CNC-D00

Brother CNC

New easier-to-use user interface
drives SPEEDIO's machining capabilities to the fullest

As a result of thorough research on onsite operation, Brother's original CNC-D00 has become much easier to use.
New functions and screens have been added to enhance usability while maintaining previous useful functions.
Waste-free operation regardless of operators' skills and experience, to drive SPEEDIO's capabilities to the fullest.

Remaining/
Elapsed machining time

Workpiece counter

Support apps

Screen keys

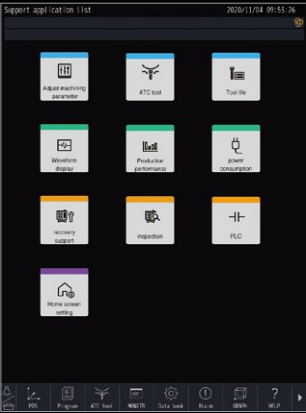Program

Tool life

Shortcut keys

Home screen

Data necessary for mass production is integrated as one.

Created a new home screen that serves as the start point of all operations. Data necessary for mass production is unified. Screens can be customized to be more user friendly.

Achieving waste-free operation optimized for manufacturing

Intuitive operation with new apps and 15-inch 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.

The new CNC further improves work efficiency in pursuit of higher productivity.

Support apps

Easy-to use apps with no complicated operation

Created new support apps with improved operability and visibility, such as an ATC tool app that enables all tool settings to be performed on one screen and a production result app that visualizes production results and operation state. Customers using the SPEEDIO for the first time do not have to learn complicated operations.

Conventional screens

Familiar conventional operation possible

Screens succeeding the configuration of the former model are available. Even those familiar with the former model can use the new controller in the same way without learning new operation methods. Touch operation is also possible to suit all levels of onsite operators from new to experienced.

Four-support package solves problems at production sites

Support apps that eliminate waste in all upstream and downstream processes
Control technology specialized for the SPEEDIO and achieved through machine/controller integrated development
The CNC-D00 responds to all customers' needs from production engineers, manufacturing operators, and maintenance engineers.

Setup	Adjustment	Production	Recovery
- Tools	- Test run	- Mass production	- Maintenance work
- Workpieces	- Adjustment	- Production control	
- Programs		- Tool change	

1 | Setup

Wanting to facilitate setup procedure

Cannot find needed data; Cannot get to the entry screen; Cannot remember G codes. If we could easily access the required data to perform setup smoothly …

SPEEDIO Setup Tools

Setup Support

**Efficient setup possible before machining
Reduction in cumbersome setup procedure**

- Easy tool settings
- Smooth programming

2 | Adjustment

Wanting to eliminate machining failure

Parameter adjustment is difficult; Required accuracy cannot be obtained; Test machining takes time; Many functions are beyond beginners' understanding. If there were adjustment functions that can be used by anybody…

SPEEDIO Adjust Tools

Adjustment Support

**Reliable settings possible even by those with less experience
Stable machining accuracy achieved by adjustment functions**

- Optimal machining settings
- Defective cutting prevention

3 | Productivity

Wanting to improve productivity

Wanting to produce as many products as possible and as fast as possible; The machine stops due to tool breakage; Wanting to visualize the plant. If the CNC were equipped with functions that can respond to a variety of needs of production sites…

SPEEDIO Production Tools

Production Support

**SPEEDIO applicable to all types of production
Production efficiency maximized to meet onsite needs**

- Productivity improvement
- Realtime monitoring to avoid defects
- Power consumption control

4 | Recovery

Wanting to implement recovery quickly

Production stops due to machine stoppage; The cause of stoppage cannot be identified; Wanting to commence recovery work immediately; Wanting to prevent failure. If there were reliable easy-to-understand functions even in the event of a failure…

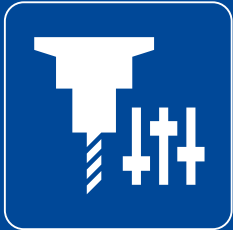**SPEEDIO** Recovery Tools

Recovery Support

**Preventive maintenance prepared for possible future problems
Reduction in downtime through reliable control**

- Quick recovery
- Preventive maintenance to prevent failure

SPEEDIO Setup Tools

Efficient setup possible before machining
Reduction in cumbersome setup procedure

Easy tool settings

ATC tool app
You can easily perform magazine tool registration, tool data editing, and magazine tool removal/attachment operation on one screen.
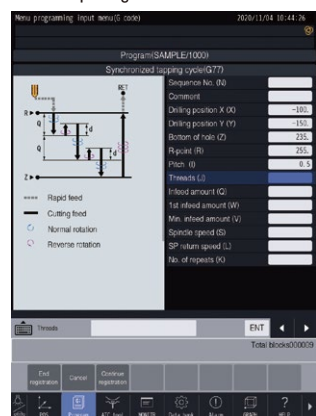
Tool life app
You can set and edit the magazine tool life. Tools are displayed on the home screen in the order from the shortest life, making replacement preparation easier.

