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 INTERNATIONA
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.
CHONGQING BRANCH (MACHINE TOOLS DIV.) CHONGQING TECHNICAL CENTER
Room 105, No.51 Xuefudadao, Nan' an District, Chongqing Province, 400074, P.R.China
PHONE:(86)23-6865-5600 FAX:(86)23-6865-5560

Mexico

BROTHER INTERNATIONAL DE MÉXICO, S.A. DE C.V.
División de Maquinaria Industrial Centro Técnico Querétaro
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

Thailand

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

India

BROTHER INTERNATIONAL (INDIA) PVT LTD.
Machine Tools Gurugram Technical Center
CE SERVICED OFFICES PVT. LTD., DLF CYBER HUB, Building No 10, Tower A, Level 1,
Phase 3, DLF Cyber City, Gurugram - 122002 Haryana - India
PHONE:(91)80-43721645

China

BROTHER MACHINERY (SHANGHAI) LTD.
DONGGUAN BRANCH (MACHINE TOOLS DIV.) DONGGUAN TECHNICAL CENTER
1F, Fuyuan Business Center Building, No.1 Lane 13, Maiyuan Road, Xin'an community,
Chang'an Town, Dongguan City, Guangdong Province, 523008, P.R.China
PHONE:(86)769-2238-1505 FAX:(86)769-2238-1506

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), or exporting M200X3/M300X3, 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), or exporting M200X3/M300X3, as a machine conforming to Row 2 of Appended Table 1 of Export Trade Control Order, a relocation detection device is installed on the machine depending on the destination country. After relocating the machine with the detection device, the machine is locked and any operation is temporarily impossible. Please inform your local distributor of machine relocation in advance and apply to perform the release operation of relocated machine.
- In order to operate our machine with an additional axis rotary table installed separately overseas after exporting the machine, the procedure to activate the axis of rotary table is needed. Please inform your local distributor of these processes in advance, because the predetermined procedure is required to perform the activation. In addition, for export to "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.
Machinery Business Division
1-5, Kitajizoyama, Noda-cho, Kariya-shi,
Aichi-ken 448-0803, Japan
PHONE: 81-566-95-0075
FAX : 81-566-25-3721
http://www.brother.com

The information in this catalogue is current as of November 2019. ver.1911

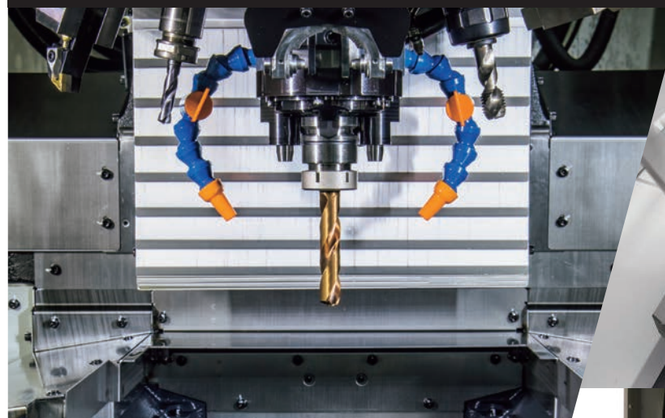
brother
at your side

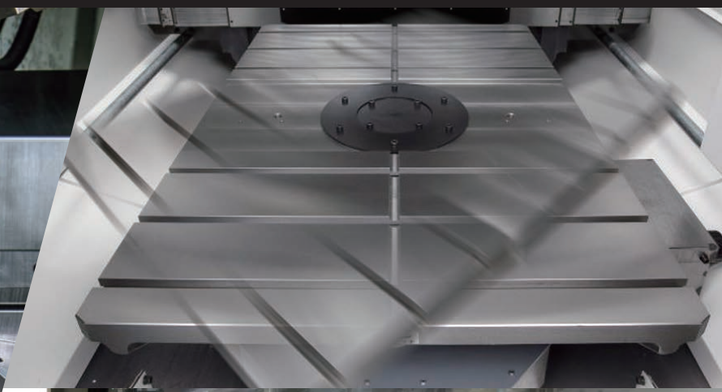
SPEEDIO

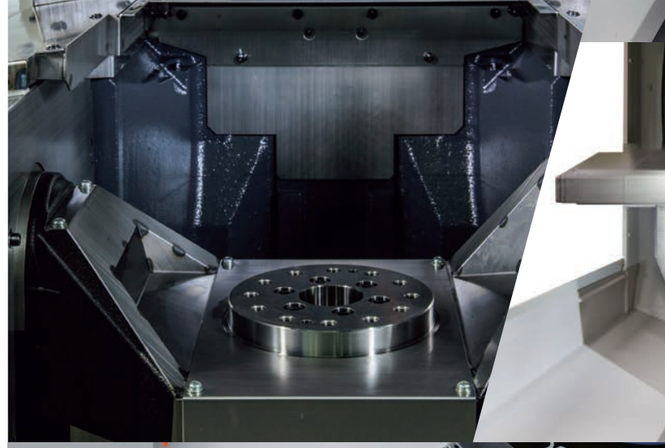
GENERAL CATALOGUE

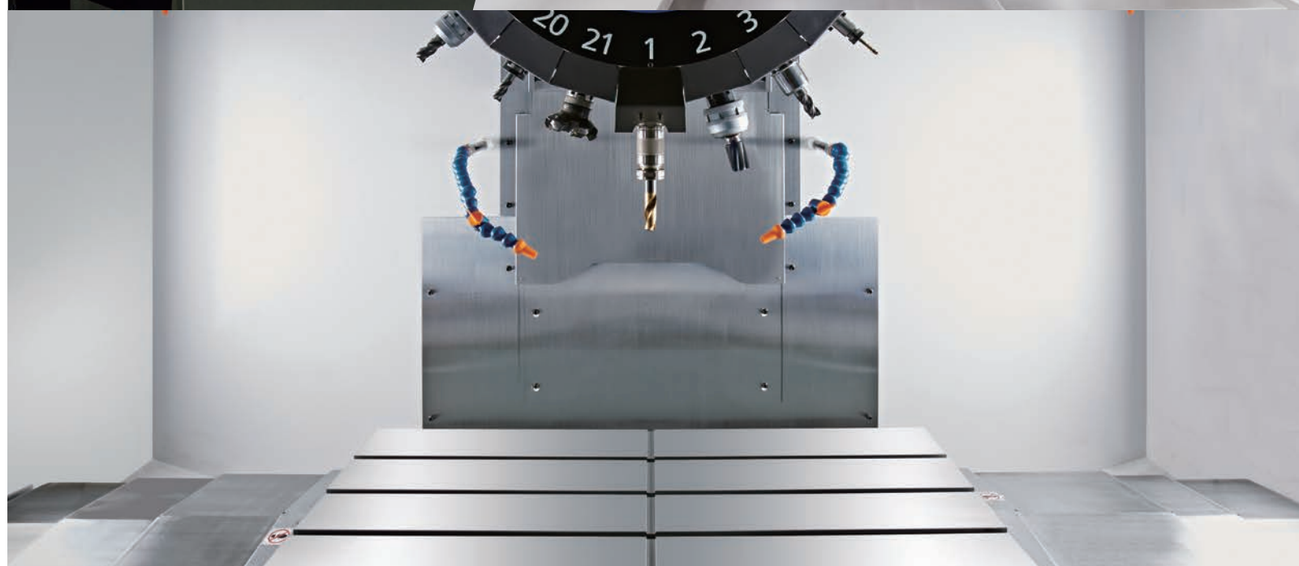
S300X2
S500X2
S700X2
S1000X1
F600X1

R450X2
R650X2
M200X3
M300X3









Our machines will bring about success to users producing mass-production parts.

Two resolutions reflected in machines

#30 spindle taper

Pursuing higher speed, acceleration, and responsiveness, utilizing features of low inertia, light weight, and original servo system

Original NC

Enabling optimal control with elimination of any waste while driving machine performance to the fullest

Overwhelming high productivity

High machining capabilities

Excellent environmental performance

Constantly pursuing the possibilities of #30 spindle machines

Extensive product lineup offers the best solution to suit each production variation.

