





# *SPEEDIO*

# Never Ends its Evolution!

High Productivity

SPEEDIO models respond to customers' requirements.

To make them essential in your process as expressed in our
"Brother also in this process" concept, hidden areas have
greatly been improved with minimum changes to the exterior,
striving for higher productivity and higher reliability.

High Machining Capabil





# **S700**%2



Photos show machines with a 21-tool magazine. The magazine cover is not provided for a 14-tool magazine.

# SPEEDIO **S500**%2



#### Basic specifications

Max. spindle speed (min-1)	10,000 10,000 high-torque (optional) 16,000 (optional) 27,000 (optional)	
Travels (mm)	\$700X2         X700 Y400 Z300           \$500X2         X500 Y400 Z300           \$300X2         X300 Y400 Z300	
Tool storage capacity (pcs.)	14 / 21	
Rapid traverse rate (m/min)	X/Y/Z 50/50/56	
Required floor space (mm)	\$700X2 2,050×2,223 \$500X2 1,560×2,223 \$300X2 1,080×2,463	
BT dual contact spindle	Optional	

\*CTS cannot be selected for 27,000 min-1 specification models.

### **High Productivity**

Achievement of high acceleration and high responsiveness through machine/controller integrated development and complete elimination of wasted operation and wasted time enable the machine to fully demonstrate its abilities, resulting in high productivity.

#### **Pursuit of high productivity**

Z-axis acceleration : 2.2G

**Fastest** acceleration in its class

Shorter cycle time has been achieved by the fastest Z-axis acceleration in its class and the low-inertia spindle

(Except 27,000 min-1 specification models)

**3%** or **more** 

\*Varies depending on machining programs or machining conditions.

#### Comparison of productivity

Example of machining program created by Brother



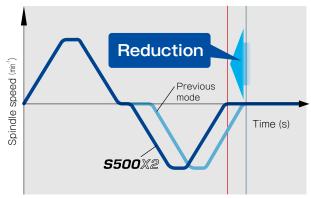
#### **Highly-responsive servomotor**

High-speed synchronized tapping at the fastest level in the world has been tuned further. Tapping can be completed in shorter time at high accuracy.



#### Comparison of cycle time in tapping

Image of tapping cycle



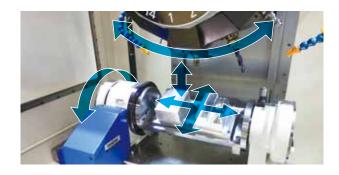
#### **Non-stop ATC**

Tool change time has been minimized by the increased Z-axis speed, in addition to the short spindle start/stop time.

S500X2 Tool - Tool : 0.8s > 0.7s Chip - Chip : 1.4s > 1.3s

#### Simultaneous operation control

Reduction in non-cutting time has been achieved by simultaneously performing tool change and positioning X/Y and additional axes.

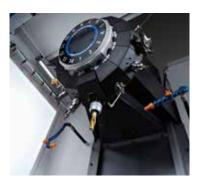


### **High Machining Capabilities**

Improved machine rigidity, diverse spindle motors, and high performance and a highly functional NC controller ensure a broad range of machining, from high-speed machining to heavy-duty machining.

#### **Highly rigid structure**

To improve rigidity, an effective machine structure has been established based on accumulated engineering analysis data.



# Rigid C-shaped machine structure

Rigidity has been enhanced by stress path reduction, especially for the Z-axis.



#### **High-power spindle motor**

 Medium- and high-speed characteristics for high efficiency machining  Low-speed characteristics optimal for heavy-duty machining





Machining details

 Cutting amount:150 cc/min
 Material: Carbon steel (for ø16 end mill)



Large hole drilling using high-torque specs

Machining details

Hole diameter: ø40 mm
 Material: Carbon steel

#### Spindle motor torque values

Standard specifications

Max. output: 18.9 kW

High-torque specifications (optional)

 $\underset{\text{(momentary)}}{\text{Max. torque}}: 92 \, \text{Nm}$ 

Max. output: 26.2 kW

#### High-speed three dimensional machining

In addition to the high-speed spindle specifications, high-speed and highly accurate three-dimensional machining has been achieved by Brother's original three-dimensional machining control equipped with a 200-block look-ahead function and smooth path offset function.

