CITIZEN







MSY

The BNE series is renowned for its high rigidity, heavy cutting capability and outstanding precision. The new MSY model extends the ability of the BNE series with the adoption of X3 axis on the back spindle (SP2) and synchronized / superimposed control for 3-tool simultaneous machining. Faster cycle times, outstanding easy-of-use and the ability to machine complex work pieces is the result.



Machine structure

The basic construction of the machine, that is the combination of the highly rigid precision scraped square guideways and the heavy slanted bed cast in one piece, is the base to support high precision, heavy cutting and long tool life even in complex machining.



Turret

Indexing by a large-diameter curvic coupling, secure hydraulic turret clamping and rugged square guideways assure high precision and long life of the turret without compromise. This turret can accommodate revolving tools with a high machining torque of 20 Nm at all 12 positions. Our unique tool holder mounting method using two guide pins makes it easy to mount and remove tool holders and ensures exceptionally high re-mounting accuracy.



Tool holder using two guide pin mounting method

Spindle

A combination of 'precision double-row cylindrical roller bearings' and 'precision angular contact ball bearings' suppresses radial run-out and thermal displacement in the longitudinal direction as well as providing high rigidity.







Comprehensive machining patterns

Equipping SP2 with an X3-axis has enabled simultaneous hole machining on both end faces, which was not possible on conventional BNE models. In addition, superimposition control allows simultaneous cutting with two tools by synchronizing the cutting at SP2 with the cutting at SP1, and also simultaneous cutting with three tools including SP2, helping to shorten cycle times. So a full range of machining variations is offered.



Convenient operation





HMI (Human Machine Interface) is adopted

Graphics displayed for each item and screens that display all the necessary information in one place greatly improve operating convenience.

The coordinate calculation function and calculator function

incorporated in the NC unit can be used for complex









Machining data screen

All you have to do is input the machining length, chucking length and so on, and the escape and approach positions are automatically calculated. This is useful for collision prevention





Support for programming

The function displays the list of G and M codes including explanations of the arguments. Canned drilling cycle is designed by dialogue form to support programming.

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Easy-to-view edit screen

intersection point calculations.







Calculation function

Programs for canned cycles etc. can be created in the conversational style.

Options



Part catcher Discharges workpiece on to conveyor.



Cut-off confirmation This is a function to confirm that cut-off of the workpiece is completed.



Ensures high-power, stable milling at a torque of 20 Nm. Furthermore, a powerful 25Nm motor for revolving tools is available.



Drill breakage detector Drill breakage is detected by the swing cylinder. The machine stops when breakage is detected.



Bar loader/bar feeder A choice of Barloaders (max bar length≃1m) or Barfeeders (max bar length≃ 3.6m are available.)

