brother
at your side

SPEEDIO

S300Xd1
S500Xd1
S700Xd1

Compact Machining Center

S

SPEEDIO's bestselling model has further expanded the applicable range

Equipped with new “CNC-D00” controller to improve productivity and usability

Using a new 28-tool magazine increases target workpieces, leading to process integration.

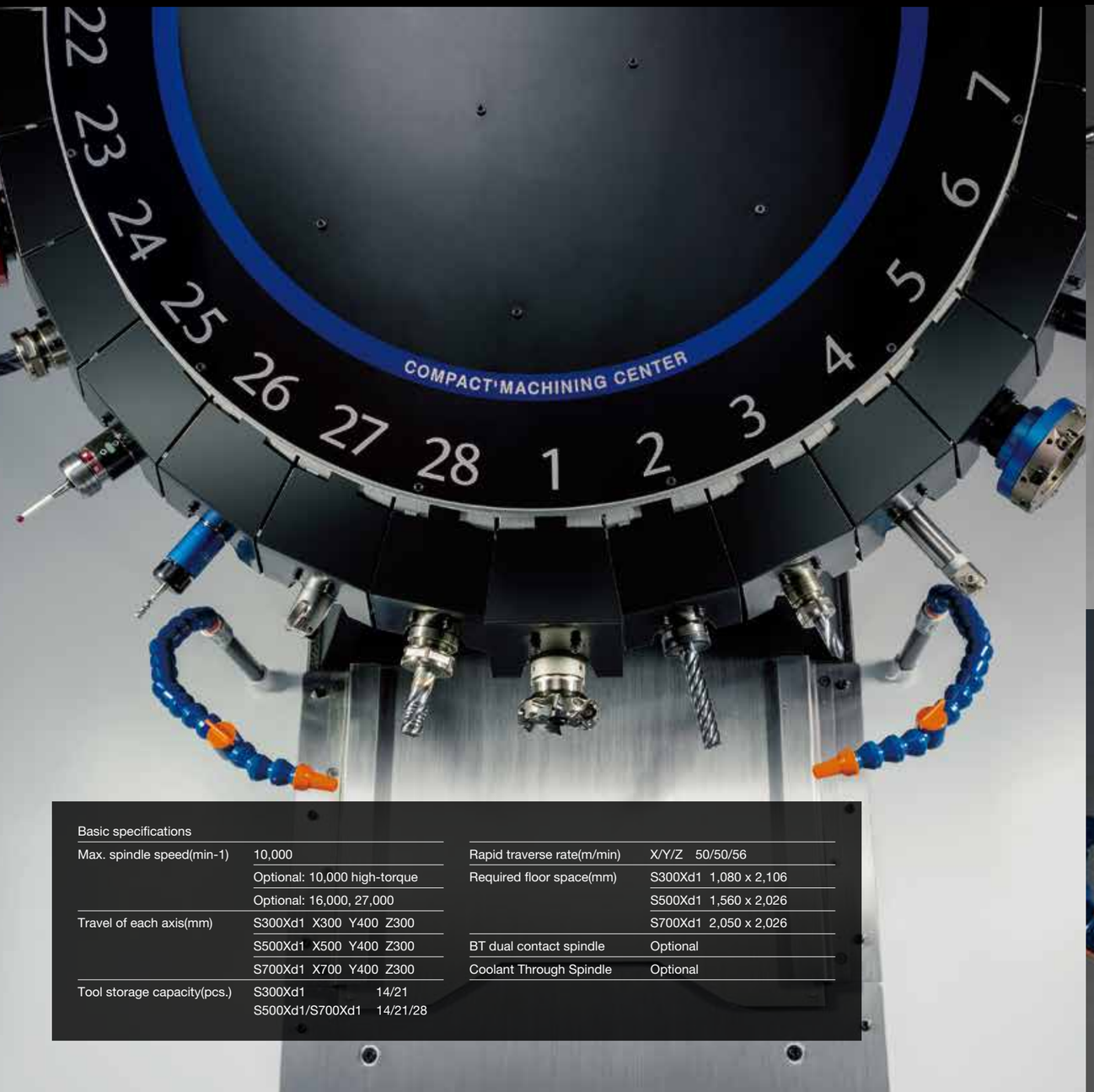
Extensive specifications are available to meet a broad range of machining applications.

Cutting Out the Waste SPEEDIO

S300 Xd1

S500 Xd1

S700 Xd1



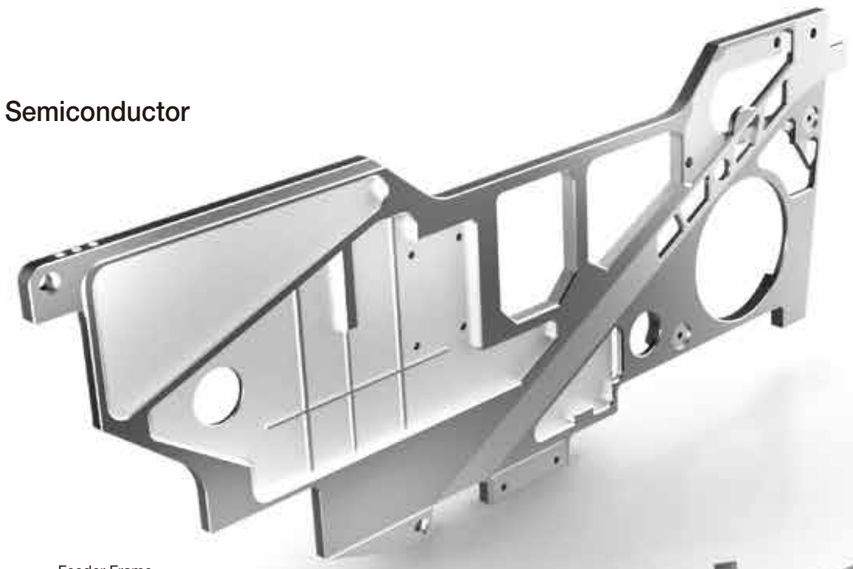
Basic specifications

Max. spindle speed(min-1)	10,000	Rapid traverse rate(m/min)	X/Y/Z 50/50/56
	Optional: 10,000 high-torque	Required floor space(mm)	S300Xd1 1,080 x 2,106
	Optional: 16,000, 27,000		S500Xd1 1,560 x 2,026
Travel of each axis(mm)	S300Xd1 X300 Y400 Z300		S700Xd1 2,050 x 2,026
	S500Xd1 X500 Y400 Z300	BT dual contact spindle	Optional
	S700Xd1 X700 Y400 Z300	Coolant Through Spindle	Optional
Tool storage capacity(pcs.)	S300Xd1 14/21		
	S500Xd1/S700Xd1 14/21/28		

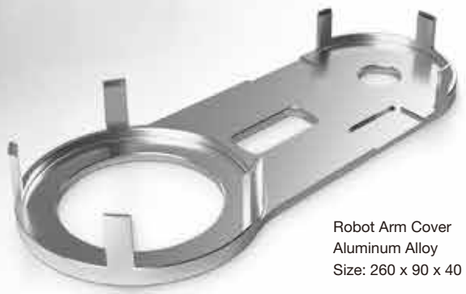
Most extensive variation in its class provides best-fit solution for any type of application

A variety of specifications are available with different X-axis travel, spindle type, or tool storage capacity.
Selecting the best specifications for your application ensures that the SPEEDIO provides incomparable productivity for customers in any industry.

