

# BFI

## ASSEMBLY MANUAL



Everyone could use a little extra Beef

## STL FILE KEY

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The STL naming convention used for BFI/BZI is the same as that used for VORON printers:

### PRIMARY COLOR

**Example**  
**z\_drive\_main\_a\_x2.stl**

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

### ACCENT COLOR

**Example**  
**[a]\_z\_motor\_mount\_a\_x2.stl**

These files will have “[a]” to the front to mention that they are intended to be printed with an accent color.

### QUANTITY REQUIRED

**Example**  
**[a]\_z\_motor\_mount\_a\_x2.stl**

If a file ends with “\_x#”, that is telling you the quantity of that part required to build this system.

## PRINT GUIDELINES

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The recommended print settings are also those used for VORON printers:

### FDM MATERIAL

BFI was designed for ABS.  
Use other plastics at your own discretion.

### LAYER HEIGHT

Recommended : 0.2mm

### EXTRUSION WIDTH

Recommended : Forced 0.4mm

### INFILL PERCENTAGE

Recommended : 40%

### INFILL TYPE

Grid, Gyroid, Honeycomb,  
Triangle, Cubic, Adaptive Cubic.

### WALL COUNT

Recommended : 4

### SOLID TOP/BOTTOM LAYERS

Recommended : 5

### SUPPORTS REQUIRED

Nah.

## HOW TO GET HELP

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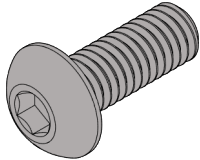
### DISCO? OH ...DISCORD

If you need assistance with your BFI assembly, you can head over to the [Voron Discord server](#) and post your questions (typically in the `#voronuser_mods` channel).



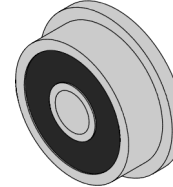
### GIT GUD

If you want to keep up with the latest updates (or if you come up with a cool usermod) for BFI, [the GitHub page](#) is the only source for the latest files.

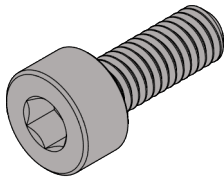
**BUTTON HEAD CAP SCREW (BHCS)**

Metric fastener with a domed shaped head and hex drive.

**ISO 7380-1**

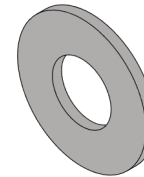
**F695 BEARING**

A ball bearing with a flange used in various gantry locations.

**SOCKET HEAD CAP SCREW (SHCS)**

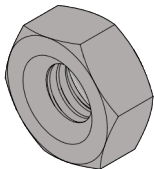
Metric fastener with a cylindrical head and hex drive. The most common fastener used on the Voron.

**ISO 4762 / DIN 912**

**M5 SHIMS**

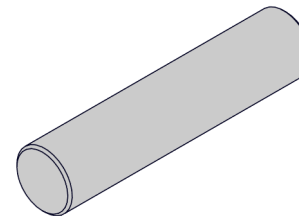
Not to be confused with stamped washers. These are used in all M5 call-out locations in this manual.

**5x7x1 DIN 988**

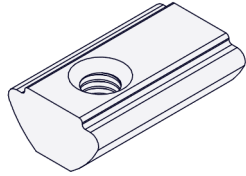
**HEX NUT**

Hex nuts couple with bolts to create tight, secure joints. M5 will be the size used in this guide.

**ISO 4032 / DIN 934**

**5MM PIN**

Steel shaft, 5mm in diameter

**DROP-IN 2020 T-NUT**

Nut that can be inserted into the slot of a 2020 aluminum profile. Used in both M3 and M5 variants throughout this guide. Often also called “roll-in T-nut”.

