

SPEEDIO

T-200Ad

T-200A

Special option Rotary Table

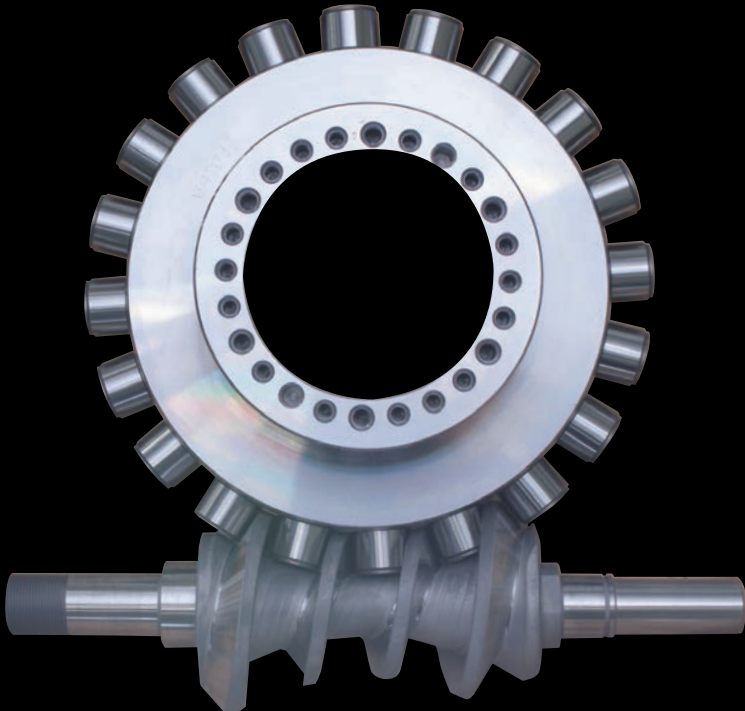




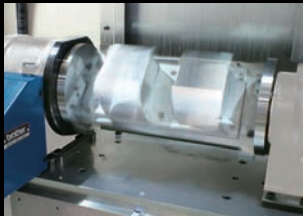
Further enhancement of SPEEDIO productivity

Process integration via multi-face machining added to high productivity of the SPEEDIO. Achieves more efficient production.

Cutting Out the Waste *SPEEDIO*



Using roller gear cam mechanism



High productivity



High accuracy



Maintenance free

Basic specifications

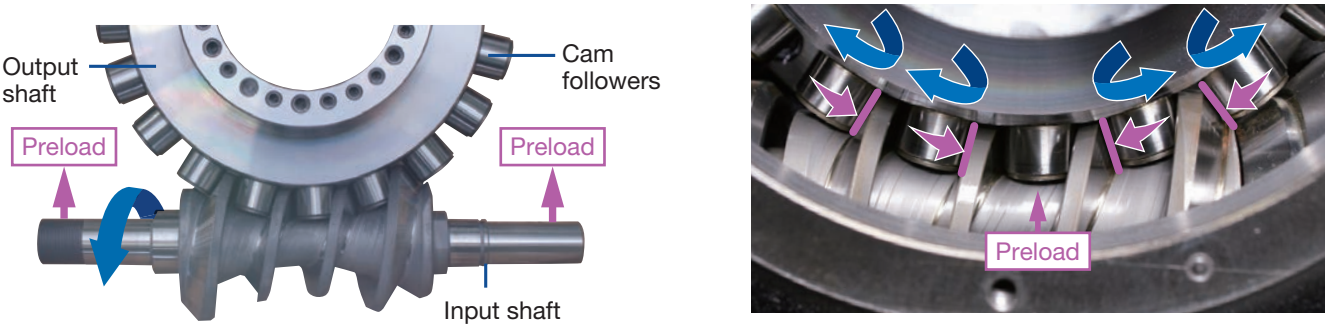
Type	Right-handed, Left-handed *1	
Center height (mm/inch)	170/6.7	
Gear ratio	1/20	
Maximum speed (min ⁻¹)	100 (50 *2)	
Maximum loading capacity (kg/lbs)	100/220 (200/440 *3)	
Product weight (kg/lbs)	61/134	
Applicable models *4 *5	T-200Ad (CNC-D00 controller)	S300Xd1, S500Xd1, S700Xd1
		W1000Xd1, R450Xd1, R650Xd1
	T-200A (CNC-C00 controller)	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, R450X2/X1, and R650X2/X1.

Use of the roller gear cam mechanism achieves high productivity, high accuracy, and extended service life.

