# Filament Maker TWO sensor calibration

Maintenance procedure

## Overview

The sensor of the Filament Maker TWO requires maintenance in the form of calibration. This will allow the sensor to reset and refine its instruments and continue to provide quality measurements. This document provides a detailed guide of the procedure.

Easy

10 minutes

### Tools required

- Calibration kit
  - 4 rods of different sizes and materials
  - Rod A, metal
  - Rod B, metal
  - Rod C, transparent plastic
  - Rod D, offset metal

### Safety Equipment

- None

## Safety notices

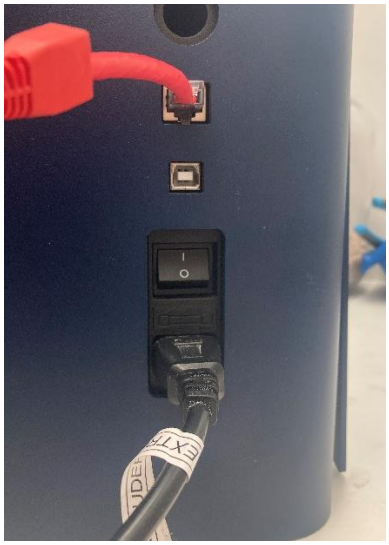
- None

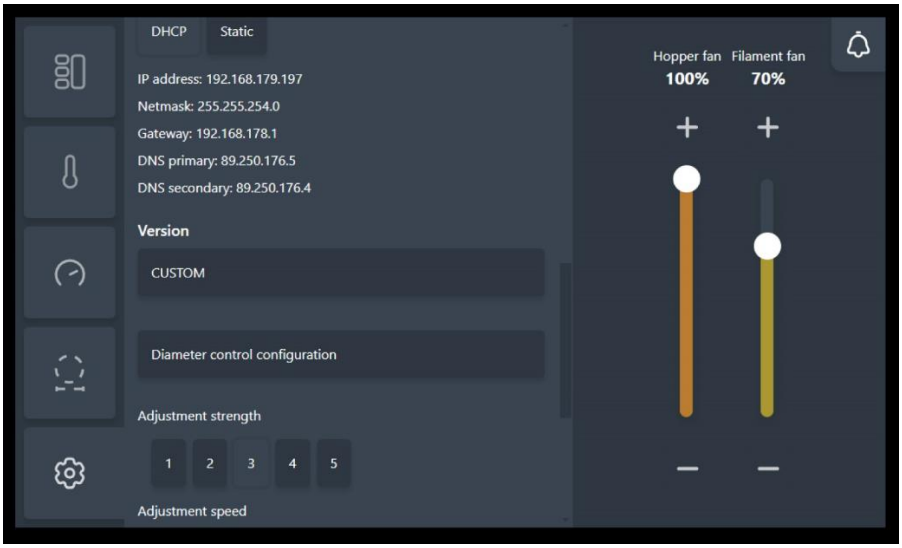
Step 1:  Prepare the Filament Maker TWO for the calibration test.

1. Connect an ethernet cable between the machine and to the local area network router.
2. Turn on the machine.
3. Open the extrusion door to access the filament sensor.
4. Go to the Settings menu on the machine touchscreen.
5. Check if the machine is on the latest firmware version

**Note:**

Details on the latest releases and how to update the firmware are found at support.3devo.com.






Step 2:  Step 2: Set up your PC for the calibration test.

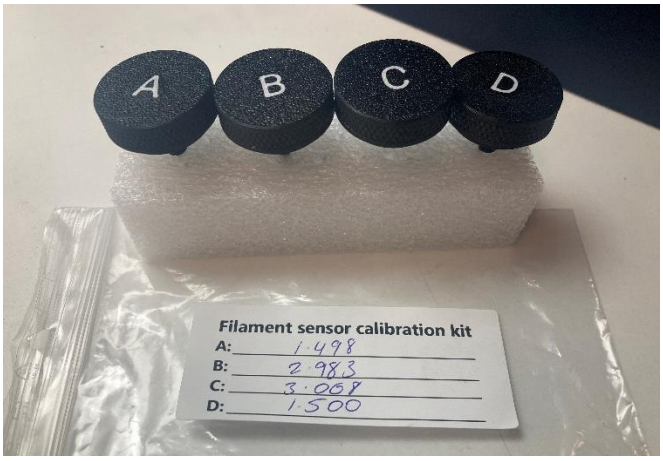
6. Open your preferred internet browser.
7. Type the following in the address bar:
   "<IP address FMTWO>:8000", and hit ENTER.

   Example: 192.168.1.123:8000

   You will land on the camera view and calibration test.

