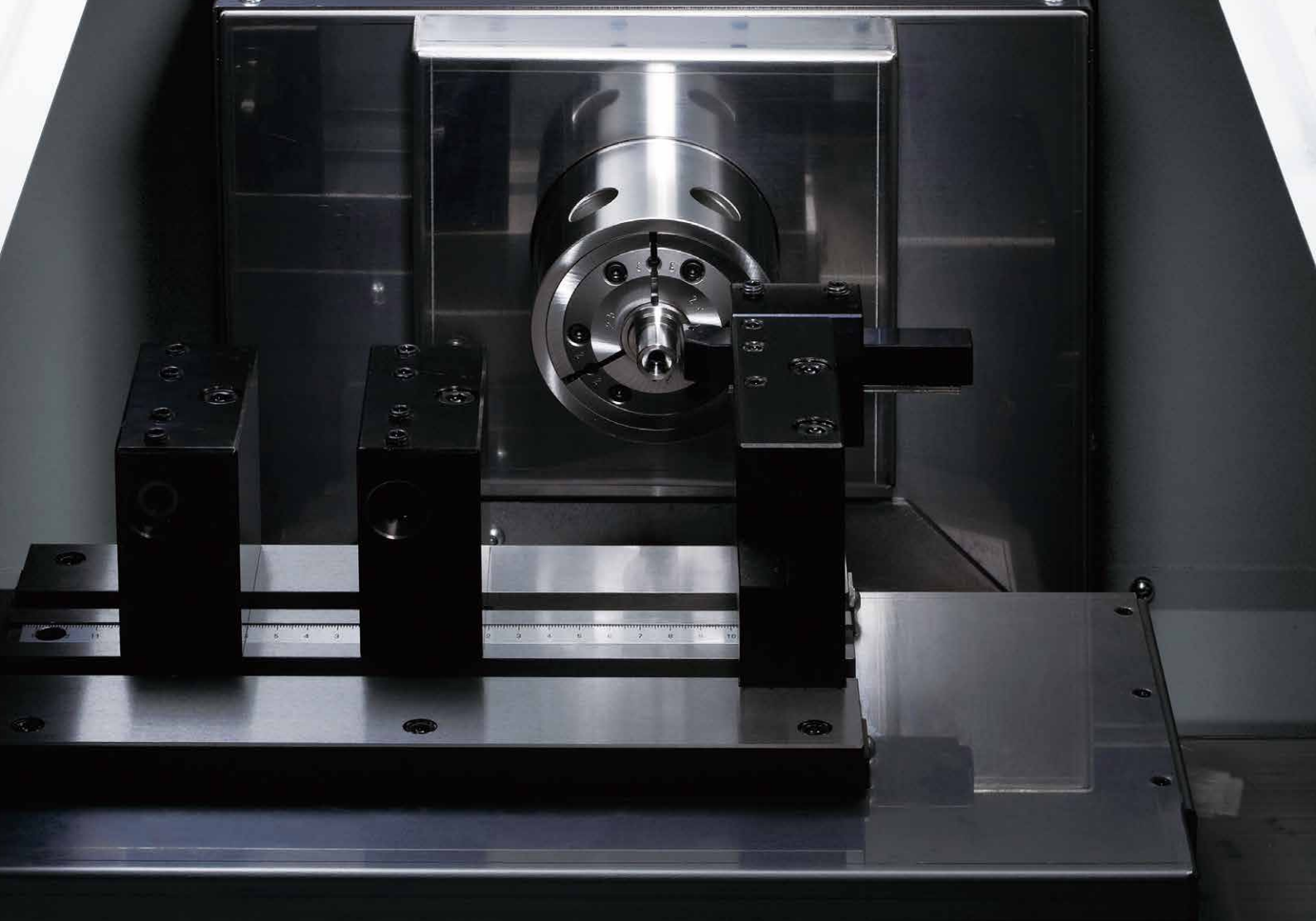# Miyano

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 m^2 has made it possible to shorten production lines and improve factory space utilization. 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.
