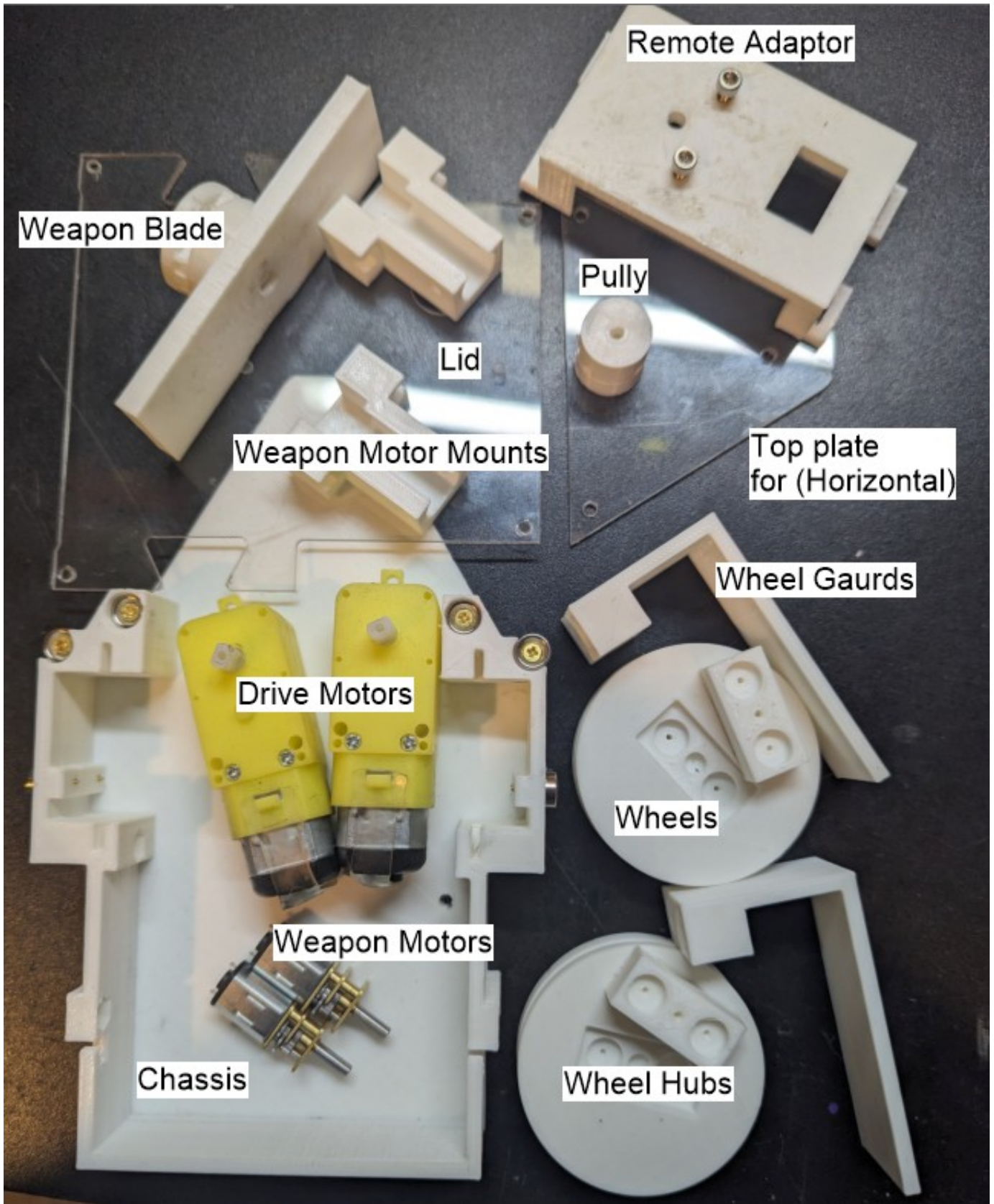
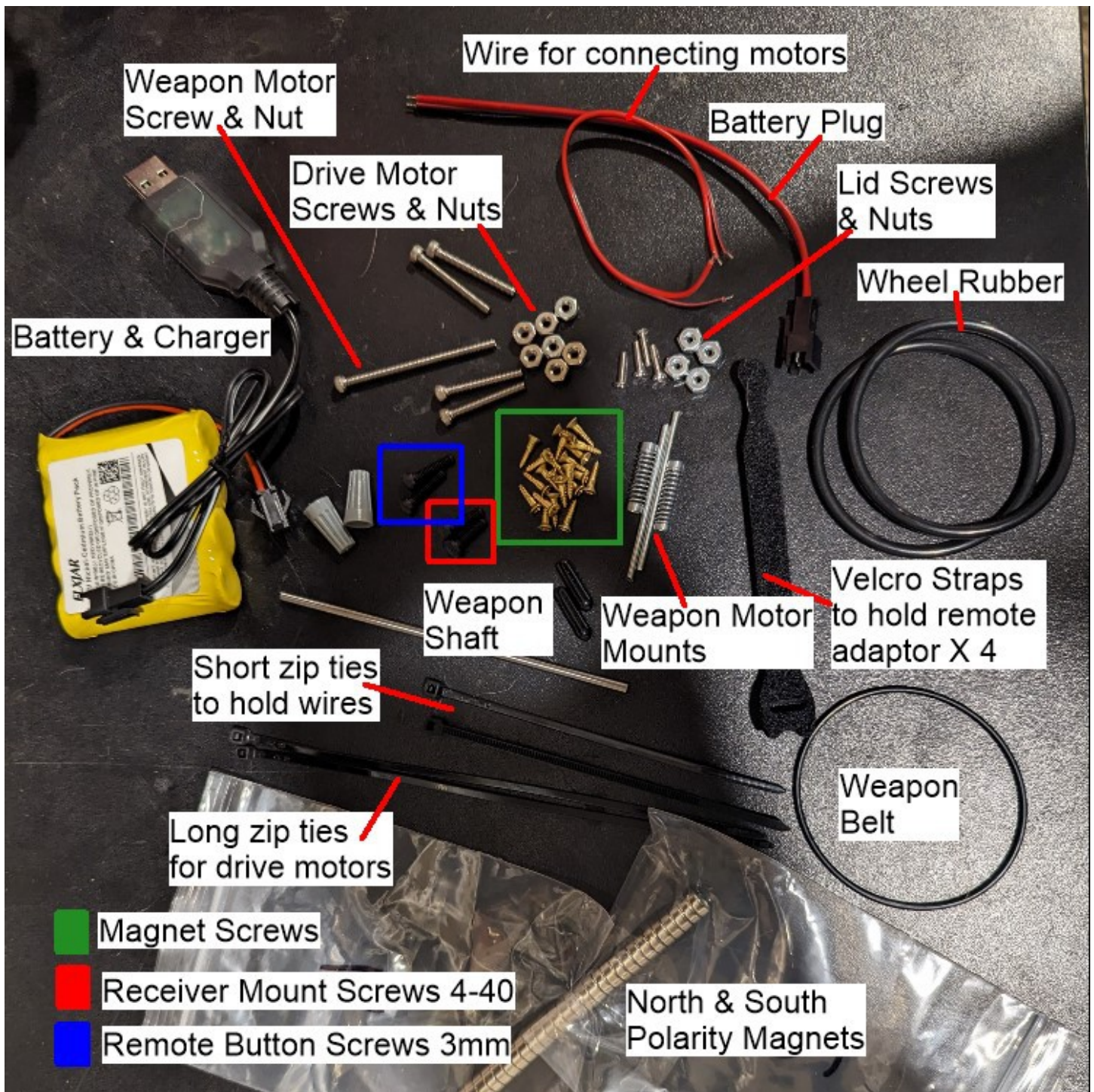


