

# ***SPEEDIO***

<b>S300Xd1</b>	<b>R450Xd1</b>	<b>U500Xd1</b>
<b>S500Xd1</b>	<b>R650Xd1</b>	<b>F600X1</b>
<b>S700Xd1</b>	<b>M200Xd1</b>	<b>H550Xd1</b>
<b>W1000Xd2</b>	<b>M300Xd1</b>	

# Cutting Out the Waste

Times are changing. Are you ready?  
You need a machine that's fast and compact.  
With the ability to make any cut.  
In this world, only the strong survive.  
Make it better with SPEEDIO.

***SPEEDIO***

Extensive lineup further expands the potential of #30 spindle machines, and provides customers with the best waste-free solution

**S**

Compact Machining Center

**S300Xd1**



**S500Xd1**



**S700Xd1**



**W**

Wide Travel Compact Machining Center

**W1000Xd2**



**U**

Universal Compact Machining Center

**U500Xd1**



**R**

Pallet Changing Compact Machining Center

**R450Xd1**



**R650Xd1**



**F**

High Rigidity Compact Machining Center

**F600X1**



**H**

Horizontal Compact Machining Center

**H550Xd1**



**M**

Compact Multi-Tasking Machine

**M200Xd1**



**M300Xd1**



Special Options

Rotary Table  
**T-200Ad / T-200A**



Loading System  
**BV7-870Ad**



## Pursuit of high productivity

High-speed operations and optimized control have been achieved by the #30 spindle taper and original NC, enabling the machine to demonstrate high productivity.

### Non-stop ATC

Fastest tool change among #30 spindle machines has been achieved by quick start/stop of the spindle, high acceleration and quick response when the Z-axis moves up and down, and optimized magazine operation.



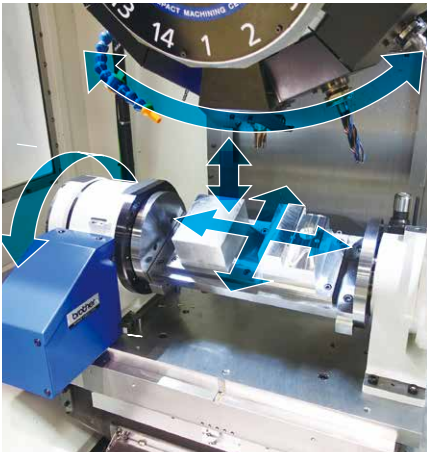
### Highly responsive servomotor

World's fastest highly accurate tapping has been achieved, using our original synchronized tapping control and a fast acceleration/deceleration spindle motor.



### Simultaneous operation

Using the original non-stop ATC code (G100) allows the machine to simultaneously position the X/Y- and additional axes while performing a tool change, leading to further reduction of wasted time.

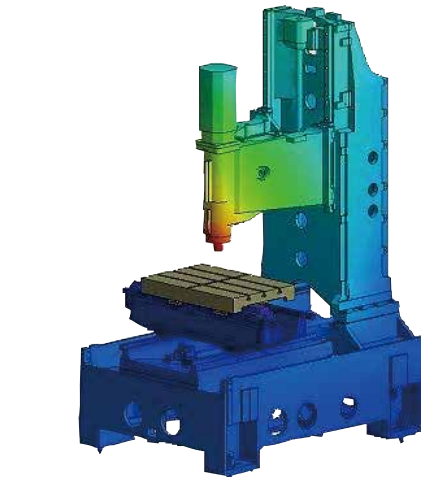


## Pursuit of machining capabilities

The highly rigid structure and high-power spindle motor allow the machine to demonstrate its broad machining capabilities, from high-efficiency machining to heavy-duty machining.

### Highly rigid structure

Based on accumulated data using analysis technologies, a highly rigid structure with vibration suppressed has been achieved, allowing the machine to demonstrate excellent machining capabilities.



### High-power spindle motor

High-speed, high-efficiency machining has been achieved using a spindle motor with high torque in the medium- and high-speed range. High-torque specifications (optional) greatly improve low-speed range torque, providing excellent heavy-duty machining for steel workpieces.

#### Medium- and high-speed range enabling high-efficiency machining



Grooving using standard specs

Machining details  
Cutting amount: 150 cc/min  
Material: Carbon steel  
(D16 end mill used)

#### Low-speed range suitable for heavy-duty machining



Large hole drilling using high-torque specs

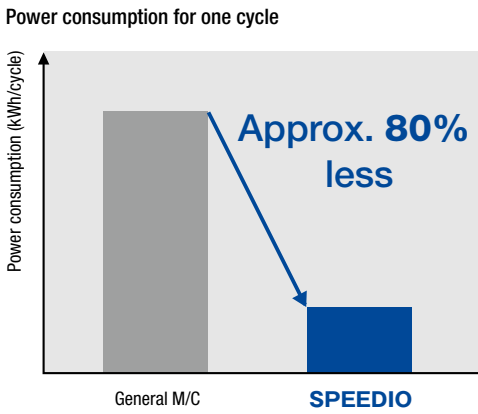
Machining details  
Hole diameter: D40 mm  
Material: Carbon steel

## Pursuit of environmental performance

Reduction in power and air consumption results in a great decrease in CO<sub>2</sub> emissions, making the machine more earth-friendly and providing high environmental performance.

### Low power consumption

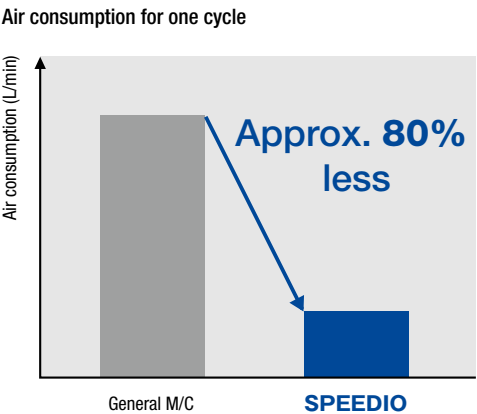
Equipped with a power regeneration system that reuses energy generated when decelerating, high-efficiency motor, energy saving pump, LED work light and other energy saving functions, achieving low power consumption.



\*Data taken running machining program created by Brother

### Low air consumption

Chip removal performance has been enhanced by optimizing the air purge path and spindle air blow timing, greatly reducing air consumption.



\*Data taken running machining program created by Brother

## Pursuit of Usability

Optimizing usability for manufacturing by eliminating any waste improves work efficiency and operating rate at production sites.



CNC-D00 controller

New "CNC-D00" controller  
Intuitive operation is possible with 15-inch vertical touch panel screen and new support apps.  
Relevant functions are grouped according to purpose, such as setup and machining settings, leading to efficient operation.  
Production and operation states are visualized, allowing faster understanding.  
Any wasted operation is eliminated in each process.

### 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.

### 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.

### 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.

### 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.





**S** High performance model suitable for a broad range of machining applications  
 Extensive spindle specifications and machine sizes  
 Further pursuing high productivity  
 and high reliability



S300Xd1



S500Xd1



S700Xd1



### Pursuit of high productivity

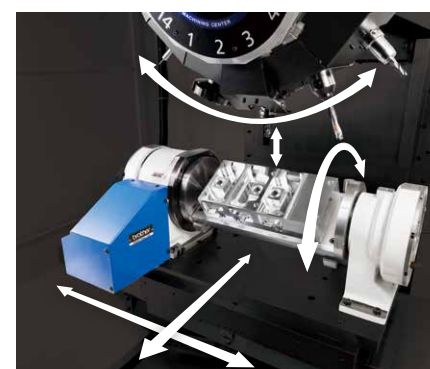
Optimizing control with the new "CNC-D00" controller eliminates all possible wasted operation during machining. Drives highly reliable machine performance to the limit to provide high productivity.

### Non-stop ATC and 28-tool magazine

In addition to 14- and 21-tool magazines, a 28-tool magazine has been developed with high-speed tool change performance maintained. The maximum tool weight has been increased to 4 kg. Tool change time of 14- and 21-tool magazines has been further reduced by optimized magazine operation, etc.



### Simultaneous operation



Z-axis acceleration : **2.2G**

### High machining capabilities and high reliability

Highly rigid machine structure and highly efficient spindle motor enable a board range of machining.

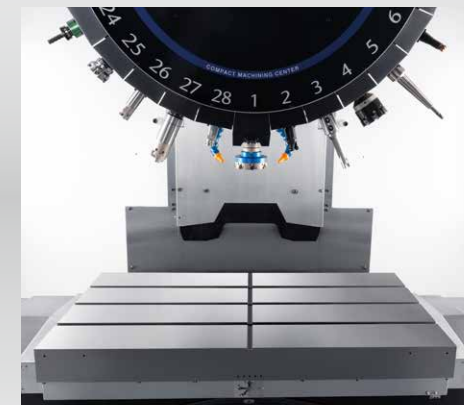
Standard spec.	Max. torque (instantaneous)	<b>40N·m</b>
	Max. output	<b>18.9kW</b>
High-torque spec. (Optional)	Max. torque (instantaneous)	<b>92N·m</b>
	Max. output	<b>26.2kW</b>

### Prevention of chip problems

Roof-shape telescopic covers are used for the X/Y-axes to help chips flow smoothly. The shape for the chip flow path from the machining room to the tank was devised to increase the flow speed. Changing the shape under the Y-axis telescopic cover and increasing the flow rate have improved chip evacuation performance by almost two-fold.



