

Duplex Machine with Truss Slant Bed CNC lathe

Model: TCK50A*500 and TCK50Y*400



Supplier: Shanghai ANTS Machine Equipment Co.,Ltd

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Technical proposal

Part 1: TCK50A*500 Technical parameter

Specifications	Units	TCK50Ax500
Max. Swing over bed	mm	Φ 560
Swing over cross slide	mm	Φ 260
Distance between center	mm	500
Max. disc machining diameter	mm	Φ 440
Standard chuck specifications	Inch	8 inches
X-axis maximum travel	mm	240
Z-axis maximum travel	mm	540
Spindle maximum speed	rpm	3000rpm
Spindle speed change		Infinitely variable speed
Spindle end code		A2-6
Spindle through hole	mm	Φ 66
Draw tube through hole	mm	Φ 55
Rapid traverse speed	m/min	X:18 Z:18
cutting feed rate	mm/min	1-15000
X/Z direction motor torque	NM	10/10 (X direction with brake)
Spindle motor power	KW	11
Horizontal turret station		8
Turning tool body size	mm	25×25
Maximum boring tool diameter	mm	40
Sleeve diameter	mm	70
Sleeve stroke	mm	80
Tailstock sleeve tapered hole		Mohs 5#
Maximum travel of tailstock	mm	450
Total power capacity	KVA	18
Cutting water tank capacity	L	90

Overall dimensions (length × width × height)	mm	2700*2000*2000
Total Weight	KG	3600

TCK50Y*400 Technical parameter

Specifications	Units	TCK50Yx400
Max. Swing over bed	mm	Φ 560
Swing over cross slide	mm	Φ 260
Distance between center	mm	400
Max. disc machining diameter	mm	Φ 350
Standard chuck specifications	Inch	8 寸
X-axis maximum travel	mm	260
Z-axis maximum travel	mm	540
Spindle maximum speed	rpm	3000rpm
Spindle speed change		Infinitely variable speed
Spindle end code		A2-6
Spindle through hole	mm	Φ 66
Draw tube through hole	mm	Φ 50
Rapid traverse speed	m/min	X:18 Z:18
cutting feed rate	mm/min	1-15000
X/Z direction motor torque	NM	15/15 (X direction with brake)
Spindle motor power	KW	11
Powered Turret Specifications		TCSDY-80-12
Turret tool holder		BMT45
Y axis travel		-45+45
Powered tool turret chuck	mm	(ER20)
Turning tool body size	mm	25×25
Maximum boring tool diameter	mm	Ø32
Sleeve diameter	mm	70

Sleeve stroke	mm	80
Tailstock sleeve tapered hole		Mohs 5#
Maximum travel of tailstock	mm	450
Total power capacity	KVA	22
Cutting water tank capacity	L	90
Overall dimensions (length × width × height)	mm	2600*1850*2100
Total Weight	KG	3200

