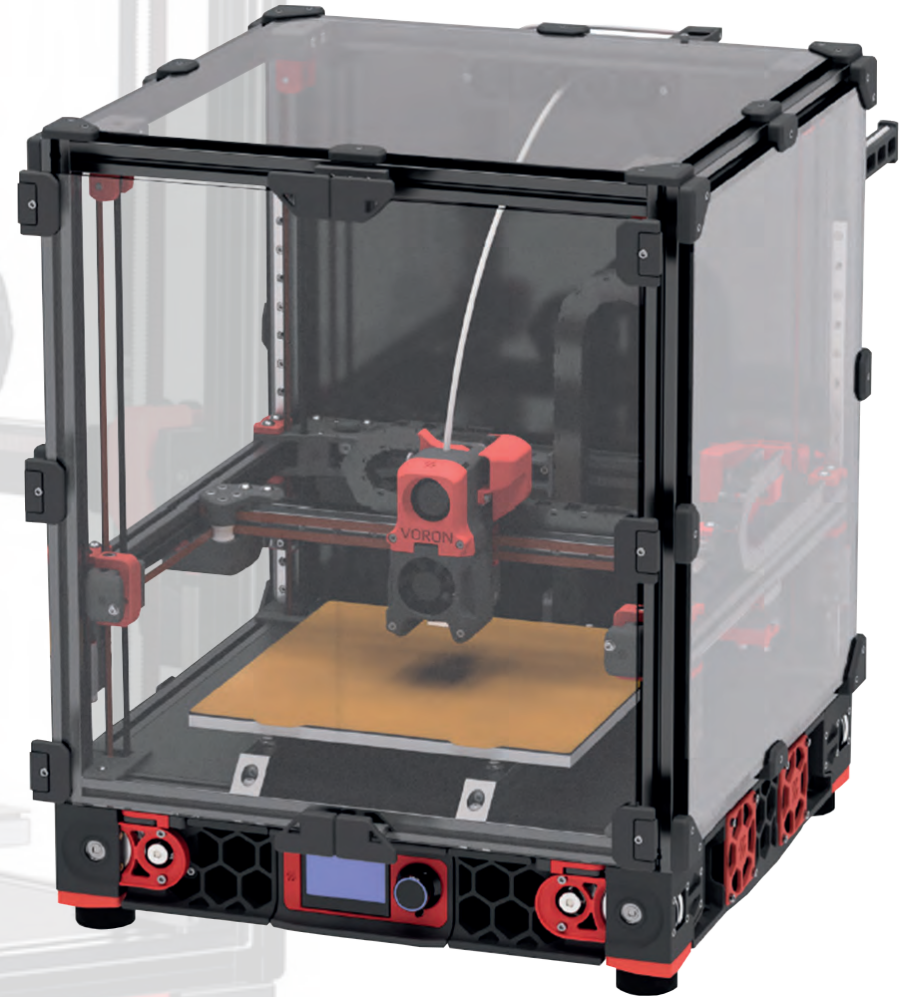




VORON 2.4

KIT 5

- GANTRY FRAME
- RAIL





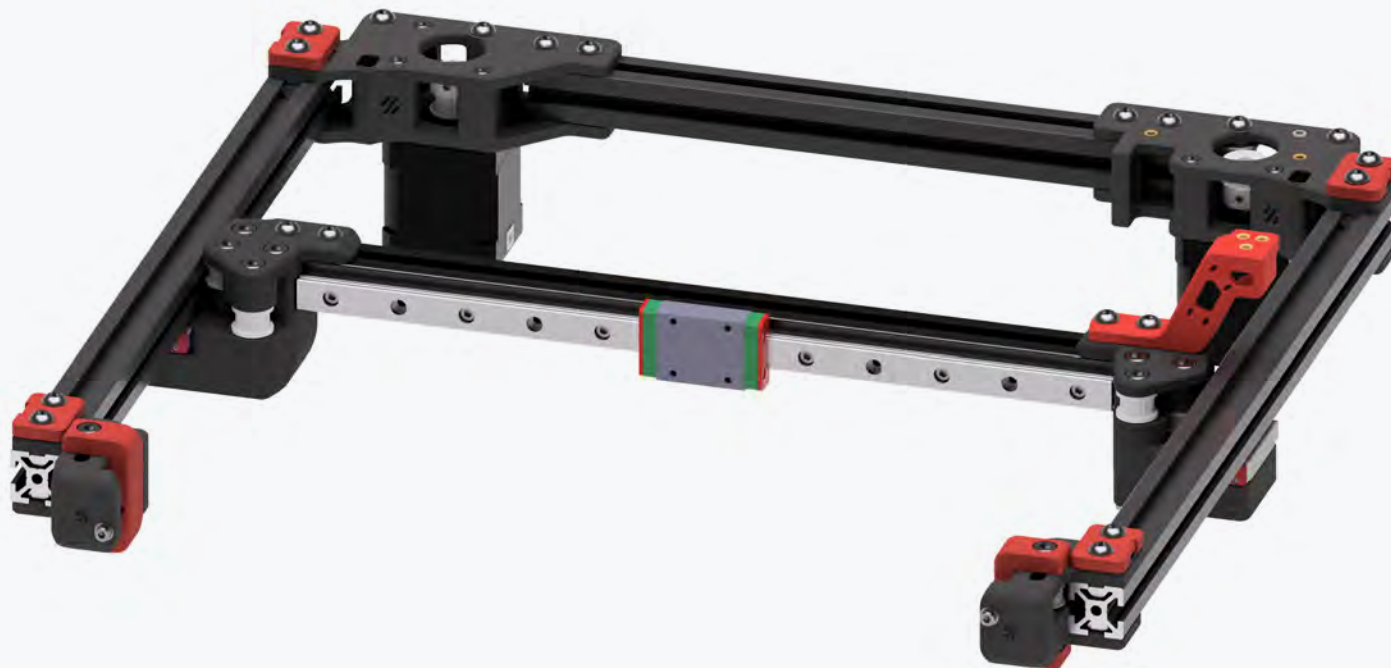
Before you begin on your journey, a word of caution.

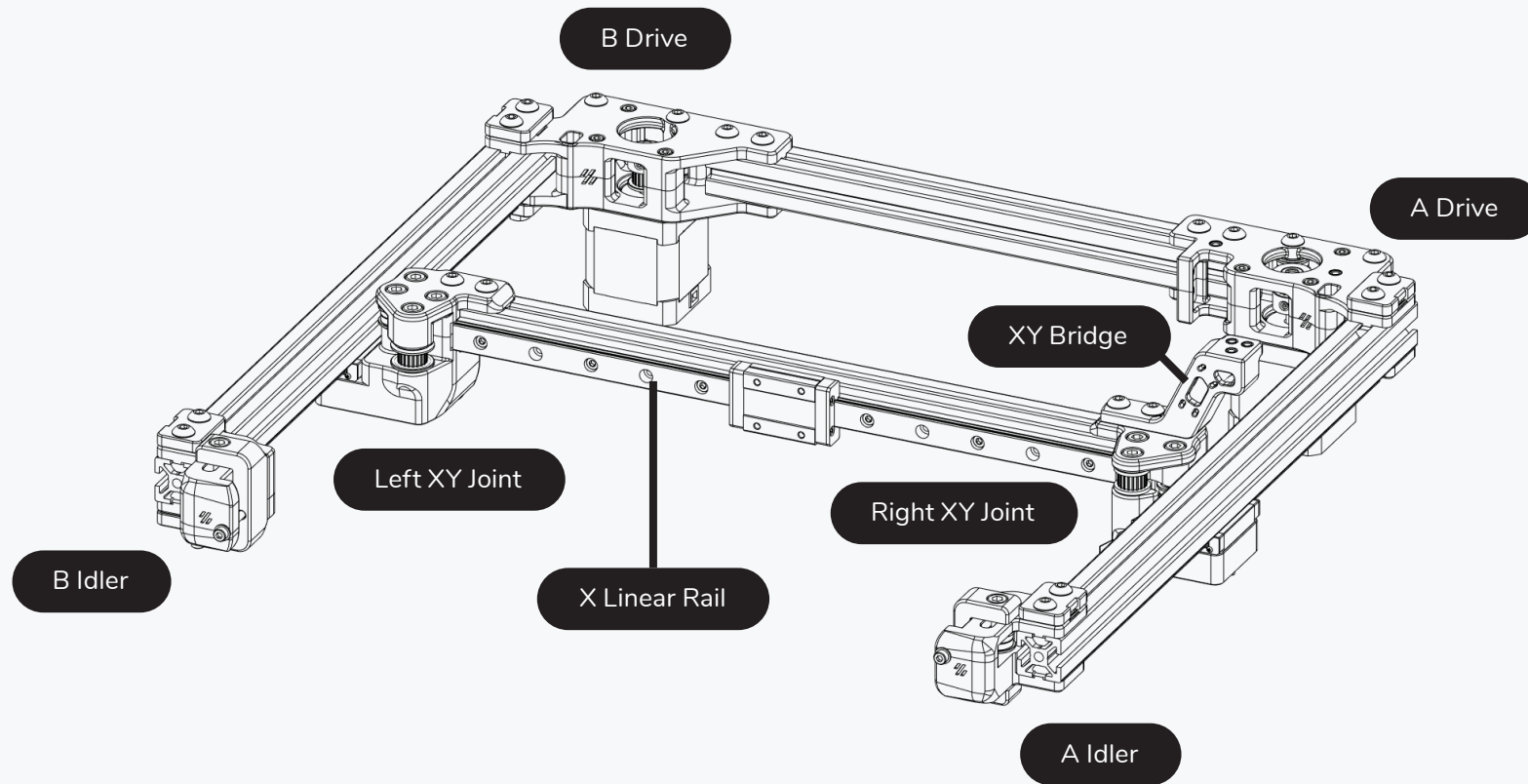
In the comfort of your own home you are about to assemble a robot. This machine can maim, burn, and electrocute you if you are not careful. Please do not become the first VORON fatality. There is no special Reddit flair for that.

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!

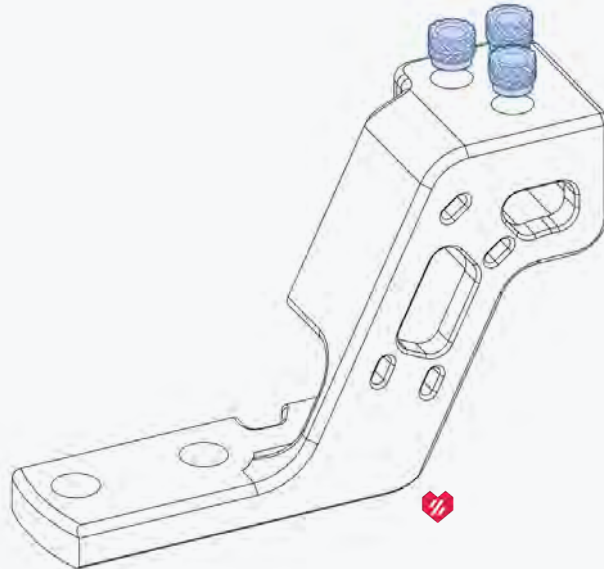
THE VORON TEAM





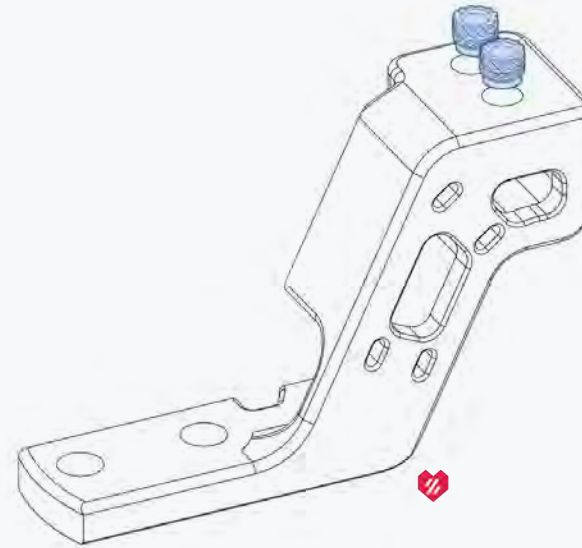
GENERIC CABLE CHAINS

The 3 hole pattern is usually found on generic cable chains.



