⚠ Warning
In order to use this product safely and correctly, please carefully read the safety pages at the beginning of this operating manual and the pages related to the functions used, and understand their contents. Failure to observe with the safety precautions and instructions in the operating manual may result in death or injury to the operator. Please place this manual near the product so that it can be consulted at any time.

JDM5T-PRO

User Manual for Five-Axis Metal Dental Prosthesis Engraving and Milling Machine

This manual provides instructions for the JDM5T-PRO Five-Axis Metal Dental Prosthesis Engraving and Milling Machine.

Warning
Before setting up, operating, or maintaining this product, you should carefully read the safety countermeasures and understand their contents. Failure to observe safety measures and other precautions described in the operating instructions may result in death or injury to the operator.

To prevent accidents caused by incorrect operation, this manual includes symbols marked before the precautions. The meanings of each symbol are as follows. Please read the main text after fully understanding its content.	
Warning:	his symbol indicates: There is a potential risk of fatal or serious injury to the operator if incorrect operations are performed.
Caution:	This symbol indicates: There is a potential risk of damage to property other than this product if incorrect operations are performed.
Usage Guidelines:	This is a reminder to the operator not to

	damage the product.
Additional Notes:	This is for reference to ensure effective use of the product.

We have attempted to describe as many scenarios as possible in this manual.

However, to specify all the things that should not be done in this manual would require a significant amount of space, hence not every instance is listed.

Therefore, any matter not specifically mentioned in this manual should be understood as "that should not be done." If there is any doubt about whether an operation can be performed, please consult our company.

Preface

1.Purpose of the Machine Tool

The F5Z Side Dry Cutting Dedicated Engraving and Milling Machine is a five-axis linkage dental prosthesis engraving and milling machine controlled by a CNC system. It is capable of cutting materials such as zirconia and resin for dental prostheses.

Please do not use this machine for other purposes.

2. Definition of user

In this manual, the person operating the product is referred to as the "operator."

The "operator" must read this manual and fully understand its contents. Operating the product without understanding the manual may not only pose a risk to the operator but also cause significant harm to those around them.

Additionally, the "operator" is prohibited from performing the following tasks:

(1) Using tools to remove removable covers

(2) Performing maintenance on the product

(3) Modifying internal parameters of the machine

Table of Contents

1. Product Safety instructions

When using this machine, if the national or local government has made regulations on safety, health, and environmental hygiene, you should comply with those regulations.

1.1. Product safety features

Warning
When operating the product with the protective door open, be careful not to touch the workbench, tool magazine and other moving parts. Otherwise, you may be pinched and get injured.
When the air supply is turned on with the protective door open, please wear protective glasses. If chips enter your eyes, it may cause blindness.
If coolant and lubricant (grease, oil) get on your hands, wipe them off immediately. Hands stained with coolant and lubricant will become very slippery, making it difficult to pick up processed products and operate the machine, which may cause injuries and damage to processed products.
When opening the protective door, be prepared to press the emergency stop button at any time.

There are sharp corners and burrs on unprocessed and processed products, so be careful, otherwise it may cause injuries. Please use protective equipment such as gloves.
When replacing live parts, only "maintenance personnel" should do it, and "operators" should not operate. If this operation is performed by personnel without sufficient professional knowledge, the safety device may not work fully, or people may be injured or get electric shock due to unexpected movements of the machine.
When using or replacing a knife, be careful to avoid injury from its sharp parts. Wear gloves and other protective gear when using a knife.
When handling chips, be careful to avoid injury. Use gloves and other protective gear.
When discarding a knife, dispose of it in accordance with the regulations on the disposal of hazardous materials. If you discard it carelessly, it will cause others to touch it and get injured.

Emergency stop button: The emergency stop button is the first thing to do when a machine tool fails. You should always be prepared to press the button when needed. Do not cover the emergency stop button with any object.

Dangers of working conditions

Notice

The workpiece should be properly clamped on the fixture before processing. If the workpiece is not completely fixed, it may fall off the fixture and cause damage to the workpiece and machine.
Before processing, check whether the tool is firmly installed on the tool assembly. If it is not installed properly, the tool will fall off, damaging the workpiece and machine.
Before processing, check that the tool is not worn or damaged. Otherwise, the machine will be damaged by the flying of tool fragments.
When opening the protective door, be prepared to press the emergency stop button at any time.
Before processing, check whether the tool assembly is firmly installed on the chuck of the tool magazine as instructed. If it is not installed properly, the tool assembly may fall off and fly out, damaging the workpiece and machine.

1.2. Dangers during electrical work

Warning
If the power cable or connection cables are damaged, the machine should be immediately stopped. Otherwise, it may lead to electric shock or fire. The machine should not be used until the damaged cables are replaced by qualified personnel.

When it is necessary to open the electrical cabinet door for work, always disconnect the power supply first to prevent the risk of electric shock.
Personnel who are not from the CNC system manufacturer should not perform system replacement operations. If individuals without sufficient professional knowledge carry out this task, it may result in safety devices not functioning properly or cause unexpected machine movements, leading to injury or electric shock.
Inside the electrical cabinet, some components may still retain residual voltage even after the power is disconnected, posing a risk of electric shock. Only personnel with sufficient electrical knowledge should touch the interior of the electrical cabinet.
Do not touch the electrical cabinet with wet hands, as it may cause electric shock.

1.3. Heat-realted dangers

Warning
It should be noted that during operation and immediately after operation, do not touch the following parts. When you need to touch hot parts, please use gloves. ① Servo motors for each axis

② Spindle motor

③ Cooling machine motor

1.4. Danger of working process

Warning
When installing parts that are obviously heavier than 20kg,parts that cannot be lifted by hand, or objects that feel heavy when trying to lift, please use a crane. If you lift it by hand, it will increase the burden on your waist and cause injuries when it falls.
Do not work in an unnatural posture of installing or removing workpieces away from the workbench.Such a posture may cause unexpected injuries to the operator due to the increase in the burden on the waist and the fall of the processed product.When working on the workbench, move the workbench closer in advance.

1.5. Instructions about fire

Warning
Do not use the machine under processing conditions where sparks fly. Otherwise, it may cause a fire. The contents of the program and various settings should be fully confirmed in advance, and the action should be confirmed to eliminate interference with the fixture to avoid

excessive load on the tool.
The chips should be cleaned. If chips accumulate inside the machine, the potential danger of ignition will increase. Clean regularly to avoid chip accumulation.
Use the machine under appropriate processing conditions with appropriate tools. When cutting with a worn tool under inappropriate processing conditions, it will catch fire due to cutting heat and other reasons. In addition, sparks from tool breakage may ignite and cause fire. Please refer to the information provided by the tool manufacturer and process with appropriate tools under appropriate processing conditions.
A fire extinguisher should be prepared near the machine in case of fire.
Sufficient coolant should be kept at all times for processing. If the coolant is insufficient, it may cause a fire or damage to the tool and workpiece due to temperature rise.
If the power cable and connection cable are damaged, the machine should be stopped immediately. Otherwise, it may cause electric shock or fire. The machine tool must not be used until the maintenance personnel replace the damaged cable.

2. Product information overview

2.1. Product introduction

The JDM5T-PRO Five-Axis Metal Dental Prosthesis Engraving and Milling Machine is a five-axis linkage dental prosthesis engraving and milling machine controlled by a CNC system, capable of milling and drilling materials such as titanium posts, titanium discs, and glass ceramics.

This machine tool is easy to operate and fully enclosed for protection. It can process materials like temporary teeth, PMMA, PEEK, wax, glass ceramics, and soft metals (such as aluminum), and can cut bridges, inlays, onlays, temporary restorations, titanium posts, titanium crowns, wax patterns, etc. It provides the best solutions for various dental restorations and dental materials.

The cutting capability may vary depending on the type of processing material and the tools used. In practical use, please make adjustments according to different materials and tools.

Please do not use this machine tool for other purposes.

2.2. Product structure overview

he castings of this machine tool undergo multiple manual aging treatments, ensuring good stability, high strength, and reliable precision.

The spindle used in this machine is an electric spindle, consisting of a motor without an outer casing, the spindle, bearings, spindle unit housing, drive module, and cooling system. The built-in motor directly drives the spindle, achieving "zero movement" in the machine tool. It features advantages such as light weight, low noise, high speed, and high precision, while simplifying the machine structure and making spindle positioning easier.

The feed system of this machine uses precision ball screws and guide rails, paired with dedicated bearings and couplings. It uses a stepper motor for direct transmission, improving transmission efficiency and the machine's movement precision.

Equipped with a professional dental CNC system, the machine supports five-axis linkage and can display and modify various coordinate parameters and program settings. It allows for direct clamping and automatic processing, offering powerful cost-performance advantages.

2.3. Product features overview

(1)**Breakpoint Memory and Continuation:** The machine saves progress while processing, eliminating concerns about power outages. Upon restarting, a pop-up prompt will appear, allowing you to resume the task with a single click.

(2) **Selective Line Processing:** You can choose to start processing

from a specific line in the file, depending on your processing needs.

(3) Multi-material Processing: The machine supports the processing of various materials, including pure titanium, glass ceramics, zirconia, and soft metals (with hardness similar to zirconia).

(4) **90-Degree Processing Support**: To achieve better processing results, the machine supports 90-degree milling, allowing for detailed reproduction of labial and buccal side details.

(5)Automatic Calibration: After prolonged use, the workpiece coordinates may shift. This function allows for easy and quick adjustment of processing offsets with one click.

2.4. Product operating environment

(1) The base for placing the equipment must be stable; otherwise, it may cause deviations in the processed products.

(2) Humidity should be between 35% and 80% (without condensation).

(3) The power supply voltage should be 220V AC.

(4) Keep the machine away from vibration sources and high-frequency emitting devices.

(5) Avoid placing the machine near fire sources, flammable and explosive materials, or environments containing corrosive gases and liquids.

(6) If the machine operates in an environment with temperatures above 40°C for extended periods, it may affect the reliability of the components.

The equipment should be placed in a well-ventilated area or a location with air conditioning.

3.Structure and functions

3.1.External structure and functions

（1）Front view

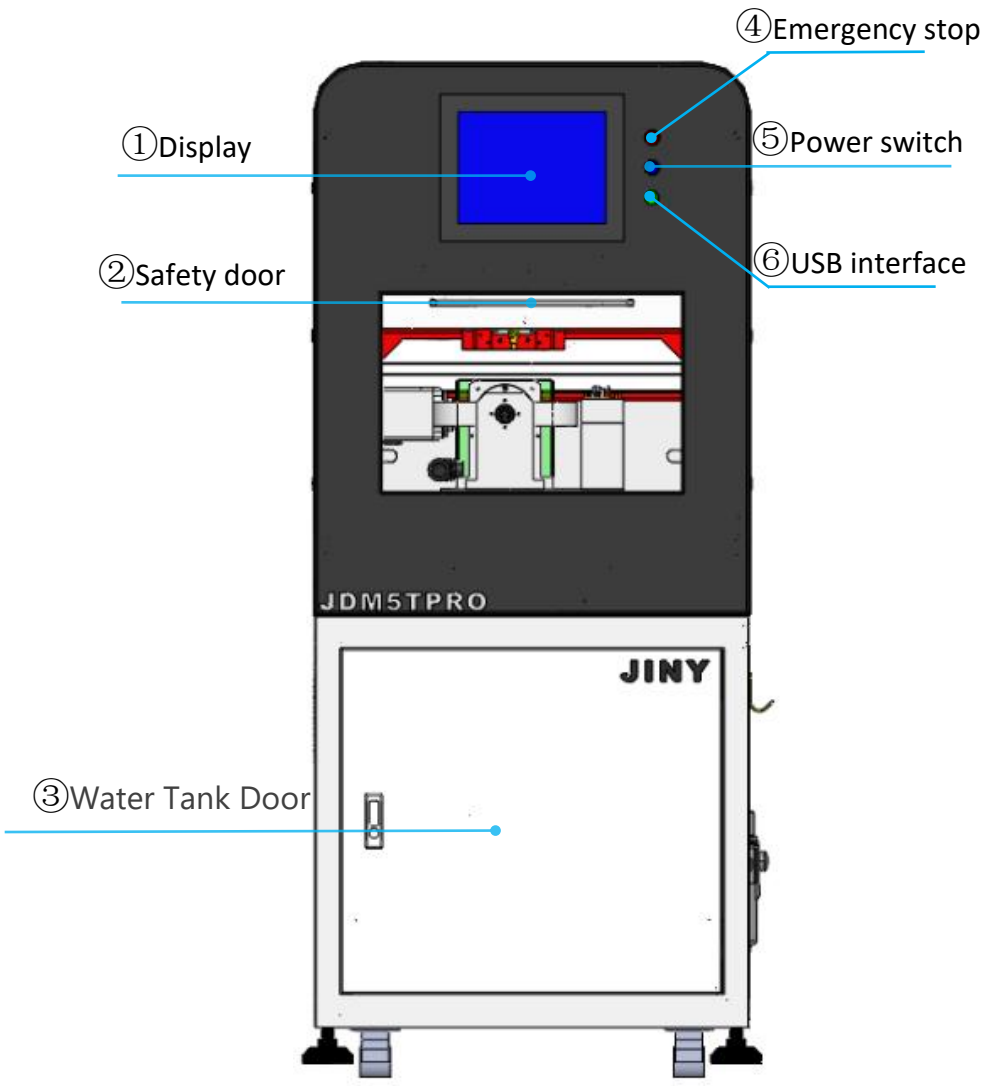


Figure 3.1.1 Front view

① Display: Touchable industrial display, basic operation and advanced settings of machine tools are operated through the display.

② Safety door: Prevent chips and cutting fluid from splashing, transparent glass in the middle of the door, cutting status can be observed at any time.

③ Water Tank Door: The placement area for the water tank, which prevents water splashes or cutting splatter from the tank.

④ Emergency stop: Emergency stop button, cannot be covered by any object.

⑤ Power switch: Machine power switch.

⑥ USB interface: Can connect to external devices such as U disk, mouse, keyboard, etc. NC program can be imported by connecting U disk.

