Door Buffer

Door Buffer BUILD GUIDE

Giving you 20mm back, and a more rigid dock

VERSION 2024-03-04

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 STEALTHCHANGER TEAM

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 StealthChanger 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.

DISCORD https://discord.gg/Mx9JKbt7

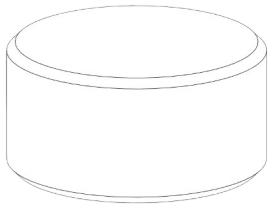
REPORTING ISSUES

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

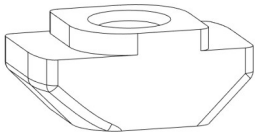
This manual is designed to be a simple reference manual and we always recommend downloading the cad-files to look around for yourself.

GitHub https://github.com/Stealthchanger/DoorBuffer



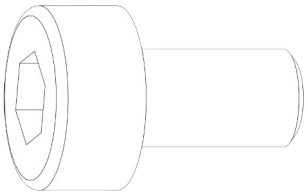
MAGNET

Metric round button neodymium magnet used on the Voron. N52 is highly recommended.



T-NUT Hammerhead

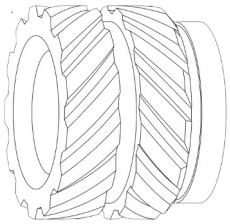
A type of nut that slides into the extrusion rail as a method of affix other parts to it.



SOCKET HEAD CAP SCREW (SHCS)

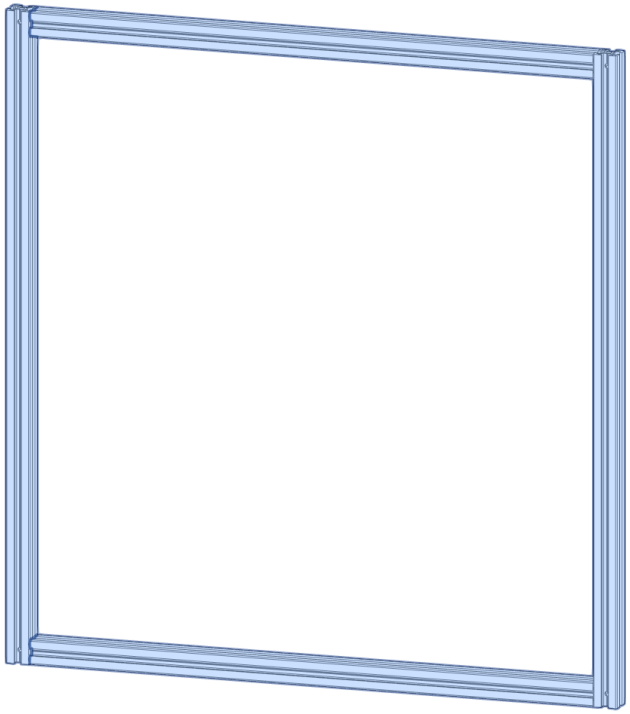
Metric fastener with a cylindrical head and hex drive. The most common fastener used on the Voron.

ISO 4762



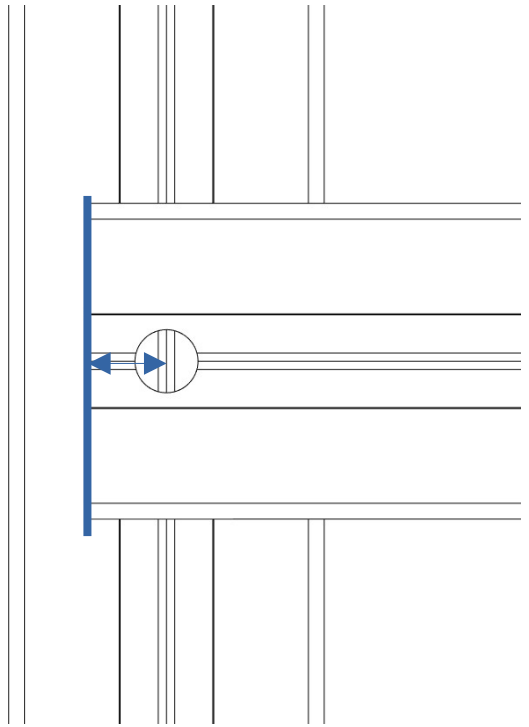
HEAT SET INSERT

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.



BASE FRAME

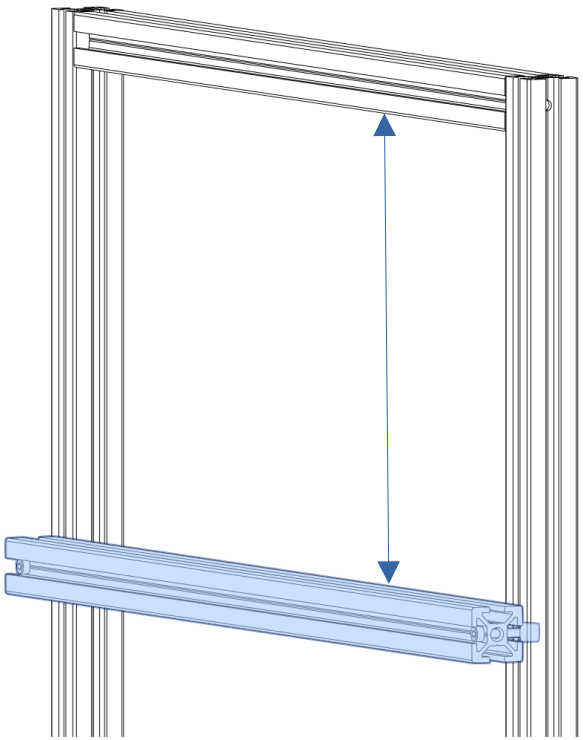
This build is meant to attach onto a normal 2020 V2.4 frame, though if you have a customized one there will be instructions on how to edit this entire design in Fusion360 at the end.