**W** Wide travel model with the largest machining area among BT30 spindle machines  
 Unprecedented large machining area enables  
 highly productive machining  
 from small to large parts



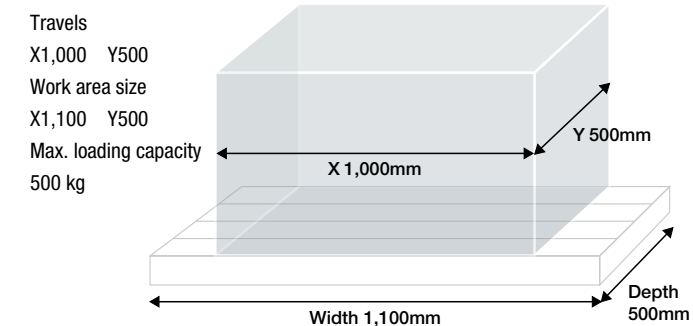
W1000Xd2



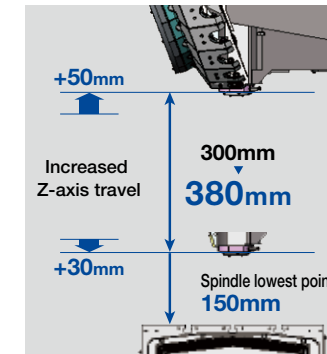
### A variety of machining from small to large workpieces

Machine's abilities to handle large workpieces and multi-type small-volume products have been further enhanced by the largest travels of any BT30 machines at X1,000 mm and Y500 mm, maximum loading capacity of 500 kg, and increased Z-axis travel.

### Ample travels and table size



### Increased Z-axis travel



Z-axis travel  
 300mm ▶ **380mm**

### Machining of large workpieces



### Multi-part machining of small workpieces



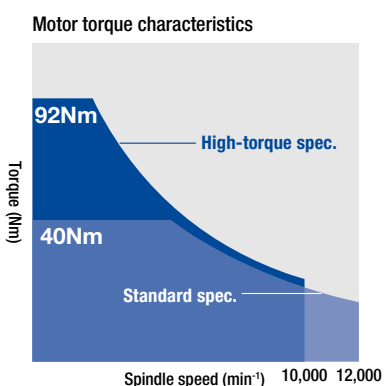
### A broad range of machining

The machine can perform a broader range of machining with the newly developed 28-tool magazine (optional), newly developed 12,000 min<sup>-1</sup> standard spindle motor, and improved spindle rigidity for high-torque specifications.

### 28-tool magazine



### High-power spindle motor



### Improved spindle rigidity



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

**M** Mass production type multi-tasking machine encourages process integration  
Newly developed magazine and new controller further encourage process integration



M200Xd1



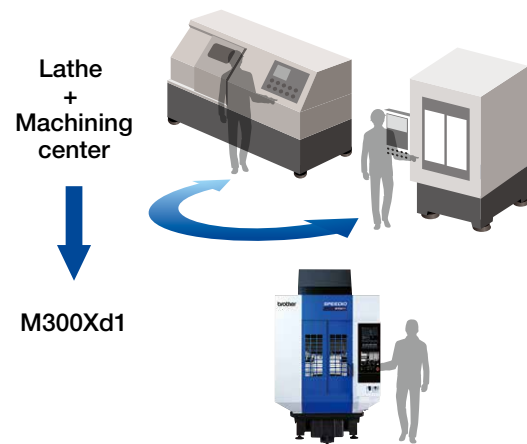
M300Xd1



Awarded to M200Xd1

### Complex machining

Turning and milling can be completed through one-time chucking on one machine. There is no handling between turning and milling, leading to various advantages.



M300Xd1

### Machine structure

A roller gear cam is used for the tilt axis (A-axis), a DD motor for the turning spindle (C-axis), and an original double plunger lock to secure turning tools.

#### Turning spindle (C-axis)



A high-speed and high-power built-in DD motor is used for the turning spindle (C-axis). Enabling efficient turning and high-speed indexing.

#### Double plunger lock



An original double plunger lock is used to secure turning tools, achieving excellent tool change repeatability.

### 28-tool magazine

In addition to a 22-tool magazine, a newly developed 28-tool magazine is available. High-speed tool change has been achieved by faster and optimized spindle start/stop, Z-axis up/down, and magazine operation.



### Simultaneous 5-axis machining \*1

Provided with functions required for simultaneous 5-axis machining, including tool center point control where machining is performed by changing the tool direction relative to the workpiece, look-ahead max. 1,000 blocks, and submicron command.



Artificial bone

\*1 Available only for the M200Xd1-5AX/M300Xd1-5AX.

### A-axis clamp

The mechanical clamp plus servo clamp method enables the machine to demonstrate high machining capabilities in high-load machining and stable lathe turning, improving machining accuracy. A double type clamp mechanism, where clamps are provided on the left and right sides, is available to further enhance high machining capabilities.

A-axis clamp torque	
Single	695N·m
Double	975N·m

**R** Non-stop machining model equipped with a pallet changer  
Extensive magazine variation further promotes process integration



R450Xd1

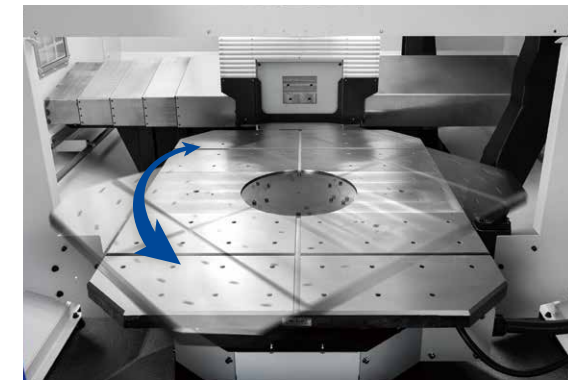
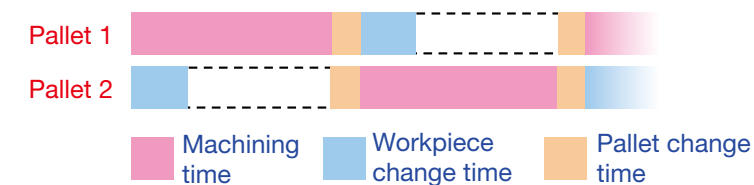


R650Xd1



### Non-stop machining

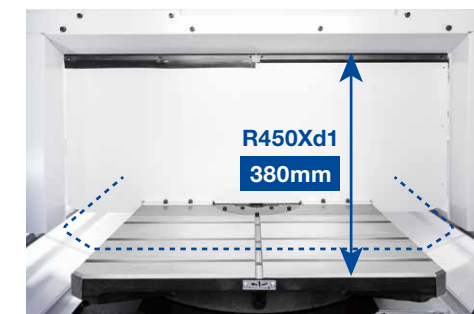
The QT (Quick Turn) table is a turntable type high-speed 2-face pallet changer. Optimized acceleration/deceleration control achieves much faster pallet change. To ensure high reliability, effects by chips etc. are minimized by a turntable that avoids lift-up motion and has a sealed structure, and positioning accuracy is maintained by the stopper mechanism. Workpieces on one pallet can be changed while machining workpieces on the other pallet. Waste in workpiece change time is eliminated, enabling non-stop machining.



Pallet change time	R450Xd1	2.7s
	R650Xd1	3.1s

### Large jig area

Even if the jig protrudes from the table, it can be mounted as long as it is within the pallet turning diameter. The jig area can be further expanded by selecting a low table option that increases the jig height or a turning diameter enlargement option that increases the jig space.



Max. jig height *1	
R450Xd1	380mm
R650Xd1	450mm

\*1 The values shown here are for low table specifications.

### Extensive magazine variation \*2 (14/22/28/40-tool magazines)

In addition to 14-, 22-, and 40-tool magazines, a newly developed 28-tool magazine is available. This promotes process integration, taking advantage of a 2-face pallet changer, and encourages productivity improvement.



40-tool magazines

\*2 The 40-tool magazine is only available for the R650Xd1.



**U** Equipped with a newly developed tilting rotary table with a maximum jig area of 500 mm in diameter  
**Performs universal indexing,**  
**encouraging process integration**



**U500Xd1**



### Process integration for multi-face machining

Less space achieved although the machine is equipped with a high-speed and highly accurate tilting rotary table with ample jig area and a newly developed 28-tool magazine. One-clamp machining encourages process integration.

