

Technical Specifications for the CNC Lathe FTC-350LMC

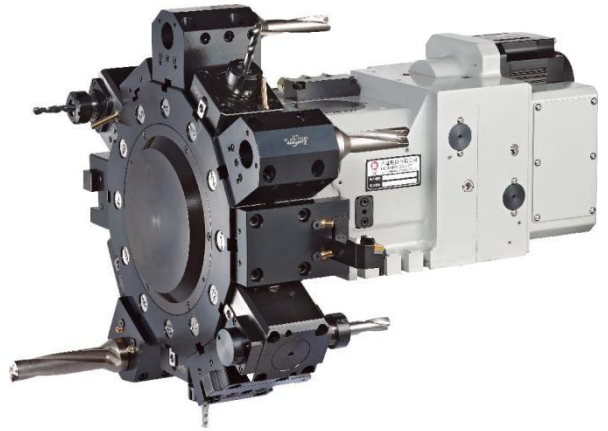


Manufacturer: Raysure Era Intelligent Technology (Shandong) Co.,
Ltd.

Number: One unit

一、 Main features of the machine tool:

1. The FTC series full-function CNC lathes represent the flagship models in the machine tool lineup, equipped with the next-generation FANUC-0I-TF (3-pack) controller and a comprehensive range of high-power α motors. Through years of production refinement, their manufacturing technology has reached remarkable maturity, delivering exceptionally stable and reliable performance alongside high efficiency and reliability.



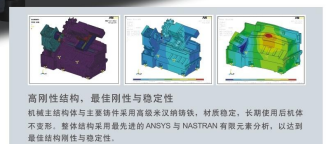
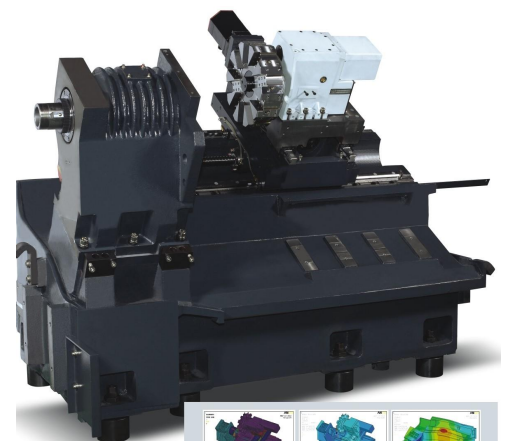
These machines are ideal for machining disc-shaped and short-shaft components from both ferrous and non-ferrous metals. Particularly suited for disc-shaped part processing, the FTC series stands out with its refined design, superior structural integrity, optimal rigidity and stability, high precision, enhanced efficiency, multifunctionality, user-friendly operation, and outstanding cost-performance ratio—all contributing to significant competitive advantages.

2. The bed base, spindle, guideways, and tool turret form the fundamental components essential for maintaining precision in CNC lathes. These structural elements are manufactured from internationally renowned Mihana cast iron, which offers excellent overall rigidity, superior machinability, and outstanding casting properties, enabling optimal structural design and ensuring the machine tool's superior precision retention and stability during high-speed machining.

The institutional design employs the PRO-E analysis framework and dynamic simulation to ensure machine tool precision and reliability.

3、 The wide-bed base and high-strength spindle, combined with THK Company's NR-type heavy-duty linear guides for the X and Z axes, form the optimal structure that ensures exceptional machine tool strength and excellent static/dynamic rigidity.

4、 The machine tool features a modular design and an inclined bed mechanism, offering a simple structure that facilitates maintenance while ensuring operational safety,



high-speed cutting accuracy, and efficient chip removal.

