Miyano

CITIZEN
Micro HumanTech

BNA-34/42

CNC Turning center

Miyano Innovation Line

BNA

Cincom Miyano

"Evolution and Innovation" is the Future

The BNA series packs sophisticated functions and high accuracy into a space-saving compact body.
It represents Evolution and Innovation.
The lineup includes models in three versions.

The Evolution line is made up of two models. The BNA-C, which has one spindle and one turret and offers excellent cost performance. The BNA-S, which features a sub-spindle (SP2) that enables back machining.

The BNA-DHY heads the Innovation line by offering the renowned Miyano attributes of performance and high accuracy in a small space with 2 turrets and Y axis for outstanding flexibility. Your needs will be met by these three models.

Miyano Evolution

CNC Turning center
with 1 spindle and 1 turret

BNA-C

Model Name			BNA-34C	BNA-42C
Max Machining Diameter of Bar Work	SP1	mm	φ34	φ42
Max. Machining Length for Bar Work		mm	175	175
Spindle Motor (15Min. Cont/Rating)	SP1	kW	7.5 / 5.5	7.5 / 5.5
Max. Spindle Speed	SP1	min^{-1}	6,000	6,000
Type of Turret			8-station	8-station
Max. Number of Revolving Tools			8	8

Miyano Evolution

CNC Turning center
with 2 spindles and 1 turret

BNA-S

Model Name			BNA-34S	BNA-42S
Max Machining Diameter of Bar Work	SP1/SP2	mm	φ34 / φ34	φ42 / φ34
Max. Machining Length for Bar Work		mm	100	100
Spindle Motor (15Min. Cont/Rating)	SP1	kW	7.5 / 5.5	7.5 / 5.5
	SP2	kW	5.5 / 3.7	5.5 / 3.7
Max. Spindle Speed	SP1/SP2	min^{-1}	6,000 / 5,000	6,000 / 5,000
Type of Turret			8-station	8-station
Max. Number of Revolving Tools			8	8

Miyano Innovation

CNC Turning center
with 2 spindles, 2 turrets and Y axis

BNA-DHY

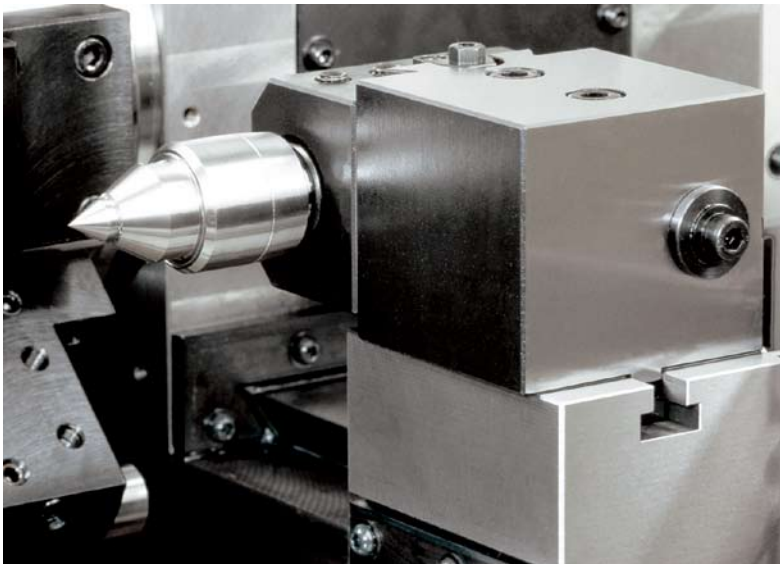
Model Name			BNA-34DHY	BNA-42DHY
Max Machining Diameter of Bar Work	SP1/SP2	mm	φ34 / φ34	φ42 / φ34
Max. Machining Length for Bar Work		mm	100	100
Spindle Motor (15Min. Cont/Rating	SP1	kW	7.5 / 5.5	7.5 / 5.5
	SP2	min^{-1}	5.5 / 3.7	5.5 / 3.7
Max. Spindle Speed	SP1/SP2		6,000 / 5,000	6,000 / 5,000
Type of Turret	SP1		8-station	8-station
	SP2		6-station	6-station
Max. Number of Revolving Tools			8	8

BNA-34C / BNA-42C

Space-saving Compact Design
The compact design achieves space savings of around 30% compared to machines with equivalent functions. This improves the production efficiency per unit of floor area, delivering excellent cost performance.

Ample Tool Stations
The machine is equipped with an 8-station turret and the half-indexing mechanism makes it possible to mount up to 16 tools.

Tailstock for Machining Long Workpieces
A hydraulically driven tailstock capable of alignment in the X and Y directions permits the machining of workpieces up to 175 mm long.