**Hardware Used**

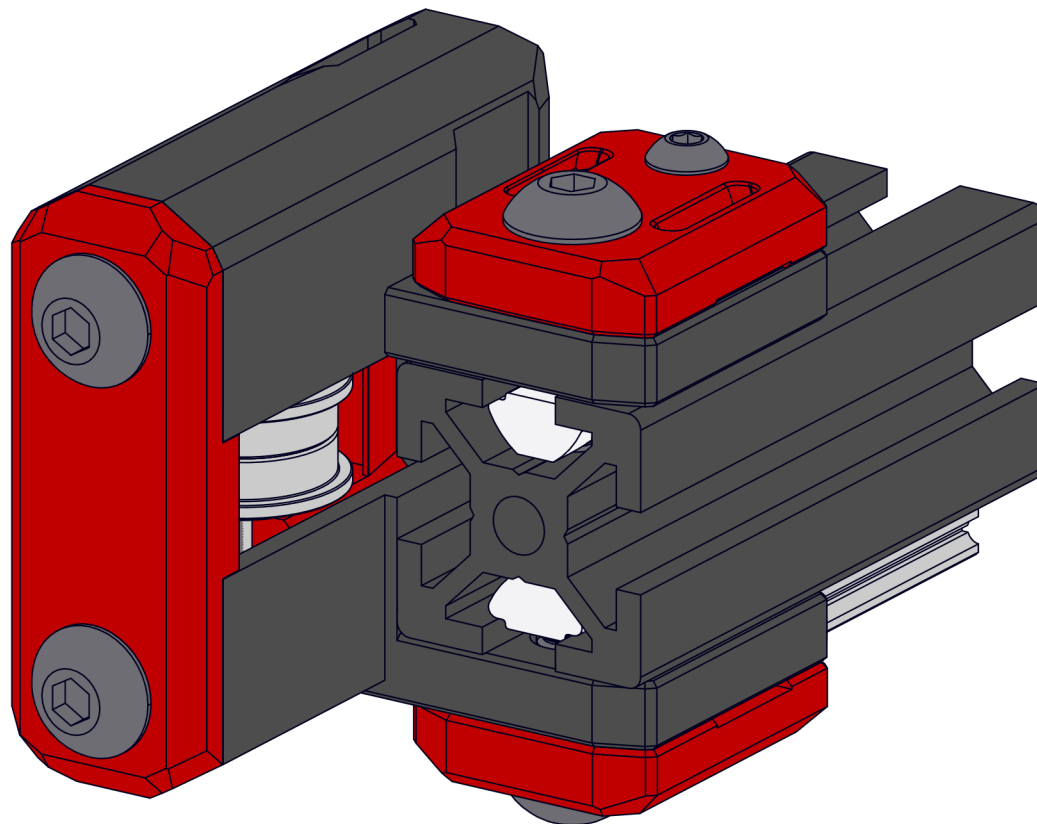
Look for the **RED** call outs to mention the various hardware used

