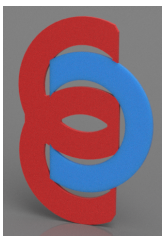
Lineux Toolchanger
Build Guide



Originally Designed and Created by :
3dfiy My Life & JackBeam

With Contribution from :
Armon / art_v2.5091_sc0018

Discord
https://discord.gg/Xwqbjj4VjH

GitHub
https://github.com/Bikin-Creative/Lineux-Toolchanger

A big thank you to everyone who made this project possible.

Inspired by Axial Flux Toolchanger / Daksh Toolchanger
Credit to chirpy2605 (Dragonburner Toolhead)

Important

- Pls take careful precautions with safety in mind when attempting to build Lineux.
- Only attempt the build if you are knowledgeable with 3d printer mechanics and electronics.
- Failure to follow safety precautions may result in things going against you, or even harm you.
- If things start to get confusing or you're stuck at some point during the build, do ask questions on our discord. Learning is always a blessing.
- We try to keep things as simple and as clear as possible for a fun and enjoyable build for everyone.
- Accented Printed Parts has an (a) on the part description.
- Lineux Toolchanger utilises strong magnets. Magnets may interfere with fans therefore it's important to know the polarity of the magnets. If the polarity is unknown, you can use your phone compass to find the polarity of the magnets. Use a permanent marker to mark the North and South pole of the magnets. It makes it easier to keep track of the polarity
- The North pole of the magnets are marked Red in the illustration. The South pole of the magnets are marked Blue.
- We are humans and are prone to mistakes. If you encounter any issues/faults with the build guide, please raise them on our Discord.

Ready? Let's go….

Index

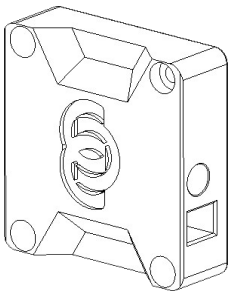
Carriage

Lineux is adaptable to most printer. Illustration and build guide below shows the carriage assembly for the VZBot 330 Printer.

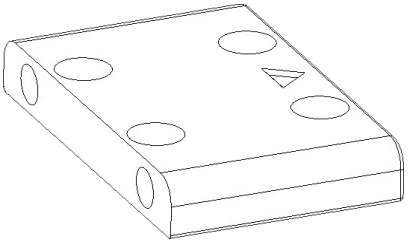
(Fun Facts : Lineux Toolchanger was first developed on the VzBot 330 Printer)

