



AEROMOTIVE
Part # 18078
2020+ Jeep Gladiator with Hellcat™ Engine Swap
Pump Assembly
INSTALLATION INSTRUCTIONS

This product is not legal for sale or use on emission-controlled vehicles except when used as a direct replacement part matching OEM specification.

WARNING!



Always be aware of flammable situations. Drilling and grinding can be potential ignition sources. Extinguish all open flames, prohibit smoking and eliminate all sources of ignition in the area of the vehicle and workspace before proceeding with the installation. Ensure you are working in a well ventilated area with an approved fire extinguisher nearby.

WARNING!



etc.

Installation of this product requires modification to a fuel tank/ the fuel system, failure to satisfy all safety considerations will result in fire, explosion, injury and/or loss of life to yourself and/or others. All fuel system components **MUST** be located as far from heat sources as possible, like exhaust, engine block,

WARNING!



Mechanical and hydraulic lifting devices can tip over or lower accidentally due to incorrect maneuvering or technical errors. A falling object can cause injury and/or loss of life to yourself and/or others. When working under the vehicle, always use stands, and ensure that the ground or floor is stable and level. Never crawl under a vehicle which is only supported by a jack.

WARNING!



The fuel system is under pressure. Do not open the fuel system until the pressure has been relieved. Refer to the appropriate vehicle service manual for the procedure and precautions for relieving the fuel system pressure.

CAUTION!



When installing this product always wear safety glasses and other appropriate safety apparel. A drilling operation will cause flying metal chips. Flying metal chips can cause eye injury.

CAUTION:



Installation of this product requires detailed knowledge of automotive systems and repair procedures. We recommend that this installation be carried out by a qualified automotive technician. Careless installation of this product can result in damage to the product, injury or loss of life to yourself and/or others.

Compatible Fuels:

Pump Gas
Race Gas
E85

This pump assembly is a high performance factory replacement unit. Key features:

- **Drops directly into the factory fuel tank (NO CUTTING REQUIRED).**
- **Utilizes the Aeromotive jet siphon system in conjunction with the OEM siphon pickup.**
- **High flow pre-filter at the inlet of pump.**
- **Includes fuel level mounting bracket for factory leveling unit.**

NOTE: The use of Teflon braided line with machine crimped hose ends is recommended. This eliminates the possibility of fuel vapors permeating through the fuel line.

EFI Application

- **Supply – Male ORB-10 to AN-8 Male Flare straight fitting (i.e. Aeromotive P/N 15610 or equivalent).**
- **Return – Male ORB-8 to AN-8 Male Flare straight fitting (i.e. Aeromotive P/N 15607 or equivalent).**
- **AN-08 (1/2") hose should be used on supply and return lines (return line only used if pulse width modulation is not used to control the fuel pump).**

Factory ventilation will be retained as per OEM spec.

The fuel pump used in this tank is the Aeromotive Stealth 525 (part # 11170).
525 Stealth Fuel Pump Specifications:

