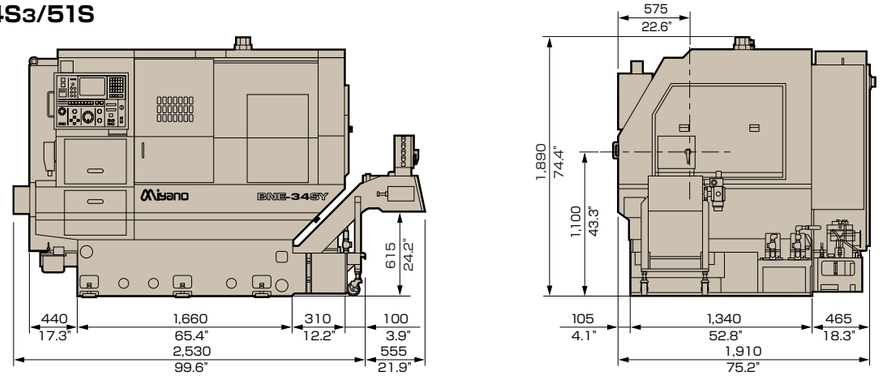
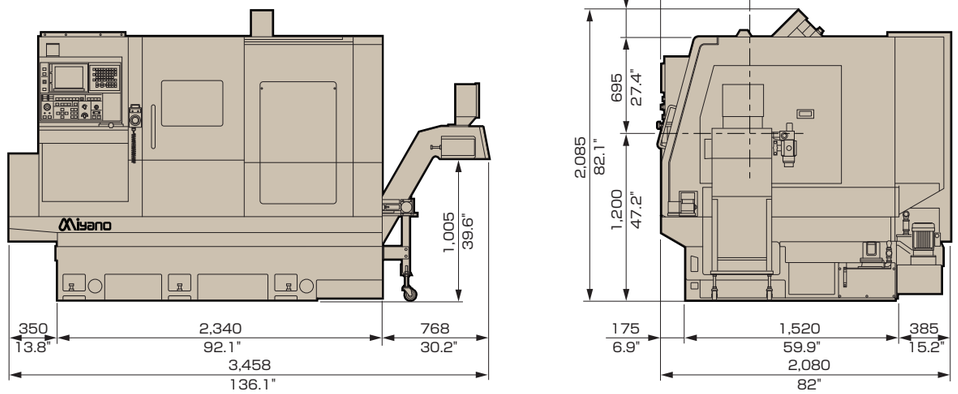
EXTERNAL VIEW

