H2C Nozzle / Hotend Clog Cleaning Guide

This article describes how to clear a clog in the H2C Hotend.

Overview of Hotend Clogging

Hotend clogging is a common issue in 3D printing. It can occur for several reasons, for example, the hotend temperature may be too low, preventing the filament from melting quickly enough during extrusion.

Alternatively, the filament itself may contain fine particles (such as in wood-filled or composite filaments), which can accumulate at the nozzle tip and restrict flow.

These symptoms are easy to identify and typically appear as:

- Under-extrusion: Insufficient filament extrusion, resulting in visible gaps around the printed model.
- No extrusion: The printer operates normally, but no filament is discharged from the nozzle.

Required Tools and Materials

To resolve most clogging issues, you may need the following tools:

- **Cleaning Needle** - Used to clear blockages in the nozzle or hotend.
- **Tweezers or Pliers** - Used to grip and remove jammed filament.
- **Heat-Resistant Gloves** - Used to protect hands when handling heated components.
- **Filament Segment** - Used to test extrusion after clearing a clog.
- **H1.5 or H2.0 Screwdriver / Hex Wrench** - Used to remove or reinstall screws during disassembly and cleaning.

Safety Warning

⚠️ **IMPORTANT!**

- Always **power off and disconnect power** on the printer before performing maintenance work. Not doing so means there is a **risk of electric shock, short circuit, and damage** to the printer or surrounding area.
- When a maintenance task necessitates the printer being powered on, use **insulated gloves** for safety and pay special care **not to pinch, damage, or put pressure on** any exposed wires, connectors, or circuit boards. **Additionally, the nozzle can be extremely hot so never touch it with exposed skin.**
- If you have any questions or concerns related to the above or the steps in this guide, please open a new ticket in our Support Page for assistance.

Video Guide

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Operating Instructions

This guide provides a layered troubleshooting approach for hotend clogging. Choose the appropriate method based on the severity of the clog.
The following instructions use the right hotend as an example. For the left hotend, the procedure is identical—simply select “Left Side” in the menu.

1. Manually Extrude the Clogged Filament

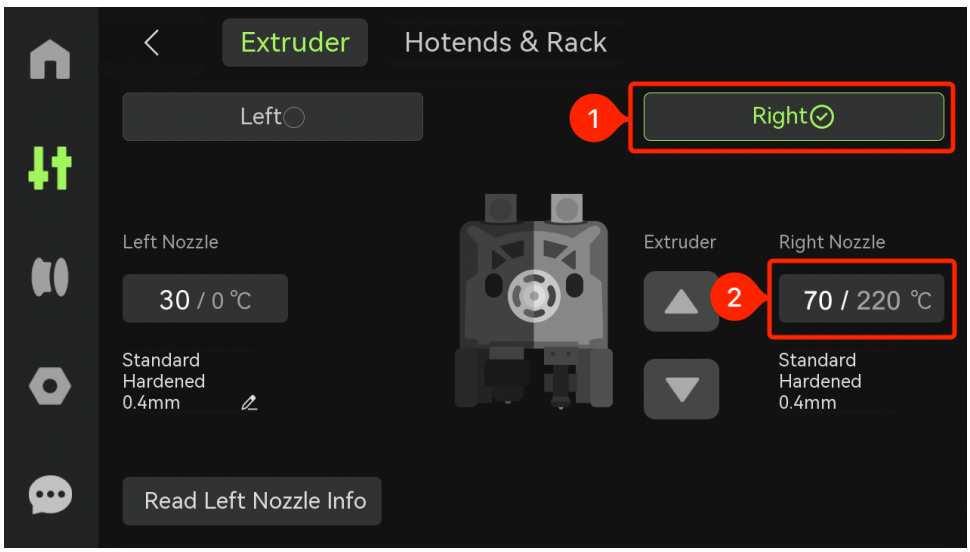
This is the simplest method for clearing a hotend clog. On the touchscreen, increase the hotend temperature slightly above the recommended printing temperature for the filament, then use the menu to extrude the filament.

Step 1. Heat the Hotend

On the printer touchscreen, tap “Control” → “Nozzle & Extruder” to open the extruder control interface.

