CITIZEN

Miyano

GN3200

High Precision CNC Lathe

GN3200

High efficiency through space savings

A compact design with a total machine width of 700 mm and a floor space requirement of 1.04 m2 has made it possible to shorten production lines and improve factory space utilisation.

The incorporation of a high-speed gantry loader with a loading time of 3.5 seconds and a wide choice of infeed and outfeed devices allows stand-alone automation or integration with other processes.

High-precision positioning and exceptional accuracy

A combination of a single slide construction, achieved using slides with excellent damping characteristics and a lubricating oil discharge control has increased follow-up performance for very small axis movement and has brought lost motion as close to zero as possible. Built-in spindles with forced cooling and built-in sensors give smooth rotation with low vibration thanks to beltless drive. This construction ensures outstanding accuracy and repeatability.

GN3200w

Improved efficiency through further space savings

The GN3200W is the twin spindle version of the GN3200 which, equipped with a high speed loader, makes even higher productivity available. The machine width is 33% shorter than previous Miyano models and the required floor space has been reduced by 27%, realising significant space saving.

A wide choice of infeed/outfeed devices, single or double high speed gantry loaders, transfer and turnover units makes the machine the best choice to meet specific automation needs.

Clever, rigid construction with zero thermal effect

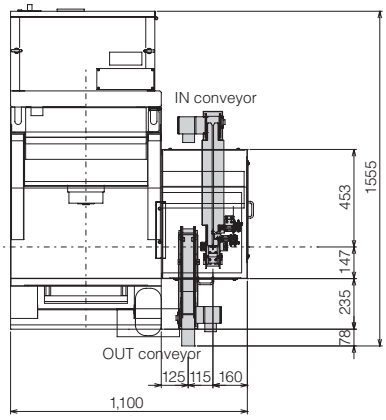
The basic concept in designing the machine is preventing thermal displacement over time by transferring the heat of machining to the machine body. This is achieved by a frame and bed with a thermally symmetric design, backed up by a wing-type headstock and a separate coolant tank.

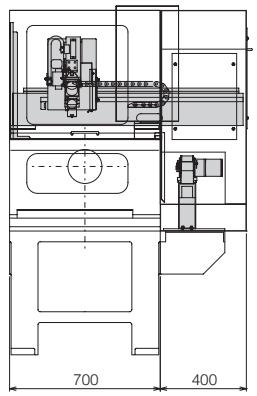
Example configurations

High-efficiency production is achieved in combination with devices like newly designed high-speed gantry loaders featuring excellent cost performance, and part feeders, conveyors and pallet stockers.

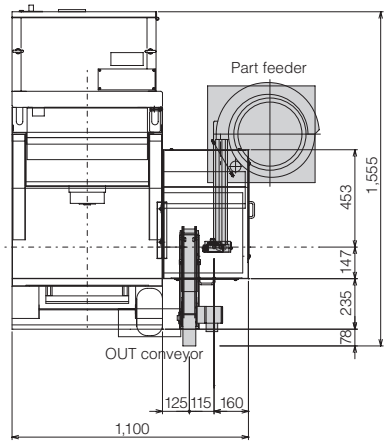
Gantry loader with high-speed travel of 154 m/min. on the X axis.

