



MMU STORAGE ASSEMBLY

Version 2024-04-19

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INTRODUCTION

THE MMU STORAGE PROJECT

This project is meant to be used with an MMU like the ERCF (<https://github.com/EtteGit/EnragedRabbitProject>) and aims to add on seamlessly to VORON printers design wise, while keeping your filament dry.

Currently this project has alpha status and is not fully finished. Some prototypes are built, but not all features are present or fully fledged out.

For example future revision may use a heater to dry up already wet filament, therefore high temperature tolerant materials (e.g. polycarbonate instead of acrylic panels) are used. If the project deviates from that, it might switch to using acrylic panels.

ACKNOWLEDGMENTS

This project is heavily inspired by VORON DESIGN and even uses parts from the VORON TRIDENT project (<https://github.com/VoronDesign/Voron-Trident>), namely:

- STLs/Panels/bottom_panel_clip_x4.stl
- STLs/Panels/bottom_panel_hinge_x2.stl
- STLs/Panels/midspan_panel_clip_4mm_x7.stl
- STLs/Panels/corner_panel_clip_4mm_x8.stl
- STLs/Skirt/[a]_corner_baseplate_a_x2.stl
- STLs/Skirt/[a]_corner_baseplate_b_x2.stl
- STLs/Skirt/corner_a_x2.stl
- STLs/Skirt/corner_b_x2.stl

This project also heavily relies on the INTEGRATED AUTO-REWIND SPOOL HOLDER by VINCENT GROENHUIS (<https://www.thingiverse.com/thing:3781815>). Without this design, this project would not be possible!

Special Thanks to the VORON TEAM and VINCENT GROENHUIS for their awesome work!

INTRODUCTION

FILE NAMING

The STL file naming convention is the same as for VORON designs, namely:

PRIMARY COLOR

Example `z_joint_lower_x4.stl`

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

ACCENT COLOR

Example `[a]_tensioner_left.stl`

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

QUANTITY REQUIRED

Example `[a]_z_belt_clip_lower_x4.stl`

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

PART PRINTING GUIDELINES

The print guidelines are also the same as for VORON designs, namely:

3D PRINTING PROCESS

Fused Deposition Modeling (FDM)

INFILL TYPE

Grid, Gyroid, Honeycomb, Triangle or Cubic

MATERIAL

ABS

INFILL PERCENTAGE

Recommended: 40%

LAYER HEIGHT

Recommended: 0.2mm

WALL COUNT

Recommended: 4

EXTRUSION WIDTH

Recommended: Forced 0.4mm

SOLID TOP/BOTTOM LAYERS

Recommended: 5

INTRODUCTION

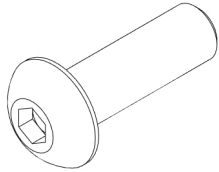
REPORTING ISSUES

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/Zergie/MMU-Filament-Storage/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

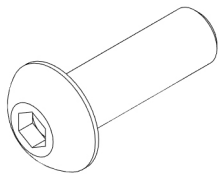
This manual is designed to be a simple reference manual. Building this project can be a complex endeavor and for that reason we recommend downloading the CAD files off our GitHub repository if there are sections you need clarification on. It can sometimes be easier to follow along when you have the whole assembly in front of you.

HARDWARE REFERENCE

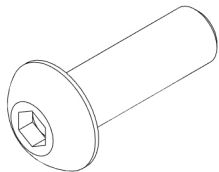


BUTTON HEAD CAP BOLT (BHCS)
Metric fastener with a domed shape head and hex drive. Most commonly found in locations where M5 fasteners are used.

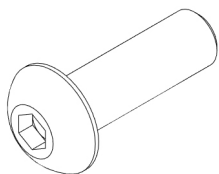
ISO 7380-1



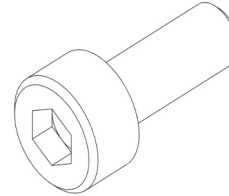
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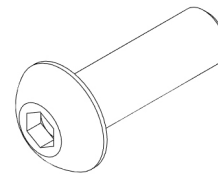


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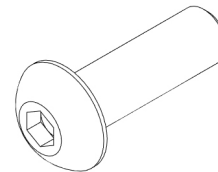


SOCKET HEAD CAP BOLT (SHCS)
Metric fastener with a cylindrical head and hex drive. The most common fastener used in this project.

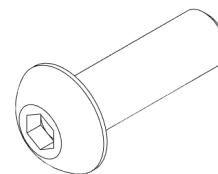
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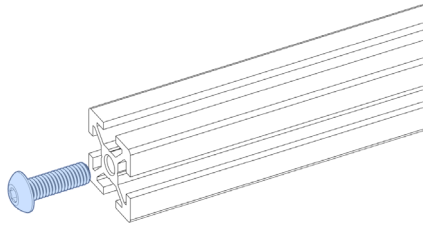


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HARDWARE REFERENCE



BLIND JOINT BASICS

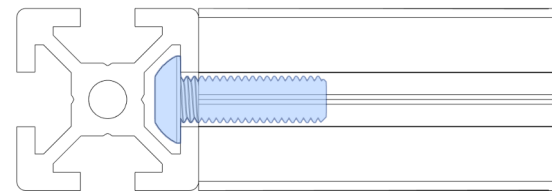
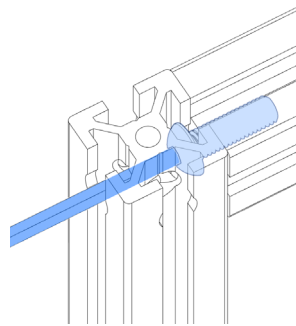
Blind Joints provide a cost effective and rigid assembly method.

