

# **ARRINGTON**

## **PERFORMANCE**

**NASCAR Proven Power for the Street.**

API Competition Single Fuel Hat Installation Guide



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*Arrington Performance*

67 Motorsports Drive  
Martinsville, VA 24112

*INSTALLATION MANUAL*  
**API Competition Single Fuel Hat**  
**5.7L/6.1L HEMI Engine Equipped LX/LC Vehicles – 2005-2 013**

Please take a few moments to review this manual thoroughly before you begin work. Verify that your kit is complete (see parts list below). If you discover shipping damage or missing parts, please call us immediately. Review exactly what is required in terms of tools, time, and experience before undertaking this installation.

**Arrington Performance is not responsible for damages, injury, or death caused by improper installation of fuel systems or components. Fuel system installations should be completed only by an authorized and qualified technician.**

**Caution!** - Modifying your fuel system without the proper knowledge, tools, or precautions can be dangerous! Fuel level must be below 1/8 tank before beginning the installation process to avoid over-run. Check your area before you begin the installation process. Remove any open flames such as cigarettes or pilot lights. Install only in a well-ventilated area. DO NOT install inside of a standard garage or with the vehicle doors closed to avoid inhalation of toxic gas fumes and risk of explosion. DO NOT smoke in the installation area. Fumes and a small amount of fuel may be released when servicing the pump, basket or connections. In order to reduce the risk of personal injury, cover any fittings with a shop towel before disconnecting to catch any fuel that may leak out. Place the towel in an approved container when the job is complete.

Engine recalibrating devices can modify fuel and spark curve (including, but not limited to programmers) and are recommended when changing the pressure or volume of fuel delivered to the engine. Improper use of these programmers may cause engine damage or failure. Arrington Performance is not responsible for engine or consequential damages.

Parts List:

- API Competition Fuel Hat Assembly
- Installation Items: heat shrink tubing, tie wraps.

Tools Required:

- Safety glasses
- Hammer or Rubber Mallet
- Medium Flat Head Screw Driver
- 10MM Metric Wrench or Equivalent
- Wire Cutter
- Wire Stripper
- Heat Gun or Equivalent
- Soldering Gun
- Solder (Pref. Rosin Core or Equivalent)
- 2.5mm Allen Wrench

Helpful Tools:

- Shop Vacuum Cleaner
- Fuel Hat Ring Remover (Specialty Wrench)
- Trim Removal Tool

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# Preparation

## Step A.)

Open the trunk of your vehicle and remove any extra items in the trunk that might hinder the installation process.



## Step B.)

Begin by pulling the carpet insert from the trunk area.



## Step D.)

Remove the vehicles negative wire connection to the battery.





# Installation

## Step 1.)

Clean and prepare a work area on which you will prepare the fuel hat for reinstallation. Remove the rear seat from your LX/LC vehicle as well as anything else that might hinder your working area. Take extra caution to make sure all dirt, loose change, etc. is removed to make sure your fuel tank remains free of debris.



## Step 2.)

Lift away the foam over the fuel hat cover.



## Step 3.)

Lift the fuel hat access seal and unplug the wire harness from the fuel hat.



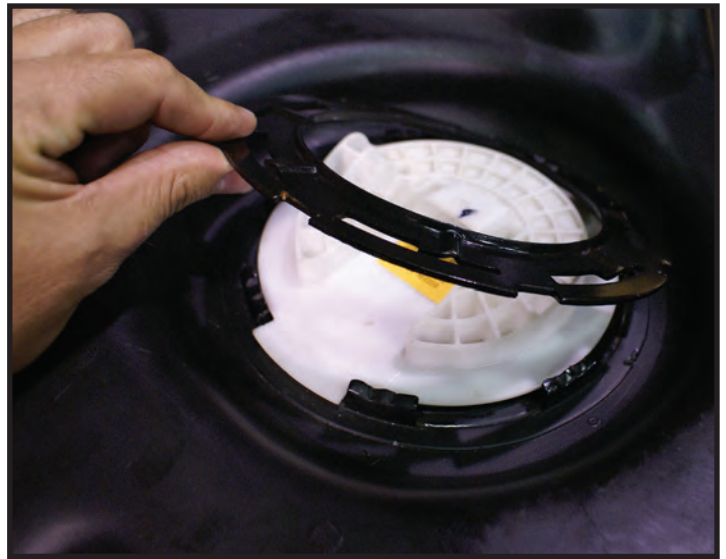
#### Step 4.)

Carefully remove the fuel hat steel retainer ring by turning it approximately 10° counter-clockwise to align the retainer feet with the retainer ring release openings.



#### Step 5.)

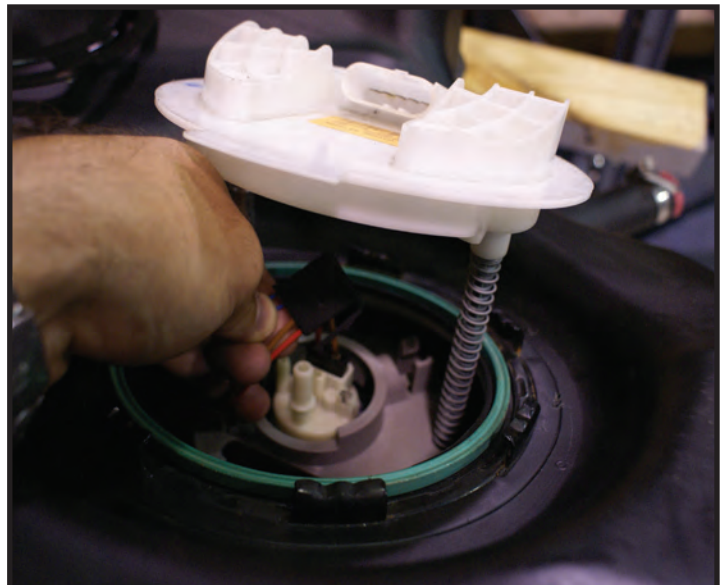
Remove the ring and gently lift the fuel hat lid up, approximately 5" to gain access to the wiring harness plugs (fuel pump power plug, and the sending unit plug) on the underside of the lid. Unplug these and pull the fuel hat lid away from the rest of the assembly.



#### Step 6.)

Once the fuel hat lid is removed, you will see the top of the fuel basket which has 3 main lines connected to it. The high pressure fuel line which is attached to the top of the stock fuel pump, the main venturi return line, and finally the smaller factory fuel pressure return line.

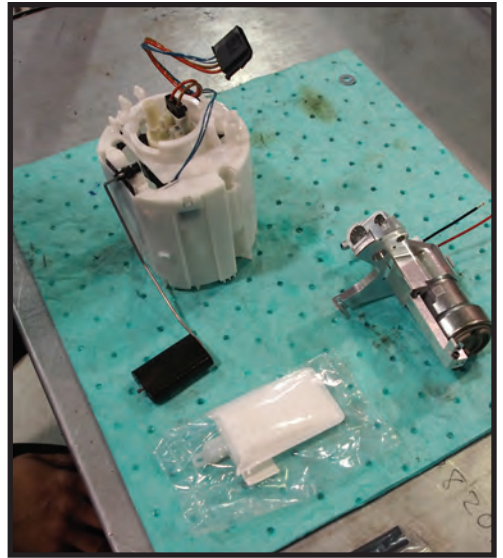
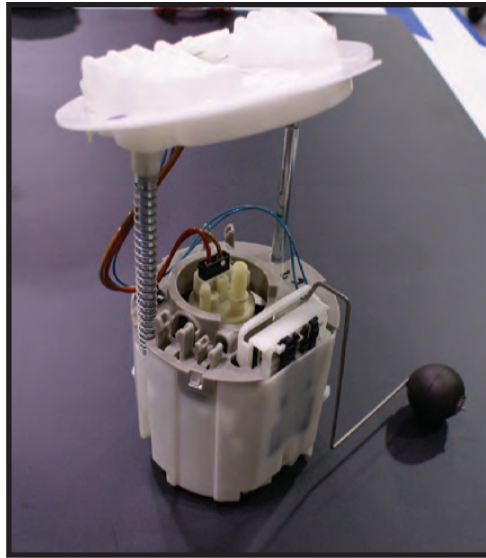
**Note: Once the fuel hat cap is lifted from its original position, the trapped gasoline vapors will be released. Use EXTREME CAUTION during the rest of the basket installation steps, as the gasoline vapors are EXTREMELY flammable.**





