

# ***SPEEDIO***

## **W1000Xd2**

Wide Travel Compact Machining Center



# W

Largest travels and loading capacity among BT30 machines  
**X1,000 x Y500 x Z380 mm**  
**500 kg\***

Mounting a new 28-tool magazine promotes process integration for machining large workpieces.

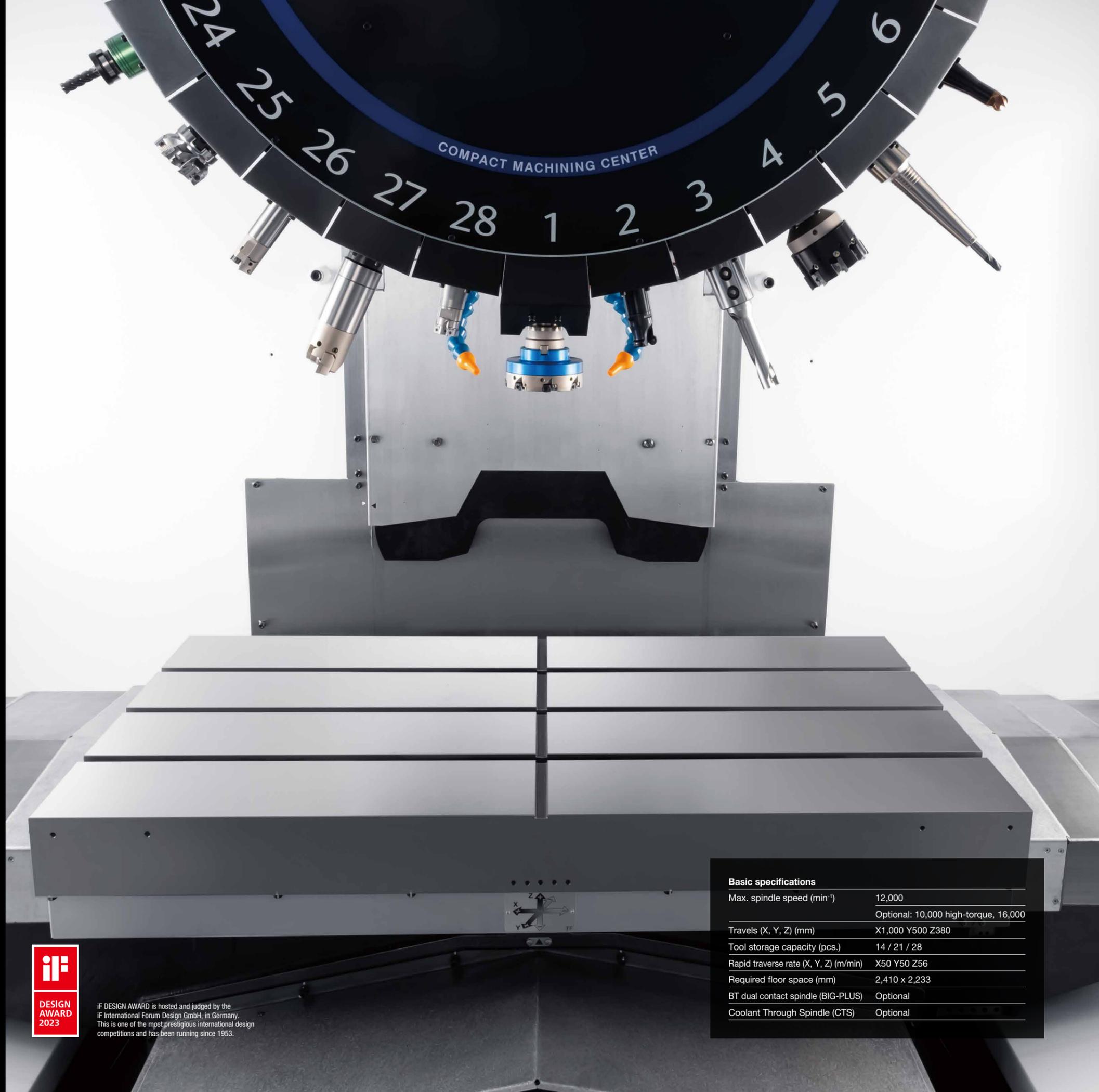
With maximum table loading capacity increased to 500 kg and increased Z-axis travel, the machine is widely suitable for a variety of production systems.

\* Parameter setting needs to be changed.

## Cutting Out the Waste *SPEEDIO*



**W1000Xd2**



iF DESIGN AWARD is hosted and judged by the iF International Forum Design GmbH, in Germany. This is one of the most prestigious international design competitions and has been running since 1953.

### Basic specifications

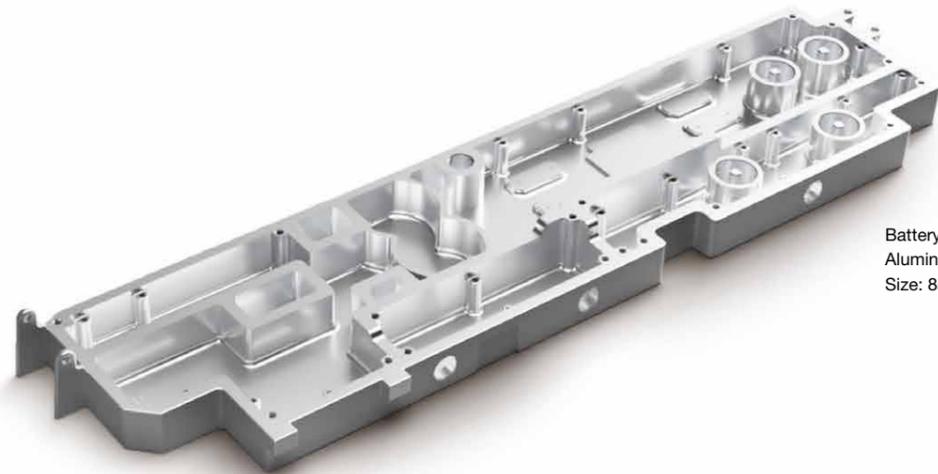
Max. spindle speed (min <sup>-1</sup> )	12,000 Optional: 10,000 high-torque, 16,000
Travels (X, Y, Z) (mm)	X1,000 Y500 Z380
Tool storage capacity (pcs.)	14 / 21 / 28
Rapid traverse rate (X, Y, Z) (m/min)	X50 Y50 Z56
Required floor space (mm)	2,410 x 2,233
BT dual contact spindle (BIG-PLUS)	Optional
Coolant Through Spindle (CTS)	Optional

## Expands target machining parts and process flexibility utilizing the widest machining area in BT30 machines' history

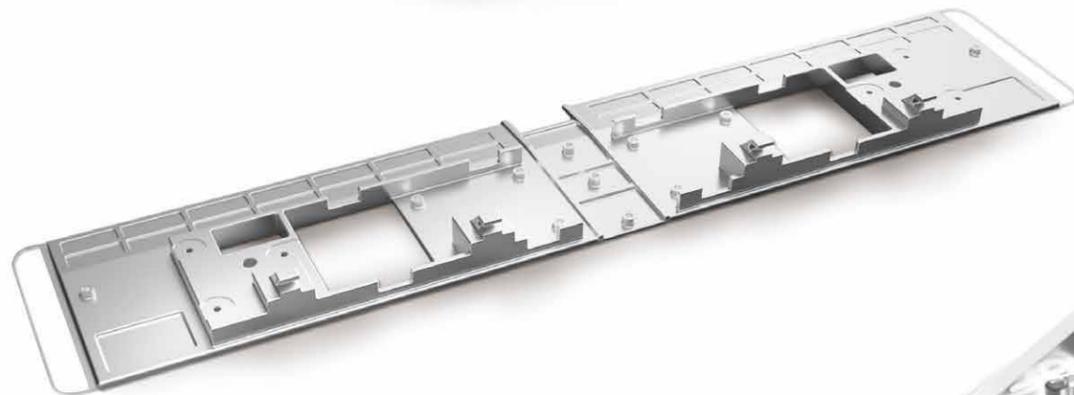
The large machining area can respond to customers' expectations in a variety of situations, while maintaining high-speed and easy-to-handle features of BT30 machining centers.

