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R450X1



Global Service Sites

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

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China

**BROTHER MACHINERY (SHANGHAI) LTD.
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**BROTHER INTERNATIONALE INDUSTRIEMASCHINEN GmbH
MACHINE TOOLS DIVISION FRANKFURT TECHNICAL CENTER**
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India

**BROTHER INTERNATIONAL (INDIA) PVT LTD.
BANGALORE TECHNICAL CENTER**
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Figures in brackets () are the country codes.

Specifications may be subject to change without any notice.

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**BROTHER INDUSTRIES, LTD.
MACHINERY & SOLUTION COMPANY**

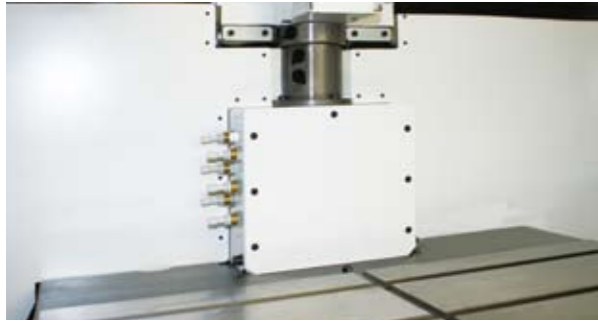
1-5, Kitajizoyama, Noda-cho, Kariya-shi,
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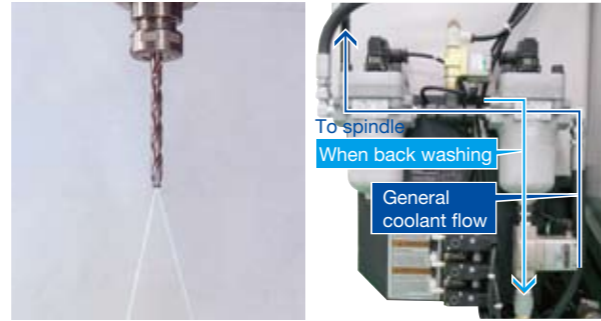


Optional attachments



Hydraulic rotary joint (4P) / Pneumatic relay box (12P)

12 pneumatic ports and 4 hydraulic ports have been prepared so that jigs that use pneumatic or hydraulic pressure can be mounted easily.
* When using the hydraulic rotary joint, the Y-axis travel becomes 290 mm.



Coolant Through Spindle (CTS)

1.5 Mpa CTS is effective for deep drilling and high-speed machining. The back washing system automatically washes the filter to prevent it from clogging, enabling longer continuous operation without filter replacement.
* Please consult Brother for use of 3 MPa CTS.



Work light (1 or 2 lamps) / Table light (LED)

LED lamps are used for the work light and table light, providing longer life and saving energy.



Tool washing (air-assisted type)

New air-assisted type tool washing with higher discharge pressure provides higher chip removal capacity. Stable washing power is achieved, without being affected by filter clogging.



Side door (with transparent window)

This makes setup or tool change from the side easier. It is possible to operate the manual pulse generator through the side door and check the machining room through the lighting window.
* Standardly equipped with 22 tool magazine model.



Automatic oil lubricator / Automatic grease lubricator

Regularly applies oil or grease to all lubricating points on the three axes.
* Manual greasing applies to the standard specification model.



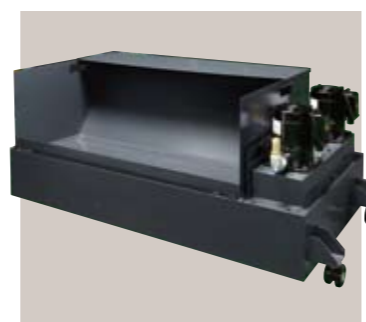
Turning diameter enlargement (D1,100mm)

A wider jig area can be secured by enlarging the QT table turning diameter.
* The column moves to a safe position before the QT table turns.



Automatic door (motor-driven)

A motor-driven door is used, achieving smooth operation and reducing opening and closing time.



Coolant unit

Can be selected from 100L or 150L, depending on the purpose.



Indicator light (1,2, or 3 lamps)

LED lamps are used. There are no bulbs to burn out, making it completely maintenance free.



Spindle override

Spindle speed can be changed without changing the program.



Side cover (transparent board type)

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



RS232C (25 pin) for control box

A 25-pin RS232C connector can be connected to the side of the control box.