TOOLBAR HOLE PLACEMENT

The bottom bar that the modular docks mount to is 10mm shorter than your frame measured furthest left to right. A standard 350 frame is 510mm across the front and so the toolbar needs to be 500mm

NOTE: You will need to drill a hole big enough for a 3mm screw to pass through 4mm minimum is recommended for better adjustment.



TOOLBAR TO FRAME

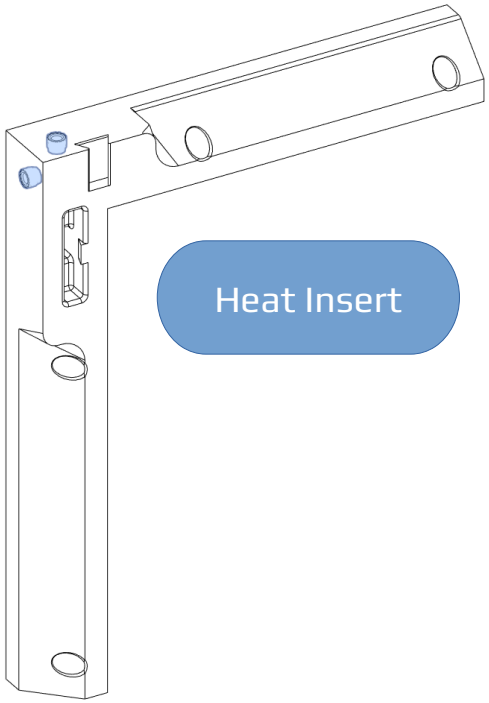
Bolt on the toolbar extrusion 170mm down so that there is a 170mm free clearing between them.

170mm

M3x20mm SHCS
T-NUT

SCREWS

Take your M3x20mm through the holes you made and mount it using T-NUT's

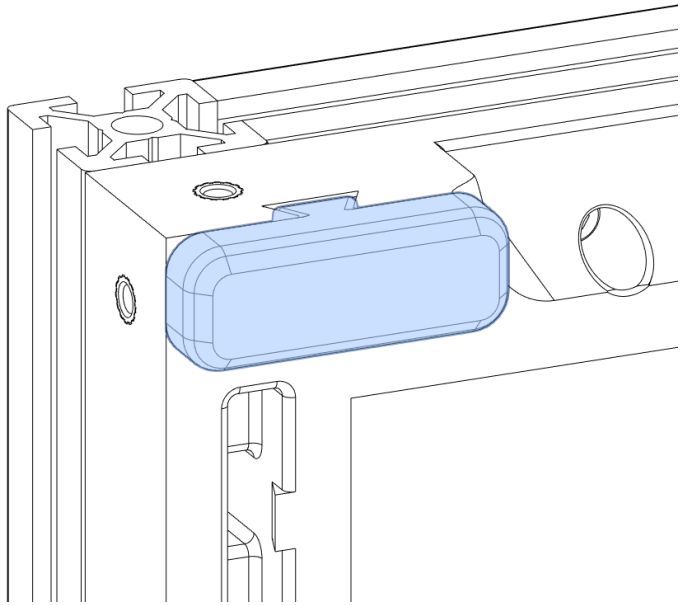


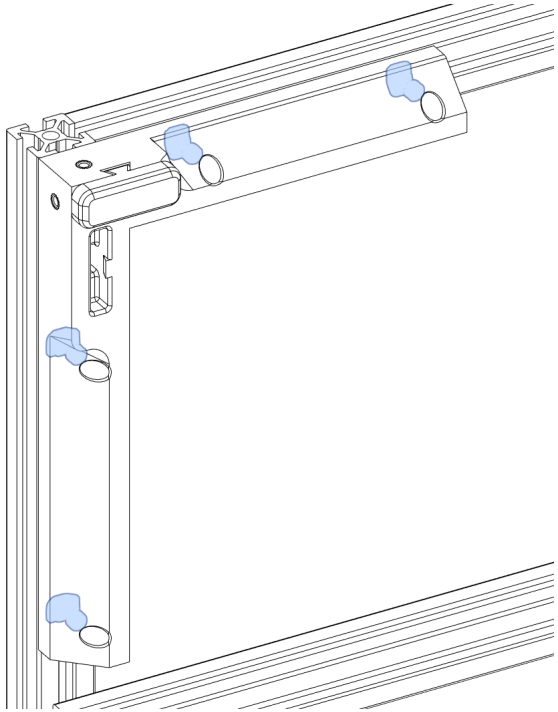
HEAT INSERT (optional)

These corner inserts are meant for the larger panel clips provided. You do not need them in case you don't wish to reprint your excising panel clips.

FAKE CLIP (optional)

The fake clip is purely cosmetic and not obligatory (it looks nice tho).

