

Horizontal CNC Lathe

TCS-II Series



Tongtai Machine & Tool Co., Ltd.

Headquarters

No.3, Luke 3rd Rd., Luzhu Dist., Kaohsiung City 82151, Taiwan

TEL : 886-7-9761588 FAX : 886-7-9761589

www.tongtai.com.tw

Taoyuan Branch	TEL : +886-3-4551399	FAX : +886-3-4559730
Taichung Branch	TEL : +886-4-23589600	FAX : +886-4-23589993
Japan Branch	TEL : +81-047-712-0835	FAX : +81-047-712-0870
Europe Branch	TEL : +31-161-454639	
Malaysia Branch	TEL : +603-78597113	FAX : +603-78597115
Vietnam Branch	TEL : +84-24-62766090	
Thailand Branch	TEL : +66-2-3164708-10	FAX : +66-2-3164711
Indonesia Office	TEL : +62-21-45850875	FAX : +62-21-45850876

Members of TTGroup

Honor Seiki Co., Ltd.

TEL : 886-7-9759888

FAX : 886-7-9759999

www.honorseiki.com.tw

Asia Pacific Elite Corp.

TEL : 886-4-23589313

FAX : 886-4-23588913

www.apecnc.com

Quick-Tech Machinery Co., Ltd.

TEL : 886-6-3841155

FAX : 886-6-3841177

www.quicktech.com.tw

PCI-SCHEM

TEL : 33-4-77426161

FAX : 33-4-77426023

www.pci.fr

ANGER Machining GmbH

TEL : 43-7229-71041-0

FAX : 43-7229-71041-199

www.anger-machining.com

MEMBER OF
TTGROUP

China Operation Center

Shuzhou Tong-yu Machine & Tool Co., Ltd.

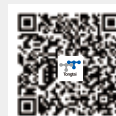
No.555 Huahong Rd., Economic Development Zone of Wujiang,
Suzhou City, Jiangsu Province, China

TEL : 86-512-63430168 FAX : 86-512-63431622

E-mail : sales@tong-yu.com.cn

www.tongtai.com.tw/cn

Wuhan Branch	TEL : +86-27-84586587	
Chongqing Branch	TEL : +86-23-67865925	FAX : +86-23-67867717
Guandong Branch	TEL : +86-769-81158198	FAX : +86-769-81158108
Tianjin Branch	TEL : +86-22-24417640	FAX : +86-22-24416738
Shanghai Office	TEL : +86-21-24208138	FAX : +86-21-34073262
Shenyang Office	TEL : +86-24-24142968	FAX : +86-24-24115782