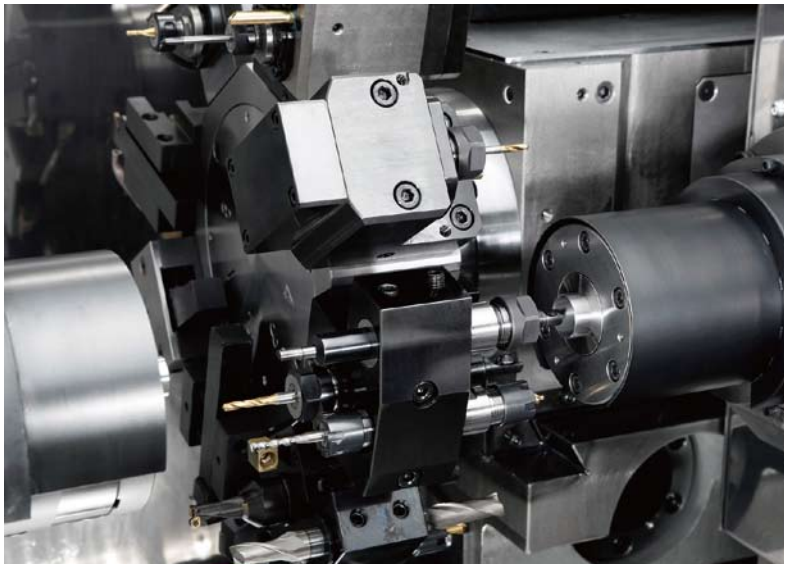
Tailstock (live center, MT2)

BNA-34S / BNA-42S

The S model delivers increased versatility with the provision of a sub-spindle for pick-off and back machining. Multiple tool holders enable the use of many tools for unrivalled flexibility in a bar turning machine of this compact size.

Reduced Idle Time
All BNA models incorporate the latest control technology for reduced non-cutting time and improved productivity.

Inspiring Tooling Possibilities
The 8 station turret with half indexing in combination with multi tool holders helps to standardize set-ups and enable fast changeover to a different workpiece.



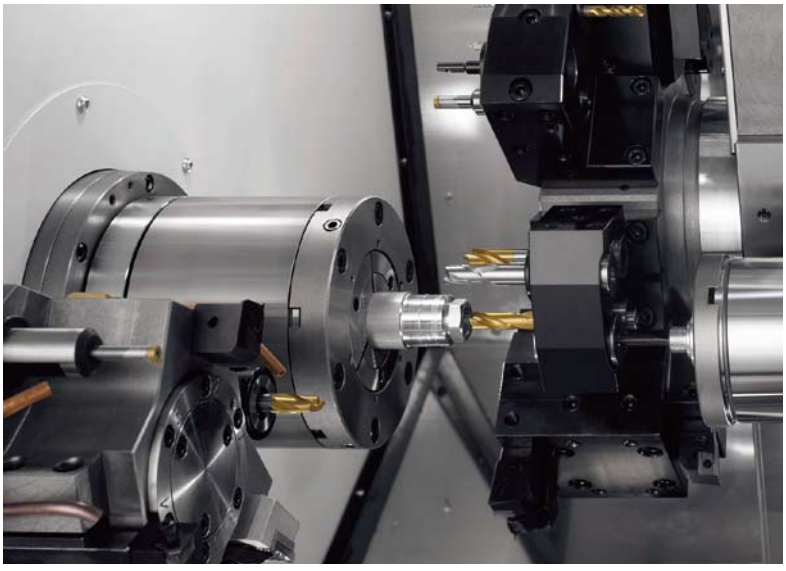
Back machining using tools installed in a triple plain head

Main: Machining with a Z 4 spindle rotary tool
Sub: Simultaneous screw-cutting

BNA-34DHY / BNA-42DHY

Y-axis Function and Sub-turret Featured
The combination of the Y-axis function incorporated in the main turret (HD1) and the compact 6-station sub-turret (HD2) can achieve further reductions in machining time through overlap processing and other forms of machining performed simultaneously on the main and sub spindles.

More Extensive Tooling
The range of machining possibilities has been broadened by the ability to use triple turning tool holder, quadruple drill holders and four spindle rotary tool units.



Overlap processing

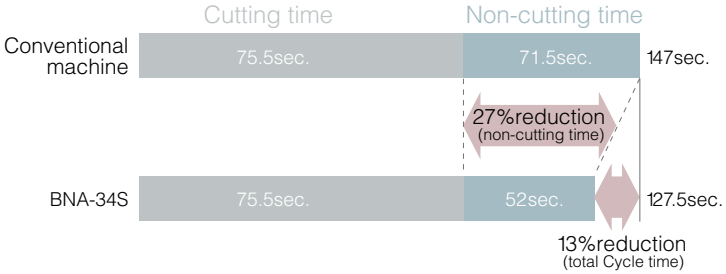
Highly versatile turret, and a wealth of tooling

Revolving tools and tool holders that allow multiple tools to be mounted at a single position mean you will never be short of tools even when machining complex workpieces.

