

SENFENG

CNC MILLING  
Product Selection Manual

Jinan Senfeng Laser Technology Co., Ltd.

No. 1777 Kejia Road, High-tech Zone, Jinan City, Shandong Province, PRC  
+86 531 88737920 +86 132 1054 6543 senfeng@sfcnclaser.com  
www.senfenglaser.com

Germany Subsidiary  
Add: Oberer Westring 33, 33142 Büren, Germany

UAE Subsidiary  
Add: Al Sajaa Industrial -Al Jlail -Sharjah -UAE

Pakistan Service Center  
Add: Dullukhur metro station 26 Ferozpur road, Lahore

USA Subsidiary  
Add: 5989 Rickenbacker Road, Commerce CA90040

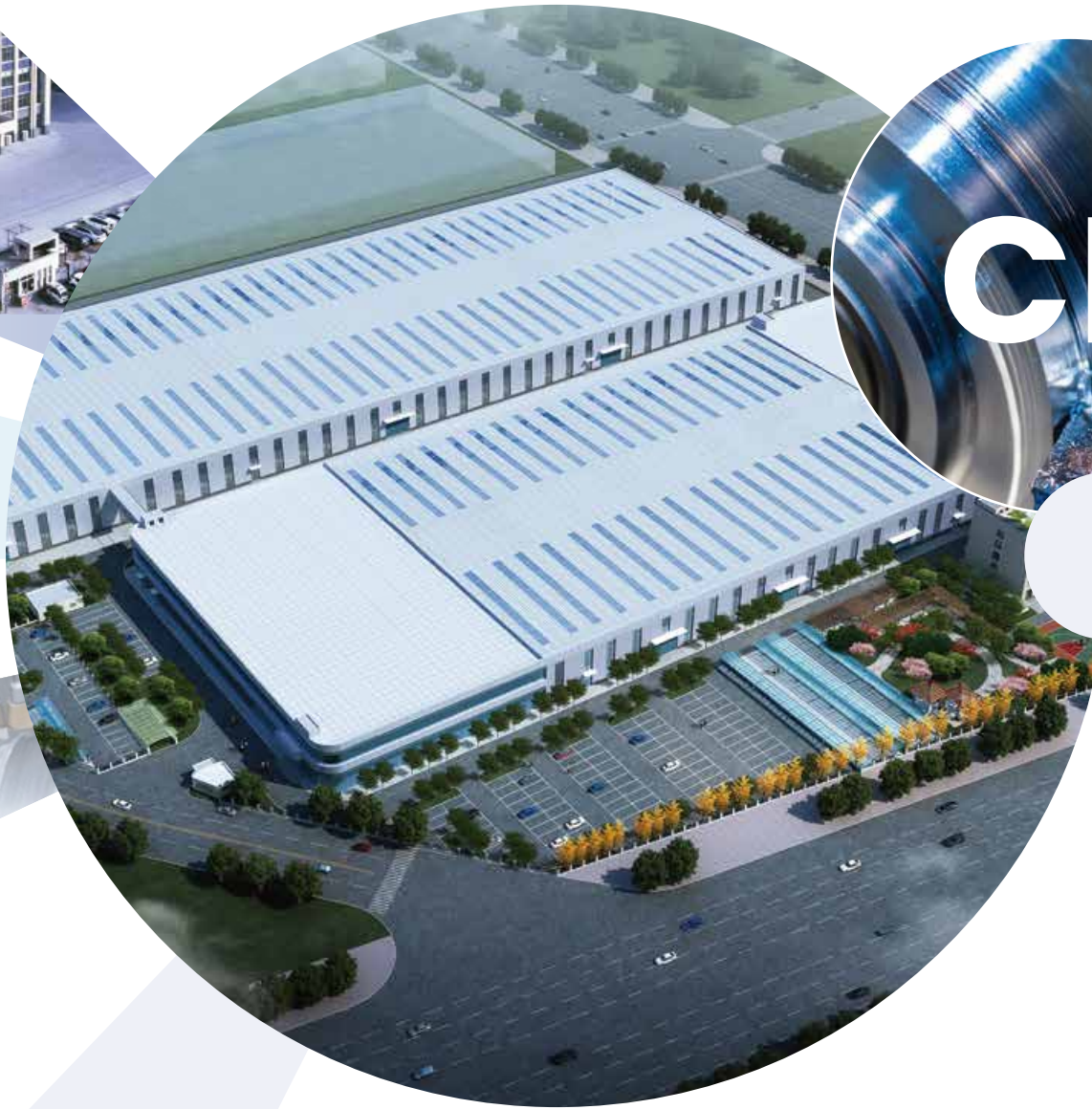
India Service Center  
Add: Plot no 4/09, survey no -519, TSIIc, ip nadergul, hyderabad

Vietnam Service Center  
Add: K13 Ngã 3 NgocHoi Xã Ngũ Hiệp Huyện Thanh Trì Hà Nội