Official Website

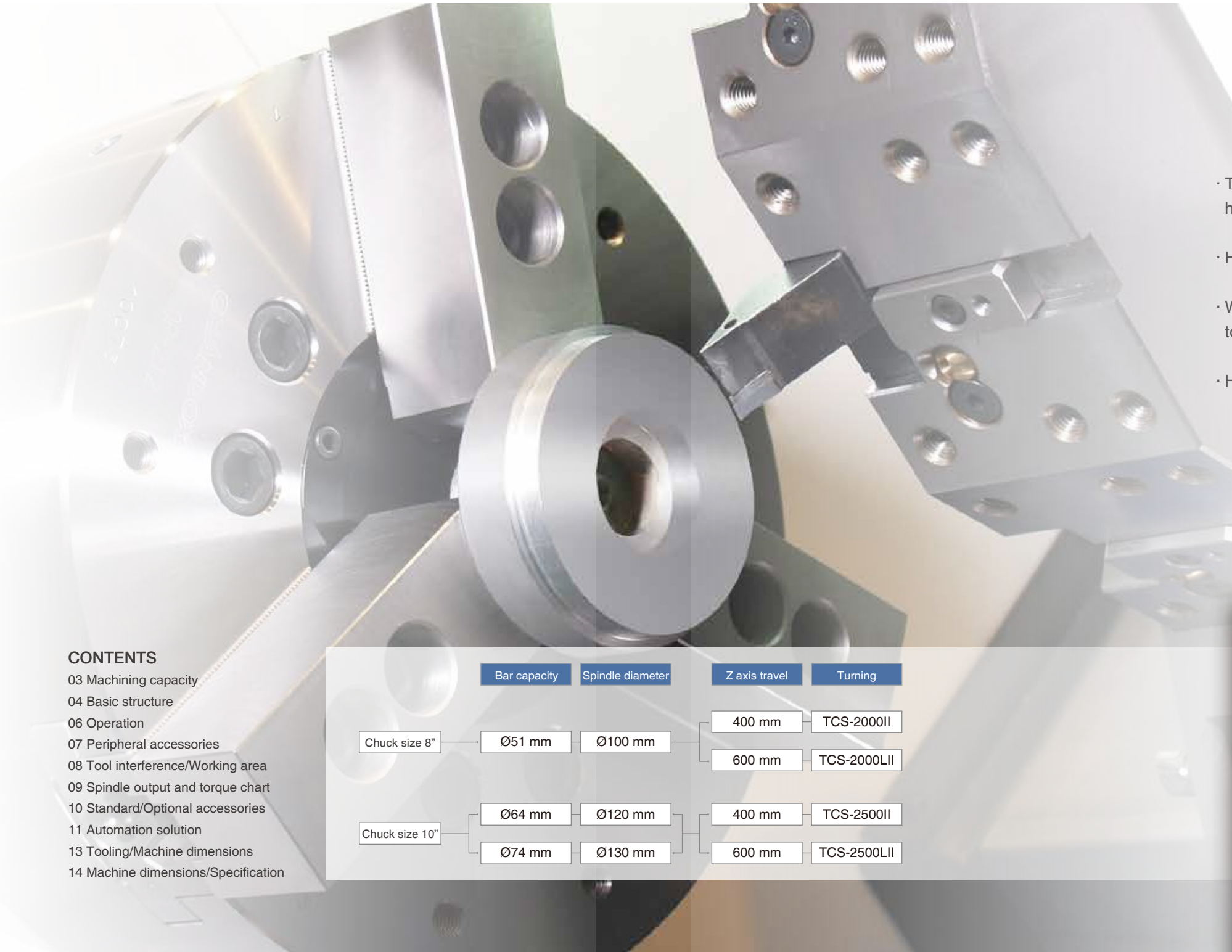


Global Network

MEMBER OF
TTGROUP

www.tongtai.com.tw

TCS-II Series



- The machine structure is optimized by Finite element analysis, ensuring high dynamic rigidity and stability.
- Highly efficient turning ability.
- With the servo driven turret, it saves time in tool changing and also benefits to the idle time.
- Highly performance/cost ratio.



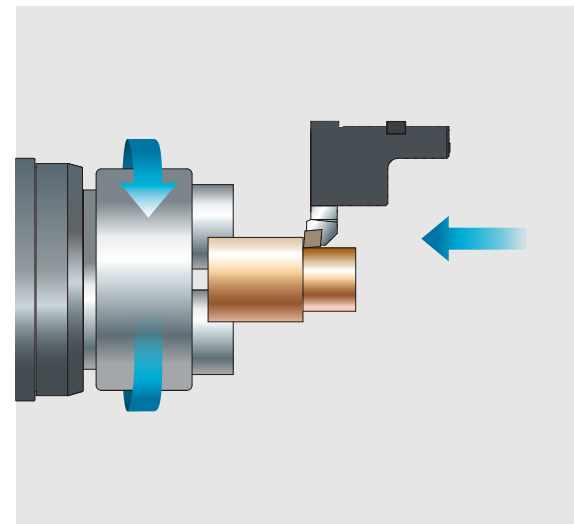
CONTENTS

- 03 Machining capacity
- 04 Basic structure
- 06 Operation
- 07 Peripheral accessories
- 08 Tool interference/Working area
- 09 Spindle output and torque chart
- 10 Standard/Optional accessories
- 11 Automation solution
- 13 Tooling/Machine dimensions
- 14 Machine dimensions/Specification

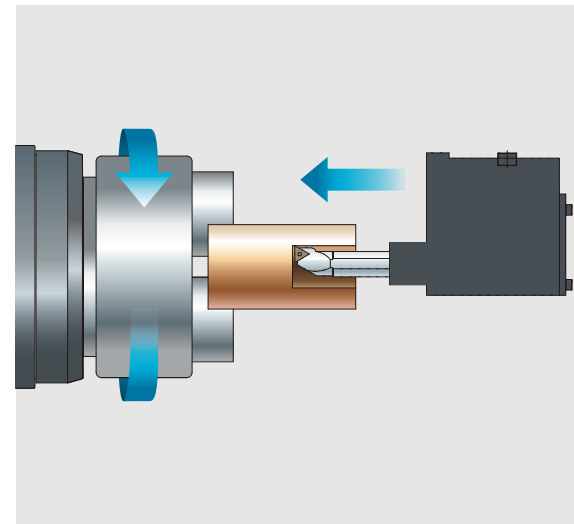
Bar capacity		Spindle diameter	Z axis travel	Turning
Chuck size 8"	Ø51 mm	Ø100 mm	400 mm	TCS-2000II
			600 mm	TCS-2000LII
Chuck size 10"	Ø64 mm	Ø120 mm	400 mm	TCS-2500II
			600 mm	TCS-2500LII