### Tilting rotary table

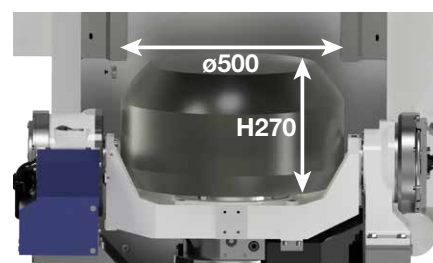
Roller gear cam mechanism is used for A and C axes, achieving high retention strength and backlash-free high-speed and highly accurate indexing.

Max. rotary speed		
A-axis	50min <sup>-1</sup>	C-axis 75min <sup>-1</sup>
0 to 90-deg. indexing time		
A-axis	0.9s	C-axis 1.2s



### Jig area

Provides ample jig area of ø500 x H270 to meet multi-face machining for medium-sized workpieces.



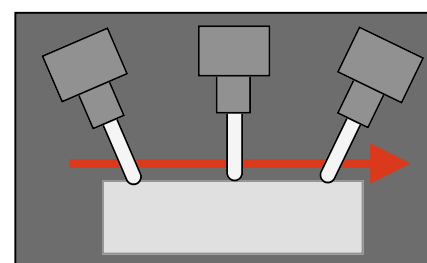
### 28-tool magazine

A newly developed compact drum type 28-tool magazine takes over fast tool change performance. (14- and 21-tool magazines are also available.)



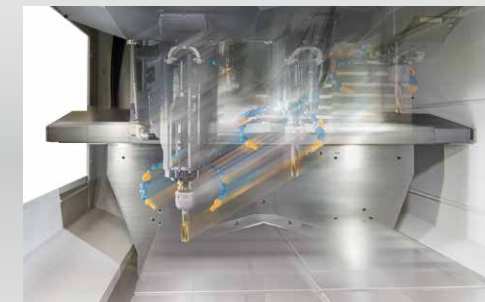
### Simultaneous 5-axis machining \*1

Provided with functions required for simultaneous 5-axis machining, including tool center point control where machining is performed by changing the tool direction relative to the workpiece, look-ahead max. 1,000 blocks, and submicron command.



\*1 Available only for the U500Xd1-5AX.

**F** Machining capabilities improved by highly rigid structure and minimizing vibration  
**Reduction in cutting time and**  
**non-cutting time greatly**  
**improves production efficiency**

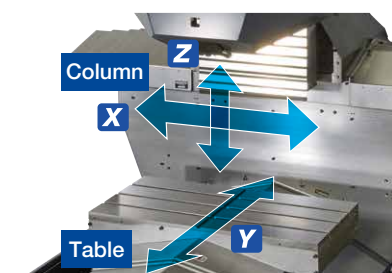


**F600X1**

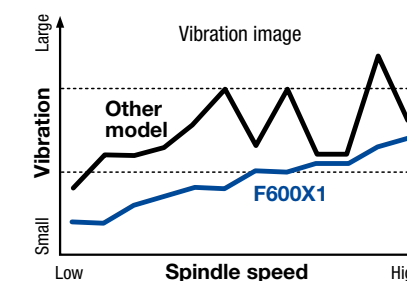
### Highly rigid structure and stable machining

The machine structure has been newly designed from the base up using structural analysis techniques. The rigidity of the drive system and spindle has been enhanced by using table movement for the Y-axis and column movement for the X- and Z-axes. In addition, the structure has been totally reviewed through vibration analysis to minimize vibration during machining, achieving stable machining in a broad range of spindle speeds.

### Highly rigid machine structure



### Wide stable range



### High-power spindle motor

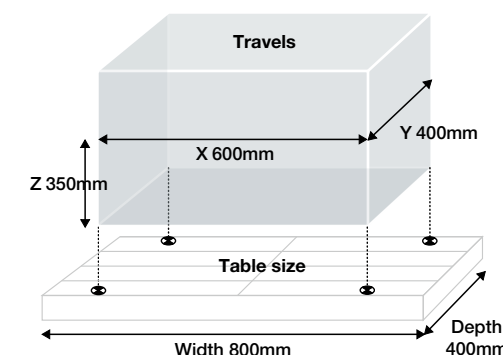
Standard equipped with the highest class high-torque motor among spindle motors used for #30 spindle machines.

### Spindle motor characteristics

Max. torque (instantaneous)	92N·m
Max. output	26.2kW

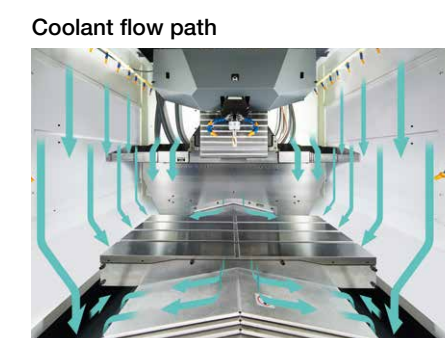
### Ample machining area

Ample machining area and large table size to accommodate large workpieces. The maximum table loading capacity has been increased to 500 kg by thickening the table.

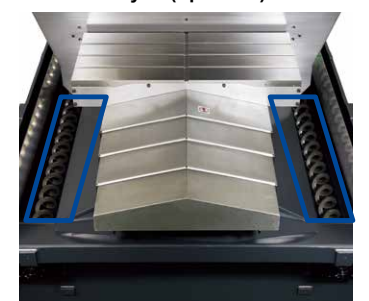


### Improved chip evacuation

Chip evacuation performance has been improved along with the expansion of the machining area. In addition, a coil conveyor and a cyclone filter are available.



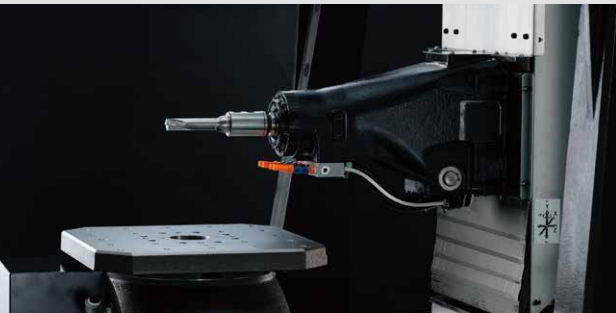
### Coil conveyor (optional)



# H

Ample jig area and a newly developed magazine enable multi-face machining of large or long workpieces.

## New style of SPEEDIO Horizontal Compact Machining Center now available

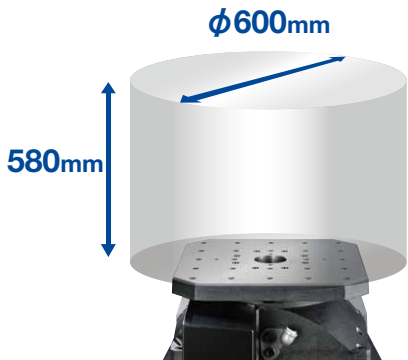


H550Xd1



### B-axis table (standard) and ample jig area

The B-axis table with a roller gear cam mechanism is provided standard, achieving an ample jig area of  $\phi 600 \times 580$  mm. \*1  
The jig area can be expanded to  $\phi 800$  mm by moving the tool to a safe position, etc. \*2



\*1. Interference area is created depending on the tool length or tool diameter.  
\*2. The tool must be moved to a safe position when the B-axis rotates or the tool length must be restricted.

### 30-tool magazine

Equipped with the newly developed direct ATC type 30-tool magazine. Supports maximum tool length of 250 mm, maximum tool diameter of 125 mm, and maximum tool weight of 4 kg, enabling a variety of machining, including long workpieces.



### Space saving

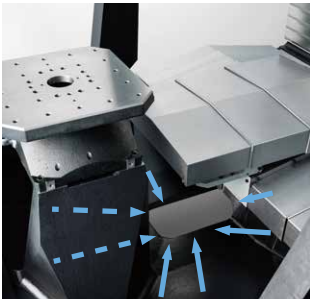
Machine dimensions are 1,557 mm in width and 2,990 mm in depth, achieving reduction in space while maintaining ample jig and machining areas.



### Chip evacuation performance

Designed to prevent problems caused by chips by enhancing chip evacuation performance with a magazine cover that separates the magazine from the machining area, a center trough structure, and a head shower (optional) that removes chips from the spindle head.

#### Center trough structure



#### Head shower

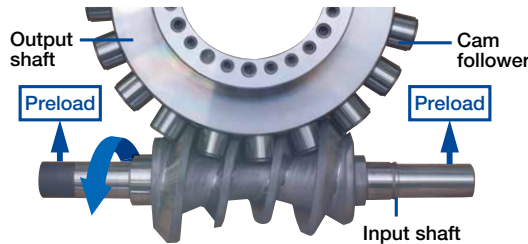


## Further enhancing productivity in multi-face machining

Special option for SPEEDIO

### Rotary Table

Using roller gear cam mechanism



#### High productivity

Provides high acceleration and high rotation speed to ensure smooth operation even for jigs with large unbalanced load.

#### High accuracy

Achieves backlash-free operation by applying preload between the input and output shafts.

#### Maintenance free

There is very little wear as the input and output shafts make rolling contact. Adjustment is not necessary for long periods.