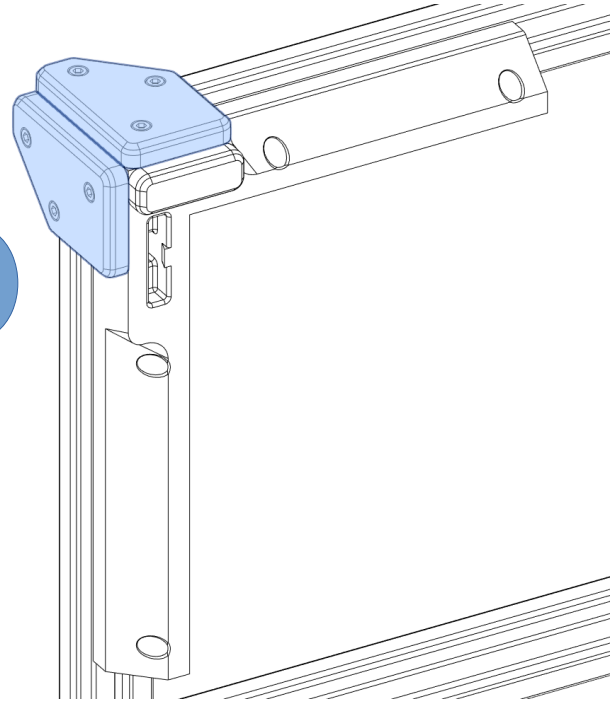




ATTACH TO FRAME

Attach your corner piece to the frame using 4 M3x8mm bolts and 4 T-NUTS

M3x8 SHCS
T-NUT



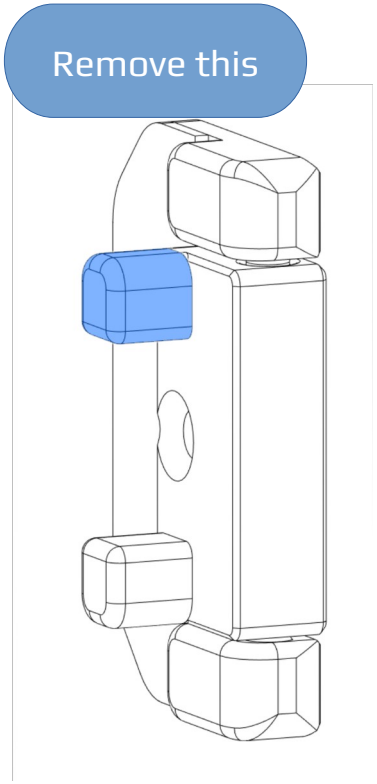
M3x8 SHCS
T-NUT

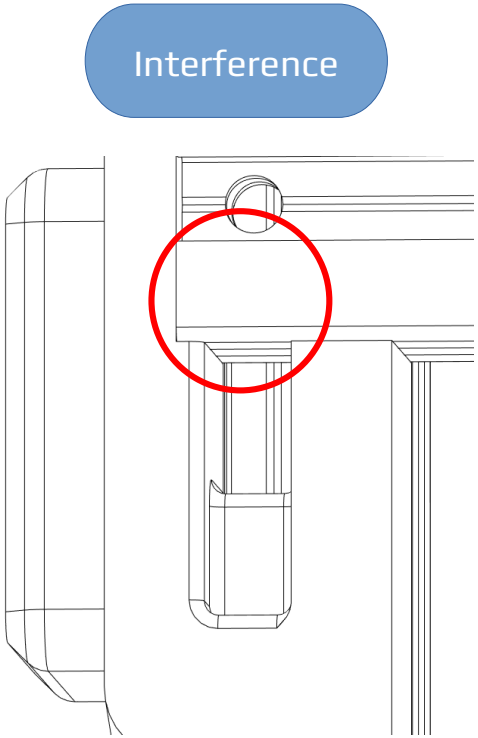
ATTACH PANEL CLIPS (optional)

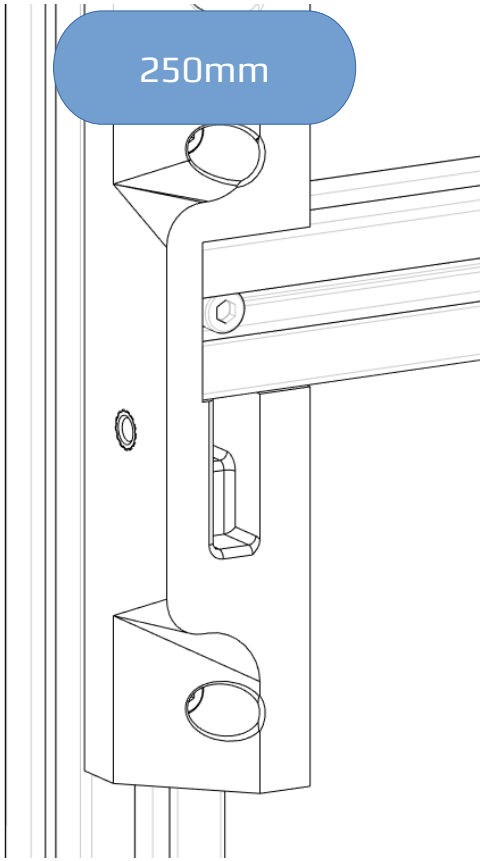
The elongated panelclips are identical to stock Voron except you will need 1 aditional M3x8 SHCS bolt that attaches to the heat insert.