The head of the BHCS is slid into the channel of another extrusion and securely fastened through a small access hole in the extrusion.

If you've never assembled one before we recommend you watch the linked guide.



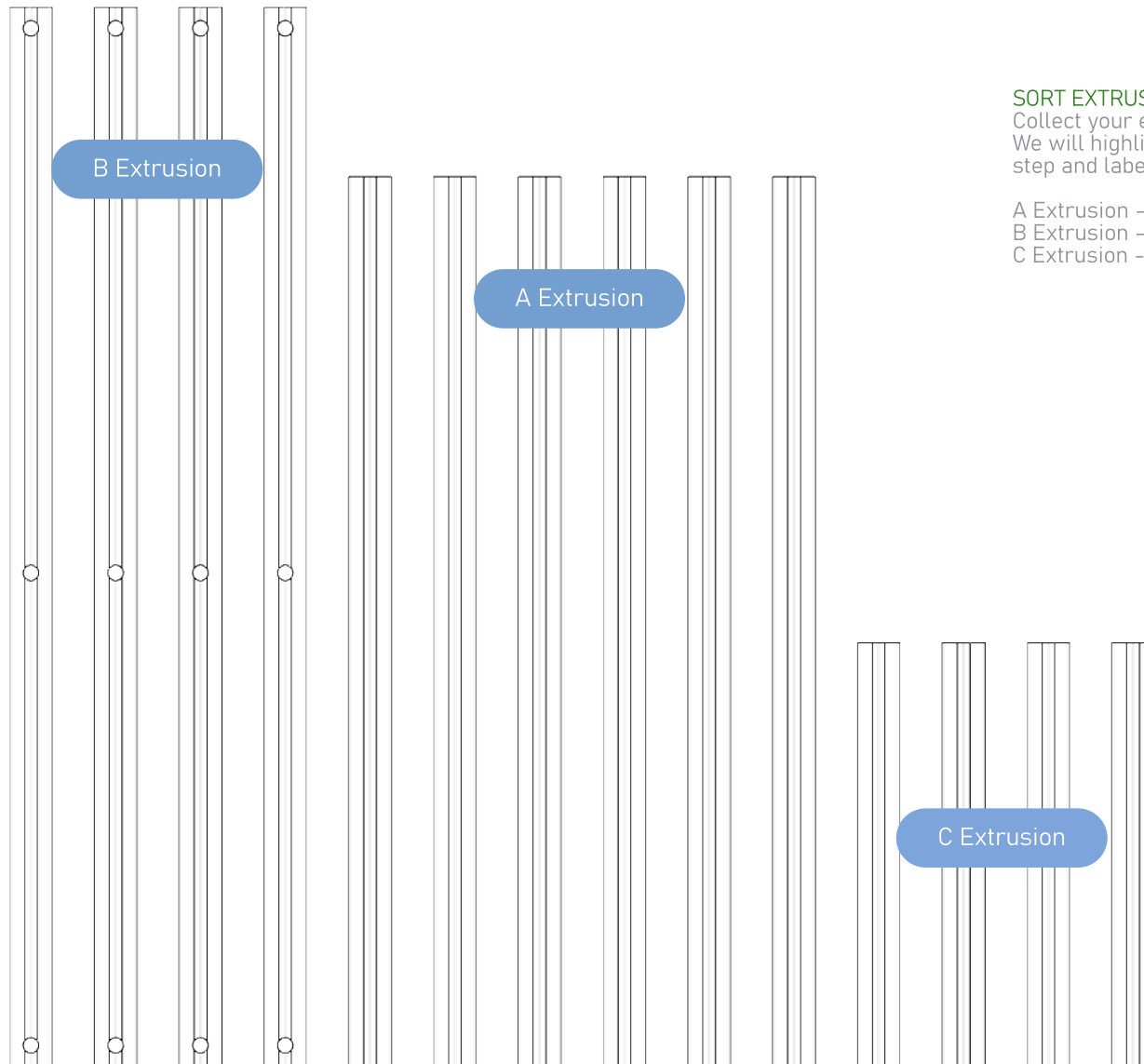
<https://voron.link/onjwmc>



FRAME



FRAME



SORT EXTRUSIONS

Collect your extrusions and sort them by length. We will highlight the extrusions used in each step and label them as shown on this page

A Extrusion – 420mm Length
B Extrusion – 500mm Length
C Extrusion – 200mm Length

FRAME

Blind Joint Plugs

M5x16 BHCS

BLIND JOINT PLUGS

To keep as much moisture out as possible, we need to plug all blind joints. These plugs do fit very tightly and need some force

