April, 2008

Instructions on installing the R/R to the front battery cover.

Please read all of the steps so you will be familiar with the complete relocation installation first.

The purpose of this relocation is to improve the cooling of the R/R (regulator/rectifier) and remove any danger of it over heating in warm or hot ambient temperatures and keeping it away from the heat generated from the engine and to get full voltage out of the charging system.

It is my theory when the R/R gets to hot, in some cases, the diodes, SCR (trysistor) and Integrated Circuit of the voltage regulator in the R/R, will either malfunction or loose their intended function to Rectify and Regulate the voltage from the Stator to the battery and electrical system which could damage the Stator. This will also enable the voltage coming out of the R/R to go directly to the battery and not go thru the wiring harness thus giving you maximum charging voltage when riding.

Here are some pictures and descriptions on how to install the R/R to the front battery cover.

Parts and tools needed.

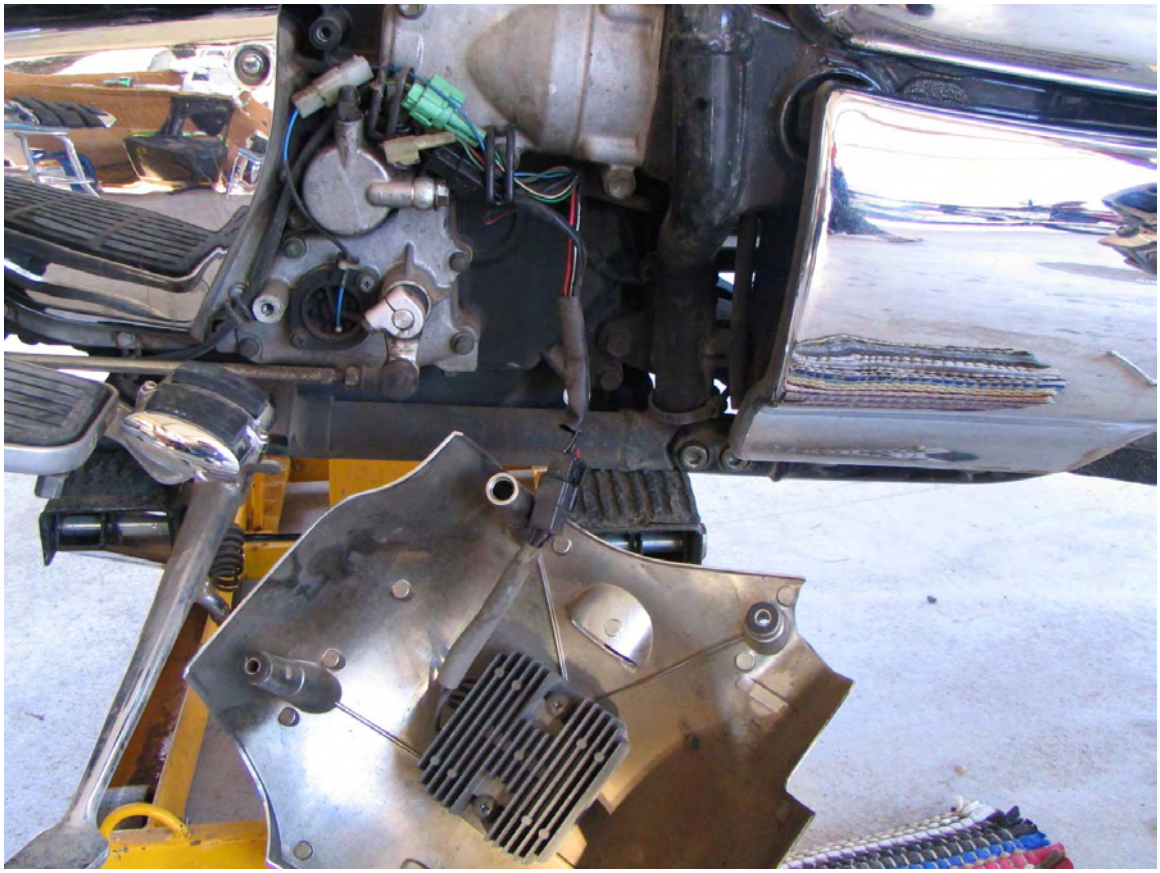
* Pair of wire strippers
* Side cutters
* Soldering iron and solder
* Electrical tape
* Shrink tubes
* Tie Straps
* Three 8 mm eyelet type terminals
* Two #10 or ¼" screws, lock washer and nuts
* Phillips screwdriver
* 8 mm socket, 10 mm socket, extension and ratchet
* In line fuse holder
* One 30 amp fuse
* 4-foot length of extension wire, 14 gauges with three wires inside with a black outer cover so it will blend onto the black bike frame.

Caution: Disconnect both terminals from the Battery!!!

Inside the large chrome cover on the left side of the M/C, is where the R/R is located. Remove the 4 hold down bolts using the ratchet, extension and 8 mm socket. When removing the cover, be careful not to loose any of the 4 rubber grommets inside the cover.

Here is a picture of the R/R, inside the cover. Disconnect the coupler from the R/R and remove the 2 Phillips head screws, which secures it to the cover. On the R/R coupler, you will notice 3 black wires (Stator), one Red wire (positive) and one Black with a White tracer wire, (negative).

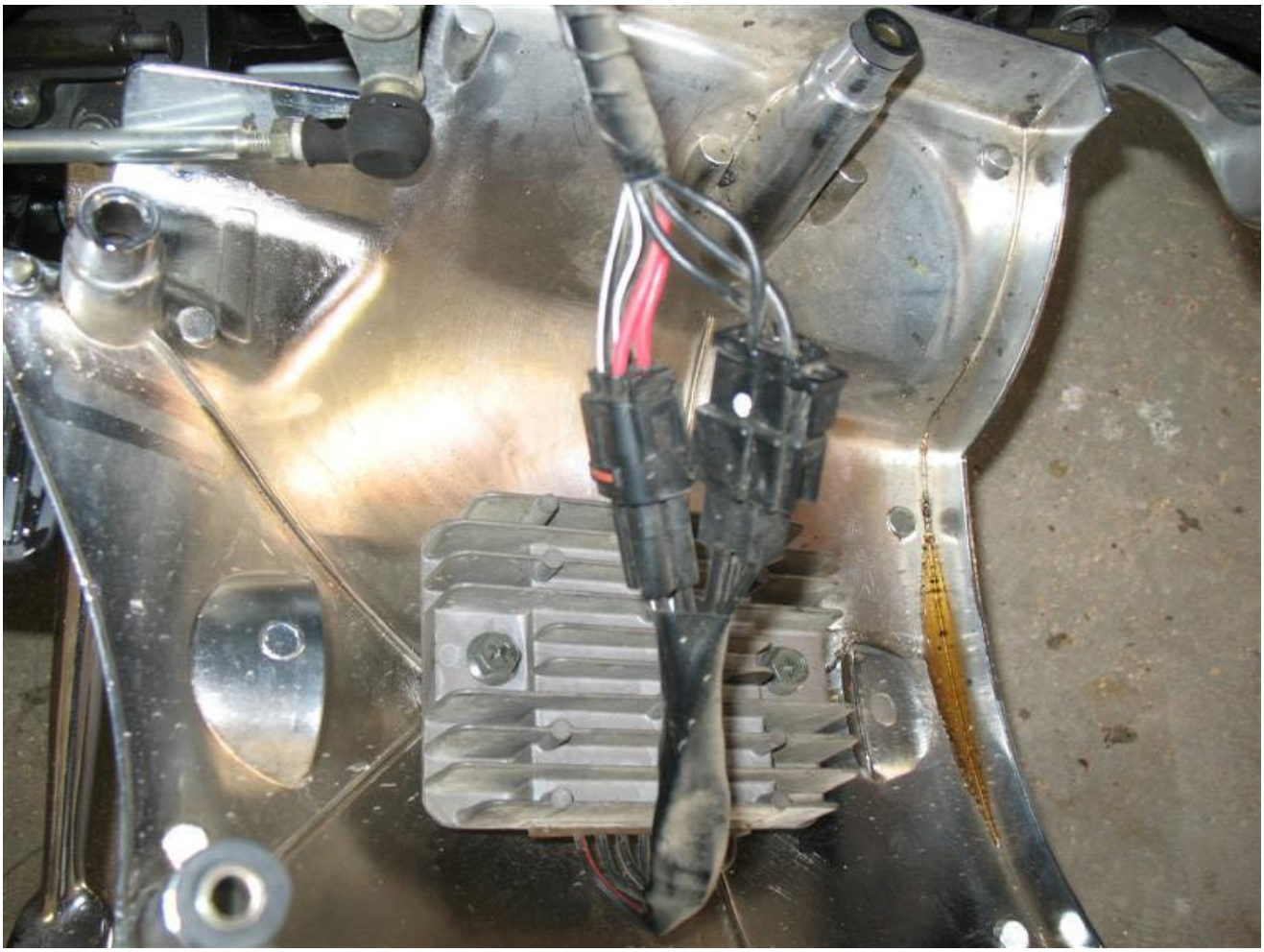
Note: On the C-90 models, there are 2 positives and 2 negative wires.