Part 2 : Product reference picture





Part 3: Equipment Introductions

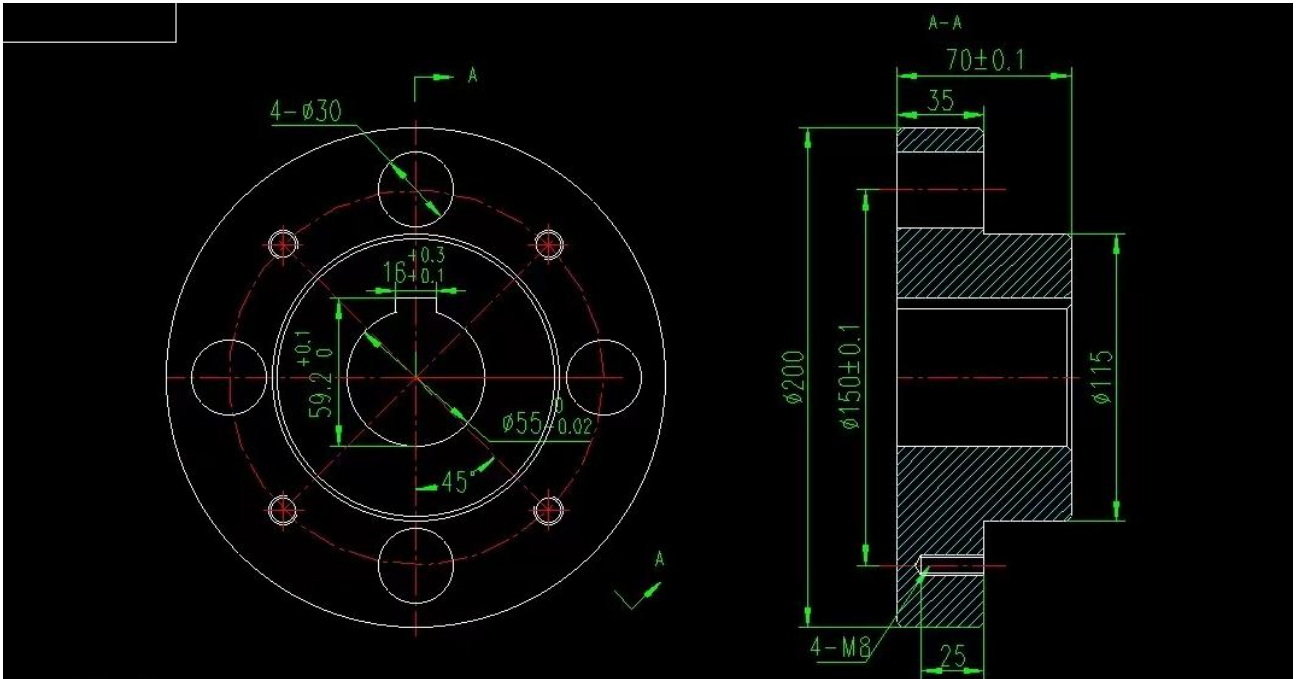
1. Main structural features

- 1 This series of machine tools is a mature product mainly exported by Shanghai ANTS Machine Equipment Co.,LTD. It has a compact structure, beautiful appearance, large spindle torque, high rigidity, stable and reliable performance, and excellent accuracy retention.
2. It adopts a 30° overall inclined bed structure and is equipped with high-precision preloaded Taiwan linear roller guides. The machine tool has high position accuracy, smooth chip removal, and is suitable for high-speed and high-precision machining.
3. The spindle adopts a high-precision spindle bearing set and has been precision assembled and dynamically balanced tested to ensure high spindle accuracy, low noise and strong rigidity.
4. Use the tool turret method to achieve fast tool changing and high positioning accuracy.
- 5 The X and Z direction feeds use servo motors directly connected to the screw through high-torque and low-inertia elastic couplings to ensure positioning accuracy and repeatable positioning accuracy.
6. Adopt advanced centralized automatic lubrication device, regular and quantitative automatic intermittent lubrication, and work stably and reliably.
7. Use domestic hydraulic chuck.
8. The hydraulic tailstock is manually adjusted and locked, and the hydraulic piston is pressed against the workpiece for processing.

2. Design elements:

① Product information

This equipment is used for processing flange products. Product model: Choose one of them as an example (refer to the drawings provided by Party A for details);



