

CS20Y·CS25Y

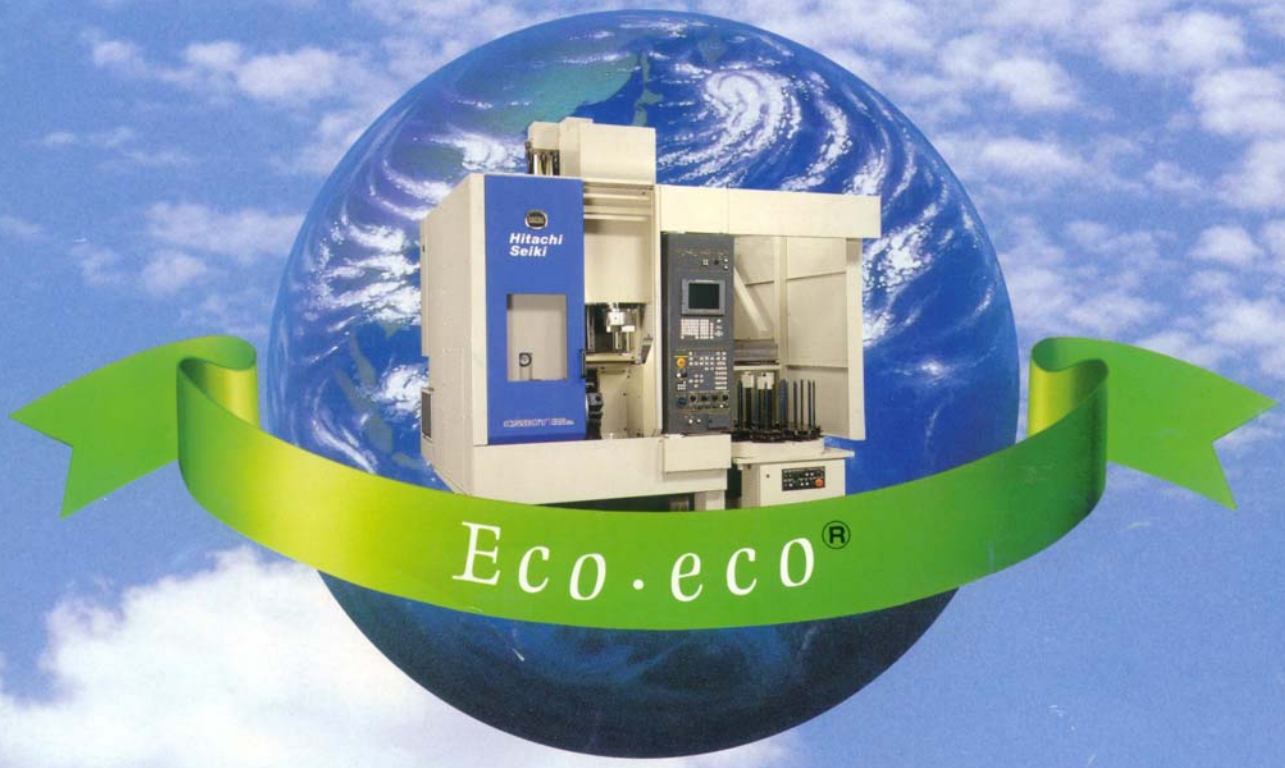
S-SERIES



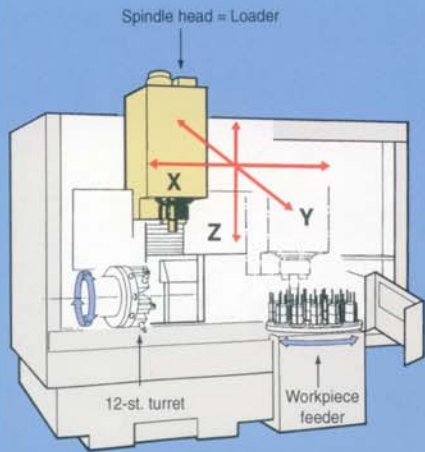
NEW

CS20Y · CS25Y

“Eco·eco[®]” Inverted Vertical Turning Cell



Excellent Achievement with a Variety of Models



Reasons for Inverted vertical turning cell



1. Quick Automation

After the workpieces are set on the feeder, an untended operation is carried out until machining of all the workpieces on the feeder are done. The spindle head facing down loads the workpiece from the feeder by itself and unloads it to the feeder after machining. It can grip and carry even heavy workpieces.