IGUS CABLE CHAINS

IGUS chains have 2 mounting holes.

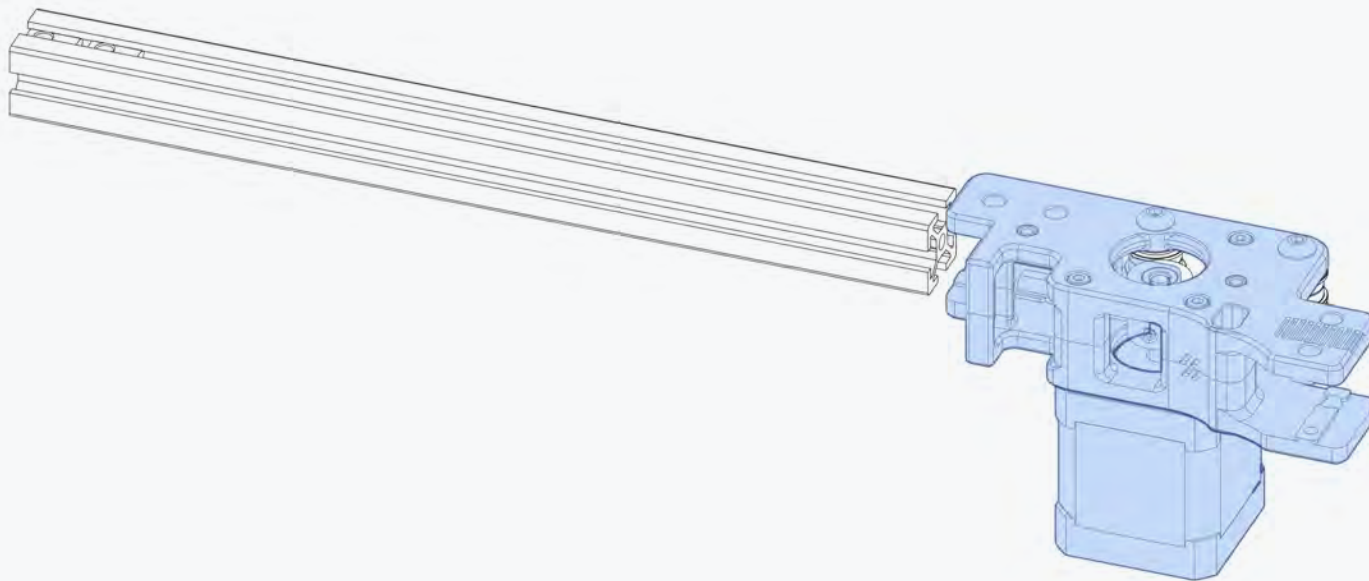
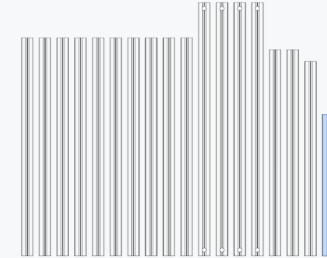
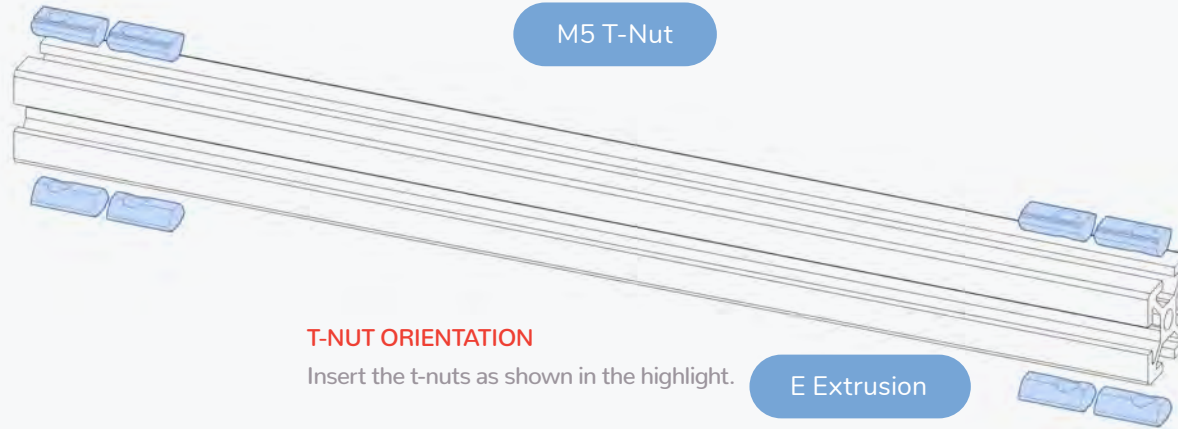


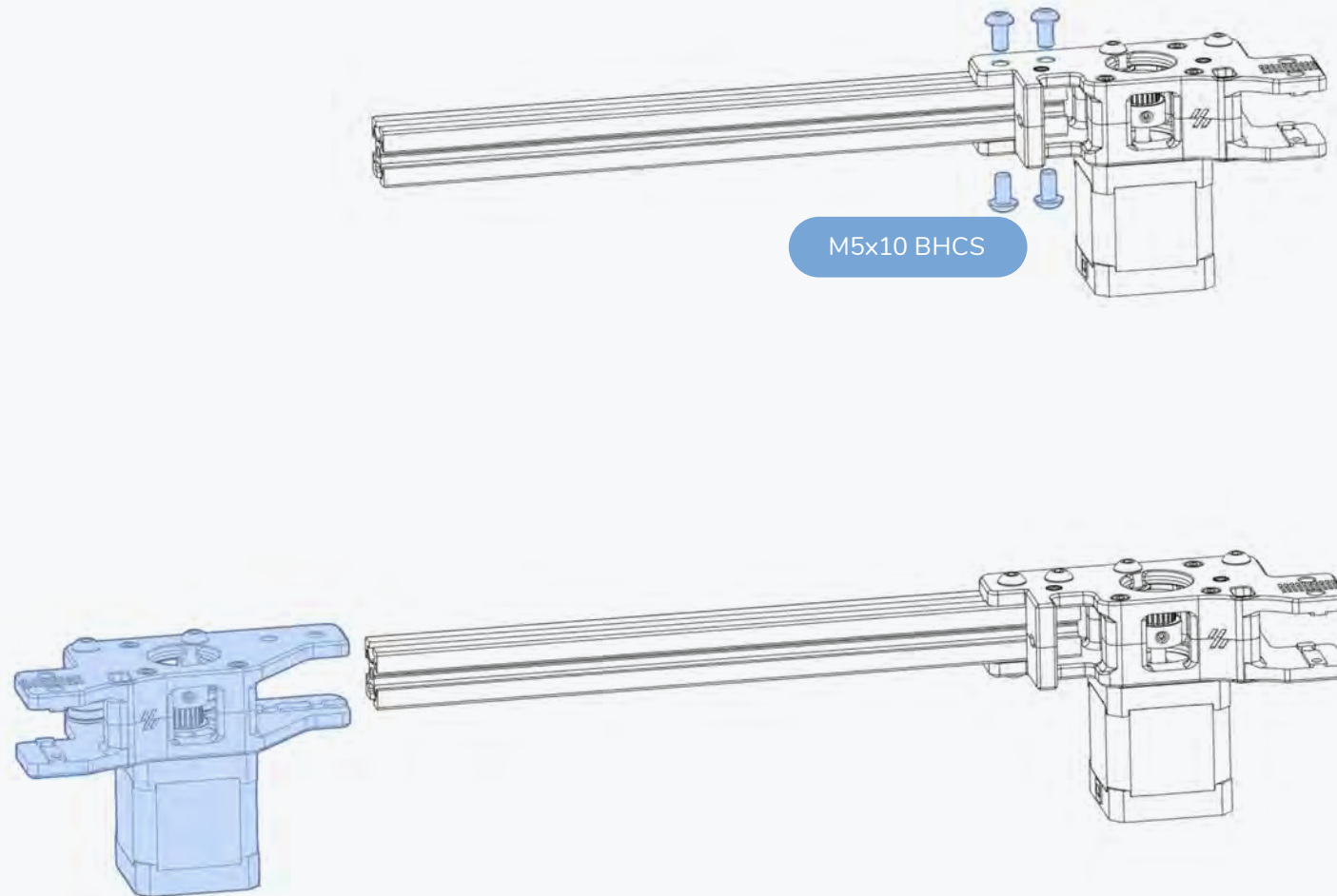
WHICH TO CHOOSE?

Pick the style that matches the mounting pattern of your cable chains.

GANTRY

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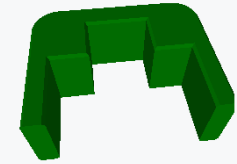






CENTRED RAIL INSTALLATION GUIDE

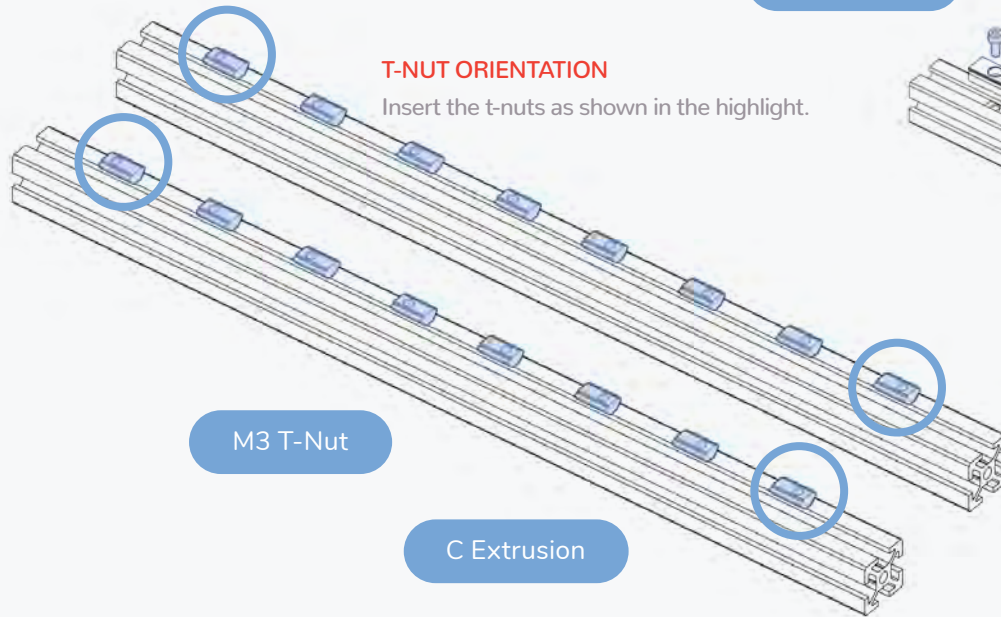
Use the MGN9 guides to position the rail in the centre of the extrusion prior to fastening the screws.



MGN9 Rail

T-NUT ORIENTATION

Insert the t-nuts as shown in the highlight.



