

# Troubleshooting: Extrusion Problems

SOURCE:

<https://support.zortrax.com/troubleshooting-extrusion-problems/>

## Table Of Contents

### Extrusion Problems

- Skipping Extruder Motor

- Vibrating Extruder Motor

- Material Deficiency in a Model

### Extruder Cable Connection

- Checking the Material Duct

- Checking the Extruder Cable

- Checking the Extruder PCB

- Checking the Extruder Motor

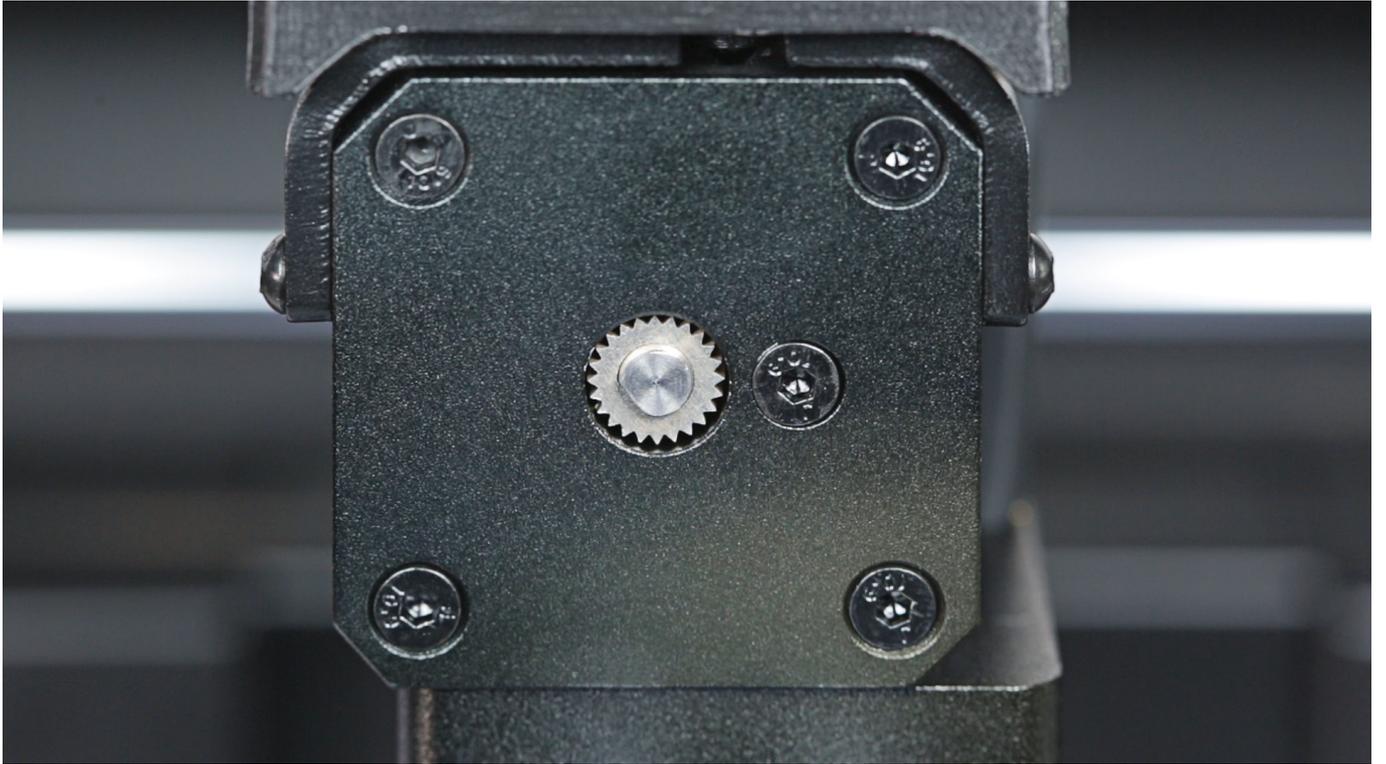
# Extrusion Problems

## SKIPPING EXTRUDER MOTOR



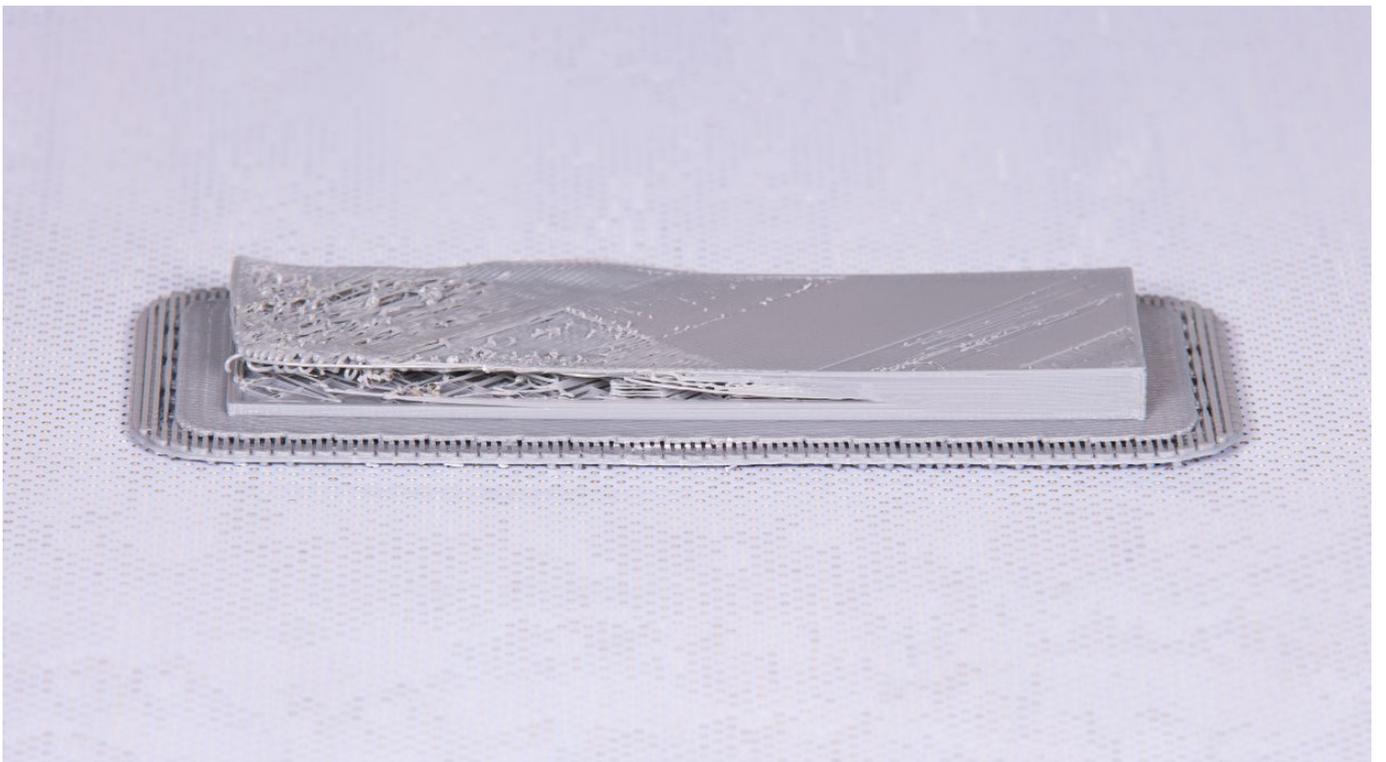
The video shows a skipping extruder motor shaft. At this moment, you can also hear unusual sounds coming from the extruder (e.g. clicking).

