

## How to install an Apex Python and Garter:

There are 3 wires attached to the mosfet. The color of the wires may vary so please look on your mosfet's packaging to figure out what each color corresponds to the wire.

Materials needed are:

- Motor connectors
- Soldering Iron
- Solder
- Deans or other preferred connector
- Additional wire as needed (no motor positive wire is provided)
- Heat shrink is highly recommended but electrical tape can be used in a pinch

The installation of these mosfets require very basic soldering skills. There are many good tutorials on how to solder on YouTube and similar sites. It is very easy to learn how to solder it just may take some practice. If this is your first time soldering it is strongly recommended you practice on some spare wire first.

The general installation steps are:

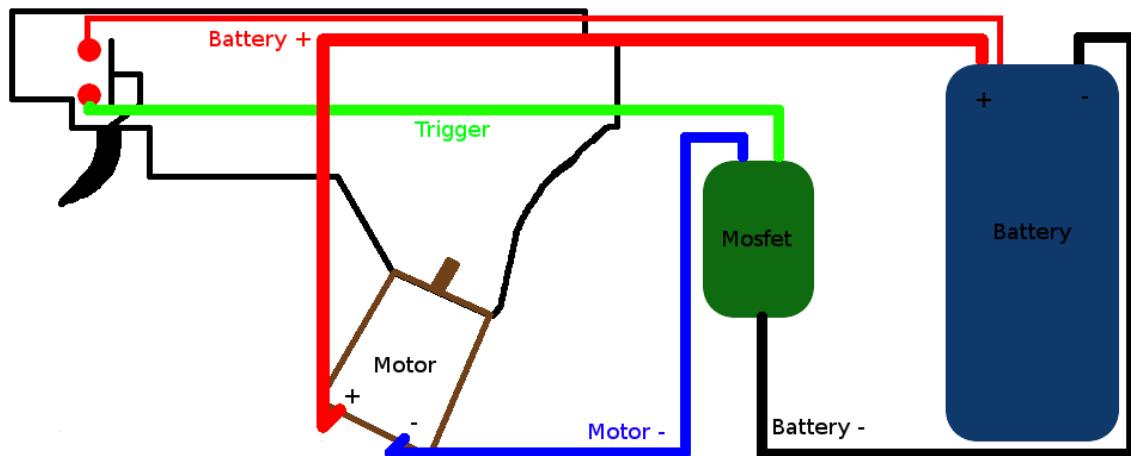
1. Figure out where you are going to place the mosfet. Many guns do not have very much extra room for things so you need to find a good place to place it. A common area is inside a buffer tube or the stock.
2. Measure how much wire you need with the mosfet in the correct location. In most installs there should be excess wire on the mosfet so simply cut them to length. If you need extra wire it is fairly easy to solder on an extension if necessary. I recommend leaving around half to an inch of extra wire for each measurement to leave room for error. Have a look at our diagrams below to give you an idea of how you should layout your wiring.
3. The battery negative wire needs to then be soldered to the negative terminal of your battery connector. Remember to slide on some heat shrink tube before you solder it together so you can insulate the joint and prevent shorts.
4. The motor negative wire goes directly to the negative terminal of your motor. Typically you should solder or crimp on a motor connector. We recommend putting some heat shrink tubing over the connector and joint to prevent any possible shorts.
5. The trigger wire needs to connect to one of the trigger contacts. The side does not matter as long as it is opposite of the side you run the battery positive to in the next steps. Also recommended to slide on some heat shrink before soldering to cover up the joint.
6. If your mosfet does not include a built-in fuse it is highly recommended to install one. Solder one end of the holder to the positive terminal of the battery connector and the other side of the holder to your positive wire. Use heat shrink on the connections as well.

7. Depending on which wiring method you choose you need to wire the positive wire to both the motor positive and the trigger. Remember to use the opposite trigger contact that you put the mosfet trigger wire on.
  - a. Option 1: Run 2 positive wires. One thicker gauge directly to the motor, and one smaller gauge directly to the trigger. This sacrifices a little bit of room for decreased resistance. The wiring holding the current will be shorter overall.
  - b. Option 2: Run 1 positive wire to the trigger and then another wire from the trigger to the motor. This method is preferred when there is no room to run the 2nd wire to the battery. It makes the overall length a little longer but the increased resistance is practically negligible.
  - c. Option 3: This combines the best of both of the previous options with a little more work. You run 1 positive wire directly from the battery connector to the motor. Along the way you cut a slit in the wire and solder a smaller wire to branch off to the trigger. It saves squeezing that extra wire going to the battery and still allows all the current to go directly to the motor with no detour up to the trigger contact.

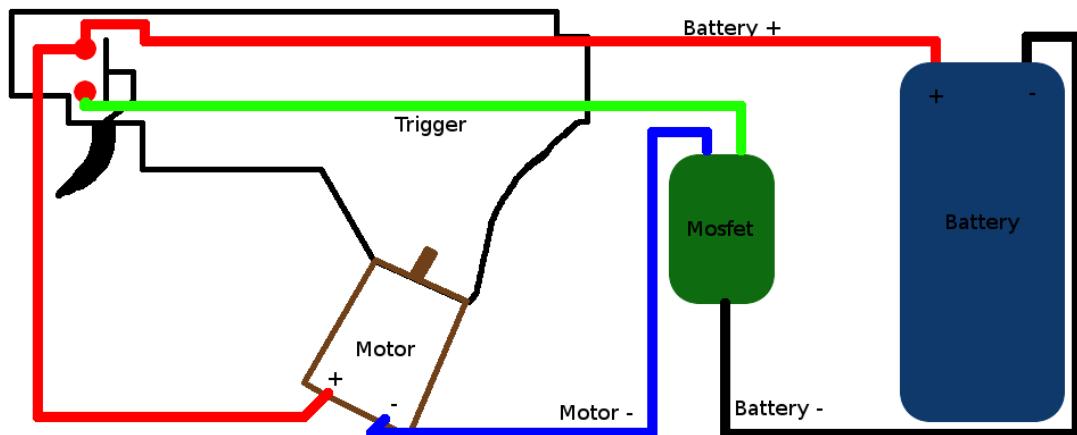
## Warnings and common problems:

- Make sure you insulate all solder joints you create. It is very easy to accidentally short them to the gearbox, motor chassis, or against each other during installation. Heat shrink tubing is the preferred method but electrical tape is a good alternative.
- Inspect your trigger contacts for any signs of wear. Before you install your mosfet the trigger likely will have worn out a bit due to arcing. If it looks a little burnt out or greyish it is highly recommended to either replace them or take some fine sandpaper and sand them until shiny again. Worn trigger contacts can cause mosfet failure if it's bad enough.
- Do not fully assemble your gun without first trying your new wiring. We recommend disconnecting the motor from the rest of the gearbox and make sure it spins freely before attempting to test it inside the gearbox.
- If for any reason the gun does not fire or the motor doesn't spin **DO NOT** hold the trigger down. This is a common instinct but holding it down will not fix the issue and will likely cause damage to something, whether it be a battery, motor, or mosfet. In this case double check all your connections, your trigger contacts, battery charge, and everything.
- Make sure you remember which terminal on the motor is which. Plugging the positive side of the motor into the negative side of the wiring and the negative side of the motor into the positive side of the wiring will cause the motor to try to spin backwards and may damage the motor, gears, or anti-reversal latch. If you hear the gun click when you pull the trigger and it doesn't fire this is likely the case.

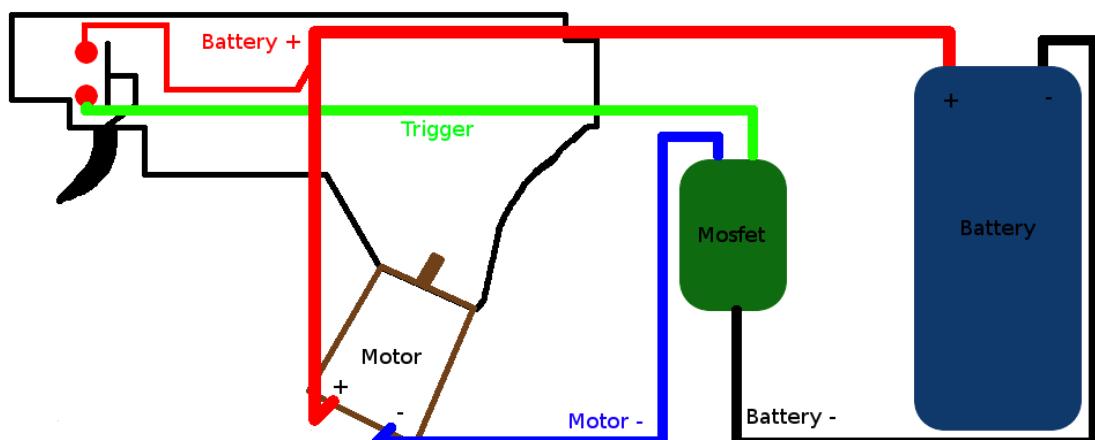
Option 1:



Option 2:



Option 3:





## **Warranty**

Apex Electrix LLC warrants your product to be free from manufacturing defects and premature failure for a period of 2 years from the original retail purchase. If you encounter a defect or failure we shall repair or replace your product at our discretion using new or refurbished parts. In the event that we are unable to repair or replace your exact model, a comparable model with similar features and price will be offered.

After the initial 2 year term we will offer to repair any failure free of labor at the sole cost of the parts required for repair and shipping.

## **Failures Not Covered**

This warranty does not cover any defects or failures resulting in misuse of the product or failure to follow reasonable precautions.

### **This warranty will be considered void under the following conditions:**

- The heat shrink material has been removed
- The user tried to modify or repair the product
- The failure is a result from improper installation or abuse
- Failure to use a fuse with the product (does not apply to products with fuses built in, please check the product description or contact us)
- Mechanical failure due to excessive force during installation

## **Limits of Liability**

If your product fails or does not perform as warranted your sole recourse shall be to repair or replace the product as described above. We will not be liable to you or anyone else for any damages that result from the failure of this product. Typical damages may include but are not limited to: battery damage, motor damage, damage to gearbox internals, and personal injury. Under no circumstances shall Apex Electrix LLC be liable for more than the purchase price of the product.

We specifically disclaim all other warranties, expressed or implied, and the user shall deem the use of this product an acceptance of these terms.

## **How to Obtain Service**

Please contact Apex Electrix LLC at: [support@apxelectrix.com](mailto:support@apxelectrix.com). Once we have verified that your problem requires you to send in the product we will provide you with an RMA number and return address. You must include the RMA number either visibly on the outside of the package or on a note inside the package.

It is the owner's responsibility to provide the initial packaging and postage. We will pay for the shipping cost to return your product to you for products under warranty. We are not responsible for any customs fees or duties.