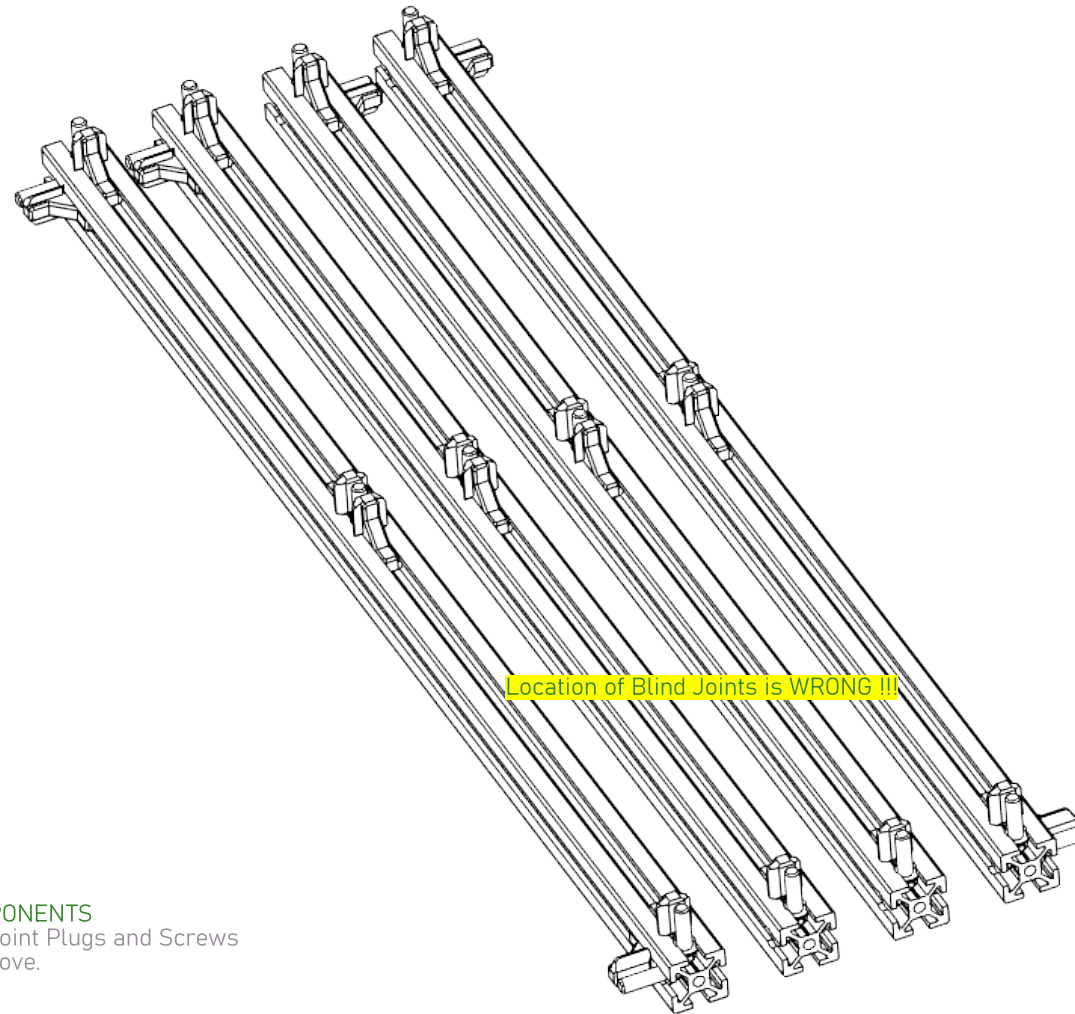
PREPARE B EXTRUSIONS

The extrusions are going to be used in this section. Prepare them as shown above. Mind the orientation of the center hole.

B Extrusion

ONLY TWO BLIND JOINT PLUGS
Mind to install only two Blind Joint Plugs here.

