![FUJI innovative spirit]

CSD 300Ⅱ / CSS 300Ⅱ

CSD 300**II** / CSS 300**II**

Front Facing 2 Parallel Spindle, 2 Turret CNC Lathe with Built in FUJI Gantry Robot.
Front Facing Modular machine with 1 Spindle, 1 Turret and Built in Fuji Gantry Robot.

CSII series feature Fuji's strengths in turning and automation
The combination of high rigidity and speed significantly improves productivity

CSD 300 II / CSS 300 II
CNC Lathe

## High rigidity slides assist in stable quality

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 CS II utilizes box way construction in both x and z axis. Ball screw rigidity has been improved by incorporating a 3 x 3 row x axis support bearing.
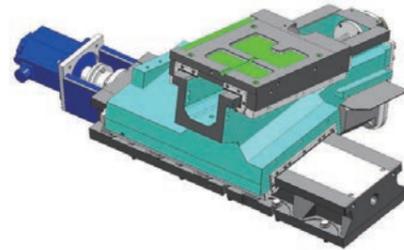

Zero-center Type Headstock

The zero-center type headstock has a thermally symmetrical design, which keeps thermal displacement to the absolute minimum. The air purge mechanism of the headstock completely protects the headstock against cutting oil and chips. This mechanism, along with grease lubrication, assures long-term processing accuracy.
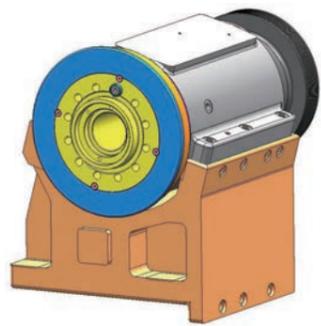
High Speed Indexing Turret

New High Speed Indexing Turret with three piece coupling and hydraulic clamping system for heavy cutting without chattering.
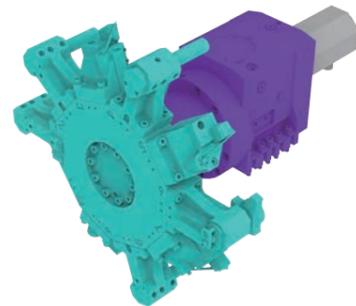
Machining ability

Max. O.D. cutting stock	**7 mm**	
Material	Cutting speed (m/min)	Feed speed (mm/rev)
S45C	150	0.3

Max. Grooving width	**10 mm**	
Material	Cutting speed (m/min)	Feed speed (mm/rev)
S45C	100	0.1

CSD 300 II R (Milling and C-axis)

Live tool specification

Max. clamping tool dia.	mm	ø16
Number of station	position	10
Spindle speed	min-1	MAX.4000
Spindle motor	kw	2.7

Performance (Drill / Tapping)

|	Dril	Tapping
Max. Cut dia (ø)	mm	ø16	M12 x 1.75
Cutting speed	m/min	50	10
Spindle speed	min-1	1000	265
Cutting feed	mm/rev	0.21	1.75

Excellent Thermal Displacement Properties

Fuji engineered bed is designed to be highly rigid while minimizing thermal displacement. In this design, both the feedback of the latest CAE analysis and the actual result are optimized.
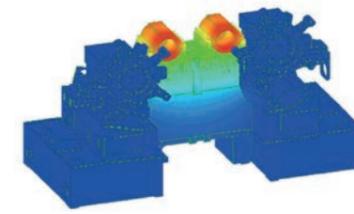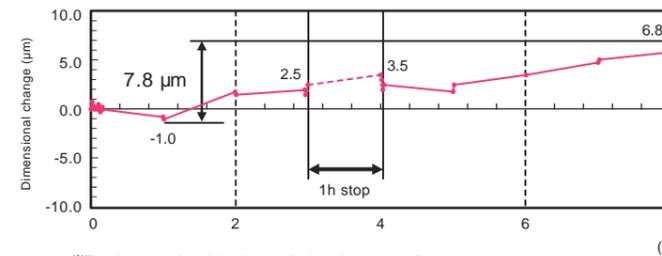

Heat analysis
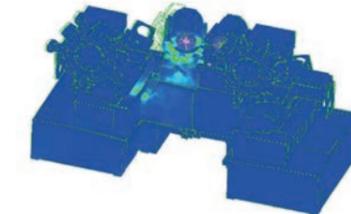
Static rigidity analysis
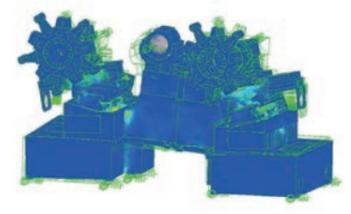
Dynamic rigidity analysis