## VIBRATING EXTRUDER MOTOR



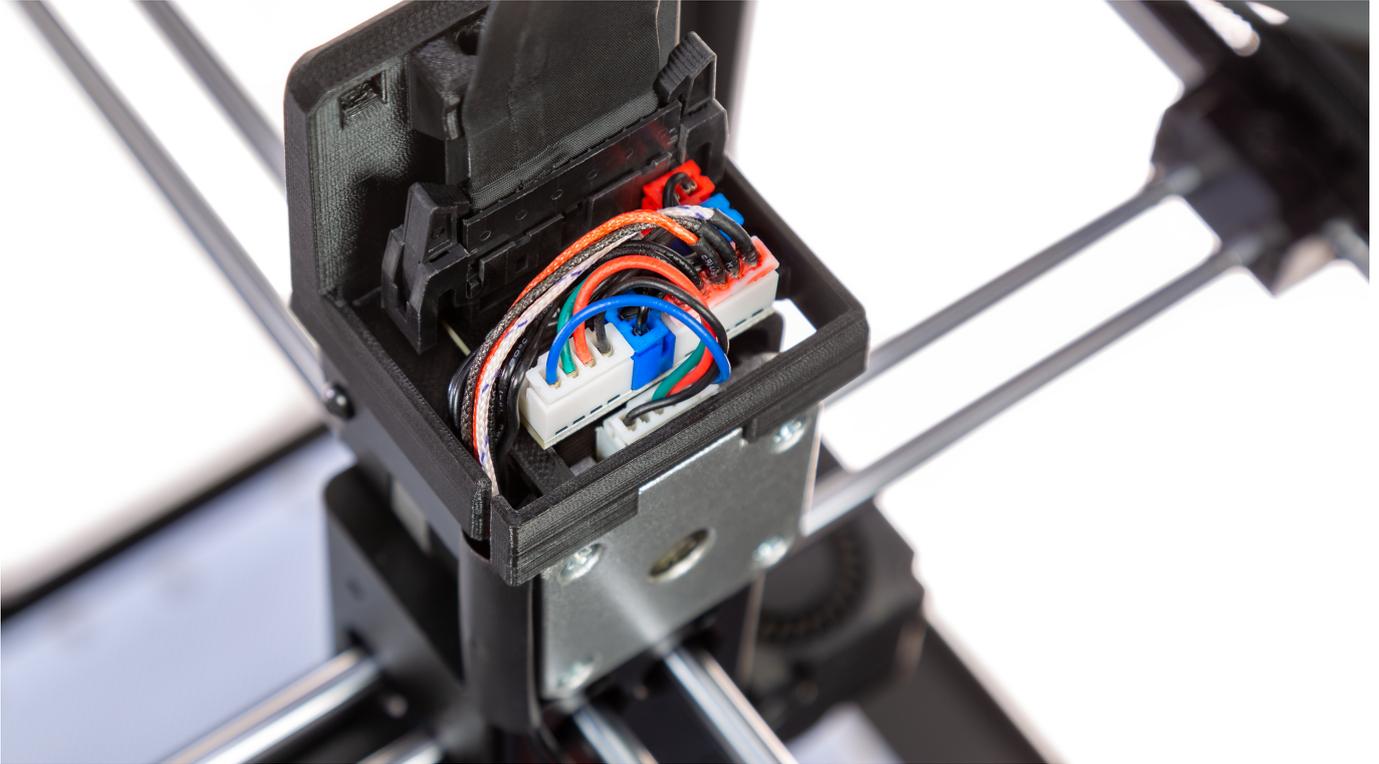
This video shows a vibrating extruder motor shaft. At this moment, you can also hear unusual sounds coming from the extruder (e.g. clicking).

### **MATERIAL DEFICIENCY IN A MODEL**



The picture shows a model with symptoms of extrusion problems in the printer. There is a visible lack of the material in the top and bottom part.

## Extruder Cable Connection



Sometimes the extruder motor can start to skip or vibrate because of incorrect connection. At first, check if the extruder motor cable is properly connected to the PCB. Check the extruder cable for proper connection as well.

In order to do that, remove the extruder top cover and check if the cables are plugged in. The photo shows the correct arrangement of cables.

If everything is properly connected, move on to the step.

