



High flow ducts for SV06+ single and double 5015 part cooling fans. Stock, K1 or Volcano nozzle.



Steve

[VIEW IN BROWSER](#)

updated 8. 3. 2024 | published 8. 3. 2024

Summary

MISTRAL: High flow duct to maximise cooling with klipper and large nozzles

[3D Printers](#) > [Other Printer Parts & Upgrades](#)

Tags: [volcano](#) [fan](#) [cooling](#) [duct](#) [double](#) [5015](#) [sovol](#)
[k1](#) [cfd](#) [sv06plus](#)

Two versions

- Z2.5 for stock nozzle no changes needed. Also suites K1 nozzle with 0.7mm extra clearance over stock.
- Z4.0 For Volcano nozzle.

For K1 and Volcano nozzle refer to the Nozzle/Heat block setup guide included.

I changed to 0.6 Volcano nozzle with klipper and needed to maximise cooling. Had two 5015 fans so what the hay. Liked how the Ammonite

mounts worked so to save time reused them and concentrated on the ducts.

The ducts to take advantage of the extra room with the SV06+ head to give a bit more clearance and improved flow. Tried to make it suitable for range of nozzles. Best setup seems to be a version to suite stock and K1 nozzles and another to suite the Volcano due to the height differences. Might be able to get away with the Volcano version with a K1 nozzle.

I've managed a 22 minute benchy using the 0.6 nozzle with only minor quality loss. The bow is the cooling limit. With 0.4 managed 16min.

It's a simple print but does require good dimensional calibration for fit:

- Keeps full xy travel and access to heat block
- 0.80 walls to keep weight down and give 2wall thicknesses for toughness.
- Recommend Petg or better. PLA ok if not printing at high temps. Helps to keep a bit of air flowing thru it if PLA.
- Easy print with no supports.
- Fixing mount to duct is M3 panheads or countersunk. Can glue them.
- Fixing to rear printhead with Clip, Double sided tape or M3 countersunk screws.
- Layer height as fine as you want it minimises layer lines best say 0.15.
- Not confirmed but single 5015 fan may get better cooling with 3rd duct blocked. Overhang performance will be better with all three.

Here is a template and simple mod to set consistent probe height <https://www.printables.com/model/775747-sv06-sv06-leveling-mounting-plate-mod-to-access-pr> .

Updates:

- Rev2.1 https://www.printables.com/@MaydayVFR_950289 requested some extra clearance. Added z4.0mm revision. Where z is height above stock nozzle. A K1 is at +0.5, Volcano +2.5 in theory. In practise it varies i think my Volcano clearance is tighter.
- Added modified LED mount
- Added a single 5015 fan connector, should be good for a decent single 5015 fan.
- Rev2 - repositioned couple of the duct vanes that were out of position a bit
- Rev2.3 z4.0mm and z2.0mm versions
 - z4.0mm suitable for Volcano nozzle and any other nozzle
 - z2.0mm only for Stock or similar (K1) nozzle
 - ducts moved a bit further from sock. Should be ok for PLA.

- Redirected for more towards plastic to give bigger cooling spread.
- Update - Added experimental folder. Targeting cooling flow rather than just pressure like water test. Interestingly 2 outlets may be better for cooling but 3 outlets is better for general overhangs. 16min Benchy with 0.4 nozzle.
- Update - Added Nozzle/Heat block setup guide
- 26 Feb'24 Added A trial clip on z3 duct with improved flow with good clearance for Stock and K1 nozzles.
- Added a beta version with a clip, tape or screw fixing for stock and k1 setups. Some flow tweaks to get a compromise between outright cooling and overhang performance.

This remix is based on



The Amonite - Sovol SV06 Fan Duct Dual 5015 Blower Fan V4

by Leander Perez Blanco

Model files



Beta Trials

2 files



mistral_duct_r50_z25-svk1.stl

☐ z2.5mm General Stock & K1, with clip and flow improvements



mistral_duct_r50_z40-volc.stl

☐ z4.0mm Volcano, with clip and flow improvements



fan_duct_airguide_r23_z40.stl

☐ z 4.0mm above stock nozzle to suite shorter Volcano, will work with stock nozzle



fan_duct_airguide_r23_z20.stl

☐ z 2.0mm above stock nozzle, not suitable for shorter Volcano



fan_duct_dual_fanconnector_r22.stl

☐ Dual 5015 fans



fan_connector_single5015_r2.stl

☐ Single 5015 Fan

fan_connector_single5015_r2.step

sv06-plus-vortex-led-mod10mm.step

☐ LED lighting mount

Other files

sv06plus-nozzle-setup-guide.pdf

☐ A guide to duct and nozzle setup.

License



This work is licensed under a
[Creative Commons \(4.0 International License\)](https://creativecommons.org/licenses/by-nc/4.0/)

Attribution-NonCommercial

-
- ✗ | Sharing without ATTRIBUTION
 - ✓ | Remix Culture allowed
 - ✗ | Commercial Use
 - ✗ | Free Cultural Works
 - ✗ | Meets Open Definition

