

BNA42SY

Two BNA Series models with improved basic functions

A surface plate structure, a tradition of the Miyano brand, has been carried over for the bed, an essential element for machining, while both size and weight have been increased in order to improve damping performance. Additionally, the coolant tank capacity has been increased to improve thermal stability. Rigidity of the entire turret tool post has been increased, and equipping with a Y axis enables the use of 12 stations. The number of installed tools has also been increased.

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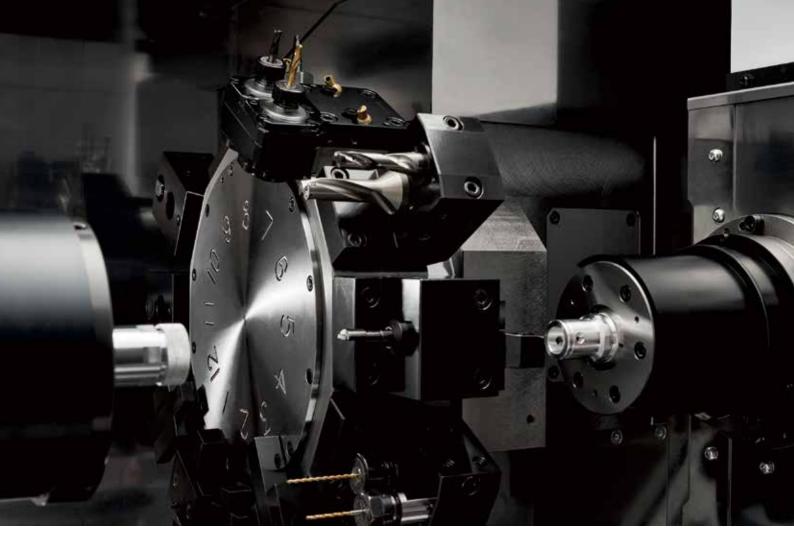


BNA42CY

The cover has been completely redesigned to improve workability.

The opening has been enlarged for easier access and provided with a large window to improve visibility. The port through which chips fall has been enlarged and the removal port has been moved closer to the outer edge of the cover to make it easier to clean away chips.

These new NC units are standard-equipped with a dual-check safety function to improve safety and productivity.



SY type with improved performance as a bar-material processing machine

The SY type has a dual-spindle/single turret tool post mechanical configuration, and the base and turret rigidity has been increased to improve basic functions.

The turret tool post has been equipped with a Y axis to expand the number of installed tools to 12 stations in order to provide the use of a rich assortment of tools, as well as simultaneous left/right machining for superimposed machining and similar processes.

The tool holder and rotary tools are the same used for the current BNA Series and the program compatibility is also ensured.



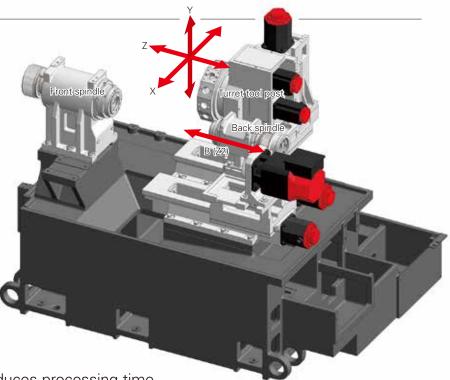
Basic structure and axis configuration

The newly designed base increases the weight of the unit and also improves rigidity.

Rectangular lapped slides have been adopted for all slides.

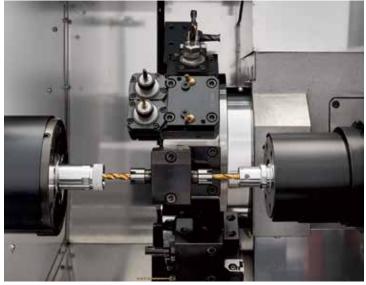
The sliding contact between surfaces provides excellent rigidity and damping performance, as well as strong cutting performance, while also helping to extend the service life of cutting tools.

