Printables by JOSEF PRUSA

Sovol SV08 Minimal Toolhead Cover

Zappes

VIEW IN BROWSER

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Summary

This is a cover that replaces the blue box on the SV08 toolhead. It provides better airflow for the heatsink.

3D Printers > Other Printer Parts & Upgrades

Tags: freecad sovol sv08 sovolsv08

Description

When I printed my first large model on the SV08, my Nozzle clogged multiple times. I may be wrong, but my assumption here is that it's not a great idea to enclose the hotend heatsink in a plastic shell, thus killing any kind of airflow.

So I created this minimal toolhead cover that lets air get to the heatsink and I hope that the clogs are a thing of the past now. It's a drop-in replacement for the original cover and it reuses the existing 5020 fan.

This is not a remix of anything in the strict sense, but I couldn't have done it without the CAD files that Sovol provides on Github. I did not directly model off these, but they were incredibly helpful for making measurements.

If you want to see this in action, have a look at this little video I made.

Warning: You might have to rework the cooling settings of youre filament profiles. A large overnight test print with this cover showed all signs of too much part cooling - keep an eye on that if you are using this cover.

Additional Parts

You will need four 4x2mm magnets, unless you are willing to destroy the original cover and pry the magnets out of that one. I suggest you don't do that.

How to Print

There are two versions of the cover for you to choose from. The one “with clips” has clips on the upper struts that safely clamp the cover to the toolhead. This is the version you should prefer if you don't have some specific reason not to. Note that, depending on your printer and filament, the overhangs on the clips can droop a bit. Use a nail file to approach that if the clip should not fit properly.

This part needs to be stiff and it needs to withstand the temperture of the heatbed as large parts are right above this hot surface during the first layers of the print. Do not think you can get away with PETG, it will NOT work. Trust me, I've tried it as my first fitting prints were from PETG.

I printed mine with Prusament PC Blend Carbon, and that worked out brilliantly. I assume that ABS would also be good, but I have no printer available that could print this part in ABS without major warping. Please let me know about your approach in the form of a make. :)

On my Prusa MK4, I could print this face down without supports when using either PETG or PCCF.

Just a little hint: If you don't have a printer that can reliably print this from ABS or PC, you can always upload the STEP file to PCBWay and have them print it. In ABS, they will do that for less than 10 bucks, so it's definitely an option.

Limitations and Remix Suggestions

Well, I am not an engineer and not a CAD professional. This object isn't pretty, the CAD modeling will drive tears to a professional's eyes and the airflow through my nozzle may suck hard. That being said, I see the following areas for improvement, but I can't be bothered to do any more work on this thing right now...

- The nozzle can probably be optimized for better airflow and less backpressure. I don't know if it's any good, honestly.

- At least for the upper struts, it would be good to have some kind of horizontal brace.

Update History

2024-06-21	Initial release
2024-06-26	Uploaded version with retainer clips on the top struts

Model files

sv08-minimal-toolhead-cover-with-clips.3mf

This is the one you want

sv08-minimal-toolhead-cover-with-clips.step

This is the one you want

sv08-minimal-toolhead-cover.3mf

Only relevant if your printer really sucks at overhangs...

sv08-minimal-toolhead-cover.step

Only relevant if your printer really sucks at overhangs...

sv08-minimal-toolhead-cover.fcstd

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