

STINGER V2

Assembly Guide



Preparation

- 1.1 Hardware
- 1.2 Tools
- 1.3 3D Prints

Assembly

- 2.1 Front End
- 2.2 Back End
- 2.3 Final

Setup

- 3.1 Update ESC
- 3.2 Update PCB
- 3.3 Balance Test

Preparation

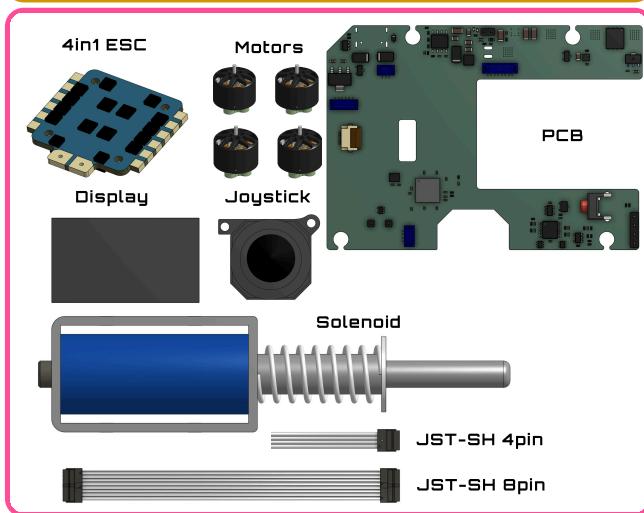
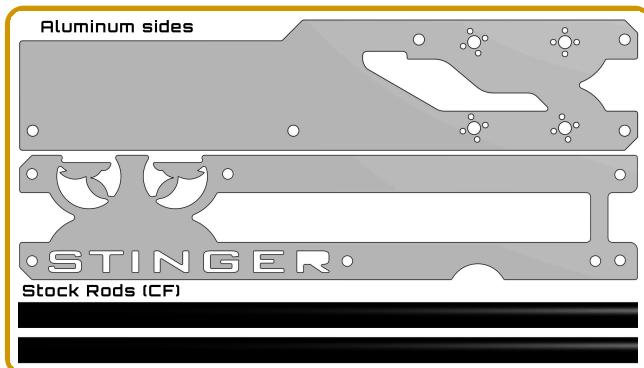
1.1 Hardware

Nuts'n Bolts

Electronics

Hardware

	M3 Threaded Insert x9
	M4 Threaded Insert x16
	M2x4RH x8
	M2x5RH x18
	M2x10RH x1
	M3x6FH x22
	M3x10FH x1
	M3x10RH x17
	M4x8FH x12
	M4x12FH x2
	Softmount x4
	M3 bushing x2
	M2 bushing x1
	5x3mm Magnet x4
	8x2mm Magnet x2
	BCAR Bearing



Questions / Need help?

Check the assembly video on youtube and the github repositories

still can't find it? Ask on discord!

Preparation

1.2 Tools



Questions / Need help?

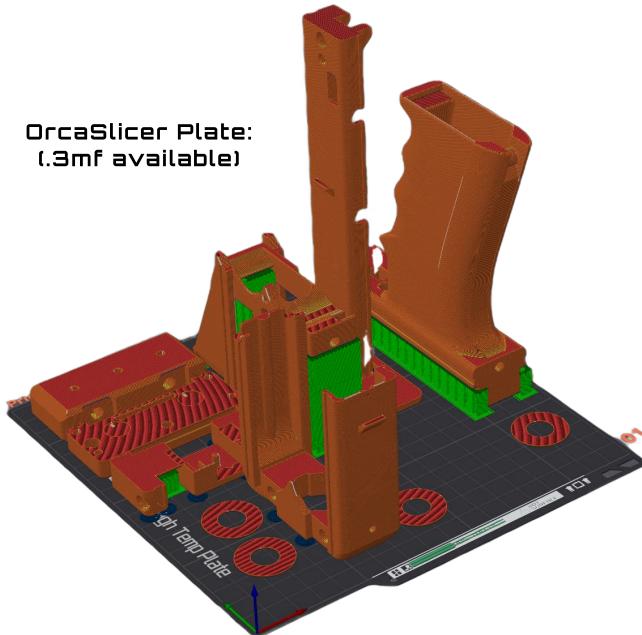
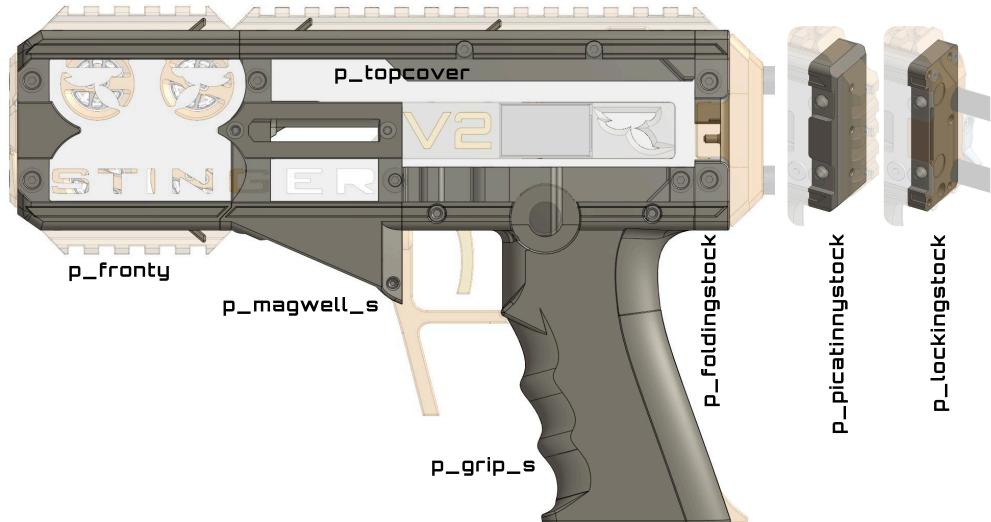
Check the assembly video on youtube and the github repositories

