

BLAMCON VYPER V0.3
ASSEMBLY GUIDE

FREE TO ALL FOR NON-COMMERCIAL USE
V0.3 AUGUST 2024 - SEE PROPS3D.PRO FOR LATEST

INTRODUCTION

Welcome to Blamcon! The Blamcon Vyper is a full featured interactive Light gun. This manual is still under development so please check often for updates and expect some issues.

FEATURES



- IR Light gun with wide angle lens compatability
- Solenoid recoil with working bolt
- Rumble and Adressable LED for interactive feedback
- Pull to reload magazine
- real eurgonomics with working rails and sights
- Working selector switch to change recoil modes
- Competitive trigger with forward A / B buttons



Firmware note: The Blamcon Firmware is still in pre-release and not yet available. When it is it will be posted freeon Blamcon.com/firmware. Using authorized firmware ensures correct operation and compatability

Disclaimer: This 3D model is provided FREE AS IS with no warranties by props3d.pro. This model is for Non-commercial use ONLY and pre-built light guns and kits are only authorized by blamcon.com and the providers listed on Blamcon.com. This manual will discribe in brief how to assemble this Functional Light Gun. if you need more help or just want to engage with fellow makers join on the Props3D.pro discord, link on the site. Have fun!

PARTS LIST 1 OF 4

SELF TAP PAN HEAD



THE BEST SCREW FOR PLASTIC. SELF TAPPING BECAUSE OF CORSE THREADS IT CAN BREAK IF TORQUED TO HARD

CAP HEAD



CAP HEAD IS USALLY RECESSED FLAT. YOU CAN SWAP THE PAN HEAD SCREWS FOR THESE IN A PINCH.

BUTTON HEAD



A BROAD HEAD MAKES THIS SCREW VERY ROBUST, JUST BE CAREFUL OF THE FINE THREADS IN PLASTIC

FLAT HEAD



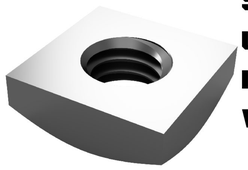
USED WHERE YOU NEED A FLUSH SURFACE TO YOUR PARTS AND DON'T HAVE MUCH ROOM.

GRUB SCREW



USED TO SET PARTS IN PLACE, BE CAREFUL BECAUSE THE HEAD CAN SPLIT IF TORQUED TOO HARD

SQUARE NUT



SQUARE NUTS CAN BE USED TO ATTACH PARTS INTO AREAS WITH GAPS WITHOUT SPLITTING

SELF TAP PAN HEAD

SIZE	NUM	USE
M2x5	4	Core to Body
M3x6	7	Joystick to Body
		Rumble Motor
M3x12	15	Selector Switch
		Butt Plate, N20
		selector switch
		Magazine Butt
		Buffer Tube Front
		Front Body
M4x8	1	Body Trig Guard
M4x14	1	Body grip back
M4x16	2	Body Joiner
M4x25	8	Foregrip to Front
		Body front/rear
		frame to back

CAP HEAD

SIZE	NUM	USE
M3x16	2	Buffer Tube
M3x20	2	Picatinny Rail

GRUB

SIZE	NUM	USE
M3x6	3	Front Sight to Front
		Frame, Front Frame
		to Barrel, Sight Dial
		to Rear Sight Body
M4x6	1	Front Frame to
		Barrel for Lens

SQUARE NUT

SIZE	NUM	USE
M3	6	For Body Nut Hoders

FLAT HEAD

SIZE	NUM	USE
M3x12	2	sight mount
		Sight Dial

BUTTON HEAD

SIZE	NUM	USE
M4x35	2	magazine spring

NOTE: ALL THESE PARTS ARE EMBEDDED IN THE BLAMCON VYPER PAGE ON BLAMCON.COM IN AN INTERACTIVE 3D MODEL FOR MORE INFORMATION ON THE LOCATION AND ORIENTATION PLEASE VISIT THERE.

WIRE

COLOR	LENGTH	USE
BLACK	22MM	USB
	16CM	Joystick
	6CM	Camera
	41CM	A/B/Foot
	9CM	LED
	17CM	Trigger
	75MM	Rubmble
RED	22MM	USB
	16CM	Joystick
	6CM	Camera
	9CM	LED
ORANGE	16CM	Joystick
	19CM	Foot Petal
YELLOW	16CM	Joystick
	6CM	Camera
	16CM	Trigger
GRAY	12CM	Selector
	36CM	A
GREEN	22MM	USB
	16CM	Joystick
	6CM	Camera
BLUE	16CM	Joystick
	35CM	B
PURPLE	16CM	Joystick
	85MM	Rumble
WHITE	22MM	USB
	9CM	LED
BLACK	10CM	Solenoid -
RED	10CM	Solenoid +

PARTS LIST 2 OF 4



SEN0158 CAMERA

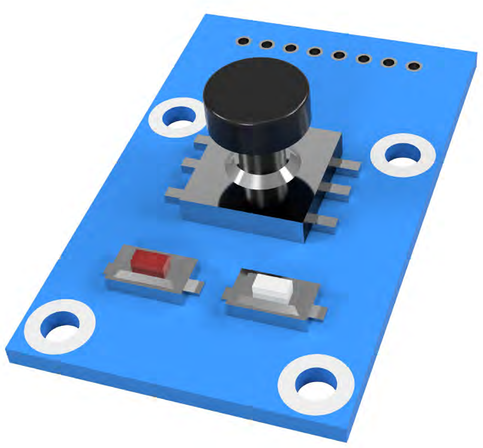
This IR positional camera is used to track up to four IR leds to track it's position in 3D space.



MINI MICROSWITCH

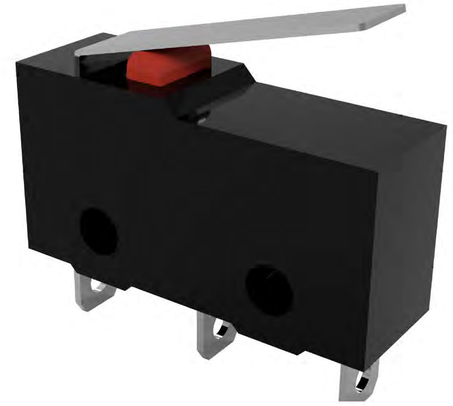
This tiny microswitch is very sensitive and used for the trigger and selector switches

Requires 2



JOYSTICK MODULE

Joystick tracks up/down/left/right/press as well as two buttons. Desolder the header to connect wires directly



MICROSWITCH

A basic microswitch is used for the magazine pull to reload action.



8MM METAL BUTTON

These buttons are very robust but be careful when you sholder as you can melt the mechansim

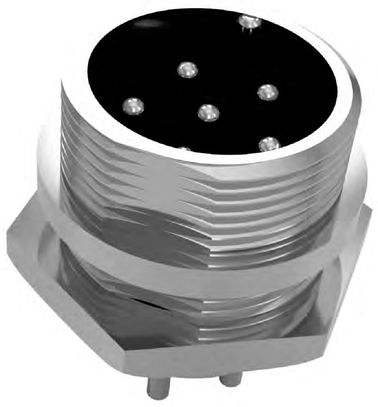
Reqires 2



N20 RUMBLE MOTOR

The N20 Rumble motor is an excellent balance of speed and action to give you snappy feedback in games

PARTS LIST 3 OF 4



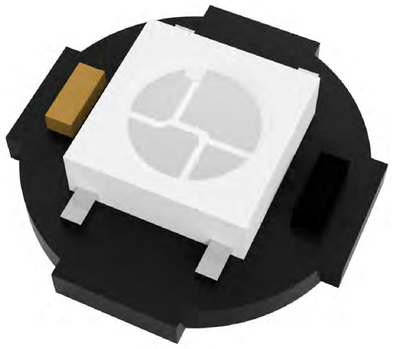
GX16 6 CONNECTOR

6 PIN ROBUST AND REMOVABLE CONNECTOR. FOUR PINS FOR USB, TWO PINS FOR 12V POWER.



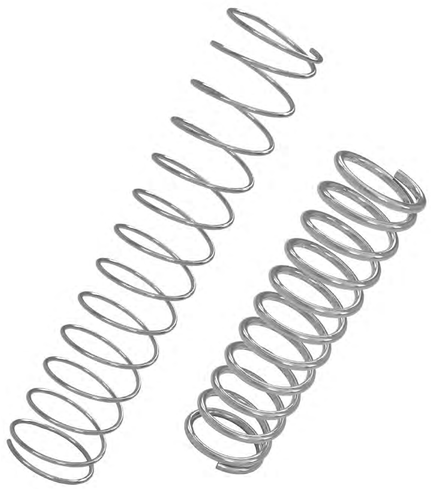
JF 205 SOLENOID 12V

POWERFUL 12V SOLENOID FOR THE RECOIL ACTION. MAKE SURE WHEN IT'S FULLY ACTUATED THERE'S SPACE BETWEEN THE BUFFERS TO REDUCE STRESS



NEOPIXEL LED

SINGLE NEOPIXEL ADDRESSIBLE LED WITH 11X6MM MILK WHITE CONVEX OPTICAL DIFFUSER



SPRINGS

15MM LONG, 4MM OUTER, .4MM WIRE FOR THE TRIGGER

25MM LONG, 5MM OUTER, .4MM FOR RECOIL

40MM LONG, 8MM OUTER, .4MM WIRE X2 FOR THE MAGAZINE



WASHERS

USED TO SPACE PARTS AND MAKE MOVEMENT EASIER. USE TWO 8MM X 4MM X .5MM FOR THE TRIGGER

REQIRES 2



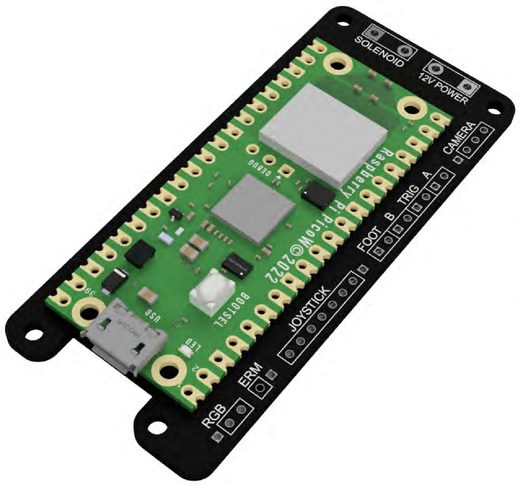
BRASS RODS

4MM X 19MM FOR THE TRIGGER

2.5MM X 12 MM X2 FOR THE MAGAZINE MICROSWITCH

2MM X 12MM X4 FOR THE TRIGGER / SELECTOR SWITCHES

PARTS LIST 4 OF 4



BLAMCON CORE

At the heart of every Blamcon is the core. This all in one unit has all the components needed to give your light gun life!



10MM ROD

2x 250mm rods are best in carbon fiber. You can use metal, wood, or any other material. They can be longer or shorter to fit the player.



USB CONNECTOR

USB micro connector to go between the core and the GX16 connector.