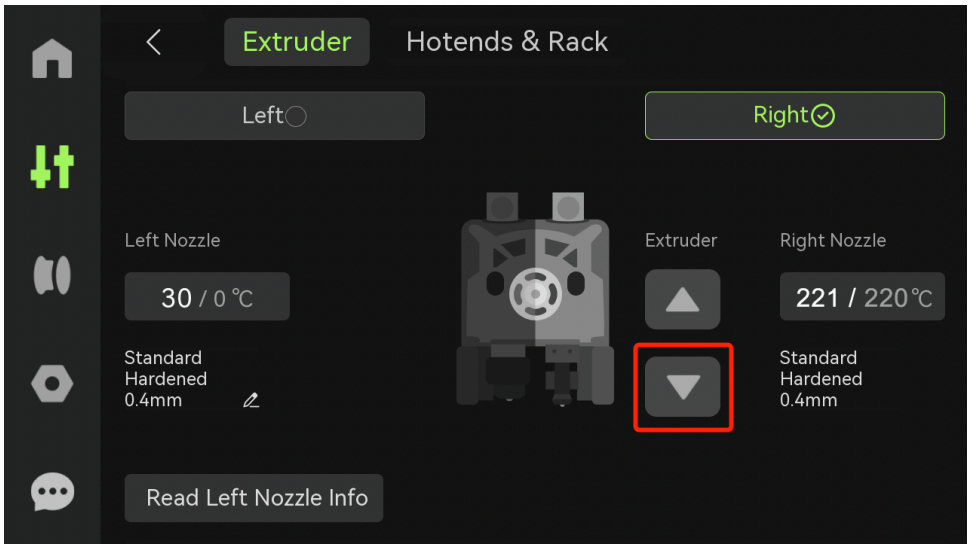


Select “Right Side” (for the right hotend), then set the right hotend temperature slightly above the normal printing temperature of the filament.
(For example, set it to 220 °C for PLA.)



Step 2. Perform Manual Extrusion

After the temperature stabilizes, tap the “Extrude” button on the current screen (The extruder will automatically feed filament for a short duration after each tap.) Observe the extrusion status at the nozzle.



⚠️ **IMPORTANT! Note**: When using TPU filament, do not tap the “Extrude” button more than three times, and avoid clicking “Retract” repeatedly in quick succession to prevent filament jamming or tangling.

Check whether the nozzle extrudes normally. As shown below, the filament should extrude smoothly and in a straight, stable flow.



2. Clear the Clog Using a Cleaning Needle

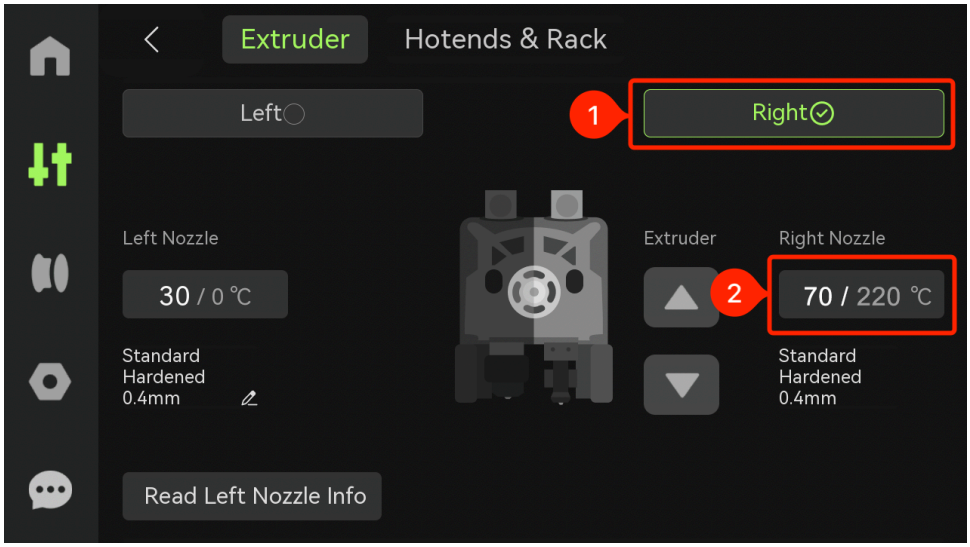
Note: This method is not suitable for nozzles smaller than 0.4 mm.