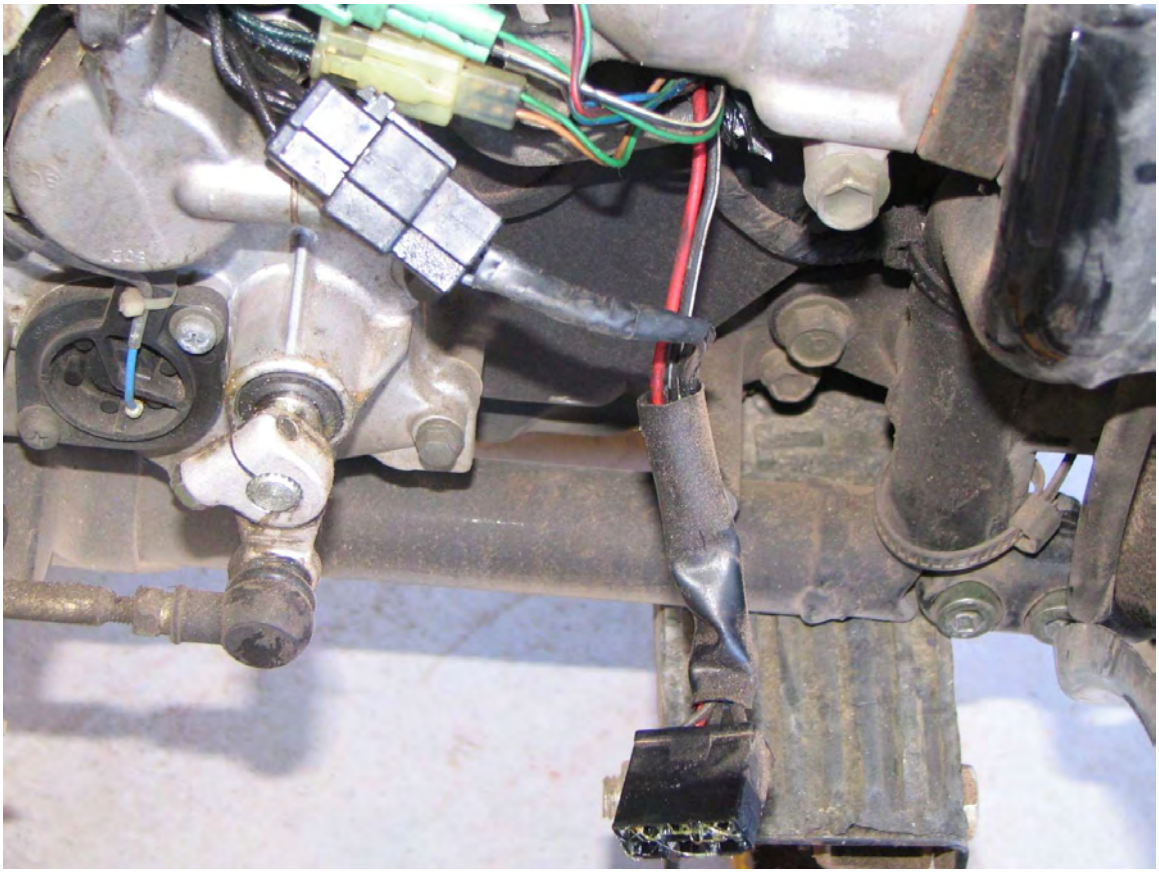
C-90 instructions:

From the harness side, the Red wires (+) are no longer used.
You can leave the wires attached to the coupler and isolate it with some electrical tape.
From the harness, cut the B/W wires (-) from the coupler and go to the frame or to one of the slave cylinder bolts.

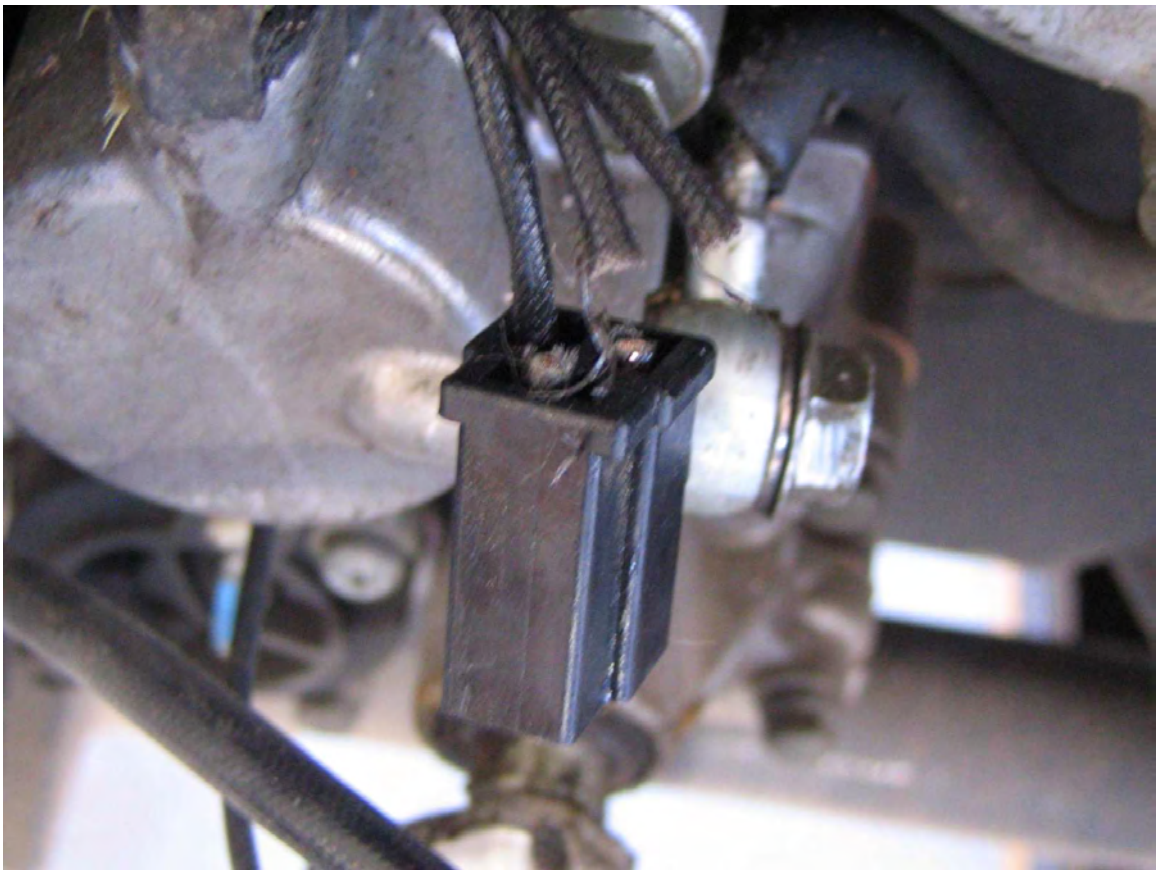
From the R/R, both Red wires go to the positive side of the battery with a 30A inline fuse.
From the R/R, both B/W goes to the negative side of the battery.
The three White wires from the stator go directly to the R/R bypassing the loop that goes under the fuel filler neck.



In this picture, you will notice another coupler attach to the R/R coupler. On this coupler, there are black 3 wires coming from inside the left chrome cover. These 3 black wires are directly from the Stator. Disconnect this coupler with the 3 Black wires from the Stator.
On the coupler that was connected to the R/R coupler, cut the Red and B/W wire right at the R/R coupler and leave them hang for now.