## Step 3: Prepare the calibration kit rods

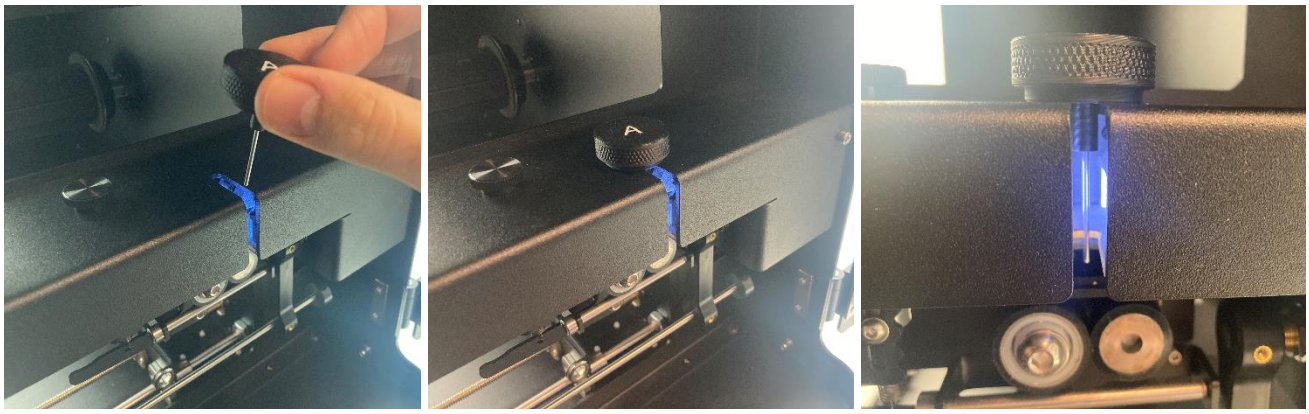
8. Place the calibration rods near the Filament Maker TWO.
9. The rods are measured at 3devo Production during QC before they are sent out. Keep the ziplock bag with the measurements nearby.




## Step 4: Calibration

The following steps require some time sensitivity so please read through the steps before carrying them out for the first time. Each rod slits into the filament sensor and needs to be pushed in until it touches the metal rim of the sensor casing. Each calibration takes a passive 4-5 seconds of waiting time, while Rod D requires a time sensitive action from the user.

10. Press “Calibrate view positions”. This is to center the camera.
11. Press “Calibrate background”. This is to measure the background light.
12. Add rod A to the filament sensor.



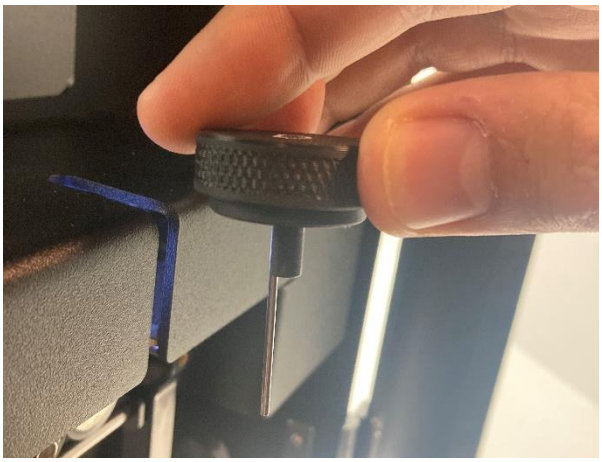
13. Enter rod A measurement into the open window left of the “Calibrate A” button.


14. Press “Calibrate A” and wait 5 seconds.
15. Add rod B to the filament sensor.
16. Enter rod B measurement into the open window left of the “Calibrate B” button.

17. Press “Calibrate B” and wait 5 seconds.
18. Add rod C to the filament sensor.
19. Enter rod C measurement into the open window left of the “Calibrate C” button.
20. Press “Calibrate C” and wait 5 seconds.

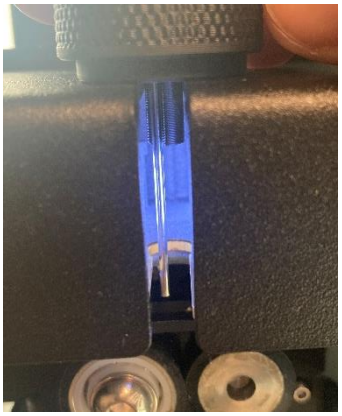
Calibration rod D

As mentioned, this calibration extra steps and requires specific positioning. Rod D has a metal rod offset from the center of the handle. This will then be rotated a full 360° clockwise inside the sensor in 4 seconds. Follow the steps carefully. Luckily there is no risk involved. If there are mistakes made, then the full process can be restarted without an issue.

21. Insert rod D with the offset metal pointing towards the machine.
22. Press “Calibrate D”.
23. Rotate rod D 360° clockwise until it is back its in original state.



24. Drag rod D towards you very slightly (no more than 1 cm) and then back to its original state.

All 4 rods have been calibrated.

25. Press “Save calibration”