Printed Tophat

Printed Tophat BUILD GUIDE

When you got too much plastic and dont wana buy extrusions

VERSION 2024-04-09

Before you begin on your journey, a word of caution.

In the comfort of your own home you are about to assemble a robot. This machine can maim, burn, and electrocute you if you are not careful. Please do not become the first STEALTHCHANGER fatality. There is no special Reddit flair for that.

Please, read the entire manual before you start assembly. As you begin wrenching, please check our Discord channels for any tips and questions that may halt your progress.

Most of all, good luck!

THE DRAFTSHIFT TEAM

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PART PRINTING GUIDELINES

The Voron Team has provided the following print guidelines for you to follow in order to have the best chance at success with your parts. The DraftShift Team recommends to follow the same standards. There are often questions about substituting materials or changing printing standards, but we recommend you follow these:

3D PRINTING PROCESS
Fused Deposition Modeling (FDM)

MATERIAL
ABS

LAYER HEIGHT
Recommended: 0.2mm

EXTRUSION WIDTH
Recommended: Forced 0.4mm

INFILL TYPE
Grid, Gyroid, Honeycomb, Triangle or Cubic

INFILL PERCENTAGE
Recommended: 15% or higher

NOTE: These parts do not experience any load an can be less dense compared to other Voron parts

WALL COUNT
Recommended: 4

SOLID TOP/BOTTOM LAYERS
Recommended: 5

FILE NAMING

By this time you should have already downloaded our STL files from the StealthChanger GitHub. You might have noticed that we have used the Voron naming convention for the files. This is how to use them.

PRIMARY COLOUR

Example part_x4.stl

These files will have nothing at the start of the filename.

ACCENT COLOUR

Example [a]_part.stl

We have added "[a]" to the front of any STL file that is intended to be printed with accent colour.

QUANTITY REQUIRED

Example [a]_part_x4.stl

If any file ends with "_x#", that is telling you the quantity of that part required to build the machine.

HOW TO GET HELP

If you need assistance with your build, we are here to help. Head on over to our Discord group and post your questions. This is our primary medium to help STEALTHCHANGER Users and we have a great community that can help you out if you get stuck.

https://discord.gg/3G7h3F9TTy

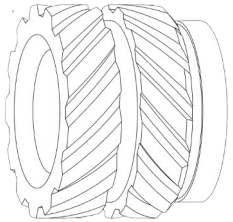
REPORTING ISSUES

Should you find an issue in the documentation or have a suggestion for an improvement please consider opening an issue on GitHub (https://github.com/Stealthchanger/DoorBuffer/issues). When raising an issue please include the relevant page numbers and a short description; annotated screenshots are also very welcome. We periodically update the manual based on the feedback we get.

THIS IS JUST A REFERENCE

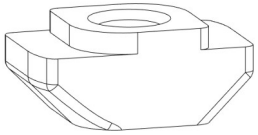
This manual is designed to be a simple reference manual and we always recommend downloading the cad-files to look around for yourself.

https://github.com/DraftShift/Tophat



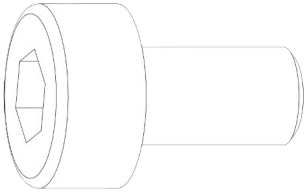
HEAT SET INSERT

Heat inserts with a soldering tip so that they melt the plastic when installed. As the plastic cools, it solidifies around the knurls and ridges on the insert for excellent resistance to both torque and pull-out.



T-NUT Hammerhead

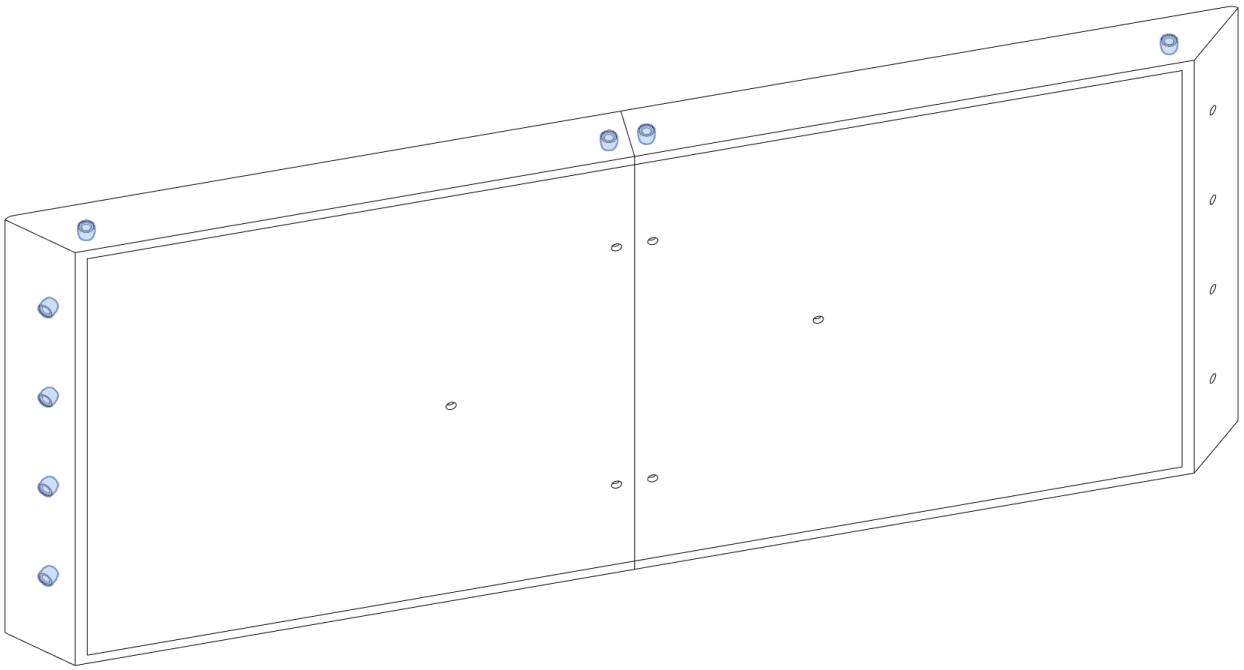
A type of nut that slides into the extrusion rail as a method of affix other parts to it.