If manual extrusion fails to push the filament through the nozzle, or the extruded filament has not fully switched to the newly loaded filament, use a cleaning needle to clear the hotend. Repeat the “needle cleaning + manual extrusion” process until the clog is completely removed. Follow the steps below:

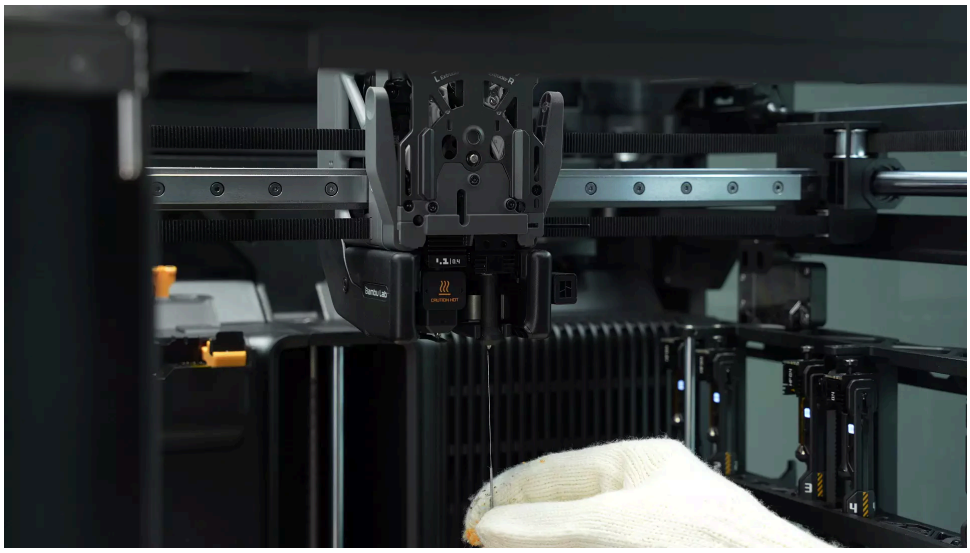
1. On the printer touchscreen, tap “Control” → “Nozzle & Extruder” to open the extruder control interface.



2. Select “Right Side” (for the right hotend), then set the right hotend temperature slightly above the normal printing temperature of the filament.
   (For example, set it to 220 °C for PLA.)



3. After the temperature reaches the desired target temperature, gently insert the cleaning needle into the nozzle and move it up and down several times to clear the blockage.



> ⚠️ **Warning:** When using the cleaning needle, pressure inside the nozzle may suddenly release, causing hot filament to eject unexpectedly. Always wear heat-resistant gloves and keep your face away from the printer chamber to avoid burns.

3. Cold Pull

Cold pull is an effective deep-cleaning technique for 3D printer nozzles. The core principle involves the process of heating to soften the filament → cooling to solidify → pulling out as a whole, allowing the filament to bond with internal debris, residue, or burnt material inside the nozzle.

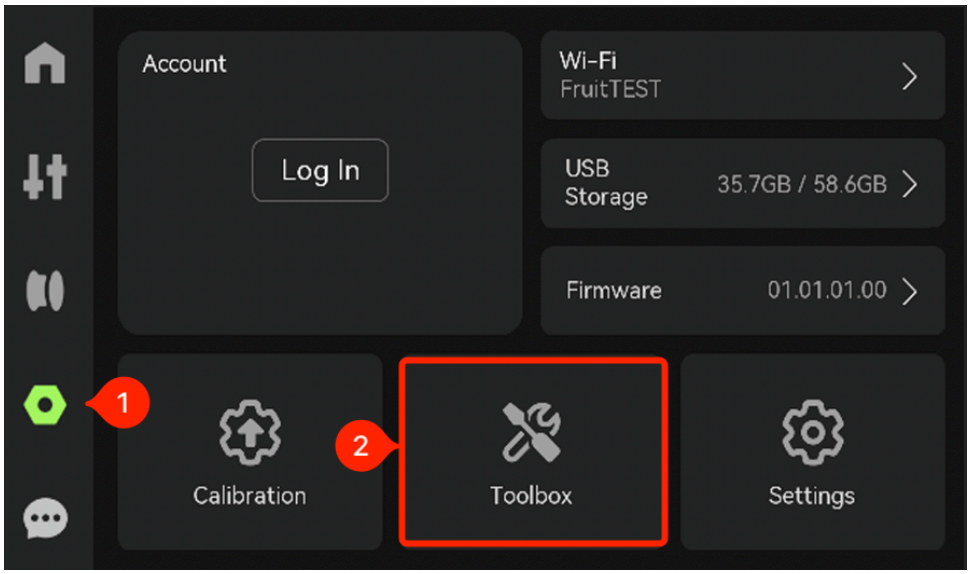
When pulled out, these contaminants are physically removed together with the filament, effectively eliminating stubborn clogs at the source.