Additionally, the Z-stroke travel distance has been increased to 50 mm to expand the range of machining available.



Left/Right simultaneous machining reduces processing time

Simultaneous machining using both left and rightside spindles enables the turret tool post and front spindle to perform machining while the back spindle follows after to perform superimposed and similar types of machining, thereby further reducing the processing time.



Superimposed machining

Conventional cutting

$LFV^{\ Option}$

LFV* is a technology for performing machining while vibrating the X and Z servo axes in the cutting direction in synchrony with the rotation of the spindle.

It reduces various problems caused by chips entangling with the product or tool, and is effective for small-diameter deep hole machining and the machining of difficult-to-cut materials.

* "LFV" is a registered trademark of Citizen Watch Co., Ltd.

Туре	X, Z	Y	B(Z2)
BNA42SY	0	×	×

Note 1. LFV function is available only for BNA42SY

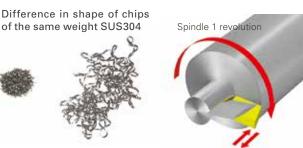
Note 2. LFV machining can be performed simultaneously on a maximum of two axes.



LFV

LFV mode 1

Ideal for outer/inner diameter machining and groove machining Multiple vibrations per spindle revolution













CY type enables use as a chucker machine

The CY type was developed under the concept of "Bar and Chucker".

The simple structure of one spindle for one turret tool post can not only perform bar material machining, but you can also combine options such as power chucks or a chip conveyor with rear discharge together with supply/discharge units, such as a gantry loader manufactured by another company, in order to incorporate the CY type into a production line as a chucker machine.



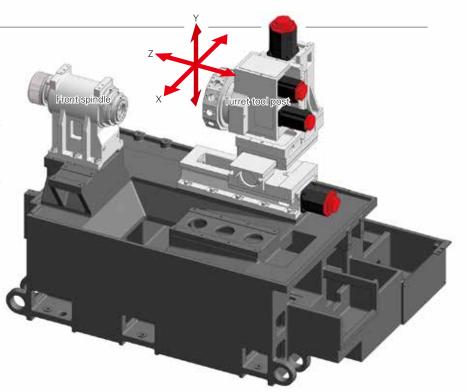
Basic structure and axis configuration

The newly designed base increases the weight of the unit while also improving rigidity.

Combining with a tailstock OPT. enables use of long workpieces.

Mounting eyes for the legs of the gantry loader are provided on the left and right side faces of the bed.

You can select whether the chip conveyor discharges to the right or the rear.



Gantry loader provided as standard equipment

Standard equipment includes mounting eyes for the legs of the gantry loader, a loader hand insertion space above the spindles, and a loader interface. Compatibility is provided for installation of a gantry loader by another manufacturer.

An automatic shutter OPT that secures space for the loader hand to enter the machine can also be mounted.



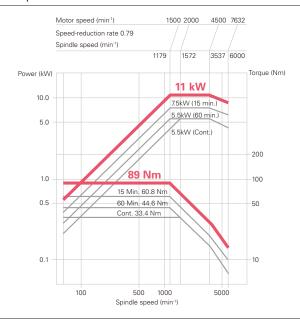
Rear-discharge chip conveyor OPT.

This chip conveyor allows for rear discharge in addition to the current side discharge. This increases the options for the installation method used.



Short-term increase in rated power of the front spindle

Power is increased up to 11 kW during spindle acceleration and deceleration to help reduce the cycle time.



Machining Support Screens



Machining data

Entering the machining length and position of the cutoff here makes it easier to measure geometry offsets and to mount tools.



Total & preset counter

Used to set the stop value for the product counter and to reset the count value.



Tool setting

Used to measure geometry offsets. It can also be used for tool mounting support, to ensure that the overhang of all tools is fixed at a constant value.

	Poserr		perst. Lise
	0.053	0.159	1190,560
1 =	1, 245	0.100	8.800
2	1,245	0.000	0.000
3	1.245	0.900	0.000
4	1.245	6,000	0.800
5	1.245	0.000	0.000
6	1.245	0.000	0.000
9	1, 245	808.0	8.696

Power consumption monitor

Allows monitoring of the power consumption per cycle time, day, or month.