Substantial Reduction in Non-cutting Time

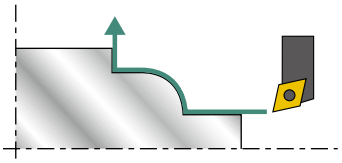
Miyano's unique control system cuts non-cutting time by 27% (compared to previous model), achieving a 13% reduction in terms of total cycle time.

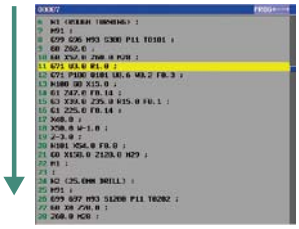
Workpiece used for data measurement



Handle Retrace (DHY Type Only)

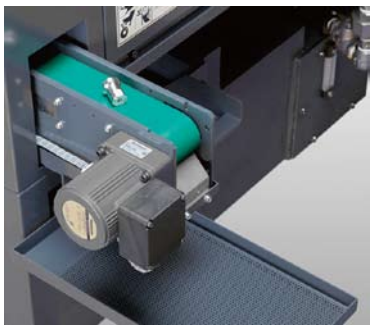
The program can be checked during automatic running by using the manual pulse handle.





Options

Part catcher
Catches workpieces without damaging them and transfers them to the part conveyor.

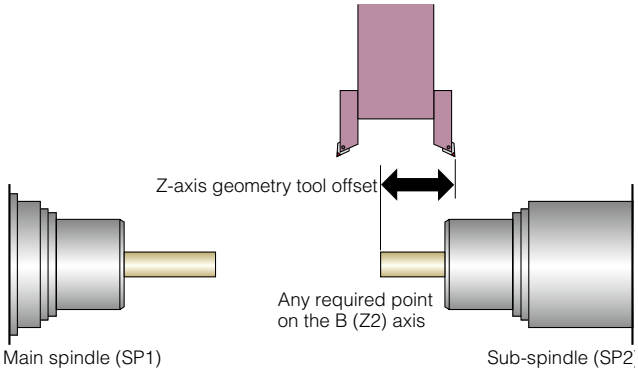


Part conveyor
Transports workpieces received from the part catcher to outside the machine.

Support Software

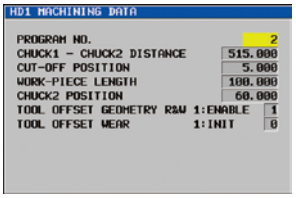
■Arbitrary Point Control by B-axis (S and DHY Types Only)

The approach for secondary operation can be made at any required point on the B (Z2) axis, so there is no need to consider the position of the B (Z2) axis when setting the offset for tools that operate on the sub-spindle (SP2).
Wasted motion is eliminated, and a smooth transition from primary to secondary operation can be made at turret index, helping to reduce cutting time.

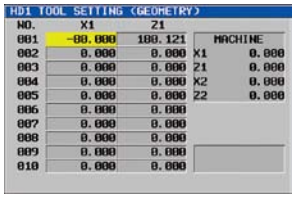


■Machining Support Screens

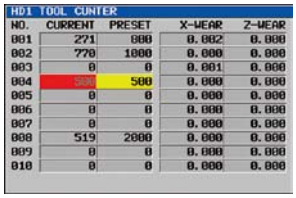
You can call up the various support screens from the new operating panel with a single touch, greatly improving working efficiency.



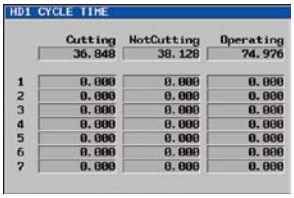
Machining data
Entering the machining length and position of the cut-off here makes it easier to measure geometry offsets and to set tools.



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.



Tool counter
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.



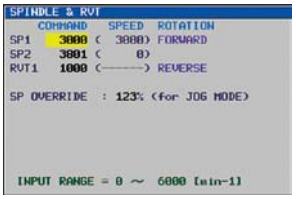
Cycle time
Allows you to measure the cutting time, non-cutting time and running time in each cycle.

Automatic running monitor (Spindle / revolving tools)
Allows you to check the status of the spindle during automatic running.

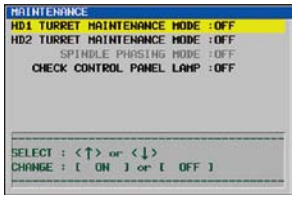
Automatic running monitor (axis)
Allows you to check the status of controlled feed axes during automatic running.

Automatic running monitor (status)
Allows you to check the machining conditions during automatic running.

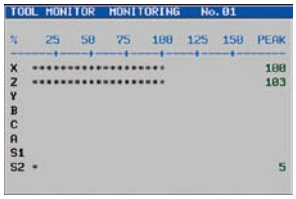
Start condition
Displays information on the start conditions for automatic running.