This new machine enables workpiece machining previously considered impossible in various industries, including the automobile industry.

### Automobile



Battery control box  
Aluminum alloy  
Size: 850 x 300 x 70



Instrument panel  
Aluminum alloy  
Size: 750 x 300 x 50



EV frame  
Aluminum alloy  
Size: 800 x 430 x 170

### Semiconductor



Shower plate  
Aluminum alloy  
Size: ø600 x 30

### General machinery



Frame parts  
Aluminum alloy  
Size: 800 x 50 x 50

### Molds



Mold parts  
Alloy tool steel  
Size: 900 x 500 x 100

### Flexibly applicable to a variety of machining

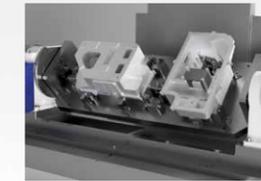
Utilizing ample jig area both in width and depth, jigs and workpieces can be placed flexibly, enabling a variety of machining to be performed flexibly and efficiently.

#### Machining of large workpieces



Enables multi-face machining of large workpieces, such as EV battery case and automobile subframe.

#### Two-part machining of medium-sized workpieces



Enables efficient machining by simultaneously machining right and left parts of the workpiece or the front of one workpiece and the rear of another.

#### Multi-part machining of small workpieces



Enables maximum hours of operation by performing multi-part machining of small workpieces or suitably placing multiple types of workpieces.

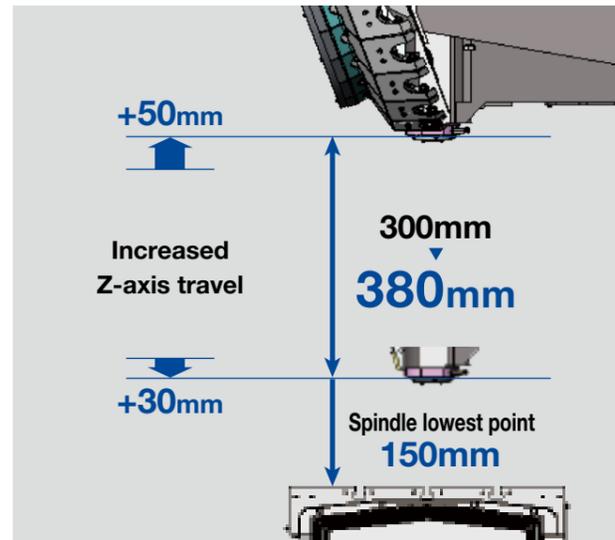
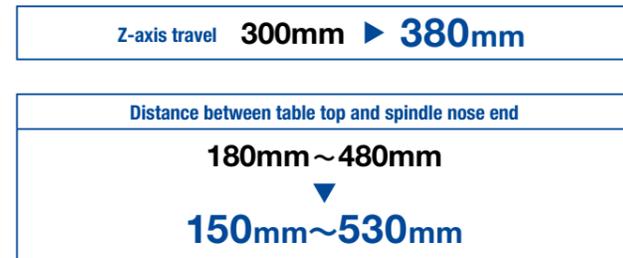
## 28-tool magazine, max. loading capacity of 500 kg, and increased Z-axis travel

### Further improves applicability from large workpiece machining to multi-product small-volume production

The wide machining area can accommodate constantly varying onsite needs, such as large workpiece machining, multi-part machining of small parts, and multi-product small-volume production with various jigs placed side by side, which enhances flexibility throughout the plant.

#### Increased Z-axis travel

The Z-axis travel and the distance between the table top and spindle nose end have been increased to secure ample machining area in the Z direction and improve tool accessibility.



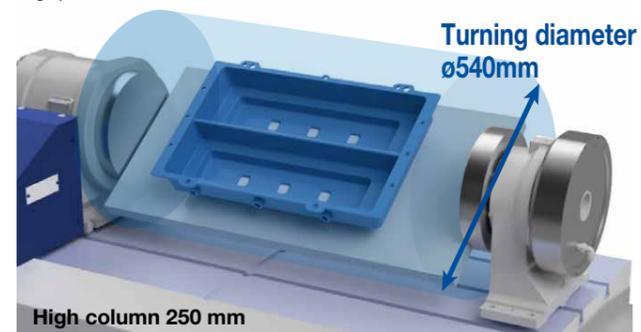
#### Increased table loading capacity

The maximum table loading capacity has been increased to 500 kg. This expands choices of jigs and enables process integration or flexible jig design.



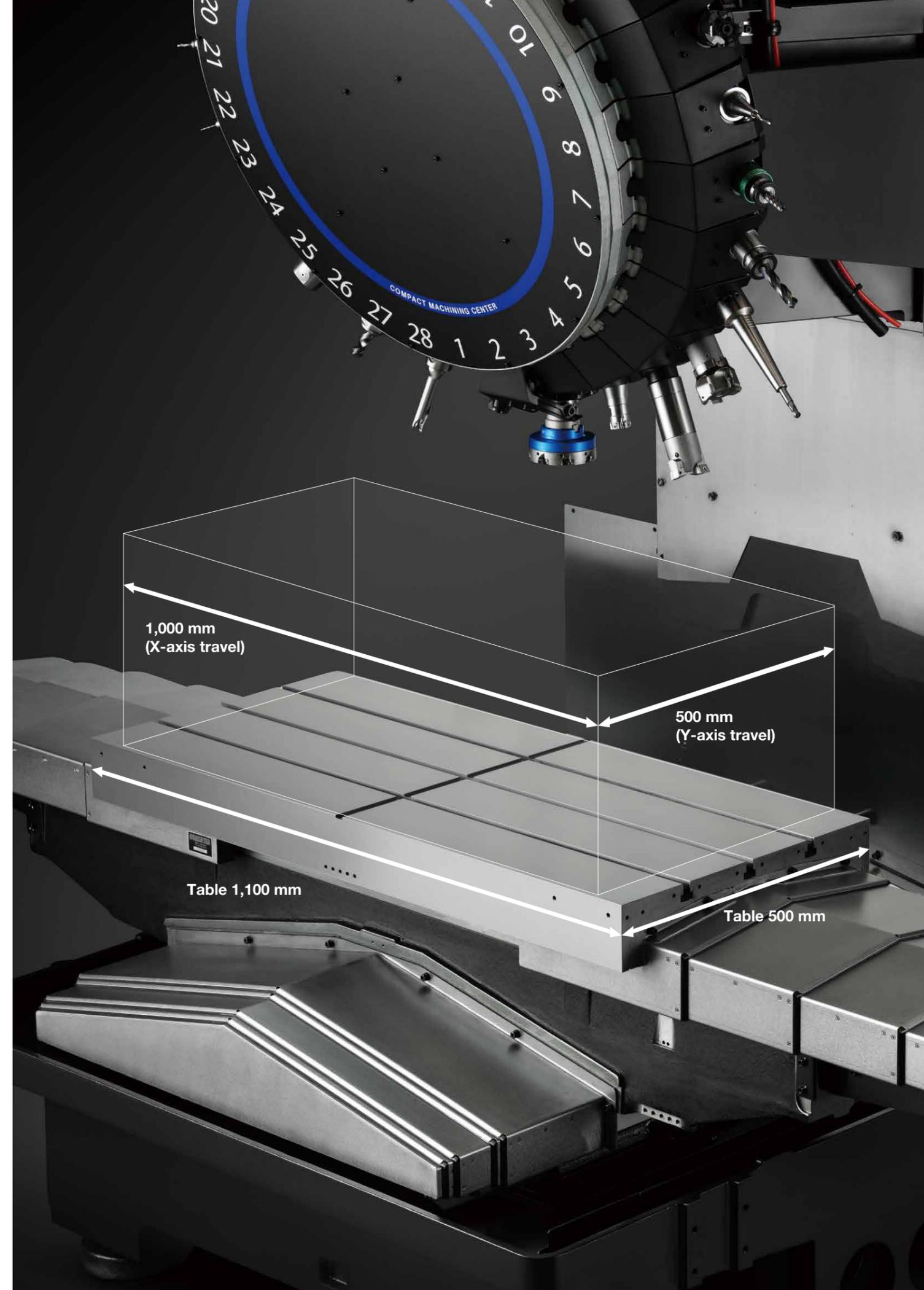
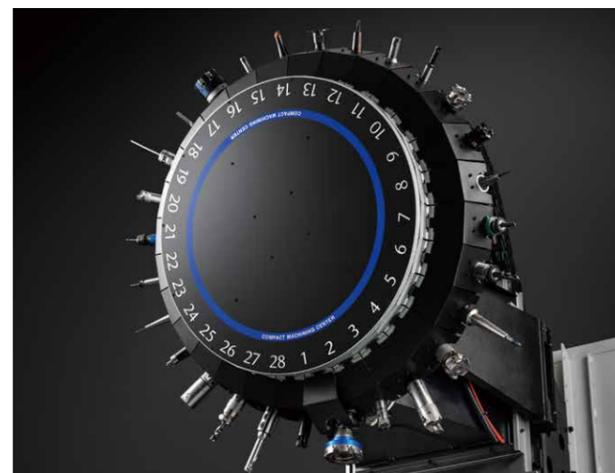
#### Large trunnion jig can be mounted