Machining capacity

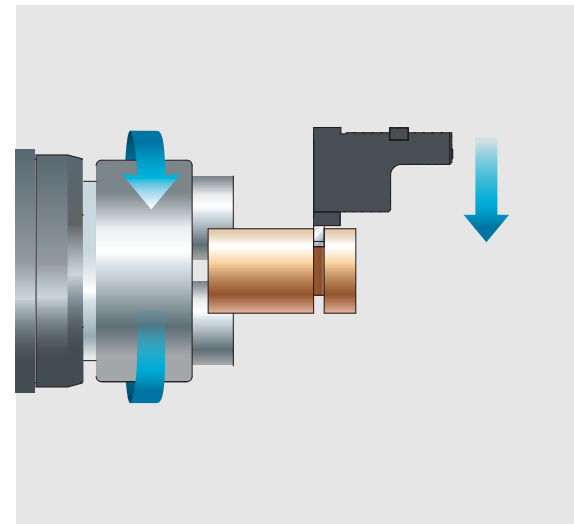
Turning Material : S45C



O.D. turning	
Material removal rate	330 cm ³ /min
Cutting depth	5 mm
Spindle speed	763 rpm
Feedrate	0.5 mm/rev
Cutting speed	120 m/min



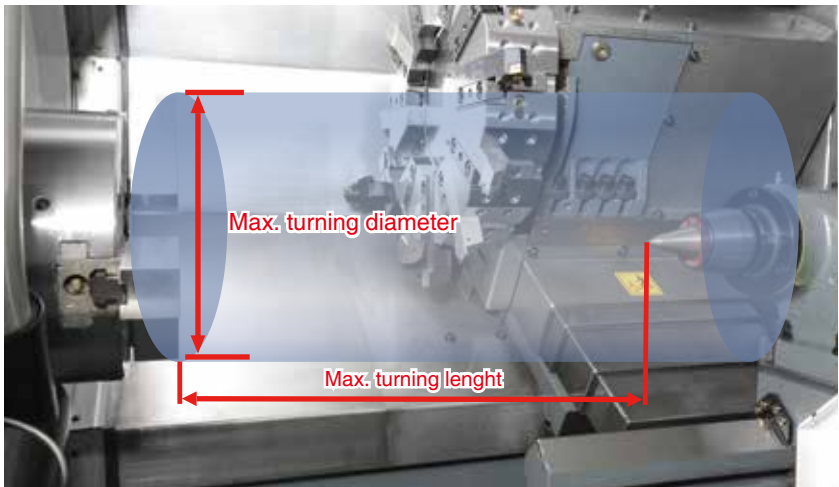
I.D. turning	
Material removal rate	270 cm ³ /min
Cutting depth	5 mm
Spindle speed	637 rpm
Feedrate	0.5 mm/rev
Cutting speed	120 m/min



Grooving	
Cutting width	8 mm
Spindle speed	637 rpm
Feedrate	0.1 mm/rev
Cutting speed	120 m/min

Basic structure

Working area



Model	TCS-II			
	2000	2000L	2500	2500L
Max. swing diameter	520			
Max. swing diameter over saddle	320			
Max. turning diameter	300 (12V) 330 (8V)		300 (12V) 330 (8V)	
Max. turning length	400	600	400	600

Unit : mm

Turret

Servo turret

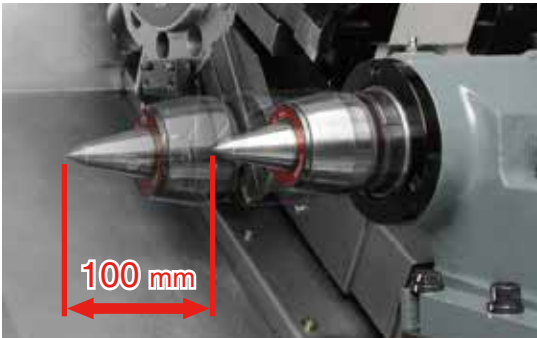


	Servo turret
Stations	12/8(Opt.)
Indexing time(adjacent tool)	0.2 sec
Indexing time(opposed tool)	0.6 sec