Spindle and revolving tool unit
Allows you to set the speed range (in manual operation) of the spindle and revolving tools, and to set the spindle override.



Maintenance
Used to turn the settings for maintenance ON and OFF.



Tool monitor(option)
Allows you to monitor tool wear and breakage by checking the current state of the machining and status of the cutting tools in terms of numerical values based on test data.

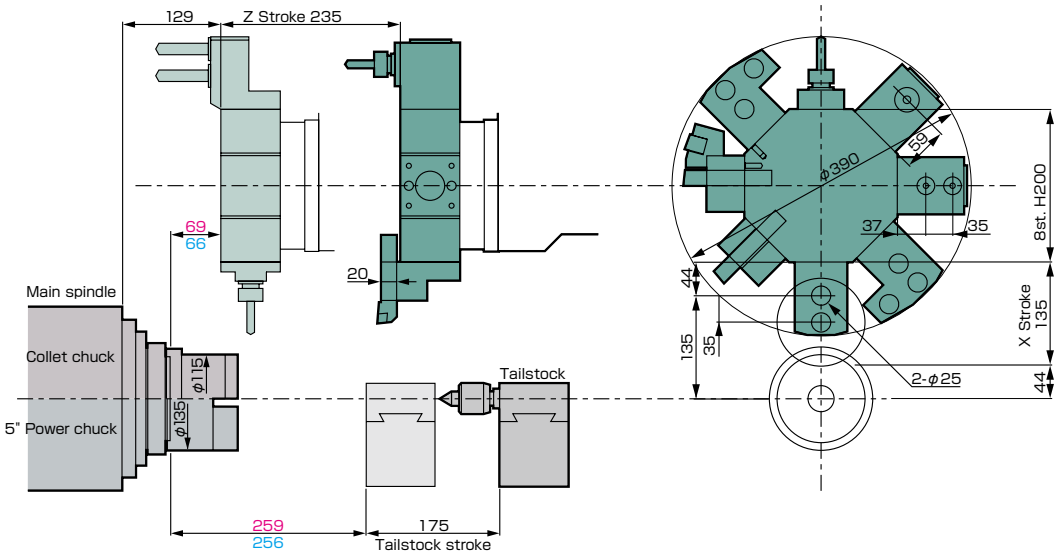
■ Availability of machining support software for each machine model

	DHY	S	C
Machining data	○	○	×
Tool setting	○	○	×
Tool counter	○	○	○
Cycle time	○	○	○
Automatic running monitor	○	○	○
Start condition	○	○	○
Spindle and revolving tools	○	○	○
Maintenance	○	○	○
Tool monitor	○	×	×

