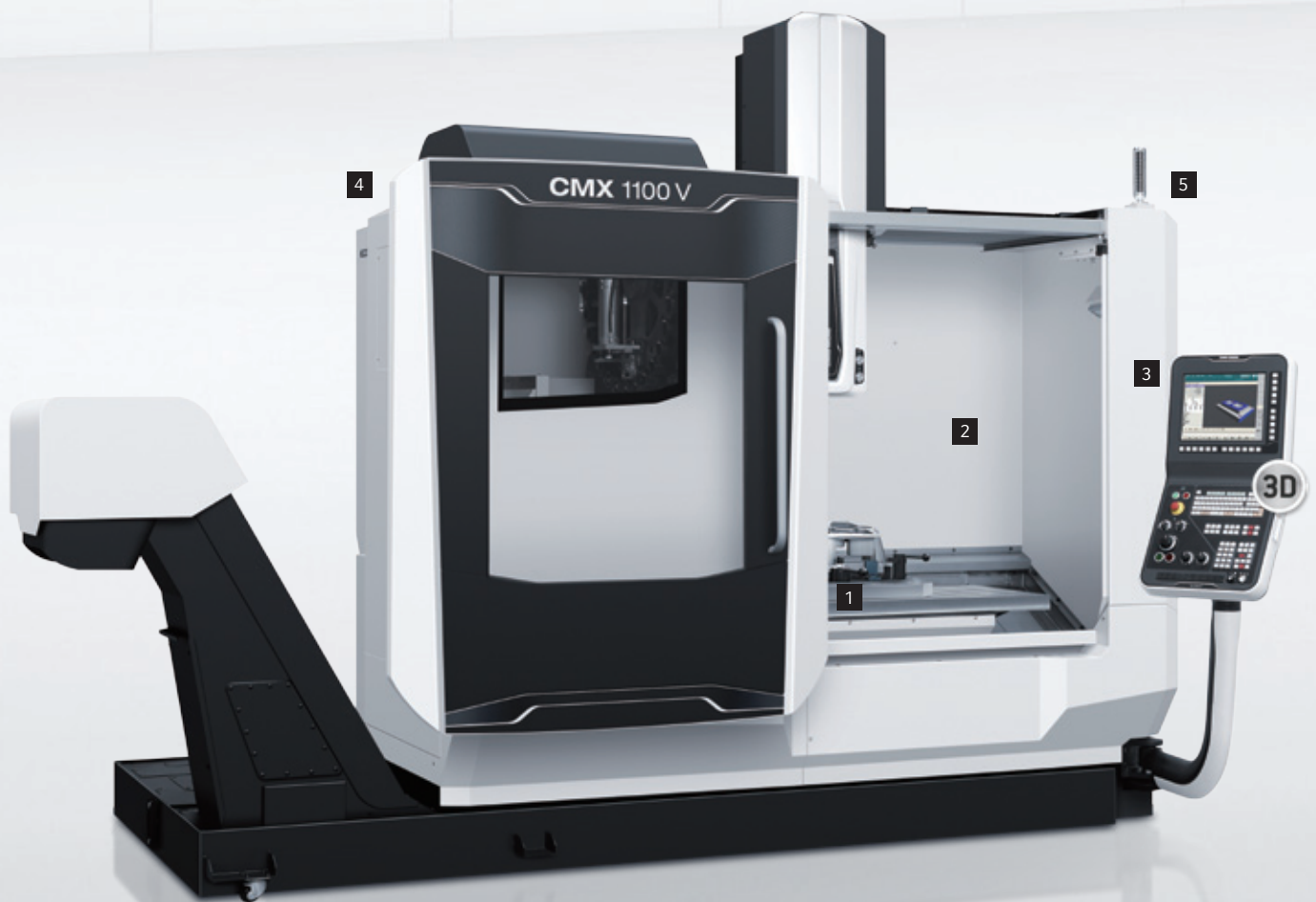
DMQP: DMG MORI Qualified Products

CMX V Series

Cutting-edge Design — Pursuit of Usability

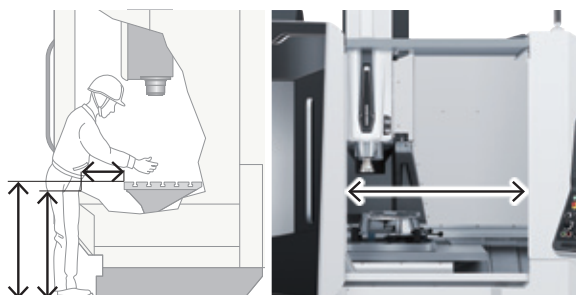
The CMX V Series employs a sophisticated cover design and is designed taking into account the accessibility to the table and workpiece handling with a crane.