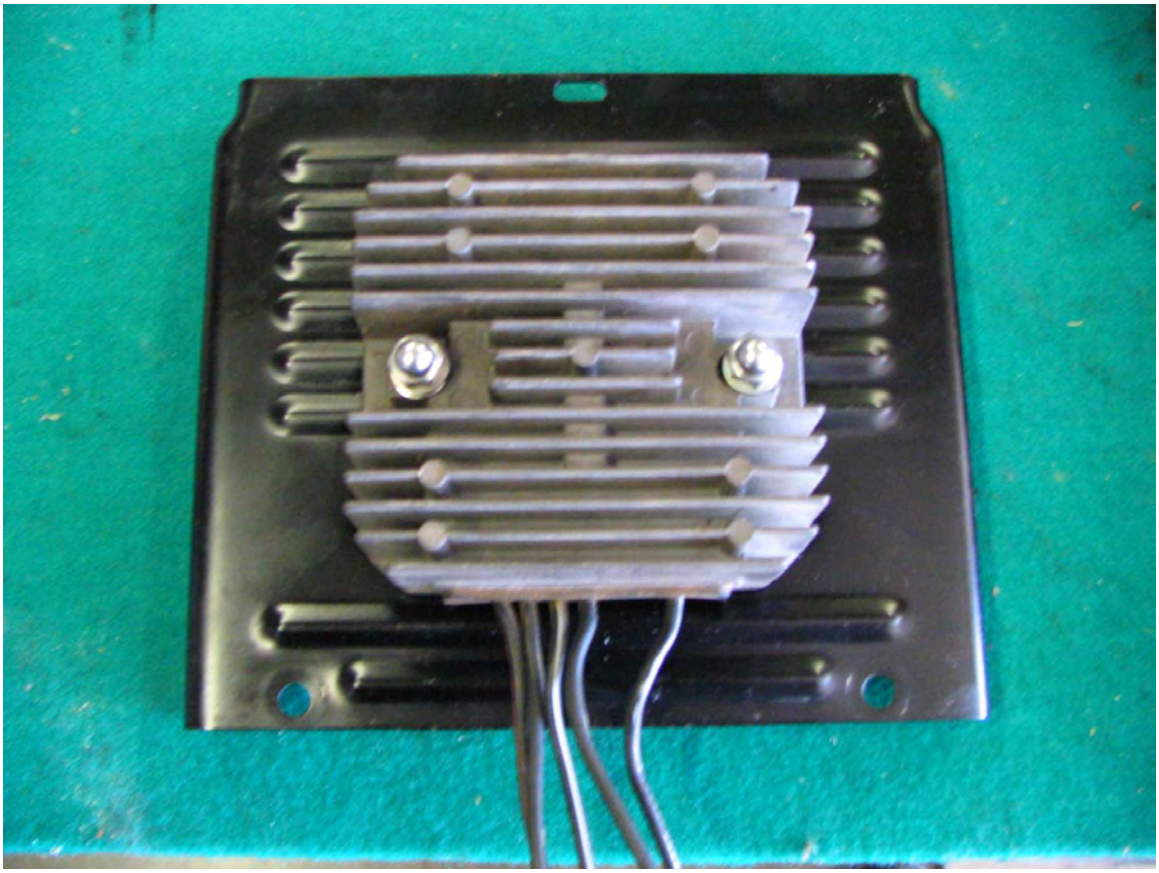
Cut all 3 black wires as close as possible to the Stator coupler.

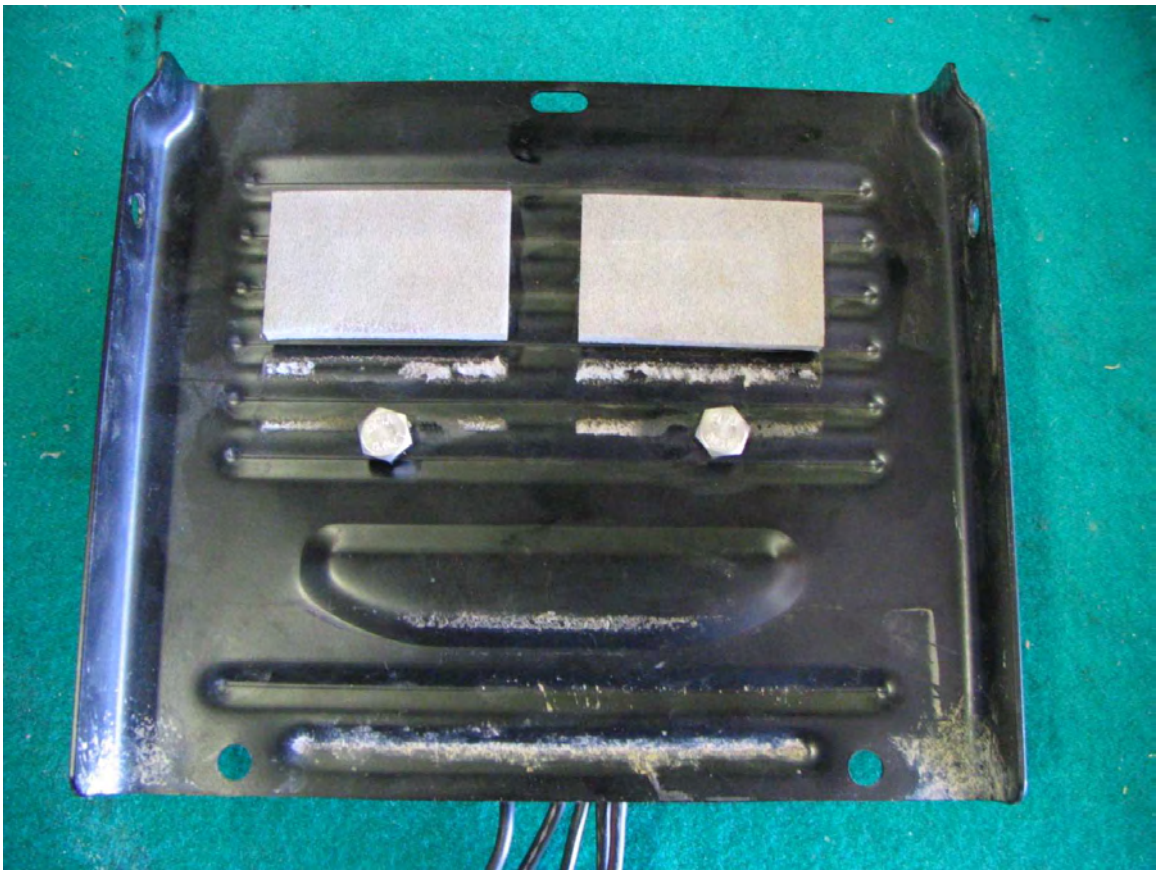


Strip approximately ¾ inch of insulation of each of the 3 black wires. Be careful when stripping the three black wires not to cut any of the wire strands.

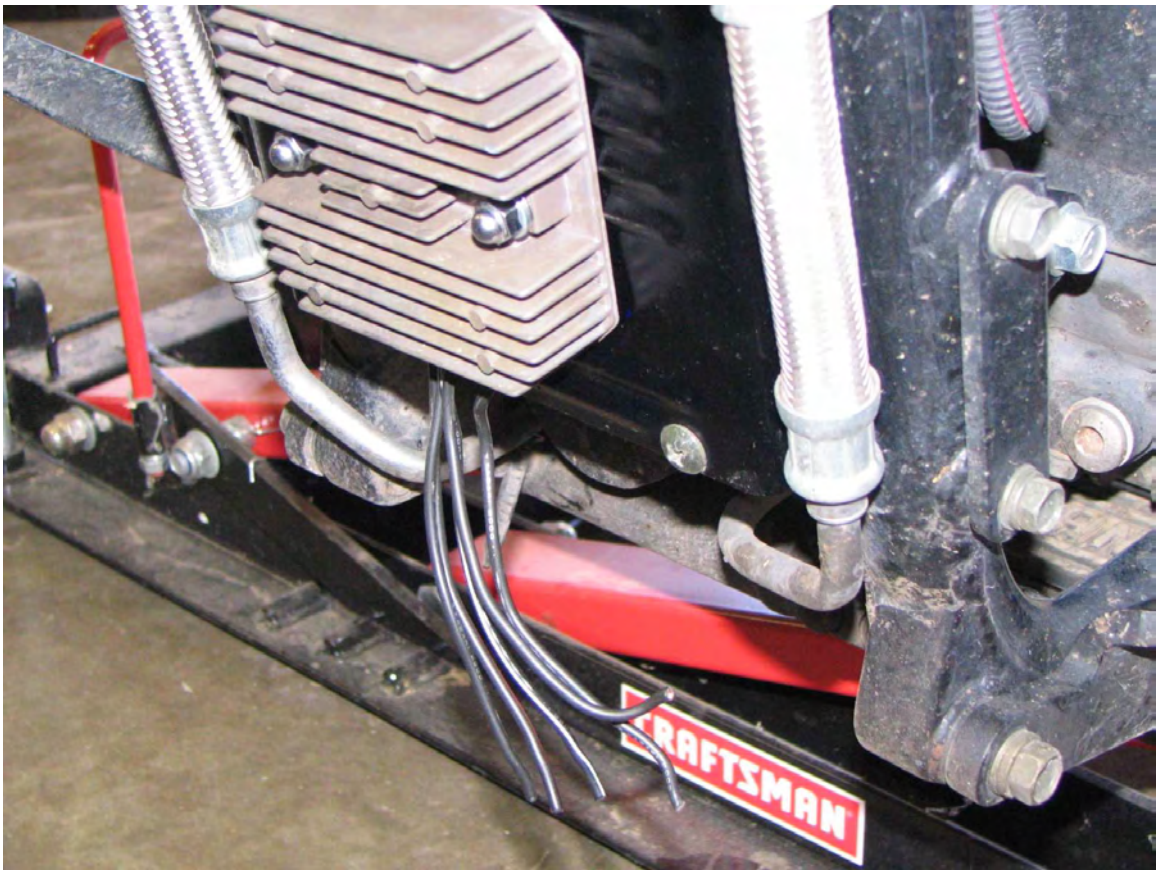
Remove the coupler from the R/R as close as possible to it.

