

P42 Plus-User Guide



Thank you for choosing our product.

To ensure safe and proper use, and to help you fully understand its features and performance, please read this user guide carefully. We also recommend keeping it in a safe place for future reference. Please note that our company is not responsible for any direct or indirect losses resulting from the use of this product, whether or not the product is functioning properly. Likewise, we are not liable for any losses caused by products that are processed using this device.

Overview:

UP3D Technology is committed to continuous improvement and innovation in our product development strategies. While we have made every effort to provide the most up-to-date product documentation, please note that this guide is not intended to serve as an absolutely authoritative reference for the current device. We reserve the right to make changes without prior notice.

If you have any questions about this product or notice any errors, omissions, or unclear information in this guide, please feel free to contact us.

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P42 Plus User Guide – Published on May 30, 2025

Originally released in Chinese

1. Welcome

Thank you for choosing the P42 Plus Dental Smart Grinding Device.

We are proud and confident to offer you this advanced piece of technology. Every unit is subject to strict quality control to ensure it meets the highest standards before leaving the factory.

This user guide is designed to help you fully understand all the functions of the P42 Plus device. It also aims to support you in operating and maintaining the equipment correctly, so you can achieve consistent, high-quality production results.

1.1 Intended Audience

This document is intended for the following users:

- End users
- Distributors at all levels
- Technical support personnel

If you have any questions about the product or need further technical assistance, please do not hesitate to contact our customer service team. We are always here to support and assist you.

Thank you again for choosing the P42 Plus Dental Intelligent Grinding Device!

2. General Information

2.1 Intended Use

This product is a wet-processing grinding device specifically designed for dental applications. It is intended only for dental use and must not be used for any other purposes.

The device can be used to grind dental materials such as ceramics, PMMA, and composite resins to fabricate dental restorations including crowns, copings, bridges, inlays, onlays, and veneers.

By installing the UPCNC software on your computer and connecting the machine, you can easily produce high-quality dental restorations. For more information about this machine, please visit our official website: <https://www.UP3Ds.com/>.

2.2 Operator Requirements

Only professionally trained individuals with sufficient knowledge, experience, and familiarity with relevant safety regulations should operate this equipment. Operators must be capable of recognizing and avoiding potential hazards.

Important Notice: The manufacturer is not responsible for damage caused by the following:

- Ignoring or disregarding this user manual
- Intentional misuse
- Use outside the specified scope
- Use by untrained personnel
- Use by non-professionals (e.g., during maintenance)
- Unauthorized technical modifications to the equipment
- Use of accessories not approved by the manufacturer

2.3 Before Use

1. Always read the included documentation carefully before installing, operating, or maintaining the machine.
2. If you're unsure how to operate the machine, do not attempt to use it. Please contact technical support for assistance.
3. Make sure all users have access to the operating instructions and are trained to use the machine safely and correctly.

2.4 Improper Operation of the Machine

2.4.1 Risk of Electric Shock

1. Do not remove the machine's outer housing. Improper actions may lead to electric shock.
2. Avoid operating in humid environments, and never touch internal components with wet or damp body parts.
3. Inspect the surrounding area and accessible internal parts daily for liquid leakage and clean it up immediately.
4. Ensure that proper leakage protection devices and grounding are in place.
5. Power cables should be routed safely to avoid cutting or damage.
6. Always inspect cables before powering on. Turn off the main switch before unplugging.
7. Do not perform troubleshooting while the machine is running. Only qualified technicians should disassemble or repair the device.

2.4.2 Moving Parts and Exterior Housing

Moving parts may cause injury, such as pinching. Be cautious with:

- The processing chamber door
- Side maintenance covers
- Water tank drawer

To stay safe:

1. Only use designated handles to move these parts.
2. Ensure your hands are clear during movement to avoid injury.

2.4.3 Working Chamber Safety

1. Moving components inside the chamber can cause crushing, cuts, or burns.
2. Inspect the machine regularly for damage. Only operate when the chamber door is fully closed and undamaged.
3. Wear gloves when handling material trays or tools.
4. Always hold tools by the shank—avoid sharp edges.
5. Do not touch the spindle during operation. After processing, avoid contact due to high temperatures.

2.4.4 Noise

1. The machine may generate significant noise during operation. Prolonged exposure may lead to hearing damage or tinnitus.
2. If high noise levels cannot be avoided, wear hearing protection such as earmuffs.

2.4.5 Coolant Guidelines

Only use “P42 PLUS Cutting Fluid” in the tank, and mix it at the recommended ratio.

2.4.6 Maintenance & Troubleshooting

1. Improper or missing maintenance may cause malfunction or injury.
2. Perform maintenance according to the maintenance schedule.
3. Do not troubleshoot while the machine is running.
4. Only authorized personnel should have access to the machine.
5. The room should be equipped with an automatic fire detection system.
6. Use only original spare parts, certified accessories, and approved equipment from the manufacturer.

2.5 Risk of Equipment Damage

2.5.1 Spindle-Related

To prevent damage due to poor maintenance:

- Clean and replace collets according to the maintenance instructions.

To prevent damage from improper tools:

- Use only official tools provided by Yunjia Technology.
- Follow UPCNC software tool life indicators to avoid poor restoration quality.

To prevent damage from impact:

- Do not apply manual force to the spindle during operation.

2.5.2 UPCAM & UPCNC Software

- Use only the latest supported versions of UPCAM and UPCNC to ensure stability and compatibility.
- Ensure your computer meets the software's system requirements and read the software manuals before use.
- After extensive testing, UPCAM and UPCNC are confirmed to be highly compatible with the P42 Plus.

Note: Yunjia Technology allows the use of third-party CAM software in place of UPCAM; however, UPCNC cannot be replaced.

If third-party software is used, the software developer bears full responsibility for the machining outcome.

2.5.3 Input Voltage

1. Voltage fluctuations may damage the control system.
2. Connect the machine to a dedicated power circuit, without other devices sharing the line.
3. If strong voltage fluctuations are unavoidable, install a voltage stabilizer to protect the machine.

2.5.4 Equipment Movement & Operating Environment

1. Operate the device on a stable, level workbench.
2. During transport, avoid dropping, impacts, strong vibrations, or mechanical stress.
3. Do not operate the machine in environments with temperature or pressure beyond its specified limits.
4. Do not use the machine near flammable or explosive materials to prevent fire or explosion.
5. Keep children and animals away from the machine.

3. Device Overview

3.1 Names and Functions of Device Components

Device Overview:



Left Side of the Device:

Ethernet Port

- For wired network connectivity.

Main Power Switch

- Turns the machine on or off.

Power Input Port

- Connects the machine to the power supply.



Right Side of the Device:

Wi-Fi Antenna

- Enables wireless network connection.



Inside the Processing Chamber:

LED Light Strip

- Provides illumination inside the chamber.

HD Camera

- Monitors the machining process.

Spindle

- Performs the actual grinding operation.

Tool Holder

- Holds the active tool in place.

Axis Mechanism

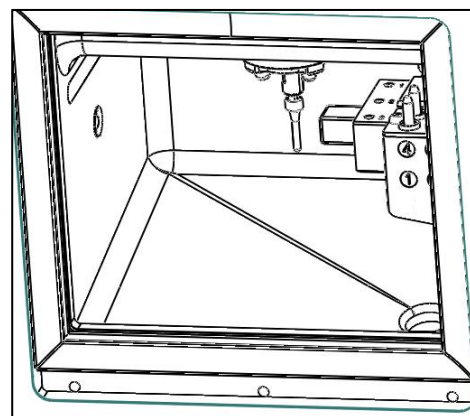
- Controls rotational movement for precision.

Drain Outlet

- Removes used coolant and waste water.

Waterproof Structure

- Protects internal components from moisture.



Tool Magazine Introduction:

Tool Length Sensor

- Automatically detects and calibrates tool length.

Calibration Ring

- Used for spindle/tool calibration.

Tool Slot 1: Glass Ceramic $\Phi 2.5$ mm

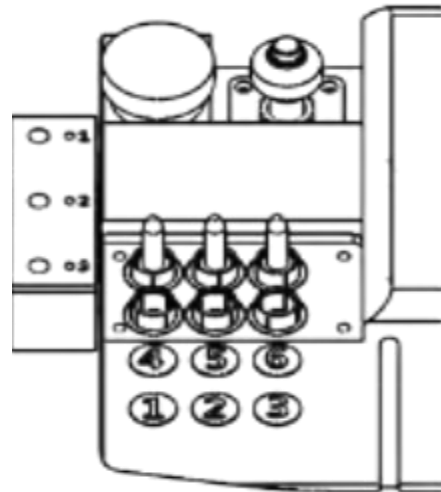
Tool Slot 2: Glass Ceramic $\Phi 1.0$ mm

Tool Slot 3: Glass Ceramic $\Phi 0.6$ mm

Tool Slot 4: PMMA $\Phi 2.0$ mm

Tool Slot 5: PMMA $\Phi 1.0$ mm

Tool Slot 6: PMMA $\Phi 0.6$ mm (also used for calibration rod)



Water Tank Introduction:

Tank Lid

- Covers the water tank and allows for easy access.