Basic structure

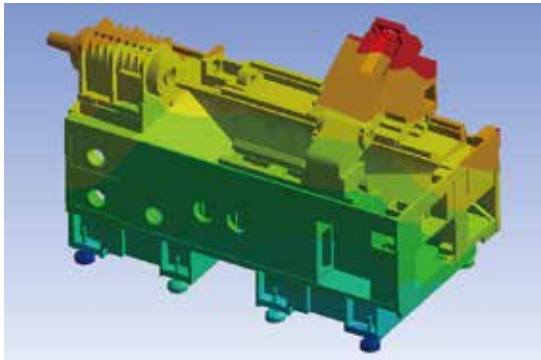
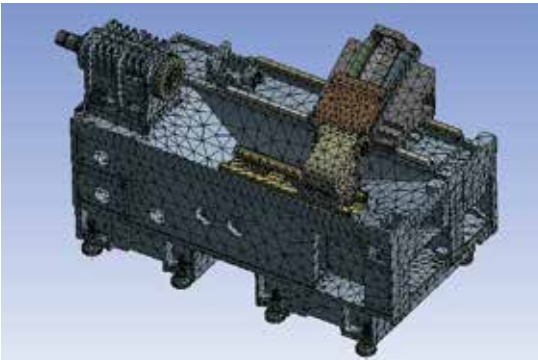
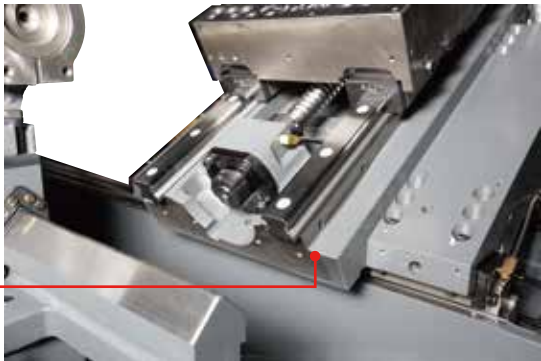
Tailstock

Manual travel	275/500(L)II mm
Quill travel	100 mm
Center taper	TCS-2000LII : MT4
	TCS-2500(L)II : MT5
Max. thrust	TCS-2000LII : 500 kgf
	TCS-2500(L)II : 700 kgf



X axis saddle

For the best structure design, the machine structure is optimized by finite element analysis for ensuring high rigidity and dynamic stability in high speed machining.



Operation

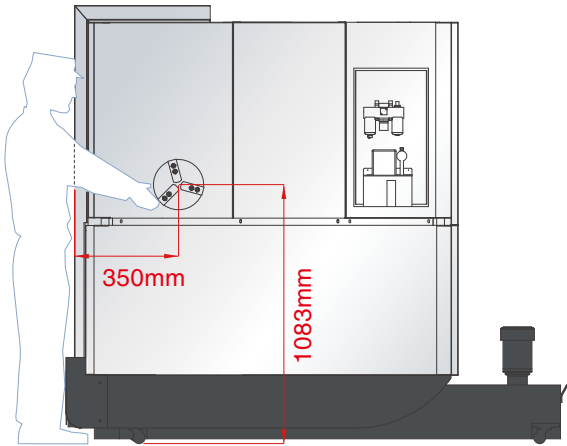
Additional storage box under operation panel

The additional storage box under operation panel offers a space to put tools, measuring gauges, and etc.



Accessibility

The access to spindle or turret is short and comfortable to operator.



Widely working area

Wide door opening makes machine operation and maintenance more convenient.