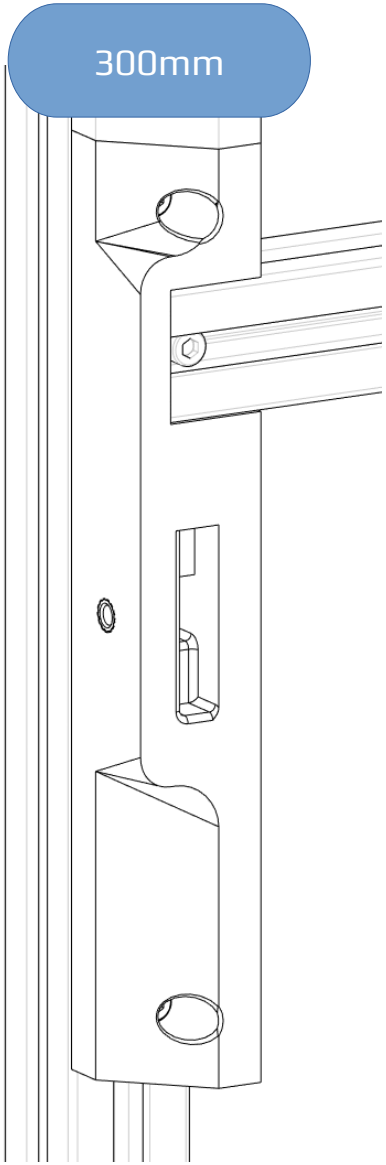
IMPORTANT NOTE

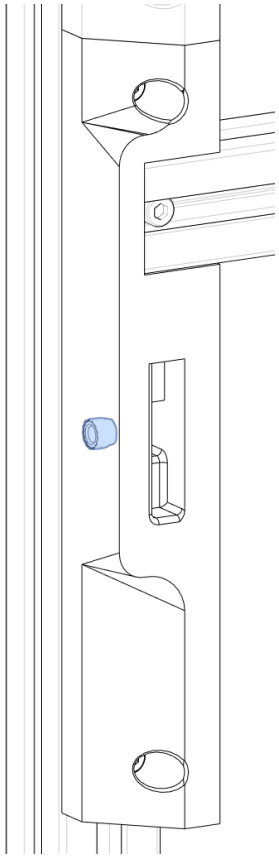
Due to the toolbar having a static distance from the top it will collide with the middle door hinge on V2.4 250mm (300 and above are fine). If this is your size you will need to snip off the top leg on your door hinge that sits into the extrusion









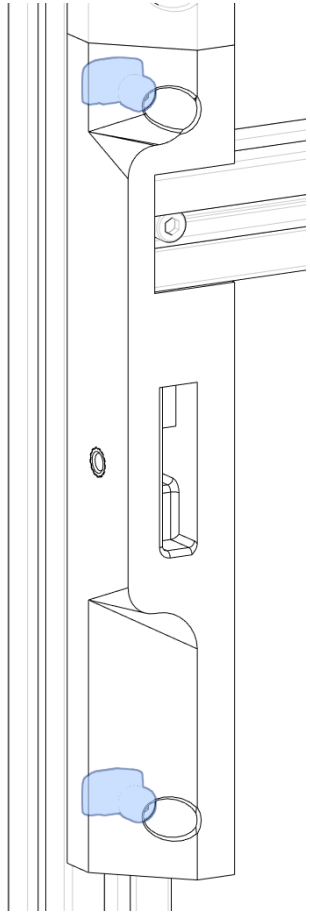


HEAT INSERT

Optional heat insert for elongated middle clip

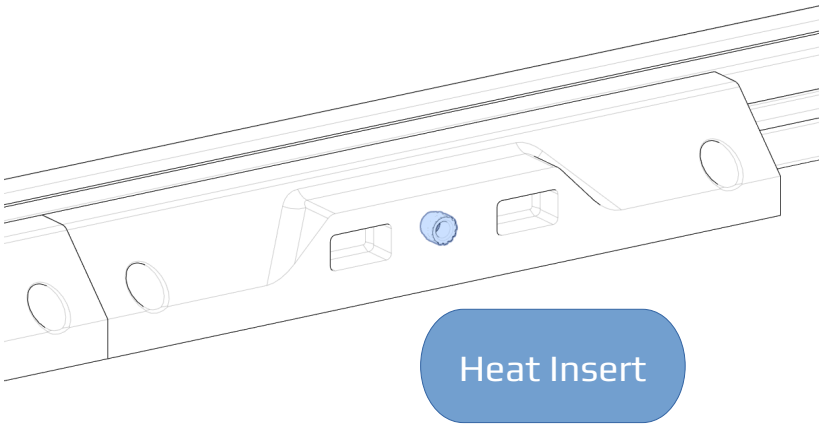
Heat Insert

M3x8 SHCS
T-NUT



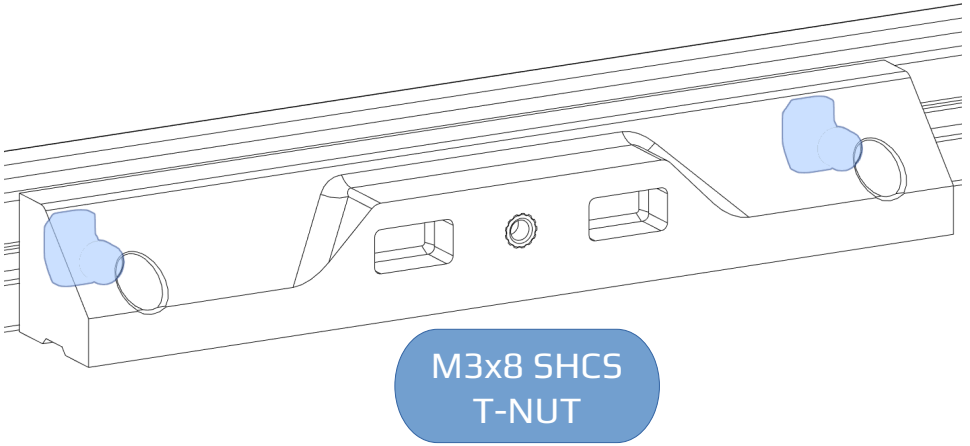
ATTACH TO FRAME

Attach the side piece to your frame using 2 M3x8 SHCS and 2 T-NUT's



INSERT HEAT SETS

Start by setting the heat sets.