LED DIFFUSER

90degree 11x6mm Convex LED diffuser makes the LED easier to see and gives it a soft light



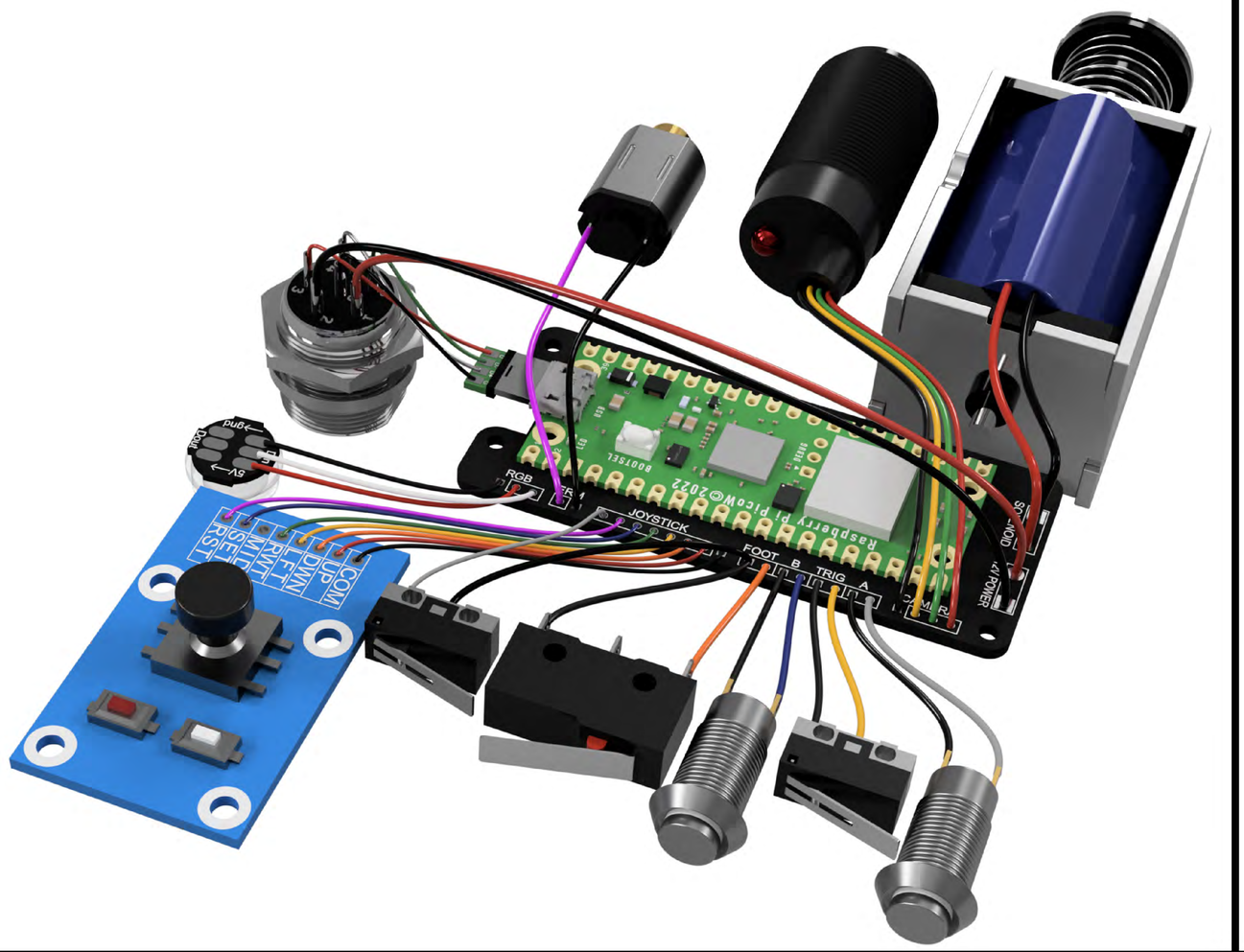
WIDE ANGLE LENS

This wide angle 180deg lens is only needed if you play close. They are sold as cell phone lenses in a 2 pack.



COPPER BUSHING

4x6x6/10x1 copper bushing
These are OPTIONAL Parts
if you want a more robust recoil. Swap the bottom printed bushings and 8mm springs with 7mm and use 2 of the alt 3D printed bushings on top.
Requires 2

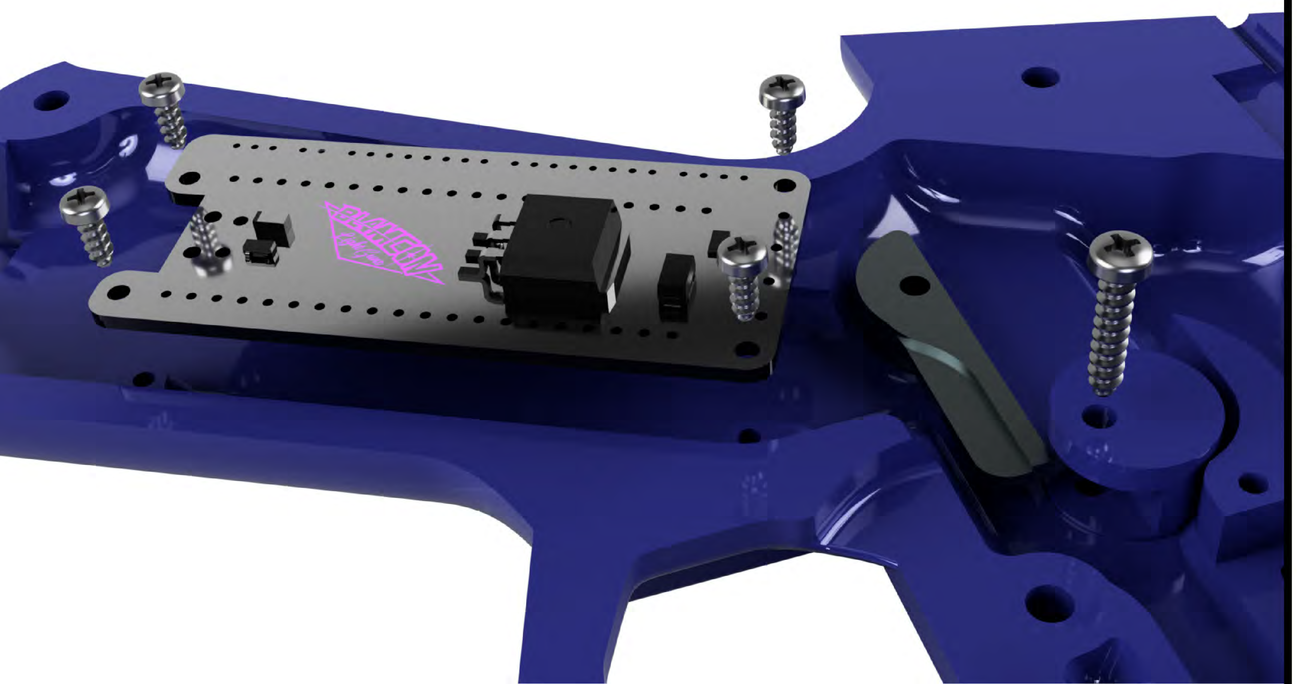


1. WIRING

READ THIS FIRST

It would be prohibitively hard to 3D model the wiring into the manual so I have included a wiring reference at the end. All wires except those in the foreend can be soldered in advance, or you can solder after completion with minor dissasembly. Please use the wiring reference to see where each wire goes and how long they should be. Use your judgement and the 'measure twice cut once' rule!

For more information on wiring this light gun visit the Props3D YouTube channel and search for the Blamcon Vyper build video.



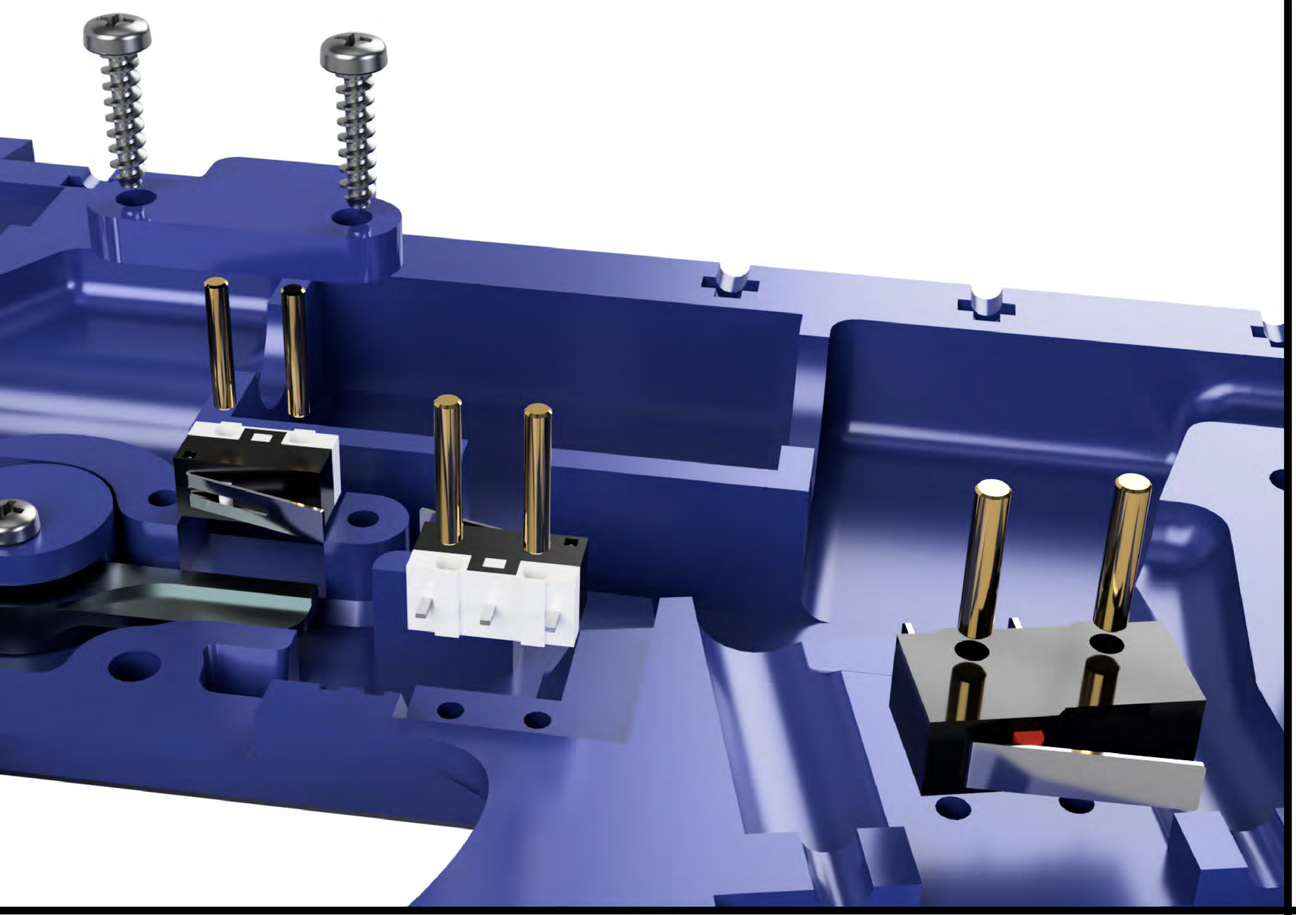
2. MOUNT THE CORE AND SELECTOR

PARTS

- Blamcon Core
- Selector
- SelectorActuator
- Pan Head M3x12 screw
- Pan Head M2x6 Screws x4

STEPS

1. Screw the core into the provided holes with M2x6
2. Install Selector and slide the SelectorActuator into the slot until the hole lines up and screw in place with M3x12