（2）Right side view

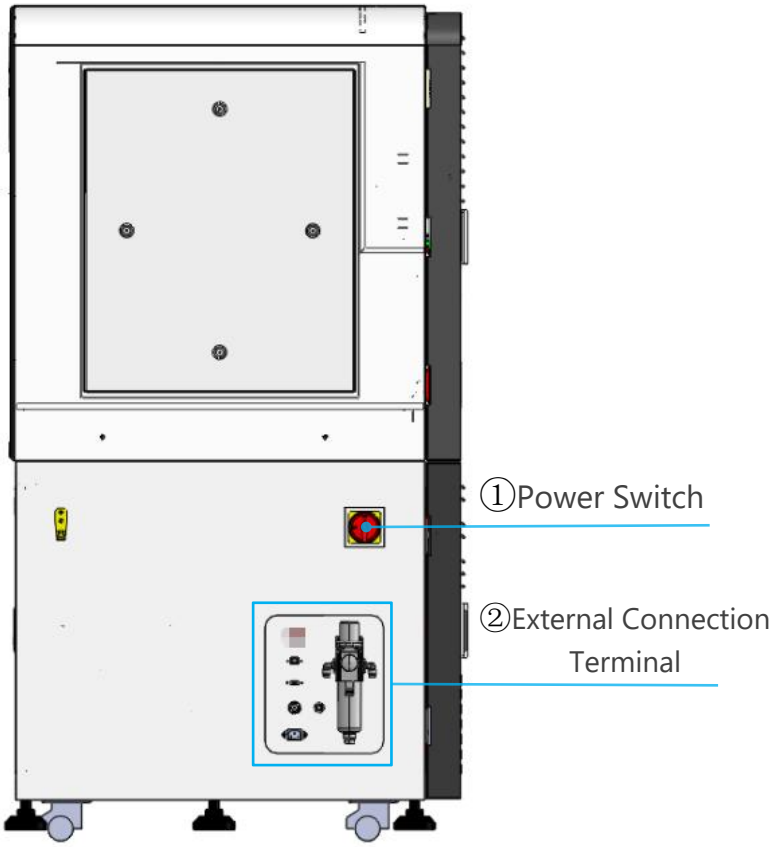


Figure 3.1.2 Right side view

① Power Switch: Turn the device on or off.

② External Connection Terminal: Includes power, network cable, air pipe, USB interface, and water pump switch.

（3）External line end

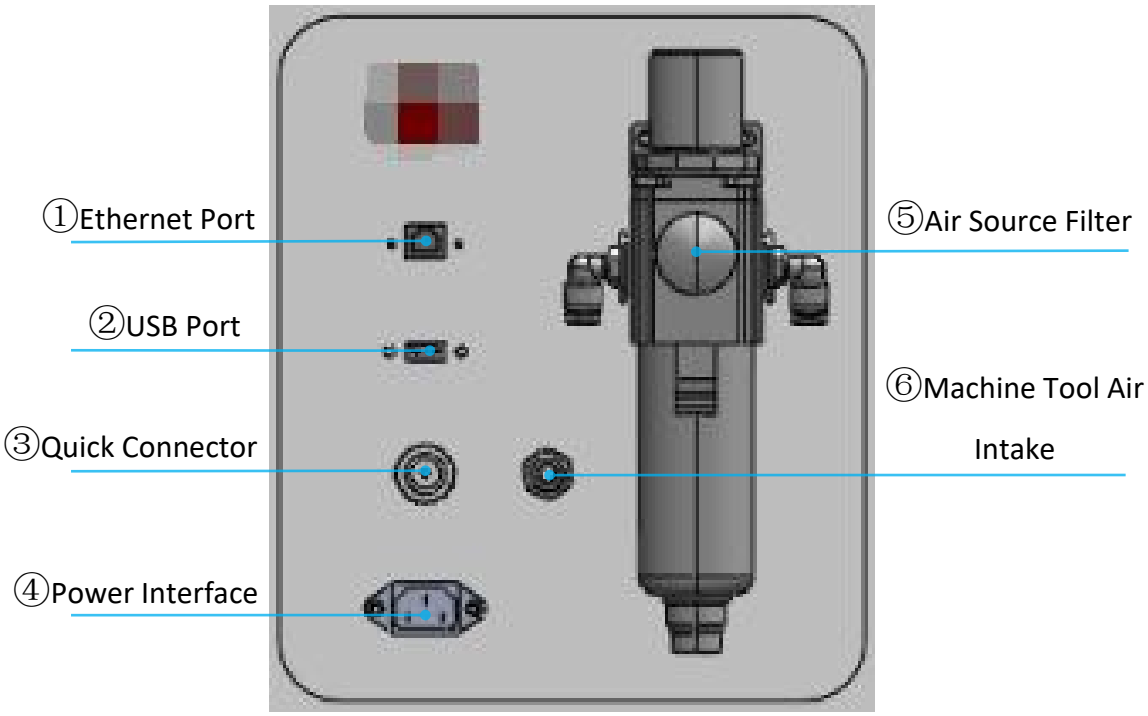


Figure 3.1.3 External line end

① Ethernet Port: Network cable connection interface.

② USB Port: Can connect to external devices such as USB drives, mice, and keyboards. NC programs can be imported via a connected USB drive.

③ Quick Connector: Pneumatic connector, can be inserted into devices such as air guns and adapter connectors.

④ Power Interface: Power cable connection interface.

⑤ Air Source Filter: Filters moisture and foreign objects from the air source to prevent malfunctions.

⑥ Machine Tool Air Intake: Equipment air intake, connected to the air source filter outlet.

3.2. Cooling System

This system incorporates two types of liquid cooling systems.

The spindle cooling utilizes a coolant tank that is separate from the main body of the machine tool, facilitating easy replacement of the coolant. Figure 3.2.1 shows the external appearance of the attached chiller unit.

The cutting cooling employs a coolant pump and a water tank that are separate from the main body of the machine tool. This design allows for convenient removal of chips and replacement of the cutting fluid. Figure 3.2.2 illustrates the attached water pump and water tank configuration.

Figure 3.2.1 Water Chiller

Figure 3.2.2 Water tank and water pump

3.3. Tool Magazine

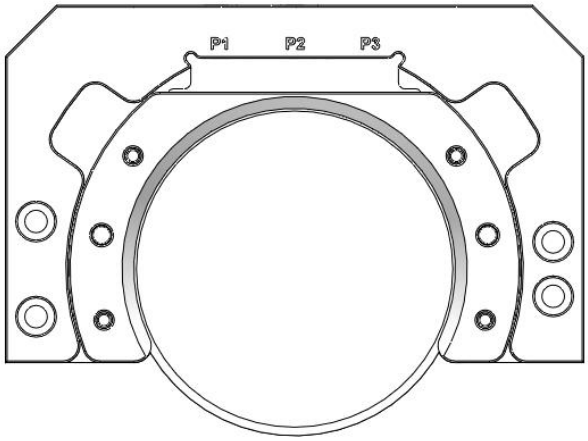
The tool magazine of this machine tool is made of aluminum alloy and can load up to 28 tools, with a light load; it is equipped with a tool setter, which can automatically compensate for tool length during processing; the overall design features low wear, long service life, easy

adjustment, and simple maintenance.

Before formal processing, it is necessary to load the correct burrs into the tool magazine.

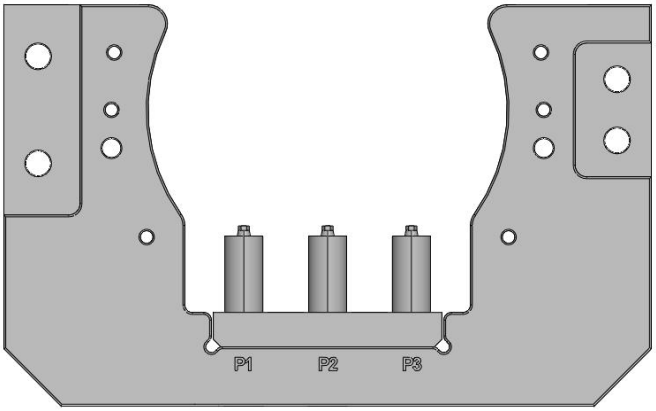
3.4. Fixture Structure

(1) Disc Clamping



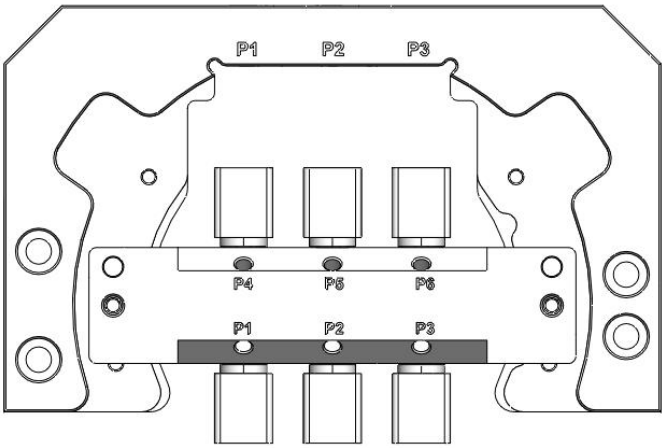
graph 3.4.1 disk

(2) Titanium Column Clamping



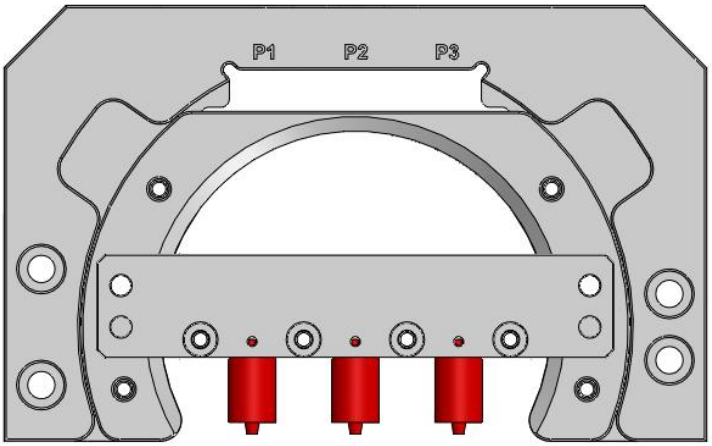
graph 3.4.2Titanium column

(3) Glass Ceramic Clamping



graph 3.4.3 glass ceramics

(4) Merentica Clamping



graph 3.4.4 Melantica clamps

(5) Square Disc Clamping

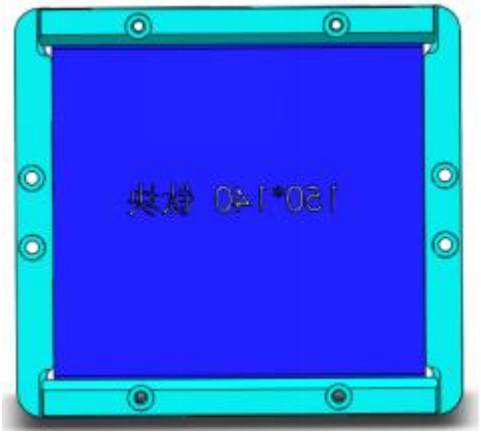


Figure 3.4.5 Square disk

(6) Disc loading and clip

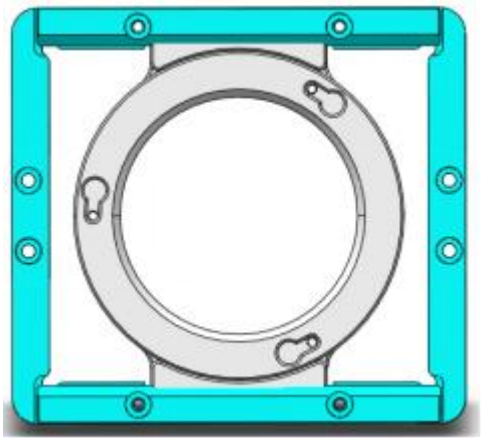


Figure 3.4.6 Disc fixture

(7) Titanium column + ceramic clamping

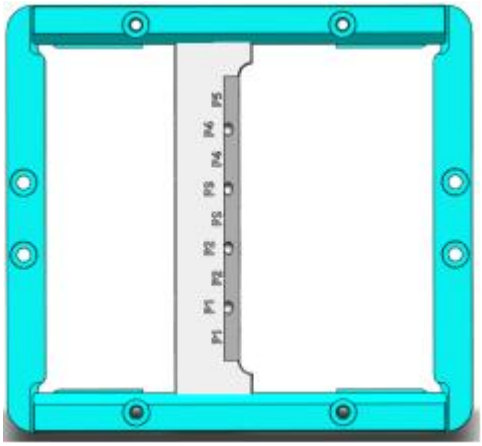


Figure 3.4.7 5A + 4G clamp

(8) Arum Custom Clip (optional)

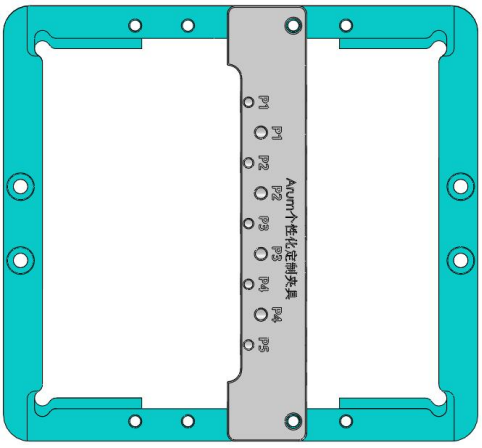


Figure 3.4.8 Arum fixture

(9) Maidentec card clip (optional)

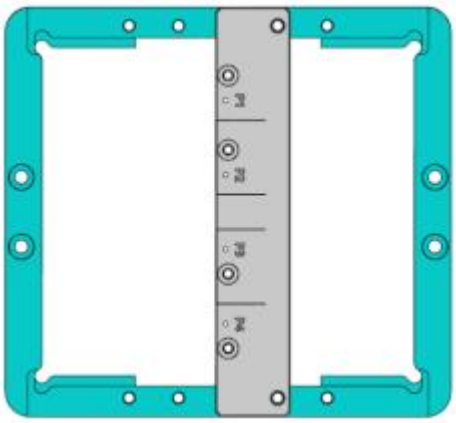


Figure 3.4.9, Maidentika fixture

4. Product installation

4.1. Unpacking and placement

（1）The machine must be unpacked carefully to avoid damage. After unpacking, the accessories must be carefully checked to see if they are in accordance with the packing list.

（2）After unpacking, place the machine on a stable workbench or on a matching base cabinet.The machine is equipped with six foot cups, which can be placed stably.When putting down the foot cups, the four corners should be placed first.After the foot cups are on the bottom, turn them 180° with a wrench.Then place the foot cups at the bottom of the middle of the machine,and do the same as the four corners. Open the safety door and take out the foam cotton used for protection in the machining

cavity inside the machine.

