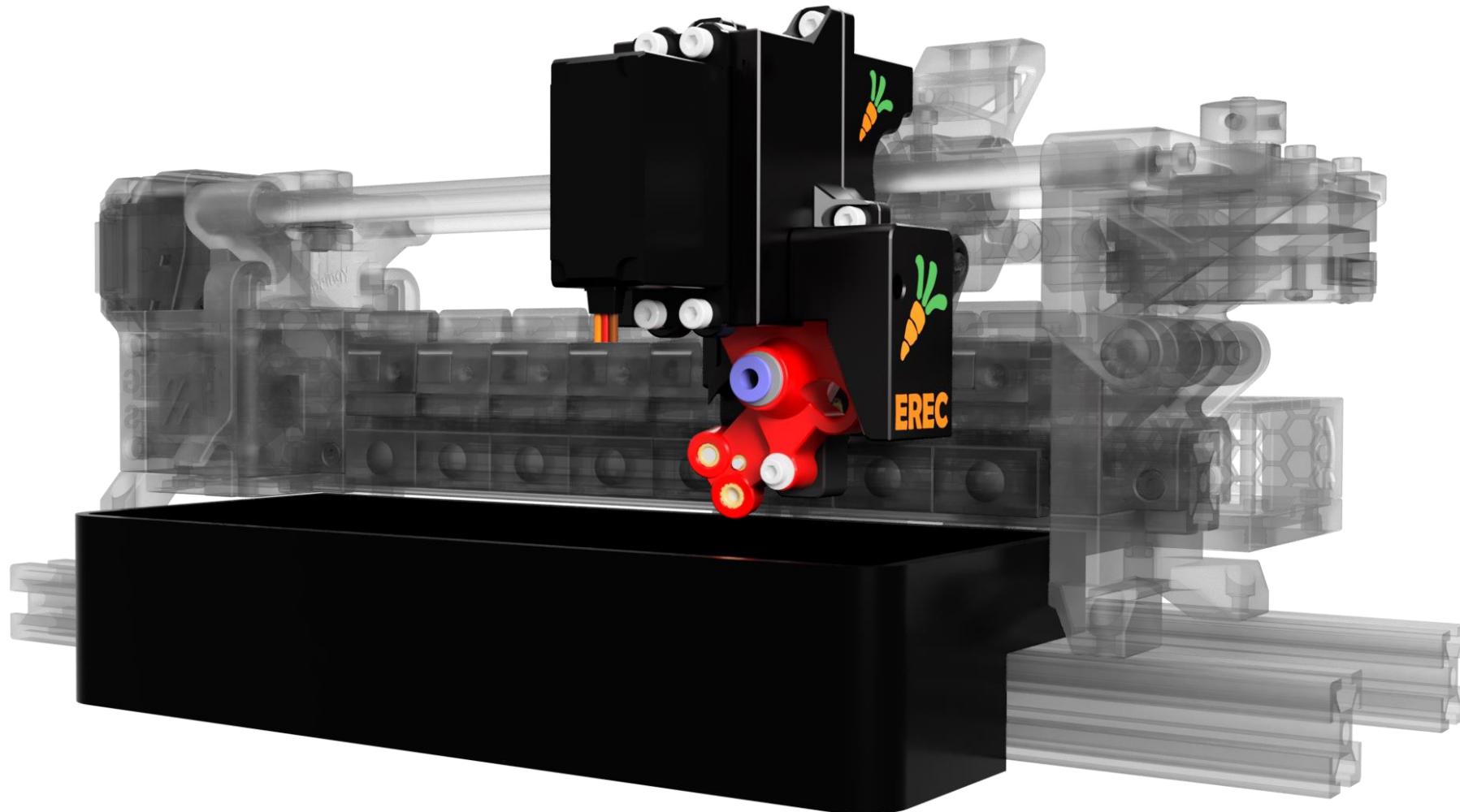


ENRAGED RABBIT ENCODER CUTTER – BETA 7.0 🐰

Assembly Guide



Attention!

I'm not an expert and 3D printing is just my hobby. So please be careful when you build this mod and don't just go ahead. All parts are tested and working. But everybody bears the risks of a modification **him/herself!** I'm not responsible if any harm occurs, so be careful, especially with the knife.

With that said, let the cutting journey begin. Have fun building this fancy carrot cutter!

Department of Design



How to get help

The assembly process of EREC can be tricky at times, although I have tried to make it as straightforward as possible. If you need any help, don't hesitate to join our Discord server, KevinAkaSam's Sandbox. Don't forget to check out our other projects :)



Invite:

<https://discord.gg/Jw4frr64yV>

Channel:

<https://discord.com/channels/964441223169449984/11697331007004345>

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Acknowledgements

EREC went over a long development cycle until we got here. The first revision of EREC got released almost one year ago! I want to say thanks to everyone who helped tinkering with us.