Performing cold pull maintenance regularly helps restore smooth filament flow, ensure stable extrusion during printing, and prevent defects such as under-extrusion, filament breakage, or poor layer adhesion.

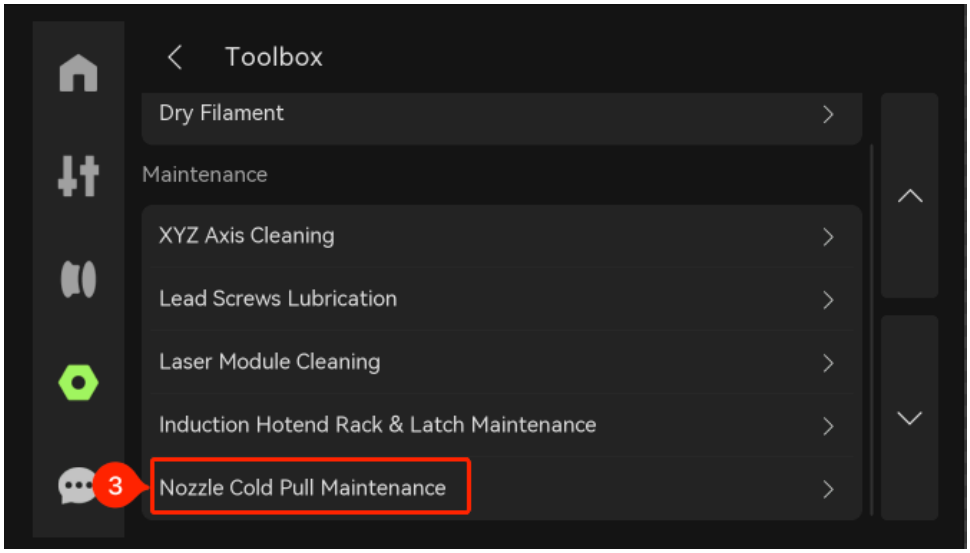
Step 1. Preparation Before Starting

On the printer touchscreen, follow the path below:

1. Navigate to the “Settings” menu
2. Select the “Toolbox” button



3. In the menu, find and tap “Nozzle Cold Pull Maintenance” to enter the cold pull preparation interface.



Step 2. Cold Pull Parameter Setup and Preparation!

Tap “Next” on the screen to proceed.



Enter the cold pull parameter configuration page. The menu will display the following adjustable options (as shown below):



1. **Select Nozzle to Clean:** Check “Left” or “Right” according to the nozzle that needs cleaning.
2. **Select Cleaning Filament:** PLA or PETG is recommended. Choose a filament with a lighter color or higher contrast than the previously used one to help identify any debris or residue removed during cleaning.
3. **Specify Nozzle Size:** Select the correct nozzle diameter (e.g., 0.4 mm, 0.6 mm) and type currently installed.
4. **Select Residual Filament Type:** Choose the filament type that was in use during or just before the clog occurred. The system will automatically set an appropriate heating temperature to ensure the residual filament softens completely.

After configuring all parameters, tap “Start” to begin the cold pull cleaning process.

Step 3. Remove the PTFE Tube

Following the on-screen instructions, press and hold the outer ring of the black pneumatic connector, then pull out the upper PTFE tube.