Position the R/R on the front battery cover, notice the amount of spacing from the bottom of the cover and use a center punch to mark the location of the holes to be drilled. Make sure that you have a block of steel or piece of wood lined up on the backside of the cover so it won't bend when striking the center punch. Use two screws, lock washers and nuts to secure the R/R to the battery cover making sure the head of the bolts will not make contact with the battery. *Note: If the R/R is too low on the cover and your shock spring are weak, the tip of the fender could make contact with it when riding over a bump or pothole.*

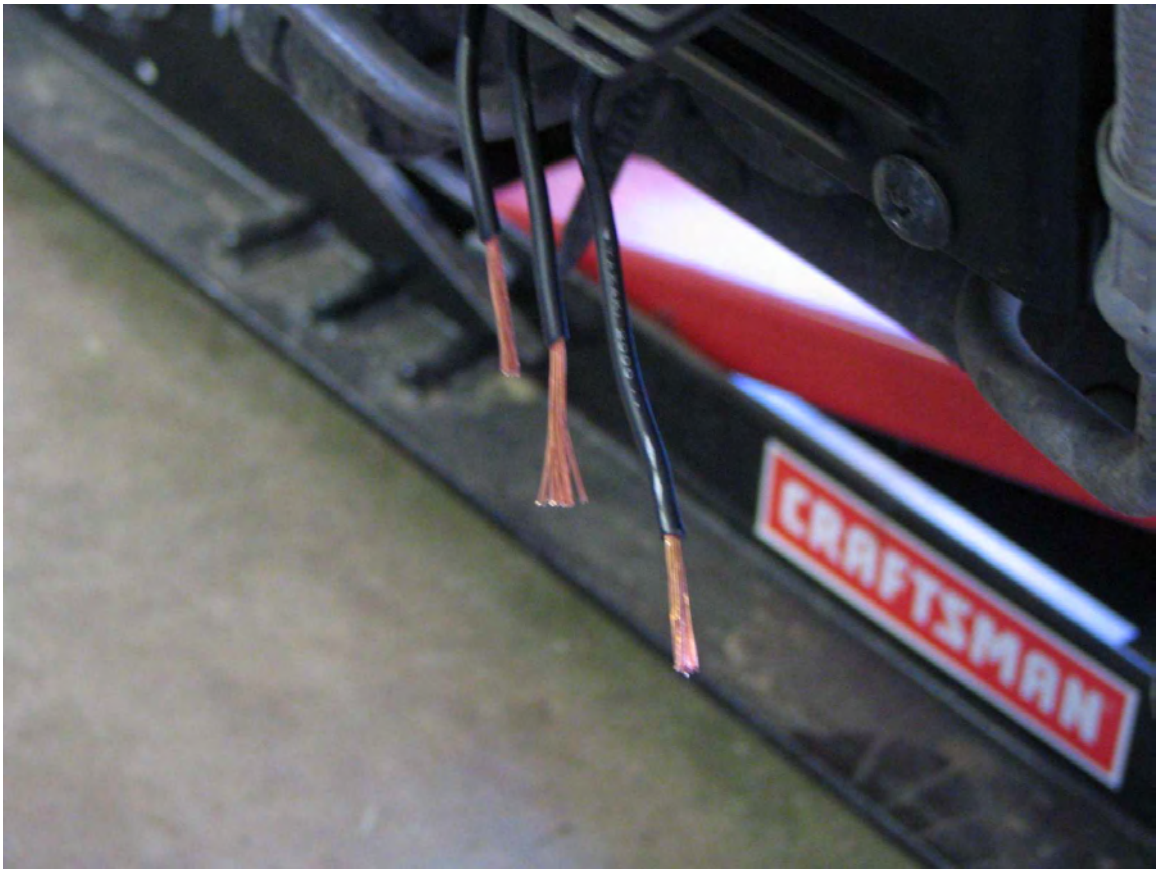


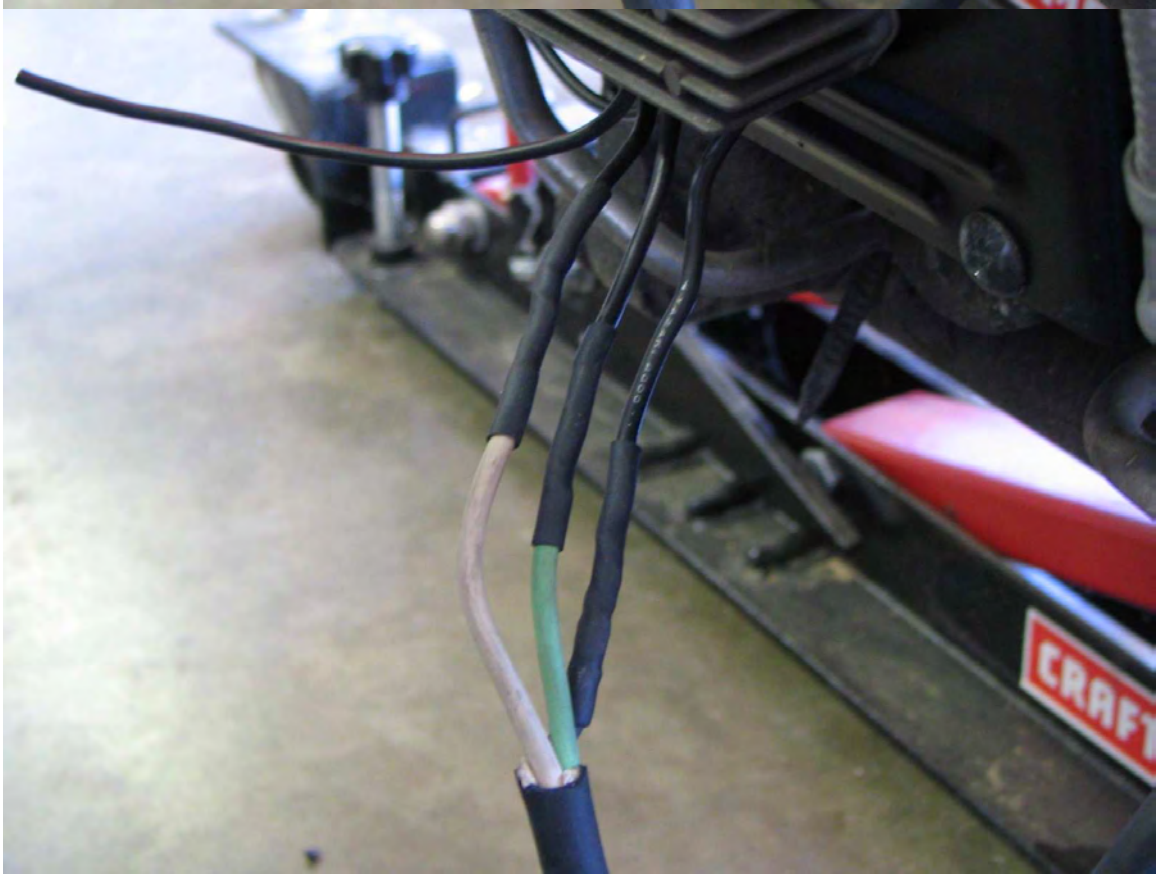


Mount the battery cover back in position.