BNE-34S3/51S



BNE-34SY5/51SY5



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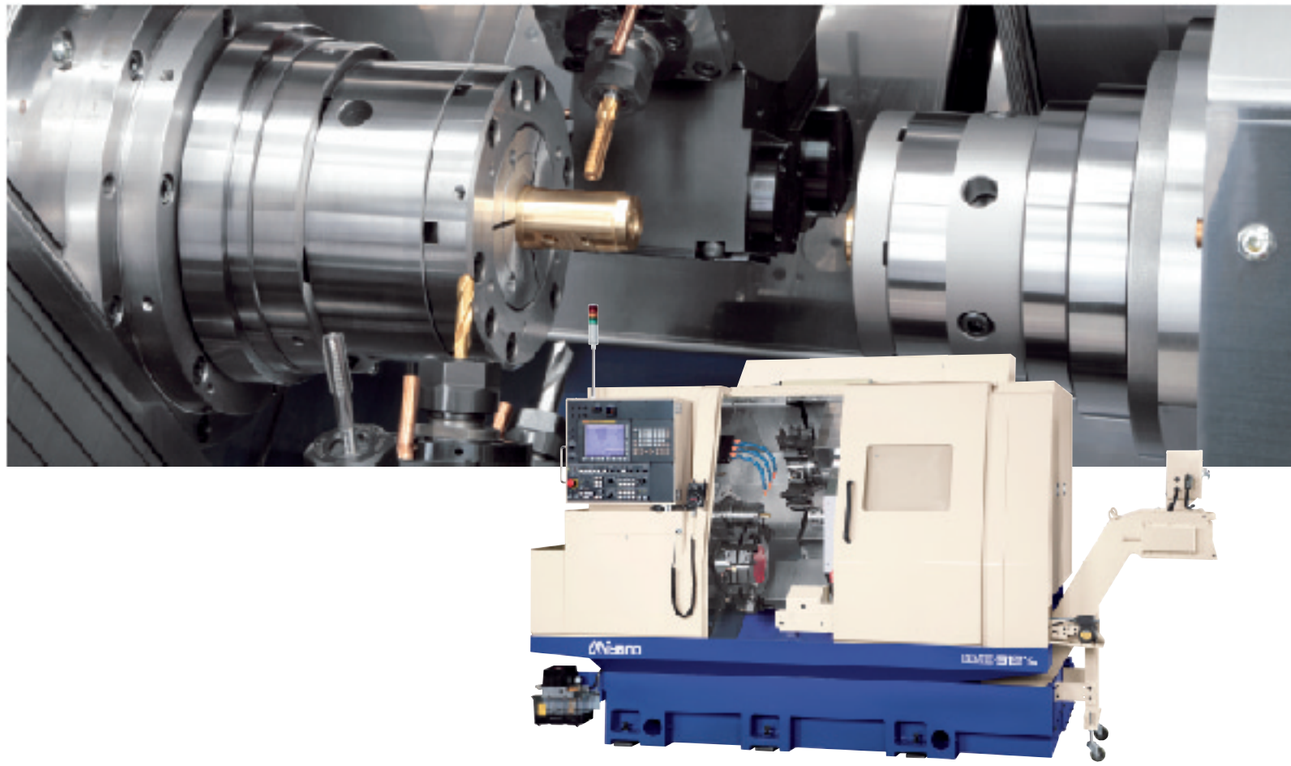
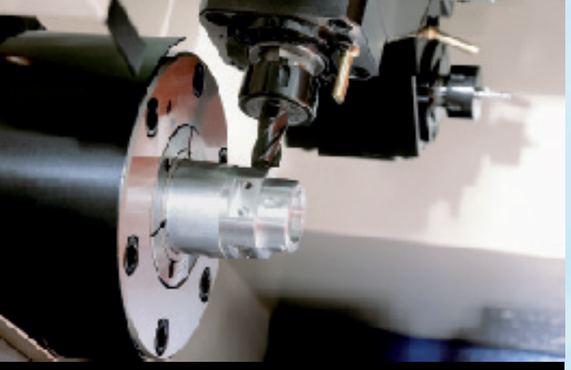
Miyano
The World Leader in Precision

2 Spindles, 2 Turrets
/ 1 Y-axis Slide
CNC Turning Center
BNE
series



BNE-34S3
BNE-51S
BNE-34SY5
BNE-51SY5



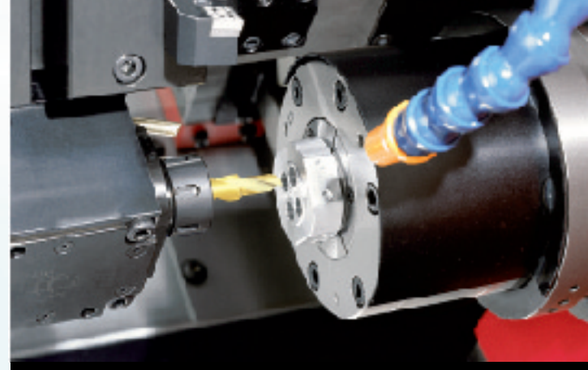
2SPINDLE+2TURRET

S TYPE
BNE-34S3
BNE-51S

The BNE Series Handles Your High Value Barwork.
"S" Type for Complete Machining with Simultaneous Operations.
"SY" Type with "Y" axis for the Most Complex Parts.

The BNE Series was designed to handle today's ever demanding high efficiency barwork. Operating multiple tools simultaneously, parts with more complex functions can now be produced with higher level of efficiency. The S-Type features simultaneous multiple tooling on the L/R spindles.

The "SY" type with Y-Axis slide for the upper turret has the capability of a machining center to handle more complex workpieces. The new design of the 2-types feature easies programming and machine operation to reduce set-up times.