- 5、 Standard configuration includes a chip removal machine and chip collection bucket.
- 6、 The spindle bearings employ precision double-row roller bearings and high-speed precision tapered ball bearings, combined with a heat sink-integrated spindle head design to effectively reduce spindle temperature, ensuring optimal stability during machining and extending bearing life.
- 7、 The structural components are manufactured from internationally standardized Mhanna cast iron. The bed features a monolithic inclined design with high-rigidity integral casting (30° angle for the FTC-350L model), ensuring material stability and preventing deformation over prolonged use. The overall structure employs advanced ANSYS and NASTRAN finite element analysis to achieve optimal structural rigidity and stability.
- 8、 The FTC series X and Z-direction horizontal guides all utilize high-strength linear guides from Japan's THK Company with an accuracy grade no lower than H. These guides feature rapid movement speed, high sensitivity, excellent wear resistance, long service life, zero clearance in transmission, and low static and dynamic friction coefficients, enabling exceptional acceleration/deceleration performance and precise linear accuracy consistency. They provide a solid foundation for high-speed machining while ensuring stable, precise motion and position accuracy for machine tools, with the linear guides also eliminating crawling and overtravel issues.
- 9、 The machine tool features high precision, with a positioning accuracy of 0.01 mm and a repeatability accuracy of 0.006 mm for linear motion.
- 10、 Ultra-high-rigidity guide rail with rapid X/Z-axis feed of 30 m/min
- 11、 Equipped with a high-power spindle motor, it significantly expands the machining range. The X and Z axes utilize THK's ultra-rigid linear guides and ball screws from Japan, ensuring exceptional precision. This high-precision spindle greatly enhances machining efficiency and surface finish quality.
12. Featuring a completely redesigned tool turret with a robust cast-iron body and large contact area, it enhances rigidity and cutting efficiency while extending tool life. All components have undergone 1 million tool change cycles, achieving a tool change time of just 0.3 seconds.

Equipped with a servo-driven tool turret that delivers a positioning accuracy of 0.0025 mm.

13. The fully enclosed protection system ensures a clean and tidy working surface, complying with ISO 14001 environmental standards. Machine tool metal屑 are centrally collected using a chain-and-plate type chip collector equipped with a dedicated metal屑 collection cart.

14. The chip remover on the FTC series lathe is located on the right side of the machine tool.

15. The newly designed hydraulic system significantly reduces overall size and minimizes precision degradation caused by temperature rise in hydraulic components.

II. Main Specifications:

order number	name	Brand Performance Specifications	
1	Control System	FANUC-0i-TF plus (3)	
2	Main spindle motor	brand : FANUC	
		Power: β series 15/18.5 kW	
3	Servo shaft motor	X-axis: βiS22/3000-B (brake engagement) 3.0 kW	
		X-axis: βiS22/3000 3.0 kW	
4	Power Tower Motor	Power Tower: Alpha Series 4.5KW	
5	principal axis	Brand: FEELER mechanical spindle	
		Transmission method: Synchronous belt	
6	main shaft bearing	Brand: NSK/FAG	
		Accuracy: P5 Level	
7	Main spindle nose-end interface	Nose end: A2-6 model equipped with an 8-inch hydraulic three-jaw chuck (Taiwan Jiahe).	
8	Main shaft through hole	diameter : φ62mm	
9	Bar diameter	diameter : φ52mm	
10	Guide Rail (Line Rail)	brand	X-axis: THK (days)
			X-axis: THK (Japan)
11	Ball screws and screw bearings	Ball screw brands	THK (sun)
		Ball screw accuracy	Level C3
		Screw bearing brands	NSK/FAG
		Screw bearing model	30TAC62B
		Screw bearing accuracy	Level P4
12	DOTA	brand	Liuxin 12T (manufactured in Taiwan)
		form	Electric Knife Selection
		maximum speed	6000r/min
		Maximum diameter of	Φ16mm

		power tool	
8	Basic components of machine tools	brand	Rui Shi Ji Yuan
		Production and Processing Methods	The core components of Rui Shi Ji Yuan are OEM-made and manufactured in-house by the company, featuring a monolithic box-shaped structure. Aging treatment combines manual aging with natural aging.
10	Pneumatic, lubrication, cooling, chip removal methods	Pneumatic component brands	Japan SMC
		Lubricant Component Brand	Japan SHOWA
		cooling-down method	External spray cooling
		Debris Discharge Form	Front-side, side-chain plate-type chip removal machine
12	Hydraulic Station and Its Components	Hydraulic Station Brands	NACHI (sun)
13	Water gun, air gun	Domestic	High-quality domestic brands