## Checking the Material Duct



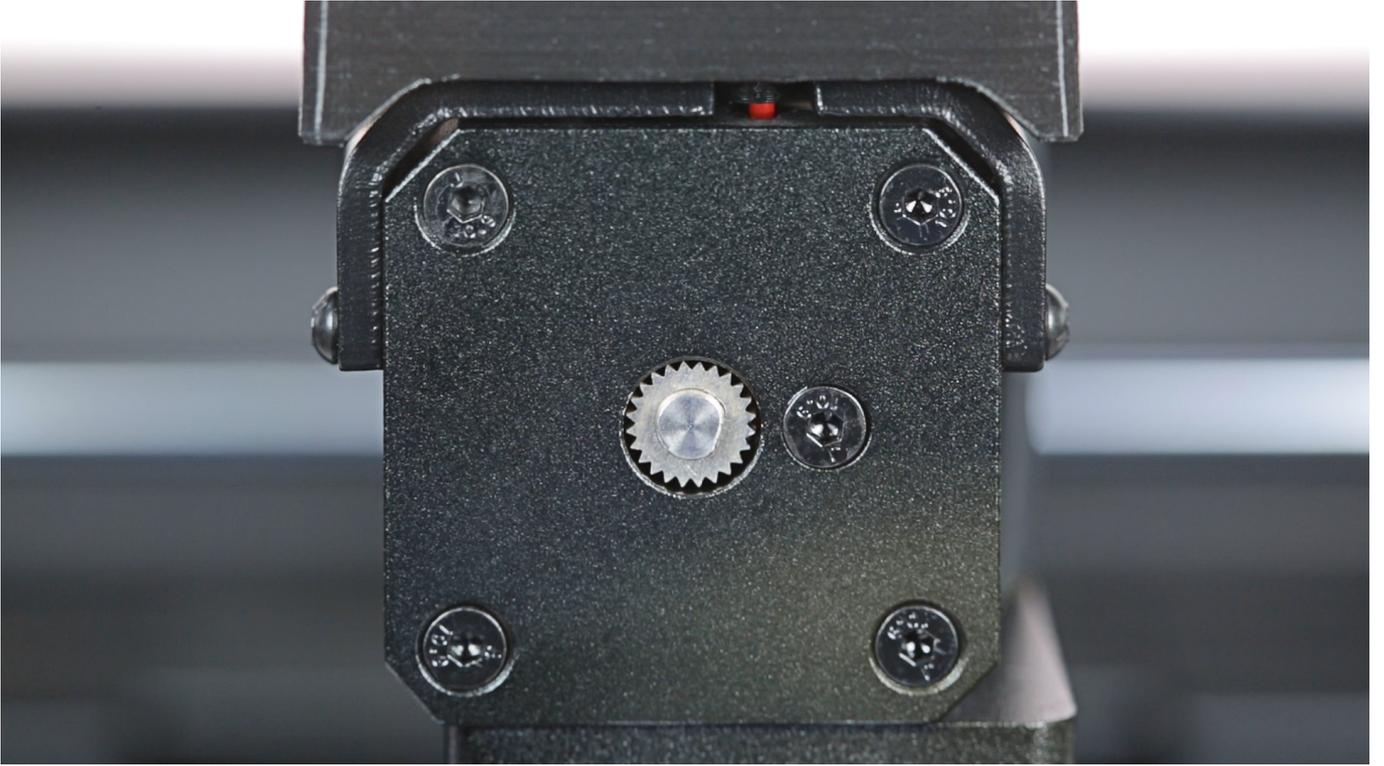
The next step is to check the material duct in the extruder.

First, unload the material with the options from the menu: *Tools -> Materials -> Unload material.*



Next, use the options from the menu: *Tools* -> *Materials* -> *Load material* again, but this time do not feed the material into the material duct in the extruder. If the extruder motor is no longer skipping/vibrating, move on to the next step.

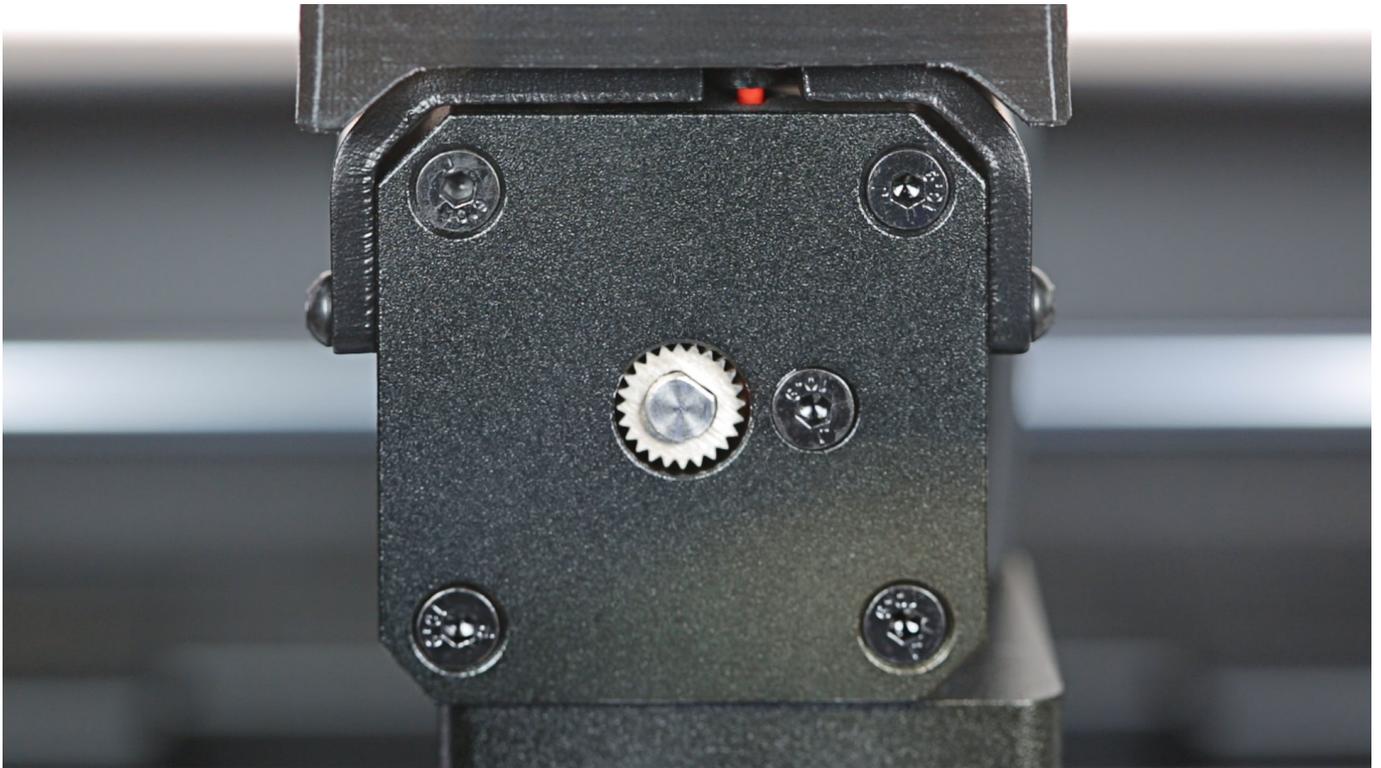
If the extruder motor is still skipping/vibrating, move on to the **step 4** in this manual.



