

After considering all the WM kits I decided on the DO Stage 2 kit.

The Snow performance was 2nd place but in the end I decided on MAP controlled over MAF controlled because the temperature in my city can change drastically in a matter of hours. The free check valve, a metal nozzle holder and black tubing are also a plus.

I considered the AEM kit but I did not want to run any boost lines, I'd rather have it electronic.

I wanted the install to be as clean and stealth as possible, I didn't want any exposed wires, no fuse holders visible, etc. I opted to solder all the connection instead of using the Posi-Lock connectors.

Devils Own Stage 2 WM kit 2.5bar:



## Stage 1, Wiring:

### Tools:

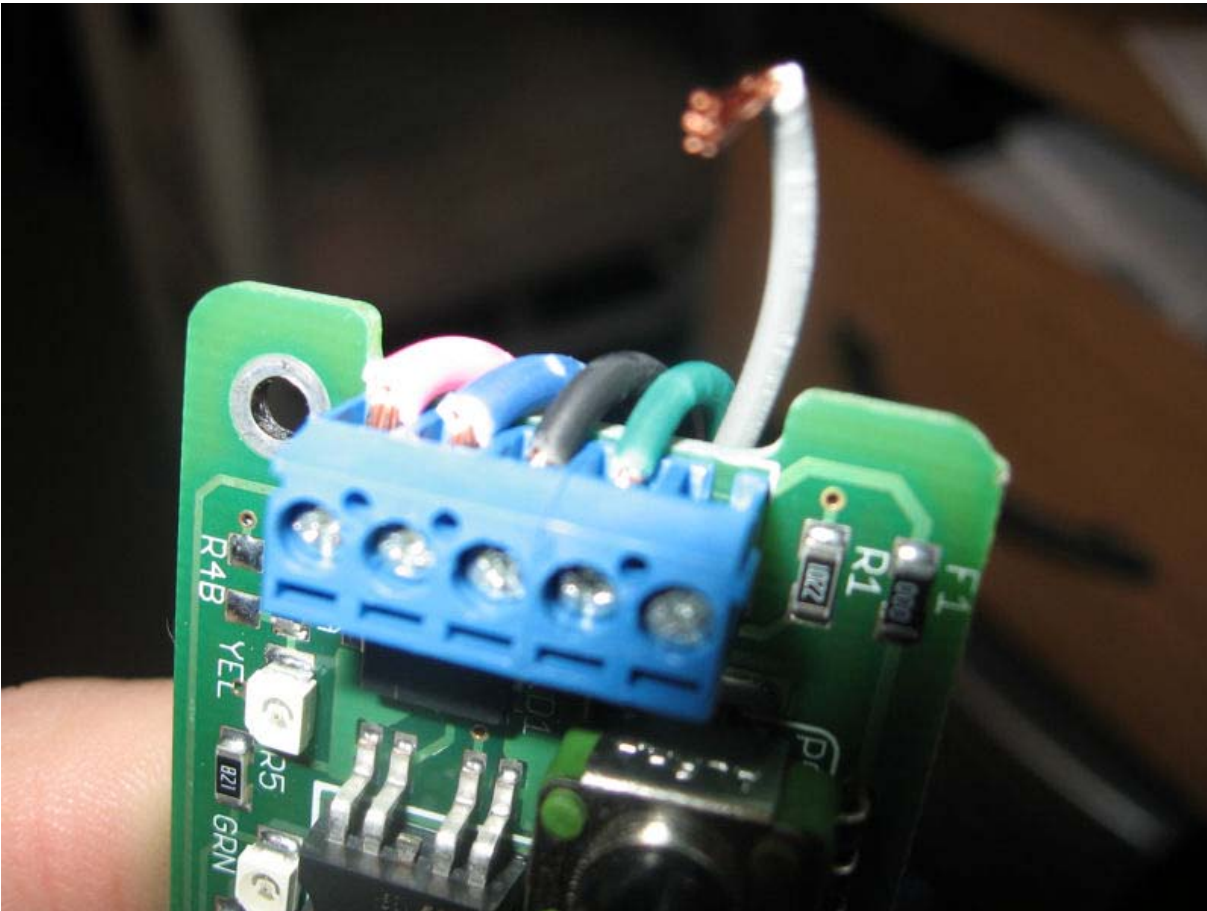
T25  
T30  
8mm socket  
10mm socket  
13mm socket  
Electrical Tape  
Soldering Iron  
Tweezers  
Pointy tool

### Parts:

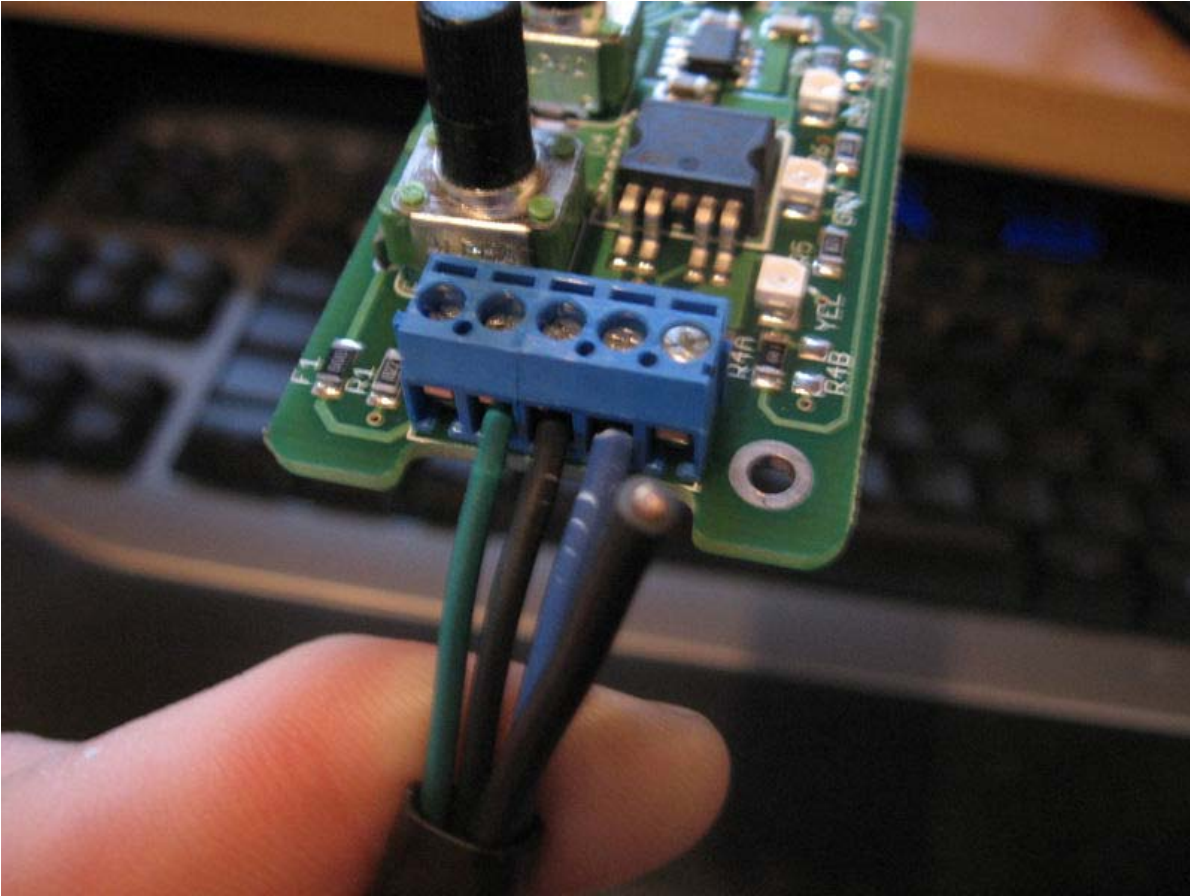
Repair wire 000 979 242  
Relay and harness  
Zip tie