2SPINDLE+2TURRET+YAXIS

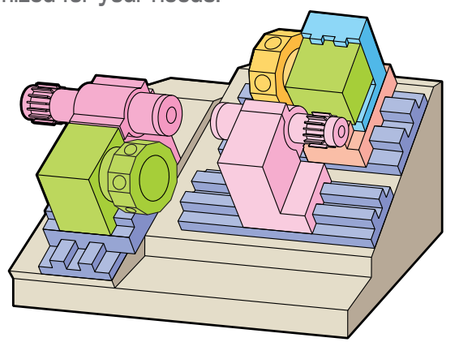
SY TYPE
BNE-34SY5
BNE-51SY5

FEATURE 1

Models And Features Optimized For Your Needs.

Select the models and the options to build a system optimized for your needs.

S type featues complete, single-setup machining with L/R spindles, C-Axis and live tools.
SY-Type features more sophisticated combined machining with Y-Axis slide. Method of the Y-Axis programming is common with all SY models.



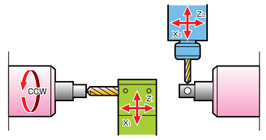
BNE-34SY/51SY
Machine Schema

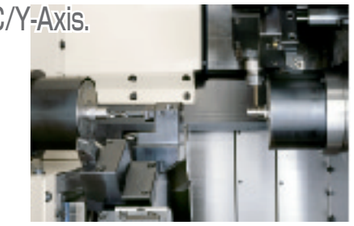
FEATURE 2

Simultaneous Machining To Eliminate Second Operations.

Completes machining made faster by L/R spindles, U/L Turrets, and C/Y-Axis.

The 2-machine-in-one, 2-spindle/2-Turret design combines all processing within a single machine. This will elliminate the secondary operation and the time loss by part-handling to achieve optimim efficiency.



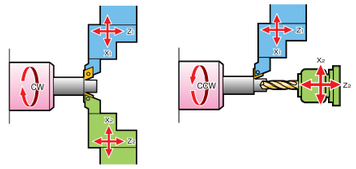


FEATURE 3

Powerful, Combined Machining Saves Time.

High-power/speed balanced turning and differential cutting boost efficiency.

"Balance turning", sumultaneous turning by the upper/lower turret, and differential cutting will further reduce the cycle time.

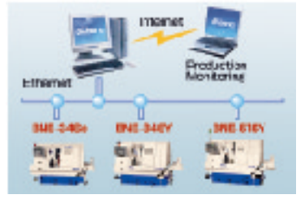


FEATURE 4

Build Your IT System By Ethernet Connection.

Ethernet helps manage the programs and monitor the machine operation.

FANUC Series i NC allows you to connect multiple BNE models to your PCs to manage your programs and monitor the machine operation. Total machine management solutions are provided.



FEATURE 5

Costs Reduced By Unmanned Operation.

Bar material to finished parts by automatic magazine barfeeder and parts stocker.

Tremendous cost saving can be achieved by using magazine loaded automatic barfeeder, part catcher, and parts stocker. Please see page 6 for details.

Welcome to the BNE Series the Ultimate Solutions for the Barworking

The need for combining a variety of operations into barworking is forever increasing.
The S and SY Type models offers a wide range of features to provide faster and more efficient solutions to shorten cycle times.
Even unusually long workpieces can be handled by holding most of components length inside the sub spindle bore.
The enhanced capability of the BNE series together with Miyano's expertise in barworking will satisfy your most demanding expectations.