ATTACH TO FRAME

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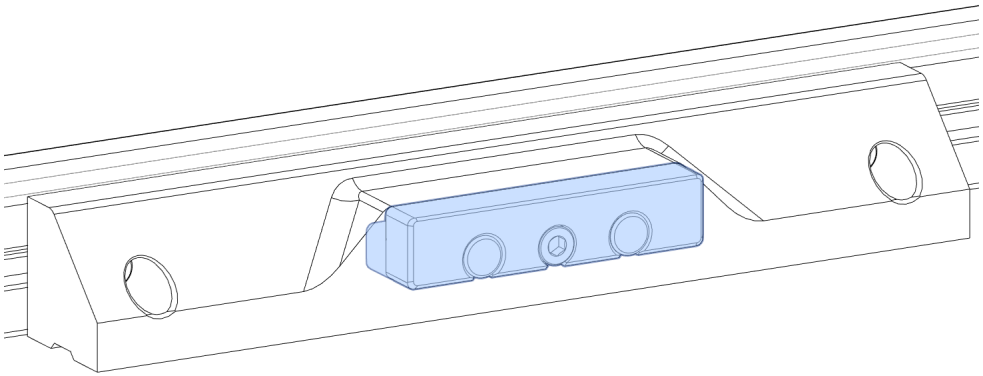
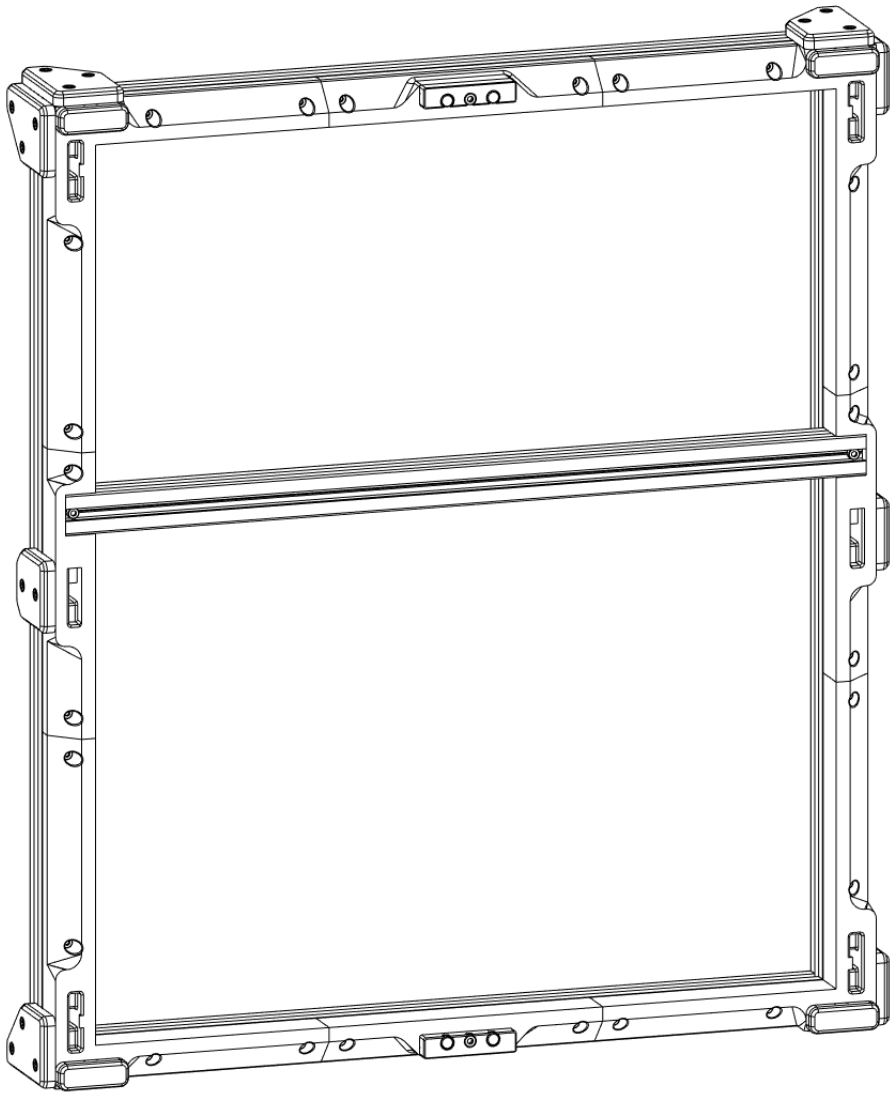


ATTACH STOCK DOOR-LATCH

Use your excising door-latch and screw it in without the T-NUT into the heat insert instead.

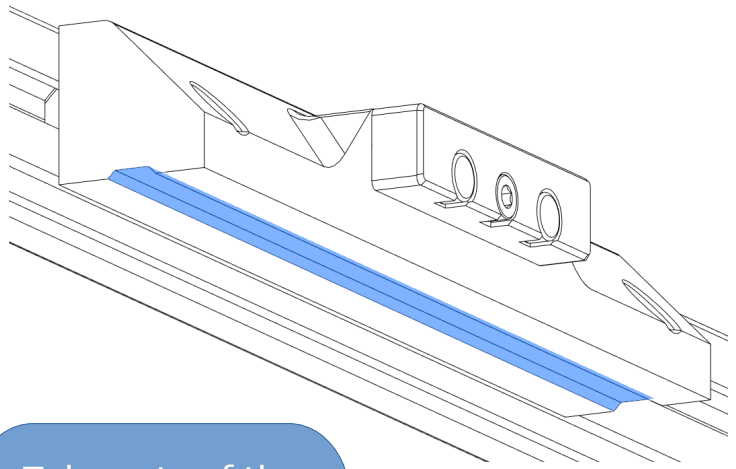


FINISH THE OTHER PIECES

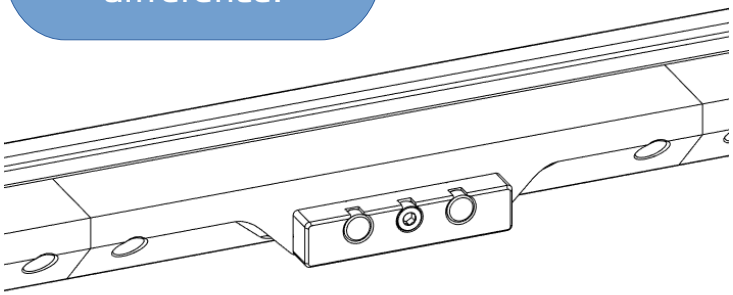
All other frame pieces are mirrored versions of the three assembled so far.