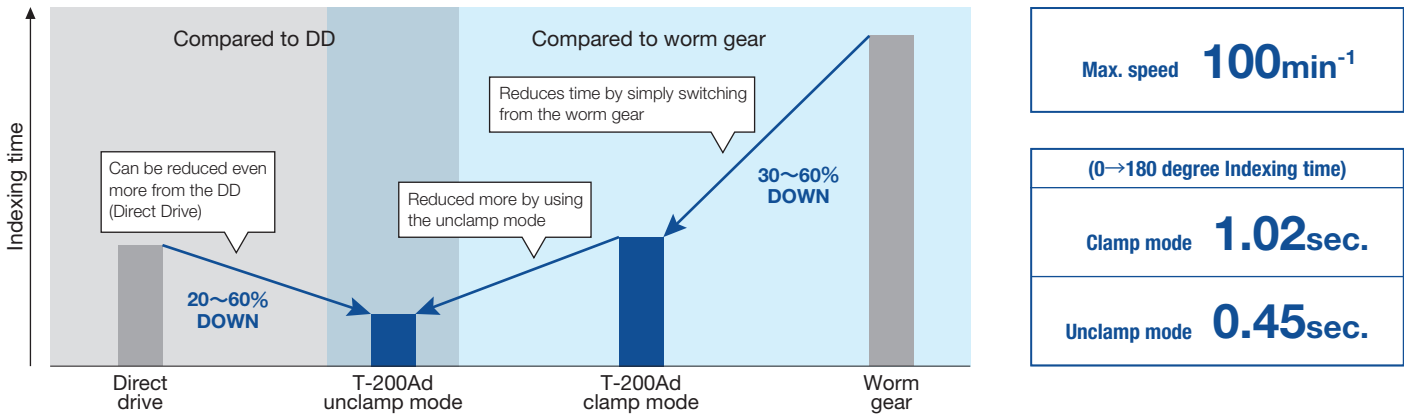
Roller Gear Cam Mechanism

By preloading the input and output shafts beforehand, the four cam followers can be always kept in contact with the cam surface, which eliminates backlash and provides high rigidity. In addition, the cam followers that rotate can transmit the motor torque efficiently, and therefore, they can rotate at low torque and be used for a long term, without wear and adjustment.



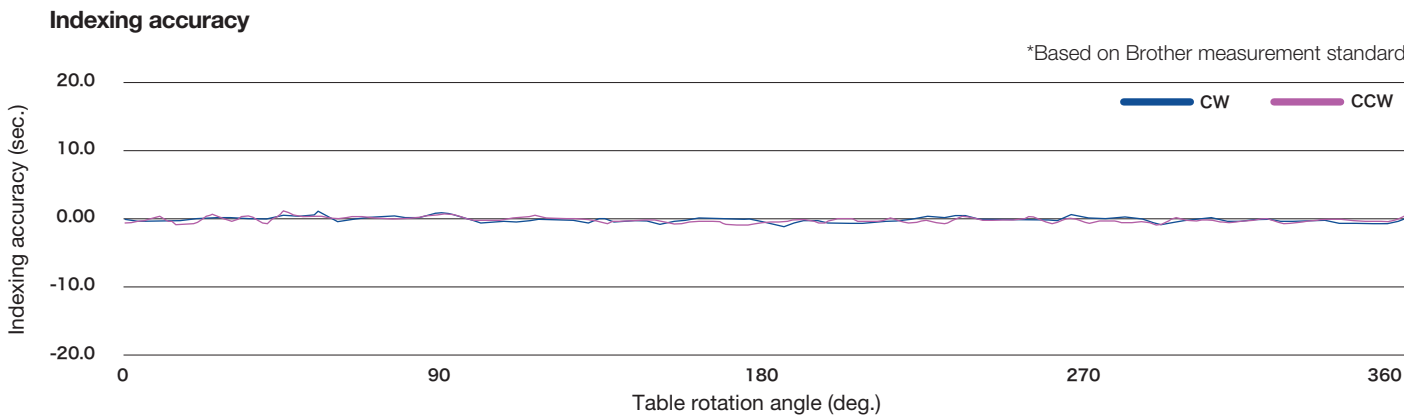
High Productivity

Combining the roller gear cam with the proper motor provides high acceleration and high rotation speed. In addition, machining can be performed only by the holding torque with motor without using the clamp mechanism depending on the machining load.



High Accuracy

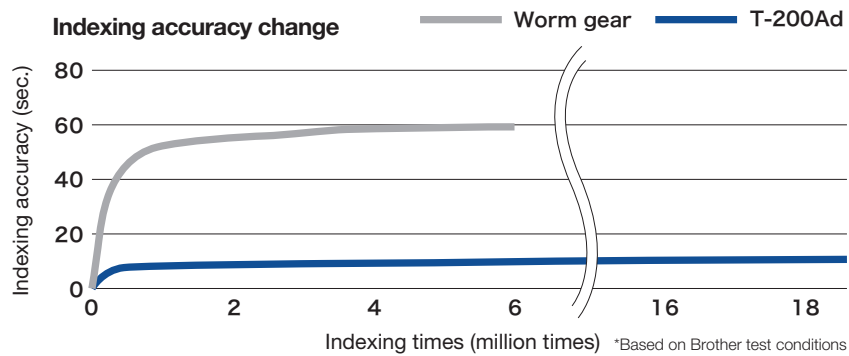
Backlash can be eliminated with preloading the cam followers. Even machining with the turning direction in reverse will not adversely affect the machining surface.



Maintenance Free

There is very little wear because the contact area is a rolling surface that rotates. While the worm gear requires regular adjustment, the roller gear cam does not require any adjustment even in long term use.