Note: When removing the foam, carefully check the inside to avoid residual foam that may affect machine performance.

（3）Take out the power cord and connect it to the power interface.

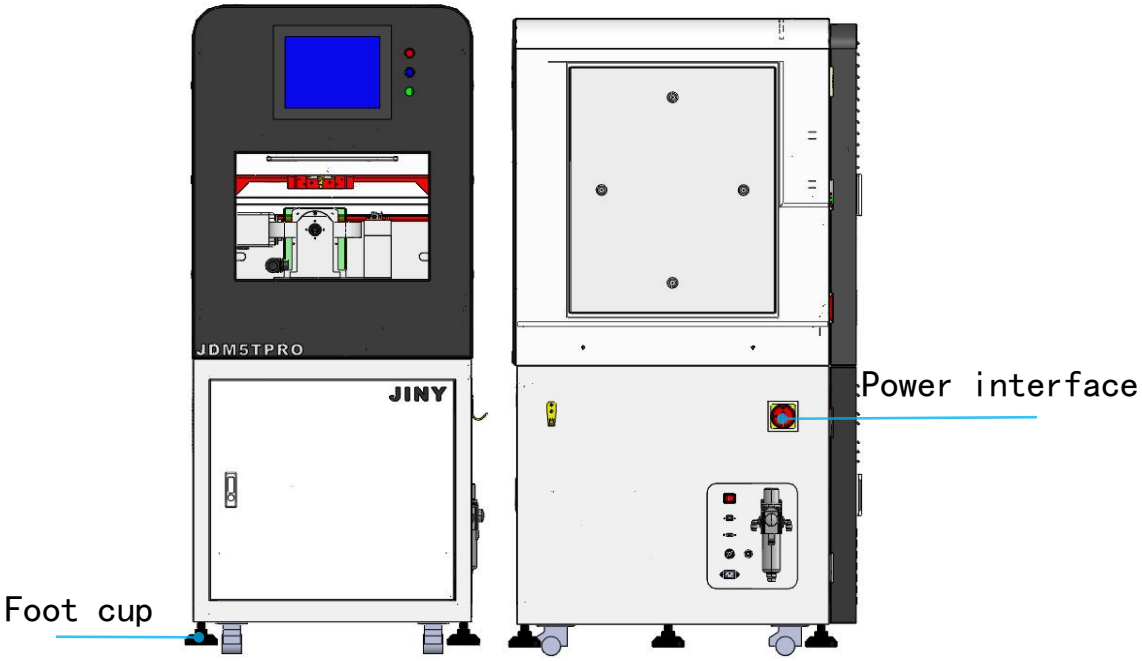


Figure 4.1.1 Foot Cup and Power

4.2. Inspection of the Cooling System

4.2.1. Inspection of the Chiller

Ensure that the water inlet and outlet of the chiller are properly connected to the water hoses.

Verify that the power cable of the chiller is securely connected.

Inspect the interior of the chiller to ensure there is sufficient water. The water level should be maintained at the high (green) mark.

Turn on the chiller. After powering on, confirm that the switch and

the green indicator light are illuminated.

Use only purified water or distilled water as the coolant.

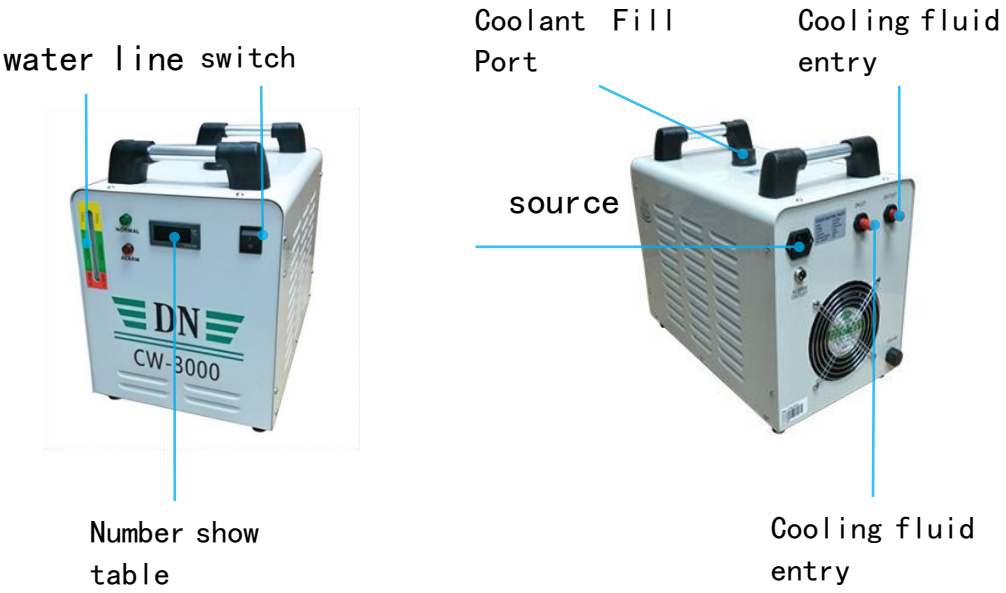


Figure 4.2.1 Chiller structure

4.2.2. Inspection of the Water Pump

Inspect the water hoses connected to the water pump. Gently tug on the hoses to ensure they are securely attached and not loose.

Verify that the power cable of the water pump is properly connected to the power source.

Pour the cutting oil provided with the equipment into the designated reservoir or tank. Ensure the oil level is within the recommended range for optimal performance.

This procedure ensures the water pump operates efficiently and maintains proper cooling and lubrication during machining processes

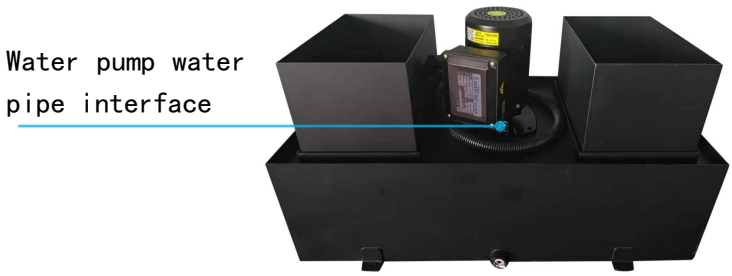


Figure 4.2.2 Chiller structure

4.3. Air connection

Take out the air pipe that comes with the machine. Connect the air pipe from the self-provided air compressor to the left side of the air source filter. At the same time, cut a section of air pipe and connect it from the air outlet of the air source filter to the air inlet of the machine tool. The air inlet on the left side of the air source filter is an 8mm air pipe interface, and the air outlet on the right side is a 6mm air pipe interface.

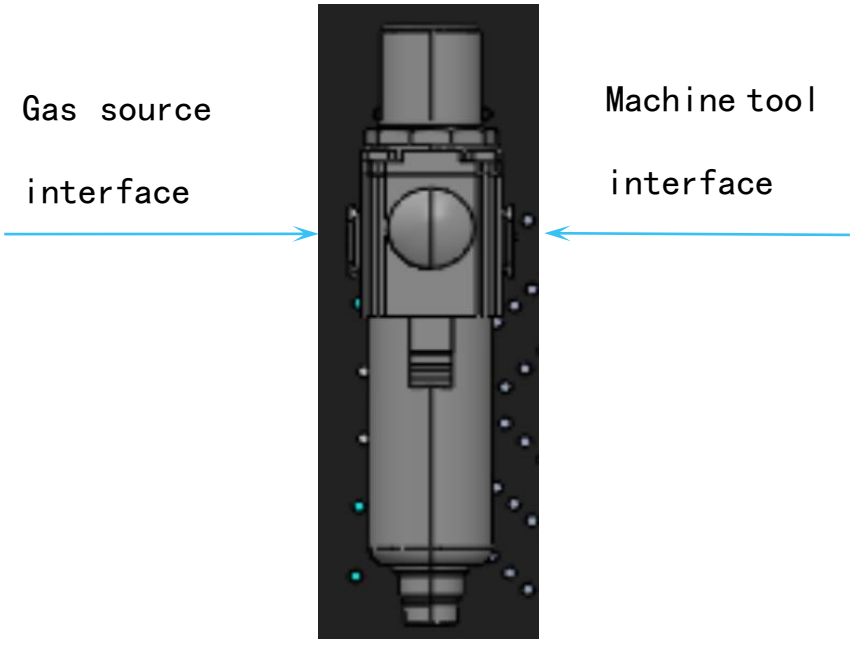


Figure 4.3.1 Filter Connection

4.4. Tool installation

Turn on the power and wait for the system to start up. After starting up, make sure that the foam in the processing chamber is clean.

Click "Manual", enter the interface of Figure 4.4.1, and press "Release the clamping tool" to remove the spindle plug.

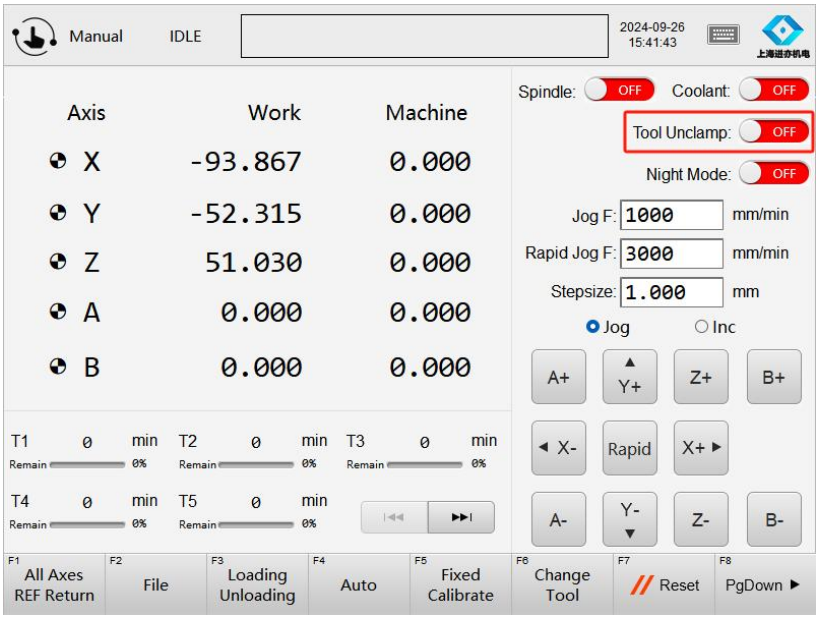
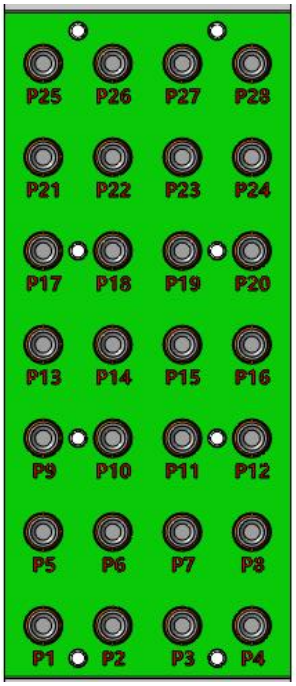


Figure 4.4.1 Pine-clip knife

Place the tool on the corresponding tool magazine number.



Titanium Disc and Glass Ceramic Bur Installation Position				
Tool Number	Name	Shank Diameter (mm)	Cutting Diameter (mm)	Cutting Length (mm)
T1	Ball End Mill	⌀ 6	3.0	16
T2	Ball End Mill	⌀ 6	2.0	12
T3	Ball End Mill	⌀ 6	1.0	8
T4	Drill Bit	⌀ 6	2.2	20
T5	Drill Bit	⌀ 6	1.5	15
T6	Flat End Mill	⌀ 6	2.0	10
T7	Ball End Mill	⌀ 6	1.5	12
T8	Bull Nose End Mill	⌀ 6	2.0 R0.2	12
T9	Bull Nose End Mill	⌀ 6	1.5 R0.1	16
T10	Bull Nose End Mill	⌀ 6	1.5 R0.1	12
T11	Ball End Mill	⌀ 6	0.5	3
T12	Flat End Mill	⌀ 6	1.0	6
T13	Flat End Mill	⌀ 6	0.5	4
T14	Ceramic Bur	⌀ 6	2.0	13
T15	Ceramic Bur	⌀ 6	1.0	10
T16	Ceramic Bur	⌀ 6	0.6	8
T17	Extended Bull Nose End Mill	⌀ 6	1.5 R0.1	20
T18	M1.4 Thread Mill	⌀ 6	/	/
T19	M1.8Thread Mill	⌀ 6	/	/
T20	M2.0Thread Mill	⌀ 6	/	/
T21	T-Slot Cutter	⌀ 6	/	/
T22-T28	/	/	/	/

Figure 4.3.2 Tool Magazine and Tool Installation Table

Then click "Change Tool" to come to the interface shown in Figure 4.4.3, select the tool magazine location where the tool is installed, and perform automatic tool change.

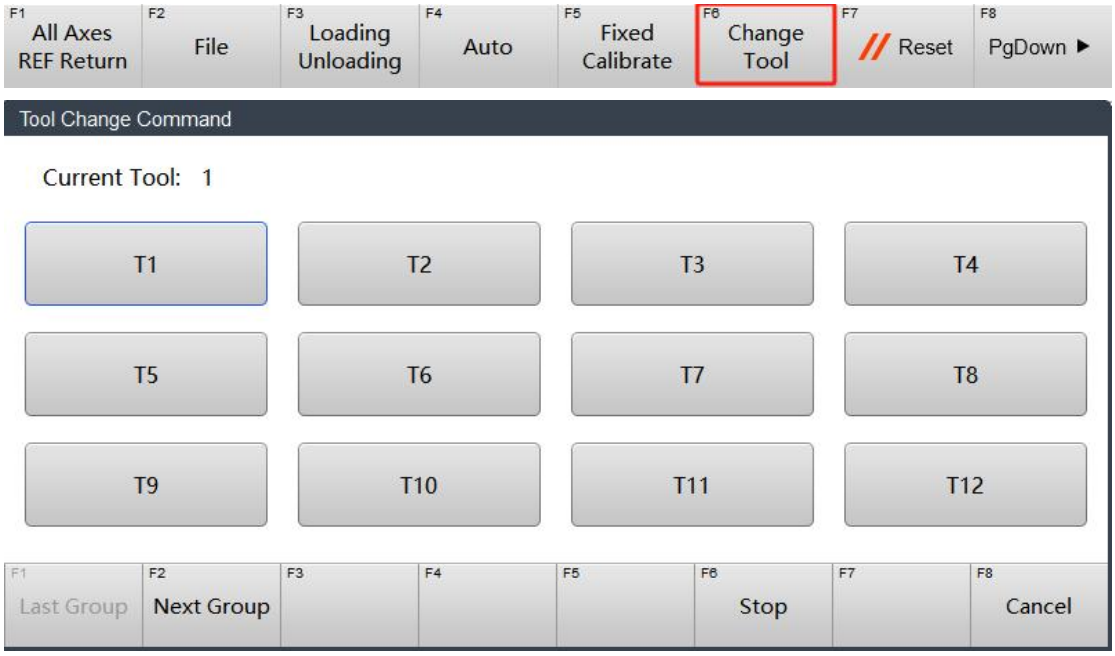


Figure 4.3.3 Tool change

5. Product Operation Instructions

5.1. Precautions Before Operation

The following steps must be taken before starting the machine to avoid damage to the equipment.