Other features for better workability are also incorporated throughout the machine. The lubrication unit and other peripherals requiring periodic maintenance are placed in an easily accessible location to improve maintainability.



1 Accessibility

With excellent access to the table and a wide door opening, setup operations such as fixture adjustment can be done smoothly. The position of the lower end of the front door has been lowered to offer better access to the spindle and table.



- + Distance from table: 323 mm (12.7 in.)
- + Height of table top surface:
850 / 885^{*1} / 920^{*2} mm (33.5 / 34.8^{*1} / 36.2^{*2} in.)
- + The position of the lower end of the front door:
748 mm (29.4 in.)
- + Door opening:
804 / 763^{*3} mm (31.7 / 30.0^{*3} in.) <CMX 600 V>
794 / 763^{*3} mm (31.3 / 30.0^{*3} in.) <CMX 800 V>
1,151 / 1,119^{*3} mm (45.3 / 44.1^{*3} in.) <CMX 1100 V>

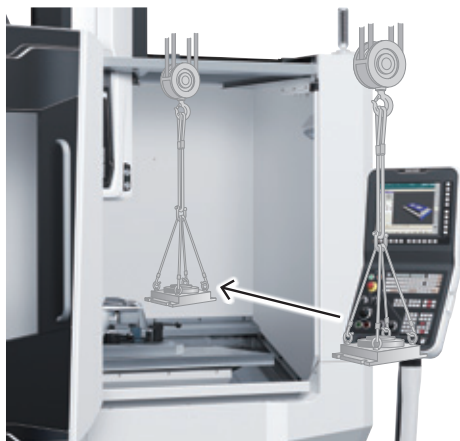
*1 Rear discharge type chip conveyor (option)

*2 External chip scraping chute (rear discharge) specification (option)

*3 Automatic door specification (option)

2 Loading and unloading with a crane

The ceiling part also opens, allowing easy loading and unloading of workpieces using a crane. The ceiling shutter* can be opened / closed automatically.



* For machines with the FANUC NC unit, it is available as standard features. For machines with the SIEMENS or HEIDENHAIN NC unit, it is available as options.

3 Swivel-type operation panel

The operation panel which can swivel from 0 degree to 100 degrees improves operability and visibility.



+ Swivel range
(operation panel): 100°

+ Swivel range (arm): 119°

4 Easier magazine maintenance

A magazine door that facilitates maintenance work on the magazine is available as an option.



Magazine door (option)

5 Centralized layout of devices

Devices which need to be inspected every day are gathered together at the side of the machine.



CMX V Series

Varieties of Systems to Respond to Diverse Needs

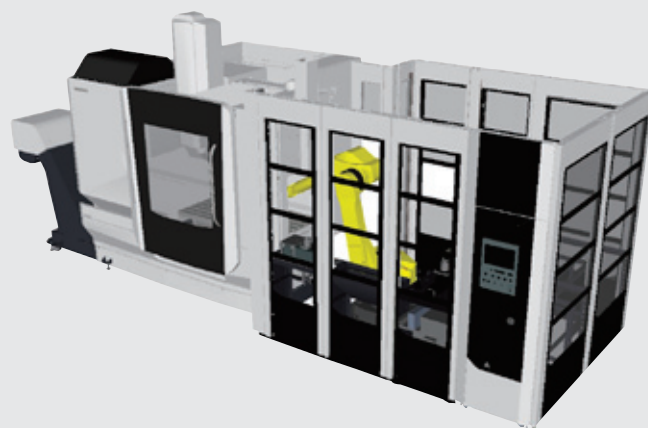
Optimal systems for customers depend on the machining type and shop floor environment.

The CMX V Series are flexibly compatible with varieties of systems and offers an optimal system for each customer. The series offers a broad range of options from automatic systems to the manual pallet changer that drastically reduces operators' setup burdens. The CMX V Series, with the out-of-the-box concept, contributes to boosting your shop floor productivity.

Robot system*

System consisting of modularized units such as a workstocker and in-machine measuring system ensures higher productivity.

- + Compatible with various robot systems to improve productivity
- + Easy system expansion and layout change possible in the future



Manual pallet changer*

Workpieces can be set up on the pallet stocker, so setup time is significantly reduced. As the pallet transfer vehicle is moved manually, the arrangement of pallet stockers can be changed flexibly.

