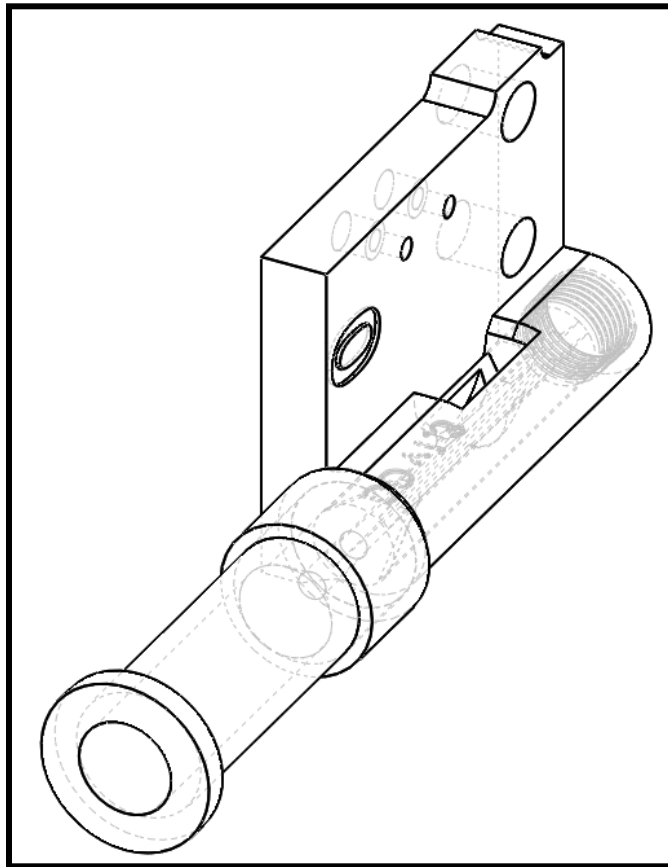


Guides to include:

- Quick Start Guide
- User Guide
- Maintenance Guide
- Troubleshooting Guide

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## **User Guide and Maintenance Manual for Filament Dust Remover**



*Figure 1: CAD image of the Filament Dust Remover*

Authors: Daniel Plascencia, Damian Gonzalez, Ellice Gao, Rubén Marroquin

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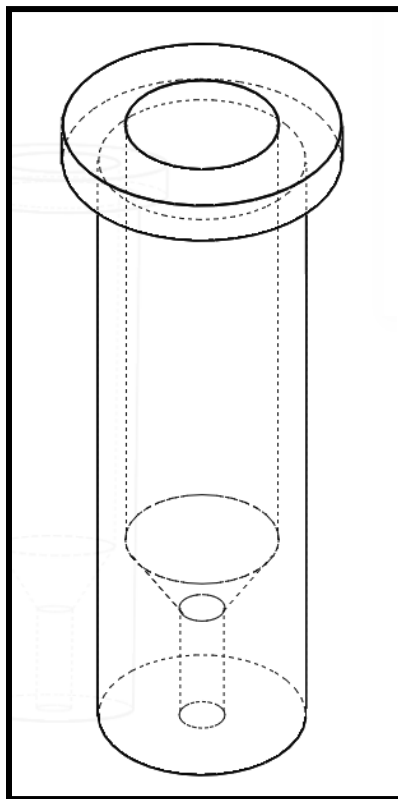
## **Introduction**