Filter Box

- Collects debris and protects the pump.

Water Tank

- Holds coolant for wet processing.

Filter Cartridge

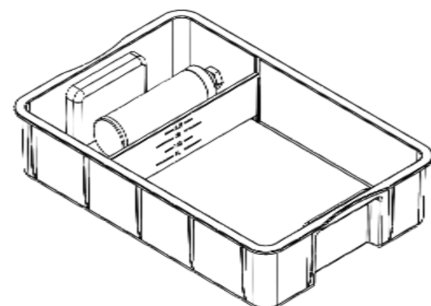
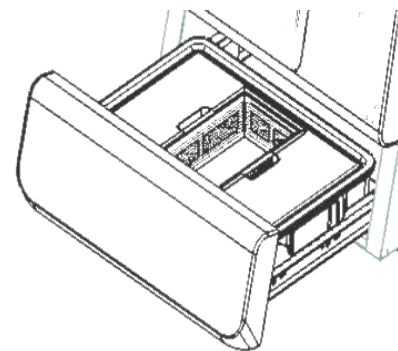
- Ensures circulating water is clean.

Water Level Indicator Panel

- Shows current water level.

Water Circulation Port

- Connects to the machine's internal cooling system.



4. Device Installation

4.1 Device Delivery

Upon receiving the device, please follow the steps below and ensure that the outer packaging is intact. Always follow safety instructions and wear protective gloves during operation.

4.1.1 Inspect Transport Packaging

Carefully inspect the transport packaging for any signs of damage. Ensure the packaging is intact to prevent potential damage during transportation.

4.1.2 Unbox the Device

Unlock the latches of the packaging box, and carefully lift and remove the box from the device.

Note: It is recommended to retain the original packaging for future transport. This helps protect the device during relocation and reduces the risk of damage.

4.2 Verify Accessories

A box of accessories is included inside the packaging. Please check the contents of the accessory box against the packing list to ensure completeness of delivery and verify that no items were damaged or lost in transit.

Note: If any issues are found, immediately contact UP3D technical support to avoid delays and ensure timely resolution.

4.3 Installation Environment Requirements

Device Handling: As the device weighs 80 kg, at least four people are required for safe transport. Ensure that all individuals are physically capable of carrying the load. When lifting, grasp the bottom corners of the device securely to prevent dropping and ensure safe handling.

Installation Site Requirements

Device Weight: 80 kg

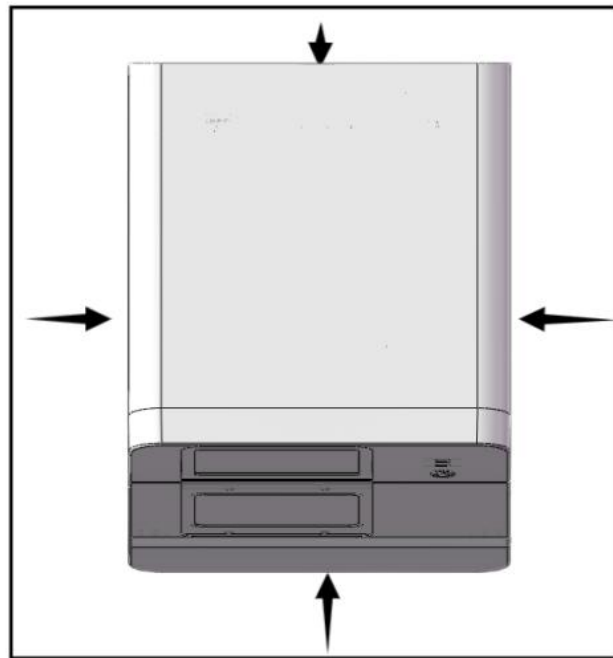
- The device must be placed on a stable and level surface capable of supporting the weight.

Device Dimensions: Length: 560 mm * Width: 400 mm * Height: 565 mm

- The installation area should be larger than the device dimensions to allow for stable and secure placement.

Power Requirements: Voltage: AC 100V–240V, 50–60Hz

- The power outlet must be grounded, voltage should be stable, and the wiring must be undamaged.
- The device should be placed so that the power plug can be easily accessed and disconnected in case of emergency.



After confirming the installation location, gently place the device on a level workbench. Ensure the surface is stable and the device is placed evenly. Keep the surrounding area clean and organized. Open the front door of the packaging box and remove the protective foam carefully — store it safely for future maintenance or transportation needs.

Important – Do NOT install in the following environments:

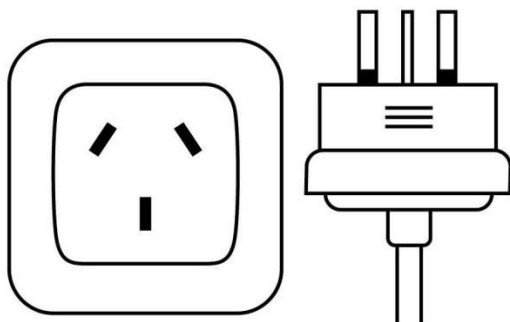
- Areas with large fluctuations in temperature or humidity
- Areas exposed to vibration or shaking
- Areas with strong electromagnetic interference, such as near high-power electronic equipment

5. Device Connection

5.1 Establishing Electrical Connections

The machine requires a continuous power supply for proper operation:

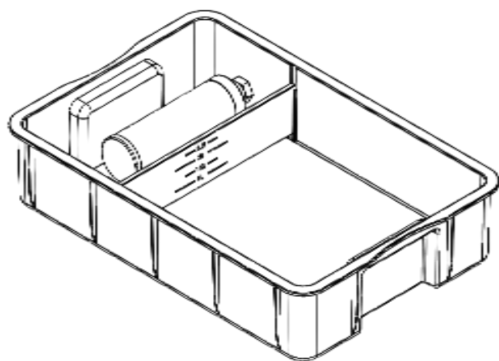
- Insert the power cable (included in the accessory box) into the power port on the device's connection panel.
- Plug the cable into a socket equipped with a leakage protection device or ground fault circuit interrupter (GFCI).
- Use a dedicated power outlet—do not use extension cords or power strips.
- Ensure the power voltage remains stable. Power failures during operation may damage the burs or the material.



Important: Do not bundle the power cable and network cable together, as this may cause interference and lead to abnormal device operation.

5.2 Establishing Water Circulation

- Pull out the drawer at the bottom of the device and remove the water tank.
- Open the tank lid, and fill the tank with purified water.
- Ensure the water level is above the partition plate and close to the 2.5L mark. Then close the tank lid and securely push the drawer back into place.
- Confirm that no water is leaking from the bottom of the device. If any leakage is found, clean it up promptly.
- Open the Maintenance Interface on the device and click the Water Spray button to verify normal water spray operation.



Important: Use purified or soft water only. Using hard water will reduce tool life and affect the quality of the restoration.

6. Device Operation

6.1 Starting the Device

First-time startup warning:

If the device is too cold at startup, there is a risk of a short circuit.