Main material of the customer's products: ☒ Aluminum, copper alloy ☐ Steel ☐ Cast iron Note: Medical device components

Processing Type: ☐ General Mold ☐ High-Precision Mold ☒ Part Processing ☒

Heavy Cutting

Brand: FFG-FEELER

Number: 1 unit

Model: CNC Lathe FTC-350LMC 0ITF Plus (NEW with 3 packages)

1. Standard Specifications

1. Itinerary	X-axis travel: 175 + 2 mm Z-axis travel: 640 mm C-axis Stroke: 360°
2. Spindle	Main spindle speed: 45–4500 rpm Spindle hole taper: 1/20 Main spindle nose end JIS-A2-6 Main spindle diameter (62 mm) Main shaft bearing diameter (100 mm)
3. Feed	The X-axis moves rapidly at 30 m/min Z-axis rapid displacement: 30 m/min
4. Cutting Range	Sling rotation radius (400 mm) Bed diameter (600 mm) Maximum turning diameter (350 mm) Maximum cutting length: 610 mm Hole diameter of the bar: 52 mm
5. CNC System	FANUC 0ITF Plus (3 packages) CNC system
6. Dota	Number of tool holders: 12T BMT55 Standard outer diameter of the tool: 25 mm Inner diameter of the tool (maximum bore diameter): 40 mm Power Spindle Motor, β Series, 4.5 kW Maximum speed: 6000 r/min Maximum support diameter of the power head: $\varnothing$ 16 mm (ER25) / $\varnothing$ 20 mm (ER32)
7th mount	Turret spindle stroke: 90 mm Hydraulic oil seat taper MT#4 Oil pressure collet diameter (70 mm)
8. Jaw	Hydraulic chuck 8 (
9. Motor	Main spindle motor, β series, 15/18.5 kW X-axis servo motor, β series, 3.0 kW X-axis servo motor, β series, 3.0 kW

10. accuracy	Positioning accuracy: X/Z 0.018 mm/0.02 mm
	Repeatability accuracy: X/Z 0.012 mm/0.015 mm
11. Shield	Full Shield
12. Colors	Pattern Standard Color
13. Machine Tools	Net weight of the machine tool: 4000 kg
	Occupies an area of 4000 cm ² (1580 mm ² including the chip discharge unit).

II. Standard Configuration

NO.	specifications	quantity
1.	8-inch hydraulic through-hole collet A2-6	1
2.	12-workstation BMT55 Sixin Power Tower	1
3.	適用 to hard jaws with 8-inch collets	1
4.	適用 to soft jaws with 8-inch collets	3
5.	Electrical Box Heat Exchanger	1
6.	Chain plate-type chip separator and bucket (right side)	8
7.	Foundation adjustment screws and washers	1
8.	Tool Box	1
9.	Rear tailstock	1
10.	End face tool holder	1
11.	Outer diameter tool holder	1

Select Configuration:

1. Panel Attachment
2. Air gun + Water gun
3. One set of MT4 active tips + one set of MT4 passive tips
4. 12 specialized tool holders (4 end face holders + 4 boring hole holders + 4 external cylindrical hole holders)
5. A set of tool sleeves with diameters ranging from $\varnothing 6$ to $\varnothing 32$ mm.
6. One set of Renishaw tool detection arms
7. 1 x 0° power tool holder (ER25)
8. 1 90° power knife holder (ER25)
9. FANUC G51.2 Functions

III. Technical Documents

1. Machine Operation Manual (Rui Shi Ji Yuan) – Scan the QR Code

Machine Operation Manual (Rui Shi Ji Yuan) – Scan the QR Code

- 2.Electrical Circuit Diagram (Rui Shi Ji Yuan) – Scan the QR Code
Electrical Circuit Diagram (Rui Shi Ji Yuan) – Scan the QR Code
- 3.FANUC System Manual CD-ROM (FANUC Company) – 1 copy
FANUC System Manual CD-ROM (FANUC Company) – 1 copy
- 4.Machine Tool Precision Inspection Checklist: Scan the QR Code
Machine Tool Precision Inspection Checklist: Scan the QR Code
- 5.Machine Tool Parameters: Scan the QR Code
Machine Tool Parameters: Scan the QR Code