② Overview of current manual operations

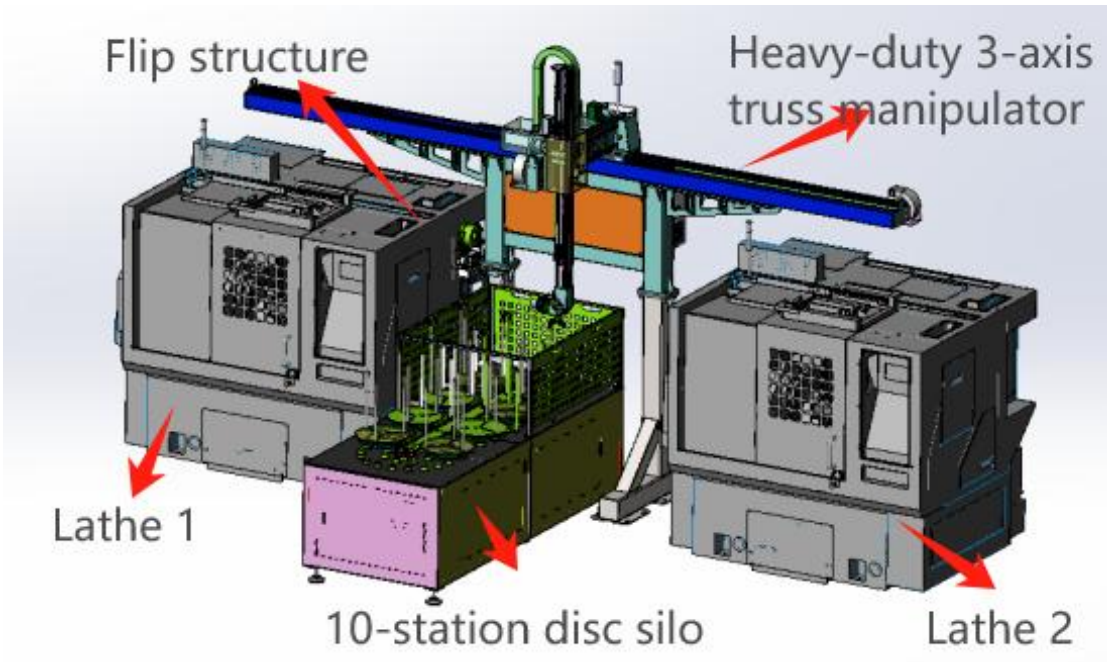
Manual operation process: manually place the workpiece on the machine tool and fix the workpiece, and then automatically operate. After the processing is completed, the workpiece is manually removed from the equipment and placed in the corresponding workpiece placement position.

③ Installation site

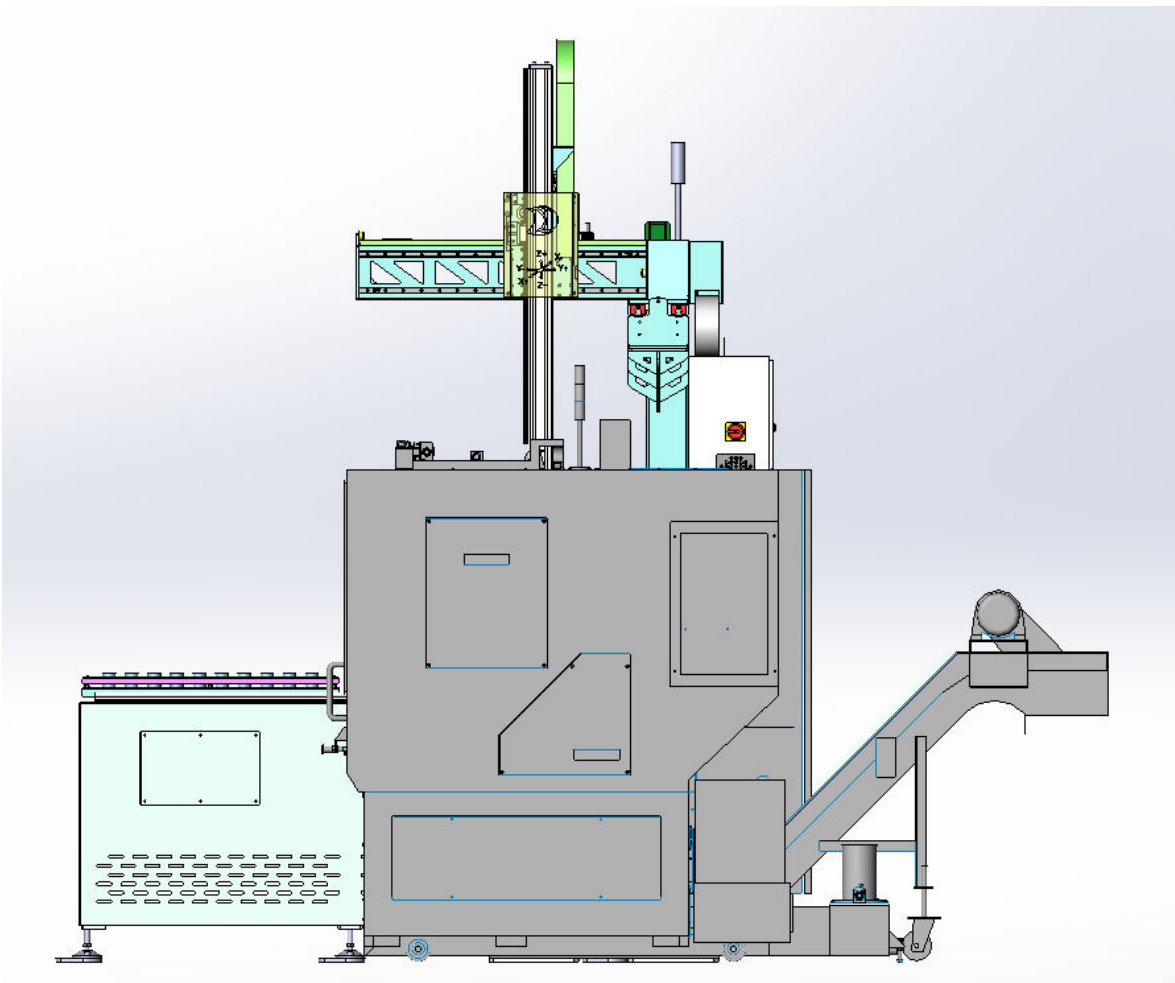
The customer's installation site has sufficient installation space requirements, and a forklift or crane is available to facilitate installation operations.