- + Drastically reduced setup time by the simple structure
- + Pallet change using the manual pallet transfer vehicle
- + Expansion of pallet stockers possible

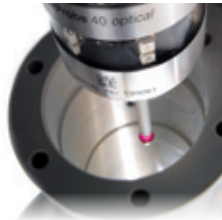
* For machines with the FANUC NC unit only.



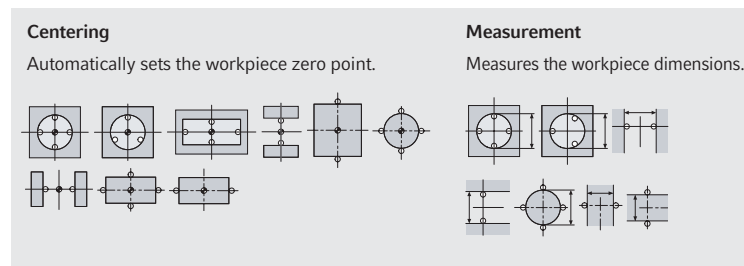
Automatic measurement (option)

In-machine measuring system (spindle)*1

- + Automatic centering and automatic measurement are possible
- + Automatic measurement applications are included



Automatic measurement applications

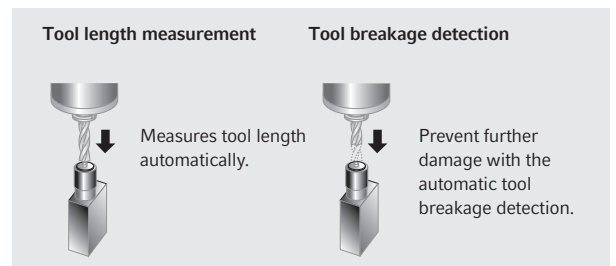


In-machine measuring system (table)

- + Automatic tool length measurement and automatic breakage detection are possible
- + Automatic measurement applications are included



Automatic measurement applications



Automatic measurement + Manual measurement functions (option)

Manual measurement applications can be added to the automatic measurement function.

Workpiece measurement function (option)

In-machine measuring system (spindle)*1 Touch sensor (optical signal transmission type)	Work setter function (manual measurement application)
	<p>Reference plane measurement: The machining reference point can be calculated simply by applying the sensor from the Z, X and Y-axis directions.</p> <p>Reference hole measurement: Centering a boss, hole, groove or width can be done at any two or three points, simply by applying the sensor.</p> <p>Coordinate rotation measurement: Machining can be done without changing the program even if the workpiece is attached crookedly, simply by performing this operation within the X-axis and Y-axis plane.</p>

Tool measurement function (option)

In-machine measuring system (table) Touch sensor (tool length) Touch sensor (optical signal transmission type)*2	Tool setter function (manual measurement application)
	<p>Tool length measurement: The tool length value can be registered automatically to the designated tool offset number.</p>

*1 Equipped with the high-speed spindle for which the spindle bearing uses a ceramic ball. So the energization type touch sensor cannot be used.

*2 The RENISHAW-made only

CMX V Series

DMG MORI SLIMline for Highest Efficiency and Reliability



15-inch MAPPS IV on FANUC

- + 3D machining simulation for easy contour verification
- + Conversational automatic programming function with process menu
- + Import and export of programs over MORI-SERVER using external PCs
- + File display and note function for accessing operating instructions, drawings and texts
- + Vertical soft keys can be set as menu or direct access buttons for quickly displaying the data selected by the user

MAPPS: Mori Advanced Programming Production System



19-inch Operate on SIEMENS

- + Expanded memory capacity to 4 GB
- + Improved overview thanks to 19-inch screen with maximized resolution and innovative comfort of intuitive use with a unique range of functions
- + 3D machining simulation for easy contour verification
- + Flexible software keyboard integrated into multi-touch display
- + Optimized ergonomics with 45° swivel range



15-inch HEIDENHAIN TNC 620

- + 15-inch TFT display with a clear screen design
- + Convenient programming with the new full ASCII keyboard
- + Workshop-oriented programming with graphics support
- + Rapid data interface for externally generated programs
- + Workpiece and tool measurement cycles in combination with the HEIDENHAIN single-touch system

DMG MORI Technology Cycles (option)

Technology Cycles are total solutions that achieve complex machining easily in a short time. They enable every operator to easily perform high-quality machining, setups and measurement with general-purpose machine tools and standard tools / fixtures, which used to be done with specialized machines, programs and tools.