*Overview:*

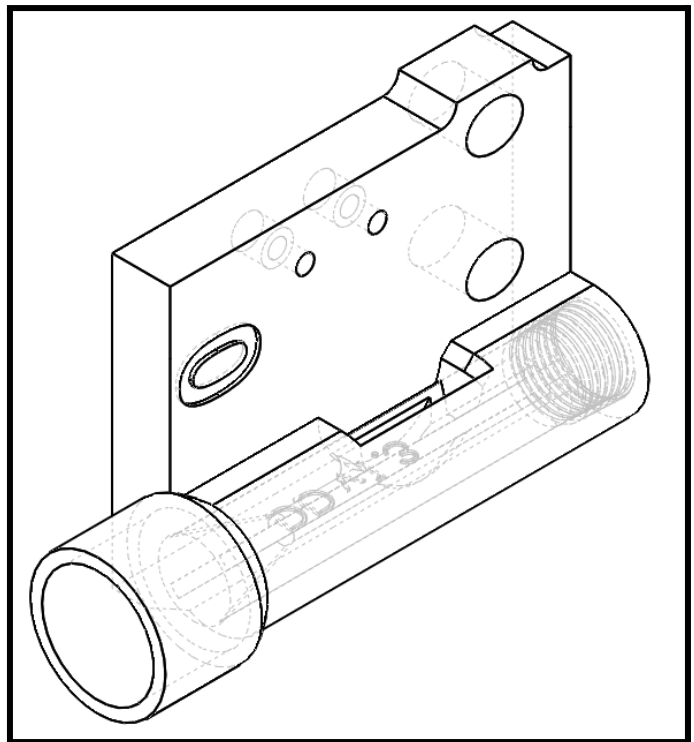
*This document provides multiple guides that are designed to be easily and readily available to help users of the Filament Dust Remover with any problems they may face. These problems could arise from installing, understanding how it works, how to maintain it, and other general issues that can occur throughout the product's lifetime.*

*To ensure full comprehension of how the device works and get the most out of it, please read the following manuals carefully and use the product as directed.*

## **Parts and Their Functions (Front Views)**



Part 1



Part 2

### **1. Housing Unit (HU)**

This houses the cleaning material that will remove dust from filament as it passes through

### **2. Filament Detection Unit (FDU)**

This houses the mechanism that detects if filament is running through the device or not

## **Quick Start Guide**

1. Print the Filament Detection Unit (FDU) and the Housing Unit (HU).
2. Get microfiber cloth and cut out a 4x3" rectangle.
3. Cut an X-shaped slit in the center of the rectangle.
4. Insert the microfiber cloth into the HU and secure it using the zip tie.
5. Feed the filament through the HU and FDU (while they are still separate).
6. Insert the HU into the FDU using the pressure fit.
7. Attach the assembled piece vertically onto a surface.
8. Use your 3D printer and enjoy your clean prints!

## **User Guide**

### **Cleaning Material Set Up**

1. Cut material into a rectangle (~ 4x3 in)
2. Tug at sides of material to get rid of fluff
3. Take filament and wrap it with the cleaning material. Make sure that the fluffy side touches filament. Wrap tightly on one end of the filament, more specifically the side that will be going into housing
4. Insert filament wrapped material into housing, use twisting motion
5. Unwrap exposed side of filament and wrap that over the housing
6. Take a velcro zip tie and wrap it around the material/housing. Make sure that the soft side of the velcro zip tie touches material. Once that is achieved, then make sure to tie tightly
7. Put the housing into the FDU

### **Assembling HU and FDU**

To assemble the device, press fit the HU into the FDU. This enables a sturdy connection, yet is easily removable with a little force. If it seems to be too tight, then you can twist the two units in opposite directions to take them apart.

### **Getting it ready to use**

Run the filament through the assembled device and find a surface on which to attach the device. This could be on the side of the 3D printer or any surface that allows for the device to be secured and for the filament to linearly pass through.

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**WARNING: The warnings for the care and handling of the Filament Dust Remover are listed below**

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- Do not secure the assembled device in an orientation that bends that filament.
- When running for long periods of time, the device may get really dirty. This is part of the design and means the device is working as intended
- Incorrect handling, such as jamming the cleaning material into the HU may cause a blockage and not allow the filament to run through and get cleaned.

- Do not set the device with filament entering through the FDU and exiting out the HU, it is not made to work in this manner.
- Do not leave the device unsecured, this may lead to the device hitting parts of the printer.

## **Maintenance Guide**

Once the HU gets too dirty, remove and replace the cleaning material with a new one.

## **Troubleshooting Guide**

<b>Challenge</b>	<b>Potential Solution</b>
HU doesn't fit into FDU	<ul style="list-style-type: none"><li>● Reduce the thickness of the printing layers to insure a press fit</li></ul>
Cleaning material causes friction, preventing filament from running through	<ul style="list-style-type: none"><li>● Apply less cleaning material</li><li>● Check that the material is touching the filament, but not squeezing tightly</li></ul>
Filament diameter is too big for device	<ul style="list-style-type: none"><li>● Download the attached CAD file and edit the diameter of the device</li><li>● Use smaller diameter filament</li></ul>