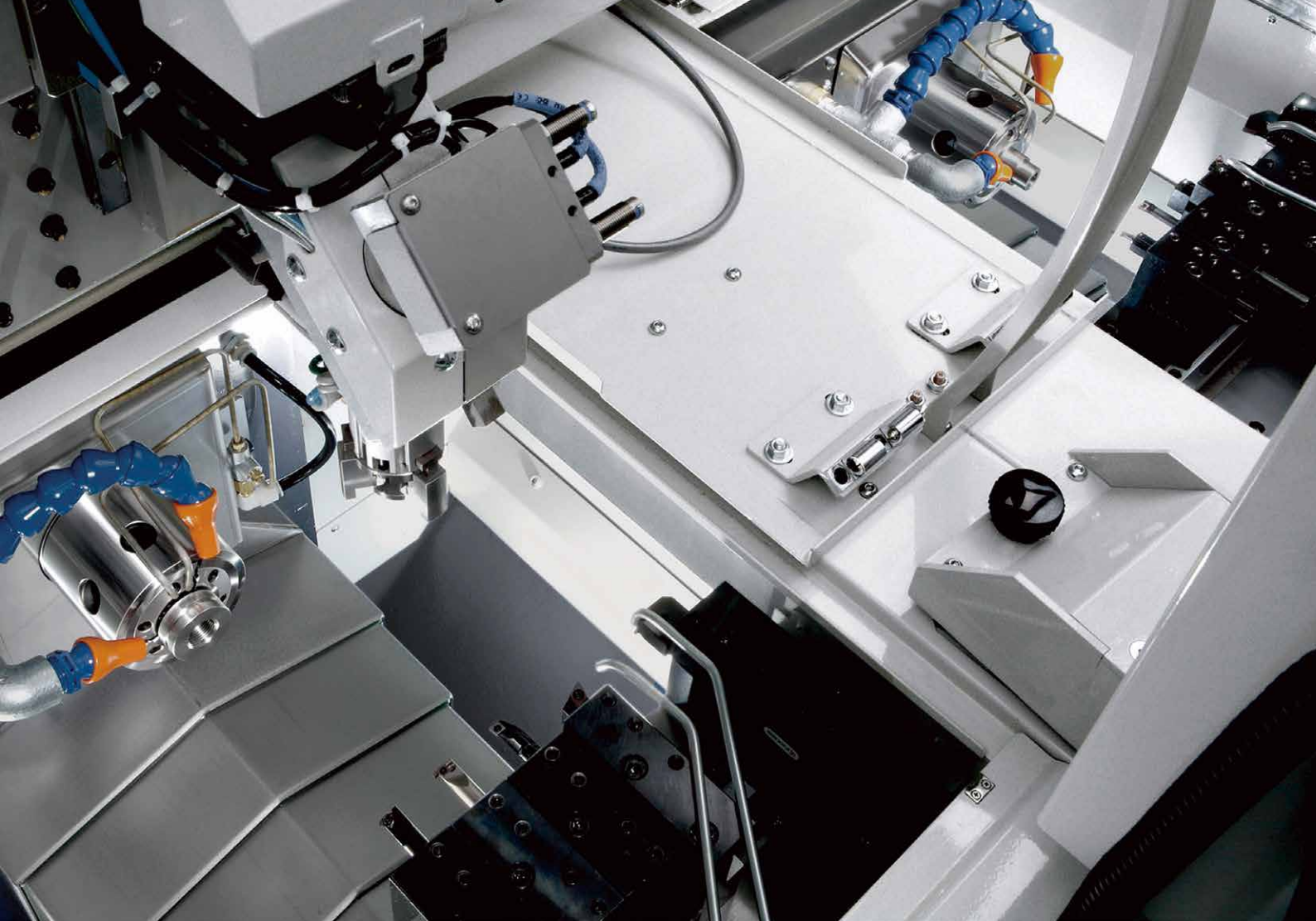
GN3200w

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% to 2.08m^2, realizing 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.
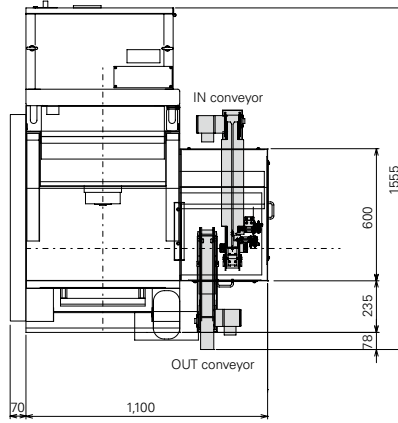
Example Configurations

