# Why does my Bambu printer say the hotend cooling fan speed is abnormal?

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**Abstract.** The hotend fan is too slow or stopped (HMS_0300-0300-0001-0001). Clear strings, reseat its 4-pin plug and retest at 51 °C: the fan runs above 50 °C.

**Keywords:** error-codes, hotends

## 1 Why does my Bambu printer say the hotend cooling fan speed is abnormal?

It means the hotend fan is spinning too slowly or has stopped (Bambu Lab code `HMS_0300-0300-0001-0001`). The printer reads that fan's speed and stops the print before heat creeps up and clogs the heatbreak. The usual causes are a filament string or debris jamming the blades, a loose 4-pin plug, or a failed fan.

### 1.1 The number

**Table 1.** The number

| What | Value | Printers |
|---|---|---|
| Print error text | `The hotend cooling fan speed is abnormal.`, print error 0300-8010 or 0300-4005 | Bambu Studio's message table |
| HMS code: fan too slow or stopped | `HMS_0300-0300-0001-0001` Level 0001 is a red error: the print stops | X1, P1, A1, H2S, H2D, P2S: the same code on each |
| HMS code: fan running slowly | `HMS_0300-0300-0002-0002` Level 0002 is a yellow warning: the print pauses | X1, P1, A1 |
| Fan switches on | Hotend above 50 °C; off below 50 °C | X1, P1, A1 |
| Retest after a fix | Set the nozzle to 51 °C and watch the fan start | X1, P1, A1. The H2D article retests at 60 °C |

HMS is Bambu Lab's Health Management System. The codes, alert levels and temperatures come from the Bambu Lab Wiki: its two HMS code articles, its H2D article, its HMS code index and its HMS introduction. The print error text and its codes come from the HMS message table Bambu Lab ships in Bambu Studio.

### 1.2 Why does a slow hotend fan stop the print?

The hotend fan, which Bambu Lab also calls the heatbreak fan, blows through the heatsink above the heater. Its job is to keep the filament above the melt zone cool and stiff. If it runs slow, the heatbreak warms up, the filament softens there and jams.

That is heat creep. The fan sends a speed signal back to the printer, so a slow or stopped fan is caught before the clog.

Bambu Lab lists these causes:

- Something stuck in the blades, such as filament strings or debris.
- The fan's connector not plugged in properly.
- A broken fan.
- A broken TH board (the toolhead circuit board).
- After a hotend swap, a fan mounted the wrong way round. Bambu Lab says that can cause errors, abnormal fan speed or frequent clogs.

Don't clear the message and keep printing. Bambu Lab's wiki says a fan kept slow lets the filament soften and jam. If the extruder has already stopped feeding, the filament may be stuck in the heatbreak.

### 1.3 Is "too slow or stopped" the same error?

Both messages are about the same fan. The print error reads `The hotend cooling fan speed is abnormal.` The HMS entry, which carries the wiki code, reads `The hotend cooling fan speed is too slow or stopped. It may be stuck or the connector may not be plugged in properly.` Only the HMS code has a fix article on Bambu Lab's wiki, so follow that one for either message.

The yellow `HMS_0300-0300-0002-0002` is the milder version: `The hotend cooling fan is running slowly. It may be obstructed. Please check for debris and clean if necessary.` The wiki's checks for it are the same.

### 1.4 How do I fix it on a P1S?

On a Bambu Lab P1S, set the nozzle to 0 °C and power off. Pull the toolhead front housing outward from its lower sides. It stays attached by the black cooling fan cable, so unplug that to lift it away.

From there, the checks match the list at the end of this answer. When you refit the hotend fan's 4-pin plug, seat it fully on the correct pin row: Bambu Lab calls out a misaligned plug on the P1 series.

