



# Installation Manual

Compatible with : 601-0289

Stage 2 G-Series / SUPRA hybrid fuel pump



This installation is not recommended for a novice or the “new guy” in the shop. Use caution when installing, as not to damage any factory components or components included in this kit. If you are not experienced in working on cars we recommend taking this kit to your local performance shop for installation.

**NOTE: Precision Raceworks, LLC holds no responsibility for any damage that occurs or laws that are broken in the installation or use of this kit. This kit is intended for off-road purposes only.**

Precision Raceworks, LLC

Magnolia, TX 77355

<https://www.precisionraceworks.com>

[support@precisionraceworks.com](mailto:support@precisionraceworks.com)

713-770-6977

© Precision Raceworks, LLC

## Kit Contents

QTY	Description	QTY	Description
1	Pump activation harness	1	Fuel line with quick connects on both ends
1	Fuel pump w/ bracket and fitting	1	Pinch clamp
1	Fuel pump sock	1	Electrical bulkhead with wires and connector
1	Sheet metal bracket		
2	Metal rivets		
2	Plastic Rivets		
1	Fuel line with single quick connect		

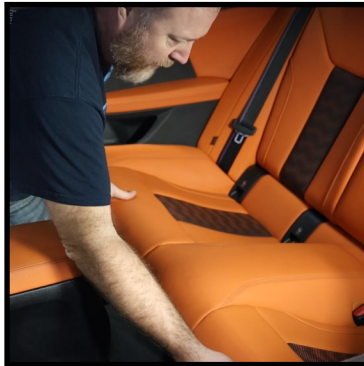
**Verify all components needed to perform install are in your kit using the list above. Additionally read through all pages of the instructions to ensure full understanding before starting installation.**

## Tools Necessary

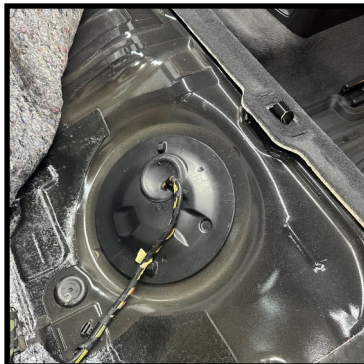
QTY	Description	QTY	Description
1	Lock Ring Tool (or hammer and extension)	1	Ratchet and Extension
1	Razor Blade	1	8mm Socket
2	Small Flat Head Screwdriver	1	10mm Socket
1	Drill	1	13mm Socket
1	1/8" Drill Bit	1	Step Bit to 1/2"
1	1/4" Drill Bit	1	5/32" Allen Key
1	Pop Rivet Gun (Optional)		

This section of the manual is intended to show the assembly of the **Precision Raceworks (description and part number here)** and final assembly. For instructions of the removal or installation of factory components, please refer to your service manual

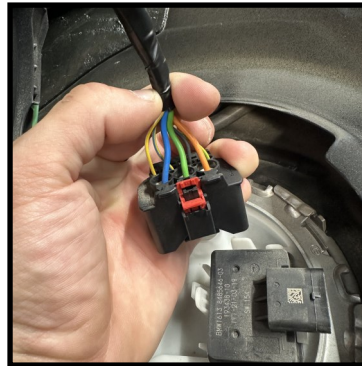
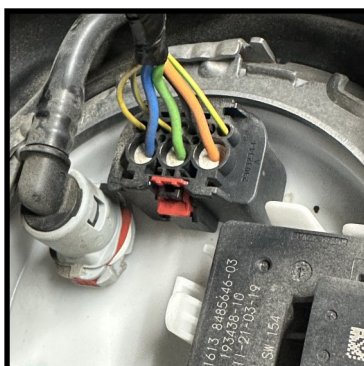
1. Ensure fuel tank is 1/4 tank or less full before starting, tanks that have more than 1/4 tank of fuel can be very difficult and messy to perform install. It is preferred to do at 1/8 of tank or less but 1/4 tank of fuel is the max you want to have.
2. Remove the rear seat of the car by pulling up quickly on the front of the seat on both sides of the car. The best place to lift is under where your knees are at when sitting in the seat. Some vehicles may need belt released shown in the second photo. Then remove seat from car.