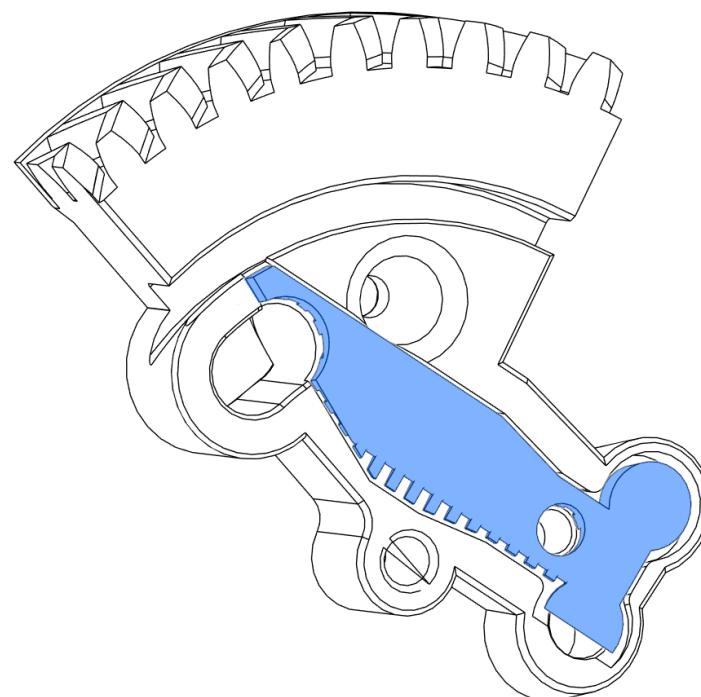
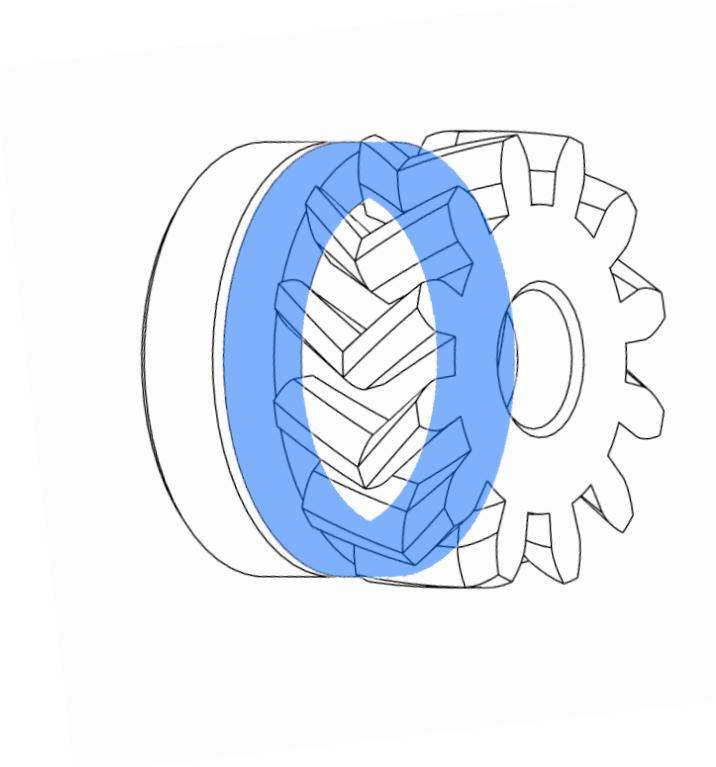
- **@KevinAkaSam** – The magic guy who developed the first concept of EREC!
- **@BioKeks** – Developer of EREC Beta6 and Beta7
- **@xF4m3** – Thanks for helping with the Macros and tinkering with us
- **@sorted01** – The guy behind *Filametrix*, thanks for the idea with the cutter!
- **@moggieuk** – Thanks a lot for awesome firmware and the quick help on the Voron Discord!
- **@HooilooH** and **@WiggyWooSaa** – Thanks for the amazing mod ideas for Beta7 <3
- **@jmillerfo** – Unofficial developer of EREC Beta6.5 ;p, thanks a lot for some design ideas!
- **@jckennell** – Maker of the original Tip collector ;)
- **@ntchris** – Thanks for making EREC compatible with ERCF-Software-V3

And of course thanks to EtteGit and the amazing ERCFv2 Team for the awesome EnragedRabbitProject!



Parts preparation

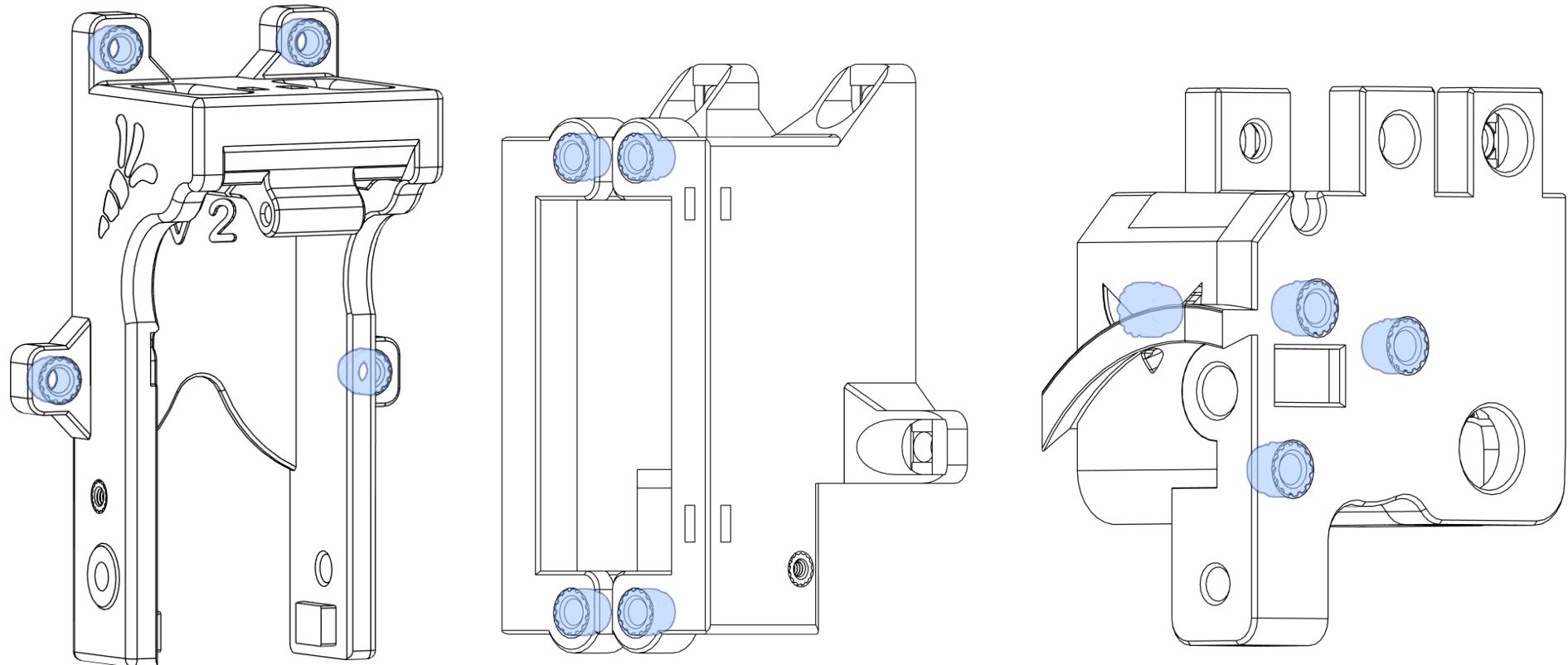
As you probably noticed during the slicing process, some parts have built-in supports to make them printable. Remove these supports before continuing with the assembly process.