NO.	CURRENT	PRESET	X WEAR	2 MEN
1001	0	0.1	8,000	0.000
002	0		-0.610	0.800
600	0	0	0.025	0.000
100	u		9.800	0.000
865	n	8	0.600	8,000
900			D. COM	0.000
867	0		6,080	0.800
nes	0.	-	0.000	0.000
600	0	0	0.000	0.000
1118	- 18		9.000	8.696

Tool counters

Informs you of the timing (count-up) for tool changes in accordance with the set tool counter stop value.

You can also enter wear offsets.



Spindle and revolving tool unit

Allows you to set the rotational speed (in manual operation) of the spindle and revolving tools, and to set the spindle override.

	Cutting	NotCutting	Operating
	0.000	1155,000	1155.000
1	9,000	11,600	11.600
2	8, 686	11,504	11.504
3	0.000	11.632	11.632
4	0, 660	11, 600	11.606
5	8, 000	11,600	11.600
6	0.000	11, 632	11.632
9	8,668	11.616	11.616

Cycle time

Allows you to measure the cutting time, non-cutting time and running time in each cycle.



Start condition screen

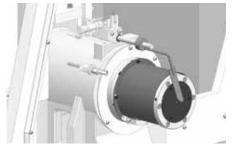
Displays information on the start conditions for automatic running.

Options



Part catcher

Receives finished workpieces. This option is indispensable for bar work.



Cut-off confirmation

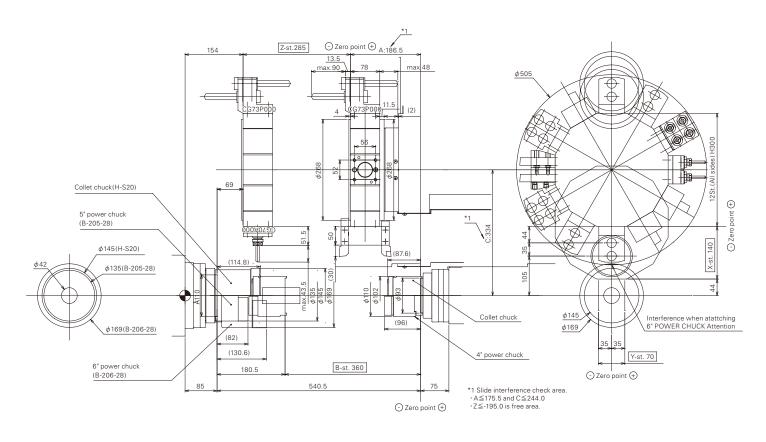
This is a function that moves the sub spindle to the retract position at a low thrust after the workpiece has been cut off to check for failure in the cut-off operation.