M3 T-Nut

C Extrusion

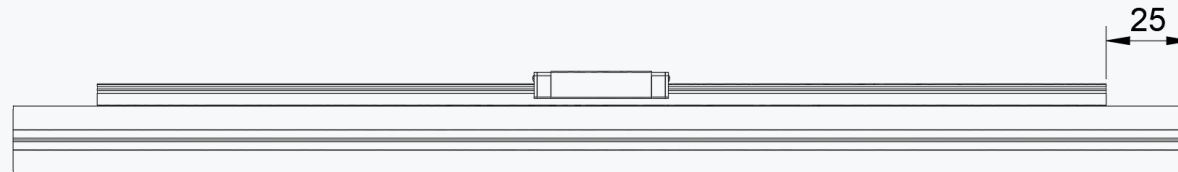


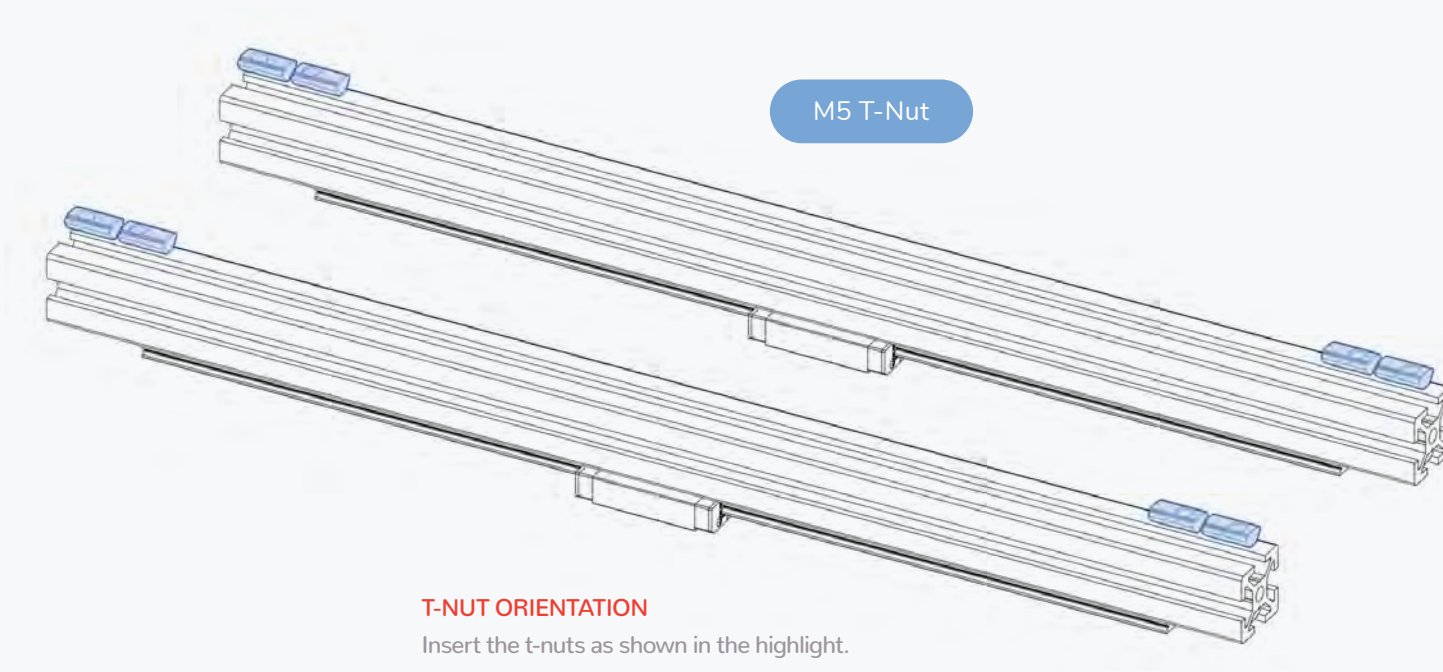
M3x8 SHCS

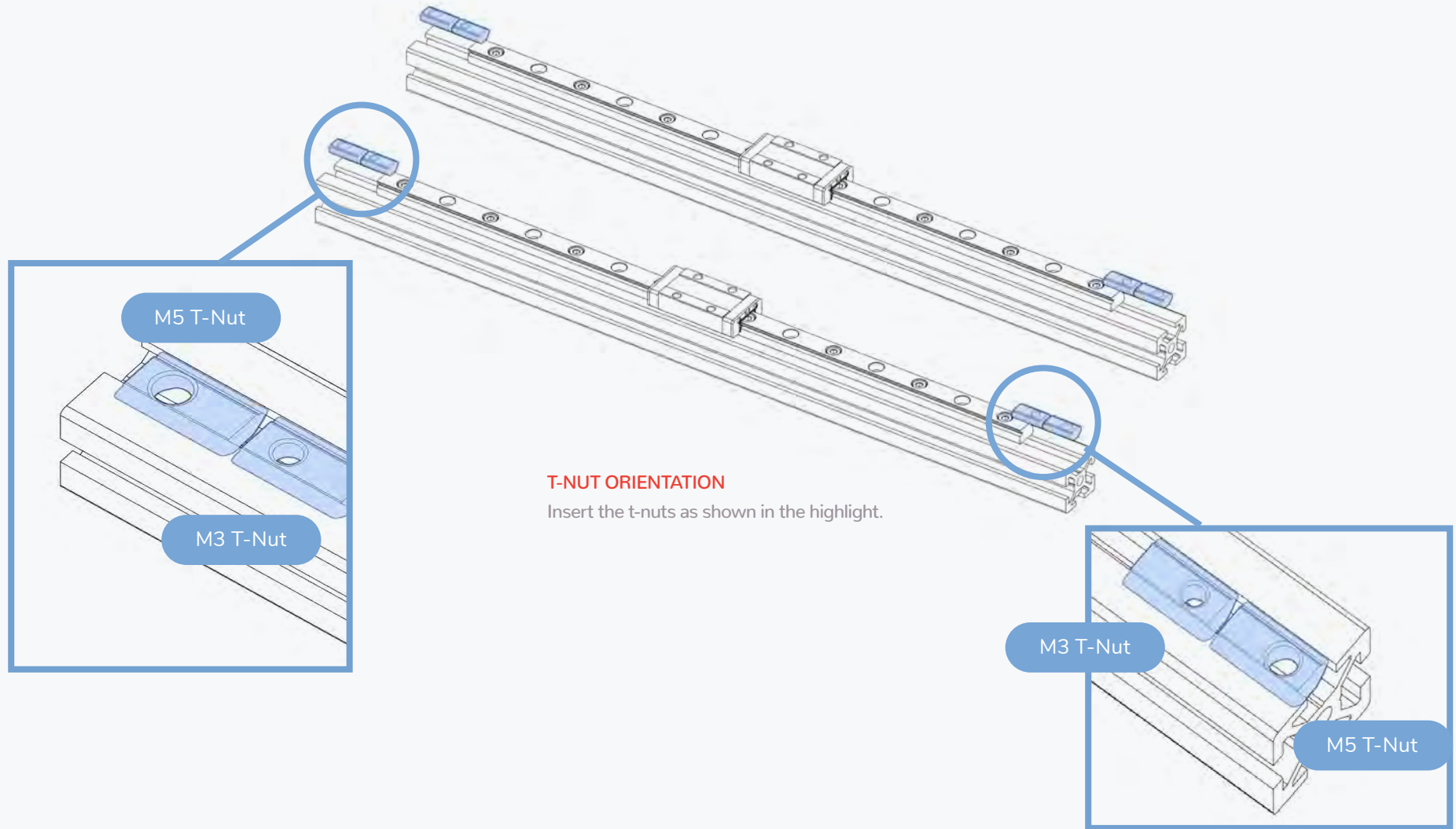
MIND THE CARRIAGE

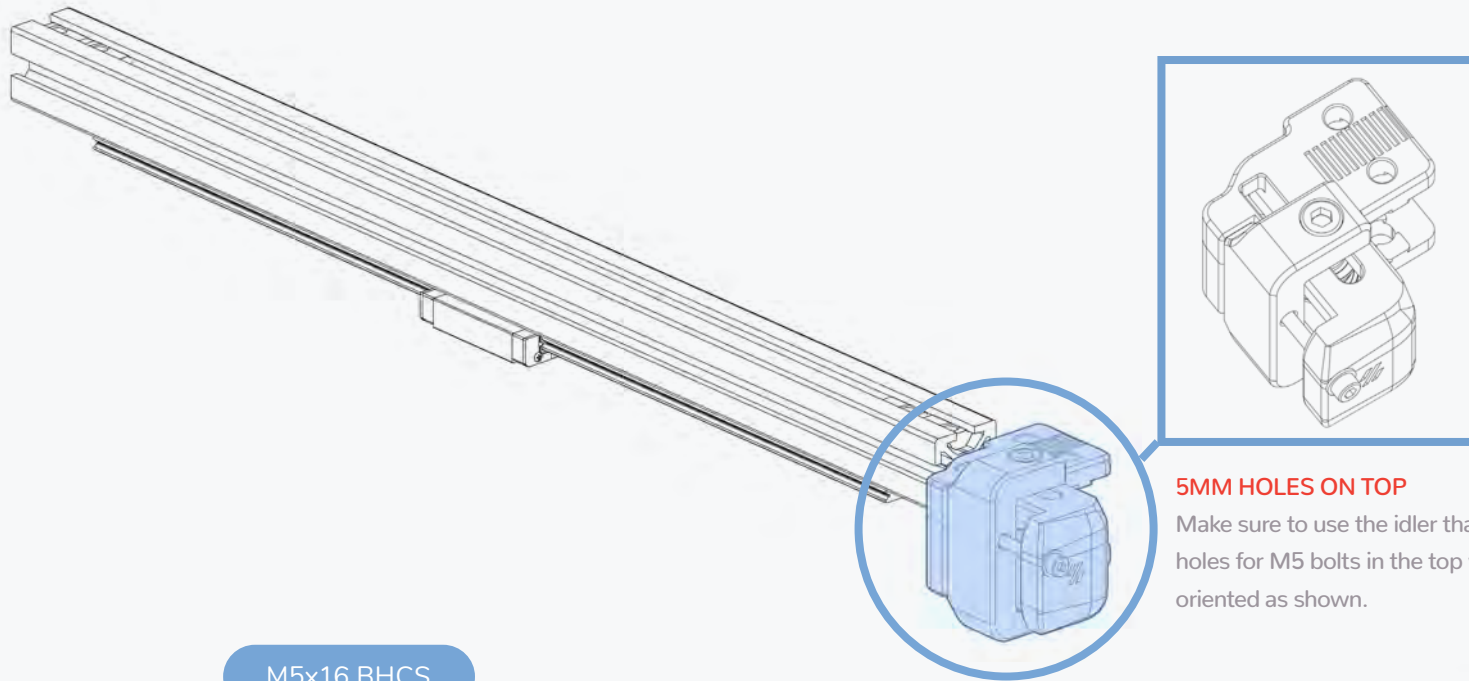
The carriages are designed to slide along the rail easily. This unfortunately also includes sliding off the rails.

Dropping the carriage likely irreparably damages it.