### Main specifications

Type	Right-handed, Left-handed *1	Gear ratio	1/20	Maximum loading capacity	100/220 (200/440 *3) kg
Center height	170mm	Maximum speed	100 (50 *2) min <sup>-1</sup>	Product weight	61kg
Applicable models	T-200Ad (for CNC-D00) S300Xd1/S500Xd1/S700Xd1/W1000Xd1/W1000Xd2/R450Xd1/R650Xd1				
*4,*5	T-200A (for CNC-C00) F600X1/S500Z2N/S700Z2N/R450Z1				

\*1. Only right-handed type available for R450Xd1 and R650Xd1. \*2. When high inertia mode (enabled by changing parameter setting) is used. \*3. When support table is used. \*4. S500Z2N, S700Z2N, and R450Z1 sold only in China. \*5. T-200A can also be used for S300X2/X1, S500X2/X1, S700X2/X1, R450X2/X1, and R650X2/X1.



## Simple & Compact Manpower saving system with easy introduction and setup

Special option for SPEEDIO

### Loading System



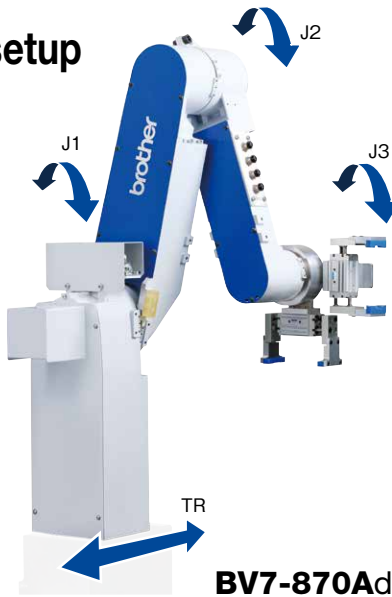
#### Integrated with the SPEEDIO

Standard equipped with a side door, and can be installed in less space



#### Specialized for loading/unloading workpieces

Simple structure with easy handling 4-axis articulated arm



BV7-870Ad

#### Controller incorporated in SPEEDIO's control box

Signal connection with machine's NC completed. Both piping and wiring stored in the body.

### Main specifications

No. of axes	4 (3 rotary axes, 1 travel axis)	Arm length	Total 870 mm	Applicable models	S300Xd1/S500Xd1/M200Xd1
Loading position	Right side / Left side	Rated transferable weight	7kg		



Machine specifications

Item			S300Xd1 S300Xd1 RD *9 S300Xd1-5AX S300Xd1-5AX RD*9	S500Xd1 S500Xd1 RD *9 S500Xd1-5AX S500Xd1-5AX RD *9	S700Xd1 S700Xd1 RD *9 S700Xd1-5AX S700Xd1-5AX RD *9	W1000Xd2/W1000Xd2 RD *9
CNC unit			《S300/S500/S700Xd1》 CNC-D00 《S300/S500/S700Xd1-5AX》 CNC-D00v (DB)			CNC-D00
Travels	X axis	mm(inch)	300 (11.8)	500 (19.7)	700 (27.6)	1,000 (39.4)
	Y axis	mm(inch)		400 (15.7)		500 (19.7)
	Z axis	mm(inch)		300 (11.8)		380 (15.0)
	Distance between table top and spindle nose end	mm(inch)	180~480 (7.1~18.9)			150~530 (5.9~20.9)
Table	Work area size	mm(inch)	600 × 400 (23.4 × 15.7)		800 × 400 (31.4 × 15.7)	1,100 × 500 (43.3 × 19.7)
	Max. loading capacity (uniform load)	kg(lbs)	250[300 *6] (551[661 *6])	250[400 *6] (551[881 *6])		300 [500 *6] (661 [1,102 *6])
Spindle	Spindle speed	min <sup>-1</sup>	10,000min <sup>-1</sup> specifications: 1~10,000, 16,000min <sup>-1</sup> specifications (optional): 1~16,000 10,000min <sup>-1</sup> high-torque specifications (optional): 1~10,000, 27,000min <sup>-1</sup> specifications (optional): 1~27,000			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
	Speed during tapping	min <sup>-1</sup>	MAX. 6,000 (27,000min <sup>-1</sup> specifications: MAX. 8,000			MAX. 6,000
	Tapered hole		7/24 tapered NO.30			7/24 tapered NO.30
	BT dual contact spindle (BIG-PLUS)		Optional			Optional
	Coolant through spindle (CTS)		Optional (CTS cannot be selected for 27,000min <sup>-1</sup> specification models)			Optional
Feed rate	Rapid traverse rate (XYZ-area)	m/min(inch/min)	50 × 50 × 56 (1,969 × 1,969 × 2,205)			50 × 50 × 56 ( 1,969 × 1,969 × 2,205)
	Cutting feed rate	mm/min(inch/min)	X,Y,Z: 1~30,000 (0.04~1,181)*7			X,Y,Z:1~30,000 (0.04 ~ 1,181) *7
ATC unit	Tool shank type		MAS-BT30			MAS-BT30
	Pull stud type *4		MAS-P30T-2			MAS-P30T-2
	Tool storage capacity	pcs.	14 / 21	14 / 21 / 28		14 / 21 / 28
	Max. tool length	mm(inch)	160 (6.3) [21 tool] 250 (9.8) [14 tool]	250 (9.8)		250 (9.8)
	Max. tool diameter	mm(inch)	110 (4.3)			110 (4.3)
	Max. tool weight *1	kg(lbs)	3.0 (6.6) [4.0 (8.8)*10]/tool, (TOTAL TOOL WEIGHT: 25 (55.1) for 14 tools, 35 (77.2) for 21or 28 tools)			3.0 (6.6) [4.0(8.8) *10] / tool, (TOTAL TOOL WEIGHT: 25 (55.1) for 14 tools, 35 (77.2) for 21 or 28 tools)
	Tool selection method		Random shortcut method			Random shortcut method
Tool *5 change time	Tool To Tool	sec	0.6 / 0.7 (14 or 21 tools / 28 tools)			0.6 / 0.7 (14 or 21 tools / 28 tools)
	Chip To Chip	sec	1.2 / 1.3 (14 or 21 tools / 28 tools)			1.3 / 1.4 (14 or 21 tools / 28 tools)
Electric motor	Main spindle motor (10min/continuous) *2	kW	10,000min <sup>-1</sup> specifications: 10.1/7.0, 16,000min <sup>-1</sup> specifications (optional): 7.4/5.1 10,000min <sup>-1</sup> high-torque specifications (optional): 12.8/9.2, 27,000min <sup>-1</sup> specifications (optional): 8.9/6.3			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
	Axis feed motor	kW	X,Y axis: 1.0 Z axis: 2.0			X,Y axis: 1.0 Z axis: 2.0
Power source	Power supply		AC 200 to 230 V±10%,3-phase, 50/60Hz±2%			AC 200 to 230 V±10%, 3-phase, 50/60Hz±2%
	Power capacity (continuous)	kVA	10,000min <sup>-1</sup> specifications: 9.5, 16,000min <sup>-1</sup> specifications (optional): 9.5 10,000min <sup>-1</sup> high-torque specifications (optional): 10.4, 27,000min <sup>-1</sup> specifications (optional): 9.5			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
	Air supply	Regular air pressure MPa Required flow L/min	0.4~0.6 (recommended value 0.5MPa *8) 45 (27,000min <sup>-1</sup> specifications: 115)			0.4~0.6 (recommended value 0.5MPa*8) 45
	Height	mm(inch)	2,498 (98.4)			2,633 (103.7)
Machine dimensions	Required floor space *11 (with control unit door open)	mm(inch)	1,080 × 2,106 [2,944] (42.5 × 82.9[115.9])	1,560 × 2,026 [2,864] (61.4 × 79.8[112.8])	2,050 × 2,026 [2,864] (80.7 × 79.8[112.8])	2,410 x 2,233 [3,071] (94.9 x 87.9 [120.9])
	Weight	kg(lbs)	2,350 (5,181)	2,400 (5,292)	2,550 (5,622)	3,350 (7,385)
Accuracy *3	Accuracy of bidirectional axis positioning (ISO230-2:1988)	mm(inch)	0.006~0.020 (0.00024~0.00079)			0.006~0.020 (0.00024~0.00079)
	Repeatability of bidirectional axis positioning (ISO230-2:2014)	mm(inch)	Less than 0.004 (0.00016)			Less than 0.004 (0.00016)
Front door			2doors			2doors
Standard accessories			Instruction Manual (DVD 1 set), leveling bolts (4 pcs.), leveling plate (4 pcs.)			