High-speed canned cycle



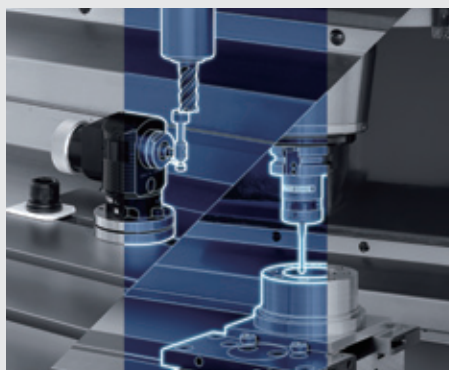
- + Easy input of various patternized machining

ATC (Application Tuning Cycle)



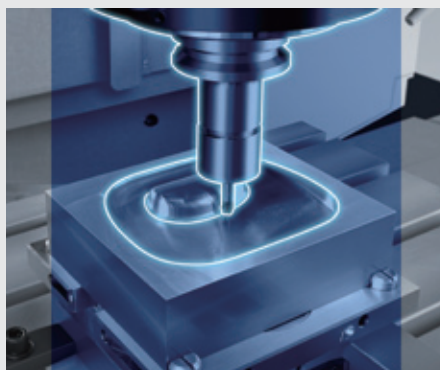
- + Easy setting of optimal feed according to machining

W setter



- + Easy and manual tool measurement and workpiece centering

Easy tool monitoring



- + Load monitoring for the spindle and traveling axes

CMX V Series

Reduction in Environmental Burden

To conserve limited resources and protect global environment. The CMX V Series pursues a high “environmental performance” that is required of machine tools.

When the latest DMG MORI vertical machining center “CMX V Series” and the “DURAVERTICAL Series” manufactured in 2006 are compared, the annual power consumption can be reduced by approximately 30%*.

* The effect indicated above may not be achieved depending on the machines, cutting conditions, environmental conditions at measurement.

Power-saving Functions

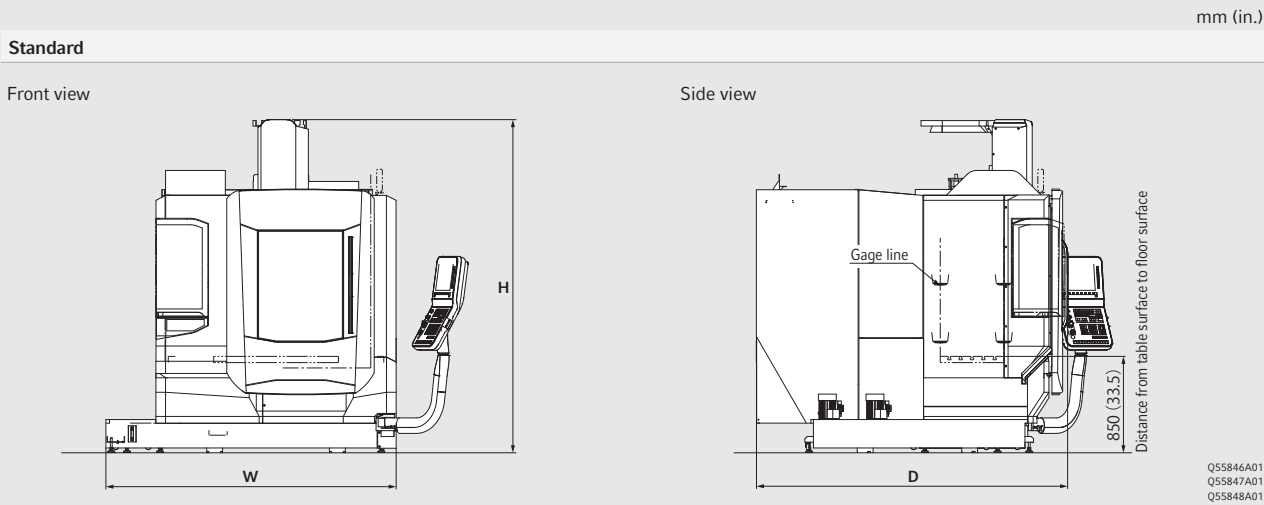
- + If the screen is not touched for a certain amount of time and NC operation is not being performed, power is cut off to the servo motor, the spindle, the coolant pump and the chip conveyor, thereby saving energy
- + The latest, energy-efficient components with low power consumption and LED lighting are employed
- + The positioning speed is automatically adjusted in accordance with the spindle acceleration / deceleration time to achieve optimal acceleration / deceleration control

Reduced Cycle Times

- + The number of pecking operations in a deep hole drilling cycle is automatically controlled according to the cutting load, shortening the machining time
- + The Smart Rigid Tapping using the maximum output power of the spindle motor allows for high-speed tapping, which significantly reduces cycle times