Max. speed

High-speed Spindle specs. (optional) :

**27,000** min<sup>-1</sup>

High accuracy mode BI (standard)

Lookahead

40 blocks

High accuracy mode BII (optional)

Lookahead

200 blocks



### Operability and Reliability

Functions of Brother's original usability-focused controller "CNC-C00 Series" have been further enhanced to make it more user-friendly.

#### **Operability**



#### **Equipped with tool monitoring functions**

#### ATC monitoring

The presence of a spindle tool is detected without using a sensor.

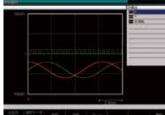
- Waveform output to memory card Torque waveform data can be output to a memory card (CSV format).
- Simple setting of high accuracy mode Parameters used for machining can easily be adjusted.



#### Control box size

Space has been increased for system expansion in case of automation etc.





#### PLC function

Standard equipped with PLC. Input and output points can be expanded to up to 1,024 points each (optional).



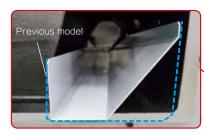
Reliability has been improved by implementing various improvements to prevent accumulation of chips and entry of coolant mist that can cause machine stoppage.

#### Reliability

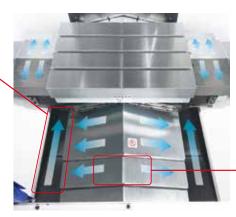
#### Improved chip flow

Use of roof shape telescopic cover

Roof shape telescopic covers are used for X- and Y-axes to facilitate chip flow. The shape of the chip flow path from the machining room to the tank is optimized to improve chip discharge performance.



■ Shape of chip flow path Chip discharge performance improved by increasing the flow rate



■ Y-axis telescopic cover (lower)
Chip discharge performance improved by optimizing the plate shape and adding piping

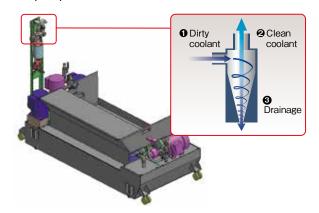


# Reliability, Machining Capabilities, and Rotary Table

#### Improved chip handling

#### ■ Tank with cyclone filter (special option for CTS)

Coolant is returned to a clean tank through a tank with a cyclone filter with fine chips removed. This reduces the filter change frequency and extends the service life of the pump.



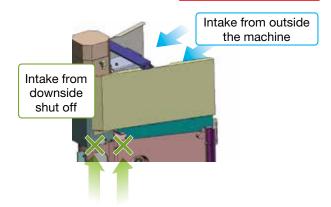
#### Improved coolant mist handling

#### Improved motor cooling air flow

A cover is installed to improve the air flow to the spindle motor fan. Intake of mist is reduced, leading to extended motor service life.

Intake of mist: Approx.

**70** %Less



#### **Machining capability**

		ADC	Cast iron	Carbon steel
Drilling	10,000min <sup>-1</sup>	D32(1.26)×0.2(0.008)	D28(1.1)×0.15(0.006)	D25(0.98)×0.1(0.004)
	10,000min <sup>-1</sup> high-torque	D40(1.57)×0.2(0.008) D30(1.18)× 0.7(0.03)	D34(1.34)×0.15(0.006) D26(1.02)×0.4(0.02)	D30(1.18)×0.15(0.006) D26(1.02)×0.25(0.01)
	16,000min <sup>-1</sup>	D24(0.94)×0.2(0.008)	D22(0.87)× 0.15(0.006)	D18(0.71)×0.1(0.004)
Tool diameter mm(inch) × Feed mm(inch)/rev	27,000min <sup>-1</sup>	D20(0.79)×0.2(0.008)	D19(0.75)× 0.15(0.006)	D17 (0.67) ×0.1 (0.004)
Tapping	10,000min <sup>-1</sup>	M27 × 3.0 (1-8UNC)	M24 × 3.0 (7/8-9UNC)	M16×2.0 (5/8-11UNC)
	10,000min <sup>-1</sup> high-torque	M39×4.0 (1 1/2-6UNC)	M33×3.5(1 1/4-7UNC)	M27×3.0 (1-8UNC)
	16,000min <sup>-1</sup>	M22×2.5 (7/8-9UNC)	M18×2.5(5/8-11UNC)	M14×2.0(1/2-13UNC)
Tool diameter mm(inch) × Pitch mm(inch)	27,000min <sup>-1</sup>	M22×2.5(7/8-9UNC)	M18×2.5(5/8-11UNC)	M12×1.75 (7/16-14UNC)
Facing	10,000min <sup>-1</sup>	960(58.6)	137(8.4)	100(6.1)
	10,000min <sup>-1</sup> high-torque	1,700(102.4)	255(15.5)	200(12.2)
	16,000min <sup>-1</sup>	660(40.3)	73(4.5)	48(2.9)
Cutting amount cm³/ min(inch³/min)	27,000min <sup>-1</sup>	600(36.6)	45(2.7)	24(1.5)

\*The data is Brother's actual test data.

