



AEROMOTIVE
Part # 19130/19131/19132/19133
2014-2019 Corvette (C7)
Pump Module
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!



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, etc.

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

Aeromotive system components are not legal for sale or use on emission-controlled motor vehicles.

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

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

Maximum continuous operating pressure should not exceed 70psi.

The enclosed Aeromotive fuel pump utilizes AN-10 ORB (O-ring Boss Port) style for the outlet and -08 ORB for the return and -06 ORB vent ports; these ports are **NOT PIPE THREAD** and utilize **NO THREAD SEALANT**.

Aeromotive Related Components:

Fuel Filters:

12310 (pump/race gas) 10 micron (A1000)
12339 (race gas/E85) 10 micron (A1000)
12341 (race gas/E85) 10 micron (Eliminator, 3.5 and 5.0)
12305 (filter bracket)

Check Valves:

15107 (-10AN)

Fuel Pressure Regulators:

13303 (-8 ORB ports) A1000
13305 (-8 ORB ports) Eliminator
13134 (-10 ORB ports) 3.5 and 5.0

Fuel Pressure Gauge:

15633 (dry 0-100psi)

Direct Injection High Pressure Pump Inlet Tee Fitting:

15137 (2x -08 ORB Port x 3/8 Quick Connect)

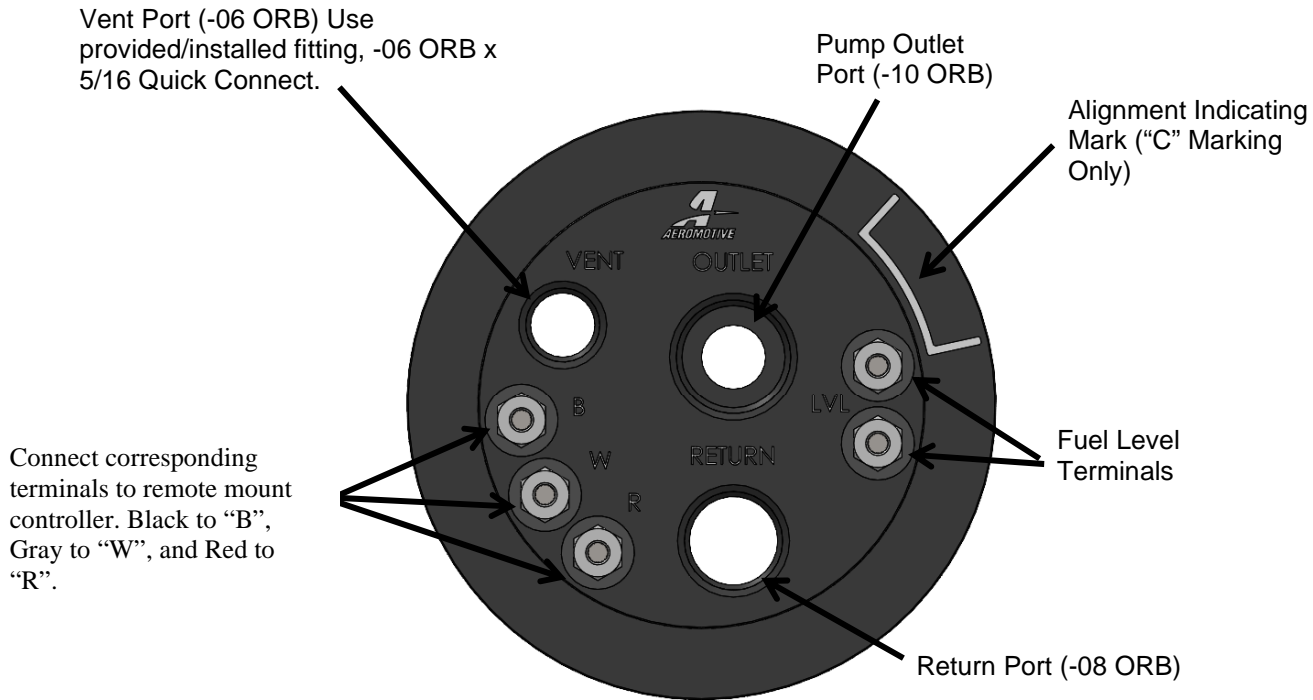
Outlet Cap Port Fittings: Included

15757 (-8 ORB x -8 AN Male Direct Port)
15690 (-10 ORB x -8 AN Male Direct Port)