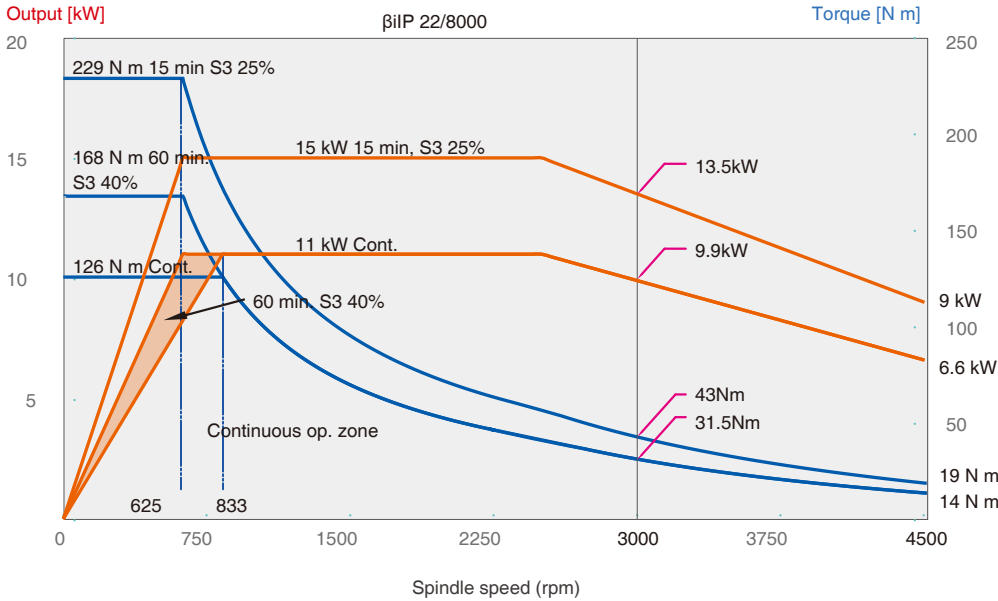
Tailstock

Wide operating space to the tailstock.