2. High Cost-Performance

Lower cost and more space saving can be attained rather than installing a robot of equivalent function. Also, no robot programs are necessary, thus shortening the setup time. The workpiece chucking by the spindle head itself eliminates rechucking of workpiece in performing transfer and machining, thus making the machining accuracy higher.

3. High Chip Disposal Capability

Chips falling by gravity are collected by steep covers and carried out of the machine with the chip conveyor, thus minimizing thermal influence on the machine accuracy.

4. Setup Saving Mechanical Software Built in

Setup saving functions such as Q-Setter, Q-Setter Repeat Function, Easy Soft Jaw Forming Function, Automatic Nose Radius Compensation, and Groove Width Compensation are built in as standard accessories to further improve the productivity.

5. User- and Environment-Friendly Technologies Reduce Running Cost

The ball screws and guideways are self lubricated and do not require lube oil systems and reservoirs. As no lube oils mix in the water soluble coolant, there is no odor and the coolant life is extended.



Rotating tools and a flexible workfeeder complete machining in one set-up

"Eco • eco[®]" Inverted
vertical turning cell

CS20Y · CS25Y



12-st VDI turret
(Standard)

Photo: CS20Y Some covers removed for visibility.

Features

1. The CS20Y/CS25Y inverted spindle CNC turning cell is a four-axis machine with X,Z,Y and C-axis. The addition of Y and C-axis permits complete machining of the workpiece.
2. 12-station VDI turret head is standard equipment. The rotating tool spindle provides 3000min⁻¹(rpm) and 3.7kW (5HP) power for drilling and end milling.
3. The traveling spindle head loads and unloads the workpiece and eliminates the need for expensive robots and grippers.

Main specifications

	Unit	CS20Y	CS25Y
● Chuck OD	mm(inch)	210(8.25)	255(10)
● Standard turning dia	mm(inch)	210(8.25)	255(10)
● Max. turning length	mm(inch)	150(6)	
● Spindle speed	min ⁻¹ (rpm)	30~5000	30~4000
● Motor for spindle	kW(HP)	11/7.5(15/10)	18.5/15(25/20)
● Rotating tool speed	min ⁻¹ (rpm)	100~3000	
● Motor for rotating tool	kW(HP)	3.7/2.2(5/3)	