M3 Heat Set Inserts

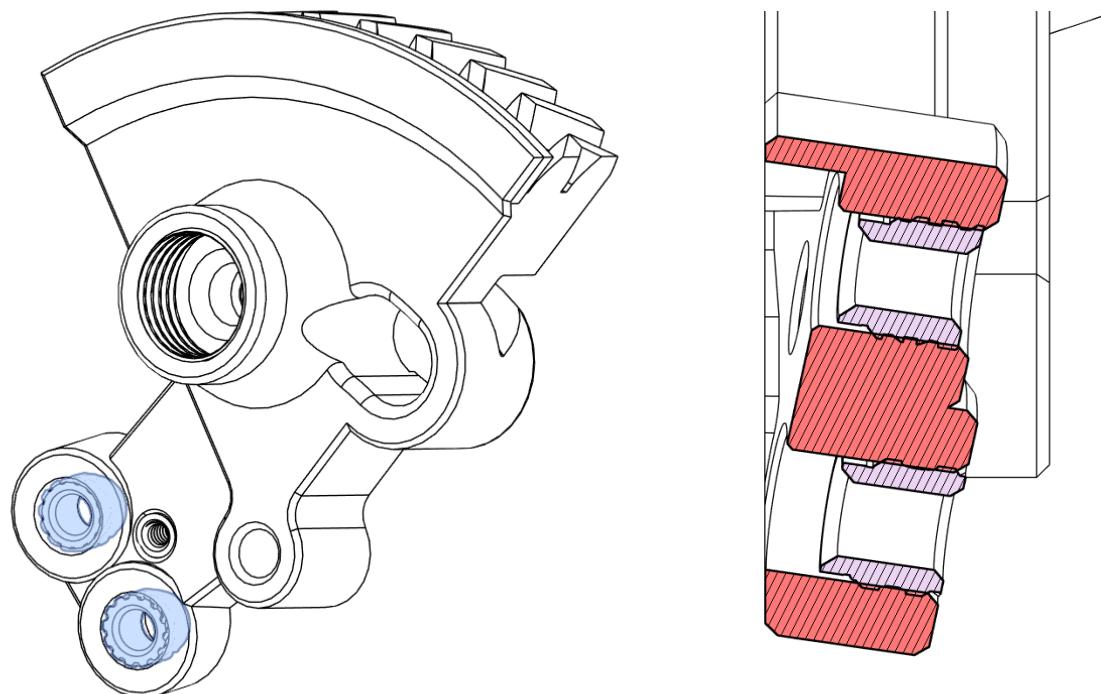
Let's begin with the M3 heat set inserts! Carefully place them into the designated holes. If you've never worked with heat set inserts before, watch this guide:

<https://www.youtube.com/watch?v=cyof7fY FcuQ>



Attention!

The two M3 heat set inserts on the *Cutter_Arm* are at a slight angle, so do your best to insert them correctly.

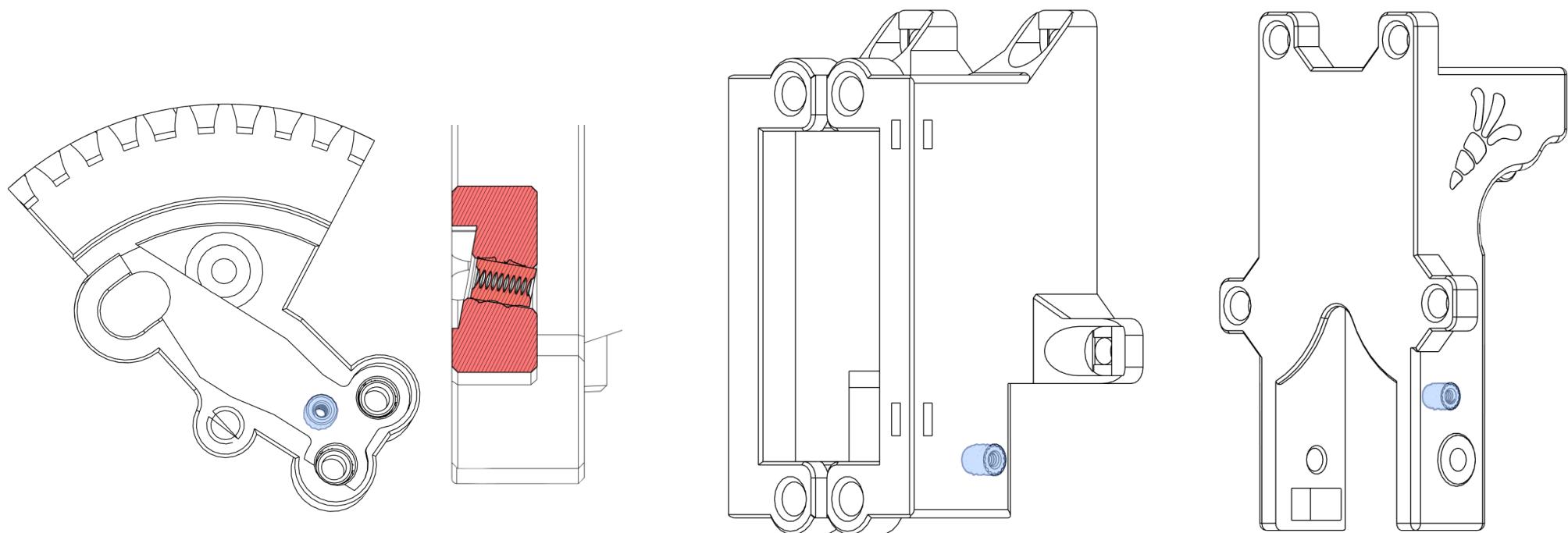


M2 Heat Set Inserts

Finished with the M3 heat set inserts? Now it's time to work on the M2 inserts. Take your time to insert them correctly :)

Attention!