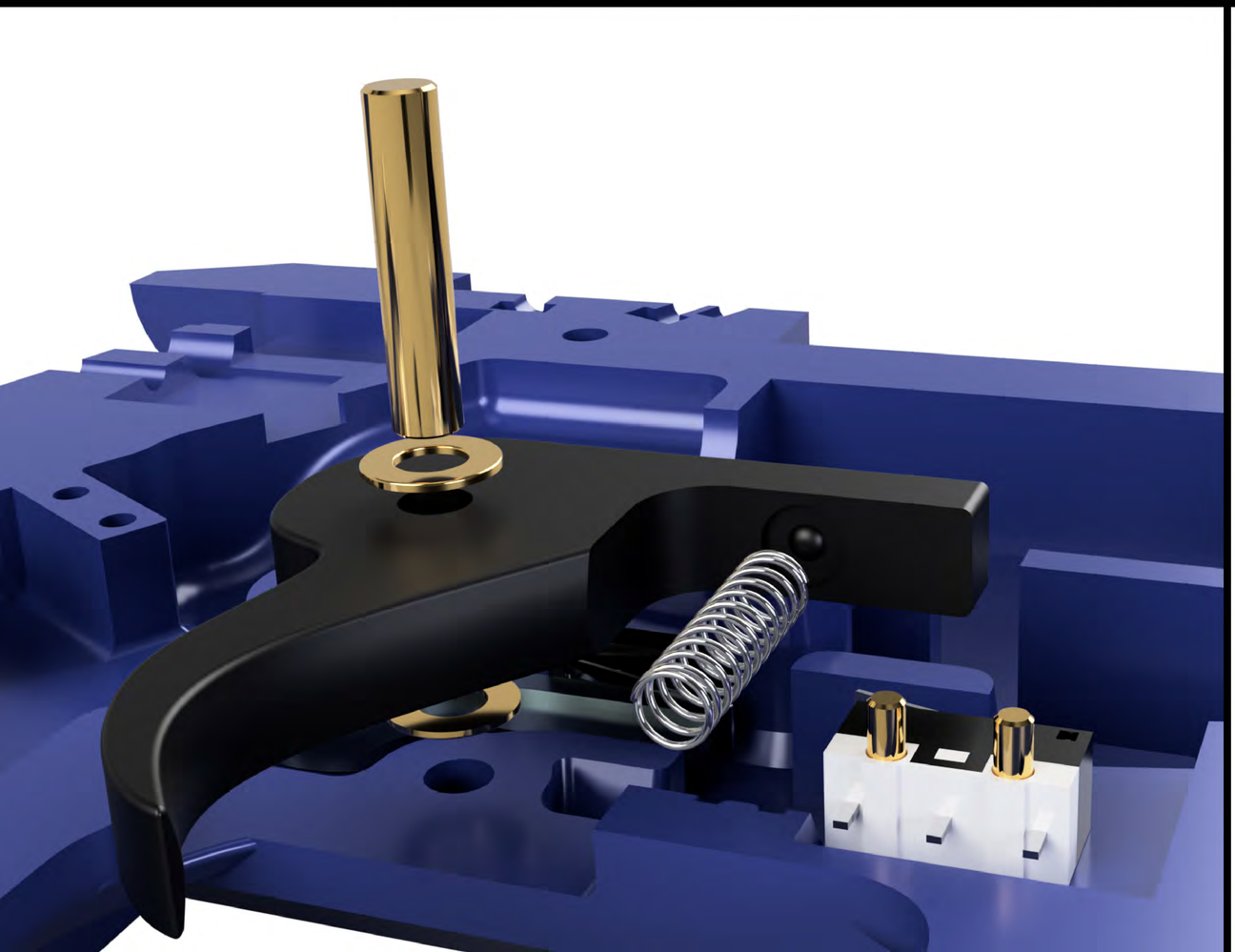
3. MOUNT THE SWITCHES

PARTS

- SelectorSwitchHolder
- Mini Microswitch x2
- Microswitch
- Bar M2 x 12mm
- Bar M2.5 x 12mm
- Pan M3 x 12mm Head Screw

STEPS

1. Insert the bar through the switches, insert the switches into the holes, be careful of orientations
2. Screw SelectorSwitchHolder on top of the selector switch
3. You may want to bend the tips of the switches down a bit for a smoother travel



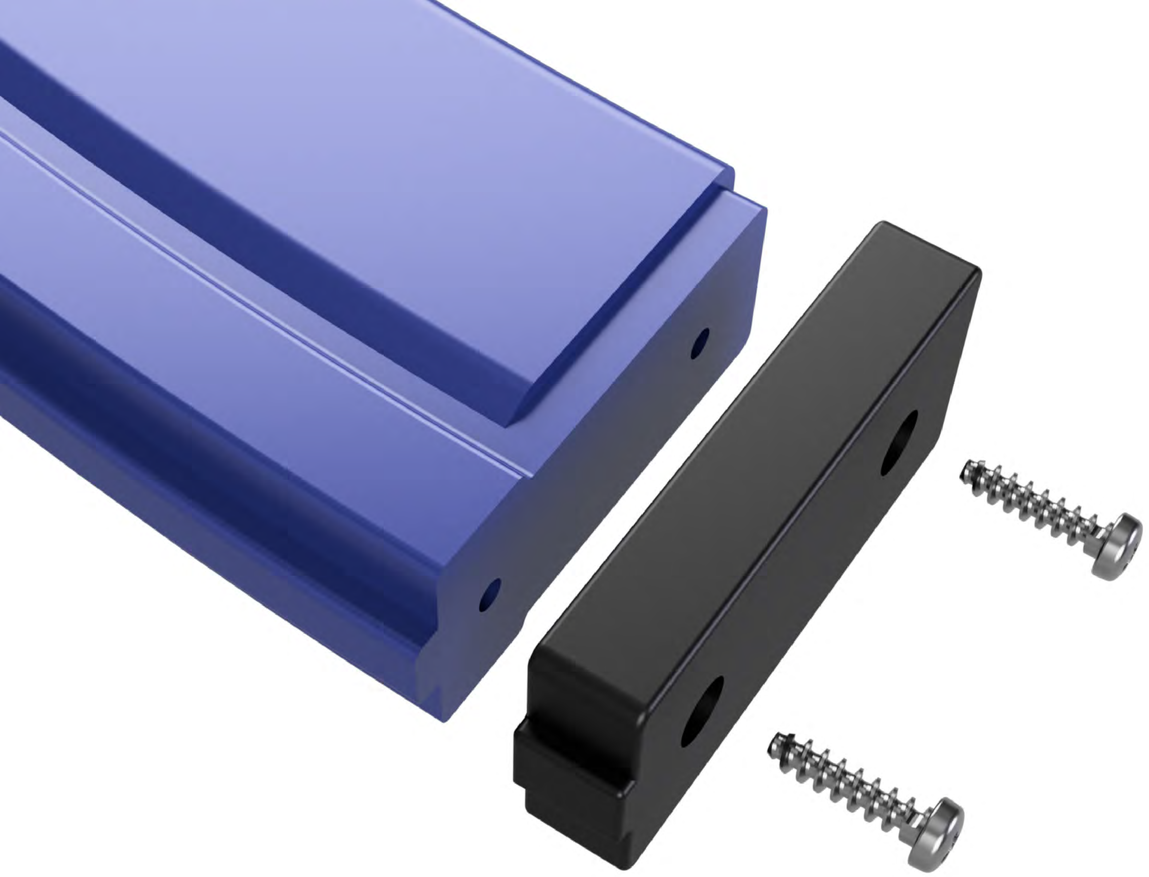
4. TRIGGER

PARTS

- Trigger
- Bar 4x19
- Washer M4x8x.5 x 2
- Spring 15x4x.4

STEPS

1. insert the 4x19 Bar through Trigger with a washer on either side, check the trigger is smooth
2. Insert the spring into the notch on the trigger and use the nub on the frame to retain it