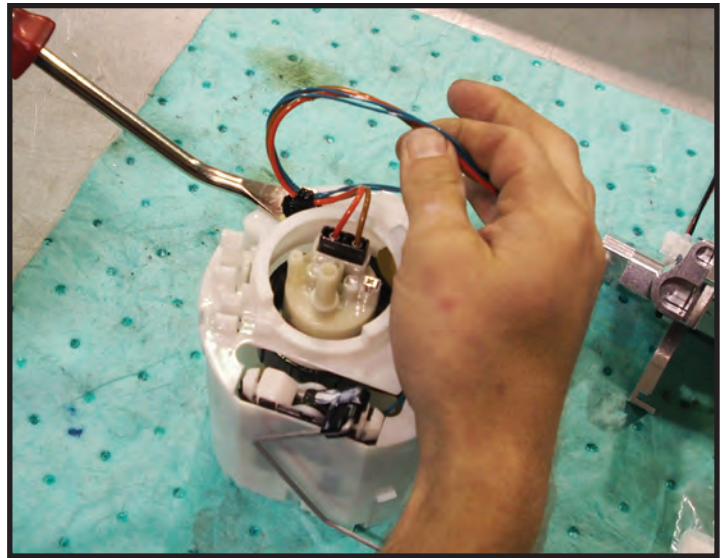
### *Step 7.)*

Carefully remove the fuel hat assembly from the gas tank and secure a clean work area for the following wiring steps. Begin by cutting the stock wire harness retainer clip as shown, taking care not to cut any of the wires.



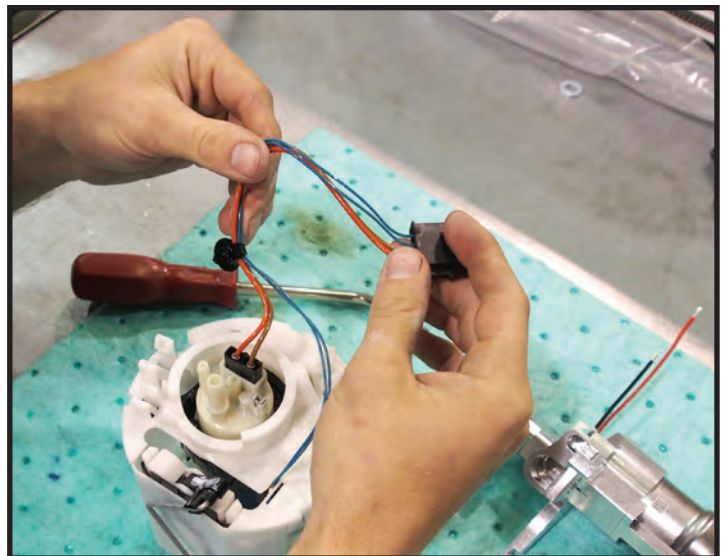
### *Step 8.)*

Remove the wire retainer clip from the fuel basket cover as shown..



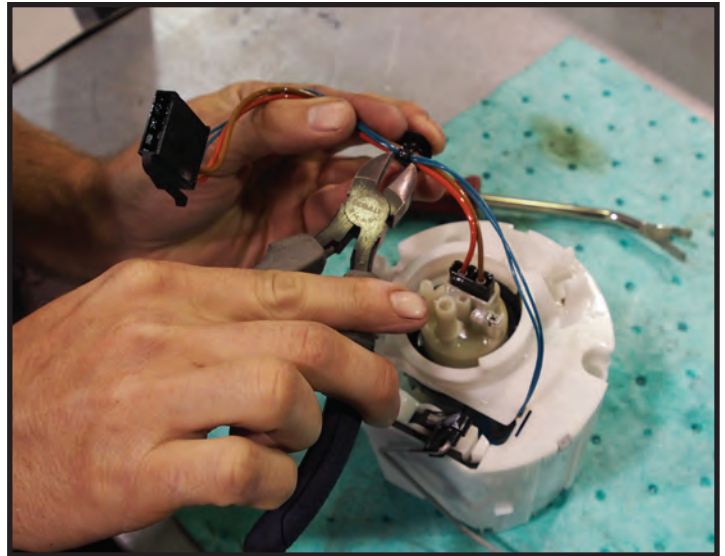
### *Step 9.)*

After the clip is removed from the cover the wires should be freed up as shown in the photo to the right.



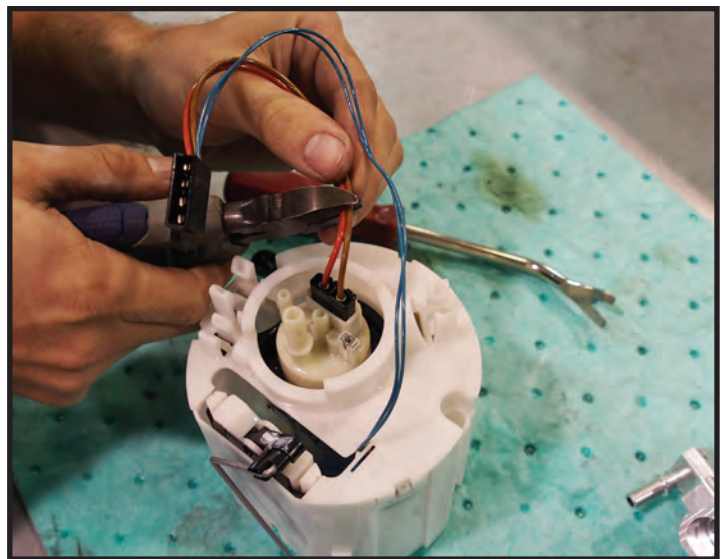
*Step 10.)*

Carefully remove the clip in a way that you do not cut or damage the wire insulation.



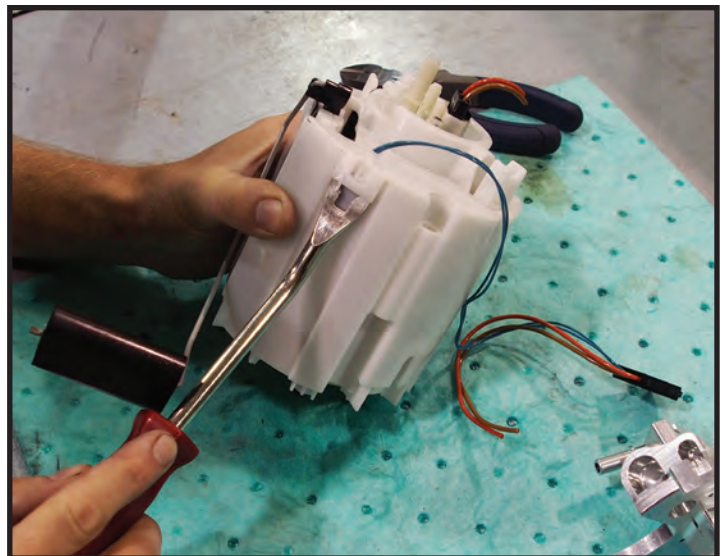
*Step 11.)*

Isolate the brown and red wires to the stock pump as shown and cut them 1" above the pump wire plug as shown.