Jordan Service Center  
Add: Amman -Sahab -Alazraq highway

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# CNC Milling Machines

## SENFENG Introduction

Senfeng is a global metal processing equipment enterprise, aiming to provide metal processing automation solutions for global users. It has mastered a number of core technologies, integrating cutting, bending, welding, cladding, automation, new energy, and CNC Milling Machines, and has become a technologically innovative enterprise in the development of the whole metal processing industry chain. Senfeng is deeply cultivating the global market and laying out the globalization strategy. At present, we has set up subsidiaries and service centers in Germany, the United States, the

United Arab Emirates, India, Pakistan, Vietnam, Jordan and other countries, and our products are sold to more than 100 countries and regions all over the world. Our products are widely used in the manufacture of precision parts and components in the fields of automotive parts, construction machinery, bridge construction templates, assembled buildings, special transformer transmission towers, coal mining and petrochemical equipment, etc. With green metal processing solutions, we meet the global manufacturing industry's demand for low-carbon and environmentally friendly development, and promote the industry's production efficiency and industrial upgrading.

HIGH PRECISION CNC ROLL LATHE  
**LYCK8463**

CNC VERTICALS WITH BOX WAYS  
**SF-V1067**

VERTICAL MACHINING CENTER SERIES  
**SF-VL855/SF-VL1160/SF-VL1160/SF-VL1370/SF-VL1580/SF-VL1690**

GANTRY MACHINING CENTER  
**SF-LM3020B/SF-LM4228**

CNC PRECISION HIGH SPEED VERTICALS  
**SF-V1067L**

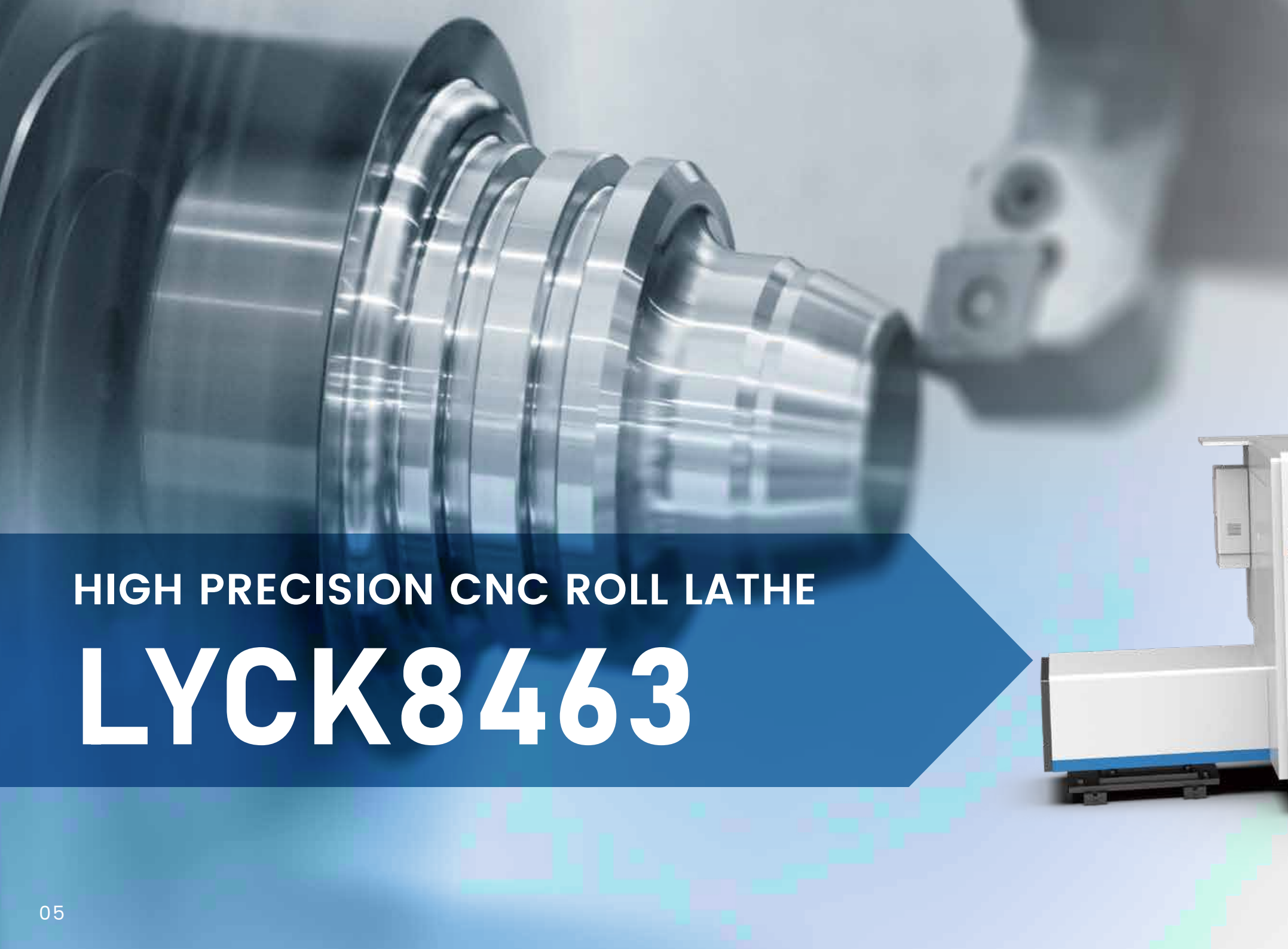
HORIZONTAL CNC LATHE  
**SF-TCK50**



# About CNC Machine tools

Founded in 2004, Jinan Senfeng Laser Technology Co.,Ltd. is a leading professional manufacturer in the field of CNC machine tools, providing customers with one-to-one solutions, which can meet their requirements for high-performance, high-precision and high-rigidity. Determined to innovate with deep technical accumulation and rich experience, Jinan Senfeng Laser Technology Co.,Ltd. will surely become a new benchmark for global CNC machine tools.