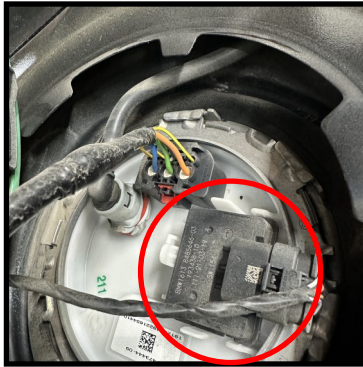
3. With the seat removed push back the felt on the right side of the car and locate the pump cover in the chassis. Remove the cover by twisting the cover to unlock it and then pulling up to remove the cover.



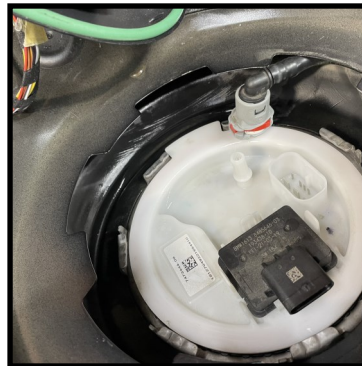
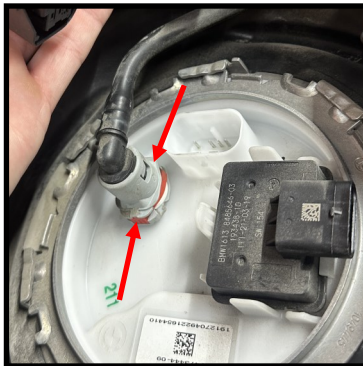
4. Disconnect the electrical wiring from the fuel pump by pulling up on the red locking tab, and then press on the release for the electrical connector while pushing down. While still pressing the release pull up to remove the connector from the pump.



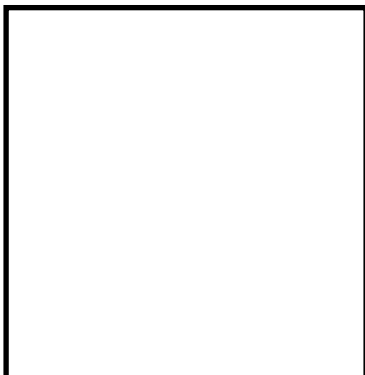
5. Some vehicles have a sensor which sits on top of the fuel pump. If your car is equipped with this sensor remove the electrical connector from the sensor at this time by pressing the latch while pushing the connector further on. Then continue pressing the latch while pulling off to remove the connector from the sensor.



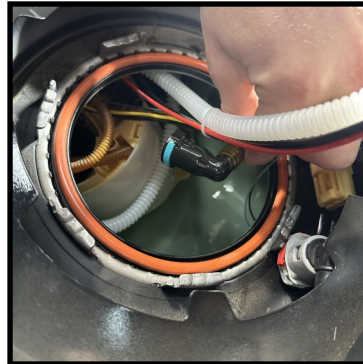
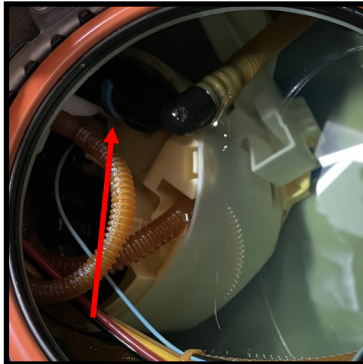
6. Removing the line can be a little difficult for some people but take your time and you will be able to get the line disconnected. To remove the fuel line you will push down on the fitting (like you are trying to install it). While pushing the fitting further on push firmly on the back of the white and red clips and continue pushing the clips inwards while pulling up on the fitting to remove the fitting from the fuel pump.



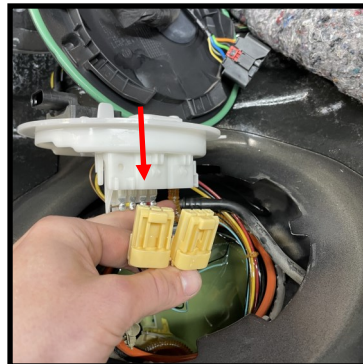
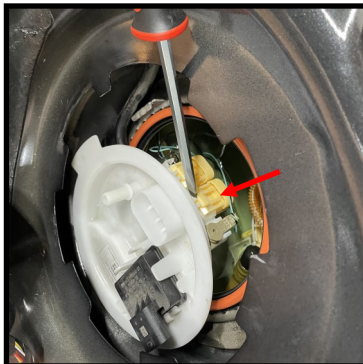
7. If you purchased a lock ring removal tool this step is a breeze, simply align the tool with the tabs on the outside of the lock ring and turn counter clockwise (using a large ratchet) to remove the lock ring. If you do not have a lock ring tool, we recommend using a socket wrench extension placing the female end against the edge of the tab and hitting with a hammer until unlocked. Once unlocked remove the lockring and set to the side.