*Step 12.)*

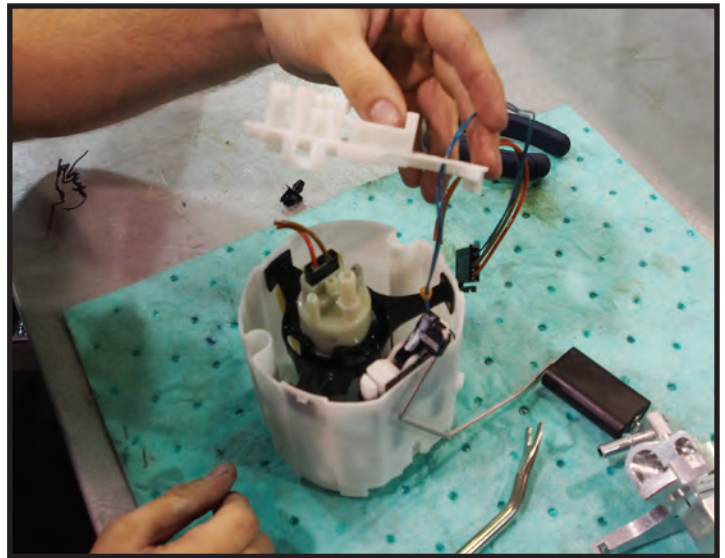
Next, release the fuel basket cover from the basket itself by unlocking the 3 tabs around the cover as shown.





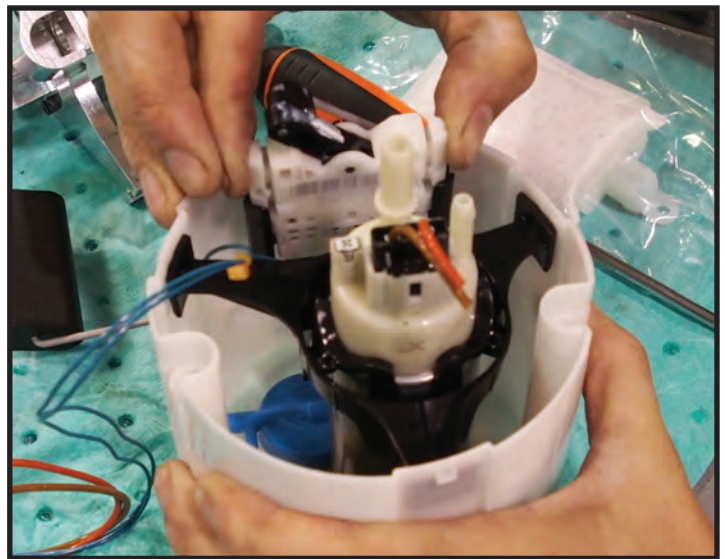
### *Step 11.)*

Remove the cover as shown making sure not to pull on the blue float sensor wires. Release them from their dedicated location in the cover.



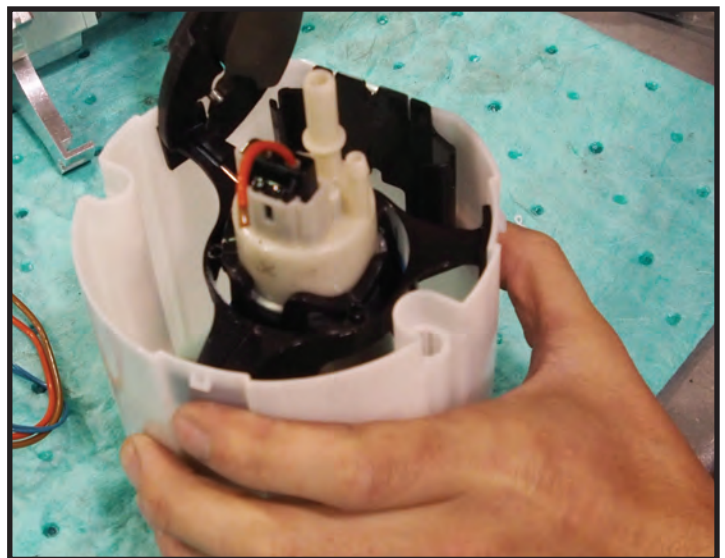
### *Step 12.)*

Next, remove the float sensor as shown in the photo to the right to make sure there is plenty of room to work inside of the basket without risking damage to unit.



### *Step 13.)*

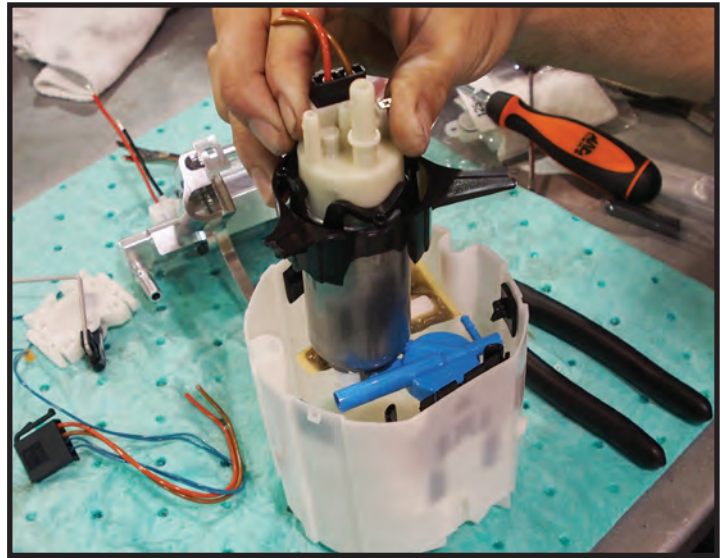
Now its time to take a pair of side cutters (preferably flush cutters) and clip the 3 black plastic arms holding the pump retainer to the basket. See the photo to the right. Clip them as close as possible to the side of the basket.





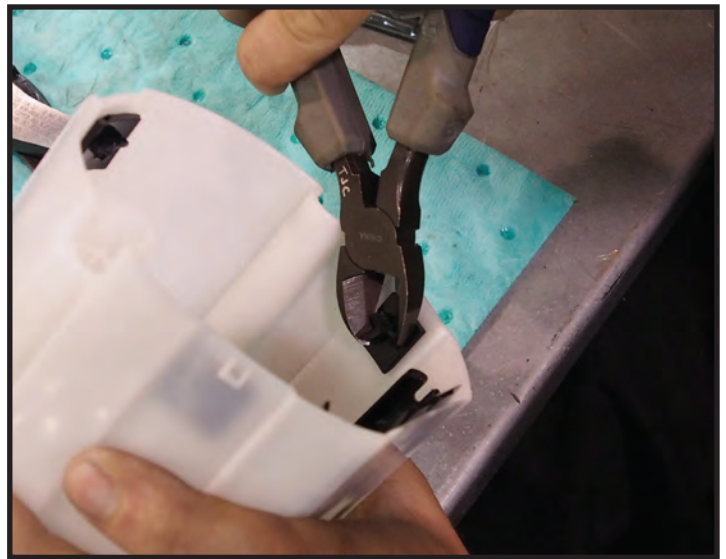
*Step 14.)*

Once the 3 arms are clipped, carefully remove the stock pump and retainer as shown in the photo to the right.



*Step 15.)*

Next, take the basket and clip any of the remaining arms off as closely as possible to the black mounting surface.



