

CT-300 Manual Cut-off Machine

Operation Instructions

2022.11.22



Foreword

First of all, thank you for purchasing the CT-300 benchtop cutting machine developed and manufactured by Trojan!

TROJAN(Suzhou) Material Technology Co., Ltd is a professional manufacturer and solutions provider in metallographic analysis field. We have been focusing on the research and development, production and sales of metallographic equipments and consumables for over 17 years and we have independently developed a series of metallographic equipment and material. TROJAN and its employees have many



years of rich experience in metallography and materials science as well as in microstructure analysis of materials and we have done extensive pioneering works and accumulated rich professional knowledge in this area.

After 17 years of development and enhancement, Trojan products have been widely used in the following industries:



- | | |
|-------------------------------|--|
| ✓ IC Semiconductor Materials | ✓ Fasteners and Tools |
| ✓ PCB and SMT Industry | ✓ New Energy Industry |
| ✓ Automotive and Parts | ✓ Aviation and Aerospace Materials |
| ✓ Various composite materials | ✓ Universities and research institutions |

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Brief Introduction

1. Description

CT-300 is an easy-to-use and powerful manual cutting machine that can be used with $\Phi 300\text{mm}$ and $\Phi 350\text{mm}$ cutting blades. It can handle the cutting of the specimens of various shapes, sizes, and complex materials. The push-up safety door design makes putting samples into the cutting chamber easy and fast. Powerful motors and ergonomic cutting arms allow for efficient and smooth cutting. The simple and clean operator panel allows any operator to cut workpieces quickly and efficiently with minimal training.

2. Features

- Adopts high-power motor (5.5Kw) to make the cutting more powerful and labor-saving;
- Cast aluminum base, integrated worktable, strong rigidity, making cutting more stable;
- Extra large working surface and operating space for faster specimen clamping;
- The simple and clean operator panel allows any operator to learn how to use quickly;
- Enlarged cooling pipes for more adequate cooling.

3. Cautions

Please read this manual carefully before operating this equipment. And strictly follow this manual to operate. For damage to the equipment caused by not following the process of the manual is not covered by the company's warranty regulations. This manual is only for users who own this machine.

4. Restrictions

CT300 is only used as a cutting equipment for metallographic specimens. Untrained or non-metallographic personnel are prohibited from operating this equipment.

The equipment can be cleaned with the equipped water gun, and the operator needs to wear goggles to prevent splashing water or debris from entering the eyes.

It is strictly forbidden to cut flammable and explosive materials and materials that are harmful to the human body, and it is also strictly forbidden to generate flammable and explosive dust during the cutting process. Cutting fluid is required to avoid burns during cutting.

The debris generated during the cutting process can easily accumulate in the water tank or cooling pipeline, requiring regular manual cleaning and maintenance by the user.

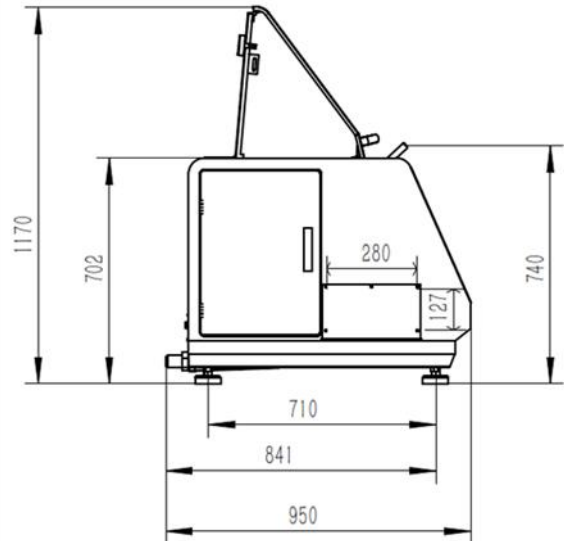
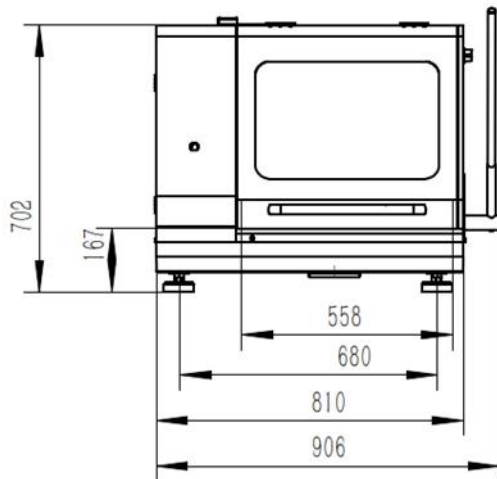
5. Technical Specifications