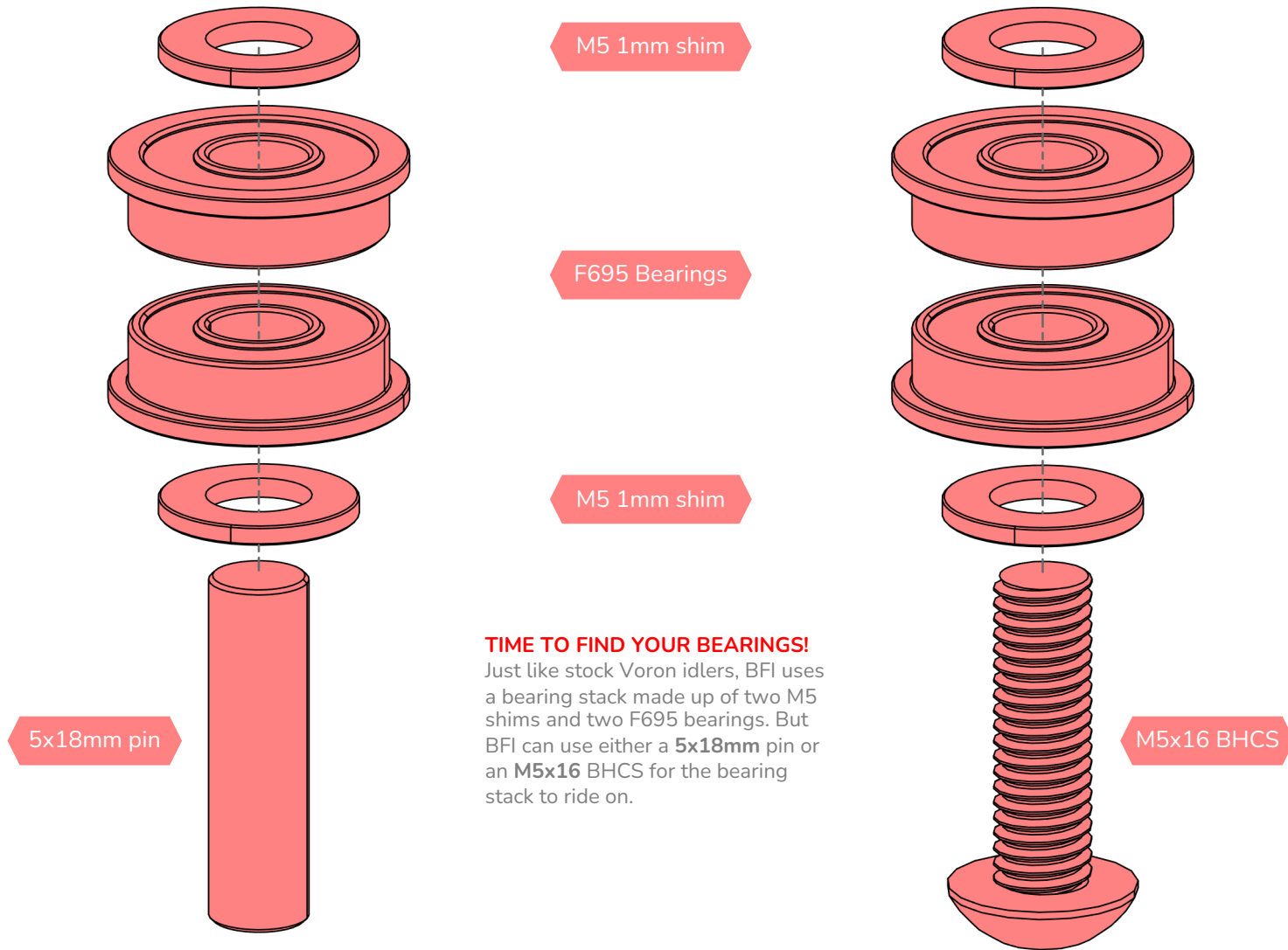
**TRIDENT**

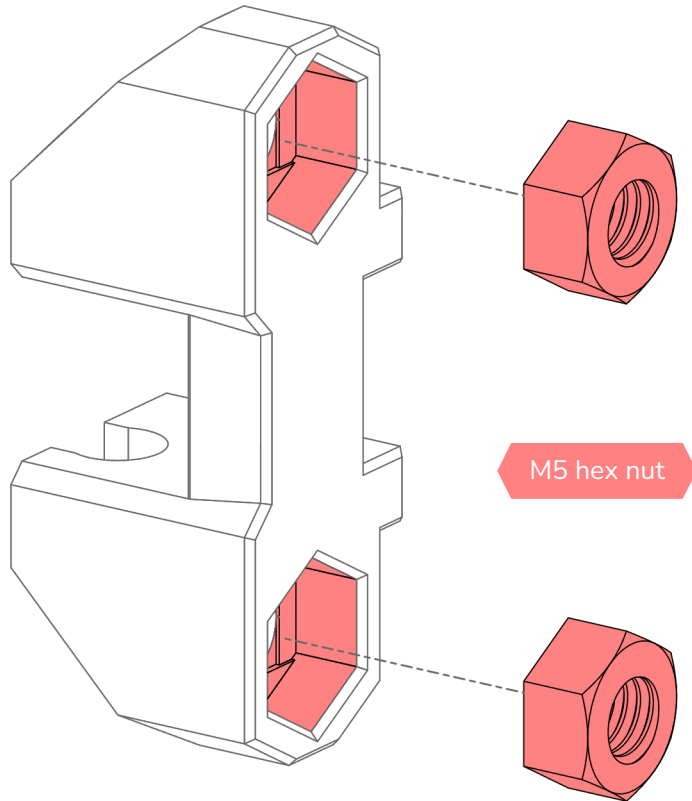
This logo denotes information that is specific to Voron Trident.

**ATTENTION BUBBLE**

This logo denotes steps that are common areas that mistakes can occur.