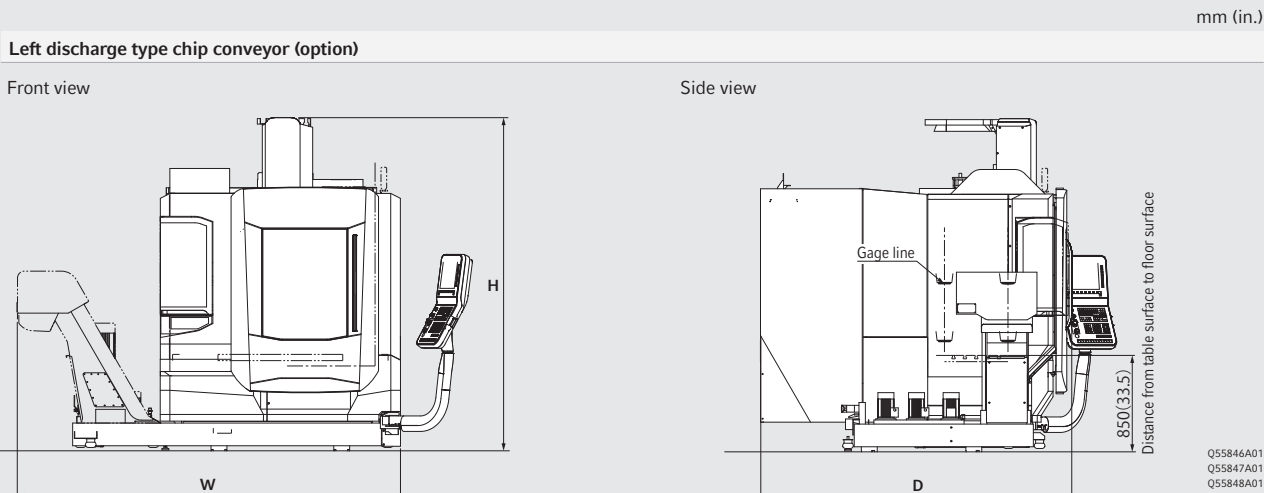
General View



mm (in.)

Machine type	Width (W)	Depth (D)	Height (H)
	FANUC / SIEMENS, HEIDENHAIN		
CMX 600 V	2,163 / 1,990 (85.2 / 78.3)	2,742 / 2,747 (108.0 / 108.1)	2,937 (115.6) [3,137 (123.5) *]
CMX 800 V	2,559 / 2,426 (100.7 / 95.5)		
CMX 1100 V	3,190 / 3,058 (125.6 / 120.4)	2,742 / 2,770 (108.0 / 109.1)	

[] Option * Raised column
● Raised column is available for machines with the FANUC NC unit only.



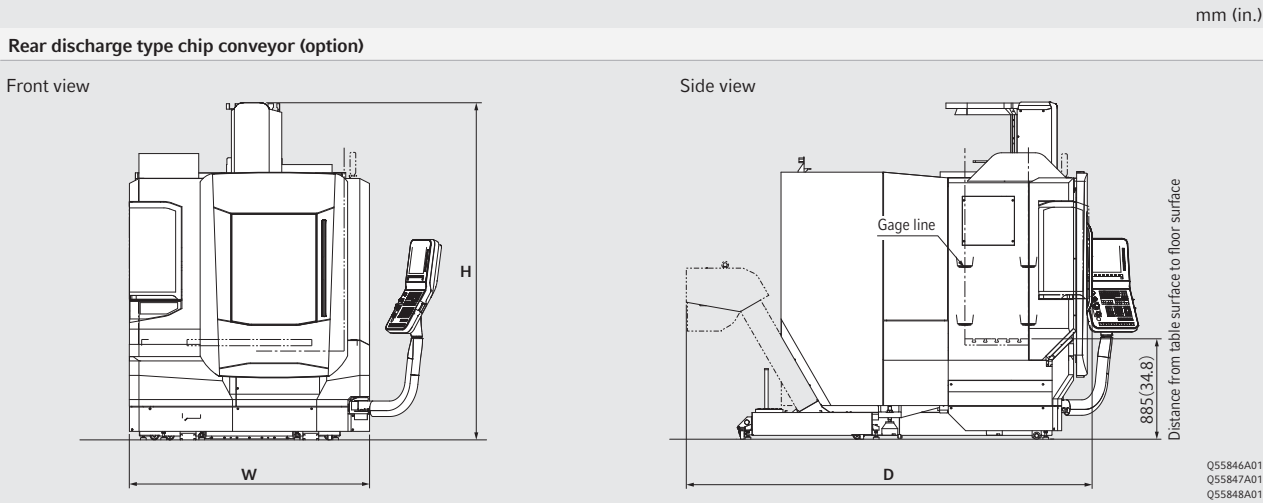
mm (in.)