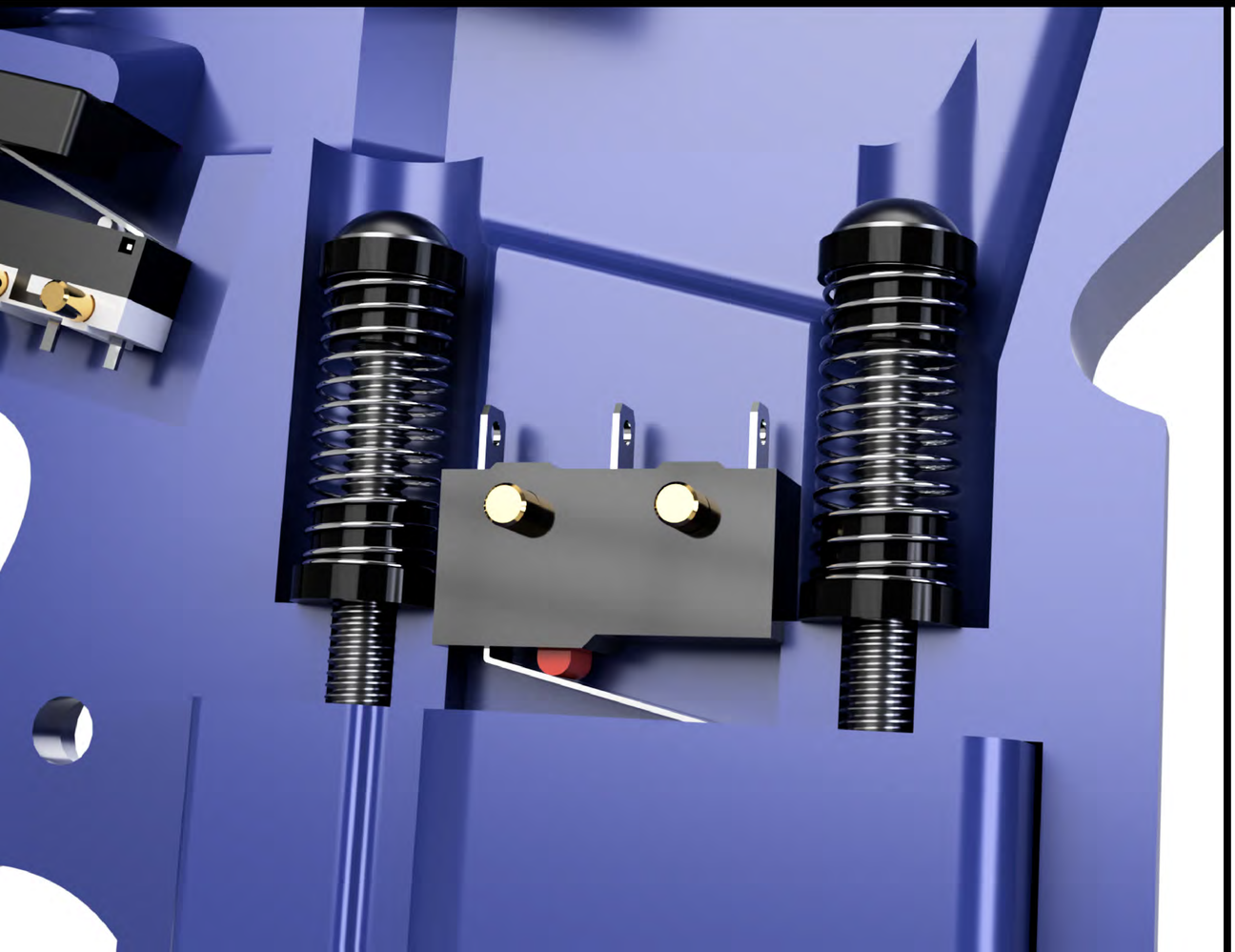
5. MAGAZINE BUTT PLATE

PARTS

- Magazine
- MagazinePlate
- Cap Head M3x12mm Screws x2

STEPS

1. Screw MagzinePlate onto Magazine



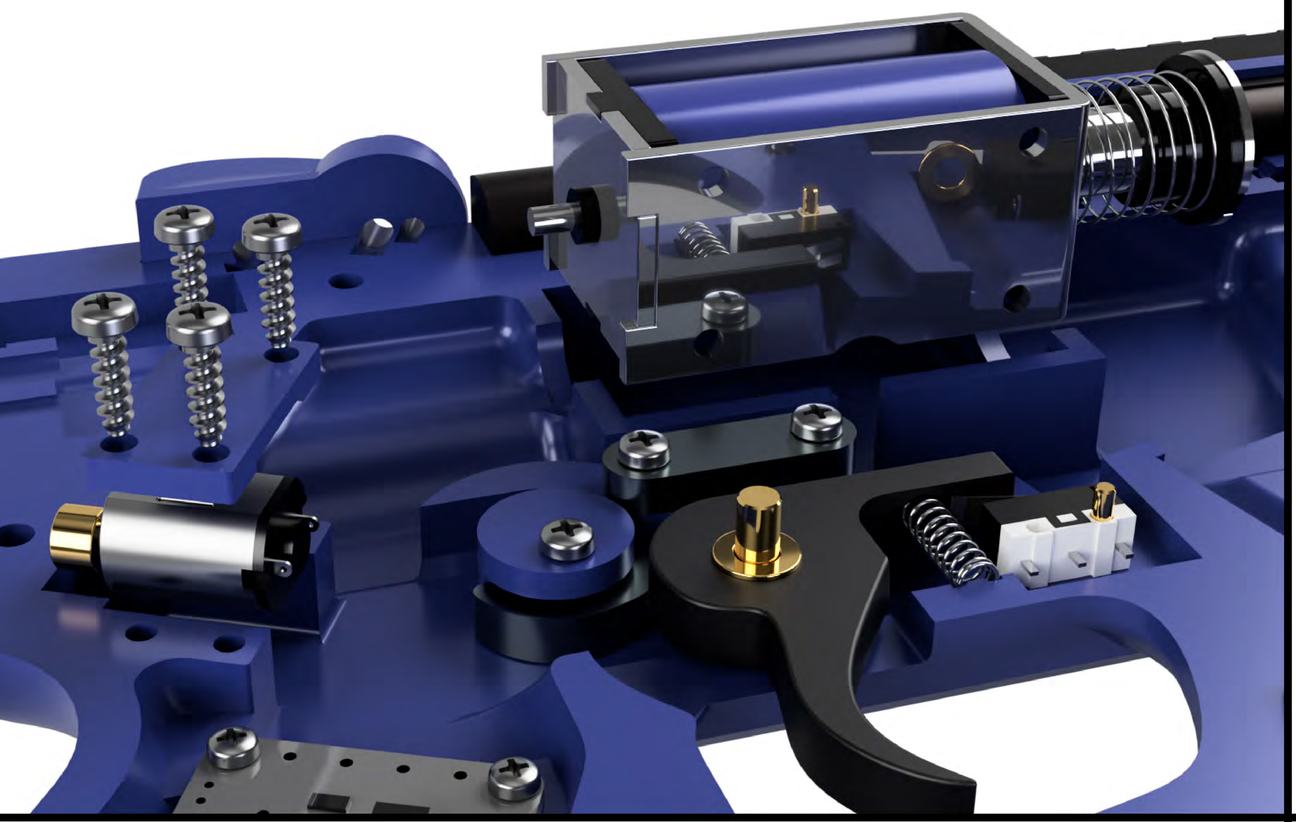
6. MAGAZINE RELOAD

PARTS

- Magazine
- Retainer x 4
- Spring 40x8x.4 x2
- Button Head M4x35mm Screws x2

STEPS

1. Insert spring and 2 Retainer onto each 35mm screw
2. Screw 35mm screw into Magazine 10mm deep with spring and Retainer in place, you can adjust the depth to increase tension. This may pop out easily so may be careful when closing the shell



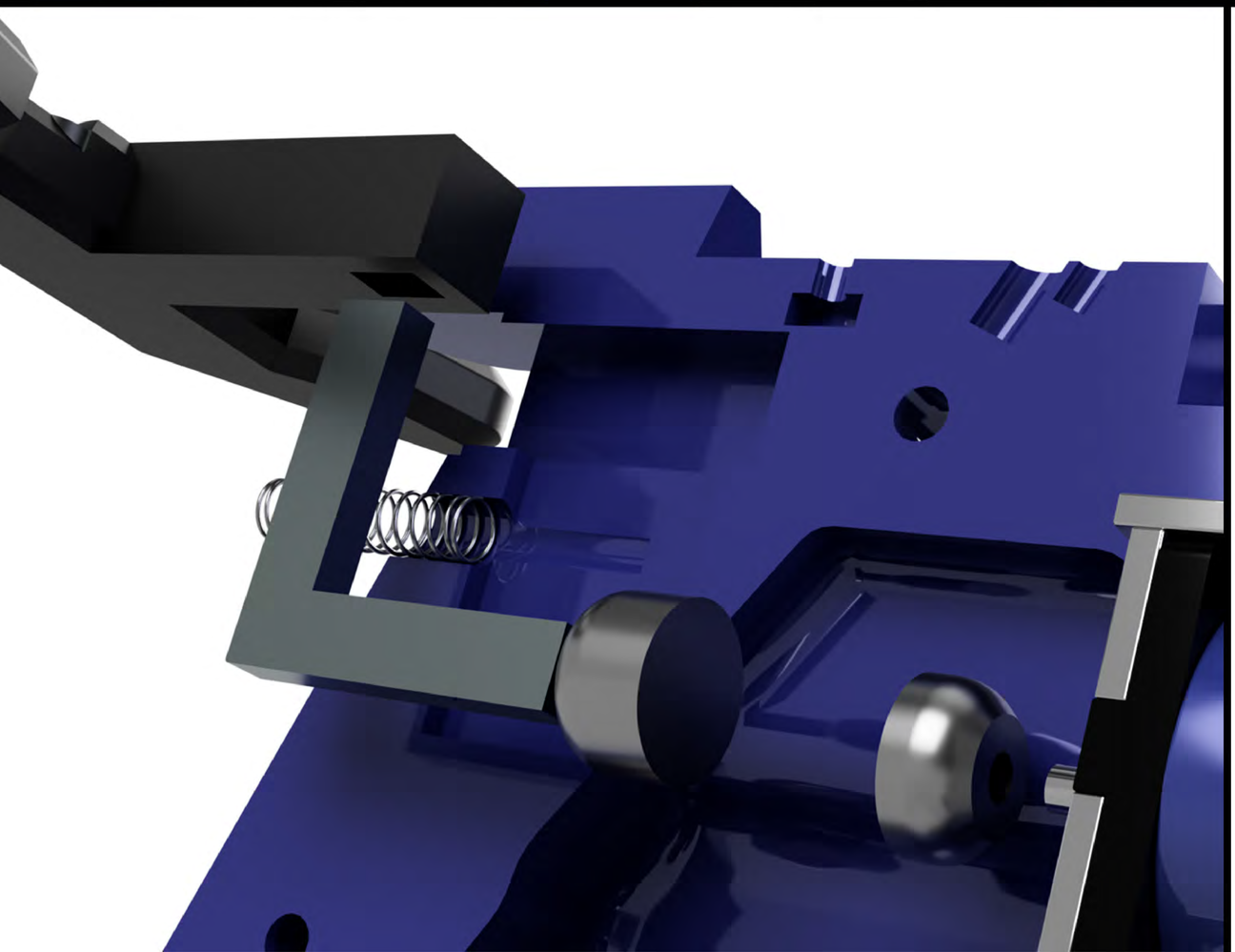
7. SOLENOID AND RUMBLE

PARTS

- Solenoid JF-Z05
- N20 Rumble Motor
- RumblePlate
- M3x12 Pan Head

STEPS

1. Run the wire from the solenoid through the notch on the side and insert
2. Inser the N20 motor into the slot and screw the RumblePlate on with the M3x12 screws



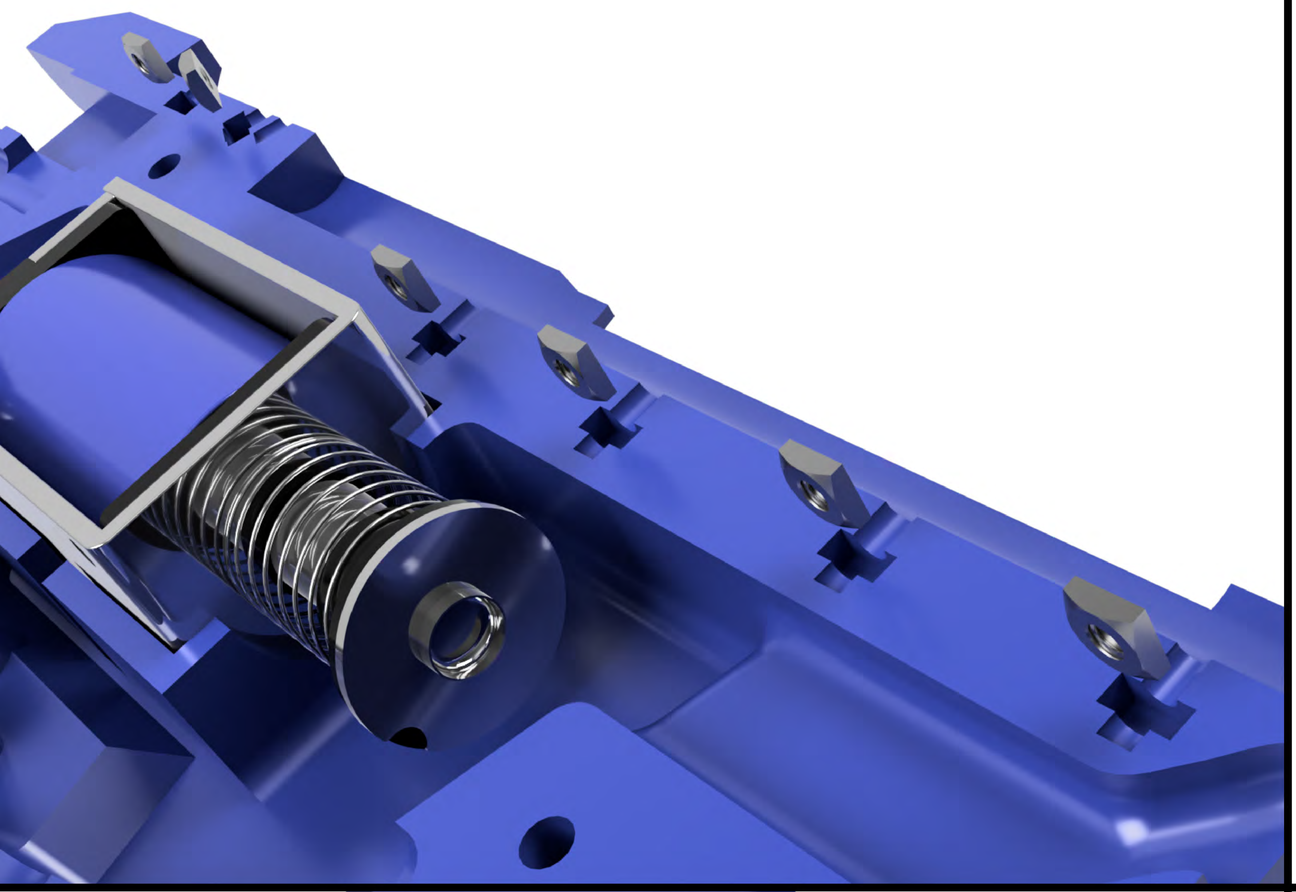
8. RECOIL SYSTEM

PARTS

- ChargingHandle
- ChargingHandleActuator
- BufferSolenoid
- BufferActuator
- Spring M5x20x5x.4