Tooling area

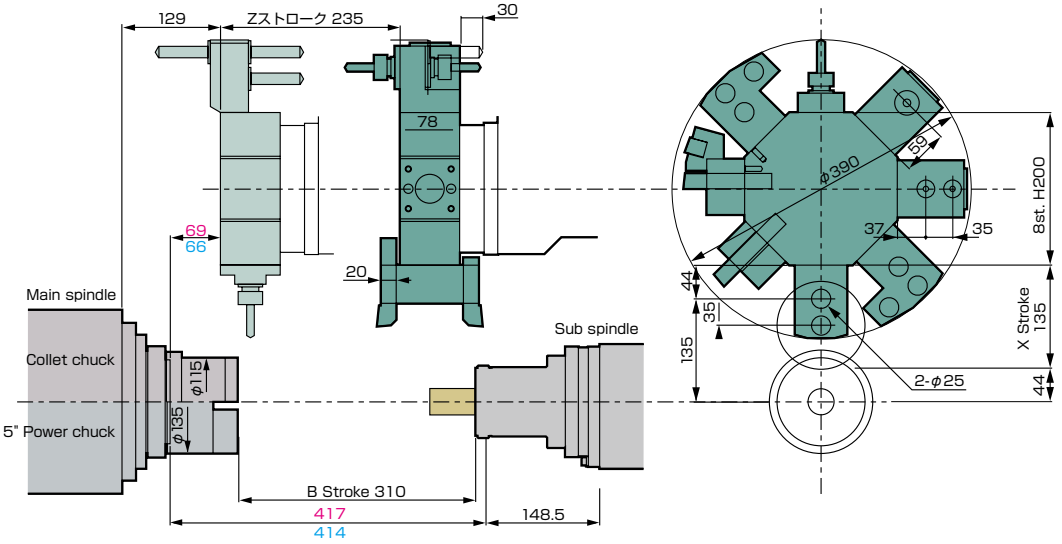
BNA-C

■Common
■42C
■34C



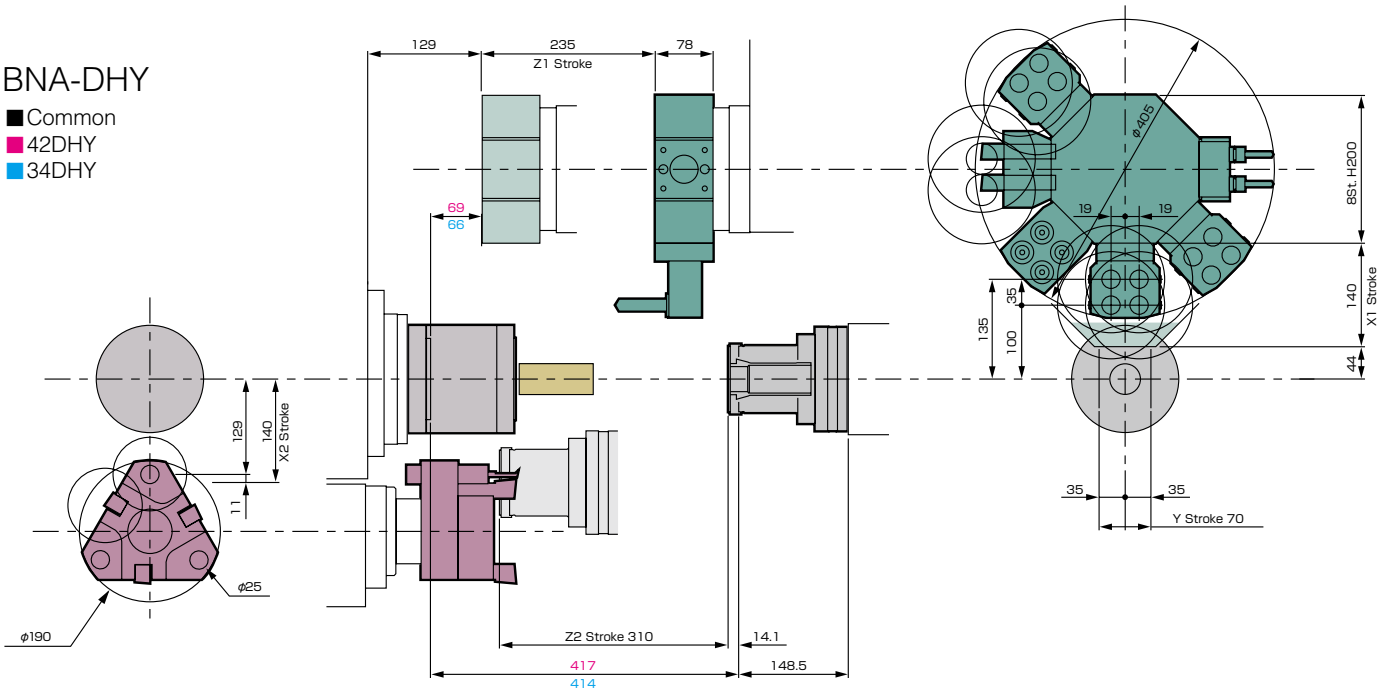
BNA-S

■Common
■42S
■34S



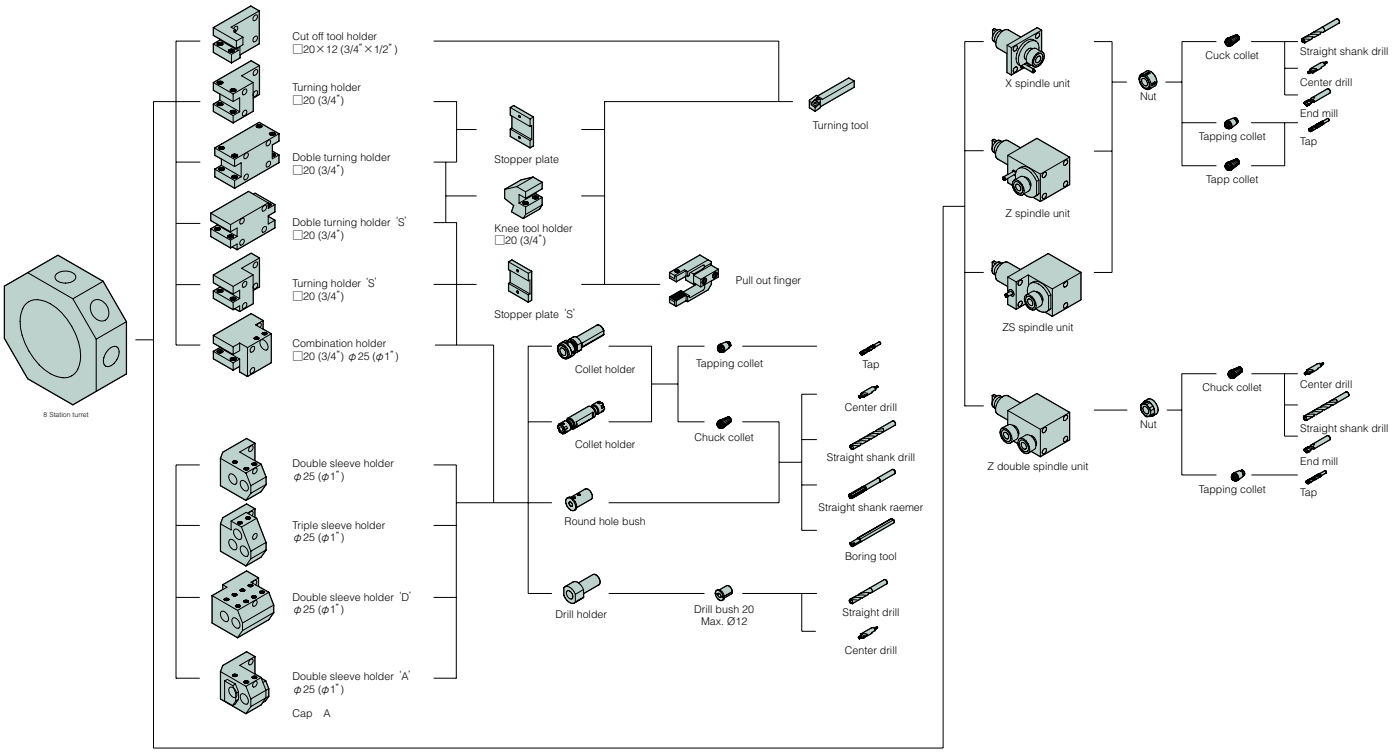
BNA-DHY

■Common
■42DHY
■34DHY

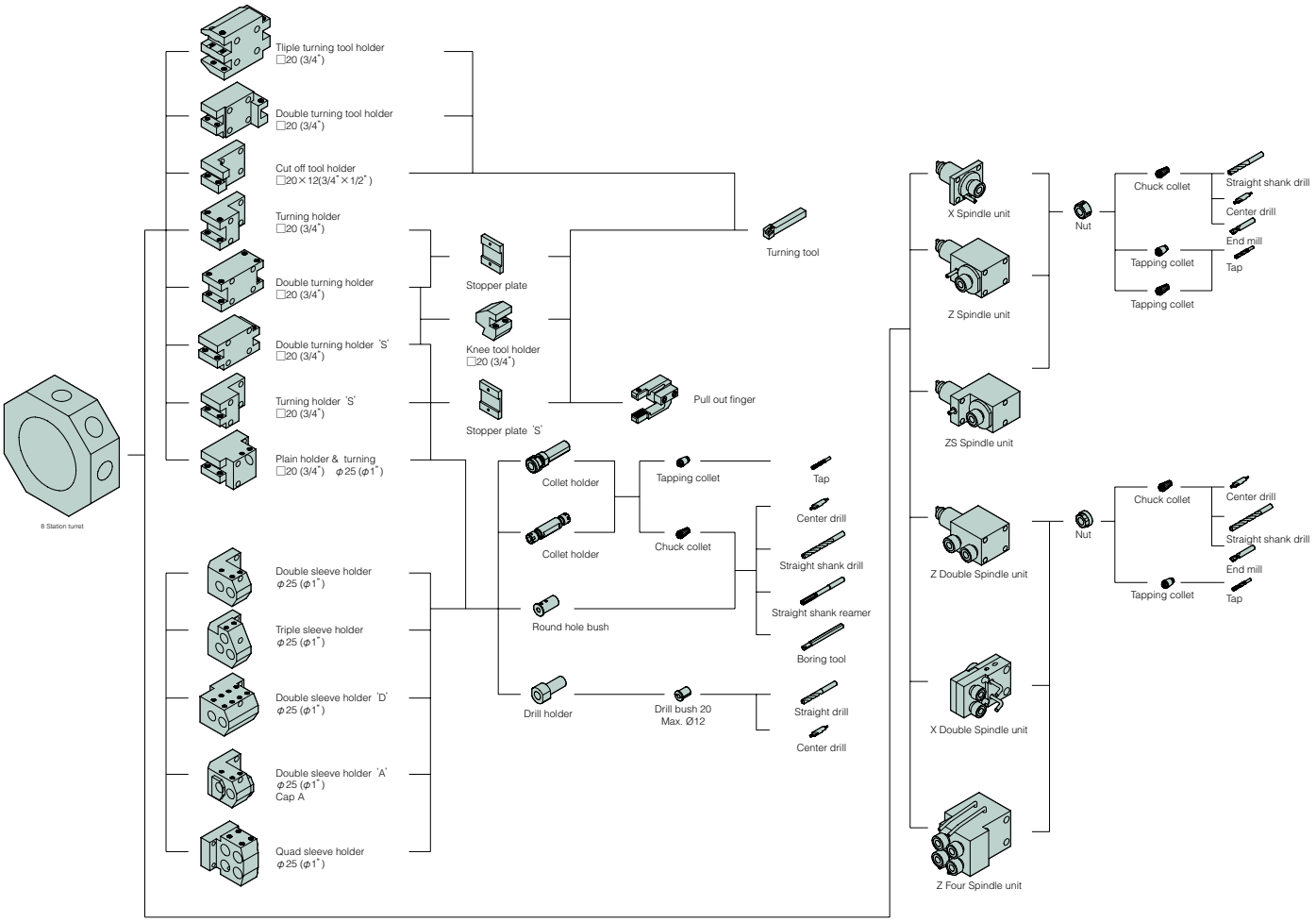


Tooling system

■BNA-C
■BNA-S

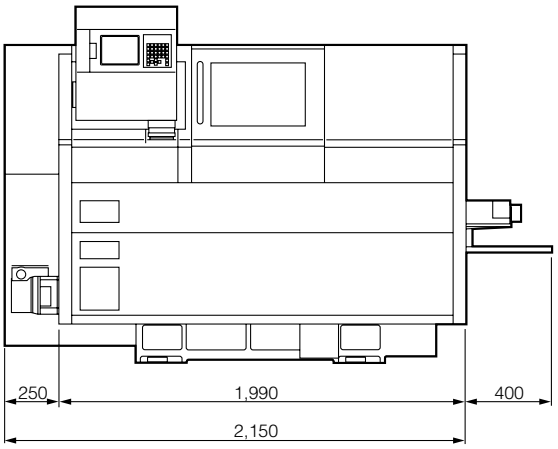


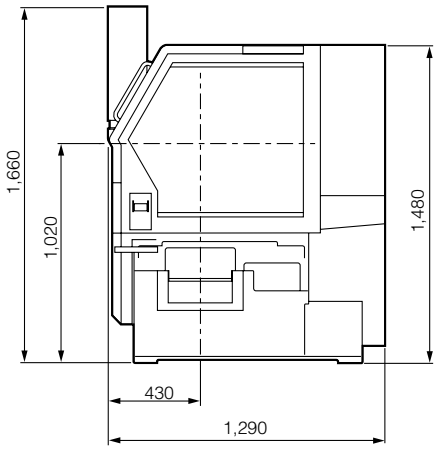
■BNA-DHY



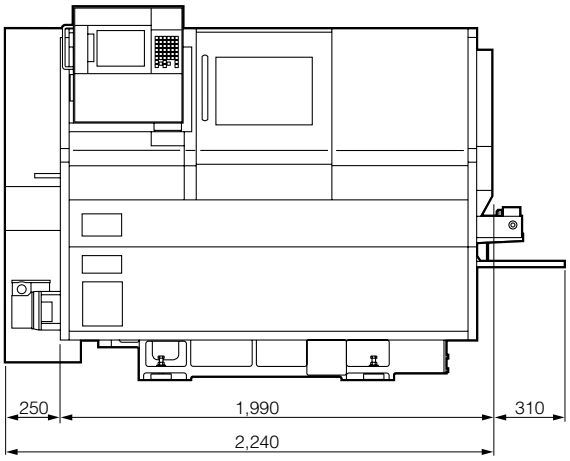
External view

