



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.



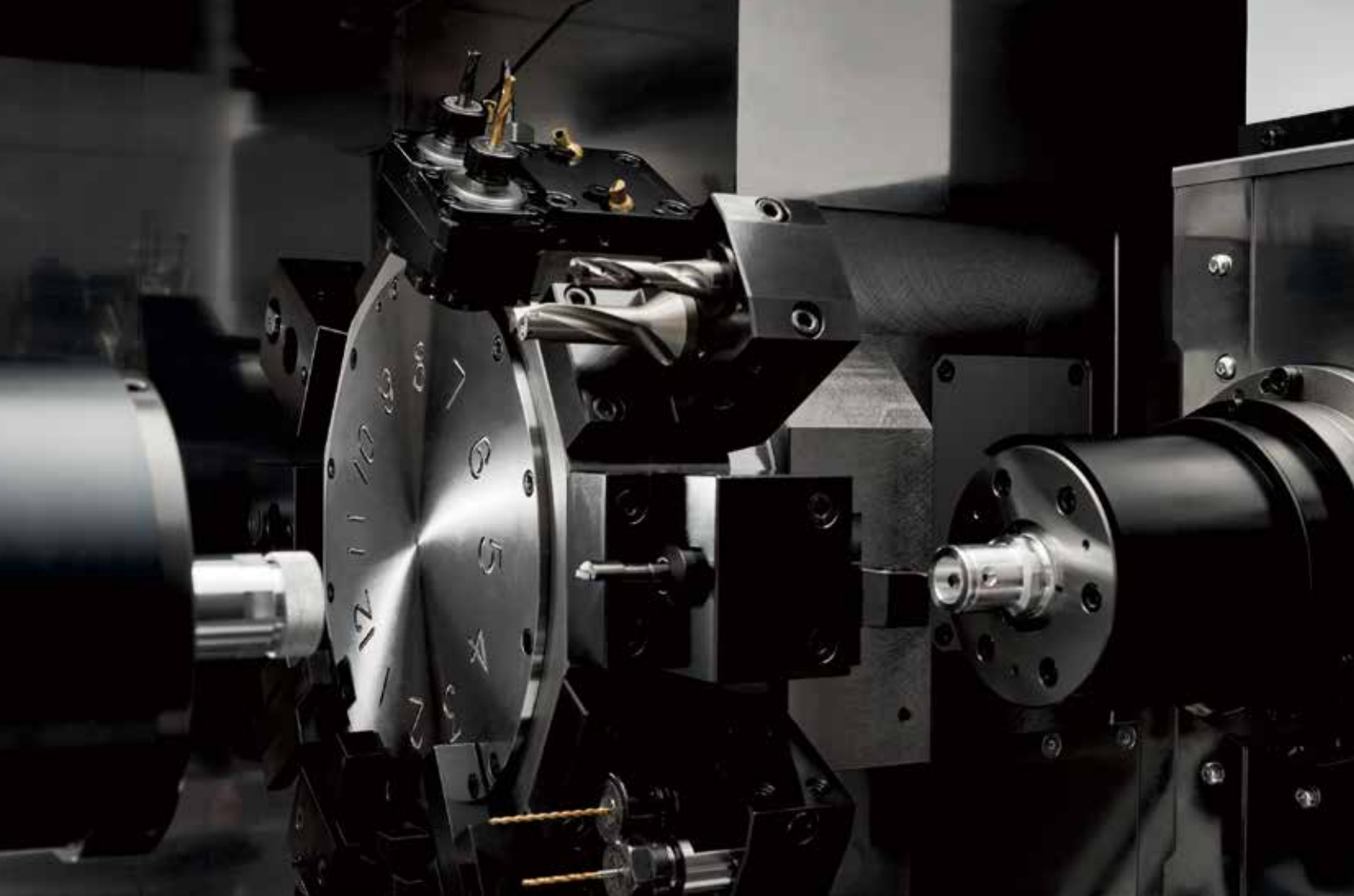
BNA42CY

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.