Electrical Components:

16307 (30 Amp Pump Wiring Kit) Use with A1000, Eliminator, and 3.5 Pump Modules
16308 (60 Amp Pump Wiring Kit) Use with 5.0 Pump Module

NOTE: This pump module installation requires an experienced tuner/installer that is familiar with integrating the OEM direct injection system with a supplemental fuel system. This system is intended to fuel both the OEM direct injection system in conjunction with a supplemental fuel system. Integrating the direct injection wiring and plumbing with the supplemental wiring and plumbing should only be done by an experienced tuner/installer. Upgraded wiring is required to power the fuel pump installed on this pump module. (Note: refer to controller module instructions for specific wiring requirements).

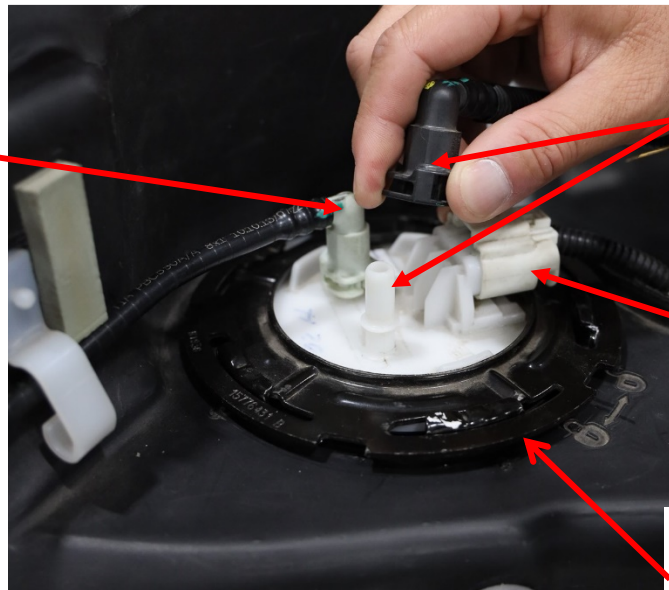


OUTLET CAP LAYOUT

The following steps are typical of most installations:

1. Drain the fuel tank, relieve system pressure (refer to service manual for proper procedure), and disconnect the battery.
2. Remove the fuel tank from the vehicle following the manufacturer's suggested procedure (refer to service manual for proper procedure).
3. Remove the fuel line and vent tube using a quick connect on the quick connect fittings and unplug the wire connectors. Be sure to not damage the vent tube as this will be reconnected to the new outlet cap. Wipe the top of the fuel pump module clean to limit the amount of dirt and debris that can fall into the tank.

OEM Tank Vent – Disconnect hose and fitting, Save and reuse during reassembly.