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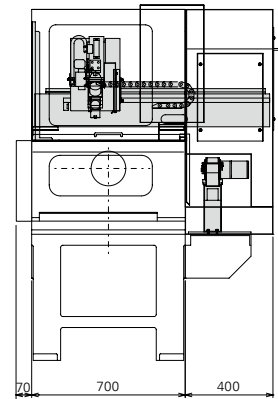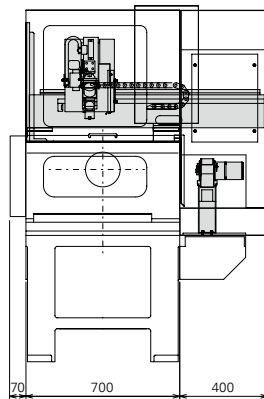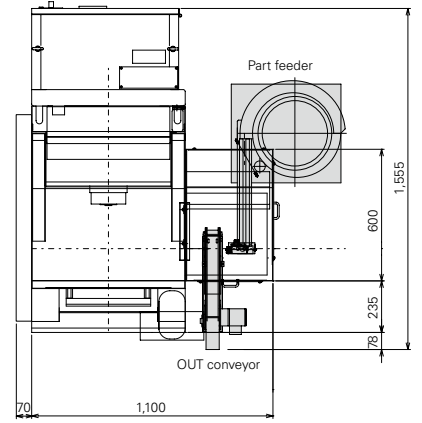
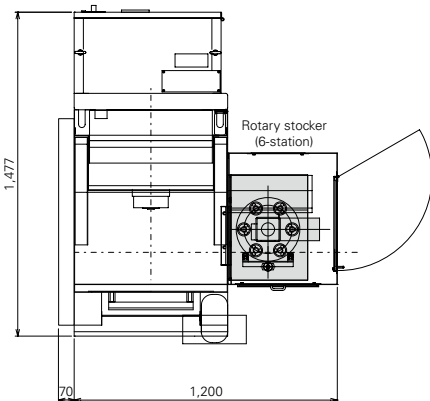Gantry loader with high-speed travel of 154 m/min. on the X axis.

IN conveyor / OUT conveyor

IN conveyor
1,555
600
235
78
OUT conveyor
70
1,100
700
400

IN part feeder / OUT conveyor

Part feeder
1,555
600
235
78
OUT conveyor
70
1,100
700
400

IN/OUT rotary stocker

Rotary stocker (6-station)
1,477
70
1,200
Stock quantity (permissible stock height: 180 mm)
70
700
500

IN/OUT pallet conveyor

Pallet conveyor
1895
70
1,150
807
70
700
450

IN/OUT workpiece stocker

Tray unloading position
1,477
290
Tray loading position
70
1,206
10 tray stocker
70
700
506