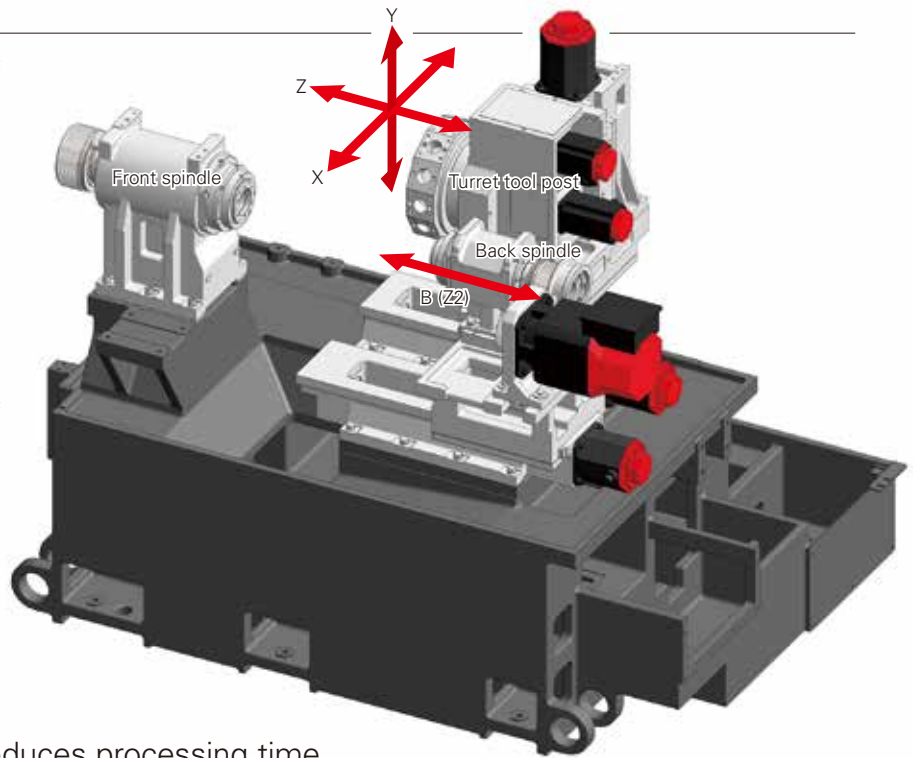
Basic structure and axis configuration

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

Rectangular lapped slides have been adopted for all slides.

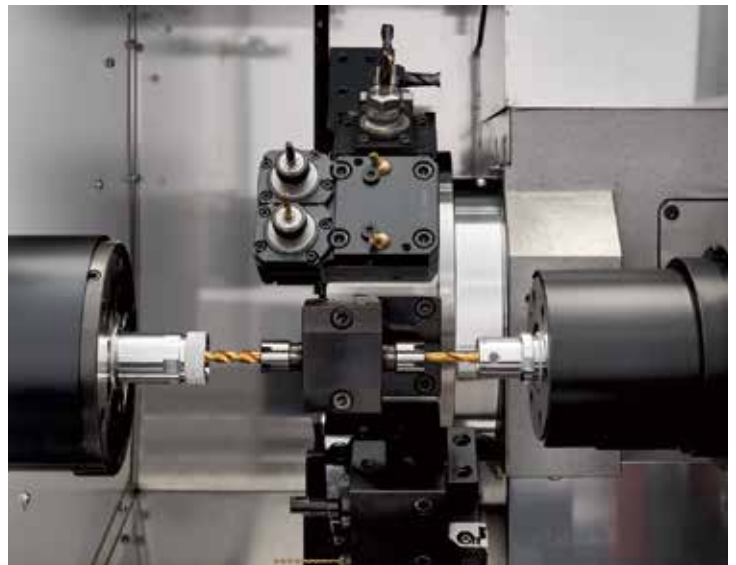
The sliding contact between surfaces provides excellent rigidity and damping performance, as well as strong cutting performance, while also helping to extend the service life of cutting tools.

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 right-side 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

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.



LFV mode 1

Ideal for outer/inner diameter machining and groove machining

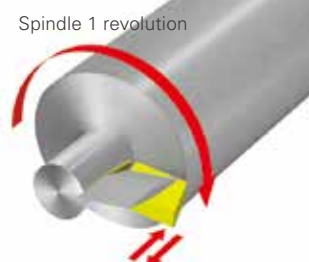
Multiple vibrations per spindle revolution

Difference in shape of chips of the same weight SUS304



LFV

Conventional cutting



Specify the number of vibrations

MOVIE 1



MOVIE 2



Type	X, Z	Y	B(Z2)
BNA42SY	○	×	×

Note 1. LFV function is available only for BNA42SY

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



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.

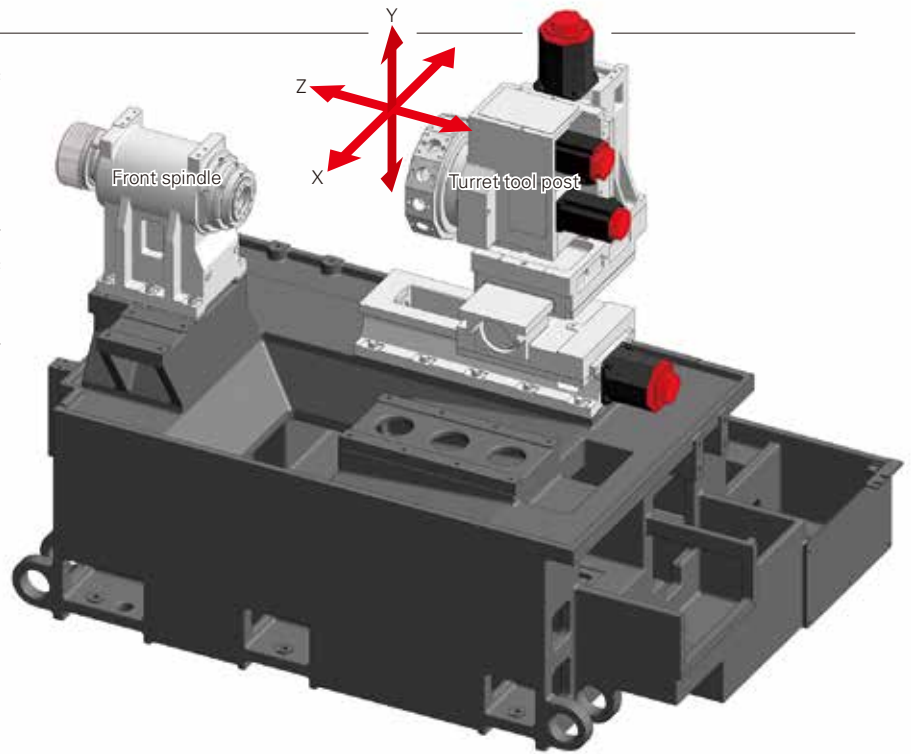


Basic structure and axis configuration

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.