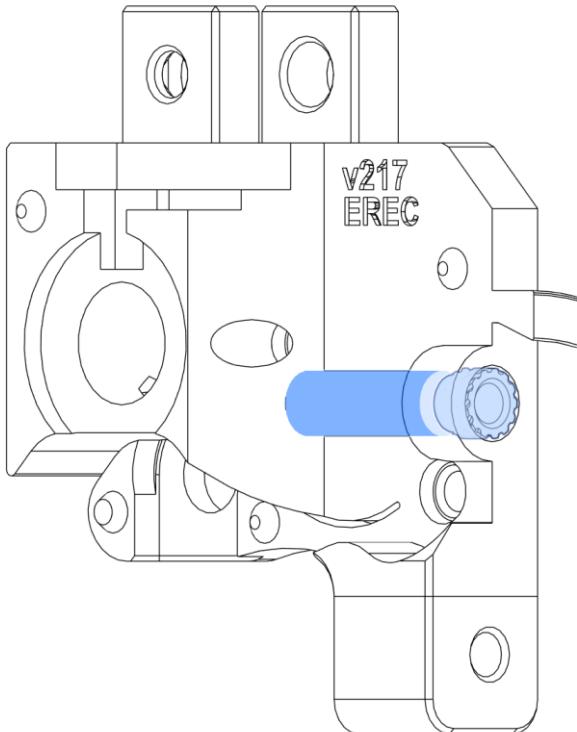
The insert of the *Cutter_Arm* has again a slight angle!



Encoder

A PTFE tube through the filament path is necessary for smooth operation. Cut a ~12mm length of PTFE tube and insert it into the hole. Secure it with an M3 heat set insert, ensuring that the insert is flush with the surface (*I promise this is the last insert ;)*). Follow the ERCFv2 assembly for the rest.

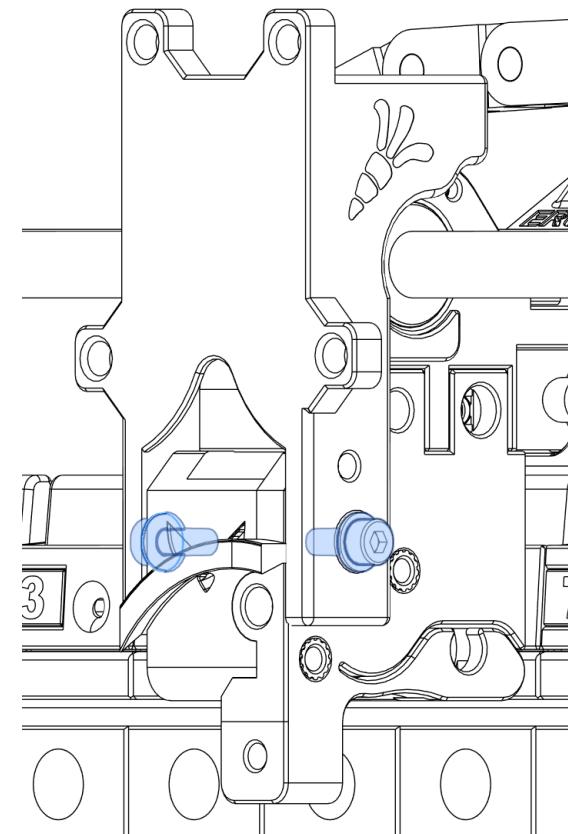
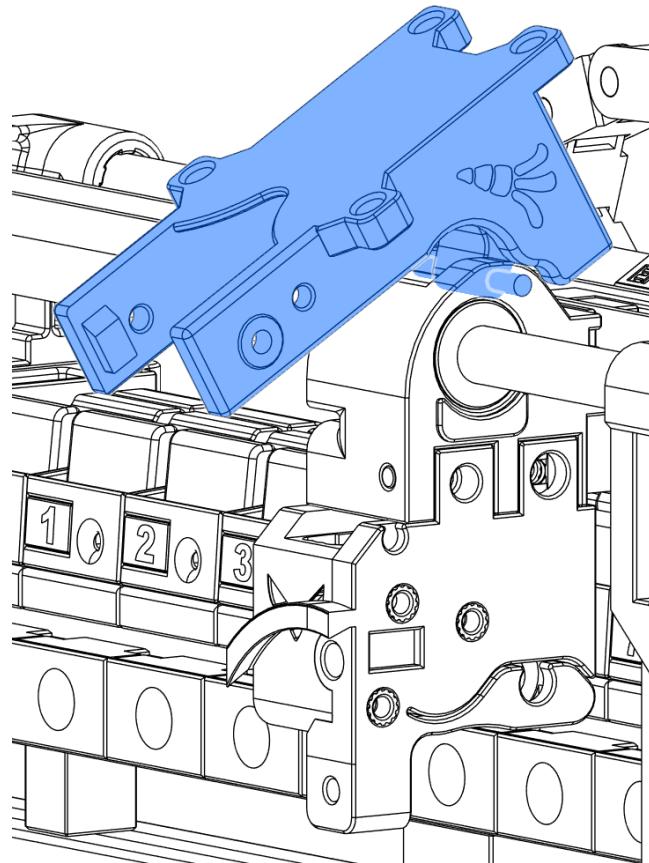
This part can be a bit tricky, so you may need a few attempts to get it right.