#### **Rotary table T-200**



#### Feature 1 High productivity

High acceleration and fast rotation ensure smooth operation even for jigs with a large unbalanced load.

#### Feature 2 High accuracy

Preload applied between the input shaft and the output shaft achieves zero-backlash.

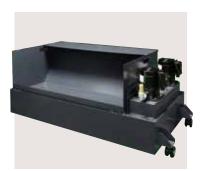
#### Feature 3 Extended service life

As very little abrasion on the input shaft and output shaft occurs due to rolling contact, adjustment is unnecessary for long periods.

#### ■ Use of roller gear cam mechanism



## Optional Specifications



#### Coolant unit

Can be selected from 50L, 100L, or 150L depending on the purpose (Photo: 150L tank with chip shower)



#### Coolant Through Spindle (CTS)

1.5 MPa CTS used for BT spindle.

\*Please consult your local distributor for use of 3 MPa CTS.

\*CTS cannot be selected for 27,000 min-1



#### High accuracy mode BII (look-ahead 200-blocks)

Equipped with a 200-block look-ahead function to achieve high-speed and highly accurate three-dimensional machining. Also equipped with the "smooth path offset function" to improve machining quality.



#### 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



LED work light (1 or 2 lamps)

LED lamps are used to extend lamp life and



#### Head coolant nozzle

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



#### Side cover (transparent board type)

External light is drawn in to make the inside of the machine brighter and improve visibility.



Tool breakage detector (touch type)

A touch switch type tool breakage detector is



Automatic grease lubricator

Regularly greases all greasing points on the

\*Manual greasing applies to the standard specification model

- \* 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.

#### **Optional Specifications**

Coolant unit

(1)50L (With valve, Pump: 180W)

(2)100L

(With chip shower and valve, Pump: 250W×2)

③150L

(With chip shower and valve, Pump: 250W+400W) Rotary table T-200

(4)150L

(With chip shower, CTS, and valve,

Pump: 250W+400W+650W)

(With cyclone filter, chip shower, CTS, and valve) Coolant Through Spindle (CTS)

- Mesh basket for chips
- Head coolant nozzle

- Tool washing (air-assisted type)
- Tool breakage detector (touch type)
- Chip shower
- Cleaning gun
- Jig shower valve unit
- Back washing system (for CTS)
- Automatic oil lubricator
- Automatic grease lubricator
- LED work light (1 or 2 lamps)
- Indicator light (1, 2, or 3 lamps) Automatic door (motor-driven)
- Area sensor
- Specified color
- Manual pulse generator

- Spindle override
- High column (150 mm, 250 mm)
- Grip cover
- Top cover
- Side cover (transparent board type)
- RS232C (25 pin) for control box
- Operation preparation circuit
- 100V outlet (in control box) Power supply expansion
- Expansion I/O board (EXIO board) ①EXIO board assembly ②Additional EXIO board assembly
- Switch pane (8 holes, 10 holes)
- Memory expansion (approx. 500 Mbytes)

- High accuracy mode BII
- (look-ahead 200 blocks, smooth path offset) Breaker handle cover
- Fieldbus
- ① CC-Link (remote device station)
- (2) PROFIBUS DP (slave)
- (3) DeviceNet (slave) PLC programming software
- (For Windows® XP, Vista, 7, and 8.1)

Windows® is a trademark or registered trademark of Microsoft Corporation in the United States and/or other countries.

\*Please contact your Brother dealer for details.