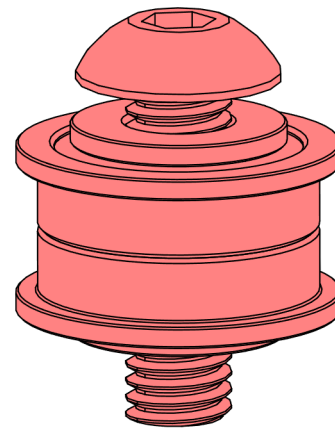
M5 hex nut

**HOLD ONTO YOUR NUTS!**

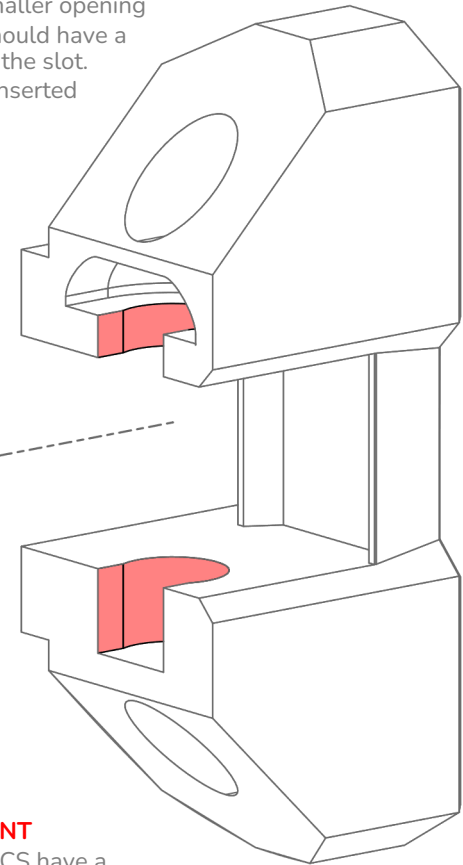
M5 hex nuts get pressed into these recesses in the back of the main body. Belt tension should prevent them from falling out once installed.

**SNAP FIT!**

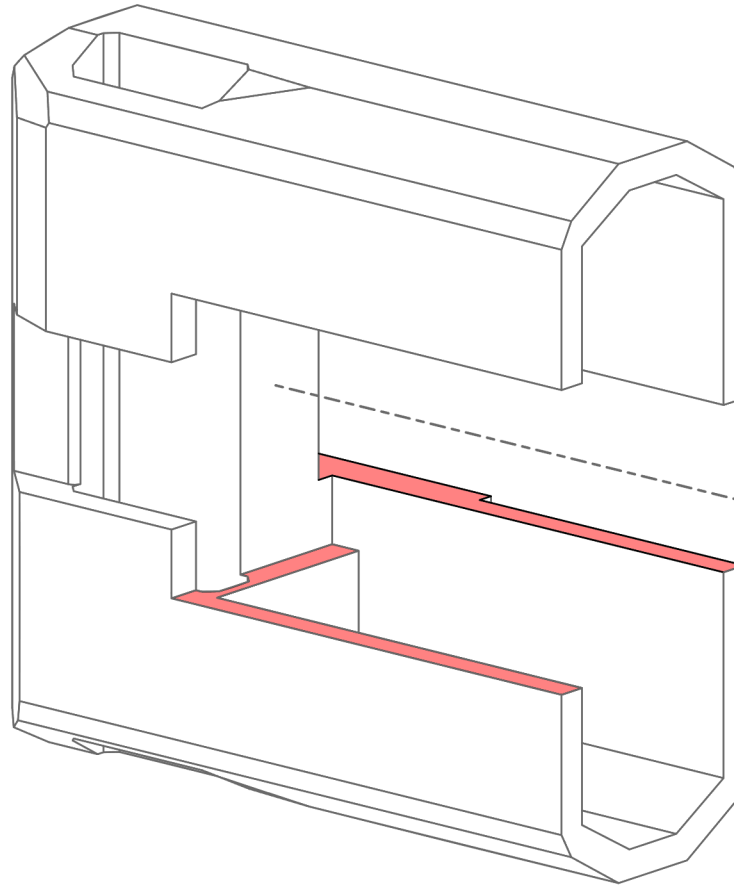
The printed part has a slightly smaller opening than the pin/screw diameter. It should have a slight snap fit when pressed into the slot. If using the BHCS it can only be inserted in one certain orientation.