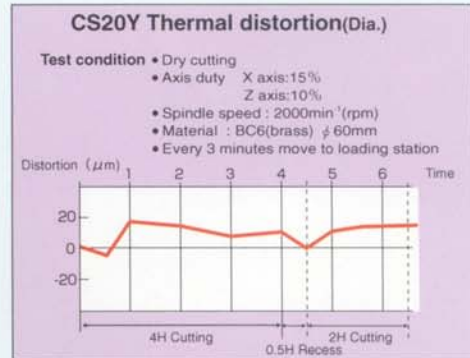
CS20Y CS25Y

High Accuracy • High Productivity

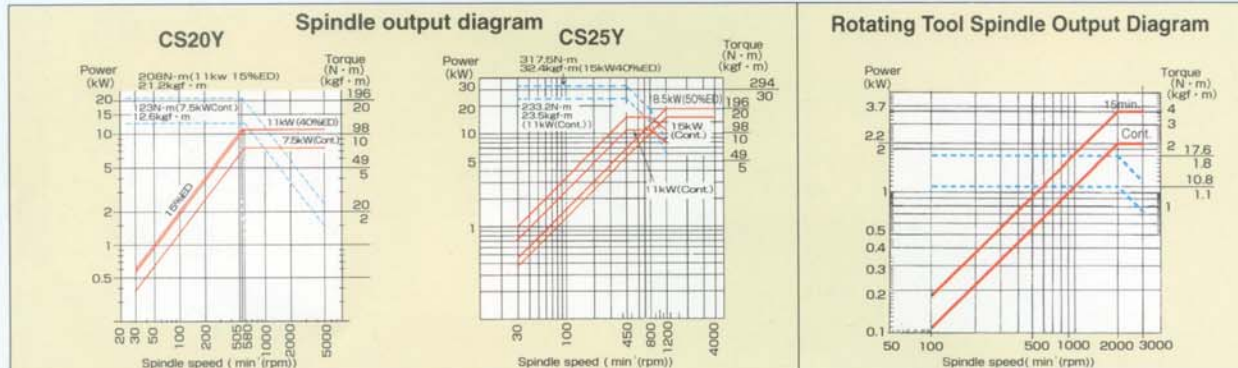
Process integration shortens the multiple-process time. Further, the workpiece turn-over station and NC chuck are added as optional variations to support customers' complex machining applications.

CS20Y Cutting capability (Material :Carbon steel)		
•OD turning	DepthxFeed	5mm(0.2")x0.5mm(0.02")/rev.
•Facing	DepthxFeed	5mm(0.2")x0.5mm(0.02")/rev.
•OD grooving	WidthxFeed	8mm(0.32")x0.1mm(0.004")/rev.
•Face grooving	WidthxFeed	8mm(0.32")x0.1mm(0.004")/rev.
•Drilling	Dia.xFeed	32mm(1.25")x0.25mm(0.01")/rev.
•Rotating Drill(Z)	Dia.xFeed	12mm(0.47")x0.3mm(0.012")/rev.
•Rotating Endmill(X)	Dia.xDepthxFeed	12mm(0.47")x10mm(0.4")x0.075mm(0.003")/rev.
•Rotating Tap	Dia.xpitch	M10x1.5mm(3/8"-24)

*Data from actual results of Seiki Standard Test.



*Accuracy data are the actual results obtained under static testing conditions in a temperature controlled environment per JIS-Standard.



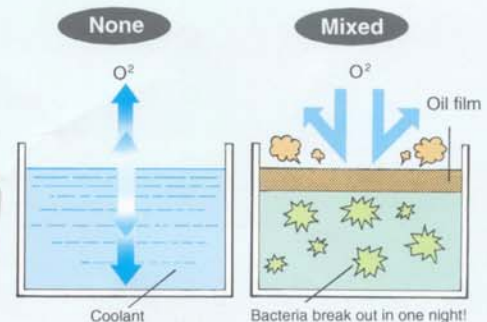
No Lubricant Necessary

Linear guide with built-in Eco Pack



Ball screws and guideways employing a self-lubricating function "Eco-Pack" do not need lubricant supply.

Mixing of lubricant into coolant



As no lubricant mixes in the coolant, the coolant is free from decomposition and odor, and its life is extended.

<Economy effect>

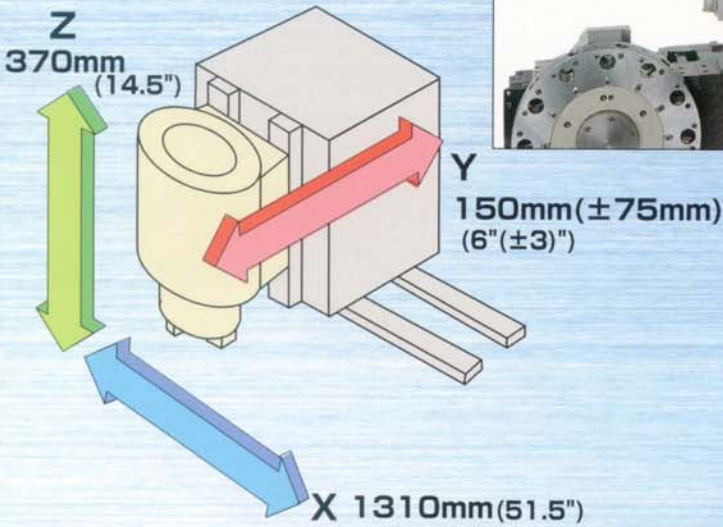
The costs for lubricant, coolant, coolant change, and waste coolant disposal are reduced remarkably.