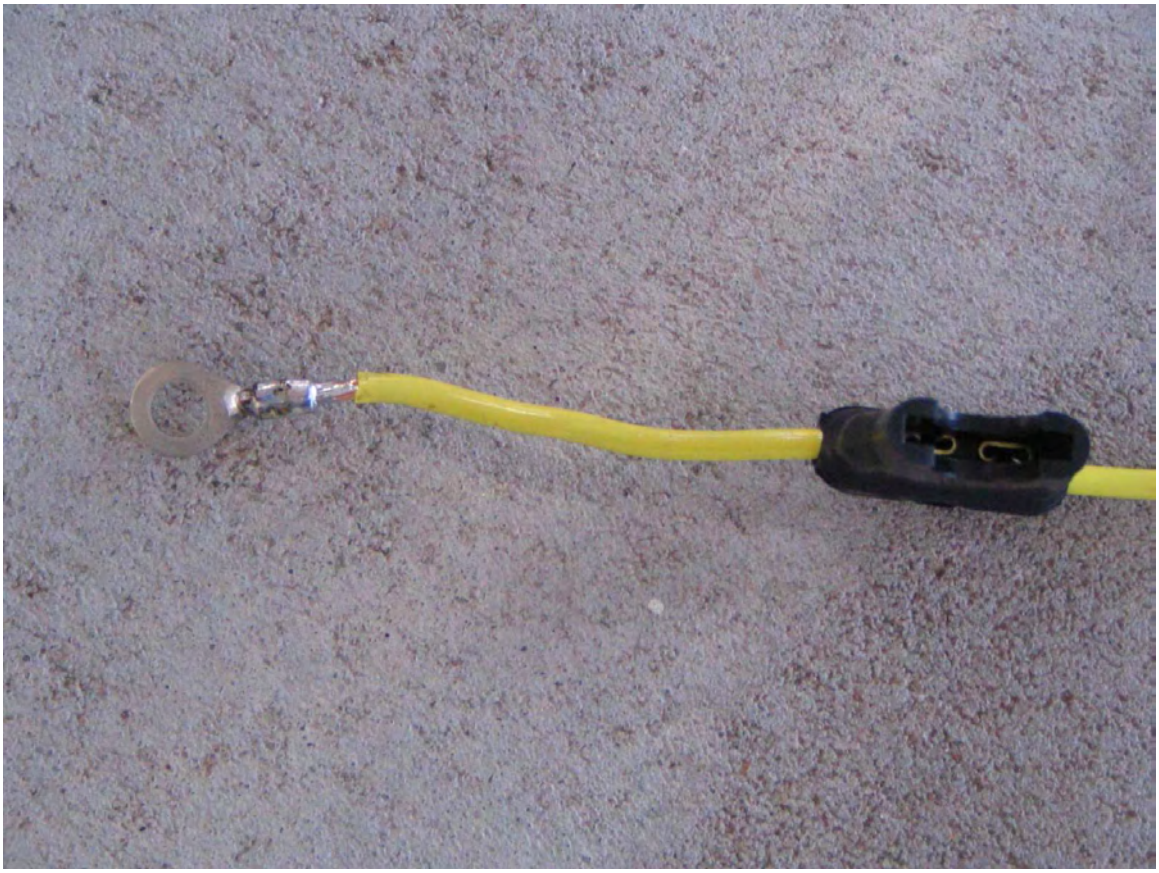
Next, you will need to connect the 3 Black wires from the R/R to the new Stator extension cord. Cut the extension cord, strip the outer insulation and solder them and insulate each one of them. I staggered them to minimize the bulkiness.

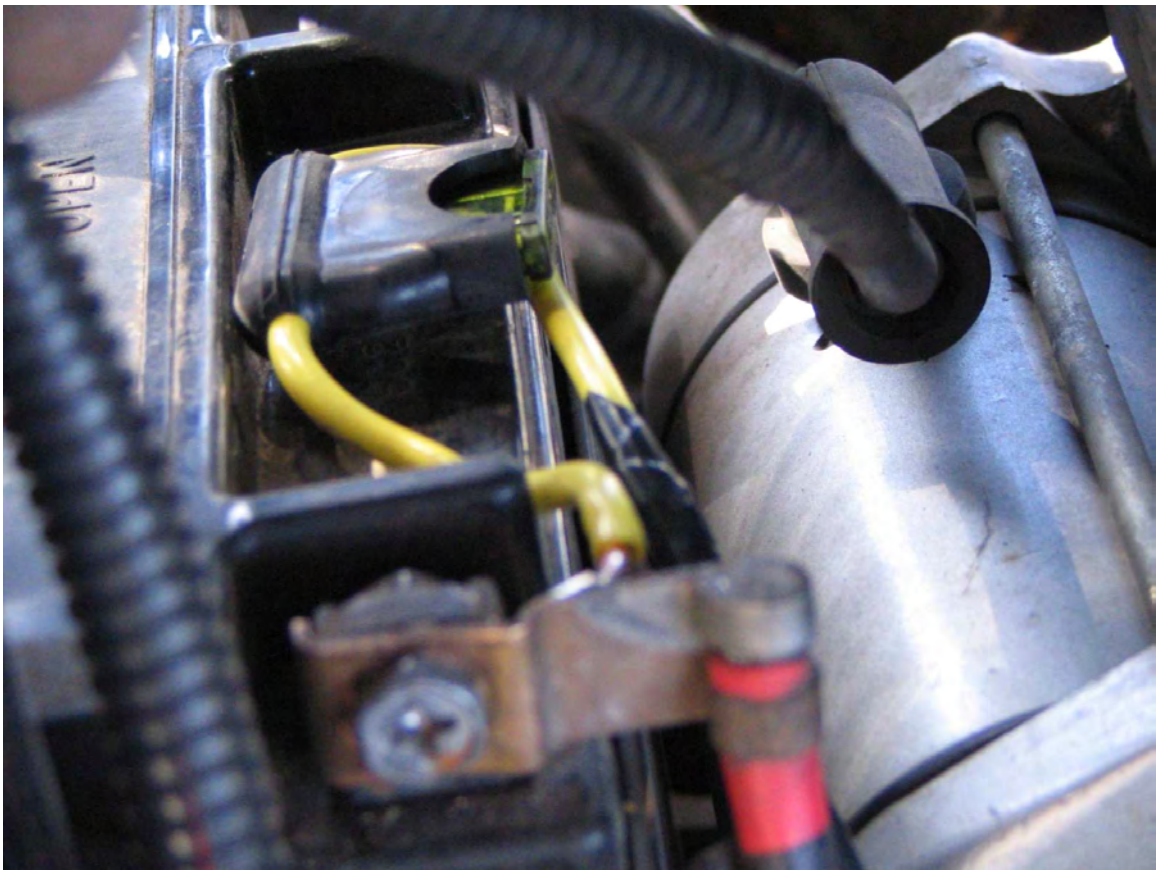




Next step will be to extend the positive(s) and negative (-) wires from the R/R so they may reach the battery terminals. Cut approximately 1 foot from the 4-foot extension cord. Strip the outer insulation and use the black wire and white wire to extend the positive and negative wires from the R/R. You can use the white wire and solder it to the Black with Red tracer wire (+) from the R/R. You can also cover it up with shrink tube or electrical tape to give it added protection and insulation. Solder the black wire to the Black with White tracer wire (-).

Take the inline fuse holder and solder an eyelet terminal to one end of it.
Solder the other end of the fuse holder to the extended wire you just installed from the Black wire with Red tracer making sure that it will long enough to reach the positive battery terminal. Insert the 30-amp fuse in the holder and fasten it to the positive terminal of the battery using the eyelet you installed and place it on top of the battery.