High column 150, 250, and 350 mm are available to meet different needs. Mounting a trunnion jig with a turning diameter of 540 mm enables multi-face machining of large parts.



#### 28-tool magazine available

In addition to 14- and 21-tool magazines, a drum type 28-tool magazine that maintains high-speed tool change performance can be mounted. This enables entire machining of large workpieces or multi-product small-volume production to the fullest potential.



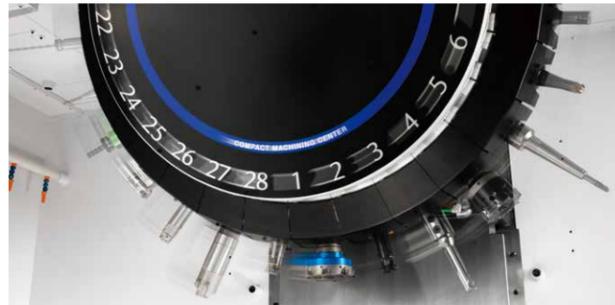
## Untiring pursuit of high productivity

### Reduction in waste by optimized control through machine/controller integrated development

Lightweight and low inertia features of BT30 machines and the original NC controller drive the machine performance to the fullest to provide high productivity.

#### Non-stop ATC

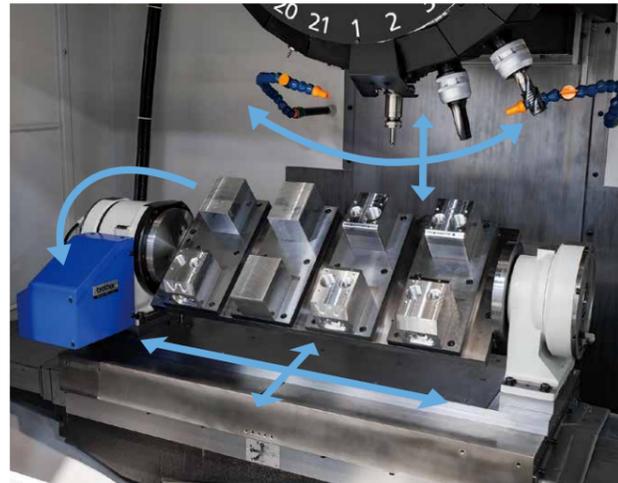
High-speed tool change has been achieved by faster and optimized spindle start/stop, Z-axis up/down, and magazine operation. Tools up to 3 kg can be changed in the shortest time. Tools up to 4 kg can also be changed with minimal increase in time.



	14/21-tool magazine (Standard tools)	28-tool magazine (Standard tools)	28-tool magazine (Heavy tools)
Chip-Chip	1.3s	1.4s	1.4s
Tool-Tool	0.6s	0.7s	0.8s

#### Simultaneous operation

Non-cutting time has been reduced by simultaneously performing tool change and positioning X/Y and additional axes.



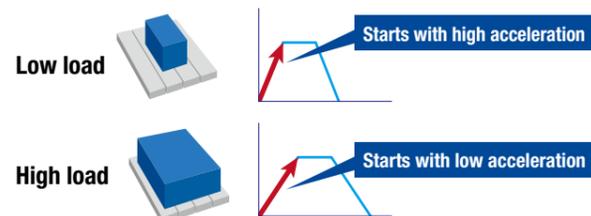
#### High acceleration/deceleration spindle

Using a low inertia spindle and high acceleration/deceleration spindle motor has achieved faster spindle start/stop.

Spindle start/stop time **0.15s or less** \* High-torque specifications

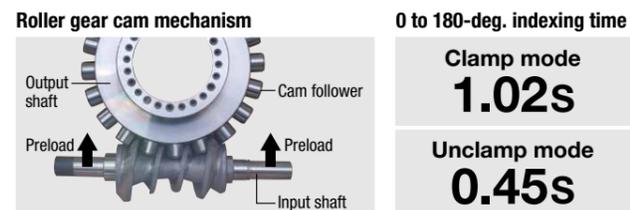
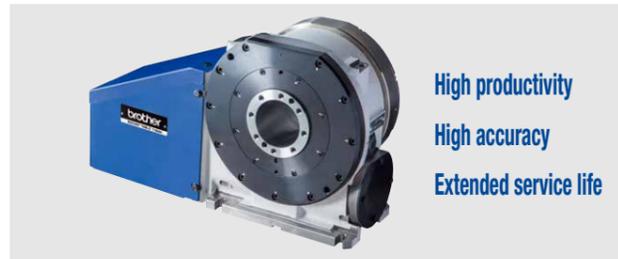
#### Optimal X/Y axes acceleration setting

This function sets the optimal acceleration for X/Y axes according to the table loading capacity.



#### Rotary table T-200Ad (optional)

Contributes to further improve productivity in multi-face machining. Use of the roller gear cam mechanism achieves high productivity, high accuracy, and extended service life.



# With highly efficient spindle motor and highly rigid structure, the machine is suitable for a broad range of machining

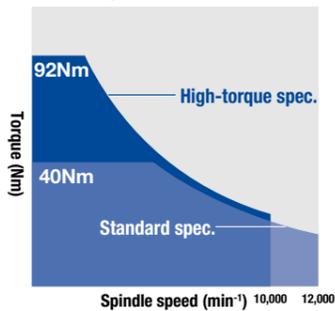
High rigidity has been achieved based on a special design of structural parts, including the base, column, and table, and use of a high-torque spindle motor.

The machine ensures stable machining in a broad range while demonstrating high machining capabilities.

## Newly developed and highly efficient 12,000 min<sup>-1</sup> spindle motor

The standard motor specifications have been upgraded from the previous 10,000 min<sup>-1</sup> to a newly developed 12,000 min<sup>-1</sup>. The spindle torque is maintained in the medium- and high-speed range. This achieves further reduction in machining time when performing highly efficient machining of aluminum or steel at high speed.

### Motor torque characteristics



High-torque spec. (optional)	
Max. torque	92N·m
Max. output	26.2kW
12,000 min <sup>-1</sup> spec. (standard)	
Max. torque	40N·m
Max. output	18.9kW

## Improved spindle rigidity

For 10,000 min<sup>-1</sup> high-torque specifications (optional), the spindle bearing diameter has been enlarged to enhance rigidity.

The machine demonstrates its capabilities in a broad range of machining, including heavy-duty machining of steel.



Spindle bearing diameter (high-torque spec.)  
**Larger by 10%**

## 7 MPa Coolant Through Spindle (CTS) (optional)

The CTS option can be selected from 3 MPa or 7 MPa. With this option, the machine can operate to its fullest potential in high-speed drilling or deep-hole drilling.