still can't find it? Ask on discord!

Preparation

1.3 3D Prints

Primary



OrcaSlicer Plate:
(.3mf available)

Settings:

.12-.2 layer height
99 wall loops

Make sure flow rate and pressure advance are well-calibrated for tolerances.

Support:

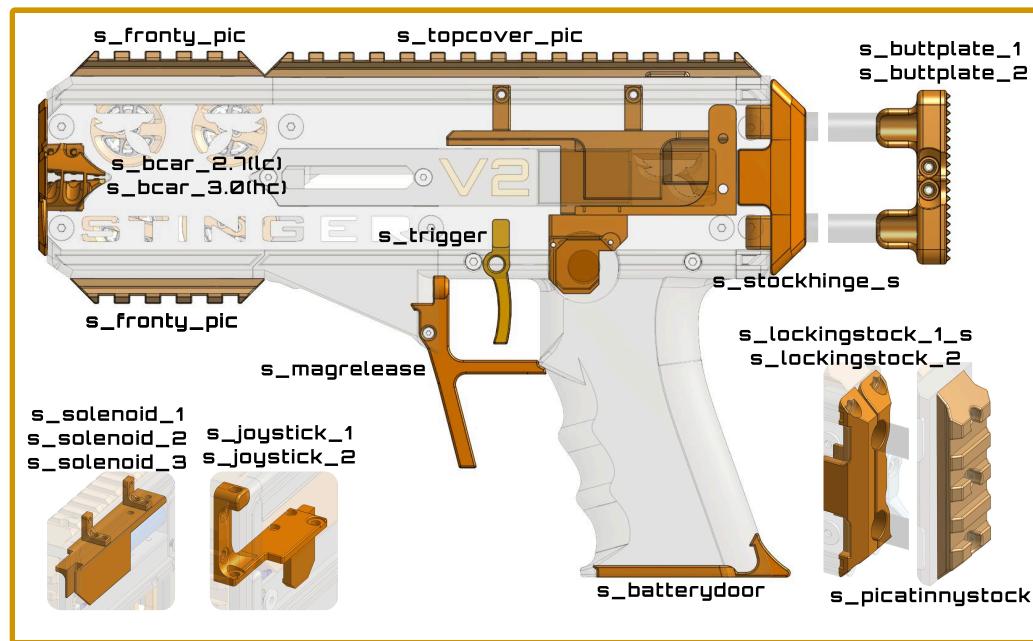
(Objects ending with `_s`)

On build plate only
Support xy distance: 2mm

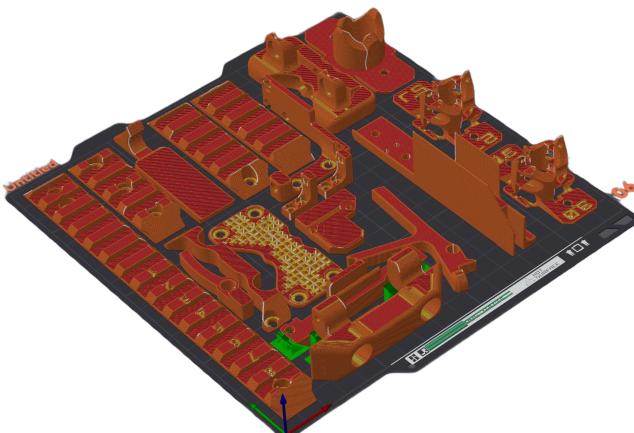
Preparation

1.3 3D Prints

Secondary



OrcaSlicer Plate:
(.3mf available)



Settings:

.12-.2 layer height
99 wall loops

Make sure flow rate and pressure advance are well-calibrated for tolerances.