# Machine Specifications and NC Unit Specifications

		Item		S700X2 / S700X2 RD **9	S500X2 / S500X2 RD **9	S300X2 / S300X2 RD **9	
CNC Unit					CNC-C00		
	X axis		mm (inch)	700(27.6)	500(19.7)	300(11.8)	
	Y axis		mm (inch)		400(15.7)		
Travels	Z axis				300(11.8)		
	Distance between table top and spindle nose end mm(inch)		180~480(7.1~18.9)				
	Work area	size	mm (inch)	(h) 800×400(31.4×15.7) 600×400(23.4×15.7)		23.4×15.7)	
Table	Max.loadir	ng capacity (uniform load)	kg (lbs)	s) 250[300 *6](551[661 *6])			
	Spindle sp	peed		10,000min <sup>-1</sup> specifications	: 1~10,000 16,000min <sup>-1</sup> specificat	ions (Optional): 1~16,000	
	min-1			10,000min <sup>-1</sup> high-torque specifications (Optional): 1~10,000 27,000min <sup>-1</sup> specifications (Optional): 1~27,000			
Spindle	Speed dur	ring tapping	min-1	MAX. 6	MAX. 6,000 (27,000min <sup>-1</sup> specifications: MAX. 8,000)		
	Tapered h	ole			7/24 tapered No.30		
	BT dual co	ontact system (BIG-PLUS)			Optional		
	Coolant Th	hrough Spindle (CTS)		Optional (CTS ca	annot be selected for 27,000 min <sup>-1</sup> spec	cification models.)	
	Rapid traverse rate (XYZ-area) m/min(inch/min)			50 × 50 × 56 (1,969 × 1,969 × 2,205)			
Feed rate	Cutting fee	ed rate	mm/min(inch/min)	X	T, Y, Z axis: 1~30,000 (0.04 ~ 1,181)	axis: 1~30,000(0.04~1,181) *7	
	Tool shanl	k type		MAS-BT30			
	Pull stad t	ype *4		MAS-P30T-2			
	Tool stora	ge capacity	pcs.	. 14/21			
ATC unit	Max. tool l	length	mm (inch)	250(9.8) 160(6.3) [21 tool] 250(9.8) [			
	Max. tool	diameter	mm (inch)	110(4.3)			
	Max. tool	veight *1 kg(lbs)		3.0(6.6) / Tool (TOTAL TOOL WEIGHT: 25(55.1) for 14 tools, 35(77.2) for 21 tools)			
	Tool selection method		Random shortcut method				
	Tool To Tool sec.		0.7				
Tool change time *5	Chip To	Chip	sec.	1.3			
				10,000min <sup>-1</sup> specification	s: 10.1/7.1 16,000min <sup>-1</sup> specifica	tions(Optional): 7.4/5.1	
Electric motor	Main spind	Main spindle motor (10min/continuous)*2 kW		10,000min <sup>-1</sup> high-torque specifications(Optional): 12.8 / 9.2 27,000min <sup>-1</sup> specifications(Optional): 8.9 / 6.3			
	Axis feed motor kW			X, Y axis: 1.0 Z axis: 2.0			
	Power supply		AC V±10%, 50/60Hz±1Hz				
	Power capacity (continuous)		10,000min <sup>-1</sup> specifications: 9.5 16,000min <sup>-1</sup> specifications (Optional): 9.5				
Power source	kVA		10,000min <sup>-1</sup> high-torque specifications (Optional): 10.4 27,000min <sup>-1</sup> specifications (Optional): 9.5				
	Air Regular air pressure MPa		0.4~0.6(recommended value : 0.5MPa *8)				
	supply	Required flow	L/min	45(27,000min <sup>-1</sup> specifications : 115)			
	Height		mm (inch)	2,497(98.3)			
Machining dimensions	Required f	floor space[with control unit do	oor open] mm(inch)	2,050×2,223 [2,794] (80.7×87.5 [110])	1,560×2,223 [2,794] (61.4×87.5 [110])	1,080×2,463 [2,794] (42.5×96.9 [110])	
	Machine we	eight (including control unit and ma	achine cover) kg (lbs)	2,400(5,291)	2,250(4,960)	2,200(4,850)	
Vooringer *3	Accuracy of	bidirectional axis positioning (ISO23	0-2:1988) mm (inch)		0.006~0.020 (0.00024~0.00079)		
Accuracy *3	Repeatability	of bidirectional axis positioning (ISO2	30-2:2014) mm (inch)	Less than 0.004 (0.00016)			
Front door					2doors		
Standard accessories	Instruction	Manual (1 set), anchor bolts (4	pcs.), leveling plates (4	pcs.), machine cover (manual door)			

<sup>\*1.</sup> 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 X and Y axes. \*7. When high accuracy mode B is used (When not used, 1 ~ 10,000 mm/min for X/Y axes and 1 ~ 20,000 mm/min for Z axis) \*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.