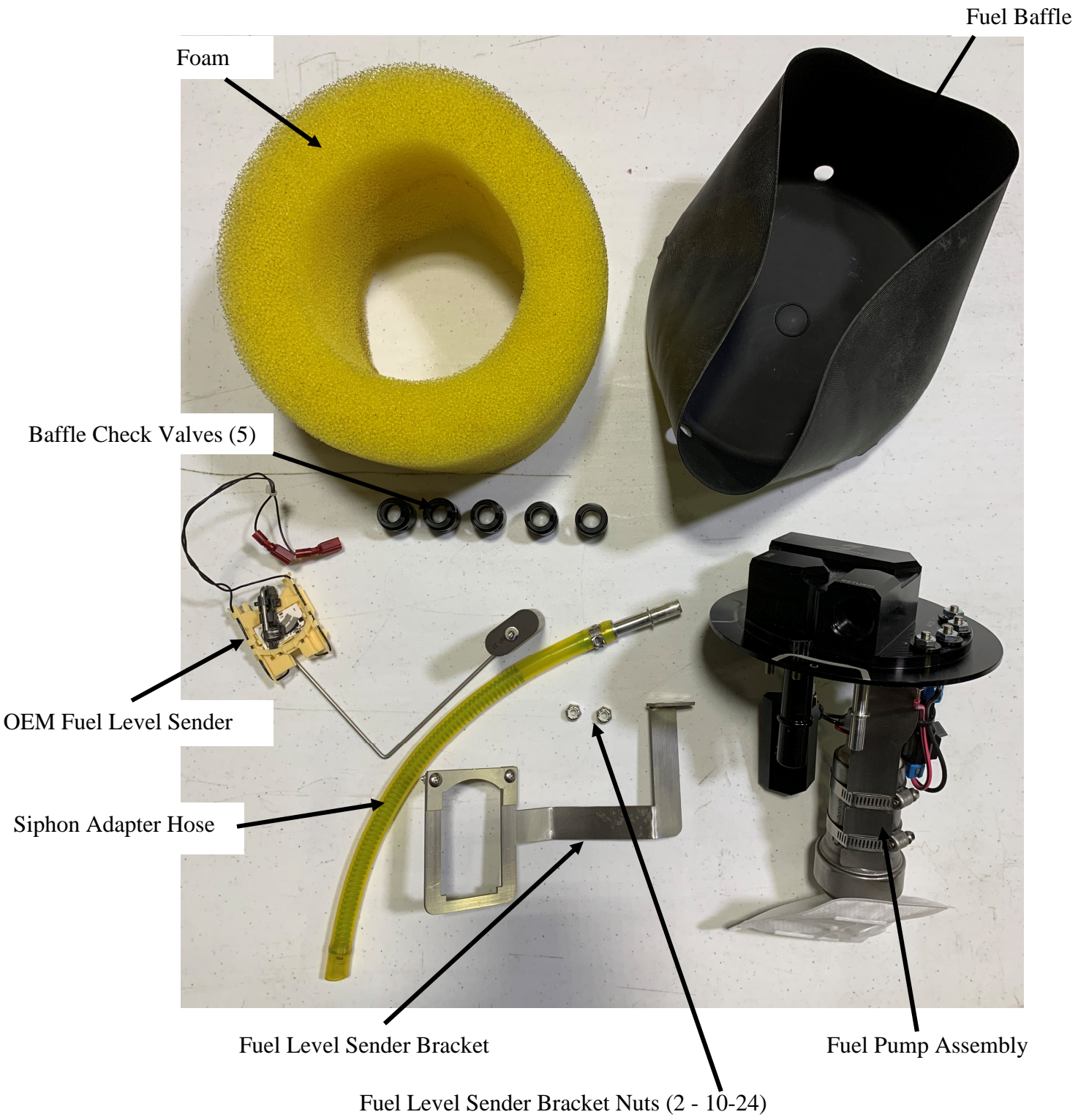
Fuel pump flow: 470 LPH @ 40 psi and 13.5V
Current Draw: 17 amps @ 40 psi and 13.5V
Continuous operating psi range: 3psi to 80 psi with carb or EFI bypass regulator
Continuous current draw range: 15-23 amps at pressures from 3psi to 80 psi
Pump internal By-Pass / Max Pressure: 105 psi maximum, dead-head pressure

To ensure proper pump function and fuel pump service life, we strongly recommend the following:

- Use of correct fuel line size as stated above.
- Installation of 10 micron post-filter between tank outlet and pressure regulator. (i.e. P/N 12350).
- Fuel pump wiring should be 10 gauge wire and triggered with a relay rated at a minimum of 30 amps (Aeromotive fuel pump wiring kit 16307).
- A high flow, return style regulator must be used if pulse width modulation is not used to control the fuel pump (EFI – 13134 (with 75-120 psi spring installed). OEM style filter/regulator combos are NOT recommended, having proven unable to handle the high flow pumps, causing premature pump failure. Failure to follow the above recommendations may result in fuel leakage, bursting of the fuel lines, poor vehicle performance and/or decreased fuel pump life! Improper installation will void all warranties for this product!