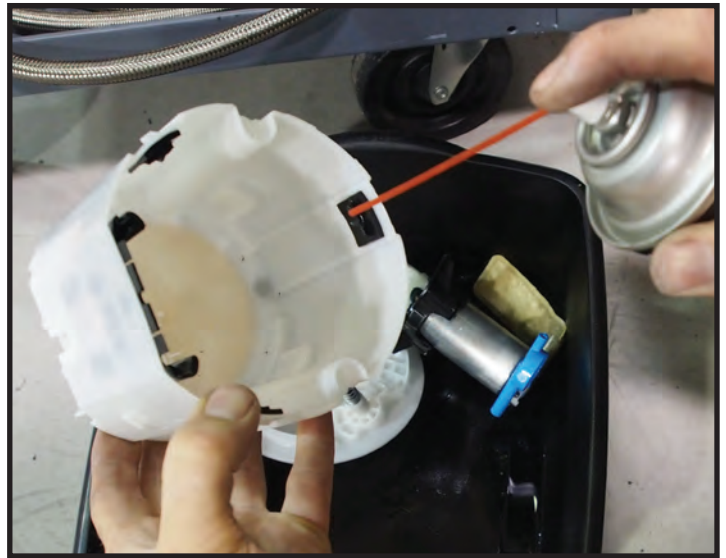
*Step 16.)*

Now take a coarse flat file as shown in the photo to the right and file down the arm remains so the black mounting surface mounting tabs on the side of the basket are almost smooth.



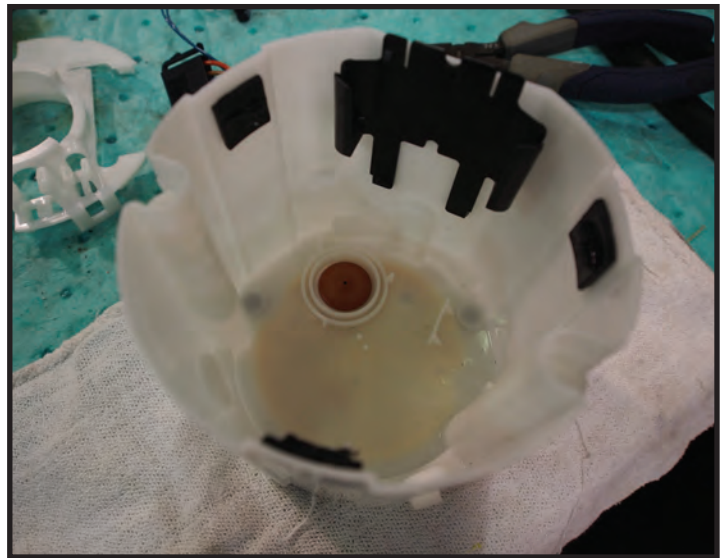
*Step 17.)*

Now that the basket has been prepared for the new fuel pump assembly, take some brake cleaner and rinse out any debris or plastic shavings.



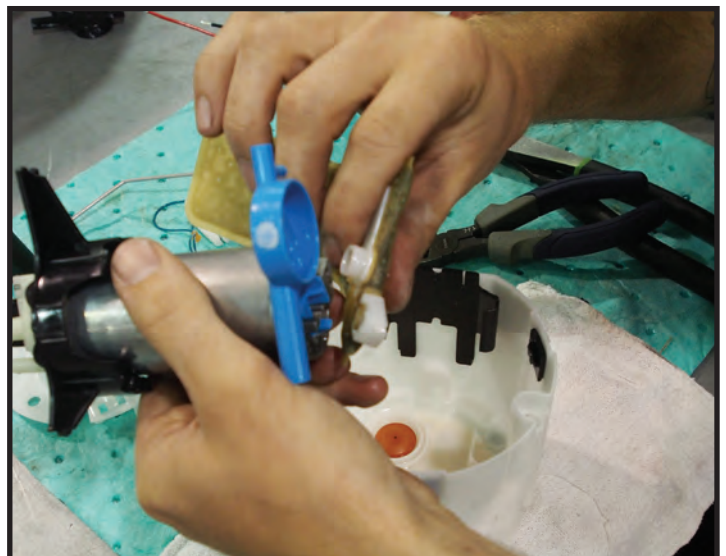
*Step 18.)*

The photo to the right shows a well prepared basket, ready to receive the new API Competition Single fuel pump assembly.



*Step 19.)*

Next, remove the old fuel sock from the old fuel pump assembly as shown.





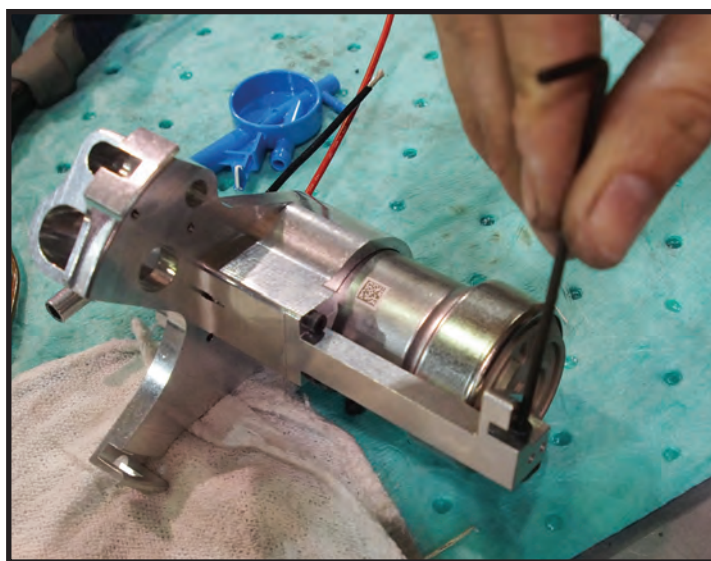
### *Step 20.)*

Once the fuel sock has been removed you can now remove the plastic pump venturi as shown in the photo to the right.



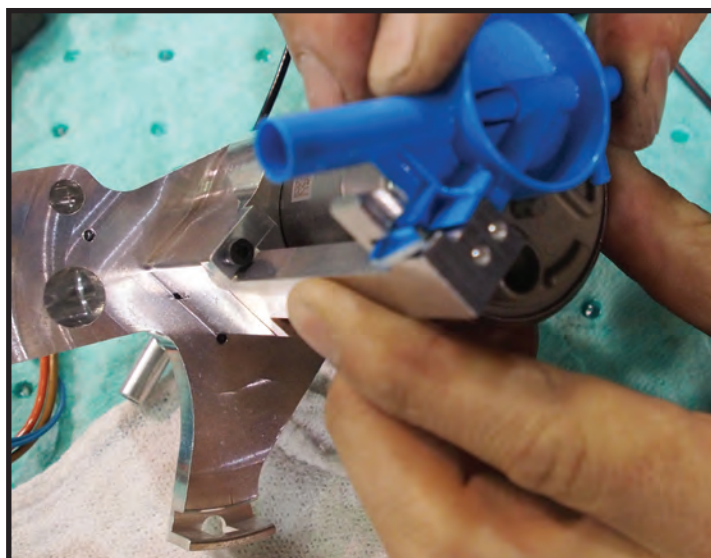
### *Step 21.)*

With the stock pump venturi removed, take the new fuel pump assembly and remove the venturi retainer bolt as shown.



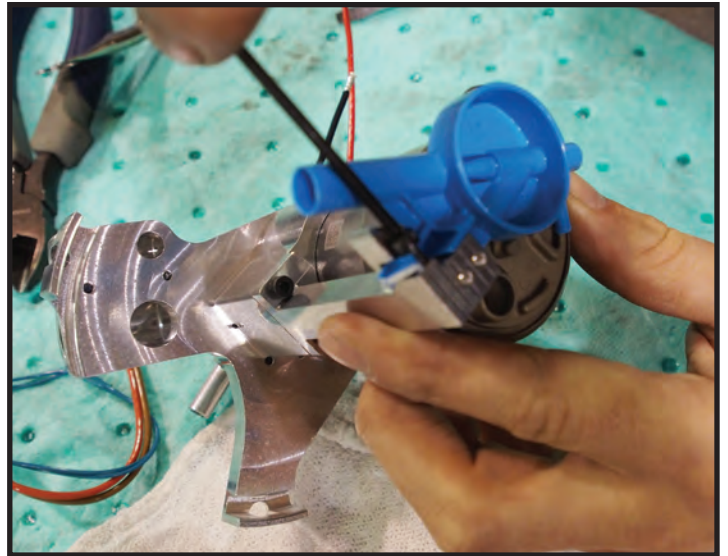
### *Step 22.)*

With the bolt removed, place the pump venturi on the new fuel pump assembly as shown in the photo to the right.