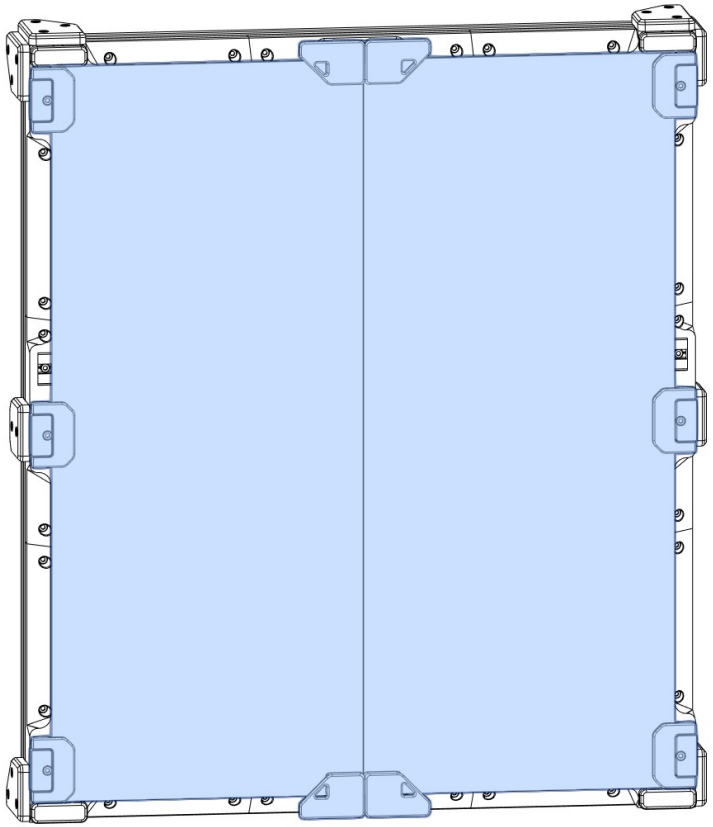
NOTE: The top three frames have a slot intended for the top of the modular dock to lock into. The bottom ones are flat.

NOTE: You should install your docks and lock them in place with the top pieces before proceeding with the build.



Take note of the difference!