Semiconductor



Feeder Frame
Aluminum Alloy
Size: 600 x 250 x 12



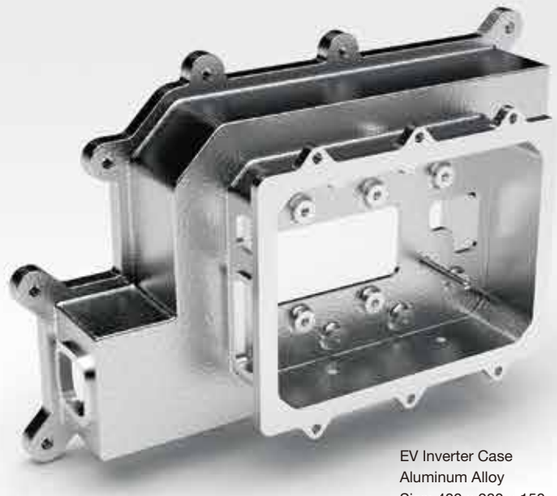
Robot Arm Cover
Aluminum Alloy
Size: 260 x 90 x 40

IC socket Jig
Aluminum Alloy
Size: 65 x 65 x 6

Support Bracket
Stainless Steel
Size: 133 x 60 x 30

Automobile

Drivetrain Part
Forged Steel
Size: ø74 x 36



EV Inverter Case
Aluminum Alloy
Size: 400 x 280 x 150

Gear Box Housing
Aluminum Alloy
Size: 305 x 260 x 90

Electric Water Pump Housing
Aluminum Alloy
Size: 111 x 96 x 71

Precision equipment

Watch Case
Stainless Steel
Size: 44 x 49 x 9

Bone Plate
Ti-6Al-4V
Size: 80 x 30 x 10

Communication Part
Cupper
Size: 100 x 42 x 20

Shower Valve
Brass
Size: 150 x 75 x 50

New 28-tool magazine makes wider variety of machining possible on one machine, promoting process integration

Including a newly developed 28-tool magazine, the machine features more capacity for tools and jigs, process integration such as for multi-face machining, and a wider range of target workpieces. Together with the extensive range of specifications, the machine is suitable for a broad range of machining.

28-tool magazine

In addition to 14- and 21-tool magazines, a compact drum type 28-tool magazine has been developed with high-speed tool change performance maintained. The maximum tool weight has been improved to 4 kg.

*The 28-tool magazine cannot be selected for the S300Xd1.

Max. tool weight **4kg**

* Parameter setting needs to be changed.

Max. table loading capacity 400 kg

The maximum table loading capacity has been increased to 400 kg. This expands choices of fixtures and promotes process integration.

*Parameter setting must be changed for table loading capacity 400kg. Max. table loading capacity is 300kg for the S300Xd1.

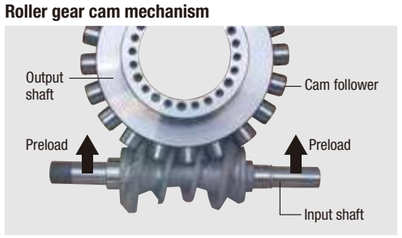
Table size(mm)

S300/S500Xd1	600 x 400
S700Xd1	800 x 400

Rotary table T-200Ad (optional)

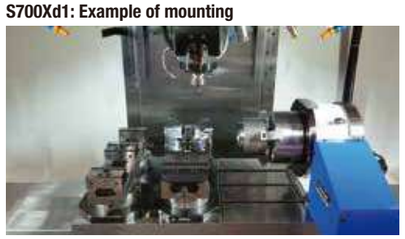
Roller gear cam mechanism is used. Compared to a worm gear type, faster index machining is possible with higher accuracy. Optimal for process integration on the SPEEDIO.

Roller gear cam mechanism



S500Xd1: Example of using support table

S700Xd1: Example of mounting



High productivity

High accuracy

Extended service life

0 to 180-deg. indexing time

Clamp mode
1.02s

Unclamp mode
0.45s

New 28-tool magazine

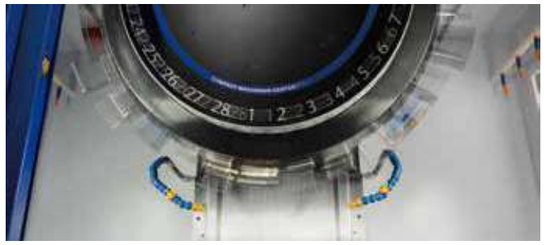
Max. tool size	110 mm
Max. tool weight	4 kg
Total tool weight	35 kg
Tool-Tool	0.7 s (Tool weight ≤ 3 kg)
	0.8 s (Tool weight ≤ 4 kg)

Untiring pursuit of high productivity
Reduction in waste by optimizing control through machine/controller integrated development

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

Non-stop ATC

High-speed tool change has been achieved by faster and optimized spindle start/stop, Z-axis up/down, and magazine operation. Tools up to 3 kg can be changed in the shortest time. Tools up to 4 kg can also be changed with minimal increase in time.



28-tool magazine	
Chip-Chip	1.3s
Tool-Tool	0.7s

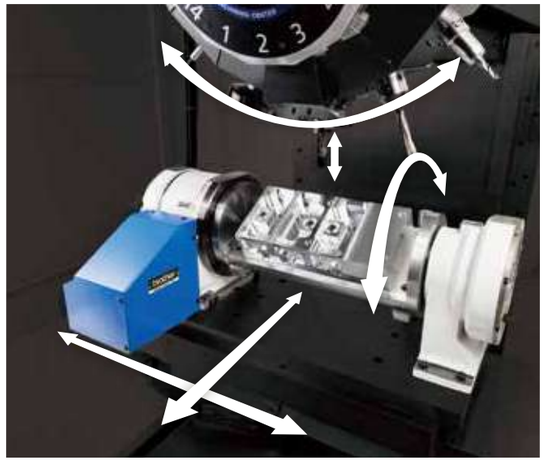
14/21-tool magazine	
Chip-Chip	1.3s ▶ 1.2s
Tool-Tool	0.7s ▶ 0.6s

4 kg tool				
	28-tool	Chip-Chip	1.4s	Tool-Tool 0.8s
	14-tool/21-tool	Chip-Chip	1.3s	Tool-Tool 0.7s

* For 4 kg tools, parameter setting needs to be changed.

Simultaneous operation

Wasted time has been reduced by simultaneously performing tool change and positioning X/Y and additional axes.



High acceleration/deceleration spindle

Using a low inertia spindle and high acceleration/deceleration spindle motor has achieved faster spindle start/stop.