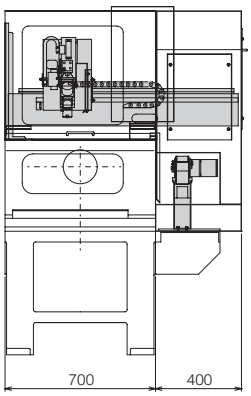
IN conveyor / OUT conveyor



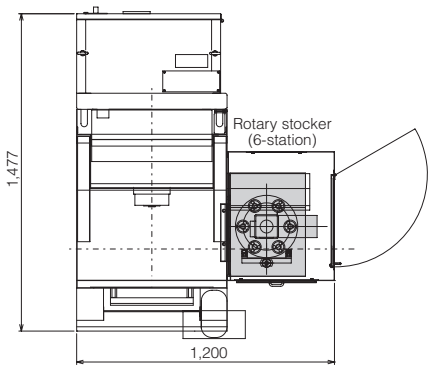


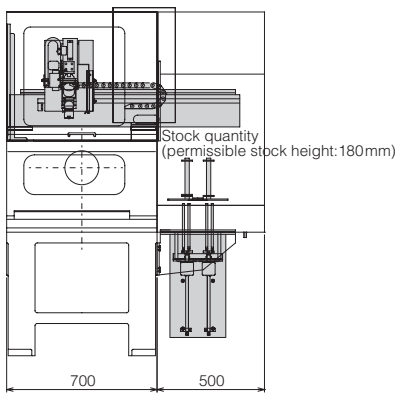
IN part feeder / OUT conveyor



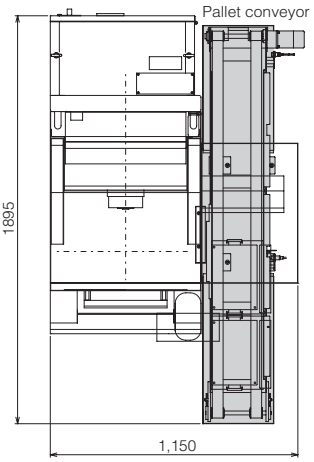


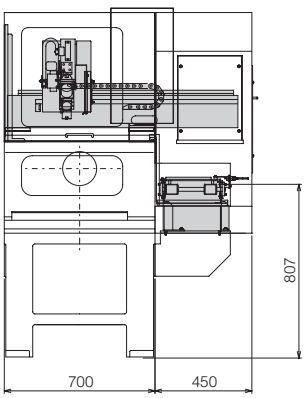
IN/OUT rotary stocker



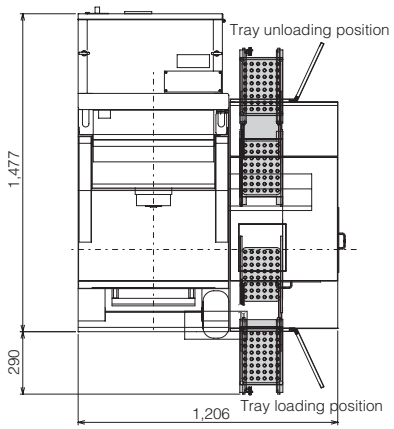


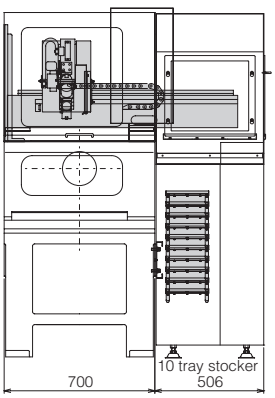
IN/OUT pallet conveyor