\*1 Actual tool weight differs depending on the configuration and center of gravity. The figures shown here are for reference only. \*2 Spindle motor output differs depending on the spindle speed.  
\*3 Measured in compliance with ISO standards and Brother standards. Please contact your local distributor for details. \*4 Brother specifications apply to the pull studs for CTS. \*5 Measured in compliance with JIS B6336-9 and MAS011-1987. \*6 Parameter adjustment is required. (Acceleration adjustment and positioning speed are also changed according to the weight.) \*7 When using high accuracy mode B. \*8 Regular air pressure varies depending on the machine specifications, machining program details, or use of peripheral equipment. Set the pressure higher than the recommend value. \*9 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. \*10 Parameter setting must be changed. (Tool magazine indexing time will change.) Max. tool weight 4.0kg cannot be available for the 27,000min<sup>-1</sup> specifications.  
\*11 The value does not include the coolant tank.

- Please read the instruction manuals and safety manuals before using Brother products for your own safety.  
When using oil-based coolant oil or when machining the materials which can cause a fire (ex. Magnesium, resin material), customers are requested to take thoroughgoing safety measures against fire.  
Depending on the types of cutting material, cutting tools, coolant oil, lubrication oil, it may have an influence on the machine lifecycle.  
Further questions, please contact our sales representative in charge.
- Leave 700 mm between machines as a maintenance space.

Machine specifications

Item			R450Xd1/R450Xd1 RD *12	R650Xd1/R650Xd1 RD *12	
				14/22/28 tool magazine	40-tool magazine
CNC Unit			CNC-D00	CNC-D00	
Travels	X axis	mm(inch)	450 (17.7)	650 (25.6)	
	Y axis	mm(inch)	320 (12.6) *7	400 (15.7)	
	Z axis	mm(inch)	305 (12.0)	305 (12.0)	435 (17.1)
	Distance between table top and spindle nose end	mm(inch)	200~505 (7.9~19.9)[280~585 (11.0~23.0) *8]	250~555 (9.8~21.8) [350~655 (13.8~25.8) *8]	250~685 (9.8~27.0) [350~785 (13.8~30.9) *8]
Table	Work area size	mm(inch)	One face 600 x 300 (23.6 x 11.8)	One face 800 x 400 (31.5 x 15.7)	
	Max.loading capacity(uniform load)	kg(lbs)	One face 120 (265) [200(441) *6]	One face 200 (441) [300 (661) *6]	
	Position time	sec.	2.7 *11	3.1 *11	3.1 *11
Spindle	Spindle speed	min <sup>-1</sup>	10,000min <sup>-1</sup> specifications: 1~10,000 16,000min <sup>-1</sup> specifications(optional): 1~16,000 10,000min <sup>-1</sup> high-torque specifications(optional): 1~10,000	10,000min <sup>-1</sup> specifications: 1~10,000 16,000min <sup>-1</sup> specifications(optional): 1~16,000 10,000min <sup>-1</sup> high-torque specifications(optional): 1~10,000	
	Speed during tapping	min <sup>-1</sup>	MAX. 6,000	MAX. 6,000	
	Tapered hole		7/24 tapered No.30	7/24 tapered No.30	
	BT dual contact system(BIG-PLUS)		Optional	Optional	
	Coolant Through Spindle(CTS)		Optional	Optional	
Feed rate	Rapid traverse rate(XYZ-area)	m/min(inch/min)	50 x 50 x 50 (1,969 x 1,969 x 1,969)	50 x 50 x 50 (1,969 x 1,969 x 1,969)	
	Cutting feed rate	mm/min(inch/min)	X, Y, Z axis : 1~30,000 (0.04~1,181) *9	X, Y, Z axis: 1~30,000 (0.04~1,181) *9	
ATC unit	Tool shank type		MAS-BT30	MAS-BT30	
	Pull stud type *4		MAS-P30T-2	MAS-P30T-2	
	Tool storage capacity	pcs.	14 / 22 / 28	14 / 22 / 28	40
	Max. tool length	mm(inch)	200 (7.9)	200 (7.9)	250 (9.8)
	Max. tool diameter	mm(inch)	80 (3.1)	80 (3.1)	55 (2.1) / 125 (4.9) No adjacent tool
	Max. tool weight *1	kg(lbs)	3.0 (6.6)<total tool weight : 25 (55.1) for 14-tool, 40 (88.2) for 22/28 tool>	3.0 (6.6) <total tool weight: 25 (55.1) for 14-tool, 40 (88.2) for 22/28 tool>	4.0 (8.8) <total tool weight: 80 (176.3) >
	Tool selection method		Random short cut method	Random short cut method	Double arm method (random closet path)
Tool *5 change time	Tool To Tool	sec.	0.6 / 0.7 (14-tool / 22 or 28 tool)	0.6 / 0.8 (14-tool / 22 or 28 tool)	0.9
	Chip To Chip	sec.	1.3 / 1.5 (14-tool / 22 or 28 tool)	1.4 / 1.5 (14-tool / 22 or 28 tool)	2.5
Electric motor	Main spindle motor (10min/continuous) *2	kW	10,000min <sup>-1</sup> specifications: 10.1 / 7.0 16,000min <sup>-1</sup> specifications: 7.4 / 5.1 10,000min <sup>-1</sup> high-torque specifications: 12.8 / 9.2	10,000min <sup>-1</sup> specifications: 10.1 / 7.0 16,000min <sup>-1</sup> specifications: 7.4 / 5.1 10,000min <sup>-1</sup> high-torque specifications: 12.8 / 9.2	
	Axis feed motor	kW	X, Y axis: 1.0 Z axis: 1.8	X, Y axis: 1.0 Z axis: 1.8	
Power source	Power supply		AC 200 to 230 V±10%,3-phase, 50/60Hz±2%	AC 200 to 230 V±10%,3-phase, 50/60Hz±2%	
	Power capacity (continuous)	kVA	10,000min <sup>-1</sup> specifications: 9.5 16,000min <sup>-1</sup> specifications: 9.5 10,000min <sup>-1</sup> high-torque specifications: 10.4	10,000min <sup>-1</sup> specifications: 9.5 16,000min <sup>-1</sup> specifications: 9.5 10,000min <sup>-1</sup> high-torque specifications: 10.4	
	Air supply	Regular air pressure MPa Required flow L/min	0.4~0.6 (recommended value : 0.5MPa *10) 45	0.4~0.6 (recommended value: 0.5MPa *10) 45	100
	Height	mm(inch)	2,584 (101.7)	2,704 (106.5)	
Machine dimensions	Required floor space *13 (with control unit door open)	mm(inch)	1,400 x 2,609 [3,448] (55.1 x 102.7 [135.7] )	1,830 x 3,029 [3,868] (72.0 x 119.3 [152.3] )	2,145 x 3,029 [3,868] (84.4 x 119.3 [152.3] )
	Weight	kg(lbs)	2,750 (6,063)	3,550 (7,826)	4,150 (9,149)
Accuracy *3	Accuracy of bidirectional axis positioning(ISO230-2: 1988)	mm(inch)	0.006~0.020 (0.00024~0.00079)	0.006~0.020 (0.00024~0.00079)	
	Repeatability of bidirectional axis positioning(ISO230-2: 2014)	mm(inch)	Less than 0.004 (0.00016)	Less than 0.004 (0.00016)	
Front door			2doors	2doors	
Standard accessories			Instruction Manual (DVD 1 set), leveling bolts (4 pcs.) [R650Xd1: 5 pcs.], leveling plate (4 pcs.) [R650Xd1: 5 pcs.]		

\*1 Actual tool weight differs depending on the configuration and center of gravity. The figures shown here are for reference only. \*2 Spindle motor output differs depending on the spindle speed.  
\*3 Measured in compliance with ISO standards and Brother standards. Please contact your local distributor for details. \*4 Brother specifications apply to the pull studs for CTS. \*5 Measured in compliance with JIS B6336-9 and MAS011-1987. \*6 Can be increased up to R450Xd1: 200kg, R650Xd1: 300kg (one face) by changing the parameter. Please consult us separately. \*7 When using the hydraulic rotary joint, the Y-axis travel becomes 290 mm. \*8 Values when the low-floor table is selected. \*9 When using high accuracy mode B. \*10 Regular air pressure varies depending on the machine specifications, machining program details, or use of peripheral equipment. Set the pressure higher than the recommend value. \*11 When table loading on one face is R450Xd1: 120kg, R650Xd1: 200kg. \*12 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. \*13 The value does not include the coolant tank or chip conveyor.

- When exporting our machine together with additional 1-axis rotary table or compound rotary table (including cases where a rotary table is scheduled to be installed overseas), or exporting the M200/M300Xd1, U500Xd1, S300/S500/S700Xd1-5AX, or H550Xd1, 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 cases where a rotary table is scheduled to be installed overseas), exporting the M200/M300Xd1, U500Xd1, or S300/S500/S700Xd1-5AX, or exporting the H550Xd1 together with additional 1-axis rotary table (including cases where 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, a procedure to activate the axis of the 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 on the machine or an additional 1-axis rotary table on the H550Xd1 separately overseas after exporting the machine. Please make sure you obtain an export license for the machine together with compound rotary table, or additional 1-axis rotary table for the H550Xd1, before shipment.