Carriage

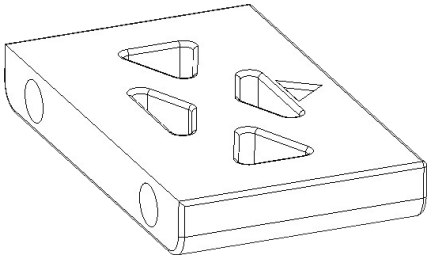
Printed Parts



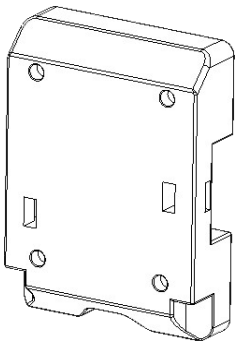
Carriage Body Front x 1



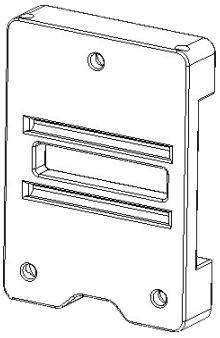
Carriage Body Top x 1



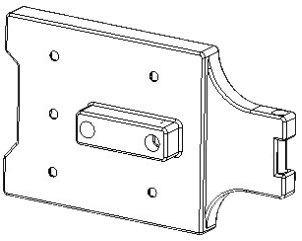
Carriage Body Bottom x 1



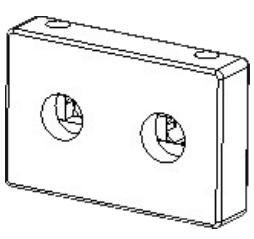
Carriage Body Middle x 1



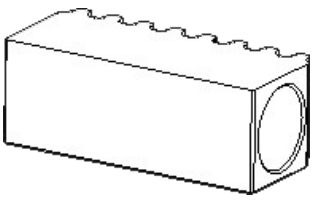
Carriage Body Rear x 1



Locking Plate (a) x 1



Slider (a) x 1



Belt Tensioner (a) x 2

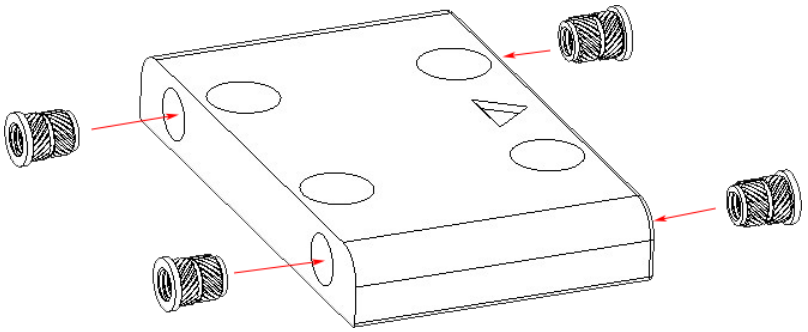
Carriage

Hardwares

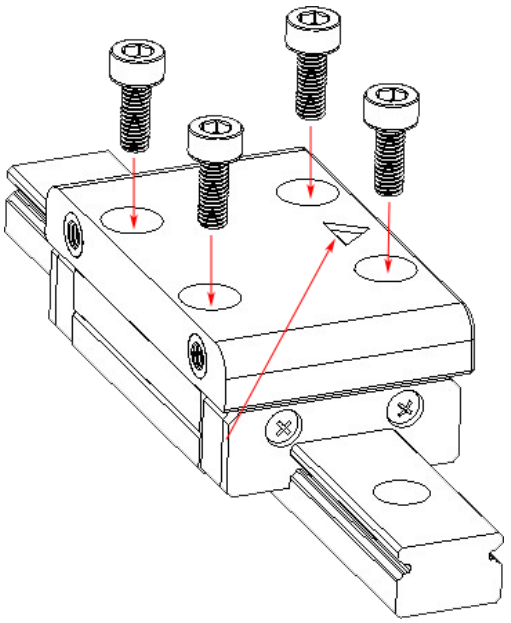
1. m3x6mm shcs (3)
2. m3x8mm bhcs (1)
3. m3x8mm shcs (8)
4. m3x10mm shcs (4)
5. m3x12mm shcs (1)
6. m3x20mm shcs (1)
7. m3x30mm shcs (1)
8. m3x40mm bhcs (2)
9. m3 brass insert (13)
10. m3 hex nut (2)
11. m5 hex nut (3)
12. m3x16mm dowel pin (1)
13. m3x20mm dowel pin (2)
14. m3x35mm dowel pin (2)
15. m3x55mm dowel pin (2)
16. mr63zz bearing (4)
17. 10x5mm N52 magnet (6)

Carriage

Insert 4 x m3 brass insert to the Carriage Body Top.

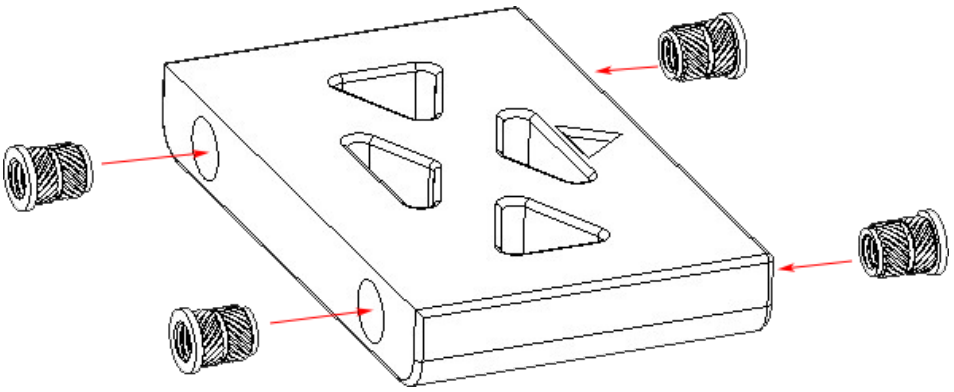


Assemble the Carriage Body Top to the MGN block using 4 x m3x10mm shcs. Pay attention to the orientation of the Carriage Body Top. Ensure the arrow on the Carriage Body Top is facing the front.