# Magneto Bot V1.3





## Tools Needed

- Soldering gun and solder (Unless you chose pre-soldered)
- Pointy tool to remove 3D print support material. The screwdriver included works also.
- Pliers, wrench or socket to hold 1/4" hex nut while screwing together parts.
- Allen Wrench 3/32
- Something to cut rubber.
- Something to cut and splice wire (Unless you chose pre-soldered).

## For more detailed information see video instructions.

<https://youtu.be/akrvhSwnjB8?si=nFm7JEFPVUEVfLet>

Please note changes to instruction video

Edit #1: Weapon blade no longer uses bearings

### Step 1: Attache N or S magnets to chassis & wheel hub

What you will need for step 1:

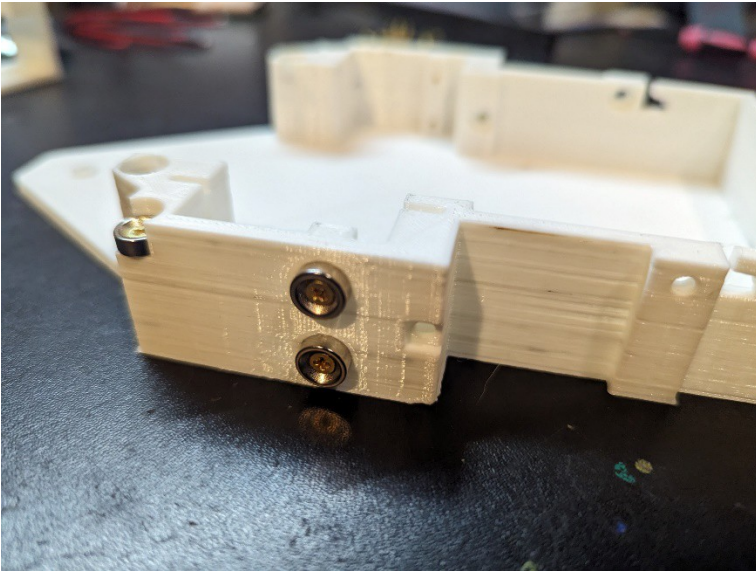
Charge your batteries now so they are ready by the end of the build.

Pick either N or S polarity magnets to use in this step as you want the magnets to attract to the parts (lid, wheels & wheel guards) that connect to the chassis and wheel hubs. You will use the opposite polarity magnets to screw to the lid, wheels & wheel guards in step 2. Philips head screws & screwdriver included. **Be careful with the magnets as if you let them snap together, they will crack (Extra magnets included).**

What to do in step 1:

1. Screw all magnets of the polarity that you chose, with the **countersunk side of the magnet facing the screw head**, to the chassis and wheel hub as shown in pictures below. You might need to clean out the hole to get the magnet to fit correctly. Don't over tighten the screws as they will strip. A nice light snug tightness is desired.

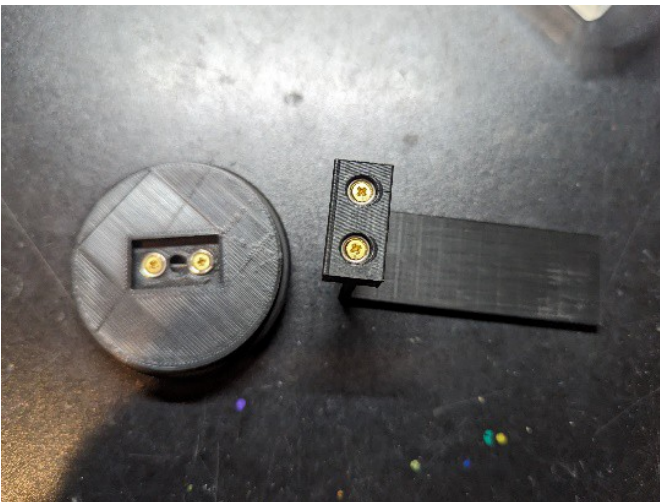




## Step 2: Attache opposite magnets to lid, wheels & guards

### What you will need for step 2:

**Provided:** Wheels, Wheel guards, plastic lid and top plate (Horizontal model), Opposite polarity magnets, small philips head wood screws & screwdriver included. Small machine screws x 2 or 4, nuts X 2 or 4. **Not Provided:** A tool like pliers or wrench to hold the nut as you attach. Nuts can also be held with a 1/4" socket.