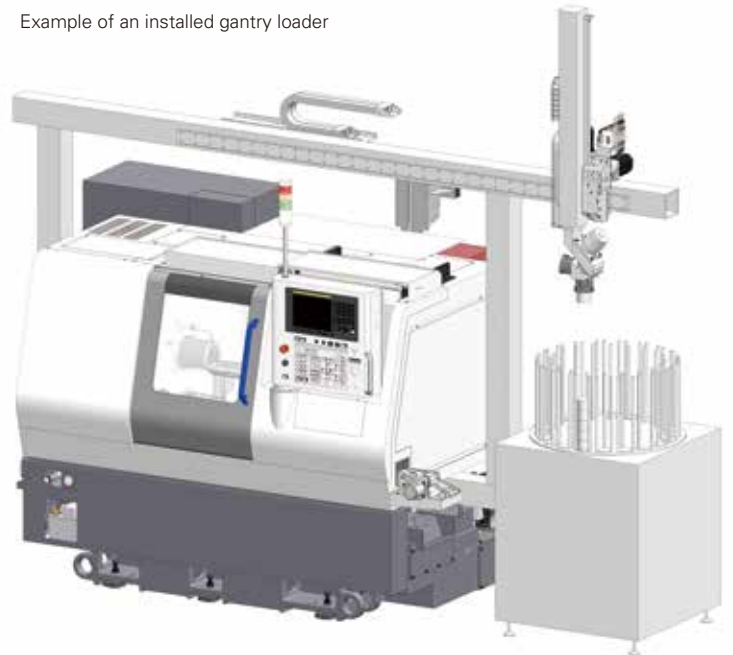


Gantry loader provided as standard equipment

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.