SPEEDIO Series

Compact Machining Center

●High-performance model

S300X2

S500X2

S700X2

●Ample travel model

S1000X1

●High rigidity model

F600X1

●Pallet changer model

R450X2

R650X2

Multi-tasking machine

●Multi-tasking machine for mass production

M200X3

M300X3

Man-hour reduction equipment

Loading System

BV7-870

Rotary Table

T-200A

Pursuit of high productivity

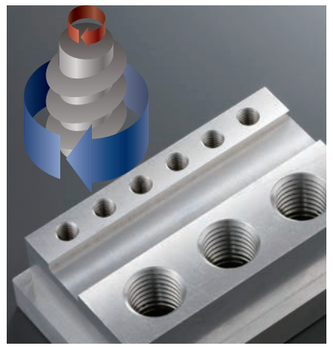
High-speed operations and optimized control have been achieved by the #30 spindle taper and original NC, enabling the machine to demonstrate high productivity.

Nonstop 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.

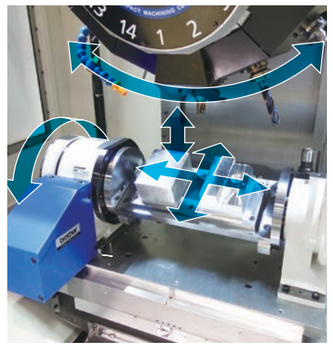
Highly-responsive servomotor

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 nonstop 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.

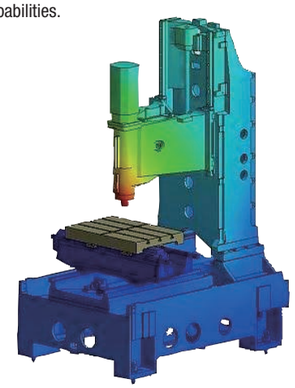


Pursuit of machining capabilities

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

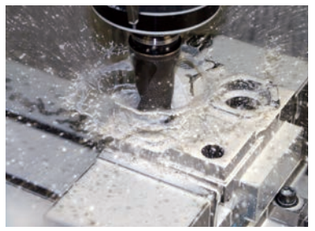
High-speed, high-efficiency machining has been achieved using a spindle motor with high torque in the medium- and high-speed range. High-torque specifications (optional) greatly improve low-speed range torque, providing excellent heavy-duty machining for steel workpieces.

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

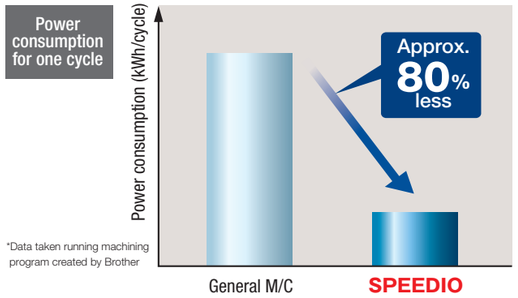
Machining details	Hole diameter : D40 mm Material : Carbon steel

Pursuit of environmental performance

Reduction in power and air consumption results in a great decrease in CO_2 emissions, making the machine more earth-friendly and providing high environmental performance.

Low power consumption

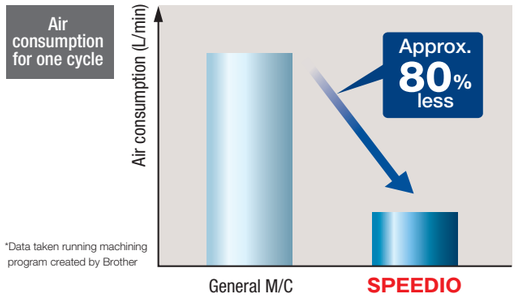
Equipped with a power regeneration system that reuses energy generated when decelerating, high-efficiency motor, energy saving pump, LED work light and other energy saving functions, achieving low power consumption.



*Data taken running machining program created by Brother

Low air consumption

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



*Data taken running machining program created by Brother

Pursuit of Usability

Original NC with emphasis on usability improves work efficiency and operating rate at production sites.

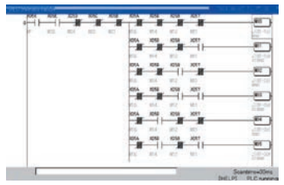
CNC-C00 controller

Operability

Equipped with a USB memory interface, sub folders to make program management easier, and shortcut keys to quickly open the desired screen.

System capacity

PLC is standard equipped and the control box can be enlarged to support system expansion for automation etc.

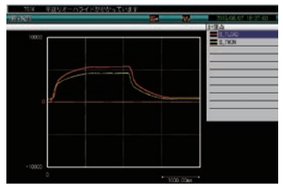


Network function

High capacity program data can be transferred via Ethernet at high speed.

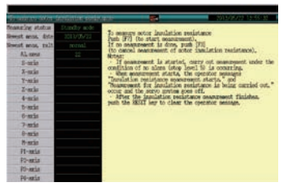
Machining support functions

Equipped with machining support functions, such as tool monitoring, torque waveform output to memory card, and high accuracy mode.



Maintenance functions

Equipped with motor insulation resistance measurement, operation log, and maintenance notice functions.



High performance models suitable for a broad range of machining

Wide array of spindle specifications and machine sizes to further seek high productivity and high reliability

S300X2 S500X2 S700X2

Pursuit of high productivity

Machines provide high productivity due to the fastest Z-axis acceleration in its class, highly-responsive servomotor, and optimized waste elimination control. In addition to this, shorter cycle time has been achieved by the low-inertia spindle motor.

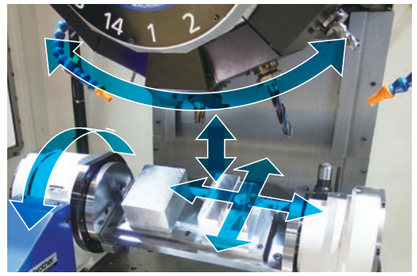
■Non-stop ATC

Z-axis acceleration: **2.2G**

Tool-Tool : **0.7s**

Chip-Chip : **1.3s**

■Simultaneous operation



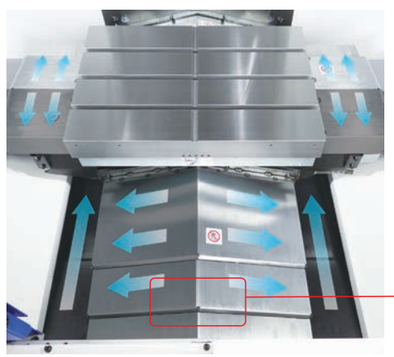
High machining capabilities and high reliability

■From high-speed, high-efficiency machining to heavy-duty machining

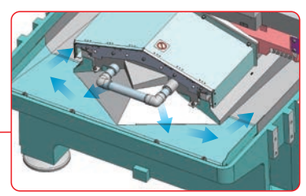
Based on the highly rigid structure, various spindle motor specifications are available to ensure a wide array of machining capabilities, such as the standard specifications with medium- and high-speed properties and the high-torque specifications with low-speed properties suitable for heavy-duty machining.

Standard specifications	Max. torque (momentary) :	40Nm
	Max. output:	18.9kW
High-torque specifications (optional)	Max. torque (momentary) :	92Nm
	Max. output:	26.2kW

■Fast chip discharge



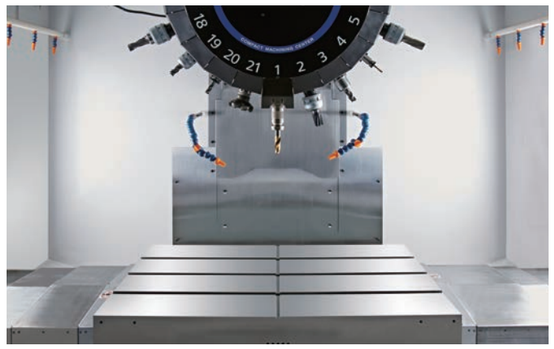
To improve chip discharge performance to ensure reliability, chip flow has been enhanced by using roof-shaped telescopic covers, adding piping, and changing the shape of the chip flow path.