FRAME

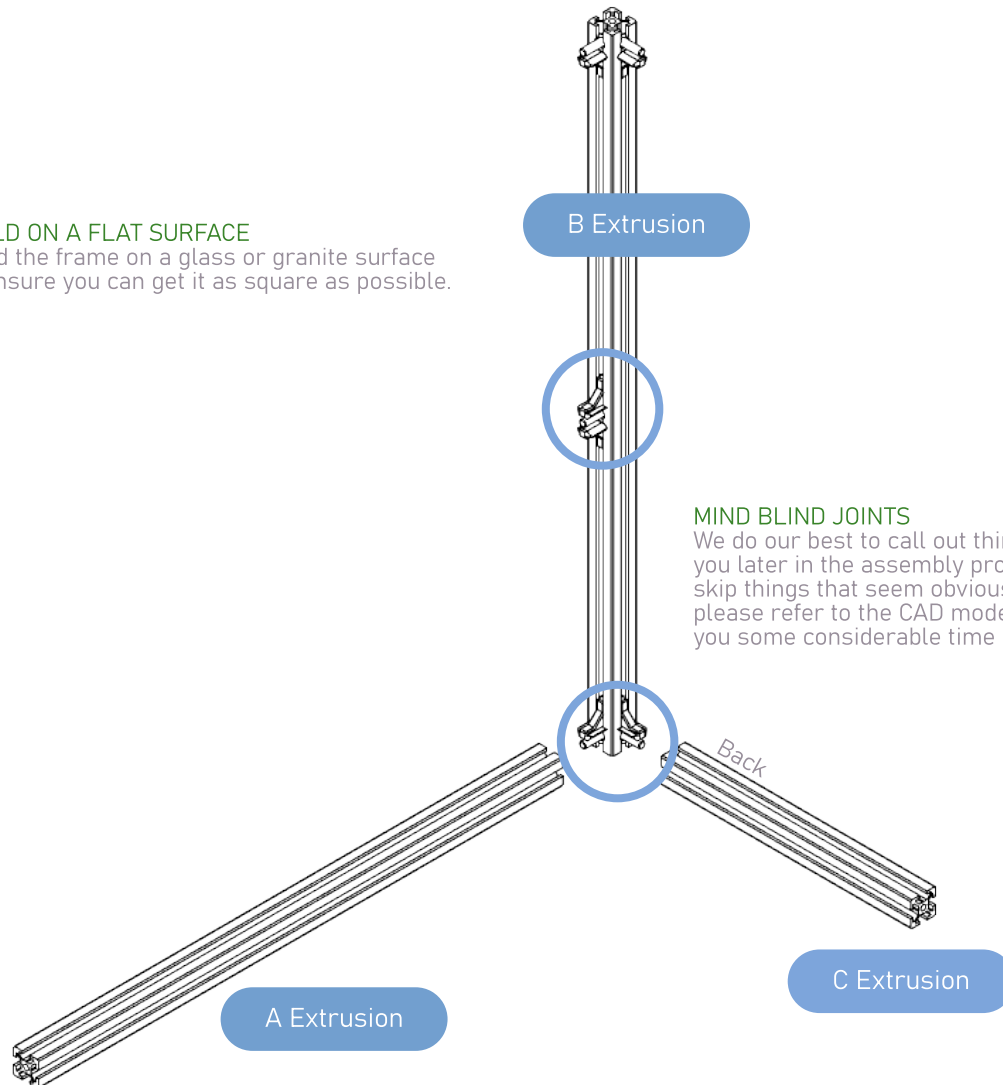


ALIGN COMPONENTS
Align Blind Joint Plugs and Screws
as shown above.

FRAME

BUILD ON A FLAT SURFACE

Build the frame on a glass or granite surface to ensure you can get it as square as possible.



MIND BLIND JOINTS

We do our best to call out things that may bite you later in the assembly process but may skip things that seem obvious to us. If in doubt please refer to the CAD model, it might save you some considerable time down the road.

FIRST BLIND JOINT

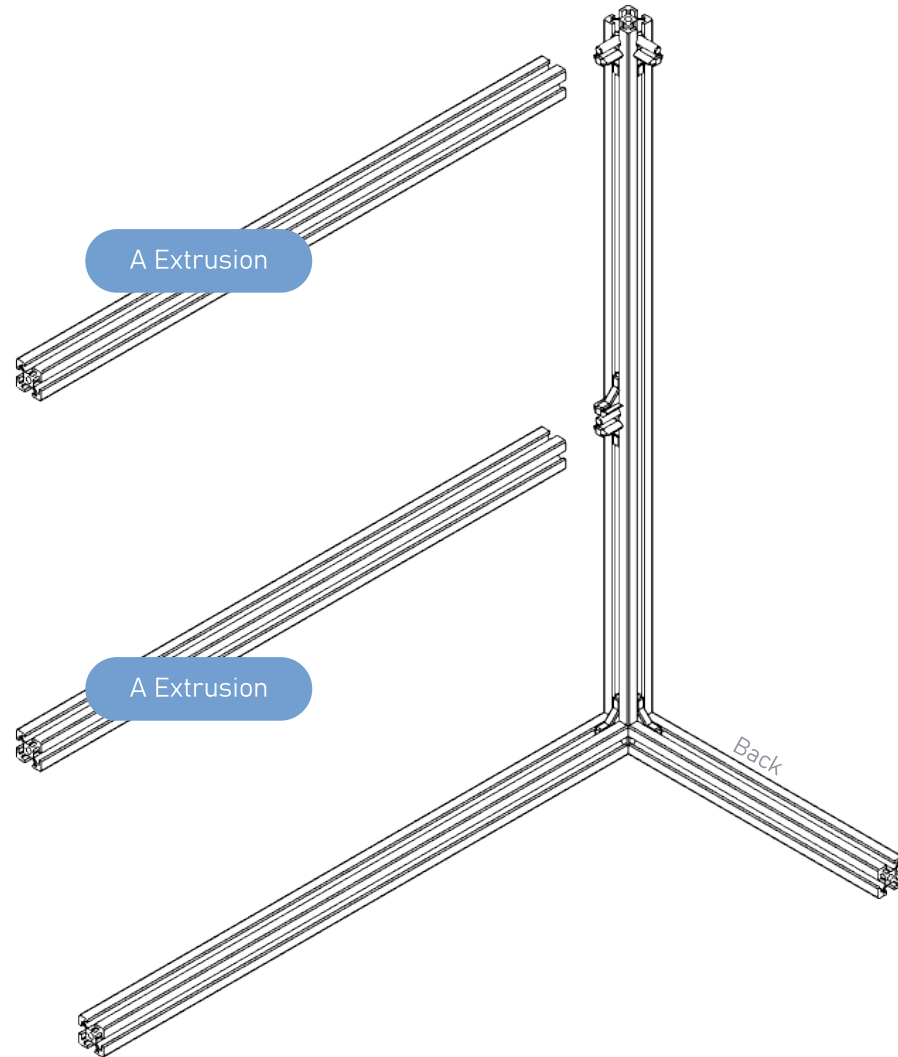
This design relies on blind joints to assemble the frame. We outlined the basics of blind joints on page 7.