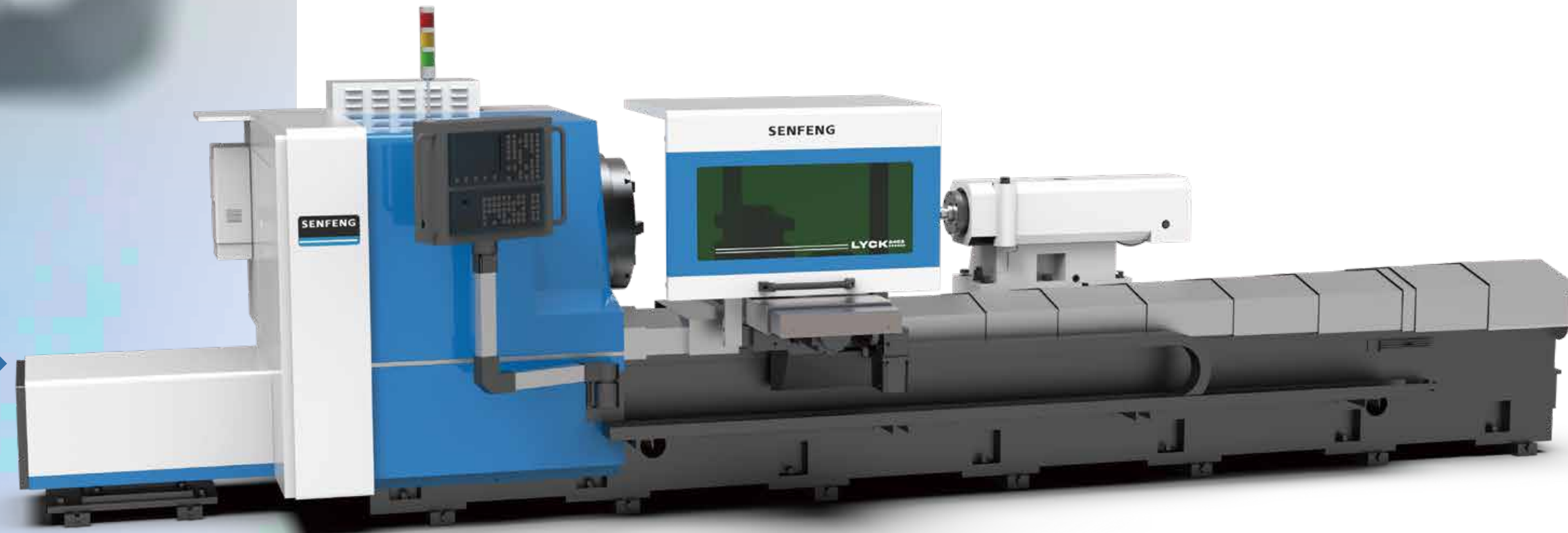


HIGH PRECISION CNC ROLL LATHE

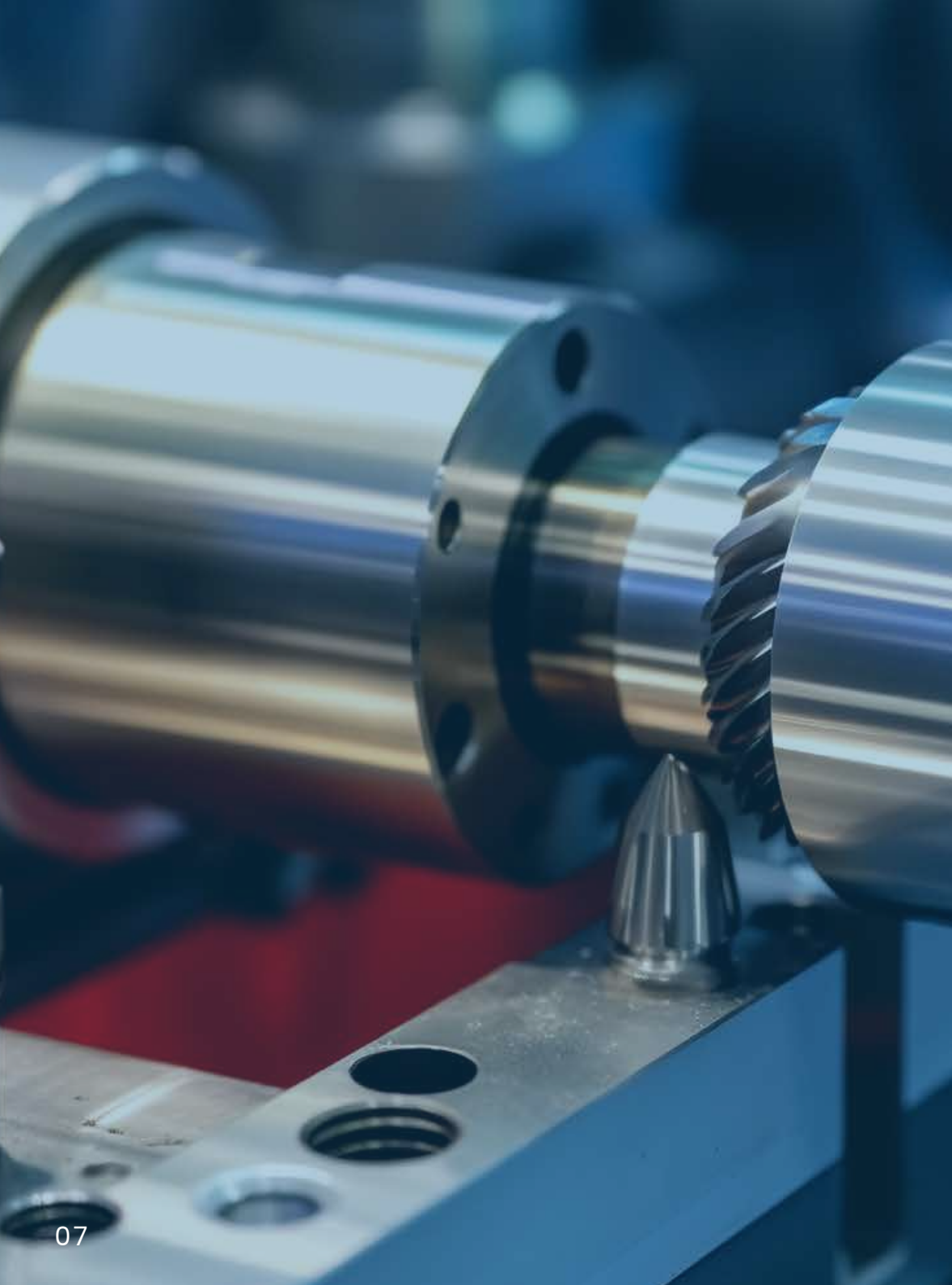
**LYCK8463**

## LYCK8463


LYCK8463 High Precision CNC Roll Lathe is mainly used for the hole processing of rolls, also can turn the outer circle of rolls, roll necks, etc., and can be used for the turning processing of parts similar to rolls. It is suitable for cutting various materials such as cast steel, forged steel, alloy steel, chilled cast iron, nodular cast iron, tungsten carbide roll ring, etc. It is also suitable for processing of large rolls such as special steel, which reduces the cost and improves the efficiency.











LYCK8463 High precision CNC roll lathe has the following features


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1. The pedestal is made of integral casting structure with 4 guide rails. Two of the rails are used for placing the turning carriage, while the other two rails are used for placing the tailstock, bracket or roller bracket. This principle not only guarantees absolute stability and precision, but also ensures unobstructed movement of the bracket along the entire machining area. Cuttings can be removed in a timely manner by means of a spacious exit, so that the accuracy of the guideway is not affected by hot cuttings.
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2. Machine tool spindle bearing adopts Japan NSK special high-precision spindle bearing and Germany NBU15 high-grade special grease, which improves the spindle precision and rigidity.
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3. The moving part of the slide board is coated with wear resistance, which has a small friction coefficient and long service life, and greatly improves the movement precision and service life of the machine tool.
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4. Tailstock adopts rotating spindle + tailstock sleeve axial expansion and adjustment of the structure of the program, tailstock spindle taper hole is Mohs 6.
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5. Machine tool adopts simple protection, beautiful and practical appearance.
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6. The standard configuration of the machine tool is the Guangzhou CNC 980TDi CNC system, optional FANUC 0i-TF CNC system, Siemens 828D CNC system.

