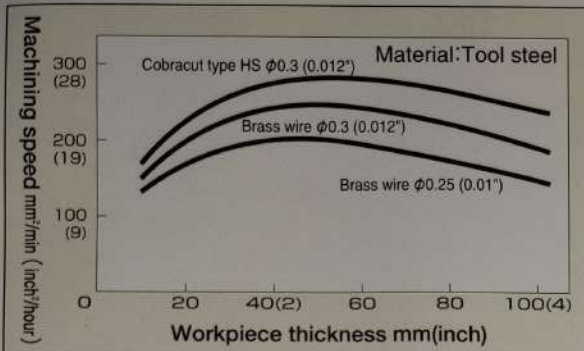




## High-speed machining

Brother's original high-end power supply and discharge control circuitry provide a maximum machining speed of 300mm<sup>2</sup>/min.



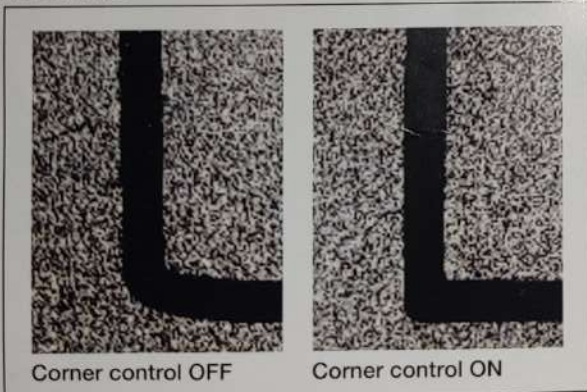
## Speed, thickness, and wire breakage prevention controls

The automatic speed and thickness controls automatically regulate the machining speed and conditions according to changes in the shape and thickness of the workpiece, while monitoring machining in real time. Combining this with a new wire breakage prevention control system allows any workpiece to be machined reliably and efficiently.

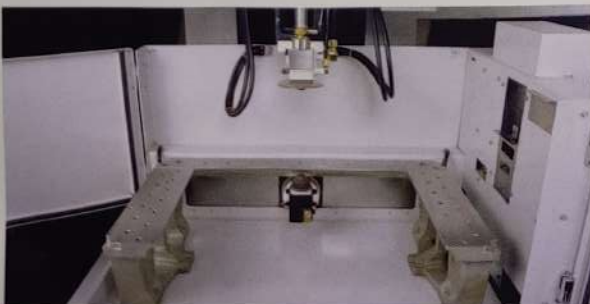
## Automatic corner control

Corner rounding is automatically controlled during high-speed machining.

Tool steel  
Thickness 10mm  
Center section



## Flat table



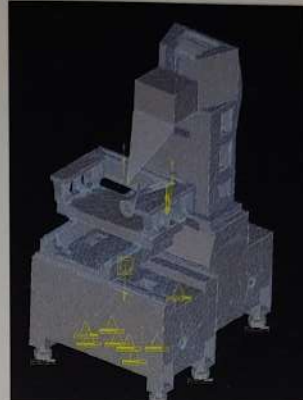
The U-shaped flat table and double doors open outward from the work tank ensuring easy set-up.

## Stable Performance

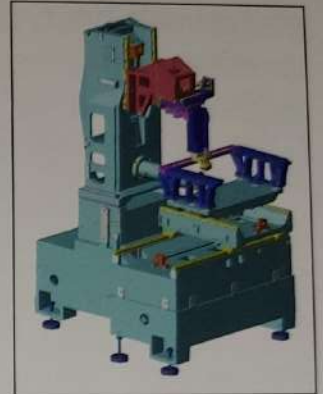


## Highly rigid machine construction

The machine's structure, developed through CAE analysis, provides more distance between guides, more rigid machine base, and a larger diameter ball screw, resulting in highly accurate table movement.



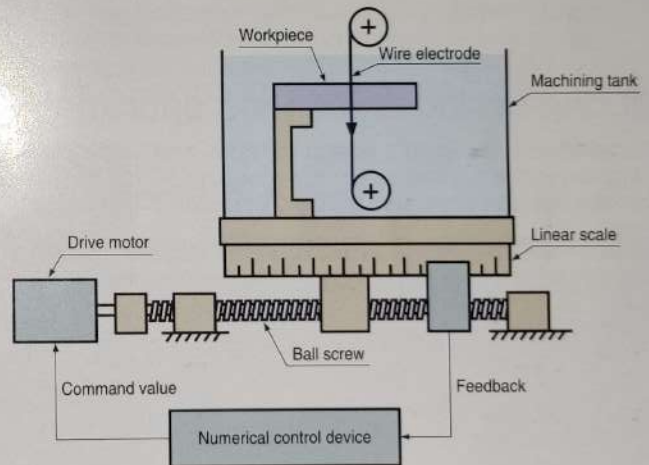
CAE analysis



Machine structure

## 0.1 $\mu$ m pitch optical linear scale

The machine is equipped with a fully closed loop control that directly reads the position of the table. This maintains high positioning accuracy over the life of the machine.