If you've never assembled one before we recommend you watch the linked guide.

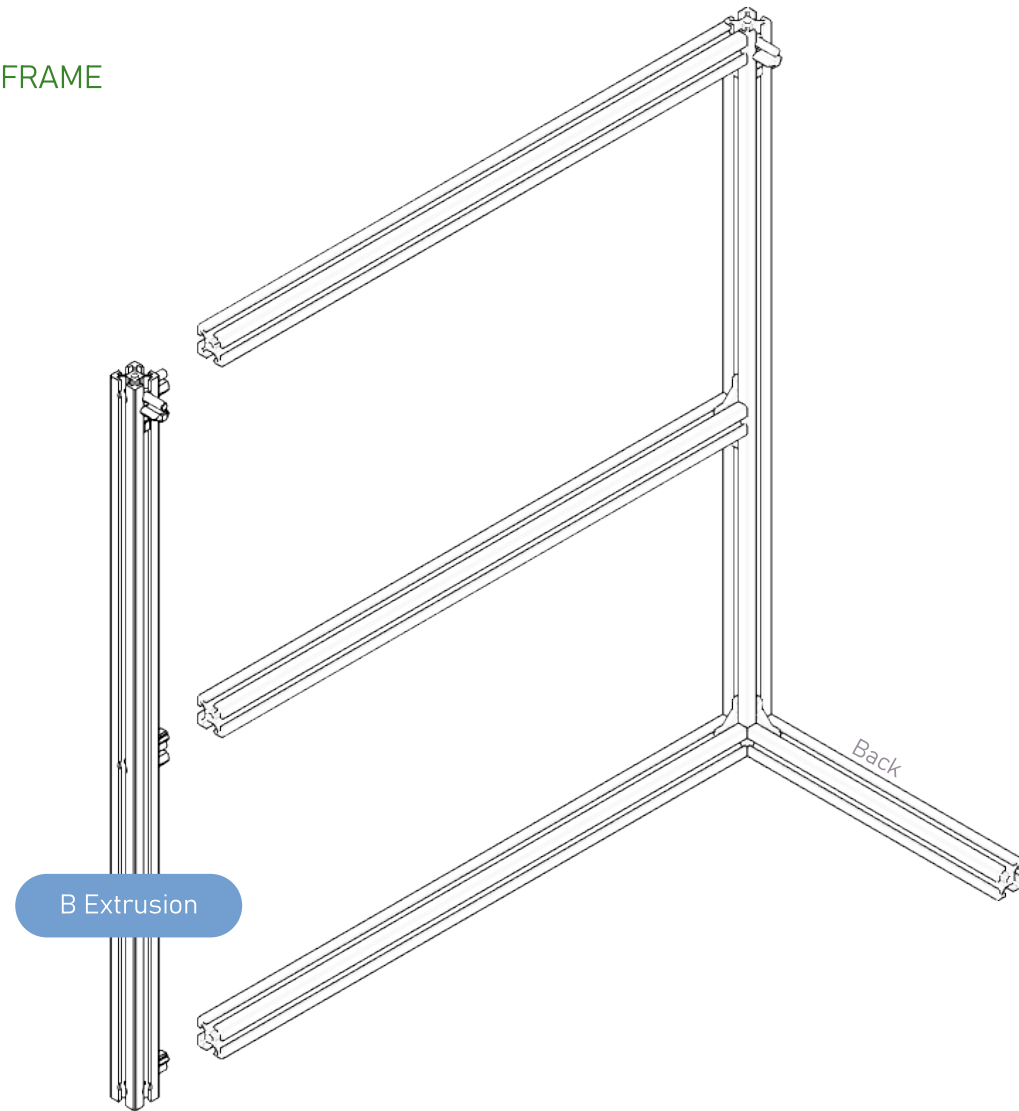


<https://voron.link/onjwmcd>