SOCKET HEAD CAP SCREW (SHCS)

Metric fastener with a cylindrical head and hex drive. The most common fastener used on the Voron.

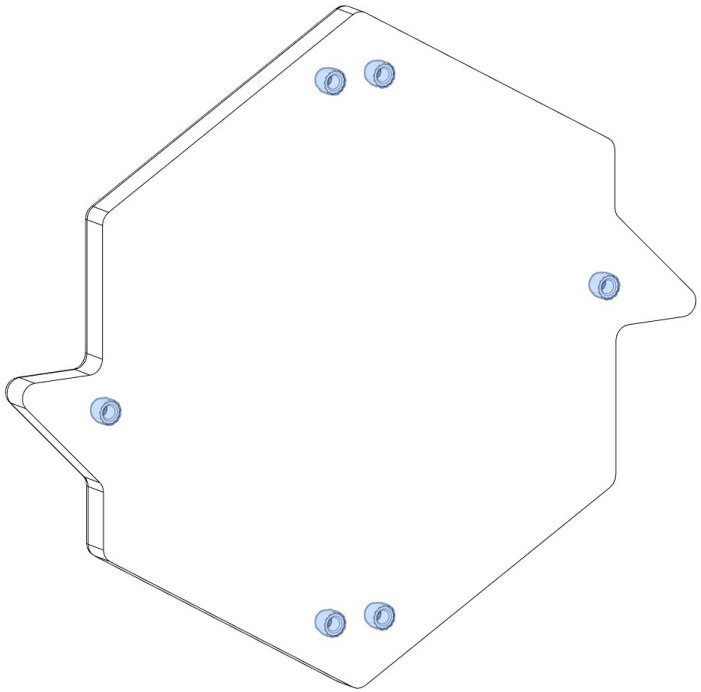
ISO 4762

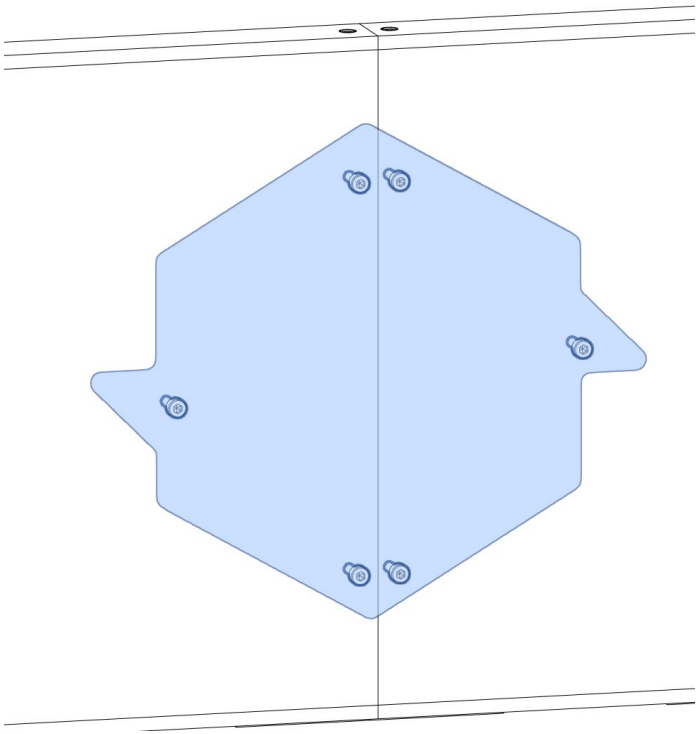


Heat insert

Heat inserts

Add heat inserts as shown on both frame parts and centre medalion





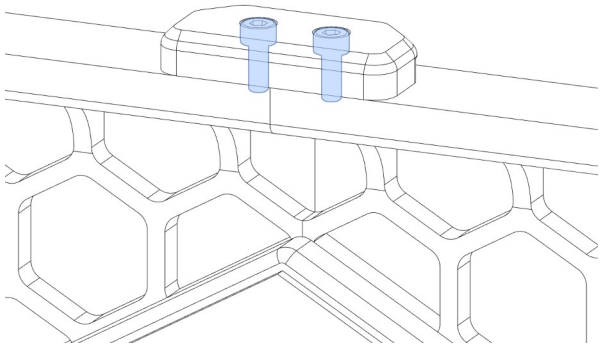
M3x10mm SHCS

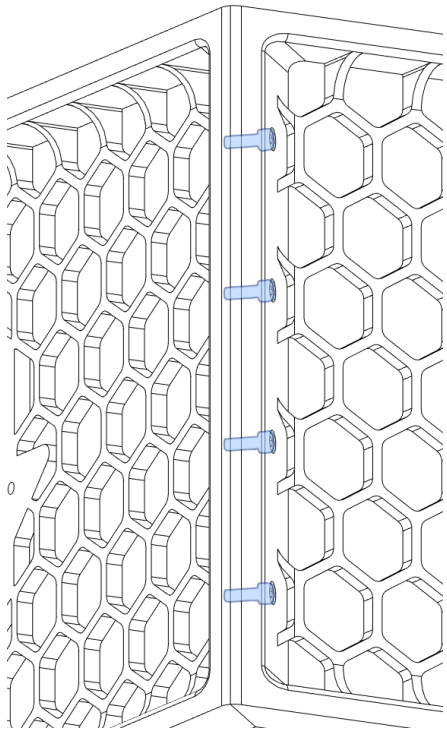
BOLT TOGETHER

Use M3x10mm to attach both sides together with the medallion

Use M3x8mm to screw together the corner pieces and top middle panel clip.

M3x8mm SHCS





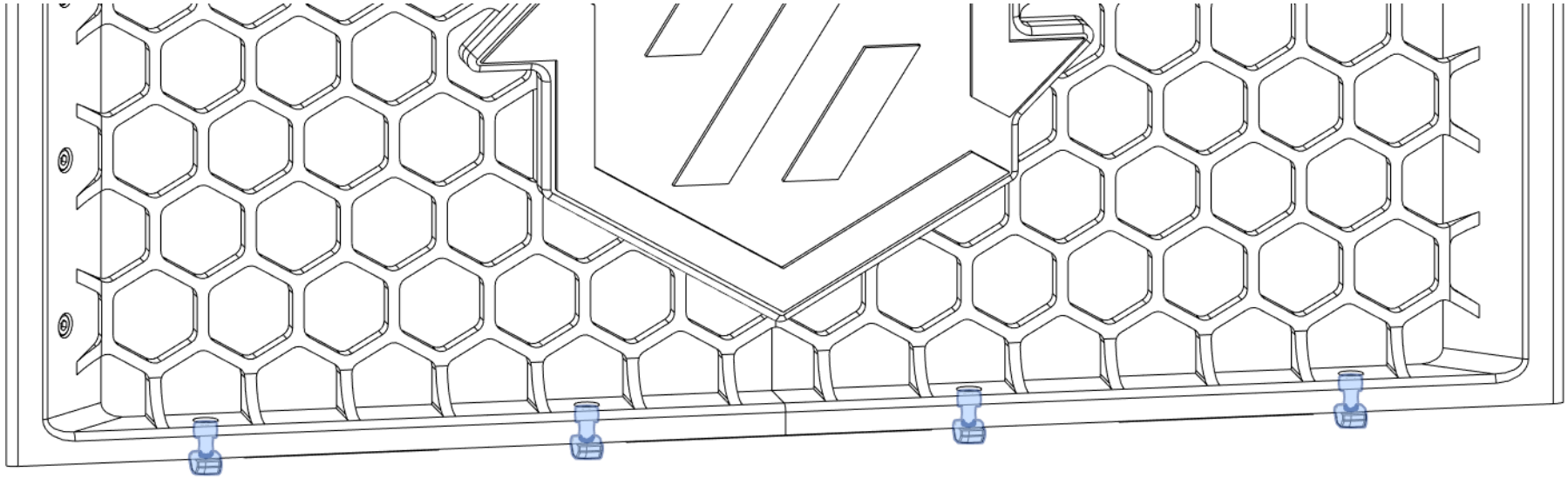
M3x8 SHCS
T-NUT

Screw on to 2020

Repeat all sides 4 times, screw together and bolt down to the top of your printer.

The tophat attaches to your 2020 frame with the same hardware you use for 4mm panel clips. M3x8mm + hammerhead T-NUT

NOTE: You can reuse your old top acrylic panel reusing the 4 corner clips.



ASSEMBLY COMPLETED!

NOTE: In case you forgot to install your modular docks, you can simply loosen the top middle piece and slide in the docks.

NOTE: You can reuse the same top panel corner clips just not the middle ones.

GitHub https://github.com/DraftShift/Tophat

Enjoy your new hat

STEALTHCHANGER

GITHUB

github.com/StealthChanger

DISCORD

discord.gg/3G7h3F9TTy