Support:

(Objects ending with _s)

On build plate only
Support xy distance: 2mm

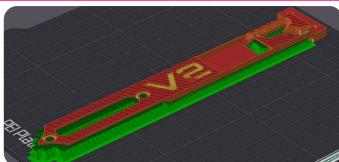
Preparation

1.3 3D Prints

Displaycarrier Settings:



Plate



Pause for 2 last layers

.16 layer height
99 wall loops

Make sure flow rate and pressure advance are well-calibrated for tolerances.

Support:

(Objects ending with _s)

On build plate only
Support xy distance: 2mm

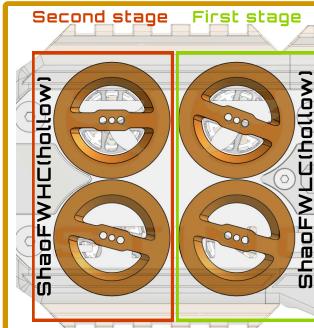
Print in white and add a pause for the last 2 layers in secondary or primary color.

logoinsert



Print the logo insert in a clear material, like clear PETG

Flywheels



The HC (= High Crush) variant has a tighter contour and grabs the dart more than the LC (= Low Crush) variant

This is to optimize FPS-to-dart wear



Settings:

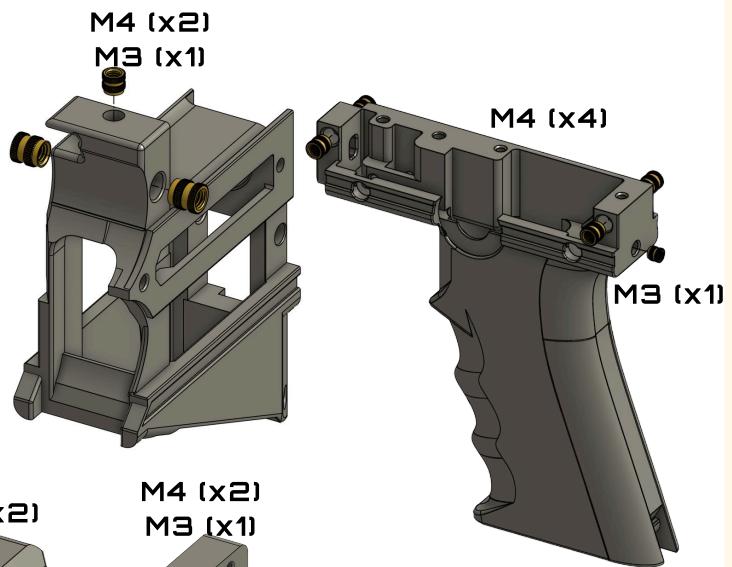
0.2mm layer height
99 wall loops
Top/Bottom shell layers: 3
Top/Bottom surface pattern: Concentric
Seam position: Random
Support: Off

Flywheels are iterated on and might change.
Check the discord server and or github for different variants or updated versions

Assembly

Heat Inserts

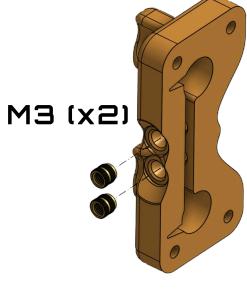
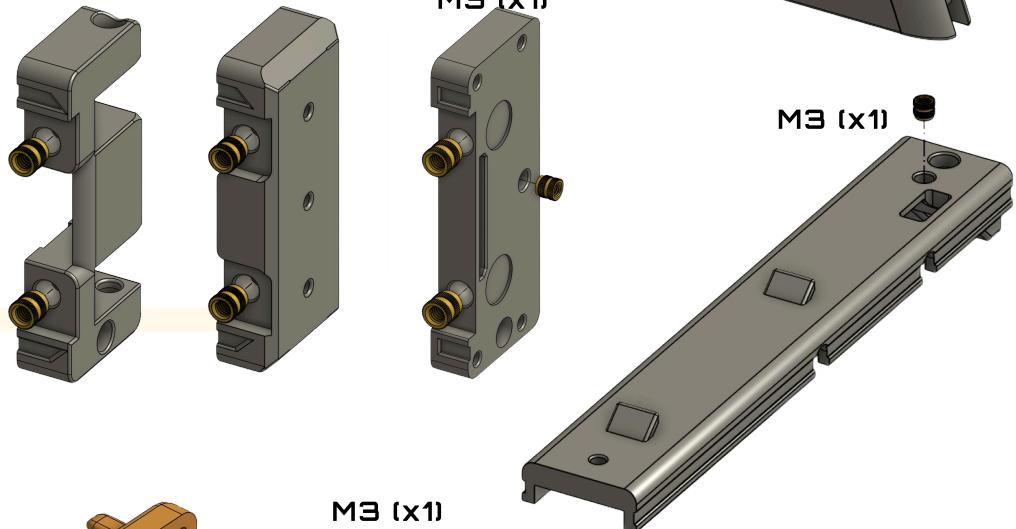
M4 (x4)
M3 (x2)