NC unit specifications			
CNC model	CNC-C00		
Control axes	5 axes (X,Y,Z, two additional axes)		
Simultaneously controlled axes	Positioning	5 axes(X,Y,Z,A,B)	
	Interpolation	Linear: 4 axes(X,Y,Z one additional axis)	
		Circular: 2 axes Helical/conical: 3 axes(X,Y,Z)	
Least input increment 0.001mm, 0.0001inch, 0.001 deg.			
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	tion USB memory interface, Ethernet, RS232C (Optional)		
No.of registrable programs	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 laguage program available	

<sup>\*</sup>Number of "control axes" and/or "simultaneously controlled axes" are the maximum number of axes, which will differ depending on the destination country and the machine specifications. \*Ethernet is a trademark or registered trademark of XEROX in the United States.

	Standard NC functions				
Absolute / incremental     Inch / metric	Tool length measurement Tool life management / spare tool	(NC)  Expanded workpice coordinate system			
Corner C / Corner B	Background editing	Scaling			
Botational transformation	Graphic display	Mirror image			
Synchronized tap	Subprogram	Menu programming			
Coordinate system setting	Herical / conical interpolation	Programmable data input			
Dry run	<ul> <li>Tool washing filter with filter clogging detection</li> </ul>				
Restart	<ul> <li>Automatic power off (energy saving function</li> </ul>				
<ul> <li>Backlash compensation</li> </ul>	<ul> <li>Servomotor off standby mode (energy saving function</li> </ul>				
Rapid traverse override	Chip shower off delay	<ul> <li>Local coordinate system</li> </ul>			
Cutting feed override	<ul> <li>Automatic coolant off (energy saving function</li> </ul>	) One-way positioning			
<ul><li>Alarm history (1,000 pieces)</li></ul>	<ul> <li>Automatic work light off (energy saving function</li> </ul>	Opeation in tape mode			
Startus log	<ul> <li>Heat expansion compensation system!</li> </ul>	(Conversation)			
Machine lock	(X,Y,Z axes)	<ul><li>Operation program</li></ul>			
<ul> <li>Computer remote</li> </ul>	<ul> <li>Tap return function</li> </ul>	<ul><li>Schedule program</li></ul>			
<ul><li>Built-in PLC</li></ul>	Automatic workpiece measurement **	1 Automatic tool selection			
<ul> <li>Motor insulation resistance measurement</li> </ul>	<ul><li>Waveform display</li></ul>	<ul> <li>Automatic cutting condition setting</li> </ul>			
<ul><li>Operation log</li></ul>	Operation level	<ul> <li>Autmatic tool length compensation setting</li> </ul>			
<ul> <li>Tool monitoring</li> </ul>	<ul> <li>External input signal key</li> </ul>	<ul> <li>Autmatic cutter compensation setting</li> </ul>			
<ul><li>Screen shot</li></ul>	<ul><li>High accuracy mode BI</li></ul>	<ul> <li>Autmatic calculation of unknown number input</li> </ul>			
<ul> <li>Waveform output to memory card</li> </ul>	(look-ahead 40blocks)	<ul><li>Machining order control</li></ul>			
<ul> <li>Auto notification</li> </ul>	<ul><li>Inverse time feed</li></ul>				
High-accuracy mode AIII	<ul> <li>Spindle load monitoring function</li> </ul>				
Optional NC functions					
Memory expansion (Approx. 50 High accuracy mode BII (look-ahead 200 blocks, smooth Spindle override High-speed processing *2	(110)	Submicron command *3 Interrupt type macro Rotary fixture offset			

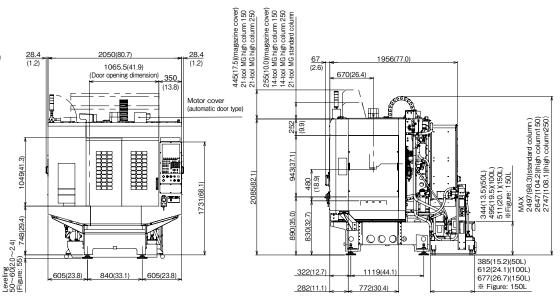
<sup>\*1.</sup> Measuring instrument needs to be prepared by users. \*2. Minute block processing time can be changed. \*3. When the submicron command is used, changing to the conversation program is disabled.