Example of an installed gantry loader



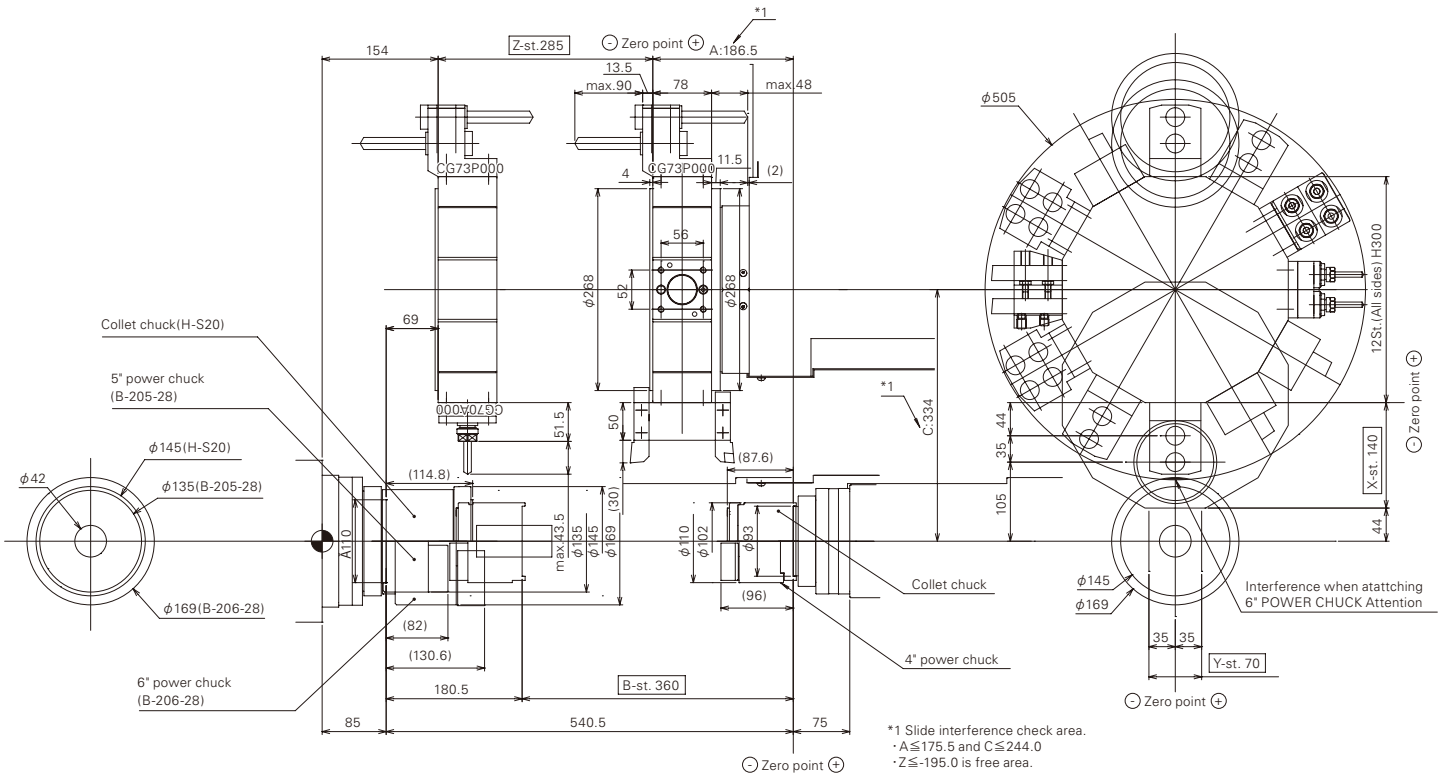
Rear-discharge chip conveyor^{OPT.}

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

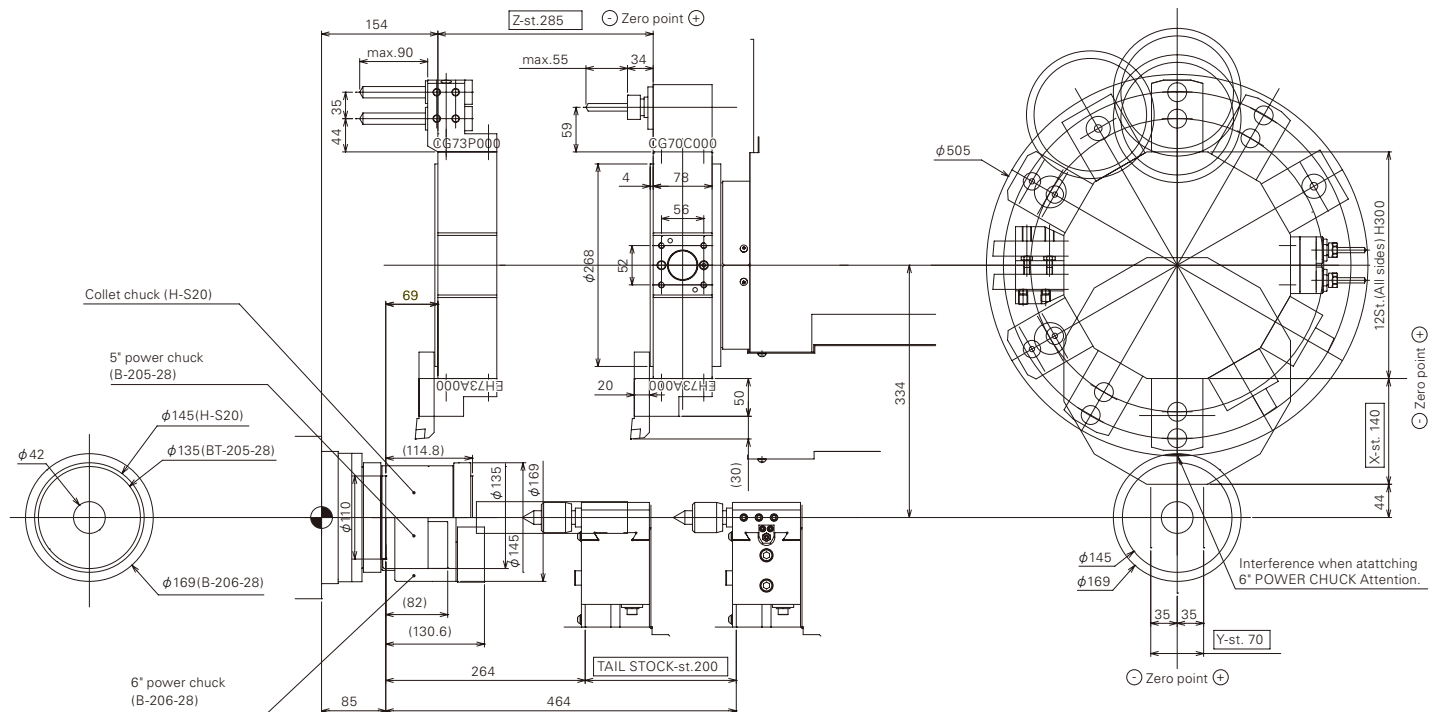


Tooling area

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Tooling system

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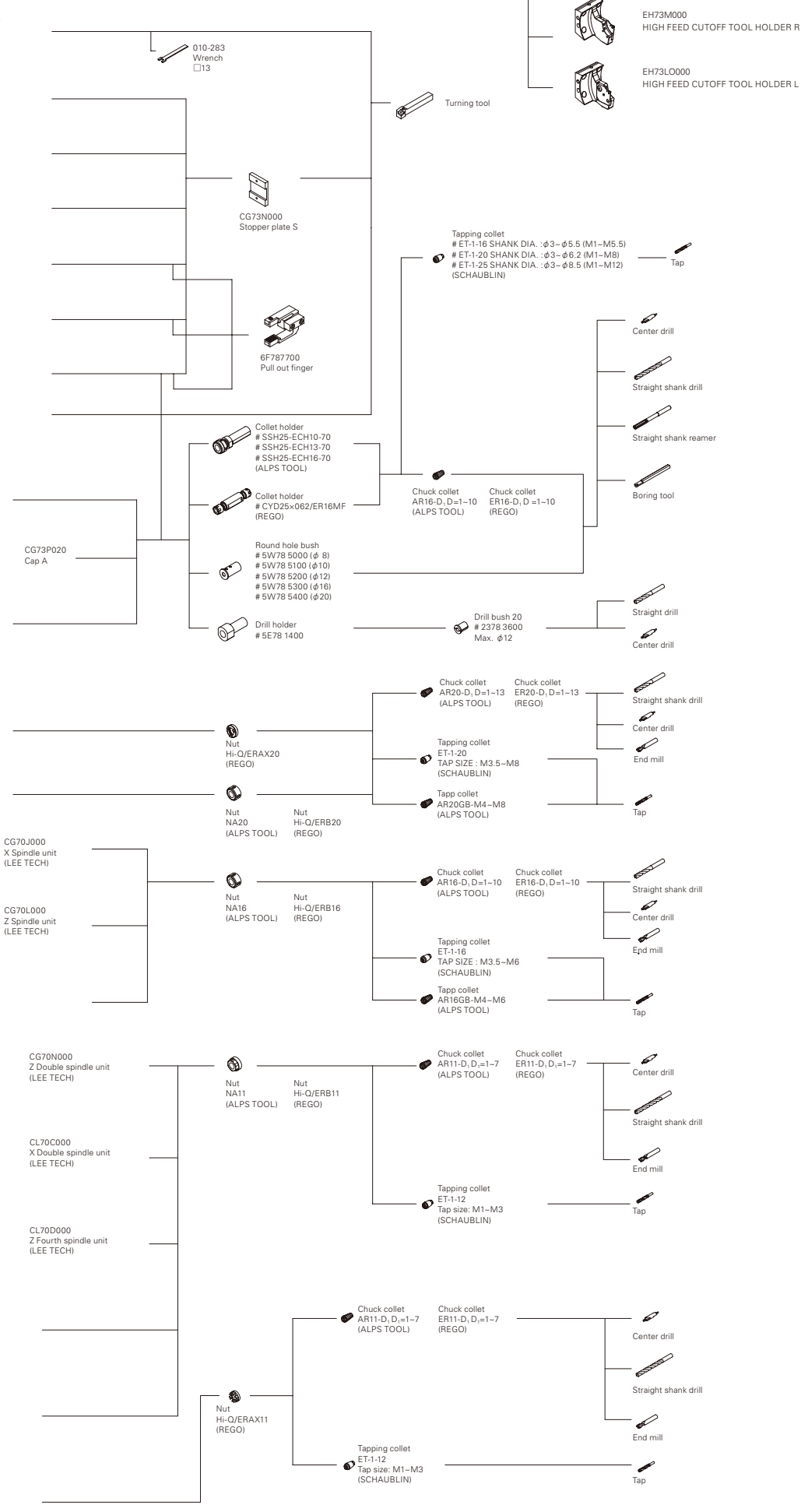