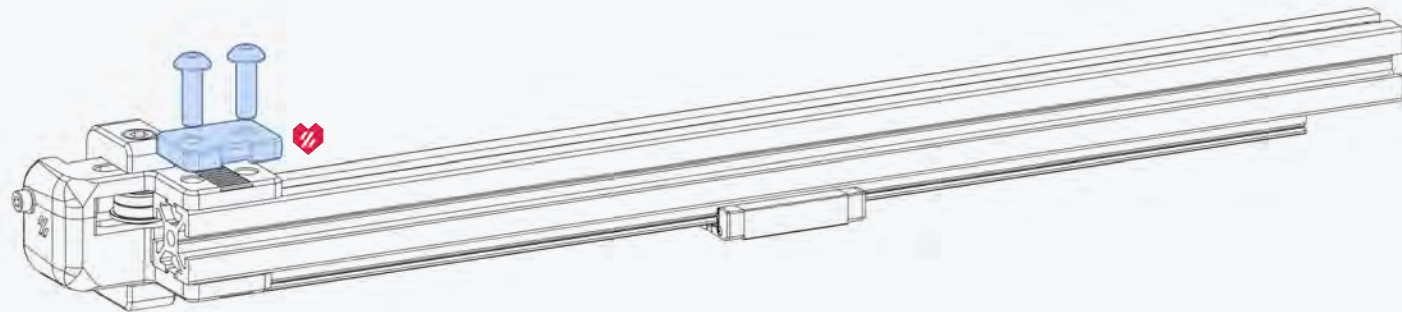


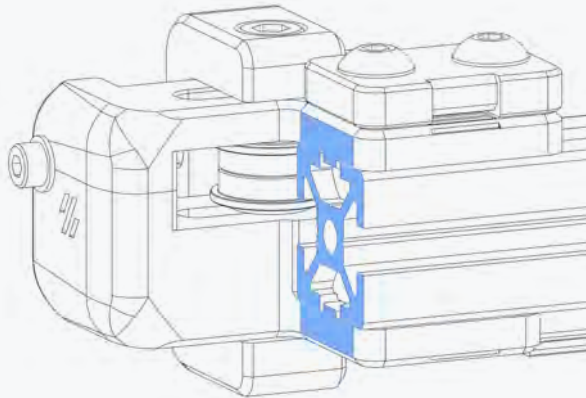


5MM HOLES ON TOP

Make sure to use the idler that has 2 holes for M5 bolts in the top when oriented as shown.

M5x16 BHCS

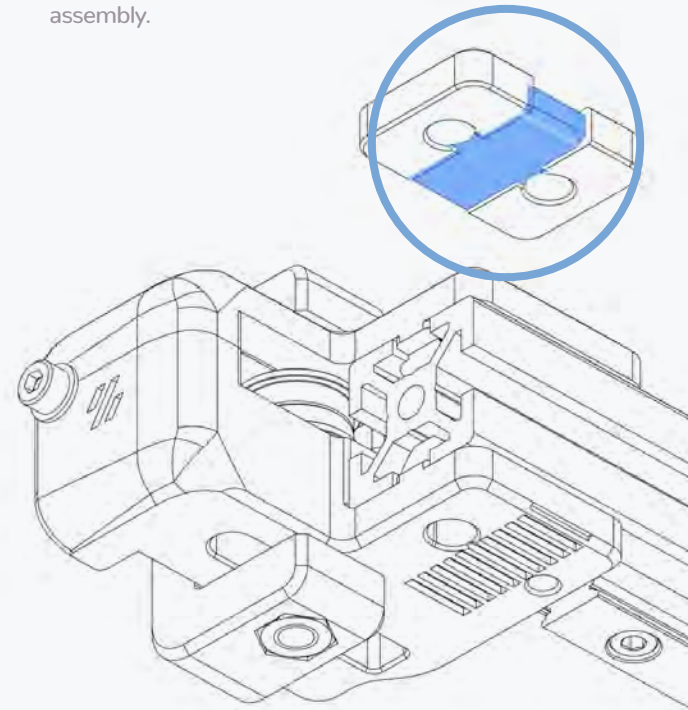


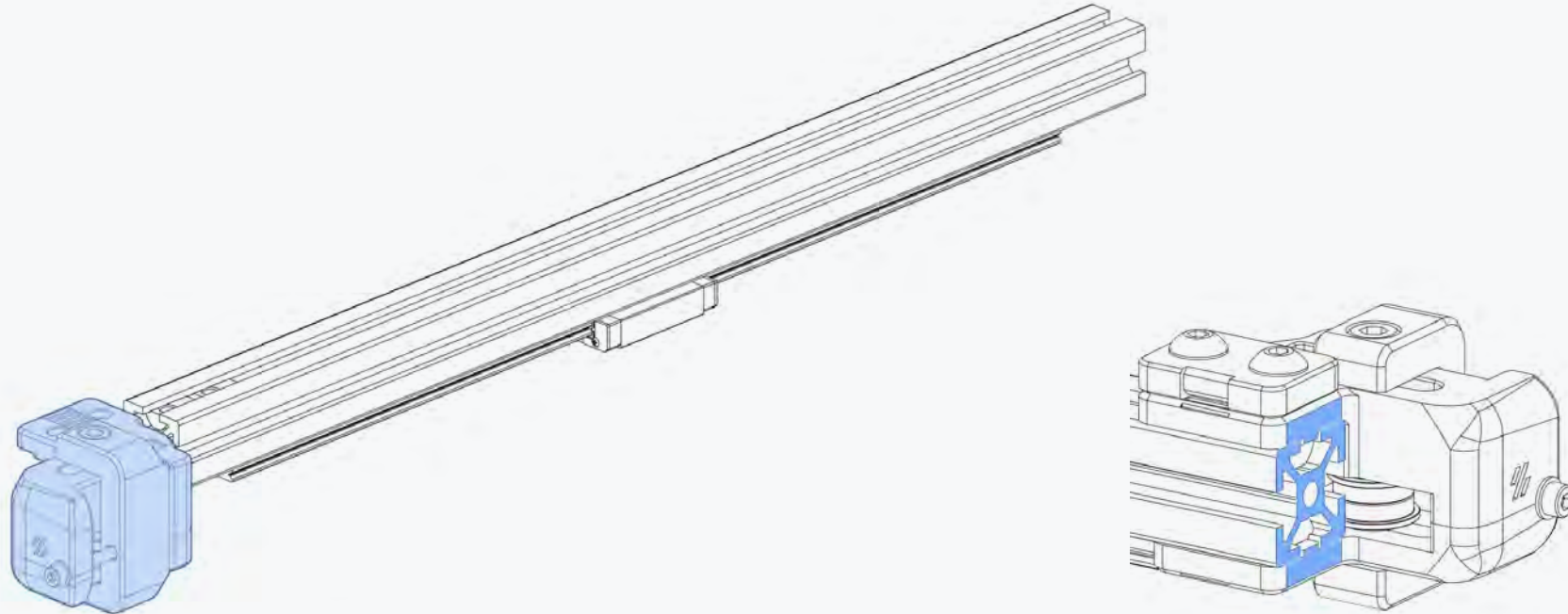
**FLUSH INSTALL**

Make sure the plastic part sits flush with the end of the extrusion. If you can't; check if you installed the correct idler.

NOTCH ORIENTATION

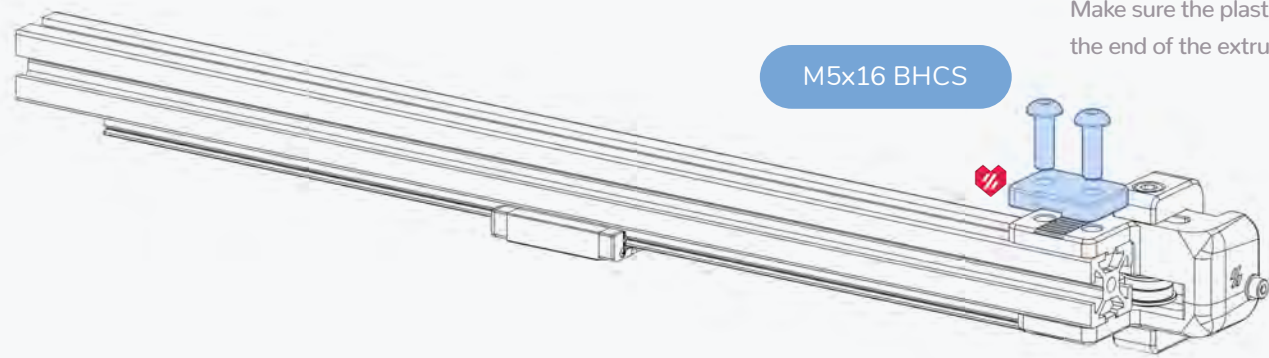
The indentation along the part is designed to clamp on the belt. The notch points away from the idler assembly.