IN conveyor / OUT conveyor

IN conveyor

1555

600

235

78

Workpiece reverse

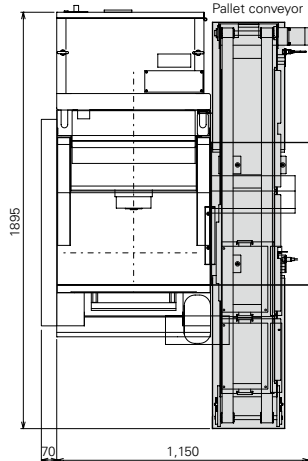OUT conveyor

70 1,400 600

Primary machining   Secondary machining

70 1,400 600

IN part feeder / OUT conveyor

Part feeder

1555

600

235

78

Workpiece reverse

OUT conveyor

70 1,400 600

Primary machining   Secondary machining

70 1,400 600
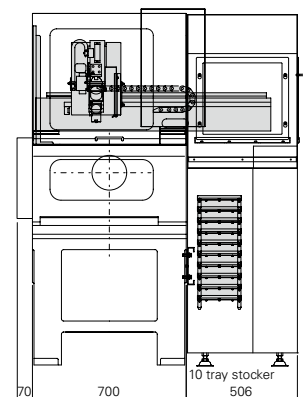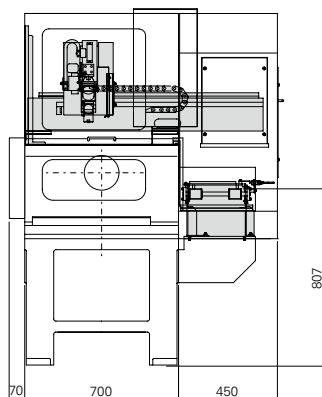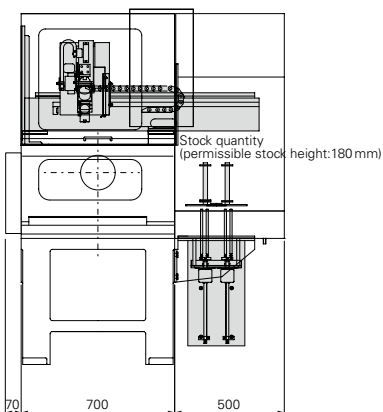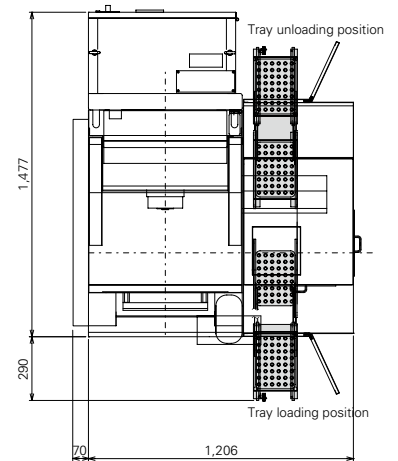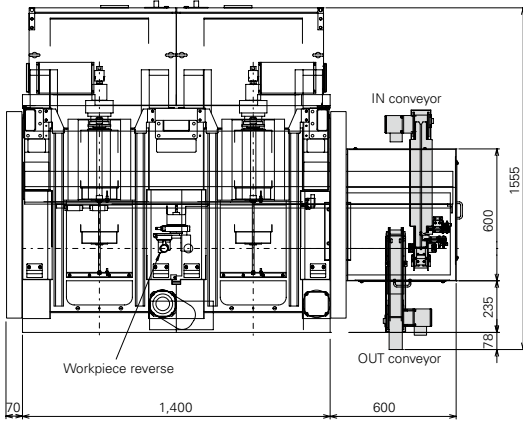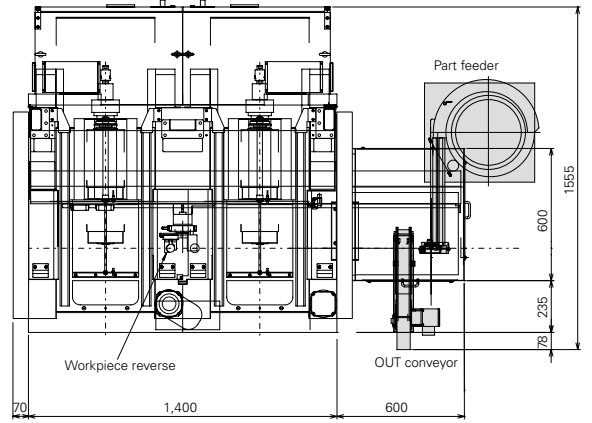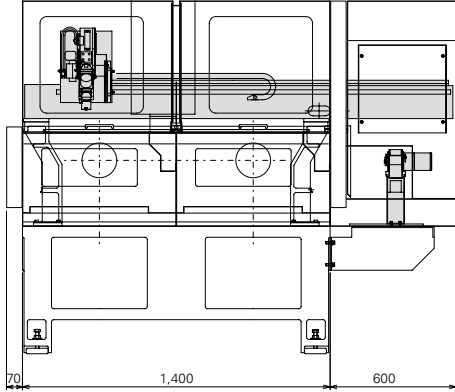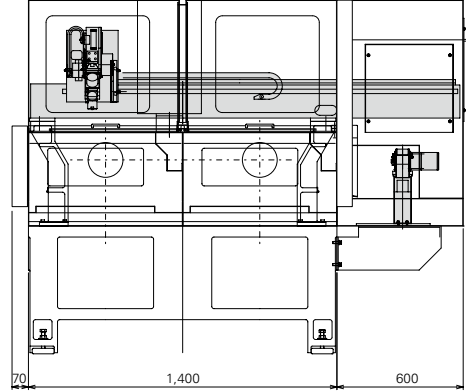
IN pallet conveyor / OUT pallet conveyor
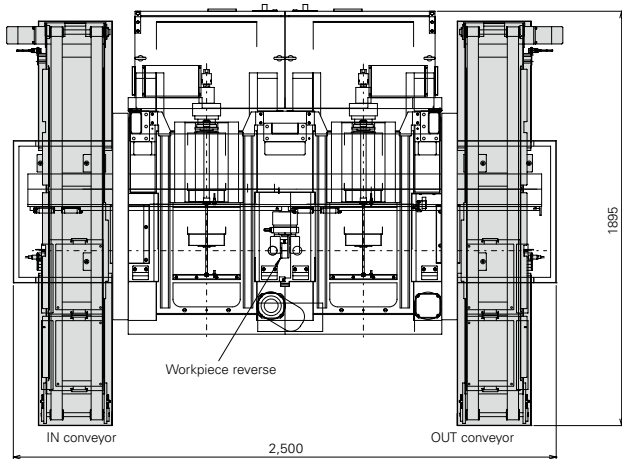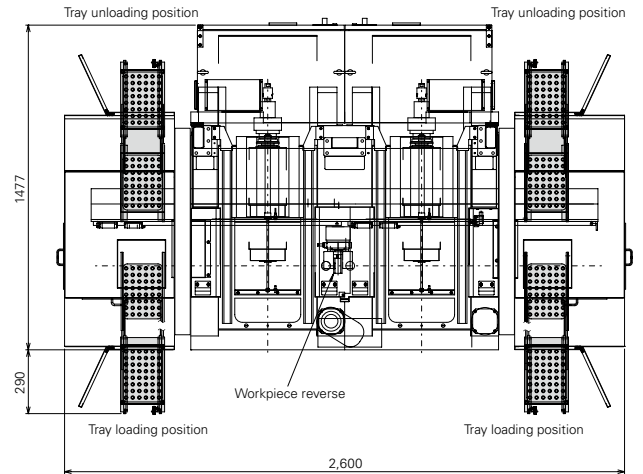
1895