STEPS

1. Insert the shorter end of ChargeingHandleActuator into Charginghandle and onto BufferActuator
2. Insert BufferSolenoid onto the end of the solenoid
3. Place the spring in the slot and make sure the handle is smooth, you may want to add lubricant



9. NUTS

PARTS

- Nut M3 Flat x 6

STEPS

1. Insert nuts into frame



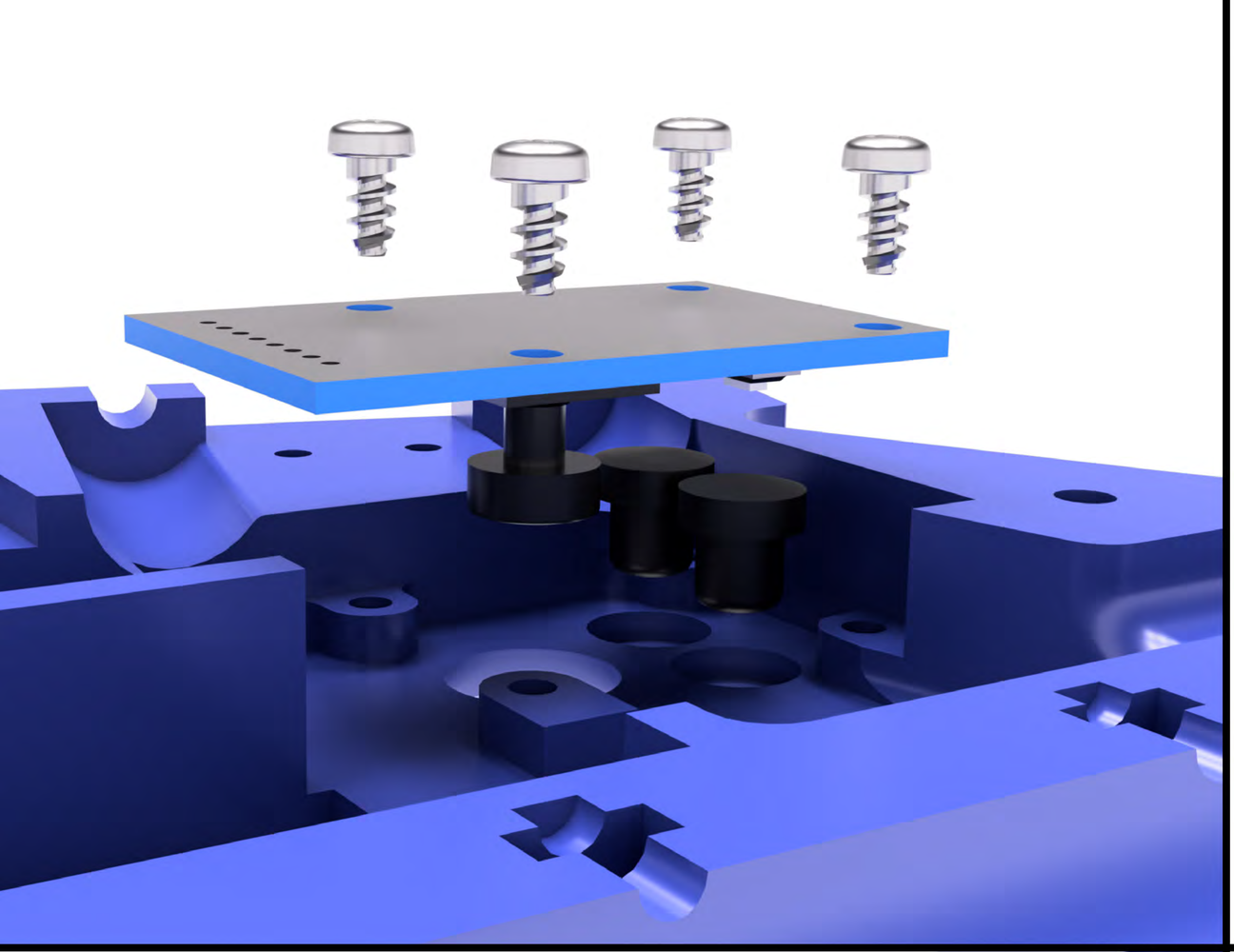
10. FEEDBACK LED

PARTS

- LEDHousing
- Led Diffuser
  NeoPixel LED
  M3x6 Pan Head x 3

STEPS

1. Insert LED Diffuser and NeoPixel LED into the hole and hold in place with LEDHousing
2. Screw LEDHousing in place



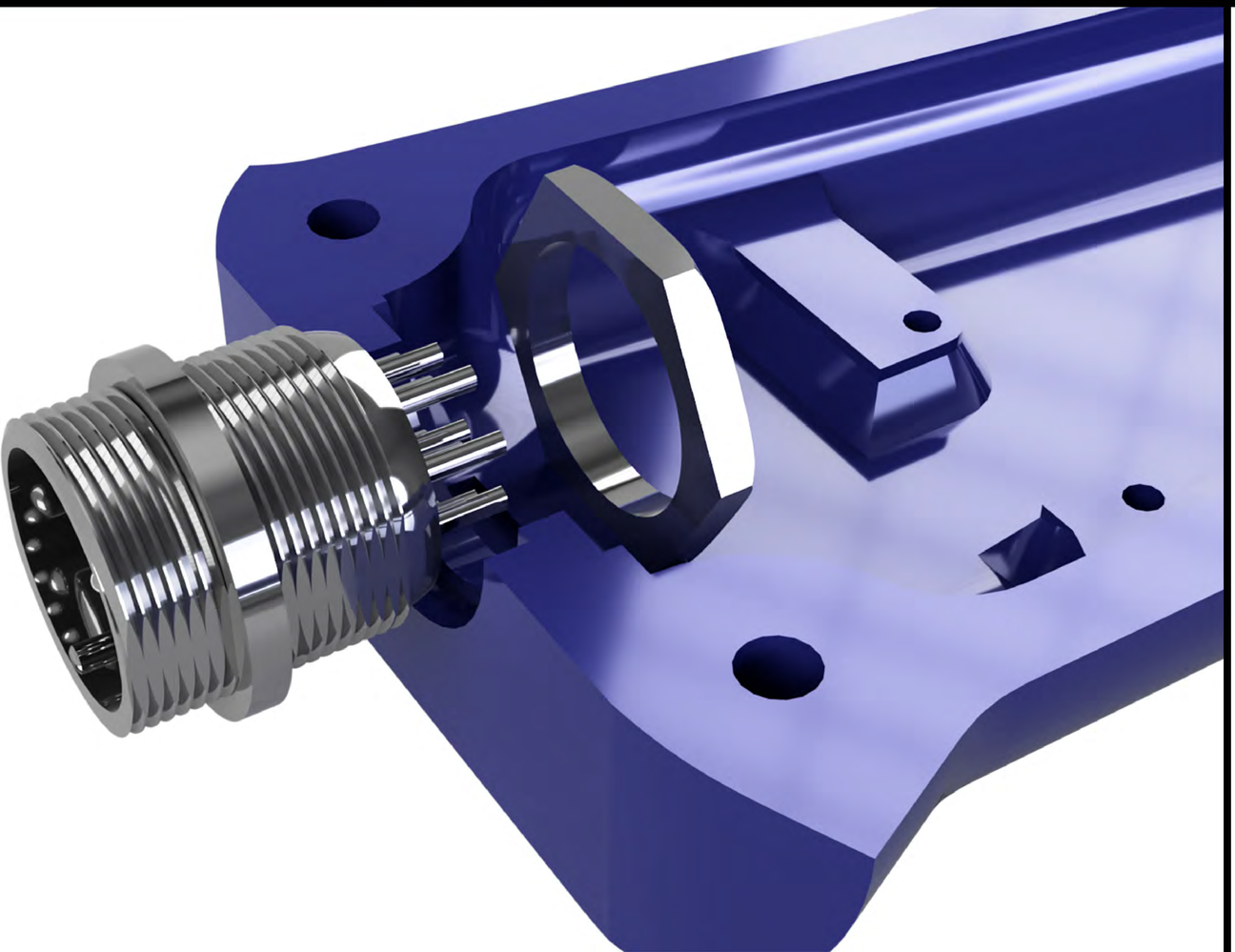
11. JOYSTICK MODULE

PARTS

- Joystick Module
- MicroButton1
- MicroButton2
- Pan M3x6mm Screw x 4

STEPS

1. Place MicroButton1 & MicroButton2 into the holes, make sure they are smooth.
2. Insert Joystick Module and screw into place, the micro buttons should actuate easily



12. GX16 CONNECTOR

PARTS

- GX16 6 pin Connector
- GX16 Nut

STEPS

1. Tighten the nut until the GX16 connector and nut fit snug, make sure you can get the two halves together. Use thread locker to keep it in place.
2. Make sure you solder the wires going through the nut or you will be stuck later



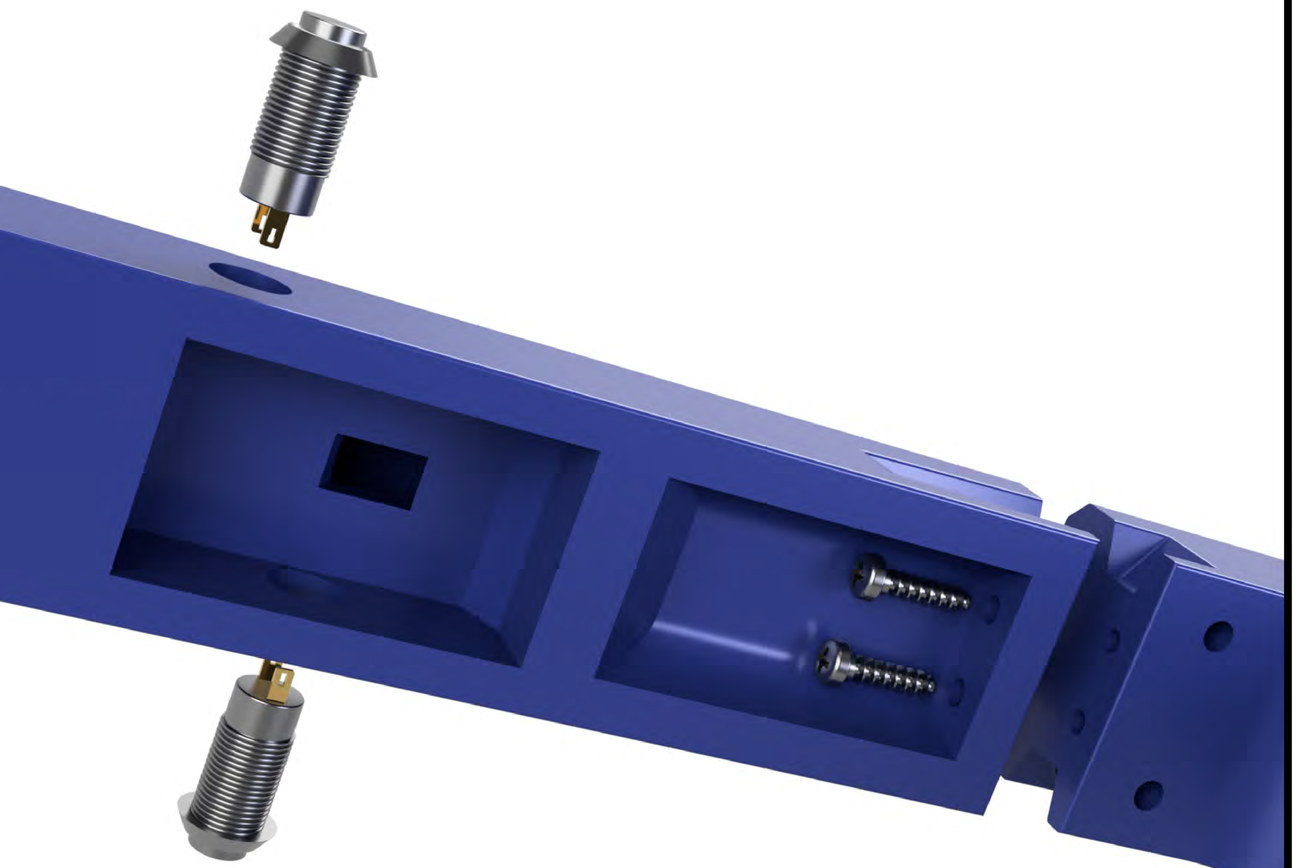
13. JOIN THE FRAME

PARTS

- Pan head M4x8 Screw
- Pan head M4x14 Screw
- Pan head M4x16 x 2 Screws
- Pan head M4x25 x 2 Screws