For Larger Dia. Completes Barwork

BNE-34SY5/51SY5
- φ34mm/φ51mm bar
- 5"/6" Chuck

For Larger Dia. Barwork

BNE-51S
- φ51mm bar
- 6" Chuck

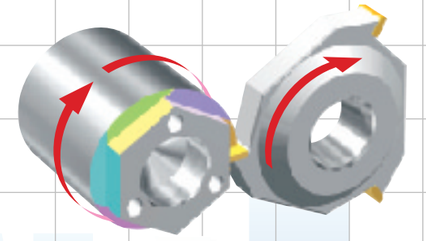
For Medium Dia. Barwork

BNE-34S3
- φ34mm bar
- 5" Chuck

Machining Examples

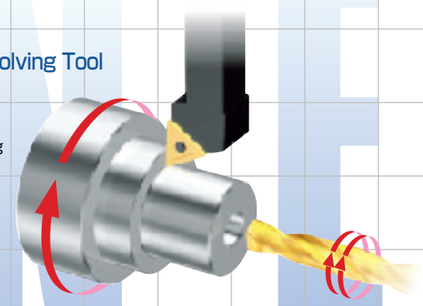
Polygon Cut

By running a polygon-cutter at twice the revolbing speed of the main spindle, two-sided, square, or hexagonal machining can be done achieving excellent surface finished.



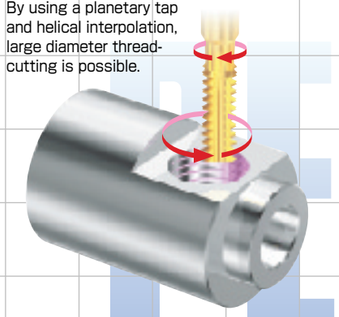
Differential Cut by Revolving Tool

By turning a small drill to the opposite direction against the revolving main spindle, the drill can run at the optimum working speed. A large drill can run at a slower speed by turning the same direction as the main spindle. As a result, tool life is extended and performance is enhanced.



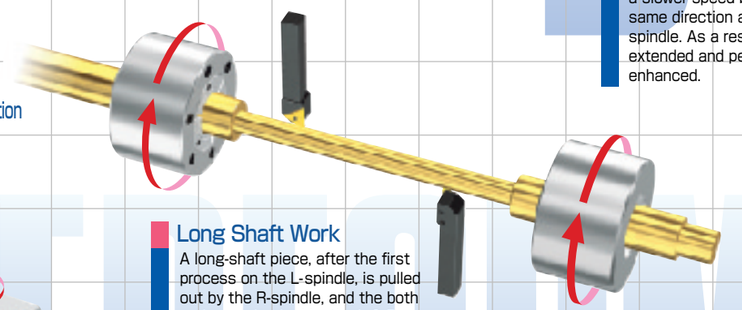
Large Thread, by Helical Interpolation (SY-Type Only)

By using a planetary tap and helical interpolation, large diameter thread-cutting is possible.



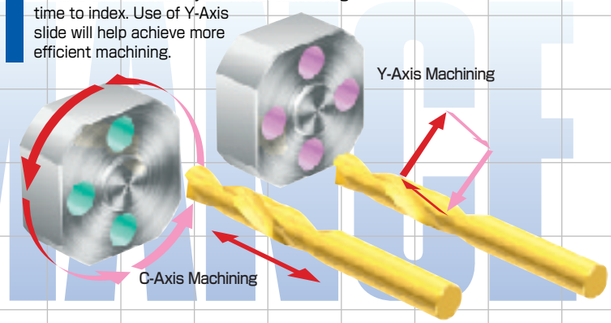
Long Shaft Work

A long-shaft piece, after the first process on the L-spindle, is pulled out by the R-spindle, and the both ends are chucked by the L & R spindles to perform long shaft turning, using the U/L-turrets simultaneously. After the cutoff and the end working on the R-spindle, the finished piece is pushed into the R-spindle by the next workpiece, and is eventually ejected out of the spindle.



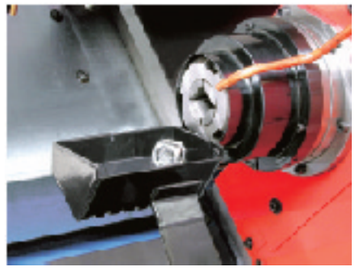
Efficient Cross Hole Machining (SY-Type Only)

Working on X-Y Axis or Z-Y Axis plane by "C" axis can increase cycle times. takes long time to index. Use of Y-Axis slide will help achieve more efficient machining.