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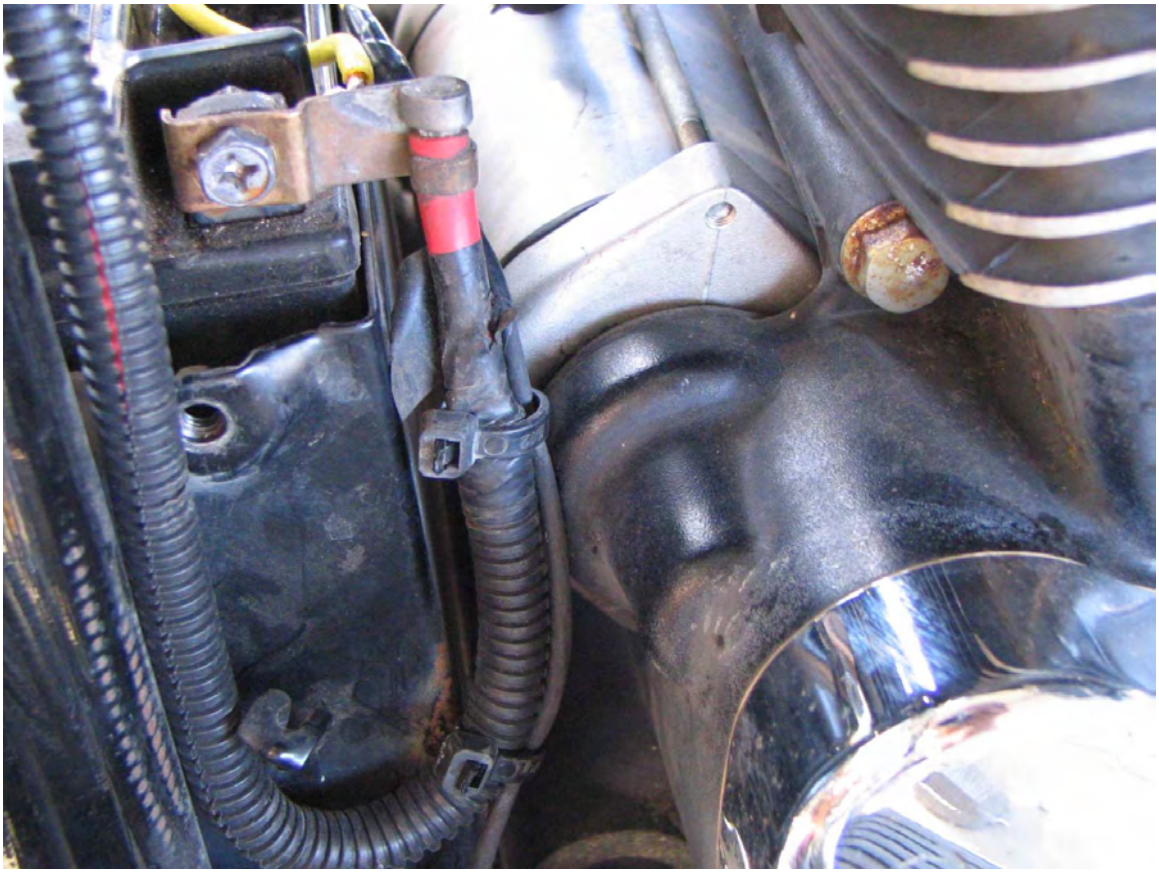
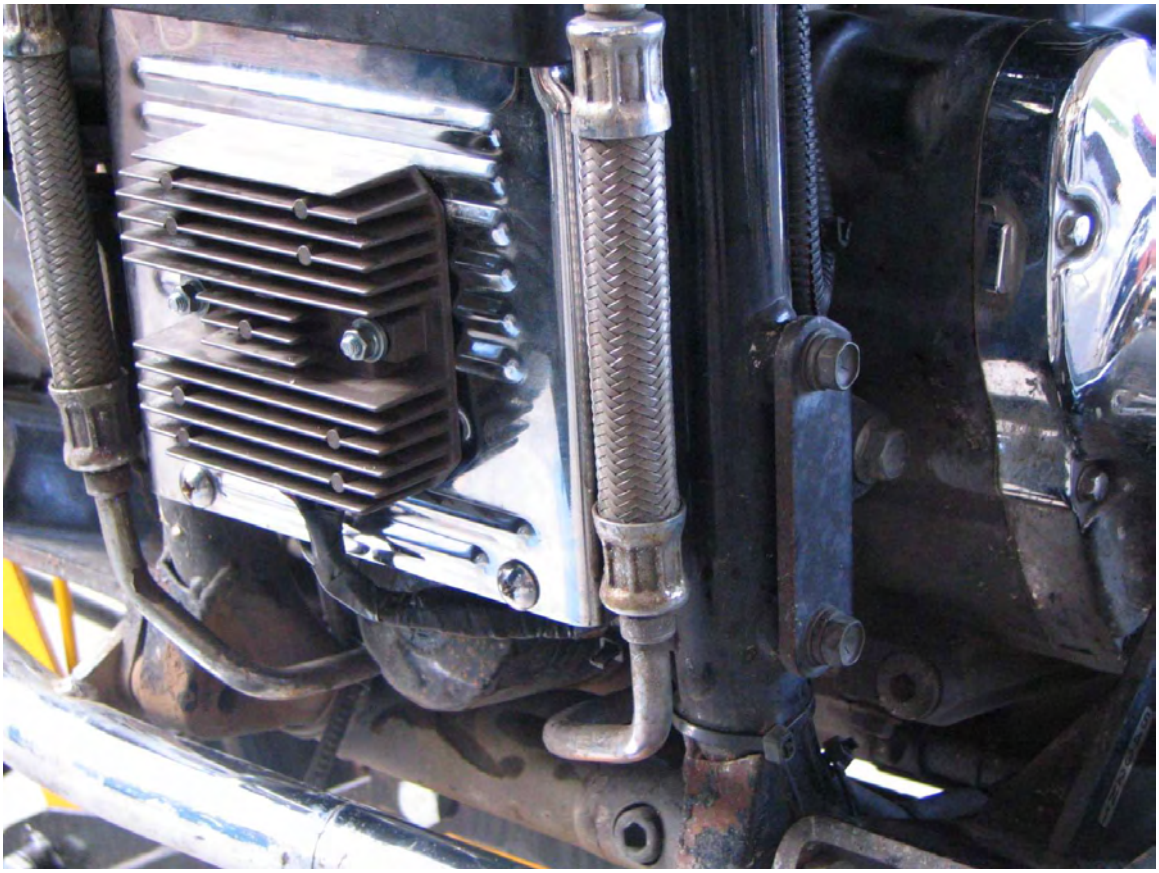
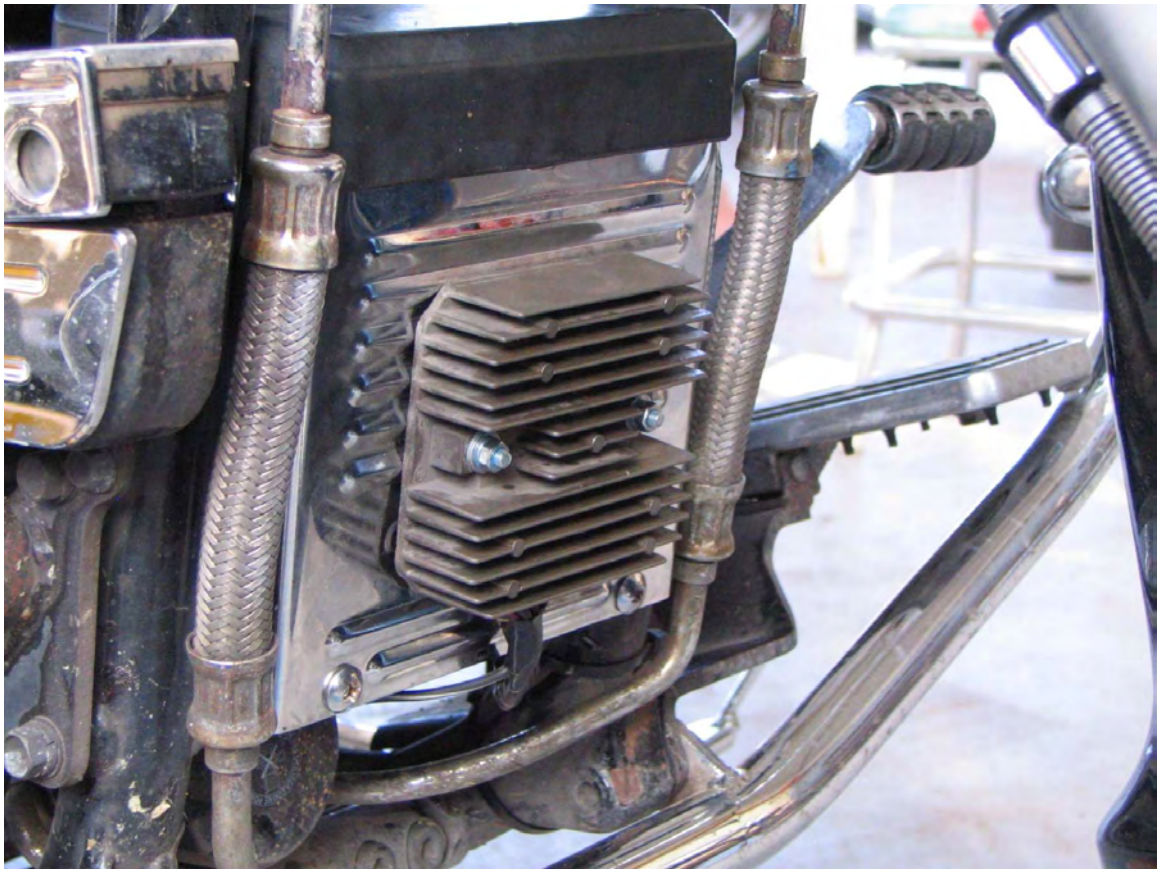
Run the wire from the fuse holder that you just installed and run it down following positive cable from the battery and secure it with a few straps. Do the same for the B/W wire(s) from the R/R and connect to the negative side of the battery **once** you have completed all of the connections.