Machine specifications

Item			M200Xd1 / M200Xd1 RD *8	M200Xd1-5AX / M200Xd1-5AX RD *8	M300Xd1 / M300Xd1 RD *8	M300Xd1-5AX / M300Xd1-5AX RD *8
CNC Unit			CNC-D00	CNC-D00v (DB)	CNC-D00	CNC-D00v (DB)
Travels	X axis	mm(inch)	200 (7.9)			300 (11.8)
	Y axis	mm(inch)	440 (17.3)			440 (17.3)
	Z axis	mm(inch)	305 (12.0)			380 (15.0)
	A axis	deg.	-30~120			-30~120
	C axis	deg.	360			360
	Distance between table top and spindle nose end	mm(inch)	150~455 (5.9~17.9)			150~530 (5.9~20.9)
Table	Work area size	mm(inch)	ø140 (ø5.5)			ø170 (ø6.7)
	Shape of table top		In compliance with table nose No.5 of ISO702-4 (JISB6109-2)			In compliance with table nose No.6 of ISO702-4 (JISB6109-2)
	Max.loading capacity (uniform load)	kg(lbs)	Table side 40 (88.2) / Tale side 19 (41.9) *9			Table side 75 (165.3) / Tale side 19 (41.9) *9
	Max. table load inertia	kg·m <sup>2</sup> (lb·inch <sup>2</sup> )	Table side 0.29 (991) / Tale side 0.04 (137)			Table side 0.8 (2,734) / Tale side 0.04 (137)
Spindle	Spindle speed	min <sup>-1</sup>	10,000min <sup>-1</sup> specifications: 1~10,000 16,000min <sup>-1</sup> specifications (Optional): 1~16,000			
	Speed during tapping	min <sup>-1</sup>	MAX. 6,000			
	Tapered hole		7/24 tapered No.30			
	BT dual contact system (BIG-PLUS)		Optional			
	Coolant Through Spindle (CTS)		Optional			
	Turning spindle	Max. Spindle speed	min <sup>-1</sup>	2,000		1,500
Feed rate	Rapid traverse rate (XYZ-area)	m/min(inch/min)	50 x 50 x 50 (1,969 x 1,969 x 1,969)			
	Cutting feed rate	mm/min(inch/min)	X, Y, Z axis: 1~30,000 (0.04~1,181) *7			
	Indexing feed rate (A and C)	min <sup>-1</sup>	A axis: 60 C axis: 200		A axis: 50 C axis: 200	
ATC unit	Tool shank type		MAS-BT30			
	Pull stud type *4		MAS-P30T-2			
	Tool storage capacity	pcs.	22/28 *10			
	Max. tool length	mm(inch)	250 (9.8) *12			
	Max. tool diameter	mm(inch)	80 (3.1)			
	Max. tool weight *1	kg(lbs)	3 (6.6) <total tool weight : 40(88.2)>			
	Tool selection method		Random shortcut method			
Tool *5 change time	Tool To Tool	sec.	0.8			0.8
	Chip To Chip	sec.	1.4			1.5
Electric motor	Main spindle motor (10min/continuous) *2	kW	10,000min <sup>-1</sup> specifications: 10.1/7.0 16,000min <sup>-1</sup> specifications (optional): 7.4/5.1			
	Axis feed motor	kW	X,Y axis: 1.0 Z axis: 1.8 A axis: 0.8			X,Y axis: 1.0 Z axis: 1.8 A axis: 1.35
	Turning spindle motor	kW	4.2			4.6
Power source	Power supply		AC 200 to 230 V±10%, 3-phase, 50/60Hz±2%			
	Power capacity (continuous)	kVA	10,000min <sup>-1</sup> specifications: 9.5 16,000min <sup>-1</sup> specifications (optional): 9.5			
	Air supply	Regular air pressure MPa Required flow L/min	0.4~0.6 (recommended value 0.5MPa *6) 175			
Machine dimensions	Height	mm(inch)	2,612 (102.9)			2,733 (107.6)
	Required floor space *11	mm(inch)	1,280 x 2,667 (50.4 x 105)			1,520 x 2,667 (59.8 x 105)
	Weight	kg(lbs)	2,700 (5,953)			2,850 (6,283)
*3 Accuracy	Accuracy of bidirectional axis positioning (ISO230-2: 1988) (ISO230-2: 2014)		X, Y, Z axis: 0.006~0.020 mm (0.00024~0.00079 inch) A, C axis: 28 sec or less			
	Repeatability of bidirectional axis positioning (ISO230-2: 2014)		X, Y, Z axis: Less than 0.004 mm (0.00016 inch) A, C axis: 16 sec or less			
Front door			2doors			
Standard accessories			Instruction Manual (DVD 1 set), leveling bolts (5 pcs.), leveling plate (5 pcs.)			

\*1 Actual tool weight differs depending on the configuration and center of gravity.The figures shown here are for reference only. \*2 Spindle motor output differs depending on the spindle speed. \*3 Measured in compliance with ISO standards and Brother standards. \*4 Brother specifications apply to the pull studs for CTS. \*5 Measured in compliance with JIS B6336-9 and MAS011-1987. \*6 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. \*7 When using high accuracy mode B. \*8 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. \*9 The loading capacity on the tail side is 13 kg at the rotating section and 6 kg at the fixed section. \*10 For the 28-tool magazine, turning tools cannot be set in adjust pods. \*11 The value does not include the coolant tank or chip conveyor. \*12. Tools with a length of 200 mm or more may contact the jig when the magazine turns, depending on the jig height.

- \* Depending on the type of coolant, it may have a significant influence on the machine lifecycle. It is recommended to use the coolant which is commercially designated as high lubricity, for example Emulsion type. Especially, the coolant of chemical solution type (ex. Synthetic type) is prohibited to use, because it may cause machine damages.
- \* When using CTS (Coolant Through Spindle) function, usage of the coolant of combustible type (ex. Oil-based type) is prohibited.