Model		CT-300
Cutting blade	Speed	Two gears: 2000 & 2500rpm
	Diameter	Φ300~Φ350mm
	Center hole	32mm
Cutting capacity @Φ300	Diameter	Φ100mm
	Height x Length	90x130mm
	Cutting length	240mm
Workbench	Size (WxD)	385x330mm
	T-slot width	12mm
Electric	Input	3x380V/50Hz+Earth wire(E) (Optional voltage: 3x220V)
	Cutting power	5.5KW
	Current, normal load	12A
Safety	Emergency stop	Press to cut off the control circuit and main power
	Safety door lock	When the door is open, it cannot be started; When it is running, the door is locked and cannot be opened
	Overload protection	Automatic shutdown when overload current is exceeded
Cooling system	Capacity	100L
	Dimension(Wx DxH)	420x680x350mm
	Interface	Inlet water: Φ19 inner diameter high pressure pipe; Water outlet: Φ38 inner diameter steel wire pipe
	Cooling water	4-way cooling tube, flow rate: 100L/min
Exhaust system	Recommended exhaust volume	150m ³ /h
Advanced Features	X Cutting table, manual	Optional
	Exhaust system	Optional
	Removable vertical cabinet	Optional
Dimension	WxDxH	906*950*702(closed) 906*950*1170(open)
Weight	Machine	235kg

Installation

1. Dimension

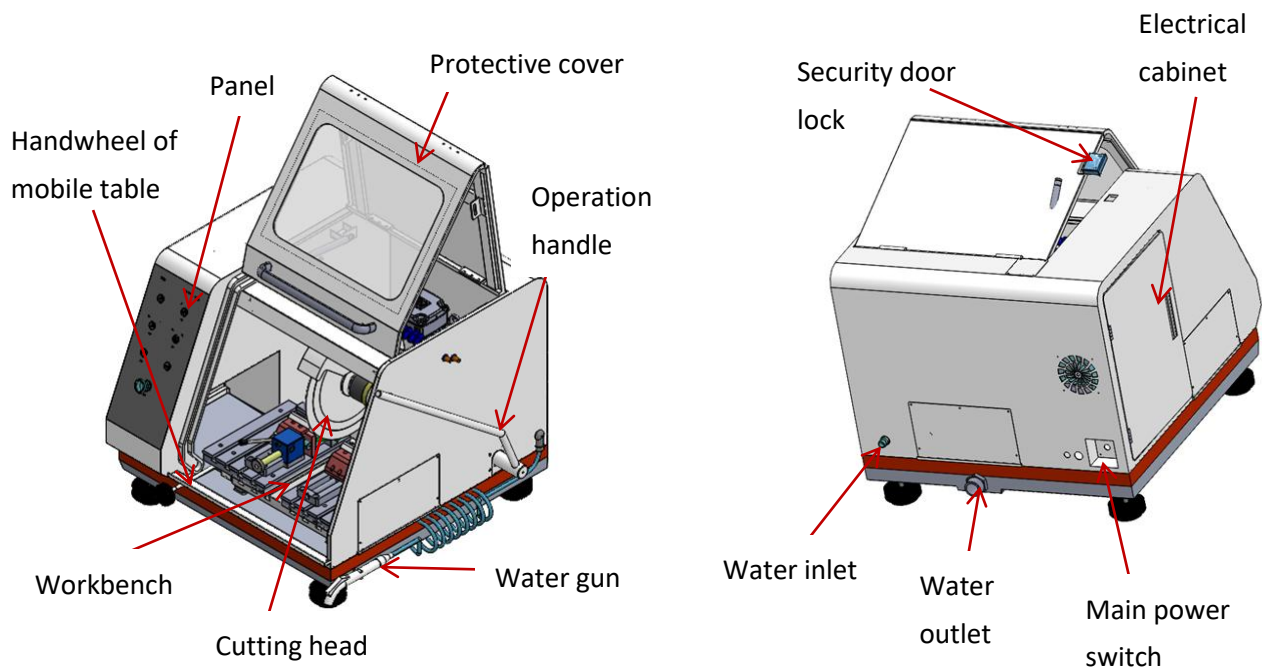
In order to facilitate the installation of CT-300 tabletop cutting machine, the suggested dimension of the cabinet is 1100x1000x750mm (WxDxH) As shown in the figure below.