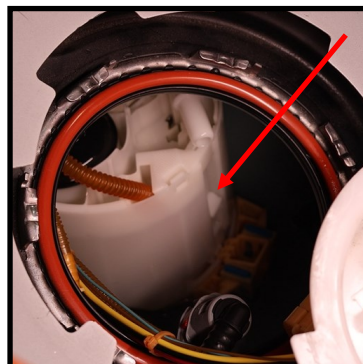
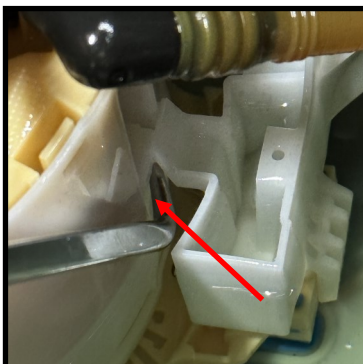
8. On the top of the fuel pump bucket locate a fuel quick connect fitting. Push the fitting further on and press in the release tabs on the fitting. With both tabs pressed in pull the fitting off to disconnect the fuel line for the transfer venturi.



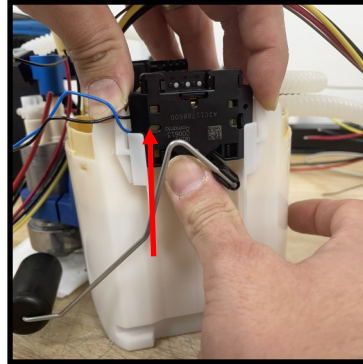
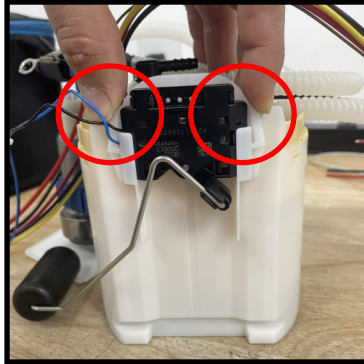
9. The left side of the car has a fuel level sensor which has wires that run to the driver's side of the car and attach to the fuel pump top hat. Follow these wires and disconnect the connector associated with them by sticking a small flat head screwdriver in the notch on the top side near the latch and prying up carefully to release the connector from the top hat. With the connector released pull the connector off the top hat.



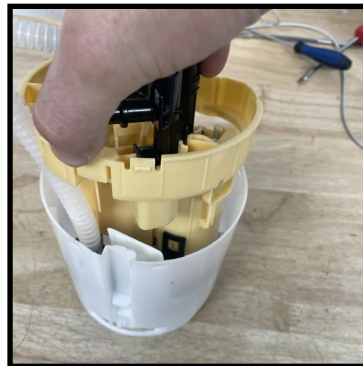
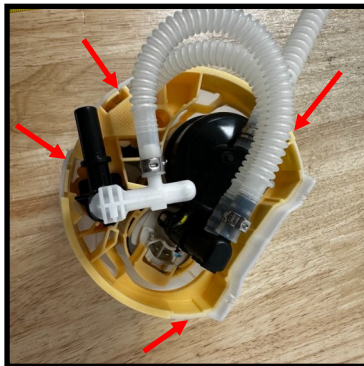
10. With all wiring and hoses disconnected it is now time to remove the fuel pump assembly. Some vehicles have a plastic piece covering the latch shown in the first photo if your vehicle has this piece remove it first and discard it. Then locate the latch which runs vertical up the center of the bucket. Pull up on this latch until released (often times the whole bucket will pop free). If the bucket does not pop free pull up more on the latch until the whole bucket comes up. Now tilt the bucket to empty some of the fuel in the bucket, then remove the bucket from the fuel tank being careful not to damage the float.