B-axis cord

Multi-face machining is possible by adding additional axes.



Manual pulse generator

Manual pulse generator with a cable makes operation through the maintenance window easier.



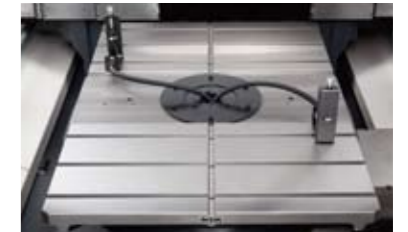
Outer index switch

This switch enables operation of the outer index table.



Cleaning gun

Helps clean the workpiece or chips inside the machine after machining.

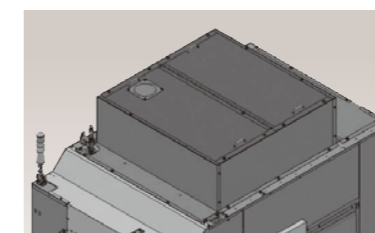


Tool breakage detector (tough type)

A touch switch type tool breakage detector is used. Installed on each pallet.

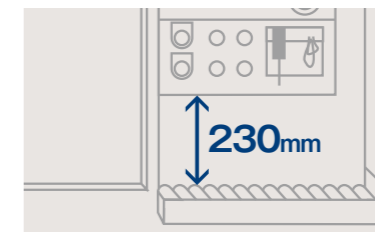
Optional Specifications

- Coolant unit
 - ① 100L (with valve and 250W pump)
 - ② 150L (with chip shower, valve and 250W + 400W pumps)
 - ③ 150L (with chip shower, CTS, valve and 250W + 400W + 650W pumps)
- Coolant Through Spindle (CTS) + Back washing system
- Tool washing (air-assisted type)
- Tool breakage detector (touch type)
- Hydraulic rotary joint (4P) + Pneumatic relay box (12P)
- Pneumatic relay box (12P)
- Cleaning gun
- Automatic oil lubricator
- Automatic grease lubricator
- LED type work light (1 or 2 lamps)
- Table light
- Indicator light (1, 2, or 3 lamps)
- Automatic door (motor-driven)
- Area sensor
- Specified color
- Manual pulse generator
- B-axis cord
- Spindle override
- Outside index rotation switch
- Turning diameter enlargement (D1,100mm)
- Top cover
- Side door (with transparent window)
- Side cover (transparent board type)
- Memory expansion (approx. 500 Mbytes)
- RS232C (25 pin) for control box
- Expansion I/O board (EXIO board)
 - ① EXIO board assembly
 - ② Additional EXIO board assembly
- High accuracy mode B II (look-ahead 200 blocks, smooth path offset)
- Submicron command
- Interrupt type macro
- Switch panel (6 holes, 10 holes)
- Fieldbus
 - ① CC-Link (remote device station)
 - ② PROFIBUS DP (slave)
 - ③ DeviceNet (slave)
- PLC programming software (for Windows XP, Vista, and 7)
- Jig shower valve unit
- Grip cover
- Mesh basket for chips



Top cover

This cover prevents the mist from getting out of the machine. There is also a hole a mist collector.

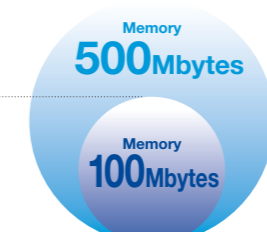


Switch panel (6 holes, 10 holes)

The position of the USB memory interface or manual pulse generator can be changed together with the switch hole. This allows more freedom to set-up a roller conveyor.