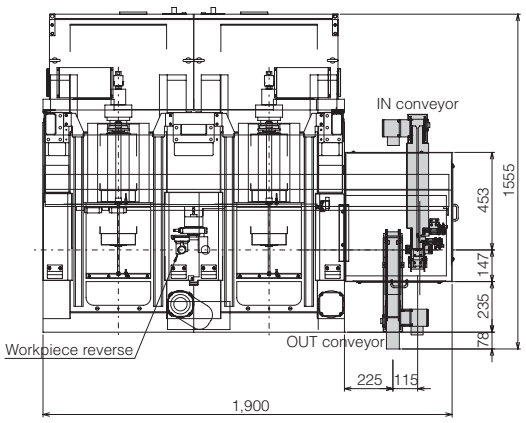


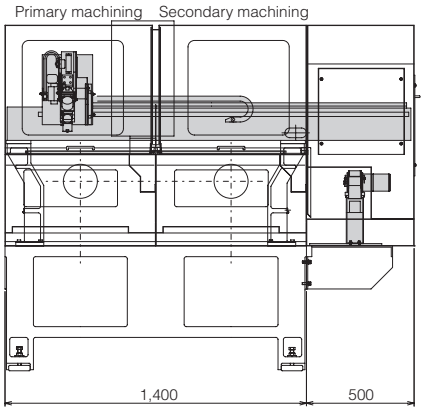
IN/OUT workpiece stocker



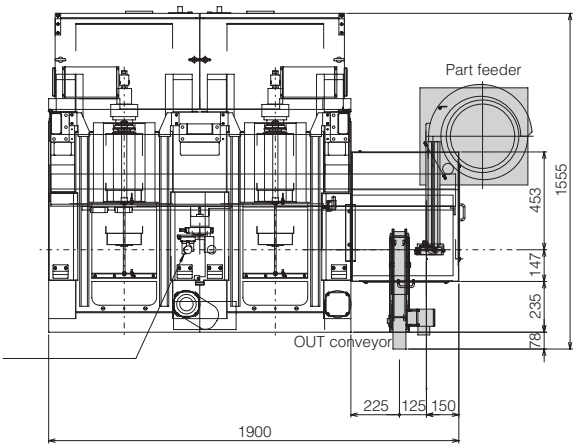


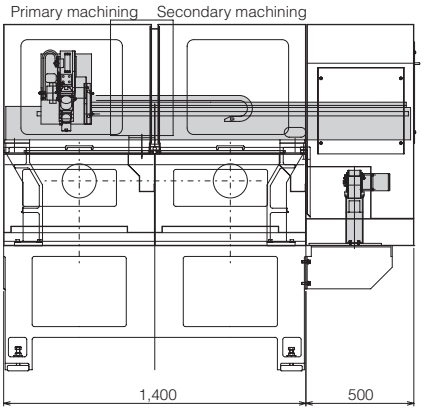
IN conveyor / OUT conveyor



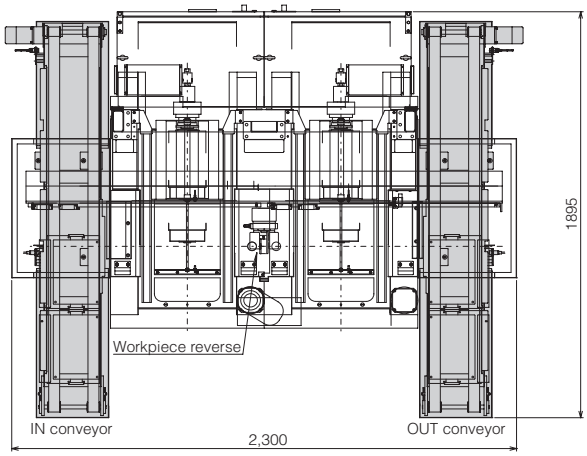


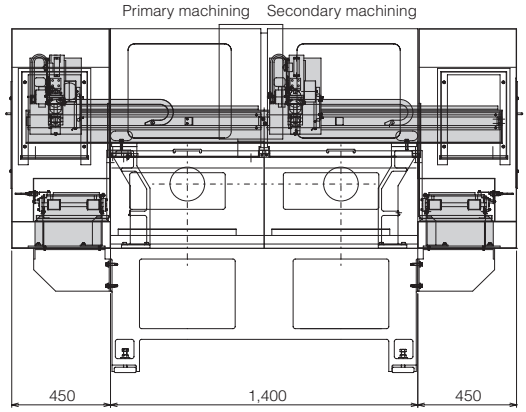
IN part feeder / OUT conveyor



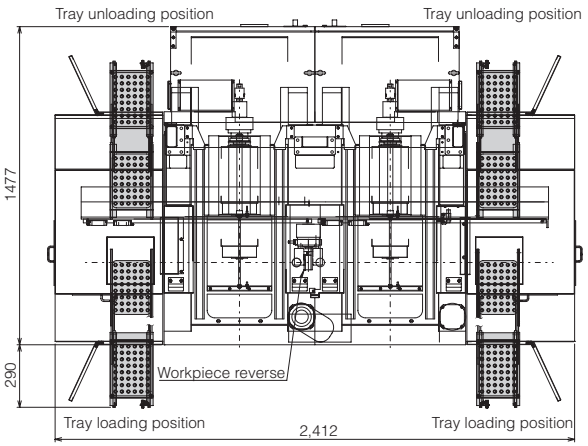


IN pallet conveyor / OUT pallet conveyor