Spindle start/stop time 0.15s or less * High-torque specifications

High acceleration Z-axis

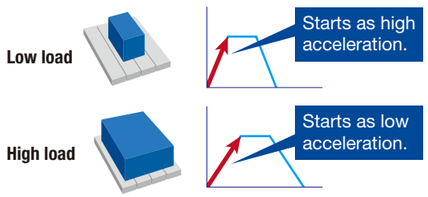
As the Z-axis moves frequently, the highest acceleration in its class has been achieved, contributing to reduction in cycle time.

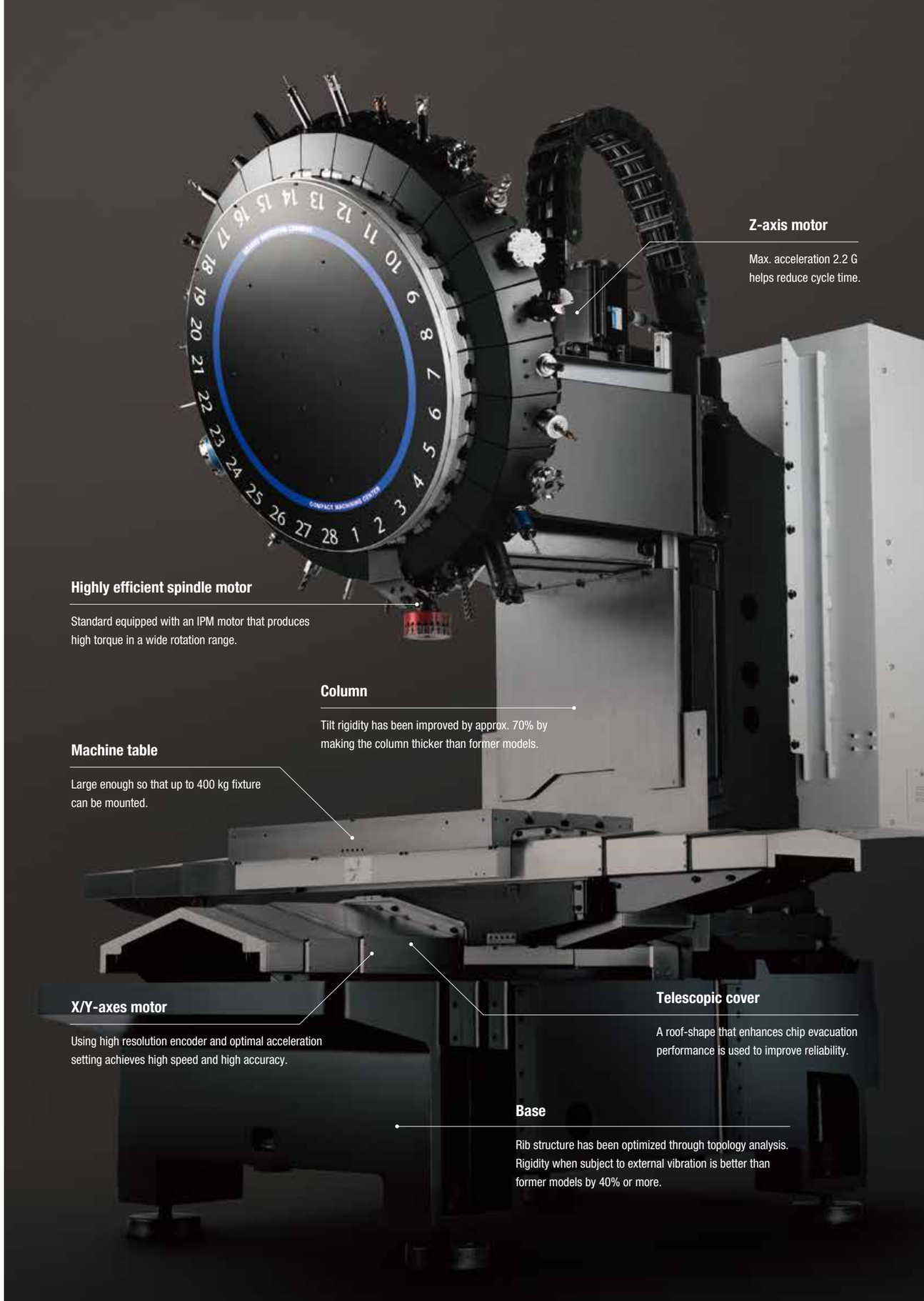
Z-axis acceleration Max. 2.2G

Optimal X/Y axes acceleration setting

This function sets the optimal acceleration for X/Y axes according to the table loading capacity.

X/Y-axes acceleration (at a load of 150 kg) 2.0G/1.3G





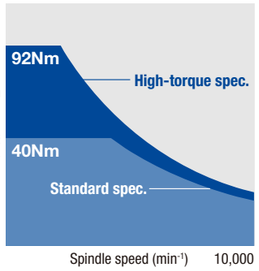
Highly rigid machine structure and highly efficient spindle motor enable a broad range of machining

Prepared spindles applicable to machining in various industries, from automobile to semiconductor, precision parts, and IT equipment industries. The new NC with improved processing speed achieves high speed and high accuracy performance even in three-dimensional machining.

Heavy-duty/highly-efficient machining using highly efficient spindle motor

A spindle motor with high torque in the medium- and high-speed range is used to achieve high-speed and highly efficient machining. In addition, the high-torque spec. (optional) machine demonstrates higher torque in the medium- and high-speed range, and greatly improves torque in the low-speed range. The machine provides excellent performance in heavy-duty machining such as large-diameter drilling and tapping.

Motor torque characteristics



10,000 min^{-1} high-torque spec. (optional)	
Max. torque	92Nm
Max. output	26.2kW

10,000 min^{-1} standard spec.	
Max. torque	40Nm
Max. output	18.9kW

High-speed and highly accurate three-dimensional machining using high-speed spindle and high accuracy mode

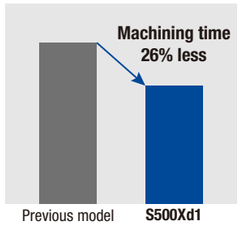
In addition to the highly-responsive servo control, the servo processing speed and resolution have been greatly improved. Enhanced original three-dimensional machining control, including increased look-ahead blocks and improved surface quality by the smooth path offset function, achieves high-speed and highly accurate three-dimensional machining.

High-speed spindle spec. (optional)	27,000min^{-1}

High accuracy mode BI	Look-ahead 160 blocks
High accuracy mode BII (optional)	Look-ahead 1000 blocks

Processing speed improved fourfold

Improved capability of processing minute line segments reduces machining time.

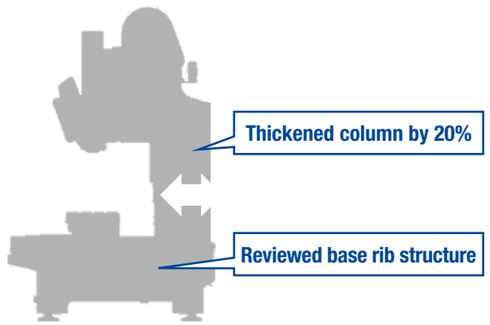


7 MPa Coolant Through Spindle (CTS) (optional)

The CTS option can be selected from 3 MPa or 7 MPa. With this option, the machine can operate to its fullest potential in high-speed drilling or peck drilling.