<sup>\*</sup>Functions listed under (NC) and (Conversation) are available only for NC programs and conversation programs respectively

# **External Dimensions**

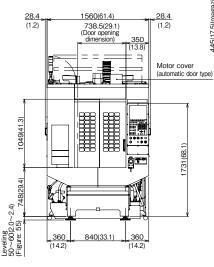


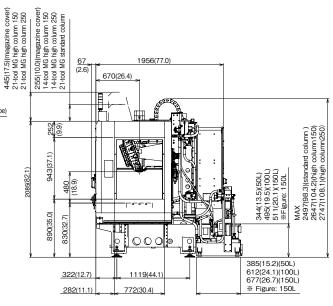




# **S500**%2

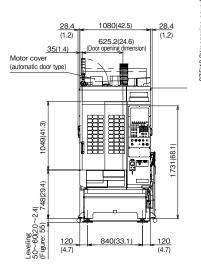


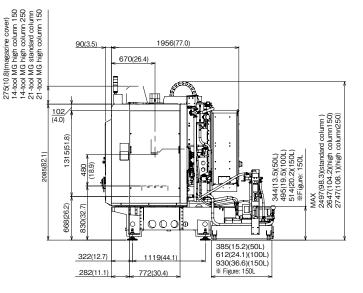


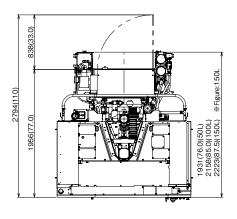


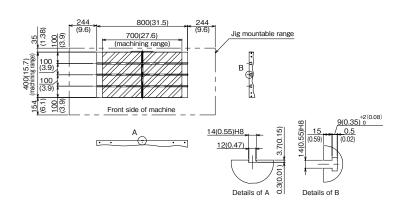


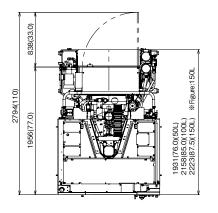


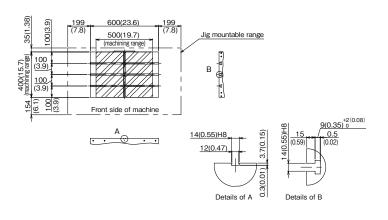


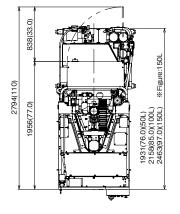


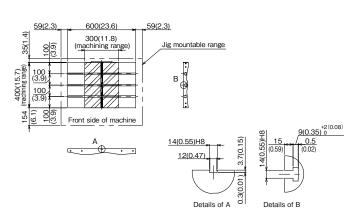












mm(inch)

#### **Global Service Sites**

Local dealers are available to provide services in each region, in addition to the sites below.

#### U. S. A.

#### BROTHER INTERNATIONAL CORP. MACHINE TOOLS DIV. TECHNICAL CENTER

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

#### Germany

#### BROTHER INTERNATIONALE INDUSTRIEMASCHINEN GmbH MACHINE TOOLS DIVISION FRANKFURT TECHNICAL CENTER

Hoechster Str.94, 65835 Liederbach, Germany PHONE:(49)69-977-6708-0 FAX:(49)69-977-6708-80

#### India

#### BROTHER INTERNATIONAL (INDIA) PVT LTD.

Machine Tools Bengaluru Technical Center
Park Landing, Ground Floor, Municipal No.5AC-709, 2nd Block, HRBR Extension, Bengaluru - 560 043 Karnataka, India PHONE:(91)80-43721645

#### China

#### BROTHER MACHINERY (SHANGHAI) LTD. (MACHINE TOOLS DIV.) SHANGHAI TECHNICAL CENTER

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

#### China

BROTHER MACHINERY (SHANGHAI) LTD.
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#### China

#### BROTHER MACHINERY (SHANGHAI) LTD. DONGGUAN BRANCH (MACHINE TOOLS DIV.) DONGGUAN TECHNICAL CENTER

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Figures in brackets () are the country codes.

- 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.
- 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 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 "non-white countries (excluding some countries and regions)", 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.

Specifications may be subject to change without any notice.



#### BROTHER INDUSTRIES. LTD.

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