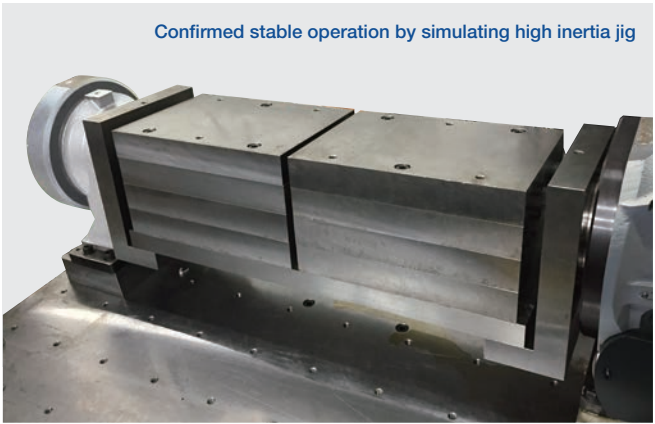
Accuracy change after indexing 18 million times **12sec. or less**



High Stability

The system offers high transmission efficiency between the input and output shafts. This completely eliminates vibration and oscillation which are likely to occur during inertia or with unbalanced jigs, thereby always providing stable operation at high speed. Even when jigs or workpieces are changed, the adjustments such as parameters are not so much required.

	Standard mode	High inertia mode
Max. speed	100min ⁻¹	50min ⁻¹
Allowable inertia	1.0kg·m ²	4.0kg·m ²

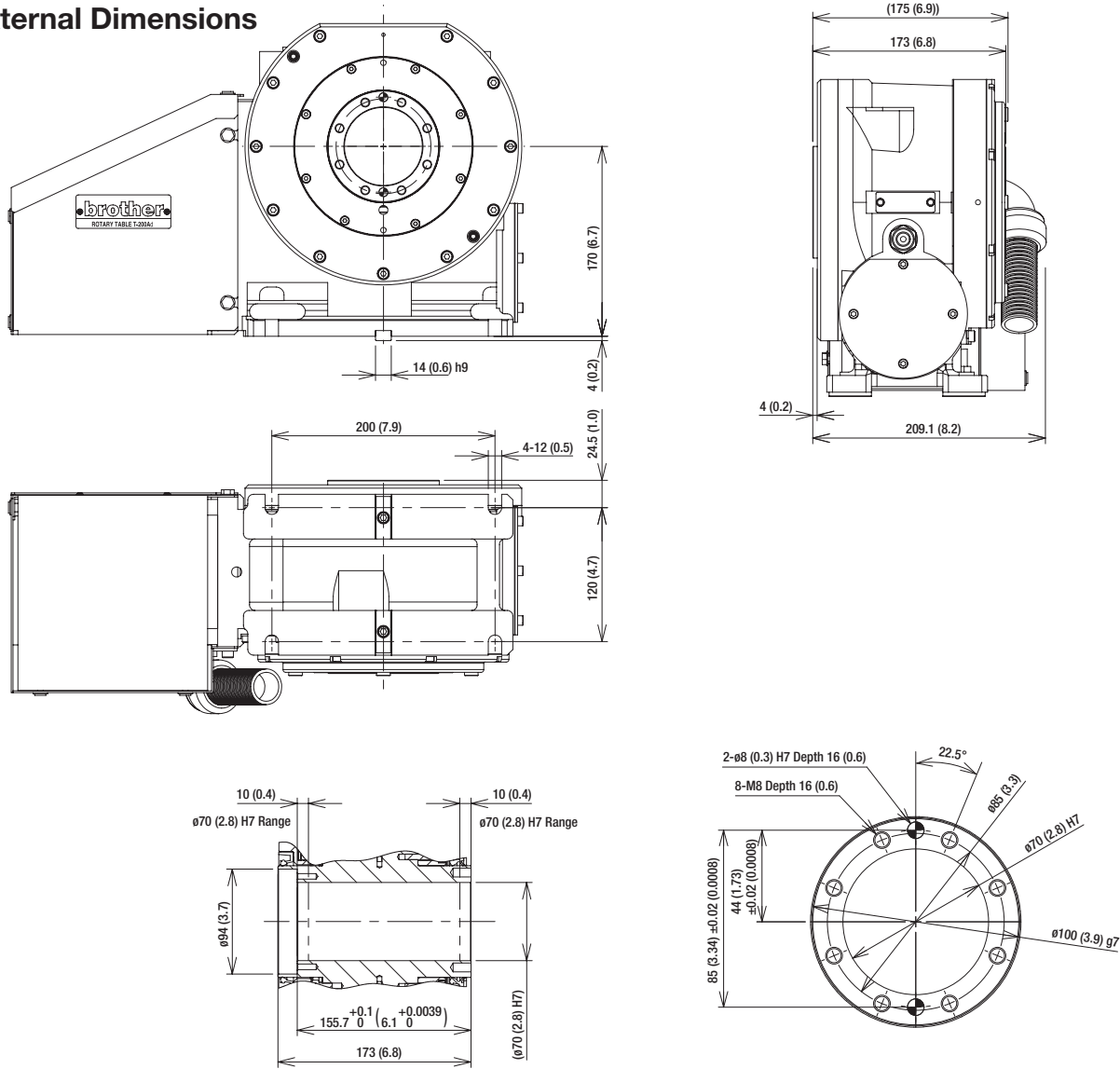


Reliable Support

As the T-200Ad rotary table is made by Brother, support is provided by the same contact as the SPEEDIO from purchase to after-sales service.