**BHCS FITMENT**

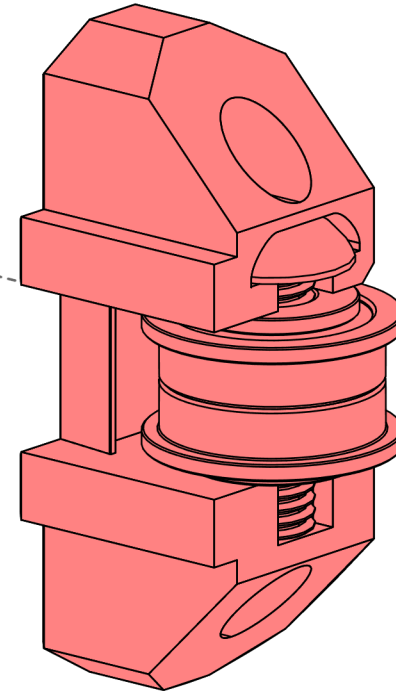
Some M5 BHCS have a slightly larger head and don't fit properly. This is a known issue and should be fixed in a future version of BFI.



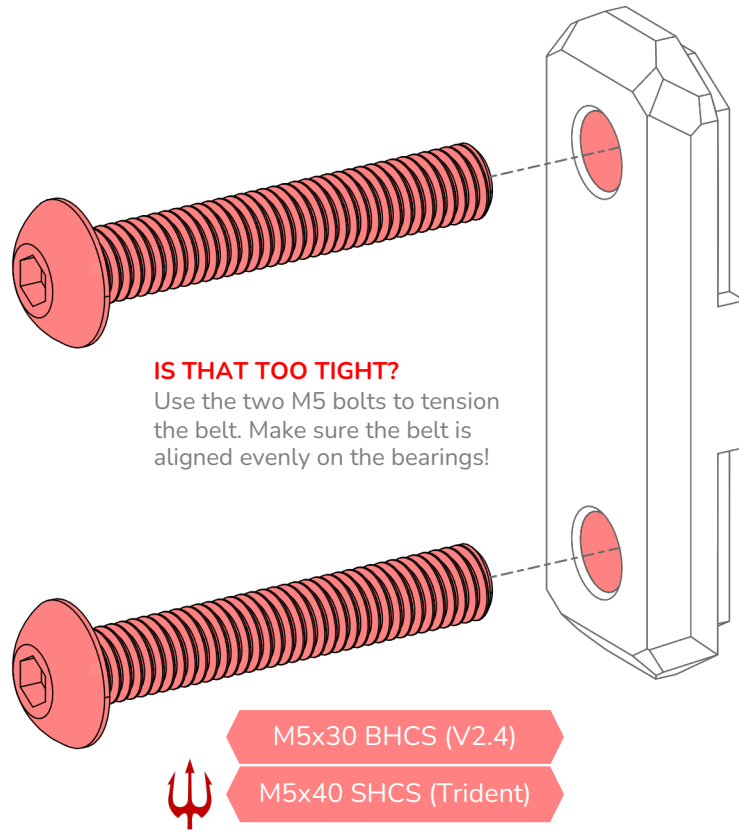


**CARRIER INSTALLATION**

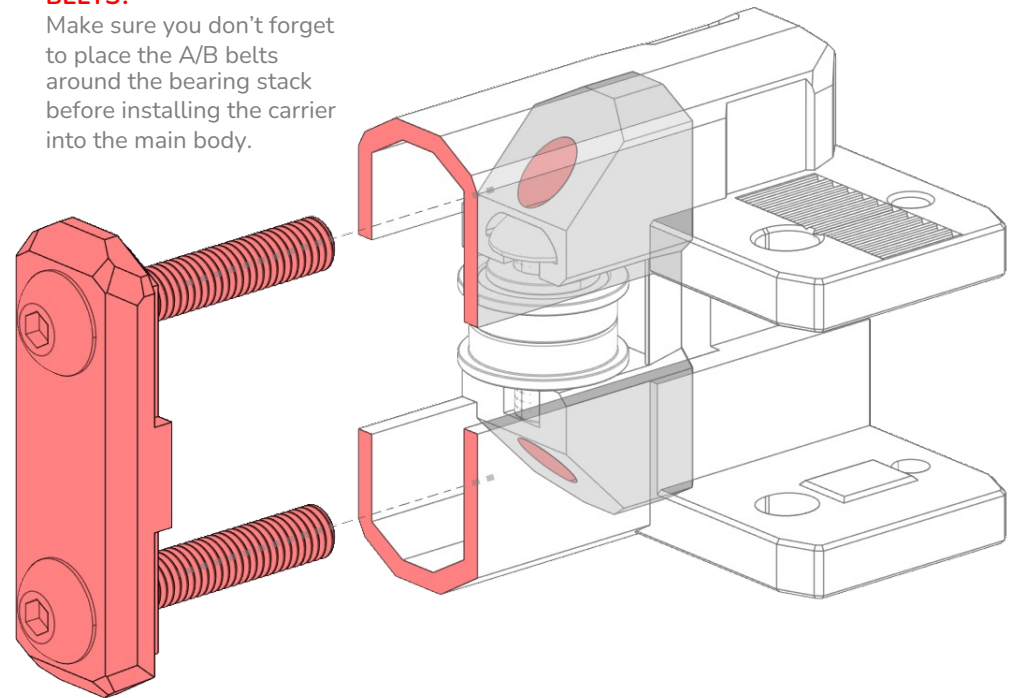
The carrier can only fit in the housing a specific way. The slots on the side are different sizes; make sure to line up the correct side of the carrier with the body.