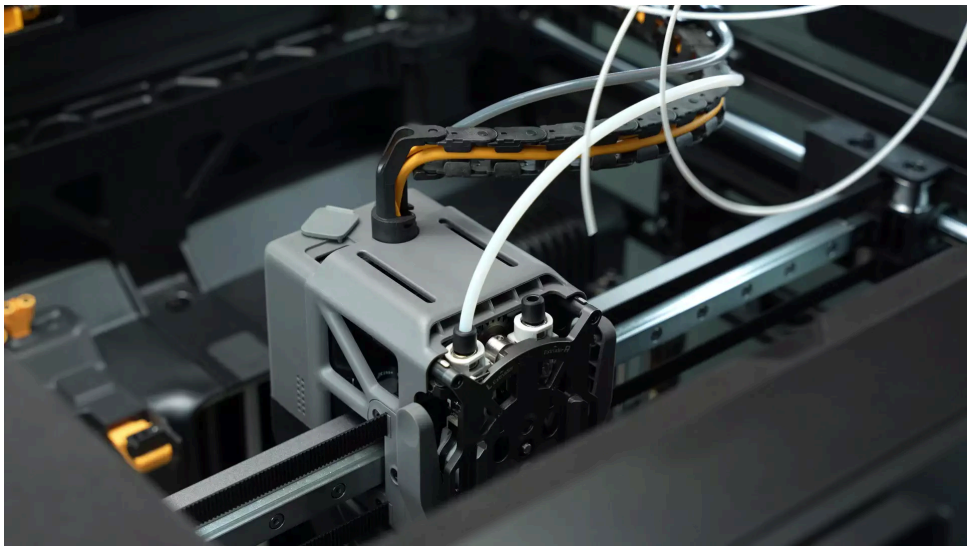


2. Tap “Done, Continue ” to proceed to the next step.



Step 4. Insert the Filament and Start the Automatic Program

1. Following the on-screen instructions, insert the cleaning filament selected in Step 2 (PLA or PETG) into the filament inlet and push it in until it is fully seated.



2. After confirming the filament is properly inserted, tap “Done” to continue.



3. The device will then automatically perform the following steps (no manual operation is required):

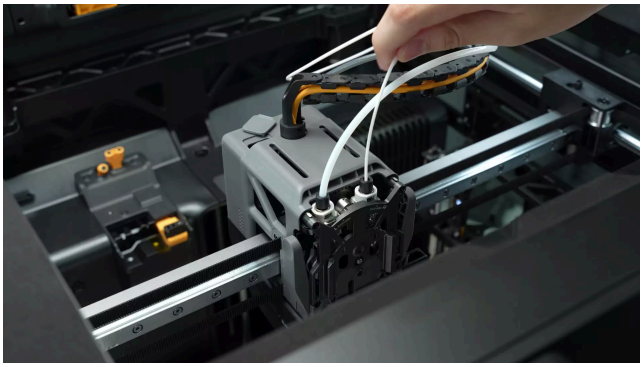


- Heat the nozzle to the preset temperature.
- Purge any residual filament from inside the nozzle.
- Cool the nozzle to the optimal temperature for the cold pull process.

Step 5. Remove the Filament and Reinstall the PTFE Tube

1. When prompted, slowly and steadily pull out the filament by hand. (The front end of the filament may carry out debris or residue causing the clog.)





Note: During the cold pull process, pull the filament vertically and slowly upward. Pulling too quickly or at an angle may cause the filament to break.

2. After the filament is completely removed, tap “Done” to continue.



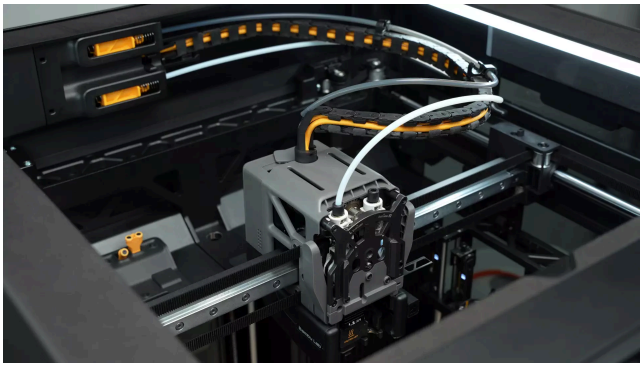
3. The screen will then display a reference example of the cleaned filament for comparison.



- If the removed filament still shows residue, burnt spots, or discoloration, repeat the cold pull process until the filament tip is clean and smooth.
- If the filament tip is smooth and free of debris, the cleaning is complete.