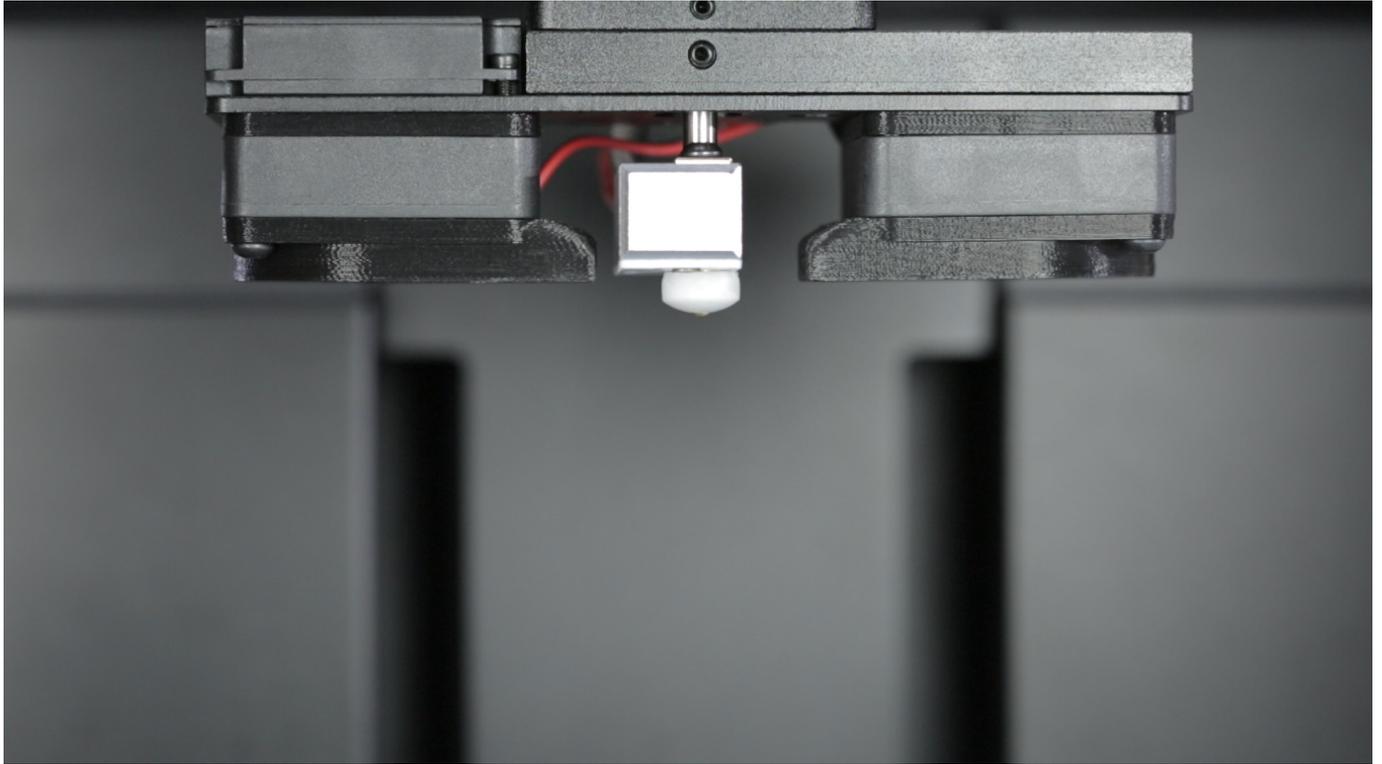
Use the options from the menu: *Tools -> Materials -> Load material* and feed the material into the extruder. Move on to the next two steps.