（1）Ensure that the base where the equipment is placed has sufficient rigidity, otherwise it will affect the performance of the equipment.

（2）Ground the rear grounding wire to reduce static electricity.

（3）Connect the air pipe and ensure that sufficient compressed air is supplied. Check if the pressure gauge on the air source filter shows a pressure above 0.60 MPa. If the air pressure is below 0.60 MPa, check if the air compressor is working properly, or replace it with a larger air storage tank. Otherwise, the system will generate an alarm and stop operating.

5.2. Operation Panel and Function Introduction

Figure 5.2.1 shows the touchscreen LCD operation panel, which is divided into three main areas on the front panel.

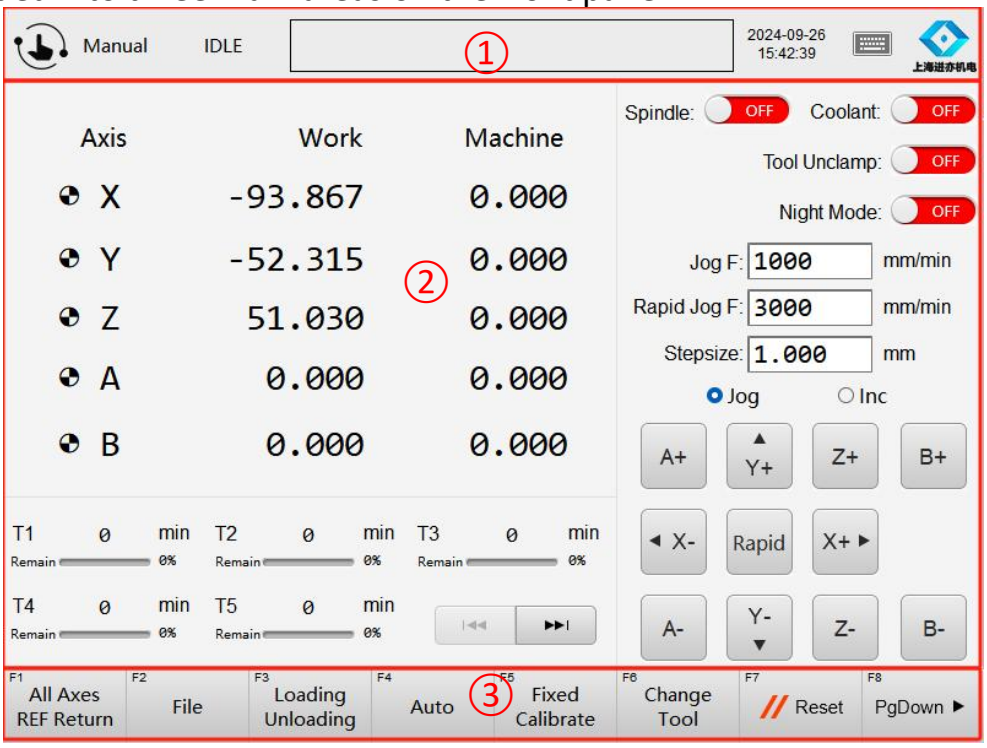


Figure 5.2.1 Operation panel

① ： System Status Bar

② ： Function Area

③ ： Operation Button Bar

5.2.1. System Status Display Area

Includes the following information:

- Current Function Area Display: Automatic, Manual.
- Current System Status: Ready, Running, Not Ready, Feed Hold.
- System Prompts or Alarm Information, etc.:

✧When an alarm is triggered, click to view the current alarm.

✧When there is no alarm, click on the blank box to view historical alarm information.

- Current Date and Time.
- Enable Soft Keyboard.
- Hidden Bar: Click to perform permission switching, software upgrades, public file upgrades, and system maintenance operations.

5.2.2. Function Area

Can be switched via the "Manual" button in the operation button bar.

The manual interface is as follows:

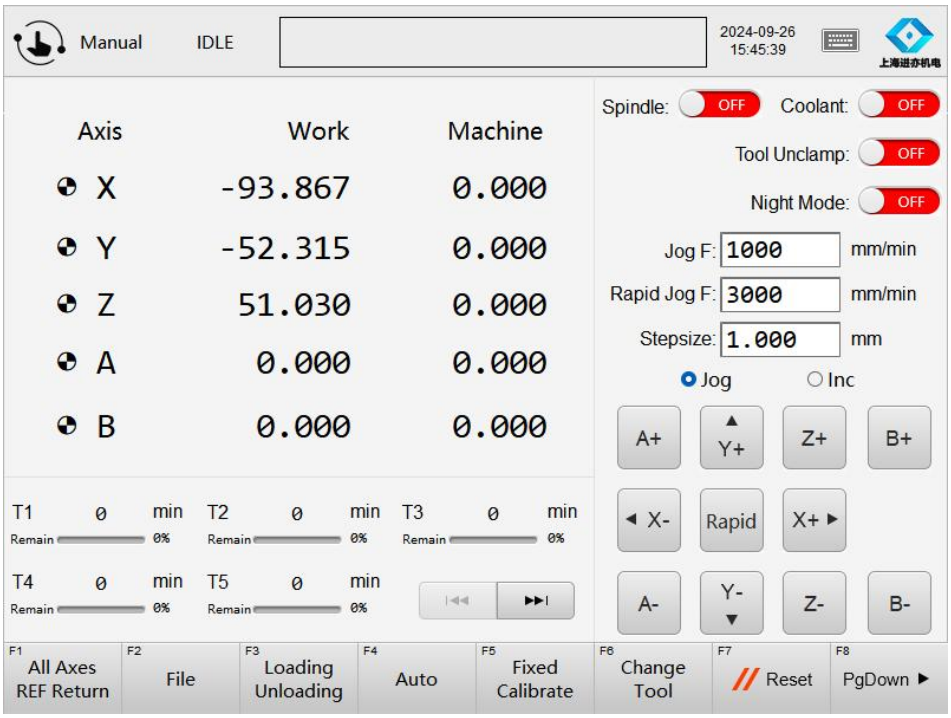


Figure 5.2.2 Manual Interface

- Spindle: Turn the spindle rotation on or off.
- Cooling: Turn the cutting fluid on or off.
- Tool Clamp Release: Turn the spindle tool release on or off.
- Manual Low Speed: Move each axis at a low speed.
- Manual High Speed: Move each axis at a high speed.
- Step: In step mode, each axis moves a fixed distance and then stops.
- "Continuous", "Step": Switch between continuous and step modes.
- Machining Channels: "X+", "X-", "Y+", "Y-", "Z+", "Z-", "A+", "A-", "B+", "B-": Control buttons for each axis.
- High Speed: Enable manual high-speed movement.

The automatic interface is as follows:

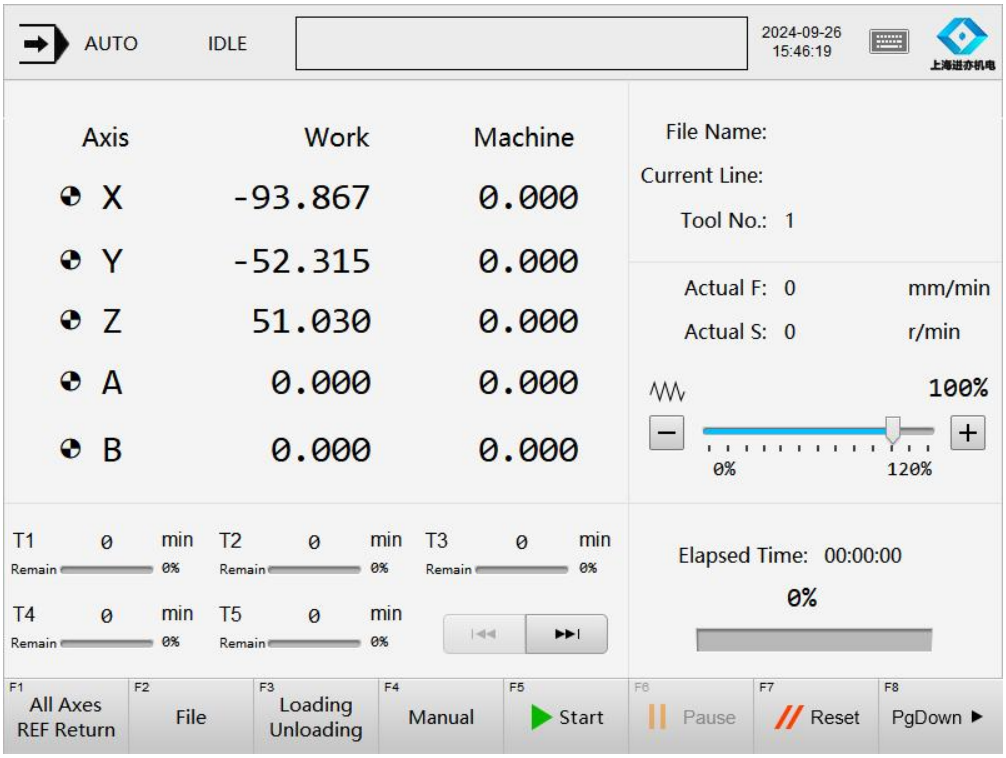


Figure 5.2.3 Automatic Interface

- The top left corner displays "Automatic".

- Displays the mechanical coordinates and workpiece coordinates of each axis.

- After executing the return to mechanical origin, the homing identifier appears. Displays the tool number and tool life.

Displays the program name, current program running line, current tool number, feed speed, spindle speed, and spindle speed adjustment.

Displays the machining time and the percentage of machining progress.

（3）Operation Button Bar

Operation Button Display:

Figure 5.2.4 Manual Mode

Operation Button Interface

graph 5.2.5 Next page

- Home: Return each axis to the mechanical origin.
- File: Load the program file.
- Loading/Unloading: Function buttons for loading and unloading.

- Automatic: Switch to automatic mode operation buttons.
- Fixed Tool Setting: Measure the tool length.
- Tool Change: Manually change the target tool.
- Reset: Reset the device status.
- Next Page: Switch to the next page function buttons.
- Return to Workpiece Origin: Quickly locate to the workpiece origin position.
- Return to Fixed Point: Quickly locate to the specified coordinate position.
- Fine Adjustment: Modify the coordinate offset.
- User Command: Input and execute simple commands, up to seven.
- Shutdown: System shutdown.
- Previous Page: Switch to the previous page function buttons.

Automatic Mode Operation Button Display:

Figure 5.2.6 Automatic Mode Operation Button Interface

Figure 5.2.7 Next Page Interface

- Manual: Switch to manual mode.
- Start: Start processing.

- Pause: Pause processing.
- Select Line Processing: Customize program line processing.
- Breakpoint Continue: Continue processing from the stop point after an abnormal program stop.
- Weihong Cloud: Connect to Weihong Cloud for data monitoring and management.
- Safety Door Open, Safety Door Close: Not in use.

5.3. Daily Operation

Pre-power-on inspection: To ensure the safety of the operator and the machine, please perform the following checks before powering on to ensure machine safety and longevity.

（1）Check if the external lines, pipelines, and each connector are damaged.

（2） Ensure that all control switches are free from obstruction or hindrance.

（3）Inspect the internal spindle area for any obstructions.

After powering on, the display will appear as shown in Figure 5.3.1. Click on "Home". When the mechanical coordinates show zero for all five axes, and the homing identifier is displayed before each axis.

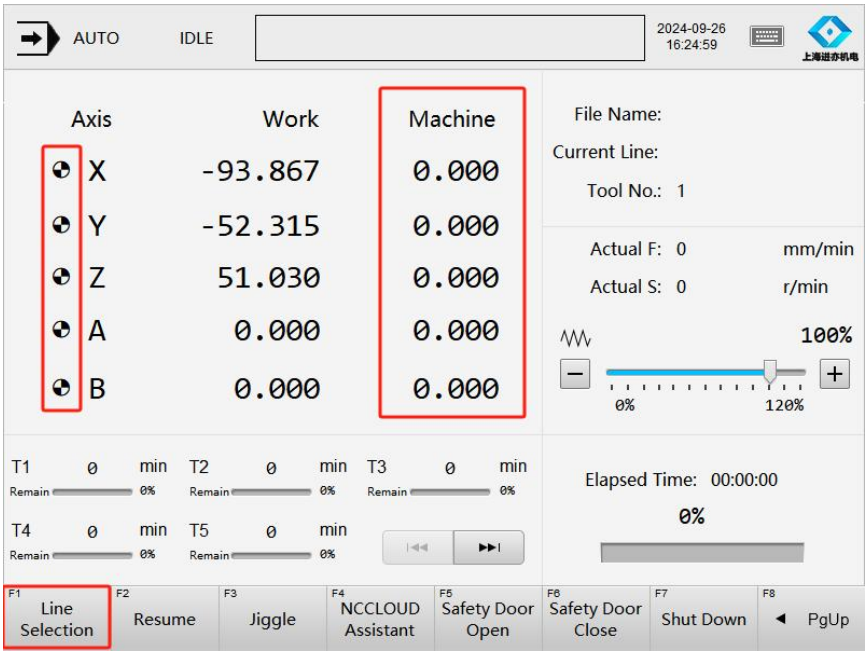


Figure 5.3.1 Return to zero

5.4. Program Operation

5.4.1. Preparing the Program

Store the program in a USB drive, connect the device through the USB interface, and import the program into the device. As shown in Figure 5.4.1.