Workpiece reverse

IN conveyor

OUT conveyor

2,500

Primary machining   Secondary machining

550 1,400 550

IN workpiece stocker / OUT workpiece stocker

Tray unloading position   Tray unloading position

1477

290

Workpiece reverse

Tray loading position   Tray loading position

2,600
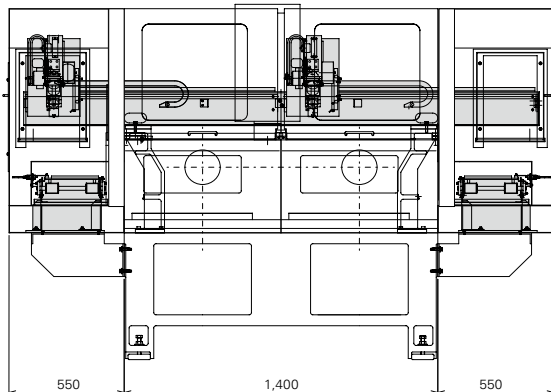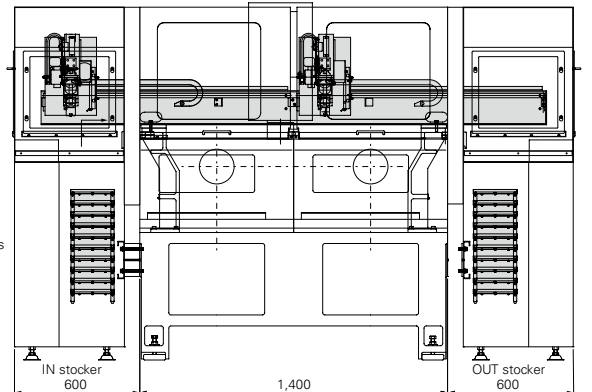
Tray stock quantity: 10 rows

Primary machining   Secondary machining

IN stocker   OUT stocker
600   1,400   600

Machining accuracy

Test piece

14mm Dia.
25mm Dia.