M4 (x2)

M4 (x2)

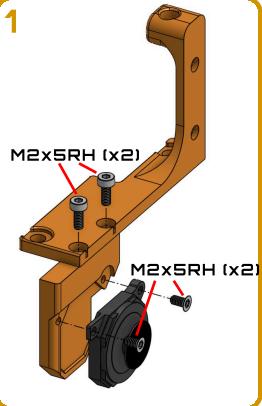
M4 (x2)
M3 (x1)



M3 (x1)

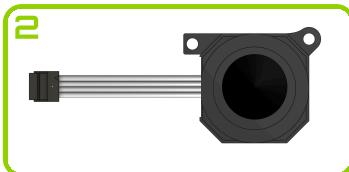
Assembly

Joystick



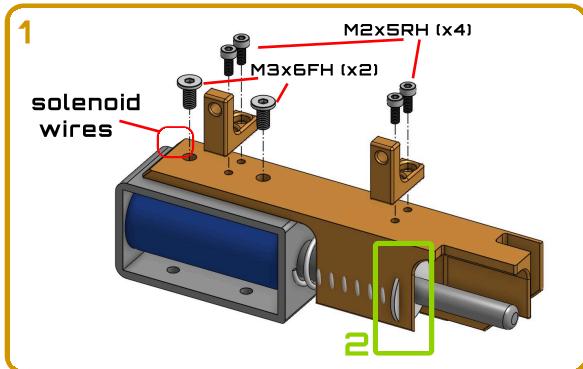
1: Screw the joystick assembly together

2: Solder the 4pin JST to the joystick
(see picture for orientation)



*This may already be soldered in your kit

Solenoid



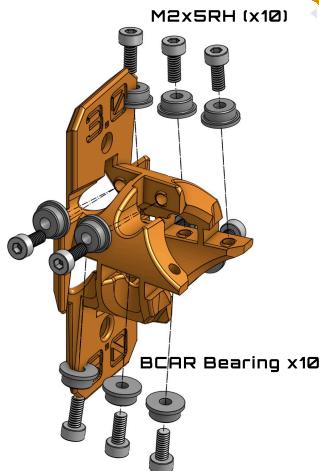
1: Screw the solenoid assembly together

2: Make sure the flat part of the solenoid part travels on this plastic protection piece to protect the display ribbon cable

Take care to run the solenoid wires on the right side as indicated

Assembly

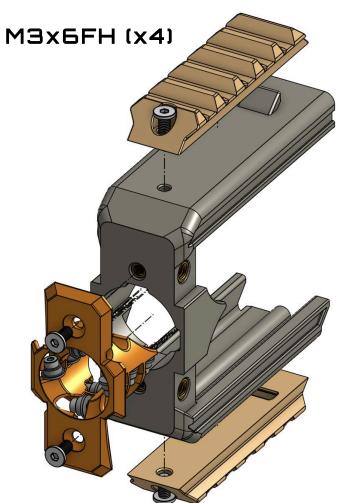
BCAR



1: Screw the bearings onto the BCAR

Notice, keep the screws as straight as possible, and check if bearings can still turn once tightened, if not untighten the screw or remove any excess material with a knife

