

## Pudgy BIQU H2 V2S Part Cooling Duct



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### Summary

A dual-5015 part cooling duct for the BIQU H2 V2S

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The Pudgy is a t h i c c dual-5015 part cooling duct for the BIQU H2 V2S.

**GitHub Repository:** <https://github.com/skybldev/pudgy-part-cooling-duct>

### Main Features

- Large opening and duct for high airflow\*
- Open access to the exposed gear and filament lever
- Mounted rigidly, securely, and closer to the carriage to reduce ringing
- Comes in a single print
- Looks cool... I think

\* This duct has not (yet) been optimized with the help of CFD

This duct was designed out of my frustration and dissatisfaction with current part cooling solutions for the extruder. It's also a “practice project” of mine for smooth duct design in CAD.

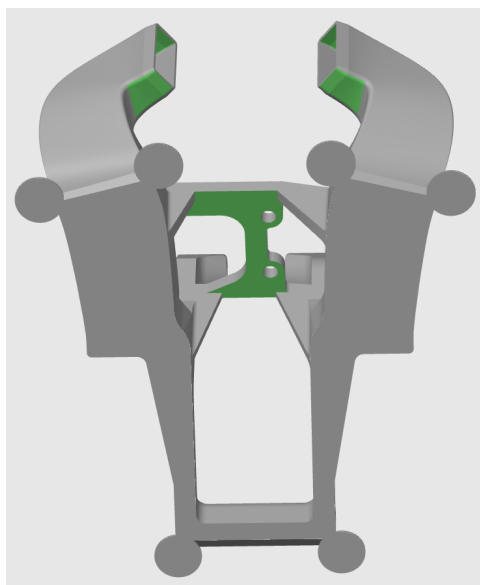
## Demonstration

Although far from perfect, I managed to achieve a 15 minute Benchy using this duct.

## Instructions

### Printing Tips and Considerations

- This model was designed to be printed with an **0.5mm nozzle**. Anything smaller will work too.
- **PETG, ABS**, and anything but PLA is recommended, since this part will be close to your hotend.
- Placing **mouse ears** on the corners of the print is recommended to reduce warping.
- **Use tree supports** if your slicer supports it. This will help tremendously with the quality of the duct ends and the extruder mount plate.
  - Here are some of the settings (OrcaSlicer) I used to achieve results in the photos below:
    - support type: tree (manual)
    - 0.25mm top Z distance
    - **on build plate only: true** (this is important for easy removal)
- **Print slower than you normally would**, especially with bridges. Don't print faster than your current cooling solution can handle. This ensures minimal obstructions in the airflow path inside the duct.
- **Optimal support areas and mouse ear placements are shown in this screenshot:**



## Assembly

Hardware required:

- 2x 5015 blowers
- 3x M3×3-6mm screws (these should come with the extruder)
- 1x M3×13mm screw (this is one of the screws holding the extruder fan in)
- 4x M4 OD5.6mm threaded inserts
- 4x M4×25mm screws (these must have a head that overlaps the fan holes)

After printing, break off supports carefully. Use flush cutters or a scalpel to remove the mouse ears.

**Important:** In order to get the blowers to fit tightly, **destructive modifications are needed.** These won't impede their functionality but will void their warranty or render them ineligible for a return.

On both fans, use a scalpel or cutter to remove this little nub above the clip close to the outlet.

Then, **only on the right-hand fan**, sand down or cut off this clip.

Remove the M3×14mm screw from the extruder fan.

Heat a soldering iron to around 10C lower than your print temperature. Then, push the four brass inserts into the four large holes.

Place the duct on the front of the extruder as shown.

Insert three M3×5mm screws on the front and upper-right mounting holes.

Insert the M3×14mm screw back into the hole it came from.

Insert the two 5015 blowers into position.

Finally, secure the fans using four M4×25mm screws.

If you find this useful, please consider supporting me on Ko-fi. Thanks and happy printing!

Diagram model sources:

- McMaster-Carr
- <https://grabcad.com/library/pc4-m6-1>
- <https://grabcad.com/library/radial-cooling-5015-fan-50mm-dc12v-1>

## Model files



**pudgy.step**



**pudgy.stl**

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