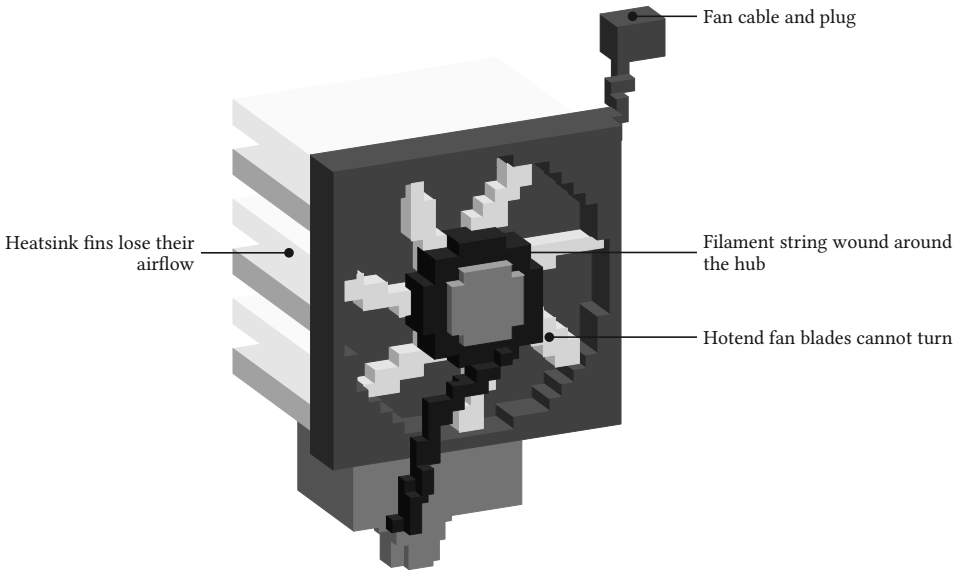



**Figure 1.** A filament string caught around the hub stops the hotend fan, the printer reads the low fan speed, and the heatsink loses the airflow that keeps the filament cool and stiff above the nozzle.

If the fan still won't start at 51 °C, the next step is reseating the FPC (flexible printed circuit) ribbon cable between the extruder connection board and the TH board. That means removing the toolhead rear cover and mid-frame.

### 1.5 How do I fix it on an X1C?

The same order, with two differences on the Bambu Lab X1 Carbon. The front housing comes off with its cables still attached; Bambu Lab rests it on the carbon rod while you work. If reseating the 4-pin plug doesn't help, reseat the 10-pin connector on the toolhead and look for damage. Printers with the V9 toolhead board have no 10-pin connector, so reseat both ends of the FPC cable instead, one end at a time.

### 1.6 How to check it on your own printer

- **Cool it and switch it off.** Set the nozzle to 0 °C; the fan stops by itself below 50 °C. Power off before you unplug anything.
- **Spin the blades with a pen or screwdriver, not a finger.** Bambu Lab warns the fan can start unexpectedly. Clear any strand wound around the hub and anything that makes the blades drag.
- **Check which way the fan faces.** After a hotend swap, compare it with the correct-orientation photos in Bambu Lab's article.
- **Reseat the 4-pin plug.** Pull it by the connector, not the wires, and push it fully home.
- **Run the 51 °C test.** Power on and set the nozzle to 51 °C. The fan should start and the HMS message should clear.
- **On a Bambu Lab A1 or A1 mini:** set the nozzle to 0 °C from Control, then Nozzle. With the power off, remove the rear toolhead cover and unplug the hotend fan plug on the toolhead board. Plug it back in and run the same 51 °C test.
- **Replace the fan if it spins freely but won't run.** Bambu Lab treats that as a failed fan. On the X1 and P1, 2 screws hold it to the heatsink; the A1 has its own fan replacement guide. If a new fan doesn't clear it, the TH board is next, through Bambu Lab support.

## References

[1] HMS_0300-0300-0001-0001: The hotend cooling fan speed is too slow or stopped, Bambu Lab Wiki. https://wiki.bambulab.com/en/x1/troubleshooting/hmscode/0300_0300_0001_0001. Accessed October 20, 2026.
[2] HMS_0300-0300-0002-0002: The speed of hotend fan is slow, Bambu Lab Wiki. https://wiki.bambulab.com/en/x1/troubleshooting/hmscode/0300_0300_0002_0002. Accessed October 20, 2026.
[3] HMS_0300-0300-0001-0001 (H2D): The hotend cooling fan speed is too slow or stopped, Bambu Lab Wiki. https://wiki.bambulab.com/en/h2/troubleshooting/hmscode/0300_0300_0001_0001. Accessed October 20, 2026.
[4] HMS Introduction, Bambu Lab Wiki. https://wiki.bambulab.com/en/x1/troubleshooting/intro-hms. Accessed October 20, 2026.
[5] HMS Home Page (HMS code index), Bambu Lab Wiki. https://wiki.bambulab.com/en/hms/home. Accessed October 20, 2026.
[6] Replace the Hotend with Nozzle/Ceramic Heater/Thermistor/Hotend Fan, Bambu Lab Wiki. https://wiki.bambulab.com/en/x1/maintenance/replace-hotend. Accessed October 20, 2026.
[7] Hotend Fan Replacement Guide - A1 Series, Bambu Lab Wiki. https://wiki.bambulab.com/en/a1-mini/maintenance/hotend-cooling-fan. Accessed October 20, 2026.
[8] HMS message table hms_en_093.json, Bambu Studio v02.08.02.61, Bambu Lab on GitHub. https://github.com/bambulab/BambuStudio/blob/v02.08.02.61/resources/hms/hms_en_093.json. Accessed October 20, 2026.

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