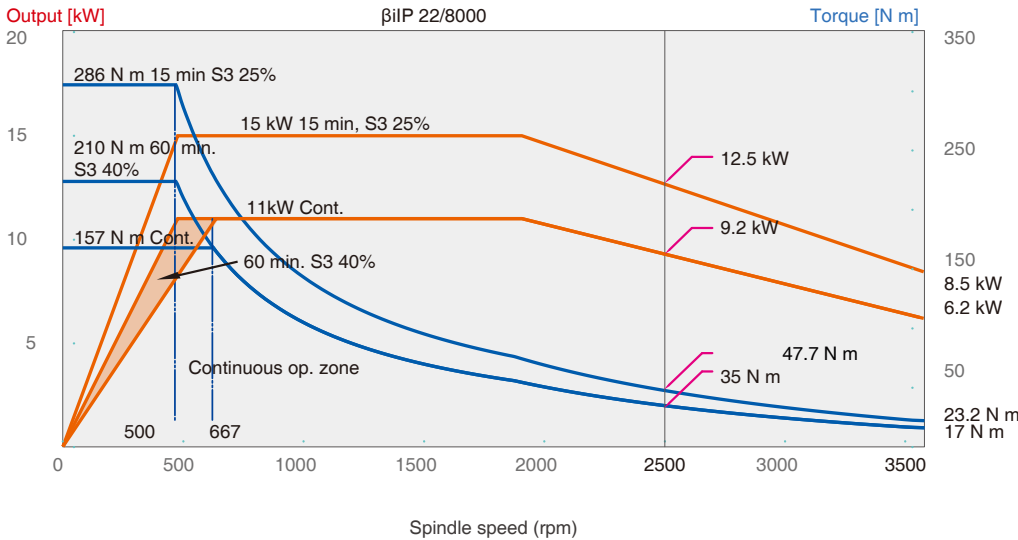


Spindle output and torque chart

TCS-2000II
Spindle bearing dia. Ø100 mm
Pulley ratio 1:1.2



TCS-2500II
Spindle bearing dia. Ø120/Ø130 mm
Pulley ratio 1:1.5



Standard/Optional accessories

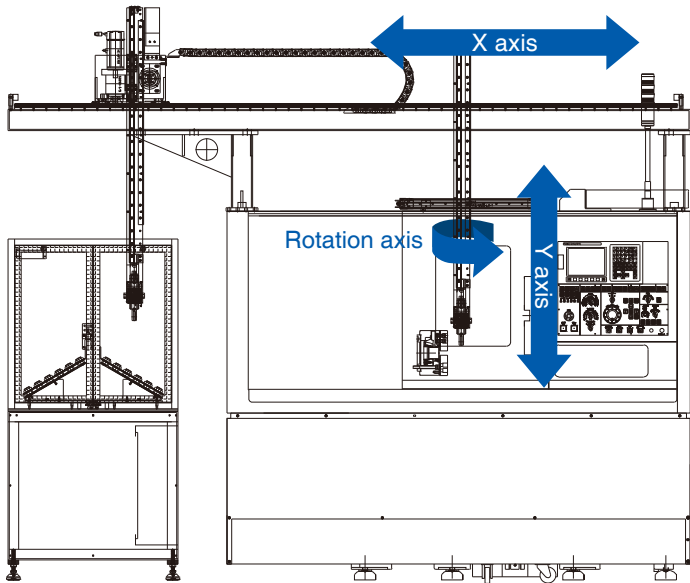
		Standard	Optional
Chuck	3 Jaws through hole chuck	●	
	Collet type through hole chuck		○
Turret	12V servo turret	●	
	8V servo turret		○
Chip conveyor	Hinge type	●	
	Scraper type		○
	Magnetic scraper type		○
Coolant & air blow	Coolant through spindle		○
	Air blow through spindle		○
	Coolant on spindle side		○
	Air blow on spindle side		○
Automation equipment	Bar feeder		○
	Part catcher		○
	Part conveyor		○
	Automatic door		○
Tool holder(Servo turret)	Face turning tool holder	2	
	I.D. tool holder	4	
	Tool adapter block	8	
	Sleeve of I.D. tool Ø8, Ø10, Ø12, Ø16, Ø20, Ø2	one each size	
	Sleeve of drilling tool MT1, MT2, MT3	one each size	
Others	Oil skimmer		○
	Oil-mist collector		○
	Air conditioner for electrical cabinet		○
	Manual tool presetter		○
	Air gun		○
	Coolant gun		○
	Chips tank		○
Tailstock	Hydraulic tailstock		○
	Quill		○

Automation solution

Solution 1 : Gantry type robot arm

The robot arm is driven by servo motor and can do three-axis motions. With the servo motor, the programmable robot arm can process rapid feeding and adjust its motion and positioning points by the workpiece shapes.

Capacity	Weight of parts	3.0kg x 2
	Max. clamping size	Ø120 x 100mm
X axis rapid traverse	160m/min	
Y axis rapid traverse	120m/min	
Rotation axis	0.5sec/90	



Workpiece turnover unit



Clamping system



Workpiece change

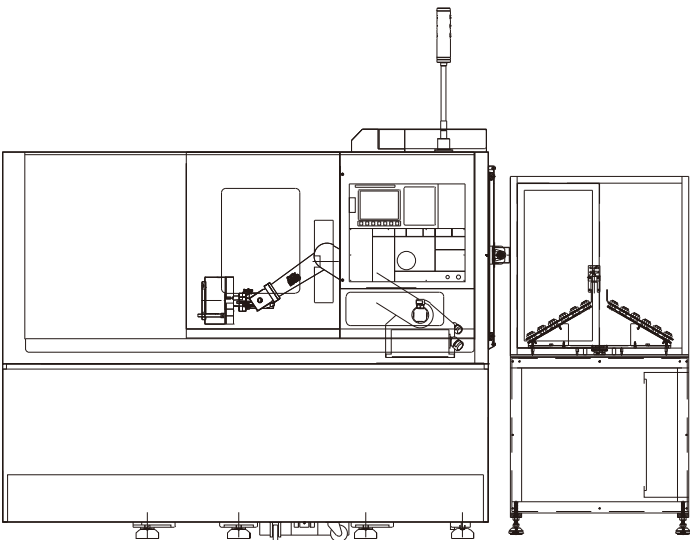


©Chucked dimeter of OP1 and OP2 must be the same.

Solution 2 : Multi-axis robot arm

- Simple structure and easy to equip, operate, maintain.
- Various choices of modular parts stockers.

Capacity	Weight of parts	3.0kg x 2
	Max. clamping size	Ø120 x 100mm
Rapid traverse of robot arm	30m/min	



Control system with dialog interface

- The alarm message will be shown when issues occur to assist trouble shooting.
- There is error proofing function to avoid incorrect operation.
- The standard is 5.7" monochrome LCD, and 6.5" color TFT-LCD is the option.



Modularized part feeder

Pallet stacking type
(Suitable to Solution 1)



Conveyor type
(Suitable to Solution 1)

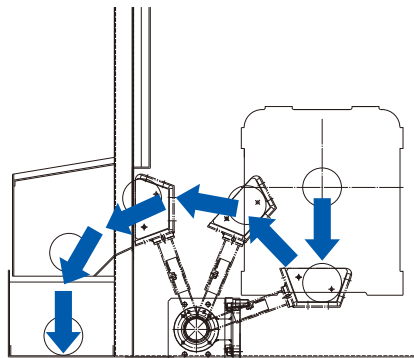
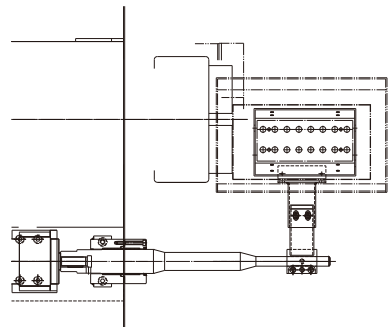