Higher machine rigidity and minimal vibration

Using topology analysis, the shapes of the base and column have been changed to improve both static and dynamic rigidity. The machine can demonstrate high machining capabilities while minimizing effects of external vibration on the machined surface quality.



Machining capability

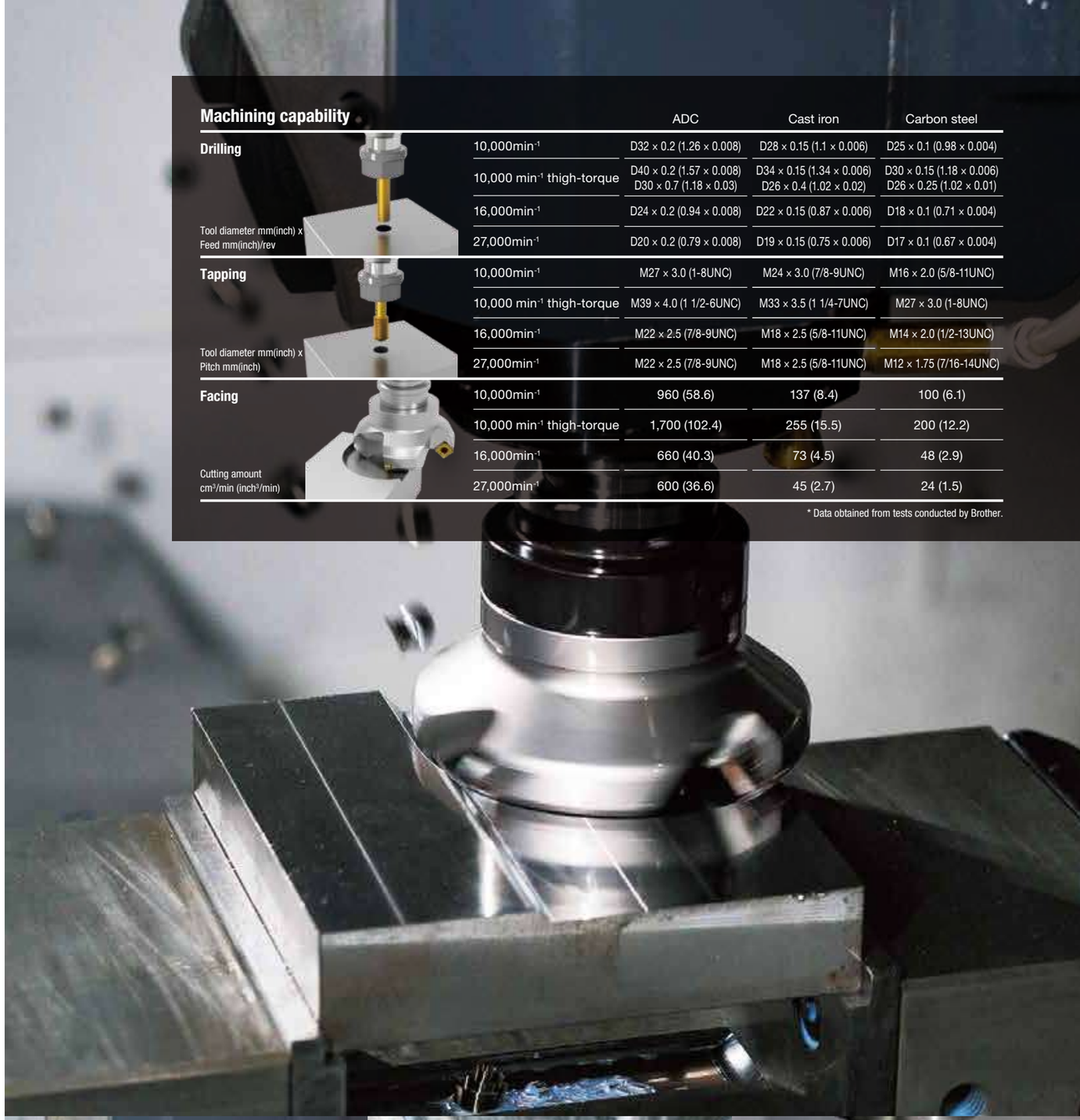
		ADC	Cast iron	Carbon steel
Drilling	10,000min^{-1}	D32 × 0.2 (1.26 × 0.008)	D28 × 0.15 (1.1 × 0.006)	D25 × 0.1 (0.98 × 0.004)
	10,000 min^{-1} thigh-torque	D40 × 0.2 (1.57 × 0.008) D30 × 0.7 (1.18 × 0.03)	D34 × 0.15 (1.34 × 0.006) D26 × 0.4 (1.02 × 0.02)	D30 × 0.15 (1.18 × 0.006) D26 × 0.25 (1.02 × 0.01)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

Tool diameter mm(inch) x Feed mm(inch)/rev

Tool diameter mm(inch) x Pitch mm(inch)

Cutting amount cm^3/min (inch^3/min)

* Data obtained from tests conducted by Brother.



Equipped with new “CNC-D00” controller
Enhanced usability with 15-inch LCD touch panel

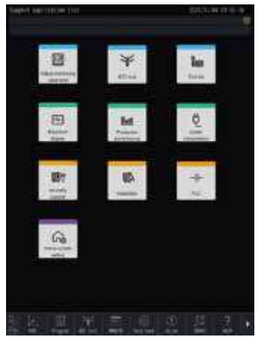
Intuitive operation is possible with new apps and vertical touch panel screen. Relevant functions are grouped according to purpose, such as setup and machining, leading to efficient operation. Production and operation states are visualized, allowing faster understanding. Waste-free operation is possible in setup, machining adjustment, production, and recovery process, leading to improved work efficiency and operating rate.

Home screen

Information required for production, such as workpiece counter and tool life, is collected on the home screen. Shortcut keys are provided for screens frequently used so you can open them by one touch.

New user interface

Usability has been greatly improved by grouping relevant functions, creating new support apps that are intuitive with improved operability and visibility, providing useful accessories (calculator, notebook, file viewer etc.), and making operation on conventional screens possible on the touch panel.


List of support apps


Conventional screen (position screen)

Setup support

Equipped with functions to easily perform setup, such as an ATC tool app that enables all magazine tool settings to be performed on one screen, menu programming that enables you to create NC programs by following instructions on the screen, and an on-screen help function.


ATC tool app

Machining adjustment support

Equipped with functions to easily perform optimal machining adjustment to improve productivity, such as a machining parameter adjustment app that enables you to easily adjust parameters according to machining details and a machining load waveform display/saving function.


Waveform display app

Production support

Equipped with functions to improve the operating rate, such as real time tool monitoring to eliminate defects, displaying production performance, power consumption etc. as a graph, and PLC/network functions to meet peripheral equipment and automation requirements.


Production performance app

Recovery support

Equipped with functions to prevent failure or ensure quick recovery, such as maintenance time notice, displaying details when an alarm occurs, and guidance for recovery/check work.