## Max. tool weight 4 kg

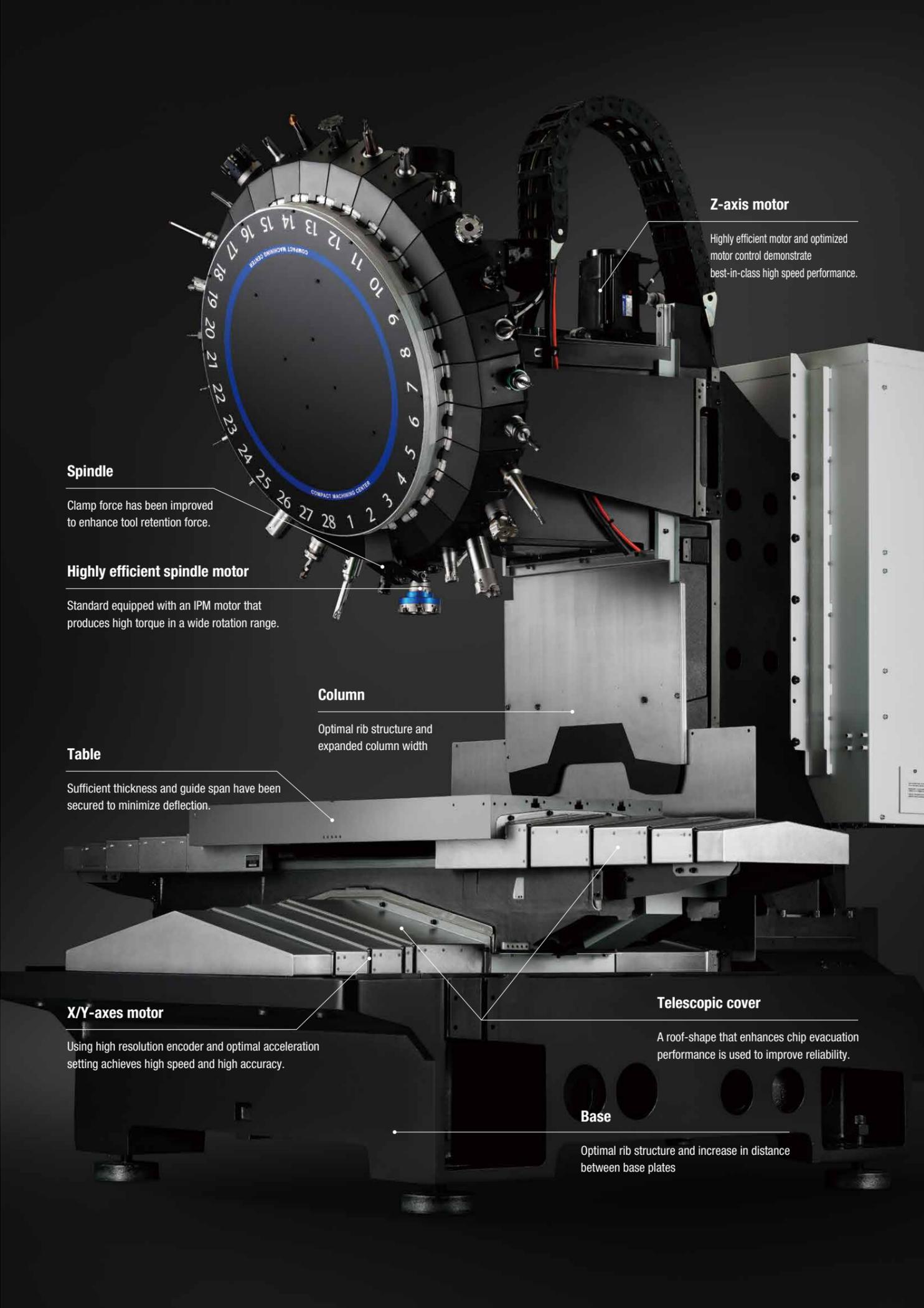
Heavy tools up to 4 kg can be mounted. Combined with large travels, the machine can meet a wide variety of applications.

\* Parameter setting needs to be changed. (Tool indexing time is changed.)

## Machining capability

		ADC	Cast iron	Carbon steel
<b>Drilling</b>	12,000min <sup>-1</sup>	D32 x 0.2 (1.26 x 0.008)	D28 x 0.15 (1.10 x 0.006)	D25 x 0.1 (0.98 x 0.004)
	10,000min <sup>-1</sup> high-torque	D40 x 0.2 (1.57 x 0.008) D30 x 0.7 (1.18 x 0.028)	D34 x 0.15 (1.34 x 0.006) D26 x 0.4 (1.02 x 0.016)	D30 x 0.15 (1.18 x 0.006) D26 x 0.25 (1.02 x 0.010)
	16,000min <sup>-1</sup>	D24 x 0.2 (0.94 x 0.008)	D23 x 0.15 (0.91 x 0.006)	D18 x 0.1 (0.71 x 0.004)
<b>Tapping</b>	12,000min <sup>-1</sup>	M27 x 3.0 (1-8UNC)	M27 x 3.0 (1-8UNC)	M22 x 2.5 (7/8-9UNC)
	10,000min <sup>-1</sup> high-torque	M39 x 4.0 (1 1/2-6UNC)	M33 x 3.5 (1 1/4-7UNC)	M27 x 3.0 (1-8UNC)
	16,000min <sup>-1</sup>	M22 x 2.5 (7/8-9UNC)	M22 x 2.5 (7/8-9UNC)	M16 x 2.0 (5/8-11UNC)
<b>Facing</b>	12,000min <sup>-1</sup>	1200 (73.2)	137 (8.4)	100 (6.1)
	10,000min <sup>-1</sup> high-torque	1920 (117.2)	303 (18.5)	256 (15.6)
	16,000min <sup>-1</sup>	960 (58.6)	83 (5.1)	54 (3.3)

\*Data obtained from tests conducted by Brother.



### Z-axis motor

Highly efficient motor and optimized motor control demonstrate best-in-class high speed performance.

### Spindle

Clamp force has been improved to enhance tool retention force.

### Highly efficient spindle motor

Standard equipped with an IPM motor that produces high torque in a wide rotation range.

### Column

Optimal rib structure and expanded column width

### Table

Sufficient thickness and guide span have been secured to minimize deflection.

### X/Y-axes motor

Using high resolution encoder and optimal acceleration setting achieves high speed and high accuracy.

### Telescopic cover

A roof-shape that enhances chip evacuation performance is used to improve reliability.

### Base

Optimal rib structure and increase in distance between base plates

# Equipped with new “CNC-D00” controller for improved usability Enhanced accessibility to make setup easier

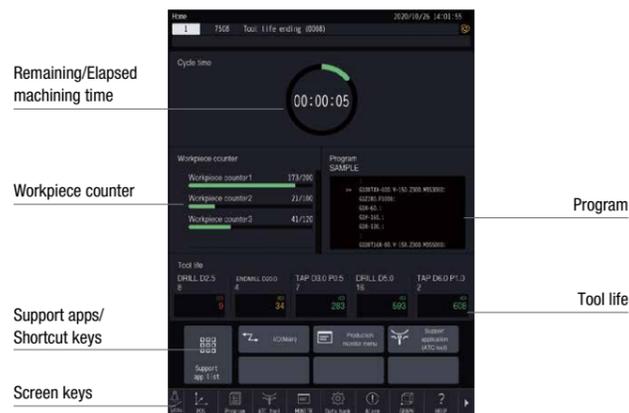
Intuitive operation is possible with new apps and 15-inch vertical LCD touch panel display.

Waste-free operation is possible in setup, machining adjustment, production, and recovery process, leading to improved work efficiency and operating rate.

Accessibility to the machine has been enhanced to enable smooth setup including workpiece change.