If the extruder motor starts to skip immediately after you load the material, carry out **extruder maintenance**. Instructions are available in this [manual](#).



If the extruder motor starts to skip some time after you load the material and the material barely comes out of the nozzle/there is no extrusion at all, move on to the next step in this manual.



Use a flathead screwdriver to remove the nozzle cover. Next, unscrew the nozzle counterclockwise using the nozzle key (when viewed from below).

**NOTE!** Unscrew the nozzle while the extruder is hot.

Detailed instructions are available in this [manual](#).



Load the material again using the options from the menu. If the extruder motor is working properly and the material is being extruded from the hotend, the nozzle you have removed needs to be cleaned or replaced with a new one.

If the material is not being extruded, the hotend needs to be cleaned or replaced with a new one. Instructions are available in manuals: [M Series](#) and [M Series Plus](#).

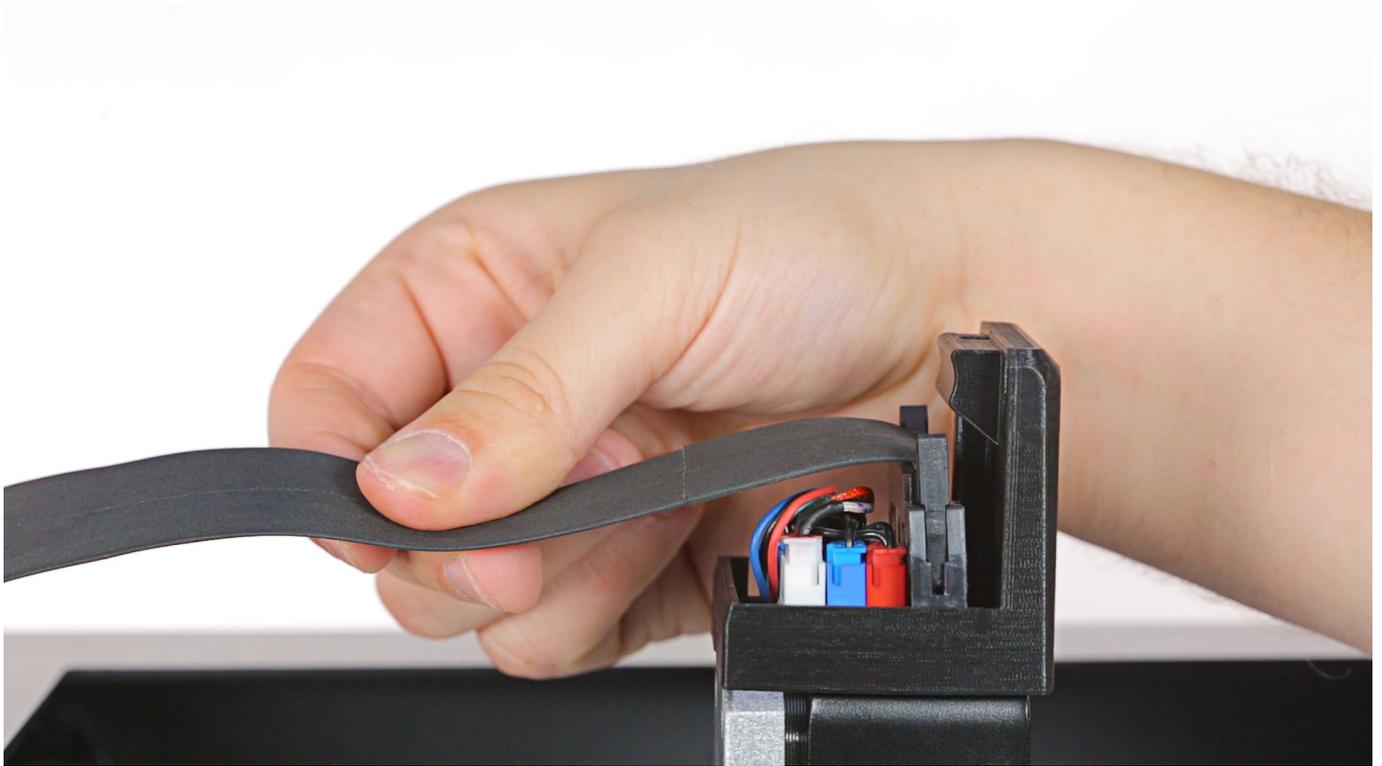
If cleaning or replacing the hotend does not help, move on to the next step.