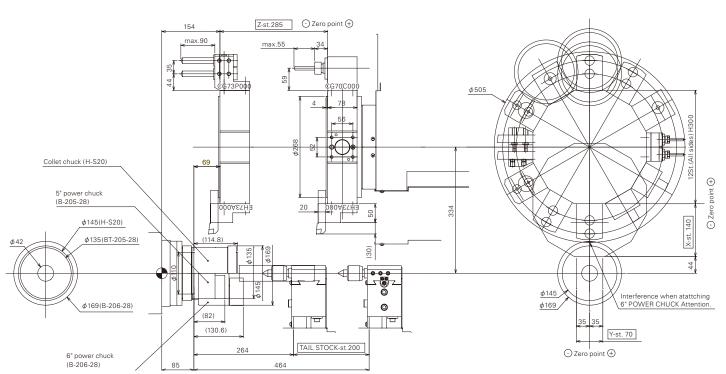
Drill breakage detector

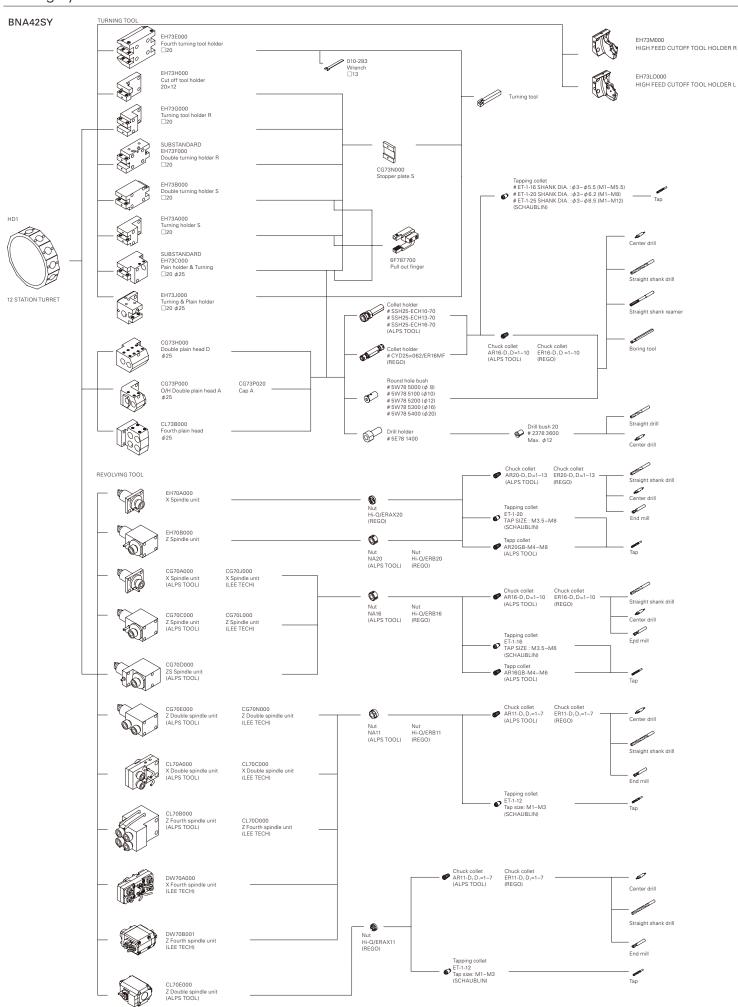
Drill breakage is detected by the swing cylinder. The machine stops when breakage is detected, and a second accident can be protected.

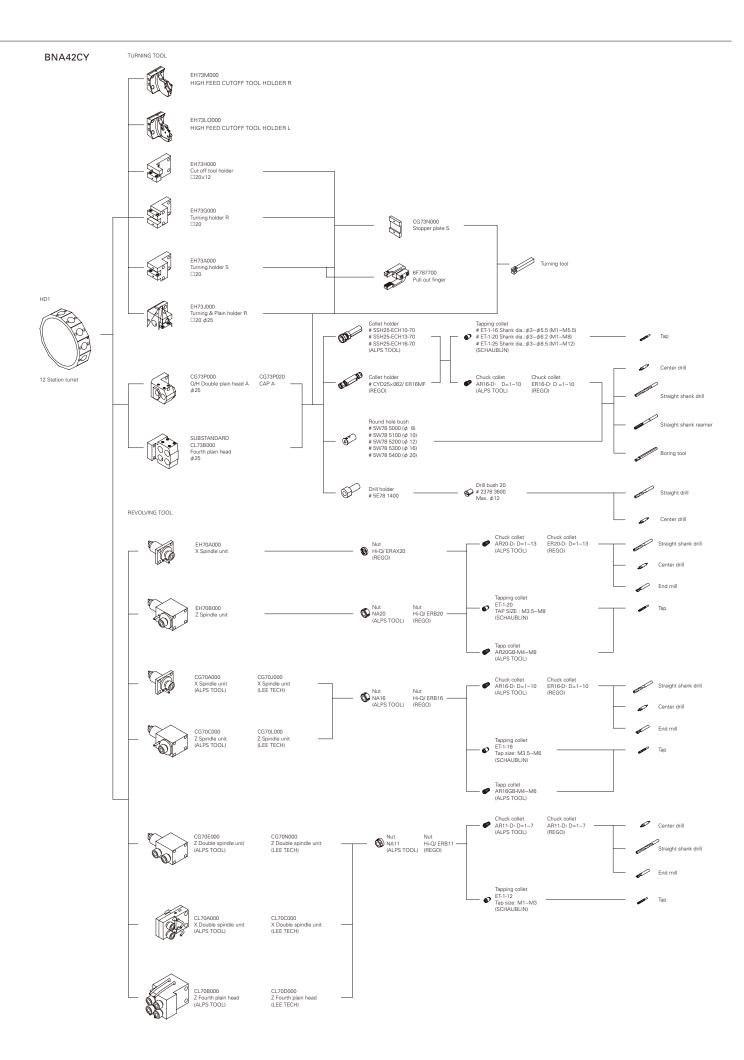
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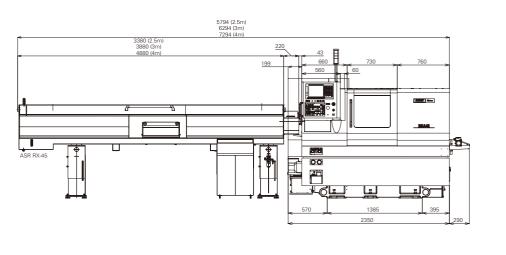
BNA42CY