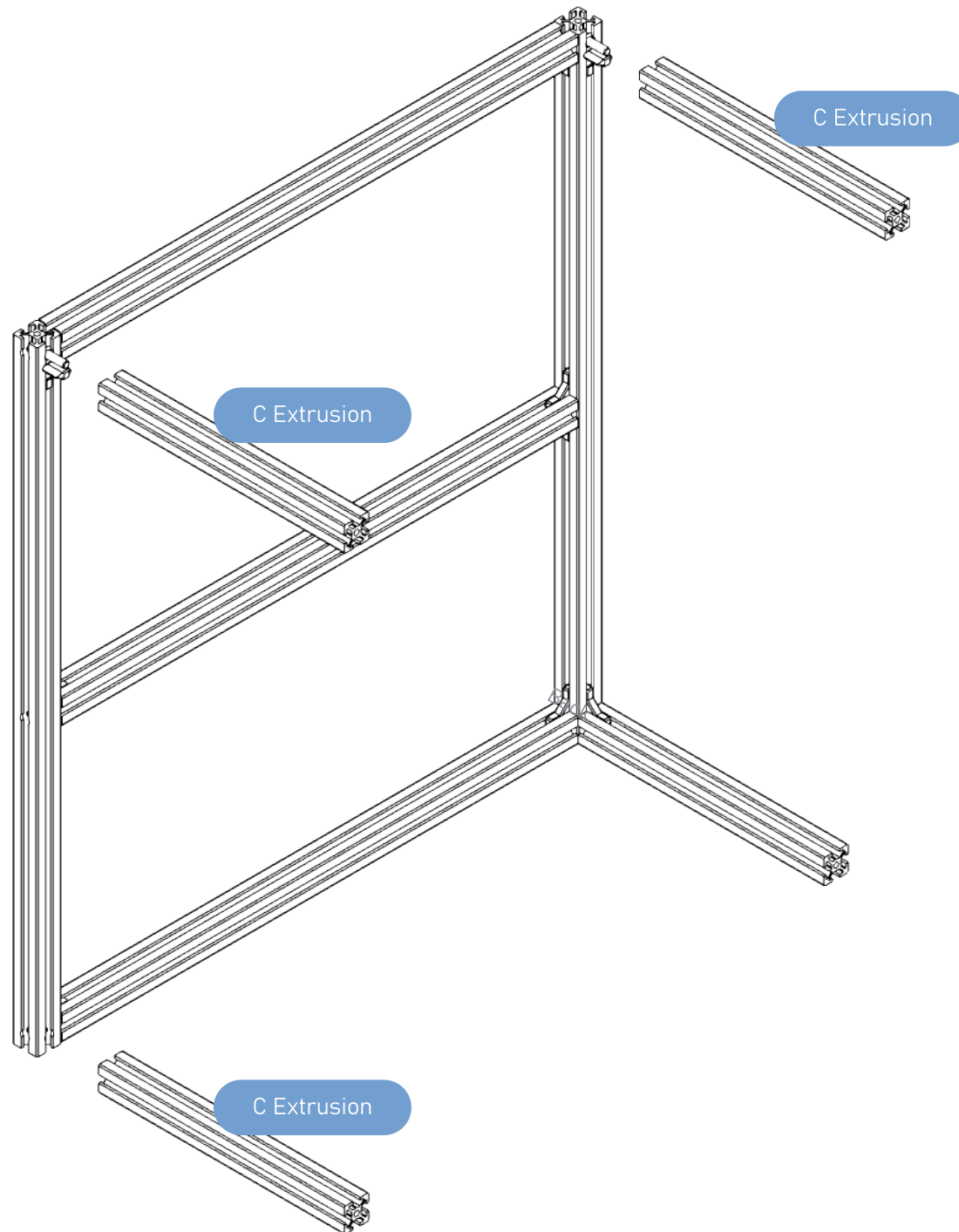
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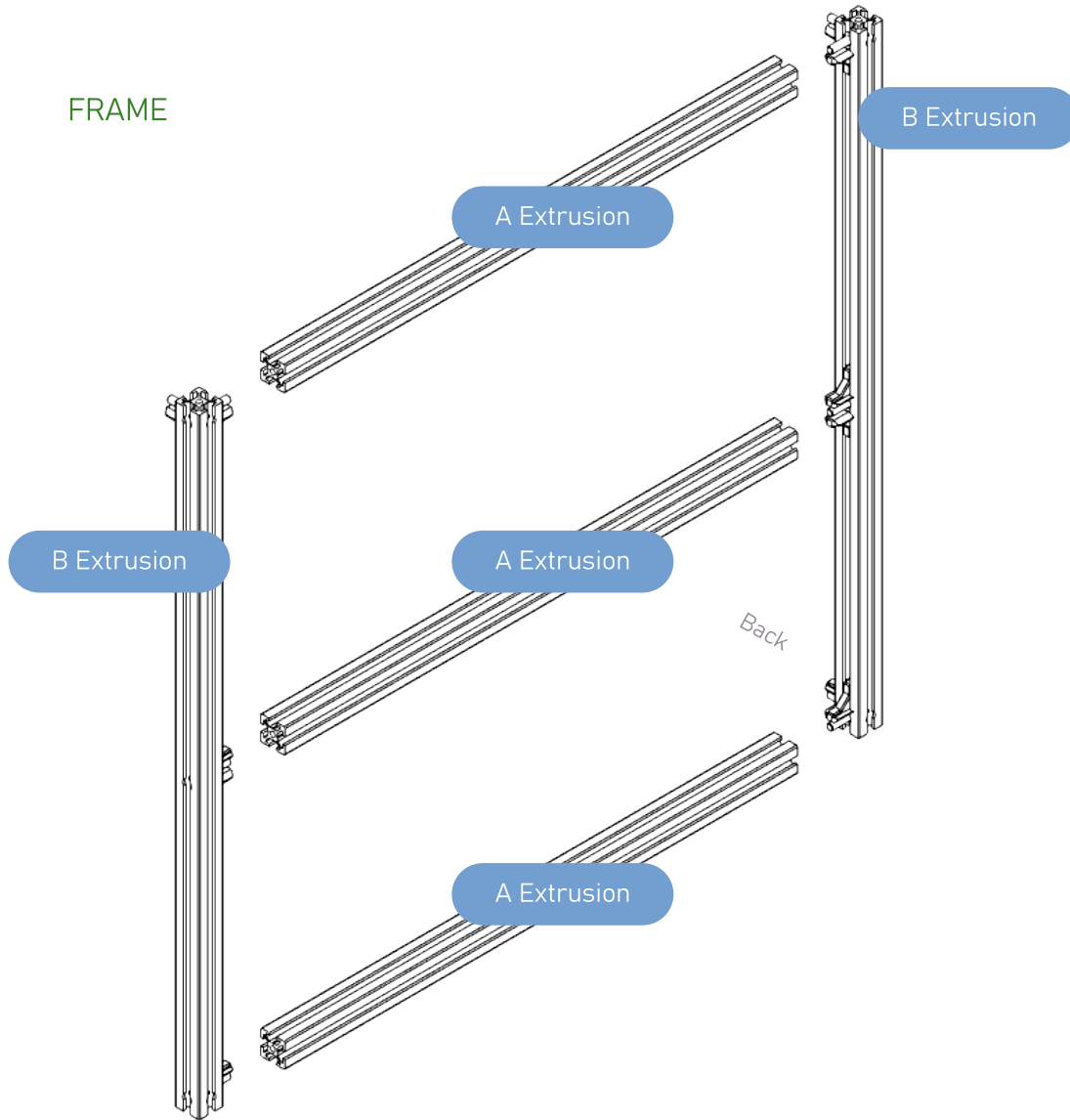
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