Machining much larger workpieces with #30 spindle machines

Achieving improved productivity for large workpiece machining with larger machining area and bigger travels than ever before

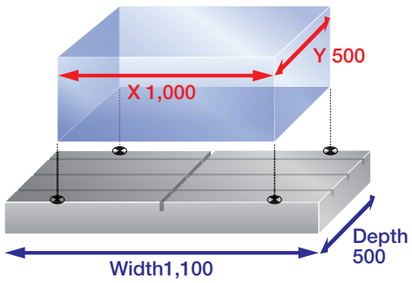
S1000X1



Mounting large workpieces and large jigs possible

Increasing the X- and Y-axes travels to the limit has enabled machining of large workpieces that could not be mounted on conventional #30 machines. A large rotary table or a large jig can also be mounted.

■Large machining area

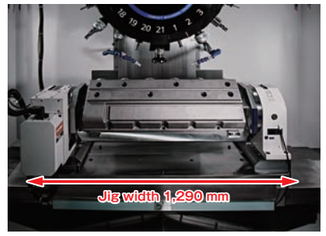


Travels: **X1,000 Y500mm**

Work area size: **X1,100 Y500mm**

Max. loading capacity: **400kg**

■Jig mounting example

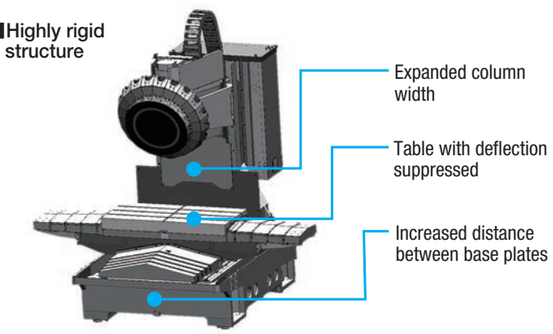


Rotary table diameter: D250 mm
Workpiece size: 830×264×135mm

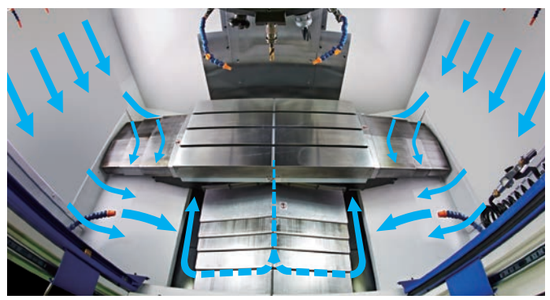
Highly rigid structure and high reliability

To enable large workpiece machining, backbone parts, such as the base, column and table, have been specially designed through numerical analysis to secure high rigidity. In addition to this, roof-shaped telescopic covers are used for the X/Y-axes and the chip shower flow rate has been doubled to improve chip discharge performance.

■Highly rigid structure



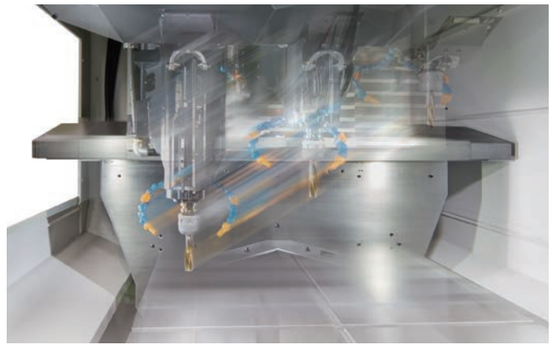
■Chip shower



Improved machining capabilities due to highly rigid structure and minimized vibration

Great improvement of production efficiency with reduction in both cutting and non-cutting time

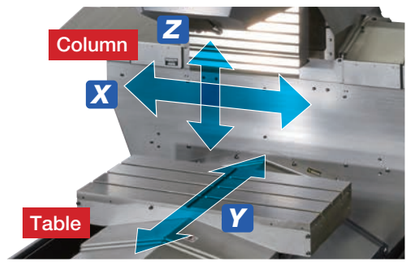
F600X1



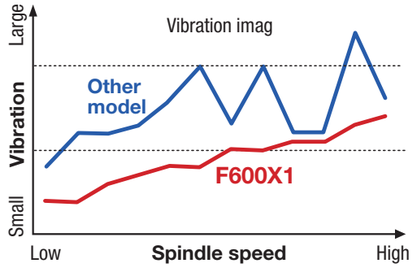
Highly rigid structure and stable machining

The fundamental machine structure has been reviewed using structural analysis techniques. Using table movement for the Y-axis and column movement for the X- and Z-axes enhances the rigidity of the drive system and the spindle. A structure that minimizes vibration during machining has been developed through vibration analysis, enabling stable machining in a wider speed range.

■Highly rigid machine structure



■Wide stable range



■High-power spindle motor

The highest class high-torque motor among spindle motors used for #30 spindle machines is standard equipped.

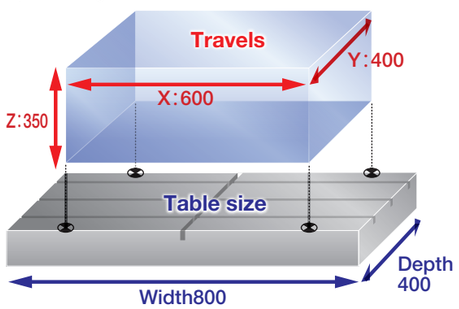
Spindle motor characteristics

Max. torque : (momentary) **92Nm**

Max. output: **26.2kW**

Large machining area

Large machining area and table size have been secured to support machining of large workpieces. Further, a maximum loading capacity of 500 kg has been achieved by increasing the table thickness.

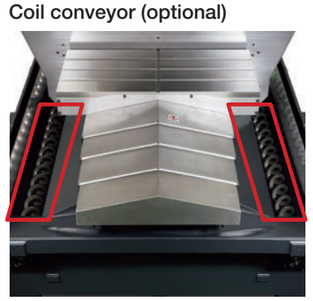


Improved chip discharge performance

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

Coolant flow path

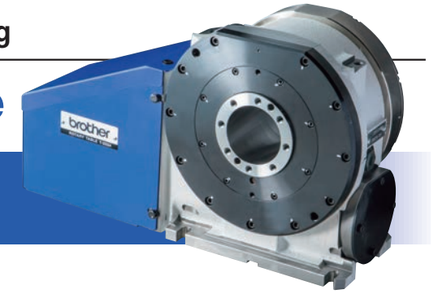
Coil conveyor (optional)



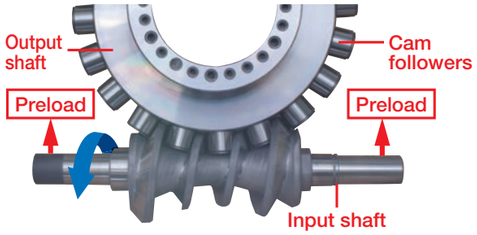
Further improving productivity of multi-face machining

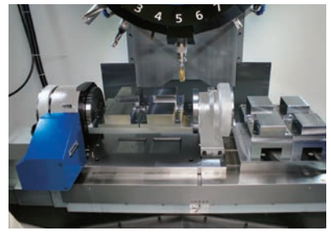
SPEEDIO Special Option Rotary Table

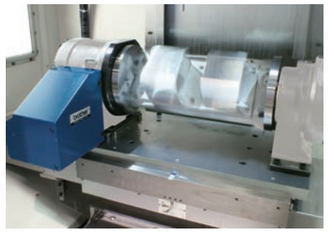
T-200A



■Use of roller gear cam mechanism







High productivity

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

High accuracy

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

Maintenance free

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

■Main specifications

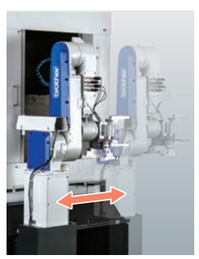
Type	Right-handed, Left-handed *1	Gear ratio	1/20	Maximum loading capacity	100 (200 *3) kg
Center height	170mm	Maximum speed	100 (50 *2) min^{-1}	Product weight	61kg
Supported models *4	S300X2 (X1) / S500X2 (X1) / S700X2 (X1) / S1000X1 / R450X2 (X1) / R650X2 (X1) / F600X1 / S500Z1 / R450Z1				

*1. Only right handed type available for R450X2 (Z1) and R650X2 *2. When high inertia mode (enabled by changing parameter setting) is used *3. When support table is used *4. S500Z1 and R450Z1 sold only in China