Installation Procedure:

1. Disconnect the negative battery cable and drain the fuel tank.
2. Raise and support the vehicle.
3. Remove the fuel tank and disconnect the OEM fuel lines and wiring plug from the tank following the manufacturer's tank removal procedure.
4. Remove the OEM fuel tank lock ring.
5. Disconnect the two internal quick connect fittings from the underside of the OEM fuel pump assembly. (The larger 5/8" quick disconnect is for the tank vent, the smaller 5/16" quick disconnect fitting is for the gas recirc line)
6. Remove the OEM fuel pump assembly from the tank.
7. Check that all components shown in the following image below are present prior to installing the new pump module.



8. Insert Check Valves into Fuel Baffle. Insert the tapered end of the Check Valve from the inside of the Fuel Baffle through each of the 5 holes. Push the Check Valve through the hole until it is retained by the small groove.



9. Insert the Foam into the Fuel Baffle; manipulate the Foam around the Check Valves so that all the Check Valve bodies are pointed towards the center of the Fuel Baffle.



10. Attach the Siphon Adapter Hose to the OEM siphon pickup tube inside the tank. The connection is a quick connect fitting that connects by pushing the male end fitting on the Siphon Adapter Hose into the OEM siphon pickup tube inside the tank. O-Ring lube can be applied to the fitting to aid in the connection of the two fittings. See the following image for OEM siphon pickup tube location.

OEM Siphon Pickup Tube
(5/16" Quick Connect)

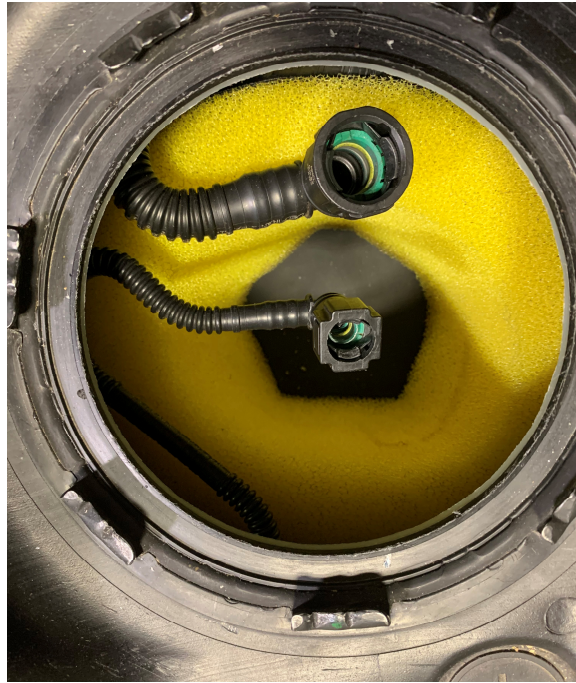


Gas Recirc Line Connector
(5/16" Quick Connect)

Tank Vent Line
(5/8" Quick Connect)



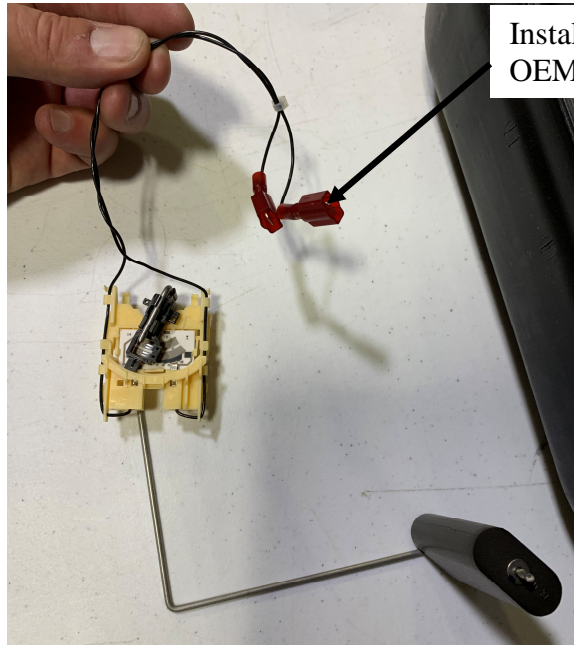
11. Once Siphon Adapter Hose is connected to the OEM siphon pickup tube, insert the Foam/Fuel Baffle/Check Valve assembly into the tank. The Foam and Fuel Baffle assembly should be concentric with the OEM fuel pump assembly hole. Arrange the tank vent line and gas recirc line so they are on top of the Foam and Fuel Baffle assembly.



