

## HOW TO No. 2 --- Waterproofing

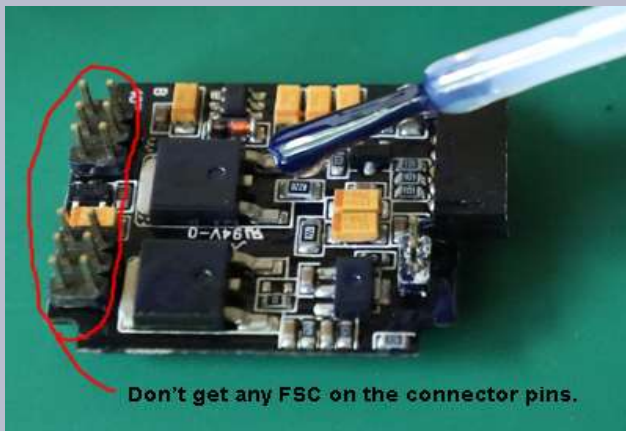
Racing in the wet can cause big and expensive problems. Blown Electronic Speed Controller (ESC) and /or Receiver (RX). Don't panic! You can do a lot towards preventing this happening. You will need the following:

- 1/ Conformal Coating for the printed circuit boards (PCB's) There are many on the market. The one I would recommend is called "FSC" (You can buy this from R.S. <https://uk.rs-online.com/web/p/conformal-coatings/0535525/> You can also get this on eBay but at a higher cost. Or search for Conformal Coating
- 2/ Plastic sealing compound (Plasti Dip) you can get this off eBay, Or search for Plasti Dip. It is expensive so maybe club together with your fellow racers.  
<https://www.ebay.co.uk/itm/PlastiDip-Plasti-Dip-Rubber-Paint/151047448649?hash=item232b212849:m:m1j1noqtO8SpjzfcHrBtCoA>
- 3/ Tools to take apart your ESC and or RX. and apply the Plasti Dip (Wooden Stirrer)
- 4/ The Item/items you want to waterproof

Assemble all the parts you will need together. Carefully take apart the first item (I have shown the ESC in the photos but you can use the same method for other parts you want to waterproof). Remember how the item came apart, taking some pictures at each stage is a good idea. Keep all the small parts safe and if there are two PCB's then be very careful taking them apart.

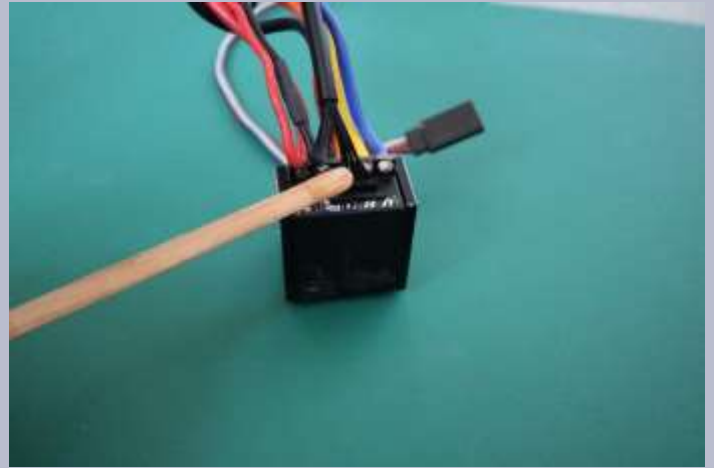
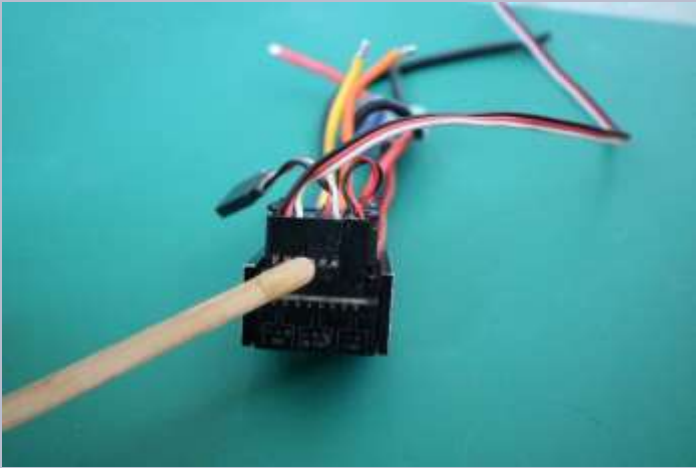


The next step is to coat the PCB's in FSC. DO NOT get any of the FSC on any of the mating areas of any connectors. Always read the instructions on using FSC and apply in a well-ventilated area.