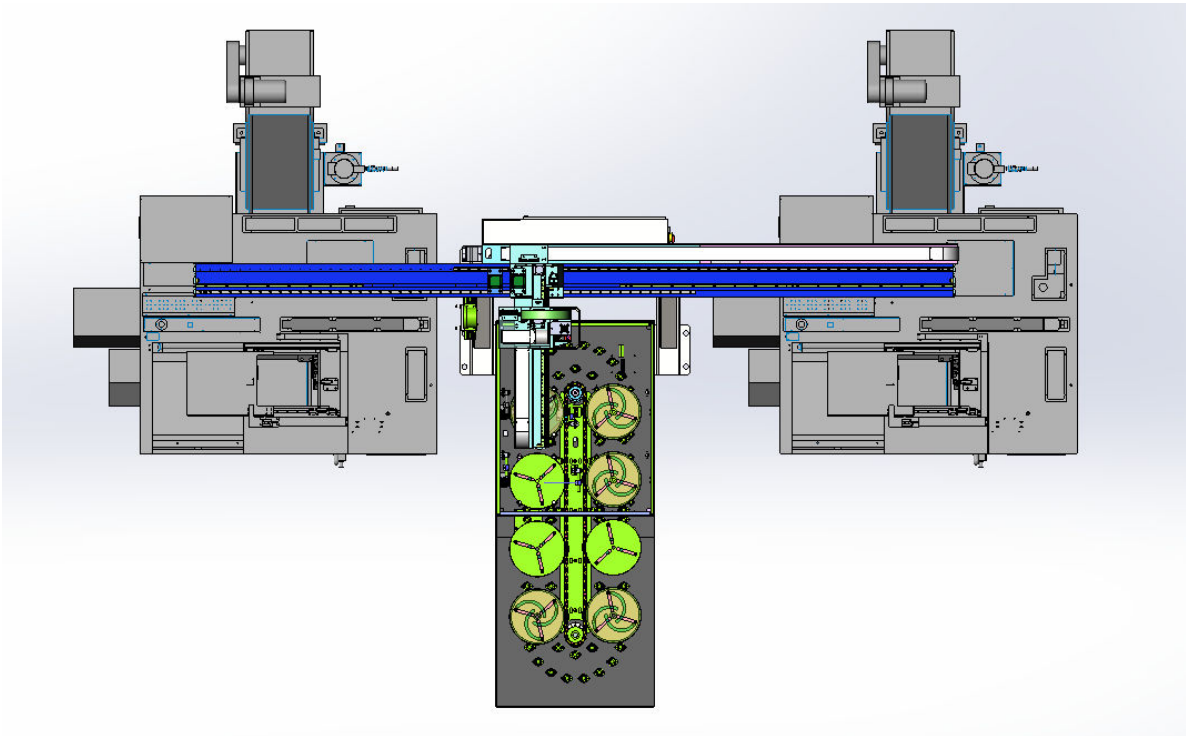
2. Description of one-to-two integrated truss robot