**WHERE'S THE TRIDENT?!**

Even though this manual is only showing the V2.4 BFI installation, the assembly process and installation process is nearly identical, except for the Z belts on the V2.4.

**BELTS?**

Make sure you don't forget to place the A/B belts around the bearing stack before installing the carrier into the main body.





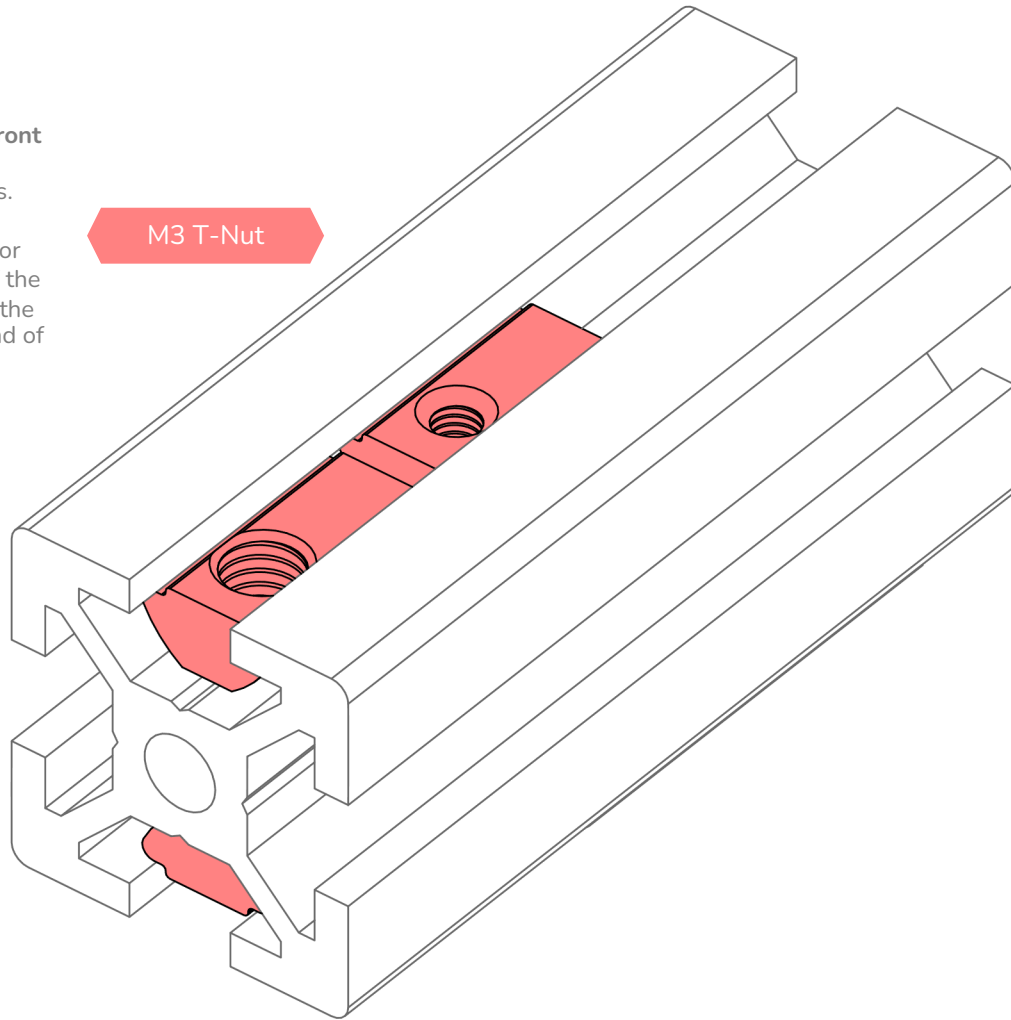
### V2.4 T-NUTS

BFI differs from the mounting of stock front idlers on V2.4 by using an M5x16 and an M3x16 on top instead of a pair of M5x16s.