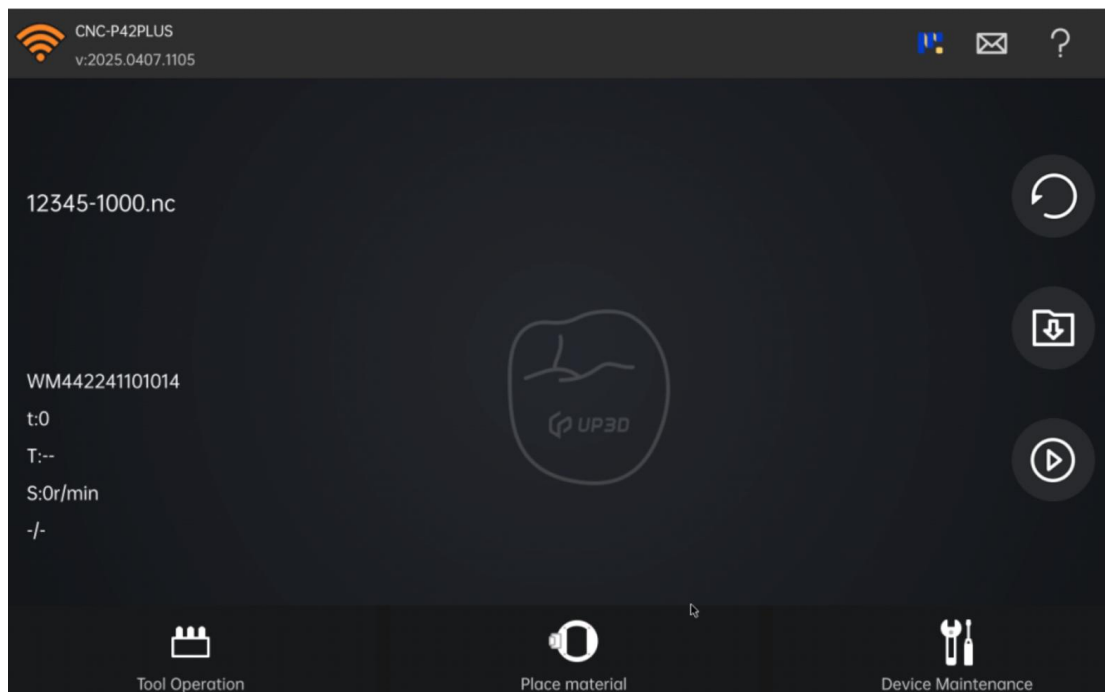
When the machine is transported from a cold to a warm environment, condensation may occur and lead to short circuits.

Before turning on the device, make sure:

- The ambient temperature complies with the device's operational requirements.
- The machine has acclimated to room temperature.
- The internal components are completely dry to avoid short circuit risks.

Once confirmed, follow these steps to start the device:

1. Make sure the operation door is closed and the device is sealed.
2. Turn on the main power switch, then press the power button on the front panel.
3. Check if the LED light strip illuminates. The machine will not home at this stage, but the light indicates the power is properly connected.



6.2 Removing the Collet Fixing Rod

To stabilize the collet during transportation, the spindle is equipped with a fixing rod. You must remove it during the first startup.

⚠ WARNING: Failure to remove the fixing rod may result in collision with machine parts and damage to the spindle.

Follow these steps to safely remove the fixing rod:

1. Open the operation door.
2. ⚠ Wear gloves, and place your hand under the spindle.
3. In UPCNC software, go to Tool Operation and click "Release Tool". The fixing rod will fall into your hand. Remove it.

6.3 Device Calibration

The P42 Plus features intelligent automatic calibration, allowing one-click precision compensation. To ensure long-term accuracy and high-quality restorations, regular calibration is recommended.

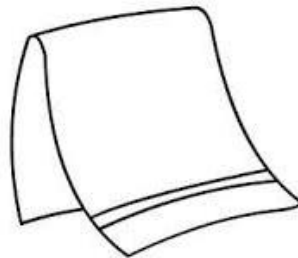
Recommended calibration occasions:

1. First-time startup after delivery (to offset possible transport impact).
2. After long-term high-intensity operation (every 3 months of continuous use).
3. If abnormalities occur during processing (e.g., chipping, tool marks, missing restorations).
4. After the machine has been moved significantly.

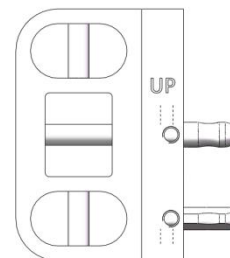
Tools Required:



Calibration Rod



Dust-Free Cloth



Calibration Plate

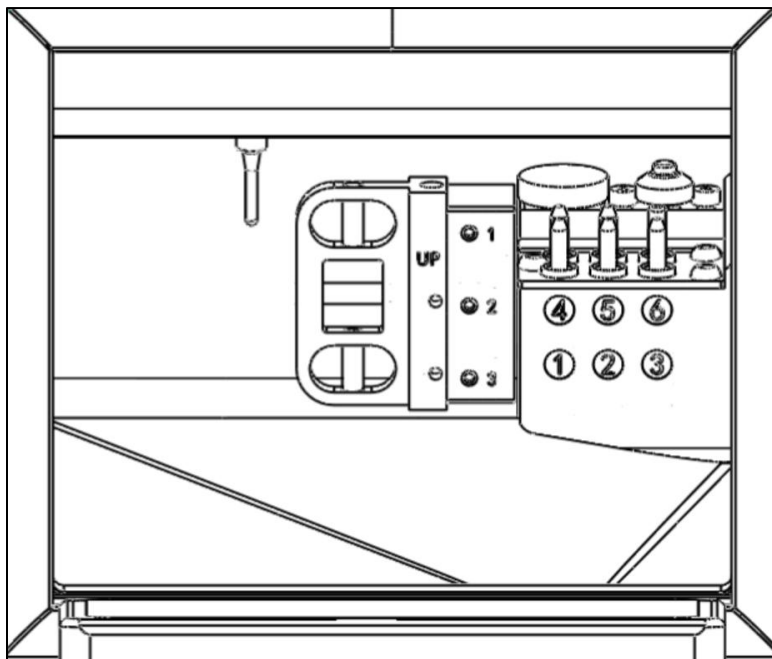
6.3.1 Installing the Calibration Rod

Before calibration, follow these preparation steps:

1. Clean the working chamber: Use the automatic cleaning function.
2. Wipe key components: Use a lint-free cloth to clean around the tool holder and clamps.
3. Clean the spindle housing: Use a brush and lint-free cloth to remove any coolant or debris from the airflow guide base.
4. Clean the spindle collet: Loosen and remove the collet, clean thoroughly.
5. Install the calibration rod into Tool Slot 6. Ensure it is fully inserted to maintain accuracy.

6.3.2 Installing the Automatic Calibration Plate

1. In UPCNC, click "Material Removal Position".



2. Insert the automatic calibration plate into the device's fixture.
3. Use the torque wrench to securely fasten the fixture.
4. Close the operation door.

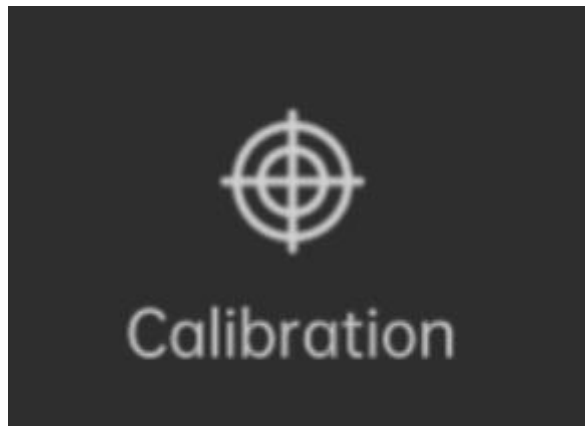
6.3.3 Starting Auto Calibration

1. In the Maintenance Interface, locate and click the Calibration icon.
2. Follow the on-screen instructions and confirm all preparations are complete.
3. Click "Start Calibration" to begin automatic calibration.

During the process, the LED strip will display a blue light to indicate progress.

Once calibration is complete, a prompt will appear. Click Confirm, and the device is ready for use.

Finally, use the torque wrench to loosen the clamp screw, remove the calibration plate, and store it properly.



7. CNC3 Control Software Operation

7.1 What is CNC3?

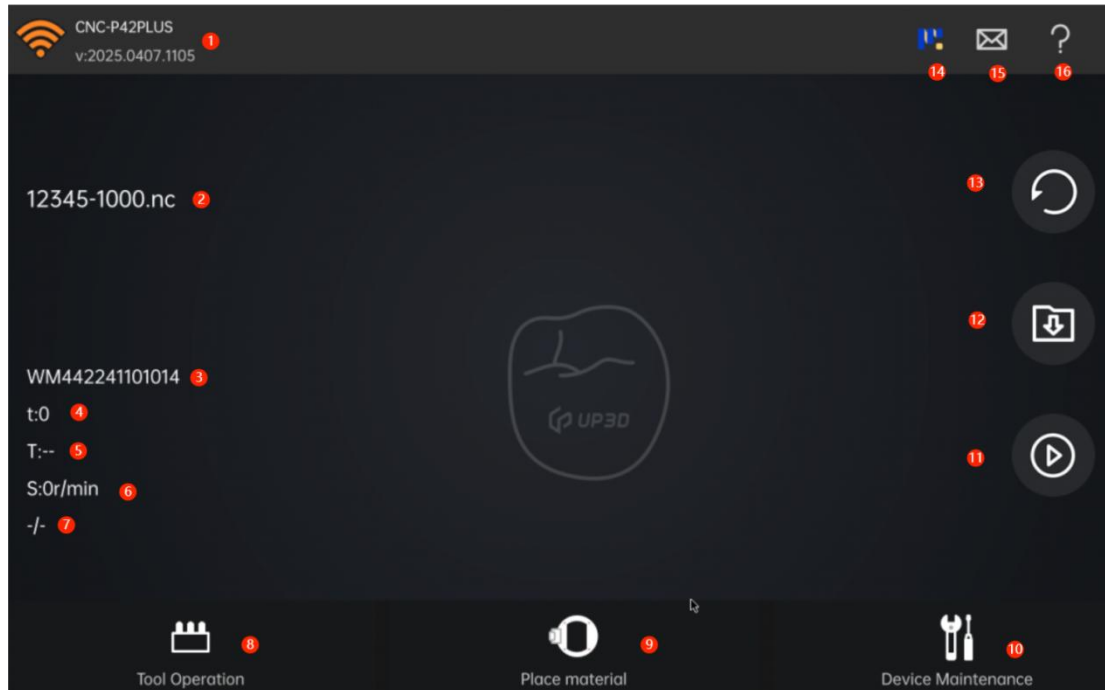
CNC3 is an intelligent control program independently developed by UP3D (YunJia Technology). It allows users to operate the milling machine via a computer interface. CNC3 provides convenient monitoring and management of machine operation, ensuring both efficiency and quality.