Machine specifications

Item			U500Xd1 / U500Xd1 RD *9 U500Xd1-5AX / U500Xd1-5AX RD *9	F600X1 / F600X1 RD *9	H550Xd1 / H550Xd1 RD *9
CNC Unit			《U500Xd1》CNC-D00 《U500Xd1-5AX》CNC-D00v(DB)		CNC-D00
Travels	X axis	mm(inch)	500 (19.7)	600 (23.6)	550 (21.7)
	Y axis	mm(inch)	400 (15.7)	400 (15.7)	400 (15.7)
	Z axis	mm(inch)	300 (11.8)	350 (13.7)	400 (15.7)
	A axis	deg.	-30~120	—	—
	B axis	deg.	—	—	360
	C axis	deg.	360	—	—
	Distance between table top and spindle nose end	mm(inch)	145~445 (5.7~17.5)	200~550 (7.8~21.6)	—
	Distance between table top and spindle center	mm(inch)	—	—	100~500 (3.9~19.7)
Table	Distance between table center and spindle nose end	mm(inch)	—	—	150~550 (5.9~21.7)
	Work area size	mm(inch)	ø260 (ø10.2)	800 × 400 (31.4 × 15.7)	400 (15.7) x 400 (15.7)
	Max.loading capacity (uniform load)	kg(lbs)	100 (220)	400 (881) [500 (1,102) *6]	300 (661)
	Max. table load inertia	kg·m <sup>2</sup> (lb·inch <sup>2</sup> )	1.8 (6,151) [2.6 (8,885) *10]	—	3.4 (11,618) [5.4 (18,453) *10]
Spindle	Spindle speed	min <sup>-1</sup>	10,000min <sup>-1</sup> specifications: 1~10,000 16,000min <sup>-1</sup> specifications (Optional): 1~16,000	10,000min <sup>-1</sup> high-torque specifications: 1~10,000	12,000min <sup>-1</sup> specifications: 1~12,000 16,000min <sup>-1</sup> specifications (optional): 1~16,000 10,000min <sup>-1</sup> high-torque specifications (optional): 1~10,000
	Speed during tapping	min <sup>-1</sup>	MAX. 6,000	MAX. 6,000	MAX. 6,000
	Tapered hole		7/24 tapered No.30	7/24 tapered No.30	7/24 tapered No.30
	BT dual contact system (BIG-PLUS)		Optional	Optional	Optional
	Coolant Through Spindle (CTS)		Optional	Optional	Optional
Feed rate	Rapid traverse rate (XYZ-area)	m/min(inch/min)	50 x 50 x 56 (1,969 x 1,969 x 2,205)	50 × 50 × 50 (1,969 × 1,969 × 1,969)	50 x 56 x 56 (1,969 x 2,205 x 2,205)
	Cutting feed rate	mm/min(inch/min)	X, Y, Z axis: 1~30,000 (0.04~1,181) *7	X, Y, Z axis: 1~30,000 (0.04~1,181) *7	X, Y, Z axis: 1~30,000 (0.04~1,181) *7
	Indexing feed rate (A and C)	min <sup>-1</sup>	A axis: 50 C axis: 75 (60 *10)	—	—
	Indexing feed rate (B)	min <sup>-1</sup>	—	—	100 (85 *10)
	Tool shank type		MAS-BT30	MAS-BT30	MAS-BT30
ATC unit	Pull stud type *4		MAS-P30T-2	MAS-P30T-2	MAS-P30T-2
	Tool storage capacity	pcs.	14/21/28	14/22	30
	Max. tool length	mm(inch)	250 (9.8)	250 (9.8)	250 (9.8)
	Max. tool diameter	mm(inch)	110 (4.3)	110 (4.3) / 125 (4.9) No adjacent tool	125 (4.9) *13
	Max. tool weight *1	kg (lbs)	3.0 (6.6) [4.0 (8.8) *11] / tool, <TOTAL TOOL WEIGHT: 25 (55.1) for 14 tools, 35 (77.2) for 21or 28 tools>	3.0 (6.6) / Tool <TOTAL TOOL WEIGHT: 25 (55.1) for 14 tools, 40 (88.1) for 22 tools>	4.0 (8.8) / tool, <TOTAL TOOL WEIGHT: 50 (110.2)>
	Tool selection method		Random shortcut method	Random shortcut method	Random shortcut method
Tool *5 change time	Tool To Tool	sec.	0.6 / 0.7 (14 or 21 tools / 28 tools)	0.7 / 0.8 (14 tools / 22 tools)	1.1
	Chip To Chip	sec.	1.2 / 1.3 (14 or 21 tools / 28 tools)	1.6 / 1.7 (14 tools / 22 tools)	2.4
Electric motor	Main spindle motor (10min/continuous) *2	kW	10,000min <sup>-1</sup> specifications: 10.1/7.0, 16,000min <sup>-1</sup> specifications (optional): 7.4/5.1	10,000min <sup>-1</sup> high-torque specifications: 12.8 / 9.2	12,000min <sup>-1</sup> specifications: 10.1/7.0, 16,000min <sup>-1</sup> specifications (optional): 7.4/5.1 10,000min <sup>-1</sup> high-torque specifications (optional): 12.8/9.2
	Axis feed motor	kW	X,Y axis: 1.0 Z axis: 2.0 A axis: 0.9 C axis: 0.55	X,Y axis: 1.0 Z axis: 1.8	X,Z axis: 1.0 Y axis: 1.8 B axis: 1.8
Power source	Power supply		AC 200 to 230 V±10%, 3-phase, 50/60Hz±2%	AC 200 to 230 V±10%, 3-phase, 50/60Hz±2%	AC 200 to 230 V±10%, 3-phase, 50/60Hz±2%
	Power capacity (continuous)	kVA	10,000min <sup>-1</sup> specifications: 9.5, 16,000min <sup>-1</sup> specifications (optional): 9.5	10,000min <sup>-1</sup> high-torque specifications: 10.4	12,000min <sup>-1</sup> specifications: 9.5, 16,000min <sup>-1</sup> specifications (optional): 9.5 10,000min <sup>-1</sup> high-torque specifications (optional): 10.4
	Air supply	Regular air pressure MPa Required flow L/min	0.4~0.6 (recommended value 0.5MPa *8) 55	0.4~0.6 (recommended value: 0.5MPa *8) 45	0.4~0.6 (recommended value 0.5MPa *8) 45
Machine dimensions	Height	mm(inch)	2,748 (108.2)	2,750 (108.2)	2,497 (98.3)
	Required floor space *12 [with control unit door open]	mm(inch)	1,560 x 2,026 [2,864] (61.4 x 79.8 [112.8])	1,800 × 2,418 [3,256] (70.9 × 95.2 [128.2])	1,557 x 2,743 [3,581] (61.3 x 108.0 [141.0])
	Weight	kg(lbs)	2,650 (5,843)	3,600 (7,937)	2,850 (6,284)
*3 Accuracy	Accuracy of bidirectional axis positioning (ISO230-2: 1988) (ISO230-2: 2014)		X, Y, Z axis: 0.006~0.020mm (0.00024~0.00079inch) A, C axis: 28 sec or less	X, Y, Z axis: 0.006~0.020mm (0.00024~0.00079inch) —	X, Y, Z axis: 0.006~0.020 mm (0.00024~0.00079 inch) B axis: 28 sec or less
	Repeatability of bidirectional axis positioning (ISO230-2: 2014)		X, Y, Z axis: Less than 0.004mm (0.00016inch) A, C axis: 16 sec or less	X, Y, Z axis: Less than 0.004mm (0.00016inch)	X, Y, Z axis: Less than 0.004 mm (0.00016 inch) B axis: 16 sec or less
Front door			2doors		2doors
Standard accessories			Instruction Manual (DVD 1 set),leveling bolts (4 pcs.), leveling plate (4 pcs.)		

\*1 Actual tool weight differs depending on the configuration and center of gravity.The figures shown here are for reference only. \*2 Spindle motor output differs depending on the spindle speed. \*3 Measured in compliance with ISO standards and Brother standards. \*4 Brother specifications apply to the pull studs for CTS. \*5 Measured in compliance with JIS B6336-9 and MAS011-1987. \*6 Acceleration must be adjusted for Y axis. \*7 When using high accuracy mode B. \*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 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. \*10 When using high inertia mode. Parameter setting needs to be changed. \*11 Parameter setting needs to be changed. (Tool indexing time is changed.) \*12 The value does not include the coolant tank or chip conveyor. \*13 When attaching an adjacent tool, the total diameter of a tool and its adjacent tool must be less than 130 mm.

CNC-D00 specifications

Model	S300/S500/S700Xd1 (-5AX), W1000Xd2, R450/R650Xd1, U500Xd1 (-5AX), M200/M300Xd1 (-5AX), H550Xd1	
CNC model	CNC-D00 S300/S500/S700Xd1-5AX, M200/M300Xd1-5AX, U500Xd1-5AX: CNC-D00v (DB)	
Control axes	S300/S500/S700Xd1 (-5AX), W1000Xd2,H550Xd1: 5 axes (X,Y,Z, 2 additional axes) R450/R650Xd1: 7 axes (X,Y,Z, 4 additional axes) M200/M300Xd1 (-5AX), U500Xd1 (-5AX): 5 axes (X,Y,Z, A,C)	
Simultaneously controlled axes	Positioning	5 axes (X, Y, Z, 2 additional axes) M200/M300Xd1(-5AX), U500Xd1 (-5AX): 5 axes (X, Y, Z, A, C)
	Interpolation	Linear: 4 axes (X, Y, Z, 1 additional axis) S300/S500/S700Xd1-5AX, M200/M300Xd1-5AX, U500Xd1-5AX: 5 axes (X, Y, Z, 2 additional axes) Circular : 2 axes Hellical/conical: 3 axes (X, Y, Z) S300/S500/S700Xd1-5AX, M200/M300Xd1-5AX, U500Xd1-5AX: 4 axes (Up to 3 axes for Linear + 1 axis for rotation, 2 axes for linear + 2 axes for rotation)
Least input increment	0.001mm, 0.0001inch, 0.001deg.	
Max. programmable dimension	±999999.999mm, ±99999.999inch	
Display	15-inch color LCD touch display	
Memory capacity	500MB, 3GB (optional) S300/S500/S700Xd1-5AX, M200/M300Xd1-5AX, U500Xd1-5AX: 3GB (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, conversatconversation (changed by parameter), conversation from conversation program to NC language program available  M200/M300Xd1(-5AX),H550Xd1: NC language *Conversation language not available	

NC functions

● CNC-D00    ● CNC-C00

Operation	Monitoring
● Dry Run	● Machining load monitoring
● Machine lock	● ATC monitoring
● Restart	● Overload prediction
● Rapid traverse override	● Waveform display / waveform output to memory card
● Cutting feed override	● Heat expansion compensation system II (X, Y, Z axes)
● Background editing	● Production performance
● Screen shot	● Power consumption
● Operation level	● Tool life / Spare tool
● External input signal key	● Stuck chips detection function
● Shortcut key (optional)	
● Spindle override	
Programming	Maintenance
● Absolute / incremental	● Tap return function
● Inch / metric	● Status log
● Coordinate system setting	● Alarm log
● Corner C / Corner R	● Operation log
● Rotational transformation	● Maintenance notice
● Synchronized tap	● Motor insulation resistance measurement
● Subprogram	● Tool washing filter with filter clogging detection
● Graphic display	● Batteryless encoder
	● Brake load rest
Measurement	Automation / Network
● Automatic workpiece measurement *1	● Computer remote
● Tool length measurement	● OPC UA
	● Auto notification
	● Built-in PLC (optional)
	● CC-Link, master station
	● CC-Link, remote device station
	● PROFIBUS DP, slave
	● DeviceNet, slave
	● PROFINET, slave
	● EtherNet/IP, slave
High speed and High accuracy	Energy saving
● Machining parameter setting	● Automatic power off
● High-accuracy mode AIII	● Servomotor off standby mode
● High-accuracy mode B I (Look-ahead 160blocks)	● Automatic coolant off
● High-accuracy mode B I (Look-ahead 40blocks)	● Automatic work light off
● Backlash compensation	● Chip shower off delay
● Tool center point control *5 (Look-ahead 1,000 blocks) (optional)	
● High-accuracy mode B II (Look-ahead 1,000blocks, with smooth path offset)	
● High-accuracy mode B II (Look-ahead 200blocks, with smooth path offset)	
● High-speed processing	

\*1/ Measuring instrument needs to be prepared by users. \*2/ When the submicron command is used, changing to the conversation program is disabled. \*3/ Only for M200/M300Xd1. \*4/ Conversation language not available for M200/M300Xd1 and H550Xd1. \*5/ Only for the S300/S500/S700Xd1-5AX, M200/M300Xd1-5AX and U500Xd1-5AX.