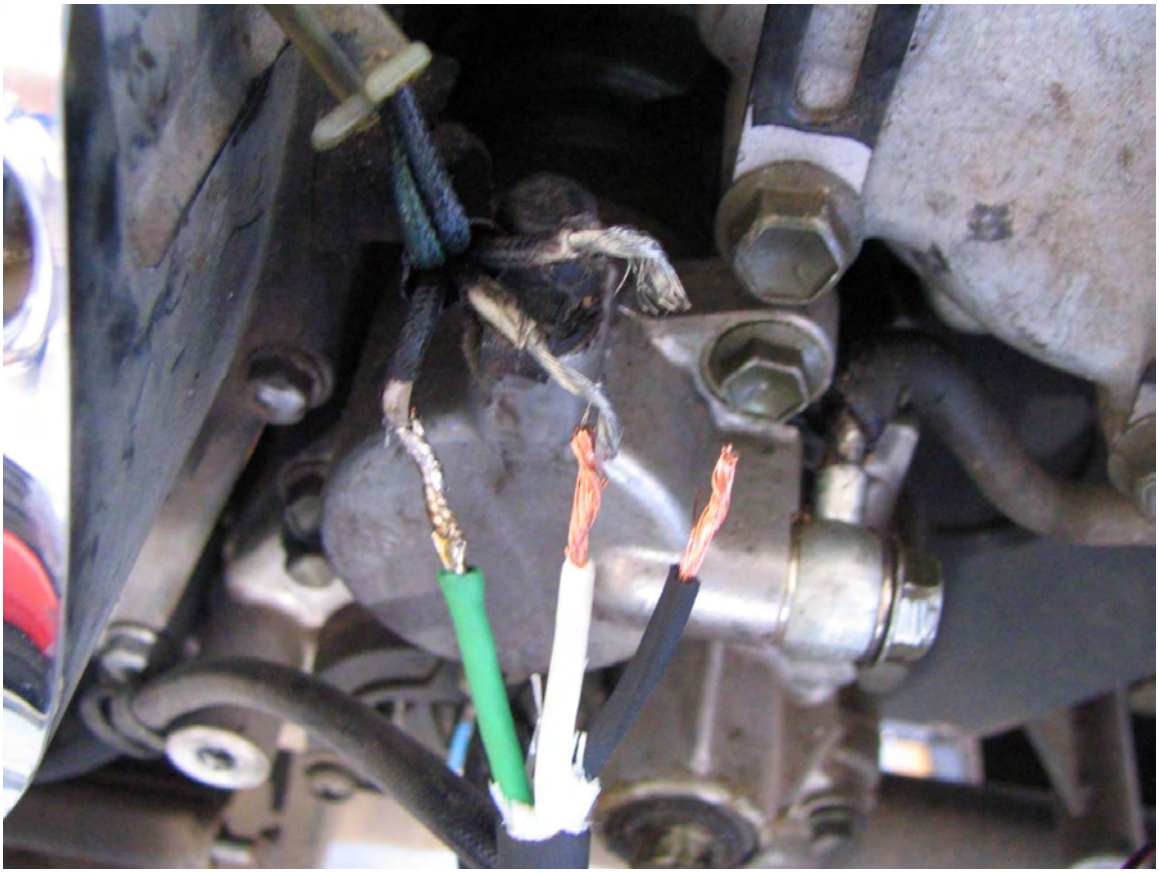


Once all wires are insulated, take the extension cord and follow the frame towards the chrome cover where the R/R was located and follow the wire which comes from the side stand switch which you will see in the next pictures. Once you have the extension cord in position, secure it under the battery box using a strap.

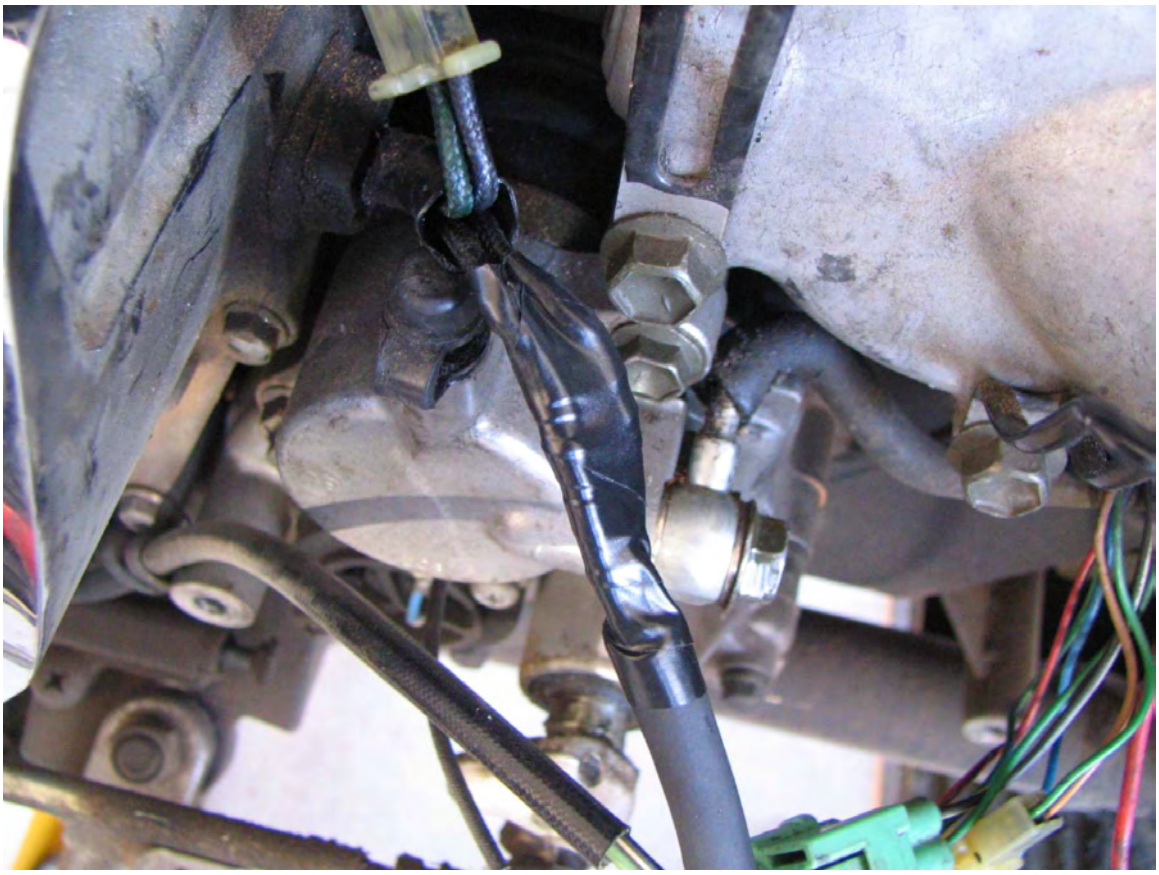




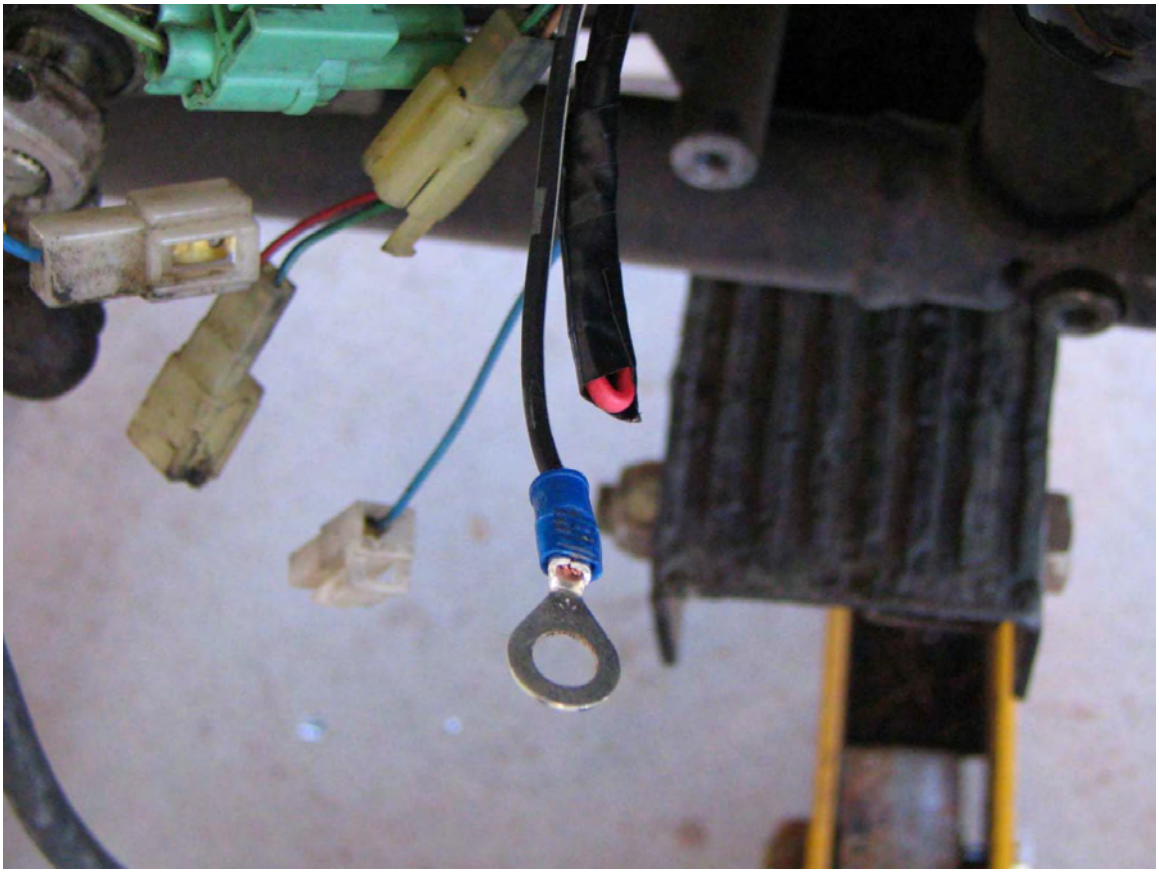
Leave yourself about 5-6 inches of cord so you will have no problems working with them. Strip all three wires so they could be soldered onto the 3-stator wires that you have already stripped. There is no matching or pairing up involved when soldering the Stator wires onto the extension cord wires. You could use shrink tubes or electrical tape to insulate each of the 3 wires.