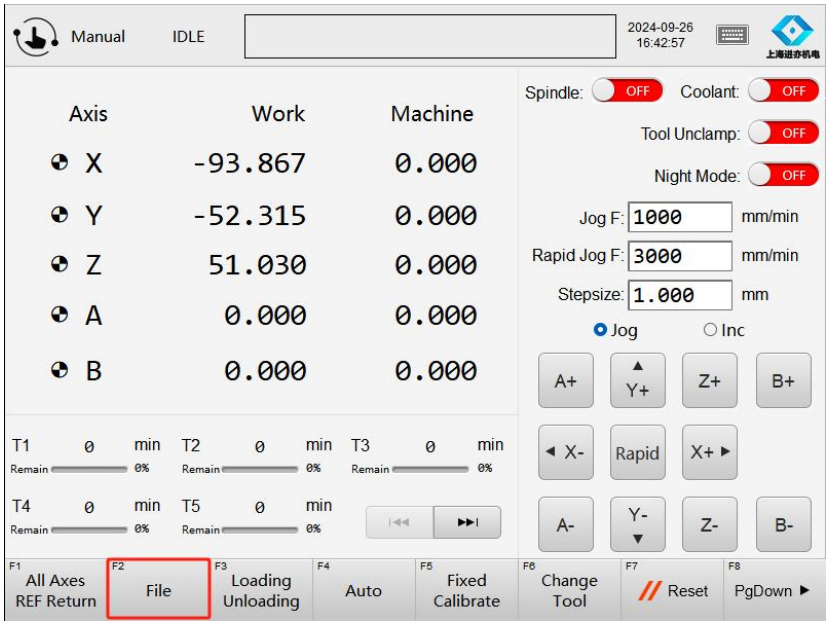


Figure 5.4.1 File

Click on "File", and a dialog box as shown in Figure 5.4.2 will pop up. Click on "USB Program", select the program that needs to be processed, click "Copy to Local", and complete the preparation before processing. The copied program can be viewed by clicking on "Local Program".

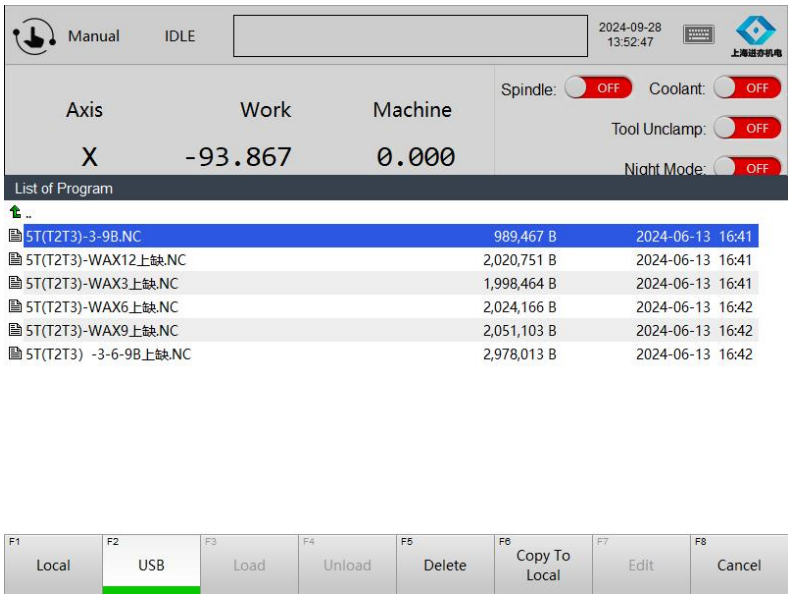
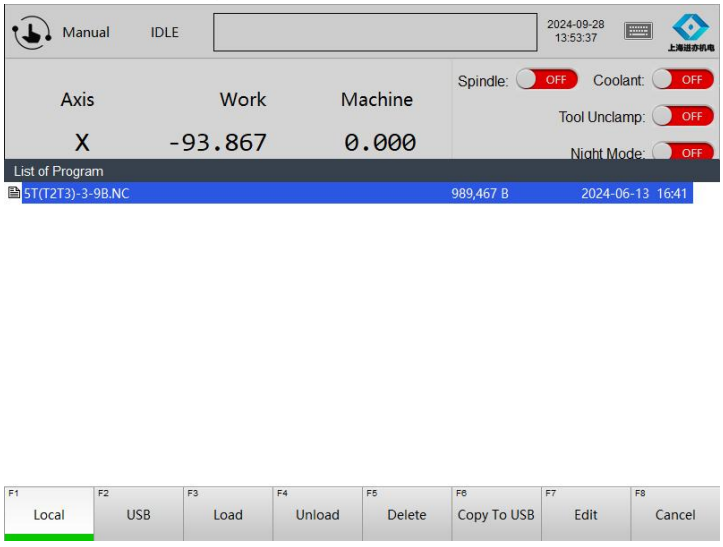


Figure 5.4.2 Preparing the Program

5.4.2. Automatic Program Execution

Click on "Local Program" as shown in Figure 5.4.3, select the program that needs to be processed, and click "Load".



graph 5.4.3 Automatic Program Execution

Enter the automatic processing interface shown in Figure 5.4.4, and check if the program name is the one that needs to be processed. After confirmation, click "Start" to proceed with dental prosthesis processing.

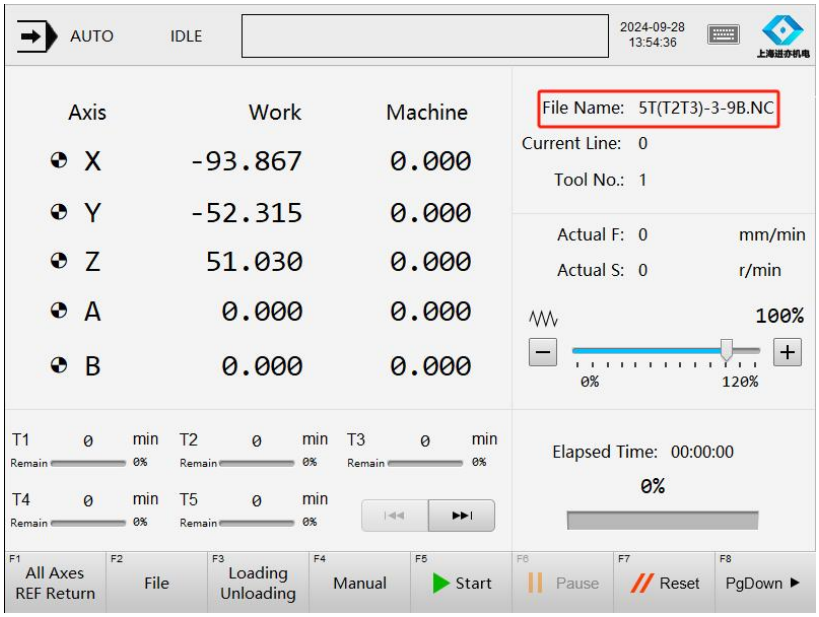


Figure 5.4.4 Program Name Confirmation

5.5. Automatic Calibration Function

After prolonged use, the equipment may develop deviations. Use this function when the product cutting effect is unsatisfactory.

（1）Preparation of Tools

Shank 4 calibration rod, calibration disc, 3mm hex key.

Figure5.5.1 Shank 4 calibration rod

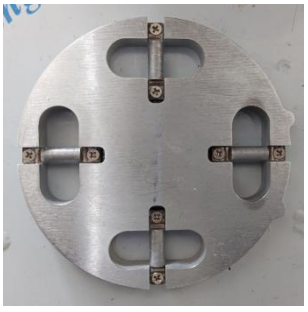


Figure5.5.2 calibration disc

（2）Installation of Calibration Disc and Rod

Mount the calibration disc onto the C-clamp; install the calibration rod into the tool magazine at position 8.

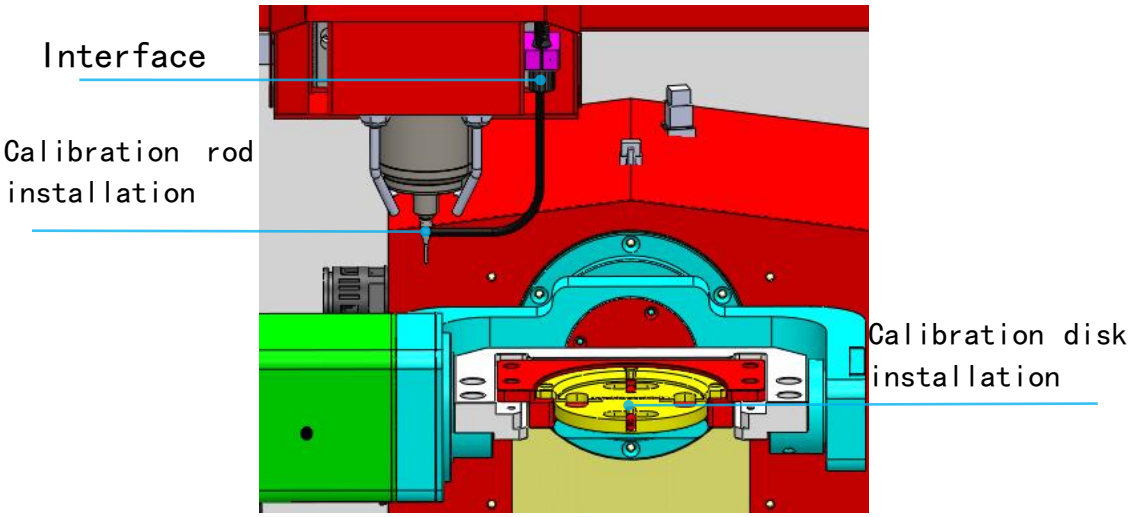


Figure 5.5.3 Tool Installation

（3）Click the "Next Page" button on the function bar; then click the "Fine Adjustment" button; followed by clicking the "Automatic Calibration" button.

Figure 5.5.4 Automated calibration

（4）After entering the password "123456", access the automatic calibration page, as shown in Figure 5.5.5. Click "Execute" to start the automatic calibration.

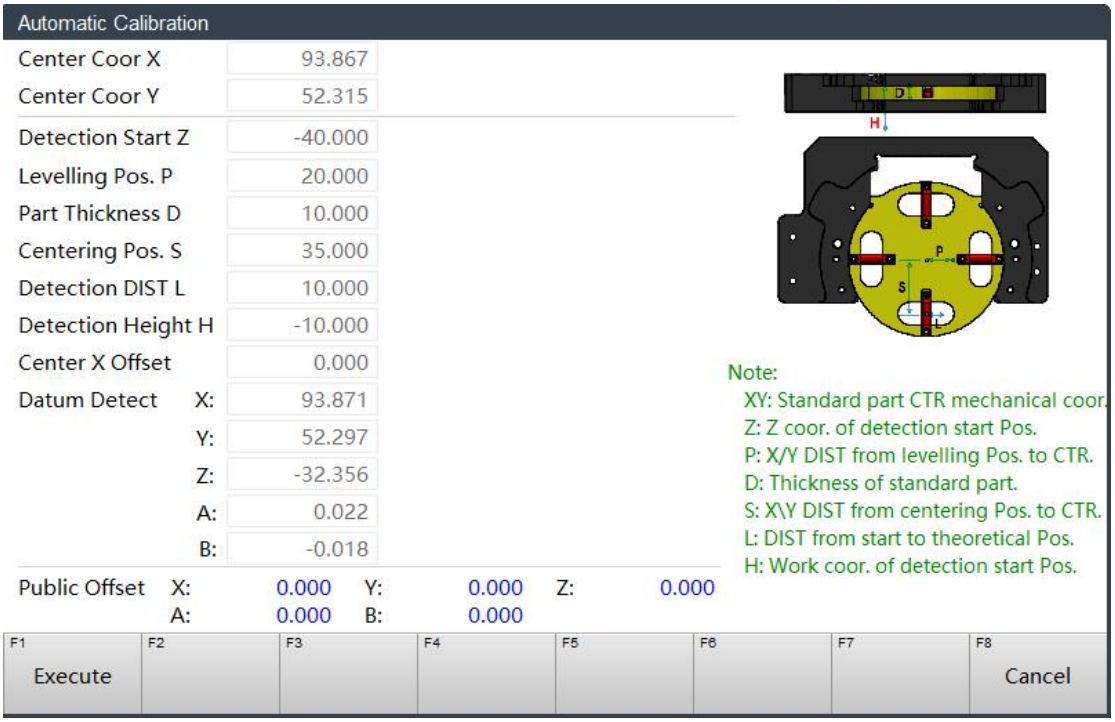
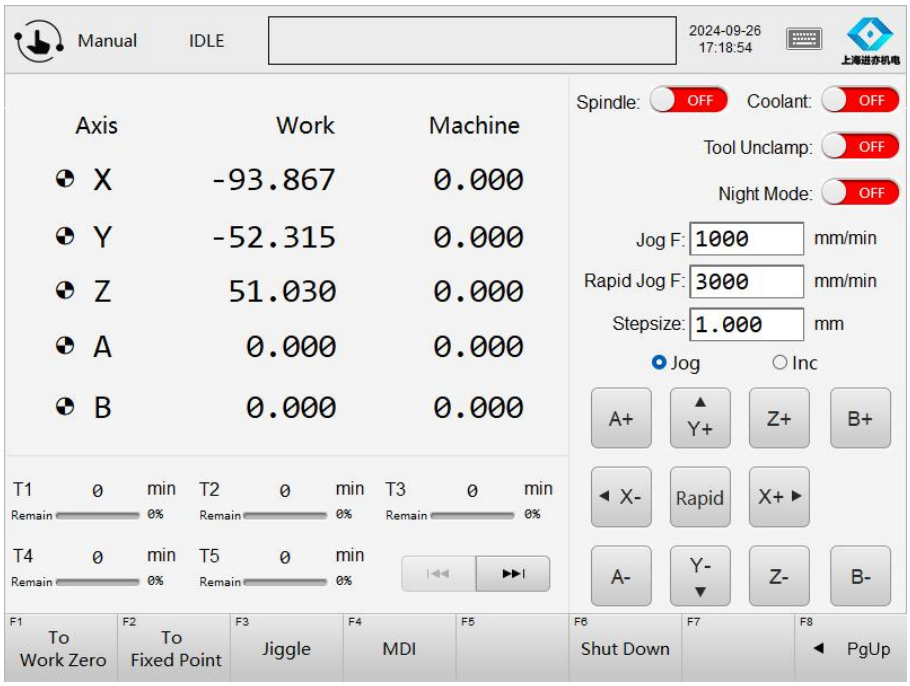


Figure 5.5.5 Automatic Calibration

5.6. Auxiliary Functions

(1) Below the manual operation panel, click on the "Next Page" in the function key operation area to reach the page shown in Figure 5.6.1.



graph 5.6.1

"Return to Workpiece Origin": Return to the machining center point.