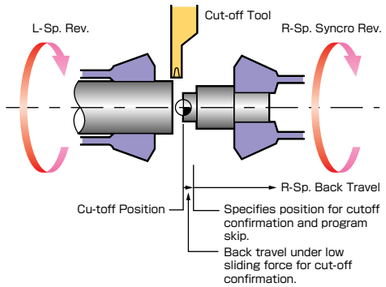


BNE PERFORMANCE

A Variety of Options to Meet Your Needs

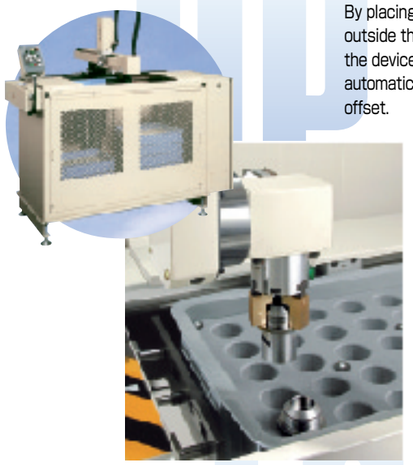


Part Catcher & Parts Conveyer
Standard bucket-type part catcher receives the workpiece and places it on parts conveyer to carry it to the outside of the machine.



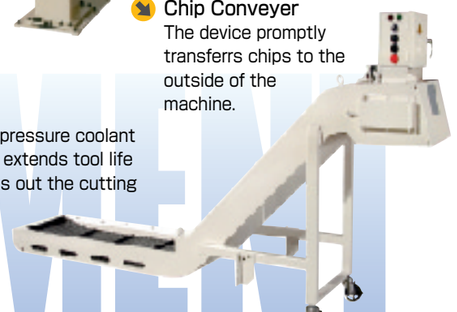
Automatic Measuring Device
By placing inside or outside the machine, the device performs automatic geometry offset.

Cutoff Confirmation System
This function confirms by program that the R-spindle can retract with a small amount of thrust command position for the cutoff confirmation and physical interfernce or machanical breakdown.



Magazine Loaded Automatic Bar Feeder
A key item to achieve long hours of barwork operation

Chip Conveyer
The device promptly transferrs chips to the outside of the machine.

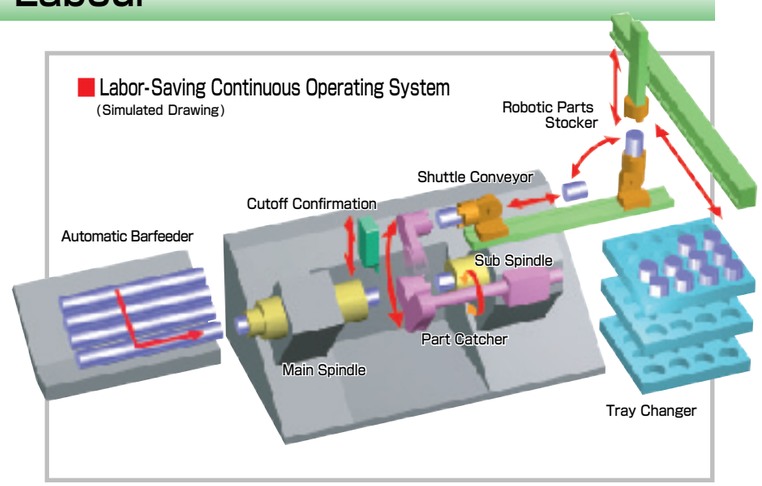


Parts Stocker with Pallet Changer
The workpiece received from the part catcher is placed in order onto a pallet through a shuttle conveyer. When it's full, the pallet is exchanged automatically.

MS Jet
The high-pressure coolant at 6 Mpa extends tool life and forces out the cutting chips.

System to Save Labour

Basic options for barwoking system includes automatic bar feeder, cutoff confirmation device, parts catcher and parts conveyor. Additionally, a parts stocker with tray changer which arranges the parts on the tray in an upright position in neat order, as well as an automatic measuring device forms a complete hands-free system from raw material to finished parts.
This helps to achieve an efficient work-flow and elliminates work in progress, Just-in-time.