(image from gsx8299 ⚡)

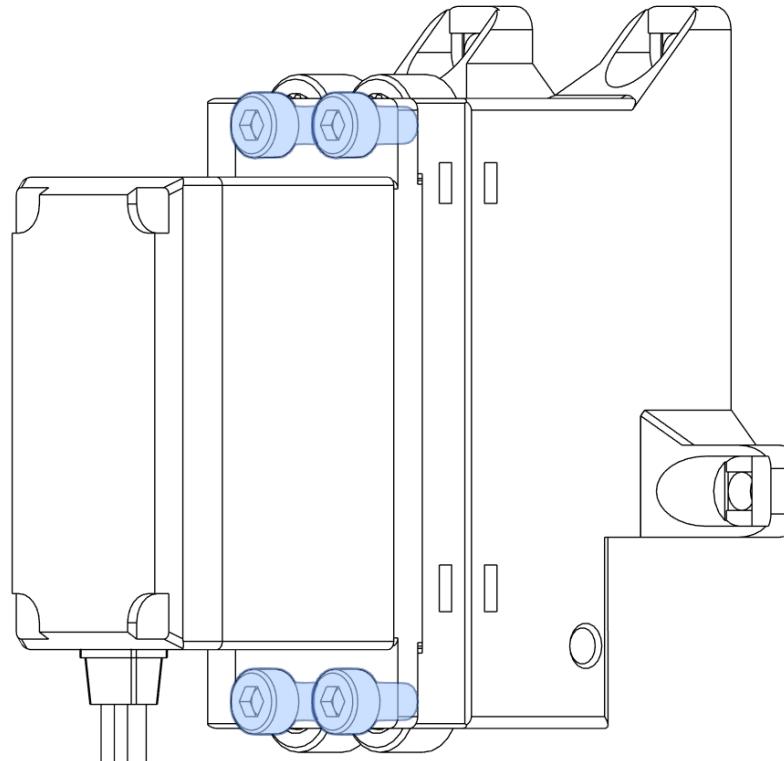
Servo Base

Insert the *Servo_Base* on the *Selector* and place a little piece of filament through the hole. Move the *Servo_Base* down until it latches with the *Encoder*. Secure it with *2x M3x8 SHCS* screws, don't forget the washers!



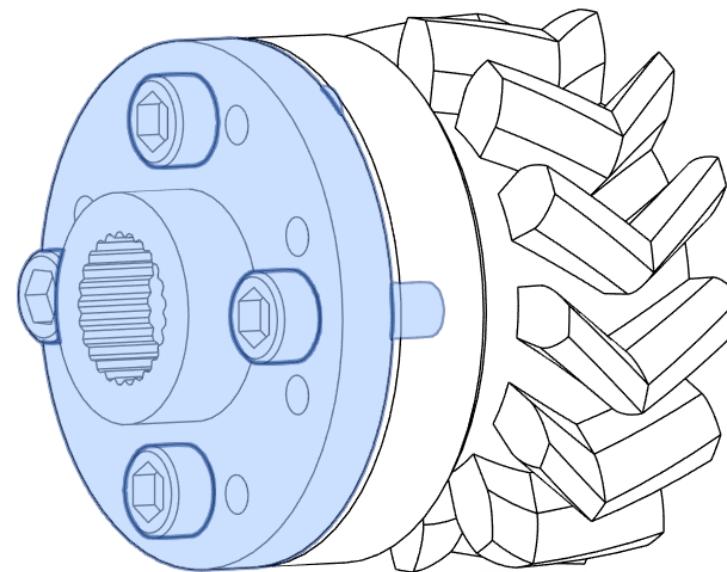
Servo Mount

Insert the servo trough the *Servo_Mount* and secure it with *4x M3x6 SHCS* screws.



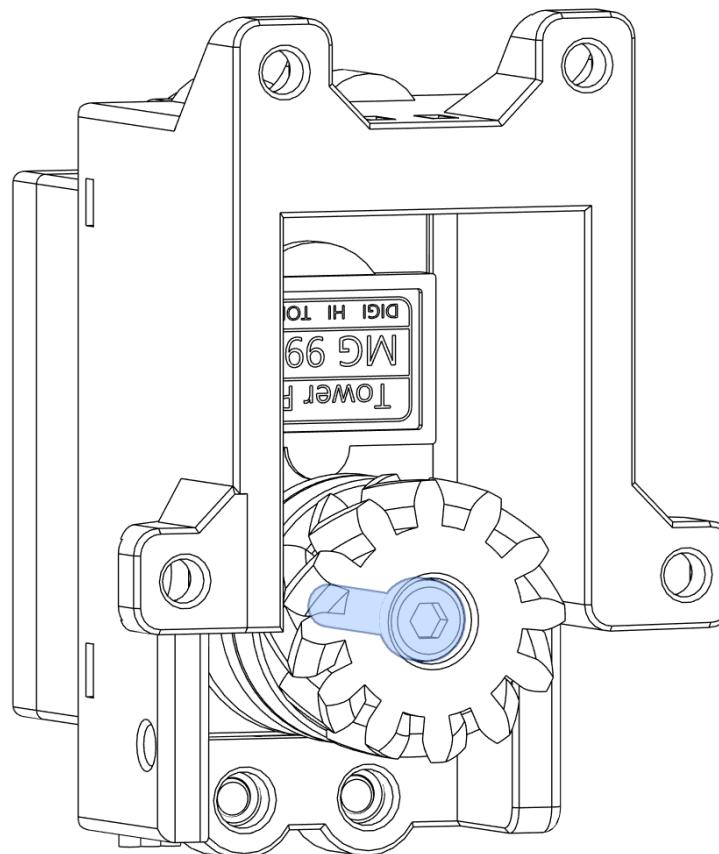
Servo Gear

Secure the round servo horn to the gear using *4x M2x6 SHCS* screws. You might need to slightly enlarge the holes in the servo horn to fit the screws. Be careful not to overtighten them!