CNC-C00 specifications

Model	F600X1	
CNC model	CNC-C00	
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)
Least input increment	0.001mm, 0.0001inch, 0.001deg.	
Max. programmable dimension	±9999.999mm, ±999.9999inch	
Display	12.1-inch color LCD	
Memory capacity	Approx.100 Mbytes (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, conversation (changed by parameter), conversion from conversation 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.

\*Depending on the model and specifications, some options may be standard equipment or may not be available. For details, refer to the model catalog.

Coolant tank

	S300Xd1 S500Xd1 S700Xd1	W1000Xd2	R450Xd1	R650Xd1	M200Xd1 M300Xd1	U500Xd1	F600X1	H550Xd1
Coolant tank 50L	●					●		
Coolant tank 100L	●					●		
Coolant tank 150L	●					●		
Coolant tank 200L	●	●				●		
Coolant tank 250L							●	
Coolant tank 150L with chute			●		●			
Coolant tank 200L with chute			●	●				●
Coolant tank 250L with chute				●				
Chip conveyor tank (360~400L)			●	●	●		●	●

\* Coolant tanks other than 50L and 100L can be selected for Coolant Through Spindle CTS 1.5 MPa with cyclone filter. However, some coolant tanks are only available for CTS 1.5MPa with cyclone filter.  
\* Capacity of the chip conveyor tank differs depending on the model, so please refer to the model catalog for details.

Option common

● BT dual contact spindle	● Area sensor	● RS232C 25-pin connector at control box	● EXIO board assembly
● Coolant Through Spindle (CTS) 1.5MPa *1	● Side cover with transparent window	● Master on circuit	①EXIO board, input32/output32, additional #1
● Tool washing, air-assisted type	● Specified color	● 100V outlet in control box	②EXIO board, input32/output32, additional #2
● Chip shower	● Tool breakage detector, touch type	● Data protection switch, key type	● Industrial network
● Fixture shower valve unit	● Manual pulse generator	● Parts name sticker set	①CC-Link, master station
● Cleaning gun	with enable switch *2	● Transformer box	②CC-Link, remote device station
● Automatic oil lubricator	● Spindle override	● Memory expansion 3GB / 500MB *3	③PROFIBUS DP, slave
● Automatic grease lubricator	● Switch panel 8 or 10 holes	● High accuracy mode B II , look-ahead 1,000 / 200 blocks, with smooth path offset *4	④DeviceNet, slave
● Work light, 1 or 2 lamps	● power supply expansion 50A	● PLC programming software	⑤PROFINET, slave *5
● Signal light, 1, 2, or 3 lamps			⑥EtherNet/IP, slave *5
● Automatic door with switch panel 10 holes			

\*1/ The pressure resistance of the CTS is 3 MPa. Pump and tank are not included. \*2/ No enable switch for F600X1. \*3/ 500MB for F600X1. \*4/ Look-ahead 200blocks for F600X1. \*5/ ⑤ and ⑥ not available for F600X1.

Option by model

	S300Xd1 S500Xd1 S700Xd1	W1000Xd2	R450Xd1	R650Xd1	M200Xd1 M300Xd1	U500Xd1	F600X1	H550Xd1
Rotary table T-200Ad / T-200A *6	●	●	●	●			●	
Coolant Through Spindle (CTS) 7MPa *7	●	●	●	●	●	●		●
Head coolant nozzle	●	●	●	●	●	●	●	●
Column coolant nozzle	●	●	●	●		●	●	
Coil conveyor *8							●	
Mesh basket for collecting chips	●	●	●	●	●	●	●	●
High column, 150mm, 250mm, or 350mm *9	●	●						
Additional axis cable	●	●	●	●			●	●
Top cover	●	●	●	●		●	●	
Grip cover for tool magazine	●	●	●	●	●	●	●	
Breaker handle cover	●					●	●	
Origin alignment mark	●	●	●	●	●	●		●
Side door with transparent window, right side			●	●	●			
Pneumatic relay box 12P			●	●				
Hydraulic rotary joint 4P			●	●				
Rotary joint 4P					●			
Hydraulic rotary cylinder					●			
A-axis clamp (Single•Double)					●			
Rotary joint 6P						●		
Rotary joint 9+1P								●
Table light			●	●				
Outside rotary table switch for 1 or 2 axes			●	●				
Rotary table switch (for B-axis, for additional axes)								●
Turning diameter enlargement, ø1,100mm (R450Xd1)/ø1,300mm (R650Xd1)			●	●				
Low-floor table			●	●				
Side magazine switch			●					
Front switch panel 10 holes				●				●
Outside start swtuch on the side				●				
Folding door (two-door)		●	●	●				●

\*6/ T-200A is available for F600X1. \*7/ Pump and tank are not included. \*8/ A chip conveyor is required when selecting coil conveyor. \*9/ 350mm high column is only available for W1000Xd2.



### Brother Technology Center Chicago

BROTHER INTERNATIONAL CORP.  
2200 North Stonington Avenue, Suite 270, Hoffman Estates, IL 60169, U.S.A.  
PHONE:(1)224-653-8415 FAX:(1)224-653-8821

### Brother Technology Center Frankfurt

BROTHER INTERNATIONALE INDUSTRIEMASCHINEN GmbH  
Hoechst Str.94, 65835 Liederbach, Germany  
PHONE:(49)69-977-6708-0 FAX:(49)69-977-6708-80

### Brother Technology Center Bengaluru

BROTHER MACHINERY INDIA PVT LTD.  
SB-111-112, 1st Stage, 2nd Cross, Peenya Indl Estate, Bengaluru - 560058 Karnataka, India  
PHONE:(91)80-43721645

### Brother Technology Center Shanghai

BROTHER MACHINERY (SHANGHAI) LTD.  
Unit 01, 5/F., No.799, West Tianshan Rd., ChangNing District Shanghai 200335, China  
PHONE:(86)21-2225-6666 FAX:(86)21-2225-6688

### Brother Technology Center Chongqing

BROTHER MACHINERY (SHANGHAI) LTD.  
Room 30, 31, NO.104 Cui bai Road, Dadukou District, Chongqing Province, 400084, China  
PHONE:(86)23-6865-5600 FAX:(86)23-6865-5560

### Nanjing Office

BROTHER MACHINERY (SHANGHAI) LTD.  
503 Room, Building No.1, No.39, Dongcun Road, Jiangning District, Nanjing City, Jiangsu Province, China  
PHONE:(86)25-87185503

### Brother Technology Center Queretaro

BROTHER INTERNATIONAL DE MÉXICO, S.A. DE C.V.  
Calle 1 No.310 Int 15, Zona Industrial Jurica, Parque Industrial Jurica,  
Queretaro, QRO C.P. 76100 México  
PHONE:(52)55-8503-8760 FAX:(52)442-483-2667

### Brother Technology Center Bangkok

BROTHER COMMERCIAL (THAILAND) LTD.  
317 Pattanakarn Road, Pravet Sub-District, Pravet District, Bangkok 10250, Thailand  
PHONE:(66)2321-5910 FAX:(66)2321-5913

### Brother Technology Center Gurugram

BROTHER MACHINERY INDIA PVT LTD.  
Plot No. 60, Sector 34, HSIIDC, Gurugram, Haryana 122001, India  
PHONE:(91)0124-4449900

### Brother Technology Center Dongguan

BROTHER MACHINERY (SHANGHAI) LTD.  
Room 103, Building 1, No.2 Nanbo Road,  
Songshan Lake District, Dongguan City, Guangdong Province, China  
PHONE:(86)769-2238-1505 FAX:(86)769-2238-1506

### Brother Technology Center Ningbo

BROTHER MACHINERY (SHANGHAI) LTD.  
1F, Building 1, No. 102, Hongtang South Road West Section, Jiangbei District, Ningbo City,  
Zhejiang Province, China  
PHONE:(86)574-87781232 FAX:(86)574-88139792

Figures in brackets ( ) are the country codes.

Specifications may be subject to change without any notice.

## BROTHER INDUSTRIES, LTD.

### Machinery Business Division

1-5, Kitajizoyama, Noda-cho, Kariya-shi, Aichi-ken 448-0803, Japan  
<https://www.brother.co.jp>

**brother**

Please check here for detailed information  
and the latest information of the base.

<https://machinetool.global.brother/>