12. Pull the Siphon Adapter Hose up and over the Foam and Fuel Baffle assembly with the end sticking out of the fuel pump hole.

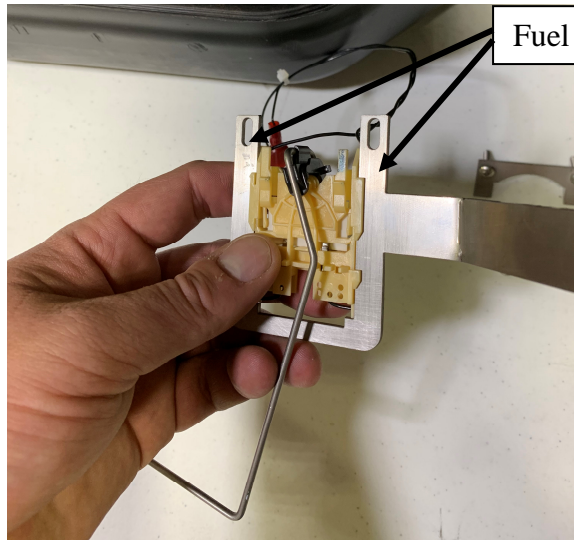


13. Carefully remove the OEM Fuel Level Sender from the OEM fuel pump assembly.
14. Cut the OEM connector off of the Fuel Level Sender, leave as much wire length as possible.
15. Strip the ends of the two wires and crimp on the supplied 2 – male quick disconnect connectors.



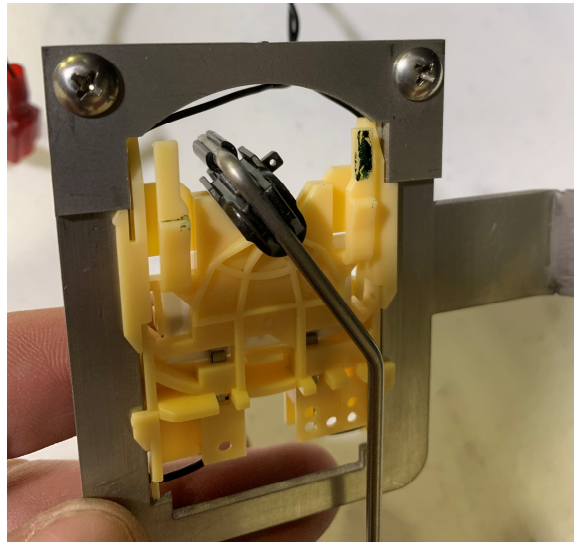
Install quick disconnect connectors on OEM Fuel Level Sender wires.

16. Install OEM Fuel Level Sender on Fuel Level Sender Bracket. First remove the Fuel Level Sender Retainer from the Bracket by loosening the two 6-32 screws/nuts. Once the retainer is removed, slide the OEM Fuel Level Sender onto the bracket by lining up the grooves on the side of the OEM Fuel Level Sender with the “legs” of the Fuel Level Sender Bracket.



Fuel Level Sender Bracket Legs

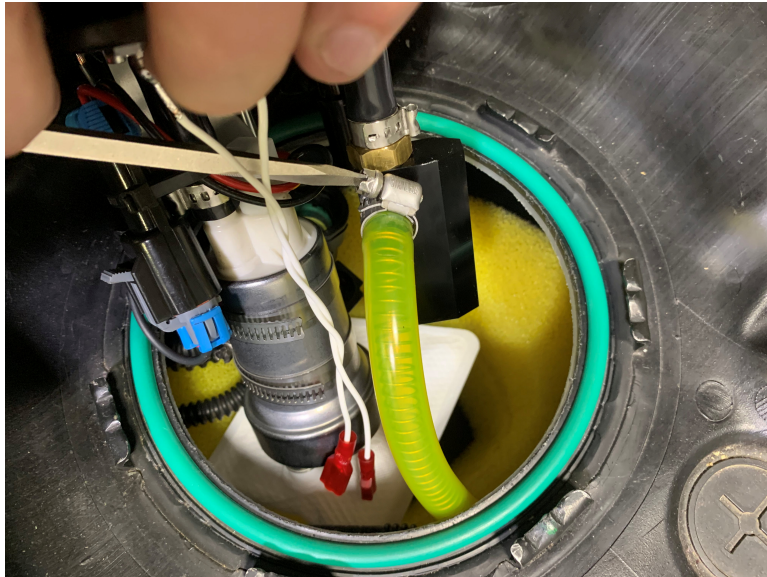
17. Slide the OEM Fuel Level Sender down until it bottoms out in the Bracket groove. Then install the Fuel Level Sender Retainer using the provided 6-32 screws, washers, lock washers, and nuts. **Note: Ensure the OEM Fuel Level Sender is installed as shown in the picture otherwise it will not be oriented correctly in the tank and will result in an incorrect fuel level readings.**



