



# A Complete Airsoft MOSFET Installation Guide

## Introduction

There are probably only two reasons that you have gotten this far as to find and click on this article. You probably have just bought an airsoft MOSFET and you are looking for a guide on how to install it properly. Or maybe you are just looking around because you would like to install an airsoft MOSFET in your AEG or AEP, but you are not sure whether or not you are capable to install it by yourself.

If you find yourself in the position that you are just looking around and you are not 100% certain about your airsoft MOSFET purchase than I would like to encourage you to check our previous article. In that article, we described all the benefits and drawbacks that will help you to make the right decision.

You can read it here: <https://smartarmaments.com/blog/benefits-of-a-mosfet-in-airsoft>

This article will describe the installation process of an airsoft MOSFET, how to prepare for it, and finally how to do it correctly.

## Preparation

To correctly prepare for an airsoft MOSFET installation you will need to prepare a 40 Watt soldering iron, a screwdriver, a rosin core electrical solder, wire clippers and strippers (preferably a 16 ga and a 22 ga), a small lighter, heat shrink tubing, extra wiring, a flux pen and all the other tools needed to take apart your airsoft gun.

Next, you will need the proper environment such as a garage where you will have a decent working surface, proper lighting and cups or containers where you can put the screws as not to lose them.

Additionally, you may want to consider preparing a notebook to take note of where and how many screws are taken out, to aid in your reassembly. It seems inevitable that after every successful disassembly and reassembly you will always end up with some leftover screws. Your notes should help you to avoid that, as you do not want your gun falling apart in the middle of a game due to a missing screw.

## The Wiring System in Your AEG

You must choose wisely where you are going to install your airsoft MOSFET because every model is different so you need to plan where all the wires will go. Remember not to neglect this planning before cutting your new wires, measure twice cut once is a good rule...

You should also consider replacing the wiring in your AEG to a low-resistance wire to get better performance out of your gun. The same applies to the connectors. Many airsoft gun producers are selling their guns with mini-Tamiya connectors that are high resistance connectors and are not designed to handle such high currents. Therefore they should be replaced with low resistance connectors like Deans or the XT60.

## Process of an Airsoft MOSFET Installation

The first step is to make sure that there are no BBs in the hop-up chamber and the inner barrel, then to unplug the battery.

1. Disassemble the airsoft gun and extract the gearbox
2. Get familiar with the installation instructions of your specific MOSFET (which pads are for trigger, for motor, and battery)
3. Prepare your workbench, tools, and parts
  - a) Soldering iron (if your MOSFET does not come with wiring) - please familiarize yourself with proper soldering techniques before attempting this mod.
  - b) Various size heat shrink tubes
  - c) An airsoft MOSFET unit
  - d) New wires (preferably soft silicone wires)
  - e) T-connect connector (also called Deans)
4. Prepare the wires (E1-prepare.jpg)
  - a) Measure and cut wires to size (remember that you do not need thick wires for the trigger contact, only the motor and battery require high current wires)
  - b) Solder thin wires to the trigger contacts, add a heat shrink tube on each connector, you can also use a longer tube for managing and protecting the wiring
  - c) Solder wires to the t-connector/Deans - this is quite tricky but the wire and connector require a great amount of heat to solder properly. It is advisable to use a heat resistant mounting for the connector and pliers to grab the wire
5. Crimp the female spade connector on the motor wires (add a heat shrink) OR solder the wires directly to the motor it is not recommended to do that, as you may overheat the connectors and cause other problems.
6. Prepare your airsoft MOSFET by applying tin to the pads



7. Solder the battery wires to the MOSFET battery pads. Those often are labeled as BAT+, BAT- or just B+ B-, just remember that the black wire is "-" or "GND" and the red one is "+" or "VCC" )
8. Now solder the motor wires to the proper pads
9. You are almost done, now solder the trigger wires (please note that sometimes there is only one pad for the trigger, if so please solder the second wire to "BAT+")
10. The last step is checking that there are no solder bridges (especially on bat+ bat- and mot+ mot- that would be VERY bad) and is everything connected in the desired order.  
If everything is correct, wrap a big heat shrink tube over the MOSFET.

## Before Reassembly

After you have finished soldering, make sure you check that all the wires are soldered to the correct parts of your airsoft gun. An airsoft MOSFET can be easily destroyed if it is plugged in the wrong way as the current will run in the wrong direction.

Reconnect the motor and the battery. The motor should activate as the trigger is pulled. You should repeat this process until it works, once it works, you are ready to assemble the airsoft gun. Double-checking your airsoft MOSFET installation is highly recommended!

## Summary

As you may have noticed, the installation of an airsoft MOSFET is not as scary as it may look at first glance. In the simplest version, it is just about disconnecting and connecting some new wires to your airsoft MOSFET, in the harder option you will require soldering iron to complete the installation.

It is possible to learn by trial-and-error as with many other things related to the maintenance of airsoft guns.

If you still do not feel brave enough to try it by yourself, or you are scared that you will connect it the wrong way and destroy the electronics then you should hand it over to an airsoft service, but you can still use our guide to verify his work!

There are a lot of wannabe airsoft services that do not use proper techniques, tools, and supplies.



If you do not know any airsoft service that you can trust, you can start your search by joining local airsoft groups on Facebook and ask the community for some recommendations.

But bear in mind that almost any person who has a bit of experience with soldering and has the proper equipment should be able to install it without any problems following this article.

Do not get discouraged, [the benefits of an airsoft MOSFET](#) are enough to reward you for all this struggle and, you will learn an additional skill for future upgrades to your airsoft gear.