External Dimensions



Specifications

Type	Right-handed, Left-handed *1
Through hole diameter	(mm/inch) 70H7/2.8H7
Center height	(mm/inch) 170/6.7
Gear ratio	1/20
Maximum speed	(min ⁻¹) 100 (50 *2)
Bi-directional positioning accuracy (ISO230-2 compliant)	(s) 20 or less
Bi-directional positioning repeatability (ISO230-2 compliant)	(s) 10 or less
Indexing accuracy *3	(s) 10 or less
Repeatability *3	(s) 4 or less
Maximum loading capacity	(kg/lbs) 100/220 (200/440 *4)
Allowable work inertia	(kg·m ² /lbs·ft ²) 1.0/23.7 (4.0/94.8 *2)
Allowable unbalanced load	(kg·m/ft·lbs) 5.0/36.2
Clamp method	Mechanical clamp (pneumatic) plus servo clamp
Clamp torque	(N·m/ft·lbs) 480/354 (at 0.5MPa)
Maximum allowable torque *5	(N·m/ft·lbs) 720/531 (at 0.5MPa)
Product weight	(kg/lbs) 61/134
Applicable models	
*6 *7 T-200Ad (CNC-D00 controller)	S300Xd1, S500Xd1, S700Xd1, W1000Xd1, R450Xd1, R650Xd1
T-200A (CNC-C00 controller)	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. Based on Brother measurement standard. *4. When support table is used. *5. Unclamping may be needed before the next machining operation starts.
*6. S500Z2N, S700Z2N, and R450Z1 sold only in China *7. T-200A can also be used for S300X2/X1, S500X2/X1, R450X2/X1, and R650X2/X1.

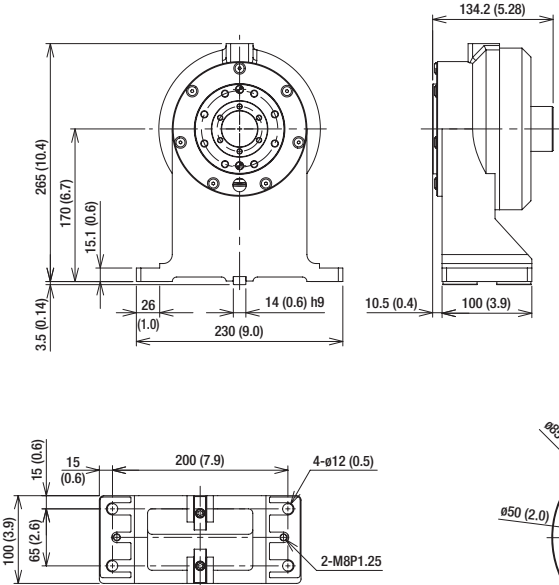
Support table

Specifications	Without clamp	With clamp
Through hole diameter (mm/inch)	40H7/1.6H7	
Center height (mm/inch)	170/6.7	
Clamp method	—	Mechanical clamp (pneumatic)
Clamp torque (N·m/ft·lbs)	—	330/243 (at 0.5MPa)
Product weight (kg/lbs)	19/42	28/62

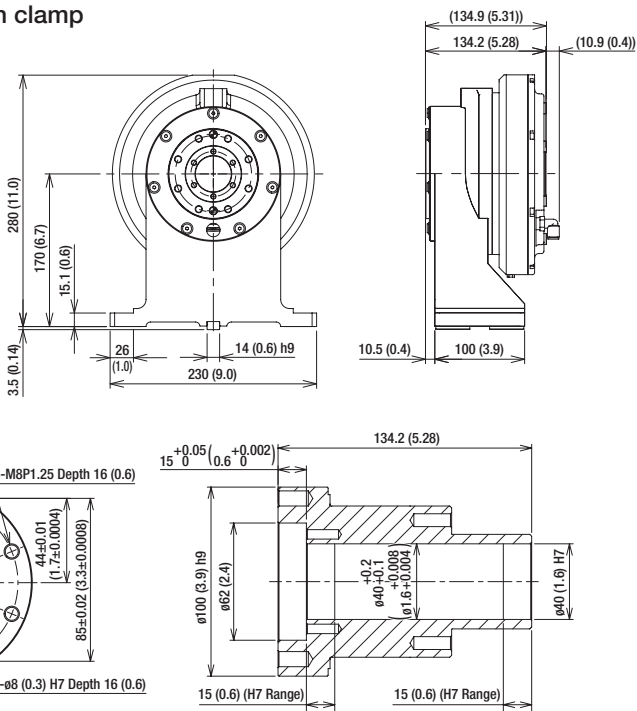


*The support table with clamp

Without clamp



With clamp



Rotary joint

Rotary joint with 6 + 1 ports is built into the rotary table.

6 ports:
Hydraulic (7MPa),
Pneumatic (1MPa)
1 port (center port):
Coolant (0.3MPa)



* Please consult us separately when using a rotary joint for a support table.

Sub plate

Required when mounting T-200Ad or T-200A and a support table directly on W1000Xd1, R450Xd1(Z1), or R650Xd1.
(149×280×t19:mm)
(5.8×11.0×t0.9:inch)



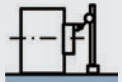
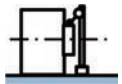
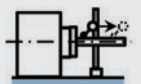
* Not required when a plate is prepared by customers.