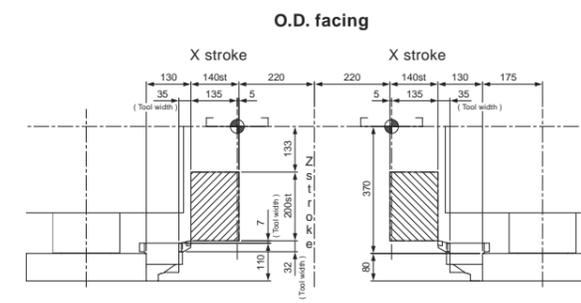7.8 µm 2.5 3.5 6.8 -1.0 1h stop
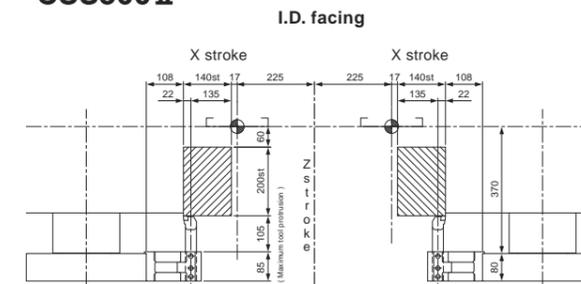
※The above-mentioned data is actual values, but not a performance guarantee.

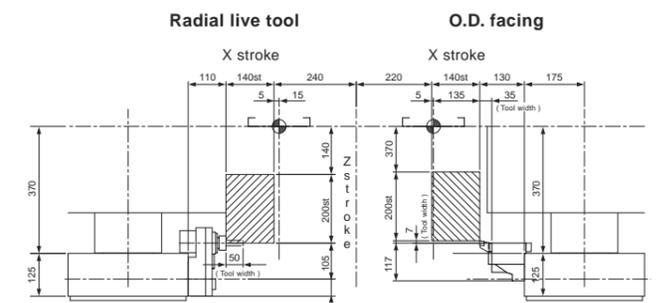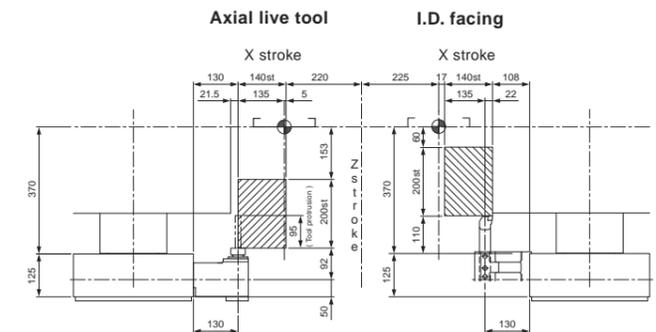| Dimensional change after 8h running	**7.8 µm**
Dimensional change after 1h stop	**1.0 µm**

Optimal Machining Space

CSD300 II / CSS300 II

I.D. facing

O.D. facing

CSD300 II R

Axial live tool / I.D. facing
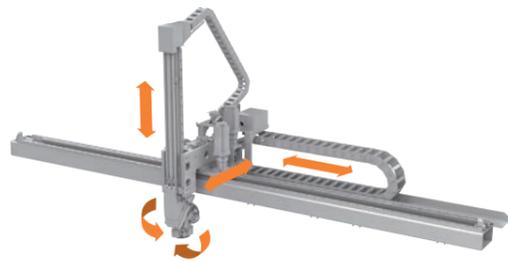

Radial live tool / O.D. facing
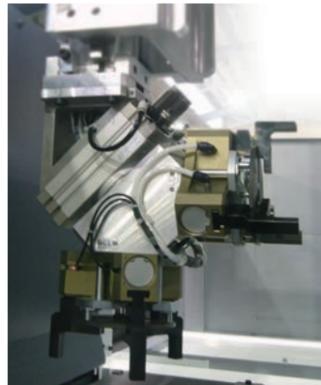
CSD 300Ⅱ / CSS 300Ⅱ
CNC Lathe

Fastest robots in their class for efficient and accurate production

High Speed 3 axis Gantry Robot (FANUC)

High speed 3 axis gantry robot reduces non productive times during the loading / unloading cycle. Controlled by the FANUC 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