① Three-dimensional drawing of truss project plan

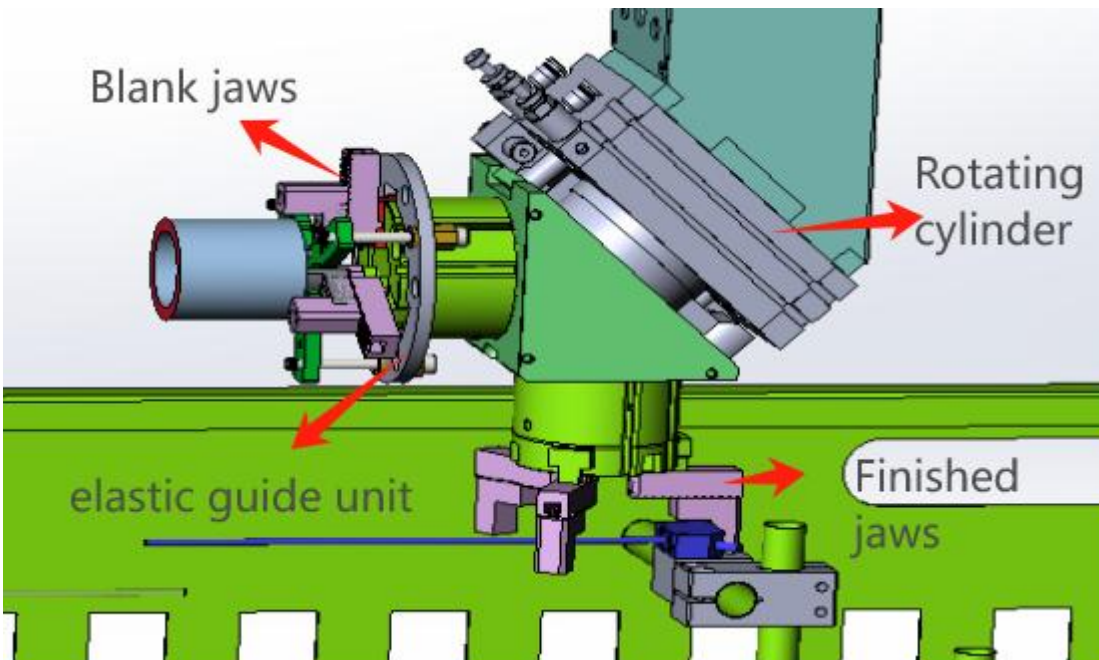


② Floor plan and description

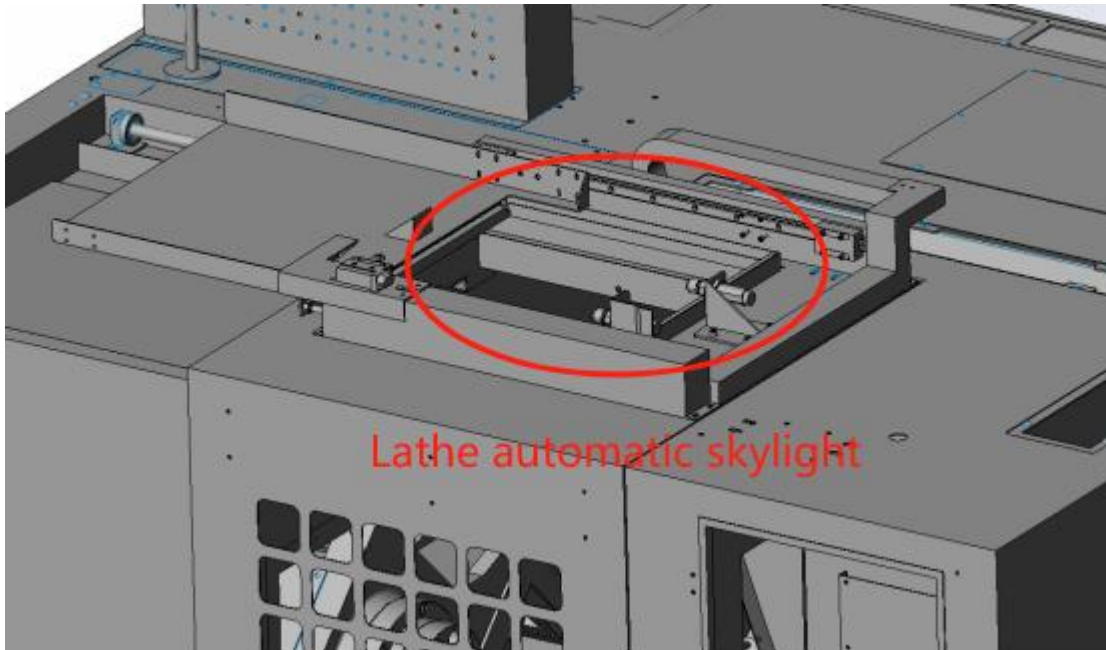




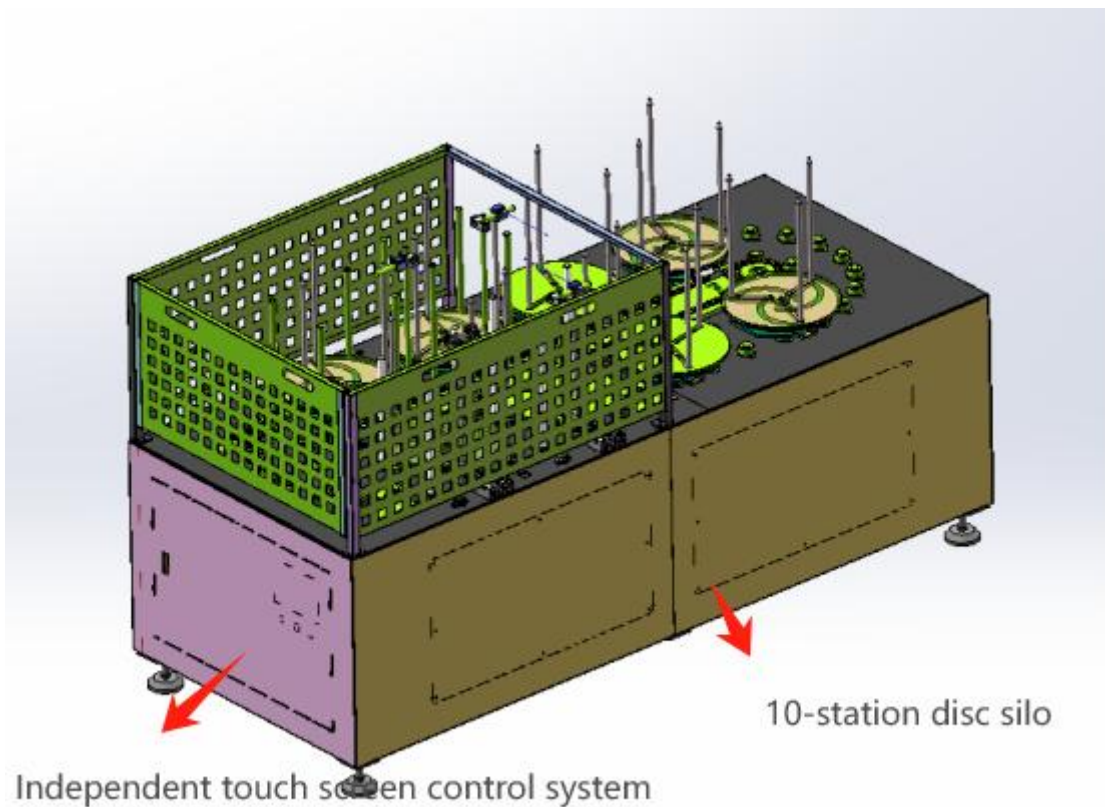
The main equipment of the truss robot: CNC lathe, machining center, truss robot body, double-layer exchange bin, turning mechanism, and clamping jaws. The layout is shown in the picture above.