20mm · 15mm · 15mm

Machined portion
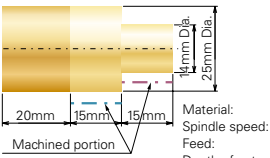
Material: BSBM
Spindle speed: 2,500m⁻¹
Feed: 0.05mm/rev
Depth of cut: 0.1mm

Dimensional accuracy

Displacement (μm)

14mm Dia.
25mm Dia.

Time
8:00 8:30 9:10 9:30 9:50 10:10 10:30 10:50 11:10 11:30 11:50 12:10 12:30 12:50 13:10 13:30 13:50 14:10 14:30 14:50 15:10 15:30 15:50 16:10 16:30 16:50 8:32 8:52

Roundness

14 mm Dia.
Roundness: 0.30μm

25 mm Dia.
Roundness: 0.30μm

Surface roughness

14 mm Dia.
Rz ISO:0.91μm

1.000μm
-1.000μm 500.1μm 1.250mm

25 mm Dia.
Rz ISO:0.91μm

1.000μm
-1.000μm 500.1μm 1.250mm
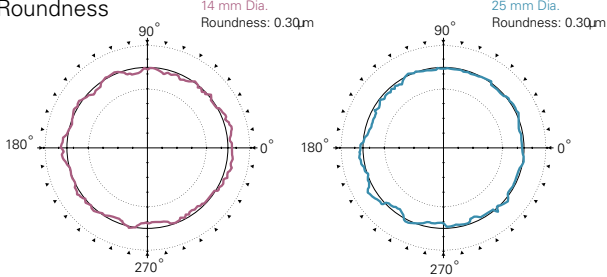
* Although the values stated here are the results of actual measurement, please note that they are not guaranteed.

Tooling area

GN3200

Spindle nose

Z st. 200
308
108
50 · 230
45
50 · 150
X st.180 · 280

GN3200W

700

Spindle nose

Z st. 200
308
108
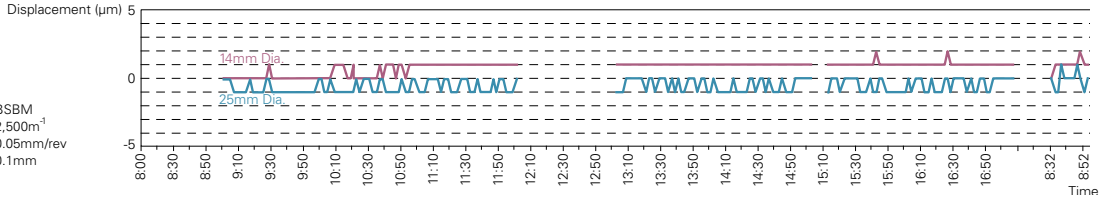50 · 230
45
50 · 150
X st.180 · 280

Spindle nose

Z st. 200
308
108
50 · 230
45
50 · 150
X st.180 · 280

Tooling system

Dummy

Tool post

Holder BO
20mm Dia.

Holder TA
12mm/ 16mm Sq.

Holder TB
12mm/ 16mm Sq.

Holder CA
12mm/ 16mm Sq.

Holder CB
12mm/ 16mm Sq.

Tool post B
20 mm Dia.

Collet holder

Chuck collet

Sleeve
8,10,12,16 mm Dia.

Drill

Boring tool

Center drill

Boring tool

Chuck system

Collet chuck (pull type)	Collet chuck (fixed type)	Fine precision chuck	Power chuck	Diaphragm chuck