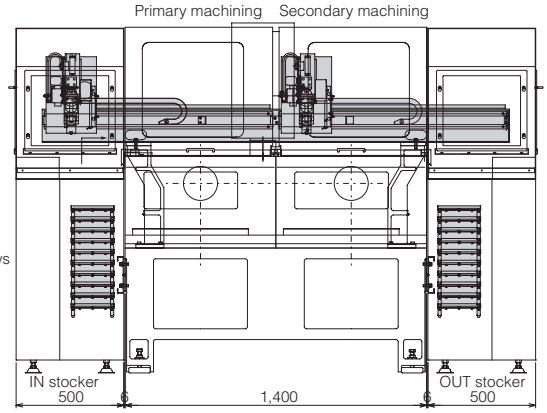




IN workpiece stocker / OUT workpiece stocker

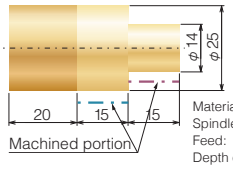


Tray stock quantity: 10 rows



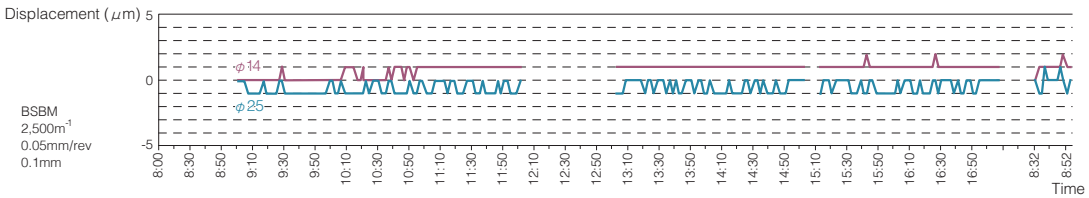
Machining accuracy

Test piece

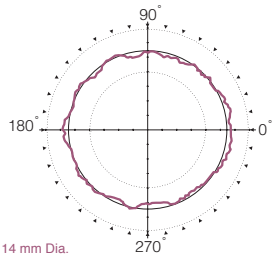


Material: BSBM
Spindle speed: 2,500m^{-1}
Feed: 0.05mm/rev
Depth of cut: 0.1mm

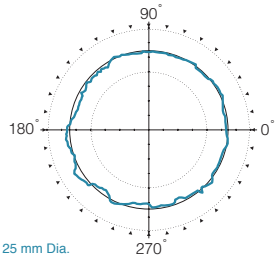