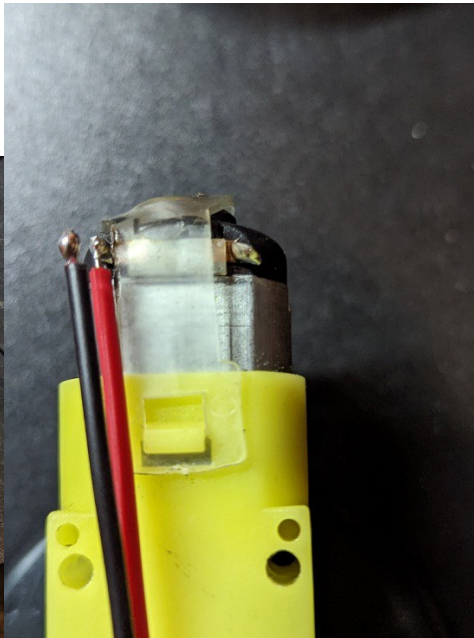
## What to do in step 2:

1. Screw all magnets of the opposite polarity that you chose for the chassis and wheel hubs to the wheels, guards & lid with the countersunk side of the magnet facing the screw head.
2. Install the short machine screws and nuts to the front of the lid as shown in picture 3 with the nylon nuts using pliers to hold the nuts. Make sure all the magnets are on the same side of the lid. Tighten and then back off one turn as you want magnets to be a little loose on the lid.

## Step 3: Solder Wires to Weapon Motors & Test

### What you will need for step 3:

**Provided:** Short zip ties to secure wires together, wire nuts, wire and motors. **Not Provided:** Soldering gun, solder wire and something to strip the wire.



### Suggestion for soldering tiny connections.

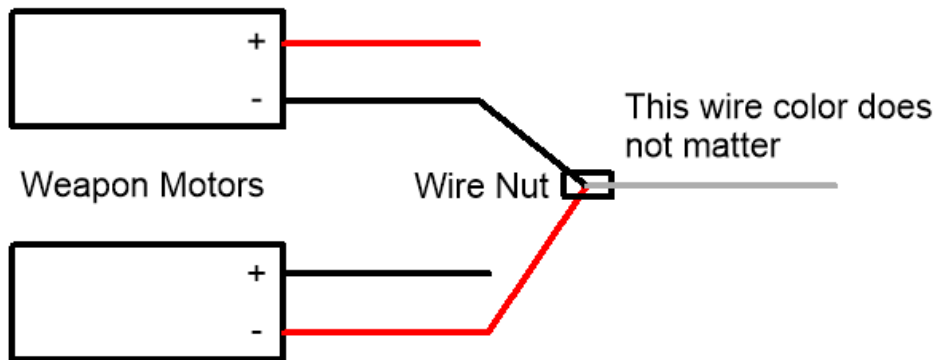
Heat up the wire and motor connector and add solder to both wire and motor connector before attaching. Then all you will need to connect is to hold the wire with solder on it to the motor connector with solder on it and the two will join with no additional solder as you hold them together and heat. See picture above.

### What to do in step 3:

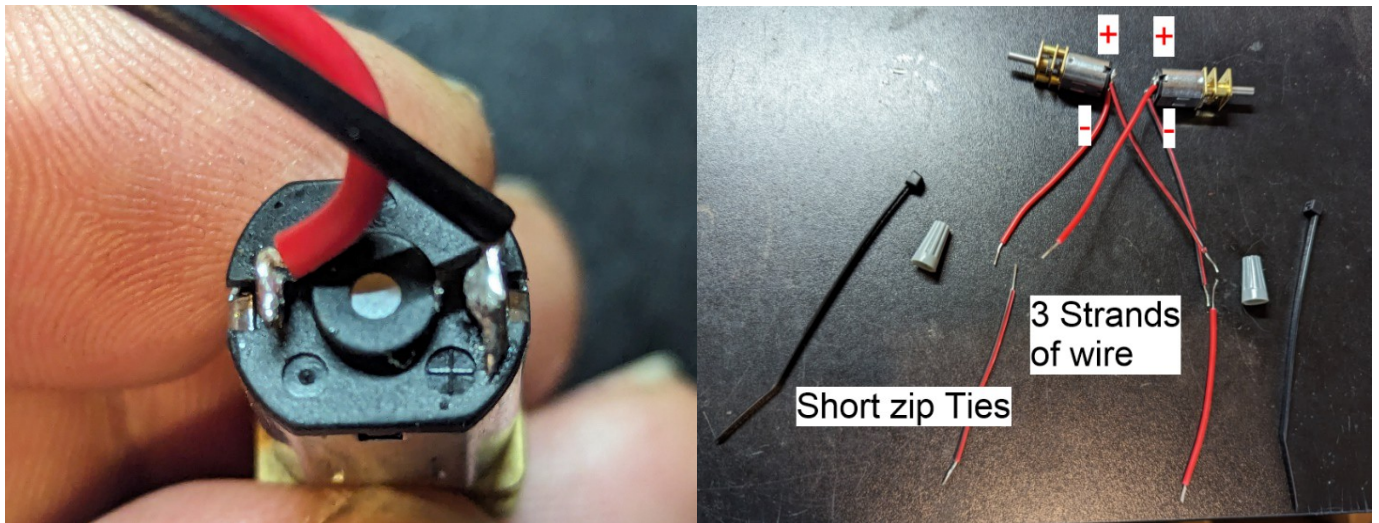
1. Solder full wire to weapon motors paying attention to (+ & -) labeled on the motors. One motor you will solder red wire to the + and the other motor you will solder black line wire to the +. This is to make sure that the motors spin in the same direction. See pictures below.

Solder wire as shown.

One motor you will solder red wire to the + and the other motor you will solder black line wire to the +.