Main functions include:

1. Milling Data Output: Send NC data files to the machine for processing.
2. Maintenance: Manage and execute maintenance tasks with built-in tools.
3. Calibration: Perform calibration operations to maintain machine precision and stability.
4. Status Display: Real-time status updates including machine state, progress, etc.
5. Error Alerts: Prompt notifications for malfunctions or anomalies.

7.2 CNC3 Main Interface

7.2.1 Overview of Main Interface



Interface Elements:

- WiFi & Software Version:** Displays current WiFi status and CNC3 version info.
- NC File:** Displays information about the imported NC file.
- Machine Name:** Shows the name/ID of the current connected device.
- t:** Current clamped tool info.
- T:** Current spindle temperature.
- S:** Spindle speed (RPM).
- Execution Line Count:** Displays current and total lines during milling.
- Tool Status:** Shows tool life and usage time.
- Material Loading Position:** Moves fixture to a convenient position for material loading/unloading.

10. **Device Maintenance:** Access daily maintenance operations.
11. **Start/Pause:** Start milling the imported NC file or pause ongoing tasks.
12. **Import NC File:** Open file explorer to select NC files for milling.
13. **Reset:** Resets the machine to standby by clearing all current statuses.
14. **MillMind:** Enables remote control via smartphone QR code scan.
15. **Information:** Shows system messages or alerts.
16. **Settings (Configuration):** Access advanced maintenance settings.

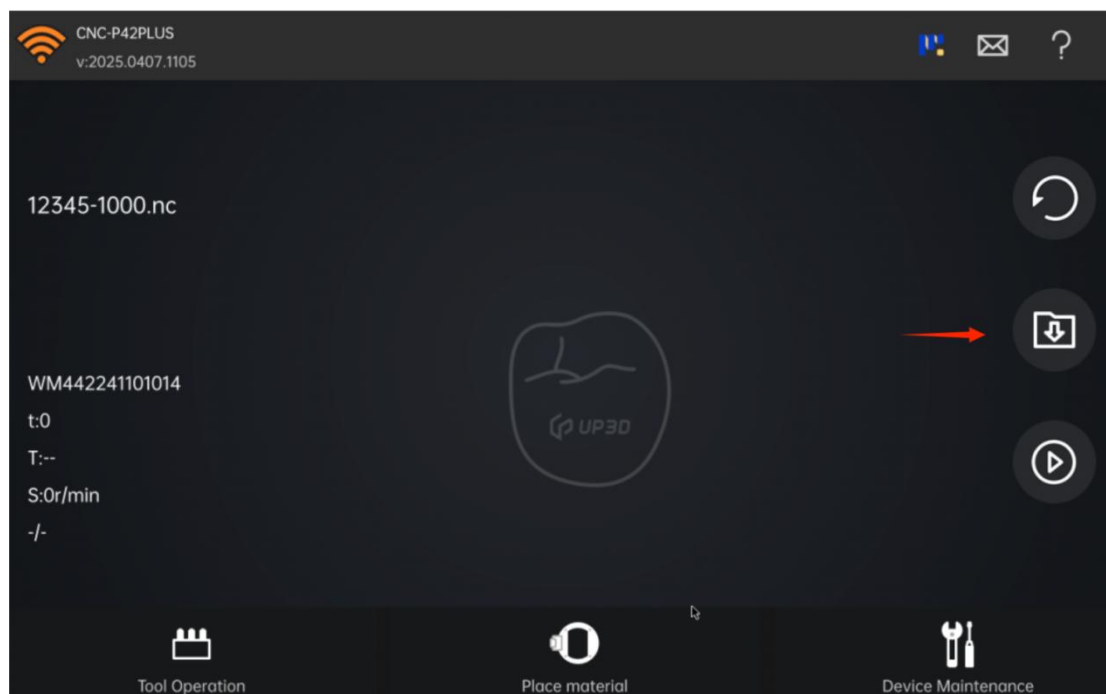
7.3 CNC3 Milling Interface

7.3.1 Importing NC Files:

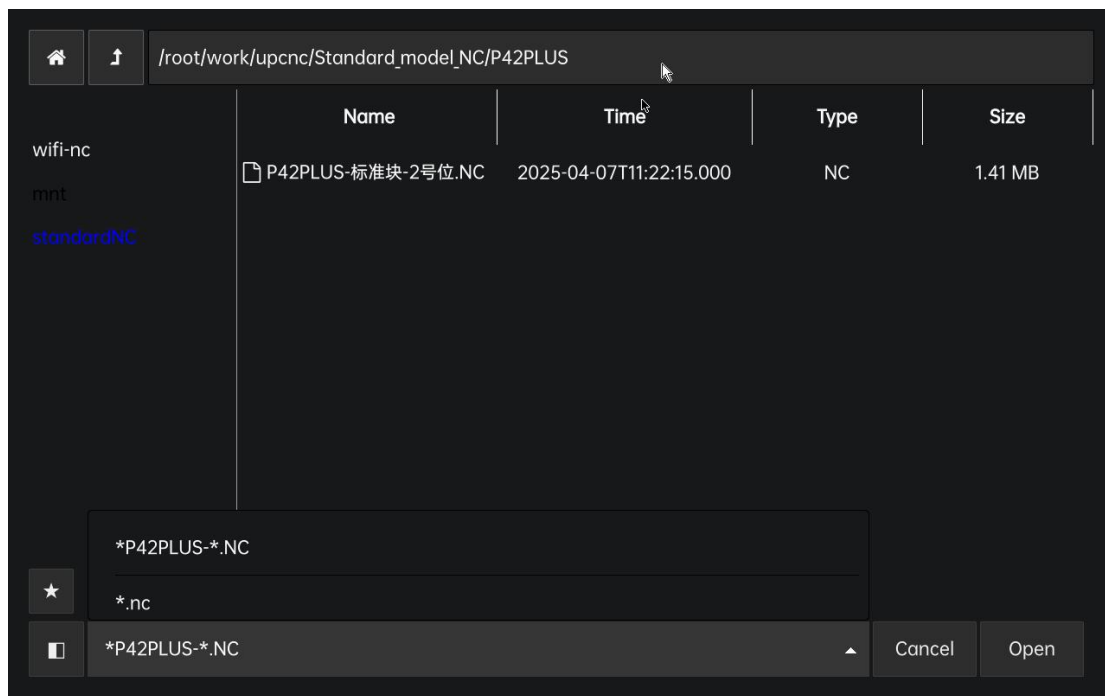
Click "Import Local NC" to open the file explorer.

Locate the required NC file and either click "Open" or double-click to import.