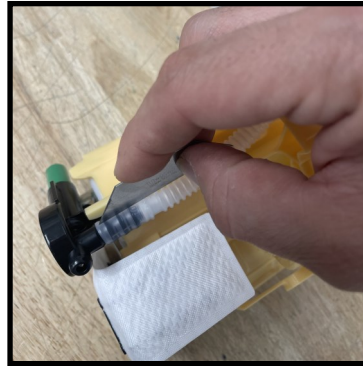
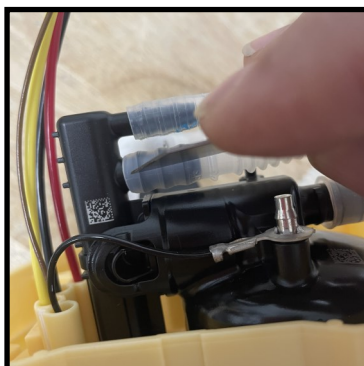
11. With the fuel pump removed from the car, disconnect the float from the bucket by squeezing the two tabs and pressing up on the float assembly.



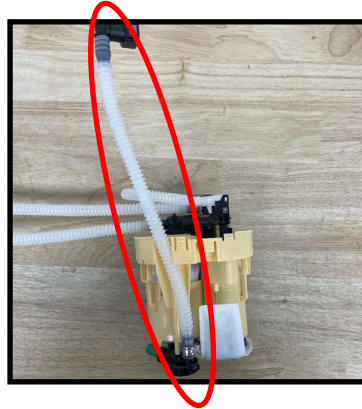
12. Remove the internal components from the bucket by releasing the 4 tabs around the lip of the bucket. This can be achieved by using a small flat head screwdriver or pick and wedging them at the two locking points closest to the float. Using another screwdriver gently pry the two tabs at the front of the bucket until all have been unseated and pull up on the components. (It will all come out together)



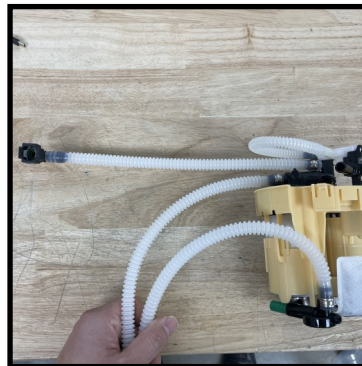
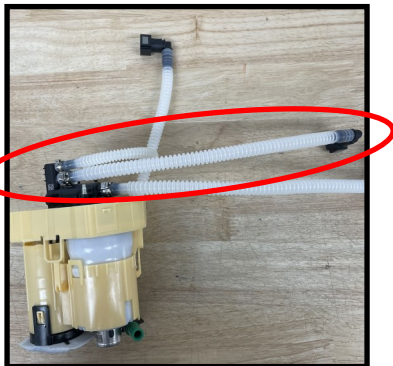
13. Using a razor blade remove the middle line on the barbed ports that connect to the lower venturi. Do this to both sides of this line, removing the line completely.



14. Install one of the supplied fuel lines with a 7.89mm female quick connect fitting onto the barb of the venturi. Ensure the pinch clamp is placed on the line before installing. (Heating the fuel line slightly will ease the installation process) The opening of the fitting will face towards the OEM pump when the venturi is installed onto the bracket. Once proper orientation is confirmed secure the line with the pinch clamp.



15. The second fuel line will be installed onto the middle barb where the line was previously removed. The opening of the quick connect fitting will face the front of the assembly. (Opposite the float side) Again, heating the line slightly will ease installation. Once proper orientation is achieved, secure in place with the pinch clamp

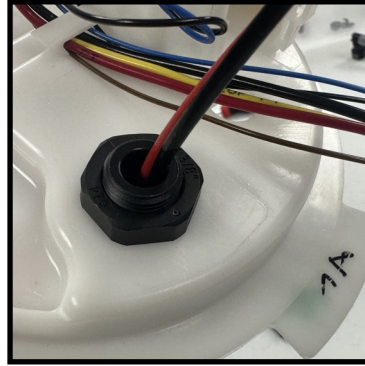


16. Make a mark in the center of the area shown below (center of slightly raised area). Start with a small drill bit and work up one size at a time until you reach the final size of 11/16". Using a razor or other tool deburr the drilled hole as needed.