Simple and compact man-power saving system with easy installation and startup

SPEEDIO Special Option Loading System

BV7-870



Integrated with the SPEEDIO main unit

Standard equipped with the side door, requiring less installation space

Specialized for loading/unloading workpieces

Simple structure with an easy-to-handle 4-axis articulated arm

Controller incorporated in SPEEDIO's control box

Signal cables internally connected to machine's NC, and piping and wiring stored in the body

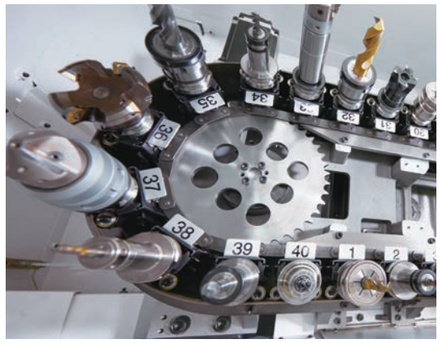
■Main specifications

No. of axes	4 axes (3 rotation axes + 1 travel axis)	Arm length	Total 870 mm	Supported models	S300X2、S500X2、M200X3
Loading position	Right side / Left side	Rated transferable weight	7kg		

Non-stop machining model standard equipped with pallet changer

40-tool magazine has been added to further promote process integration

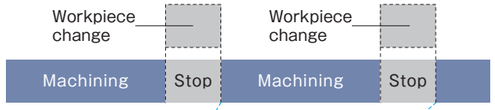
R450X2 R650X2



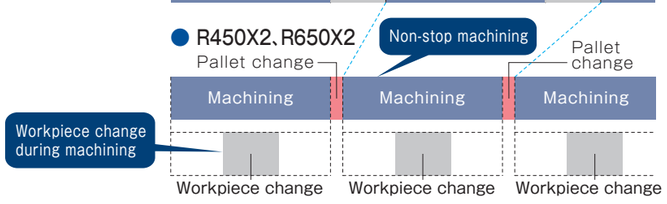
Non-stop machining

The QT (Quick Turn) table is Brother's original turn table type high-speed 2-face pallet changer. High-speed pallet change is enabled by avoiding lift-up operation while achieving high reliability through a sealed structure. Workpieces on one pallet can be changed while machining workpieces on the other pallet. Therefore, waste in workpiece change time is eliminated, enabling nonstop machining.

●Without pallet changer

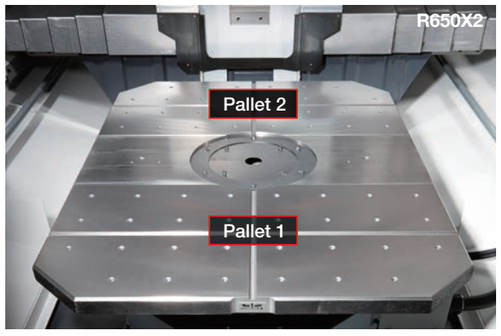


● R450X2、R650X2



Pallet change time R450X2 : **2.9s** R650X2 : **3.4s**

Large jig area

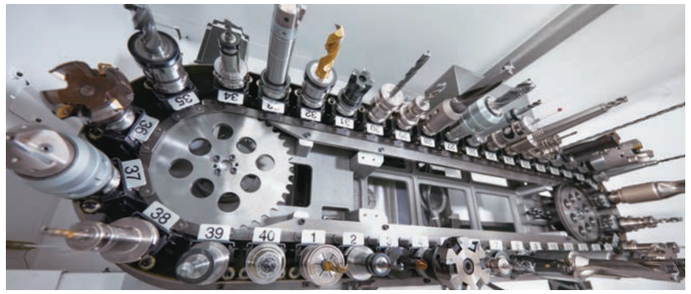


Ample travels and large jig area have been secured in spite of its compact body. A jig can be mounted and extend beyond the table as long as it is within the pallet turn diameter. The jig area can be enlarged using options (turning diameter enlargement, low table) to enable larger workpiece machining.

	R450X2	R650X2
Turning diameter	1,020mm	1,250mm
Jig height	300mm	350mm
Loading capacity	120kg	200kg
Work area size (one face)	600 x 300mm	800 x 400mm

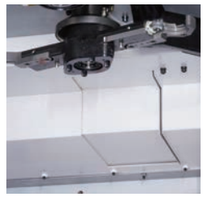
Equipped with 40-tool magazine (R650X2)

A 40-tool magazine model introduced to product lineup in addition to 14- and 22-tool magazine models. Making use of the 2-face pallet changer, process integration has been improved to increase productivity.



■Separation of machining room and magazine

To prevent chips entering the magazine, a shutter has been installed to the tool pot to separate the machining room and the tool magazine.



Pot shutter closed

Pot shutter open

High productivity

■High-speed tool change

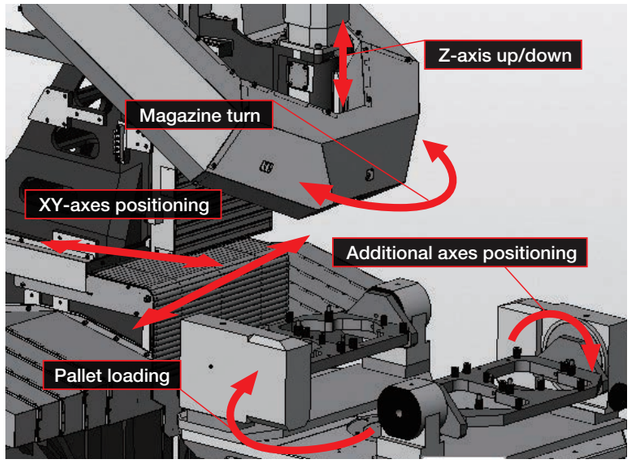
High-speed tool change is achieved by increasing the speed of, and optimizing the control for, spindle start/stop, Z-axis up/down, and magazine operation.

40-tool magazine
Tool-Tool : **0.9s** Chip-Chip : **2.6s**

22-tool magazine
Tool-Tool : **0.8s** Chip-Chip : **1.6s**

■Simultaneous operation

The machine is equipped with a simultaneous operation function where the QT table turns and the X/Y- and additional axes are positioned simultaneously when tools are changed. This enables non-stop machining, avoiding any waste pallet change time.

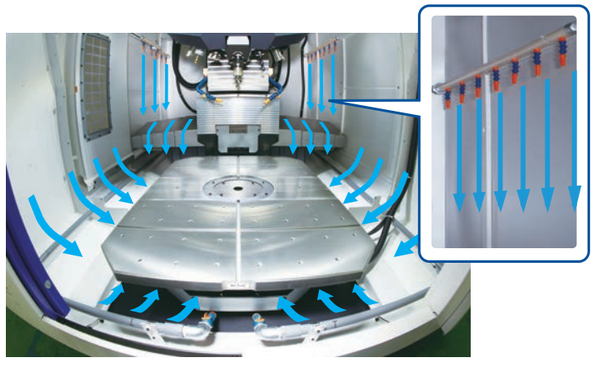


Simultaneous operation (22-magazine)

Improved reliability

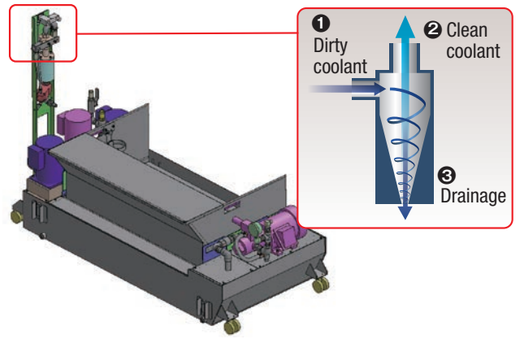
■Increased chip shower flow rate

Two chip shower pumps are installed to inject coolant from the upper section as well. This helps discharge chips from the machine quickly.



■Tank with cyclone filter (special option for CTS)

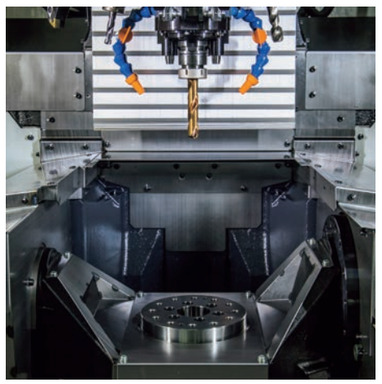
Coolant is returned to a clean tank through a tank with a cyclone filter with fine chips removed. This reduces the filter change frequency and extends the service life of the pump.