STEPS

1. The front of the grip and top of the frame are M4x16
2. The back of the grip is M4x14
3. The trigger guard is M4x8
4. The middle front and back are M4x25



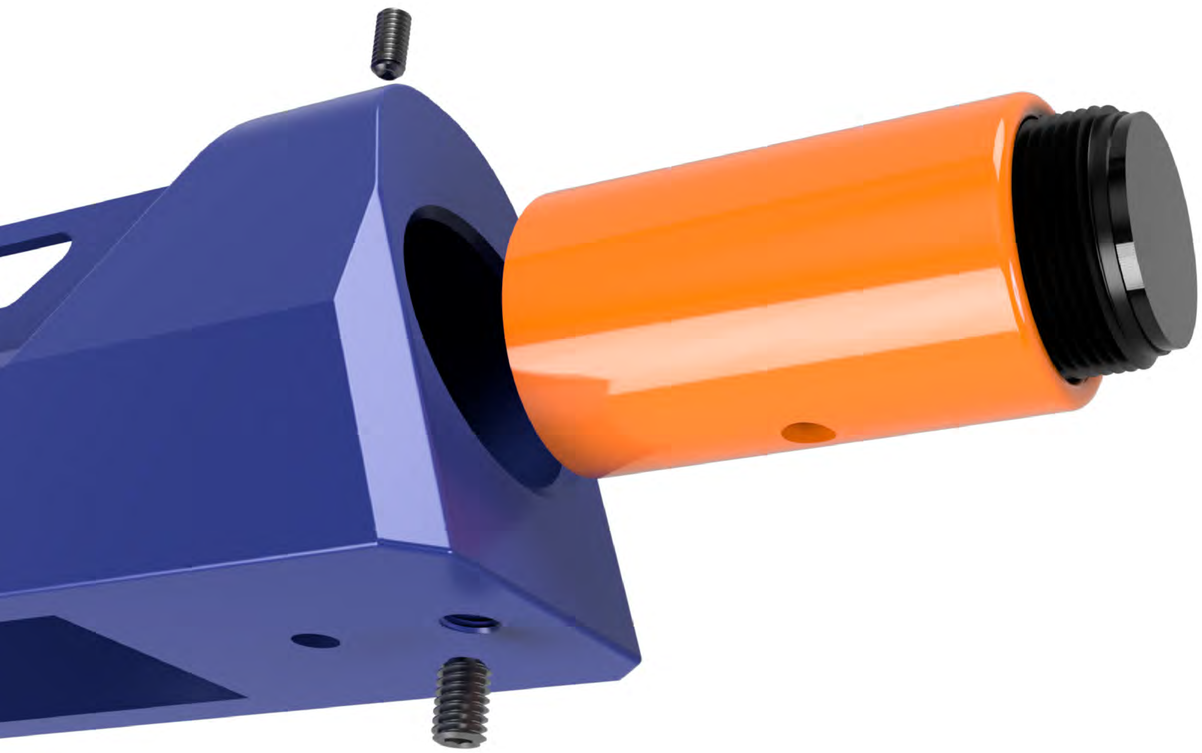
14. MOUNT THE FRONT

PARTS

- 8mm metal button x 2
- M3x12 Pan Head Screw x 2

STEPS

1. Solder the camera extension wires at this point and insert into barrel, do not screw it yet
2. Solder the button wires, insert through the holes with nuts in place, spin the buttons to tighen then thread the wires thoguh the hole and out the back
3. Screw the M3x12 screws, be careful not to strip the screw heads



15. Secure the Barrel

Parts

- Barrel
- SEN0158 Camera
- M3x6mm Set Screw
- M4x6mm set screw (optional)
- Wide Angle Lens Adapter (Optional)

Steps

1. If you are going to use the Lens adapter screw the lens in first then screw it onto the barrel
2. Insert the Camera into the barrel
3. Screw the Set screws in. Be careful. With the lens the M3 can fall in. Be careful not to strip the head of the set screws, go slowly tap if too tight



16. Foregrip

Parts

- Foregrip
- M4x25mm Pan Head Screw x 3

Steps

1. Place the Forgrip in place and screw in



17. REAR

PARTS

- BodyRear
- M4x25 Pan Head Screw X 3
- Buffer Spring

STEPS

1. Insert recoil buffer spring and check it works
2. Place BodyRear against the Body and screw in place.



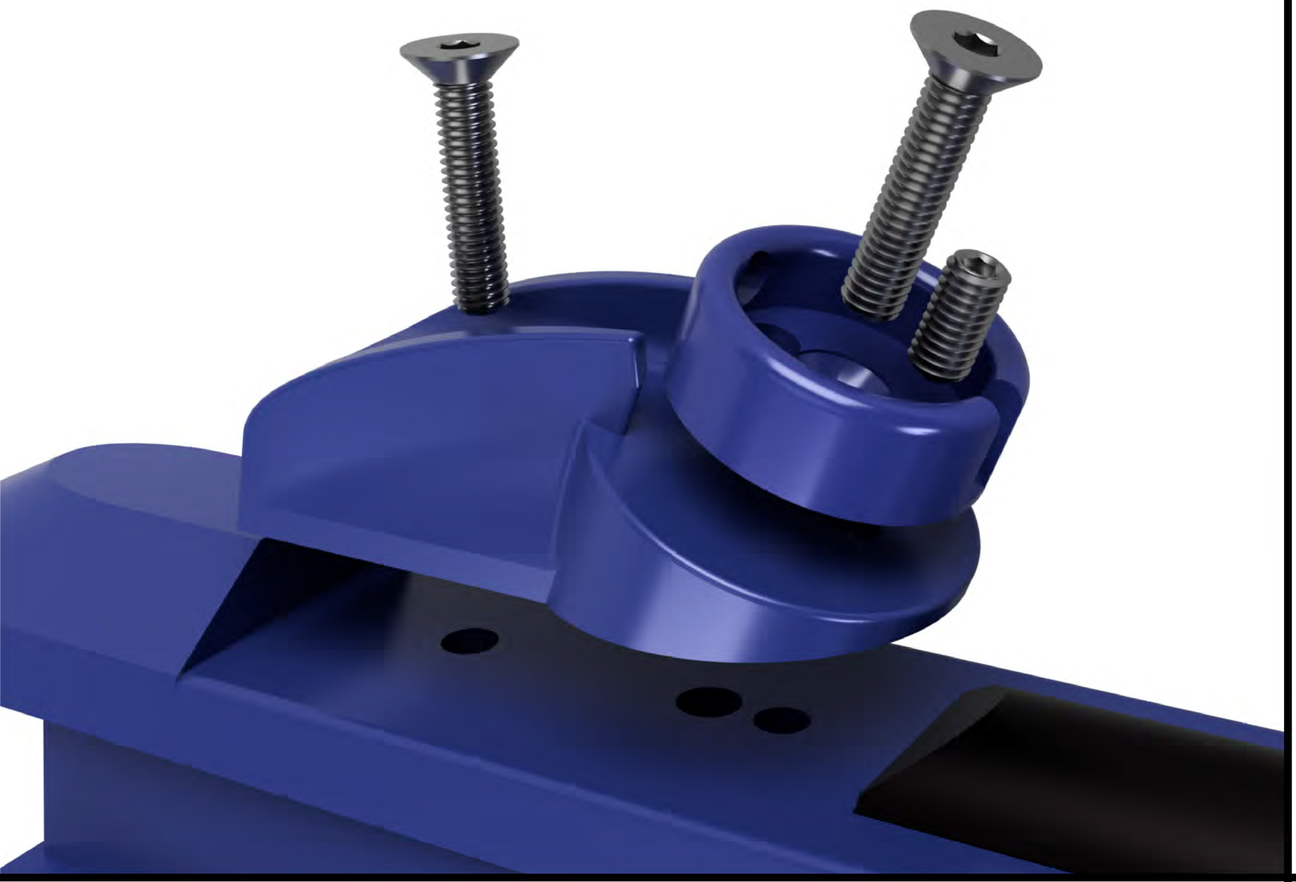
18. TOP RAIL

PARTS

- TopRail
- GasTubeTop
- GasTubeBottom
- FrontSight
- M3x16 Cap Head Screw x 2
- M3x20 Cap Head Screw x 2
- M3x12 Pan Head Screw
  M3x6 grub screw

STEPS

1. Insert FrontSight and secure with grub screw
2. Insert GasTubeTop and GasTubeBottom into the hole at the top and snap in place, place TopRail in place then screw the Gas Tube with 16mm screws and rail with 20mm screw, use the 12mm screw at the front



19. REAR SIGHT

PARTS

- RearSight
- RearSightRing
- M3x14 Flat Head Screw x 2
- M3x6mm Grub Screw

STEPS

1. Screw RearSight to frame with M3x14 screw
2. Screw Grub screw into frame until flush
3. Screw M3x14 through RearSightRing into RearSight
4. until sight is tight but turns
   back Grub screw out until it locks RearSight