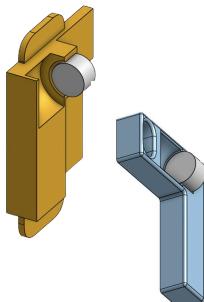
Fronty



Assembly

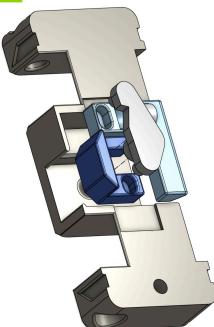
Foldingstock

1

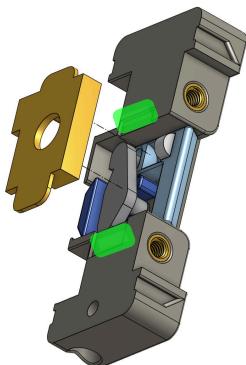


5x3mm Magnet

2



3



1: Glue the magnets into the stock parts with superglue

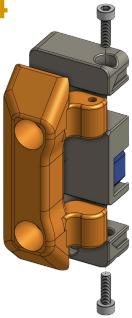
Make sure to orient the magnets so they oppose and scratch the surface for the glue to bond better

2: Add the linkage parts into the stock, make sure they can move freely.

Sand/file if they have too much friction

3: Add the cover part on top, using super glue to the **highlighted surfaces**

4



M3x10RH (x2)

4: Add the hinge and screw it in

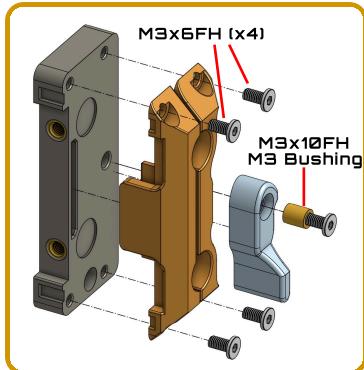
The screw holes are conical, the tighter you screw them in, the more friction the hinge will have, tune to your liking.

Some sanding, filing or slicing might be needed to fine tune the tolerances on the folding stock part.

They are tight to make it operate nicely

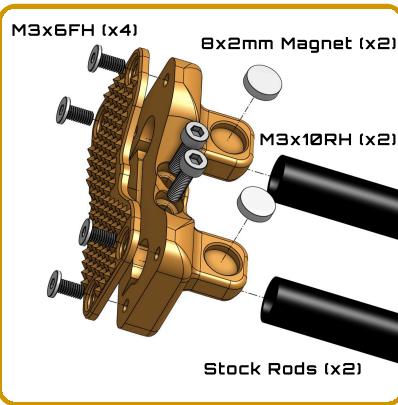
Assembly

Lockingstock



Add the parts as shown
and test if you can lock it.
The blue part should be
able to turn freely

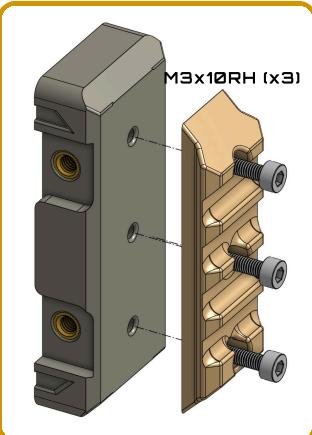
Buttplate



Glue the magnets in, roughen the
surface
first for better adhesion

Insert the rods and tighten using
the M3x10RH screws

Picatinnystock

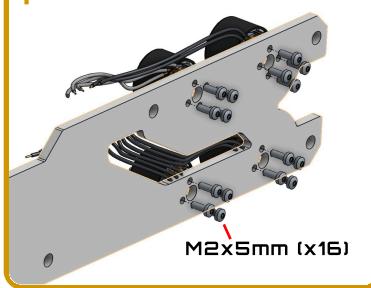


This one's pretty simple

Assembly

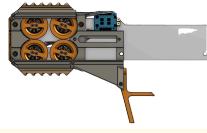
Front Assembly

1



1: Screw the motors in using the included M2x5mm **Loctited (blue)** screws.

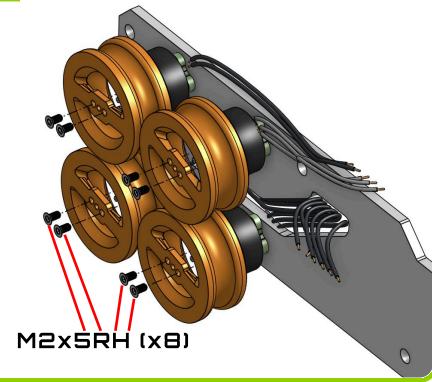
Make sure the motor cables run as in the picture



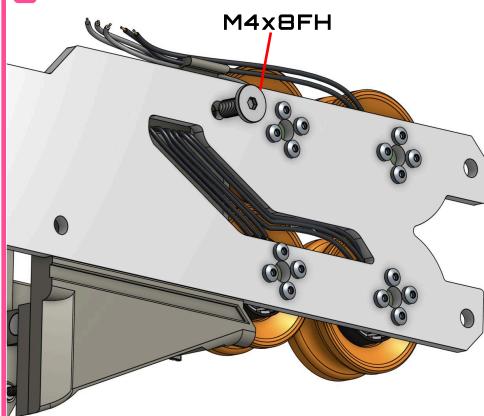
2: Add the flywheels onto the motor bells.