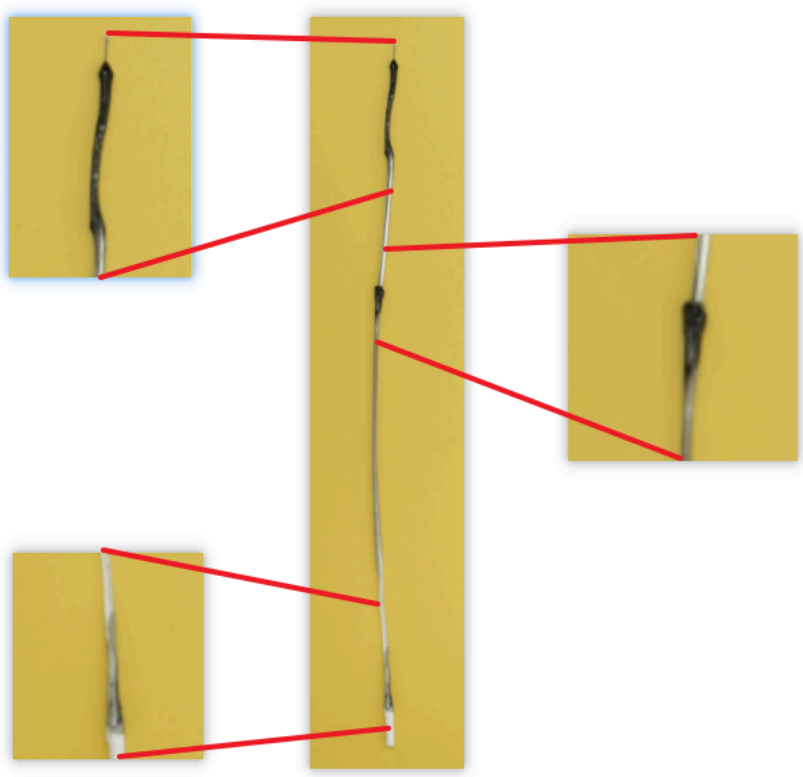
4. Finally, reinstall the PTFE tube and press it firmly into place to ensure a secure fit. Then tap “OK” (Label 1) to complete the cold pull maintenance process.





Check the Cold Pull Results

At the end of the extracted filament (as shown below for the HF nozzle), pay close attention to the following quality indicators:



1. Color Consistency: The extracted filament should not contain any discoloration, impurities, or carbonized deposits.
2. Surface Cleanliness: The surface of the extracted filament should appear uniformly melted and smooth, with no granular residue or sintered material attached.

We strongly recommend repeating the cold pull process several times until the extracted filament shows a clean surface with no abnormal residue, as shown below (example for the HF nozzle).



4. Hot Hex Wrench Clearing Method (for Cold-End Clogs)

Clogs in H2 series printers are often caused by heat creep, which leads to filament softening and sticking inside the hotend.
For a detailed explanation of heat creep and its prevention methods, refer to Heat Creep.
We recommend reviewing that section first to help prevent clogging at the source.

> ⚠️ **Warning:** Always wear protective gloves during this procedure. The hotend and melted filament reach extremely high temperatures, and accidental contact may cause serious burns.

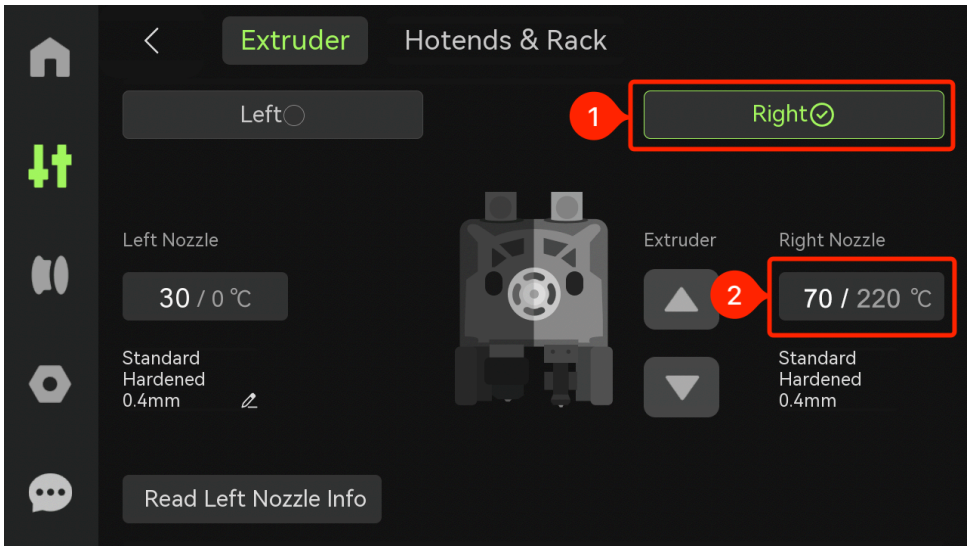
Step 1. Heat the Nozzle Tip

1. On the printer touchscreen, tap “Control” → “Nozzle & Extruder” to open the extruder control interface.



2. Select “Right Side” (for the right hotend), then set the right hotend temperature slightly above the normal printing temperature of the filament.