**Note: Be careful not to catch wires under the tophat with drill bit (holding them out of the way is recommended).**

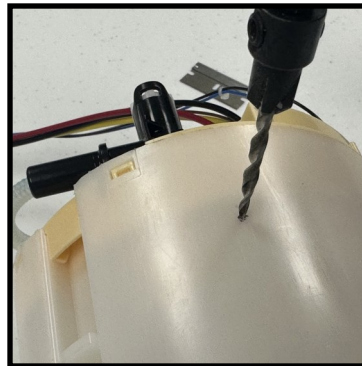
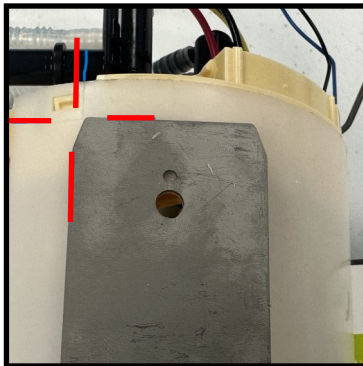


17. Proceed by installing the wire pass through bulkhead. To do this remove the nut found on the bottom of the bulkhead and feed the wires through the top of the top hat. Install the nut so that the side with writing is visible. Tighten using wrench until snug (**do not overtighten**).



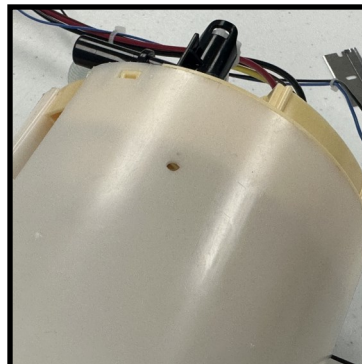
18. Place the sheet metal bracket on the outside of the bucket, aligning the left edge and top edge of the bracket in straight line with the marks from molding process outside of the clip as shown below. With bracket lined up mark the top rivet hole.

**Note: Metal and plastic rivets are included , if you do not have a rivet gun use plastic, however metal rivets are preferred. Small holes are for using metal rivets, and larger holes are for use with plastic rivets.**



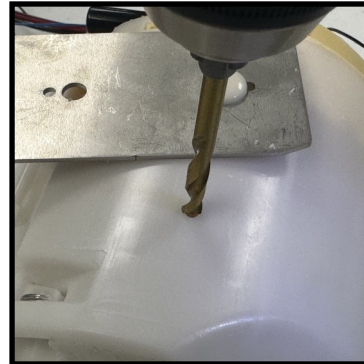
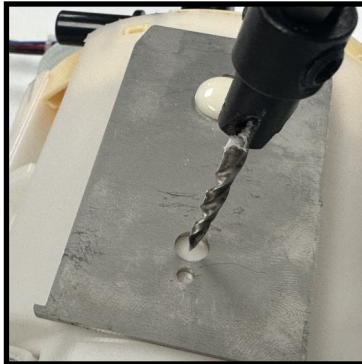
19. Drill the hole marked in step 9, for metal rivets you can start and finish with 1/8" drill bit. For plastic rivets you will start with 1/8" working up in size until you reach the final size of 1/4".

**Note: Using a large bit and not working up in size will crack plastic**

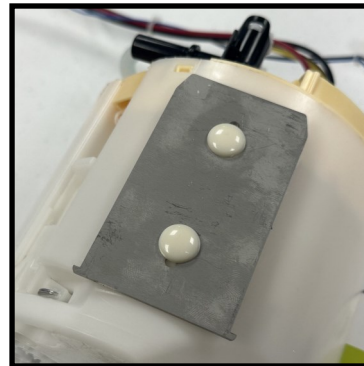
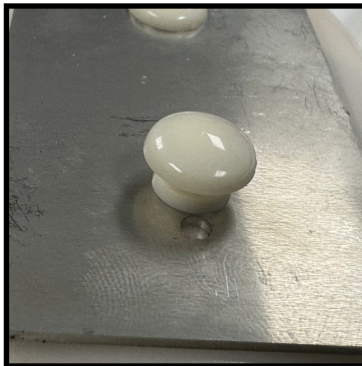