Tooling area



Tooling system





Machine specification

Item		BNE-51MSY	NC specification		
			Model device	MITSUBISHI M730VS	
Machining capacity			Command specified axes	HD1: X1, Z1, Y1,	
Maximum work length		90 mm		HD2: X2, Z2,	
Maximum bar diameter	SP1	φ51 mm		SP1 · C1	
Maximum bar diameter	SP2	¢51 mm		SP2 · C2	
Spindlo	012	φ31 ΠΠ		SP2 Slide : X3 73	
Spinule Number of epipelles		2	Auvilianu avos	HD1 Revolving tool : C3	
Number of spindles	0.04	2 5.000 min=1	Auxiliary axes	HD1 Revolving tool : C4	
Spinale speed	SP1	5,000 min ·		HD1 Revolving tool : C4	
	SP2	5,000 min '			
Spindle nose	SP1	A2-6		HD2 Index 12	
	SP2	A2-6	Control axis groups	3 groups	
Draw tube Dia.	SP1	φ52	Input code	ISO	
	SP2	φ52	Command input system	Incremental and absolute	
Type of collet chuck	SP1	H-S22/ DIN177E	Tool offset data	200 pairs	
	SP2	H-S22/ DIN177E	Feed command system	Per rotation feed and per minute	
Power chuck size and type	SP1	6" (ф 169)	Cutting feed rate and	Max.100%	
	SP2	6"(ф169)	Rapid feed override		
Turret			Zero return function	Manual zero return	
Number of turret		2	On machine program check function	Manual pulse generator	
Turret stations	HD1	- 12 ST	Program storage capacity	512KB (1200 m)	
		12 ST	Input/Output interface	Compact flash card slot	
Charle size of aguara turning tool	TIDZ	12 01. 20 mm Ca	Spindle C-axis function	0.001°	
Shank size of square turning tool		20 mm Sq.	Display device		
Diameter of drill shank		φ25 mm	Display devise	10.4" COLOF LCD	
Revolving tool					
Number of revolving tools		Max.12+12	Standard function		
Type of revolving tools		Single clutch	Start position automatic return, Manua	I feed function	
Tool spindle speed range		Max. 6,000 min ⁻¹	Manual data input (MDI) function, Back up function		
Feed rate			Operation time display, Product counter	er display	
Rapid feed rate	X1 axis	18 m/ min	Cycle time check function, Automatic screen off function		
	Z1 axis	20 m/ min	Optional block skip, Optional stop		
	Y1 axis	12 m/ min	Constant surface speed control Cut off	confirmation	
	X2 axis	16.2 m/ min	Corner chamferring/ Radius function		
	72 avis	18 m/ min	Tool nose R compensation function		
	V2 ovio	19 m/ min	Are redius aposition Throad outting	a connect quelo	
	AS dais		Arc radius specification, Thread cutting	carined cycle	
0	Z3(B) axis	20 m/ min	Spindle synchronising control function		
Slide stroke	X1 axis	195 mm	Revolving tool synchronous tap function	'n	
	Z1 axis	380 mm	Spindle synchronising control function,	Custom macro	
	Y1 axis	80 (±40) mm	Multiple canned cycles for turning, Car	nned cycle for drilling	
	X2 axis	195 mm	High speed program check function, N	illing interpolation	
	Z2 axis	175 mm	Helical Interpolation		
	X3 axis	155 mm			
	Z3(B) axis	450 mm	Preparation functions		
Motors	()		Start position automatic return. Waiting	point automatic return	
Spindle motor	SP1	15/ 11 kw (15min / cont)	Sub spindle retract return. Turret retract	t return	
	SP2	7.5/5.5 kw (15min / cont)	Automatic cut-off machining function	Tool set function	
Revolving tool motor	012	2.2 kw 20 Nm / 4.0 kw 25 Nm(op)	Spindle speed set function, Tool select	function	
Hudraulia apareting mater		1.5 kw 20 km/ 4.0kw 20 km(op.)	Chuck adjustment function, 100 select	Chuck edivergent function, 100 select function	
		0.000 law			
		0.023 RW	JOG operation function, Handle operation		
Coolant motor		0.25 KW	Spindle speed simultaneous command	i for 3 spindle	
High-pressure coolant motor		0.8/ 1.36 kw (50/60Hz)	3 Sets of M code simultaneous comma	and	
Turret index motor		0.7 kw	Control axis swap function, Arbitrary si	perposition function	
Power supply			Background editing, Function to super	mpose 2 pairs of axes	
Capacity		44 KVA			
Voltage		AC 200/ 220 V	Editing support functions		
Air supply		0.5 Mpa	Calculator function, Code list display, C	Code insert, Coordinate calculation	
Fuse		125 A	function, Format check		
Tank capacity					
Hydraulic oil tank capacity		10 L	Option		
Lubricating oil tank capacity		4 L	Automatic power shut-off. Thermo revi	sion, tool setter, Eco function RS232C	
Coolant tank capacity		350 L			
Machine dimensions					
Machine height		2 050 mm			
Floor space		W 2 725vD 2150mm			
Nechine weight					
wachine weight		0,000 Kg			
Ontinent					
Optional accessories					
Spindle brake, Air blow, Work ejector, Au	utomatic fire exting	juisner, Automatic power shut-off			

Inner high pressure coolant & air blow, Turret high pressure coolant & Air blow, Tool setter Parts Catcher, Parts Box, Collet chuck system, Chip conveyor, Total & preset counter

Oil mist collector, Signal tower, Filler tube, Spindle inner bushing, Bar feeder inner bushing Cut-off confirmation, Parts carrier, Left over catcher, Drill checker, Drill checker touch (HD1) Themo revision, 100V, Revolving tool power No.1 (25Nm).

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