*Step 23.)*

With the pump venturi in place, re-apply the socket head bolt that was removed in step 21 to keep the venturi locked into place.



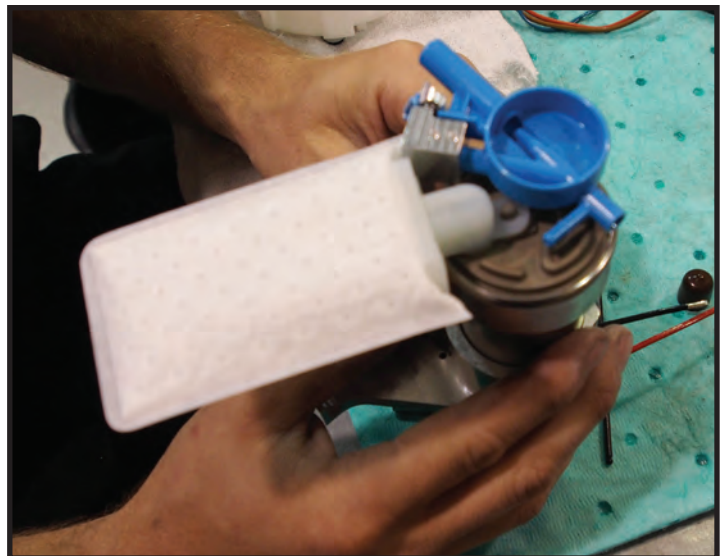
*Step 24.)*

Next, take the new fuel sock and align it as shown with the locating tab on the locating post of the pump as shown.



*Step 25.)*

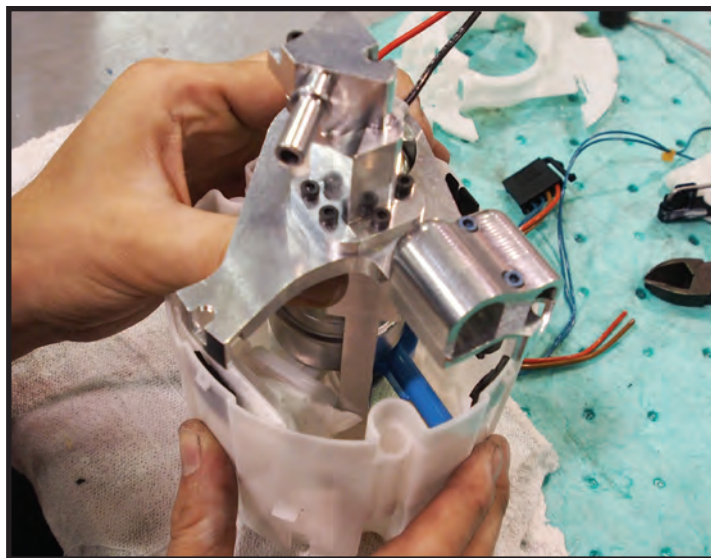
Once the locating tab is in place, press the fuel sock into place.





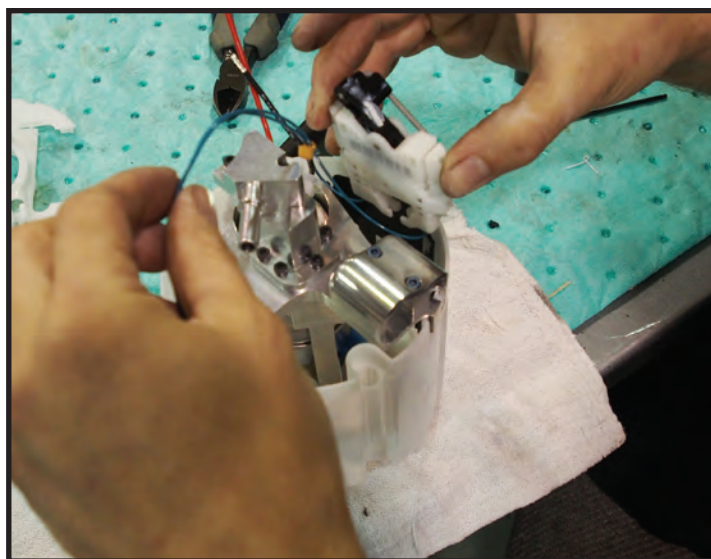
### Step 26.)

Now it is time to place the new fuel pump assembly in the stock fuel basket as shown in the photo to the right. **First note that the venturi has a very specific place in the bottom of the basket and that EXTRA time and care should be taken when dropping the assembly into place.** Align the tabs as shown and press them into place until they lock into their final position on the stock fuel basket.



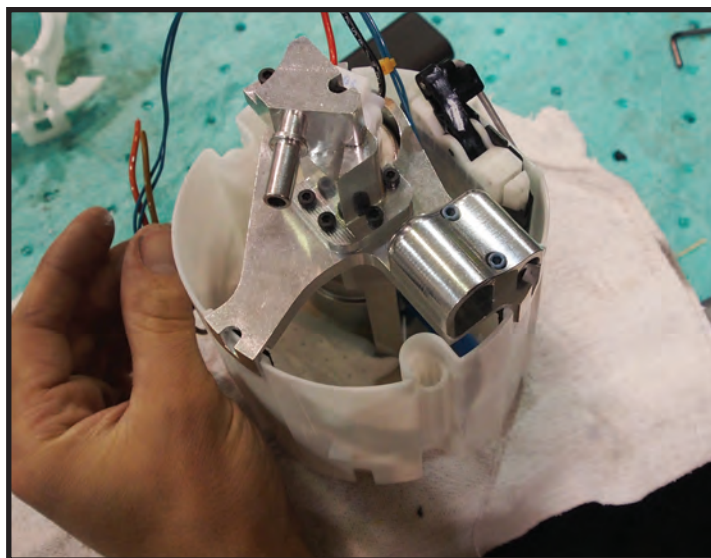
### Step 27.)

With the new fuel pump assembly now in place, we can put the float sensor back into its original position.



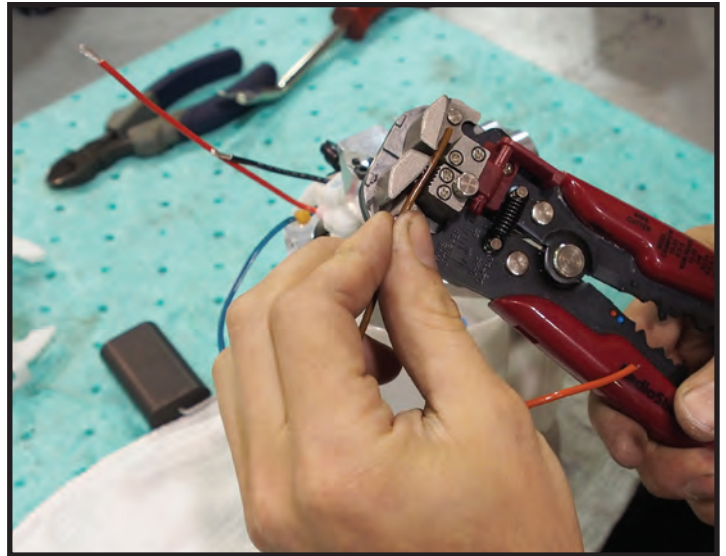
### Step 28.)

With the new pump assembly in place along with the float sensor, its time to make the new wire connection between the new pump and the stock fuel hat plug.