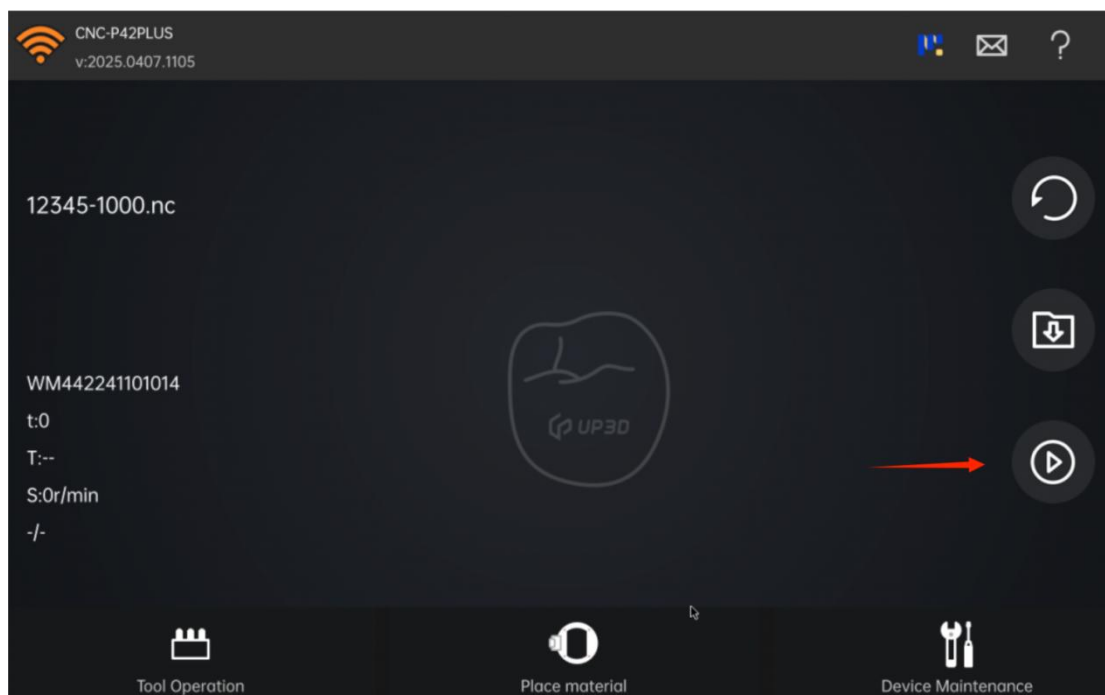
Once successfully imported, NC file information will appear on screen.



Tip: Click the file name field to choose between: NC files filtered by P42 Plus model. All available NC files (for all models).



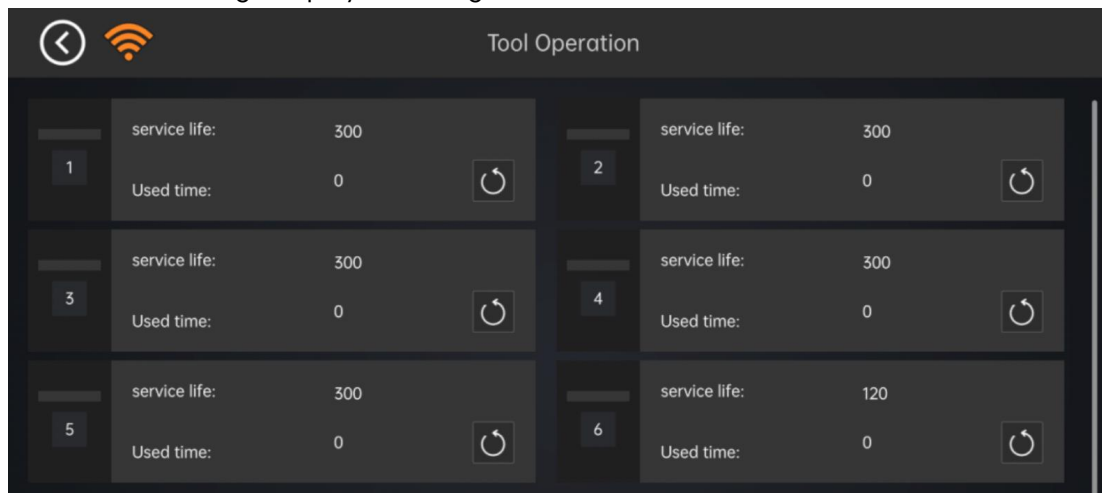
7.3.2 Starting the Milling Process



- **Start/Pause:** After importing, click Start to begin milling. Button changes to Pause. Clicking again will pause the process. You can resume by clicking Continue.
- **Reset:** While milling, clicking Reset will stop the process and reset progress to zero, returning the device to standby.

7.4 Tool Maintenance Interface

The Tool Record Page displays the usage status of each tool in the machine.

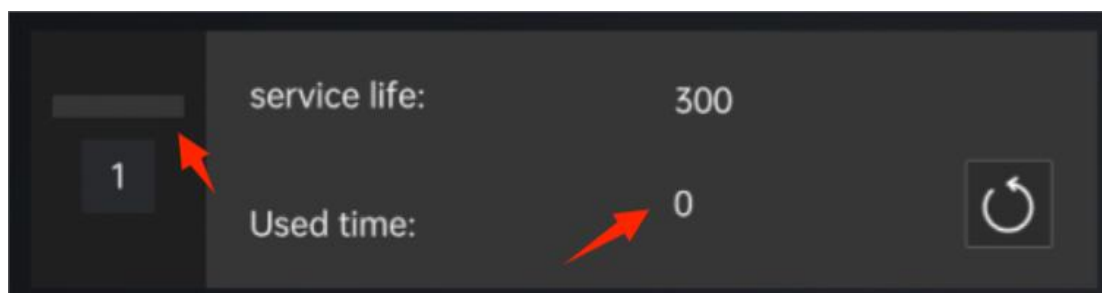


Functions:

1. Configure: Select a tool and click "Configure" to edit its data:

Used Time (min): Tracks the usage time.

Estimated Life (min): Max recommended usage time.

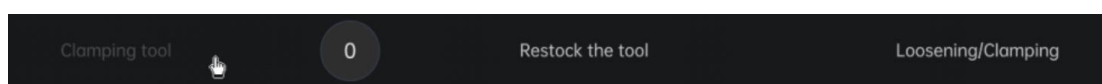


2. Reset: Use the button to reset tool usage time. You can also click the numbers to manually edit tool usage and lifespan.

3. Clamp Tool: Clamp the selected tool. If already clamped, the tool number is displayed on the button.

4. Return Tool: Returns the currently clamped tool to its tool slot.

5. Open/Close Spindle Collet: Controls the spindle's clamping mechanism.

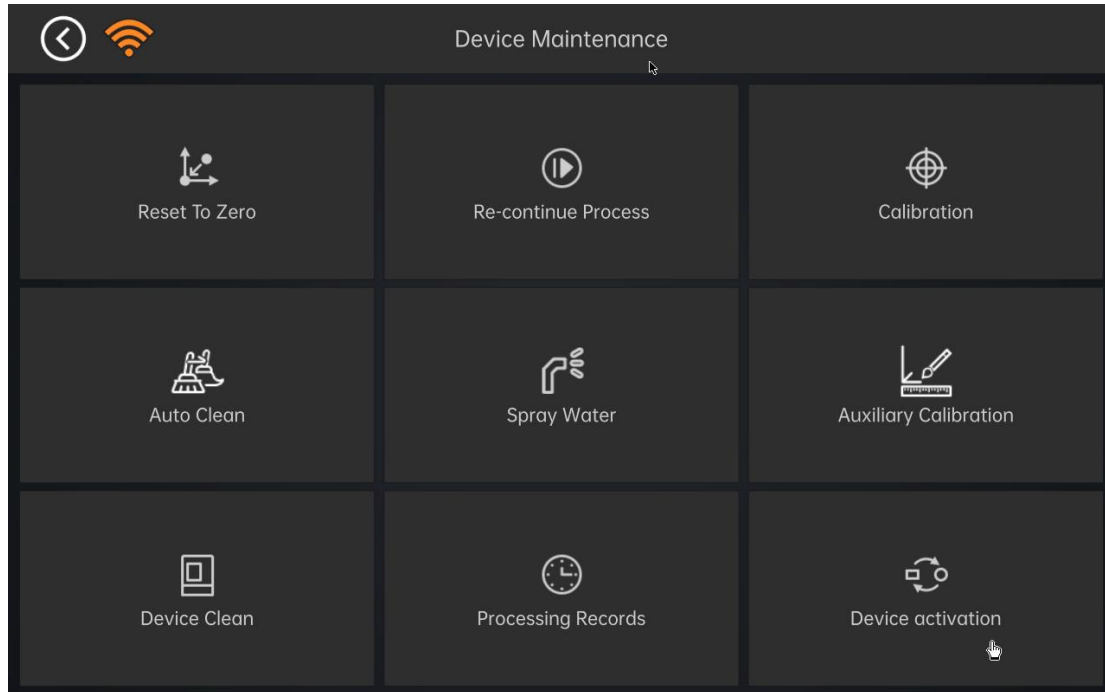


Notes:

- Tool usage time cannot exceed the estimated lifespan.
- When a tool reaches 90% of its lifespan, CNC3 will issue a tool life warning and highlight the tool in red.