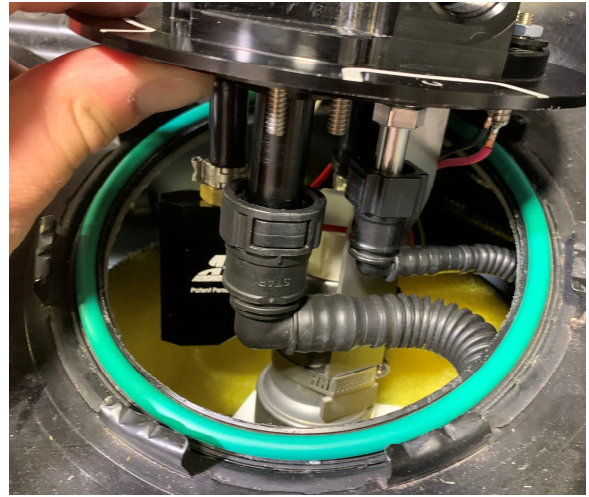
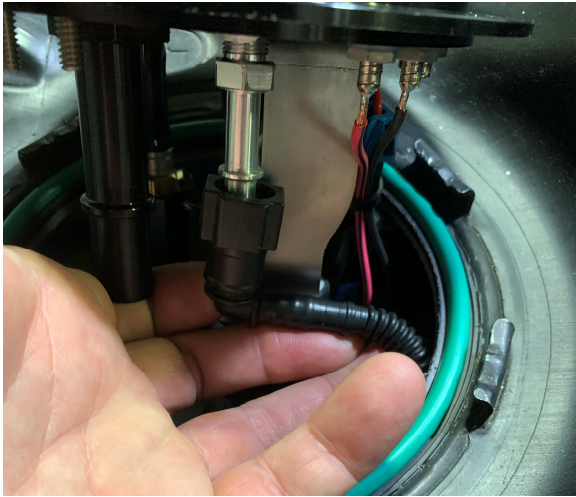
18. Loosely insert the Fuel Level Sender Bracket/Sender assembly into the tank over the top of the Foam assembly, the Level Sender should be pointing towards the front of the tank. Once inserted, let the Fuel Level Sender Bracket attachment flange hang on the edge of the hole as shown in the following images.



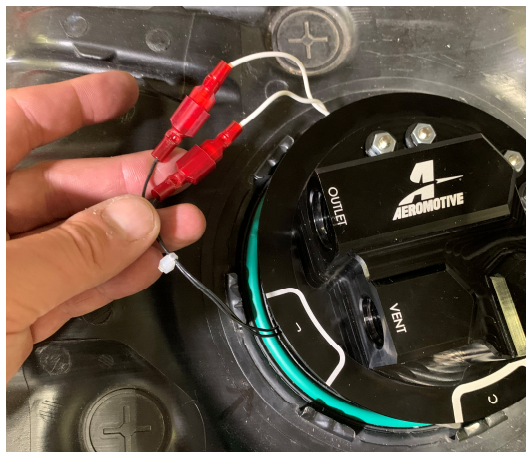
19. Install a new Fuel Pump gasket (not included) in the gasket groove. **Note: Reusing the old gasket is not recommended.** Loosely insert the Fuel Pump Assembly into the tank, (the Outlet Port should be facing towards the front of the tank).
20. Connect the Siphon Adapter Hose to the Siphon body hose barb with the supplied hose clamp.