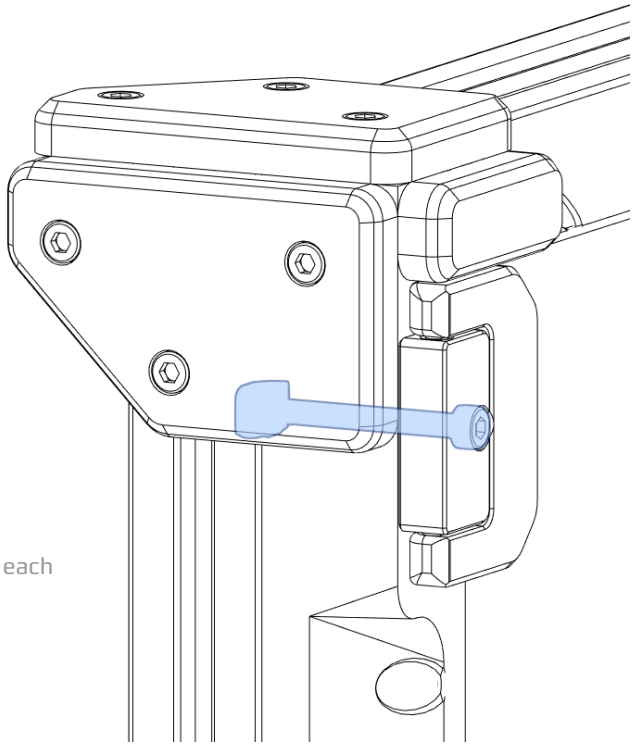




STOCK DOORS

Your excising doors should fall into place assuming you have them spaced evenly

NOTE: There is a few mm room for adjustments



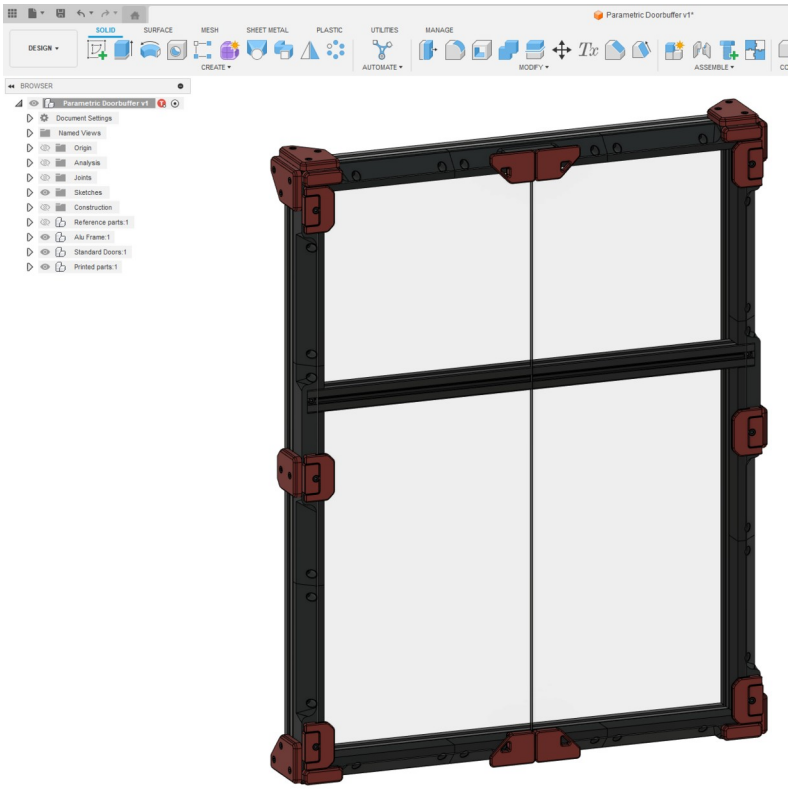
ATTACH HINGES

Hinges can now be attached with a M3x30mm and a T-NUT on each

NOTE: There is a few mm room for adjustments

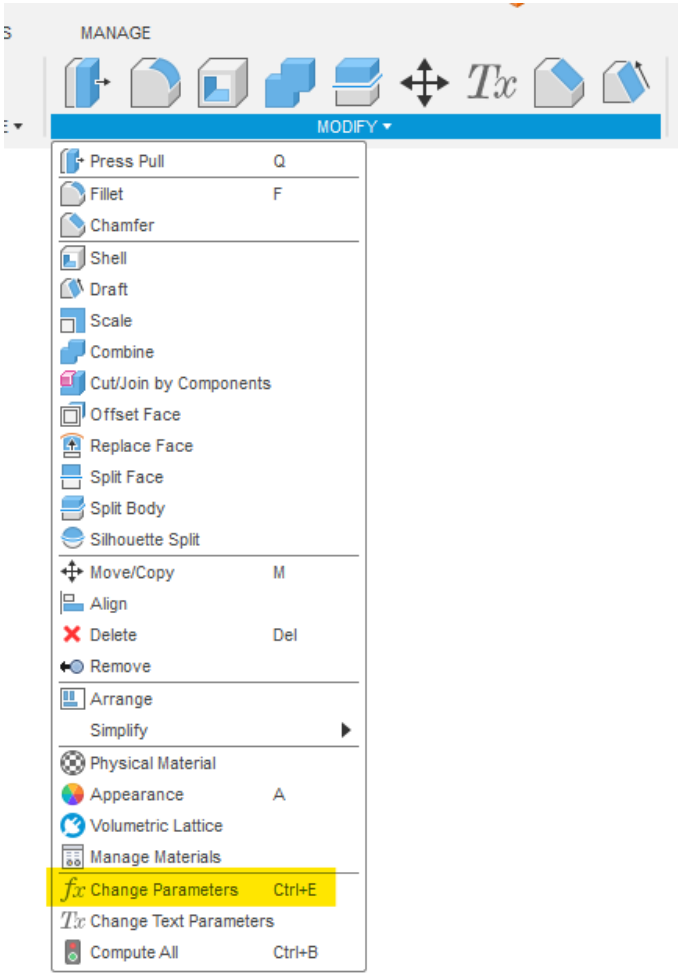
OPEN F3D FILE

Use Fusion360 and open the .f3d file from github.



OPEN PARAMETERS

Fusion's parameter window can be found under the modify drop-down menu at the top.
Or you can open it by pressing ctrl+e