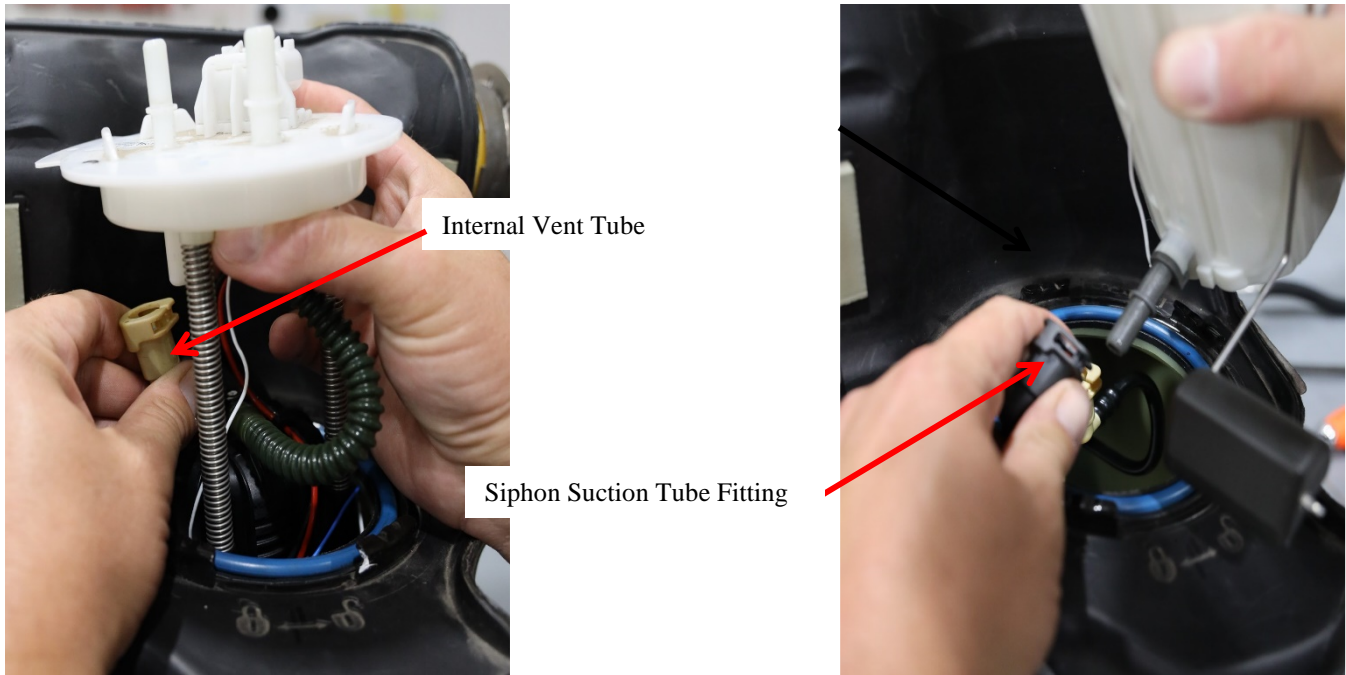


OEM Fuel Line and Fitting – Disconnect hose and fitting, not used during reassembly.

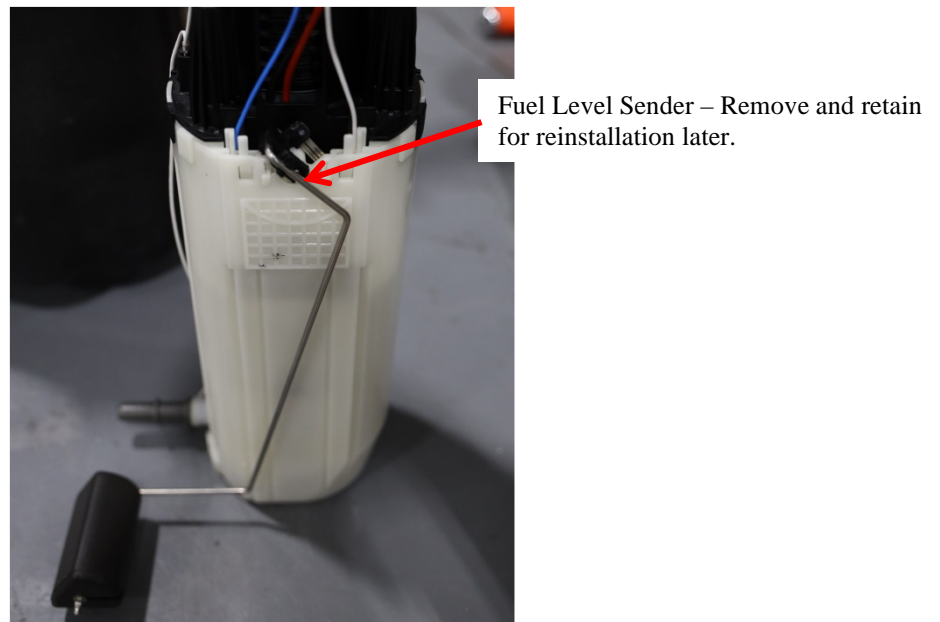
OEM Electrical Connector – Disconnect from pump module, not reused during reassembly.

OEM Lock Ring – Save and reuse during reassembly.