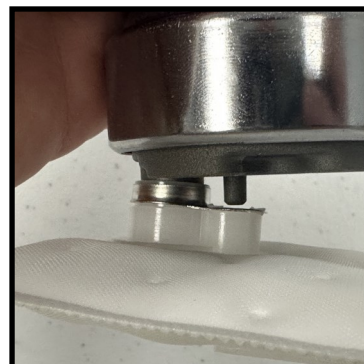
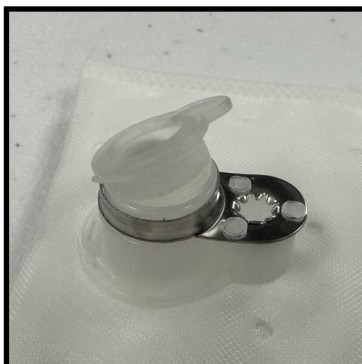
20. With the top hole drilled place the metal bracket on top of bucket. If using metal rivets insert rivet but do not compress rivet. If using plastic rivet install plastic rivet at this time. Rotate the bracket so it is in intended location, then mark the center of the hole. Once marked rotate bracket out of the way and proceed to drill repeating the process from the previous step.



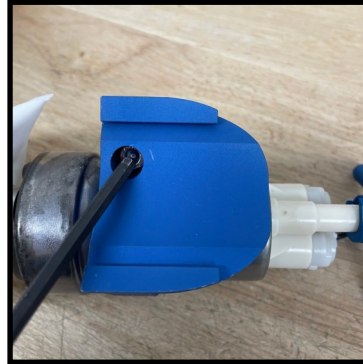
21. With the second hole drilled secure the sheet metal bracket to the outside of the bucket using either the metal rivets or the plastic rivets provided in the kit.



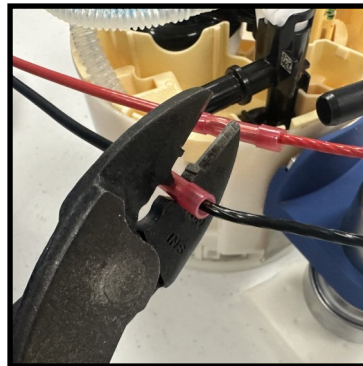
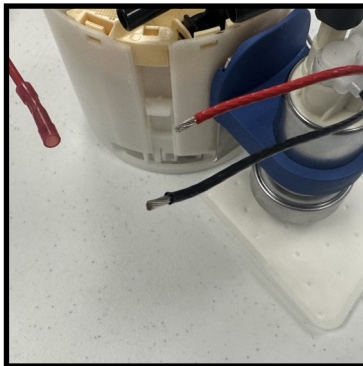
22. Ensure the pump is rotated in the bracket as shown in the image below. With the pump in the correct location install the fuel sock on the bottom of the pump (remove the plastic plug from the sock before installing). Ensure sock is sufficiently seated on the pump input and the peg offset from the inlet.



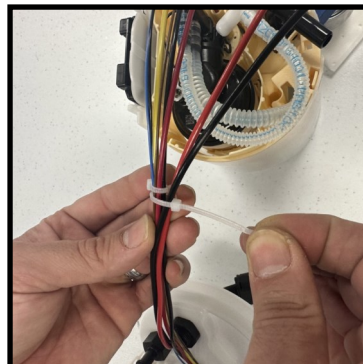
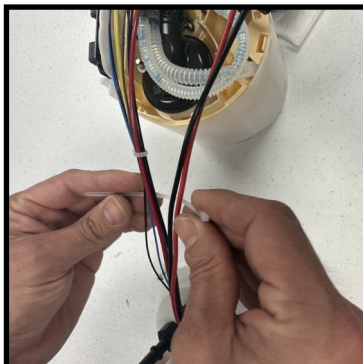
23. Install the secondary pump into the blue billet pump bracket and slide the pump up until the bottom of the bracket is approximately 1/8th of an inch from the flared portion of the pump. Tighten the screw on the back side of the bracket using a 5/32 allen key