Dimensional accuracy



Roundness

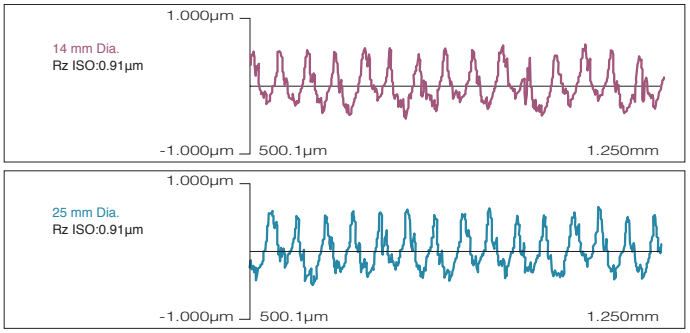


14 mm Dia.
Roundness: 0.30μm



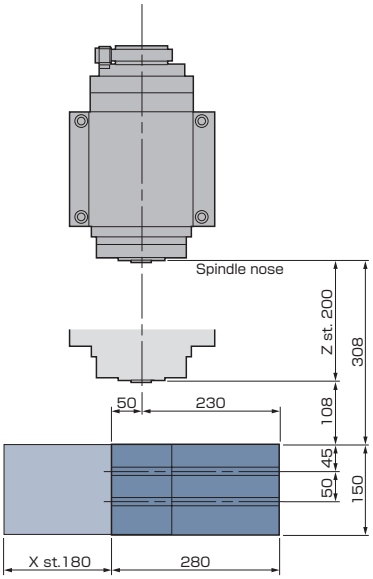
25 mm Dia.
Roundness: 0.30μm

Surface roughness

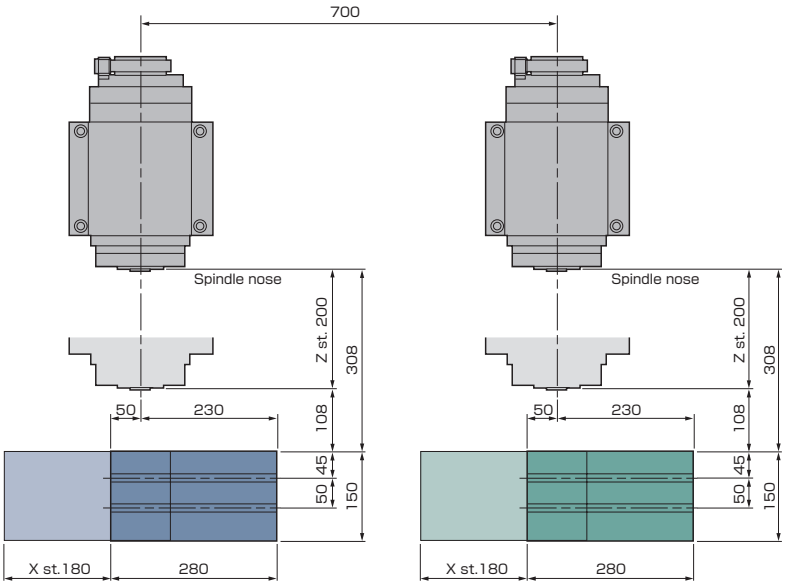


Tooling area

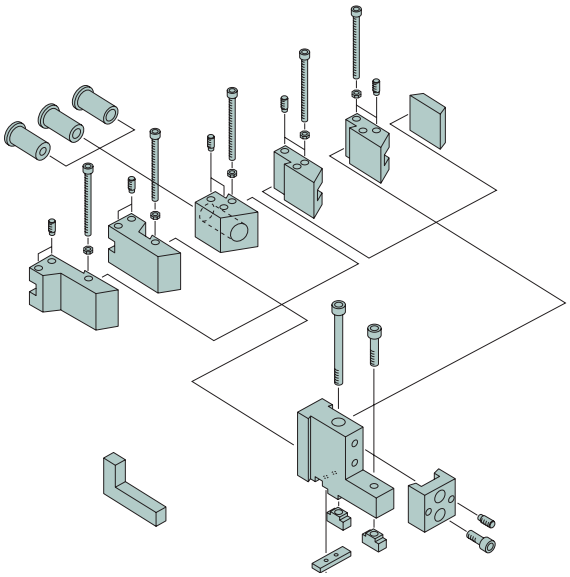
GN3200

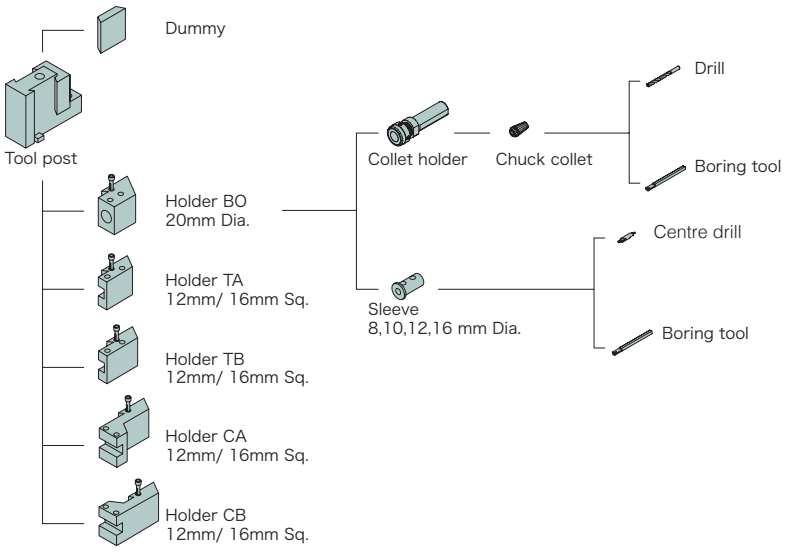


GN3200W



Tooling system





Chuck system

Collet chuck (pull type)