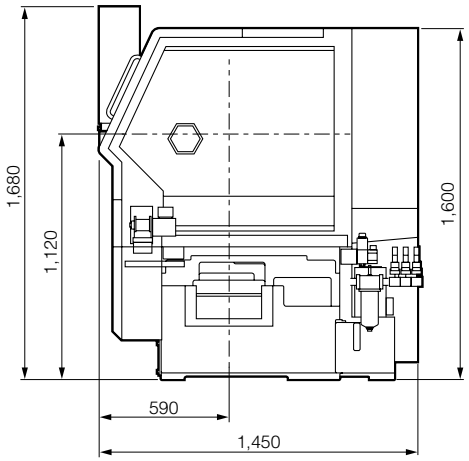
■BNA-C
■BNA-S





■BNA-DHY





NC Specification	MIYANO-FANUC Oi-TD
Controlled axis	X、Z、axis (BNA-C) X、Z、Baxis (BNA-S)
	X1、Z1、Y、X2、Z2 axis (BNA-DHY)
Min. input increment	0.001mm(Diameter for X axis), 0.001deg.
Min. output increment	X axis: 0.0005mm, Z axis: 0.001mm
Parts program strage capacity	1Mbyte(2560m Tape length)
Spindle function	Spindle speed S4-digits, directly specified(G97),
	Constant Cutting speed control(G96)
Cutting feed rate	F3.4 digit per revolution,
	F6 digit per minute, directly specified
Cutting feed rate override	0～150% (in 10% increments)
Rapid traverse rate	X, Z, B asis : 20m/min (C,S)
	X1, Z1, Z2 axis:20m/min
	Y, X2 axis:12m/min (DHY)
Interpolation	G01, G02, G03
Threading	G32, G92
Canned cycle	G90, G92, G94
Work coordinate setting	Automatic Setting, 64 work coordinate setting by the tool position
	memory and the geometry offset.

