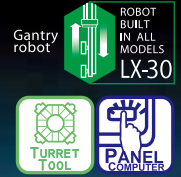


CS SERIES



Front Facing(Parallel)2 Spindle 2 Turret CNC Lathe with Gantry Robot.

This dual spindle, dual turret CNC lathe is engineered for performance, built fully automated with high speed gantry robot. Compact in size, the machine is designed to be highly rigid and accurate. The CSD200 with dual robot is available for high speed and high output production.



CSD300

The above photo includes options.

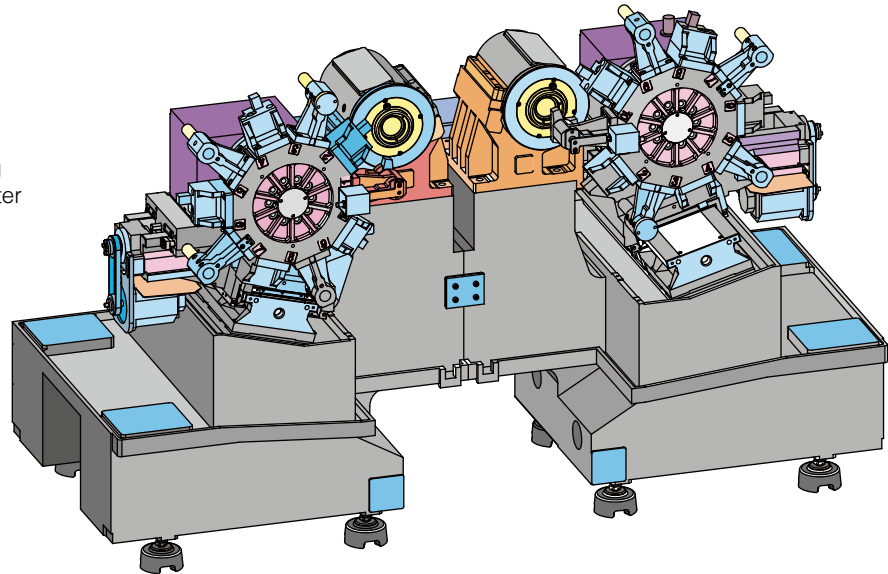
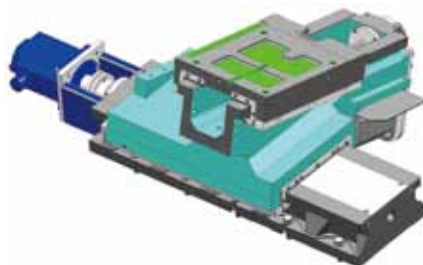
High Rigidity

Column

The thermally stable and space saving design bed is equipped with zero-center type headstock and high speed turret, ensuring optimum quality.

Highly Rigid Slides

The CSD 300/400 utilizes box way construction in both x and z axis. The compact CSD200 utilizes linear roller ways in both axis and long type slide for z axis for high rigidity. Ball screw rigidity has been improved by incorporating a 3 x 3 row x axis support bearing.



High Speed Indexing Turret

Cam type turret with high speed indexing by servo motor. Turret clamps by 3 piece hydraulic coupling eliminating cutting vibration to the lowest possible level.



Front Facing Modular machine with 1 Spindle, 1 Turret and Gantry Robot.

The CSS machine is suitable for line integration such as with the CSD dual spindle lathe for an efficient, automated pass through system.



CSD200 Dual-Gantry

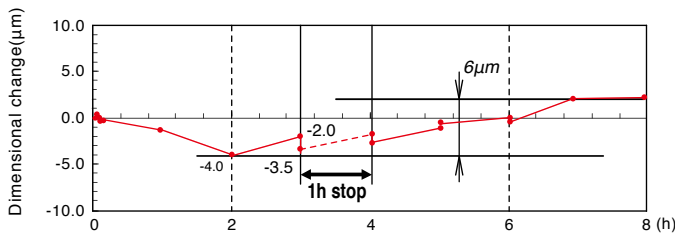


CSS300

The above photo includes options.