Optionally apply Loctite, tighten generously but as not to break the plastic

2



3



3: Route the top 2 motor wires through the slot in the magwell part.

Route the bottom 2 motor wires through the aluminum cutout and then through the magwell. Make sure to flatten them and make sure they run side by side as to be flush with the side.

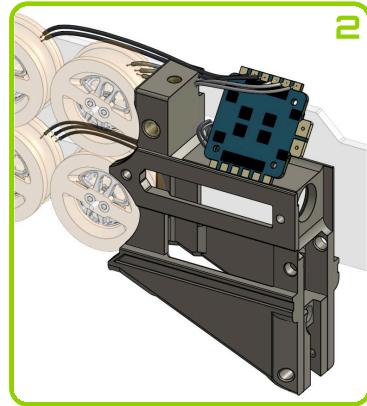
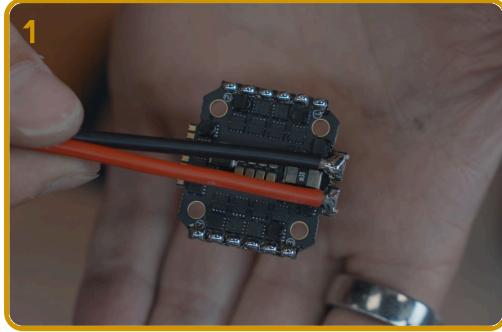
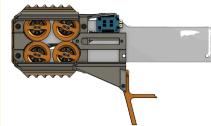
Optionally glue the wires onto the magwell part with hot glue after routing to keep them nice and tight and to plug up the hole. Make sure the top right motor wire does not rub onto the motor's flywheel.

Please reference the assembly video on how to do this neatly

Assembly

Front Assembly

1: Prepare the ESC by adding the capacitor, power leads and pre-tinning

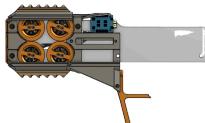
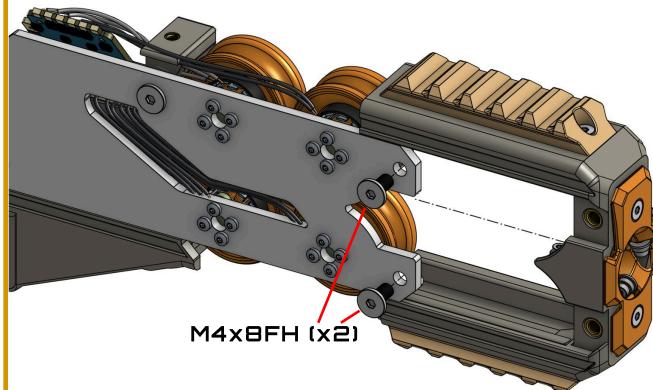


2: Shorten the motor wires to the right length, strip and solder them onto the ESC, the order of motor wires connected to a single (3 cable) ESC does not matter (just changes direction, we will fix later in AM32 configurator), but it is vital each 3 phase motor goes to 1 ESC.



Assembly

Front Assembly

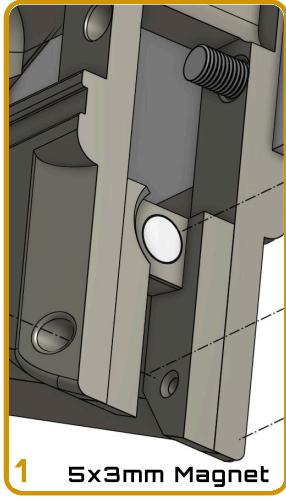


Slide the fronty over the flywheels, it will friction fit into the magwell
(it has a up and down, look at the contour at the bottom of the magazine)

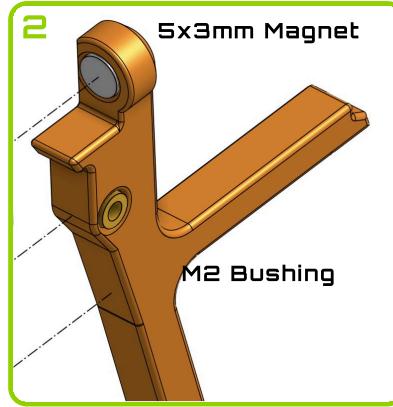
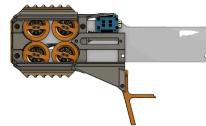
Make sure it doesn't pinch the motor wires anywhere and check that the motors still spin freely after.