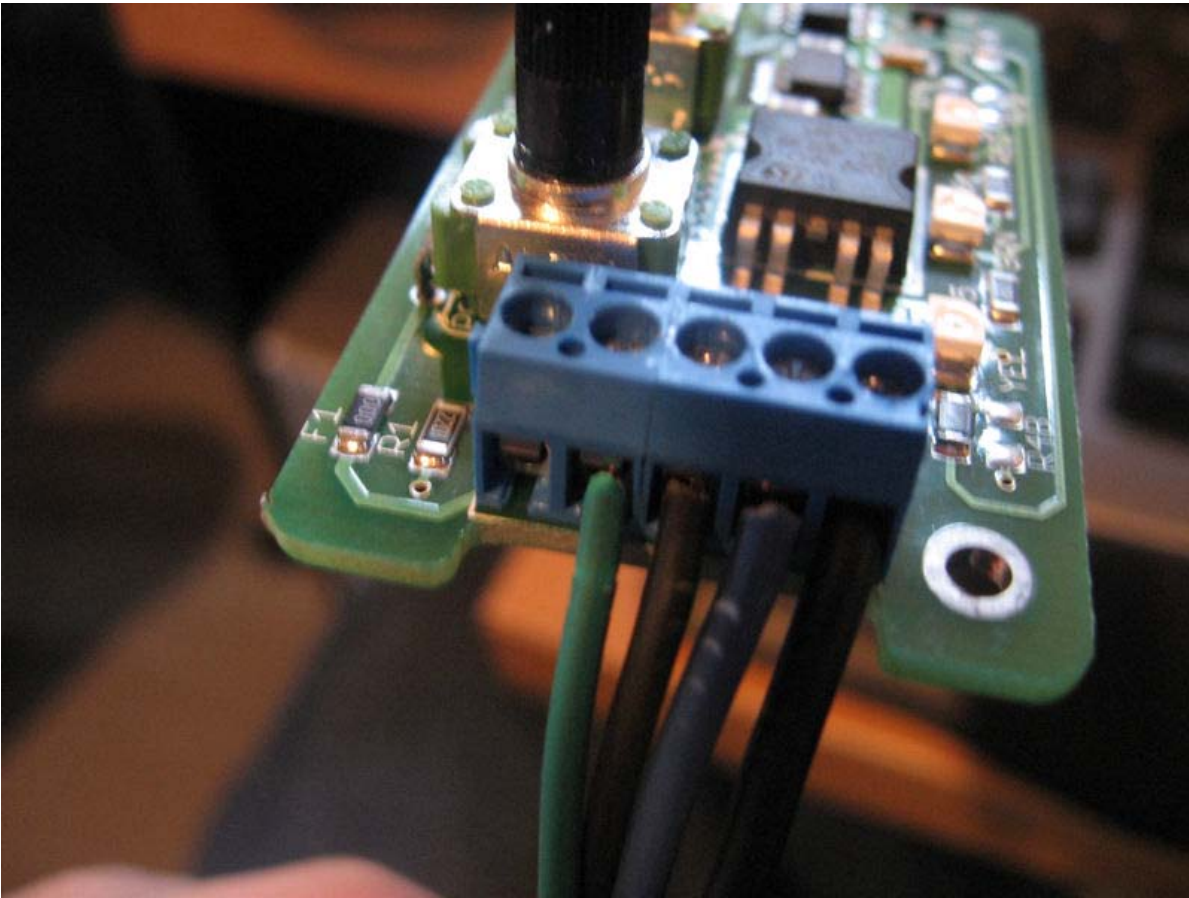
### Step 1, Prepare the controller:

The gray wire is not needed as I plan on using the MAP sensor on the engine instead of using an external Map sensor.



The pink power wire was not long enough so I switched it to a longer 16 gauge wire. From here on in the pink wire will be black.

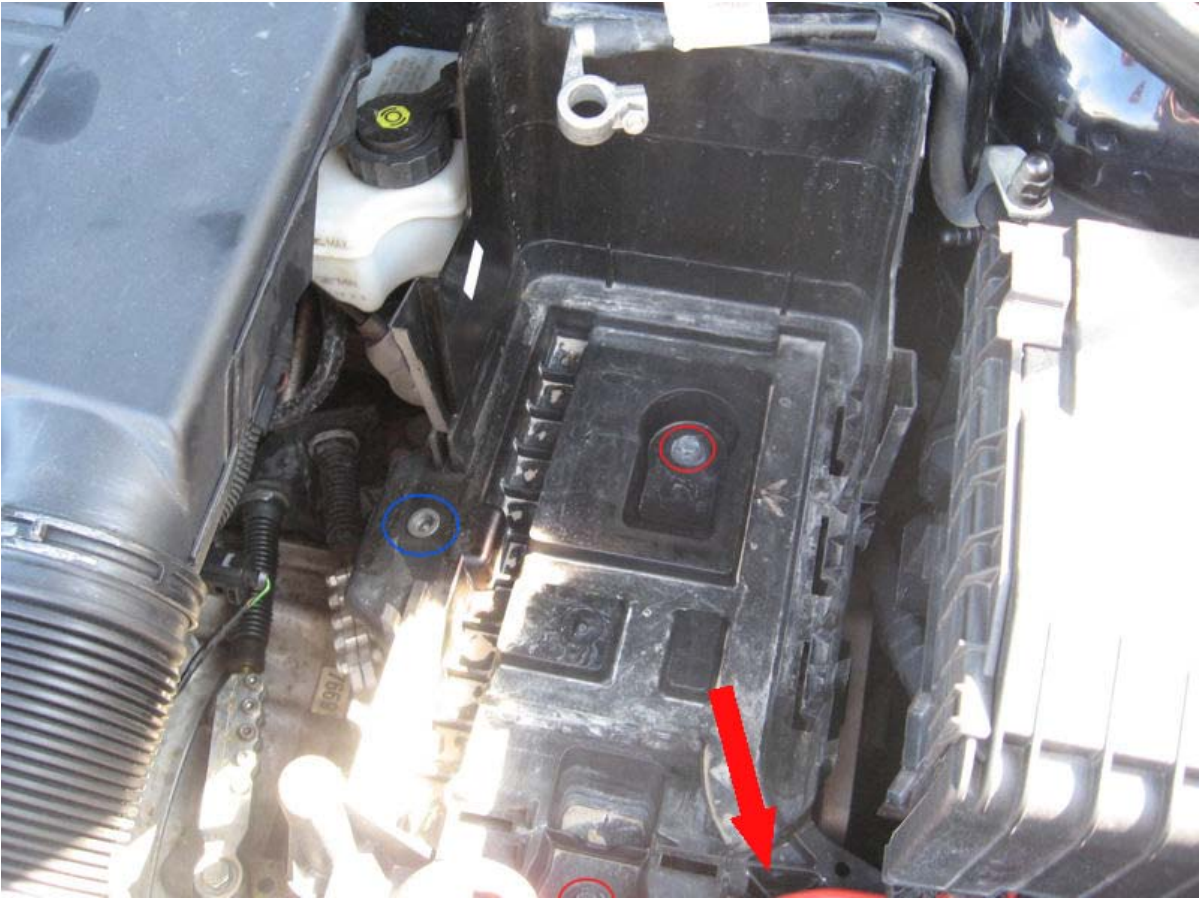




**Step 2, Remove battery and tray:**

The removal of the battery is self explanatory. You will need a 10mm wrench/socket to remove the cables from the battery. Always remember to remove the negative side first. The bracket that holds the battery down is 13mm (blue).