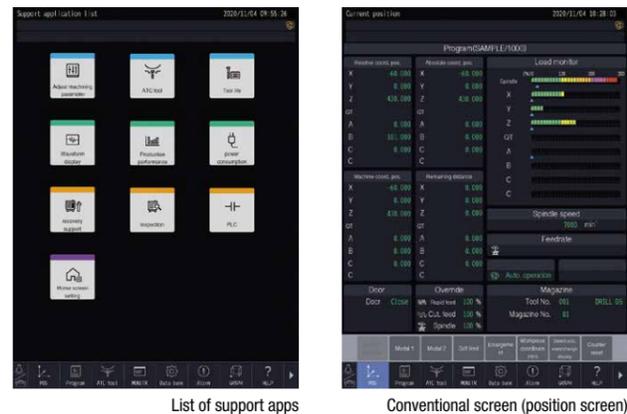
## Home screen

Information required for production, such as workpiece counter and tool life, is collected on the home screen. Shortcut keys are provided for screens frequently used so you can open them by one touch.



## New user interface

Usability has been greatly improved by grouping relevant functions, creating new support apps that are intuitive with improved operability and visibility, providing useful accessories (calculator, notebook, file viewer etc.), and making operation on conventional screens possible on the touch panel.



## Setup support

Equipped with functions to easily perform setup, such as an ATC tool app that enables all magazine tool settings to be performed on one screen, menu programming that enables you to create NC programs by following instructions on the screen, and an on-screen help function.



ATC tool app

## Machining adjustment support

Equipped with functions to easily perform optimal machining adjustment to improve productivity, such as a machining parameter adjustment app that enables you to easily adjust parameters according to machining details and a machining load waveform display/saving function.



Waveform display app

## Production support

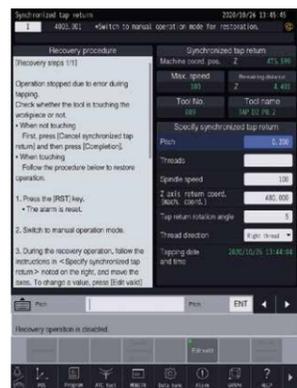
Equipped with functions to improve the operating rate, such as real time tool monitoring to eliminate defects, displaying production performance, power consumption etc. as a graph, and PLC/network functions to meet peripheral equipment and automation requirements.



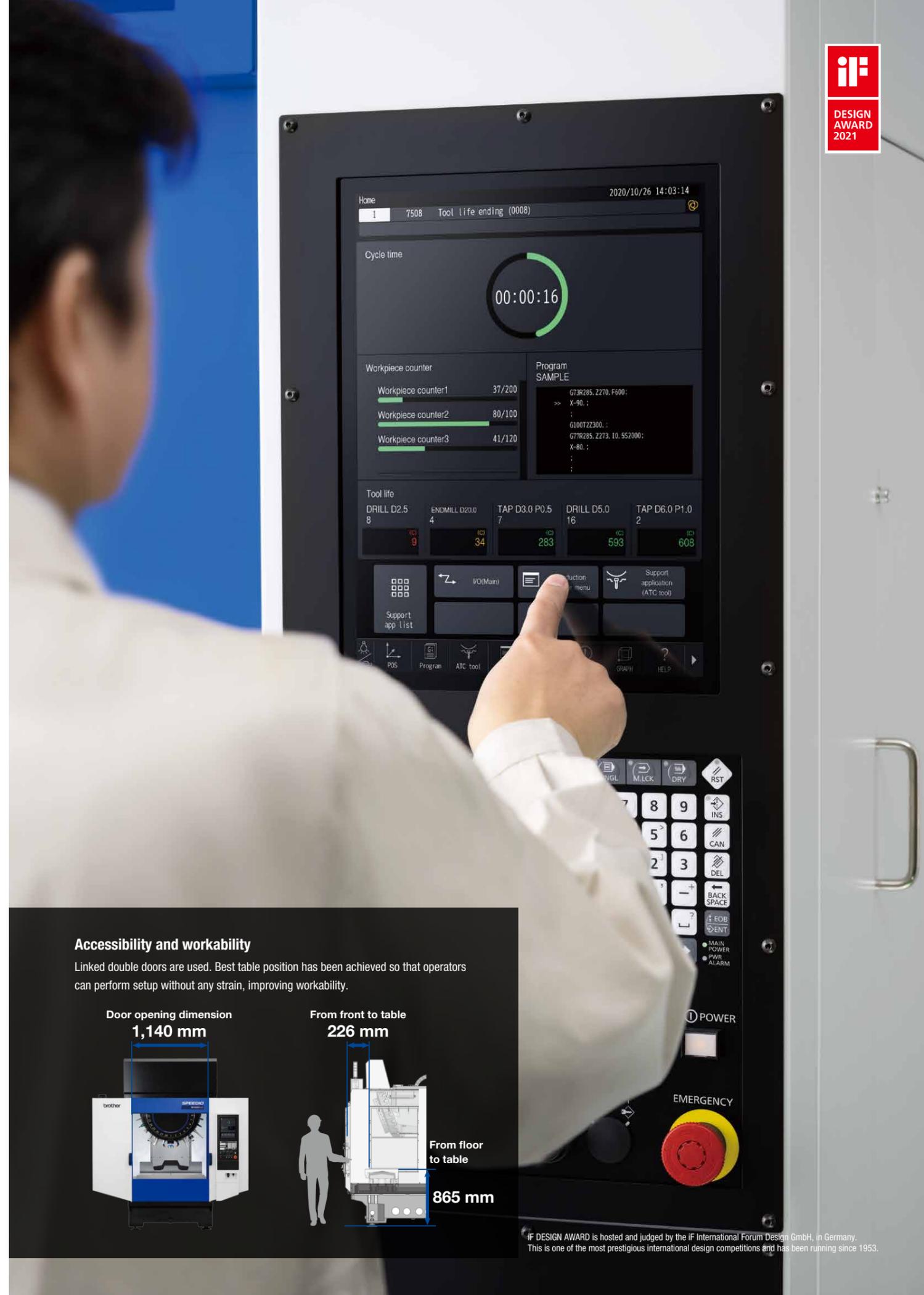
Production performance app

## Recovery support

Equipped with functions to prevent failure or ensure quick recovery, such as maintenance time notice, displaying details when an alarm occurs, and guidance for recovery/check work.

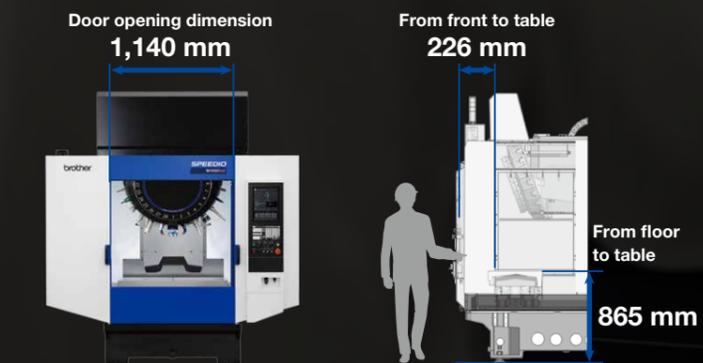


Recovery support app



## Accessibility and workability

Linked double doors are used. Best table position has been achieved so that operators can perform setup without any strain, improving workability.



## Reliability that ensures high productivity

## High environmental performance that encourages carbon neutrality

Reliability functions that prevent defective products and maintenance functions that prevent machine failure achieve high reliability and maintains high productivity.

Our efforts to improve environmental performance and effects of high productivity greatly reduce power consumption, creating an earth-friendly plant environment.

### Reliability and maintenance functions for prevention of defects/failures and quick recovery

The machine is equipped with many functions to maintain productivity at plants: functions that prevent possible defects in daily production sites, such as tool abrasion, omission of tool attachment, re-machining of the same workpiece, and deterioration in machining accuracy due to chips caught in spindle, and functions that assist with recovery in the case of machine failure or other problems.

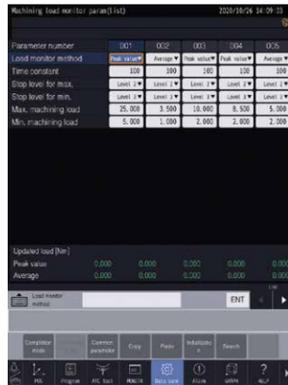
#### ATC tool monitoring

The presence of a spindle tool is checked before and after tool change without using a sensor.