Excellent Thermal Displacement Properties

CSD200



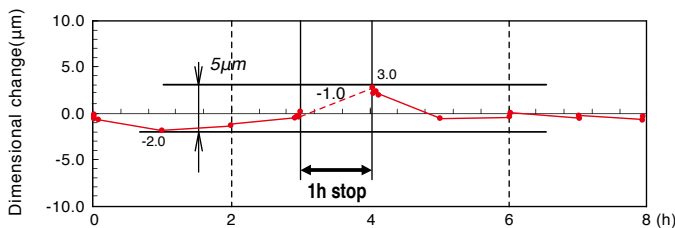
Dimensional change after 8h running

6.0µm

Dimensional change after 1h stop

1.5µm

CSD300/CSS300



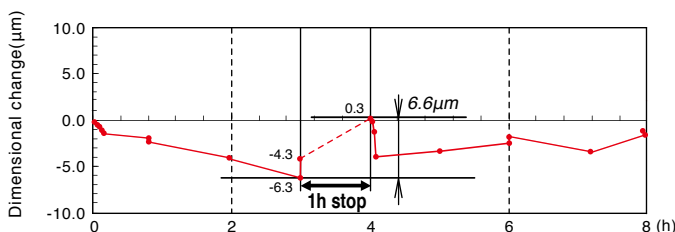
Dimensional change after 8h running

5.0µm

Dimensional change after 1h stop

4µm

CSD400/CSS400



Dimensional change after 8h running

6.6µm

Dimensional change after 1h stop

4.6µm

The above-mentioned data is actual values, but not a performance guarantee.

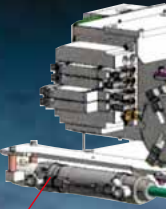
System Layout

Flexible machine configuration with various optional devices.

The high speed 3-axis gantry robot can access peripheral devices at the left and right of the machine.
With the use of various optional devices highly productive lines are developed.

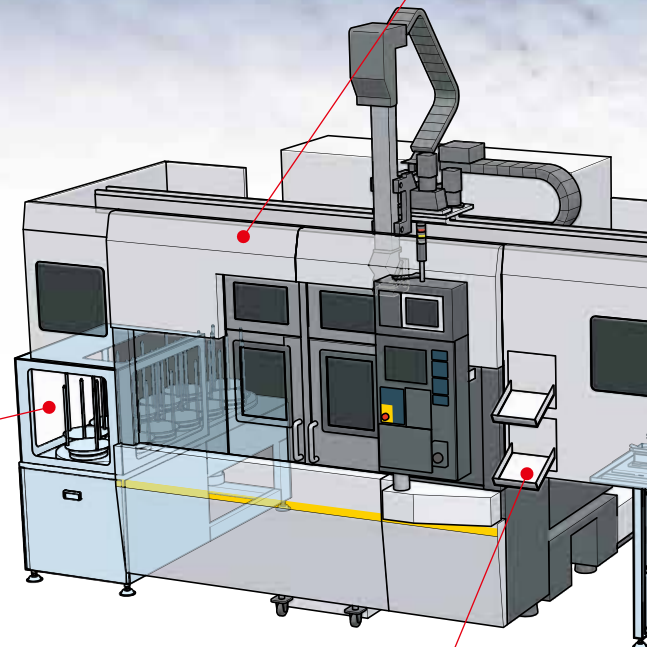
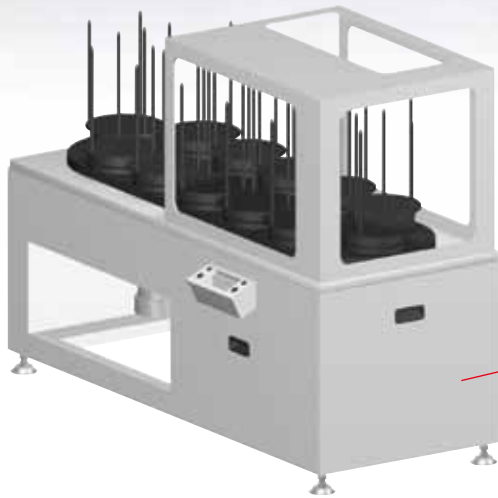
Work Turn Over Device

Enables front and back machining on the same machine. Residing in the robot traverse area, the turn over station has no influence on cycle time.



Work Stocker

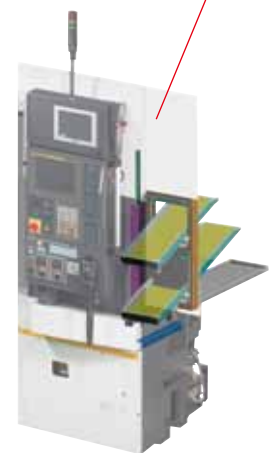
10/12/20 pallet work stockers available.