Disc gripper



Machine with automatic skylight



Tray silo (picture shows 8 stations)

③ Automated process flow

Truss robot automatic loading and unloading workflow

- a. Manually bury materials into the machine tool in advance (for the first time), and then feed materials into the matrix plate;
- b. The truss raw materials are clamped to the matrix plate tooling to pick up the materials, and then wait above the automatic door of the machine tool;
- c. After the machine tool is processed, the automatic door of the machine tool opens, the finished truss clamp takes the material from the machine tool, blows the waste material, and then switches the raw material clamp to release the material;
- d. During the processing of the machine tool, the raw material is clamped to the transfer device to pick up the material. The finished product clamp sends the workpiece to the transfer device to be turned over, and then waits above the automatic door of the machine tool. After the machine tool is processed, the finished truss clamp takes the material from the machine tool, blows the waste material, and then switches the raw material clamp to release the material; (If secondary processing is required, this step needs to be added, and an additional transfer device is required)
- e. Put the cost in the truss finished product folder at the corresponding silo or unloading platform;
- f. The truss blank clamp takes the blank from the silo.

Repeatedly

④ Machine tool description

The machine tool is equipped with an automatic skylight;

Chip removal after the machine tool is used, and truss mounting holes are reserved on the side of the robot base

Part 4: Standard Equipment&Optional Equipment

Name	Model	Quantity	Brand
CNC lathe	TCK50A/TCK50Y	2 units	ANTISHICNC
Truss robot	DZ1-2-5550	1 set	Dongzhi
flip mechanism	ZD-HRO70L2-MHL32D	1 set	Dongzhi
Tray silo	DZ-P10 φ 50- φ 220	1 set	Dongzhi
Jaws	DZ-HRO70-CY63	1 set	Dongzhi
Packing and shipping		1 set	
Installation and commissioning customer training		1 set	

TCK50A*500 Standard Equipment

Name	Specifications	Quantity	Supplier
CNC System	GSK988T	1set	GSK
X-direction motor	10nm	1set	GSK
Z-direction motor	10nm	1set	GSK
Spindle motors and drives	Servo main motor (11 KW)	1set	GSK
Spindle unit	Φ 200	1set	China
Screw bearing	25TAC62	1set	China-Taiwan
Servo turret	8 stations	1set	China-Taiwan
X/Z roller guide	35/35	1set	HIWIN/PMI
X/Z ball screw	3210/4010	1set	HIWIN/PMI
Lubrication device	automatic lubrication	1set	China
hydraulic station	1.5kw	1set	China
Hydraulic chuck cylinder	8 inches	1set	China
Cooling pump	250W	1set	China
Hydraulic tail top		1set	China
Chip conveyor	Universal chain plate type	1set	China

TCK50Y*400 Standard Equipment

Name	Specifications	Quantity	Supplier
CNC System	GSK988T	1set	GSK
Spindle motors and drives	Servo main motor (11 KW)	1set	GSK
Spindle unit	Φ 200	1set	China
Screw bearing	25TAC62	1set	China
Servo turret	12 stations(BMT45-ER20)	1set	China-Taiwan
X/Z roller guide	35/35	1set	HIWIN/PMI
X/Z ball screw	3210/4010	1set	HIWIN/PMI

Lubrication device	automatic lubrication	1set	China
hydraulic station	2.2kw	1set	China
Hydraulic chuck cylinder	8 inch	1set	China
Oil cylinder	10 inch	1set	China
Cooling pump	370W	1set	China
Hydraulic tail top		1set	China
Chip conveyor	Chain plate type	1set	China

Optional accessories

Name	Specifications	Quantity
Control System	FANUC	1 set

Part 5 :Manufacturing Time

Around 3-4 months , the machine will be ready for FAT(Factory Acceptance Test) after received deposit and after confirmed contract and technical proposal.

Remark: If the customer has special requirements for the delivery time, please confirm with Shanghai ANTS machine

Part 6 : Acceptance Test

TCK50A*500

Test items	Standard tolerance (mm)
Periodic axial play of the main shaft	0.005
Radial run-out of spindle chuck positioning cone	0.005
Position accuracy	Repeat positioning accuracy A
	X: ± 0.003 Z: ± 0.003
Diameter uniformity	0.01/150
Flatness	0.02/ $\phi 200$
Thread pitch product error	0.010/50
Surface roughness	Ra1.6 μm

TCK50Y*400

Test items		Standard tolerance (mm)
Periodic axial play of the main shaft		0.005
Radial run-out of spindle chuck positioning cone		0.005
Position accuracy	Repeat positioning accuracy A	X: ± 0.004 Z: ± 0.004
Diameter uniformity		0.01/150
Flatness		0.02/ $\phi 200$
Thread pitch product error		0.010/50
Surface roughness		Ra1.6 μm

Part 7 : Quality Assurance & After-sales Service

Shanghai ANTS Machine Equipment Co., Ltd. fully fulfills the terms of machine tool technical services promised to users.