External view

GN3200

70 350
770

1600
875
1457 1000
1532

GN3200W

70 350 700 350 70
1540

1600
875
1457 1000
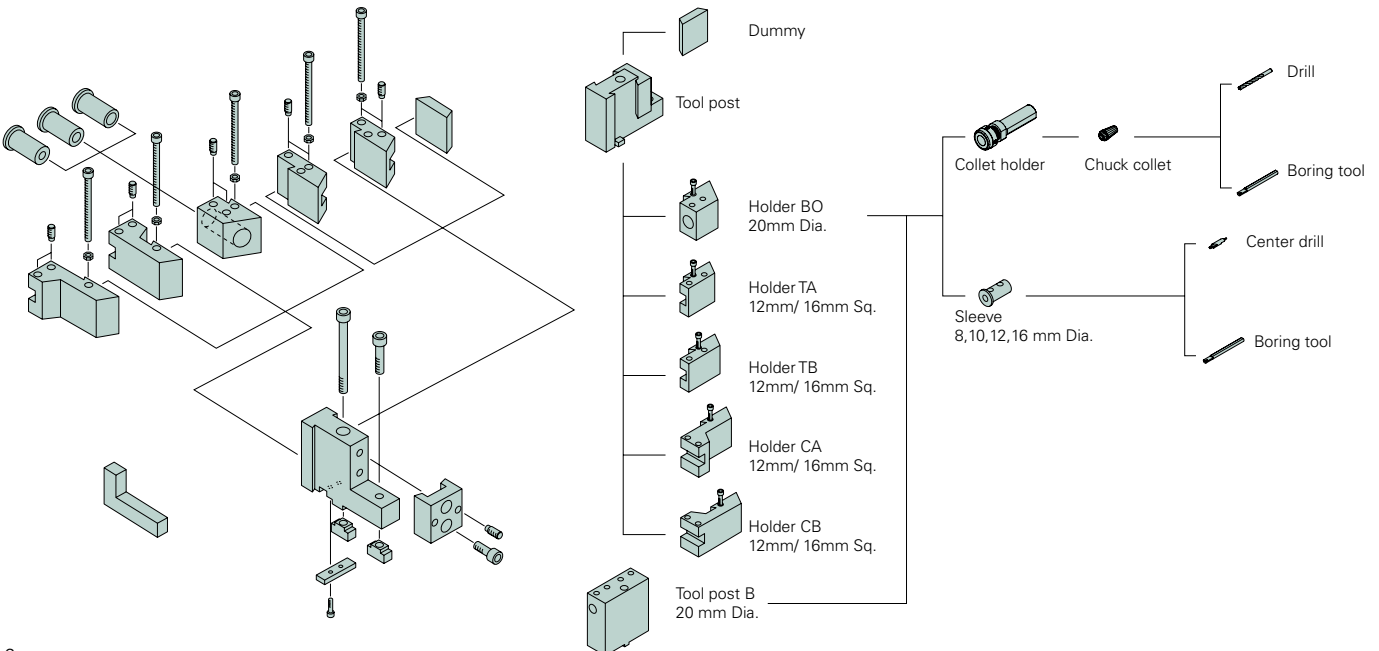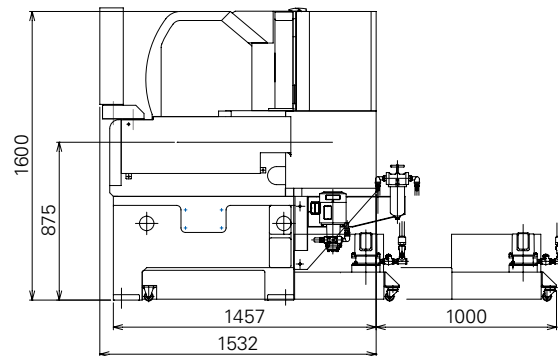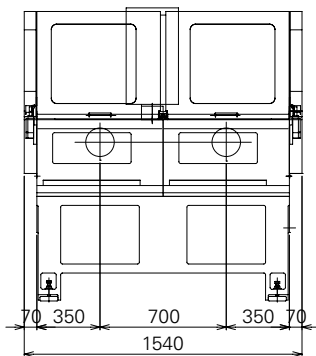1532

NC Specification

GN3200	FS 0i-TF 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.
	Polar coordinate interpolation, Cylindrical interpolation, Cs outline control.

GN3200w	FS 0i-TF 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.
	Polar coordinate interpolation, Cylindrical interpolation, Cs outline control.

Machine specifications

Items		GN3200			
		GN-3200-2F1	GN-3200-2F2	GN-3200W-2F2	GN-3200W-2F3
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		1,250 kg	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 color, 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			