Main Specifications and Parameters Table

Item	Content	Unit	Specification Parameter
Capacity	Maximum steady turning diameter	mm	Φ630
	Maximum turning length	mm	3000
	Distance between two tops	mm	3300
Spindle	Spindle speed change	-	stepless speed change
	Spindle speed range	r / min	4-285
	Spindlehead/spindle bore	mm	A2-15 / Φ130
	Spindle taper hole	No.	Metric: No. 140 (Taper: 1:20)
	Spindle front bearing inner ring diameter	mm	Φ200
	Chuck Specifications	-	Φ630 four-jaw chuck.
Feed	Maximum spindle torque	N·m	3700
	X, Z axis rapid traverse speed	m / min	X: 10, Z: 7
	Maximum travel of X and Z axes	mm	X: 425 Z: 3000
Electrical machinery	X, Z axis screw diameter / pitch	mm	X: φ 63×10 Z: φ 50×6
	Spindle motor power	kW	AC30/37
	X, Z axis motor torque	N·m	X, Z: 22, 38
Tool Holder	Tool holder type/Tools number	-	Vertical turret / 4 tool
	Blade to edge size	mm	300
	Turning tool specification	mm	40 * 40
	Tool holder selection	-	Proximity, logical turn
Tailstock	Sleeve diameter / travel	mm	Φ220/300
	Bore taper of top	NO	MT: 6
Precision	Positioning accuracy	mm	X:0.0165 Z:0.05
	Repeated positioning accuracy	mm	X:0.006 Z:0.013
Others	Machine tool area(L×W)	mm	7430*2489
	Power capacity	KVA	60
	Net weight of machine	kg	16000
	CNC system		GSK 980TDi

## CNC VERTICALS WITH BOX WAYS

# SF-V1067

## Bare Machine

"Bare Machine" refers to the fundamental components of a machine tool, essentially the "framework" of the machine, also known as the machine tool body. Specifically, it consists of the main parts and foundational components such as the machine bed, saddle, worktable, column, guideways, and headstock. These foundational components together form the main structure of the machine tool, providing a stable support and platform for its operation.

The design and manufacturing processes of Bare Machine directly affect the quality, lifespan, and reliability of CNC machine tools. Therefore, producing it requires companies to have a high level of technical and managerial expertise.



## SF-V1067

SF-V1067 CNC Verticals With Box Ways is designed for industries with high efficiency machining needs, capable of multi-face machining in one clamping, and can perform multiple processes such as vertical milling, drilling, boring, expanding and tapping. It has good economic effect on machining parts with more complex shape, higher precision requirements and frequent variety replacement. Widely used in automotive parts, aerospace, optical equipment, medical equipment and electronic industry parts production, as well as all kinds of precision mold processing.





# CNC PRECISION HIGH SPEED VERTICALS

## SF-V1067L



## SF-V1067L

SF-V1067L CNC Precision High Speed Verticals is a three-axis roller guideway vertical machining center, capable of multi-face machining in a single clamping, vertical milling, drilling, boring, expanding, tapping and other multi-processes. It has good economic effect on machining parts with complex shape, high precision requirement and frequent variety replacement. Widely used in automotive parts, aerospace, optical equipment, medical equipment and electronic industry parts production, as well as all kinds of precision mold processing.



The SF-V1067L CNC Precision High Speed Verticals

1.CNC PRECISION HIGH SPEED VERTICALS

Bed base, column, table, slide saddle, spindle box and other big parts are made of high-quality resin sand molding, high-strength high-quality cast iron, combined with rigorous shoveling technology, so that the machine tool to get high rigidity and long-lasting stable precision. The three-axis feeding system adopts branded roller guideway, six sliders in X-axis and four sliders in Y-axis and Z-axis; Z-axis has no counterweight, so the dynamic precision is good.



2.DIRECT DRIVE HIGH-SPEED SPINDLE

The direct drive spindle design, together with the oil-cooling system, can achieve a long time 12,000 rpm high speed rotation, which minimizes the vibration and thermal error generated during high speed machining of the spindle and improves the machining accuracy. The spindle adopts BBT40 specification with double-sided positioning for higher tool rigidity.

3.HIGH-SPEED AND HIGH-PRECISION FEEDING SYSTEM

Featuring a high-load C3 class double-nut ball screw, the ball screw is center-mounted and pre-stretched to provide superior repeatable positioning accuracy with minimal thermal elongation. Rapid traverse speeds are up to 48m/min.

4.HIGH EFFICIENCY HIGH STABILITY TOOL MAGAZINE

24T automatic tool change system, cam box using absolute encoder output, stable structure and high reliability.

5. USED OIL (WASTE LUBRICANT) RECYCLING STRUCTURE

The whole machine adopts the structure of waste oil (waste lubricant) recycling, which is clean and environmentally friendly, and saves costs.

6. RICH PERIPHERAL DEVICE OPTIONAL

Fourth axis, scale, tool setting instrument, workpiece inspection, etc. are available for users to choose from.