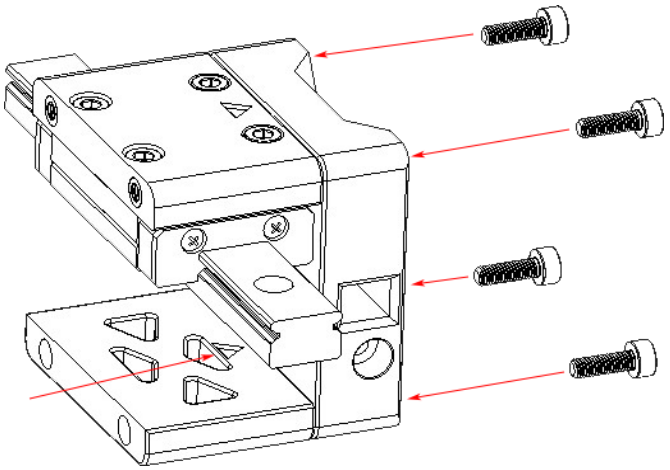


Carriage

Insert 4 x m3 brass insert into the Carriage Body Bottom.

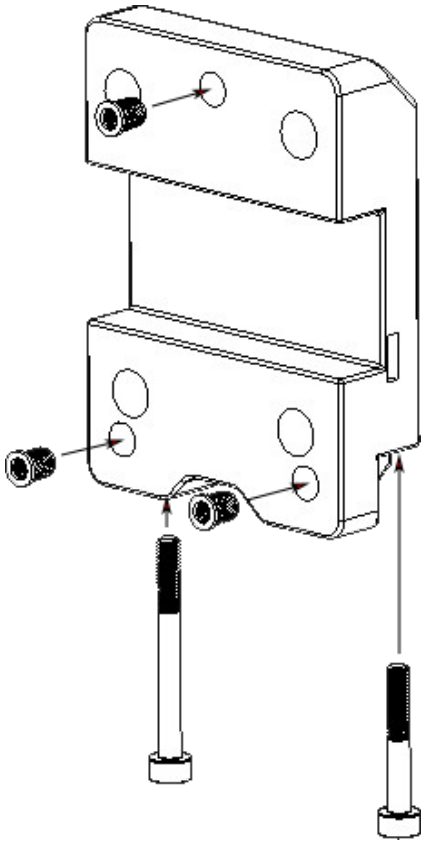


Install the Carriage Body Front and Carriage Body Bottom to the Carriage Assembly using 4 x m3x10mm shcs. Pay attention to the orientation of the Carriage Body Bottom. Ensure the arrow on the Carriage Body Bottom is facing the front.

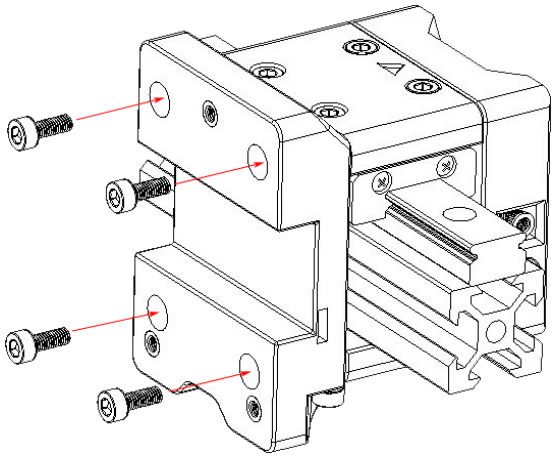


Carriage

Insert 3 x m3 brass insert into the Carriage Body Middle. Screw in m3x20mm shcs and m3x30mm shcs to the threaded hole from below. Do not overtighten because you are screwing into plastic. The m3x30mm shcs will go on the left side and the m3x20mm will go on the right side when viewed from the back as shown below. These 2 screws will provide strength support for the belt.