Recovery support app

DESIGN AWARD 2021

Equipped with functions that support connection with various peripheral equipment or automation

Network

Sending/receiving files or monitoring via FTP or HTTP. Compatible with OPC UA, a data exchange standard for industrial communication. In addition to the conventional field bus, data communication is possible via Industrial Ethernet, such as Ethernet/IP and PROFINET. Production/operation results screens on the machine can be viewed from a PC’s browser.

Built-in PLC

Standard equipped with a PLC function. Program memory and object memory have been increased to enhance the capacity for peripheral equipment. In addition to ladder language, ST language and FBD language can also be used for built-in PLC programming.

Built-in PLC screen

Reliability maintains high productivity

Maintenance functions have been enhanced to prevent machine failure, with measures for chips taken to reduce machining defects. Thorough avoidance of machine stoppage maintains high productivity at production sites.

Enhanced maintenance functions

The machine is equipped with many functions that can prevent possible defects in daily production sites, such as tool abrasion, omission of tool attachment, and re-machining of the same workpiece, and functions that assist with recovery in the case of machine failure or other problems.

ATC tool monitoring

The presence of a spindle tool, tool holder mis-clamp, tool key position deviation etc. is checked before and after tool change without using a sensor.

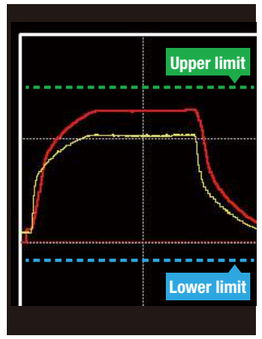
Spindle tool check


Key position deviation

Machining load monitoring

Machining load applied to the spindle is monitored to issue an alarm when the load is not within the preset range.


Setting screen



Setting image

Overload prediction

Predicts overload during mass production based on one machining cycle to prevent machine stoppage.

Maintenance notice

Notifies operators of maintenance related issues in advance, such as greasing time.

Alarm log

Displays alarm log details to help identify the cause.

Automatic backup

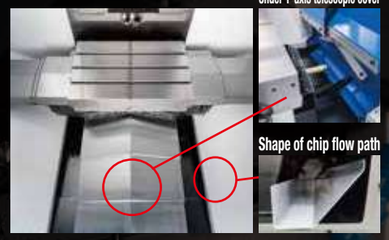
NC programs, databank, and PLC data are saved to a USB memory stick as backup.

Prevention of chip problems

Thorough chip evacuation/removal prevents chip problems, improving reliability.

Improvement of chip evacuation performance

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



Tool washing, air-assisted type (optional)

Air-assisted high discharge pressure and discharge amount steadily remove chips attached to the tool taper. Stable washing power is achieved, without being affected by filter clogging. Expanding the pump capacity is not necessary, leading to higher energy saving.

Striving to create earth-friendly machines

Our efforts to improve environmental performance and effects of high productivity greatly reduce power consumption, contributing to the carbon neutrality of plants.

Low power consumption

In addition to the low inertia spindle and highly efficient spindle motor, the machine is equipped with various energy saving functions to lower power consumption.

Power regeneration system

Reuses the energy generated when the servomotor decelerates.

Highly efficient spindle motor

Energy-saving pump

LED work light

Energy-saving NC functions

- Automatic coolant off
- Automatic work light off
- Standby mode
- Automatic power off

Power consumption app

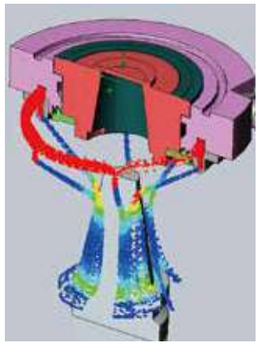
Current and past power consumption can be checked.

Low air consumption

Air related functions have been reviewed and optimized to eliminate any waste, leading to reduction in air consumption.

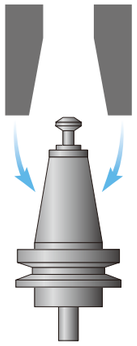
Air purge

A highly airtight structure achieved through repeated flow rate analysis reduces the amount of air used.



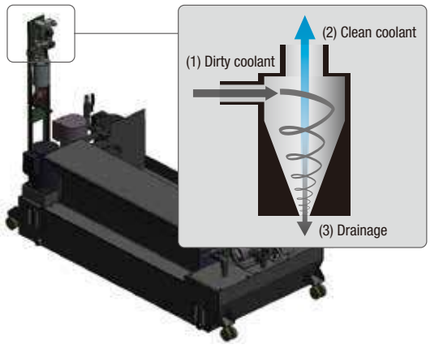
Spindle air blow

Amount of air used is reduced by discharging three times the conventional volume of air only when required.



Tank with cyclone filter and no consumables (special option for CTS)

Clean coolant is returned to the clean tank through another tank with a cyclone filter that removes fine chips. Coolant is kept clean this way to reduce the filter change frequency and extend the service life of the pump.



Automatic oil/grease lubricator that optimizes consumption (optional)

Consumption amount and timing are optimized by the automatic oil/grease lubricator. Oil mixing with coolant can be minimized.

Automatic oil lubricator

Automatic grease lubricator

Efforts for carbon neutrality

Brother will contribute to achieve a sustainable society through the development and sales of products with less environmental load and energy consumption.

Reduction in machining time

Compared to general M/Cs, machining time has been greatly reduced.

Reduction in power consumption

Compared to general M/Cs, power consumption has been greatly reduced.

Reduction in air consumption

Compared to general M/Cs, air consumption has been greatly reduced.

Coolant tank

Can be selected from 50L, 100L, 150L, or 200L according to the purpose.
If you need a CTS spec. higher than 1.5 MPa, this will be custom-built.

Coolant Through Spindle (CTS)

Can be selected from 3.0 MPa or 7.0 MPa. Pump and tank are not included.

Column coolant nozzle

Powerfully removes chips on and around the workpiece to prevent chips building up.

Head coolant nozzle

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

Chip shower

Chip shower pipes are located at the upper section inside the machine for more efficient flow, and flexible shower nozzles can be directed to the side of the machine cover or sections where chips tend to accumulate.

Tool washing, air-assisted type

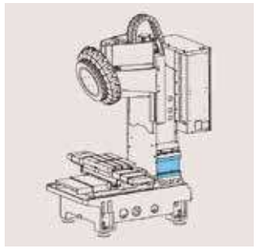
High discharge pressure and flow rate efficiently remove chips attached to the holder. Equipped with a filter clog warning function.

Fixture shower valve unit

Consists of jig washing valves and pipes to the ceiling of the machine. Pipes from the machine to the required location must be prepared by customers.

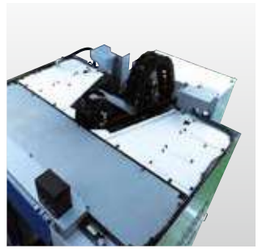
Cleaning gun

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



High column (150 mm, 250 mm)

150 mm and 250 mm high columns are available to meet customer's needs.



Top cover

Shutting the opening on the top prevents coolant or chips splashing outside of the machine. A hole for the mist collector is provided.

Side cover with transparent window, single side

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

Work light (right side, left side)

LED lamps are used to extend lamp life and save energy.