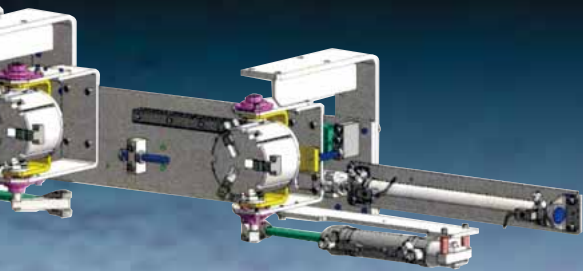


	MP5-20	MP5-30	MP5-40
Pallet quantity	20	12	10
Work size	ø120	ø203	ø300
Max. stacking height	345	325	315
Max.load (pallet)	25	40	50

Work Chute

The Robot periodically takes out the workpiece and puts it in the quality check chute. This chute is also used to discharge autogauging and seating confirmation NG parts.



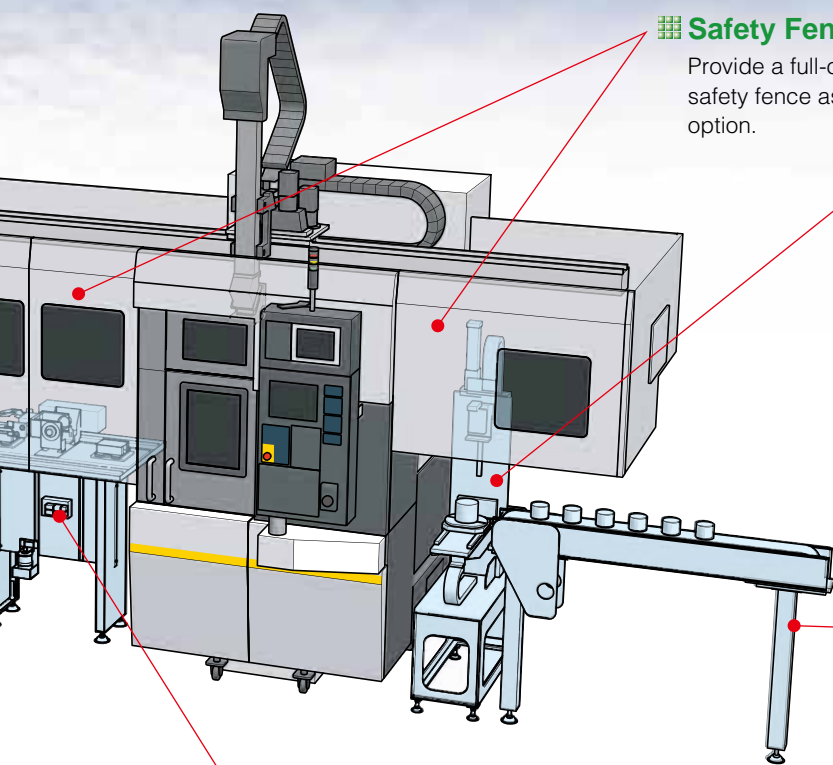


■ Safety Fence

Provide a full-cover type safety fence as an option.

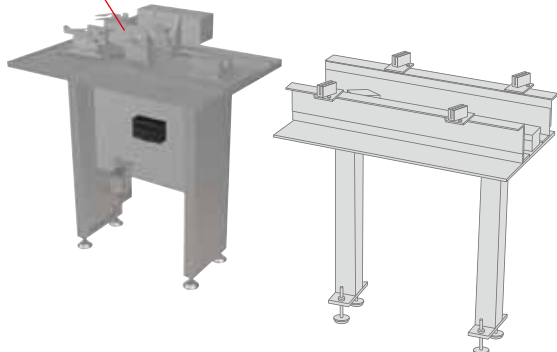
■ Auto Gauge

Placed on the side of the machine, this device ensures part quality by gauging specific process dimensions and automatically feeding back this information to the NC for dimensional compensation.



■ Conveyor

Transfer the work between machines in a fully automated way.



■ Parts Turn Over / Parts Shift Device

Parts shift device to automatically transfer parts to the next robot, or Parts Turn Over Device to present the parts in the correct orientation for the next process.

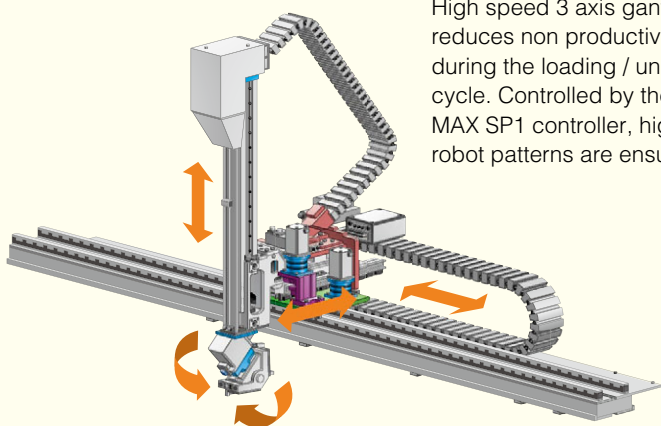
Three Axis Gantry Robot

LX-30

High speed 3-axis gantry robot

The 3-axis robot with Fuji MAX SP1 controller and swivel type robot chuck enables a significant reduction in part load/unload time.