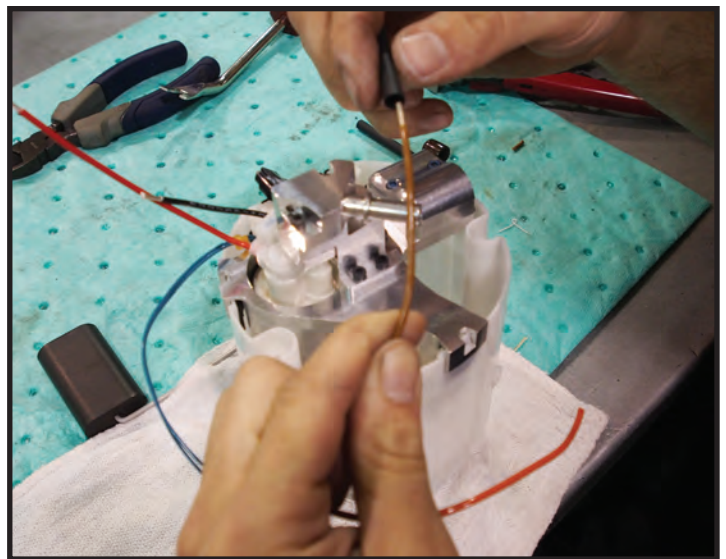
*Step 29.)*

First strip the brown wire of the stock fuel hat plug wire.



*Step 30.)*

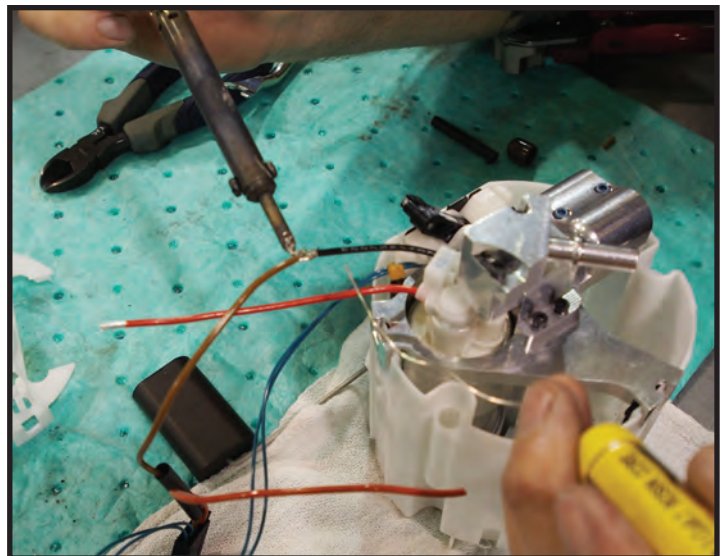
Slip the chemical resistant heat-shrink tubing over the wire as shown.



*Step 31.)*

Solder the brown wire to the black wire of the new fuel pump as shown in the photo to the right, making sure to properly flow the solder across the entire connection.

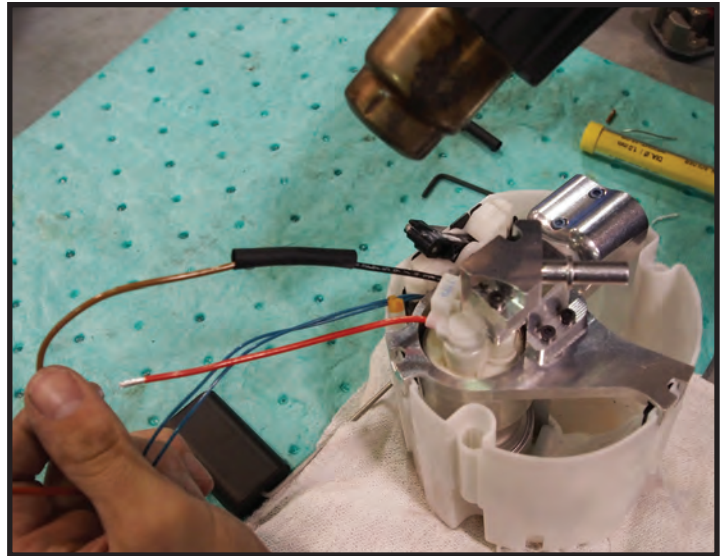
**\*\*\*Note: The soldering process in the next few steps is CRITICAL and should be done by a qualified technician.**





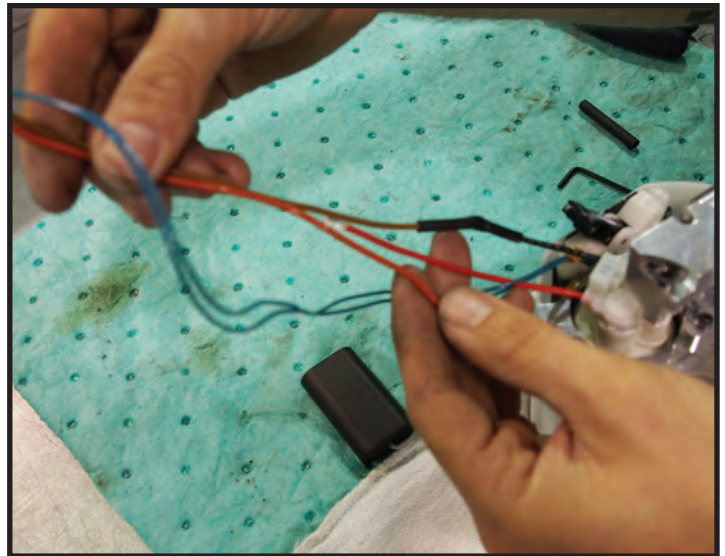
*Step 32.)*

Slip the heat shrink of the newly soldered brown-to-black connection and use a heat gun to properly apply the tubing.



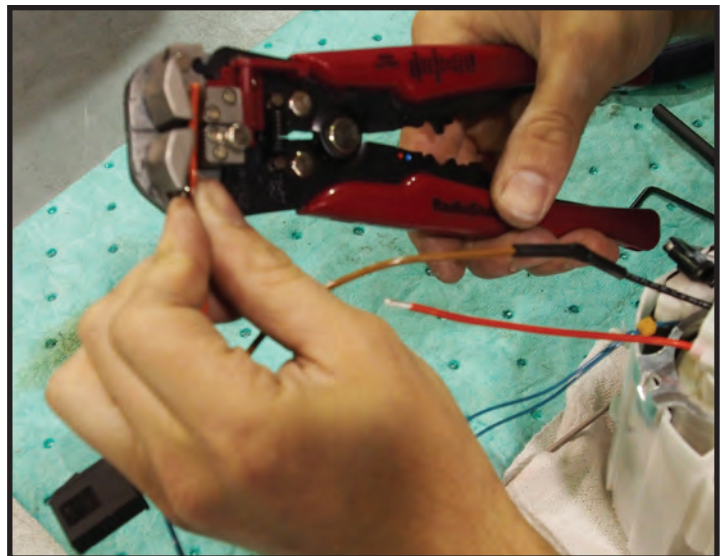
*Step 33.)*

Next, line up the red wires as shown and cut the red wire of the stock fuel hat to the proper length to suit the new pump red wire length as shown in the photo to the right. The pump wires are intentionally staggered to reduce the chances of possible contact and shorting.