Machine type	Width (W)	Depth (D)	Height (H)
	FANUC / SIEMENS, HEIDENHAIN		
CMX 600 V	3,006 / 2,954 (118.3 / 116.3)	2,742 / 2,747 (108.0 / 108.1)	2,937 (115.6) [3,137 (123.5) *]
CMX 800 V	3,378 / 3,395 (133.0 / 133.7)		
CMX 1100 V	4,010 / 4,028 (157.9 / 158.6)	2,742 / 2,770 (108.0 / 109.1)	

[] Option * Raised column
● Raised column is available for machines with the FANUC NC unit only.

CMX V Series

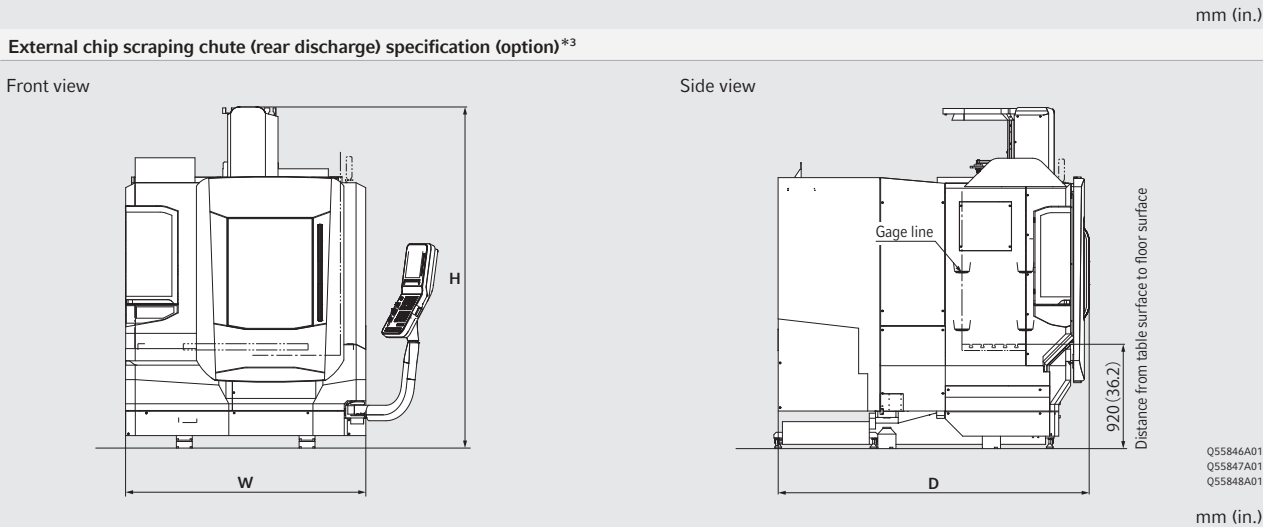
General View



mm (in.)

Machine type	Width (W)	Depth (D)	Height (H)
	FANUC / SIEMENS, HEIDENHAIN		
CMX 600 V	1,868 / 1,864 (73.5 / 73.4)	3,578 / 3,567 (140.9 / 140.4)	2,972 (117.0)
CMX 800 V	2,118 (83.4)		[3,172 (124.9)* ²]
CMX 1100 V* ¹	2,750 (108.3) / —		2,972 (117.0) [3,172 (124.9)* ²] / —

[] Option *1 For machines with the FANUC NC unit only. *2 Raised column
● Raised column is available for machines with the FANUC NC unit only.



mm (in.)

Machine type	Width (W)	Depth (D)	Height (H)
	FANUC		
CMX 600 V	1,868 (73.5)	2,742 (108.0)	3,007 (118.4)
CMX 800 V	2,118 (83.4)		[3,207 (126.3)* ²]
CMX 1100 V	2,750 (108.3)		

[] Option *2 Raised column *3 For machines with the FANUC NC unit only.
● Raised column is available for machines with the FANUC NC unit only.