7.5 Device Maintenance Interface

7.5.1 Functions Overview



1. **Homing (Return to Zero):** All machine axes return to coordinate origin.
2. **Resume Milling:** Resume interrupted milling from the break point.
3. **Calibration:** Run automatic calibration to restore precision.
4. **Auto Cleaning:** Execute automatic cleaning using NC commands.
5. **Spray Water:** Activates the water spray system.
6. **Assisted Calibration:** Guides user through manual calibration procedures.
7. **Device Maintenance:** Visual guidance for chamber cleaning, spindle maintenance, spray nozzle, and water loop.
8. **Milling History:** View the machine's past job records.
9. **Device Activation:** Activate or start a trial of the milling machine.

8. Device Operation

8.1 Pre-Machining Preparation

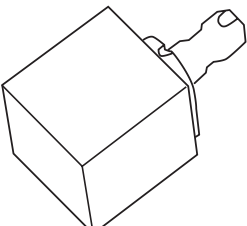
Improper usage may damage the tool or material or affect the grinding quality. Please ensure:

1. The correct type and size of material is selected.
2. Manufacturer-recommended burs are used.
3. The material disk is properly locked to prevent movement and vibration.

8.1.1 Supported Materials

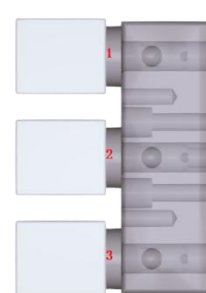
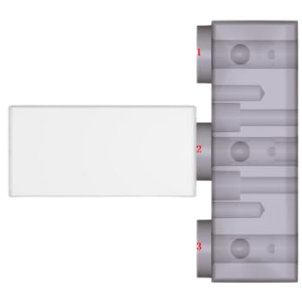
- Glass ceramic
- PMMA
- Composite resin

8.1.2 Supported Material Dimensions

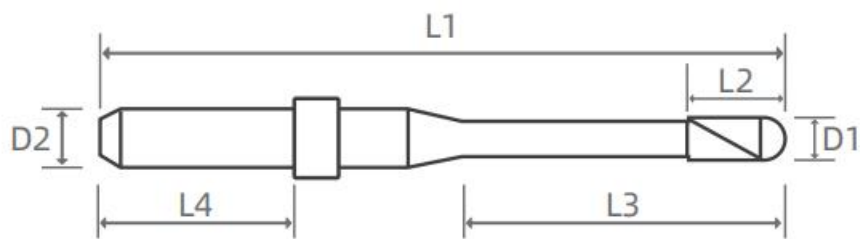
	Material type	Block
	Holder diameter	6 mm
	Max. dimensions	40*20*20 mm (max)

When processing 40×20×20 mm material, only use position 2 to avoid errors.

8.1.3 Material Quantity vs. Width

Material width ≤ 16 mm Multiple positions can be used	Material width > 16 mm Only position 2 is supported
	

8.1.4 Supported Burs



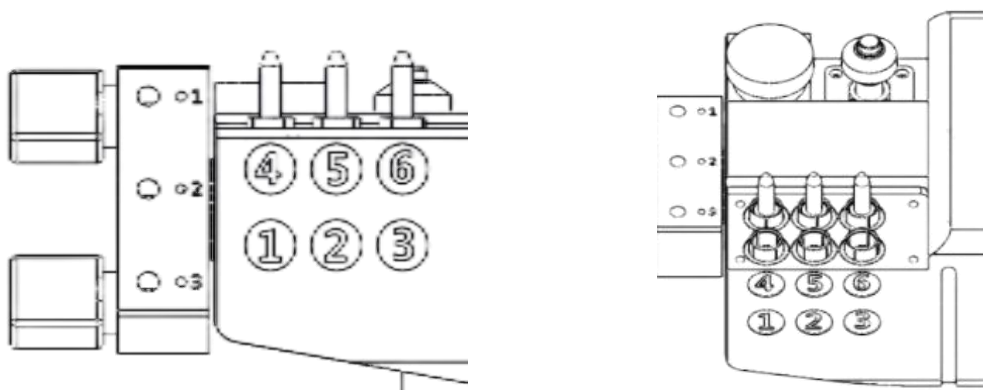
Length: 40mm

Shank diameter: 4mm

Tool specifications are for reference only.

Material	Specs	Diameter	Tool Slot
Glass ceramic	R1.25*16*4*40	Diameter: 2.5mm (40mm)	Slot 1
Glass ceramic	R0.5*10*4*40	Diameter: 1.0mm (40mm)	Slot 2
Glass ceramic	R0.3*8*4*40	Diameter: 0.6mm (40mm)	Slot 3
PMMA	R1.0*16*4*40	Diameter: 2.0mm (40mm)	Slot 4
PMMA	R0.5*16*4*40	Diameter: 1.0mm (40mm)	Slot 5
PMMA	R0.3*8*4*40	Diameter: 0.6mm (40mm)	Slot 6
Calibration	Size: 4*40 (used during calibration)		Slot 6

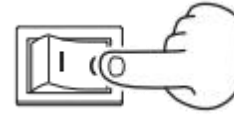
Notes: Glass ceramic and composite resin share the same burs. Ensure correct bur selection and installation.



8.2 Powering On

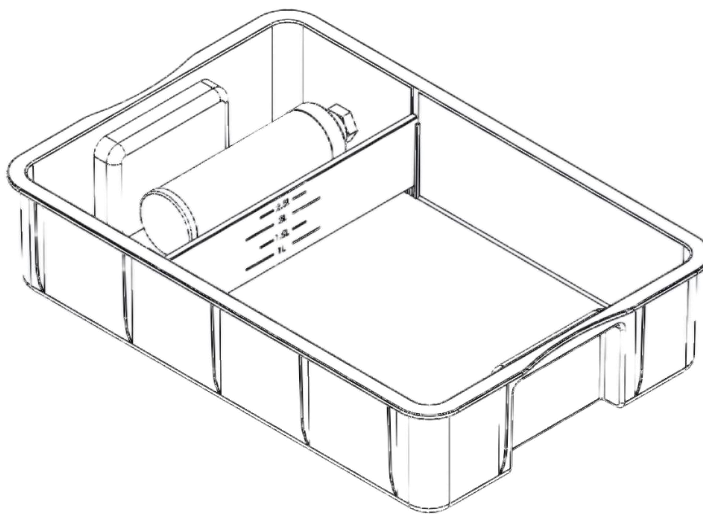
8.2.1 Start Machine

- Ensure operation door is closed.
- Turn on the main power switch.
- Press the power button on the front panel.
- Indicator lights (LED strip and internal lights) turn on.
- Startup successful.



8.2.2 Water Circulation System

- Gently pull out the drawer at the bottom of the P42 device to remove the water tank.
- Inspect cleanliness and water level.

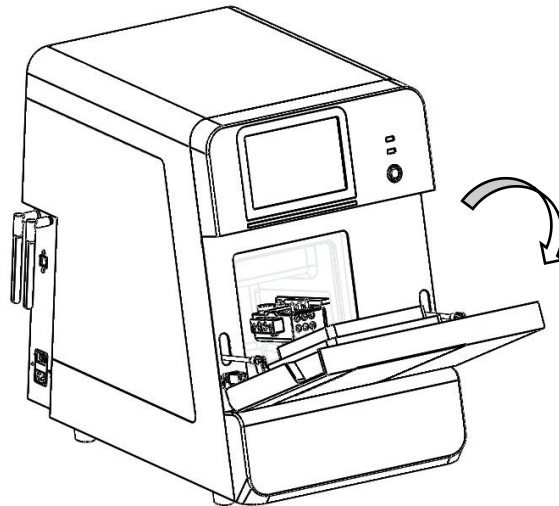


1. **Cutting fluid:** Use soft or purified water. Hard water shortens bur life and affects cutting.
2. **Water level:** Keep below 2.5L to avoid leakage.
3. **Maintenance:** Regularly replace water to maintain performance.

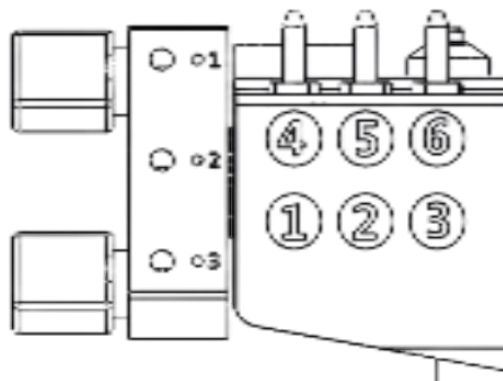
Notes: Do not overfill. Replace used liquid periodically. Ensure proper drawer closure and nozzle function.