Collet chuck (fixed type)

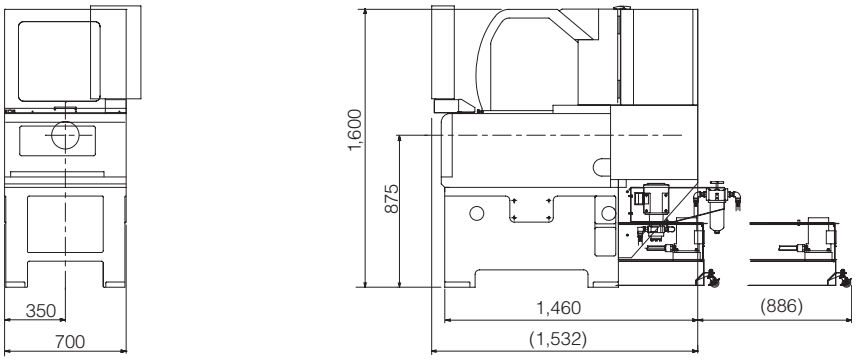
Fine precision chuck

Power chuck

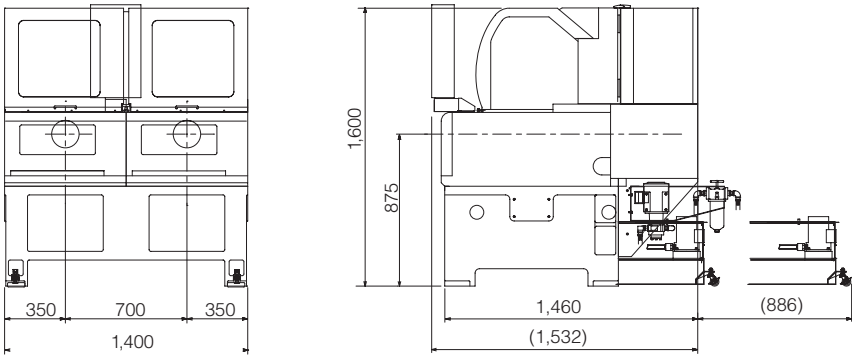
Diaphragm chuck

External view

GN3200



GN3200W



NC specification

GN-3200	FS 0i-TD 1 system
Controlled axis	X, Z
Min. input increment	0.0001mm, 0.00001inch, 0.0001deg
Min. output increment	X axis:0.00005mm (Radius value) Z axis:0.0001mm
Interpolation	G01, G02, G03
Threading	G32, G33, G34
Rapid feed override	0 - 100%
Cutting feed override	0 - 150%
Parts program storage capacity	512Kbyte(1,280m)
No of registered programs	400
Spindle function	Spindle speed S4-digits, directly specified (G97),
	Constant Cutting speed control (G96)
Tool function	T ##** (## = Tool number & geometry,
	** = Wear offset number)
Tool compensation	64 pieces (total of 3 system: 96 pieces)
Data input/output	RS-232C, Memory card interface
Others	8.4" color LCD, Work piece coordinate system (G52 - G59),
	Inch/ metric change, Chamferring/Corner R,
	Programmable data input (G10), Direct drawing
	dimension programming, Drilling canned cycle,
	Custom macro, Multiple repetitive canned cycle,
	Background editing, Spindle orientation, Rigid tapping,
	Tool life management, Tool nose R compensation
	(G40, G41, G42), Actual cutting feed rate display,
	Operating time/Parts No. display.
Options	Polar coordinate interpolation, Cylindrical interpolation,
	Cs outline control.