Smooth programming

Menu programming
You can simply enter G/M codes for each item while viewing instructions on the display. In case that G codes have slipped your mind, you can enter them without opening the manual.

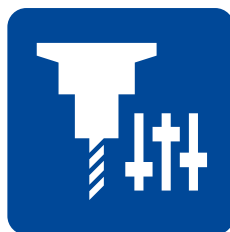### Running multiple blocks in MDI operation

Expanded memory capacity
Standard 500 MB / Option 3 GB

Help key
Displays the help message for the current screen with one touch.

Memo pad / Calculator / File viewer
A variety of accessories that assist setup are provided. The file viewer allows you to display the manual or desired pdf files.

QWERTY on-screen keyboard

SPEEDIO Adjust Tools

Reliable settings possible even by those with less experience
Stable machining accuracy achieved by adjustment functions

Optimal machining settings

Machining parameter adjustment app
You can easily set the optimal acceleration depending on the table loading capacity, adjust the balance of machining accuracy and surface quality, or set the optimal tapping/drilling conditions.
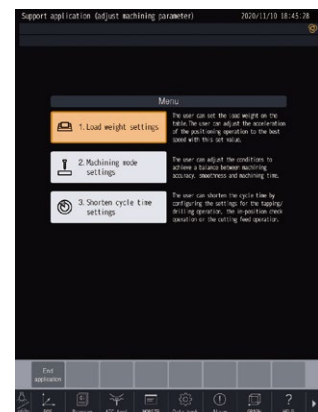
Machining mode setting
The mode is set depending on the required accuracy and time. Optimal operation can be achieved without difficult entry of acceleration or repeated adjustment.
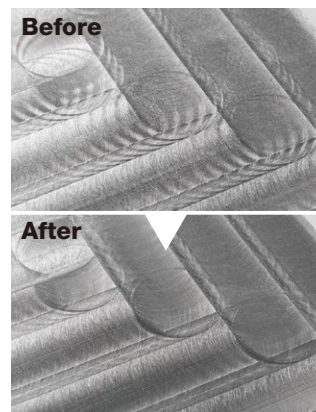
Defective cutting prevention

Waveform display app
Waveforms of the spindle, feed axis etc. are displayed. Adjustment that previously relied on the knack of experienced personnel can now be performed quantitatively by visualizing the cutting resistance or vibration quantitatively.

Before

After

Automatic heat expansion compensation
Heat expansion is predicted and compensated without a sensor based on the operation log of each axis.

Estimating loading weight
The jig weight is estimated by the CNC. Acceleration/deceleration is automatically adjusted by entering this weight, reducing the cycle time without rewriting the program.

Graphic display
Simulation on the screen makes the program check easier.

Tool length range setting
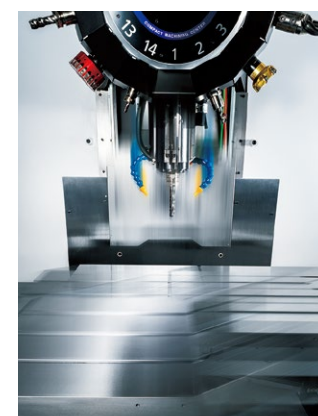The entry range can be set as desired. This prevents incorrect entry at the worksite.

SPEEDIO Production Tools

SPEEDIO applicable to all types of production
Production efficiency maximized to meet onsite needs

Productivity improvement
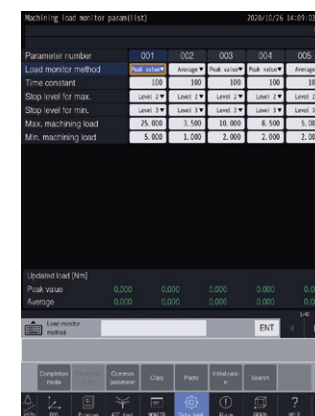
Reduction in cycle time
- Faster ATC
- Shorter processing cycle
- Faster canned cycle
- High-speed tap return

## Realtime monitoring to avoid defects

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

Power consumption control

Power consumption app
Servomotors, pumps, and other equipment are grouped and displayed according to purpose. As measurement is possible for each cycle, it can be used for cost calculation.
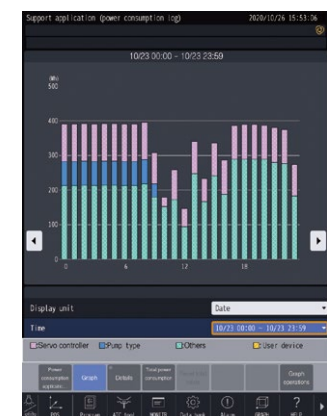
ATC monitoring
The presence of a tool or tool holder mis-clamp is detected without using a sensor.