TURNING TOOL

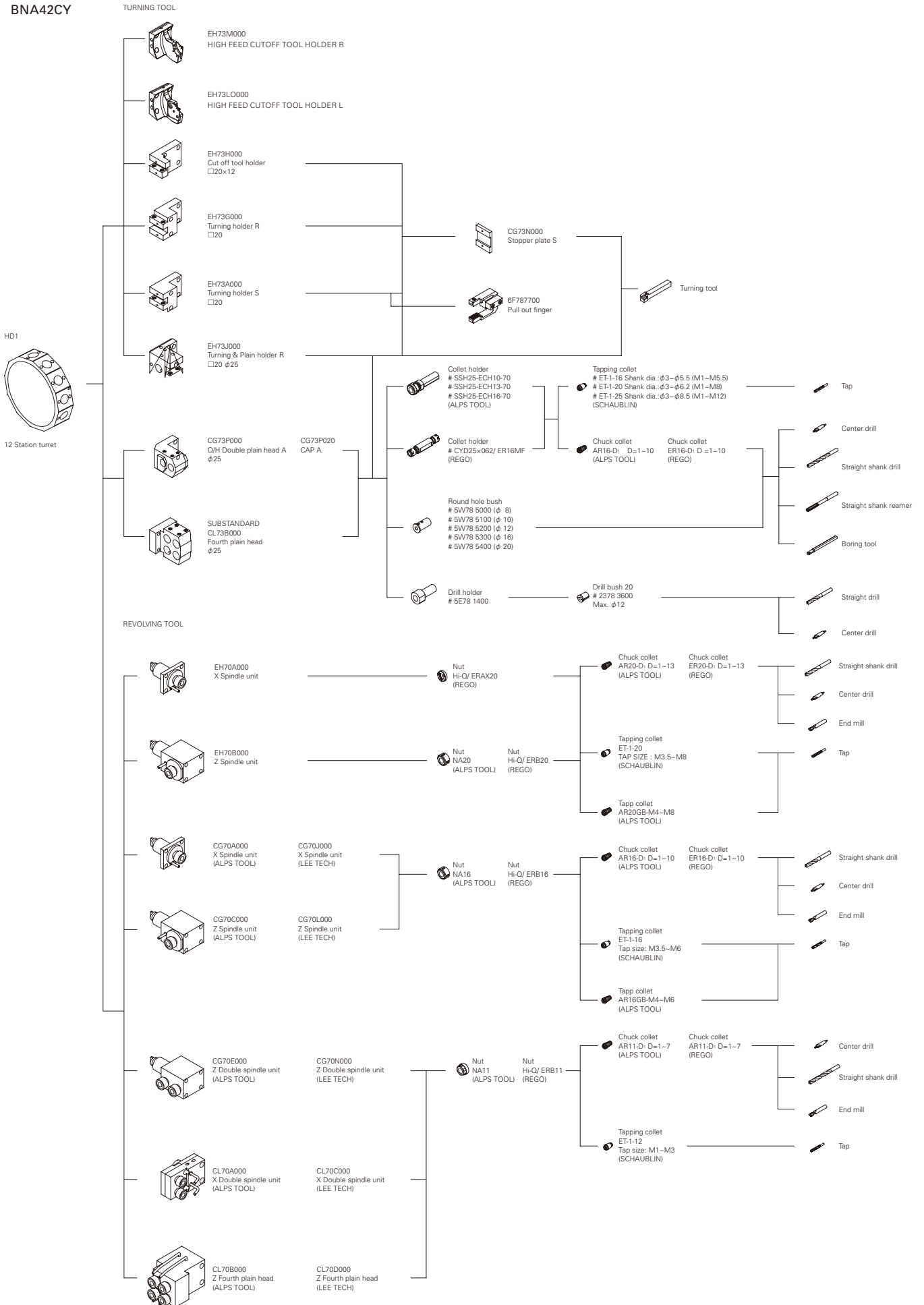
- EH73E000
Fourth turning tool holder
□20
- EH73H000
Cut off tool holder
20x12
- EH73G000
Turning tool holder R
□20
- SUBSTANDARD
EH73F000
Double turning holder R
□20
- EH73B000
Double turning holder S
□20
- EH73A000
Turning holder S
□20
- SUBSTANDARD
EH73C000
Plain holder & Turning
□20 φ25
- EH73J000
Turning & Plain holder
□20 φ25
- CG73H000
Double plain head D
φ25
- CG73P000
O/H Double plain head A
φ25
- CL73B000
Fourth plain head
φ25