Optional

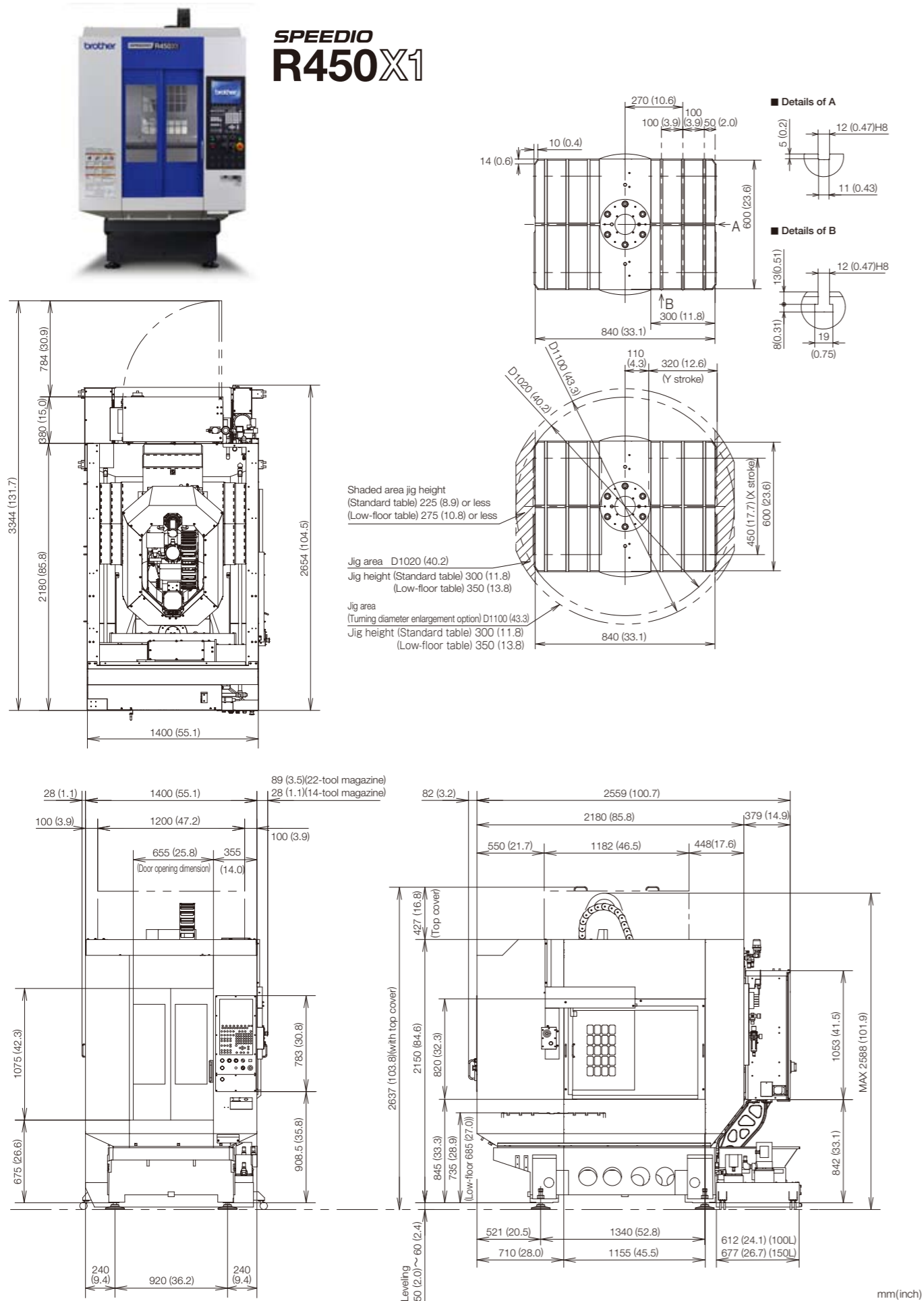
Standard



Memory expansion

Memory can be expanded to up to 500 Mbytes.