		CSD300II CSD300II Dual-G CSS300II
Carrying capacity	kg	3 + 3 (5 + 5)
Max. traverse speed	m / min	175
Max. up / down speed	m / min	155
Max. front / back speed	m / min	70
Min. tact time	sec	18.7 11.0 11.0

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

Robot Chuck
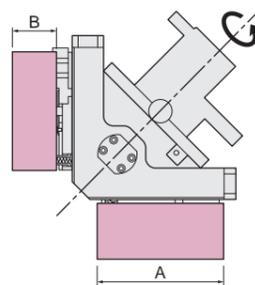
	Work size (A × B)
CSD300II	ø200 mm x 100 mm
CSS300II	

An air chuck is used and a clamp check switch is provided as standard.

Compact teach pendant

The conventional robot teach pendant and manual pulse generator are integrated into one, and the main machine and robot can be operated just by changing the screen on the pendant.
Ease of operation is further improved by the graphical user interface and compact design that fits in one hand.

Automatic point display function

It is possible to reduce the time taken to search for points in the program by searching for points that are being used from the program and displaying these points in the screen.

Robot operation setting function

Standard operation of the robots - loading from the entrance unit to the main machine, and unloading to the exit unit - can now be changed easily by selecting buttons on the operation panel.
In addition, it is also possible to support a wide range of variances, such as when setting the unloading destination when a chute is installed as optional specifications and when quality checks are performed while leaving a workpiece in the machine.
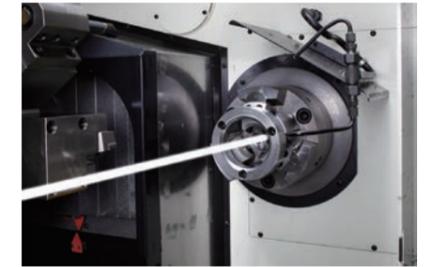
A Variety of options available to meet your needs designed to increase efficiency and productivity

Air Confirmation

Chuck
Locate Work
Work
Pressure switch
Confirmation
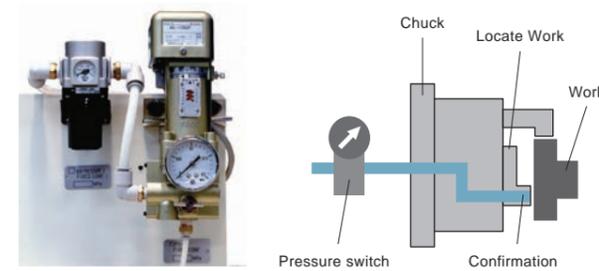
Confirms that the part is securely up against the locator. If air confirmation is not made the cutting process does not begin.

Through Spindle Coolant

Coolant can be directed through the spindle for the clearing of chips in ID turning.

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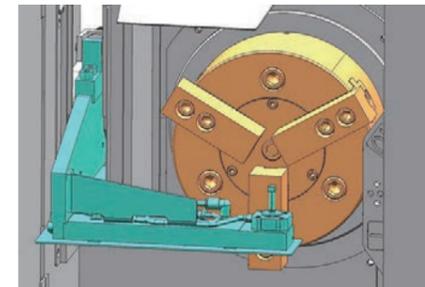
This single unit performs three tasks:automatic tool compensation, tool damage detection and tool setting. An air blow off provided near the sensor to prevent inaccuracies due to trapped chips.

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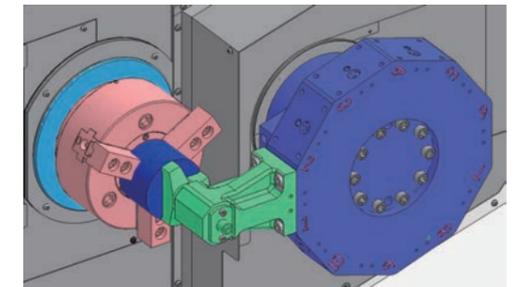
Work pusher device can be installed on the turret to push the part into the chuck utilizing z axis on the turret slide. This ensures that the work piece is up against the locator. When used in conjunction with air confirmation a stable process is achieved.

Chip Conveyor
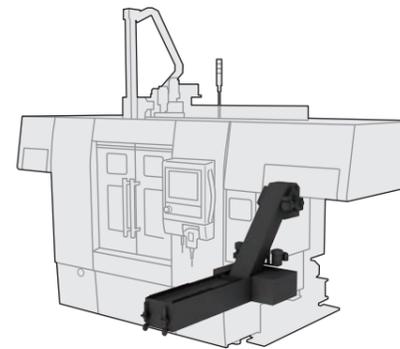
Rear discharge chip conveyor. Hinge, scraper or magnetic conveyors available.