Signal light (1, 2, or 3 lamps)

LED lamps are used. No maintenance required. Can be tilted to improve visibility.

Automatic oil lubricator

Regularly applies oil to all lubricating points on the tree axes.

Automatic grease lubricator

Regularly applies grease to all lubricating points on the three axes.
*Manual greasing is required for the standard specification model.

Automatic door with switch panel 10 holes

A motor-driven door is used, achieving smooth operation.

Area sensor

Optical area sensors are used. Use area sensors to prevent operators being caught in the automatic door.

Switch panel (8 holes or 10 holes)

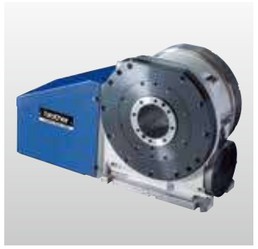
Various switches, such as automatic door open/close switches, are set in specific locations. The switch panel (8 holes) is also available so that the position of the manual pulse connector can be changed.

Manual pulse generator

A cable is provided for the manual pulse generator, making setup easier. Equipped with emergency stop and enable switches.

Tool breakage detector, touch type

A touch switch type tool breakage detector is available.



Rotary table T-200Ad

Reduction in the body width secures a wider jig area. Use of the roller gear cam mechanism achieves high productivity, high accuracy, and extended service life.

Spindle override

Spindle speed can be changed without changing the program.

Master on circuit

Master on circuit and switch can be attached.
* A switch panel (8 holes or 10 holes) is required separately.

Data protection switch, key type

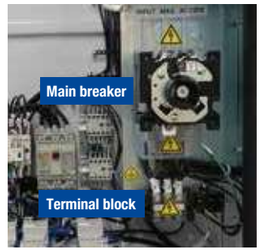
Changing the operation level is enabled or disabled by the key.

Origin alignment mark

Aligning X/Y/Z-axes origin alignment marks clearly indicates home positions.

100V outlet in control box

100V outlet is provided on the right inside the control box.



Power supply expansion 50A

The capacity of the main breaker can be increased from 30A to 50A. The size of the relevant wiring increases accordingly.
A terminal block for external equipment power supply is provided under the main breaker.

RS232C 25-pin connector

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

- Coolant tank
  1) Coolant tank, 50L
  2) Coolant tank, 100L
  3) Coolant tank, 150L
  4) Coolant tank, 150L for 1.5 MPa CTS pump with cyclone filter
  5) Coolant tank, 200L for 1.5 MPa CTS pump with cyclone filter
- Coolant through spindle (CTS) piping, Max.3.0 MPa
- Coolant through spindle (CTS) piping, Max. 7.0 MPa
- Column coolant nozzle
- Head coolant nozzle
- Chip shower
- Tool washing, air-assisted type
- Fixture shower valve unit
- Cleaning gun
- Mesh basket for collecting chips
- High column (150 mm, 250 mm)
- Top cover
- Side cover with transparent window, single side
- Work light (1 lamp for right side, 1 lamp for left side)
- Signal light (1, 2, or 3 lamps)
- Automatic oil lubricator
- Automatic grease lubricator
- Automatic door with switch panel 10 holes
- Area sensor
- Switch panel (8 holes or 10 holes)
- Manual pulse generator with enable switch
- Connector and hook for manual pulse generator
- Tool breakage detector, touch type
- Rotary table T-200Ad
- Additional axis cable (for 1 axis or 2 axes)
- RS232C 25-pin connector at control box
- Spindle override
- Master on circuit
- Data protection switch, key type
- Grip cover for 14/21/28-tool magazine
- Parts name sticker set
- Breaker handle cover
- Origin alignment mark
- 100v outlet in control box
- Power supply expansion 50A
- Transformer box
- Specified color
- EXIO board assembly
  1) EXIO board, input 32/output 32, additional #1
  2) EXIO board, input 32/output 32, additional #2
- PLC programming software for D00
- Industrial network
  1) CC-Link, master station
  2) CC-Link, remote device station
  3) PROFIBUS DP, slave
  4) DeviceNet, slave
  5) PROFINET, slave
  6) EtherNet/IP, slave
- Memory expansion 3 Gbytes

Machine Specifications

Item				S300Xd1 / S300Xd1 RD *9	S500Xd1 / S500Xd1 RD *9	S700Xd1 / S700Xd1 RD *9
CNC unit				CNC-D00		
Travels	X axis		mm(inch)	300 (11.8)	500 (19.7)	700 (27.6)
	Y axis		mm(inch)	400 (15.7)		
	Z axis		mm(inch)	300 (11.8)		
	Distance between table top and spindle nose end		mm(inch)	180~480 (7.1~18.9)		
Table	Work area size		mm(inch)	600 × 400 (23.4 × 15.7)		800 × 400 (31.4 × 15.7)
	Max. loading capacity (uniform load)		kg(lbs)	250[300 *6] (551[661 *6])	250[400 *6] (551[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		
	Speed during tapping		min^{-1}	MAX. 6,000 (27,000min^{-1} specifications: MAX. 8,000		
	Tapered hole			7/24 tapered NO.30		
	BT dual contact spindle (BIG-PLUS)			Optional		
	Coolant through spindle (CTS)			Optional (CTS cannot be selected for 27,000min^{-1} specification models)		
Feed rate	Rapid traverse rate (XYZ-area)		m/min(inch/min)	50 × 50 × 56 (1,969 × 1,969 × 2,205)		
	Cutting feed rate		mm/min(inch/min)	X,Y,Z: 1~30,000 (0.04~1,181)*7		
ATC unit	Tool shank type			MAS-BT30		
	Pull stud type *4			MAS-P30T-2		
	Tool storage capacity		pcs.	14 / 21	14 / 21 / 28	
	Max. tool length		mm(inch)	160 (6.3) [21 tool] 250 (9.8) [14 tool]	250 (9.8)	
	Max. tool diameter		mm(inch)	ø110 (4.3)		
	Max. tool weight *1		kg(lbs)	3.0 (6.6) [4.0 (8.8)*10]/tool, (TOTAL TOOL WEIGHT: 25 (55.1) for 14 tools, 35 (77.2) for 21or 28 tools)		
	Tool selection method			Random shortcut method		
Tool change time *5	Tool To Tool		sec	0.6 / 0.7 (14 or 21 tools / 28 tools)		
	Chip To Chip		sec	1.2 / 1.3 (14 or 21 tools / 28 tools)		
Electric motor	Main spindle motor (10min/continuous) *2		kW	10,000min^{-1} specifications: 10.1/7.0, 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		
	Axis feed motor		kW	X,Y axis: 1.0 Z axis: 2.0		
Power source	Power supply			AC 200 to 230 V±10%,3-phase, 50/60Hz±2%		
	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		
	Air supply	Regular air pressure	MPa	0.4~0.6 (recommended value 0.5MPa) *8		
		Required flow	L/min	45 (27,000min^{-1} specifications: 115)		
Machining dimensions	Height		mm(inch)	2,498 (98.4)		
	Required floor space *11 [with control unit door open]		mm(inch)	1,080 × 2,106 [2,944] (42.5 × 82.9[115.9])	1.560 × 2,026 [2,864] (61.4 × 79.8[112.8])	2,050 × 2,026 [2,864] (80.7 × 79.8[112.8])
	Weight		kg(lbs)	2,350 (5,181)	2,400 (5,292)	2,550 (5,622)
Accuracy *3	Accuracy of bidirectional axis positioning (ISO230-2:1988)		mm(inch)	0.006~0.020 (0.00024~0.00079)		
	Repeatability of bidirectional axis positioning (ISO230-2:2014)		mm(inch)	Less than 0.004 (0.00016)		
Front door				2doors		
Standard accessories	Instruction Manual (DVD 1 set), leveling bolts (4 pcs.), leveling plate (4 pcs.)					