#### Machining load monitoring

Machining load applied to the spindle is monitored to issue an alarm when the load is not within the preset value.



#### Stuck chips detection function

Chips caught between the spindle and the holder during ATC are detected without using a sensor. Detecting any chips caught during ATC prevents defects being delivered to downstream processes.

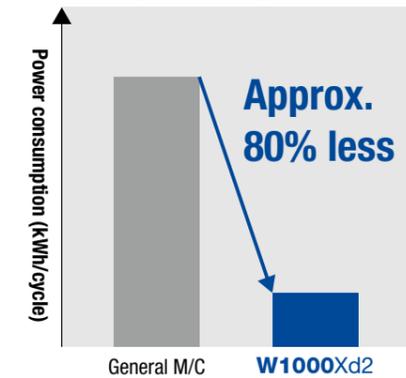
Tool No.	Tool Name	Tool ID	Status	Message
001	TOOL1	0.001	Normal	Value acquired
002	TOOL2	0.002	Normal	Value acquired
003	TOOL3	0.003	Normal	Value acquired
004	TOOL4	0.004	Normal	Value acquired
005	TOOL5	0.005	Normal	Value acquired
006	TOOL6	0.006	Normal	Value acquired
007	TOOL7	0.007	Chip stuck	Not acquired
008	TOOL8	0.008	Normal	Value acquired
009	TOOL9	0.009	Normal	Value acquired
010	TOOL10	0.010	Normal	Value acquired



#### Approach to carbon neutrality

Constantly strives to achieve sustainable society through development/sales of products with less environmental load and energy consumption.

#### Power consumption for one cycle



\* Data taken running machining program created by Brother

#### Low power consumption

In addition to the low inertia spindle and highly efficient spindle motor, the machine is equipped with various energy saving functions to lower power consumption.

#### Energy-saving technologies

Power regeneration system, highly efficient spindle motor, energy-saving pump, LED work light, energy-saving NC functions

#### Power consumption app

Current and past power consumption can be checked.

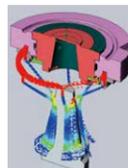


#### Low air consumption

Air related functions have been reviewed and optimized to eliminate any waste, leading to reduction in air consumption.

#### Air purge

A highly airtight structure achieved through repeated flow rate analysis reduces the amount of air used.



#### Spindle air blow

Amount of air used is reduced by discharging three times the conventional volume of air only when required.



#### High reliability – Measure for chips

Chip evacuation performance has been improved to support the wide machining area. Two chip shower pumps are installed to double the flow rate.

#### Roof-shape telescopic cover

Roof-shape telescopic covers are used for the X-Y-axes to prevent chips from building up.

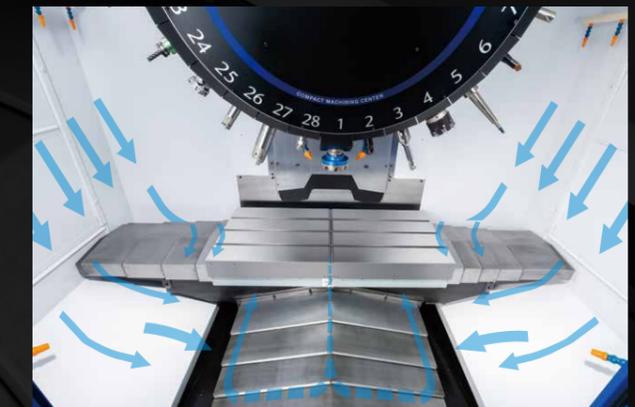


#### Tool washing, air assisted type (optional)

Discharge pressure and flow rate have been increased to steadily remove chips attached to the holder.



#### Image of chip evacuation flow

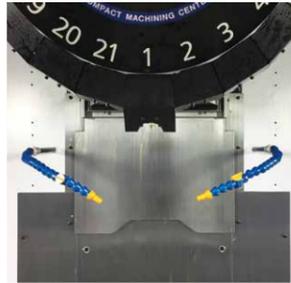




**Coolant tank**  
A large 200L tank is available. If you need a CTS spec. higher than 1.5 MPa, this will be custom-built.



**Coolant Through Spindle (CTS)**  
Can be selected from 3 MPa or 7 MPa. Pump and tank are not included.



**Column coolant nozzle**  
Powerfully removes chips on and around the workpiece to prevent chips building up.



**Head coolant nozzle**  
Coolant can reliably be applied to the machining section as the tool and nozzles are set in place.



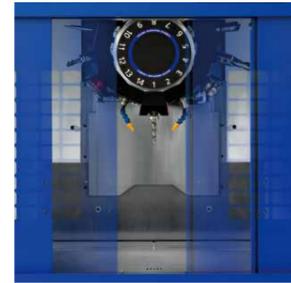
**Signal light (1, 2, or 3 lamps)**  
LED lamps are used. No maintenance required. Can be tilted to improve visibility.



**Automatic oil lubricator**  
Regularly applies oil to all lubricating points on the three axes.  
\* Manual greasing is required for the standard specification model.



**Automatic grease lubricator**  
Regularly applies grease to all lubricating points on the three axes.  
\* Manual greasing is required for the standard specification model.



**Automatic door with switch panel 10 holes**  
A motor-driven door is used, achieving smooth operation.



**Chip shower**  
Chip shower pipes are located at the upper section inside the machine for more efficient flow, and flexible shower nozzles can be directed to the side of the machine cover or sections where chips tend to accumulate.



**Tool washing, air-assisted type**  
High discharge pressure and flow rate efficiently remove chips attached to the holder. Equipped with a filter clog warning function.



**Fixture shower valve unit**  
Consists of jig washing valves and pipes to the ceiling of the machine. Pipes from the machine to the required location must be prepared by customers.



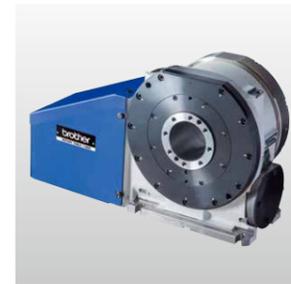
**Cleaning gun**  
Helps clean the workpiece or chips inside the machine after machining.



**Area sensor**  
Optical area sensors are used. Use area sensors to prevent operators being caught in the automatic door.



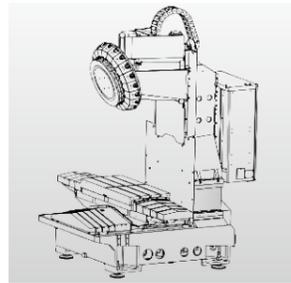
**Manual pulse generator**  
A cable is provided for the manual pulse generator, making setup easier. Equipped with emergency stop and enable switches.



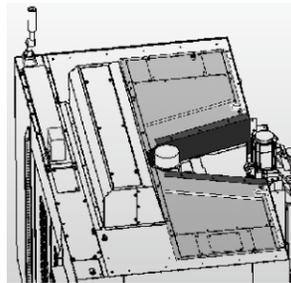
**Rotary table T-200Ad**  
Use of the roller gear cam mechanism achieves high productivity, high accuracy, and extended service life.



**Tool breakage detector, touch type**  
A touch switch type tool breakage detector is available.



**High column (150 mm, 250 mm, or 350 mm)**  
150 mm, 250 mm and 350 mm high columns are available to meet customer's needs.



**Top cover**  
Shutting the opening on the top prevents coolant or chips splashing outside of the machine. A hole for the mist collector is provided.



**Side cover with transparent window, single side**  
External light is drawn in to make the inside of the machine brighter and improve visibility.



**Work light (right side, left side)**  
LED lamps are used to extend lamp life and save energy.



**Spindle override**  
Spindle speed can be changed without changing the program.



**Switch panel (8 holes or 10 holes)**  
Various switches, such as automatic door open/close switches, are set in specific locations. The switch panel (8 holes) is also available so that the position of the manual pulse connector can be changed.



**Master on circuit**  
Master on circuit and switch can be attached.  
\* A switch panel (8 holes or 10 holes) is required separately.