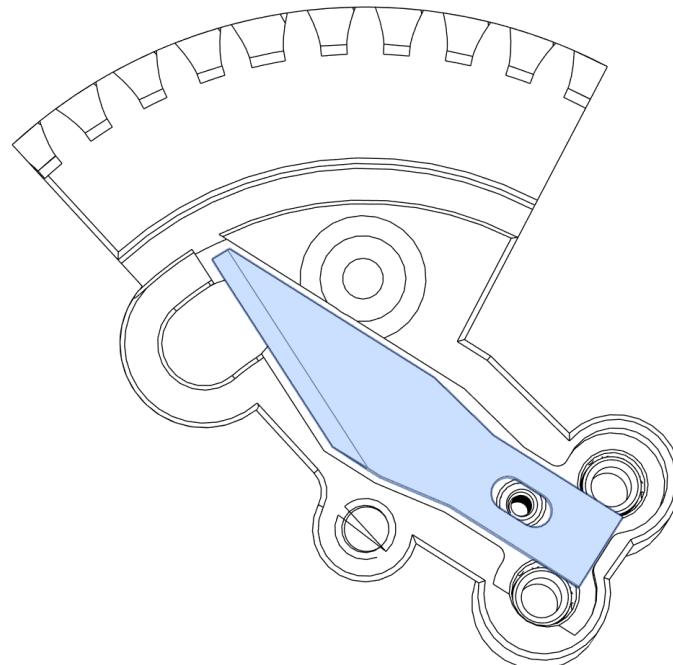
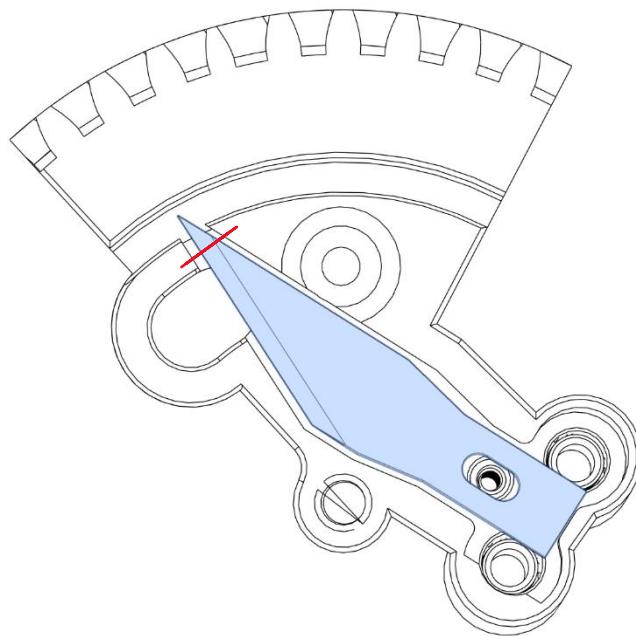
Servo Gear Mounting

Mount the assembled servo gear using *1x M3x18 SHCS* screw. Tighten the screw firmly but be cautious not to over-tighten and risk damaging any components.



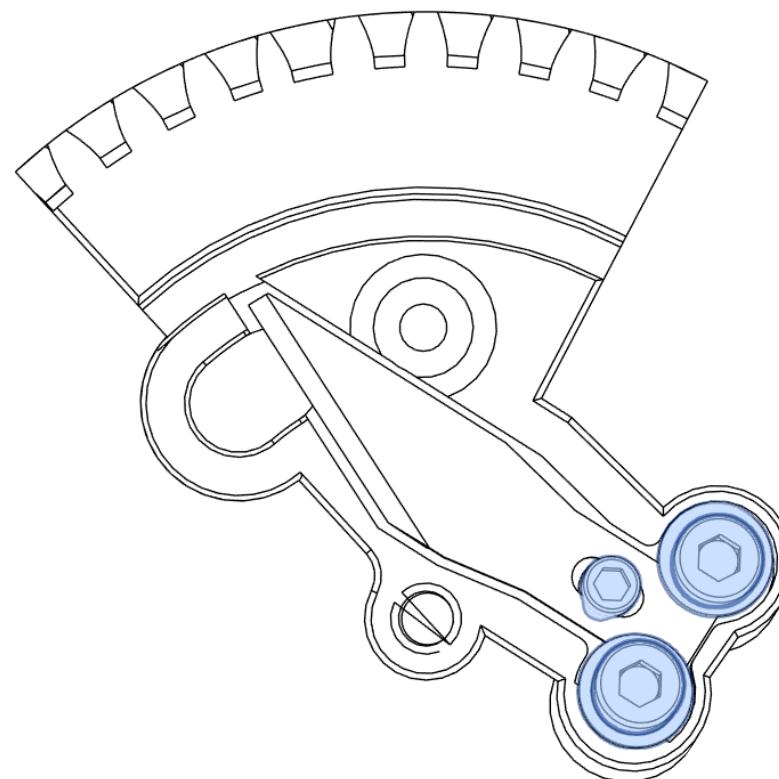
Cutter Arm

Insert the knife and mark the spot as shown in the picture below. Use appropriate tools to carefully cut off the tip of the knife. **Be extremely cautious during this step**—the knife might shatter, so wear safety glasses and perform the cutting in a controlled environment, such as inside some box. **I am not responsible for any accidents or damage that may occur during this process.**