20. STOCK

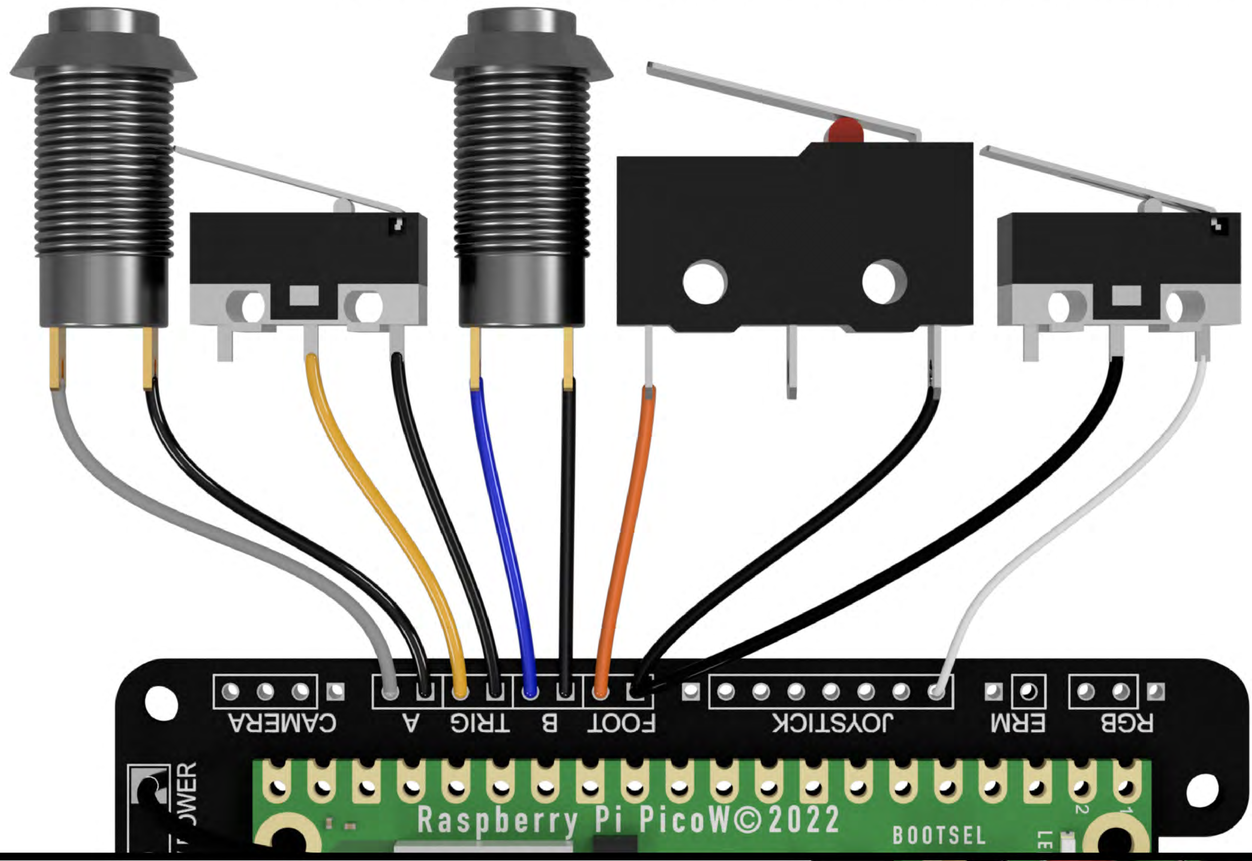
PARTS

- Stock
- ButtPlate
- 250mm 10mm rod
- M3x12 Pan Head Screw x 3

STEPS

1. 10mm Rod can be carbon fiber, Wood, or Metal. 3D printer rods are heavy but also work great.
2. Insert rod into rear and stock to secure, if it's loose shim
   Screw Stock to ButtPlate

SOLDER THE COMPONENTS TO THE **BACK** SIDE OF THE CORE.
THEY ARE ONLY SHOW THIS WAY FOR CLARITY!



21. SWITCHES

A button – 8mm Button
38cm 28AWG gray signal, 41cm black ground*

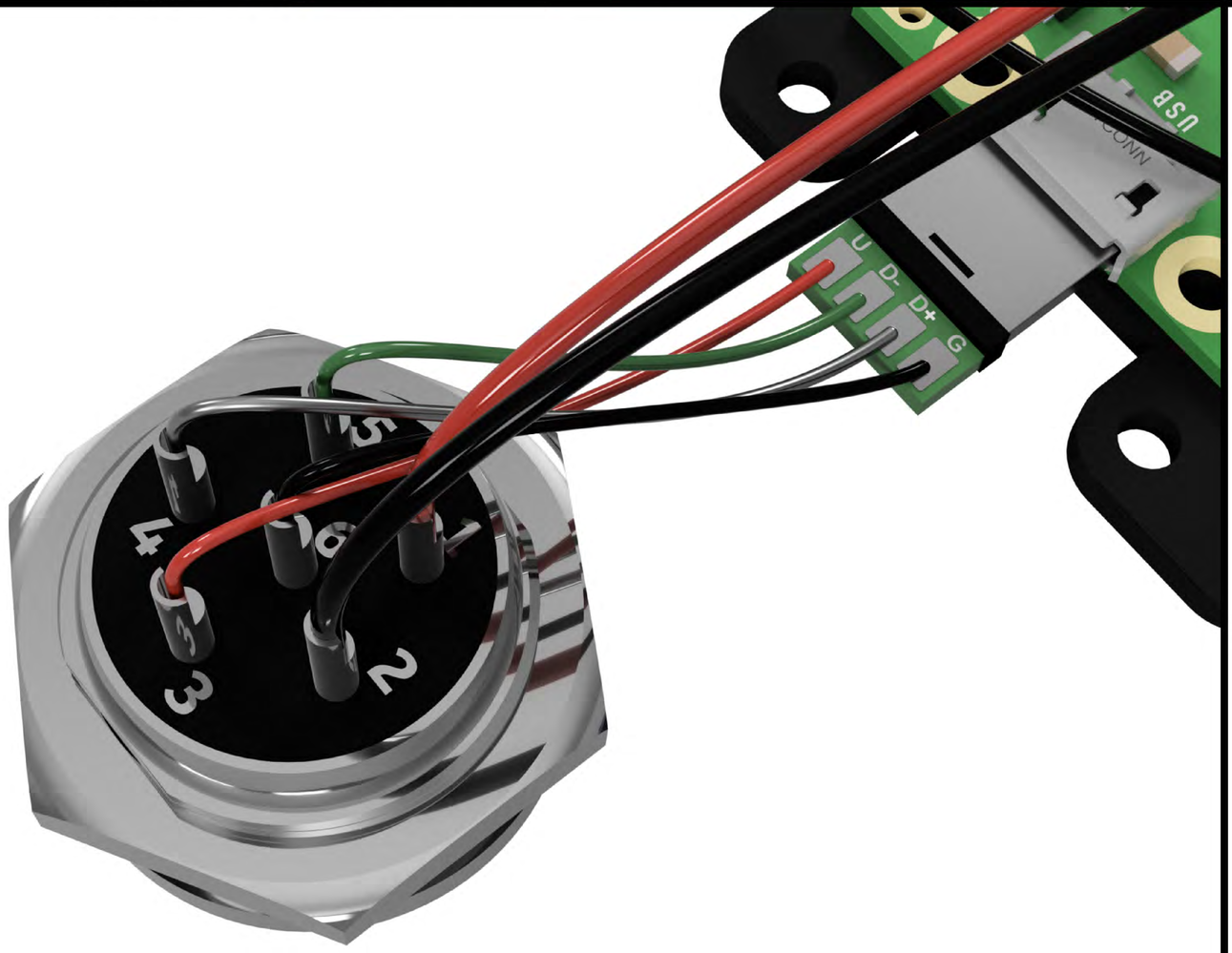
trigger – mini microswitch
16cm 28AWG yellow signal, 17cm black ground

B Button – 8mm Button
38cm 28AWG blue signal, (share ground with A*)

Magazine Assignable – microswitch
19cm 28AWG orange signal, (share ground with A*)

Selector Switch – mini microswitch
12cm 28AWG gray signal, (share ground with Trigger*)

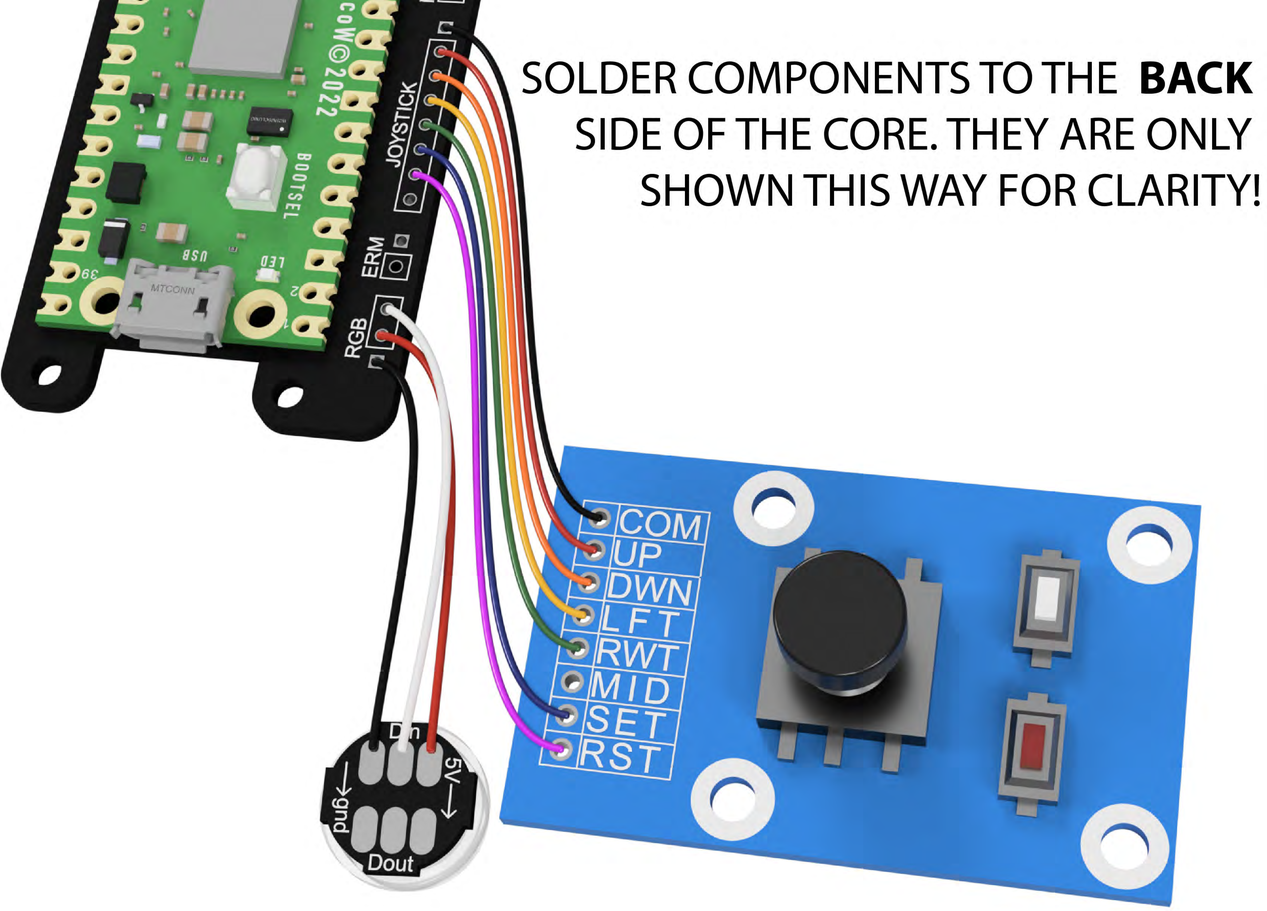
*Ground wires can be daisy chained, see video



22. GX16 6

Solenoid Power
10cm 22AWG red power, 10cm black ground
Solder to 12V Power IN on the Core (not shown)

USB Wires
22mm 28AWG red power, 22mm 28AWG black ground
22mm 28AWG white D+, 22mm 28AWG green D-



SOLDER COMPONENTS TO THE **BACK** SIDE OF THE CORE. THEY ARE ONLY SHOWN THIS WAY FOR CLARITY!

