



FILAMENT SENSOR PREVENTATIVE MAINTENANCE

Cleaning and Maintaining Proper Operation of
Filament Sensors

The following process should be completed at a minimum of once per week to allow for proper filament sensor functionality. If running filled materials (Carbon Fiber, Glass, etc.) this process may need to be performed more frequently.

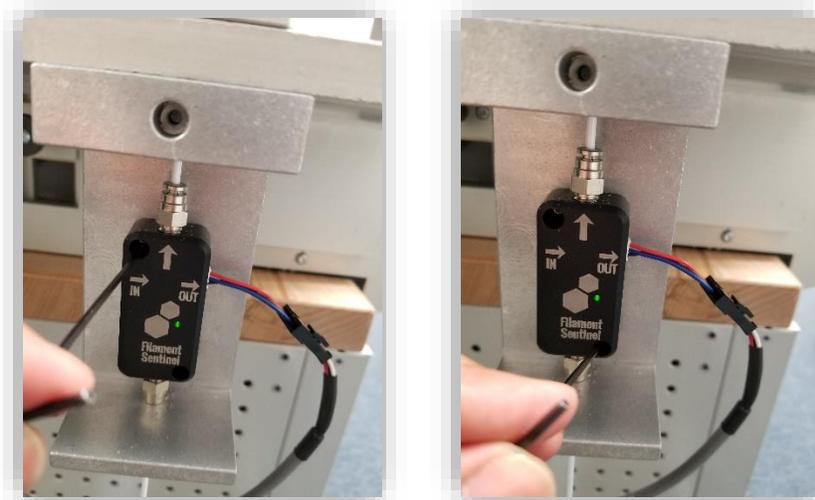
Tools needed

1. 2 mm Hex wrench
2. Canned air duster
3. Small pipe cleaning brushes

Filament Sensor Removal

Prior to performing the cleaning of the filament sensors, follow the below steps to remove the filament sensors from their location on the printer.

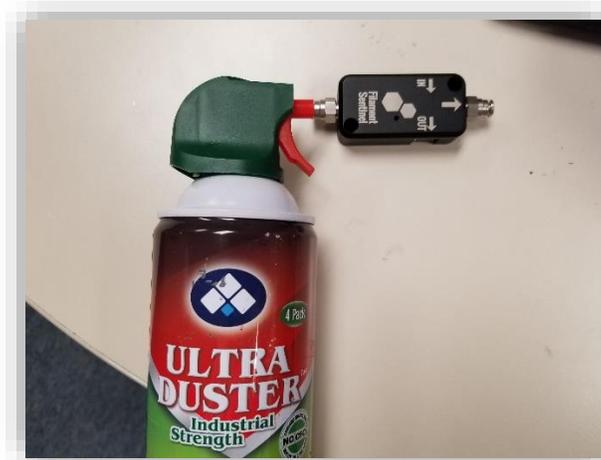
1. Unload the filament
2. Disconnect the electrical connection from the sensor.
3. Remove the filament sensor from the mounting bracket by removing the mounting screws from the mounts using the 2 mm wrench.



Using the three processes detailed in this document you should be able to clear any unnecessary tension on the filament caused by the filament sensors.

Process 1: Canned Air Solution

1. Using the canned air duster, blow air at a moderate pressure (approximately 20 psi) through the filament sensor entrance (bottom of sensor).
2. Using the canned air duster, blow air at a moderate pressure (approximately 20 psi) through the filament sensor exit (top of sensor).



Process 2: Small Pipe Cleaning Brush Solution

Alternatively, you can use the small pipe cleaning brushes provided with the machine to clean the filament sensor hole.

1. Remove the sensors from their mounting bracket like in the previous process.
2. Insert the cleaning brush into the entrance (bottom) of the filament sensor.
3. Repeat with the exit (top) of the filament sensor.
4. Additionally, use the canned air to verify that any remaining particles have been removed.
5. Reinstall the sensors and verify proper functionality.

Process 3:

If the filament still has excess drag when being pulled by the extruder you might need to adjust the guide tubes inside of the sensor.



1. Remove the fitting at the entrance to the sensor (bottom of sensor).
2. Remove the fitting at the exit of the sensor (top of the sensor).
3. Visually inspect that there is no damage to the guide tubes
 - a. The guide tube should be straight with no kinks or bending
 - b. The openings of the guide tubes should be round with no indication that they have been pinched.
4. If the tubes display indications that they have been pinched or bent, straighten them to the best of your ability and reinstall.

Filament Sensor Installation

After performing the cleaning of the filament sensors, follow the below steps to re-install the filament sensors to their location on the printer.

1. Place the filament sensor into its position and attach it to its mounting bracket by installing the mounting screws using the 2mm hex wrench.
2. Connect the electrical connection to the sensor.
3. Insert filament into the sensor and verify that the green light turns on, indicating that filament is present.