Once the battery is removed you will need to remove the tray it sits on. There are 3 bolts (red). In the picture below one bolt is not pictured.

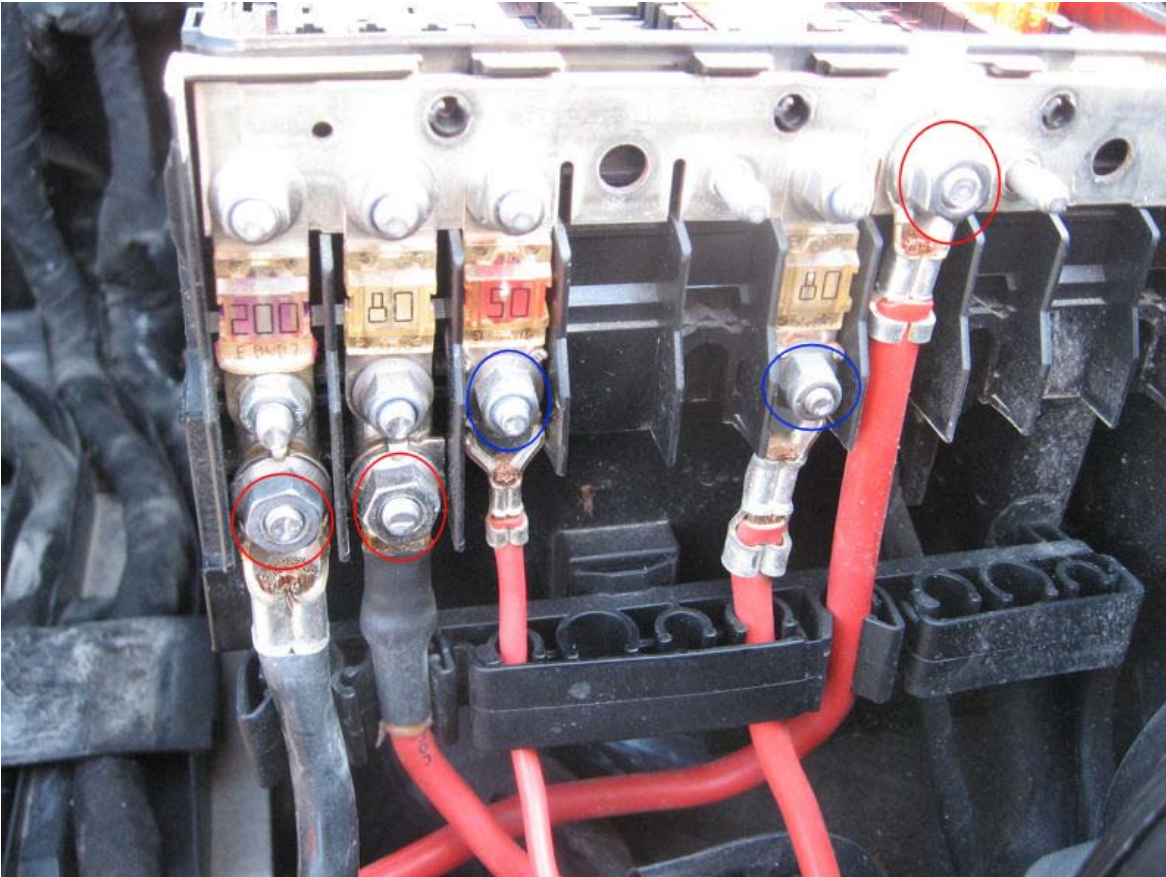


Tray removed:

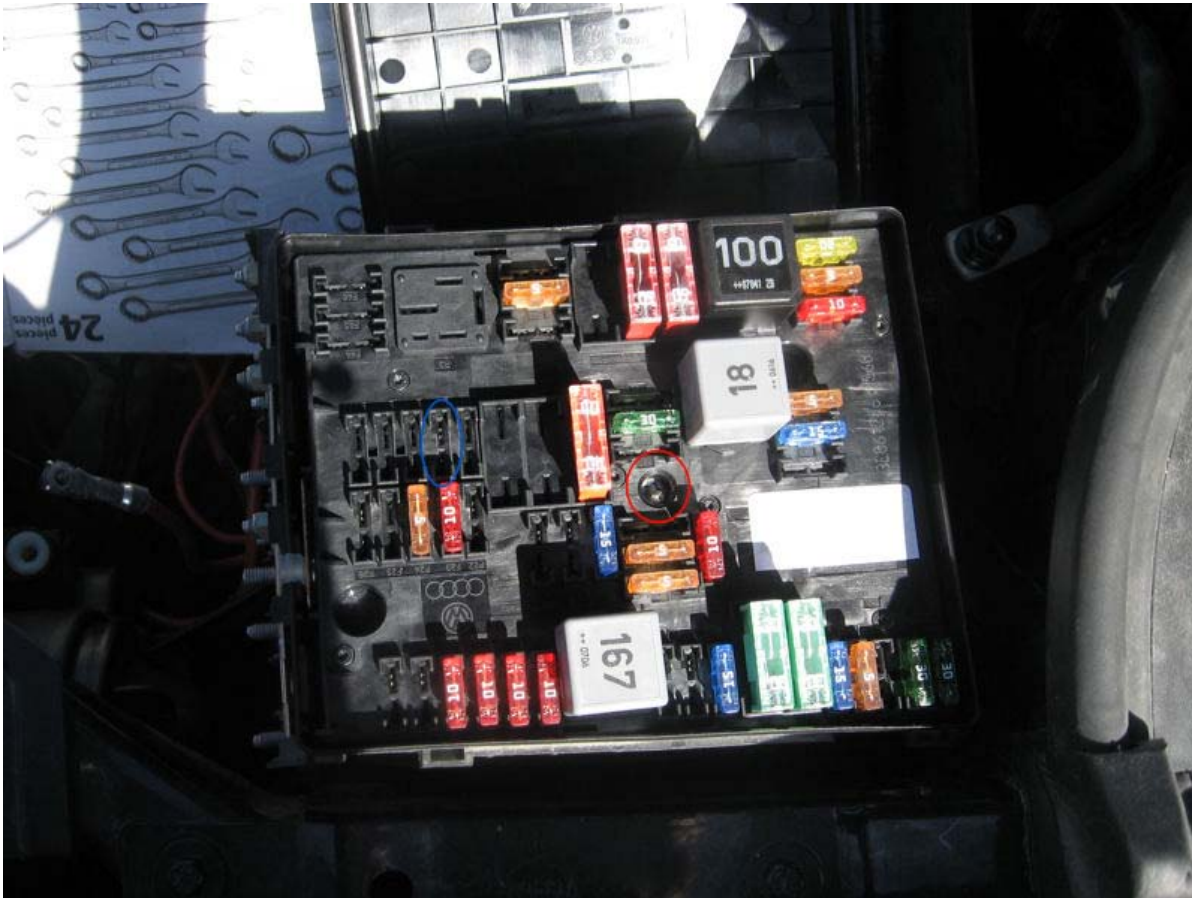


**Step 3, Remove relay panel:**

First remove the positive wires from the relay panel. You will need a 10mm socket (red) and an 8mm socket (blue):



Unscrew the T30 screw (red) and the panel should pop off. We will be adding a fuse in F34 (blue):