OPTIONAL EQUIPMENT

MACHINE SPECIFICATIONS

Items	Model Name	BNE-34S3	BNE-51S	BNE-34SY5	BNE-51SY5
Machining Capacity & Chuck System					
Power Chuck & Size	L/R Spindle	5"/4" Oil Hyd.	6"/4" Oil Hyd.	5"/5" Oil Hyd.	6"/5" Oil Hyd.
Max. Bar Capacity	L/R Spindle	φ34/φ34mm (1.34"D/1.34"D)	φ51/φ41mm (2.0"D/1.6"D)	φ34/φ34mm (1.34"D/1.34"D)	φ51/φ41mm (2.0"D/1.61"D)
Max. Turning Length		90mm(3.54")	90mm(3.54")	90mm(3.54")	90mm(3.54")
Spindle					
Type of Cllet Chuck		Stationary	Stationary	Stationary	Stationary
Spindle Speed Range	L/R Spindle	67~5,000r/min.	54~4,000r/min.	67~7,000r/min.	54~5,000r/min.
Spindle Motor(Cs Axis)	L/R Spindle(30min. rat)	7.5/ 5.5kW	15/11kW	7.5/5.5kW	15/5.5kW
R Spindle Slide Travel (B Axis)		450mm(17.72")	450mm(17.72")	450mm(17.72")	450mm(17.72")
Turret					
Type of Turret	Upper/Lower Turret	12St./10St.Turret	12St./10St. Turret	12St./12St. Turret	12St./12St. Turret
Type of Y Axis Slide		.....	.....	Orthogonal Slide	Orthogonal Slide
Tool Shunk Size	Upper & Lower Turret	□20mm(3/4" Sq.)	□20mm(3/4" Sq.)	□20mm(3/4" Sq.)	□20mm(3/4" Sq.)
Tool Hole Dia.	Upper & Lower Turret	φ25mm(1" Dia.)	φ25mm(1" Dia.)	φ25mm(1" Dia.)	φ25mm (1" Dia.)
Upper Turret Slide Travel	X1 Axis Slide	150mm(5.9")	150mm(5.9")	175mm(6.9")	175mm(6.9")
	Z1 Axis Slide	380mm(14.97")	380mm(14.97")	380mm(14.97")	380mm(14.97")
	Y Axis Slide	.....	.....	±40mm(±1.58")	±40mm(±1.58")
Lower Turret Slide Travel	X2 Axis Slide	115mm(4.53")	115mm (4.53")	145mm(5.7")	145mm(5.7")
	Z2 Axis Slide	125mm(4.9")	125mm(4.9")	175mm(6.9")	175mm(6.9")
Turret Indexing Time	Upper/Lower Turret	0.5/0.45secc./pos	0.5/0.45sec./pos	0.25/0.25sec./pos	0.25/0.25sec./pos
No. of Revolving Tool St.	Upper/Lower Turret	6/ 5	6/5	12/12	12/12
Revolving Tool Speed Range	Upper/Lower Turret	0~4,000r/min.	0~4,000r/min.	~4,000r/min.	~4,000r/min.
Drilling Capacity	Upper & Lower Turret	φ16mm(0.5" D)	φ16mm(0.5" D)	φ16mm(0.5" D)	φ16mm(0.5" D)
Tapping Capacity	Upper & Lower Turret	M12(5/16-22UN)	M12(5/16-22UN)	M12(5/16-22UN)	M12(5/16-22UN)
Driving Motor 30min rat.	Upper/Lower Turret	2.5/1.3kW	2.5/1.3kW	2.5/2.5kW	2.5/2.5kW
Coolant					
Tank Capacity		180L	180L	340L	340L
Machine Dimensions					
Machine Hight		1,850mm(72.84")	1,850mm(72.84")	2,085mm(82.1")	2,085mm(82.1")
Hight of Spindle Center		1,100mm(43.31")	1,100mm(43.31")	1,200mm(47.2")	1,200mm(47.2")
Floor Space		2,530×1,910mm (99.6"×75.2")	2,530×1,910mm (99.6"×75.2")	2,690×2,080mm (105.9"×81.9")	2,690×2,080mm (105.9"×81.9")
Machine Weight		6,200kg(13,670"Lbs.)	6,300kg(13,890"Lbs.)	7,600kg(16,760"Lbs.)	7,800kg(17,200"Lbs.)
Others					
Splash Guard Interlock, Coolant, Pneumatic Unit, Machine Light					
Options					
Collet Chuck System, Power Chuck System, Cut-off Confirmation, R Spindle Through Coolant & Work Ejector, Air Blow, High Pressure Coolant,					
Coolant Mist Collector & Dumper for Anti-back Fire, Cooolant Level Switch, Revolving Tools & Driving Unit, Parts Catcher & Parts Conveyor, Auto Door,					
Automatic Power Off, Chip Conveyor, Sygnal Light (3 Steps), Magazine Loaded Automatic Bar Feeder.					