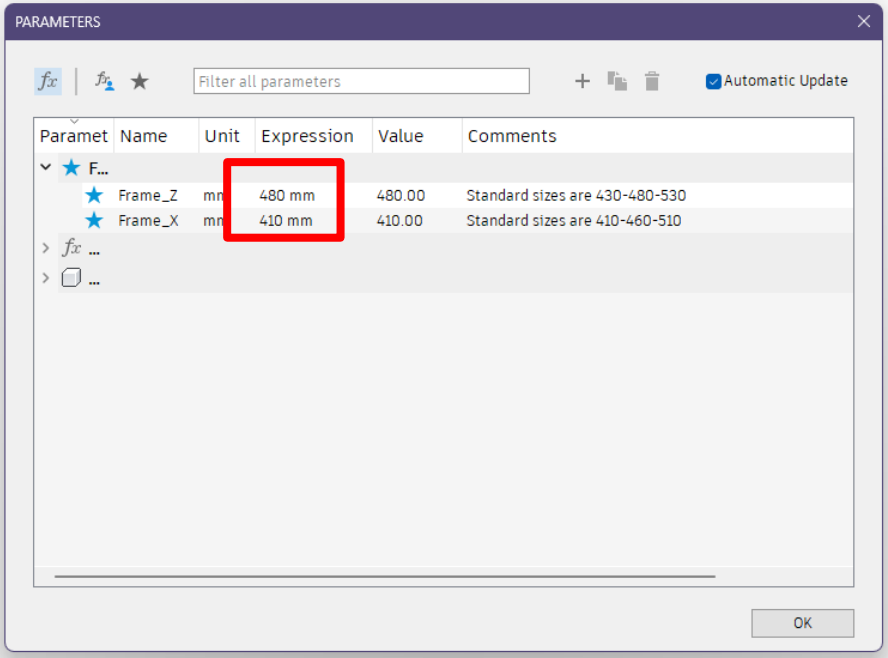


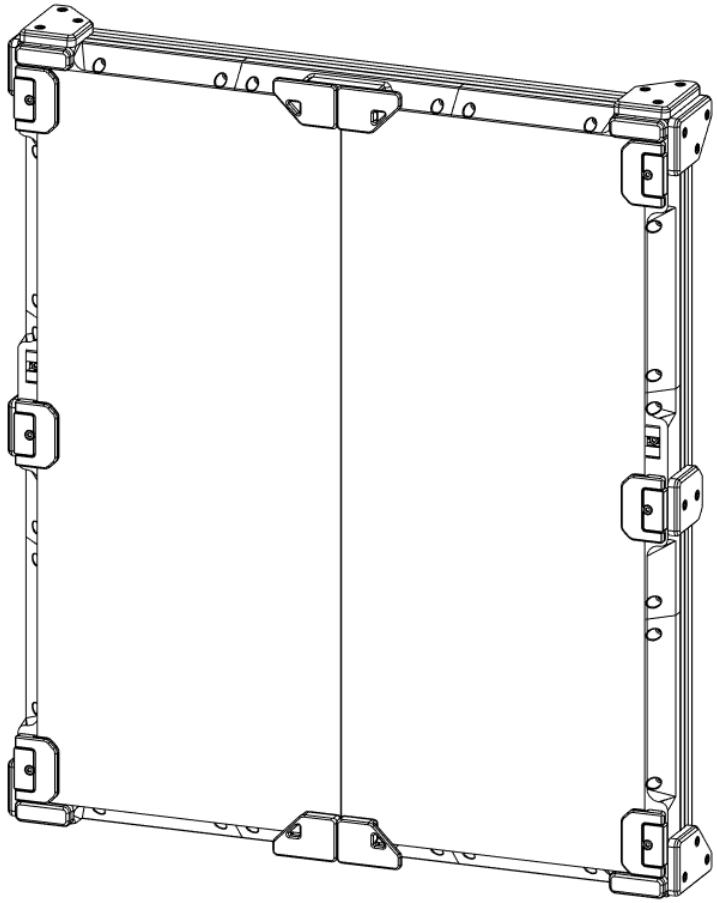
PARAMETERS

Edit the numbers inside the red box (under the expression column)

WARNING! Do not input lower numbers than a 250mm bed it will break stuff!

Default parameters	Frame_Z	Frame_X
250mm Bed	430mm	410mm
300mm Bed	480mm	460mm
350mm Bed	530mm	510mm

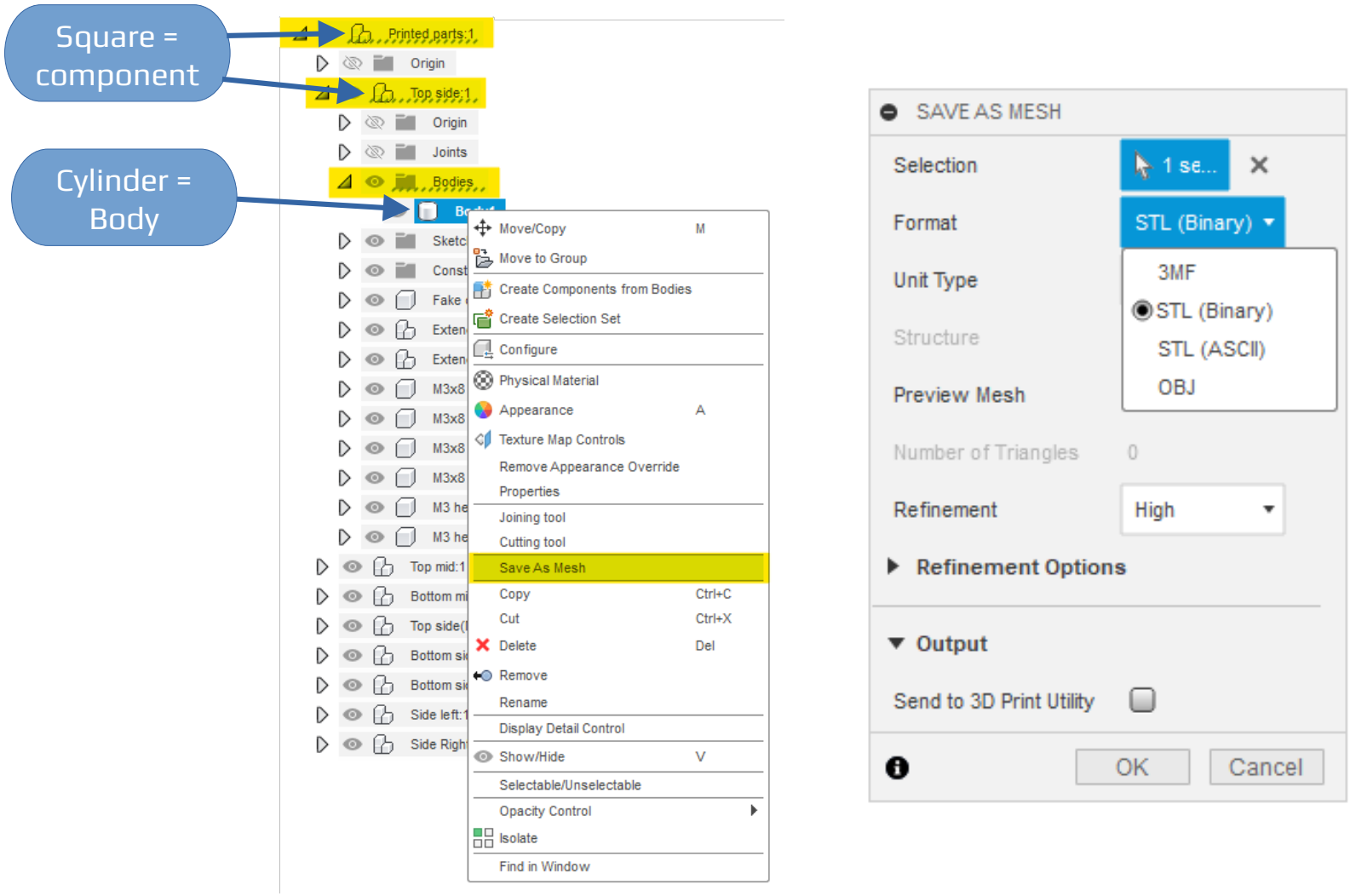




SAVE AS MESH

After editing your parameters you can quickly export any part by right-clicking and selecting "Save as mesh".

NOTE: If you right-click a entire component, you will save screw inserts and anything nested inside it into one big STL-file. You can save it as .3MF and keep nested parts as a multi body file. To avoid this only save bodies and not entire component!



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.

GitHub https://github.com/Stealthchanger/DoorBuffer

Enjoy your new front door

STEALTHCHANGER

GITHUB

github.com/StealthChanger

DISCORD

discord.gg/Mx9JKbt7