Evolving process integration machine

Target machining parts have greatly increased due to enlarged machining area and improved machining capabilities.

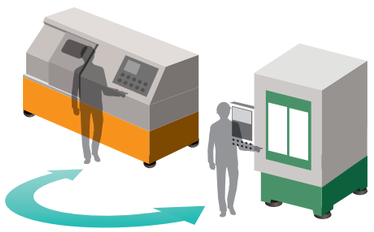
M200X3 M300X3



Effects of mass production type complex machining

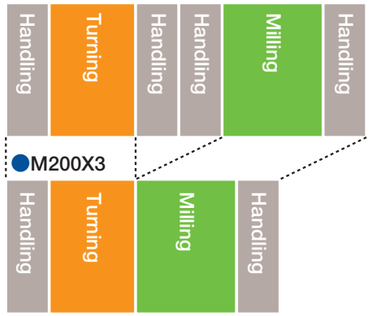
Workpieces previously machined using a turning center and a machining center can now be machined on a single machine with machining processes integrated. This reduces handling time between machines.

●Turning center + Machining center



●M200X3

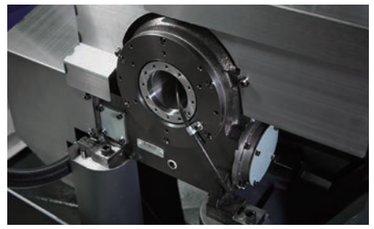
●M200X3



Machine structure

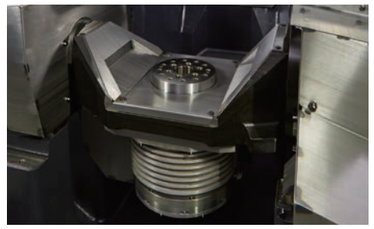
The machine has an original design, including the magazine structure, that keeps the machine compact while maintaining the rigidity of each axis and the balance of rigidity.

●Tilt axis (A-axis)



A roller gear cam is used for the tilt axis (A-axis). High retention force and a backlashless structure achieve high-speed and high-accuracy indexing.

●Turning spindle (C-axis)



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

●Double plunger lock

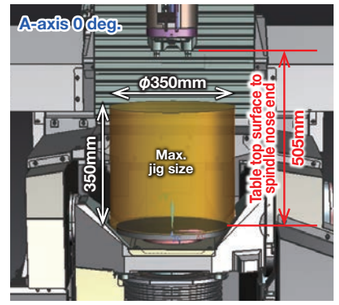
An original double plunger lock is used to secure turning tools, achieving excellent tool change repeatability.

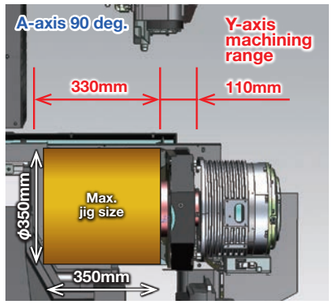
Expansion of machining area

Large machining area has been secured to allow more flexibility for jig design to meet a variety of workpiece machining.

- The distance between the table top surface and the spindle nose end has been increased to secure sufficient area for the jig, workpiece and tool in the Z-axis direction.

Max. jig size
M200X3 : Φ300mm x H300mm
M300X3 : Φ350mm x H350mm





Machining capabilities

■Milling capabilities

As the spindle can provide high torque even in the medium- and high-speed range, the machine fully demonstrates its capabilities in high-speed, high-efficiency machining of aluminum or steel.

Max. torque : 40Nm Max. output : 18.9kW

■ Turning capabilities

High-efficiency machining is achieved by the high-output turning spindle with a maximum speed of 2,000 min-1 (M200X3), and the turning tool secured by the double plunger lock.

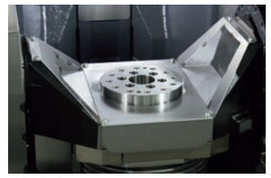
Max. torque	Max. output
M200X3 : 55Nm	M200X3 : 8.7kW
M300X3 : 102Nm	M300X3 : 9.9kW

Improved clamp force

■C-axis clamp force

The C-axis clamp force has almost doubled (compared to previous model). This enables more stringent cutting conditions to be set for machining that results in load being applied in the C-axis rotation direction, improving production efficiency.

C-axis clamp force
M200X3 : 345Nm
M300X3 : 450Nm

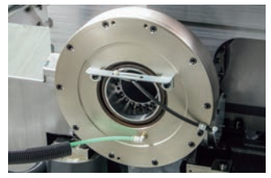


M300X3

■A-axis clamp (optional)

The A-axis clamp enables the machine to demonstrate high machining capabilities even in high-load machining. In addition, stable rotation and less vibration during lathe turning have been achieved, improving machining accuracy.

A-axis clamp force
M200X3/M300X3
500Nm

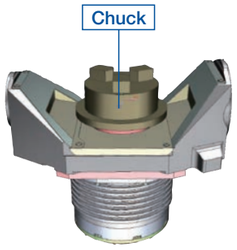


M300X3

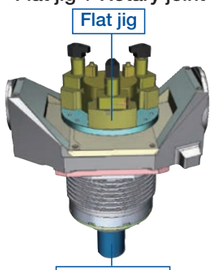
Example of jig configuration

Applicable to a variety of jigs from manual clamping to automatic clamping

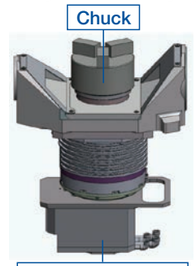
Hand chuck



Flat jig + Rotary joint



Chuck + Hydraulic rotary cylinder

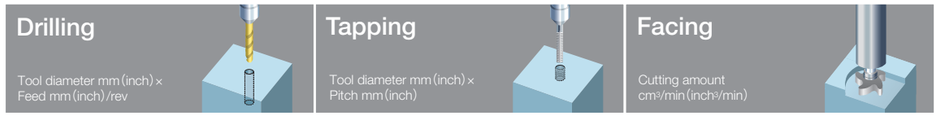


* General or special options are included in figures. Please contact your local distributor for chucks that can be mounted.

Machining capability　Target machining parts

Machining capability

＊The data is Brother's actual test data.



		ADC	Cast iron	Carbon steel	ADC	Cast iron	Carbon steel	ADC	Cast iron	Carbon steel
S300X2 S500X2 S700X2 S1000X1	10,000min⁻¹	D32×0.2 (1.26×0.008)	D28×0.15 (1.1×0.006)	D25×0.1 (0.98×0.004)	M27× 3.0 (1-8UNC)	M24× 3.0 (7/8-9UNC)	M16×2.0 (5/8-11UNC)	960 (58.6)	137 (8.4)	100 (6.1)
	10,000min⁻¹ high-torque	D40×0.2 (1.57×0.008) D30×0.7 (1.18×0.03)	D34×0.15 (1.34×0.006) D26×0.4 (1.02×0.02)	D30×0.15 (1.18×0.006) D26×0.25 (1.02×0.01)	M39×4.0 (1 1/2-6UNC)	M33×3.5 (1 1/4-7UNC)	M27×3.0 (1-8UNC)	1,700 (102.4)	255 (15.5)	200 (12.2)
	16,000min⁻¹	D24×0.2 (0.94×0.008)	D22×0.15 (0.87×0.006)	D18×0.1 (0.71×0.004)	M22×2.5 (7/8-9UNC)	M18×2.5 (5/8-11UNC)	M14×2.0 (1/2-13UNC)	660 (40.3)	73 (4.5)	48 (2.9)
S1000X1 : 27,000min⁻¹ is not available.	27,000min⁻¹	D20×0.2 (0.79×0.008)	D19×0.15 (0.75×0.006)	D17×0.1 (0.67×0.004)	M22×2.5 (7/8-9UNC)	M18×2.5 (5/8-11UNC)	M12×1.75 (7/16-14UNC)	600 (36.6)	45 (2.7)	24 (1.5)

		ADC	Cast iron	Carbon steel	ADC	Cast iron	Carbon steel	ADC	Cast iron	Carbon steel
F600X1	10,000min⁻¹ high-torque	D40×0.2 (1.57×0.008)	D34×0.15 (1.34×0.006)	D30×0.1 (1.18×0.004)	M39×4.0 (1 1/2-6UNC)	M33 × 3.5 (1 1/4-7UNC)	M27 × 3.0 (1-8UNC)	1,800 (109.8)	300 (18.3)	255 (15.5)