**RS232C 25-pin connector**  
RS232C 25-pin connector can be attached to the side of the control box.

- Coolant tank
  - 1) Coolant tank 200L
  - 2) Coolant tank 200L for CTS 1.5 MPa with cyclone filter
- Coolant through spindle (CTS) piping, Max. 3 MPa
- Coolant through spindle (CTS) piping, Max. 7 MPa
- Column coolant nozzle
- Head coolant nozzle
- Chip shower
- Tool washing, air-assisted type
- Fixture shower valve unit
- Cleaning gun
- Mesh basket for collecting chips

- High column (150 mm, 250 mm, or 350 mm)
- Top cover
- Side cover with transparent window, single side
- Work light, 1 lamp for right side
- Work light, 1 lamp for left side
- Signal light (1, 2, or 3 lamps)
- Automatic oil lubricator
- Automatic grease lubricator
- Automatic door with switch panel 10 holes
- Area sensor
- Manual pulse generator with enable switch
- Connector and hook for manual pulse generator with enable switch
- Rotary table T-200Ad
- Tool breakage detector, touch type

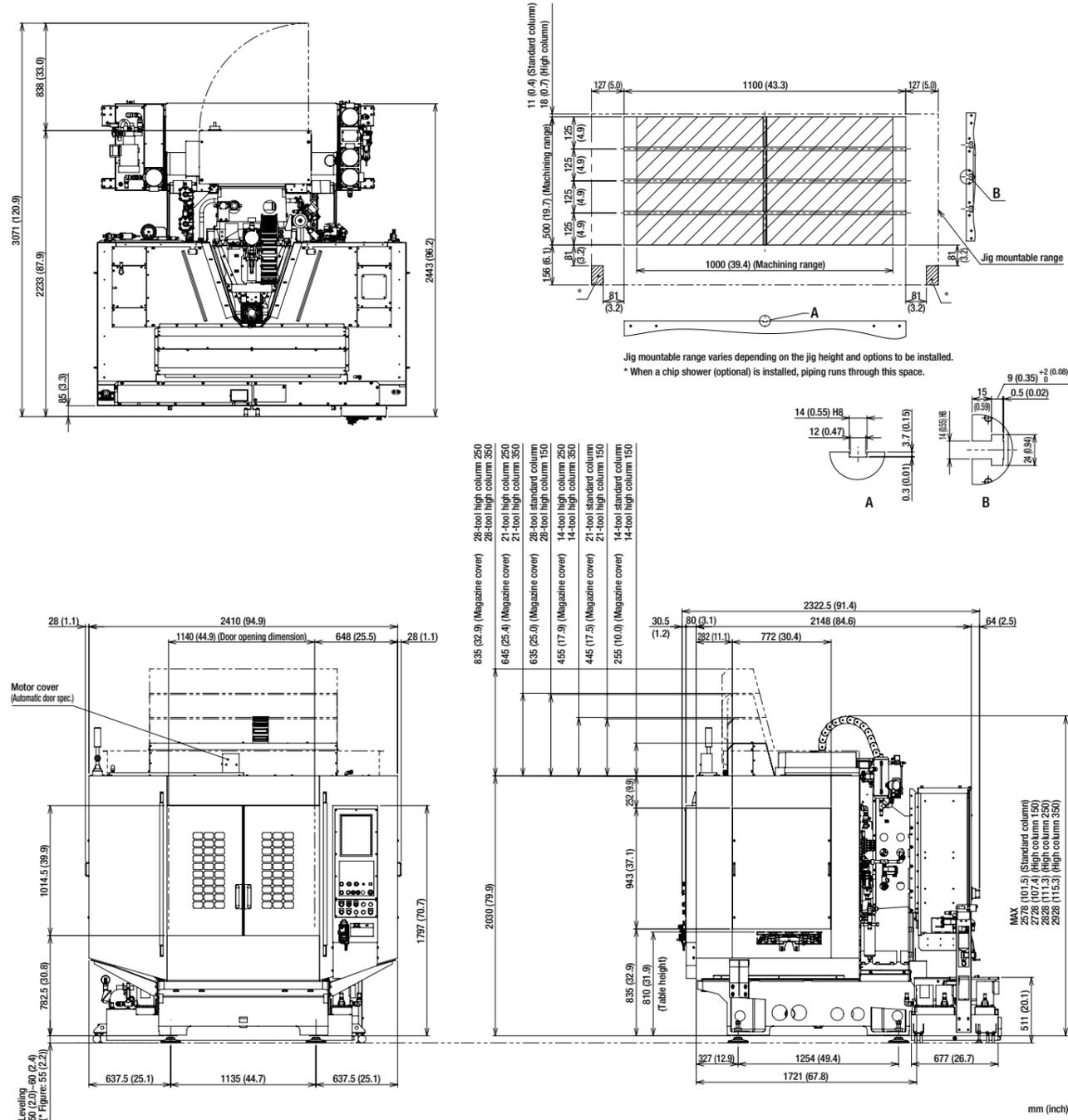
- Additional axis cable (for 1 axis or 2 axes)
- Spindle override
- Switch panel (8 holes or 10 holes)
- Grip cover for 14/21/28-tool magazine
- Data protection switch, key type
- Master on circuit
- RS232C 25-pin connector at control box
- 100V outlet in control box
- Folding door (two-door)
- Power supply expansion 50A
- Parts name sticker set
- Specified color
- Transformer box

- Origin alignment mark
- EXIO board assembly
  - 1) EXIO board, input32/output32, additional #1
  - 2) EXIO board, input32/output32, additional #2
- PLC programming software for D00
- Industrial network
  - 1) CC-Link, master station
  - 2) CC-Link, remote device station
  - 3) PROFIBUS DP, slave
  - 4) DeviceNet, slave
  - 5) PROFINET, slave
  - 6) EtherNet/IP, slave
- Memory expansion 3 Gbytes

- Please read the instruction manuals and safety manuals before using Brother products for your own safety.
- When using oil-based coolant or when machining materials which can cause a fire (ex. magnesium, resin), customers are requested to take thorough safety measures against fire. The types of cutting material, cutting tools, coolant, or lubrication oil may have an influence on the machine's lifecycle. For further questions, please contact our sales representative.
- Leave 700 mm between machines as a maintenance space.
- When exporting our machine together with additional 1-axis rotary table or compound rotary table (including case that a rotary table is scheduled to be installed overseas), the machine is deemed to be included in the "applicable listed items" controlled by the Foreign Exchange and Foreign Trade Law of Japan. When exporting the machine, please obtain required permissions, including an export license, from the Ministry of Economy, Trade and Industry (METI) or Regional Bureaus of Economy, Trade and Industry before shipment. When re-selling or re-exporting the machine, you may need to obtain permissions from METI, and the government of the country where the machine is installed.
- When exporting our machine together with compound rotary table (including case that a rotary table is scheduled to be installed overseas), as a machine conforming to Row 2 of Appended Table 1 of Export Trade Control Order, a relocation detection device is installed on the machine depending on the destination country. After relocating the machine with the detection device, the machine is locked and any operation is temporarily impossible. Please inform your local distributor of machine relocation in advance and apply to perform the release operation of relocated machine.
- In order to operate our machine with an additional axis rotary table installed separately overseas after exporting the machine, the procedure to activate the axis of rotary table is needed. Please inform your local distributor of these processes in advance, because the predetermined procedure is required to perform the activation. In addition, for export to some countries and regions other than "Group A countries", it is not possible to install a compound rotary table separately overseas after exporting the machine. Please make sure to obtain the export license of the machine together with compound rotary table before shipment.

\*The type of coolant may have a significant influence on the machine's lifecycle. It is recommended to use high-lubricity (emulsion type) coolant. Do not use chemical solution type (synthetic type) coolant, as it may cause damage to the machine.  
\*When using CTS (Coolant Through Spindle) function, do not use flammable coolant (ex. oil-based type).