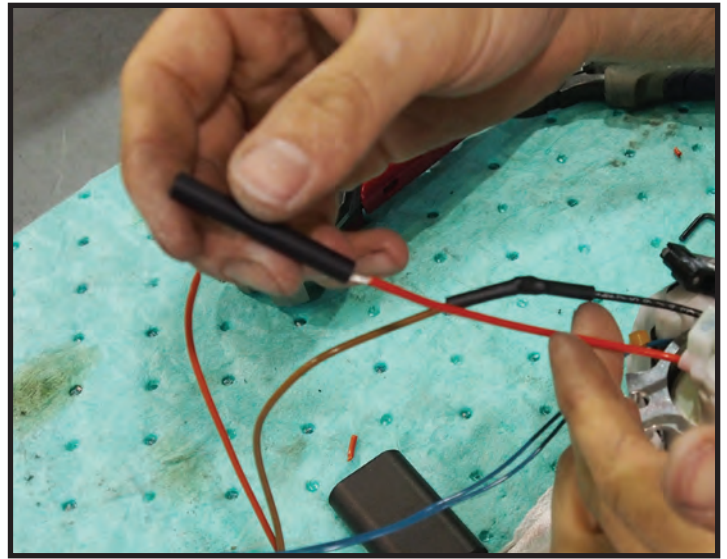
*Step 34.)*

Strip the red wire of the stock fuel hat plug.



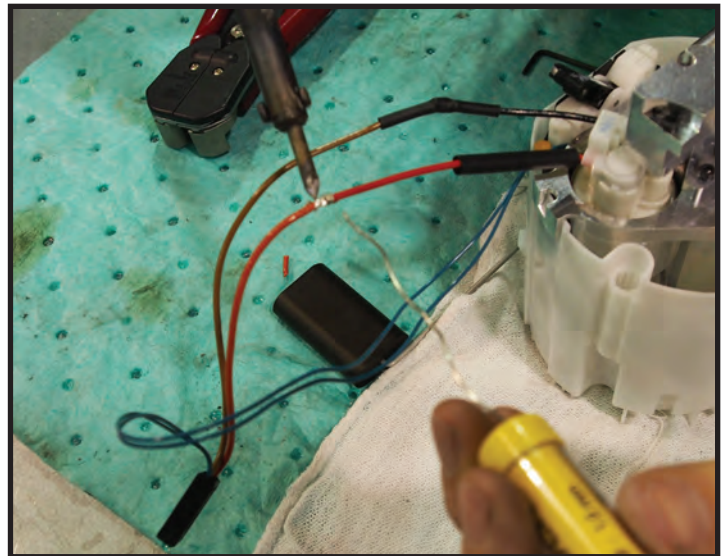
*Step 35.)*

Slip the chemical resistant heat-shrink tubing over the wire as shown.



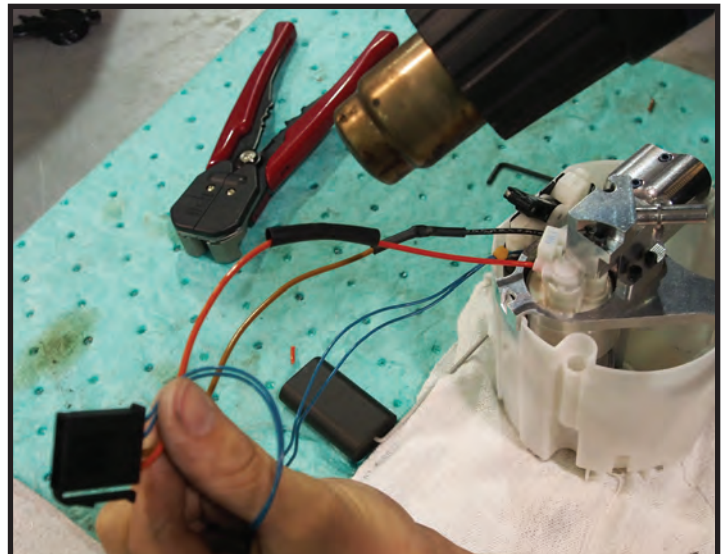
*Step 36.)*

Solder the red wire connection as shown in the photo to the right.



*Step 37.)*

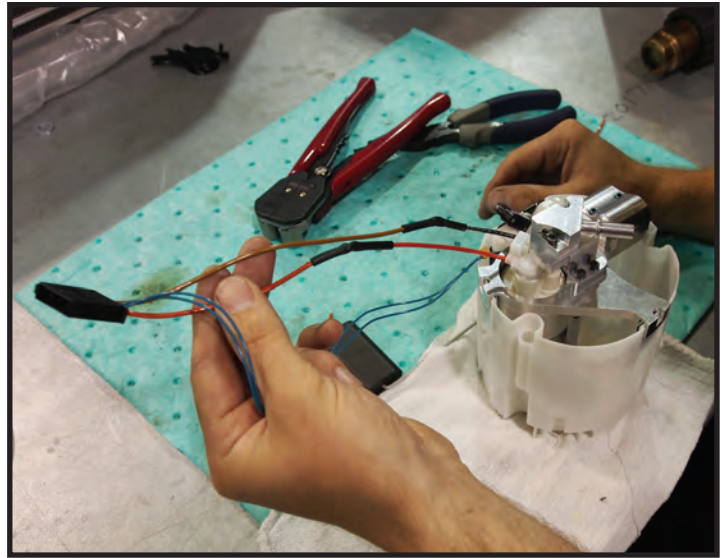
Slip the heat shrink of the newly soldered red-to-red connection and use a heat gun to properly apply the tubing.





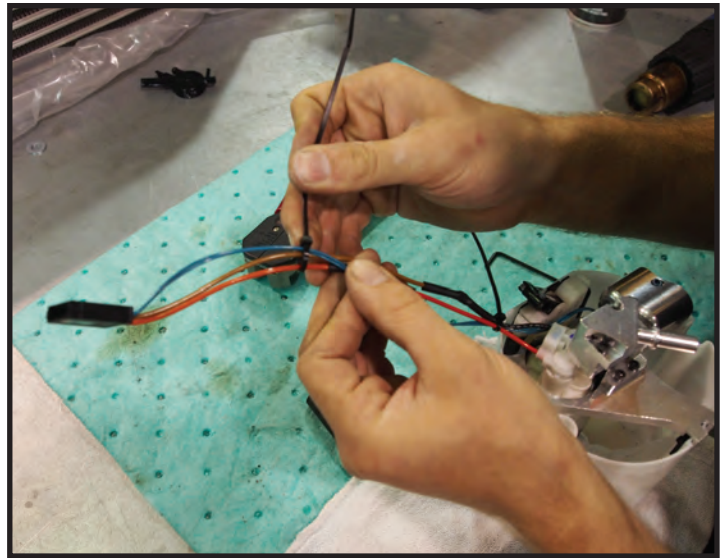
*Step 38.)*

The photo to the right shows the proper wire connection made between the new pump and the stock fuel hat plug wires.



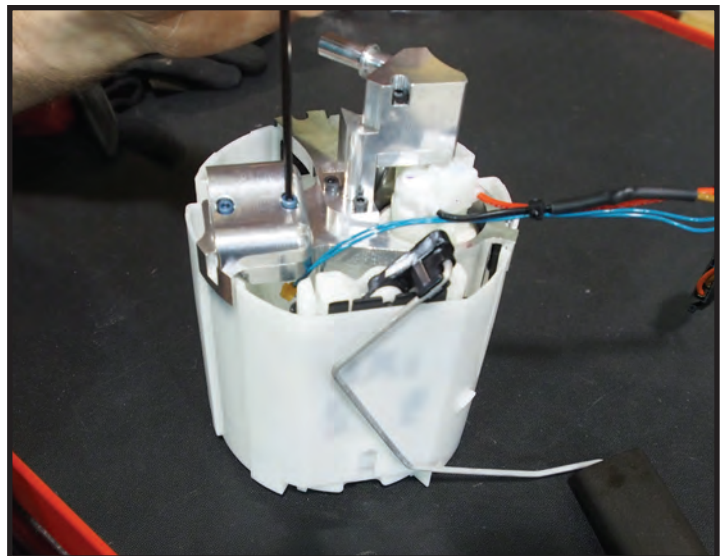
*Step 39.)*

Take the included tie-wraps and apply them as shown. Once applied, clip the remaining length to make sure that they do not interfere with the fuel float operation



*Step 40.)*

Now its time to remove the return line retainer cover as shown in the photo to the right .