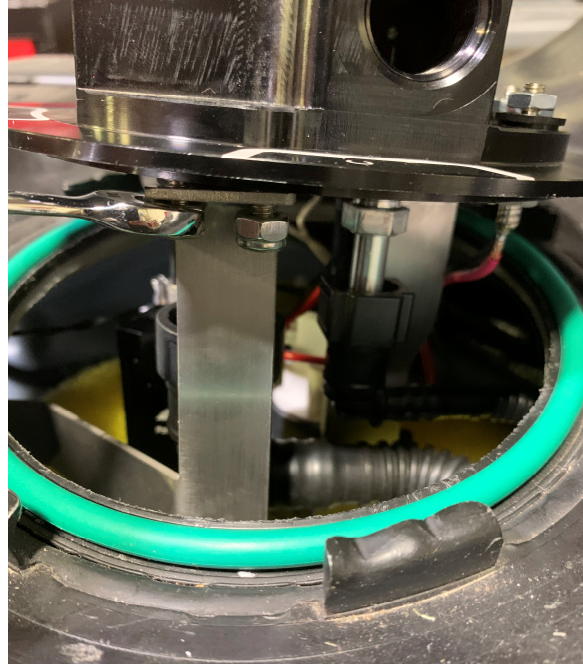
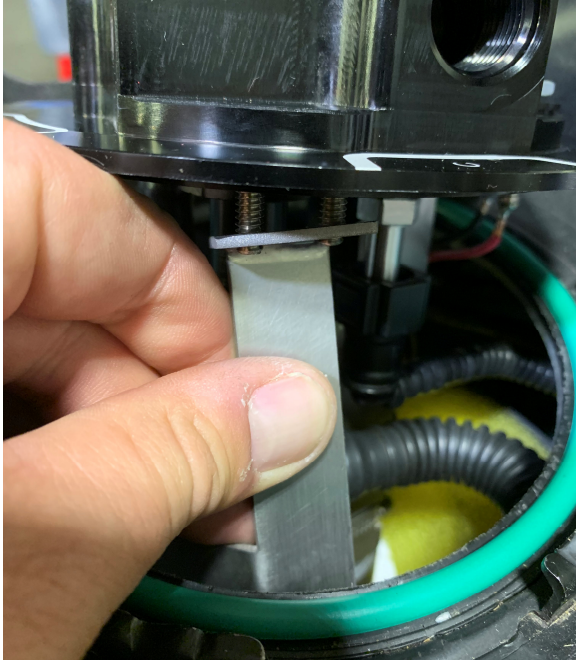
21. Connect the Gas Recirc Line to the 5/16" quick connect fitting on the underside of the Fuel Pump Assembly outlet cap, then connect the Tank Vent Line to the 5/8" quick connect fitting on the underside of the Fuel Pump Assembly outlet cap.



22. Connect the white LVL wires with the wires from the OEM Fuel Level Sender using the quick disconnect connectors. **Note: It doesn't matter which wires are connected to each other as the circuit is resistance based.**



23. Push the Fuel Level Sender wires back into the tank, ensure they are not sticking out of the tank and will get pinched between the tank surface and the outlet cap.
24. Connect the Fuel Level Sender Bracket to the underside of the Fuel Pump Assembly outlet cap. To do this, pick up on the Fuel Level Sender Bracket mounting flange and line up with the 2 – 10-24 studs on the bottom of the outlet cap. Use the 2 - 10-24 Nyloc nuts to tighten the Fuel Level Sender Bracket to the bottom of the outlet cap. A small 3/8" wrench works well for this step.



25. Push the Fuel Pump Assembly down into the tank and rotate the outlet cap until the markings with the "J" are lined up as shown in the following image with the arrow on the tank. Secure the outlet cap to the tank with the OEM lock ring.



26. Install the provided 5/8" quick connect fitting into the Vent port on the outlet cap. **Note: Although the OEM Tank Vent and Fuel Recirc Lines are connected internally in the tank to the bottom of the outlet cap, new or manipulated lines will need made/sourced by the Installer to allow for optimal connections to the outlet cap ports.**



Note: Aux. Terminals are not used in this application and should have no wires connected to them.