7. EXCELLENT CONTROL SYSTEM

Standard configuration is FANUC 0i-MF Plus(5) CNC, optional other FANUC series or Siemens 828D CNC.

Main Specifications and Parameters Table

Item	Name		Unit	SF-V1067L
Travel	X-axis		mm	1020
	Y-axis		mm	600
	Z-axis		mm	700
Worktable	Table size		mm	1120*600
	Maximum table load		kg	600
	Distance from spindle nose to table		mm	80 to 780
	T-slot		-	5-18 * 100
Spindle	Spindle motor speed		rpm	12000
	Spindle power		kW	11/15
	Spindle bore specification		-	BBT40
	Pull stud		-	MAS403-1982-BT40 1 (45°)
Feed	Rapid feed (X/Y/Z)		m/min	48/48/36
	Cutting feed		m/min	1-20
Tool changer	Capacity		set	Disc 24
	Maximum disc diameter	Solid/hollow tool	mm	80/125
	Maximum tool length		mm	300
	Maximum tool weight		kg	8
	Tool selection		-	Arbitrary/sequential selection
	Tool change time (tool-tool)		s	1.8
Precision	Bidirectional positioning accuracy		mm	0.032/0.025/0.025
	Bi-directional repeatability accuracy		mm	0.018/0.015/0.015
Others	CNC system		-	FANUC 0i-MF Plus(5)
	Cooling water tank capacity		L	240
	Barometric pressure		kg/c m³	6
	Electricity demand		-	380V±10% 50Hz
			kVA	30
	Machine dimensions		mm	2500*2600*3420
	Machine weight		kg	About 7000



# VERTICAL MACHINING CENTER SERIES



## Low Vibration and High Rigidity Bed



### 1.HIGH PRECISION MACHINING HOST

The installation reference surface and base of the machine tool are processed through a series of processes using imported high precision gantry pentahedron, providing reliable guarantee for the execution of high precision standards by Senfeng.



### 2.ONE-PIECE CASTING

The base is made of gray cast iron (HT300), with one-piece casting, high load capacity, wear resistance, high rigidity mechanical performance. Under conditions of rapid axial feed, it has stable support rigidity.



### 3.LONG-TERM STRESS RELIEF

After long-term stress relief, the structure and dimensions of the base are stable, effectively improving the stability of mechanical performance and precision, enhancing resistance to deformation, strength, and fatigue life, reducing deformation errors caused by internal stress in the castings.



### 4.HIGH PRECISION BALL SCREW

Adopting pre-tensioning process effectively reduces the impact of heat generation on the transmission accuracy of the screw, improves precision, enhances rigidity and resistance to thermal deformation. The high torque motor is directly connected to the ball screw, greatly improving positioning accuracy. The screw is supported at both ends, providing high rigidity, high precision, high-speed movement, and high feed force.



### 5.HIGH RIGIDITY LINEAR BALL GUIDE RAIL

The heavy-duty linear guide rail provides excellent rigidity and precision, with stronger heavy cutting capacity and longer machine tool lifespan.



### 6.PRECISION HAND SCRAPING PROCESS

The key contact surfaces such as the base, spindle box, and screw fixed seat undergo precision hand scraping process, enhancing balance load and significantly improving structural strength.



Main Specifications and Parameters Table

Item	Detail	Unit	SF-VL855	SF-VLI160	SF-VLI160P	SF-VLI370	SF-VLI580	SF-VLI690
Worktable	Worktable Dimension	mm	1000*550	1200*600		1200*600	1400*700	1600*800
	Maximum Load	kg	500	800		800	800	1500
	T-Slot Size	mm	5-18-90	5-18-100		5-18-100	5-18-130	7-22-110
Processing Range	3-Axis Travel	mm	800*550*550	1100*600*600		1100*600*600	1300*700*750	1500*800*700
	Distance From Spindle Nose To Table Surface	mm	120-670	120-720		120-720	120-870	160-860
	Distance From Spindle Center To Z-Axis Guideway Surface	mm	590	650		650	722	855
Spindle	Taper Hole (7:24)	/	BT40 φ150	BT40 φ150		BT40 φ150	BT40 φ150	BT50 φ155
	Speed Range	r/min	8000	8000		8000	8000	6000
	Spinde Motor Power	kW	7.5	11		11	15	15
Feed	3-Axis Rapid Speed	m/min	32/32/24	24/24/18		36/36/24	24/24/18	24/24/24
	Feed Speed	mm/min	1-10000	1-10000		1-10000	1-10000	1-10000
Tool Changer	Type	/	Disc	Disc		Disc	Disc	Disc
	Capacity	/	24T	24T		24T	24T	24T
	Tool Change Time	s	2.5	2.5		2.5	2.5	2.5
Positioning Accuracy	X/Y/Z Axis Positioning Accuracy	mm	0.008	0.008		0.008	0.008	0.008
	X/Y/Z Axis Repeated Positioning Accuracy	/	0.005	0.005		0.005	0.005	0.005
Dimension (L×W×H)		mm	2600*2380*2400	3100*2500*2800		3100*2500*2800	3550*2700*2600	4300*3200*2800
Gross Machine Weight Approx.		kg	5300	6500		6500	8000	10000