2. Electrical requirements

Power supply: three-phase five-wire 380V, power: 10Kw, good grounding, need to connect to the neutral wire.

Composition



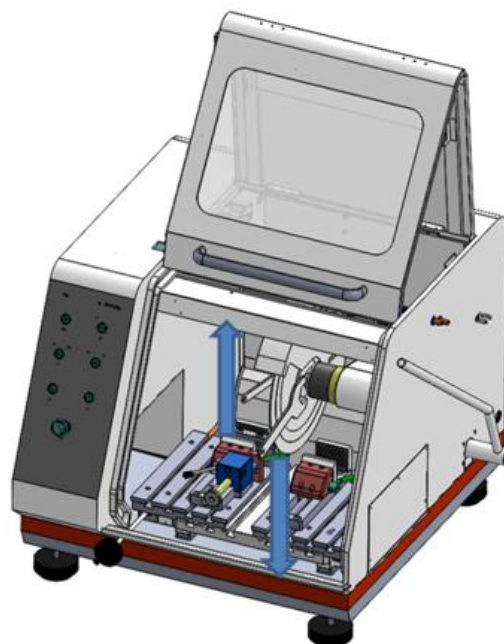
Equipment Operation

1. Introduction to the functions of the control panel

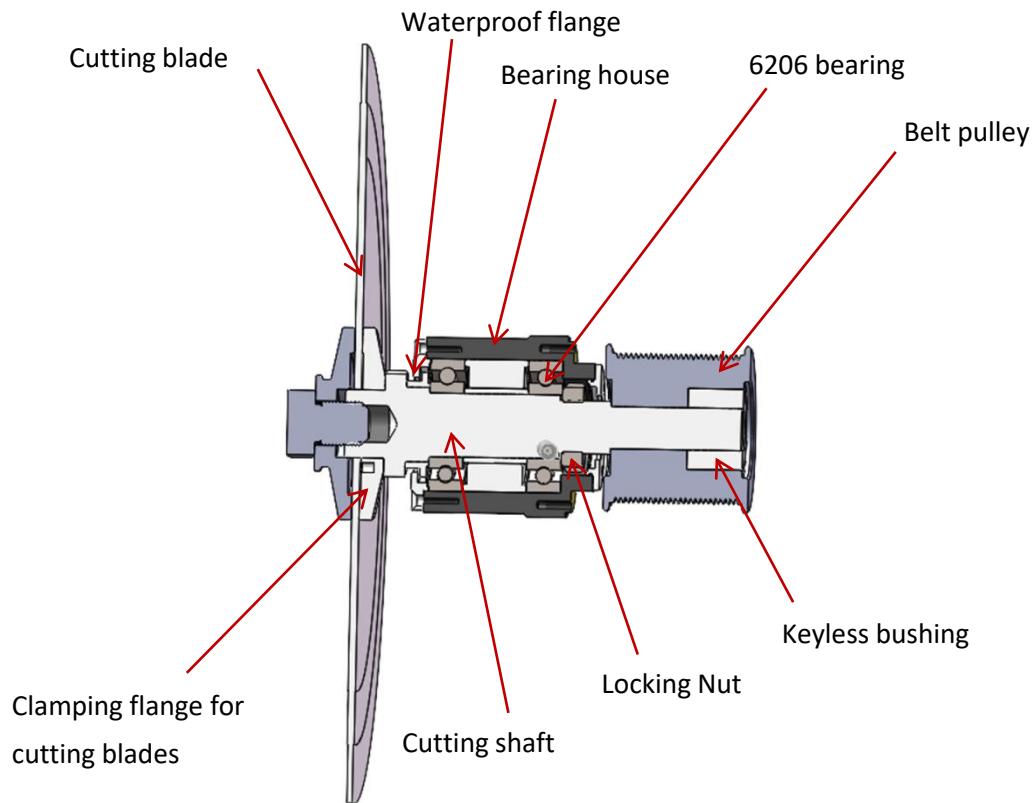


2. Replacement of cutting blade

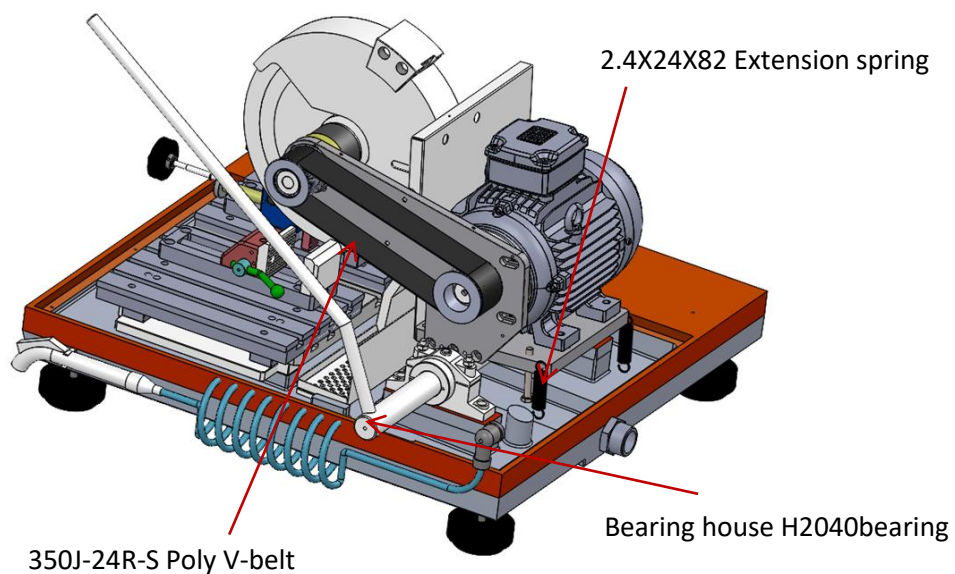
To replace the cutting blade, you need to use a wrench with an opening of 30mm and 46mm. See the picture below, loosen the flange screws and remove the cutting blade.