Plate type
(Suitable to Solution 1 & 2)
Slant plate type
(Suitable to Solution 2)



Solution 3 : Bar feeder

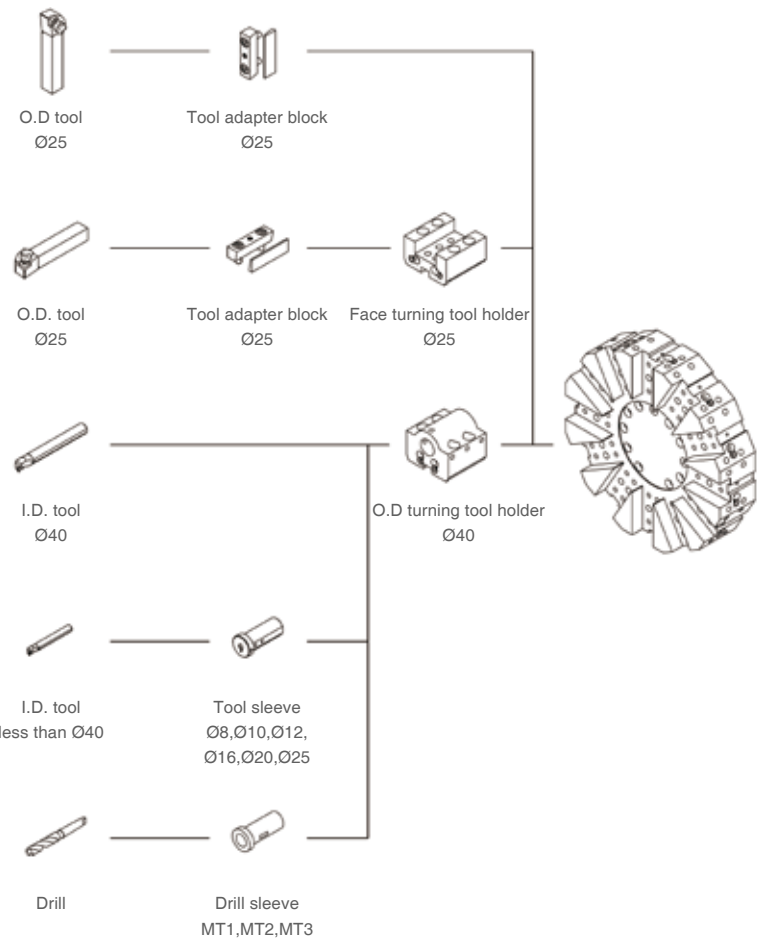
- Bar feeder can work with part catcher.The solution is simple and easy to operate, repair and maintain.
- Part conveyor is available.



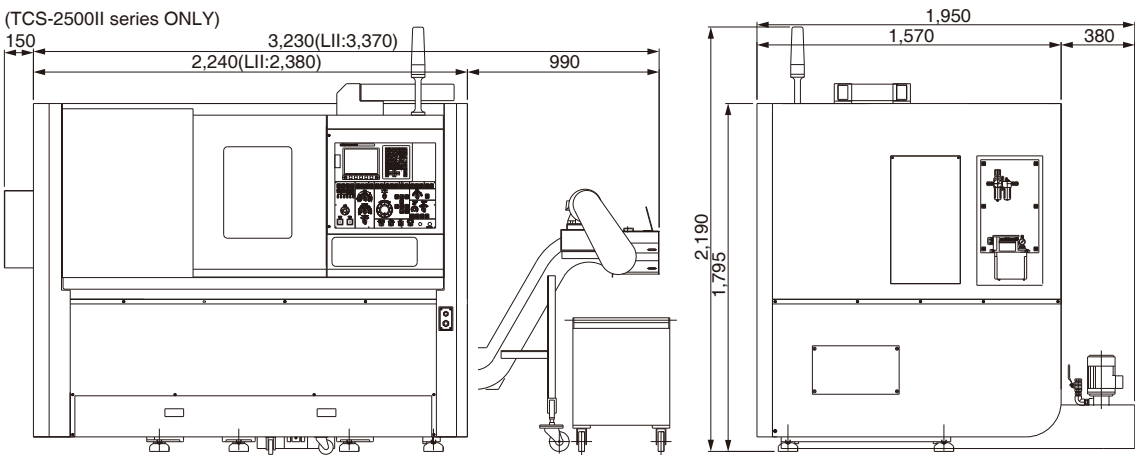
Tooling/Machine dimensions

TCS-2000(L)II、TCS-2500(L)II
Tool system (8/12 index)