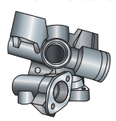
		ADC	Cast iron	Carbon steel	ADC	Cast iron	Carbon steel	ADC	Cast iron	Carbon steel
R450X2 R650X2	10,000min⁻¹	D32×0.2 (1.26×0.008)	D28×0.15 (1.1×0.006)	D25×0.1 (0.98×0.004)	M27× 3.0 (1-8UNC)	M24× 3.0 (7/8-9UNC)	M16 × 2.0 (5/8-11UNC)	960 (58.6)	128 (7.8)	81 (5.0)
	10,000min⁻¹ high-torque	D40×0.2 (1.57×0.008) D30×0.7 (1.18×0.03)	D34×0.15 (1.34×0.006) D26×0.4 (1.02×0.02)	D30×0.15 (1.18×0.006) D26×0.25 (1.02×0.01)	M39×4.0 (1 1/2-6UNC)	M33×3.5 (1 1/4-7UNC)	M27×3.0 (1-8UNC)	1,700 (102.4)	255 (15.6)	186 (11.4)
	16,000min⁻¹	D24×0.2 (0.94×0.008)	D22×0.15 (0.87×0.006)	D18×0.1 (0.71×0.004)	M22×2.5 (7/8-9UNC)	M18×2.5 (5/8-11UNC)	M14×2.0 (1/2-13UNC)	660 (40.3)	73 (4.5)	48 (2.9)

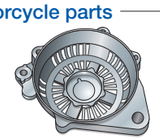
		ADC	FC250	Carbon steel	ADC	FC250	Carbon steel	ADC	Cast iron	Carbon steel
M200X3	10,000min⁻¹	D28×0.2 (1.1×0.008)	D28×0.15 (1.1×0.006)	D23×0.1 (0.9×0.004)	M22×2.5 (7/8-9UNC)	M22 × 2.5 (7/8-9UNC)	M16 × 2.0 (5/8-11UNC)	489 (29.8)	110 (6.7)	54 (3.3)

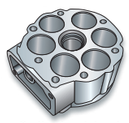
		ADC	FC250	Carbon steel	ADC	FC250	Carbon steel	ADC	Cast iron	Carbon steel
M300X3	10,000min⁻¹	D28×0.2 (1.1×0.008)	D28×0.15 (1.1×0.006)	D23×0.1 (0.9×0.004)	M22×2.5 (7/8-9UNC)	M22 × 2.5 (7/8-9UNC)	M16 × 2.0 (5/8-11UNC)	611 (37.3)	110 (6.7)	54 (3.3)

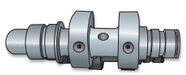
Target machining parts

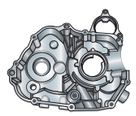
■Automotive and motorcycle parts

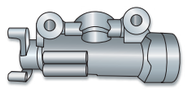

EPS housing


Alternator


Cylinder block


Camshaft


Crankcase

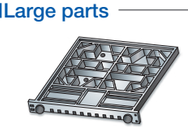

Brake master cylinder

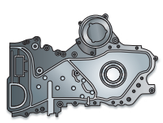
■General machinery and precision parts


Watch parts


Camera parts

■Large parts

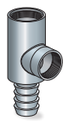

Relay box

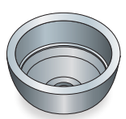

Timing chain cover

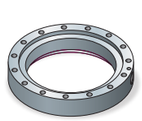

Cylinder head cover for trucks

■Target machining parts for M200X3 / M300X3


EV motor frame


Piping parts


Artificial bone parts


Cross roller

Machine specifications

Item			S300X2 S300X2 RD ＊9	S500X2 S500X2 RD ＊9	S700X2 S700X2 RD ＊9	S1000X1 S1000X1N RD ＊9
CNC Unit			CNC-C00			CNC-C00
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)			300 (11.8)
	Distance between table top and spindle nose end	mm (inch)	180～480 (7.1～18.9)			180～480 (7.1～18.9)
Table	Work area size	mm (inch)	600×400 (23.4×15.7)		800×400 (31.5×15.7)	1,100 × 500 (43.3 × 19.7)
	Max.loading capacity (uniform load)	kg (lbs)	250 (551) [300 (661) ＊6]			300 (661) [400 (881) ＊6]
Spindle	Spindle speed	min⁻¹	10,000min⁻¹ specifications：1～10,000 16,000min⁻¹ specifications (Optional)：1～16,000 10,000min⁻¹ high-torque specifications (Optional)：1～10,000 27,000min⁻¹ specifications (Optional)：1～27,000			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	min⁻¹	MAX. 6,000 (27,000min⁻¹ specifications：MAX. 8,000)			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 (CTS option is not available for 27,000min⁻¹ spec.)			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 axis：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 stad type ＊4		MAS-P30T-2			MAS-P30T-2
	Tool storage capacity	pcs.	14／21			14／21
	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)／Tool〈TOTAL TOOL WEIGHT：25 (55.1) for 14 tools, 35 (77.2) for 21 tools〉			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			Random shortcut method
Tool change time ＊5	Tool To Tool	sec.	0.7			0.8
	Chip To Chip	sec.	1.3			1.4
	Cut To Cut	sec.	—			1.2
Electric motor	Main spindle motor ＊2 (10min/continuous)	kW	10,000min⁻¹ specifications：10.1／6.7 16,000min⁻¹ specifications (Optional)：7.4／5.1 10,000min⁻¹ high-torque specifications (Optional)：12.8／9.2 27,000min⁻¹ specifications (Optional)：8.9／6.3			10,000min⁻¹ specifications：10.1／6.7 16,000min⁻¹ specifications (optional)：7.4／4.9 10,000min⁻¹ high-torque specifications (optional)：12.8／8.8
	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 V±10%、50/60Hz±1Hz			AC V±10%、50/60Hz±1Hz
	Power capacity (continuous)	kVA	10,000min⁻¹ specifications：9.5 16,000min⁻¹ specifications (Optional)：9.5 10,000min⁻¹ high-torque specifications (Optional)：10.4 27,000min⁻¹ specifications (Optional)：9.5			10,000min⁻¹ specifications：9.5 16,000min⁻¹ specifications (optional)：9.5 10,000min⁻¹ high-torque specifications (optional)：10.4
	Air supply Regular air pressure	MPa	0.4～0.6 (recommended value：0.5MPa ＊8)			0.4～0.6 (recommended value:0.5MPa ＊8)
	Air supply Required flow	L/min	45 (27,000min⁻¹ specifications：115)			45
Machining dimensions	Height	mm (inch)	2,497 (98.3)			2,532 (99.7)
	Required floor space [with control unit door open]	mm (inch)	1,080 × 2,463 [2,794] (42.5 × 96.9 [110])	1,560 × 2,223 [2,794] (61.4 × 87.5 [110])	2,050 × 2,223 [2,794] (80.7 × 87.5 [110])	2,410×2,442 [2,967] (94.9×96.1 [116.8])
	Weight	kg (lbs)	2,200 (4,850)	2,250 (4,960)	2,400 (5,291)	3,300 (7,275)
＊3 Accuracy	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 (1 set)、anchor bolts (4 pcs.)、leveling plates (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 X and Y axes.　＊7／When using high accuracy mode B.〈Non high accuracy mode B〉X,Y axis：1～10,000mm/min　Z axis:1～20,000mm/min.　＊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. Except for the S1000X1, machines equipped with a relocation detection device come with "RD" at the end of the model name. The S1000X1 come with "N RD".