"Return to Fixed Point": Return to a pre-set point. This function can be used before or after machining to facilitate the removal of the material tray.

"Fine Adjustment": Perform manual calibration and automatic calibration.

"User Command": Execute one of seven simple commands. Select a command, and the system will automatically execute the input instruction.

(2) Below the automatic operation panel, click "Next Page" in the function operation area to navigate to the page shown in Figure 5.6.2.

graph 5.6.2

"Selective Line Machining": Allows selecting the start and end lines of an NC file for independent machining.

"Resume from Breakpoint": This function enables resuming

machining from the paused point after a program halt or an abnormal power outage. A pop-up prompt will appear upon startup; press "Confirm" to resume the machining task.

Warning: Do not use this function after a tool breakage.

"Weihong Cloud": Connects to the Weihong Cloud for remote equipment monitoring.

"Safety Door Open", "Safety Door Close": These are safety door control switches. This model is not equipped with safety door control switches.

"Shutdown": System shutdown button. After completing machining, shut down the machine tool by selecting this option first, then turn off the machine tool's power supply.

6. Product maintenance

6.1. Precautions

（1）Ensure that the equipment is properly grounded. Failure to do so may result in a risk of electric shock.

（2）The exhaust pipe of the vacuum cleaner must be directed outdoors to prevent indoor environmental pollution, harm to human

health, and to avoid reducing the service life of the equipment.

（3）Clean the processing chamber thoroughly before replacing the cutting material.

（4）When connecting the water cooling system, air supply system, and dust collection system, ensure correct connections without misalignment to prevent severe damage to critical components. If abnormal water conditions occur, cease use and contact us.

（5）The system's air source must be clean and filtered through an air filter to prevent affecting the surface quality of the processed products and to avoid reducing the lifespan of the equipment components. The air pressure must be above 0.60 MPa to prevent abnormal alarms.

（6）During manual operation, always monitor the status of each axis position. A collision between the spindle and the fixture can cause severe damage to critical components. In case of an emergency, promptly press the emergency stop button.

（7）The computer integrated with the equipment is dedicated to this specific machine. Do not modify system-related settings, install, or uninstall software.

（8）To ensure stable operation of the equipment, use a dedicated USB flash drive. Do not share USB drives used for personal or educational purposes to prevent virus infections and unnecessary complications.

（9）Operate the equipment following the standard computer startup

and shutdown procedures to prevent loss of system files, which could result in failure to boot or reduced system responsiveness.

（10）If abnormal sounds or movements occur during use, stop the operation, record the abnormal information, and contact us.

（11）Regularly check the condition of the cutting burrs to ensure the cutting edge remains sufficiently sharp.

（12）When cleaning the machine tool, leave the tool holder in the spindle taper hole to prevent chips and dirty liquids from entering the spindle taper hole.

（13）After installation, the equipment should not be moved in principle. If movement is necessary, apply force only to the base plate, not to any part of the outer shell, to avoid deformation of the shell or even dropping of the equipment, which could lead to serious accidents.

6.2. Main maintenance items and checklists

Inspection and maintenance items		Check interval			
		A	B	C	D
1	Remove dust from the processing chamber of the equipment	✔			
2	Remove dust and oil from the screen	✔			
3	Check whether the pressure of the pneumatic system is within the normal working range	✔			

4	Check whether the chiller is working properly and whether the water supply is sufficient	✔			
5	Check whether the exhaust fan is working properly	✔			
6	Check the coolant level in the water tank and remove the chips on the water tank filter.	✔			
7	Wipe the spindle chuck dry with a clean soft cloth		✔		
8	Check whether the guide rail moves smoothly and whether there is any noise			✔	
9	Check machine tool accuracy and calibrate			✔	
10	Replace the coolant in the water tank and chiller				✔
A-Once a day B-Once a week C-Monthly D-Every three months					

7.Scene integration concept

Understanding user habits, we practice matching different application scenarios with different users' usage needs and habits, reducing unnecessary action waste and time waste. Your little troubles are also a huge driving force for our progress.

7.1.Diverse application scenarios

(1)Computer network cable directly connected to control processing machine, industrial computer connected to WiFi for remote technical

support service

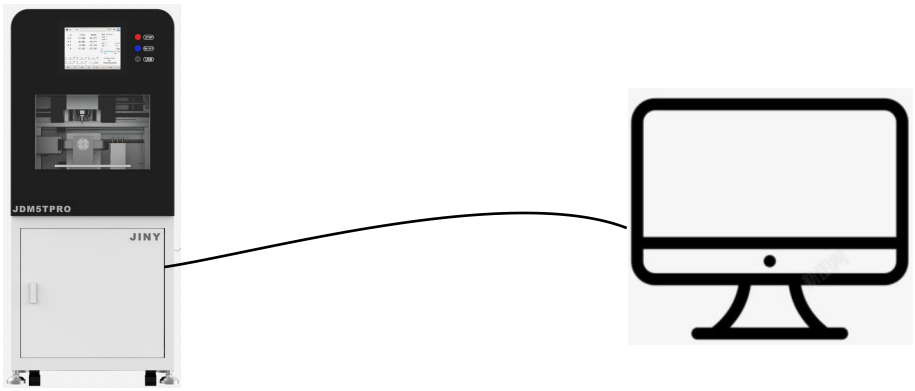


Figure 7.1.1 Network cable direct connection

（2）The router establishes a local area network, the industrial computer can connect to all processing machines in the local area network, and the router is connected to Ethernet for remote technical support services.

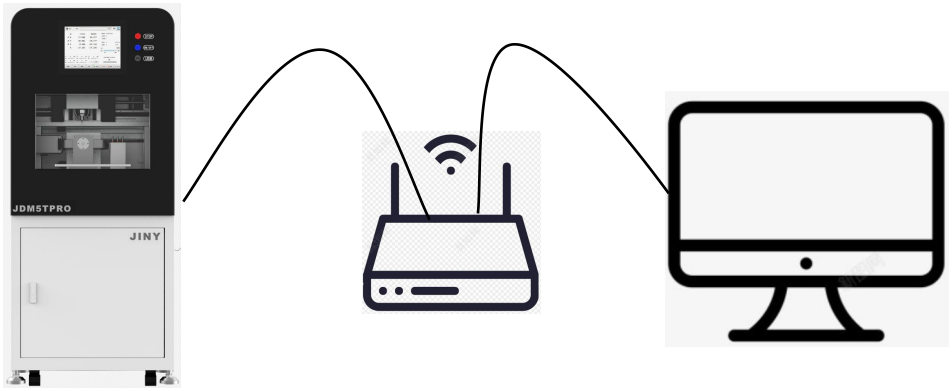


Figure 7.1.2 LAN connection

（3）The processing machine is connected to the switch expansion network port, and the PC can be connected to all processing machines in the expansion network. The PC can selectively connect to Ethernet for remote technical service support.

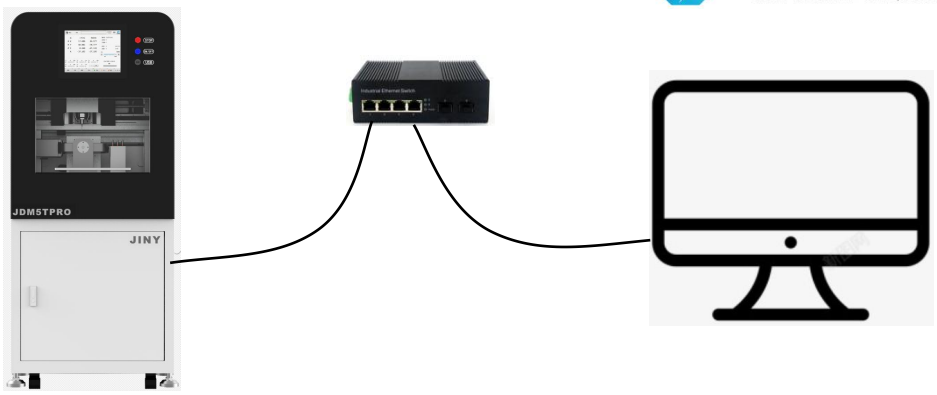


Figure 7.1.3 Switch connection

（4） The processing machine is connected to the router through a network cable.The industrial computer can be connected to the processing machine through the WiFi of this router. The external Ethernet of the router is used for remote technical service support.

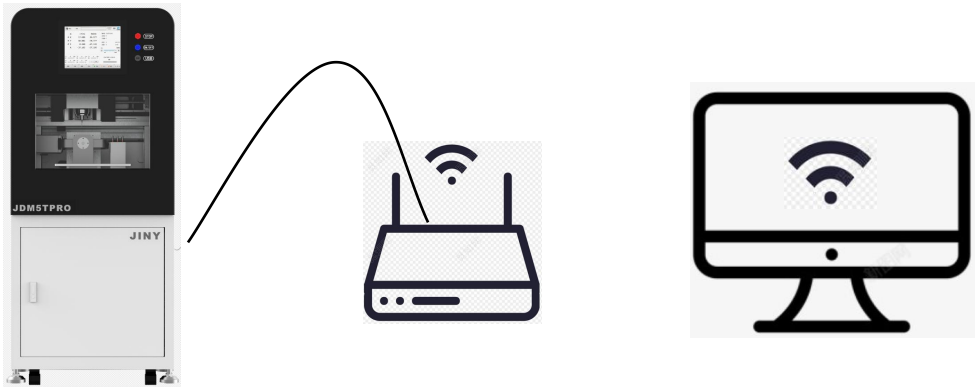


Figure 7.1.4 WiFi connection

7.2. Establishing the Network Connection Between the Industrial Computer and the Machine Tool

Precautions:

This function requires the device to be connected to a network or local area network (LAN).

This operation requires accessing the manufacturer's page. Please do not click on any options outside of this step to avoid causing malfunctions in the machine tool or system.

(1) Click on the upper right corner of the machine tool operation interface, as shown in Figure 7.2.1, and select the "Manufacturer" option.

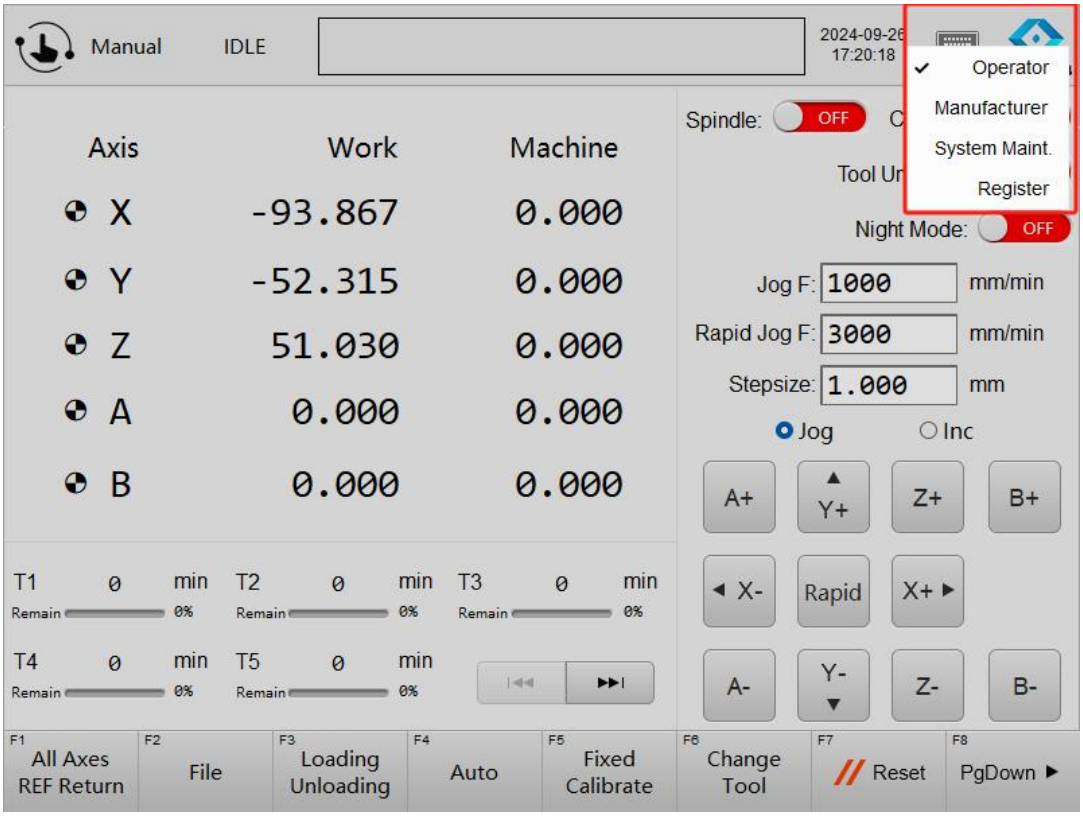


Figure 7.2.1 Toggle authority

(2) A password input dialog box will pop up. As shown in Figure 7.2.2, enter the password "123456".

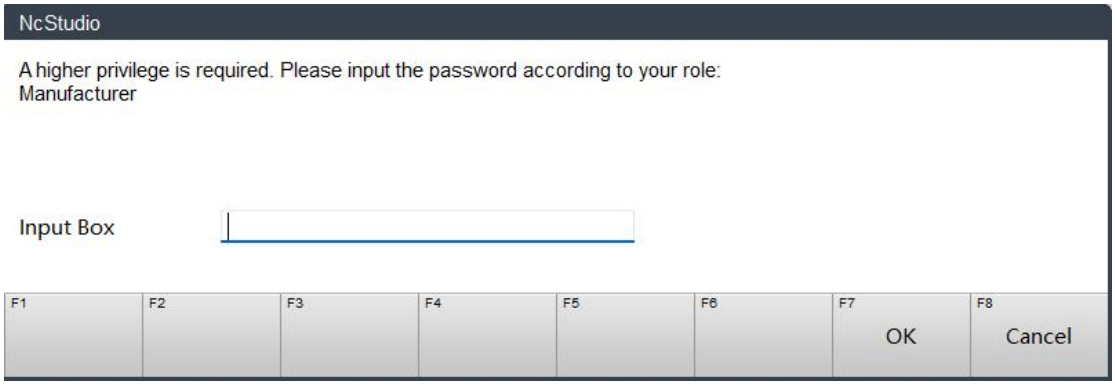


Figure 7.2.2 Enter a password

(3) Enter the manufacturer interface, as shown in Figure 7.2.3. Click on "System Information," then click "Show Desktop."