REVOLVING TOOL

- EH70A000
X Spindle unit
- EH70B000
Z Spindle unit
- CG70A000
X Spindle unit (ALPS TOOL)
- CG70C000
Z Spindle unit (ALPS TOOL)
- CG70D000
ZS Spindle unit (ALPS TOOL)
- CG70E000
Z Double spindle unit (ALPS TOOL)
- CL70A000
X Double spindle unit (ALPS TOOL)
- CL70B000
Z Fourth spindle unit (ALPS TOOL)
- DW70A000
X Fourth spindle unit (LEE TECH)
- DW70B001
Z Fourth spindle unit (LEE TECH)
- CL70E000
Z Double spindle unit (ALPS TOOL)

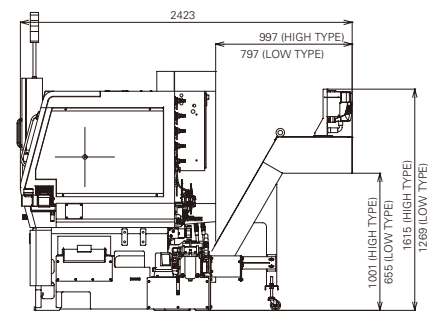
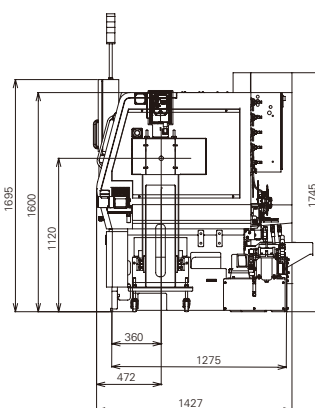
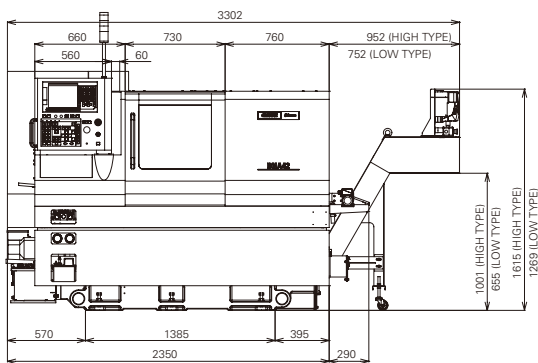
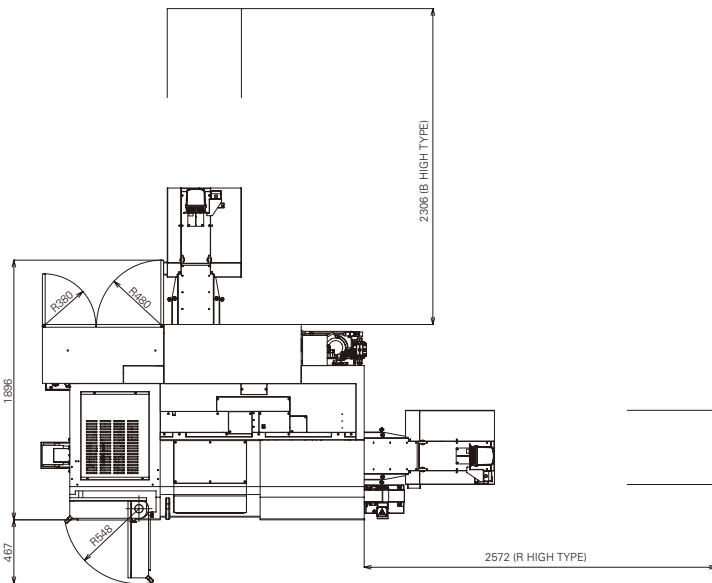
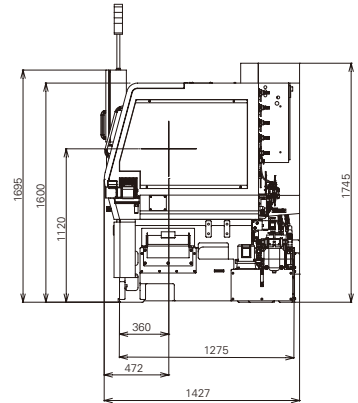
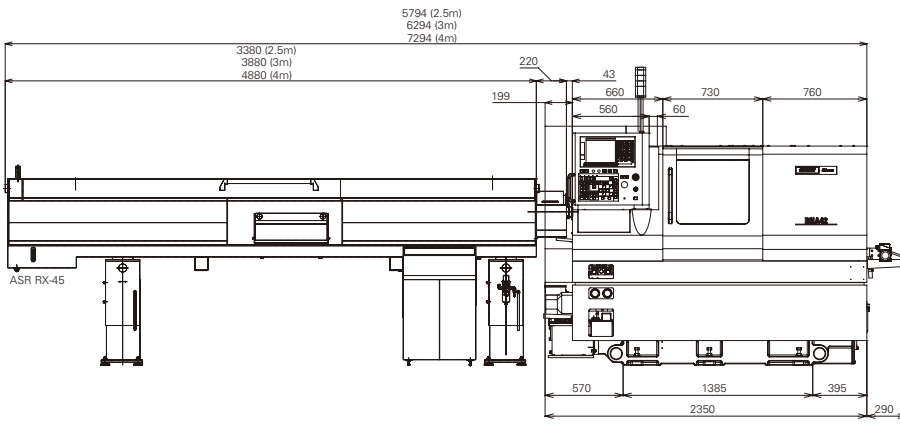