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

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

- Leave 700 mm between machines as a maintenance space.

- 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 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 some countries and regions other than "Group A countries", 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.

NC unit specifications

CNC model	CNC-D00	
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	0.001 mm, 0.0001 inch, 0.001 deg.	
Max. programmable dimension	±999999.999 mm, ±99999.9999 inch	
Display	15-inch color LCD touch display	
Memory capacity	500 Mbytes, 3 Gbytes (optional) (Total capacity of program and data bank)	
External communication	USB memory interface, Ethernet, RS232C (optional)	
No. of registrable programs	4,000 (Total capacity of program and data bank)	
Program format	NC language, conversation (changed by parameter)	
	Conversion from conversation program to NC language program available	

* "Control axes" and "Simultaneously controlled axes" indicate the maximum number of axes, which will differ depending on the destination country and the machine specifications.
* Ethernet is a registered trademark of Xerox Corporation in the United States.

NC functions

Operation	Dry run
	Machine lock
	Program restart
	Rapid traverse override
	Cutting feed override
	Background editing
	Screen shot
	Operation level
	External input signal key
	Shortcut keys
	<Optional>
	Spindle override
Programming	Absolute / Incremental
	Inch / Metric
	Coordinate system setting
	Corner C / Corner R
	Rotational transformation
	Synchronized tap
	Subprogram
	Graphic display
Measurement	Automatic workpiece measurement *1
	Tool length measurement
High speed and high accuracy	Machining parameter adjustment
	High-accuracy mode AIII
	High-accuracy mode BI (look-ahead 160 blocks)
	Backlash compensation
	<Optional>
	High accuracy mode BII (Look-ahead 1,000 blocks, smooth path offset)
Monitoring	Machining load monitoring
	ATC monitoring
	Overload prediction
	Waveform display / Waveform output to memory card
	Heat expansion compensation system II (X, Y, and Z axes)
	Production performance display
	Tool life / Spare tool

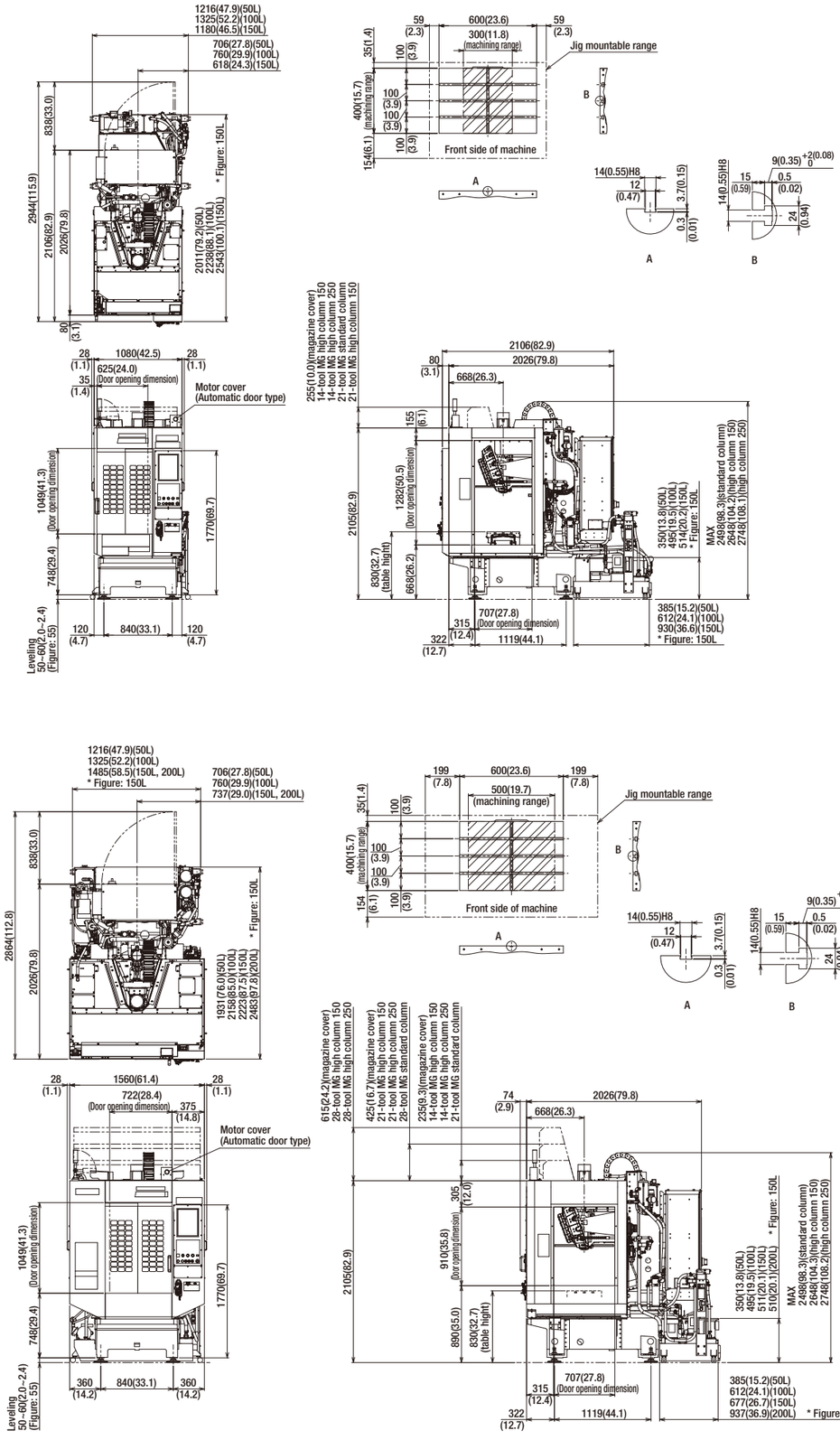
Maintenance	Tap return function
	Status log
	Alarm log
	Operation log
	Maintenance notice
	Motor insulation resistance measurement
	Tool washing filter with filter clogging detection
	Battery-free encoder
	Breake load test
Automatic / Network	Computer remote
	OPC UA
	Auto notification
	Built-in PLC (LD/ST/FBD)
	<Optional>
	CC-Link, master station
	CC-Link, remote device station
	PROFIBUS DP, slave
	DeviceNet, slave
	PROFINET, slave
	EtherNet/IP, slave
Energy saving	Automatic power off
	Standby mode
	Automatic coolant off
	Automatic work light off
	Chip shower off delay
Support apps	Adjust machine parameters
	ATC tool
	Tool life
	Waveform display
	Production performance
	Power consumption
	Recovery support
	Inspection
	PLC
Accessories	File viewer
	Notebook
	Calculator
	Register shortcut
	Display off

Functions limited to NC language	Menu programming
	Local coordinate system
	Expanded workpiece coordinate system
	One-way positioning
	Inverse time feed
	Programmable data input
	Tool length compensation
	Cutter compensation
	Scaling
	Mirror image
	External sub program call
	Macro
	Operation in tape mode
	Multiple skip function
	<Optional>
	Submicron command *2
	Interrupt type macro
	Rotary fixture offset
	Fixture coordinates setting *3
	Involute interpolation
Functions limited to 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

*1. Measuring instrument needs to be prepared by users.
*2. When the submicron command is used, changing to the conversation program is disabled.
*3. There are restrictions on the axis configuration.