## Z-axis motor control

This control feature ensures outstanding Z-axis machine position repeatability for superior taper cutting.

## Design for Maximum Efficiency



### Space saving

Compact design with integrated mechanical and power units allows for effective use of your facilities floor space.

### No air supply required

Unmanned operation, even during nights and holidays

### Inverter pump

Highly economical with reduced power consumption

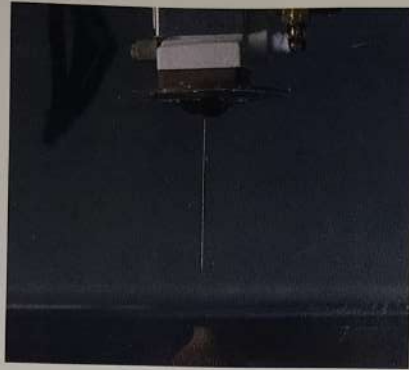
# Fast Automatic Wire Threading



Annealing and high heat cutting functions have been added to our fast and reliable automatic wire threader; featuring a simple mechanism composed of diamond guides and a water jet.

## Fast automatic wire threading : 15 seconds

A thorough review of the wire threading route and jet stream has produced a more reliable threader; even in submerged conditions. These features greatly reduce the total machining time.



Submerged threading

## Threading coated wire is possible

Annealing and high heat cutting functions straighten the curled wire and forms the perfect wire tip, to successfully thread coated wire.

## Long-period unmanned operation

The used wire is cut to a length of 5mm. and collected in the bucket set in the machine. This bucket can store up to 20 kg of used wires.



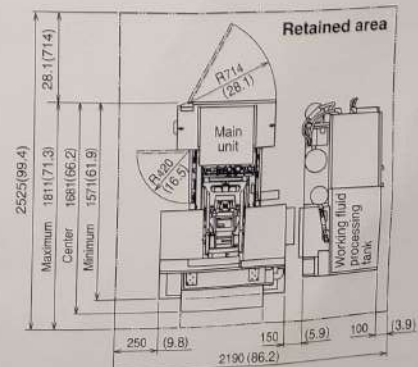
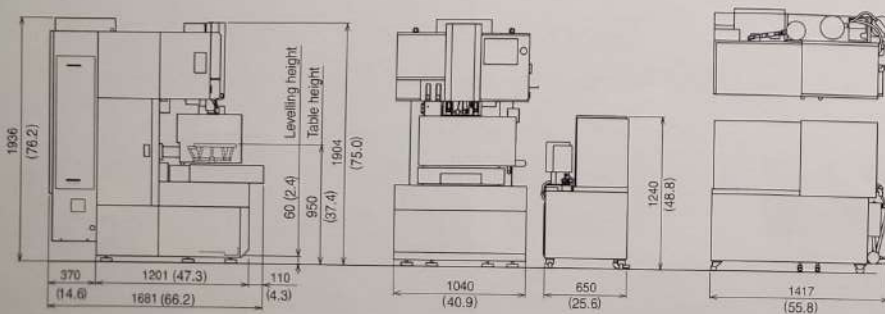
Used wire collector



Automatic wire threader

## External dimension drawing

mm(inch)