Production result app
The workpiece counter etc. is displayed as a graph, enabling you to understand the transition of production state.

Micro-segment processing capacity
The CPU capacity has been greatly enhanced. A delay can be minimized even for CAM data with small tolerances.

Previous model	Fourfold processing speed
D00	

Processing speed per block

Enhanced network function
Internal data etc. can be collected periodically. Compliant with OPC-UA.
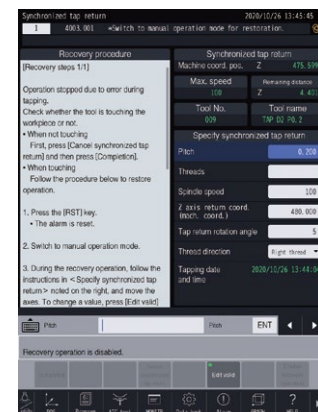
SPEEDIO Recovery Tools

Preventive maintenance prepared for possible future problems
Reduction in downtime through reliable control

Quick recovery

Recovery support app
Recovery work instructions are displayed to reduce machine downtime.
- Tap return
- Automatic door adjustment, etc.

Storing program alarm position
The position when an alarm was issued is automatically stored. The program can restart from that position.

Automatic backup
NC programs, databank, and PLC are backed up in USB memory. This makes recovery smooth in the event of an accident.

Alarm log
Alarm log details are displayed and used to identify the cause.
No. of alarm logs: 2000

Preventive maintenance to prevent failure

Overload prediction
Overload during mass production is predicted based on one machining cycle to prevent machine stoppage.
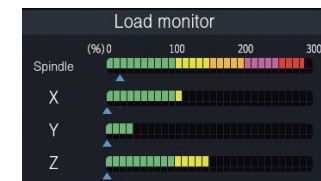
Maintenance notice
The CNC notifies you when maintenance is required. You can reliably perform maintenance that tends to be forgotten.

Motor insulation resistance measurement
The motor insulation resistance is measured to detect any sign of failure.

Operation log
Downtime can be reduced by monitoring when a failure occurred.
No. of operation logs: 50,000

NC functions

Operation	Dry run
	Machine lock
	Restart
	Rapid traverse override
	Cutting feed override
	Background editing
	Screen shot
	Operation level
	External input signal key
	(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 A III
	High-accuracy mode B I (look-ahead 160blocks)
	Backlash compensation
	(optional)
	High-accuracy mode B II , look-ahead 1,000blocks, with 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,Z axes)
	Production performance
	Tool life / Spare tool

Maintenance	Tap return function
	Status log
	Alarm log
	Operation log
	Motor insulation resistance measurement
	Tool washing filter with filter clogging detection
Automation / Network	Computer remote
	OPC UA
	Auto notification
	Built-in PLC
	(optional)
	CC-link, master station
	CC-link, intelligent device station
	PROFIBUS DP, slave
	DeviceNet, slave
	PROFINET, slave (scheduled to be installed)
	EtherNet/IP, slave (scheduled to be installed)
Energy saving	Automatic power off
	Servomotor off standby mode
	Automatic coolant off
	Automatic work light off
	Chip shower off delay
Support Apps	Machining parameter adjustment
	ATC tool
	Tool life
	Waveform display
	Production performance
	Power consumption
	Recovery support
	Inspection
	PLC
Accessories	File viewer
	Memo pad
	Calculator
	Shortcut registration
	Display OFF

NC language mode only	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
	Feature coordinate setting function *3
	Involute interpolation
Conversation language mode only	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 models that can be equipped.

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, two additional axes)
	Interpolation	Linear : 4 axes (X,Y,Z one additional axis)
		Circular : 2 axes
		Helical/conical : 3 axes (X,Y,Z)
Least input increment	0.001mm, 0.0001inch, 0.001 deg.	
Max.programmable dimension	±999999.999mm, ±99999.9999inch	
Display	15-inch color LCD touch display	
Memory capacity	500 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), conversation from conversation program to NC language program 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.

Specifications may be subject to change without any notice.

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