(For example, set it to 220 °C for PLA.)

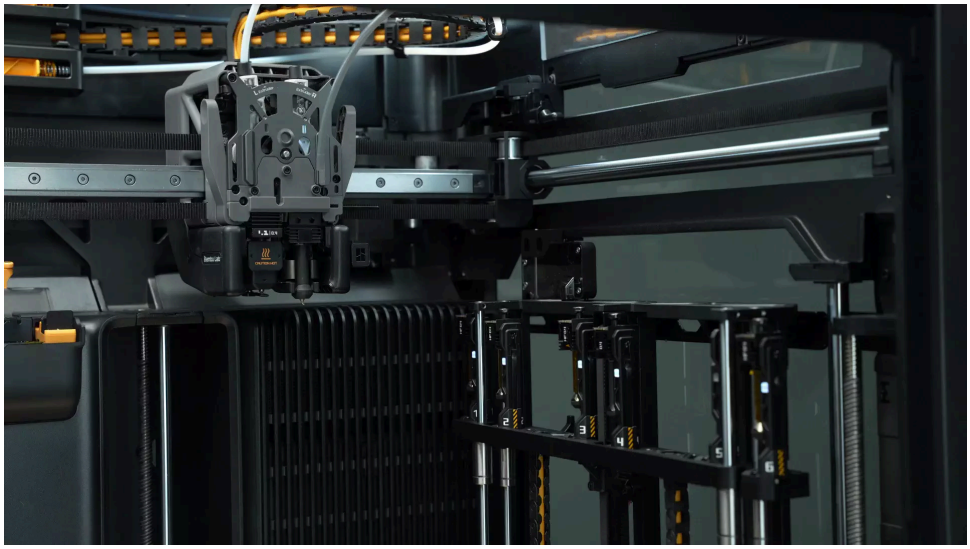


Step 2. Remove the Induction Hotend

1. On the screen, tap “Hotend & Rack” → select the Induction Hotend on the left panel → then tap “Place.”



2. The printer will automatically place the Induction Hotend onto an available Induction Hotend Dock Assembly.



⚠️ **IMPORTANT! Note**: If the “Place” operation is not performed, you would need to touch the nozzle tip to remove the Induction Hotend manually. However, since it was heated to 220 °C in Step 1, direct contact poses a serious burn risk and is strongly discouraged.

3. Move the toolhead to an accessible position to facilitate the removal of the Induction Hotend.



4. Remove the Induction Hotend to be cleared from its corresponding Induction Hotend Dock Assembly. Hold it only by the heatsink section and avoid touching the nozzle tip.



⚠️ **Warning Note:** Do not touch the nozzle tip to avoid burns.

Step 3. Heat the Hex Wrench

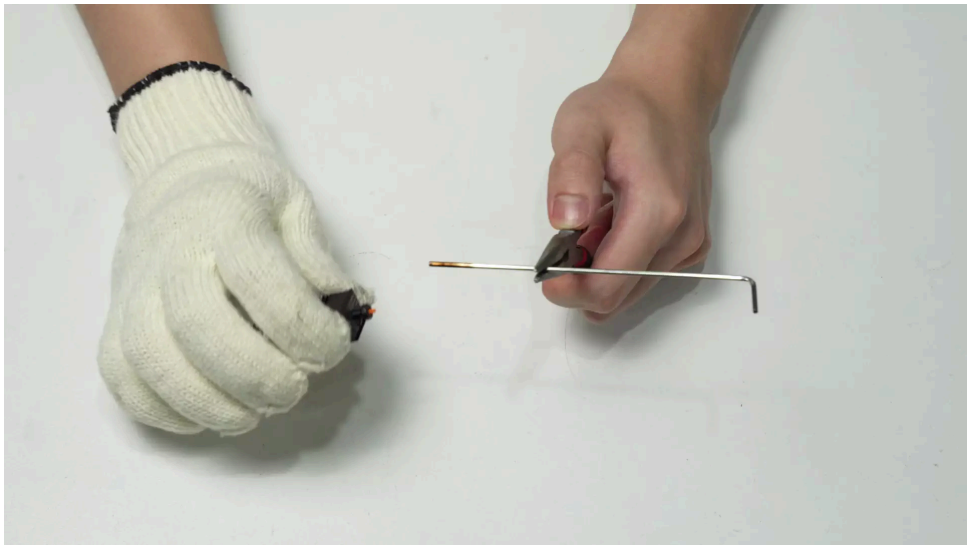
Firmly hold the end of the hex wrench with pliers and evenly heat the tip for about 10 seconds to ensure it reaches sufficient temperature.