Machine specifications

Item			F600X1 F600X1 RD ※9	M200X3 M200X3 RD ※9	M300X3 M300X3 RD ※9
CNC Unit			CNC-C00	CNC-C00	
Travels	X axis	mm (inch)	600 (23.6)	200 (7.9)	300 (11.8)
	Y axis	mm (inch)	400 (15.7)	440 (17.3)	440 (17.3)
	Z axis	mm (inch)	350 (13.7)	305 (12.0)	305 (12.0)
	A axis	(deg.)	—	120 ～ −30	120 ～ −30
	C axis	(deg.)	—	360	360
	Distance between table top and spindle nose end	mm (inch)	200～550 (7.8～21.6)	150～455 (5.9～17.9)	200～505 (7.9～19.9)
Table	Work area size	mm (inch)	800×400 (31.4～15.7)	φ140 (φ5.5)	φ170 (φ6.7)
	Shape of table top		—	In compliance with table nose No.5 of ISO702-4 (JISB6109-2)	
	Max.loading capacity (uniform load)	kg (lbs)	400 (881) [500 (1,102) ＊6]	Table side 40 (88.2) ／ Tale side 11 (24.3)	Table side 75 (165.3) ／ Tale side 11 (24.3)
	Max. table load inertia	kg m² (lb·inch²)	—	Table side 0.29 (991) ／ Tale side 0.04 (137)	Table side 0.58 (1982) ／ Tale side 0.04 (137)
Spindle	Spindle speed	min⁻¹	10,000min⁻¹ high-torque specifications：1～10,000	10,000min⁻¹ specifications：1～10,000 16,000min⁻¹ specifications (Optional)：1～16,000	
	Speed during tapping	min⁻¹	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	
Turning spindle	Max. Spindle speed		—	2,000	1,500
Feed rate	Rapid traverse rate (XYZ-area)	m/min (inch/min)	50×50×50 (1,969×1,969×1,969)	50×50×50 (1,969×1,969×1,969)	
	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	
	Indexing feed rate (A and C)	min⁻¹	—	A axis：60 C axis：200	A axis：50 C axis：C200
ATC unit	Tool shank type		MAS-BT30	MAS-BT30	
	Pull stad type ＊4		MAS-P30T-2	MAS-P30T-2	
	Tool storage capacity	pcs.	14／22	22	
	Max. tool length	mm (inch)	250 (9.8)	200 (7.9)	
	Max. tool diameter	mm (inch)	110 (4.3) ／125 (4.9) No adjacent tool	80 (3.1)	
	Max. tool weight ＊1	kg (lbs)	3.0 (6.6) ／Tool〈TOTAL TOOL WEIGHT：25 (55.1) for 14 tools, 40 (88.1) for 22 tools〉	3 (6.6)	
	Tool selection method		Random shortcut method	Random shortcut method	
Tool change time ＊5	Tool To Tool	sec.	0.7／0.8 (14 tools／22 tools)	0.8	0.8
	Chip To Chip	sec.	1.6／1.7 (14 tools／22 tools)	1.4	1.6
Electric motor	Main spindle motor ＊2 (10min/continuous)	kW	10,000min⁻¹ high-torque specifications：12.8／9.2	10,000min⁻¹ specifications：10.1／7.0 16,000min⁻¹ specifications (Optional)：7.4／5.1	
	Axis feed motor	kW	X,Y axis：1.0 Z axis：1.8	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	—	3.6	4.6
Power source	Power supply		AC V±10%、50/60Hz±1Hz	AC V±10%、50/60Hz±1Hz	
	Power capacity (continuous)	(kVA)	10,000min⁻¹ high-torque specifications：10.4	10,000min⁻¹ specifications：9.5 16,000min⁻¹ specifications (Optional)：9.5	
	Air supply Regular air pressure	MPa	0.4～0.6 (recommended value : 0.5MPa ＊8)	0.4～0.6 (recommended value : 0.5MPa ＊8)	
	Air supply Required flow	L/min	45	165	
Machining dimensions	Height	mm (inch)	2,750 (108.2)	2,603 (102.5)	2,653 (104.4)
	Required floor space [with control unit door open]	mm (inch)	1,800×2,654 [3,162] (70.9×104.5 [124.5])	1,280 × 3,862 (59.8 × 152.0)	1,520 × 3,862 (59.8 × 152.0)
	Weight	kg (lbs)	3,480 (7,672) [14 tools] ／3,520 (7,760) [22 tools]	2,750 (6,063) [3,050 (6,724) withBV7-870]	2,880 (6,349)
＊3 Accuracy	Accuracy of bidirectional axis positioning (ISO230-2：1988)	mm (inch)	0.006～0.020 (0.00024～0.00079)	X,Y,Z axis：0.006～0.020 (0.00024 × 0.00079) A,C axis：28 sec or less	
	Repeatability of bidirectional axis positioning (ISO230-2：2014)	mm (inch)	Less than 0.004 (0.00016)	X,Y,Z axis：Less than 0.004 (0.00016) A,C axis：16 sec or less	
Front door			2doors	2doors	
Standard accessories			Instruction Manual (1 set), anchor bolts (4 pcs.), leveling plates (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 X and Y axes. ＊7／When using high accuracy mode B.〈Non high accuracy mode B〉X,Y axis : 1～10,000mm/min Z axis:1～20,000mm/min. ＊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.

Machine specifications

Item			R450X2 R450X2 RD ＊12	R650X2 R650X2 RD ＊12 14/22 tool	R650X2 R650X2 RD ＊12 40 tool
CNC Unit			CNC-C00	CNC-C00	
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) [250～555 (9.8～21.9) ＊8]	250～555 (9.8～21.8) [320～625 (12.6～24.6) ＊8]	250～685 (9.8～27.0) [320～755 (12.6～29.7) ＊8]
Table	Work area size	mm (inch)	One face 600×300 (23.6×11.8)	One face 800×400 (31.5×15.7)	
	Max.loading capacity (uniform load)	kg (lbs)	One face 120 (265) [200 (441) ＊6]	One face 200 (441) [300 (661) ＊6]	
	Table position time	sec.	2.9 ＊11	3.4 ＊11	3.4 ＊11
Spindle	Spindle Speed	min⁻¹	10,000min⁻¹ specifications：1～10,000 16,000min⁻¹ specifications (optional)：1～16,000 10,000min⁻¹ high-torque specifications (optional)：1～10,000	10,000min⁻¹ specifications：1～10,000 16,000min⁻¹ specifications (Optional)：1～16,000 10,000min⁻¹ high-torque specifications (Optional)：1～10,000	
	Speed during tapping	min⁻¹	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 × 50 × 50 (1,969 × 1,969 × 1,969)	50 × 50 × 50 (1,969 × 1,969 × 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 stad type ＊4		MAS-P30T-2	MAS-P30T-2	
	Tool storage capacity	pcs.	14／22	14／22	40
	Max. tool length	mm (inch)	200 (7.9)	200 (7.9)	250
	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 tools, 40 (88.2) for 22 tools〉	3.0 (6.6) 〈total tool weight : 25 (55.1) for 14 tools, 40 (88.2) for 22 tools〉	4.0 (8.8) 〈total tool weight : 80 (176.3)〉
	Tool selection method		Random shortcut method	Random shortcut method	Double arm method (random closest path)
Tool change time ＊5	Tool To Tool	sec.	0.7／0.8 (14 tools／22 tools)	0.7／0.8 (14 tools／22 tools)	0.9
	Chip To Chip	sec.	1.4／1.6 (14 tools／22 tools)	1.4／1.6 (14 tools／22 tools)	2.6
Electric motor	Main spindle motor ＊2 (10min/continuous)	kW	10,000min⁻¹ specifications：10.1／7.1 16,000min⁻¹ specifications (Optional)：7.4／5.1 10,000min⁻¹ high-torque specifications (Optional)：12.8／9.2	10,000min⁻¹ specifications：10.1／7.1 16,000min⁻¹ specifications (Optional)：7.4／5.1 10,000min⁻¹ high-torque specifications (Optional)：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 V±10%、50/60Hz±1Hz	AC V±10%、50/60Hz±1Hz	
	Power capacity (continuous)	kVA	10,000min⁻¹ specifications：9.5 16,000min⁻¹ specifications (Optional)：9.5 10,000min⁻¹ high-torque specifications (Optional)：10.4	10,000min⁻¹ specifications：9.5 16,000min⁻¹ specifications (Optional)：9.5 10,000min⁻¹ high-torque specifications (Optional)：10.4	
	Air supply Regular air pressure	MPa	0.4～0.6 (recommended value：0.5MPa ＊10)	0.4～0.6 (recommended value：0.5MPa ＊10)	
	Air supply Required flow	L/min	45	50	100
Machining dimensions	Height	mm (inch)	2,588 (101.9)	2,696 (106.2)	
	Required floor space [with control unit door open]	mm (inch)	1,400×2,653 [3,448] (55.1×104.4 [135.7])	1,897×3,448 [3,868] (74.7×135.7 [152.3])	2,145×3,248 [3,868] (84.4×127.9 [152.3])
	Weight	kg (lbs)	14 tools : 2,670 (5,886), 22 tools : 2,700 (5,954)	3,500 (7,716)	4,000 (8,818)
＊3 Accuracy	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		
Standard accessories			Instruction Manual (1 set), anchor bolts (4 pcs.) [R650X2 : 5 pcs.], leveling plates (4 pcs.) [R650X2 : 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 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 R450X2 : 200kg, R650X2 : 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.〈Non high accuracy mode B〉X,Y axis : 1～10,000mm/min Z axis:1～20,000mm/min. ＊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 table loading on one face is R450X2 : 120kg, R650X2 : 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.