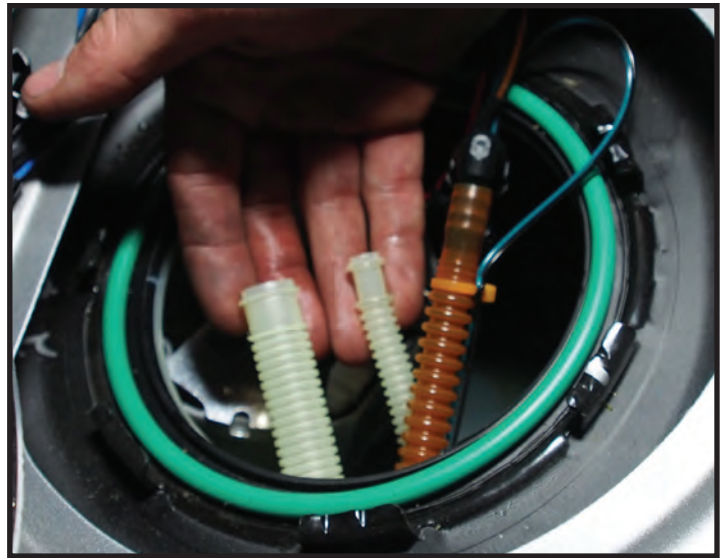
*Step 41.)*

With the return line retainer cover removed, drop the fuel basket with the new fuel pump assembly into place as shown.



*Step 42.)*

Next, locate the return lines and the fuel supply line.



*Step 43.)*

Place return lines in the new fuel return line retainer cover as shown.





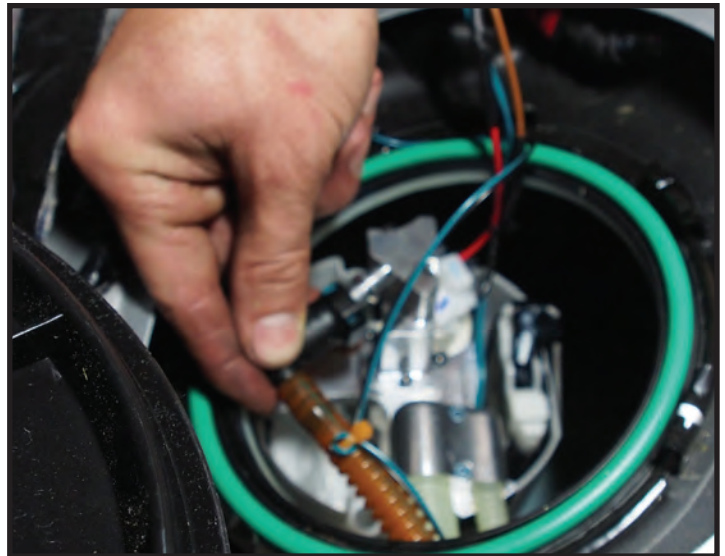
*Step 44.)*

With the return lines in their correction locations, bolt the retainer back to the new fuel pump assembly as shown.



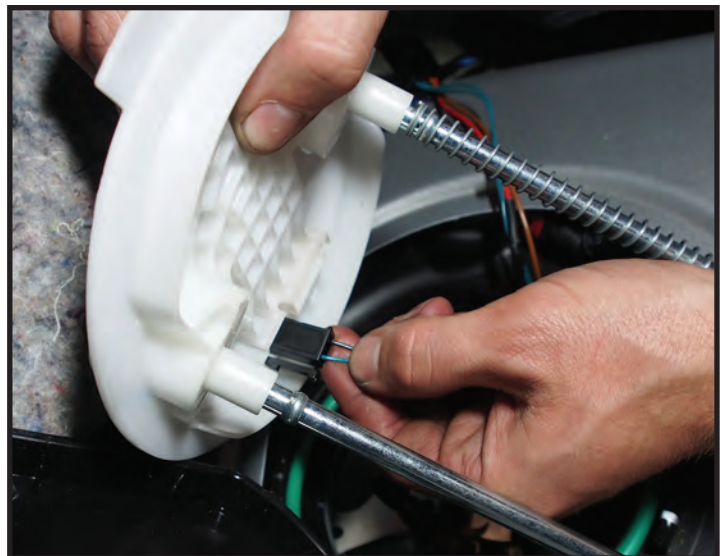
*Step 45.)*

Next, connect the fuel supply line to the new fuel pump assembly as shown, making sure that the quick-connect correctly locks into place.



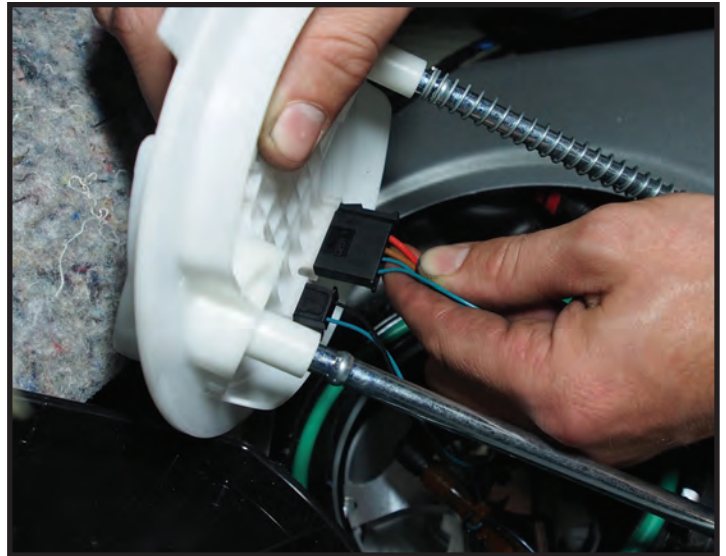
*Step 46.)*

Locate and reconnect the plug from the passenger side fuel sending unit as shown.



*Step 47.)*

Next, reconnect the new fuel pump assembly to the fuel hat as shown.



*Step 48.)*

With both plugs properly connected, place the fuel hat back into its stock location inside of the fuel basket as shown in the photo to the right making sure that the wires are free and clear of the pressure springs.



*Step 49.)*

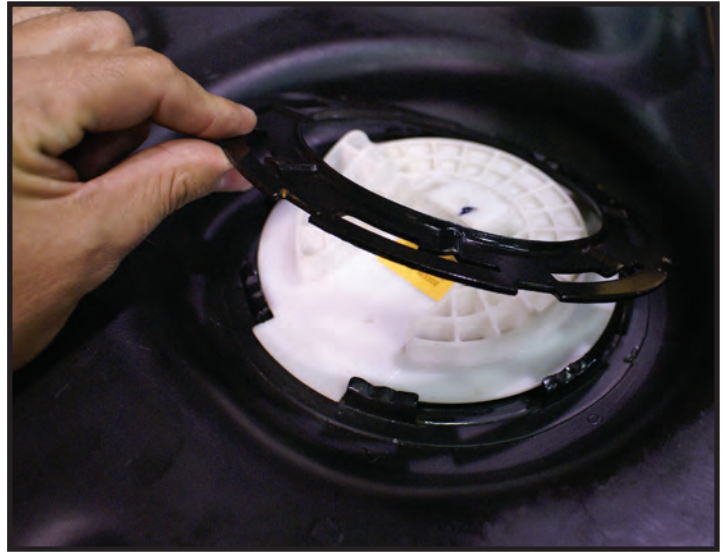
The photo to the right shows the fuel hat properly seated and ready for the retainer ring to be re-applied.





*Step 50.)*

Replace retainer ring to lock the fuel hat into place.



*Step 51.)*

Reconnect the negative side of the vehicles battery harness.



*Step 52.)*

You're done! Take your HEMI powered vehicle for a test drive..