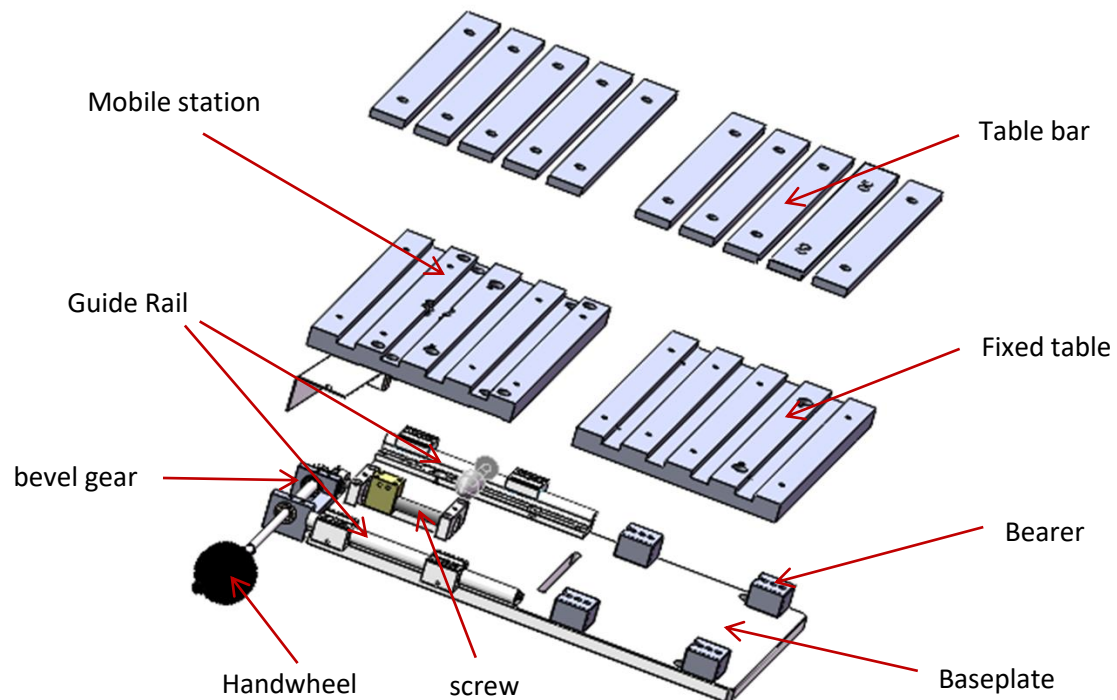
3. Structure diagram of cutting flange



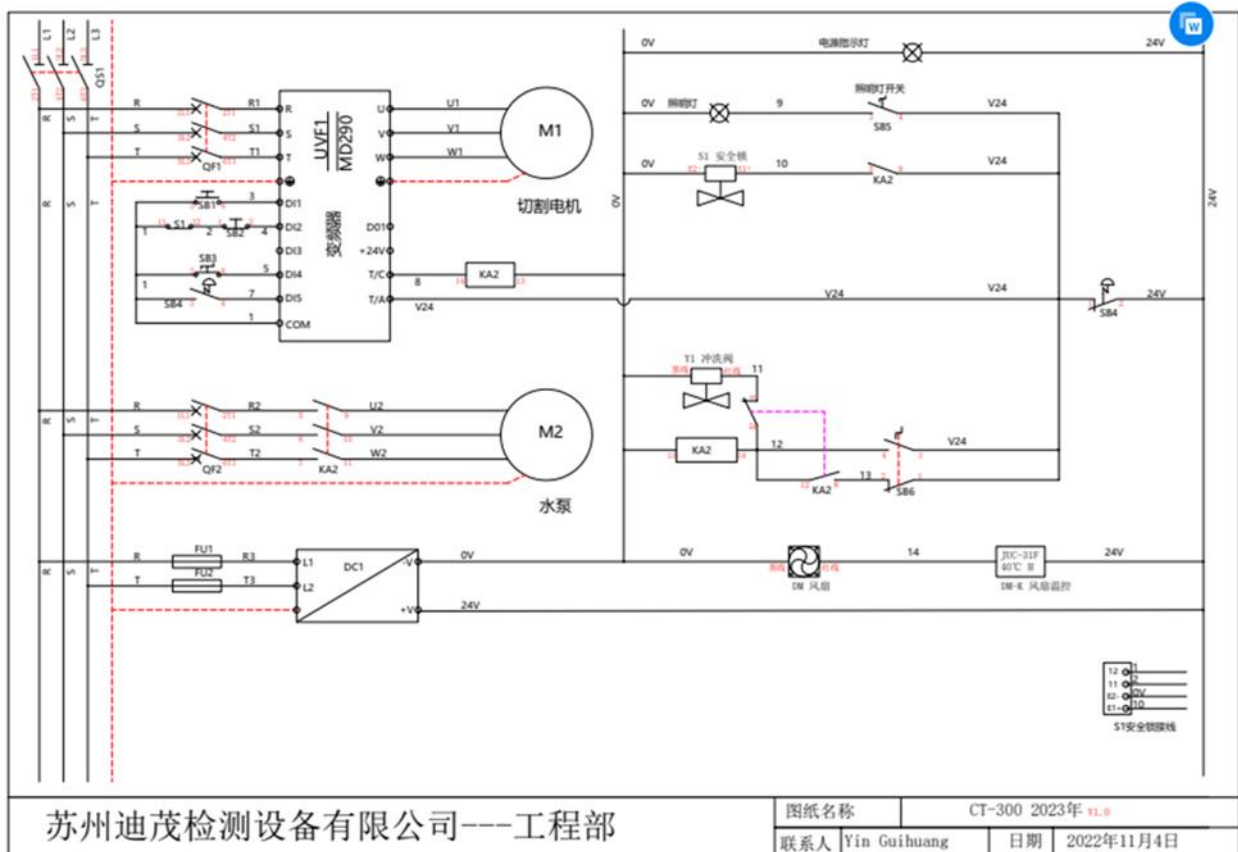
4. Structure diagram of main drive



5. Mechanical drawing of X-table



Wiring diagram



Maintenance and Care

1. List of consumable parts

Serial No.	Name	Specifications	Quantity (min. package)
1	Cutting shaft belt	350J-24R-S	1pc
2	Cutting shaft bearing	NSK, 6206	2pcs
3	water tank filter	100um Filter	5pcs
4	Gas Spring for the cover	Center distance 380 stroke 180, 200N, M8	2pc
5	Pulley for the cover	M6 outer wire, outer diameter 26, thickness 10mm	2 pcs
6	Front cover explosion-proof plate	Transparent PC board, 378*525*5mm	1 pc

2. Common faults and solutions












Serial No.	Name	Possible reason	Solution	Remark
1	Overcurrent protection	1.The cutting speed is too fast; 2.Unsuitable cutting blades that do not cut; 3.The sample is not firmly clamped, which is loose during the cutting and leads to the clamping of the blade.	Replace the appropriate cutting blade; 3.Check the fixture or workpiece, re-clamp the workpiece, and consider adding auxiliary fixtures for special-shaped workpieces;	
2	Smaller cooling water volume	1.The water pump does not work; 2.Low water level in the tank;	1.Open the door of the electrical box and check whether the corresponding circuit breaker is tripped for protection; 2. Add cooling water;	
3	Water gun does not spray water	1.Low water level in the tank; 2.The flushing electric valve is damaged;	1.Add cooling water; 2.Replace the electric valve;	

3. Maintenance requirements




Serial No.	Time	Content	Responsible
1	Daily or every 8 hours	1. Use the water gun to clean the debris in the cutting chamber/workbench; especially the debris accumulated in the downspout area, must be cleaned up in time. 2. Check whether there is debris in the sink and clean it up in time; avoid not cleaning for a long time, the debris will harden and block the sink. 3. Clean the debris in the filter bag; depending on the frequency of cutting, it may be necessary to clean the filter bag after 2 hours of continuous cutting. 4. Check the water level in the tank and add cooling water if the water level is too low. 5. Move the table cutter in X direction, turn the table hand wheel to move the table left and right to flush the debris under the table. It also avoids the deformation of the slider due to long-term unidirectional force after the worktable stays in one position for a long time. 6. Turn off the main power.	Operator
2	Once a week	1. Clean the water tank, replace with new cooling water if necessary, and add cutting fluid . 2. Use a grease gun to add grease to the clamp and the bearing housing under the spindle motor. 3. Check whether the fixture can be clamped. 4. Check if the emergency stop switch is normal.	Equipment manager