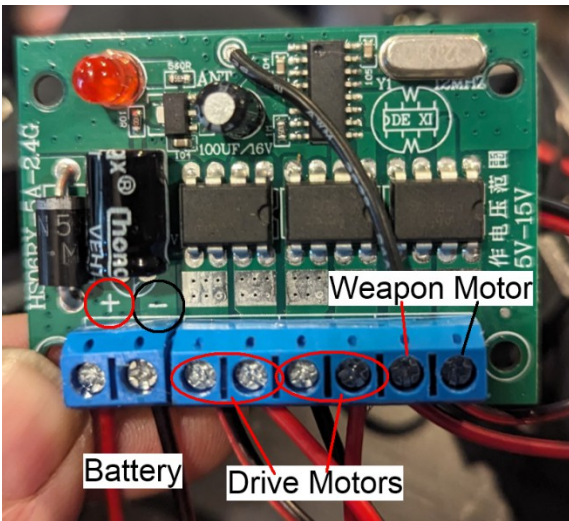
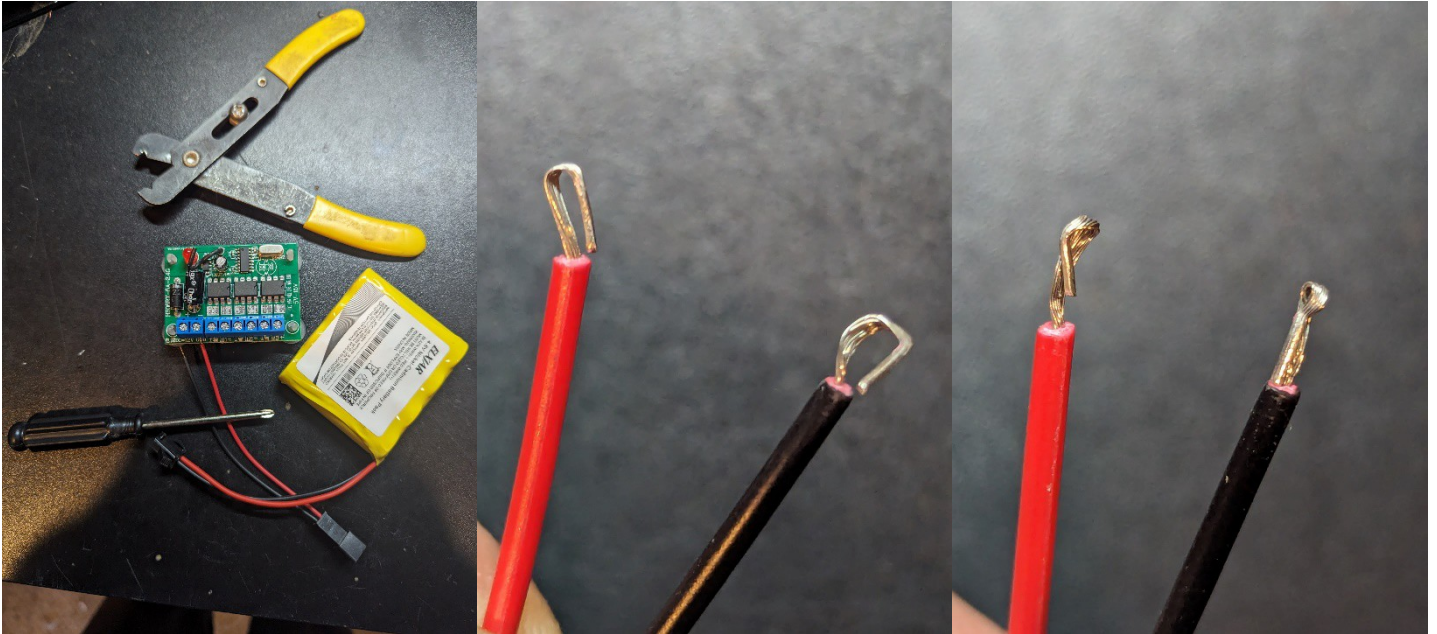


Wire the 2nd motor the same as shown with the 2 remaining wires

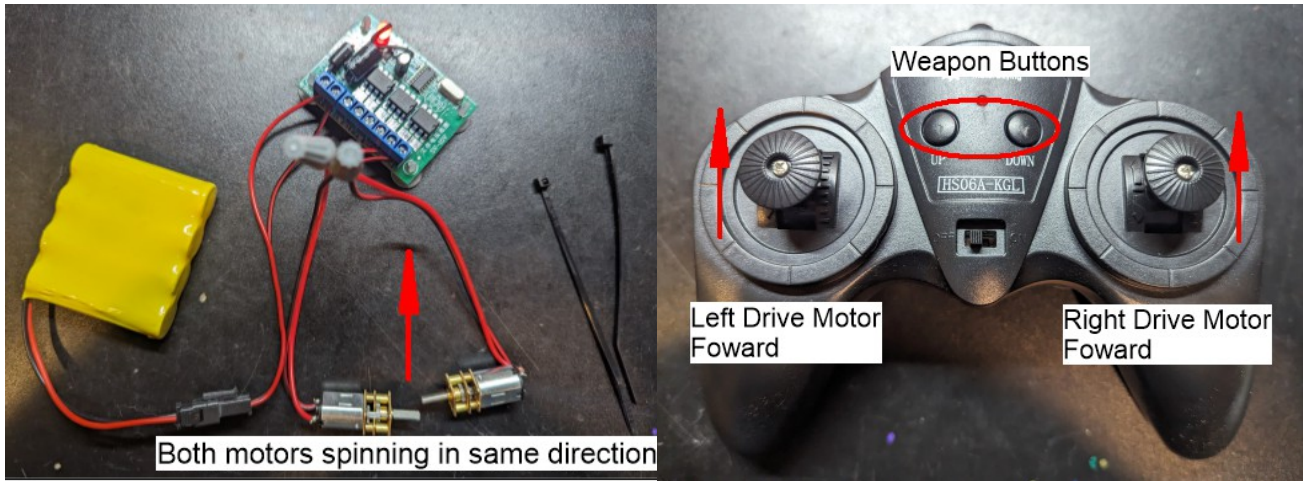


2. Use the 3<sup>rd</sup> strand of wire & wire nuts to create the wire harness as shown in the picture above. Don't install the short zip ties till the testing is done. See pictures above.
3. Now let's test the weapon motors. Connect the battery plug to the receiver using the small philips head screwdriver provided. Strip back the wire another ¼" and bend the stripped wire in half and twist together to create a doubled-up wire. This allows it to be thicker and stronger connection to the receiver board. Insert into the port on the board and screw the philips head clockwise to tighten. Tug on the wire to make sure they are