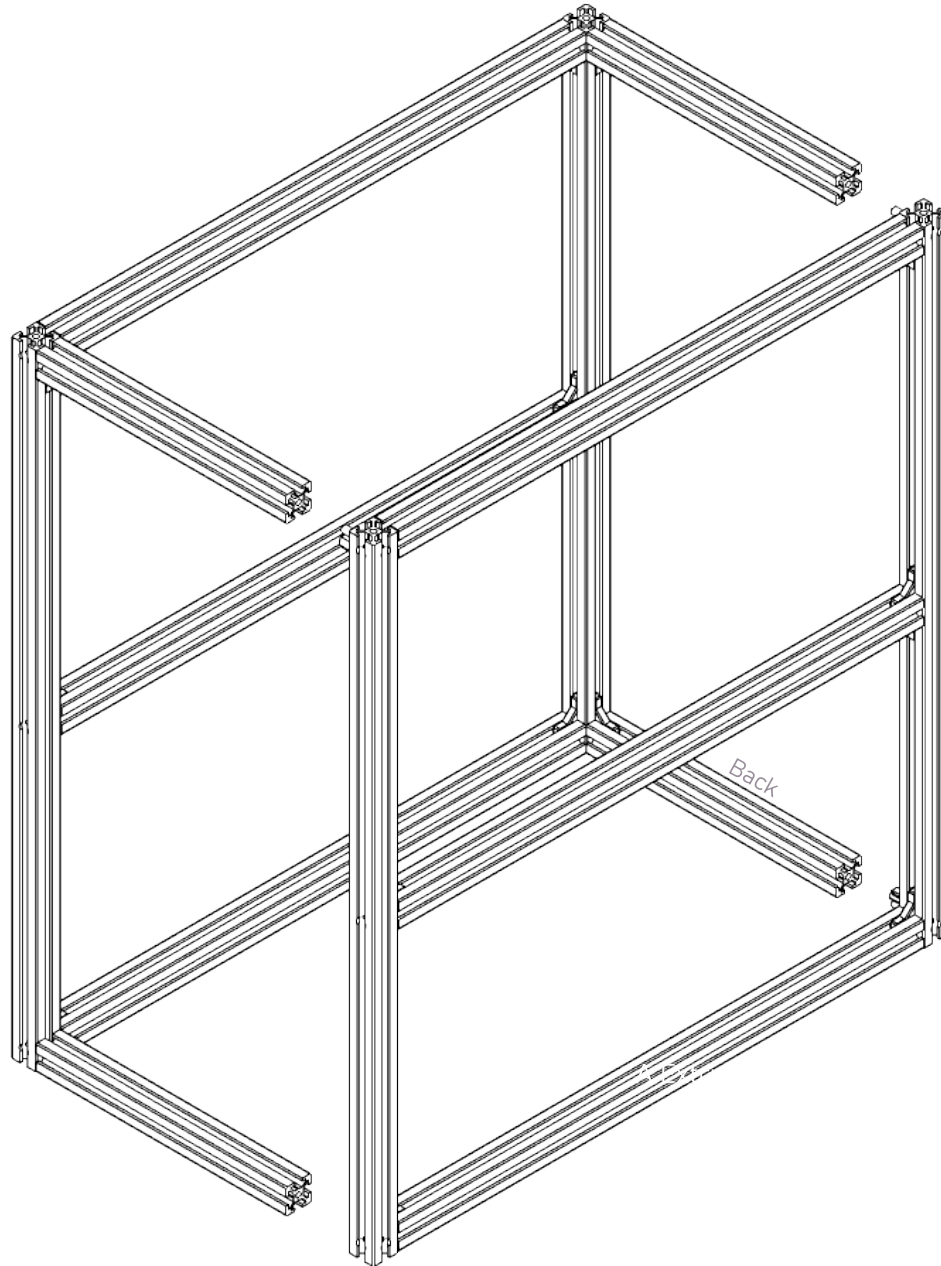
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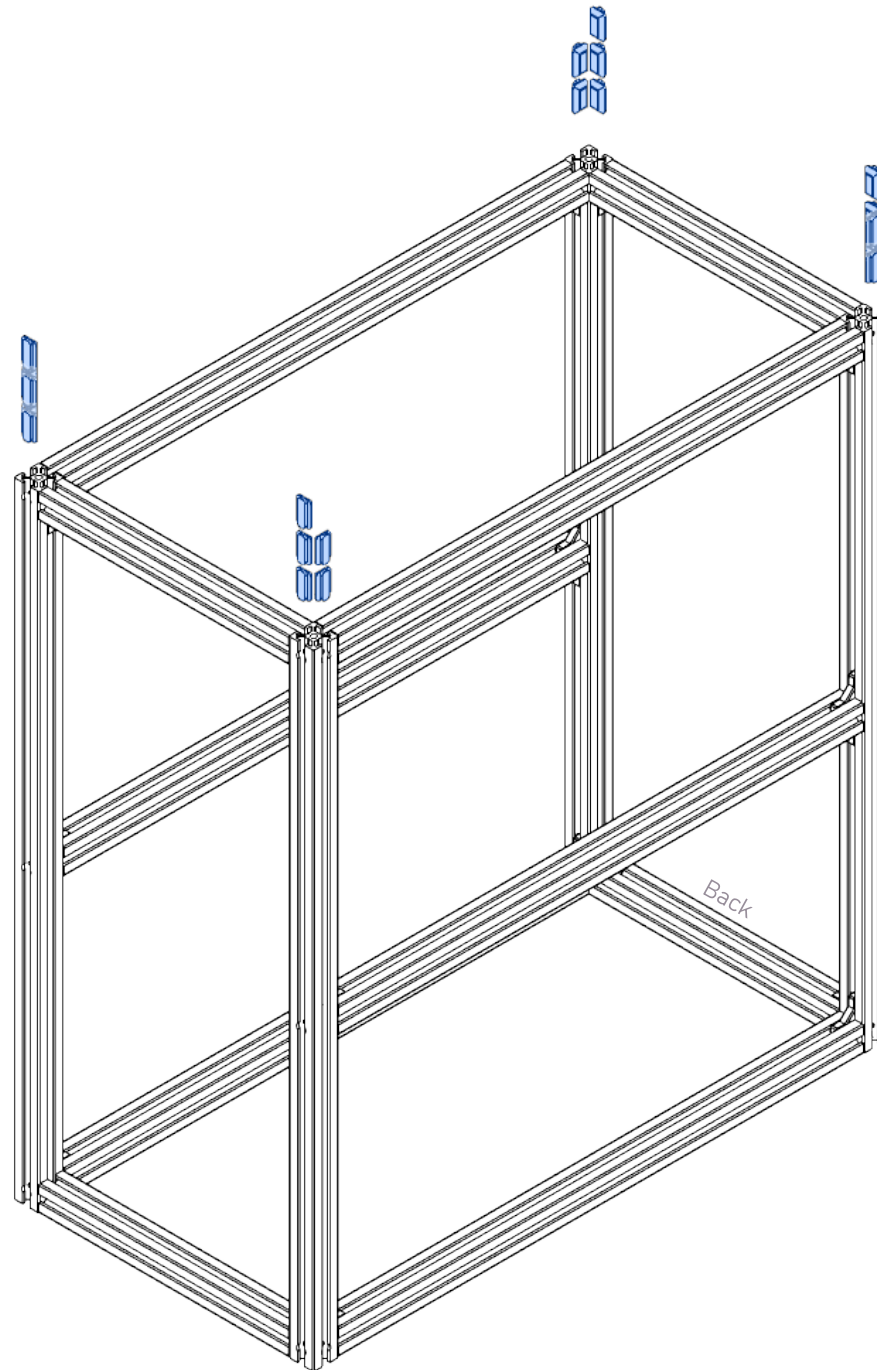
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FRAME



FRAME



COVER BLIND JOINT ACCESS

Cover up all Blind Joint screws with the Blind Joint Plates.

FRAME