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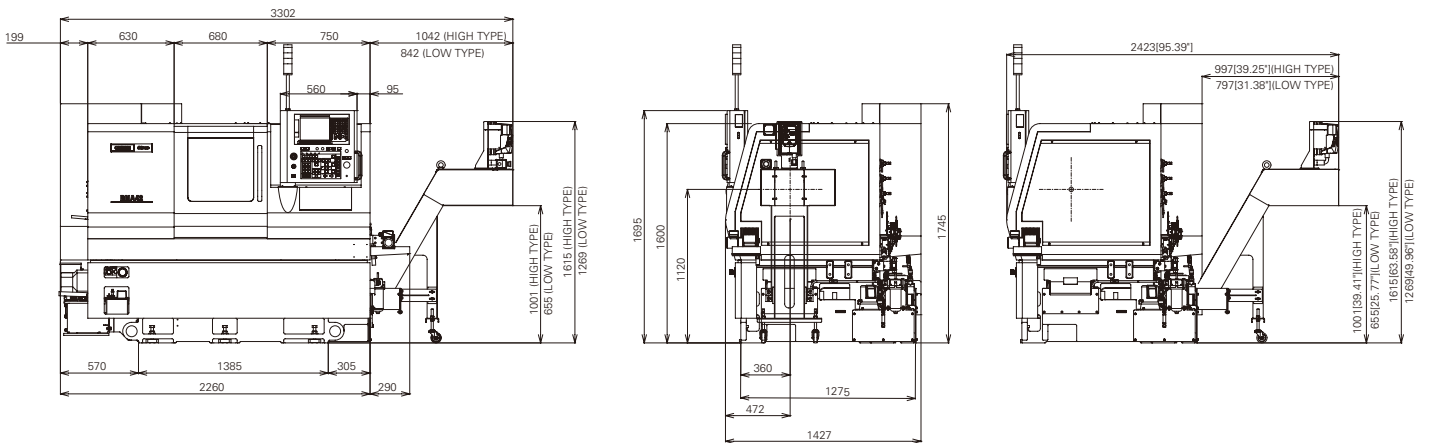
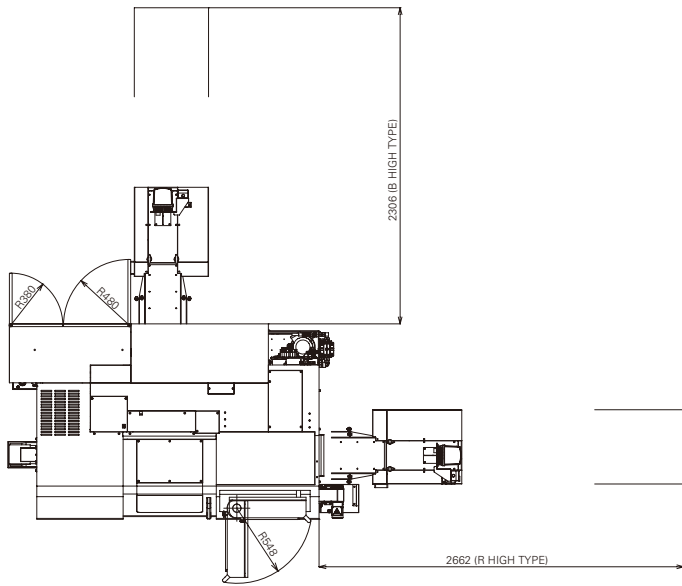
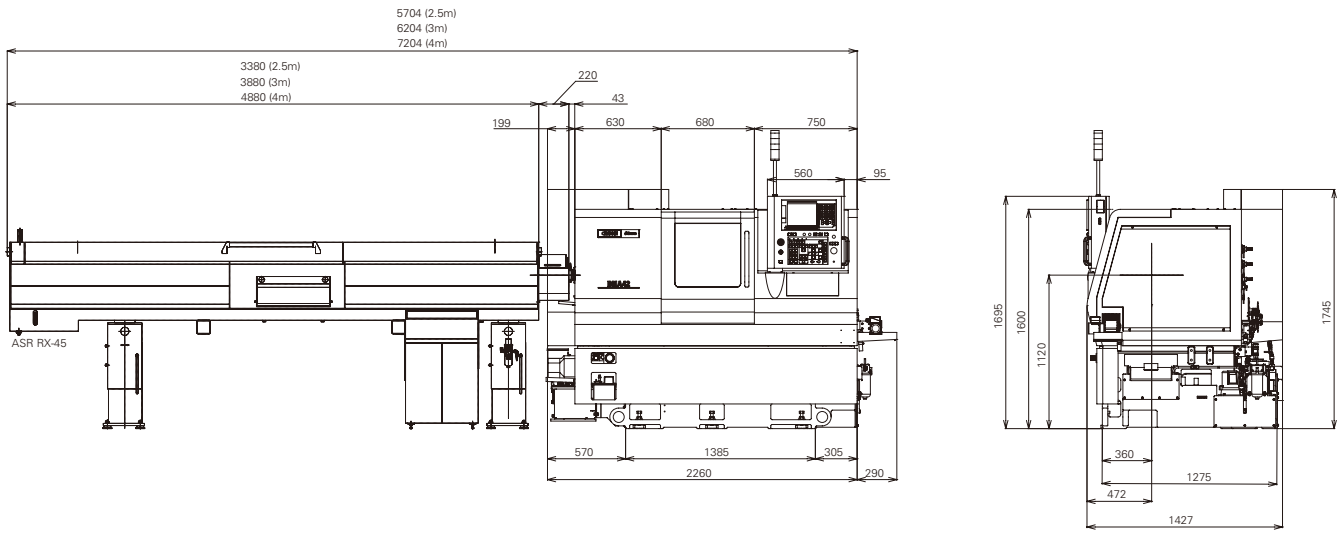