## Checking the Extruder Cable



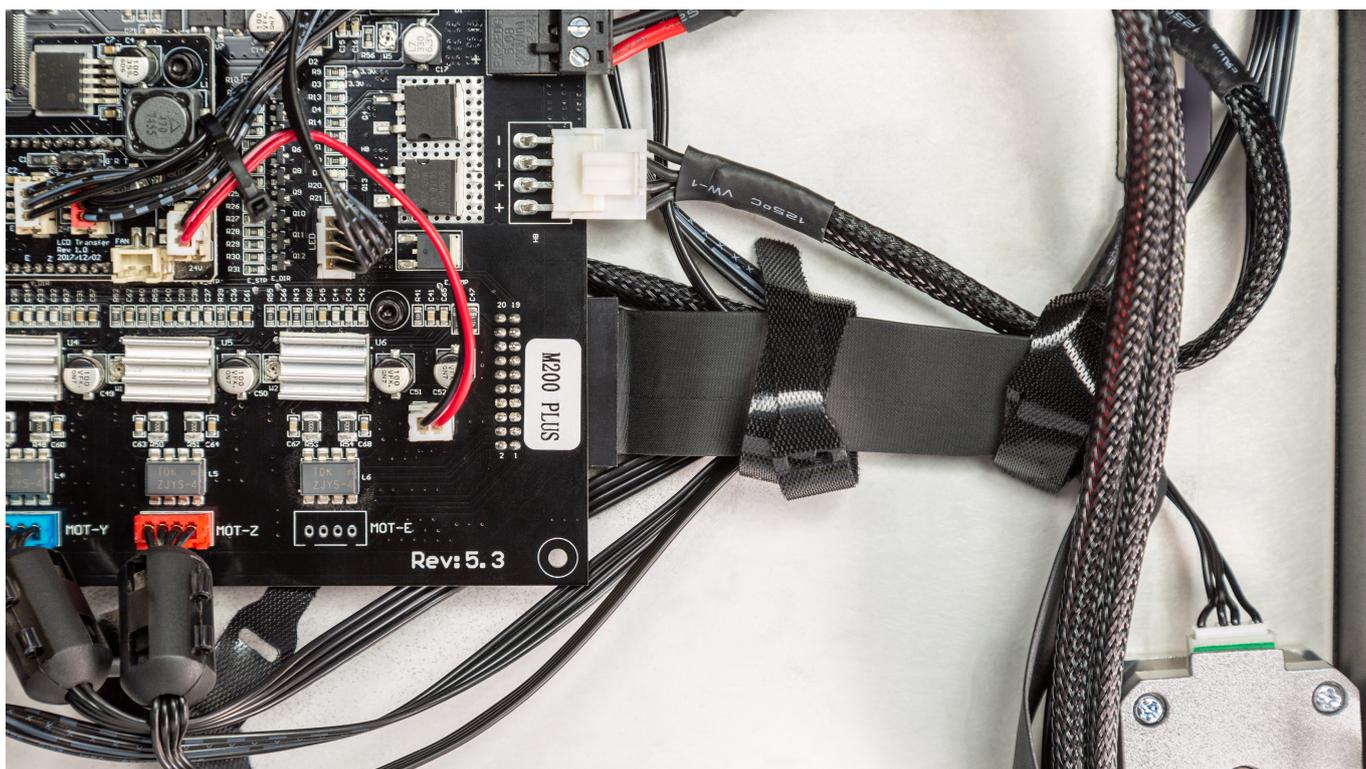
At this point, you have to check if you are experiencing an extruder cable malfunction.

Use the options from the menu: *Tools -> Materials -> Load material* and do not feed the material into the duct in the extruder again.



Move the extruder cable in different directions and inspect the extruder motor. If at some point the motor shaft is not skipping, the extruder cable has to be replaced. Instructions for this procedure are available in this [manual](#).