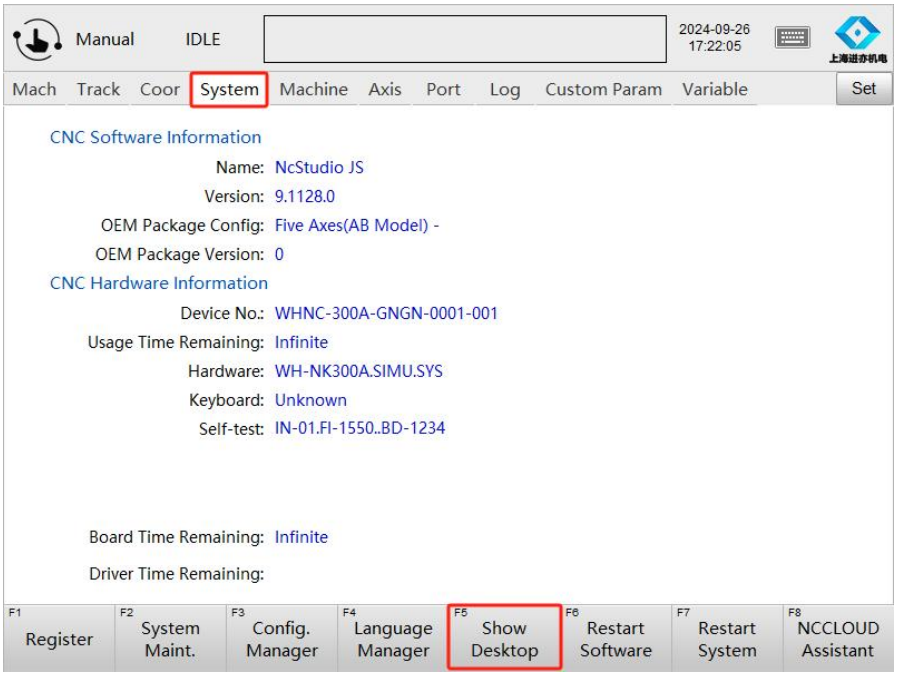
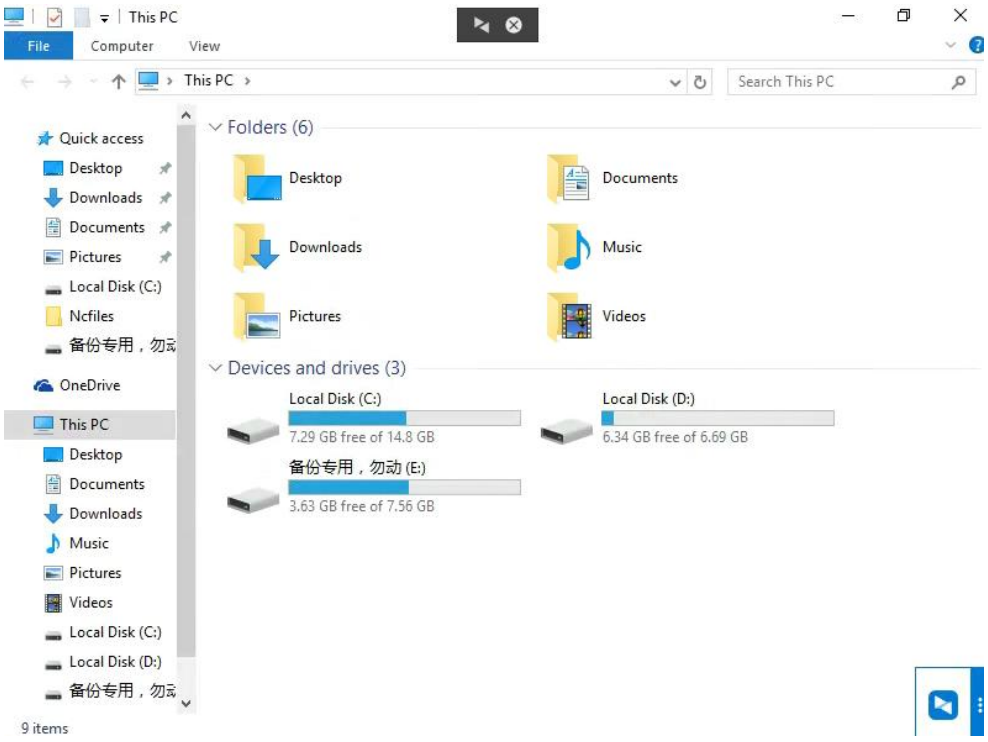


Figure 7.2.3 Show Desktop

(4) The software system desktop will be displayed, as shown in Figure 7.2.4. Double-click on "This PC."

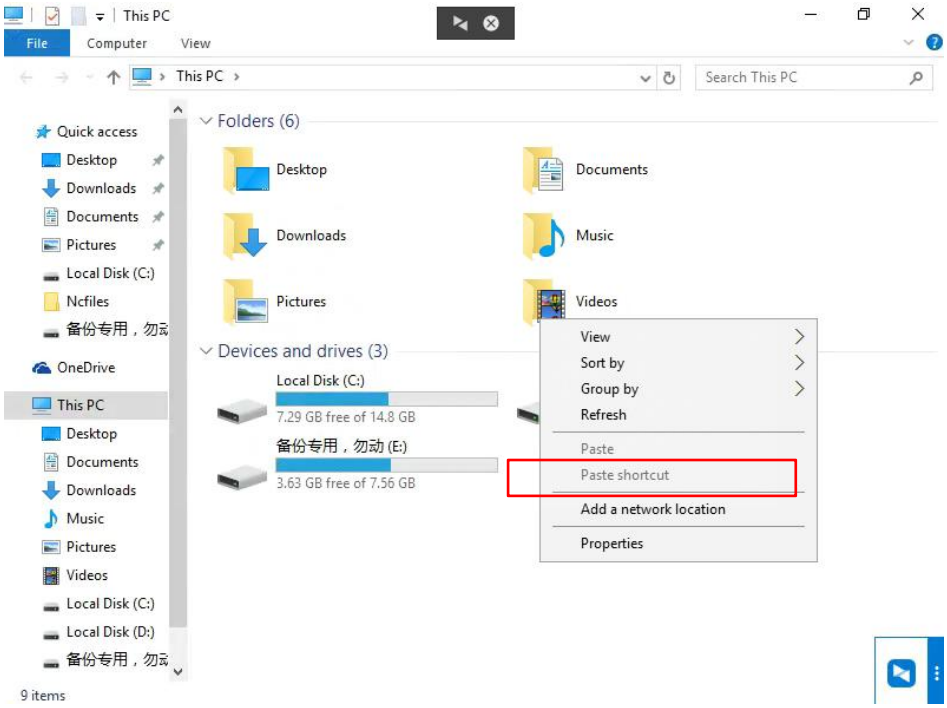
Figure 7.2.4 This PC

(5) An interface as shown in Figure 7.2.5 will pop up. Long-press on a blank area of the "Devices and Drives" interface.



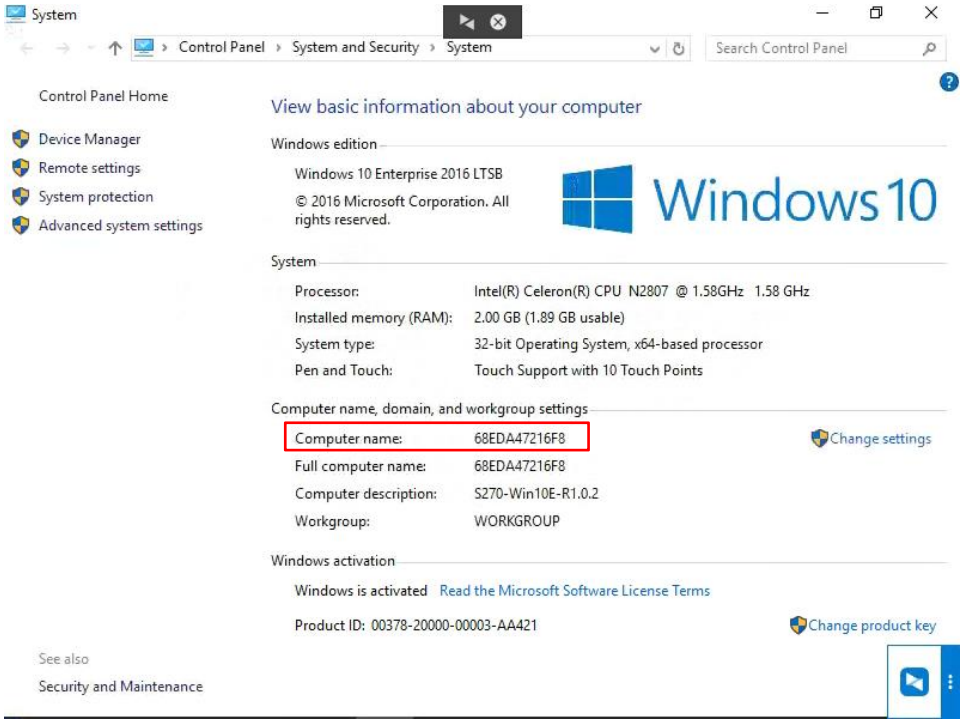
graph 7.2.5

(6) A menu bar, as shown in Figure 7.2.6, will pop up. Click on "Properties."



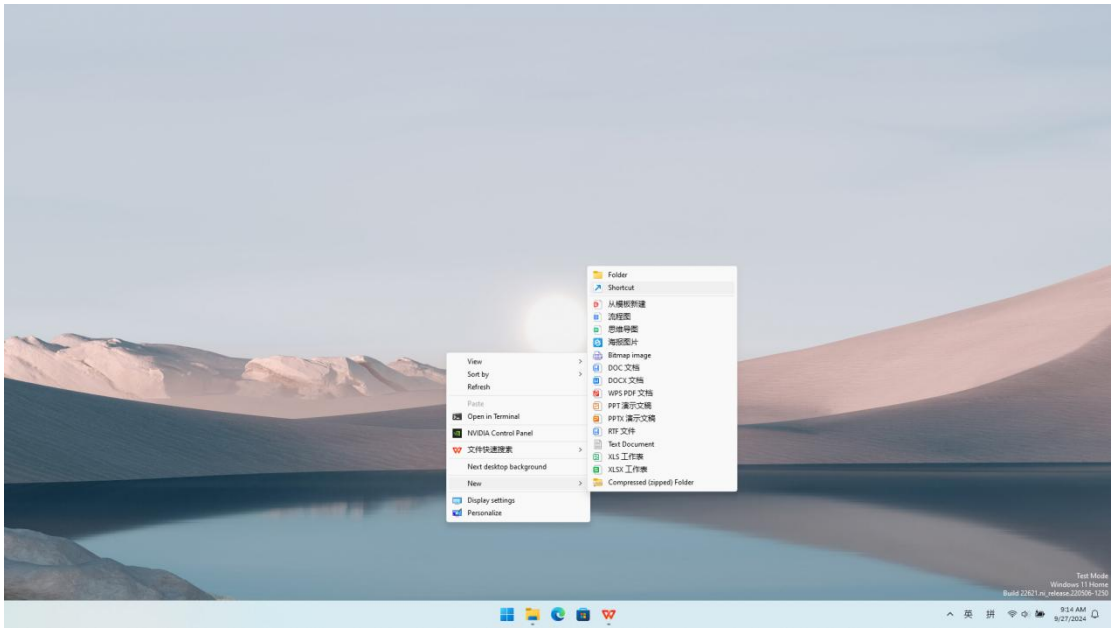
graph 7.2.6

(7) An interface, as shown in Figure 7.2.7, will pop up. Record the computer's full name: "68EDA47216F8."



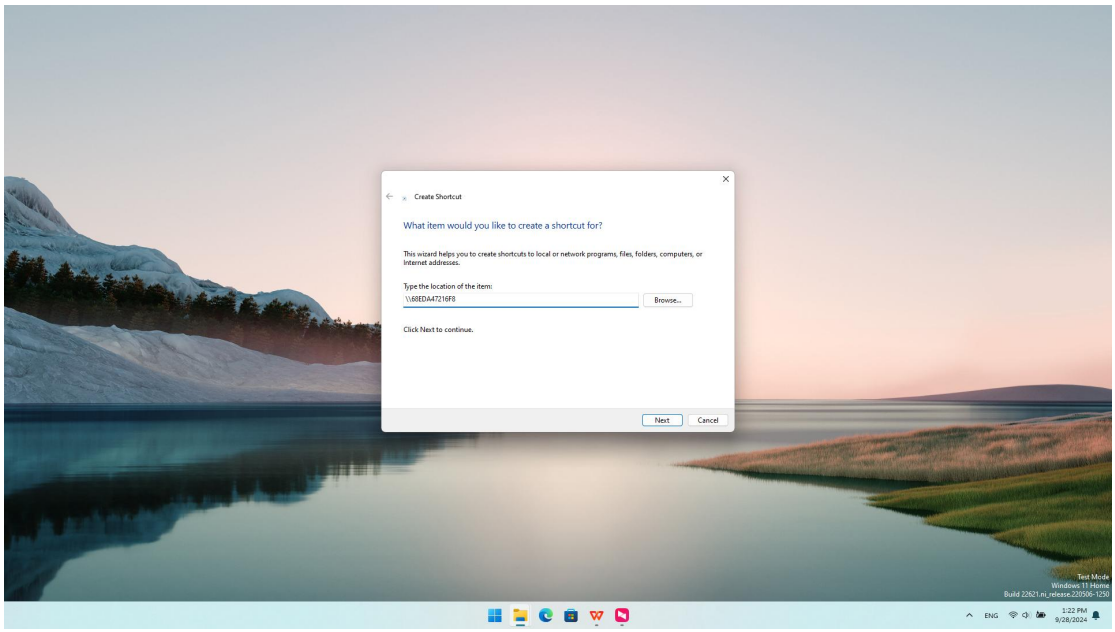
graph 7.2.7

(8) Navigate to the desktop of the industrial computer (IPC) that needs to connect to the machine tool, as shown in Figure 7.2.8. Right-click the mouse, select "New," and then choose "Shortcut."