GN-3200W	FS 0i-TD 2 system
Controlled axis	X, Z 2 axes × 2 systems
	2 Saddle loader: 2 axes × 2 systems
	1 Saddle loader: 2 axes × 1 system
Min. input increment	0.0001mm, 0.00001inch, 0.0001deg
Min. output increment	X axis:0.00005mm (Radius value) Z axis:0.0001mm
Interpolation	G01, G02, G03
Threading	G32, G33, G34
Rapid feed override	0 - 100%
Cutting feed override	0 - 150%
Parts program storage capacity	Total of 2 systems 1Mb (2,560m)
No of registered programs	800 (Total of 2 systems)
Spindle function	Spindle speed S4-digits, directly specified (G97),
	Constant Cutting speed control (G96)
Tool function	T ##** (## = Tool number & geometry,
	** = Wear offset number)
Tool compensation	64 pieces (total of 3 system: 96 pieces)
Data input/output	RS-232C, Memory card interface
Others	8.4" color LCD, Work piece coordinate system (G52 - G59),
	Inch/ metric change, Chamferring/Corner R, Programmable data
	input (G10), Direct drawing dimension programming,
	Drilling canned cycle, Custom macro, Multiple repetitive canned
	cycle, Background editing, Spindle orientation, Rigid tapping,
	Tool life management, Tool nose R compensation(G40, G41, G42),
	Actual cutting feed rate display, Operating time/Parts No. display.
Options	Polar coordinate interpolation, Cylindrical interpolation,
	Cs outline control.

Machine specification

Items		GN-3200	GN-3200W
Machining capacity			
Max. Diameter of chuck	Pull type collet chuck	40 mm Dia.	
	fixed type collet chuck	35 mm Dia.	
	Fine precision air chuck	45 mm Dia.	
	Power chuck	45 mm Dia.	
	Diaphragm chuck	45 mm Dia.	
Max. Machining length		50 mm Dia.	
Max. work length with loader		40 mm Dia.	
Spindle			
Number of spindles		1	2
Spindle nose		Special flat	
Through hole diameter		17 mm Dia.	
Inner diameter of draw tube		11 mm Dia.	
Spindle speed range		8,000 min^{-1}	
Slide			
Number of Tool Platens		1	2
Type		Horizontal linear tool platen	
Type of slide	X-axis	Dovetail	
	Z-axis	Dovetail	
Control axis		2-Axis (Simultaneously X, Z)	2×2-Axis (Simultaneously X, Z)
Slide travel	X-axis	180mm	
	Z-axis	200mm	
Rapid feed rate	X-axis	15m/min	
	Z-axis	15m/min	
Tools			
Shank size of square turning tool		10, 12, (16) mm Sq.	
Number of tools	Standard	5	5×2
Diameter of drill shank		20 mm Dia.	
Motor			
Spindle drive	15Min./ Cont.	2.2/1.5kw	
Coolant			
Tank type		Separate type	
Tank capacity		90 L	200 L
Spindle Cooling device			
Tank capacity	Oil Viscosity VG10	7 L	9 L
Air supply			
Air pressure supply		0.4 Mpa ($4kgf/cm^2$)	
Lubricating system			
Tank capacity	Oil Viscosity VG32	1.5 L	1.5 L×2
Equipment power supply			
Capacity		7.2 KVA	14 KVA
Machine dimensions			
Spindle center height		875 mm	
Machine hight		1,600 mm	
Floor space	Width	700 mm	1,400 mm
	Depth	1,460 mm	
Machine weight		1,500 kg	2,700 kg
Others			
Spalsh guard interlock.			
Optional accessories			
Gantry loader, Chuck Systems, Air Blow, High pressure & inner coolant, Spindle inner coolant, Automatic fire-extinguisher, Automatic power off, Chip conveyor, Chip box,			
Total and Preset Counter, Total and multi counter, Coolant mist collector duct, Damper & duct, warning light, Specification colour, etc.			

Loader specifications (Optional)	2-Axes NC		
		1 saddle 2 hands	1 saddle 2 hands
		---	2 saddles 4 hands
Conveyance capability			
Max. work piece size		40× 40 mm Dia.	
Max. weight capacity		250g	
Feed rate	Right and left operation	130 m/ min	
	Upper and lower sides	154 m/ min	
Control			
Control system		PMC axis control	
Control soft		Flexible loader control	
Drive system	Right and left operation	Rack & pinion	
	Upper and lower sides	Rack & pinion	

CITIZEN

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