This is to allow the use of the same STL for both A and B housings. The placement of the T-Nuts is the same on top and bottom of the extrusion (M5 T-nut closer to the open end of the extrusion).

M3 T-Nut

M5 T-Nut

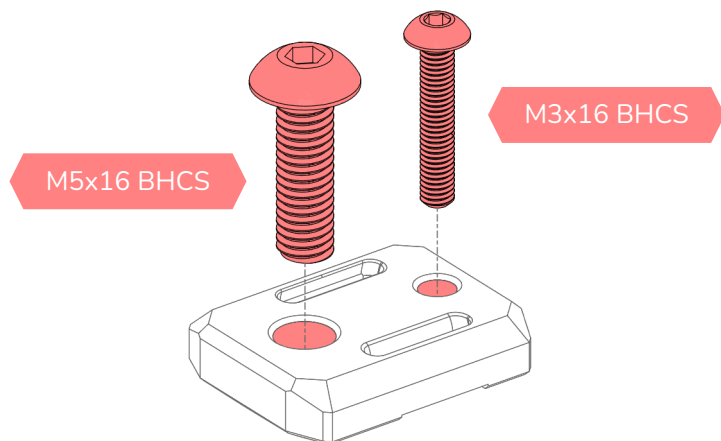


### TRIDENT INSTALL

Trident's version of BFI mounts using four M5x10 BHCS into a pair of M5 T-Nuts on the top and bottom of the extrusion instead of an M5 and an M3, just like the stock Trident front idlers.

**Z BELTS?**

The top Z belt clamps are held down with an M5x16 BHCS and an M3x16 BHCS. The same part is used on the bottom for stock Z joints on a V2.4. **If you are using non-stock Z joints** (i.e. GE5C, Rockem Sockem, Rigid, etc.), **it is recommended to use the bottom Z belt clamps that were included with the specific Z joint you are using.**

**WHAT ABOUT TRIDENT?**

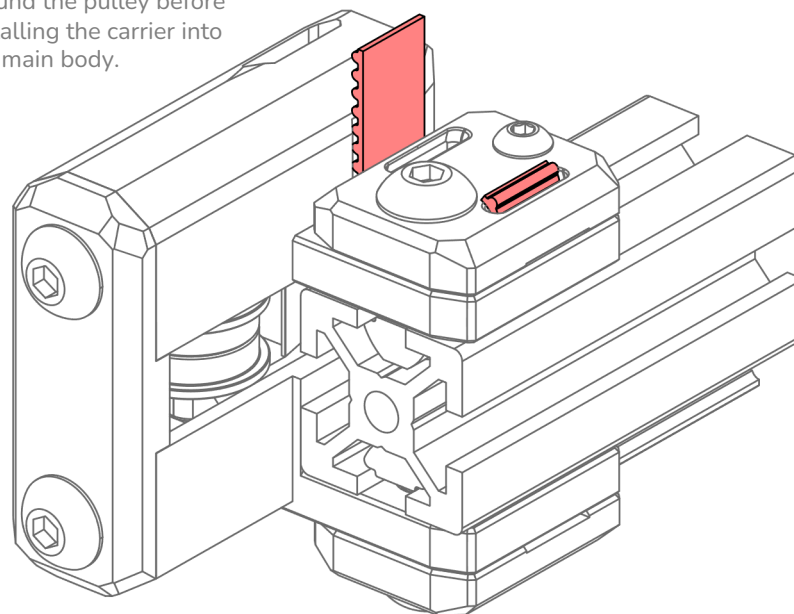
BFI for Trident uses two M5x10 BHCS on top, two more on bottom (on each side) but obviously Trident has no Z belt clamps to worry about. Unlike V2.4, there is no mounting hardware change from stock front idlers for Trident.

**CROOKED Z BELTS??**

Double check where you have installed your Z belts. The belt should be up against the body of the idler before it goes under the clamp; the belt should only go through the “mouth” on the outer edge of the printer.

**BELTS?**

Make sure you don't forget to place the A/B belts around the pulley before installing the carrier into the main body.



# BFI