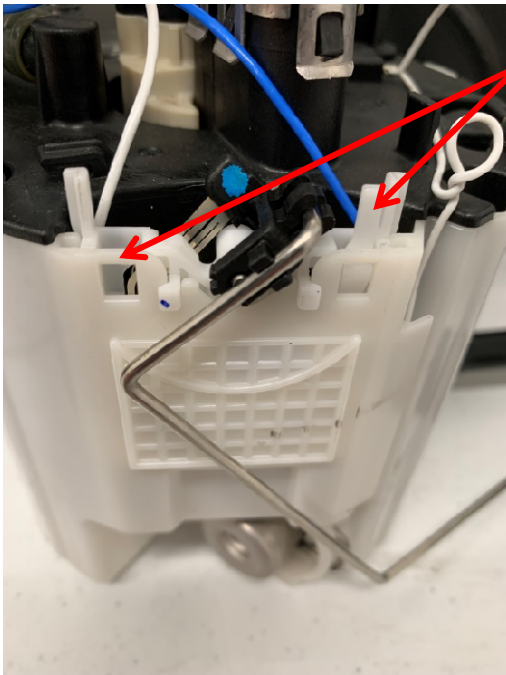
4. Remove the lock ring from the top of tank, (only remove the lock ring from the pump side, the siphon side lock ring will not be removed). Remove the pump module from the tank by carefully lifting up on the module and then disconnecting first the internal vent tube, then the siphon suction tube. **Note: All internal tank quick connect hoses are reused, do not cut or destroy fittings during disassembly.** Be careful not to spill fuel or damage the fuel level sending unit as shown in the image following.



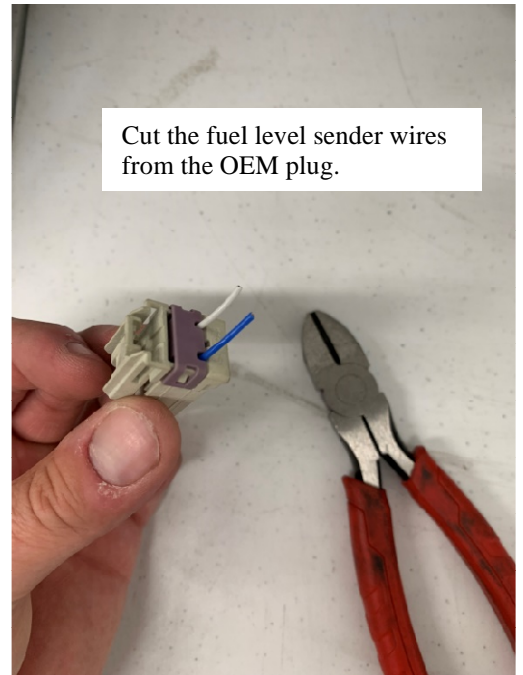
CAUTION: Immediately wipe up any fuel spills from the hoses.



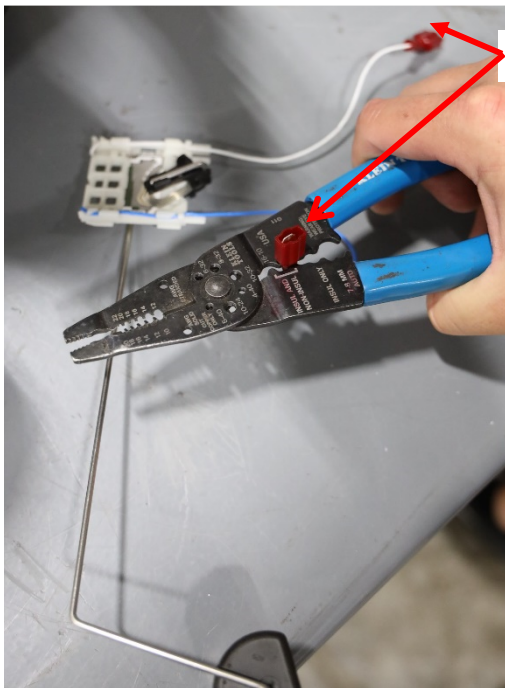
5. Once the OEM fuel pump module is fully removed from the tank, carefully remove the fuel level sender from the OEM fuel bucket. To do this, depress the two small tabs shown in the following image: slide the fuel level sender up to remove from the fuel bucket. (See picture below). Unplug the fuel level sender wires from the bottom of the OEM fuel outlet cap.