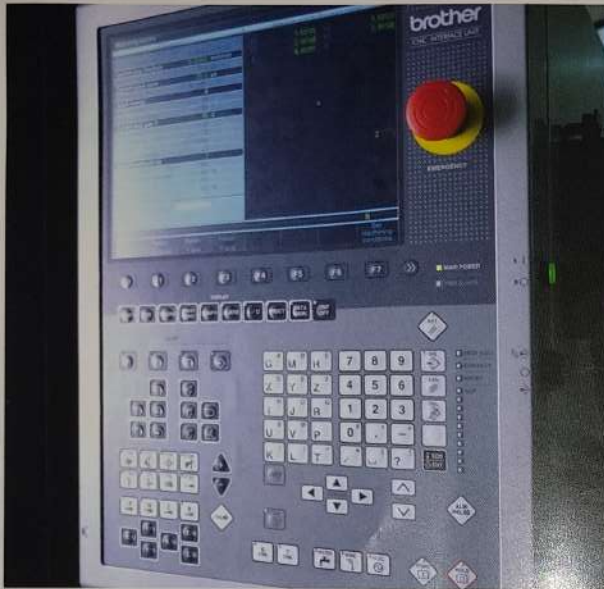


# New User/Machine Interface



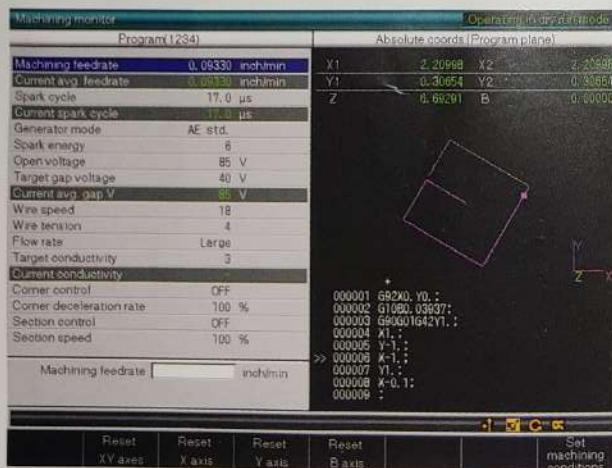
The new NC unit features a simple and improved user-friendly interface. This new NC is equipped with an easy-to-view and easy-to-understand visual color display that maximizes machine performance.

## New NC unit



A large color LCD (12.1-inch) is provided for a better view of cutting conditions, programs, graphics and integrated help messages.

## Machining monitor display



Machining path, speed, current position, gap voltage, and program can be displayed simultaneously for real time checking.

## Easy set-up

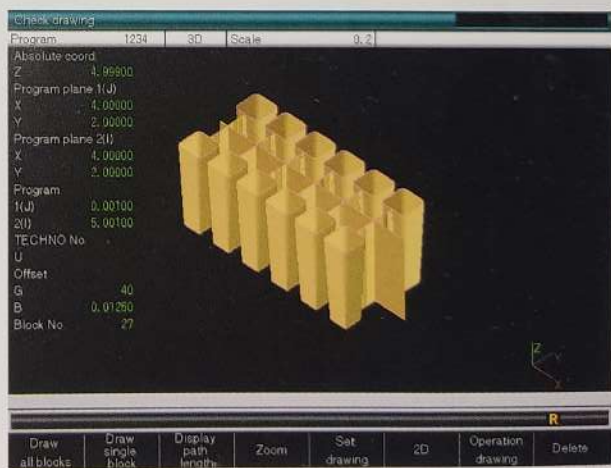
New and improved user friendly functions such as 3D graphics, workpiece rotation, additional user set points, and improved measuring cycles allow for easy machine set-ups.

## Simple machining condition setting

TECHNO list	Item	Current mach cond	Normal A	Normal B	Normal C
TECHNO No.		10001000	1000100	1000101	1000100
Machining feedrate		0.09330	0.09330	0.09535	0.09709
Spark cycle		17.0	17.0	17.0	14.0
Generator mode		AE std.	AE std.	AE std.	AE std.
Spark energy		6	6	5	6
Open / Target gap voltage		85 / 40	85 / 40	95 / 40	85 / 40
Wire speed / Tension		18 / 4	18 / 4	15 / 4	15 / 4
Flow rate / Conductivity		Large / 3	Large / 3	Large / 3	Large / 3
S-control max. feedrate		0.11811	0.11811	0.07874	0.11811
S-T / Stability control		ON-OFF / 2	ON-OFF / 2	ON-OFF / 2	ON-OFF / 2
Offset		0.00291	0.00291	0.00275	0.00295
Material		Tool steel	Tool steel	Tool steel	Tool steel
Thickness		0.36370	0.36370	0.36370	0.79740
Wire type		Hard	Hard	Hard	Hard
Wire diameter		0.0040	0.0040	0.0040	0.0040
Wire tilt angle		0.00000	0.00000	0.00000	0.00000
Machining type		Sealed	Sealed	Sealed	Sealed
Roughness / Finish		0.43 / 0.80	0.43 / 0.80	0.36 / 0.72	0.36 / 0.80
Upper / Lower nozzle		0.0 / 0.0	0.0 / 0.0	0.0 / 0.0	0.0 / 0.0
Comment					
TECHNO No.					

The machine is equipped with a variety of built-in machining conditions, from rough cutting to finish cutting. Simply selecting the material and thickness sets the optimal machining conditions. The results can then be further searched by surface roughness. Material: Alloy steel, carbon steel, stainless steel, copper, aluminum, cemented carbide, graphite. Thickness: 5, 10, 20, 30, 40, 50, 60, 70, 80, 100, 150mm

## Graphic drawing



Graphics can be displayed two-dimensionally or three-dimensionally. The remaining machining time of the current program or the graphics of the next program can be checked while machining.