# HORIZONTAL CNC LATHE

# SF-TCK50

TCK series CNC horizontal lathe is a high-quality product designed and produced in response to the market and development needs by combining our many years of experience in designing horizontal CNC horizontal lathes. The maximum machining diameter of this machine is  $\phi$  360mm, and the maximum machining length is 500mm. The newly designed main machine structure and reliable assembly technology have upgraded the TCK series of machine tools, and the stable and reliable product performance together with the innovative ergonomics design makes the TCK series undoubtedly become the best in the industry.



Main Specifications and Parameters Table

Item		Unit	SF-TCK50	Note
Maximum Rotary Diameter		mm	500	
Maximum Cutting Length		mm	500	
Maximum Cutting Diameter		mm	360	Horizontal 8-Station Tool Holder
Standard Cutting Diameter		mm	240	
Maximum Rotary Diameter on The Slide Plate		mm	300	
Spindle End Type and Code			A2-6	Integral Spindle Units
Spindle Hole Diameter		mm	65	
Maximum Bar Diameter		mm	50	
Spindle Box	Speed Range	r/min	50~4000	
	MaximumOutput Torque	nm	177	ZJY265A-11AM-B5
			177	CTB-4011ZGC10
			235	βlip22/6000
	Spindle Speed		Stepless Gearbox	
	Main Motor Output	kw	15（30 Min）/11（Rated）	ZJY265A-11AM-B5
			15（30 Min）/11（Rated）	CTB-4011ZGC10
			15（15 Min）/11（Rated）	βlip22/6000
Chuck	Diameter/Type	mm	8"Hollow	
X-Axis Rapid Speed		m/min	30	
Z-Axis Rapid Speed		m/min	30	
X-Axis Trave		mm	200	
Z-Axis Trave		mm	550	
Tailstock Travel		mm	450	
Tailstock Sleeve Travel		mm	100	
Tailstock Sleeve Taper		Mohs	5#	
Standard Tool Holder Form			Horizontal 8-Station	
Tool Size	Cylindrical Cutter	mm	25*25	
	Boring Bar Diameter	mm	Φ40/Φ32/Φ25/Φ20	
Cutter Be Selected Nearby			Yes	
Maximum Load Capacity	Disk Workpiece	kg	200	Including Machine Tool Accessories Such as Chucks
	Shaft Workpiece	kg	500	
Machine Weight		kg	3600	
Machine Dimension(L X W X H)		mm	2300*1700*1930	



# OPTIONAL CONFIGURATION



Oil Mist Collector



Workpiece Catcher



High-pressure Coolant



Tool Setter



Center Frame



Servo Tailstock



Driven Tool Holder



Swarf Bin



Electrical Cabinet Air Conditioner

- Electrical Control Cabinet
- Power Supply Cabinet
- Communication Equipment
- Program-Controlled Switch
- Measuring Instruments



Oil Cooler

- Mechanical Spindle
- Low-speed Electric Spindle
- Hydraulic Station and Lubrication Station
- Lubrication and Cooling System for Gearbox



Fourth Axis



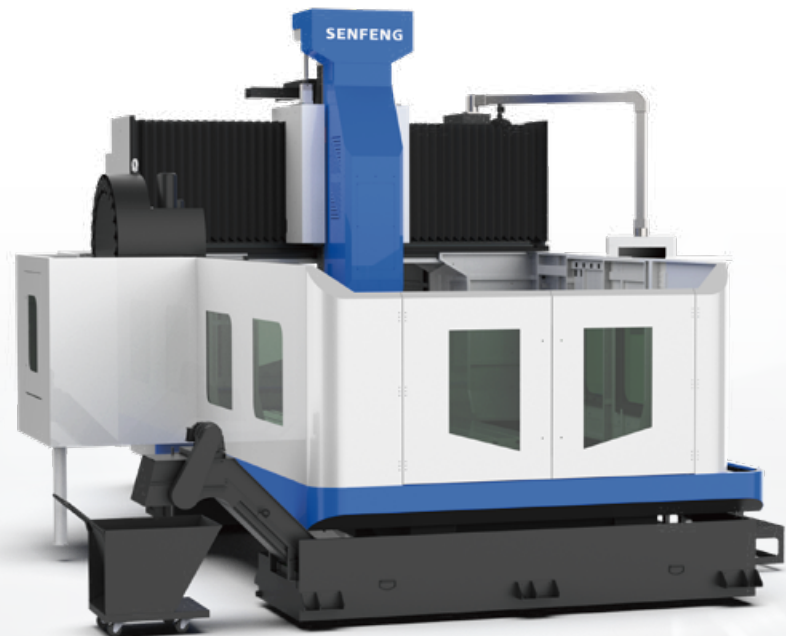
Chip Conveyor

# GANTRY MACHINING CENTER





# SF-LM3020B/ SF-LM4228



This series of products introduces the international advanced dynamic rigidity design concept, and all of them adopt three-dimensional design, with strong frame rigidity, structural symmetry and stability. The castings have been analyzed by finite element analysis to enhance the structural strength and optimize the matching of reinforcing bar type, so that the machine tool has high rigidity, high strength and excellent geometrical precision, and can ensure the long-term stability and high precision of the machine tool.