8.3 Material Installation

- Open the operation door.



- Insert the material pin into the rotary axis hole.



Notes:

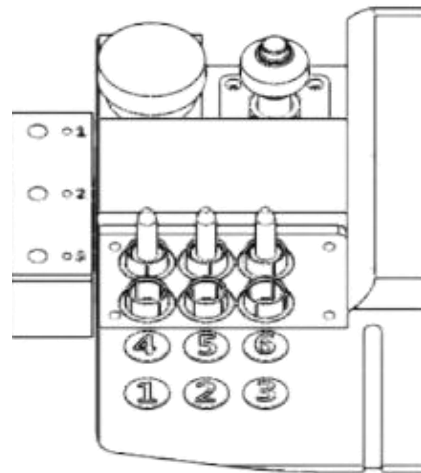
1. Ensure the notch at the pin base aligns with the protrusion on the rotary axis no gaps allowed.
2. Materials wider than 16 mm must be installed in position 2 only.
3. Tighten the fixation screw using a 2.0N torque wrench.

8.4 Bur Installation

Install the correct bur for the selected material before machining. Using incorrect burs may damage the spindle or material.

8.4.1 Tool Slot Assignment

Glass ceramic	Diameter: 2.5mm	Slot 1
Glass ceramic	Diameter: 1.0mm	Slot 2
Glass ceramic	Diameter: 0.6mm	Slot 3
PMMA	Diameter: 2.0mm	Slot 4
PMMA	Diameter: 1.0mm	Slot 5
PMMA	Diameter: 0.6mm	Slot 6



Notes: Handle sharp parts carefully. Wear appropriate protective gear.

8.4.2 Automatic & Manual Tool Change

- **Bur life:** Tracked by CNC software. Replace upon reaching the limit.
- Reset tool life in CNC after replacement.

Auto change: Click "Return Tool" in CNC → The tool is returned to its slot automatically.

Manual change: Click "Release Tool" → The tool will fall from the spindle. Wear gloves to catch the tool.

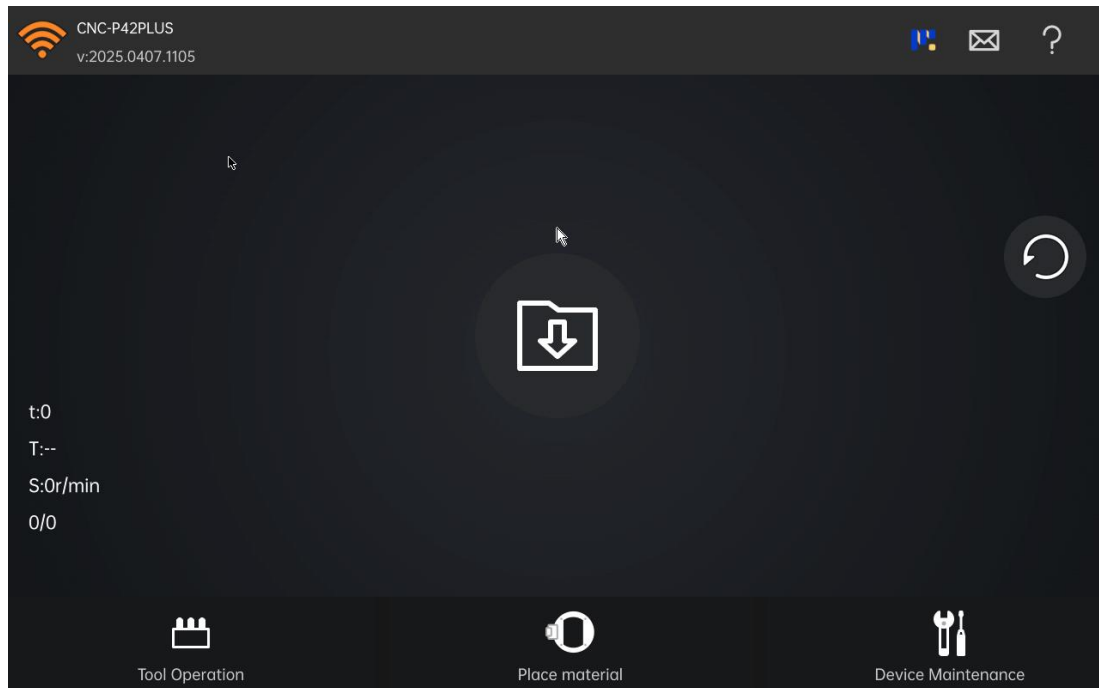
8.5 Start, Pause, and Cancel Machining

Ensure the following before starting:

1. NC file is generated by UPCAM
2. Material is properly installed and clamped
3. Correct burs installed with sufficient life
4. Water system functioning properly

8.5.1 Start Machining

1. Close the operation door.
2. Insert USB with NC file into the port.



3. Click "Import File" in CNC 3 and select the file.
4. Click "Start" to begin machining.



8.5.2 Pause and Resume

1. Click "Pause" → Process halts.
2. Click "Start" again → Process resumes.

8.5.3 Cancel Machining

1. Click "Pause".
2. Click "Reset" → Machine clears all status and enters standby.
3. Click "Home" → All axes return to origin.

8.6 Shutdown Procedure

- Clean the machining chamber.
- Close the door.
- Turn off front panel power button.
- Switch off main power.

9.Maintenance of Equipment

9.1 Daily Maintenance

Please pay attention to the daily maintenance of your equipment, as it can ensure that your device executes machining commands effectively and delivers satisfactory results. Therefore, your daily maintenance of the equipment is crucial.

Please adhere to the maintenance requirements outlined for your equipment and perform the necessary maintenance tasks. The following maintenance procedures require simple manual operations. If you are unsure about any maintenance procedures, feel free to contact technical support for guidance.

Location	Tools	Main points	Cleaning cycle
Work area	1. Clean dust-free cloth. 2. Double-end cleaning brush	1. Clean the inner cabin of the processing machine: clean it with a cleaning brush, and finally wipe it with a clean cloth. A. Tool alignment instrument. B. Material holder. C. Observation window. D. Webcam. E. Tool library. F. Calibration ring. G. Tool holder	Clean once a week

Spindle and chuck	1. Double-end cleaning brush. 2. Cleaning brush. 3. Knurled nut. 4. Cleaning cone. 5. Chuck grease	1. Click the equipment maintenance-interface-Calibration-Spindle cleaning. 2. Move the spindle to the center position in the processing warehouse and clean the spindle with a double brush. 3. Click the loose clamp tool, take out the knurled nut and insert it into the calibration rod and insert it into the spindle port. 4. After stabilizing the spindle chuck, rotate counterclockwise to remove the spindle chuck. 5. Insert rotary cleaning with cleaning cone at the mouth of the spindle. 5. The spindle chuck is inserted with a cleaning brush for fast rotation and drawing cleaning. 6. After cleaning, apply the chuck grease on the side wall of the spindle chuck, and the gap can not be smeared (original grease is required). 7. The rest of the position needs to be cleaned with a clean cloth. 8. Install the spindle chuck back according to the disassembly method and rotate clockwise to ensure the lock. 10. After clicking the clamp tool, the device clicks back to zero and can be used normally.	Clean once a week
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Nozzle / nozzle	1. Cleaning brush	1. Click the equipment maintenance-interface-Calibration-Spindle cleaning. 2. The spindle is moved to the center position in the processing warehouse. 3. The cleaning brush is probed into 4 sprinklers respectively. 4. Rotating to clean the hole. 5. Click the equipment maintenance interface to return to zero and you can use it normally.	Clean once a week or when the water spray is abnormal
Water tank	1. Clean scraping blade 2. Clear water	1. Open the water tank drawer and take out the water tank. 2. Place the water tank in the cleaning pool and open the water tank cover. 3. Pour the cutting liquid into the sewer. 4. The glass-ceramic powder residue accumulated in the water tank should be cleaned with a scraper. 5. Wash the cleaned water tank in the pool and rinse until there is no powder. 6. Add appropriate amount of milling liquid after filling the water tank to 2.5L. 7. Put it back in the equipment drawer and keep the drawer door closed. 8. Click on the equipment maintenance interface to confirm that the water spray is normal and then resume its use.	Clean the machined 30Pcs denture for maintenance or abnormal water spraying