NC unit specifications　Standard NC functions

NC unit specifications

CNC model	CNC-C00	
Control axes	S300X2、S500X2、S700X2、S1000X1、F600X1：5 axes (X,Y,Z, 2 additional axes)	
	R450X2、R650X2 ：7 axes (X,Y,Z, 4 additional axes)	
	M200X3、M300X3：5 axes (X,Y,Z,A,C)	
Simultaneously controlled axes	Positioning	5 axes (X,Y,Z,A,B)
		M200X3、M300X3：5 axes (X,Y,Z,A,C)
	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, 0.001 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 (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 laguage program available
	M200X3、M300X3：NC language ＊Conversation language not available.

＊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
- Corner C / Corner R
- Rotational transformation
- Synchronized tap
- Coordinate system setting
- Dry run
- Restart
- Backlash compensation
- Rapid traverse override
- Cutting feed override
- Alarm history (1,000 pieces)
- Startus 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
- Herical / conical interpolation
- Servomotor off 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 B I (look-ahead 40blocks)
- Wave form output to memory card
- Screen shot
- Auto notification
- Inverse time feed
- Spindle load monitoring function
- ATC monitoring function

(NC)
- Expanded workpice coordinate system
- Scaling
- Mirror image
- Menu programming
- Program compensation
- Tool length compensation
- Cutter compensation
- Macro function
- Local coordinate system
- One-way positioning
- Opeation in tape mode

(Conversation) ＊2
- Operation program
- Schedule program
- Automatic tool selection
- Automatic cutting condition setting
- Autmatic tool length compensation setting
- Autmatic cutter compensation setting
- Autmatic calculation of unknown number input
- Machining order control

(Turning function) ＊3
- Constant peripheral speed control
- Feed per revolution control
- Tool position compensation XYZ
- Nose R compensation
- Thread cutting

Optional NC functions

- Memory expansion (Approx. 500 Mbytes)
- Spindle override
- High accuracy mode B II (look-ahead 200 blocks, smooth path offset)
- High-speed processing ＊5

(NC)
- Submicron command ＊4
- Interrupt type macro
- Rotary fixture offset
- Feature coordinate setting function ＊3
- Involute interpolation

＊1 Measuring instrument needs to be prepared by users.
＊2 Conversation language not available for M200X3/M300X3
＊3 M200X3/M300X3 only
＊4 When the submicron command is used, changing to the conversation program is disabled.
＊5 Minute block processing time can be changed.
＊ Functions listed under (NC) and (Conversation) are available only for NC programs and conversation programs respectively.

Option list《Coolant tank》

		S300X2	S500X2	S700X2	S1000X1	F600X1	R450X2	R650X2	M200X3	M300X3
50L	Standard	●	●	●						
100L	Standard						●			
	With chip shower	●	●	●						
150L	With chip shower	●	●	●			●			
	With cyclone filter, chip shower and CTS	●	●	●			●			
200L	With chip shower				●			●		
	With chip shower, CTS and back washing system				●					
	With cyclone filter, chip shower and CTS							●		
250L	With chip shower					●		●		
	With cyclone filter, chip shower and CTS					●		●		
Chip conveyor	With chip shower					●				
	With cyclone filter, chip shower and CTS					●				
Two-step Chip conveyor	With chip shower								●	●
	With cyclone filter, chip shower and CTS								●	●
Coolant tank with chute	With chip shower								●	●
	With cyclone filter, chip shower and CTS								●	●

●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.

Option list

	S300X2	S500X2	S700X2	S1000X1	F600X1	R450X2	R650X2	M200X3	M300X3
Rotary Table T-200	●	●	●	●	●	●	●		
BT dual contact system (BIG-PLUS)	●	●	●	●	●	●	●		
Coolant Through Spindle (CTS)	● ＊3	● ＊3	● ＊3	●	●	●	●	●	●
Coolant Through Spindle (CTS) 7MPa ＊7							●		
Head coolant nozzle	●	●	●		●	●	●	●	●
Column coolant nozzle	●	●	●	●	●				
Tool washing (air-assisted type)	●	●	●	●	●	●	●	●	●
Tool breakage detector (touch type)	●	●	●	●	●	●	●	●	●
Chip shower	●	●	●	●	●	●	●	●	●
Coil conveyor					●				
Hydraulic rotary joint (4P) + Pneumatic relay box (12P)						●	●		
Pneumatic relay box (12P)						●	●		
Rotary joint (4P)								●	●
A-axis clamp								●	●
Cleaning gun	●	●	●	●	●	●	●	●	●
Jig shower valve unit	●	●	●	●	●	●	●	●	●
Automatic oil lubricator	●	●	●	●	●	●	●	●	●
Automatic grease lubricator	●	●	●	●	●	●	●	●	●
LED type work light (1or2lamps)	●	●	●	●	●	●	●	●	●
Table light (LED type)						●	●		
LED type indicator light (1,2, or 3 lamps)	●	●	●	●	●	●	●	●	●
Automatic door (motor-driven)	●	●	●	●	●	●	●	●	●
Area sensor	●	●	●	●	●	●	●	●	●
Specified color	●	●	●	●	●	●	●	●	●
Manual pulse generator	●	●	●	●	●	●	●	●	●
B axis cord	●	●	●	●	●	●	●		
Spindle override	●	●	●	●	●	●	●	●	●
High column (150mm, 250mm, 350mm) ＊1	● ＊4	●	●	●					
Outside index rotation switch						●	●		
Turning diameter enlargement (R650x2 : D1,300mm, R450x2 : D1,100mm)						●	●		
Low-floor table						●	●		
Front switch panel (8 holes)							●		
Grip cover	●	●	●	●	●	●		●	●
Top cover	●	●	●	●	●	●	●	● ＊5	● ＊5
Side cover (transparent board type)	●	●	●	●	●	● ＊6	● ＊6	●	●
Side door (with transparent window)						● ＊6	● ＊6	●	●
Mesh basket for chips	●	●	●	●	●	●	●		
RS232C (25 pin) for control box	●	●	●	●	●	●	●	●	●
Operation preparation circuit	●	●	●	●	●	●	●	●	●
100V outlet (in control box)	●	●	●	●	●	●	●	●	●
Power supply expantion	●	●	●	●	●	●	●	●	●
Breaker handle cover	●	●	●	●	●	●	●	●	●
Expansion I/O board (EXIO board) EXIO board assembly Additional EXIO board assembly	●	●	●	●	●	●	●	●	●
Switch panel (8 holes, 10 holes)	●	●	●	●	●	●	●	●	●
Memory expansion (approx. 500 Mbytes)	●	●	●	●	●	●	●	●	●
High accurancy mode BII (look-ahead 200 blocks, smooth pass offset)	●	●	●	●	●	●	●	●	●
Fieldbus CC-Link (remote device station) PROFIBUS DP (slave) DeviceNet (slave)	●	●	●	●	●	●	●	●	●
PLC programming software (for Windows®, Vista, 7 and 8.1) ＊2	●	●	●	●	●	●	●	●	●

＊1／350 mm high column is only available for S1000X1.　＊2／Windows® is a trademark or registered trademark of Microsoft corporation in the United States and/or other contries.
＊3／27,000min⁻¹ specifications : CTS option is not available.　＊4／S300X2 21 ATC specifications : 250mm high column is not available.　＊5／M200X3、M300X3 : Standardly equipped.
＊6／R450X2 and R650X2 22 ATC specifications : Standardly equipped.　＊7／CTS 7MPa is only available for R650X2 40-tools.