Chip Conveyor (side exit)
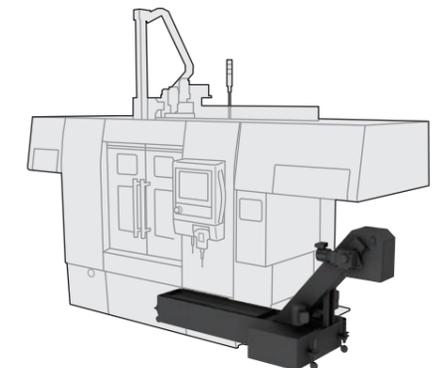
Side exit conveyor can be ordered for floor layouts where rear exit does not work.

CSD 300Ⅱ / CSS 300Ⅱ
CNC Lathe

New Control Panel and Design improves operator efficiency.
Multi language system : 7 available languages.

Advanced operability assists work efficiency

FANUC 0i-TF Plus

Enhanced productivity with version up NC.
Improved program process speeds up to 57% results in faster parts cycle times.

15 inch monitor

iHMI standard feature

Interactive programming enhances productivity and supports flexible parts production.

3D simulation

Comparison of setup work time

	NC program	Machining adjustment	Total
HMI	2	2	4
iHMI	0.25	0.5	0.75

Note: Based on Fuji's proven results

Drastically reduces the setup work time

Fuji designed operation panel and HMI that promotes ease of use for the machine operator

Intuitive and easy operation is possible from integrating lamps and buttons.

Auto operation possible lamps

The button lights up when conditions for automatic operation have been reached.
The screen for the starting conditions is displayed by pressing the illuminated button.

Jog operation

When the slide moves to origin position, the jog conditions are fulfilled and the button turns on.
The screen for jogging is displayed by pressing the illuminated.

The number of times moving to an external screen is minimized by a layout based on workability.

Gathers the conditions for automatic operation

Conditions that are not met are displayed at the top of the list, eliminating the need to search for conditions across screens.
In addition, it is easy to move to the necessary screens to meet conditions with a single button press.

Check error details

By displaying error details of the machine, robots, and peripheral devices in the same screen, users can check the location of the error at a glance without having to go back and forth between different screens.

Screen for tools

Displaying counters and wear offsets in the same screen makes it possible to input offsets while checking the count-up values during operation.

Alarm message screen

Quick recovery for the machine is supported just by the screen display without checking instruction manuals because operation navigation is guided when an error occurs.

Digital type seating screen *option

The digital type seating screen can be selected in addition to the conventional type.
Threshold values can be specified on the screen by using the digital type, and the attachment position of seating sensors can be flexible, leading to improvements in responsiveness.

SLM *option

Abnormal loads due to tool damage during machining can be detected.
It is possible to specify threshold values by referring to the maximum load and average load based on each cutting path instance displayed on the screen.

CS series Line up

Machining dia.
unit: mm [inch]

ø300 — CSS400 — CSD400
ø200 — CSS300II — CSD300II / CSD300IIR / CSD300II Dual-G
ø120 — CSD200 / CSD200 Dual-G

| 2.7 | 3.5 | 4.1 | 4.9 | 6.4 |

Size.
unit: m² [ft2]
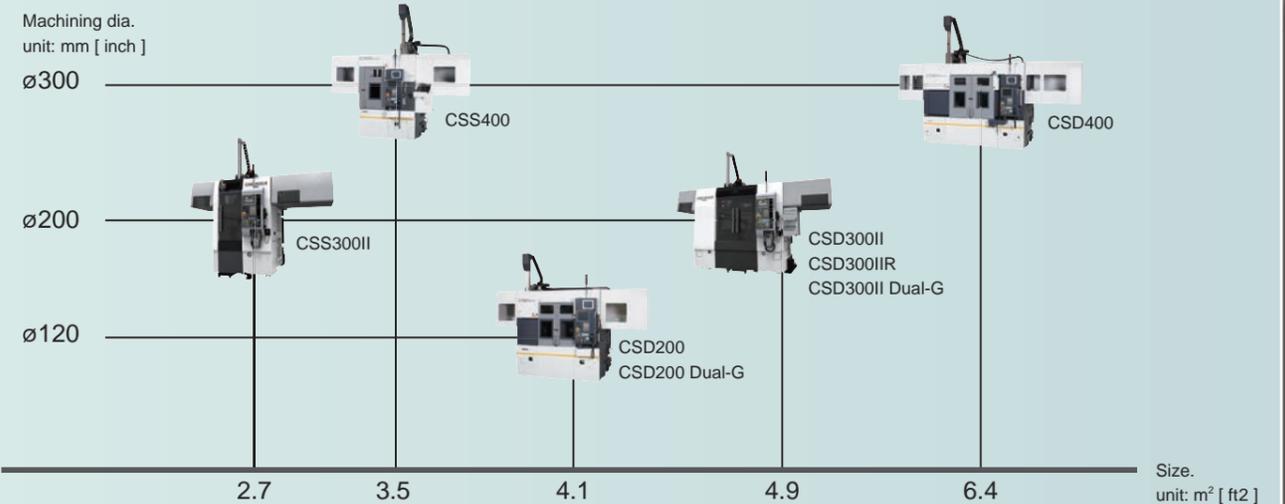
Flexible machine configuration with various optional devices.