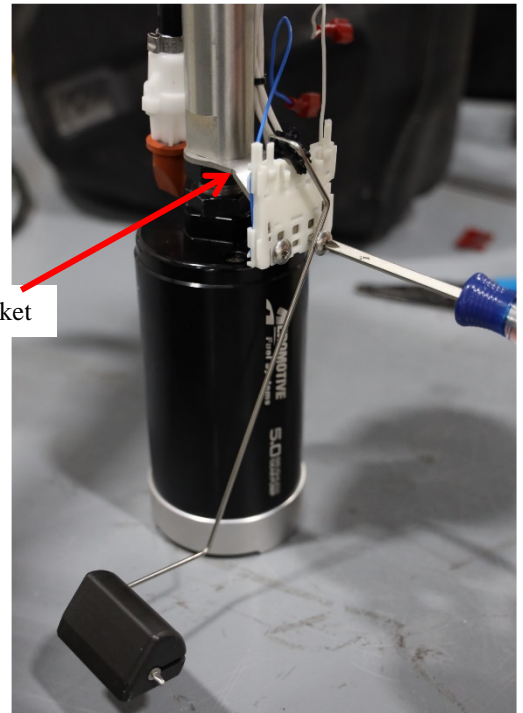
Depress two plastic tabs to remove- fuel level sender.



6. Cut the wires from the fuel level sender near the plug as shown in the above image, leave as much wire length as possible on the fuel level sender.
7. Strip the ends of the wires from the fuel level sender. Crimp on the new male blade connectors as shown in the following image.