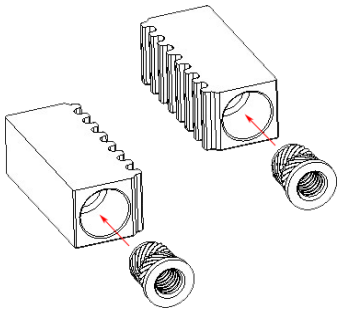


Install the Carriage Body Middle to the Carriage Assembly using 4 x m3x8mm shcs

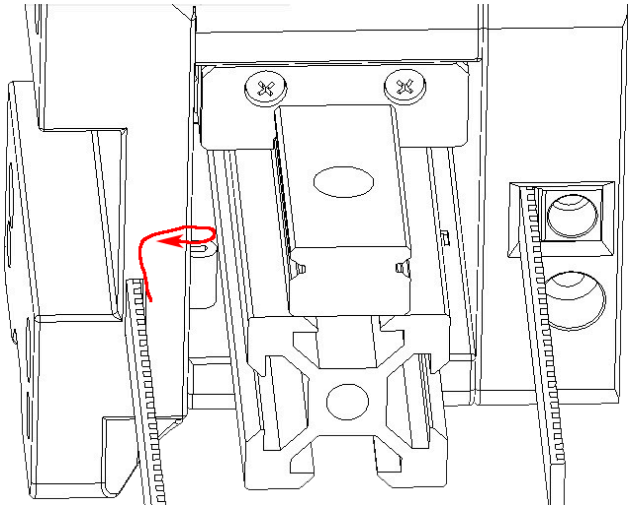


Carriage

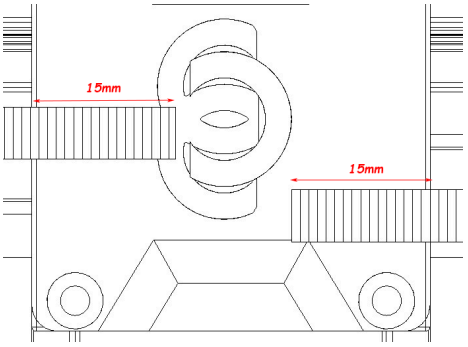
Looks like you’re almost there towards completing the Carriage Assembly. Now is the perfect time to install the belts on the carriage. Insert m3 brass insert to both Belt Tensioner.



Run the rear belt in through the belt opening of the Carriage Body Middle and form a loop upon the belt exiting through the back. Slide the belt back in through the rear opening and pull on tight on the belt from the entrance point.This will ensure the belt is fitted snugly and locked in place.Repeat the same procedure for the opposite side.

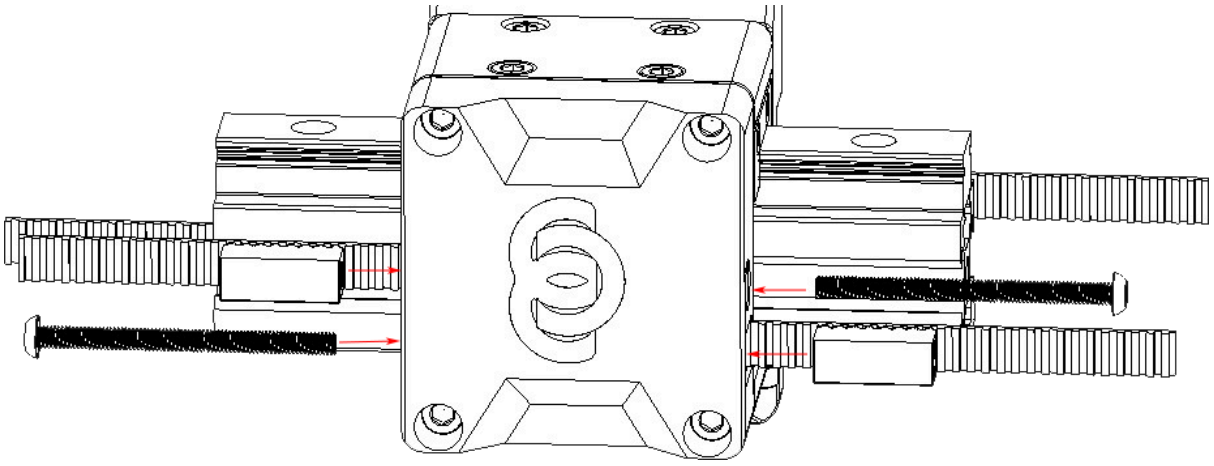


Next, install the front belts. Ensure all belts are riding on the pulleys and idlers properly before committing to cutting the belts to length. Measure and cut the belt at 15mm from the edge of the Carriage Body Front.



Carriage

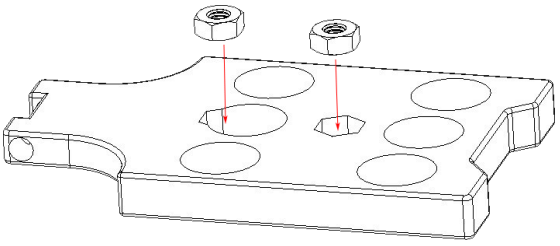
Slide in the belt together with the Belt Tensioner in the Carriage Body Front. Screw in the m3x40mm bhcs from the opposite side to grab the Belt Tensioner but keep the belt a bit loose at this point. Once both Belt Tensioner are held in place, you can then adjust the belt tension as per yr printers recommended tension.