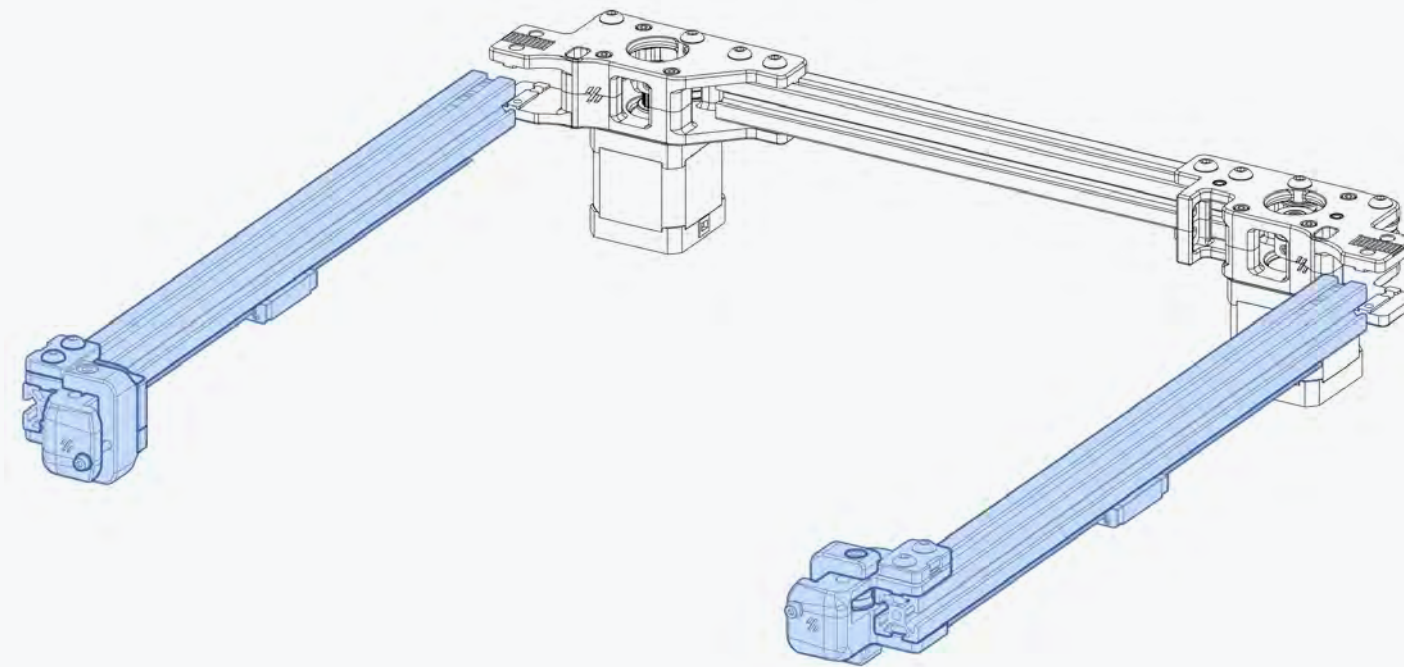


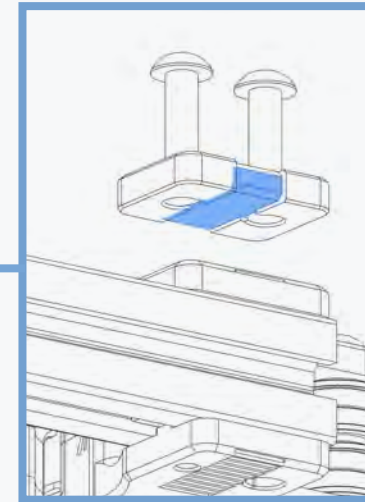
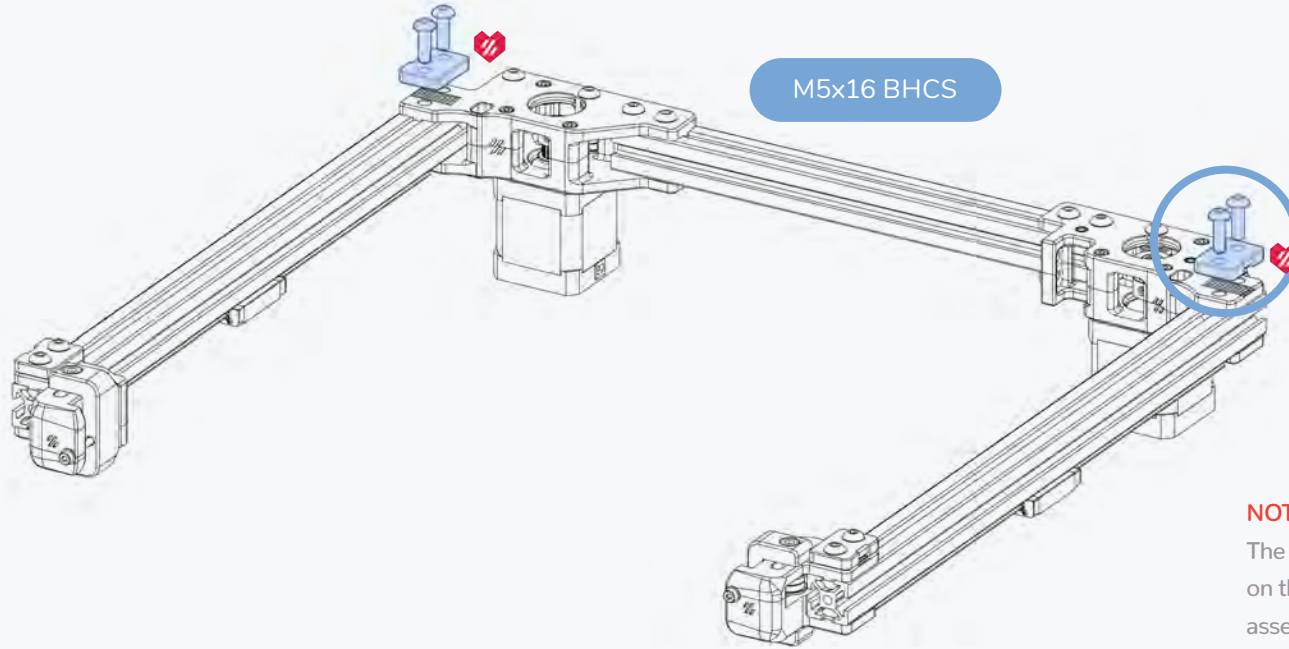
FLUSH INSTALL

Make sure the plastic part sits flush with the end of the extrusion.



M5x16 BHCS



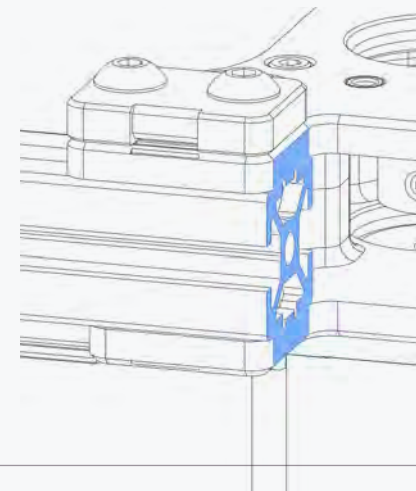


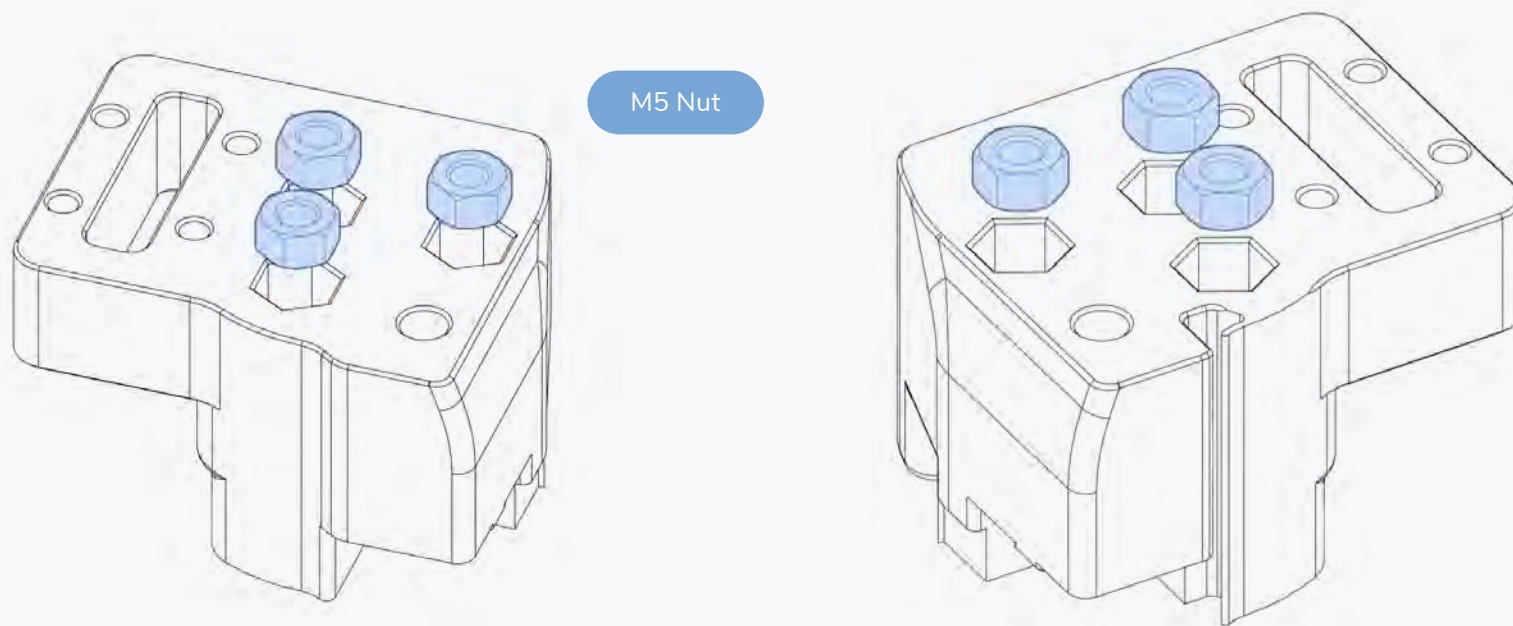
NOTCH ORIENTATION

The indentation along the part is designed to clamp on the belt. The notch points away from the drive assembly.

FLUSH INSTALL

Make sure the plastic part sits flush with the end of the extrusion.

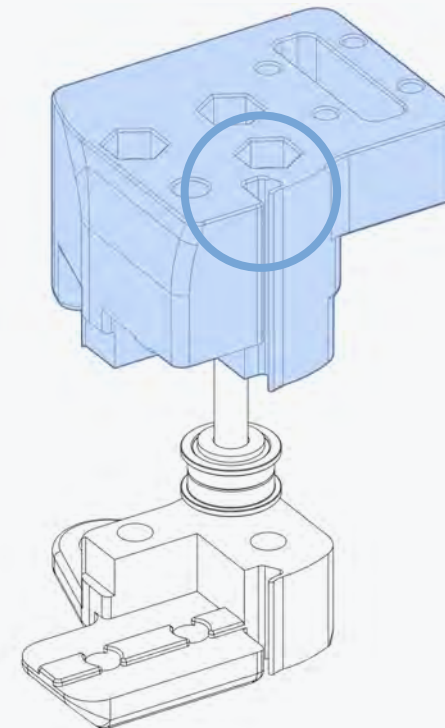
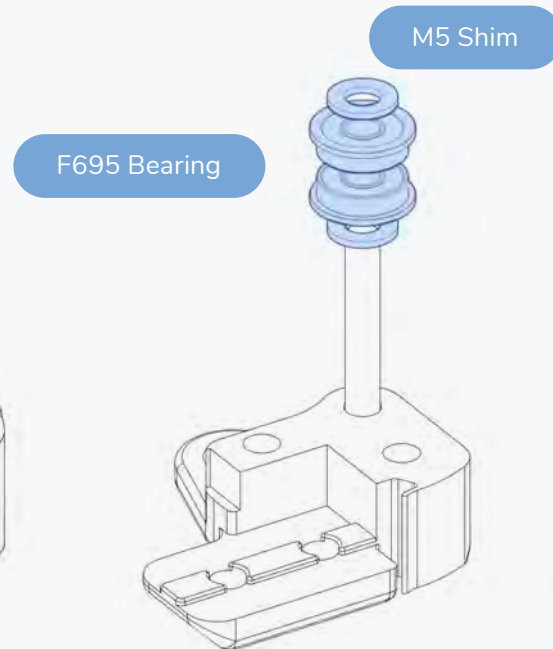
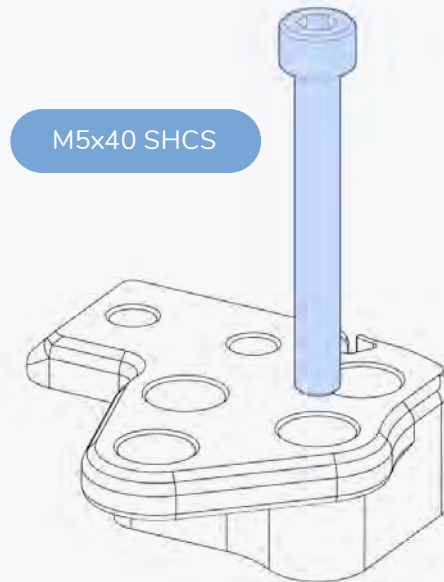
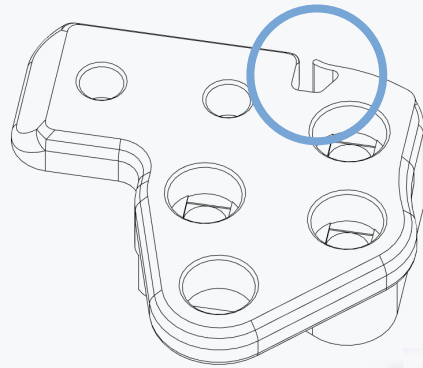