Material clamping hole	1. Cleaning brush	1. Click the material handling position button. 2. After the clip is rotated and tilted, use a brush to insert it into 3 positions respectively. 3. Rotary cleaning hole. 4. Click on the equipment maintenance interface to return to zero and you can use it normally.	Clean once a week or when the water spray is abnormal
Water circulation system	1. Clear water	1. Place clear water in the water tank. 2. Click the equipment maintenance interface sprinkler command. 3. Run the sprinkler instruction for 30 minutes. 4. Turn off the sprinkler command and replace the pure water with the right proportion of milling liquid. 5. Click on the equipment maintenance interface to confirm that the water spray is normal and then resume its use.	Clean it once a week (on the last working day) or when the water spray is abnormal
Cooling liquid	Visual	1. Check whether the liquid height meets the processing requirements. If the water level is insufficient, please add liquid (milling liquid or pure water) in time. 2. Check whether there is any water spill or residue in the equipment, please clean it in time and keep it dry	Check once a day

Shell	1. Clean dust-free cloth. 2. Alcohol	1. The power supply should be turned off before cleaning the equipment. 2. Use a clean cloth to wet with alcohol. 3. Gently wipe the outer shell of the equipment box. 4. Wipe to finish the drying of the equipment box. 5. Resume normal use	Clean according to your actual needs
Update software and firmware	Contact technical support for remote updates	1. Regular iterative optimization will provide you with the best experience.	You will be contacted in time before updating
The equipment has not been in use for a long time	Contact technical support for remote updates	1. If the equipment is not in use for 4 weeks, contact technical support for remote maintenance before use.	If not in use for 4 weeks, contact technical support for remote maintenance.

9.2 Maintenance Work

For all maintenance-related issues, please contact the UP3D technical support department for assistance. They will provide you with spare parts, maintenance tips, and perform preventive maintenance upon your request. When delivering or installing the machine, please inquire with the service personnel for detailed contact information of the customer service team.

9.3 Warranty Service

The equipment comes with a warranty period of 12 months or 2,000 operating hours, whichever comes first. During this period, we provide free after-sales service. However, it's important to note that even within the warranty period, UP3D will charge for repair services under the following circumstances, including repair fees and parts costs:

- - Damage caused by human factors.
- - Improper use of the equipment.
- - Natural disasters beyond control.
- - Replacement or use of components or tooling not approved by UP3D.
- - Disassembly and repair by unauthorized professionals.
- - Other malfunctions not caused by the equipment itself.
- - After the warranty period, UP3D will provide paid repair services.

These terms are intended to ensure free after-sales service under normal usage and maintenance conditions but do not cover issues caused by improper user operation, external factors, or unauthorized repairs. If you require repair services during or after the warranty period, please feel free to contact UP3D for detailed information and support.

10. Troubleshooting

If the device fails to operate properly or encounters an abnormal condition, please refer to the following troubleshooting guide.

Important: Improper troubleshooting may damage the device. If the issue cannot be resolved or identified, please contact technical support for assistance.

10.1 Tool Change Issues

When this issue occurs, a prompt will appear on the software interface indicating tool change failure during the process.

Possible Causes:

- **During machining:** The tool may be damaged or the tool clamping failed during the change, interrupting the process. After fixing the error, machining must be restarted.
- **Not machining:** Tool clamping or release failed due to tool damage or an empty tool slot.

Solution:

Click the "Release/Clamp Tool" button. Check if the spindle collet opens properly, then clean and maintain the spindle collet to ensure it is free of debris.

10.2 Limit Switch Issues

When triggered, the software interface shows a prompt indicating that the device has hit a limit switch or moved beyond its allowed travel during operation.

Cause Types:

- **Mechanical limit:** If the X, Y, or Z axis hits a hard limit, it means the machine collided with the limit switch abnormally, causing an error.

Solution:

Click "OK" to close the prompt, then press "Reset" and "Home" buttons in the software to restore normal operation.

- **Motion limit:** This warning indicates the programmed toolpath exceeds the allowed travel limits.

Solution:

Click "OK" to close the prompt, then press "Stop." Revise or regenerate the NC file before continuing.

10.3 Unsatisfactory Machining Results / Broken Tools

- **Check tool (carbide bur) lifespan:**
- Worn or damaged burs affect machining quality.

Inspection & Solution:

1. Visually inspect all burs.
2. Check tool life value on the touchscreen.
3. Replace worn tools with new ones.

- **Check material setup:**

- Incorrect positioning affects results.

Inspection & Solution:

1. Remove and reinstall the blank.
2. Ensure the groove of the blank fits correctly on the locating pins.
3. The blank must fit tightly with the clamp and be secured by the locking screws.

- **Check machining file quality:**

- Verify the restoration data and nesting data meet machining requirements.

Inspection & Solution:

1. Review CAD or STL files to ensure restoration quality; modify design if edges are too thin or sharp.
2. Confirm CAM nesting is correct and simulate toolpaths before machining.
3. Check accuracy of scanning device and software if necessary.

➤ **Spindle collet cleanliness and tightness:**

- Dirty or loose collets can cause issues.

Inspection & Solution:

1. Clean collet with supplied maintenance kit.
2. Ensure collet is correctly seated in the spindle.

10.4 Poor Water Spray Performance

➤ **Water circulation system check:**

Check for low coolant or blockages.

Inspection & Solution:

1. Check coolant level in the tank and refill with correct coolant mix if low.
2. Clean filters, tank, and nozzles if blockage occurs; refill with fresh coolant at proper ratio.

10.5 Other Issues

For other faults, please contact technical support.

Note:

Different cutting fluids may have incompatible compositions

11. Equipment Disposal

11.1 Processing Residues

When handling processing residues, comply with relevant regulations:

1. Avoid hazardous residues entering soil, water, or drains.
2. Adhere to national and local laws at disposal sites.
3. If necessary, dispose of residues through approved processing companies.

Retain reference samples of disposed products for at least six months.

11.2 Disposing of Machines

Before disposing of equipment, contact technical support. If you dispose of the machine independently, comply with national and local laws. If necessary, use approved processing companies for disposal.

12. Storage and Transportation

12.1 Storage

- Avoid direct sunlight.
- Do not expose to rain.
- Equipment should be used in the following environmental conditions:
 - ① Temperature: 10°C to 35°C
 - ② Humidity: Below 80% (relative humidity), without condensation

12.2 Transportation

- Transport the machine flat, preferably in its original packaging.
- Avoid severe vibrations.
- If the equipment is transported in cold or humid conditions, upon arrival at the customer's location, it should be placed indoors to reach thermal equilibrium with room temperature before use.
- Otherwise, there may be risks of overcooling or excessive humidity, leading to short circuits.

13. Product Technical Specifications

The basic specifications of the UP3D Intelligent 5-Axis Dental Milling Machine P42 Plus are as follows:

P42 Plus Technical Specifications	
General Device Information	
Application	Wet processing
Processable Materials	Glass ceramics, PMMA, composite resin
Material Size	Block: 40 × 20 × 20 mm (Max)
Indications	Anatomical crowns, anatomical bridges, implant open-hole crowns, inlays, onlays, veneers, etc.
Basic Structure	
Construction	Machine base made of solid aluminum casting
Number of Axes	4 axes
Rotational Axis	A-axis: ±360°
Lighting	LED lighting inside the processing chamber
Power Consumption	0.75kW
Spindle Specifications	
Type	High-frequency electric spindle, automatic tool change, no air supply required
Maximum Speed	60,000 rpm (max)
Tool Holder Diameter	Φ4
Power	800W (Pmax) 450W (S1)
Automatic Functions	
Tool Change	Tool magazine holds 6 tools; precise tool length measurement and broken tool detection via tool length sensor
Connectivity & Power Supply	
Voltage	100VAC~240VAC 50~60Hz
Data Interfaces	Wi-Fi, USB, Ethernet port
Environmental Conditions	
Operating Temperature	10 °C ~ 35 °C
Operating Humidity	Below 80% relative humidity, non-condensing
Dimensions & Weight	
Dimensions	560×400×565 (mm)
Weight	80 kg
Compatible Software	
CAM Software	UPCAM

Dear valued customer,

Upon receiving the product, please take the time to carefully review the contents of this document. If you have any questions, concerns, or need further support, please contact us immediately. We will promptly assist you. Once you agree with the above content, please sign below to confirm receipt and return this receipt to us. Additionally, we warmly welcome any feedback or comments you may have.

The purpose of this receipt is to ensure mutual understanding between us and to provide a record to ensure that the delivered product/service meets your expectations.

Thank you for choosing UP3D. We look forward to continuing to provide you with excellent products/services.

Warm regards,

[Customer Signature]

Date: _____

If you require technical support, please scan the QR code below, and we will provide you with professional guidance and technical assistance.



Information Retrieval



Technical Support