Unit : mm



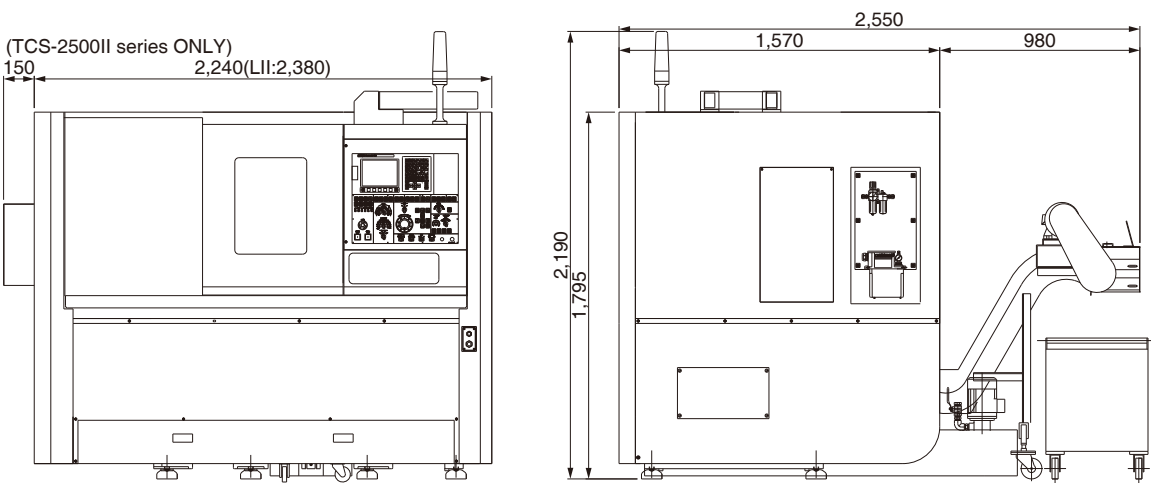
Machine with side disposal chip conveyor



Unit : mm

Machine dimensions/Specification

Machine with side disposal chip conveyor



Unit : mm

Specification

Item	Specification	Unit	TCS-2000II	TCS-2000LII	TCS-2500II	TCS-2500LII
Turning capacity	Max. swing diameter	mm	Ø520			
	Max. swing diameter over saddle	mm	Ø320			
	Max. turning diameter	mm	Ø300 (Ø320)			
	Max. turning length	mm	400	600	400	600
Spindle	Spindle nose		A2-6			
	Spindle speed	rpm	4,500 (3,000)		2,500 (3,500)	
	Chuck O.D.	inch	8"		10"	
	Through-spindle hole diameter	mm	Ø62		Ø76 (Ø86)	
	Bar capacity	mm	Ø51		Ø64 (Ø74)	
	Spindle bearing diameter	mm	Ø100		Ø120 (Ø130)	
	Min. CS axis indexing increment	deg	-			
Turret	Tool Capacity	pc	12 (8)			
	O.D. tool holder	mm	25x25			
	I.D. tool holder	mm	Ø32 (Ø40)			
		mm				
Travel	X/Z/B axis travel	mm	170/400/-	170/600/-	170/400/-	170/600/-
Feed	X/Z/B axis rapid traverse	m/min	30/30/-			
	Cutting feedrate	mm/min	0-5000			
Tailstock (Opt.)	Tailstock/Quill travel	mm	275/100	500/100	275/100	500/100
	Center taper		MT4		MT5	
	Driving system		manual			
Hydraulic unit	Hydraulic tank capacity	L	30			
	Hydraulic motor	kW	1.5			
Motor	Spindle motor	kW	15/11			
	X/Z axis servo motor	kW	1.8/1.8			
Dimension	w/o chip conveyor	mm	2,380x1,950x2,190		2,390x1,950x2,190	2,530x1,950x2,190
	With side disposal chip conveyor	mm	3,370x1,950x2,190		3,380x1,950x2,190	3,520x1,950x2,190
	With rear disposal chip conveyor	mm	2,380x2,550x2,190		2,390x2,550x2,190	2,530x2,550x2,190
	Weight	kg	3,300	3,900	3,400 (3,500)	4,000 (4,100)
Controller			Fanuc 0i-TF			

©Specifications May Be Changed Without Prior Notice