Packing list

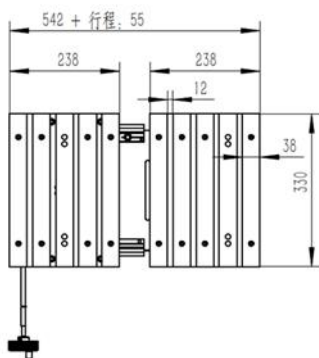
1. Standard accessories:

Serial number	Name	Picture	Specifications	Amount
1	Circulating water tank system		Capacity: 100L, flow: 100L/Min	1set
2	Quick fixture		One on each side	1set
3	Open-end wrench		46mm & 30mm open-end wrenches.	1set
4	Allen key		M8mm Allen key	1pc
5	Cutting blades fix		Lock nut 1pcs+Fixing piece 2pcs	1set
6	Inlet pipe		Φ19mm Rubber pipe 1.5m	1pc
7	Outlet pipe		Φ38mm steel wire pipe	1pc
8	Coolant		TJ-1410,(2000ml)	1bottle
9	Cutting blade		A603020(300*32*2.0) A503020(300*32*2.0)	5pcs each
10	Operation manual			1pc
11	Product certificate			1pc
12	Warranty card			1pc

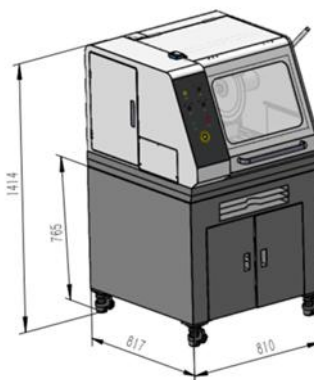
2. Optional accessories:

Serial number	Name	Picture	Specifications	Amount
1	Side handle type quick fixture			1set
2	Vise type quick fixture			1set
3	vertical fixture			1pc

3. Optional before leaving the factory:



X-direction cutting platform
(manual)



CT-300 special cabinet

Inspector: _____

Packer: _____

Product certificate

Product name: Metallographic specimen cutting machine

Factory number:

Model: CT-300

Manufacture Date:

Inspection records:

1. The quality of manufacturing and assembly meets the drawings requirements, and the electrical appliances meet the technical requirements.
2. Smooth rotation and low noise.
3. The appearance quality is intact.
4. Parts and components are intact without shortage.

It is qualified after inspection and allowed to leave the factory.

Inspectors: _____

Inspection date: _____

Product Warranty Card

Product name: Metallographic automatic cutting machine

Product model: CT-300

Factory number: _____

Purchase date: Y _____ M _____ D

(Purchasing time is based on the date of completion of equipment debugging)

Manufacturer's stamp

(Stamp is valid)

Customer name: _____

Contact number: _____

Address: _____

Zip code: _____

The Warranty Rules

The content of this article is about free maintenance regulation:

1. This product is guaranteed for one year.
2. During the warranty period, mechanical failure occurs when equipment is normally used in accordance with the instruction (judged by the official staff from our company) , our company will provide free maintenance service.
3. During the warranty period, if one of the following situation happens, we will charge for maintenance:
 - 1) Without warranty card and valid purchase certificate.
 - 2) Mechanical failures and damages caused by incorrect use and Maintenance.
 - 3) Mechanical failures or damages caused by transportation, removal after purchase.
 - 4) Mechanical failures and damages caused by other unavoidable external Factors.
 - 5) Water inflow inside the equipment and damages caused by incorrect use or other liquid.
 - 6) Damage caused by using other unspecified power source and voltage.
4. Within the warranty period, free maintenance service will be performed in accordance with the above regulations.
5. Our Company shall not be liable for any special, accidental or indirect damages, whether in contract, in civil negligence or in other respects, without any other express or implied guarantees (including the implied guarantees of marketability, the reasonableness and adaptability of a particular application, etc.).
6. This Guarantee is valid only in the mainland of the People's Republic of China.