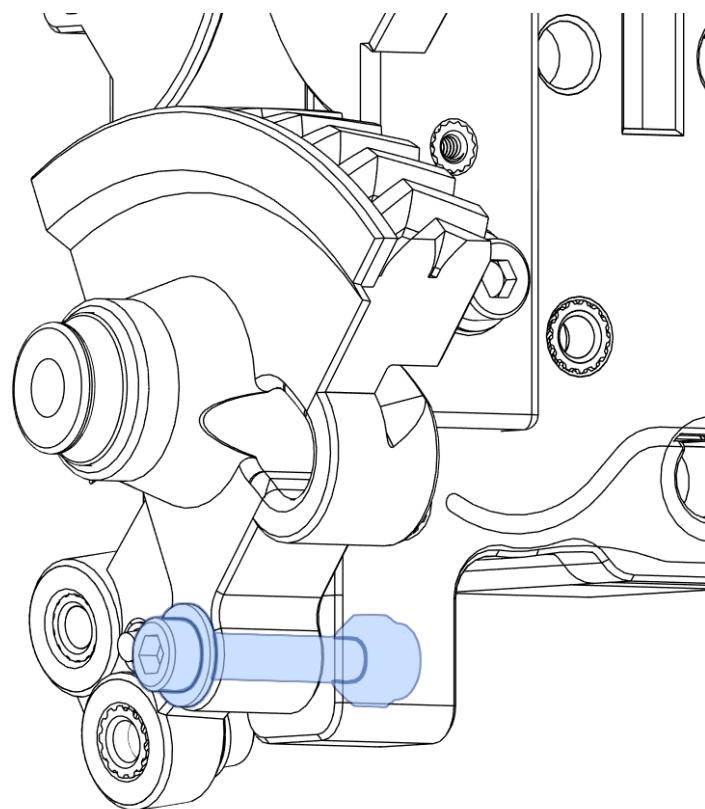
Cutter Arm

Mount the knife in the *Cutter Arm* using *1x M2x6 SHCS*, *2x M3x6 SHCS* and *2x M3-Washers*. The knife might bend during his process a bit. Don't forget to insert your *ECAS* or *PG4-Bowden Coupling*.



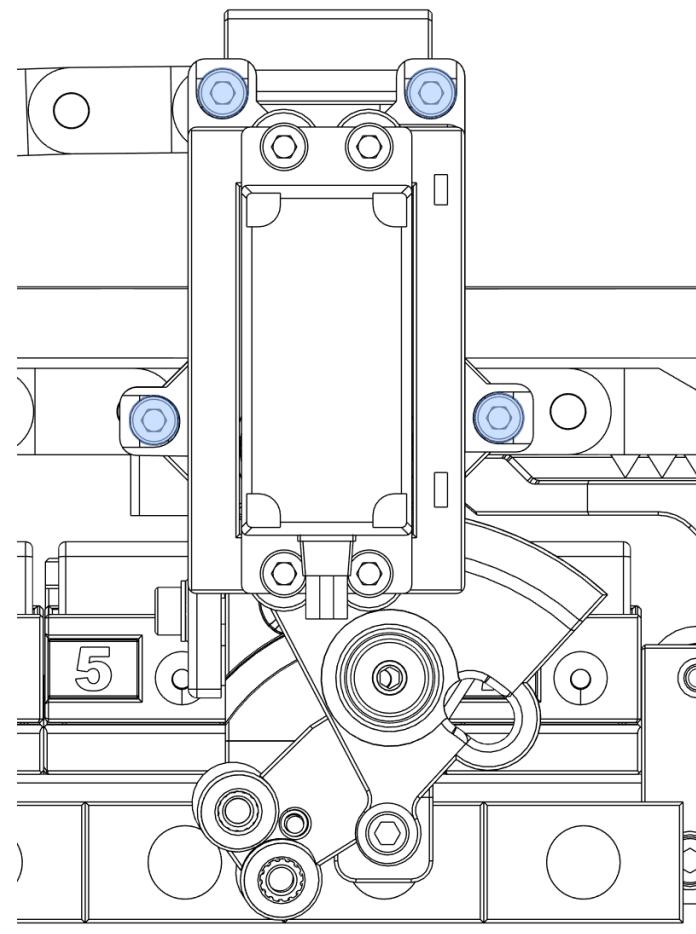
Cutter Arm Mounting

Slide the *Cutter Arm* on the *Encoder* like it is shown on the picture and secure it in place with a 1x *M3x18 SHCS*, 1x *washer* and 1x *M3 nylon nut*. Tighten the screw so that the *Cutter Arm* can still rotate freely but remains stable without any vertical movement



Servo Base Mounting

Fasten the *Servo_Mount* to the *Servo_Base* using four *M3x8 SHCS* screws as shown in the picture. You may need to disassemble it again later to adjust the servo angles (-> [Firmware](#))



Wiring

Most ERCF boards aren't designed to supply a large amount of current on the 5V line. Connecting the servo directly to the board might damage it. It's recommended to follow the official wiring guide.