Main Machine Specifications

				CMX 600 V	CMX 800 V	CMX 1100 V
Travel						
X-axis travel <longitudinal movement of table>	mm (in.)			600 (23.6)	800 (31.5)	1,100 (43.3)
Y-axis travel <cross movement of saddle>	mm (in.)				560 (22.0)	
Z-axis travel <vertical movement of spindle head>	mm (in.)				510 (20.1)	
Distance from table surface to spindle gauge plane	mm (in.)			120—630 (4.7—24.8)		
Table						
Working surface	mm (in.)			900 × 560 (35.4 × 22.0)	1,100 × 560 (43.3 × 22.0)	1,400 × 560 (55.1 × 22.0)
Table loading capacity	kg (lb.)			600 (1,320)	800 (1,760)	1,000 (2,200)
Spindle						
Max. spindle speed	min ⁻¹			12,000 [15,000 <high speed>] [20,000 <high speed, high output>] <FANUC> 12,000 <SIEMENS, HEIDENHAIN>		
Feedrate						
Rapid traverse rate	mm/min (ipm)			X / Y / Z: 36,000 / 36,000 / 30,000 (1,417.3 / 1,417.3 / 1,181.1) <FANUC> X, Y, Z: 30,000 (1,181.1) <SIEMENS, HEIDENHAIN>		
Cutting feedrate	mm/min (ipm)			X, Y, Z: 1—20,000 (0.04—787.4) <when using look-ahead control> <FANUC> X, Y, Z: 1—30,000 (0.04—1,181.1) <SIEMENS, HEIDENHAIN>		
ATC						
Type of tool shank	FANUC			BT40 [CAT40] [DIN40]		
	SIEMENS, HEIDENHAIN			DIN40 [BT40] [CAT40]		
Tool storage capacity				30 [60*1]		
Max. tool diameter	With adjacent tools	mm (in.)		80 (3.1)		
	Without adjacent tools	mm (in.)		125 (4.9) <FANUC> 130 (5.1) <SIEMENS, HEIDENHAIN>		
Max. tool length		mm (in.)		300 (11.8)		
Max. tool mass		kg (lb.)		8 (17.6)		
Tool changing time*2	Tool-to-tool	s		1.32 <max. tool mass: less than 4 kg (8.8 lb.)> / 1.46 <max. tool mass: 4—8 kg (8.8—17.6 lb.)> <FANUC> 2.40 <SIEMENS, HEIDENHAIN>		
	Cut-to-cut (chip-to-chip)	<DIN>	s	Adjacent: 3.76*3 / Farthest: 3.76*3 <FANUC> Adjacent: 6.70 / Farthest: 6.70 <SIEMENS, HEIDENHAIN>		
		<MAS>	s	3.74*3		
Motor						
Spindle drive motor <25%ED / cont>		kW (HP)		15 / 11 (20 / 15) [15 / 11 (20 / 15) <high speed>] <FANUC> [37 / 18.5 (50 / 24.7) <15%ED / cont> (high speed, high output)] <FANUC> 13 / 9 (17.3 / 12) <40%ED / 100%ED> <SIEMENS, HEIDENHAIN>		

[] Option

*1 For machines with the FANUC NC unit only. Magazine door (option) is essential.

*2 Depending on the arrangement of tools in the magazine, the Cut-to-cut (chip-to-chip) time may be longer.

*3 ATC standby mode ON. (ATC standby mode: open the ATC shutter using M code commands beforehand.)

● 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.

● When the two-face contact specification is selected, a two-face contact tool and other tools cannot be used together.

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

● The information in this catalog is valid as of March 2017.

Applications and Parts
Highlights
Machine and Technology
Others
Machine Specifications
▸ Main Machine Specifications
▸ Main Standard & Optional Features

CMX V Series

Main Machine Specifications

			CMX 600 V	CMX 800 V	CMX 1100 V
Machine size					
Machine height		mm (in.)	2,937 (115.6) [2,972 (117.0) *4] [3,007 (118.4) *5] ● The height is increased by 200 mm (7.9 in.) for the raised column specification.		
Floor space <width × depth>	FANUC	mm (in.)	2,163 × 2,742 (85.2 × 108.0) [1,868 × 3,578 (73.5 × 140.9) *4] [1,868 × 2,742 (73.5 × 108.0) *5] [3,006 × 2,742 (118.3 × 108.0) *6]	2,559 × 2,742 (100.7 × 108.0) [2,118 × 3,578 (83.4 × 140.9) *4] [2,118 × 2,742 (83.4 × 108.0) *5] [3,378 × 2,742 (133.0 × 108.0) *6]	3,190 × 2,742 (125.6 × 108.0) [2,750 × 3,578 (108.3 × 140.9) *4] [2,750 × 2,742 (108.3 × 108.0) *5] [4,010 × 2,742 (157.9 × 108.0) *6]
	SIEMENS, HEIDENHAIN	mm (in.)	1,990 × 2,747 (78.3 × 108.1) [1,864 × 3,567 (73.4 × 140.4) *4] [2,954 × 2,747 (116.3 × 108.1) *6]	2,426 × 2,747 (95.5 × 108.1) [2,118 × 3,567 (83.4 × 140.4) *4] [3,395 × 2,747 (133.7 × 108.1) *6]	3,058 × 2,770 (120.4 × 109.1) [4,028 × 2,770 (158.6 × 109.1) *6]
Mass of machine		kg (lb.)	4,700 (10,340)	5,000 (11,000)	5,500 (12,100)
Control unit					
FANUC			FOiMF		
SIEMENS			SINUMERIK 840D sl		
HEIDENHAIN			TNC 620		