Assembly

Front Assembly



1: Glue the magnet into the magwell

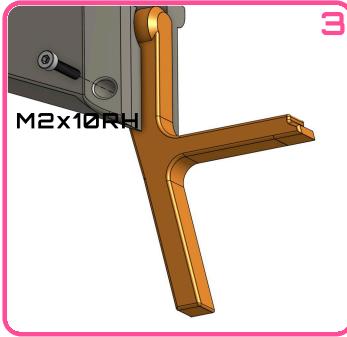


2 5x3mm Magnet

5x3mm Magnet

10 of 10

M2 Bushing



3

M2x10RH

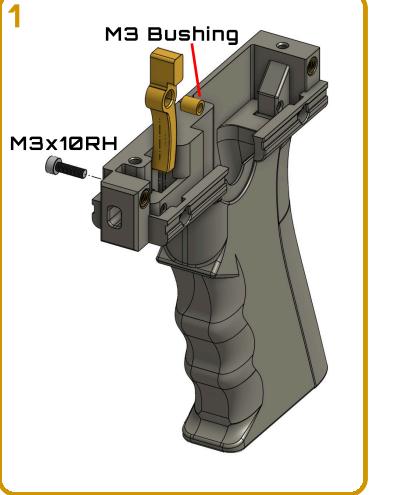
1 5x3mm Magnet

2: Glue the magnet in the mag release such it attracts to the one in the magwell.
Tip: add glue to the mag release, put the magnet onto the magwell and push the mag release on. Add the M2 Bushing too.

3: Add the mounting screw, tightening it until it the mag release stops moving or gets stuck in the open position.

Assembly

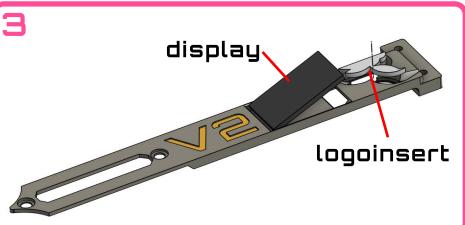
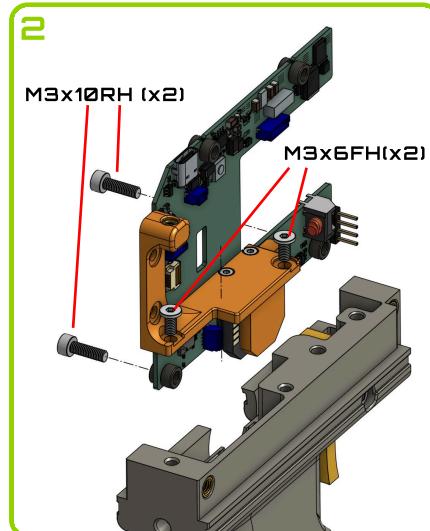
Rear Assembly



1: Pressfit the bushing into the trigger, add it into the grip. Make sure it moves without friction, sand/file if needed.

2: Plug in the joystick into the JST port on the PCB, move the PCB and the joystick assembly into the grip at the same time. This might take a little wiggling and trial and error. Secure the PCB to the grip with 2 screws, don't over tighten. **(Add the rubber gummies first!!)**. Secure the joystick assembly with 2 screws too.

Confirm the trigger still actuates.



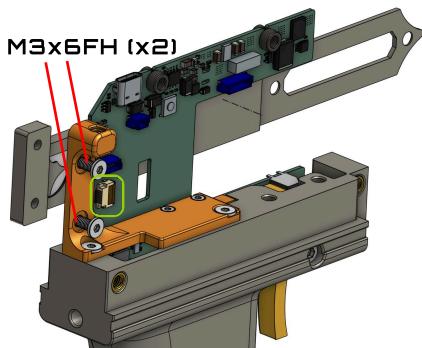
3: Seat the display into the display carrier as shown. Seat it into the back with the ribbon cable through the hole. Then let it fall into the carrier. **Be very careful with the ribbon cable, and do NOT put pressure on the display. If it does not fit, tune your printer's flow rate and PA.**

Assembly

Rear Assembly



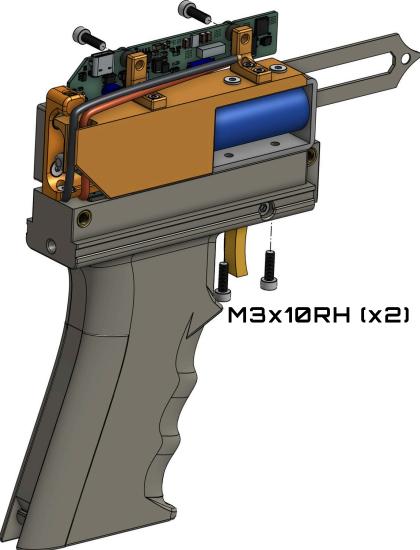
1



1: Route the ribbon cable through the hole in the PCB. Secure it with screws (make sure the displaycarrier is horizontally level). Then plug in the ribbon cable by lifting up the black plastic retainer, sliding it in, and pushing it back down.