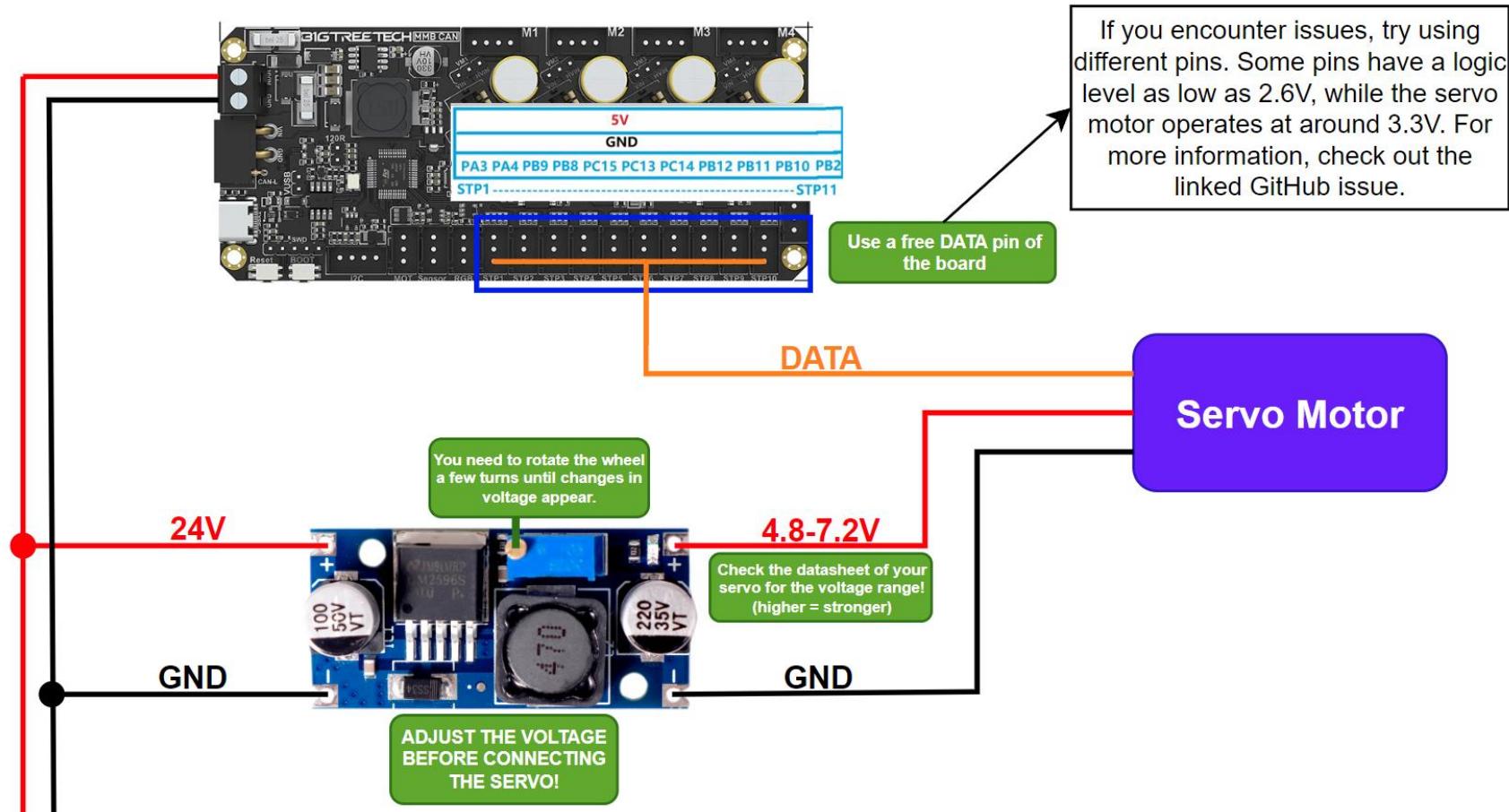


Image Sources

LM2596: <https://adiy.in/>

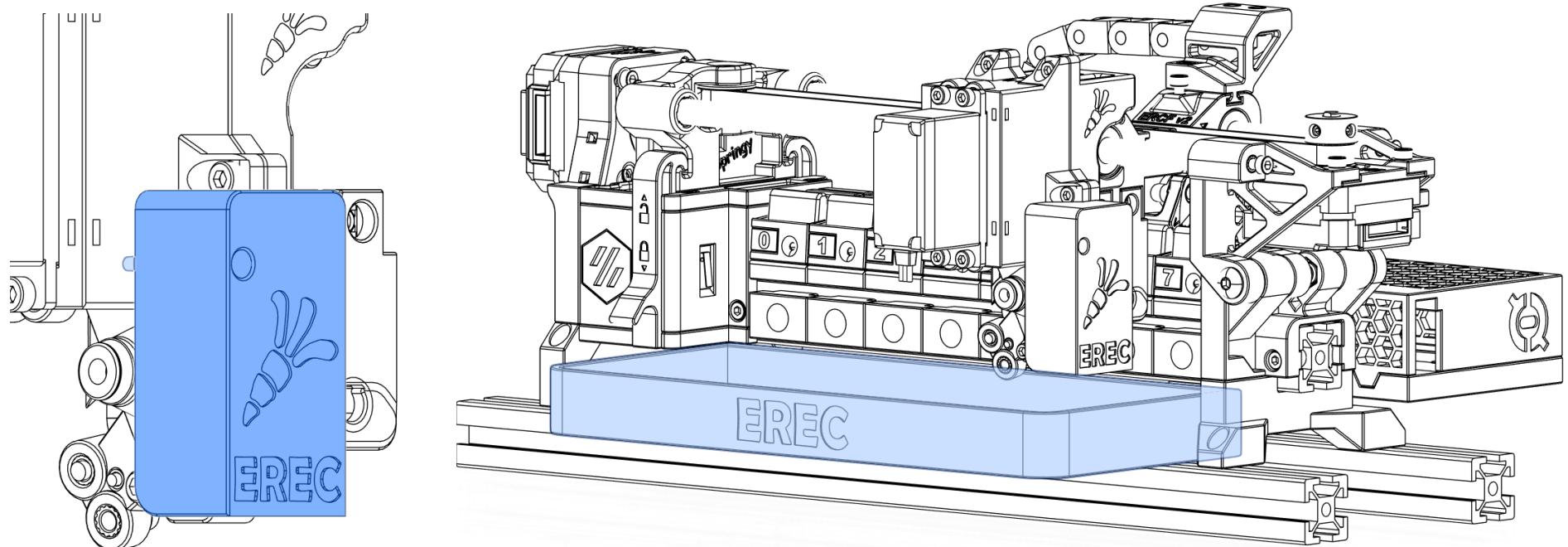
BTT-MMB: <https://github.com/bigtreeTech/MMB/>

GitHub Issue

https://github.com/kevinakasam/ERCF_Filament_Cutter/issues/20#issuecomment-2198867799

(OPTIONAL) Tip Collector

Use two *M2x6 SHCS* screws to mount the *Tip Catcher* in the designated spot. Then, attach the *Tip Bin* to the 2020 extrusion using *3x M3x8 SHCS* screws and *3x M3 T-Nuts*.



Firmware

EREC uses *HappyHareV2* as its firmware. Thanks to **maggieuk**, you can enjoy easy integration as a third-party addon. For more information, visit <https://github.com/moggieuk/Happy-Hare/wiki/Addon-Feature-Setup#---erec-filament-cutter>.

In the configuration file, adjust the `variable_servo_closed_angle` and `variable_servo_open_angle` settings. If the angle is out of the servo range (e.g., the open angle is 200 but the servo only goes up to 180), you will need to disassemble the *Servo_Base* and reposition the gear wheel to fit the correct angles.

For those using ERCF-Software-V3 or the older Enraged Rabbit software, the cutter feature is unsupported due to missing APIs/macros. A special fork of ERCF-Software-V3 with added support for the ERCF cutter and sample config files is available: <https://github.com/ntchris/ERCF-Software-V3>



Happy Cutting!