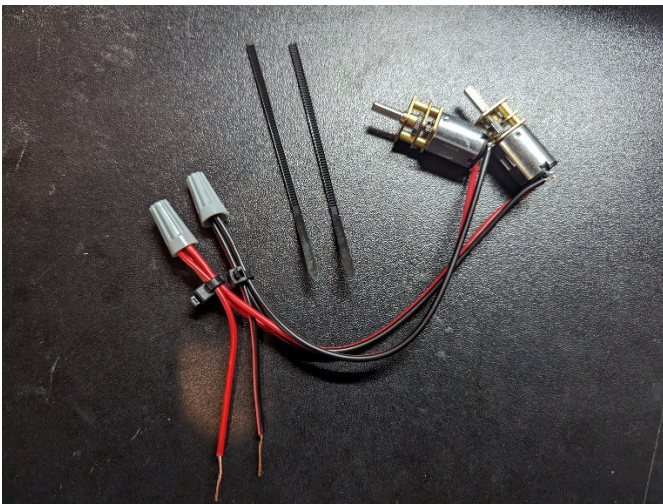
secure to the receiver board. Do this on all other wire connections. Insert and screw the red wire to the + and the black to the – See pictures below.



4. Connect the weapon motors and battery as shown below. Now turn on your remote to test to make sure all the weapon motors are running in the correct rotation when either of the weapon buttons is pressed. If the motors spin in the opposite direction, then undo the wire nuts and try crossing the wires in a different configuration. But if you followed step 3 correctly then both motors should be spinning in the same rotation. See pictures below.



5. After you have both motors rotating in the same direction. Use the short zip ties to bind it all together and cut off the excess. The wire nuts are just for covering the connection and the zip ties will hold it all together.



## Step 4: Assemble & mount weapon motors.

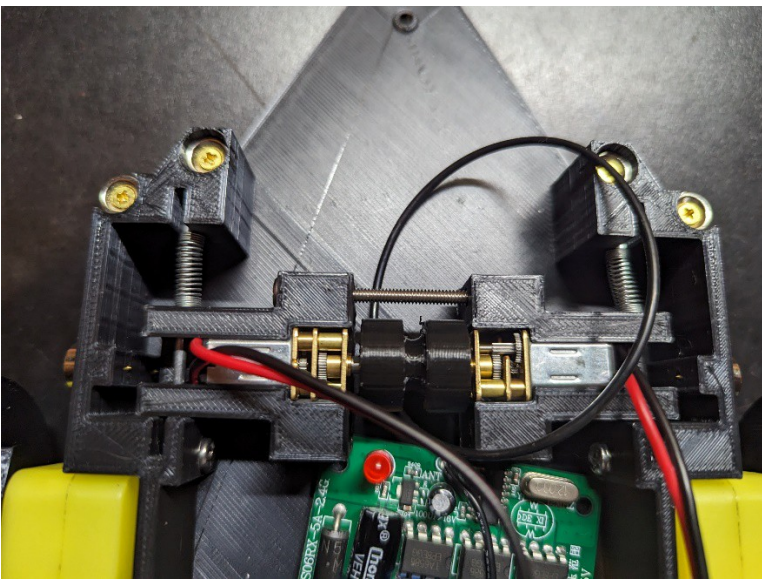
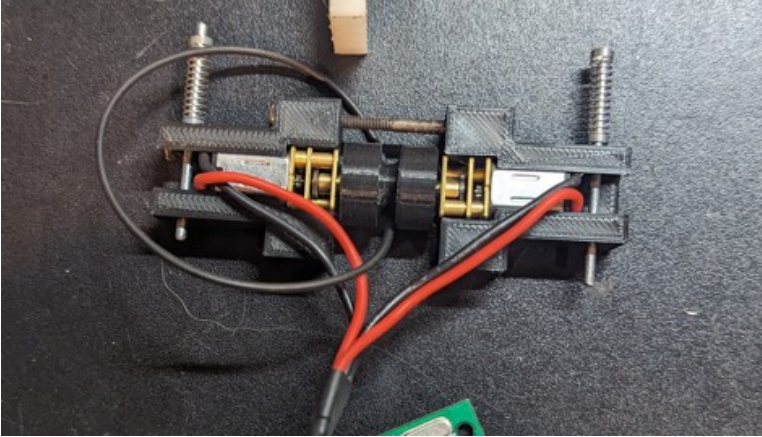
### What you will need for step 4:

**Provided:** Weapon mounts X 2, Long Screw & nut x1, weapon belt and pulley x 1, weapon mount shafts & springs x 2 and chassis. **Not Provided:** Something to clean out the pulley so it pressed onto the shafts of the weapon belt.

### What to do in step 4:



1. Slide the weapon motors into the weapon brackets. Connect one side of the pulley to one of the weapon motor shafts. Before connecting the other motor to the pulley as shown below, slide the weapon belt into position. Now you can take the 1 long screw and nut to connect the 2 motor mounts.
2. Slide the 2 shafts into the mounts and place the springs onto the shafts. We suggest being careful with the springs as they have a tendency to fly away when compressing them during mounting. Take this assembly and press into the chassis while compressing the springs with your fingers. See pictures below.