Specifications check list

	S300Xd1, S500Xd1(Z2N), S700Xd1(Z2N), W1000Xd1, F600X1	R450Xd1(Z1)	R650Xd1
No. of axes	1	1 / 2	1 / 2
Machine type	—	Low table / Standard	Low table / Standard
Rotary table type	Right-handed / Left-handed	Right-handed	Right-handed
B-axis cord	○	○	○
Partition (with 12-Port pneumatic relay box)	—	○	○
Turning diameter enlargement	—	○	Not required / Required
Support table	Not required / Without clamp / With clamp	Not required / Without clamp / With clamp	Not required / Without clamp / With clamp
Sub plate	Not required / Required	Not required / Required	Not required / Required
Rotary joint for T-200A(d)	Not required / Required	Not required / Required	Not required / Required
Manual	Not required / Required	Not required / Required	Not required / Required

○: Included. Not need to order separately.

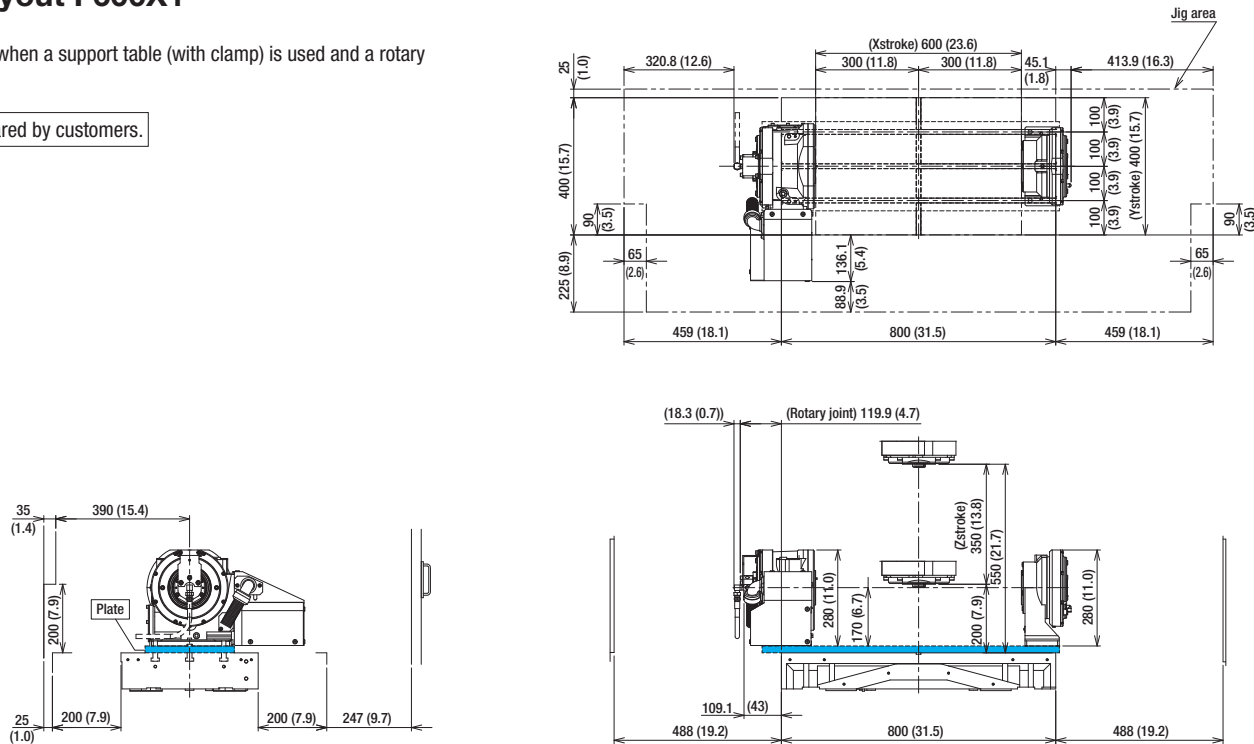
Accuracy standards

Measurement items	Diagram	Allowable value (mm)
Deflection of table top surface		0.015
Deflection of table outer peripheral surface		0.010
Parallelism between rotation center and vertical mounting reference surface		0.020 for 150 mm
Squareness between table top surface and vertical mounting reference surface		0.020
Parallelism between rotary axis and guide block of vertical mounting reference surface		0.025 for 150 mm

Mounting layout F600X1

The illustration shows when a support table (with clamp) is used and a rotary joint is mounted.