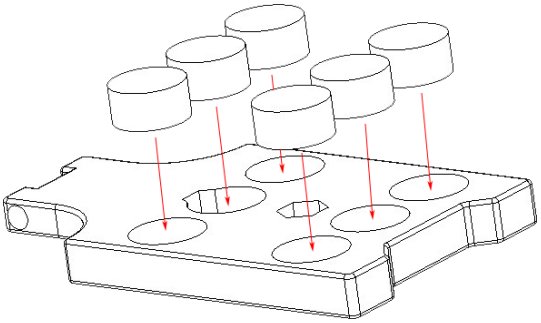
Congratulations, you have the base carriage installed. Your Carriage Assembly should look like this right now. Few more steps to go…

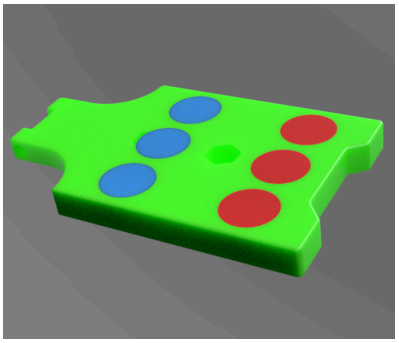
Carriage

Insert 2 x m3 hex nuts, 1 in one of the magnet slot and 1 on the Locking Plate. Ensure the hex nuts are seated properly in the hex nut cutouts.

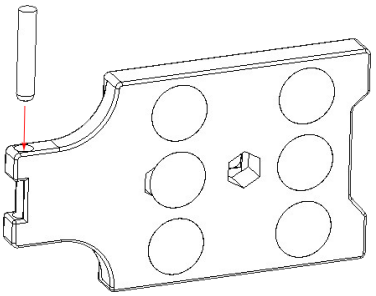


Install 6 x 10x5mm magnets on the Locking Plate. Pls ensure the correct orientation is followed. Refer to the colour image for the correct orientation. North is Red, South is Blue. Having the magnets installed in the wrong orientation may affect the Part Cooling Fans and stop them from working. The magnets should be a tight fit in the slots. It's recommended to apply a few drops of glue in the slots before pushing the magnets in. A wooden mallet might also be handy to ensure the magnets are seated fully in and properly.



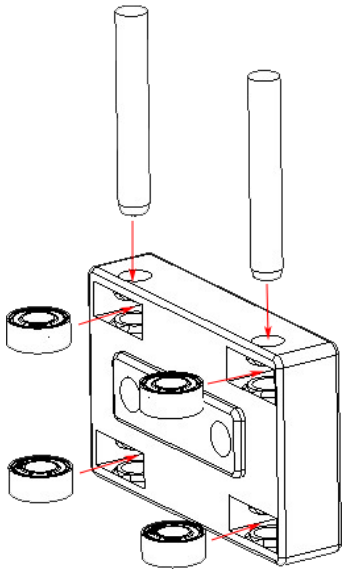


Install the m3x16mm dowel pin on the Locking Plate arm.

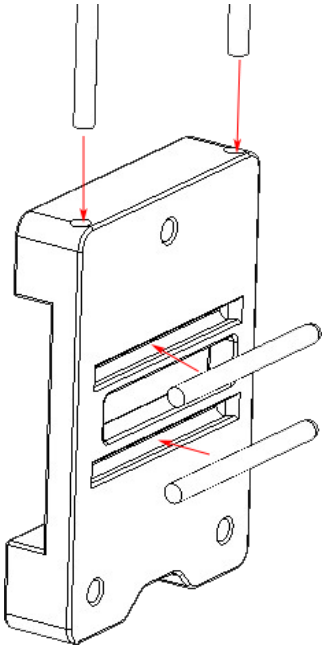


Carriage

Slide in 4 x mr63zz bearings in the respective slots on the Slider and push in the 2 x m3x20mm dowel pins to hold the bearings in place.

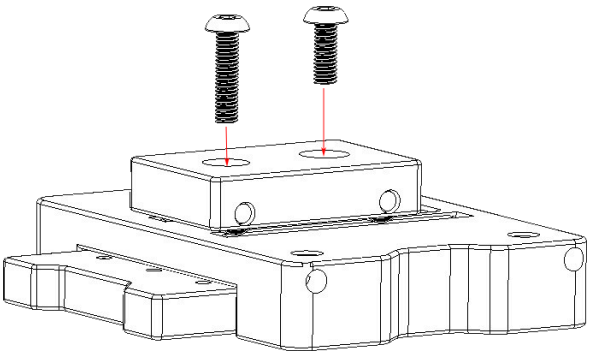


Next, prepare the Carriage Body Rear. Insert 2 x m3x35mm dowel pins in the 2 slots and push in the 2 x m3x55mm dowel pins from the top. Ensure the dowel pins sit flush with the Carriage Body Rear at the top.