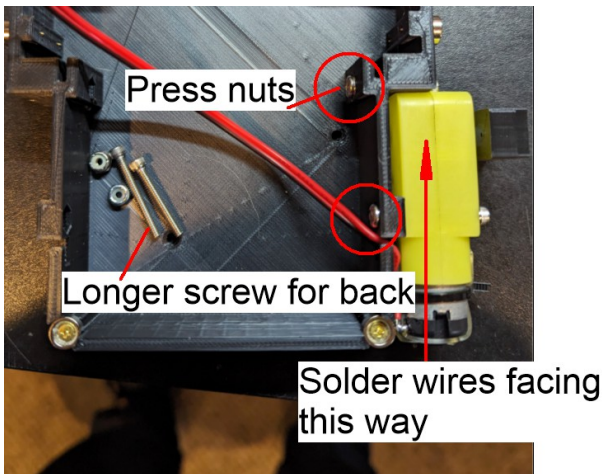
## Step 5: Solder Wires to Drive Motors & Test

### What you will need for step 5:

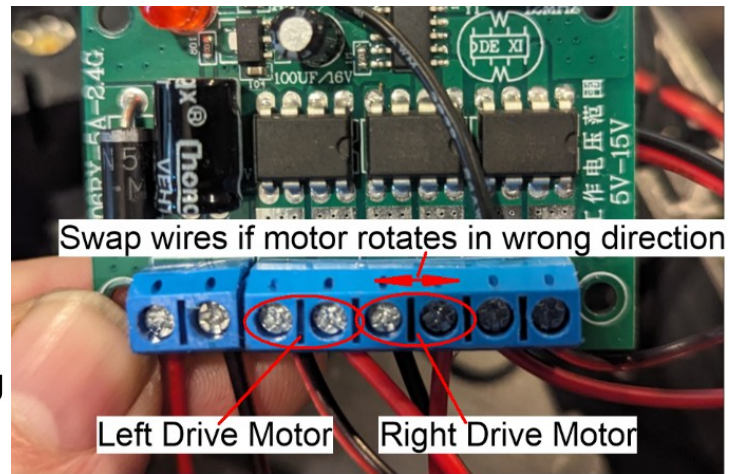
**Provided:** Long zip ties to secure wires to motors, wire, chassis, drive motors and drive motor mounting screws. **Not Provided:** Soldering gun, solder wire, allen wrench and something to strip the wires.

1. Solder the wires to the drive motors with them facing towards shaft of the motor. There are no + & - on the motors so you will adjust during testing in step 4.
2. Use long zip ties to secure wires to motors as the solder is not that strong. See pictures below.
3. Attache motors to chassis with drive motor screws provided. Press the nuts x 4 into the chassis.
4. Now it's time to wire the motors to the receiver and test. Install wires as shown and if one of the motors doesn't spin forward when pressing on the forwards stick just swap the red and black wire. See pictures below.
5. Cut off riser tabs on receiver board so there is plenty of room for battery and use the short machine screws and nuts X 2 to attach receiver board to chassis.

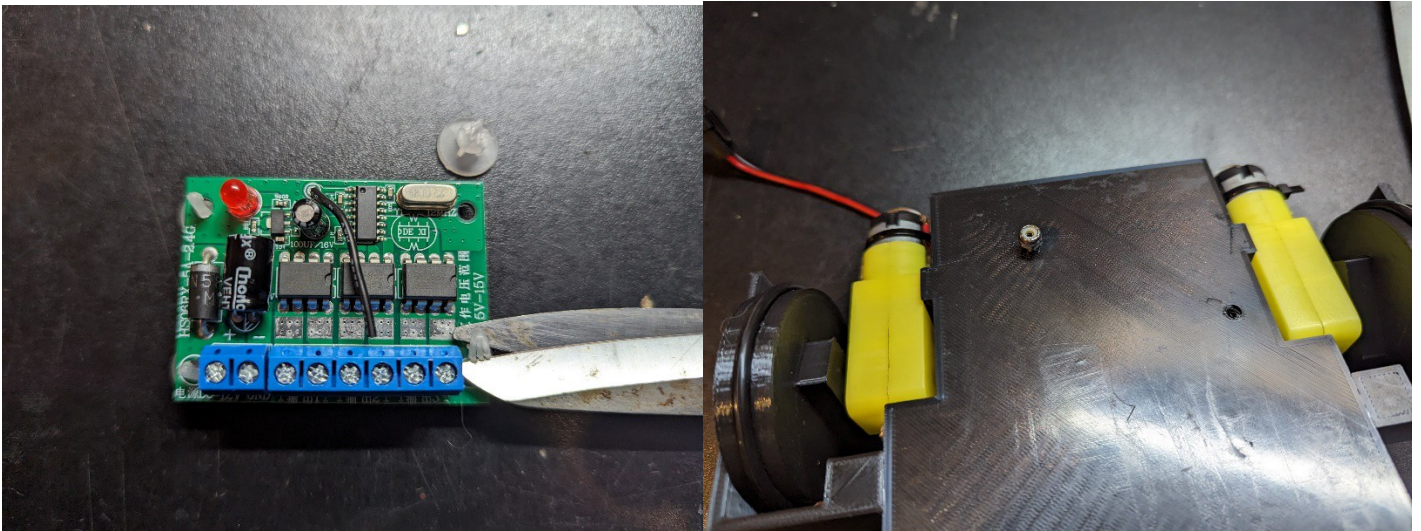
### Step 3



### Step 4



## Step 5



## Step 6: Attach wheel hubs to drive motors.

### What you will need for step 6:

**Provided:** Wheel hubs with magnets you installed in step 1 & wood screw X 2. **Not Provided:** Something to clean out the hub slightly so it will press onto the motor shaft.

1. Try pressing the wheel hub onto the drive motor shaft. If it won't push on with a little force, then clean it out at the opening a little till it presses on firmly.
2. Take one small wood screw and screw the hub to the shaft. Now the wheels will magnet to the motors.
3. Slip the rubber wheel rings onto the tires.