Note: Be sure to route all fuel lines clear of any moving suspension or drivetrain components, and any exhaust components! Protect fuel lines from abrasion and road obstructions or debris.

Note: Per MOPAR HELLCAT™ Engine Kit Instructions; it is highly recommended that a pulse width modulated variable pressure fuel pump and fuel delivery is used with the HELLCAT™ Engine package. The 525 pump installed on the Aeromotive HELLCAT™ swap fuel pump assembly is compatible with pulse width modulation (PWM). A separate fuel pump harness and fuel pump control module (FPCM) is required from MOPAR in order to properly control the pulse width modulation function of the pump. See the 6.2L Supercharged Crate HEMI™ Engine Kit Instruction Sheet for details on this harness and the installation procedure. MOPAR instructions indicate that diagnostic trouble codes may appear if the fuel pump harness and fuel pump control module is not used to control the fuel pump.

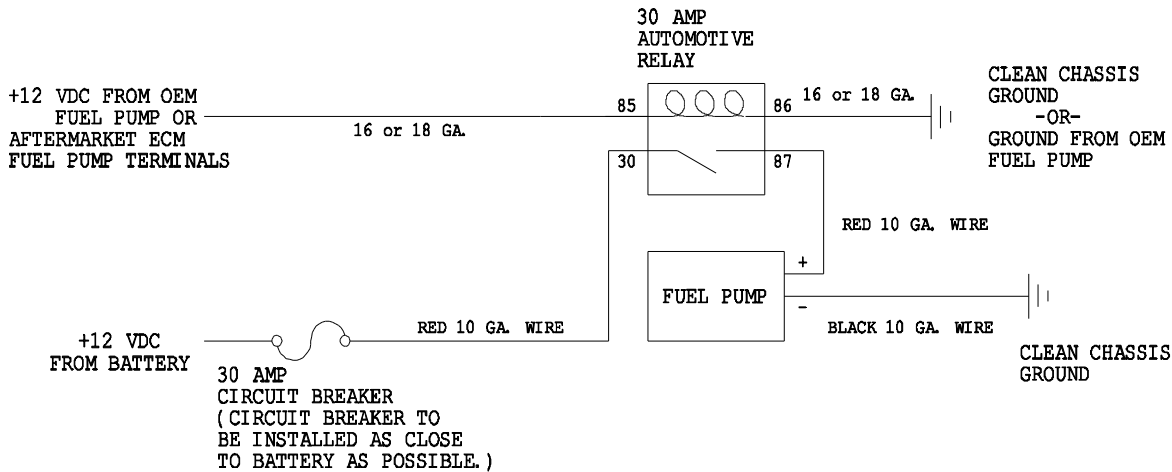
When controlling the pump with pulse width modulation a bypass fuel pressure regulator is not required and not recommended. This eliminates the need for a fuel return line. The return line port on the fuel outlet cap is intended to be connected to the Gas Recirc Line if not being used as a fuel return. The fuel pressure will be controlled by the fuel pump control module from MOPAR.

If not using the suggested MOPAR PWM harness, an EFI bypass fuel pressure regulator will be required for system operation (i.e. Aeromotive 13134 with 75-120 psi spring installed). A return line to the fuel tank will be required if using a bypass regulator. See MOPAR HELLCAT™ Engine Kit Instructions for required fuel system pressure. Note: MOPAR instructions indicate that diagnostic trouble codes may appear if the fuel pump harness and fuel pump control module is not used to control the fuel pump. The Gas Recirc Line cannot be connected to the tank if the system is being converted to a return style as the return port is intended to be used as the Gas Recirc Line port.

If not using the suggested MOPAR pulse width modulated harness to control the fuel pump, connect the Aeromotive fuel pump with the following procedure and as shown in the diagram:

27. Connect electrical power (12 VDC) power and ground to the pump. Aeromotive wiring kit P/N 16307 is recommended. Make sure you use stranded, insulated copper wire, in the sizes shown, with matching crimp-type connectors for all connections. **Note: The two LVL terminals on the outlet cap will need connected to the OEM fuel level sender wires in the OEM fuel tank wiring harness. These wires will need to be located and have ring terminals installed to connect to the LVL terminals on the outlet cap.**

Note: Route all electrical wires clear of any moving suspension or drivetrain components and any exhaust components! Protect wires from abrasion and road obstructions or debris.