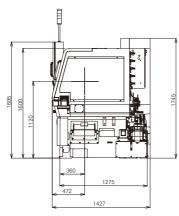


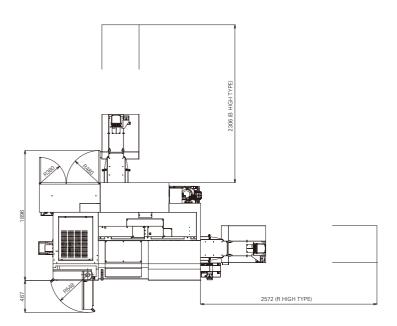


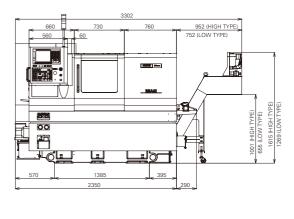


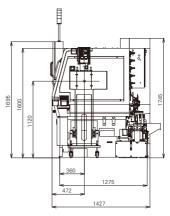
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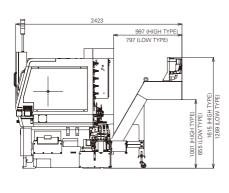




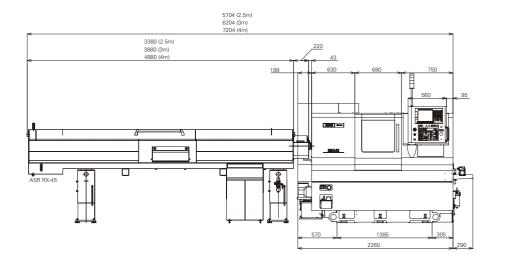


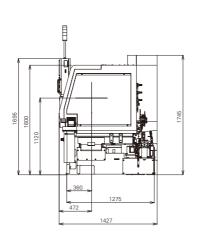


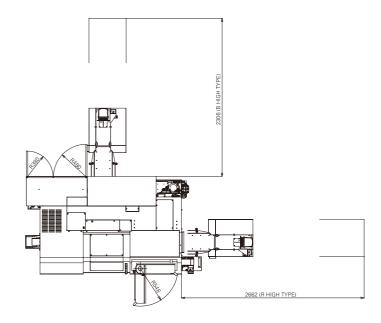


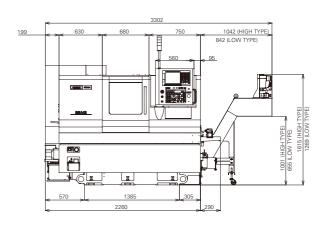


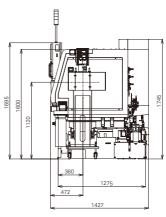
BNA42CY

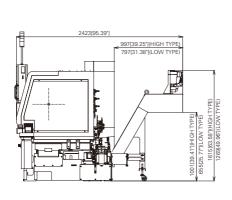












Machine Specification

Item Capabilities/Capacities		BNA-42CY5	BNA-42SY5
Max. machining length		200 mm	100 mm
Standard machining diameter (Chuc	k diameter) SP1	42 mm dia.	100 11111
Standard Mashining diameter (onde	SP2		34 mm dia.
Travel distance			
Turret slide travel distance	X axis	140 mm	
	Z axis	285 mm	
	Y axis	70 (+/-35) mm	
Back spindle slide travel distance	B axis		360 mm
Spindles			
Number of spindles		1	2
Spindle speed	SP1	60 to 6,000 min ⁻¹	
	SP2		50 to 5,000 min ⁻¹
Closing tube through-hole diameter	SP1	43 mm dia.	
	SP2		30 mm dia.
Collet chuck type	SP1	Hardinge S20, DIN173E, B8	1
	SP2		JPN, DIN171E
			DIN173E, B&S #22
Power chuck type	SP1	5" and 6" hollow chucks	5" hollow chuck
	SP2		4" hollow chuck
Tool post			
Number of tool posts		10.07	
Type of tool post		12 ST.	
Opposite side distance of tool pos	S L	300 mm	
Max. turning radius of tool post Dimensions of tools used		505 mm dia.	
		20 mm sq.	
Dimensions of tool post holes		25 mm dia.	
Rotary tools Number of installed rotary tools		Max.12	
Type of rotary tool drive		Independent clutch drive	
		50 to 5,000 min ⁻¹	
Rotating speed of rotary tools Machining capacities	Drill	Max. 10 dia.	
Machining capacities	Тар	Max. M6 × 1	
	тар	(Limited to spiral and point t	and for MO v 1 25)
		Max. M8 x 1.25 for BSBM	aps 101 1010 X 1.25)
Feed rate		IVIDA. IVIO X 1.20 IOI BOBIVI	
Rapid feed rate	X axis	20 m/min	
napia reed rate	Z axis	20 m/min	
	Y axis	12 m/min	
	B axis		20 m/min
Slide thrust	B datio		20 11,11111
	X axis	5 kN	
	Z axis	5 kN	
	Y axis	6.7 kN	
	B axis		5 kN
Tailstock			•
	Max. travel distance	200 mm	
	Morse taper size	MT2	
	Max. slide thrust	4.3 kN (at 3.4 MPa)	
	Min. slide thrust	0.57kN (at0.45 MPa)	
	Drive method	Hydraulic	
Motors			
Spindle motor	SP1	11/ 7.5/ 5.5 kW (15%/ 15 m	in/ cont.)
	SP2	5.5/ 3.7 kW (15 min/ cont.)	
Rotary tools motor		2.8/ 1.0 kW	
Coolant pump motor		0.25 kW	
High-pressure coolant motor		1.1/0.75 kW (60/ 50Hz)	
Required power source			
Power supply		AC 200/ 220 +5%/ -10%, 50	1
Power supply capacity		16 kVA	26 kVA