Tool selection and work coordinate settings, and tool wear compensation	Tool selection and work coordinate settings are selected from1-64
	by T□□△△□□ at the specified position for each turret tool wear
	compensation is selected by △△.
Direct input of tool position	by measured MDI
Input/Output interface	PC card slot
Automatic operation	1 cycle operation/Continuous operation, Single block, Brock delete,
	Machine lock, Optional block skip, Dry run feed hold
Others	8.4" color LCD, No of resistered programs : 800,
	Decimal point input, Manual pulse generator,
	Memory protect, AC digital servo motor, etc.
NC standard functions	Chamferring/Corner R, Tool nose R compensation,
	Constant peripheral speed (G96), Background editing,
	Programmable data input (G10), Operating time/Parts
	No. display, Multiple repetitive canned cycle(G70～G76)
	Rigit tap function (Main & sub), Cylindrical interpolation,
	Custom macro B, Drilling canned cycle (G80～G86)
	Tool life management system.

Machine Specifications

Items		BNA-C		BNA-S		BNA-DHY	
		34C	42C	34S	42S	34DHY	42DHY
Machining capacity							
Max. work length		175mm		100mm			
Max. machining diameter of bar work	SP1	φ 34mm	φ 42mm	φ 34mm	φ 42mm	φ 34mm	φ 42mm
	SP2	φ 34mm					
Slide stroke							
Turret slide stroke	X1axis	135				140	
	Z1axis	235					
	Y1axis	---				70(±35)	
Spindle slide stroke	X2 axis	---				140	
	Z2 axis	---				310	
	B axis	---		310		---	
Spindle							
Number of spindle		1		2			
Spindle speed range	SP1	60～6,000min^{-1}					
	SP2	50～5,000min^{-1}					
Inner diameter of draw tube	SP1	φ 36mm	φ 43mm	φ 36mm	φ 43mm	φ 36mm	φ 43mm
		φ 30mm					
Collet chuck type	SP1	Spring collet	Hardinge S20	Spring collet	Hardinge S20	Spring collet	Hardinge S20
	SP2	Spring collet					
Power chuck type	SP1	5" thru-hole chuck					
Spindle minimum index angle	SP1	0.001°					
	SP2	0.001°					
Turret							
Number of turret		1				2	
Type of turret	HD1	8ST.					
	HD2	---				6ST.	
Shank height of square turning tool		□ 20mm					
Diameter of drill shank		φ 25mm					
Revolving tools							
Number of revolving tools		Max.8					
Type of revolving tools		Single Clutch					
Tool spindle speed range		50～5,000min^{-1}					
Machining capacity	Drill	Max. φ 10					
	Tap	Max. M6×1 S45C (M8×1.25 Spiral tap and Point tap only)					
		Max. M8 ×1.25 BSBM					
Feed rate							
Rapid Feed rate	X1axis	20m/min					
	Z1axis	20m/min					
	Y1axis	---				12m/min	
	X2 axis	---				12m/min	
	Z2 axis	---				20m/min	
	B axis	---		20m/min		---	
Tailstock							
Max. slide stroke		175mm		---			
Live center size		MT2		---			
Max. slide force		4.3KN(at 3.4Mpa)		---			
Motors							
Spindle drive	SP1(Cs)	7.5/5.5kw(15min./cont)					
	SP2(Cs)	5.5/3.7kw(15min./cont)					
Revolving tool drive		2.8/1.0kw					
Coolant ponp		0.18kw					
High pressure coolant drive		1.0/0.6kw (60/50Hz)					
Tank capacity							
Hydraulic oil tank capacity		7L					
Lubricating oil tank capacity		2L					
Coolant tank capacity		165L					
Machine dimensions							
Machine hight		1,660mm				1,680mm	
Floor space		W2,150 × D1,290mm				W2,240 × D1,450mm	
Machine weight		2,800kg				3,000kg	
Optional accessories							
Spindle air blow, Spindle Brake, High pressure coolant, Coolant level swich, Signal tower, Coolant mistcollector, Automatic fire-extinguishing equipment, Automatic power shut-off, Chip conveyor, Chip box, Parts catcher, Parts conveyor, RS-232C, 100V							

ISO 9001
ISO 14001
BUREAU VERITAS
Certification

Headquarters
Tokorozawa works

JQA-EM5711
Shirakawa works
Kitakami works

JQA-QM4675
Kitakami works

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CITIZEN
Micro HumanTech

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