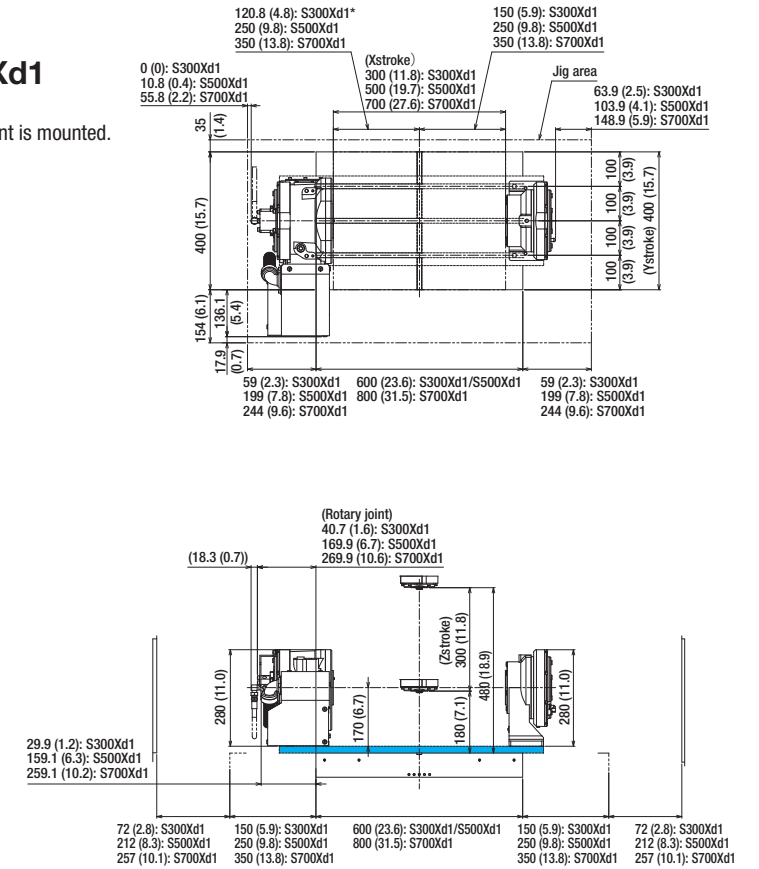
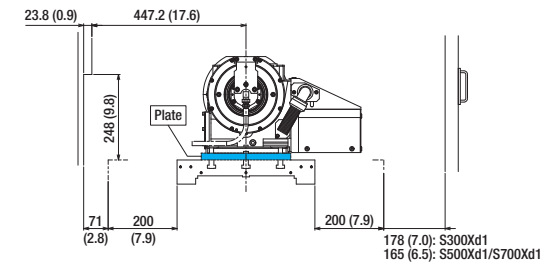
A plate must be prepared by customers.



Mounting layout S300Xd1/S500Xd1/S700Xd1

The illustration shows when a support table (with clamp) is used and a rotary joint is mounted.

A plate must be prepared by customers.

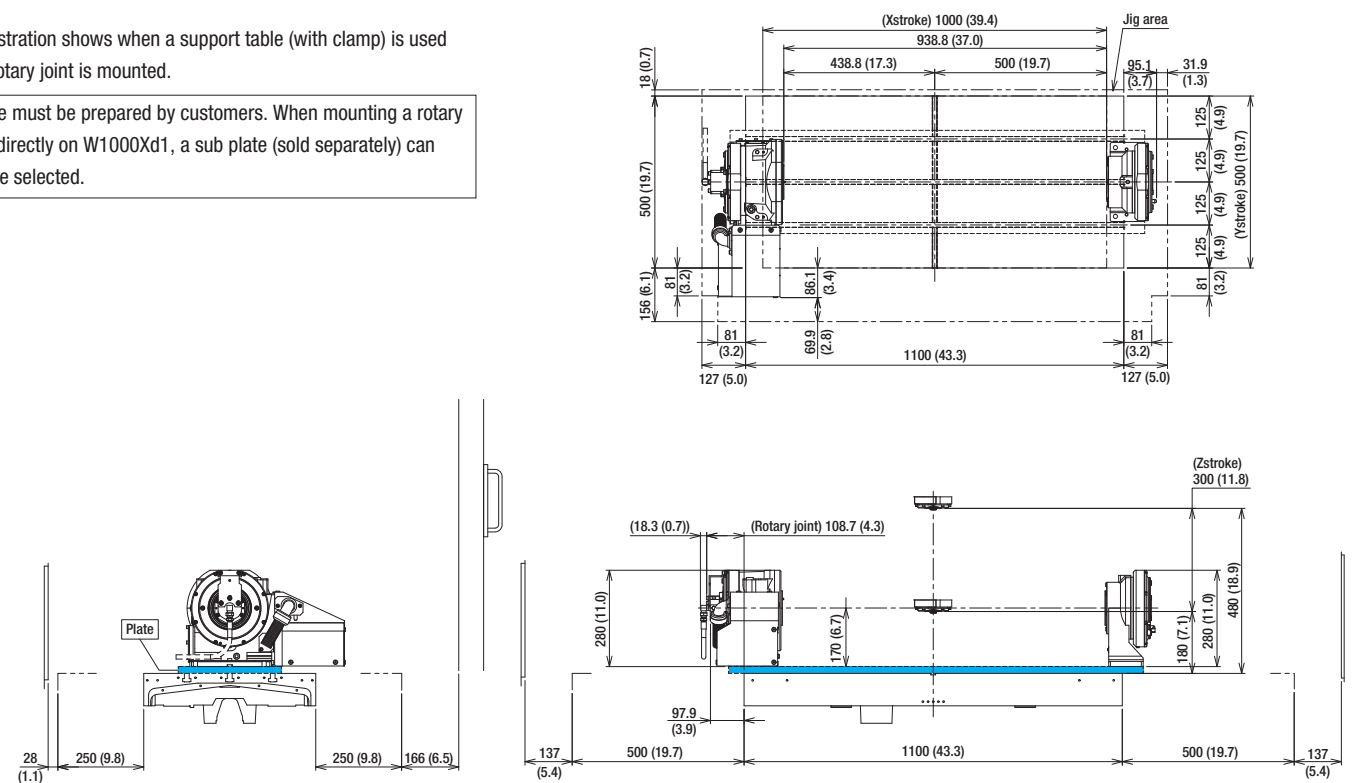


* In case of S300Xd1, T-200Ad with rotary joint cannot be installed on the table edge.