⚠️ **Note:** Always use pliers to hold the hex wrench. Do not touch the metal section directly to prevent burns.

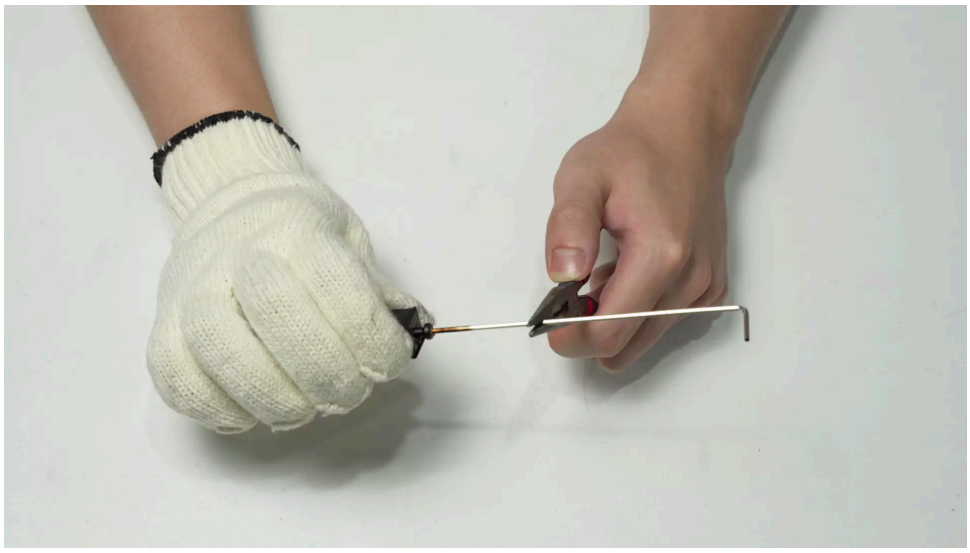


Step 4. Insert into the Nozzle Inlet and Allow to Cool

1. While the tip of the hex wrench is still hot, quickly align it with the nozzle inlet and insert it vertically through the top channel of the heatsink into the clogged filament inside.
   Hold it in place for about 30 seconds to let the hex wrench cool naturally and bond firmly with the surrounding filament.



2. After cooling, slowly and steadily pull the hex wrench straight out in the same direction.
   The clogged filament will be removed together with the wrench, clearing the blockage completely.



How to Verify Completion

Reinstall the nozzle, reconnect the PTFE tube, and reload the filament to test the extrusion performance.
If clogging or under-extrusion persists, repeat the hotend cleaning process until normal extrusion is restored.



The above procedures can clear 99% of nozzle blockages. However, if the nozzle shows signs of wear or deformation, replace the nozzle directly to resolve the issue.
If the printer resumes normal extrusion and printing after completing all the cleaning steps, the nozzle unclogging has been successful.

Note: Clearing clogs in 0.2 mm nozzles is more challenging. Repeat the above cleaning steps multiple times as needed.

Nozzles with a diameter smaller than 0.4 mm have a higher likelihood of clogging because larger particles can enter the nozzle channel, where they may accumulate and cause blockages.

End Notes

We hope this guide has provided clear and practical support.

If the issue remains unresolved, please submit a support ticket and include your recent printer logs and additional pictures or other details. Our technical team will review your request and provide detailed assistance.

You can also visit Bambu AI , which can instantly answer common questions and provide you with operational guidance.

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