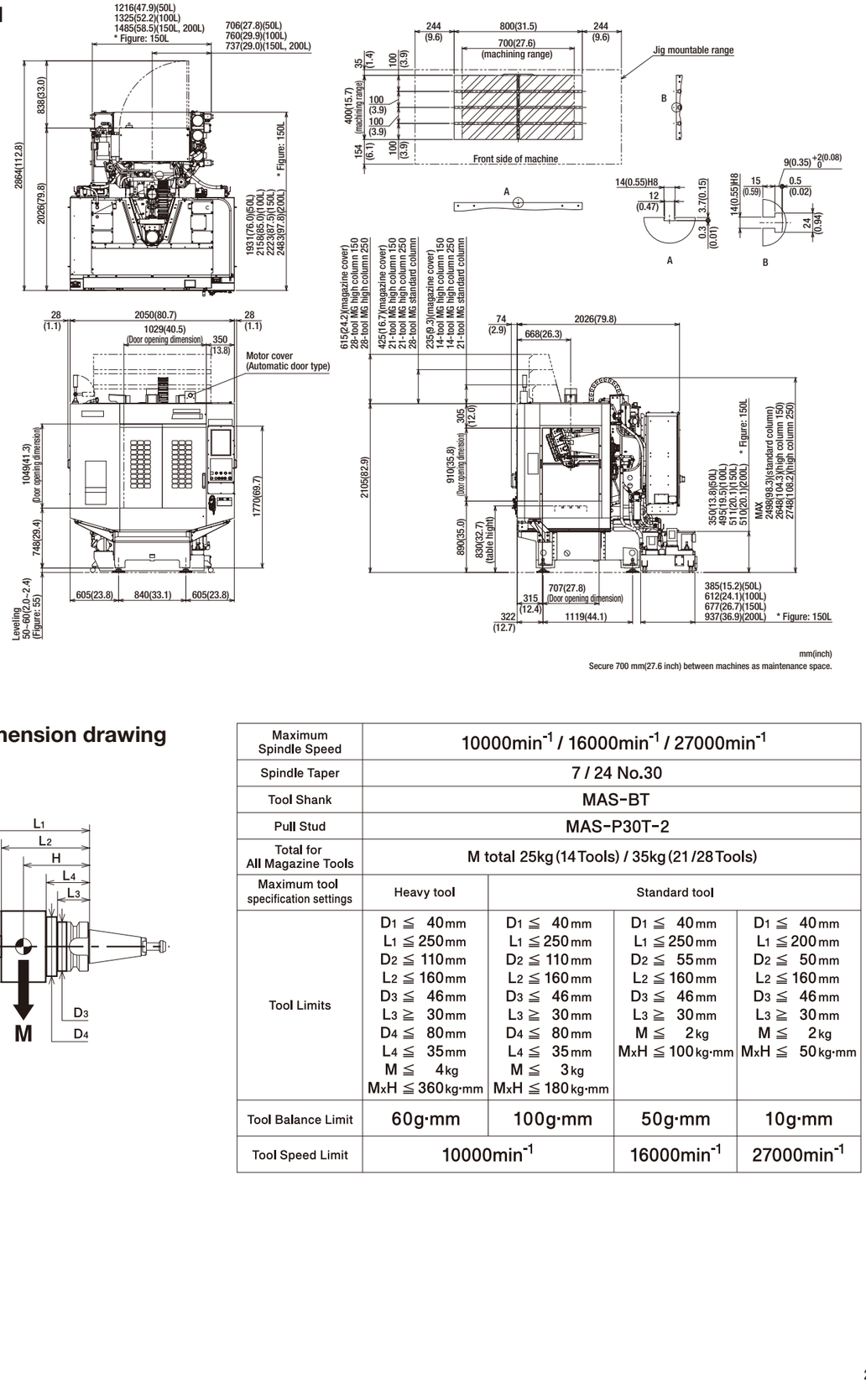
* Depending on the type of coolant, it may have a significant influence on the machine lifecycle. It is recommended to use the coolant which is commercially designated as high lubricity, for example Emulsion type. Especially, the coolant of chemical solution type (ex. Synthetic type) is prohibited to 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.

S300Xd1



S500Xd1

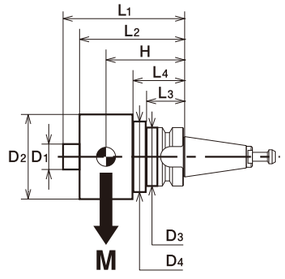
S700Xd1



mm(inch)

Secure 700 mm(27.6 inch) between machines as maintenance space.

Tool dimension drawing



Maximum Spindle Speed	10000min^{-1} / 16000min^{-1} / 27000min^{-1}			
Spindle Taper	7 / 24 No.30			
Tool Shank	MAS-BT			
Pull Stud	MAS-P30T-2			
Total for All Magazine Tools	M total 25kg (14 Tools) / 35kg (21 / 28 Tools)			
Maximum tool specification settings	Heavy tool	Standard tool		
Tool Limits	D1 ≦ 40mm L1 ≦ 250mm D2 ≦ 110mm L2 ≦ 160mm D3 ≦ 46mm L3 ≧ 30mm D4 ≦ 80mm L4 ≦ 35mm M ≦ 4kg MxH ≦ 360kg·mm	D1 ≦ 40mm L1 ≦ 250mm D2 ≦ 110mm L2 ≦ 160mm D3 ≦ 46mm L3 ≧ 30mm D4 ≦ 80mm L4 ≦ 35mm M ≦ 3kg MxH ≦ 180kg·mm	D1 ≦ 40mm L1 ≦ 250mm D2 ≦ 55mm L2 ≦ 160mm D3 ≦ 46mm L3 ≧ 30mm M ≦ 2kg MxH ≦ 100kg·mm	D1 ≦ 40mm L1 ≦ 200mm D2 ≦ 50mm L2 ≦ 160mm D3 ≦ 46mm L3 ≧ 30mm M ≦ 2kg MxH ≦ 50kg·mm
Tool Balance Limit	60g·mm	100g·mm	50g·mm	10g·mm
Tool Speed Limit	10000min^{-1}		16000min^{-1}	27000min^{-1}

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Figures in brackets ( ) are the country codes.

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