<Ecology effect>

Wastes are substantially reduced, as well as energy saving.

Easy Programming Owing to Orthogonal 3-Axis Structure

The X, Y, and Z axes are positioned at 90 degrees to each other axis. Programs can be created in the same manner as that of machining centers. Each axis can be programmed independently, it is not necessary to program 2 axis to achieve Y axis capability.



Spindle head

Workpiece Turn-Over Station (optional)

Installing a workpiece turn-over station in the machine enables a 1st. and 2nd. operation combined machining. Unmanned machining can be carried out in all the workpieces on the feeder.



NC Chuck (optional) <PAT. pending>

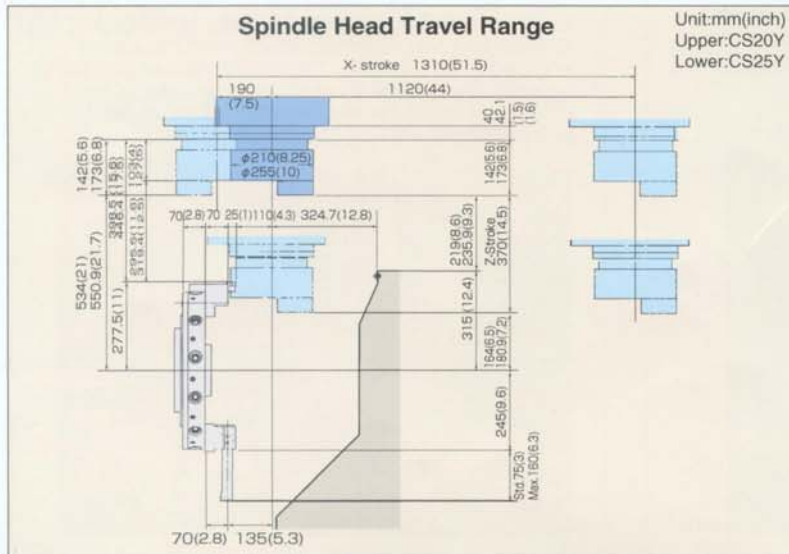
A gradual and uniform chucking force attained through unique technologies. This feature remarkably reduces the distortion when chucking thin walled workpieces. With this process, roundness variations of thin walled workpieces, is reduced by 1/3 to 1/4 compared to hydraulic chucks. The chucking diameters, jaw opening stroke, and speed can also be easily set on the NC chuck setting screen.



Machine specifications

Items		Unit	CS20Y	CS25Y	
Capacity	Swing	mm(inch)	400(15.7)		
	Chuck OD	mm(inch)	210(8.25)	255(10)	
	Standard machining dia.	mm(inch)	210(8.25)	255(10)	
	Max.machining length	mm(inch)	150(6)		
Spindle	Spindle speed	min ⁻¹ (rpm)	30~5000	30~4000	
	Speed ranges		Stepless		
	Spindle nose		A2-6	A2-8	
	Spindle through hole dia.	mm(inch)	59(2.3)	78(3.1)	
	Main bearing ID	mm(inch)	100(4)	130(5.1)	
Rotating spindle	Spindle speed	min ⁻¹ (rpm)	100~3000		
Turret head	Type of turret head		12-st. VDI Rotary tool turret		
	Travel	X-axis	mm(inch)	1310(51.5)	
		Y-axis	mm(inch)	150 (±75) (6±3)	
		Z-axis	mm(inch)	370(14.5)	
		C-axis		Rotating	
	Rapid traverse	X/Z-axis	m(inch)/min	30(1181)	
		Y-axis	m(inch)/min	15(591)	
		C-axis	min ⁻¹ (rpm)	500	
	Cutting feedrate	X/Y/Z-axis	mm(inch)/rev.	0.001~1000(0.0001~40)	
		C-axis	min ⁻¹ (rpm)	5.6	
	Jog feedrate		mm(inch)/min	0~5000(0~200)	
	No. of tools		pcs.	12	
	Turning tool dimension OD/ID		mm(inch)	□25(1) / φ32(1-1/4)	
Motors	For spindle (40%ED/Cont.)		kW(HP)	11 / 7.5(15/10)	18.5 / 15(25/20)
	For rotating spindle(15min/Cont.)		kW(HP)	3.7/2.2(5/3)	
	For servo	X·Y-axis	kW(HP)	2.8(3.8)	
		Z-axis	kW(HP)	3.8(5)	
	Hydraulic pump motor		kW(HP)	0.4(0.5)	
	Coolant pump motor		kW(HP)	1.1(1.5)	
Power sources	Electric power supply		kVA	23	26
	Air pressure		MPa(PSI)	0.5(70)	
	Air flow rate		Nℓ (gal ³)/min	150(40)	
Machine weight			kg (ℓ bs)	5300(11700)	5500(12100)