2

M3x10RH (x2)



2: Add the solenoid carrier onto the grip, secure it with 2 screws through the bottom (use a long Alan key). Route the battery cable through the slot and through the grip. Secure the pcb with 2 screws on the top, don't over tighten.

3



3: Add the joystick cover by first removing the thumb stick and also the thin plastic sheet behind. Use a small amount of super glue.

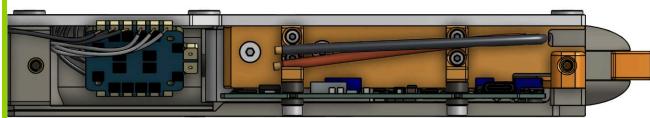
Assembly

Final Assembly & First Time Setup



1

1: Push the grip assembly into the front assembly. This should be a tight fit, could need to remove elephant's foot on the magwell. Pull back the mag release to get more room. Do not over tighten the M3 screws in the plastic.

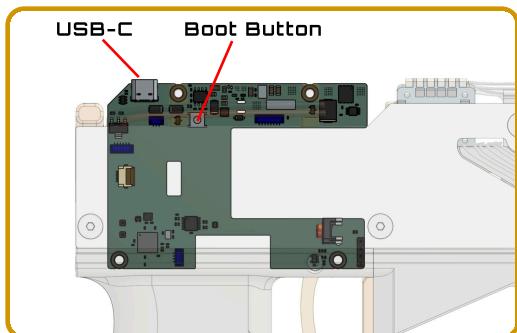


2

Solder on the solenoid wires and ESC power wires, plug in the 10-pin JST from the ESC to the PCB

Assembly

Final Assembly & First Time Setup



Now is the time to test the blaster electronically. Install firmware on the PCB by plugging it into the USB-C port into your laptop. A drive should appear. If not, try holding down the boot button whilst plugging into USB. Drag the latest firmware .uf2 file from the GitHub repo into the drive. The blaster should boot after this.

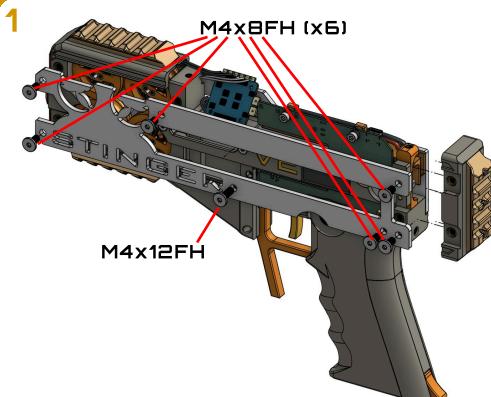
Next, plug in the blaster into a battery. Recommended to first check for continuity on the battery terminals to detect shorts and/or power with a current limited power supply. **Check the ESC does not contact either side panels, add insulating tape if it does.** You should be entered to first time setup. Follow first time setup and check if the motors spin. **DO NOT FIRE DARTS YET.**

Lastly update the ESC config for motor directions. Power the blaster and spin the flywheels using idle to check which ones are spinning wrong. To use AM32 config, go to the **Menu > Device > Hardware Setup > ESC Config**. Now you can plug your blaster in to your PC and navigate to AM32.ca. The device should show up and you can connect. Read out the 4 ESC's. Update the FW if nesssesairy and apply the latest config from GitHub to all 4 ESC's. Lastly reverse the motors that are spinning in the wrong direction.

Optionally, balance the flywheels using the tool in **Menu < Device < Hardware Setup < Flywheel Tester**. My rule of thumb is that if they sound okay at 60% (Which is higher than max RPM), they are balanced enough. You can balance using standard techniques, I like to spin the flywheels and hold a file to them to remove outside inconsistencies of the first layer

Assembly

Final Assembly & First Time Setup



1: Add your favorite stock option and secure the left side panel.
Add electrical/Teflon tape to the ESC if it has a chance if hitting either side aluminum panel

2: Lastly, add the top cover and Picatinny rail.