Air pressure source		0.5 MPa	
Fuse capacity on facilities side		75 A	100 A
Tank capacities			
Hydraulic tank capacity		18 L	
Lubricating oil tank capacity		2 L	
Coolant tank capacity		235 L	
Machine size			
Machine height		1,745 mm	
Required floor surface area		W 2,260 x D 1,433 mm	W 2,350 x D 1,433 mm
Machine weight		3,220 kg	3,650 kg
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Control unit	BNA-42CY5	BNA-42SY5
Control unit Control axis	FS.0i-TF PLUS	
HD1	X1, Z1, Y1, C1, E1 (Turret)	X1,Z1,Y1,B1, C1, C2, E1
	A1 (Rotary tools)	(Turret), A1 (Rotary tools
		During superimposed
		operation: X1, Z1, Y1,
		C1, E1 (Turret)
		A1 (Rotary tools)
1D2		During superimposed operation: Z2, C2,
Feed axis absolute position detector		X1,Z1,Y1,B
Min. set unit	0.001 mm/0.001 deg.	
nterpolation function	G00	
Positioner Linear interpolation	G00 G01	
Circular interpolation	G02, G03 (multiple quadr	ante available)
Dwell	G04	arts available)
Threading	G32	
Multiple threading	G33	
eed function		
Rapid feeding override	0 to 100% (10% increme	ents)
Cutting feed speed override	0 to 150% (10% increme	ents)
Per minute feed and per rotation	G98/G99	
Manual handle feeding	x1, x10, x100	
Reference point return	G28	
Reference point return chuck		
2nd reference point return Program input function	G30 0r G30P2	
Tape code	EIA/ISO auto-detection	
Absolute commands	X,Z,Y,C	X,Z,Y,C,B
Incremental commands	U, W, V, H	1. 1-1.1-1-
Programmable data input	G10	
Coordinate system settings	G50	
Workpiece coordinate system		
Program storage and editing		1
Program storage capacity		1 Mbyte (Two system total
	400	800 (Two system tota
Spindle and supplementary Spindle functions	S4 digits	
Supplementary functions	M3 digits	
Constant peripheral speed contro		
Fool and tool compensation		
Tool functions	T4 digits command	
	Upper 2 digits: Tool select	
	Lower 2 digits: Wear offs	set
Nose radius compensation	G40,G41,G42	
Operating functions	1404	
Optional stop	M01	
Jog feeding Input/Output interface	0 to 1,260 mm/min	
PC card slot and USB mem	nory slot	
Automatic operation	.0.7 0.01	
One-cycle/Continuous oper	ration, Single block, Block	delete, Machine lock
Optional block skip, Dry rui		
Other 10.4" color LCD, Supporting multi	·	
Memory protection, AC dig		, .nanaa paloo gonorator
Standard NC functions	,	
Chamfering/corner R, Backgro	und editing, Operating time/	Number of parts display
Canned composite cycles (G7	0 to G76), Spindle synchroni	zation function (SY only)
Spindle rigid tapping (Main		
Cylindrical interpolation, Cus		
Tool service life manageme	ent, Superimposition cont	roi tunction (SY only)