## **Step 7: Mount weapon blade**

### **What you will need for step 7:**

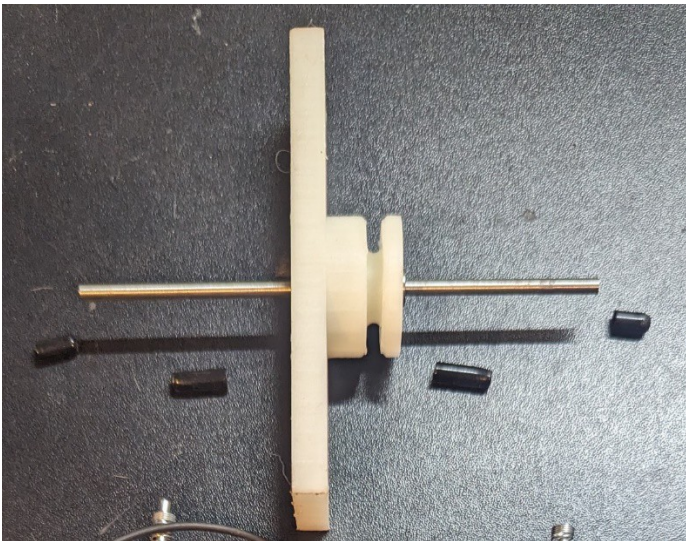
**Provided:** Weapon blade, shaft, shafts to keep blade off ground (Vertical model) & rubber caps. **Not Provided:** Scissor to cut rubber, pointy tool to clean out belt track (The screwdriver included will work also).

### **What to do in step 7:**

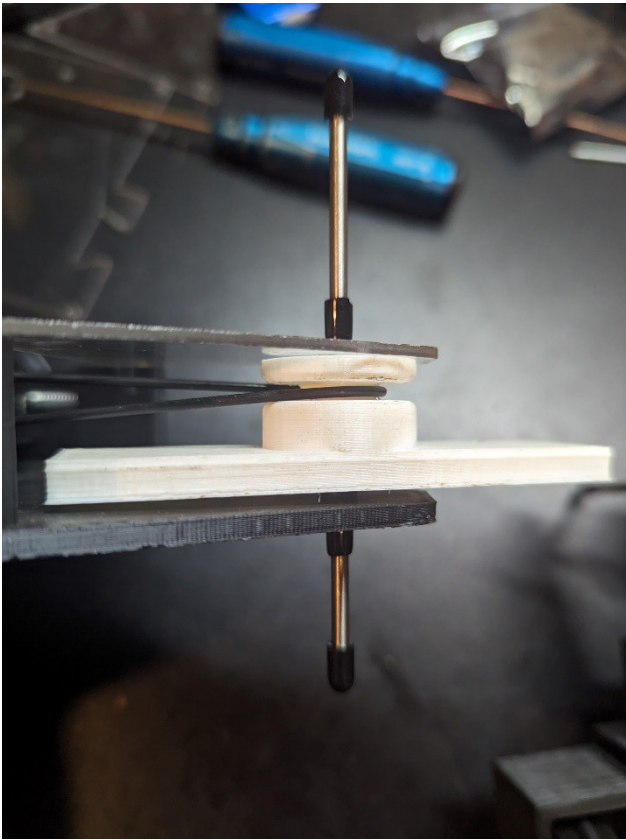
1. Clean up belt track in weapon blade. You can use the screwdriver included.
2. Use the shaft to clean out the shaft hole by pushing it through a couple time still it goes smoothly.



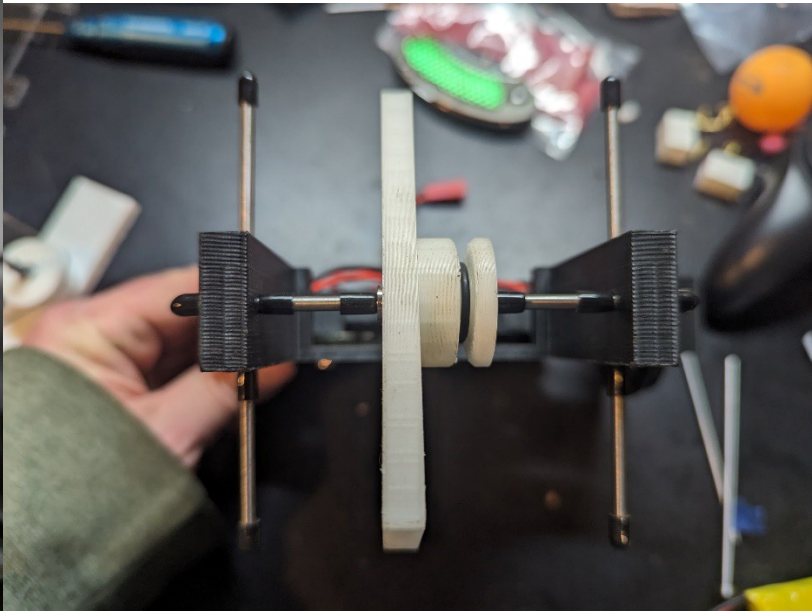
3. Cut the rubber caps in half. The tip side will be used to cap off the ends of the shaft so they don't scratch the surface you are driving on the open piece will be used as a spacer to keep your weapon aligned in the middle on the shaft.



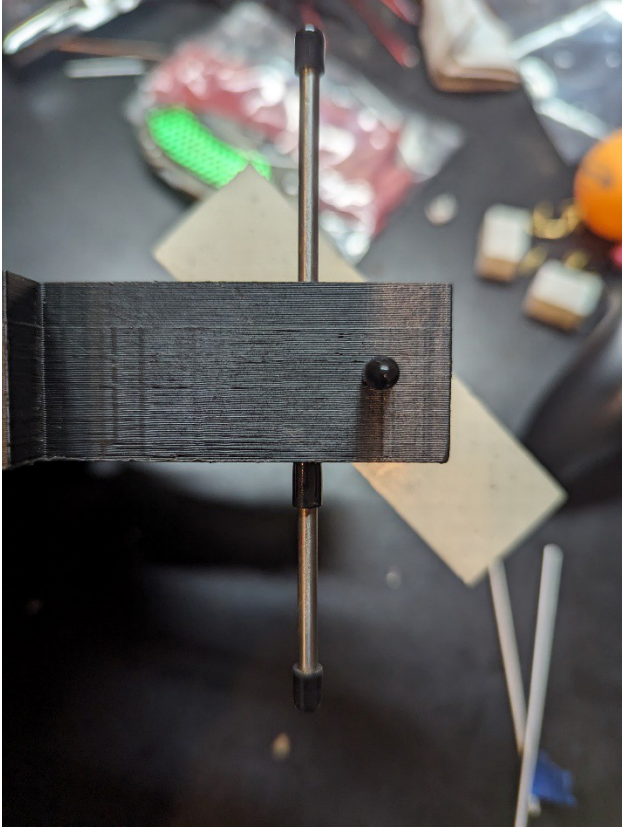
4. Now slide the shaft through the weapon mount to the chassis while arranging the spacers and caps as show in pictures