External dimensions



NC unit specifications

CNC model	CNC-D00
Control axes	5 axes (X, Y, Z, 2 additional axes)
Simultaneously controlled axes	Positioning 5 axes (X, Y, Z, 2 additional axes) Interpolation Linear: 4 axes (X, Y, Z, 1 additional axis) Circular: 2 axes Helical/Conical: 3 axes (X, Y, Z) Involute interpolation (optional)
Least input increment	0.001 mm, 0.0001 inch, 0.001 deg.

Max. programmable dimension	±999999.999 mm, ±99999.9999 inch
Display	15-inch color LCD touch display
Memory capacity	500 Mbytes, 3 Gbytes(optional) (Total capacity of program and data bank)
External communication	USB memory interface, Ethernet, RS232C (optional)
No. of registrable programs	4,000 (Total capacity of program and data bank)
Program format	NC language, conversational language (changed by parameter) Conversion from conversational language program to NC language program available

\*\*Control axes" and "Simultaneously controlled axes" indicate the maximum number of axes, which will differ depending on the destination country and the machine specifications.  
\*Ethernet is a registered trademark of Xerox Corporation in the United States.

Machine specifications

Item		W1000Xd2 / W1000Xd2 RD *10	
CNC unit		CNC-D00	
Travels	X axis	1,000 (39.4) mm(inch)	
	Y axis	500 (19.7) mm(inch)	
	Z axis	380 (15.0) mm(inch)	
	Distance between table top and spindle nose end	150~530 (5.9~20.9) mm(inch)	
Table	Work area size	1,100 x 500 (43.3 x 19.7) mm(inch)	
	Max. loading capacity (uniform load)	300 [500 *1] [661 [1,102 *1]] kg(lbs)	
Spindle	Spindle speed	12,000min <sup>-1</sup> specifications: 1~12,000, 10,000min <sup>-1</sup> high-torque specifications (optional): 1~10,000, 16,000min <sup>-1</sup> specifications (optional): 1~16,000 min <sup>-1</sup>	
	Speed during tapping	MAX. 6,000 min <sup>-1</sup>	
	Tapered hole	7/24 tapered NO.30	
	BT dual contact spindle (BIG-PLUS)	Optional	
Feed rate	Coolant through spindle (CTS)	Optional	
	Rapid traverse rate (XYZ-area)	50 x 50 x 56 (1,969 x 1,969 x 2,205) m/min(inch/min)	
ATC unit	Cutting feed rate	X, Y, Z: 1~30,000 (0.04~1,181) *2 mm/min(inch/min)	
	Tool shank type	MAS-BT30	
	Pull stud type *3	MAS-P30T-2	
	Tool storage capacity	14 / 21 / 28 pcs.	
	Max. tool length	250 (9.8) mm(inch)	
	Max. tool diameter	ø110 (4.3) mm(inch)	
	Max. tool weight *4	3.0 (6.6) [4.0(8.8) *5] / tool, (TOTAL TOOL WEIGHT: 25 (55.1) for 14 tools, 35 (77.2) for 21 or 28 tools) kg(lbs)	
	Tool selection method	Random shortcut method	
	Tool change time *6	Tool To Tool	0.6 / 0.7 (14 or 21 tools / 28 tools) sec
		Chip To Chip	1.3 / 1.4 (14 or 21 tools / 28 tools) sec
Electric motor	Main spindle motor (10min/continuous) *7	12,000min <sup>-1</sup> specifications: 10.1/7.0, 10,000min <sup>-1</sup> high-torque specifications (optional): 12.8/9.2, 16,000min <sup>-1</sup> specifications (optional): 7.4/5.1 kW	
	Axis feed motor	X, Y axis: 1.0 Z axis: 2.0 kW	
Power source	Power supply	AC 200 to 230 V ± 10%, 3-phase, 50 / 60Hz ± 2%	
	Power capacity (continuous)	12,000min <sup>-1</sup> specifications: 9.5, 10,000min <sup>-1</sup> high-torque specifications (optional): 10.4, 16,000min <sup>-1</sup> specifications (optional): 9.5 kVA	
	Air supply	Regular air pressure 0.4~0.6 (recommended value 0.5MPa) *8 MPa Required flow 45 L/min	
Machine dimensions	Height	2,633 (103.7) mm(inch)	
	Required floor space *11 [with control unit door open]	2,410 x 2,233 [3,071] (94.9 x 87.9 [120.9]) mm(inch)	
	Weight	3,350 (7,385) kg(lbs)	
Accuracy *9	Accuracy of bidirectional axis positioning (ISO230-2:1988)	0.006~0.020 (0.00024~0.00079) mm(inch)	
	Repeatability of bidirectional axis positioning (ISO230-2:2014)	Less than 0.004 (0.00016) mm(inch)	
Front door		2doors	
Standard accessories	Instruction Manual (DVD 1 set), leveling bolts (4 pcs.), leveling plate (4 pcs.)		

\*1. Parameter setting needs to be changed. (Table travel time is changed.) \*2. Value when using high accuracy mode B \*3. Brother specifications apply to the pull studs for CTS. \*4. Maximum tool weight differs depending on the configuration and center of gravity. The figures shown here are for reference only. \*5. Parameter setting needs to be changed. (Tool indexing time is changed.) \*6. Measured in compliance with JIS B6336-9 and MAS011-1987. \*7. Spindle motor output differs depending on the spindle speed. \*8. Regular air pressure varies depending on the machine specifications, machining program details, or use of peripheral equipment. Set the pressure higher than the recommended value. \*9. Measured in compliance with ISO standards and Brother standards. Please contact your local distributor for details. \*10. The machine needs to be equipped with a relocation detection device depending on the destination. Machines equipped with a relocation detection device come with "RD" at the end of the model name. \*11. Dimensions not including the coolant tank.

NC functions

Operation	Dry run	<Optional>	<Optional>	One-way positioning
Monitoring	Machine lock	High accuracy mode BII (Look-ahead 1,000 blocks, smooth path offset)	CC-Link, master station	Inverse time feed
	Program restart		CC-Link, remote device station	Programmable data input
	Rapid traverse override		PROFIBUS-DP, slave	Tool length compensation
	Cutting feed override	Machining load monitoring	DeviceNet, slave	Cutter compensation
	Background editing	ATC tool monitoring	PROFINET, slave	Scaling
	Screen shot	Overload prediction	EtherNet/IP, slave	Mirror image
	Operation level	Waveform display / Waveform output to memory card		External sub program call
	External input signal key	Heat expansion compensation system II (X, Y, and Z axes)	Energy saving	Macro
	Shortcut keys	Production performance display	Automatic power off	Operation in tape mode
	<Optional>	Tool life / Spare tool	Standby mode	Multiple skip function
Programming	Spindle override		Automatic coolant off	<Optional>
	Absolute / Incremental	Maintenance	Automatic work light off	Submicron command *2
	Inch / Metric	Tap return function	Chip shower off delay	ATC tool
	Coordinate system setting	Status log		Tool life
	Corner C / Corner R	Alarm log	Support apps	Waveform display
	Rotational transformation	Operation log	Adjust machine parameters	Production performance
	Synchronized tap	Maintenance notice	ATC tool	Power consumption
	Subprogram	Motor insulation resistance measurement	Tap return function	Recovery support
	Graphic display	Tool washing filter with filter clogging detection	Status log	Inspection
	Automatic workpiece measurement *1	Battery-free encoder	File viewer	PLC
Measurement	Tool length measurement	Brake load test	Notebook	Automatic cutting condition setting
	Machining parameter adjustment	Automatic / Network	Calculator	Automatic tool length compensation setting
	High-accuracy mode AIII	Computer remote	Register shortcut	Automatic cutter compensation setting
	High-accuracy mode BI (look-ahead 160 blocks)	OPC UA	Display off	Automatic calculation of unknown number input
	Backlash compensation	Auto notification	NC language functions	Machining order control
		Built-in PLC (LD/ST/FBD)	Menu programming	
			Local coordinate system	
			Expanded workpiece coordinate system	

\*1. Measuring instrument needs to be prepared by users. \*2. When the submicron command is used, changing to the conversational language program is disabled. \*3. There are restrictions on the axis configuration.

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Figures in brackets ( ) are the country codes.

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Specifications may be subject to change without any notice.

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