NC specifications

Environmental Performance Information

	Item	BNA-42CY5	BNA-42SY5
	Standby power	0.591 kW	0.661 kW
Power consumption	Power consumption with model workpiece *1	0.155 kWh/ cycle	0.187 kWh/ cycle
	Power consumption value above converted to a CO2 value *2	71.0 g / cycle	89.0 g / cycle
Air consumption	Required air flow rate	29.1 NL/ min (without air blow) 120 NL/ min(with air blow)	52.7 NL/ min (without air blow) 173 NL/ min(with air blow)
Lubricating oil consumption	At power ON	2.5 cc / 15 min	3.0 cc / 15 min
Noise level	Value measured based on JIS	72 dB	
Recycling Indication of the material names of plastic parts		Detailed in the Instruction Manual*3	
Environmental management		We have obtained ISO14001 certification. We pursue "Green Procurement", whereby we mak our purchases while prioritizing goods and service that show consideration for the environment.	

- 1 This is the power consumption in program operation liwher not cuttingl for one of our standard set pieces, abover for bumposed of coming the enconnecting performance with that or existing models, abover for the proposed of coming the enconnecting performance with that or existing models.

 2 This is the value connected in a many time of the CHUBU Electric Power COL emissions coefficient for 2015 as published by the Ministry of the Provincement.

 3 If polyvinyl chloride (PVC) and fluoric resin are not processed correctly, they can generate harmful gases. When recycling these materials, commission a contractor that is capable of processing them appropriately.

CITIZEN

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CITIZEN



Fixed Headstock Type CNC Automatic Lathe