Gantry machining center with high machine torque and excellent quick response characteristics. It is equipped with a variety of machining functions such as milling, boring, drilling (drilling, expanding, reaming), thread tapping, countersinking and so on. The product technical indexes and configurations are leading in China, the product structure and process are mature, and the product quality is stable. Applicable to automotive, mold, aerospace, packaging, hardware and other various machining needs of the field.

Main Specifications and Parameters Table

Item	Main Specifications and Parameters Table	Unit	SF-LM3020B	SF-LM4228
Work Scope	X-Axis Travel	Mm	3000	4200
	Y-Axis Travel	Mm	2200	3500
	Z-Axis Travel (Including Tool Change Travel)	Mm	1000	1000
	Distance From Spindle Nose To Table Surface	Mm	200-1200	300-1300
	Gantry Width	Mm	2000	2800
	Gantry Height	Mm	1250	1400
Spindle	Spindle Speed	Rpm	6000	6000
	Spindle Taper	/	BT50	BT50
	Spindle Motor	Kw	15 / 18.5	22
Worktable	Table Size	Mm	3000*1800	4200*2400
	Maximum Table Load	Kg	8000	15000
	T-Slots (Number Of Slots*Slot Width*Spacing)	/	9-22*180	11-28*200
Tool Changer	Tool Shank Type	/	BT50	BT50
	Capacity	T	24	24
	Maximum Tool Diameter (Without Pro-Tool)	Mm	112 (200)	112 (200)
	Maximum Tool Length	Mm	350	350
	Maximum Tool Weight	Kg	18	18
Speed	X-Axis Rapid Traverse	m/Min	12	12
	Y-Axis Rapid Traverse	m/Min	15	12
	Z-Axis Rapid Traverse	m/Min	12	12
	Cutting Feed Rate	Mm/Min	10-10000	10-10000
Others	Machine Weight	T	24 (±5%)	41 (±5%)
	Power Requirements	Kva	35	40
	Air Supply	Kg/Cm2	6	6



# FANUC System

Powerful system functions and in-depth secondary function development combined to greatly enhance the ease of use of the machine tool;

System secondary development in the use of machine tools, debugging, safety alarm troubleshooting, maintenance and other aspects to bring convenience to customers.

## FANUC System Advantage

1. Machine maintenance and precautions, so that machine maintenance more convenient
2. Mcode query, so that the use of machine tools more intuitive, more convenient;
3. I/O status query, query the machine tool's input and output signal status, convenient for maintenance personnel to check the signal;
4. Using the system preset function, image human-machine dialogue, set processing parameters, simplify programming
5. Lubrication notes and lubrication-related input and output signals;
6. Concise alarm information, more convenient to find the cause of the alarm;
- 7.Tool changer management interface, convenient for tool arrangement and tool management;
8. Four-axis management interface, customer optional function management.





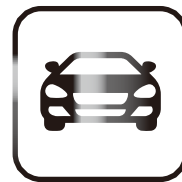
# Total Product Service



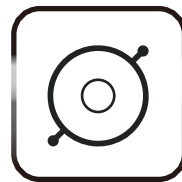
Parts Processing



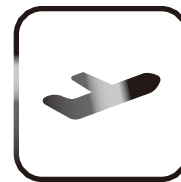
Mold Processing



Automotive Processing



Precision Machining



Aero Processing

# Worldwide After-Sales Service



## CNC Milling Service

### 10 Minutes Quick Response

24/7 available for your call.

Professional technical engineers reply with a solution within 10 minutes after submitting for repair.



### Consultant Customization Services

Specialized program customization services: customization of service schemes based on specific conditions.

Certification system for service engineers: engineers are strictly assessed and certified.

Training on frequent questions: make a book of frequent questions and train customers by certified engineers.

On-line one-to-one guidance: senior engineers guide customers to solve problems through telephone, video and other network modes.

One time: once the equipment is debugged and the same kind of error won't reoccur.



### Regular Inspection

**Front-end service:** detailed training of technical theory, practical operation and trouble-shooting.

**Regular service:** regular maintenance reminder, regular service, regular promotional activities.

**Value-added services:** equipment software and hardware upgrading services, financial leasing services, extended warranty.