External Dimension



Machine Specifications and NC Unit Specifications

Machine specifications

Item	SPEEDIO R450X1	
CNC Unit	CNC-C00	
Travels	X axis	450 (17.7)
	Y axis	320 (12.6) *7
	Z axis	305 (12.0)
	Distance between table top and spindle nose end	200~505 (7.9~19.9) [250~555 (9.8~21.9)] *8
Table	Work area size	One face 600x300 (23.6x11.8)
	Max. loading capacity (uniform load)	One face 120 (265) [200 (441)] *6
Spindle	Spindle speed	10,000min ⁻¹ specifications: 10~10,000 16,000min ⁻¹ specifications (optional): 16~16,000 10,000min ⁻¹ high-torque specifications (optional): 10~10,000
	Speed during tapping	MAX. 6,000
	Tapered hole	7/24 tapered No.30
	BT dual contact system (BIG-PLUS)	Optional
	Coolant Through Spindle (CTS)	Optional
Feed rate	Rapid traverse rate (XYZ-area)	50 x 50 x 50 (1,969 x 1,969 x 1,969)
	Cutting feed rate	X, Y, Z 1~30,000 (0.04~1,181) *9
ATC unit	Tool shank type	MAS-BT30
	Pull stud type *4	MAS-P30T-2
	Tool storage capacity	14/22
	Max. tool length	200 (7.9)
	Max. tool diameter	80 (3.1)
Tool change time *5	Max. tool weight *1	3.0 (6.6) (total tool weight : 25 (55.1) for 14 tools, 40 (88.2) for 22 tools)
	Tool selection method	Random shortcut method
	Tool To Tool	0.8/0.9 (14 tool / 22 tool)
	Chip To Chip	1.6/1.7 (14 tool / 22 tool)
Electric motor	Cut To Cut	1.3/1.4 (14 tool / 22 tool)
	Main spindle motor (10min/continuous)*2	10,000min ⁻¹ specifications: 10.1/6.7 16,000min ⁻¹ specifications: 7.4/4.9 10,000min ⁻¹ high-torque specifications : 12.8/8.8
Power source	Axis feed motor	1.0 (X,Y) , 1.8 (Z)
	Power supply	AC V±10%、50/60Hz±1Hz
	Power capacity (continuous)	10,000min ⁻¹ specifications: 9.5 16,000min ⁻¹ specifications: 9.5 10,000min ⁻¹ high-torque specifications : 10.4
Machining dimensions	Height	2,588 (101.9)
	Required floor space [with control unit door open]	1,400x2,654 [3,344] (55.1x104.5 [131.7])
Accuracy *3	Weight	2,700 (5,954)
	Accuracy of bidirectional axis positioning (ISO230-2:2006)	0.006~0.020 (0.00024~0.00079)
	Repeatability of bidirectional axis positioning (ISO230-2:2006)	Less than 0.004 (0.00016)
Standard accessories	Instruction Manual (1 set), anchor bolts (4 pcs.), leveling bolts (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 Brother 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 200 kg (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 recommended value *11/ When the turning diameter enlargement option is selected.

NC unit specifications

Item	
CNC model	CNC-C00
Control axes	7axes (X,Y,Z, 4 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	USB memory interface, Ethernet, RS232C
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

* When program size is bigger than 2 Mbytes, machine works with extended memory operation.
* Ethernet is a trademark or registered trademark of XEROX in the United States.

Standard NC functions

- Absolute / incremental
- Inch / metric
- Corner C / Corner R
- Rotational transformation
- Synchronized tap
- Coordinate system setting
- Dry run
- Restart
- Backlash compensation
- Pitch error compensation
- Rapid traverse override
- Cutting feed override
- Alarm history (1,000 pieces)
- Status log
- Machine lock
- Computer remote
- Built-in PLC
- Motor insulation resistance measurement
- Operation log
- High-accuracy mode AIII
- Tool length measurement
- Tool life management / spare tool
- Background editing
- Graphic display
- Subprogram
- Helical / conical interpolation
- Standby mode (energy saving function)
- Chip shower off delay
- Tap return function
- Automatic work light off (energy saving function)
- Automatic workpiece measurement *1
- Heat expansion compensation system II (X,Y,Z axes)
- Automatic power off (energy saving function)
- Automatic coolant off (energy saving function)
- Tool washing filter with filter clogging detection
- Waveform display
- Operation level
- External input signal key
- High accuracy mode BI (look-ahead 30blocks)
- Expanded workpiece coordinate system
- Scaling
- Mirror image
- Menu programming
- Program compensation
- Tool length compensation
- Cutter compensation
- Macro function
- Local coordinate system
- One-way positioning
- Operation in tape mode
- Conversation
- Operation program
- Schedule program
- Automatic tool selection
- Automatic cutting condition setting
- Automatic tool length compensation setting
- Automatic cutter compensation setting
- Automatic calculation of unknown number input
- Machining order control

Optional NC functions

- Memory expansion (Approx. 500 Mbytes)
- High accuracy mode BII (look-ahead 200 blocks, smooth path offset)
- Spindle override

NC

- Submicron command *2
- Interrupt type macro

*1. Measuring instrument needs to be prepared by users.
*2. When the submicron command is used, changing to the conversation program is disabled.
*Functions listed under (NC) and (Conversation) are available only for NC programs and conversation programs respectively.