## Expanded memory

With 10 MB of storage space the HS-70A can store up to 1000 programs. These programs as well as machining conditions can be externally input and output via serial communication or floppy disk unit (optional). Increasing storage memory to 128 MB is also available as an option.

# SPECIFICATIONS

## ■ Main unit

Item	mm (inch)
Maximum workpiece dimensions	580x390x170 (22.8x15.3x6.7)
Maximum workpiece weight	350kg (770lbs)
X and Y axis stroke	410x260 (16.1x10.2)
Z axis stroke	170 (6.7)
Maximum machining speed	300mm <sup>2</sup> /min (28inch <sup>2</sup> /hour)
Optimum surface roughness	0.26µmRa (0.01µinchRa)
Maximum table feed speed	900mm/min : positioning (36inch/min) 300mm/min : machining (12inch/min)
Wire diameter	0.1, 0.15, 0.2, 0.25, 0.3 (0.004, 0.006, 0.008, 0.01, 0.012)
Wire guide system	Round diamond
Wire feed speed	40-250mm/sec (1.57-9.84inch/sec)
Wire tension	3-25 N
Maximum wire spool	DIN 160 / P10 (13.5 lbs & 10 kg)
Wire recovery method	Mechanical cutting with rotating blade
Wire recovery bucket capacity	20kg (44lbs)
U and V axis stroke	±32.5x±32.5 (±1.28x±1.28)
Maximum taper angle	15 deg - Workpiece Thickness: 100 (4)
Taper mode	Sharp corner taper, Cylindrical taper, Conical taper, Independent U/V 4 axes programming
Dielectric fluid feed system	Submerged type/ Flushing type
Main unit dimensions	1040x1681x1936 (40.9x66.2x76.2)
Main unit weight	1500 kg (3080 lbs)
Installation area	2190x2525 (86.2x99.4) Including maintenance area
Power supply	3-phase AC V ±10% 50/60Hz ±1Hz
Total input	13.5kVA Includes dielectric fluid cooling system

## ■ NC unit

Item	mm (inch)
Controllable Axes	X • Y • Z • U • V • B
Minimum setting unit	0.001 (0.00001)
Minimum drive unit	0.0001 (0.000004)
Maximum command value	± 9999.999 (± 999.99999)
Interpolation functions	Linear, Arc
Positioning command functions	Relative, Absolute
Input	Keyboard, RS-232C, Ethernet
Display	12.1" color LCD (SVGA)
Memory	25,400m (1,000,000inch) Number of programs 1000
Operating modes	Program, Back, Trace, Jog, Step, Breakpoint return, Centering, Edge find, Zero-point return
NC-Functions	Machine lock, Dry run, Single block, Optional stop, Metric/Inch select, Stored stroke limit, Subprogram, 2D/3D(surface / wire-frame)graphics, Machining time display, Correction of pitch error, Automatic condition setting, Servo feed & thickness corner control

## ■ Dielectric fluid supply tank

Dielectric tank supply	360 L
Filter system	2 internal pressure filters
Ion exchanger capacity	7.5 L
External dimensions	650x1417x1240 (25.6x55.8x48.8)
Weight (empty)	215 kg (473 lbs)

## ■ Automatic Wire Threader

System	Water jet
Applicable wire electrode	0.2, 0.25, 0.3 (0.008, 0.01, 0.012)
Minimum initial hole diameter	2 (0.08)
Maximum feed thickness	150 (5.9)
Re-thread	Included
Skip function	Included

## ■ Expansion memory (option)

Setting unit	0.00001 deg
Minimum setting unit	0.00072 deg
Maximum feed speed	20 min <sup>-1</sup>
Load capacity	8 kg (18 lbs)

## ■ Other option

- Dielectric fluid cooler • Vertical alignment gauge • Auxiliary base • Wire guide (0.1 - 0.3) • Indication light (single/triple)
- I/O interface board • Manual pulse emitter • lower cover • Auxiliary power supply device • Expansion memory (128 Mbyte)
- Removable data storage unit ( FDD ) • Task light



# brother®

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MACHINERY & SOLUTION COMPANY  
MACHINE TOOLS FIELD

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Installation area	2190×2525 (86.2×99.4) Including maintenance area
Power supply	3-phase AC V ±10% 50/60Hz ±1Hz
Total input	13.5kVA Includes dielectric fluid cooling system

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