CAUTION: While performing the following steps, if any fuel leaks are detected, immediately turn the fuel pump OFF, remove any spilled fuel and repair the leak(s) before proceeding!

28. Turn the fuel pump ON without starting the engine, allow the pump to run for several seconds and check the fuel pressure. If no pressure, turn the fuel pump OFF, wait one minute, then turn the fuel pump ON and recheck the pressure. Repeat this fuel pump OFF and ON procedure until the fuel pressure gauge registers pressure or you detect a fuel leak. If necessary, loosen the fuel line fitting at the fuel rail to bleed off excessive air in the system. Tighten any fuel line fittings which were loosened and ensure that any spilled fuel is cleaned up and removed from the vicinity of the vehicle. If no pressure is registered on the gauge after running the pump for several seconds and you have found no leaks, check all fuel and electrical connections to determine the cause.
29. Once the fuel pressure gauge registers pressure, start the engine. The gauge on the fuel pressure regulator should register between 35-80 for EFI. Test drive the vehicle to ensure proper operation and re-check the fuel system for leaks. If any leaks are found, immediately discontinue use of the vehicle and repair the leak(s)!

Contact US

RGA NUMBER REQUIRED FOR ALL RETURNS TO AEROMOTIVE.

To obtain an RGA number, please call (913) 647-7300 and ask for the Returns and Repairs department.

- **Shipping Address**

Aeromotive Inc.
7805 Barton St.
Lenexa, KS 66214

- **Sales & Returns**

Aeromotive Inc.
11414 W 79th Street.
Lenexa, KS 66214

General Inquiries and Tech Line: (913) 647-7300

General Email: info@aeromotiveinc.com

Tech Email: tech@aeromotiveinc.com

The Aeromotive Tech Lines are open Monday through Friday from 9:30AM to 5:00PM Central Standard Time.



WARNING: This product can expose you to chemicals, including chromium, which is known to the State of California to cause cancer or birth defects or other reproductive harm. For more information, visit: www.p65Warnings.ca.gov

AEROMOTIVE, INC. LIMITED WARRANTY

This Aeromotive Product, with proof of purchase dated on or after January 1, 2003, is warranted to be free from defects in materials and workmanship for a period of one year from the original date of purchase. No warranty claim will be valid without authentic, dated proof of purchase.

This warranty is to the original retail purchaser and none other and is available directly from Aeromotive and not through any point of distribution or purchase.

If a defect is suspected, the retail purchaser must contact Aeromotive directly to discuss the problem, possible solutions and obtain a Return Goods Authorization (RGA), if deemed necessary by the company. Please call 913-647-7300 and dial option 3 for the technical service dept. All returns must be shipped freight pre-paid to the company and with valid RGA before they will be processed.

Aeromotive will examine any product returned with the proper authorization to determine if the failure resulted from a defect or from abuse, improper installation, misapplication or alteration. Aeromotive will then, at it's sole discretion, return, repair or replace the product.

If any Aeromotive product is determined defective, buyer's exclusive remedy is limited in value to the sale price of the good. In no event shall Aeromotive be liable for incidental or consequential damages.

Aeromotive expressly retains the right to make changes and improvements in any product it manufactures and sells at any time. These changes and improvements may be made without notice at any time and without any obligation to change the catalogs or printed materials.

Aeromotive expressly retains the right to discontinue at any time and without notice any Aeromotive product that it manufactures or sells.

This warranty is limited and expressly limits any implied warranty to one year from the date of the original retail purchase on all Aeromotive products.

No person, party or corporate entity other than Aeromotive shall have the right to: determine whether or not this Limited Warranty is applicable to any Aeromotive product, authorize any action whatsoever under the terms and conditions of this Limited Warranty, assume any obligation or liability of any nature whatsoever on behalf of Aeromotive under the terms and conditions of this Limited Warranty.

This Limited Warranty covers only the product itself and not the cost of installation or removal.

This Limited Warranty is in lieu of and expressly excludes any and all other warranties, expressed or implied. This Limited Warranty gives you specific legal rights, and you may also have other rights which vary from state to state.