**Horizontal Bot**



**Vertical Bot**



**Vertical Bot**

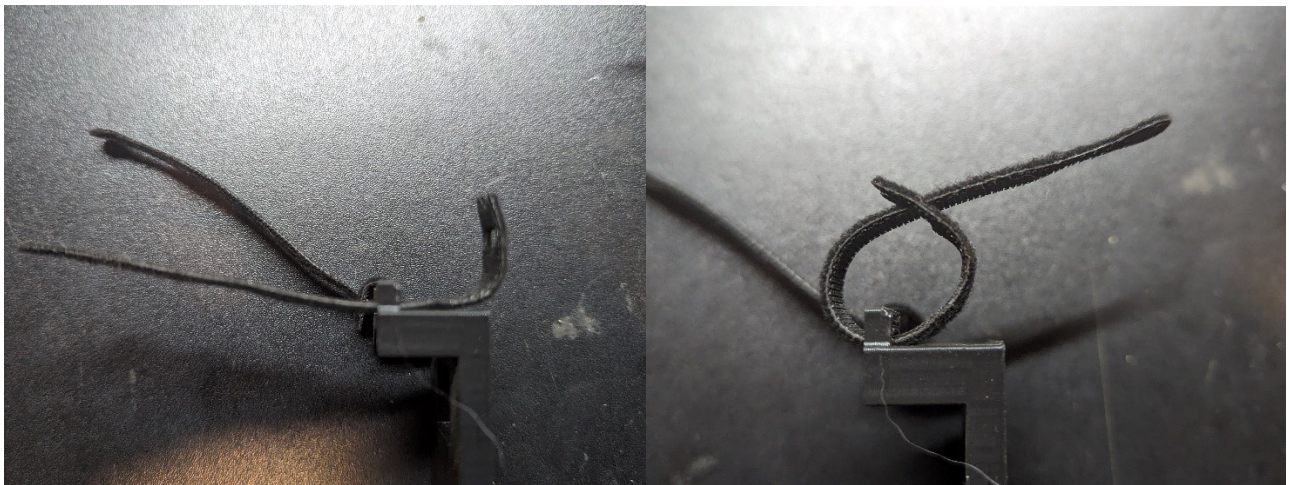
## Step 8: Remote adapter

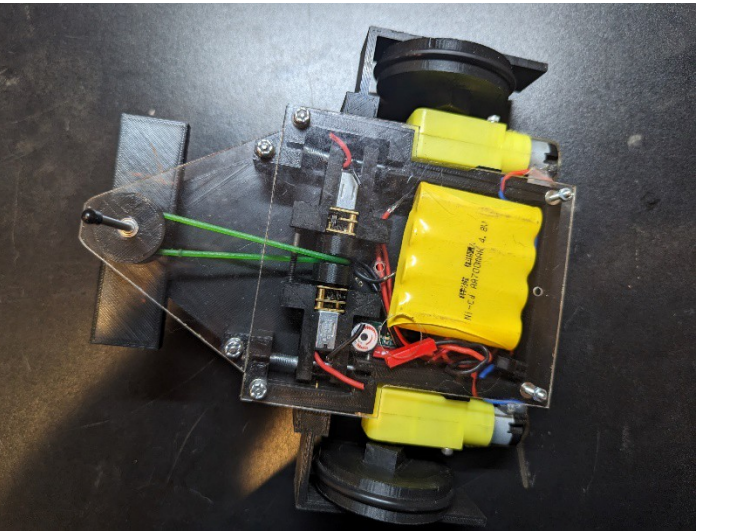
### What you will need for step 8:

**Provided:** Remote adapter, Remote, velcro straps x 4. **Not Provided:** AA Batteries X2 for remote

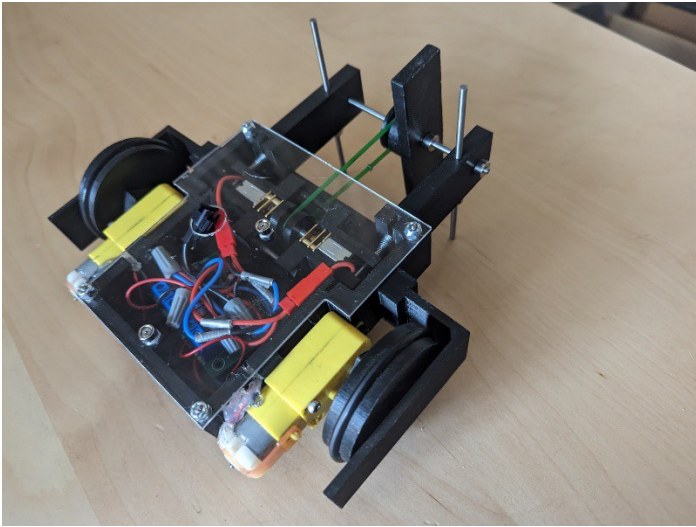
### What to do in step 8:

1. Put 2 AA batteries into the remote
2. Screw in the 2-3mm screws provided. These will be used to keep the weapon running while driving.
3. Slip the 4 velcro straps into the 4 slots on the remote adapter and loop around sliding the end of the velcro strap through the slot on the end of the strap.
4. Now set the remote adapter onto the remote and use the velcro straps to secure it to the remote. The screws can be turned to turn the weapon blade on without having to hold the button while you battle. Unscrew one of screws and screw the other one to reverse the rotation of the blade.









**Now it's time to FIGHT!**

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