High Speed 3 axis Gantry Robot



High speed 3 axis gantry robot reduces non productive times during the loading / unloading cycle. Controlled by the FUJI MAX SP1 controller, high speed robot patterns are ensured.

Swivel Head Robot Chuck



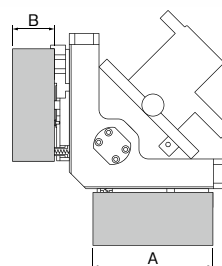
Non productive time reduction utilizing the swivel head design.

Fastest Robot in its class

		CSD200 (CSD200 Dual-G)	CSD300 (CSS300)	CSD400 (CSS400)
Carrying capacity	kg	3+3	5+5	15+15
Max. traverse speed	m/min	180	165	135
Max. up/down speed	m/min	150	120	75
Max. front/back speed	m/min	70	70	50
Min. tact time	sec	19.0(11.0)	21.2(13.0)	36.2(21.0)

The above-mentioned data is actual values, but not a performance guarantee.

Robot Chuck

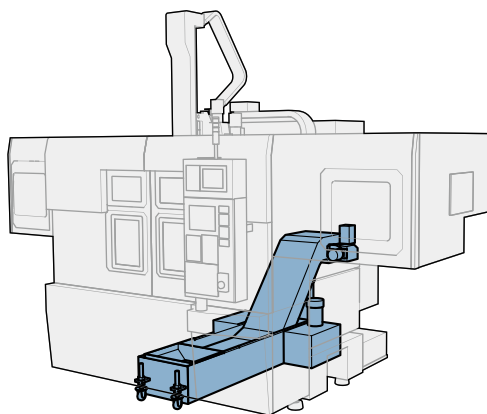


	Work size (AxB)
CSD200	ø120mm×60mm
CSD300	ø200mm×100mm
CSS300	
CSD400	ø300mm×150mm
CSS400	

Class 300/400 utilizes hydraulic robot chucks – yielding better grip for faster robot traverse speeds.

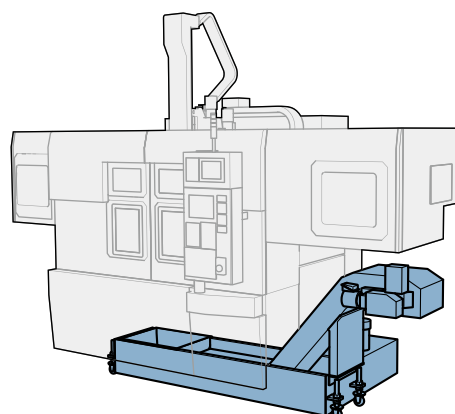
Option

Chip Conveyor



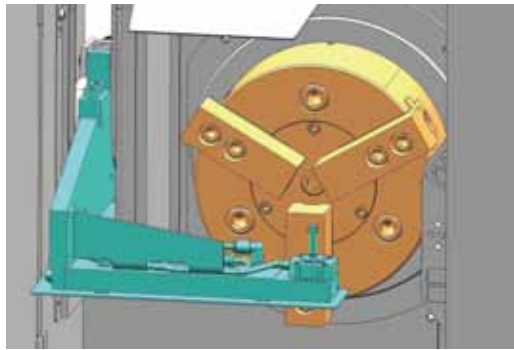
Single chip conveyor. Hinge, scraper or magnetic conveyors available.

Chip Conveyor (side exit)



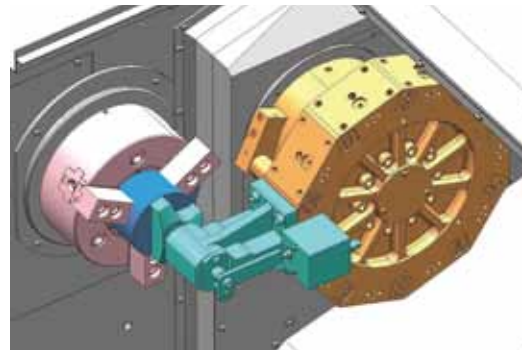
Side exit conveyor can be ordered for floor layouts where rear exit does not work.