RIGHT XY JOINT

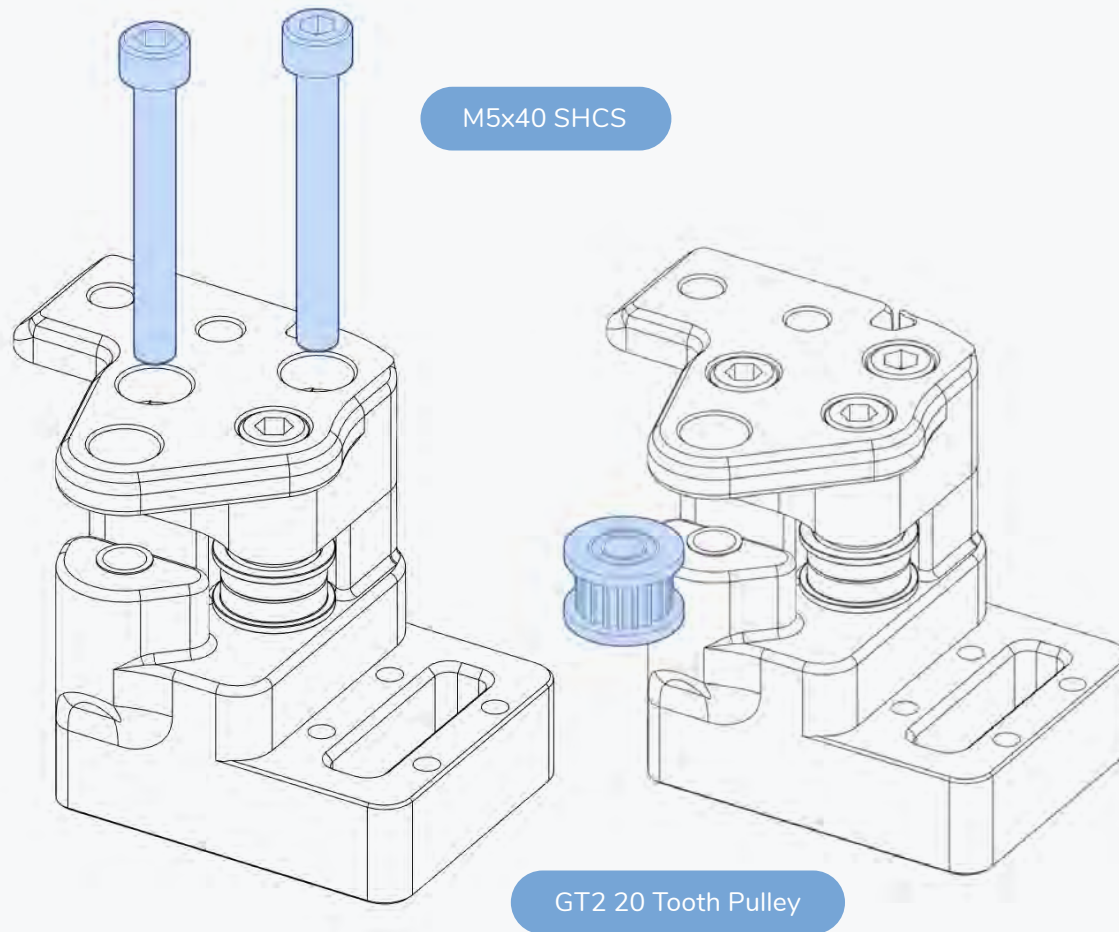
CABLE PATH

The printed parts for the right XY joint have a small channel to guide the end stop wires..



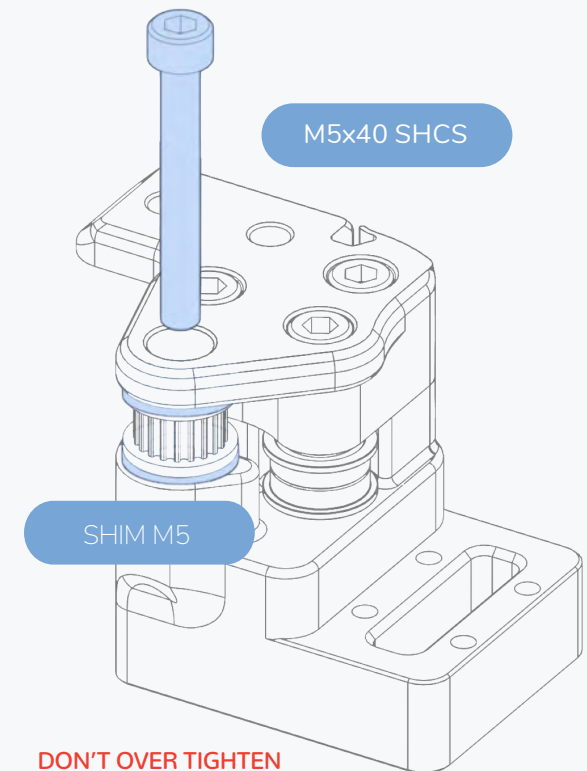
RIGHT XY JOINT

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SYNCHRONOUS PULLEYS

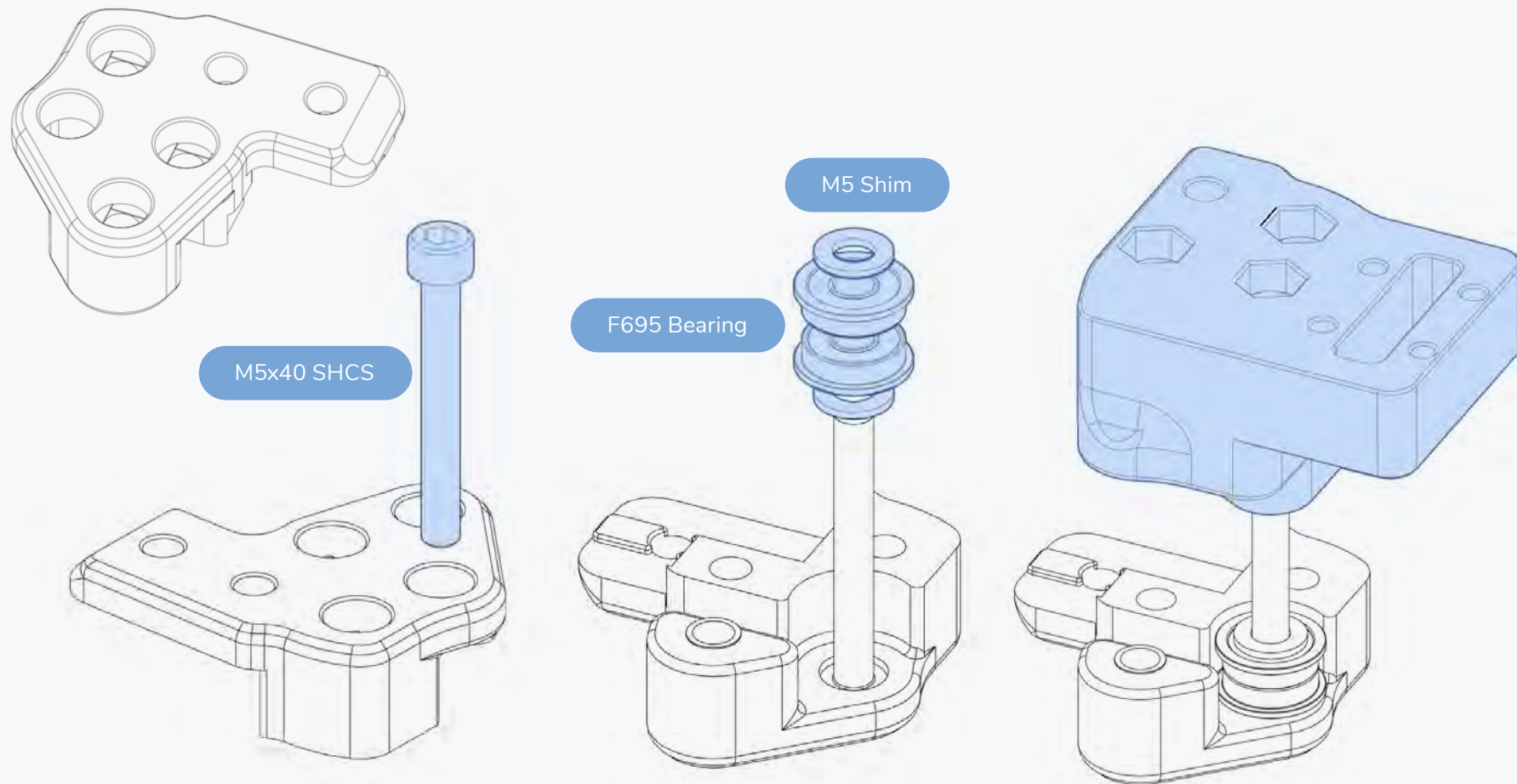
For synchronous pulleys with a low flange, add 2 SHIM M5 in order to align the belt properly.

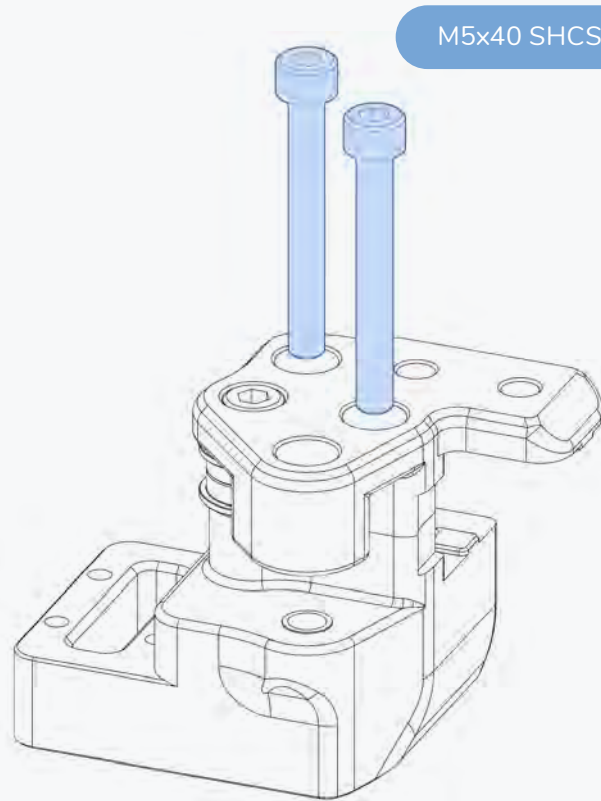


DON'T OVER TIGHTEN

The bolt is used to position the idler and is screwed directly into plastic.
The idler must spin freely.

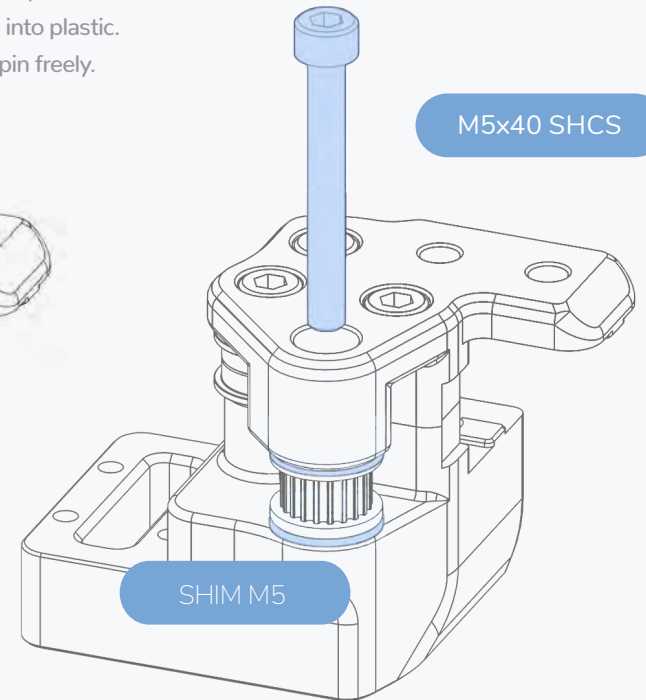
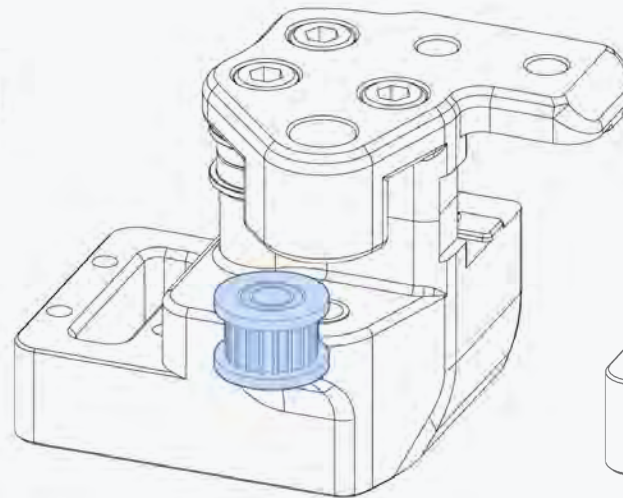
LEFT XY JOINT