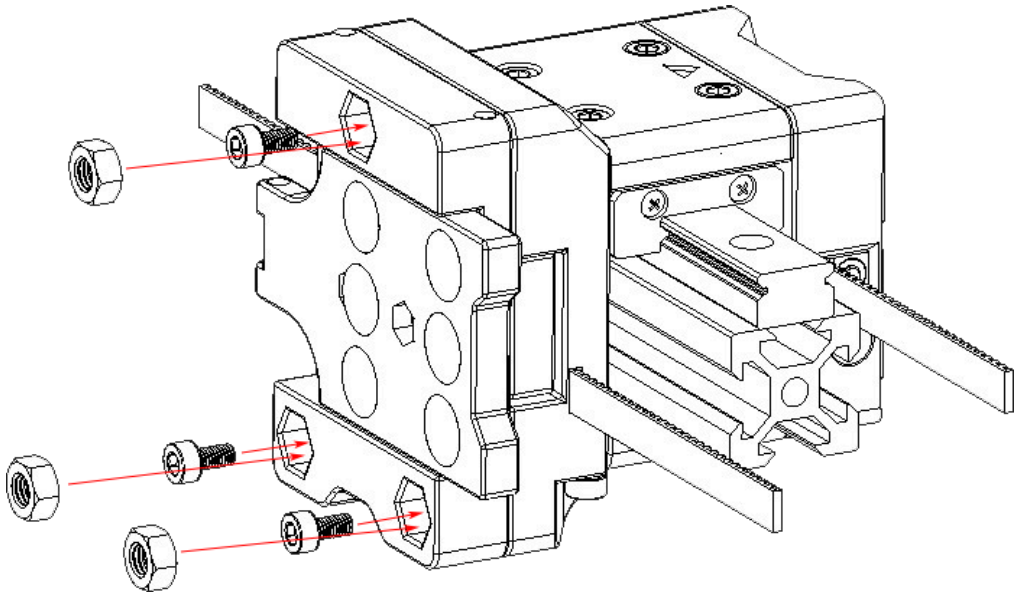


Carriage

Place the assembled Locking Plate magnets side face down on a flat surface and place the Carriage Body Rear on top. Place the assembled Slider on top of the Locking Plate and screw them down using m3x8mm bhcs and m3x12mm bhcs. The m3x8mm should be on the right (closer to Locking Plate Arm) and the m3x12mm on the left when viewed from the front. It is advisable to apply threadlocker to the 2 screws to prevent them getting loose. After completed, slide the Locking Plate back and forth. They should move freely without any resistance.

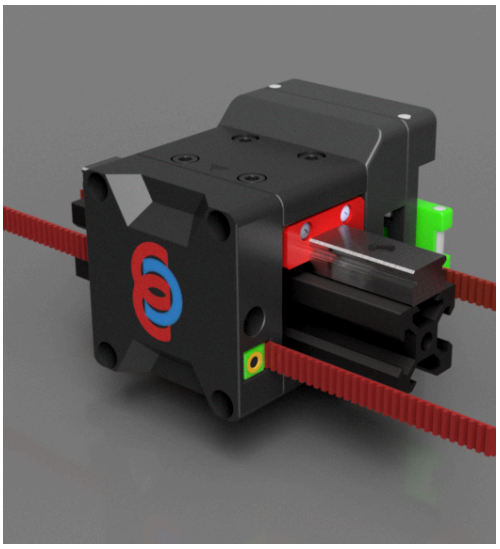


It's time to complete the whole Carriage Assembly. Install the Carriage Body Rear to the Carriage Assembly and screw it down using 3 x m3x6mm shcs. You can then push in 3 x m5 hex nuts on top of the screws. The m5 hex nuts should be a push tight fit to prevent them from accidentally dropping out.



Carriage

Congrats on completing the Carriage Section. Job well done. Remember to take breaks in between assemblies. Your final Carriage Assembly should look like this.

Checklist

- Ensure the Locking Plate can move freely without resistance.
- Try to move the carriage around. Ensure the m5 hex nuts stay in place.
- Ensure you have the proper belt tension.
- Ensure all screws are tightened.

Let’s assemble the Toolhead next once you’re ready to rock and roll…

To Be Continued…