*Specifications are subject to change for improvement without notice.
 *Accuracy and cutting data may vary depending on machining condition, tools, material, and room temperature.
 These are not guaranteed numbers.



Standard accessories

- C-axis control
- Disc brake device for C-axis
- Hydraulic long stroke solid chuck
- Soft jaw
- Spindle positioning device 2 position
- Q-setter
- Chuck side air blow device
- Jet coolant
- Turret side/chip wash
- Operator side door interlock
- Chuck op. by M-code
- Chuck open /close confirmation
- Spindle speed meter on screen
- Spindle load meter on screen
- Separate type rotating tool sp. load meter
- Spindle /feedrate override
- Call light
- Electric leakage detection breaker
- Machining completion pre-call
 Work counter/ Run hour display on screen
- Work light
- Leveling block
- Spanners and wrenches

Feeder package

- Package A Small lot
 Simple type stocker φ150mm(6")x8P
- Package B Middle lot
 Lift-up feeder φ150mm(6")x8P
- Package C Heavy and complicated spec.
 Rotary feeder φ200mm(8")x14P

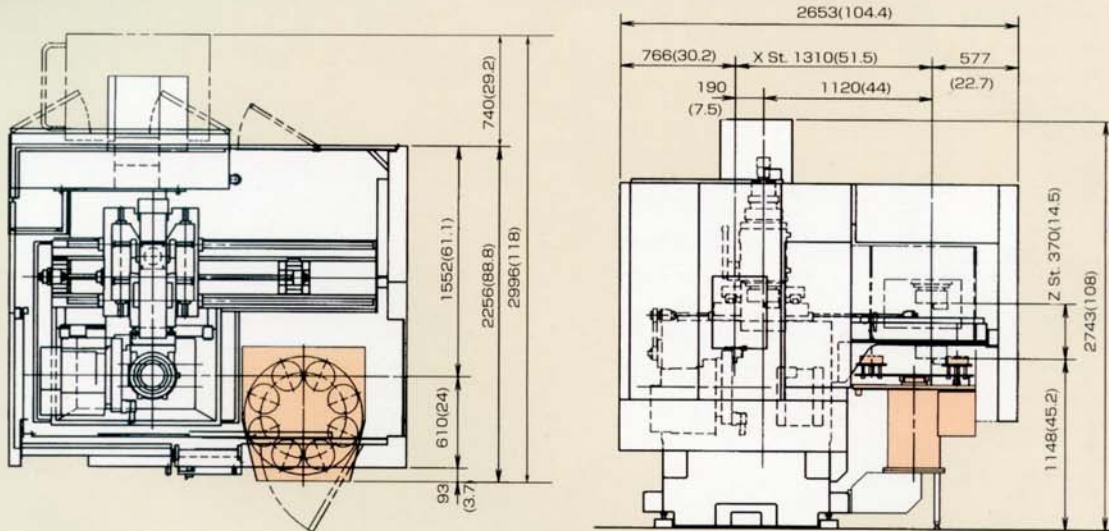
Optional accessories

- X-axis scale feedback
- Gang tool platen
- Chip conveyor
- Magnet plate
- Chip conveyor w/intermittent feed
- Chip wagon w/roller
- Inside sp. air blow device
- Gun coolant
- Chuck side , coolant/air switchable
- Spindle through coolant
- Inside spindle coolant/air switchable
- Coolant/air switchable from turret
- NC chuck(CS25Y)
- Additional jaws for standard chuck
- High /low 2-step pressure chucking
 for hydraulic chuck
- Workpiece fit confirmation device
- Work pusher
- Work feeder
- Separate type spindle speed meter