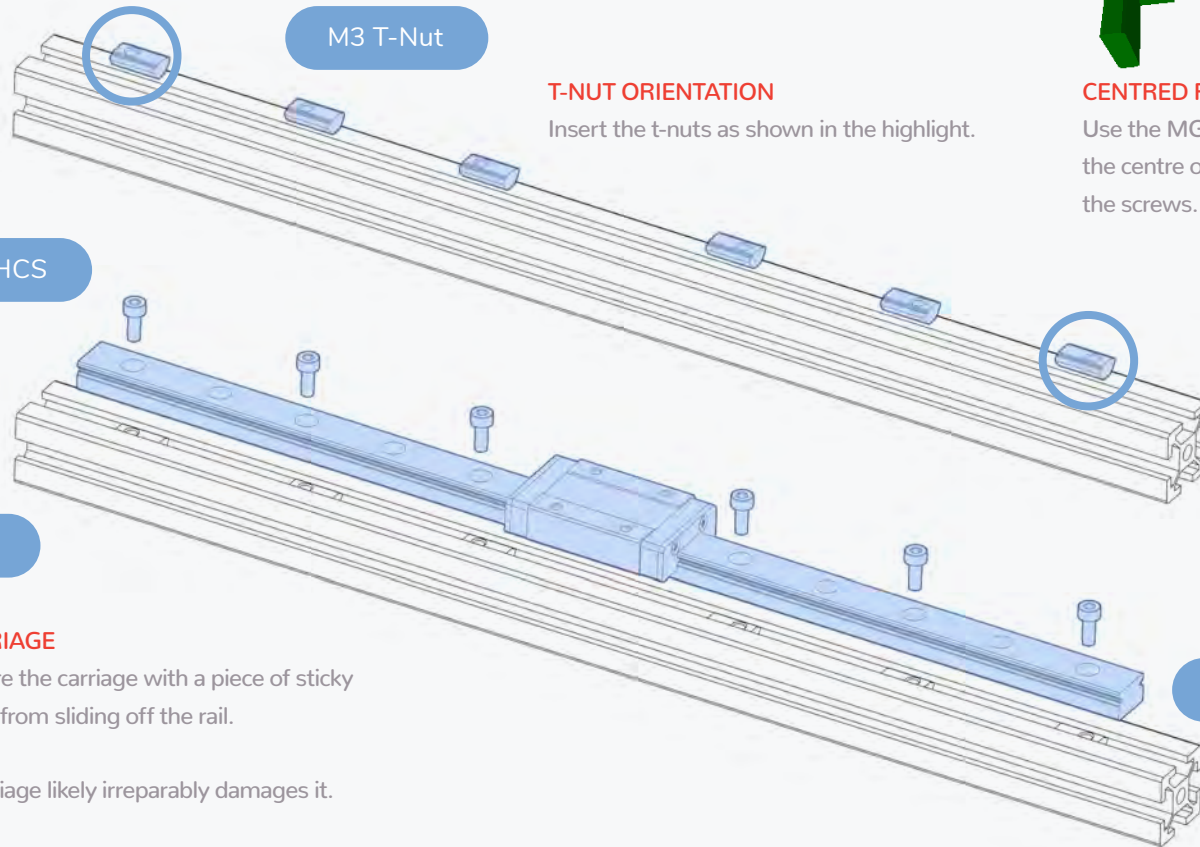
DON'T OVER TIGHTEN

The bolt is used to position the idler and is screwed directly into plastic. The idler must spin freely.



SYNCHRONOUS PULLEYS

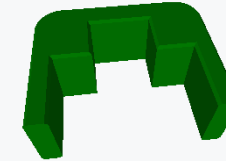
For synchronous pulleys with a low flange, add 2 SHIM M5 in order to align the belt properly.



M3 T-Nut

T-NUT ORIENTATION

Insert the t-nuts as shown in the highlight.



CENTRED RAIL INSTALLATION GUIDE

Use the MGN12 guides to position the rail in the centre of the extrusion prior to fastening the screws.

M3x8 SHCS

D Extrusion

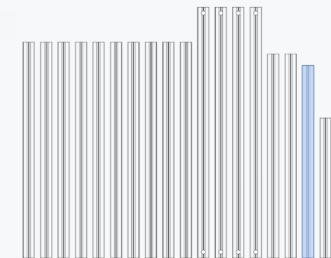
MIND THE CARRIAGE

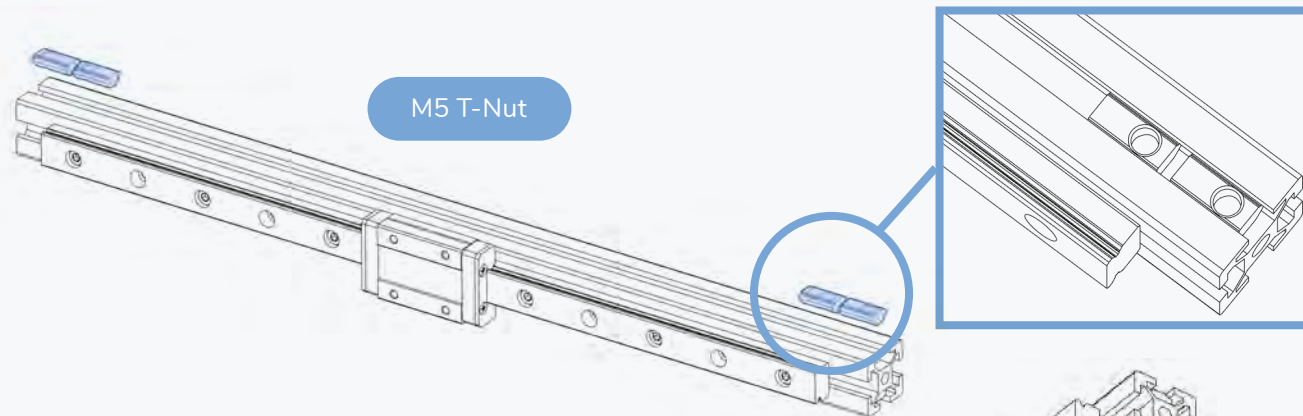
Temporarily secure the carriage with a piece of sticky tape to prevent it from sliding off the rail.

Dropping the carriage likely irreparably damages it.