[] Option

*4 Rear discharge type chip conveyor

*5 External chip scraping chute (rear discharge) specification

*6 Left discharge type chip conveyor

● Raised column is available for machines with the FANUC NC unit only.

● The information in this catalog is valid as of March 2017.

CMX V Series

Main Standard & Optional Features

●: Standard features

○: Options

—: Not applicable

			FANUC	SIEMENS or HEIDENHAIN
Spindle				
Type of tool shank	BT40		●	○
	CAT40		○	○
	DIN40		○	●
Magazine				
Tool storage capacity	30 tools		●	●
	60 tools*1		○	—
Coolant				
Coolant gun			○	○
	1.2 MPa (174 psi)		—	○
	1.5 MPa (217.5 psi)		○*2	—
	2.0 MPa (290 psi)		—	○
	4.0 MPa (580 psi)		—	○
Through-spindle coolant system (unit on coolant tank) center through	7.0 MPa (1,015 psi)		○*2	—
	1.5 MPa (217.5 psi)		○*2	—
	7.0 MPa (1,015 psi)		○*2	—
Through-spindle coolant system (unit on coolant tank) side through			○*2	—
Coolant chiller (separate type)			○*2	—
Mist collector	AFS-600		○	○
Chip disposal				
Chip conveyor	Left discharge, scraper type (inner pan type)		○	○
	Left discharge, scraper type (inner pan type) + drum filter type		○	—
	Rear discharge, scraper type (inner pan type)		○	○*3
	Rear discharge, scraper type (inner pan type) + drum filter type		○	—
External chip scraping chute	Rear discharge		○	—
Measurement				
In-machine measuring system (table)*4	Touch sensor	(M)	○	—
In-machine measuring system (spindle + table)*4*5		(R)	○	○
Automation				
Automatic door			○	○
Other				
Signal light	4 layers (LED type: red, yellow, green, blue)		○	○
Manual pulse generator (separate type)			○	○
Progress line			○	○

*1 Magazine door (option) is essential.

*2 DMQP (DMG MORI Qualified Products)

*3 It is not available for CMX 1100 V.

*4 The specifications vary depending on the manufacturers. (M: made by Magnescale R: made by RENISHAW)

*5 Equipped with the high-speed spindle for which the spindle bearing uses a ceramic ball. So the energization type touch sensor cannot be used.

● DMQP: Please see Page 17 for details.

● The information in this catalog is valid as of March 2017.

● Specifications, accessories, safety device and function are available upon request.

● Some options are not available in particular regions. For details, please consult our sales representative.

⚠ Flammable coolant such as oil-based coolant has a high risk of ignition, and will cause fire or machine breakage if ignited.
If you have to use a flammable coolant for any reason, please be sure to consult our sales representative.

<Precautions for Machine Relocation>

EXPORTATION:

All contracts are subject to export permit by the Government of Japan.

Customer shall comply with the laws and regulations of the exporting country governing the exportation or re-exportation of the Equipment, including but not limited to the Export Administration Regulations.

The Equipment is subject to export restrictions imposed by Japan and other exporting countries and the Customer will not export or permit the export of the Equipment anywhere outside the exporting country without proper government authorization.

To prevent the illegal diversion of the Equipment to individuals or nations that threaten international security, it may include a "Relocation Machine Security Function" that automatically disables the Equipment if it is moved following installation.

If the Equipment is so-disabled, it can only be re-enabled by contacting DMG MORI or its distributor representative. DMG MORI and its distributor representative may refuse to re-enable the Equipment if it determines that doing so would be an unauthorized export of technology or otherwise violates applicable export restrictions.

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

+ The information in this catalog is valid as of March 2017. Designs and specifications are subject to changes without notice.

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

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

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The logo for DMG MORI, with "DMG" in green and "MORI" in red, both in a bold, sans-serif font.