Note. The specifications are subject to change without notice.
Machine in photo. may not look exactly the same as the actual products.

NC SPECIFICATIONS

MIYANO-FANUC

•Simultaneous control axis	4/3 Axes: 2 System (X1, Z1, X2, Z2, B, Cs1, Cs2-axis) ··· S Type
	5/4 Axes: 2 System (X1, Z1, Y1, A1, X2, Z2, Y2, A2, Cs1, Cs2-axis) ··· SY Type
•Min. input increment	0.001mm, 0.0001inch, 0.001degree
•Min. output resolution	X-axis: 0.0005mm, Z-axis: 0.001mm, Cs-axis : 0.01deg., Y-axis : 0.001mm
•Parts program storage capacity	4kB (40m tape length), 63 Programs ··· S Type
	64kB (160m tape length), 120 Programs ··· SY Type
•Spindle function	Spindle speed S5 digits direct specify (G97),
	Constant cutting speed control (G96),
•Cutting feed rate	F3.4 digit direct specify (feed per rev.: mm/rev., feed per min.: mm/min.)
•Cutting feed rate override	0~150% (10steps)
•Interpolation	G01, G02, G03
•Threading	G32, G33 (SY-type), G92
•Canned cycle	G90, G92, G94
•Work coordinate setting	Automatic setting, 32 sets by the geometry offset function per each system.
•Tool selection and work coordinate system selection	Tool and work coordinate system selection 1~32 can be done by the first two digit of the T-4 digit code.
•Tool wear offset	Tool wear offset selection Last two digit of the T-4 digit code.
•Direct input of the tool position	Measured value can be directly key in.
•Manual pulse generator	0.001mm/1pulse (×1 ×10 ×100 selection)
•Automatic operation	1 cycle operation/Continuous operation, Single block operation,
	Block delete, Machine lock, Optional block skip [/], Dry run. Feed hold.
•Others	
7.2" Monochrome LCD ··· S-type, 10.4" color LCD ··· SY-type, Decimal point input, Memory protect,	
Cs-axis control (L/R Spindle), Synchronous mixing feed function, Spindle synchronous control,	
Polar coordinate interpolation, Start interlock, AC digital servo, Machine alarm display,	
Absolute position coder (without tool spindles), I/O interface (RS-232C, PC card slot)	
•NC Options	
Chamfering/Corner R, Tool nose R compensation, Multi-repetitive canned cycle (G70~G76),	
Drilling canned cycle (G80~G86), Run hour/Parts number countering, Background editing,	
Additional tool wear off-set (Total: 64 pairs), Additional parts program storage (Total: 80m,160m, 320m ··· S-type,	
Total: 320m, 640m, 1,280m, 2,560m ··· SY-type), Programmable data input (G10), Tool life management	
system, Retrace Function on a tool path ··· SY-type, Custom Macro B, Cylindrical interpolation (for Cs-axis),	
Continuous multi-lead thread cutting, Variable lead threading, Rigid tapping function at L/R-spindle/Tool spindles	
(Include drilling canned cycle) ··· SY-type, Helical interpolation ··· SY-type, Polygon cut function, Direct input of	
drawing dimensions (Using with chamfering/corner R together is not possible.), Superpose feed function A ··· SY-type,	

●NC Operation Panel

●Data I/O with laptop PC