MGN12 Rail

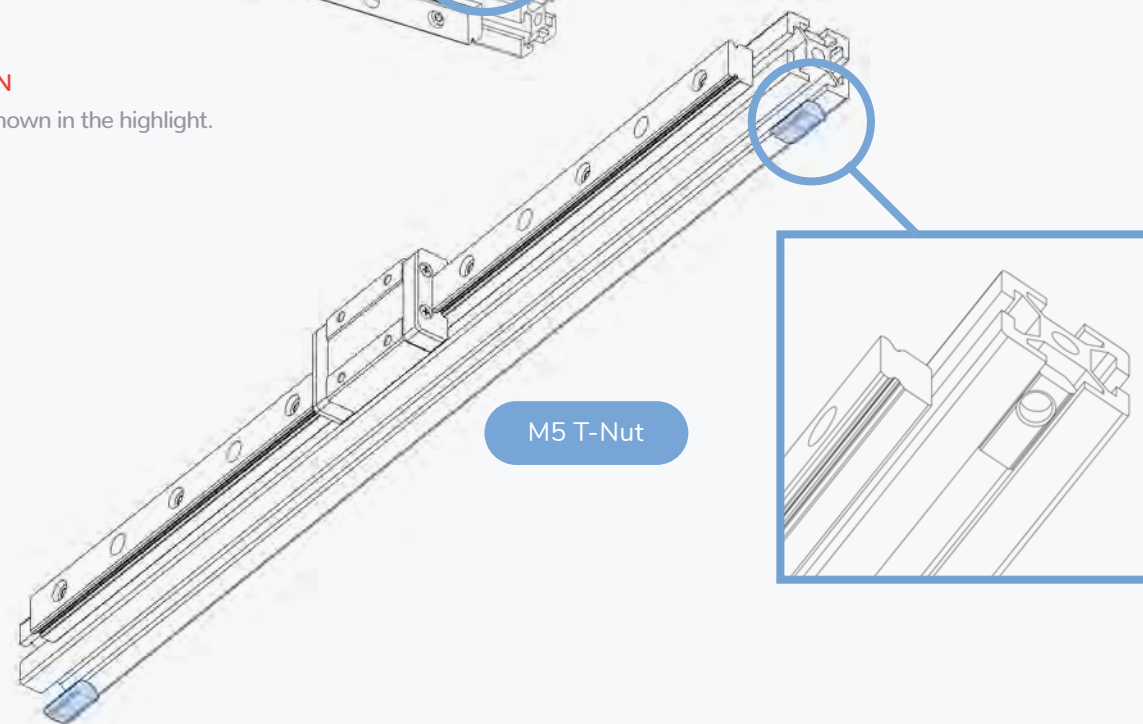
15

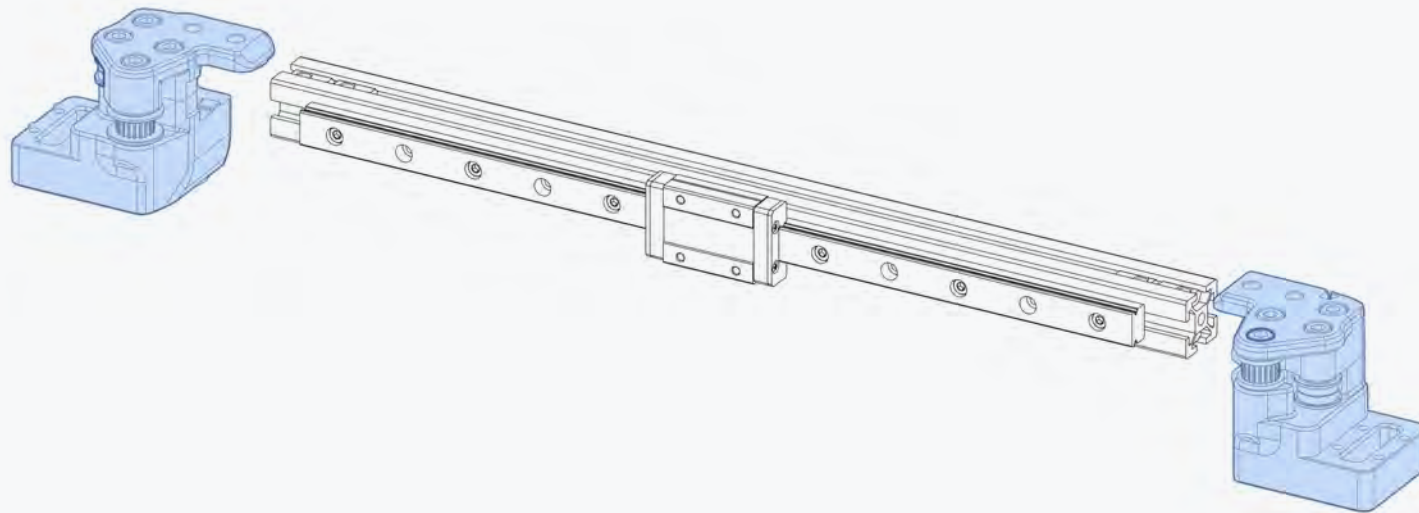




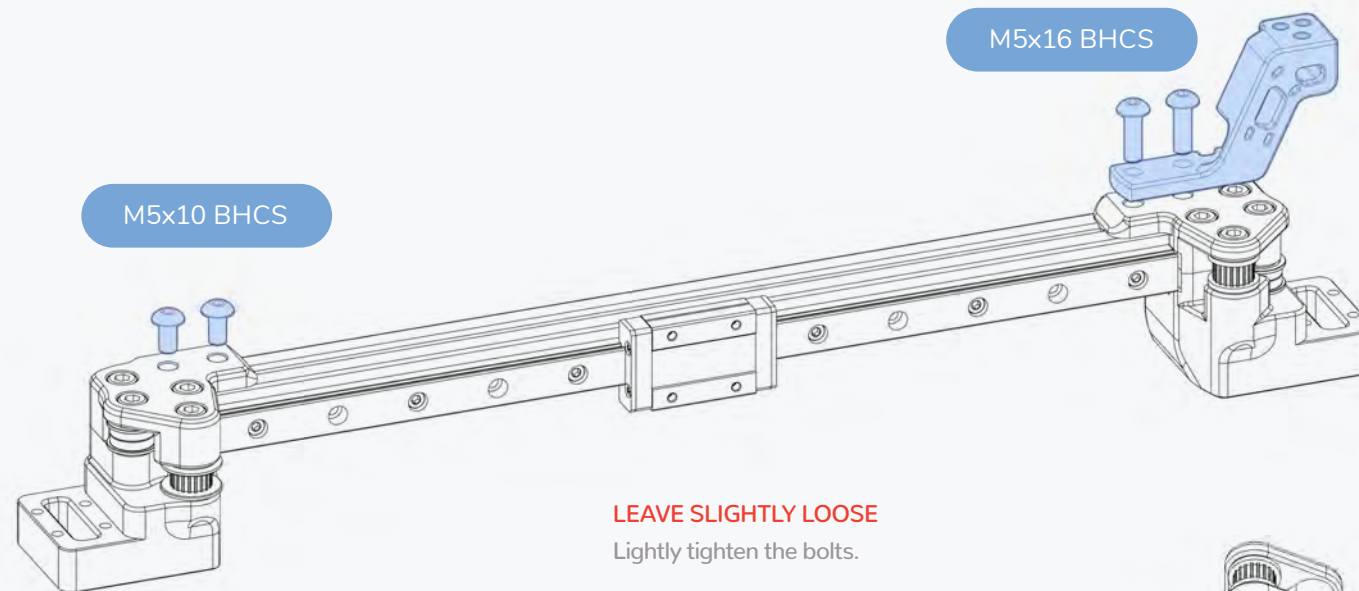
T-NUT ORIENTATION

Insert the t-nuts as shown in the highlight.

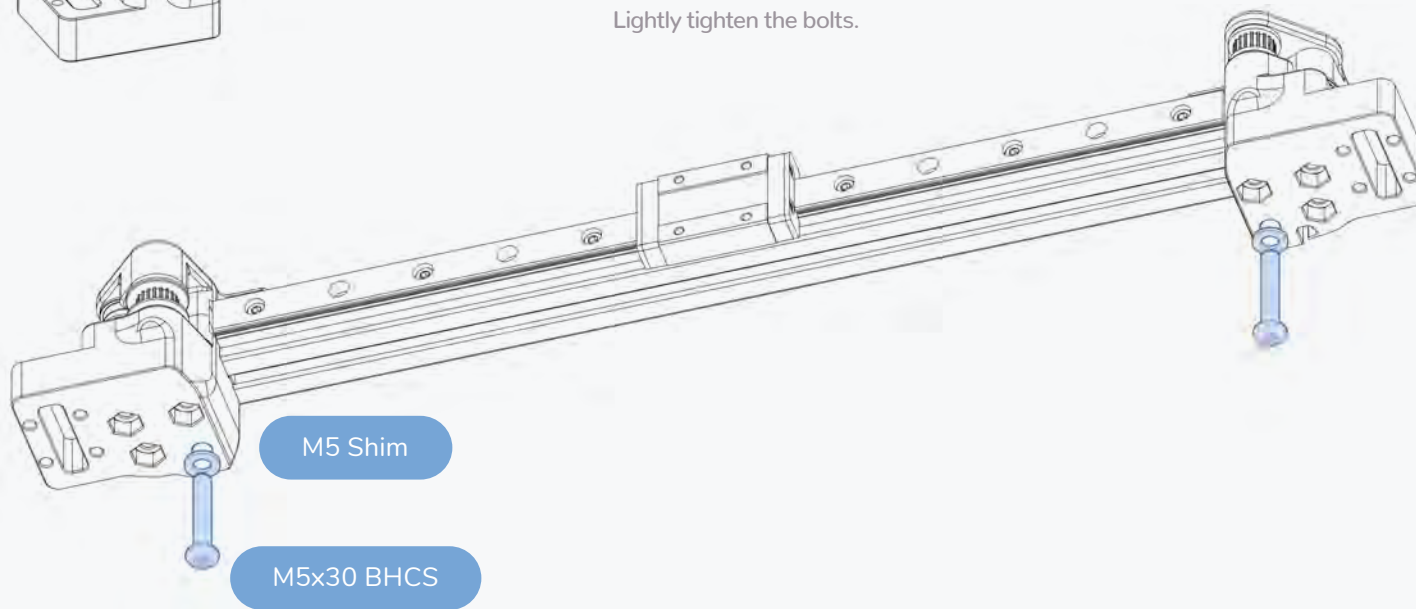


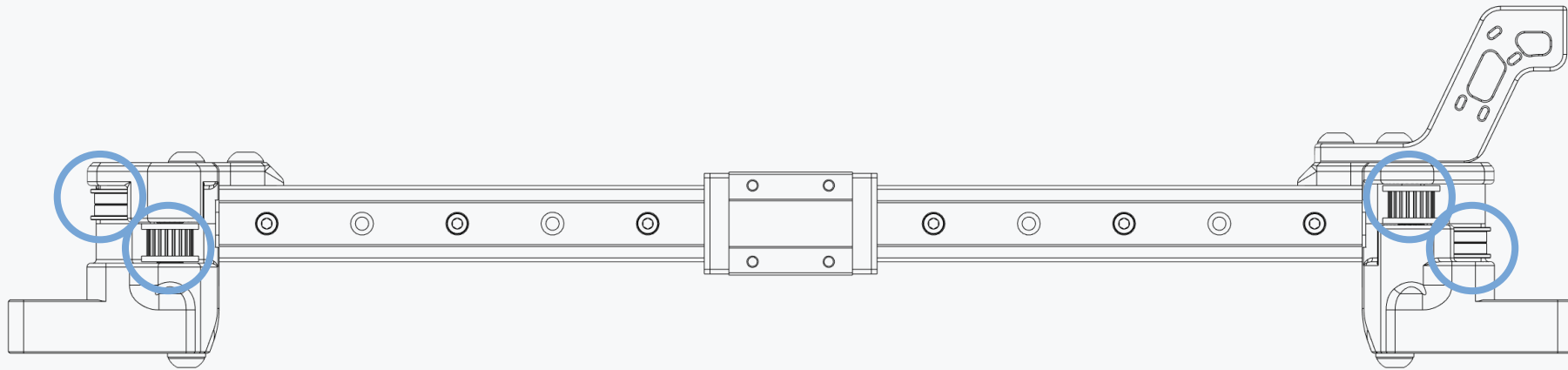


X AXIS



LEAVE SLIGHTLY LOOSE
Lightly tighten the bolts.





CHECK YOUR WORK

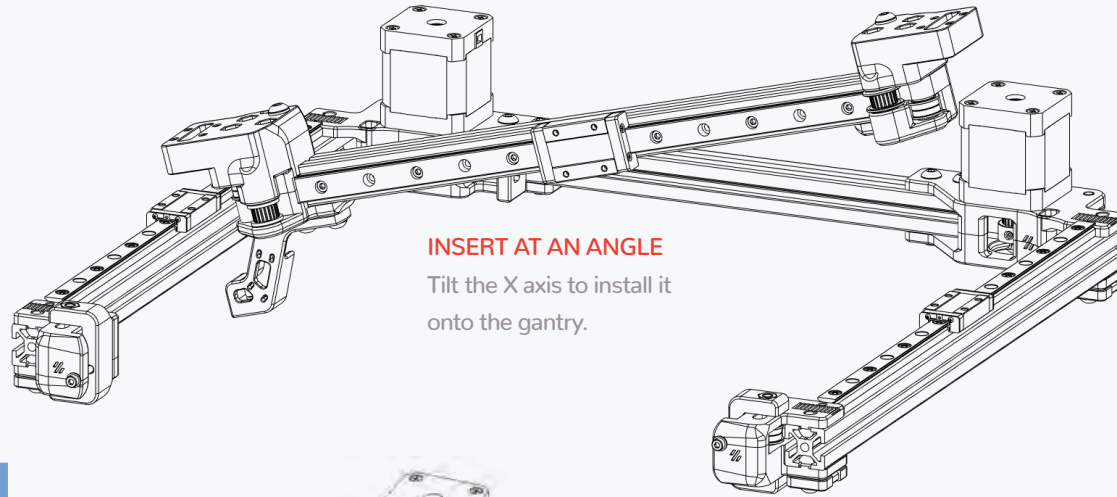
Compare your assembled part to the graphic shown here.

Pay attention to the pulley orientation and alignment with the bearing stack ups.

GANTRY

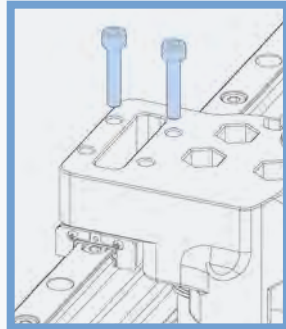
FLIP GANTRY

Turn the gantry around for the next step.



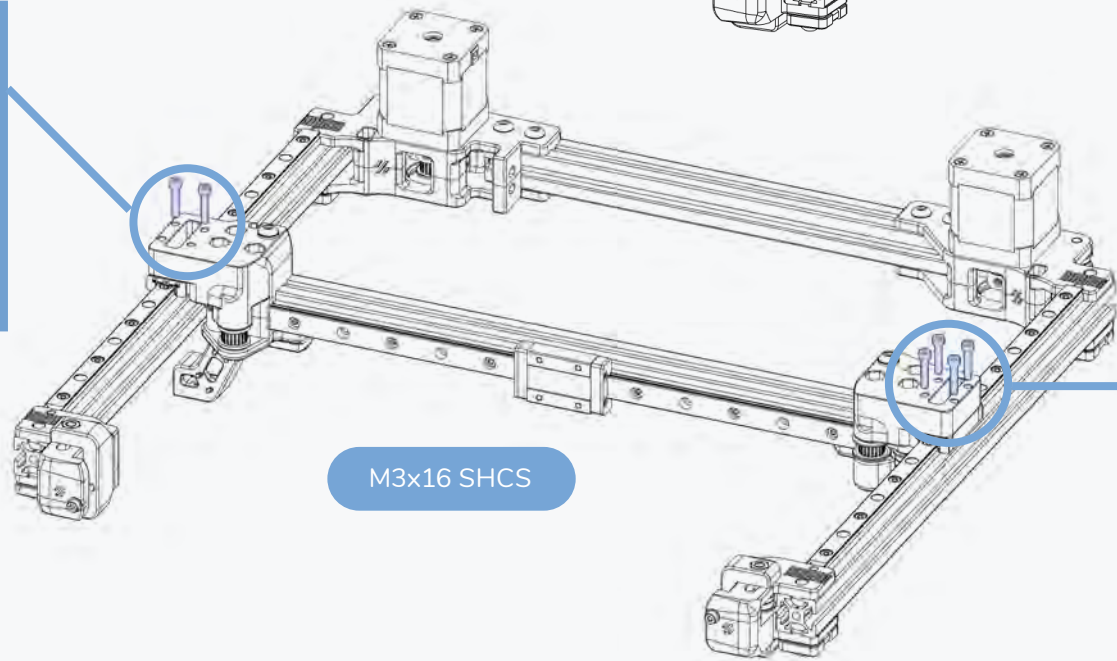
INSERT AT AN ANGLE

Tilt the X axis to install it onto the gantry.



2X BOLT ONLY

The remaining bolts will be installed in a later step.



M3x16 SHCS