1. Since the final acceptance of the machine tool, all failures caused by quality problems will be guaranteed for one year free of charge.
2. Since the final acceptance of the machine tool, the failure of other parts caused by quality problems will be guaranteed for one year free of charge.
3. Since the final acceptance of the machine tool, we also guarantee to actively cooperate with the user to repair the failure caused by the quality of the machine tool, and free labor costs within one year.
4. Lifetime guarantee to provide spare parts supply at preferential prices.
5. Factory environment requirements

Describe	Require
Power supply	AC220V $\pm 10\%$, AC50Hz
Compressed air	Pressure 0.5~0.7MPa Flow greater than 50L/Min
Ground	Each robot is grounded first
Ground foundation engineering for system installation	The basic ground is compacted to ensure a load-bearing strength of 800Kg/m ² , the ground level difference is $\pm 3mm$, and the foundation thickness is more than 150mm.
Ambient temperature	Operating temperature 0~55°C
Relative humidity	Under normal circumstances, the ambient humidity is 20% to 75%RH (no condensation)
Installation Environment	Ambient temperature 5°C-40°C
Discharge	Customers assist in unloading and provide forklifts, cranes and other equipment

Warranty service:

one year warranty(12 months since customer receive & use the machine).

The manufacturer guarantees to provide life-long paid maintenance services for the product.

Part 8: Packing & Shipping Terms**1. Machine Dimensions & Foundation Drawing****2. Provide the following technical documents when the equipment is delivered**

Packing List 1 copy

Certificate of conformity (including precision inspection sheet) 1 copy

User's manual 1 copy

CNC system manual 1 copy

Electric knife holder manual 1 copy

Inverter manual 1 copy

Motor manual 1 copy

Driver Manual 1 copy

Oil pump manual 1 copy

3. Packaging and transportation

Exporting standard wood box packing

The transportation is carried out in accordance with the contract terms.

Part 9: Company Introduction

Shanghai ANTS Machine Company is mainly engaged in Universal lathe, CNC lathe, Heavy duty lathe, Special purpose lathe, Sawing machine, Drilling machine, Milling Machine, VMC(Vertical Machining Centre), HLC(Horizontal Machining Centre), Gantry Machining Centre and other equipment. The products are sold to Hebei, Shaanxi, Hunan, Henan, Jiangsu, Shandong, Guangdong, Shanghai and other places. More than 300 professional after-sales service personnel in 83 offices across the country provide customers with pr-sales and after-sales services at any time. The products are deeply trusted by customers and are exported to more than 20 countries and regions such as the United States, Germany, Italy, India, Thailand, and Russia. Especially in recent years, they have been widely used in major domestic well-known enterprises such as China National Heavy Duty Truck, Ministry of Aeronautics and Space, Zhongyuan Special Steel, Zhengmei Machinery, Shanghai Heavy Industry, Wuhan Iron and Steel, Anshan Iron and Steel and Sany Heavy Industry have the characteristics of rich experience, excellent.

Factory Pictures



<p>ISO 14001 Environment Management System</p>	<p>ISO 9001 Quality Management System</p>	<p>European CE Certificate</p>

Part 10: Quotation & Transaction Terms

QUOTATION SHEET

CURRENCY UNIT : US\$

Date: February 22, 2024

Machine Type	Equipment Model	Technical Parameter	PRICE in USD (EXW Factory)
Duplex Machine with Truss Slant Bed CNC lathe	TCK50A*500 and TCK50Y*400	As upper technical description	- USD/set

* The sea freight cost fluctuate everyday due to the global shipping situation, The final confirmed price can be checked when the machine is about to ship.

Remarks :

- 1. Origin:** The People's Republic of China
- 2. Delivery Time:** 3-4 months ready for the factory acceptance test.
- 3. Payment terms:** 30% payment in advance for deposit, 70% balance after the pre-acceptance test before shipment
- 4. Package:** Factory export wood box packing
- 5. Validity:** 30 Days.(The buyer has to re-check with seller if the quotation validity is expired)