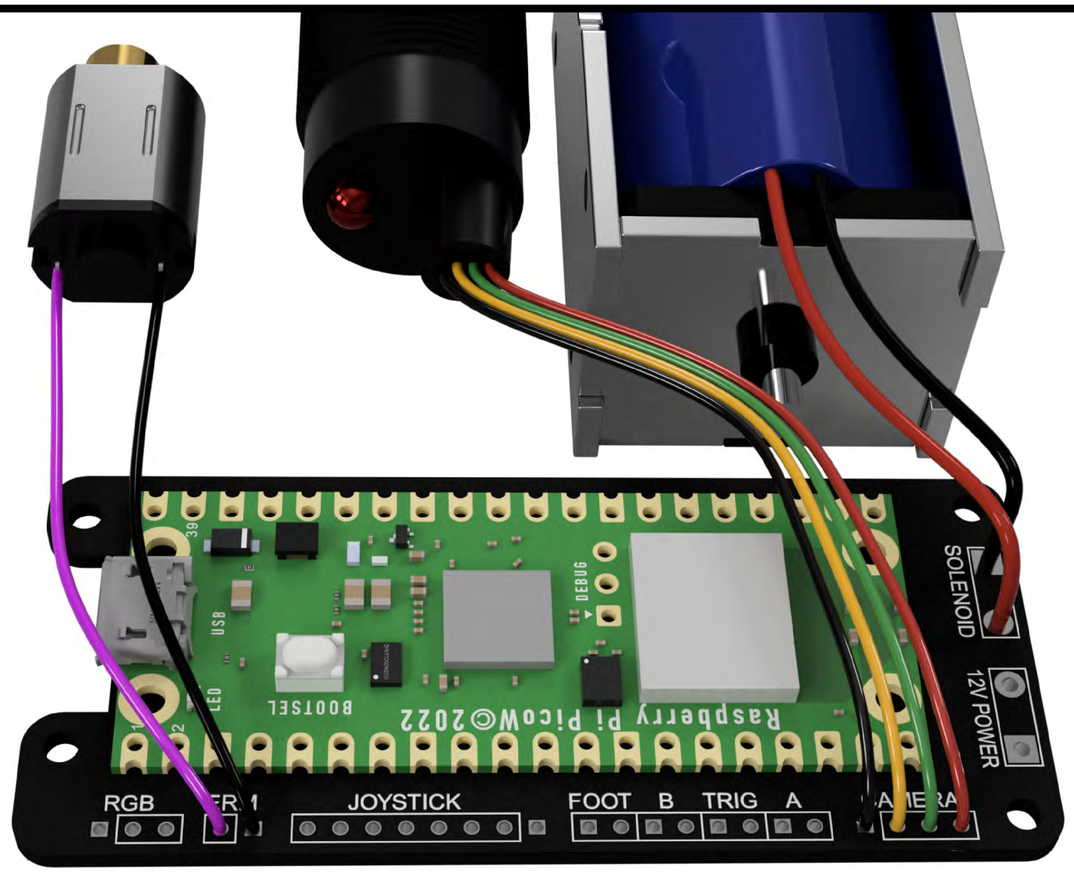
23. JOYSTICK AND LED

JOYSTICK

16CM 28AWG BLACK GROUD, 16CM RED UP
16CM 28AWG ORANGE DWN, 16CM YELLOW LFT
16CM 28AWG GREEN RWT, 16CM BLUE SET
16CM 28AWG PINK RST

LED

9CM 28AWG RED POWER, 9CM BLACK GROUND
9CM 28AWG ORANGE DIN



SOLDER THE COMPONENTS TO THE **BACK** SIDE OF THE CORE. THEY ARE ONLY SHOW THIS WAY FOR CLARITY!

24. CAMERA, SOLENOID, RUMBLE

CAMERA

7CM 28AWG RED POWER, 7CM BLACK GROUND
7CM 28AWG GREEN SIGNAL, 7CM YELLOW SIGNAL
CUT EXISTING CAMERA WIRE CONNECTORS OFF FLUSH AND EXTEND THE WIRES, USE HEAT SHRINK TO PROTECT

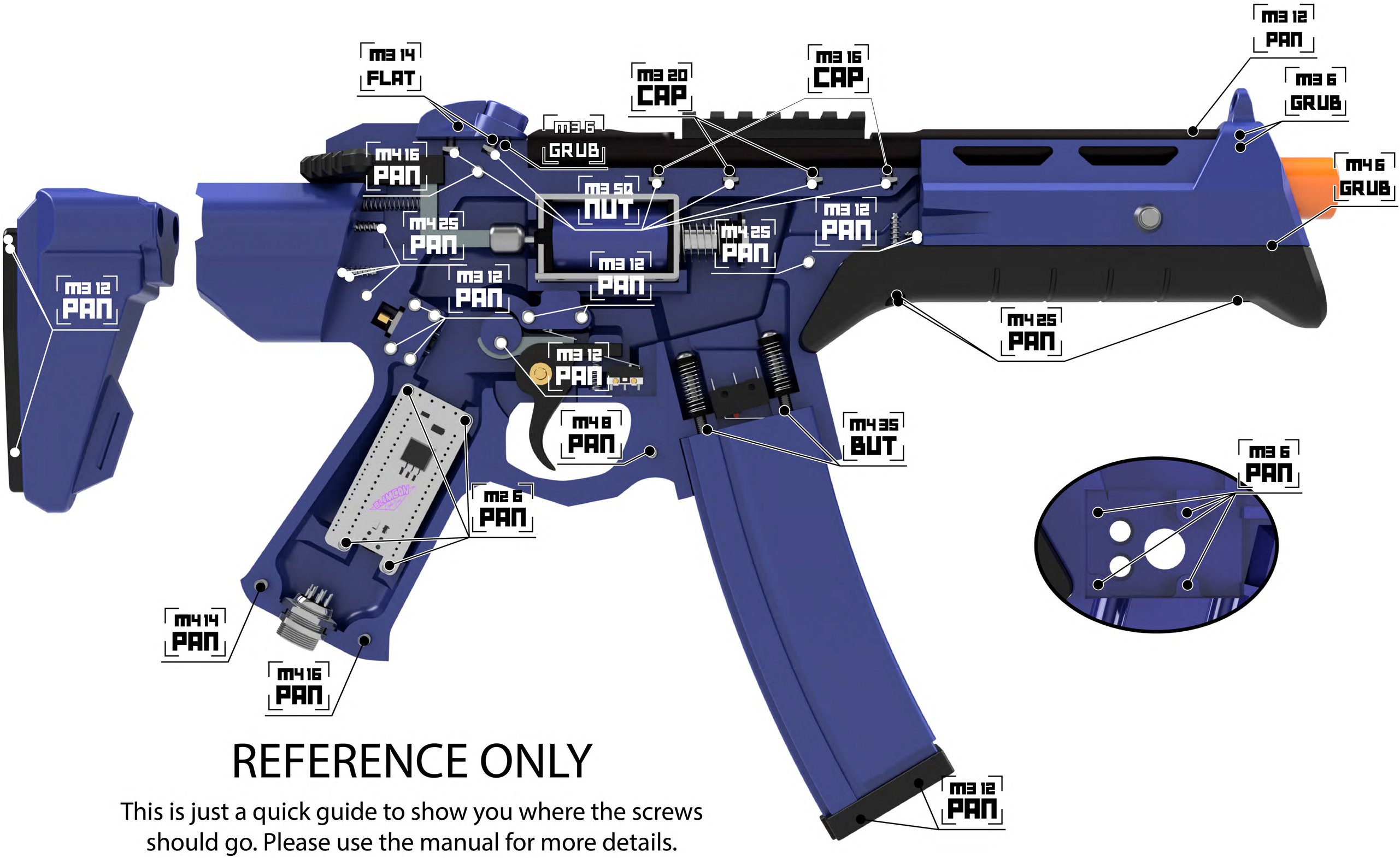
SOLENOID

100MM RED POWER, 100MM BLACK GROUND
(CUT WIRES TO THIS LENGTH FROM THE NOTCH ON THE SIDE, SEE BUILD VIDEO)

RUMBLE

85MM 28AWG PINK, 75MM 28AWG BLACK

VYPER SCREW GUIDE



REFERENCE ONLY

This is just a quick guide to show you where the screws should go. Please use the manual for more details.

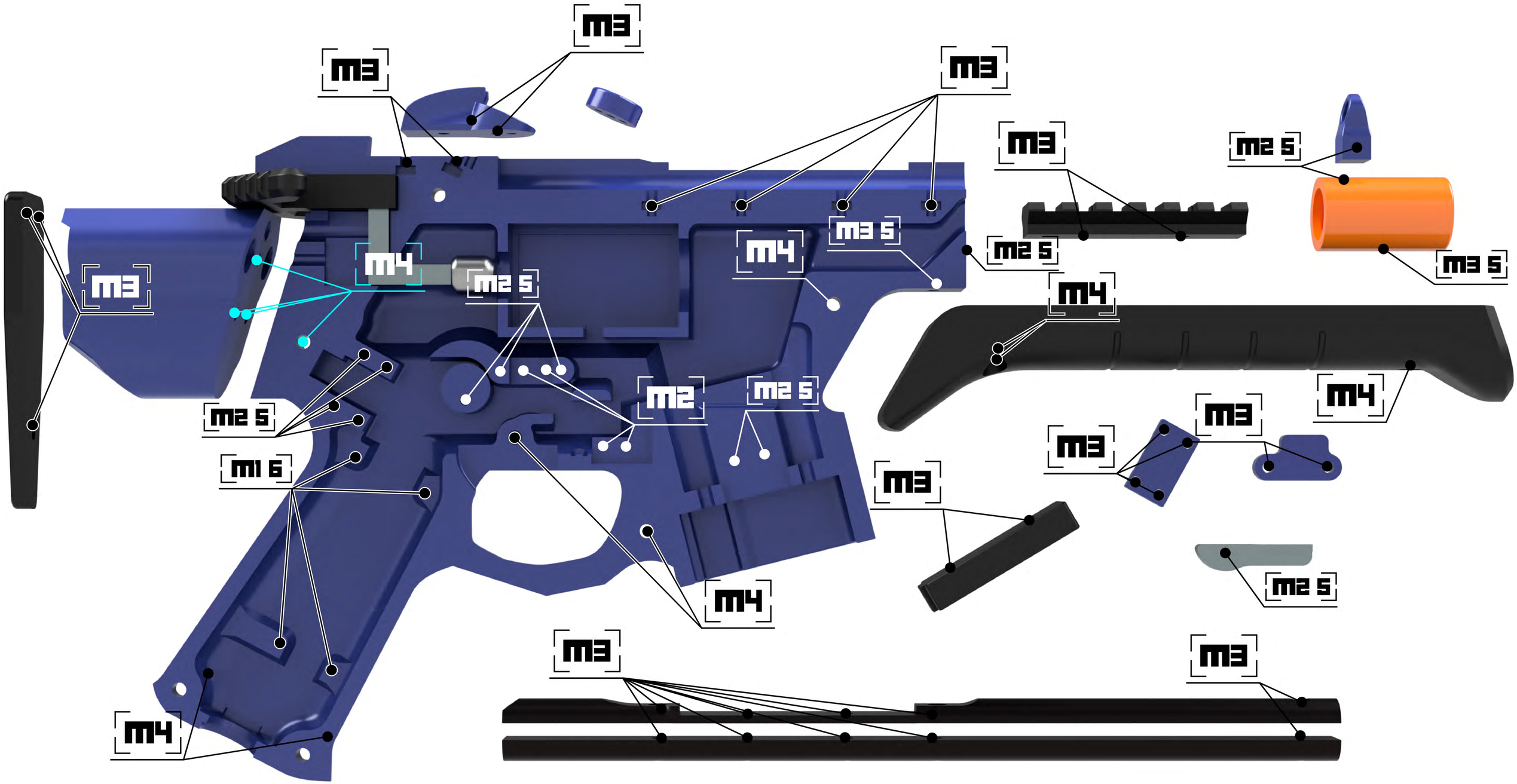
VYPER HOLE SIZE GUIDE - 1



REFERENCE ONLY

If your printer does not print the hole sizes correctly please use a small drill to size the holes correctly so the screws will go in smoothly

VYPER HOLE SIZE GUIDE - 2



REFERENCE ONLY

If your printer does not print the hole sizes correctly please use a small drill to size the holes correctly so the screws will go in smoothly