- Separate type rotating tool spindle speed meter
- Separate type spindle load meter
- Rotate tool spindle override
- Separate type counter
- Separate type run hour meter
- Weekly timer
- Additional call light
- Call light and buzzer
- Automatic power cut-off device
- Separate start/stop/emergency button
- Separated start/stop button
- Seiki DON FD
- Auto presetter
- Workpiece measuring device
- Transformer

External dimensions

Package A <Simple type stocker>

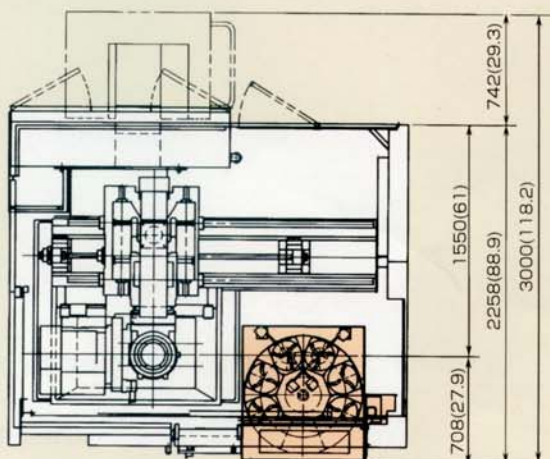
It is a package of 8 pcs workpiece storage. **Basic spec.** ● Simple type stocker ϕ 150mm(6") x 8P ● Max. work length 150mm(6")
 ● Max. work dia. ϕ 150mm(6") ● Max. work weight 20kg(44 lbs)



Package B <Lift-up feeder type>

Lager capacity, part storage, in a small space.

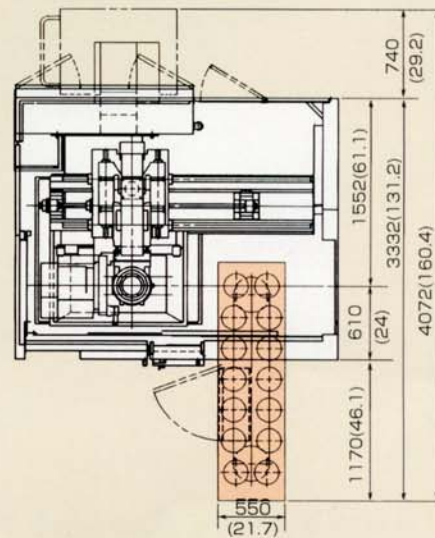
- Basic spec.**
- Lift-up feeder ϕ 150mm(6") x 8P
 - Max. work length 150mm(6")
 - Max. work dia. ϕ 150mm(6")
 - Max. work weight 20kg(44 lbs)
 - Max. loading height 300mm(12")
 - Lift-up position 2 places
 - Pallet 8 (14/20/26) pallets



Package C <Rotary feeder type>

This package for parts you cannot handle with current robot, and / or heavier weight and / or unpalleted workpieces.

- Basic spec.**
- Rotary feeder ϕ 200mm(8")x14P
 - Max. work length 150mm(6")
 - Max. work dia. ϕ 200mm(8")
 - Max. work weight 20kg(44 lbs)
 - Pallet 14 (20/26) pallets



★**Optional type** Customer's requirements are acceptable. Also, for the feeder prepared by the customer, directly connectable interfaces are available. Further, a turn-over station, line conveyor, extended feeder, etc. are available.