Mounting layout W1000Xd1

The illustration shows when a support table (with clamp) is used and a rotary joint is mounted.

A plate must be prepared by customers. When mounting a rotary table directly on W1000Xd1, a sub plate (sold separately) can also be selected.

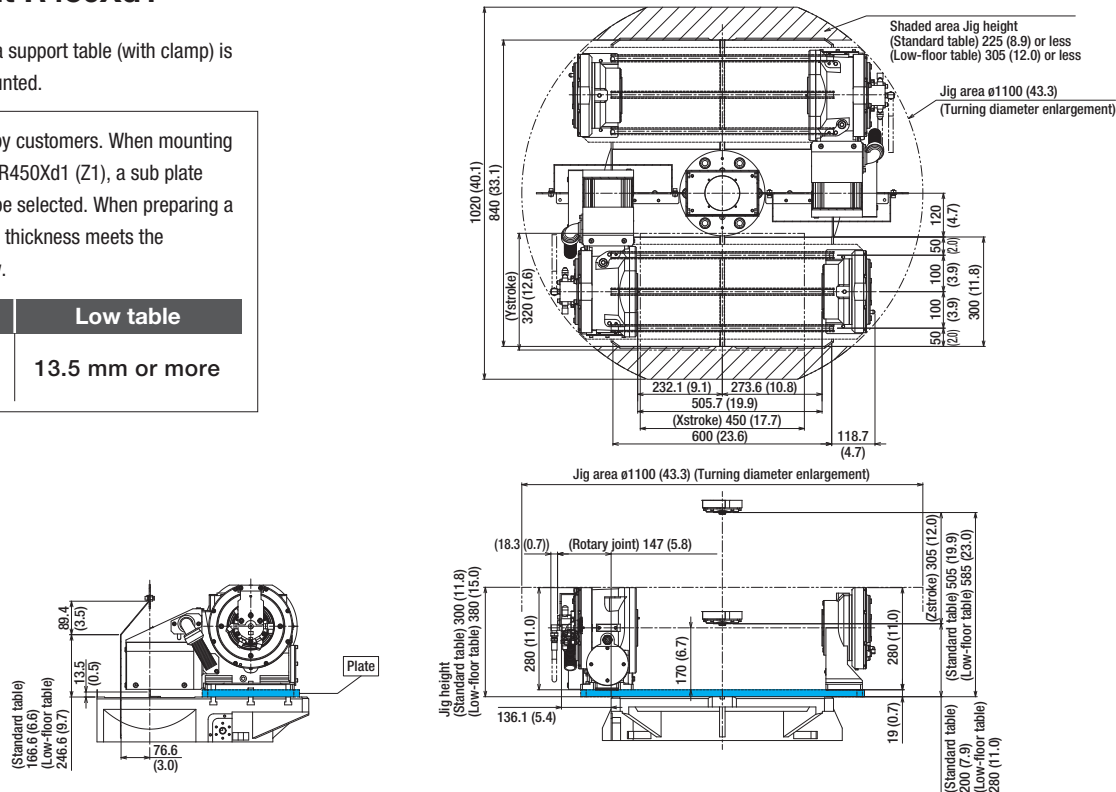


Mounting layout R450Xd1

The illustration shows when a support table (with clamp) is used and a rotary joint is mounted.

A plate must be prepared by customers. When mounting a support table directly on R450Xd1 (Z1), a sub plate (sold separately) can also be selected. When preparing a plate, ensure that the plate thickness meets the requirements shown below.