When the FSC is fully dried check you have not missed any area. Then carefully re-assemble the unit, taking care to put everything back correctly (this is where pictures come in handy)

The next step is to apply Plasti Dip to the areas where wires are attach as this is a more flexible style of coating than the FSC, (Fit connectors and wires prior to coating with Plasti Dip) this will allow for some movement. Plasti Dip can be applied over connectors and wires as it can be peeled off with care if required at a later date. Ensure you have a good coverage to halt any ingress of moisture.



Ensure you have a good coverage where wires are fixed via solder or connector to halt any ingress of moisture.

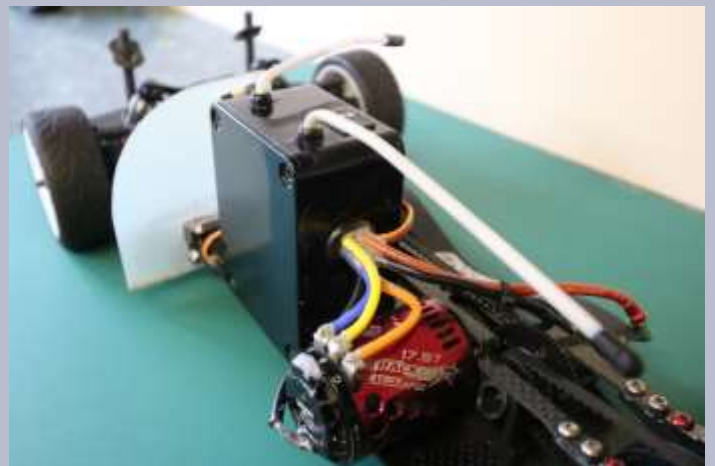


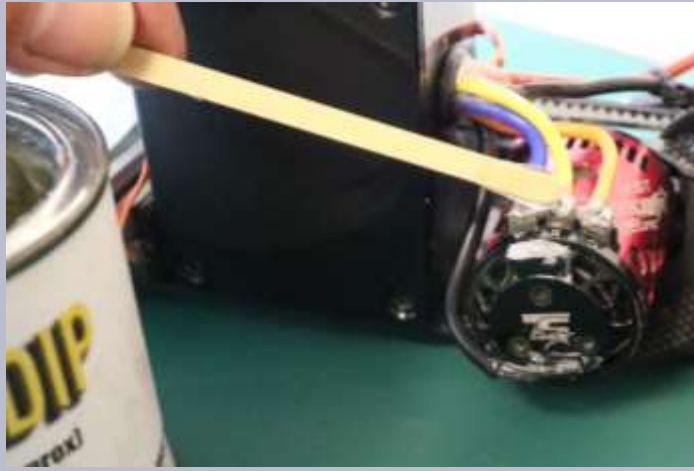
With regards to a switch you can do a couple of things.  
1/ You can seal in a small flexible cover so you can switch "ON" and "OFF".

2/ Or you can put the switch into the "ON" position then seal with Plasti Dip; the car is then switched on as soon as you connect the battery.

I prefer method 2 as this tends to give a more reliable seal.

Another waterproofing method is to put all your electronics in a sealed box (as the picture below). However even using this method I feel it is best to also waterproof as above in addition to the box. You can still get moisture within the box on a damp day due to heat from the ESC causing condensation! Remember to seal the wires where they exit the box as well!





**Waterproofing is just as important for all electronics on the car. Don't forget that Brushless motors have PCB's within and they will require attention with some FSC. The pictures below show the PCB's in a brushless motor and a receiver. If you are unsure about waterproofing your car, then please ask any questions on our Facebook pages or talk to our members for help. Better to ask than damage many £'s worth of equipment.**

**Please note: this is intended as a guide only not all ESC's Motors and receiver are the same.**