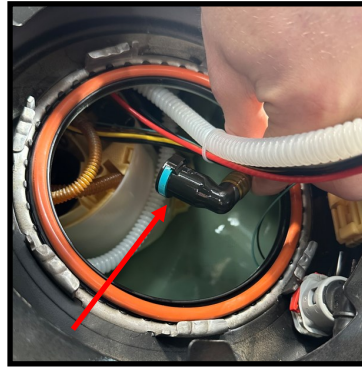
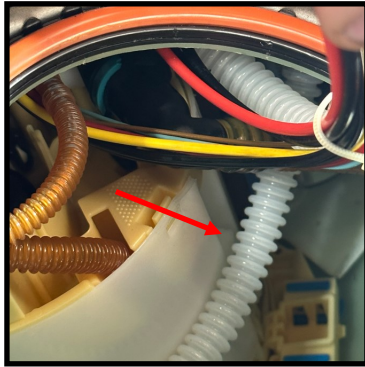
24. Place the fuel pump on the sheet metal hanger (note it will not sit all the way down at the bottom of the hanger). Then attach the pump wires to the bulkhead wires using the supplied butt connectors or spades by crimping the connectors to the wires.



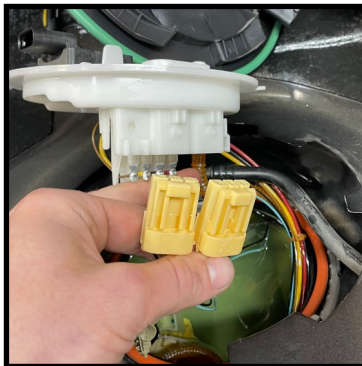
25. Using a zip tie, secure the wiring from the secondary pump to the factory wiring near the center of the factory wiring. This step is not required but provides clean install while reducing possibility of wiring getting in the way of the fuel float.



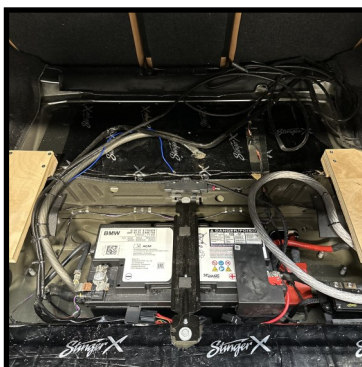
26. To reinstall the pump in the car simply slide the secondary pump off the side of the bucket, then slide the bucket into the tank. Then with the bucket near the opening slide the second pump onto the bracket installed on the side of the bucket. With both pumps inside the tank reinstall the fuel pump bucket back to the bottom of the fuel tank. Once the bucket snaps into bottom of fuel tank push down on the securing latch to lock it in place. Then reattach the venturi line shown in the second photo below.



27. With the pumps back in the tank ensure there are no wires or hoses that can interfere with the fuel float. Reattach the fuel float connectors to the underside of the top hat. With both connectors reconnected and everything clear of the fuel float movement place the top hat back on the fuel tank with the tab pointing to the rear of the vehicle. Then reinstall the fuel pump locking ring ensuring it reaches the locking indentation to ensure it seals properly to the fuel tank.



28. With the pump installed locate the battery at the rear of the car. **Download and open the Precision Raceworks Pump Activation Harness install guide.** This guide will give you a general overview for installation of the activation harness including the different ways it can be used for fuel pump control.



28. With all wiring for the pump activation harness routed and complete. Remove the rubber grommet in the fuel access cover and cut a straight slit from the outside edge towards the middle being careful not to cut any wiring. With the grommet cut pass the main harness connector (and extension harness which routes to front of car if used) through the fuel access cover. With the harness(s) through the cover slide the wire into the cut in the grommet and reinstall the grommet in the access cover.



27. With the pump back in the car, we recommend starting the car and adding fuel from a gas can. Make sure the fuel gauge appears to be working properly based on visual before and after adding fuel. Also ensure there are no issues with the car starting or idling. Take note it can be common to get air in the line causing long crank or rough idle while the air works through the system.
27. While the car is idling if your vehicle has a factory or aftermarket low pressure fuel sensor we recommend viewing the live data for the fuel pressure. While viewing the live data connect the supplied test harness and see that the fuel pressure increases this will verify the assembly and wire harness have no issues.
29. After inspection is complete reassemble the car complete putting all covers, panels, seats, and anything else removed to perform install back in their proper places.
29. Enjoy your new fuel system! We are sure you will be cranking up the power now and the car should be a blast to drive!