Tool detector



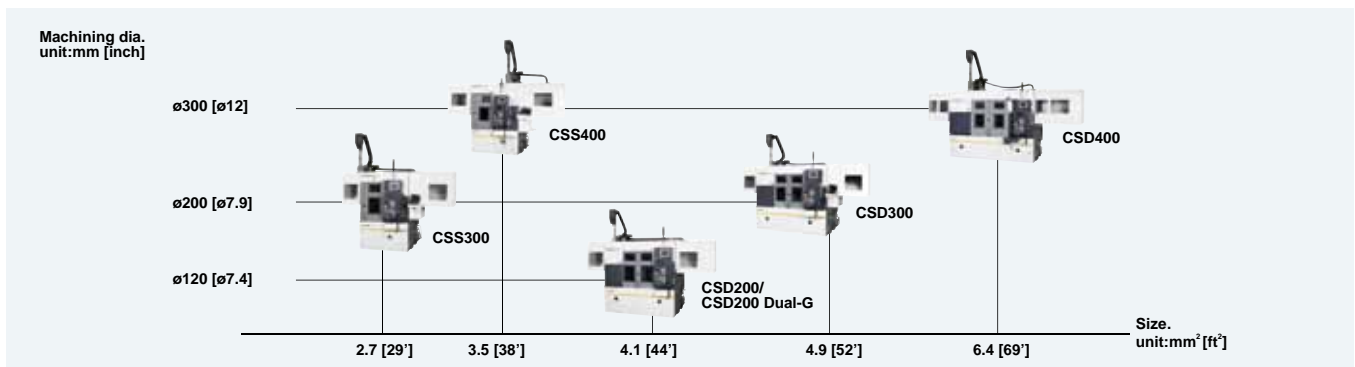
This single unit performs three tasks: automatic tool compensation, tool damage detection and tool setting. An air blower is provided near the sensor to prevent inaccuracies due to trapped chips.

Work Pusher



Work pusher device can be installed on the turret to push the part into the chuck utilizing z axis on the turret slide. This ensures that the work piece is up against the locates. When used in conjunction with air confirmation a stable process is achieved.

CS series Line up



Specification for CS series

Machine Specification

		CSD200 / CSD200 Dual-G	CSD300 / CSS300	CSD400 / CSS400
Recommended work size	mm [inch]	ø120 x 60 [ø4.7 x 2.4]	ø200 x 100 [ø7.9 x 3.9]	ø300 x 150 [ø11.8 x 5.9]
Spindle dia.	mm [inch]	ø80 [3.1]	ø100 [3.9]	ø120 [4.7]
Spindle nose		A2-5	A2-6	A2-8
Spindle bore	mm [inch]	ø42 [1.7]	ø56 [2.2]	ø67 [2.6]
Spindle speed	r.p.m	Max. 4000	Max. 3630 (optional 4000)	Max. 2220
Spindle motor	kw [hp]	7.5/11 [10 / 15]	7.5 / 11 [10 / 15] 11 / 15 [15 / 20]	15 / 18.5 [20 / 25]
Number of tool station		8+8	10+10 / 10	12+12 / 12
Turret index time	sec	0.26	0.25	0.41
Turret mechanism		Cam	Cam	Cam
Chuck size	inch	6~8	8~10	10~12
CNC control		FANUC Oi-TD	FANUC Oi-TD	FANUC Oi-TD
Slide stroke	X-axis mm [inch]	120 [4.7]	140 [5.5]	195 [7.7]
	Z-axis mm [inch]	150 [5.9]	200 [7.9]	315 [12.4]
Feed motor	X-axis kw [hp]	1.2 [1.6]	1.2 [1.6]	1.8 [2.4]
	Z-axis kw [hp]	1.2 [1.6]	1.2 [1.6]	1.8 [2.4]

Robot Specification

	LX-30S	LX-30H	LX-30B
Carrying capacity	3+3 [6.6+6.6]	5+5 [11+11]	15+15 [33+33]
Robot controller	MAX SP1	MAX SP1	MAX SP1

Machine Size

Footprint	mm X mm [feet, inch X feet, inch]	1900 x 2150 [6'3"x7'6.5"]	2260 x 2150 [7'5" x 7'0.6"]	1260 x 2150 [4'1.7"x7'0.6"]	2720 x 2360 [8'11.2"x7'9"]	1490 x 2360 [4'10.8"x7'0.6"]
Machine height [with Robot]	mm [feet, inch]	3045 [9'12"]	3240 [10'7.6"]	3715 [12'2.4"]		
Machine weight [with Robot]	kg [lb.]	4500 [17600]	5500 [12125]	3500 [7716]	7500 [16534]	4500 [17600]

Specifications are subject to change without notice.