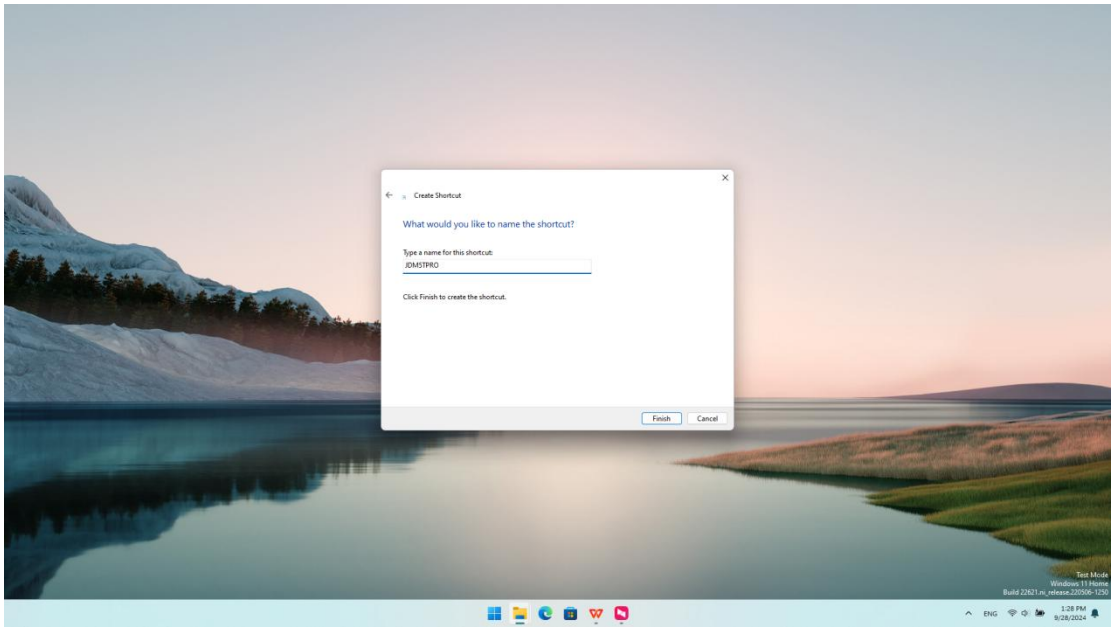
graph 7.2.8

(9) A dialog box, as shown in Figure 7.2.9, will pop up. Enter the recorded computer's full name: "\68EDA47216F8." Ensure that the full name is prefixed with "\." Then, click "Next."



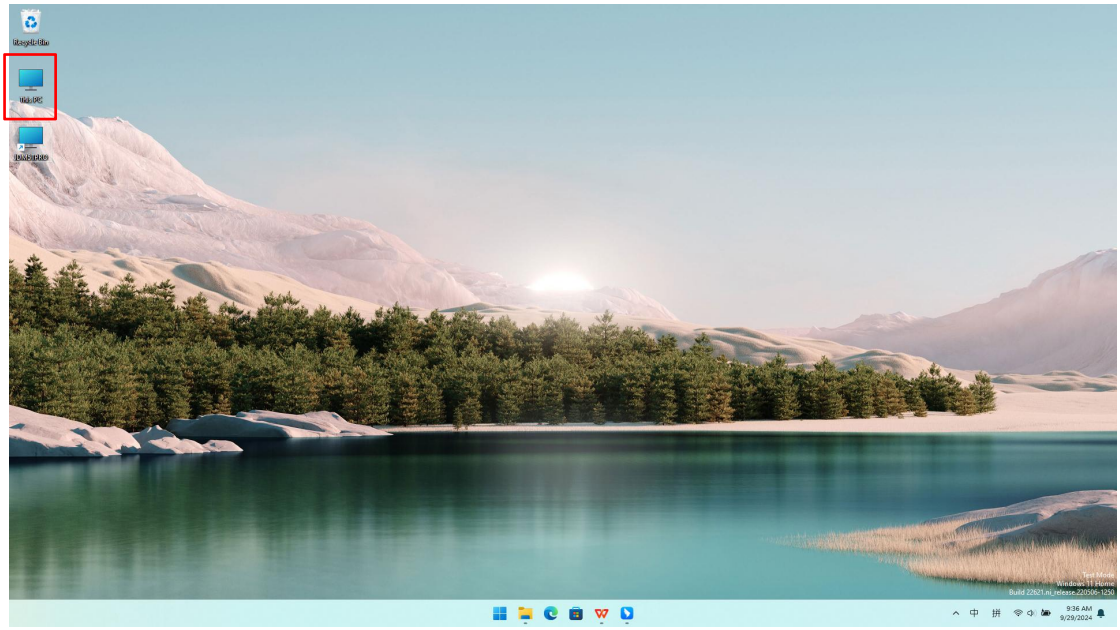
graph 7.2.9

(10) A dialog box, as shown in Figure 7.2.10, will pop up. Name this file "JDM5T-Pro" Click "Finish" to complete the creation.



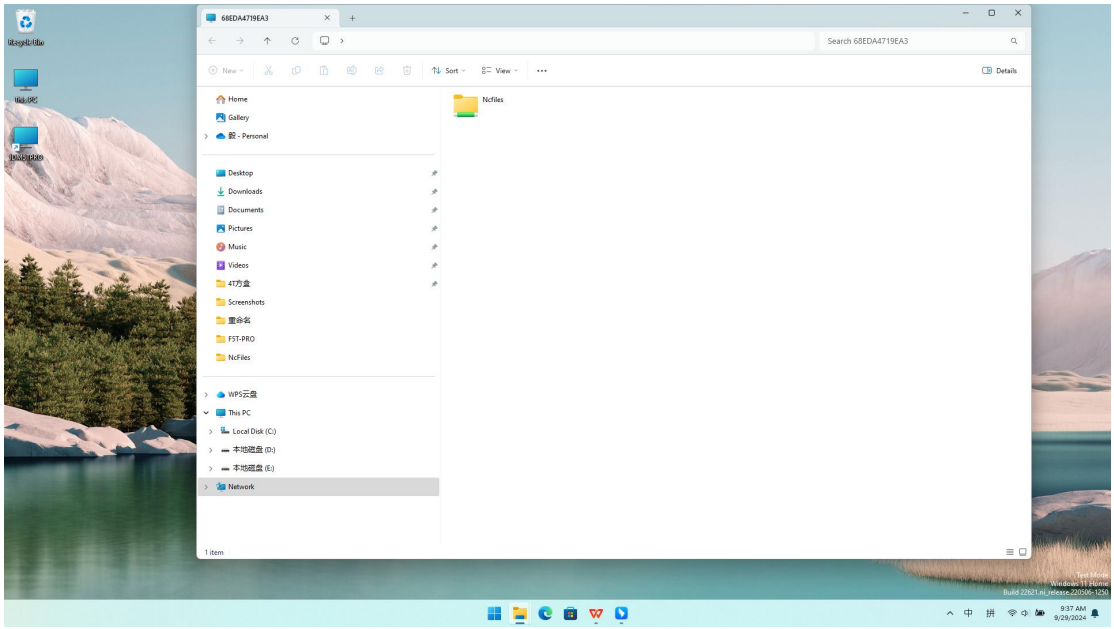
graph 7.2.10

(11) After the creation is completed, you can find the device connection icon on the desktop, as shown in Figure 7.2.11. Double-click to open the icon.



graph 7.2.11

(12) A shared folder of the connected device will pop up, as shown in Figure 7.2.12. Double-click to open the folder.



graph 7.2.12

(13) As shown in Figure 7.2.13, you can view the NC files inside the machine tool through the industrial computer (IPC). Additionally, you can remotely copy, transfer, or delete NC files.

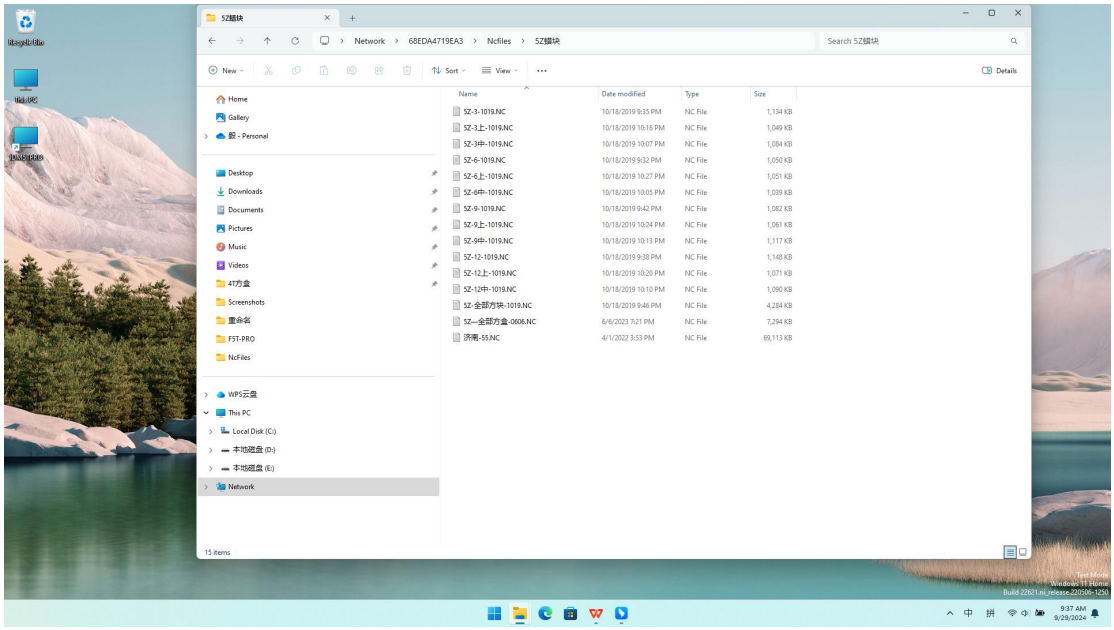


图 7.2.13

7.3. Product software support

This manual only provides technical support for the product hardware functions.For questions related to product software installation,please consult after-sales.The following is the recommended software configuration.

System	Windows7/Windows10 64 位
Memory	16GB
CPU	Intel i7-10700K/AMD R7-5800
Graphics	GTX2060
Solid State	512G
C disk reserved space	10G
Hard disk reserved space	20G

8. Common faults and solutions

Serial number	Fault phenomenon	Troubleshooting Project	Solution
1	The program cannot be run and it prompts that the machine is locked. Please contact the agent.	Encryption period expired	Please contact customer service
2	System air pressure is low warning, processing is interrupted	①Check whether the air pipe is leaking	Replacement of air tube
		②Check whether the air supply pressure is lower than 0.60MPa	Check whether the air compressor is working properly
3	Tool breakage during	①Tool life reached	Replace new tool

	machining	②Software typographical error	Modify the layout error position
4	The equipment makes abnormal sounds during processing	①Check the lubrication condition of the screw and guide rail	Improve lubrication conditions and ensure sufficient lubricating oil
		②Check the screw bearings	If the bearing is damaged, replace it with a new one
		③Check whether the motor shaft and screw bearing are loose.	If it is loose, tighten the locking screw of the coupling.
5	The display is unresponsive to touch	①System freeze	Restart the system
		②The touch screen USB interface has poor contact	Re-plug the USB port
6	Inverter alarm：-1	Communication line failure	Open the side cover and re-plug the network cable interface at the bottom of the inverter.
7	Inverter alarm: 34, spindle temperature is too high	①Cooling water pump water level is low	Add or replace cooling water
		②Cooling circuit is blocked	Clean the chips from the water tank and replace the cooling water
8	Alarm prompts that the limit is touched or the movement exceeds the stroke	①Check if the X, Y, and Z axes are limited	Wait ten seconds after shutting down and restarting
		②Motion limit	Stop the equipment and revise the NC file
9	Alarm "Tool change failed"	Check if there are tools in the tool magazine that needs to be changed	Place the required tool in the position where the tool is not placed
10	Alarm "Tool broken"	①The tool has reached its service life	Replace the new tool
		②The tool is broken	
11	Alarm "Communication	Line inspection	If there is no poor contact, shut down

	error"		for more than ten seconds and then restart.。

If the form is not filled in, please contact after-sales.

9. Product technical parameters

Name	**JDM 5 T-PRO five-axis metal denture carving and milling instrument**
Dimensions	**726*911*1700mm**
Weight	**700kg**
Tool Magazine	**28**
Processing Travel Range	**XYZ:290*190*120**
Input Voltage	**220v**
Spindle Power	**2.5kw**
Spindle Speed	**60000rpm**
Spindle Cooling Method	**Water Cooling**
Chiller	**0.5kw**
Total Machine Power	**5.0kw**
Cutting Method	**Oil cut (optional water cut)**
work materia	**Implant Bar Bridge Framework、Custom Locator、Custom Abutment、Glass Ceramic、HPP、Resin、Wax Disc、Titanium and Other Metals or Non-Metals**

Maximum Angle	A-axis	360°
	B-axis	+ 26° - 30°
Average Processing Time	Metal Crown	15-22min
	Abutment	7-20min
	Ceramic	10-20min
	Bar Attachment	2-4hour
	Bridge Framework	3-5hour

10. Configuration list

Specifications	Name	Number	Unit
Main Unit and Its Accessories	1.JDM5T-PRO Dental Milling Machine	1	Unit
Complimentary Accessories Included	2. Cooling Water Hose	1	Set
	3.Coolant Tank, Water Pump, and Filter Sponge (Screws, Air Hose Connectors)	1	Set
	4.Power Cable	2	Piece
	5.Chiller	1	Unit
	6.Hex Key (Allen Wrench)	3	Piece
	7.M5*10 Set Screw / M4*16 Screw / M5*16 Screw	1	Set
	8.Cutting Fluid	3	Bottle
	9.21 Shank 6 Metal Burs (T1-T21)	21	Piece

	10.Wax Block	1	Piece
	11.Adjustable Titanium Column	3	Piece
	12.Dongle	1	Piece
	13.Drain Hose and Hose Clamp	1	Set
	14. Spindle Wrench	1	Piece
	15.Door Panel Key	1	Piece
Random Documentation	16.User Manual	1	Copy
	17.Factory Inspection Report	1	Copy
	18.Factory Installation Report	1	Copy
	19.Equipment Qualification Certificate	1	Copy