External view

BNA42SY



BNA42CY



Machine Specification

Item	BNA-42CY5		BNA-42SY5		NC specifications							
Capabilities/Capacities					BNA-42CY5			BNA-42SY5				
Max. machining length	200 mm		100 mm		Control unit	FS.0i-TF PLUS						
Standard machining diameter (Chuck diameter)	SP1	42 mm dia.				Control axis						
	SP2	---		34 mm dia.		HD1	X1, Z1, Y1, C1, E1 (Turret)	X1,Z1,Y1,B1, C1, C2, E1		During superimposed operation: X1, Z1, Y1, C1, E1 (Turret)		
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		Feed axis absolute position detector	X, Z1, Y1		X1,Z1,Y1,B				
Spindle speed	SP1	60 to 6,000 min ⁻¹				Min. set unit	0.001 mm/0.001 deg.					
	SP2	---		50 to 5,000 min ⁻¹								
Closing tube through-hole diameter	SP1	43 mm dia.				Positioner	G00					
	SP2	---		30 mm dia.		Linear interpolation	G01					
Collet chuck type	SP1	Hardinge S20, DIN173E, B&S #22D, JPN34, Hainbuch				Circular interpolation	G02, G03 (multiple quadrants available)					
	SP2	---		JPN, DIN171E		Dwell	G04					
Power chuck type	SP1	5" and 6" hollow chucks		5" hollow chuck		Threading	G32					
	SP2	---		4" hollow chuck		Multiple threading	G33					
Tool post												
Number of tool posts	1				Feed function							
Type of tool post	12 ST.				Rapid feeding override	0 to 100% (10% increments)						
Opposite side distance of tool post	300 mm				Cutting feed speed override	0 to 150% (10% increments)						
Max. turning radius of tool post	505 mm dia.				Per minute feed and per rotation	G98/G99						
Dimensions of tools used	20 mm sq.				Manual handle feeding	x1, x10, x100						
Dimensions of tool post holes	25 mm dia.				Reference point return	G28						
Rotary tools												
Number of installed rotary tools	Max. 12				Reference point return chuck	G27						
Type of rotary tool drive	Independent clutch drive				2nd reference point return	G30 or G30P2						
Rotating speed of rotary tools	50 to 5,000 min ⁻¹				Program input function							
Machining capacities	Drill	Max. 10 dia.				Tape code	EIA/ISO auto-detection					
	Tap	Max. M6 x 1 (Limited to spiral and point taps for M8 x 1.25)				Absolute commands	X,Z,Y,C		X,Z,Y,C,B			
		Max. M8 x 1.25 for BSBM				Incremental commands	U, W, V, H					
Feed rate												
Rapid feed rate	X axis	20 m/min				Programmable data input	G10					
	Z axis	20 m/min				Coordinate system settings	G50					
	Y axis	12 m/min				Workpiece coordinate system	G54 to G59					
	B axis	---		20 m/min								
Slide thrust												
Slide thrust	X axis	5 kN				Program storage and editing						
	Z axis	5 kN				Program storage capacity	512 Kbyte		1 Mbyte (Two system total)			
	Y axis	6.7 kN				Number of registered programs	400		800 (Two system total)			
	B axis	---		5 kN								
Tailstock												
Tailstock	Max. travel distance	200 mm				Spindle and supplementary functions						
	Morse taper size	MT2				Spindle functions	S4 digits					
	Max. slide thrust	4.3 kN (at 3.4 MPa)				Supplementary functions	M3 digits					
	Min. slide thrust	0.57kN (at 0.45 MPa)				Constant peripheral speed control	G96					
	Drive method	Hydraulic										
Motors												
Spindle motor	SP1	11/ 7.5/ 5.5 kW (15%/ 15 min/ cont.)				Tool and tool compensation functions						
	SP2	5.5/ 3.7 kW (15 min/ cont.)				Tool functions	T4 digits command					
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/ 60 Hz ±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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BNA42SY/CY

Fixed Headstock Type CNC Automatic Lathe