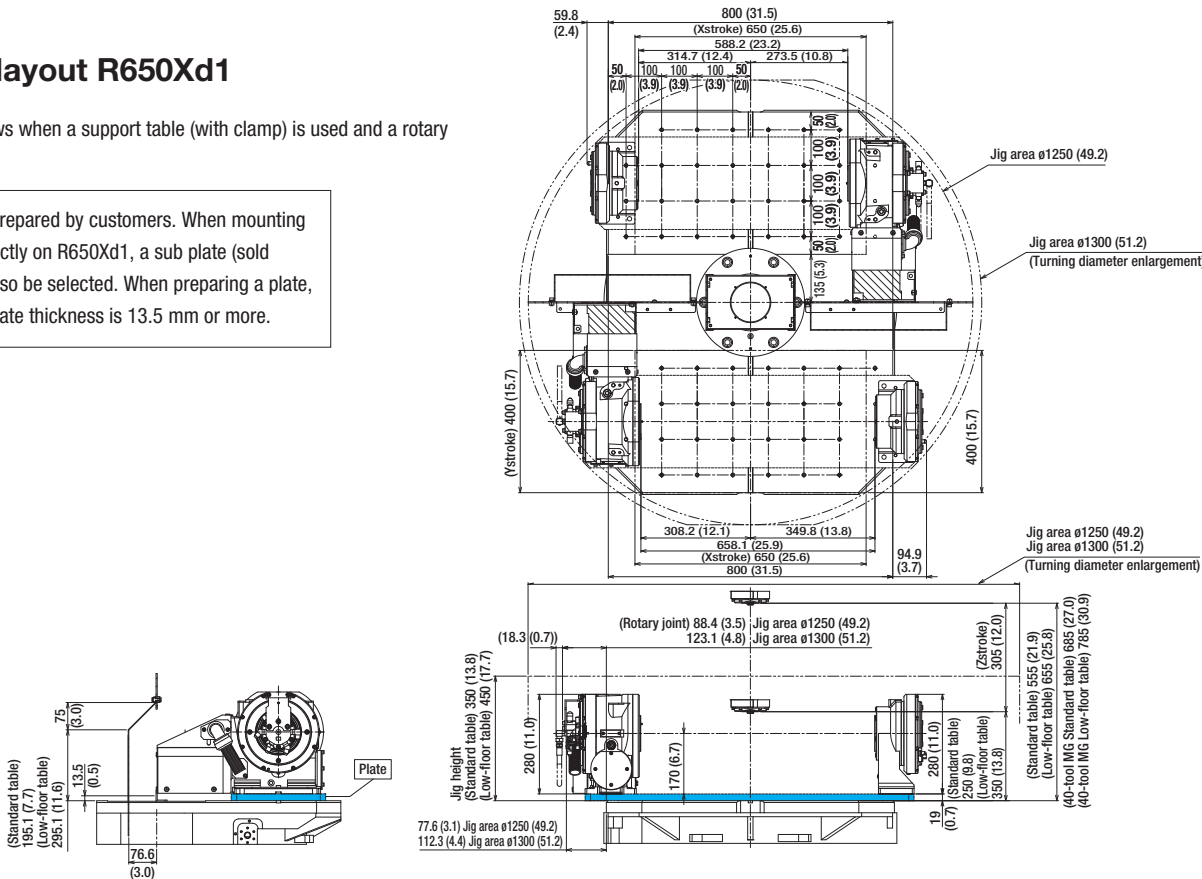
Standard table	Low table
13.5 mm or more Less than 20 mm	13.5 mm or more



Mounting layout R650Xd1

The illustration shows when a support table (with clamp) is used and a rotary joint is mounted.

A plate must be prepared by customers. When mounting a rotary table directly on R650Xd1, a sub plate (sold separately) can also be selected. When preparing a plate, ensure that the plate thickness is 13.5 mm or more.



Glossary

Positioning accuracy in one direction	Positioning at any 12 points in one direction (same direction), the differences between the command value input from NC and the actually positioned angle are measured, obtaining the difference between the measured maximum and minimum value of the 12 points. It is a commonly used measurement method which is not influenced by backlash because it rotates in one direction.
Positioning accuracy and repeatability in one direction	5 times positioning at any 1 point in one direction (same direction), the differences between the actually positioned angles are measured. This is performed at any 12 points, obtaining the maximum value of the differences at each point. It is a commonly used measurement method which is not influenced by backlash because it rotates in one direction.
Bi-directional positioning accuracy (Complies with ISO230-2)	Positioning at any 12 points is performed in the forward direction and then positioning at same 12 points are done from the reverse direction. The differences between the command value input from NC and the actually positioned angle are measured. This is performed 5 times at each point, obtaining the value accounted for variations in measured difference. The measurement is performed under more severe conditions than that of positioning accuracy in one direction, because backlash affects the result.
Bi-directional positioning accuracy and repeatability (Complies with ISO230-2)	5 times positioning at any 1 point in the forward direction and from the reverse direction, the differences between the actually positioned angles are measured. This is performed at any 12 points, obtaining the maximum value of the differences at each point. The measurement is performed under more severe conditions than that of positioning accuracy and repeatability in one direction, because backlash affects the result.
Clamp torque	Holding torque applied in the table rotation direction when the table clamp mechanism is activated. Total torque of servo clamp (doubled by roller gear cam) and mechanical clamp (pneumatic 0.5 MPa).
Maximum allowable torque	Torque allowable for cutting load to be momentarily applied to the output shaft with the rotary table held by the servo clamp and the mechanical clamp. (However, unclamping may be needed before the next machining operation starts.)
Allowable workpiece inertia	Maximum value for inertia of object attached to the jig mounting face.
Allowable unbalanced load	Maximum value for offset of object attached to the jig mounting face. $U[\text{kg}\cdot\text{m}]=w[\text{kg}]\times L[\text{mm}]/1000$
Angle unit	1[°]=60[min]=3600[s]
Example of calculating	Q. When the indexing accuracy is 10 seconds, what is the error at the edge 100mm radius from the center of rotation? A. 10[s]=10/3600÷0.0028[°] 100[mm] X tan(0.0028°)=0.005[mm] When the rotation direction is displaced by 10 [s], the vertical deviation is 5 μm at the edge 100mm radius from the center of rotation.

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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.
- When exporting this product, be sure to check the end user and their purpose of use from the viewpoint of security trade control.

Specifications may be subject to change without any notice.

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