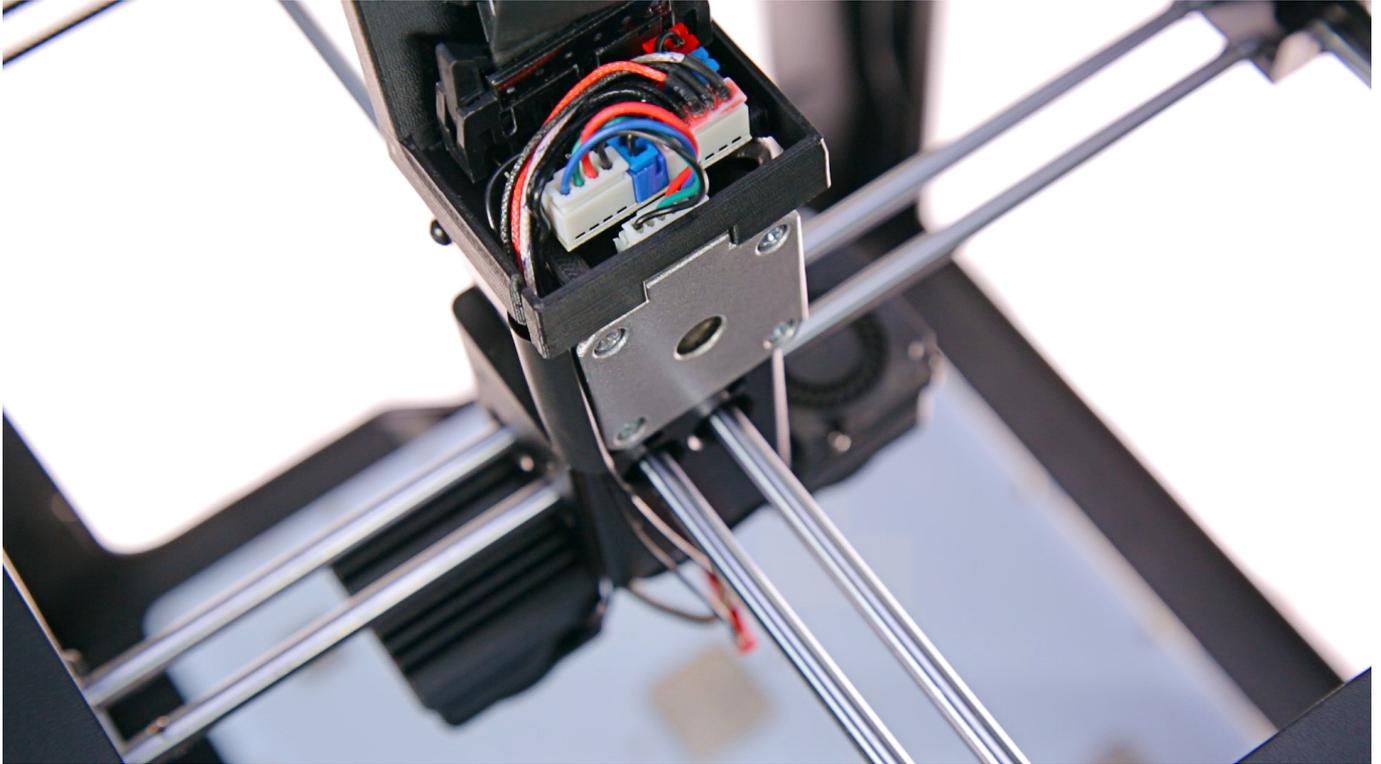
If the motor shaft is skipping the whole time you are moving the extruder cable, move on to the next step.



Turn the printer over and unscrew the screws that secure the bottom plate. Check if the extruder cable is properly connected into the motherboard.

If the cable is properly connected, move on to the next step.

## Checking the Extruder PCB



Now you have to check if extrusion problems are not caused by a faulty extruder PCB.

For this procedure, you have to remove either the X or Y axis motor. Instructions on how to remove an axis motor are available in this [manual](#).

Next, unplug the extruder motor cable from the PCB and plug that cable into the axis motor you have just removed.



Use the options from the menu to start the procedure of material loading. Next, move the extruder towards each endstop twice. See the video for details.

Wait until the display shows a message indicating that the material should be inserted into the duct in the extruder and inspect the axis motor you have plugged into the PCB.

If the shaft in the axis motor is not skipping, move on to the next step.

## Checking the Extruder Motor



The last component you have to check for proper operation is the extruder motor.

Remove the extruder motor according to instructions available [here](#). Next, connect it to the axis motor cable which you have removed earlier.

Use the options from the menu to start the platform calibration procedure and check if the extruder motor shaft is skipping. If its movement is difficult or it does not turn at all, replace the extruder motor.

If you are still having problems with the extruder motor after following the above procedures, contact the Support Center through the [support form](#).