



Ultimate 3D Printer Enclosure Filter V2



Indeterminate Design

[VIEW IN BROWSER](#)

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Summary

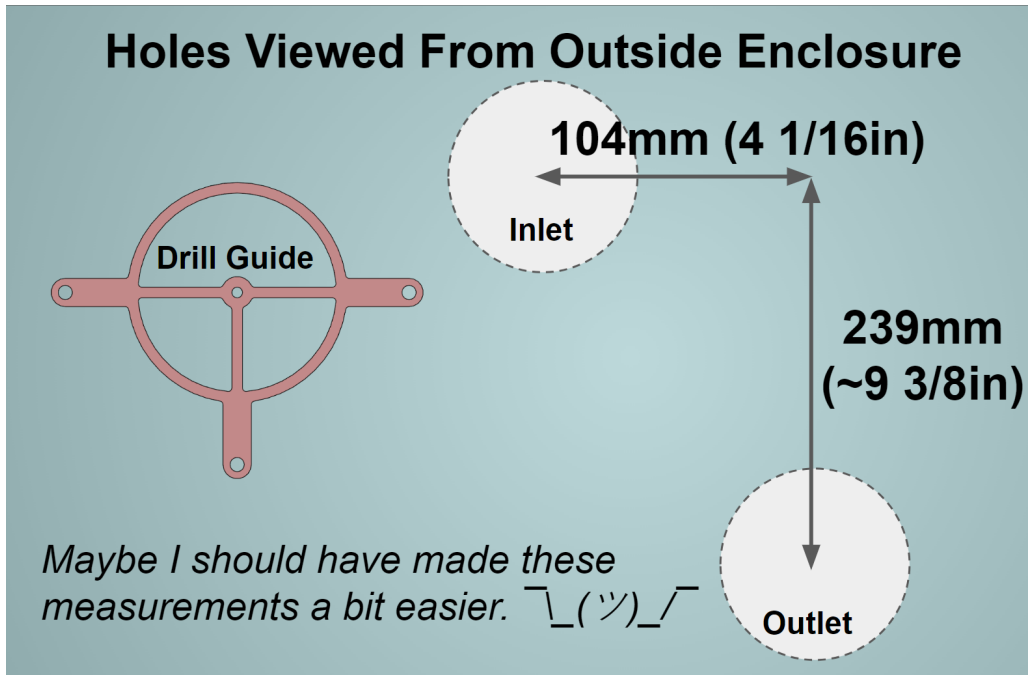
The ultimate 3D printed enclosure filter using a HEPA filter and Activated Charcoal.

[3D Printers](#) > [Accessories](#)

Tags: [filter](#) [air](#)

Basically better than V1 in every way. High flow 120mm blower/centrifugal style fan, HEPA filter, Activated Charcoal filter, tool-less servicing, negative pressure, and easy to 3d print and build.

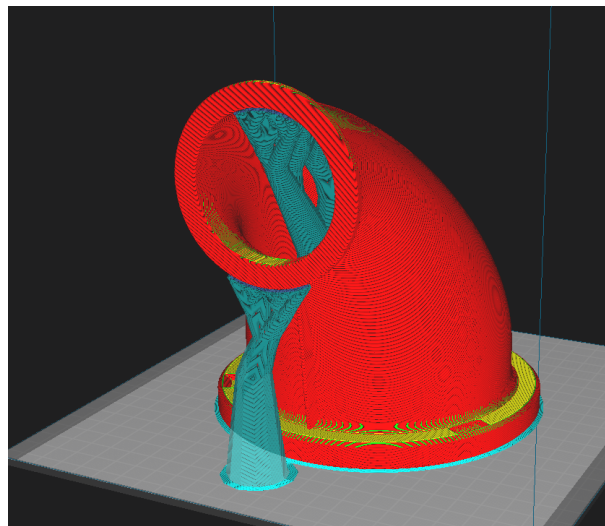
Drilling Guide:



Note: Holes are 2.5" or ~62mm in diameter, can be cut with hole saw or jig saw.

Print Settings:

- 0.4mm nozzle, much of the housing is just 2 walls thick (0.8mm)
- 0.25mm layer height worked well for my printer.
- Depending on settings it's about 700g of filament.
- For most enclosures under 60C (140F), PETG works well
- For actively heated enclosures, I recommend Nylon/ASA/ABS
- Supports are definitely needed for several of the parts like the upper housing and the roof of the lower housing. I recommend tree supports with ~66% interface density.



Items needed to build this filter:

- Wathai 120mm x 32mm Blower Centrifugal Fan https://www.amazon.com/dp/B08Q3Q2354?ref=ppx_yo2ov_dt_b_product_details&th=1
- Hoover Vacuum HEPA Filter (Hoover 440003905) https://www.amazon.com/dp/B09PNF6VY3?psc=1&ref=ppx_yo2ov_dt_b_product_details
- Activated Charcoal https://www.amazon.com/dp/B0002566WO?psc=1&ref=ppx_yo2ov_dt_b_product_details
- Women's Pantyhose or other fine mesh for the bottom of the charcoal filter housing
- CA or other glue to glue mesh to bottom of housing (Will be held by bolts when assembled)
 - I recommend buying an assortment from Amazon/Aliexpress. Many of these can be longer, you may just have some threads sticking out.

Hardware (All screws are allen socket head)	Qty
M3x10	3
M3x20	2
M4x10mm	4
M4x15mm	3
M4x25mm	3
M4x15-20mm (Depends on thickness of enclosure walls)	10
M4x10 (Optional Weight for Air Inlet Flapper Valve)	1
M5x10mm	4

Use at your own risk. I recommend that you have at least a high level understanding of how filtration systems operate and the risks involved. This is a universal filter setup and changes may need to be made for your specific situation and use.

Model files



Cold Air Inlet Flapper Valve

3 files



flapper-door_1_flap-1_1_body1.3mf



flapper-door_1_body1.3mf



flapper-door_1_backing-plate_1_body1.3mf



Upper Housing for 2.5in Tubing

3 files



hanger-for-straight-hose-filter-housing_1_body1.3mf



top-mount-intake_1_body2.3mf

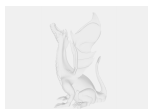


upper-housing-straight-for-hose_1_body7.3mf



CAD

1 file



enclosure-filter-v2-v1.f3z



clip-print-3x.3mf



bottom-mount.3mf



diverter-arm.3mf



diverter-flap.3mf



hole-drilling-guide.3mf



upper-mount.3mf



filter-adaptor-2.3mf



filter-adaptor-1.3mf



intake-tubes_1_1st-section_1.3mf



carbon-filter_1.3mf



bottom-return-air.3mf



intake-tubes_1_inlet-cone_1.3mf



intake-tubes-print-as-many-of-these-as-you-want.3mf



upper-housing.3mf

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