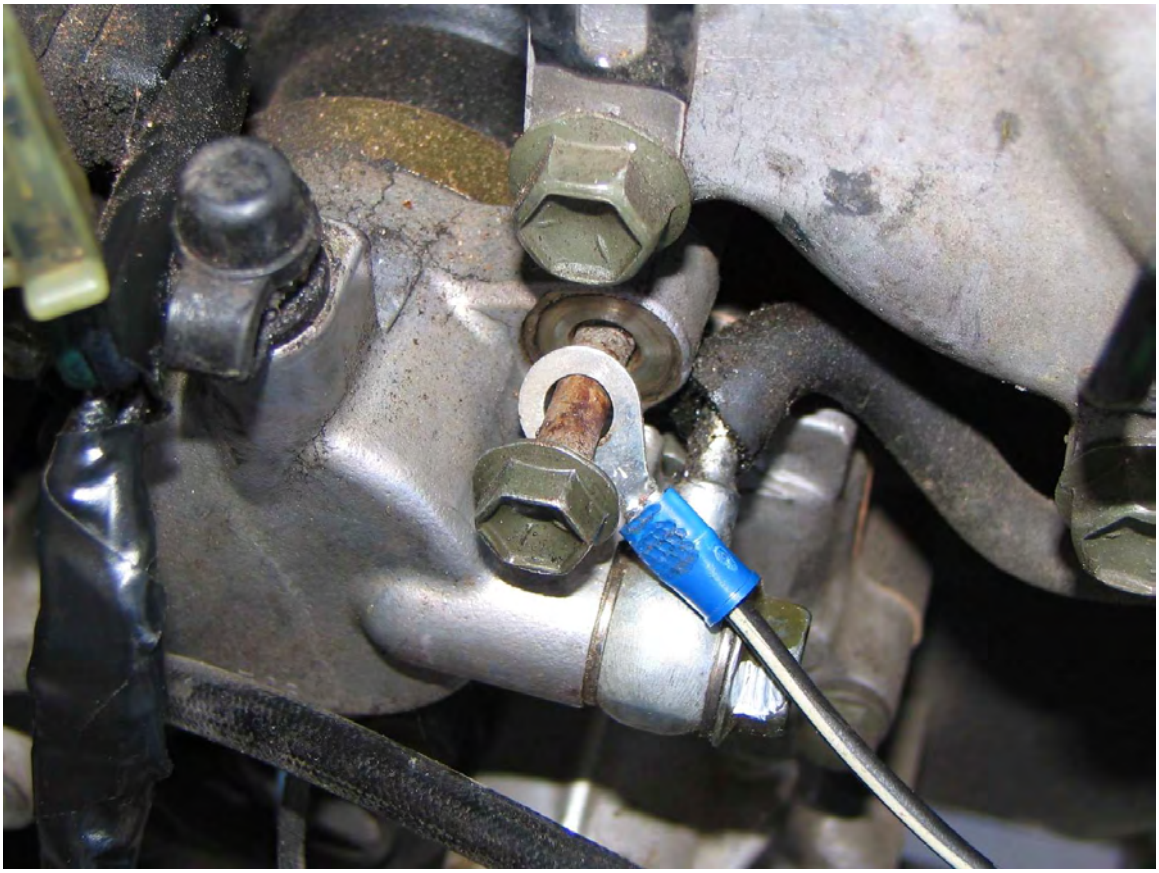
Once they are all insulated, wrap it all up.



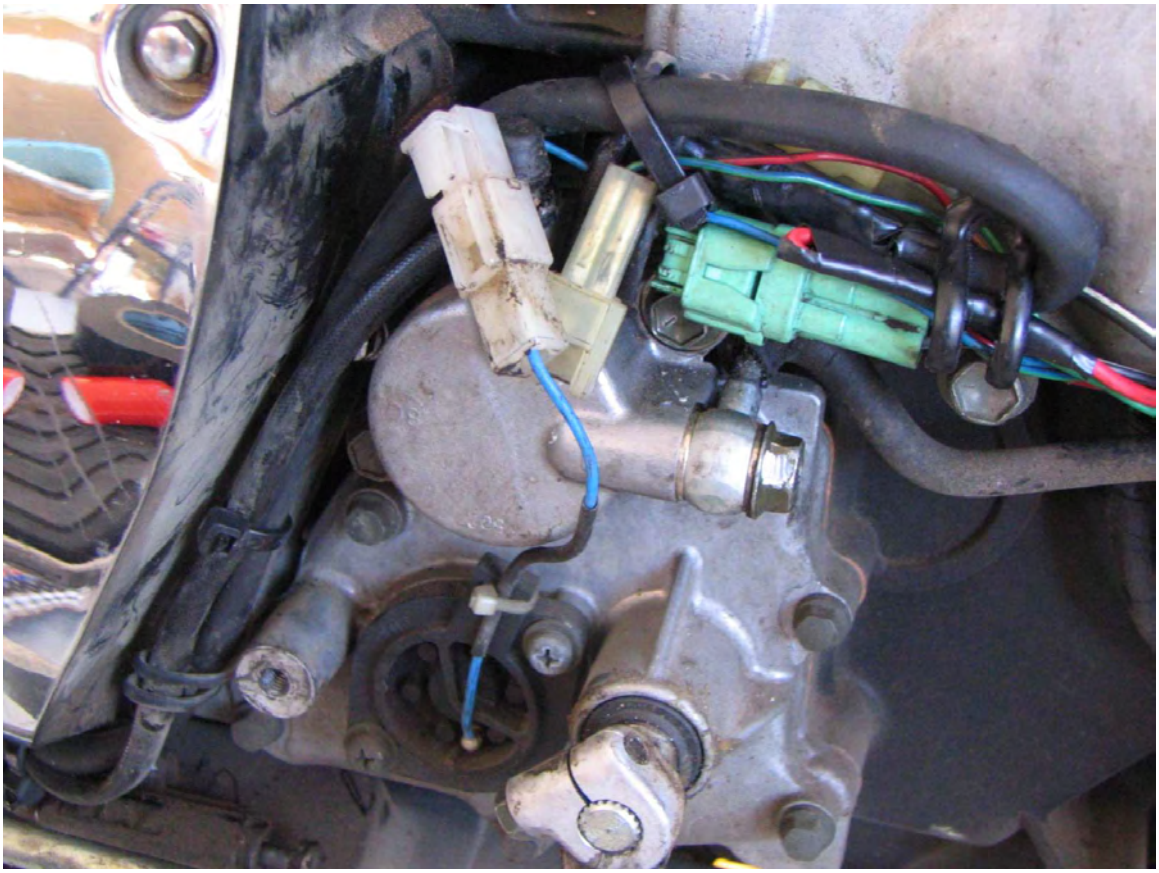
Strip the B/W wire that you already cut off from the R/R coupler and install one eyelet terminal on the B/W wire. The Red wire will no longer be used. Insulate the Red wire so it won't short out anywhere.



Remove the right hand side hold down bolt on the clutch slave cylinder and install the B/W wire with the eyelet terminal you installed and tighten.



Once you are done these steps, secure all of the wires using the OEM secure clamps and run the newly install Stator extension wire downwards on the left side of the slave cylinder, secure it with a few tie straps and follow the frame towards the battery.



I do recommend that you install a high quality permanent voltmeter on your bike so you may keep an eye on your charging system as you ride.

Total time to do this modification is between 2-3 hrs.

O.C.D.