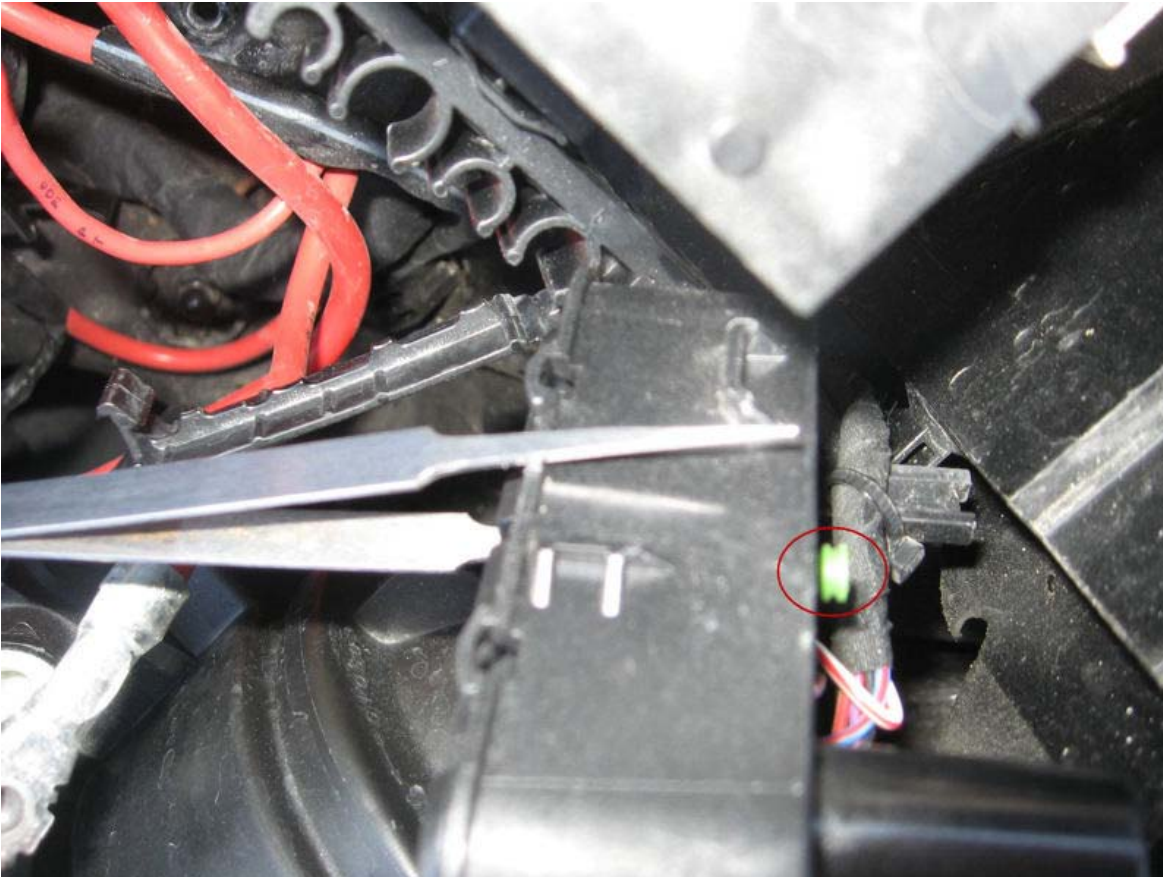
When I pulled the relay panel off I was working blind I wasn't sure how this was going to turn out. I had an extra repair wire from when I installed my alarm siren and I found a connector on the back of the panel that fit the repair wire perfectly. I probed around with a multimeter for a few seconds and I found that the fuse above (Blue) connected to the pin 15 on the connector below (red). This is where I decided to add the 10amp fuse that came with the DO kit.

**Step 4, Add repair wire:**

This is the spot where we will add the repair wire. You will need to push the clip (blue) in the direction of the arrow:



Push out the green water tight plug with the tweezers:





Add silicone to the wire to ensure everything is water tight and insert from the bottom side. VW wanted this panel to stay water tight so once I had the wire in there I double checked that the new wire was indeed water tight. Once completed push the pink clip (2 pictures back) back to its original position:



**Step 5, Run wires through firewall:**

This is the rubber gasket where we will run the wires. It's located behind where the battery used to be:



Use a long pointy tool and push it through the gasket. You will need to remove the black panel above the pedals to see the gasket from the inside. Remove these 2 screws (red), they are both T25:



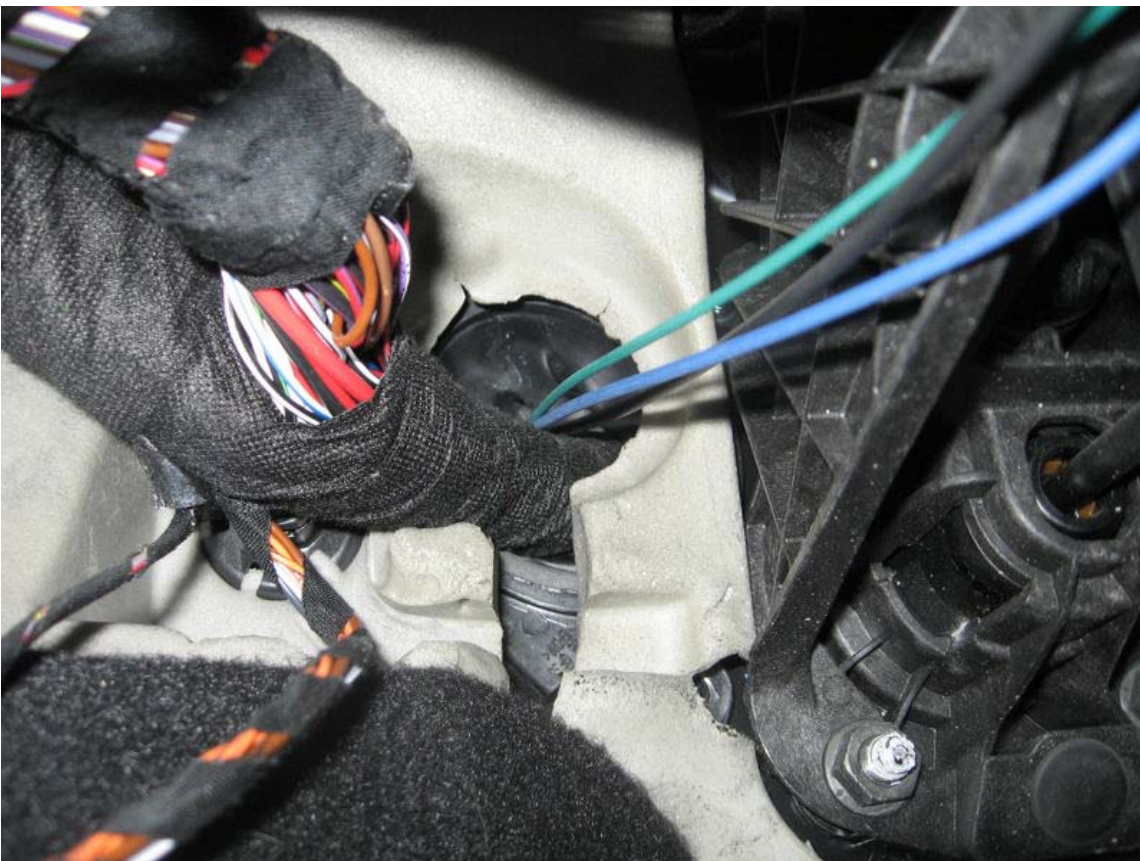
The tool:



On the inside tape the wires to the tool and pull the wires through. Wires pulled through from outside:



Wires on the inside:

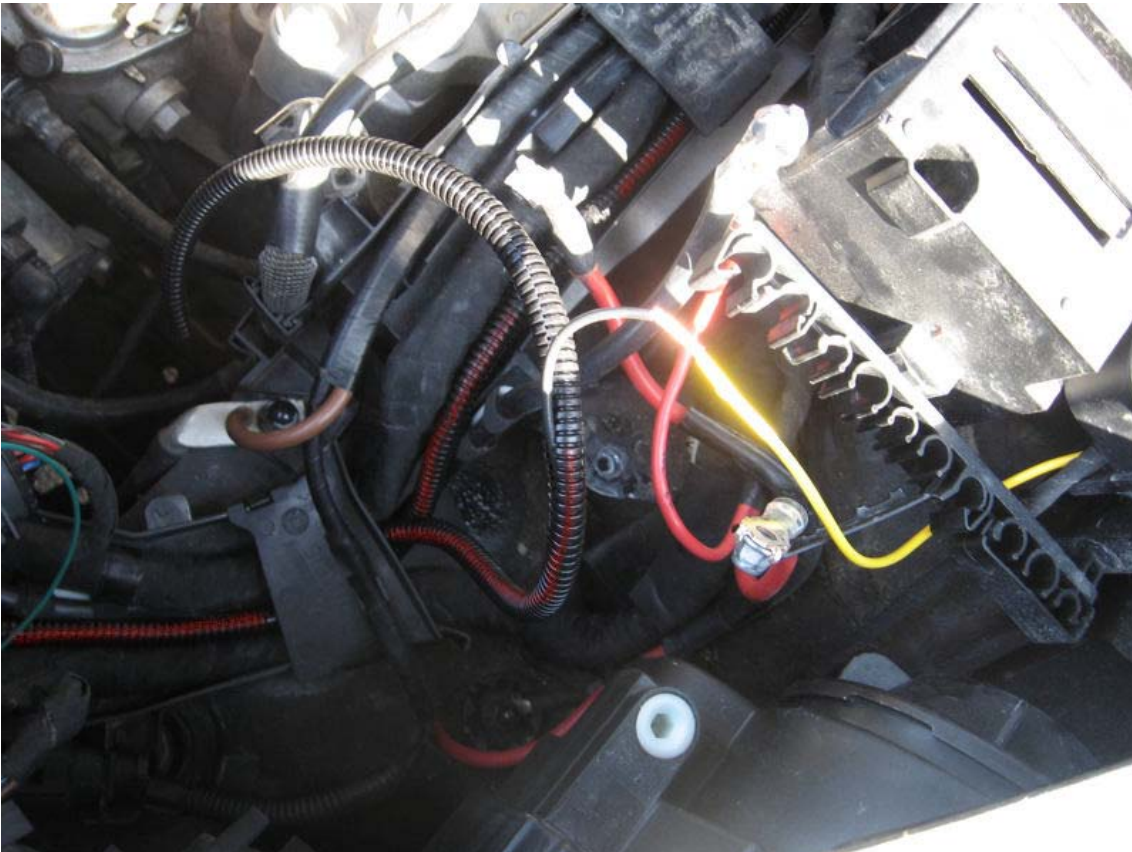


**Step 6, Run wires inside engine compartment:**

Put the 3 wires into the wire loom supplied with the DO kit and run it next to the other wiring harnesses (red):



Solder the black power wire to the yellow repair wire we installed earlier:



Locate and remove the 14 pin connector from its holder. It's located near the coolant hose in front of where the battery used to be:



Strip wire, attach green wire from the DO controller, and then solder together. The wire is the Lilac/Green wire in pin 14:



The wiring in the engine compartment is now complete. The blue wire pictured below will be run to the pump in stage 2:

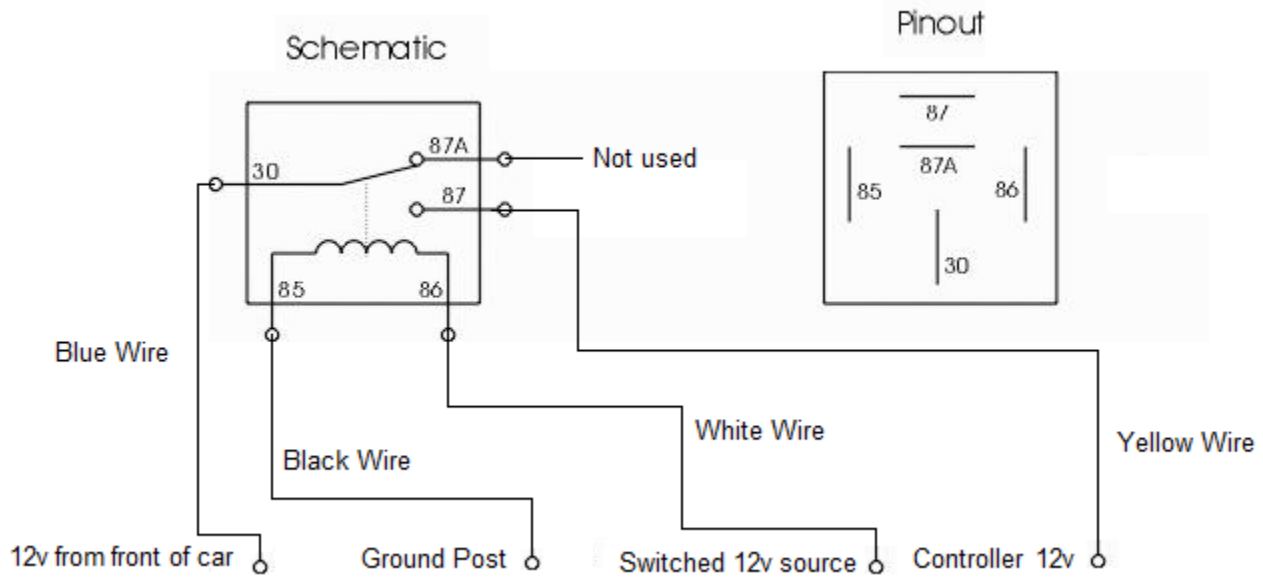


Reinstall the relay panel, battery tray, and battery:

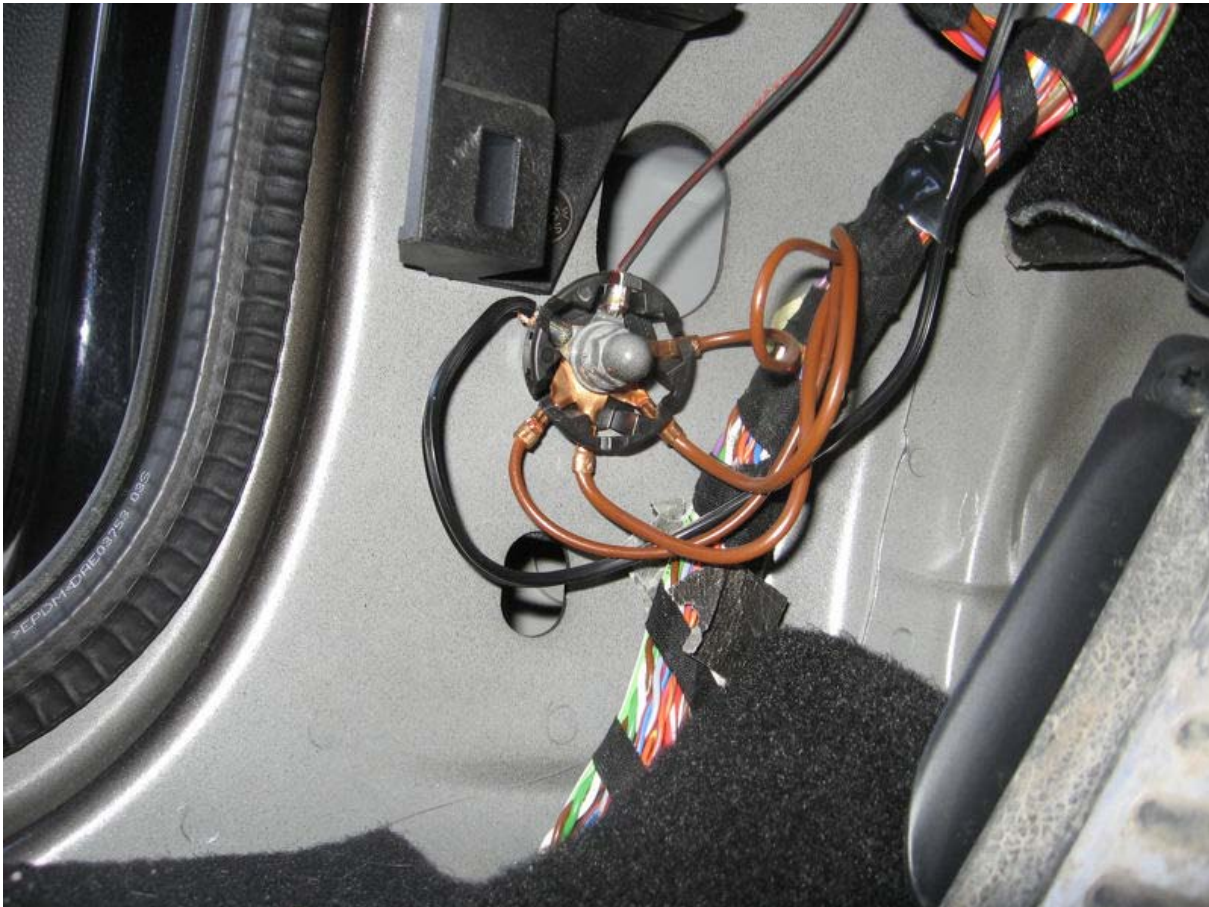


### Step 7, Connect relay and ground:

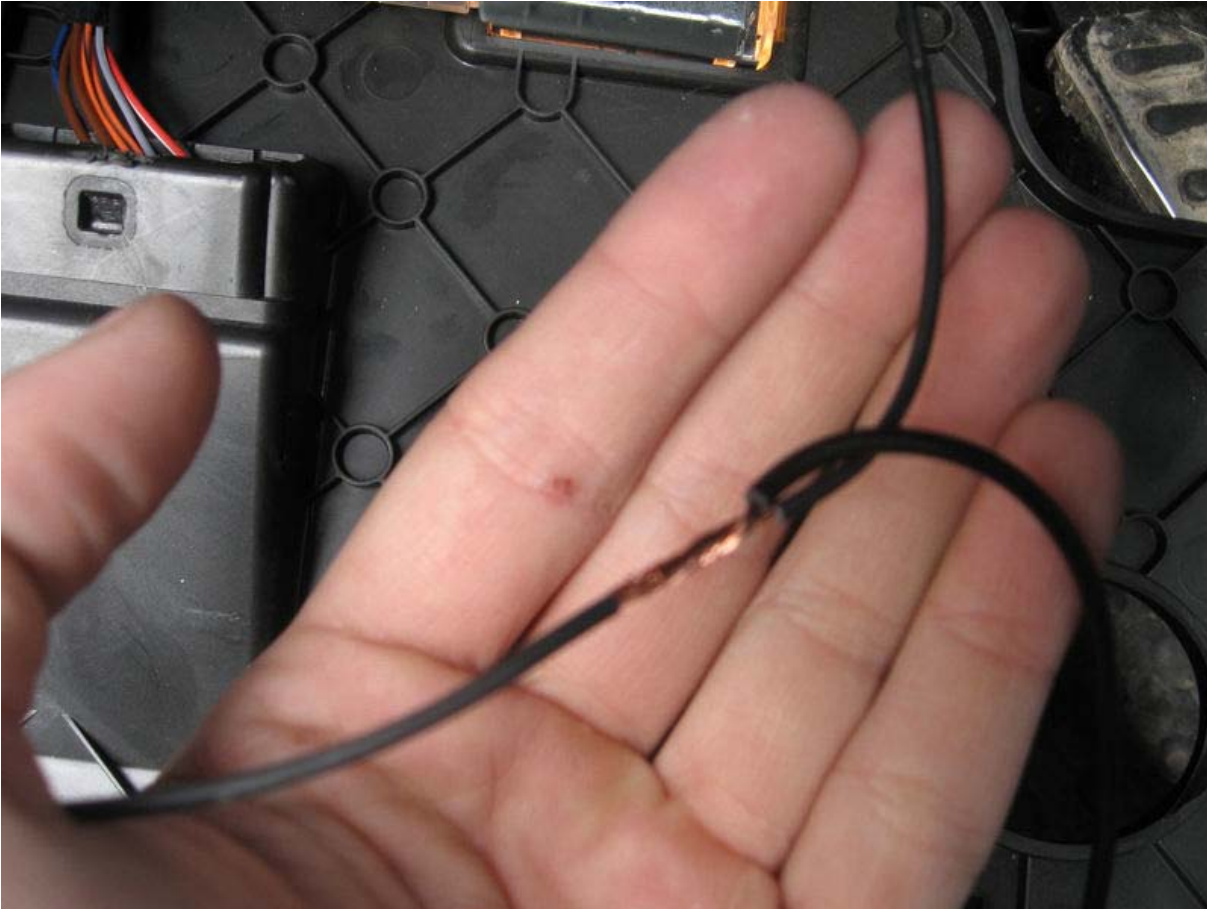
Here is the circuit diagram for the relay. The colors of your wires may be different:



Remove the kick panel to access the ground post. Instructions can be found in the sub install DIY <http://forums.vwvortex.com/zerothread?id=3250572>. Once the panel is removed attach the ground wire to the post, this wire runs to the DO controller. Once complete reinstall the kick panel:



Remove a section of insulation from the ground wire going to the controller and splice in the black side from the relay:

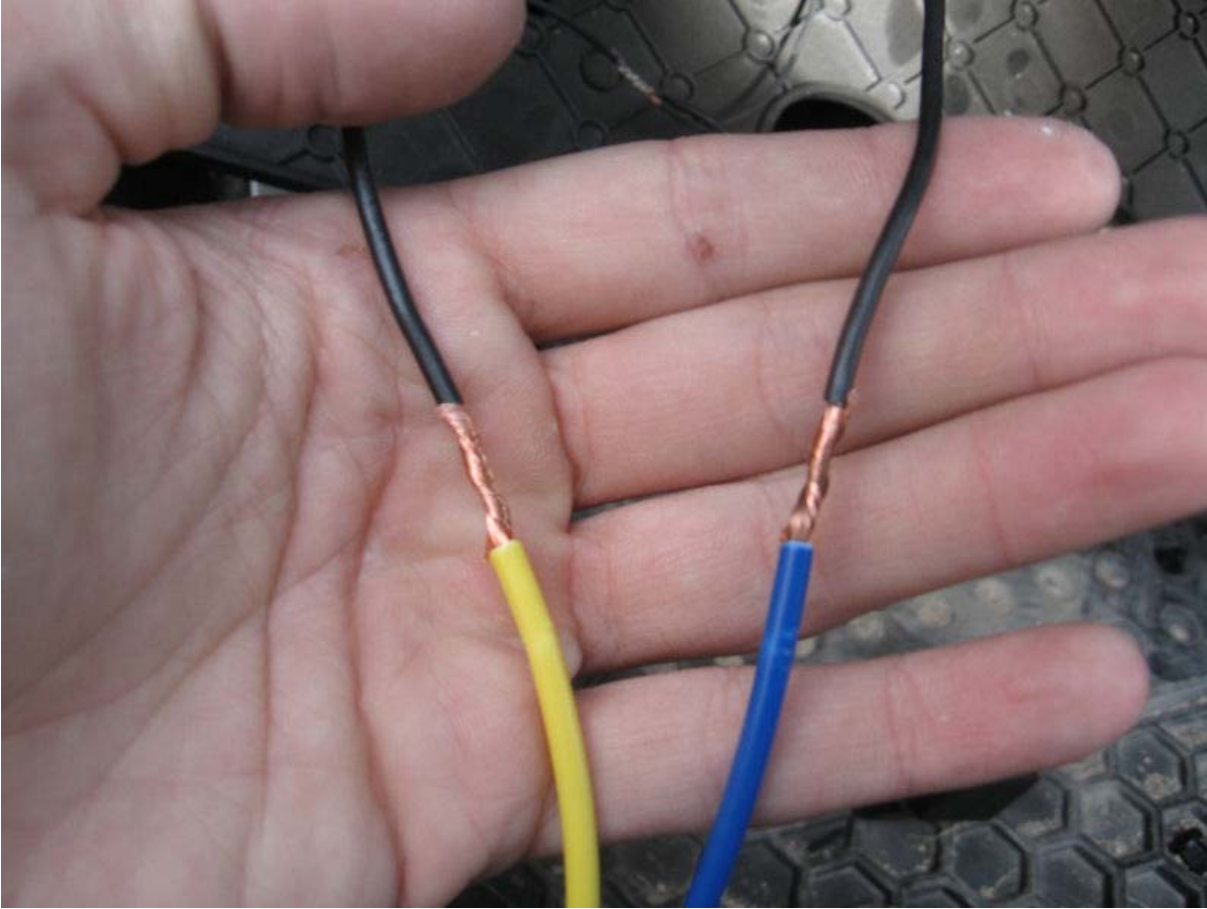


Attach the white wire from the relay to a 12v switched source. The black wire in the picture goes to my radar detector:





Cut the black (used to be pink) positive wire and attach one side to the yellow wire from the relay and the blue wire to the other side:



I drilled 2 holes into the cubby near the steering wheel and attached a zip tie to keep the controller from moving too much:



Secure the relay to the existing wiring above the black cover using electrical tape, re-install the black cover, the cubby tray and this stage is complete.

## **Stage 2, Remove bumper cover:**

Tools:  
T25 bit  
T30 bit

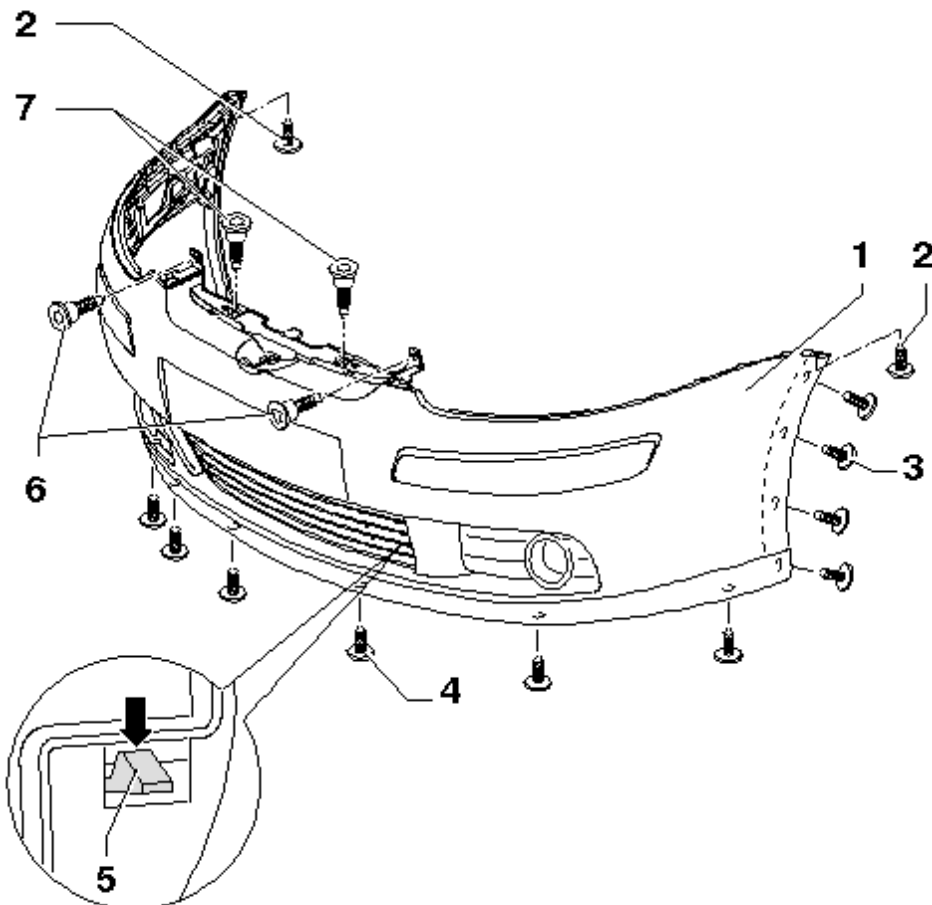
### **Step 1, Remove Grill:**

There are 4 screws that need to be removed (**red**), they are all T25. There are 2 locking tabs that need to be loosened (**blue**). Be very careful, we don't want to break any plastic:



**Step 7, Remove cover:**

Remove all these screw to detach the cover. The 7's are T30, all others are T25. You do not need to remove the electrical connectors from the cover. Just let it down on ground, you should have enough room to work:



### Stage 3, The tank:

Tools:

7/8 drill bit.

8mm socket

T25

T30

#### Step 1, Remove connectors from the tank:

Remove the 2 white (red) clips from the washer tank. Remove the electrical connectors from the washer pump and the fluid sensor (blue). Then remove the 2 washer lines from the pump (green). Gently pry the black and white clamps from the hoses to remove them from the pump:



#### Step 2, Remove washer tank:

Using a 10mm socket remove the 3 bolts (red) holding the tank to the frame:



Remove the top bolt (red) holding the filler spout to the frame then remove the tank from the car:



**Step 3, Install washer adapter:**

Drill a hole using the 7/8 drill bit into the tank::



Insert the adapter and tighten with fingers:



## Stage 4, The pump:

Tools:

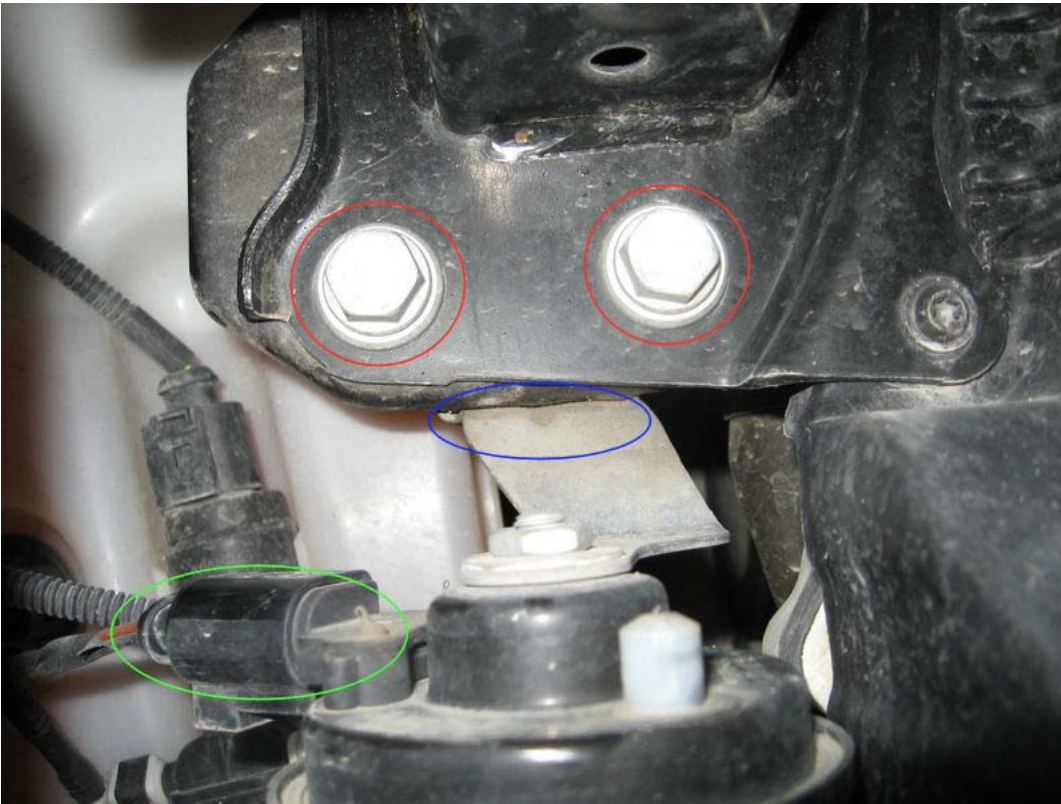
15mm socket  
Electrical Tape  
Soldering Iron

Tools:

4x 10-24 x 1.5 Screws  
4x locking nuts  
Sheet of 1/8 thick aluminum

### Step 1, Remove horn:

We will place the pump behind the passenger fog light grill. The bracket will be attached using these 2 bolts (red). Remove the bolt holding the horn, its located behind the horn bracket (blue). Unclip the horns electrical connector (green):



### Step 2, Create bracket:

Using a piece of cardboard get it as close to the shape required then transfer it to aluminum. Here is what I ended up with:



Drill the holes to mount the bracket to the 2 bolts mentioned above:





Drill the 4 holes to mount the pump to the bracket:



**Step 3, Mount pump to the bracket:**

Use the screws with the locking nuts to attach the pump to the bracket. There was a plastic tab (red) that held a wire loom before. This had to be removed for the pump to fit:

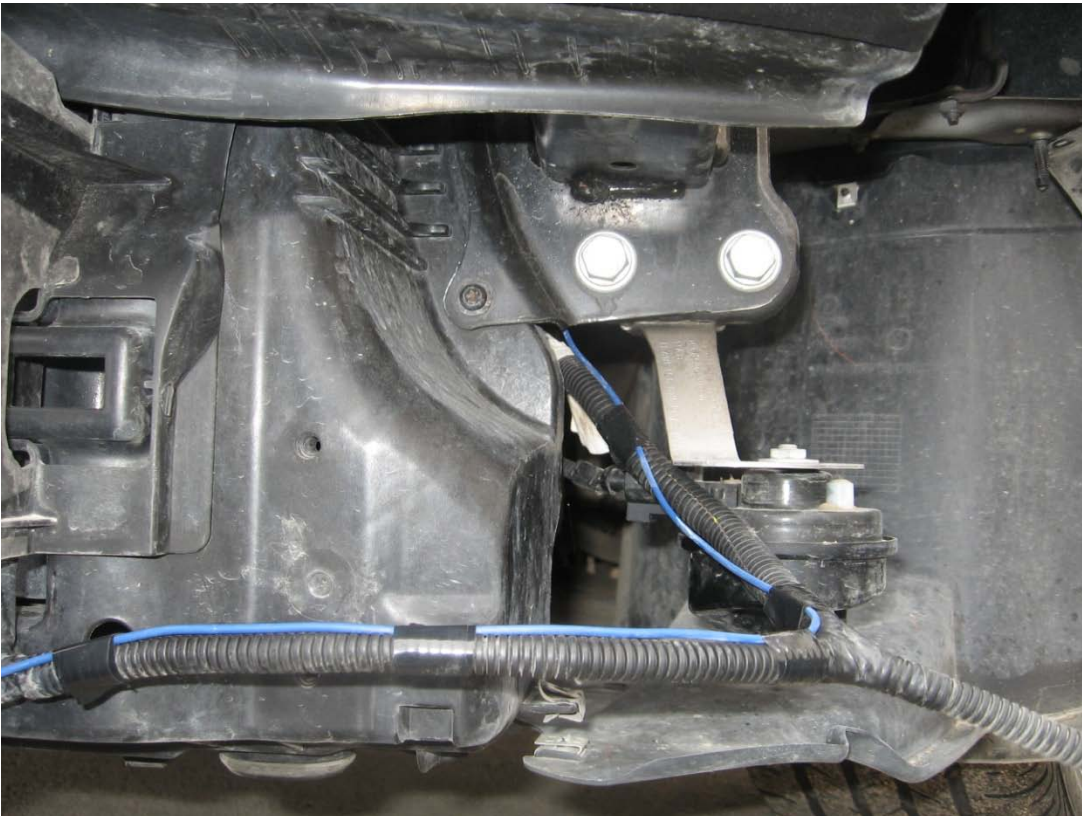


**Step 4, Wire the pump:**

Attach the negative side of the pump to grounding post behind washer reservoir:



Run the blue wire that was left over from stage 1 down from the connector where we attached the green wire near the driver side horn, then in front of the radiator alongside the passenger fog light loom. Attach it to the positive side of the pump:





## Stage 5, The nozzle:

### Tools:

8mm socket  
T25 bit  
T30 bit  
11/32 drill bit  
1/8 NPT tap  
Channel locks

### Step 1, Remove throttle pipe:

Remove To remove the throttle pipe you will need to remove a few clamps and connectors. Use a 7mm socket to remove the clamp (**red**). Use a flat screwdriver to pry off the clip for the noise pipe (**blue**):



Use an 8mm socket to remove the top bolt of the pipe (red) and a 7mm socket to remove the lower clamp (green). Disconnect the MAP sensor (blue), Note the clip is behind the hose in this picture



Wiggle the lower part of the pipe from the lower hose:



Remove the bottom bolt using a T30 bit:



Carefully remove the pipe from the car then remove the 2 remaining clamps using a 7mm for the worm clamp and channel locks to remove the noise pipe clamp. We will drill the hole here:



**Step 2, Install nozzle:**

Drill the hole with an 11/32 drill bit, then tap using a 1/8<sup>th</sup> NPT tap:



Follow the instructions inside the DO manual to properly assemble the nozzle and check valve. Once completed carefully thread the nozzle into the throttle pipe:



**Step 3, Re-install pipe:**

Reinstall the pipe in the reverse order from above. Be very careful, it may take a few tries to wiggle the pipe in place:





**Stage 6, Plumb the pump:**

**Step 1, Reinstall the washer tank:**  
Here is the tank and pump installed:



**Step 2, Reconnect electrical connectors and run hose:**

Run a small hose from the washer adapter to the pump. Run hose from the other side of the pump to the nozzle:





You can now reinstall the bumper cover.

### **Stage 7, Set the controller and enjoy:**

I set the start to 5 PSI and the end to 11 PSI. The end PSI should be the lowest PSI you have seen at red line. Setting it higher than this will actually lower the amount being sprayed at the red line.