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.

LAPSYS
IoT Solution

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.
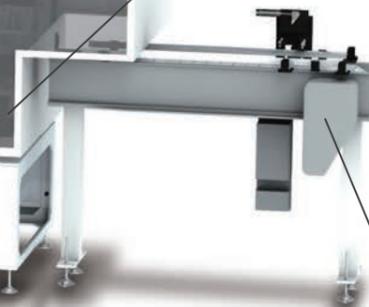
Safety Cover

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.

Work Stocker

10/12/20 pallet work stockers available.

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

Parts Turn Over / Parts Shift Device

Parts turn over device to present the parts in the correct orientation for the next process, or Parts shift device to automatically transfer parts to the next robot.

Conveyor

Transfer the work between machines in a fully automated way.

Specifications

Machine Specifications			CSD300 ll, CSD300 ll R	CSS300 ll
Maximum work size		mm [inch]	φ200 × 100 [φ7.9 × 3.9]	φ200 × 100 [φ7.9 × 3.9]
Max swing dia		mm [inch]	φ310 [φ12.2]	φ310 [φ12.2]
Spindle dia		mm [inch]	φ100 [φ3.9]	φ100 [φ3.9]
Spindle nose			A2-6	A2-6
Spindle bore		mm [inch]	φ56 [φ2.2]	φ56 [φ2.2]
Spindle speed		min^{-1}	Max. 4000	Max. 4000
Spindle motor		kw [hp]	11 / 15 [15 / 20]	11 / 15 [15 / 20]
Number of tool stations			10	10
Chuck size		inch	8 〜 10	8 〜 10
Slide stroke	X-axis	mm [inch]	140 [5.5]	140 [5.5]
	Z-axis	mm [inch]	200 [7.9]	200 [7.9]
Rapid traverse	X-axis	m / min [inch / min]	24 [945]	24 [945]
	Z-axis	m / min [inch / min]	24 [945]	24 [945]
Servo setup unit	X-axis	mm [inch]	0.001 [0.0001]	0.001 [0.0001]
	Z-axis	mm [inch]	0.001 [0.0001]	0.001 [0.0001]
Servo motor	X-axis	kw [hp]	1.2 [1.6]	1.2 [1.6]
	Z-axis	kw [hp]	1.8 [2.4]	1.8 [2.4]
Live tool specification (CSD300 ll R)	Spindle motor	kw [hp]	2.7 [3.7]	-
	Spindle speed	min^{-1}	4000	-
CNC control			FANUC 0i-TF Plus	FANUC 0i-TF Plus
Power capacity		KVA	60	40
Robot Specifications				
Robot type			LX-30H ll	LX-30H ll
Max. Carrling capacity		kg [lb.]	3 + 3 (5 + 5) [6 + 6 (11 + 11)]	3 + 3 (5 + 5) [6 + 6 (11 + 11)]
Robot controller			FANUC	FANUC
Machine Size				
Footprint		mm x mm [feet,inch x feet,inch]	2260 x 1980 [7'5" x 6'6"]	1260 x 1980 [4'2" x 6'6"]
Machine height [with Robot]		mm [feet,inch]	3250 [10'8"]	3250 [10'8"]
Machine weight [with Robot]		kg [lb.]	5500 [12100]	3000 [6614]

Machine Overview

CSD300 II , CSD300 II R

CSS300 II

(mm)

FUJI CORPORATION

202301_CS II_CA_A4_E_00