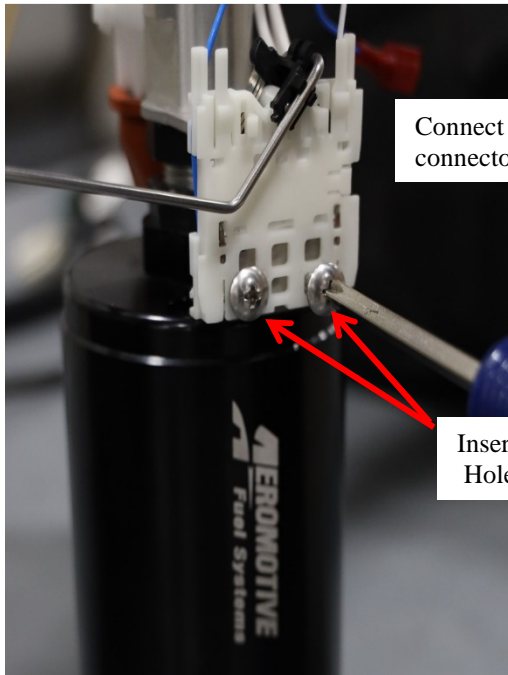


Blade Connectors



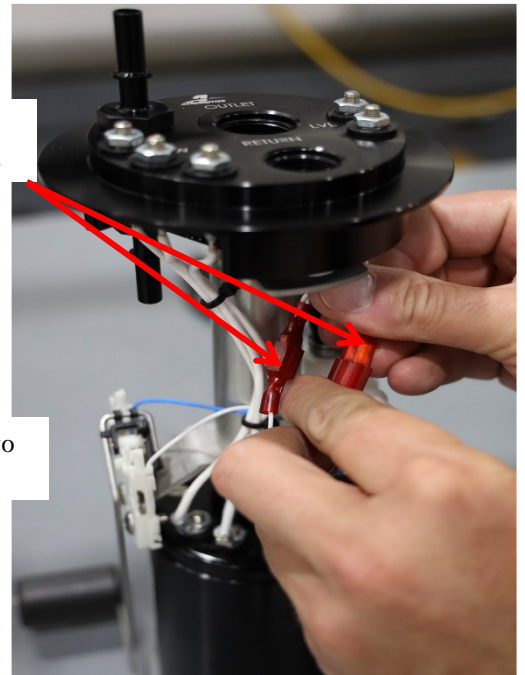
Fuel Level Sender Mounting Bracket

8. Attach the OEM fuel level sender to the Fuel Level Sender Mounting Bracket as shown in the above image. To do this, use the two provided 10-32 truss head screws to attach the level sender to the bracket. The screws should be inserted through the bottom two square holes of the plastic as shown in the below image. **Note: If the screws are installed in the top two holes the level sender will read incorrectly or not work properly. Note: Be careful not to overtighten the screws which can break the plastic of fuel level sender or distort the fuel level sender, resulting in a faulty reading at the gauge.**

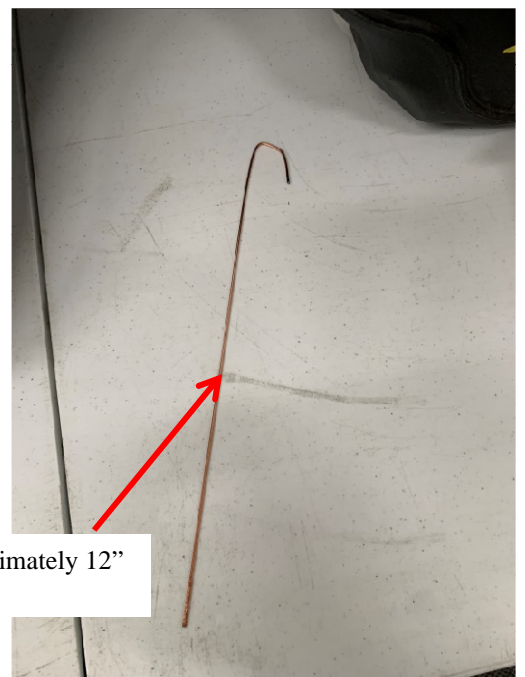


Connect male and female blade connectors to LVL wires from Outlet Cap.

Insert Screws Through the Bottom Two Holes in the Fuel Level Sender.

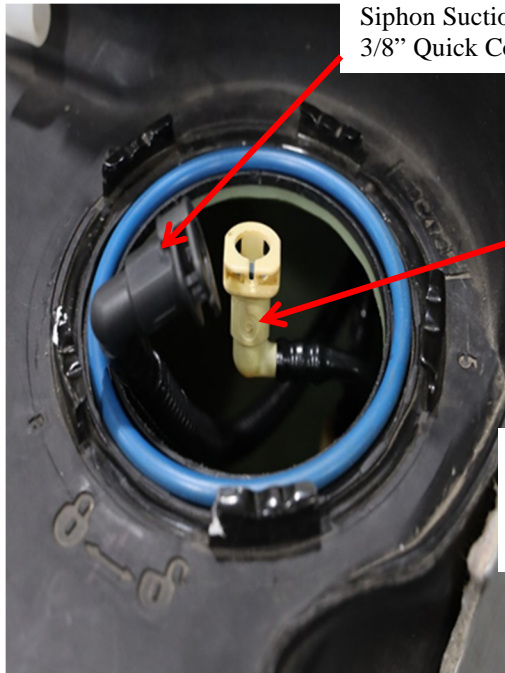


9. Connect the two male and female blade connectors with the white wires from the “LVL” terminals on the bottom of the outlet cap. **Note: Route the wires from the fuel level sender to ensure they are secure and do not interfere with the movement of the fuel level sender arm. Securing the wires with a small nylon cable tie may help keep the wires from interfering with the fuel level sender arm movement.**
10. Ensure all wires are not interfering with the fuel level sender and the arm has full range of motion.
11. Loosely insert the pump assembly into the fuel tank; there are two hoses inside the tank that will connect to the new fuel pump assembly. Be careful not to damage the fuel level sender when inserting the pump into the tank. **Note: It is helpful to have a small wire with a hook on one end to help retrieve the hoses inside the tank.**



Wire with hook end - (approximately 12” length).

12. The two hoses inside the tank are shown in the image below; these hoses are used during the fuel pump module installation.



Siphon Suction Hose –
3/8” Quick Connect

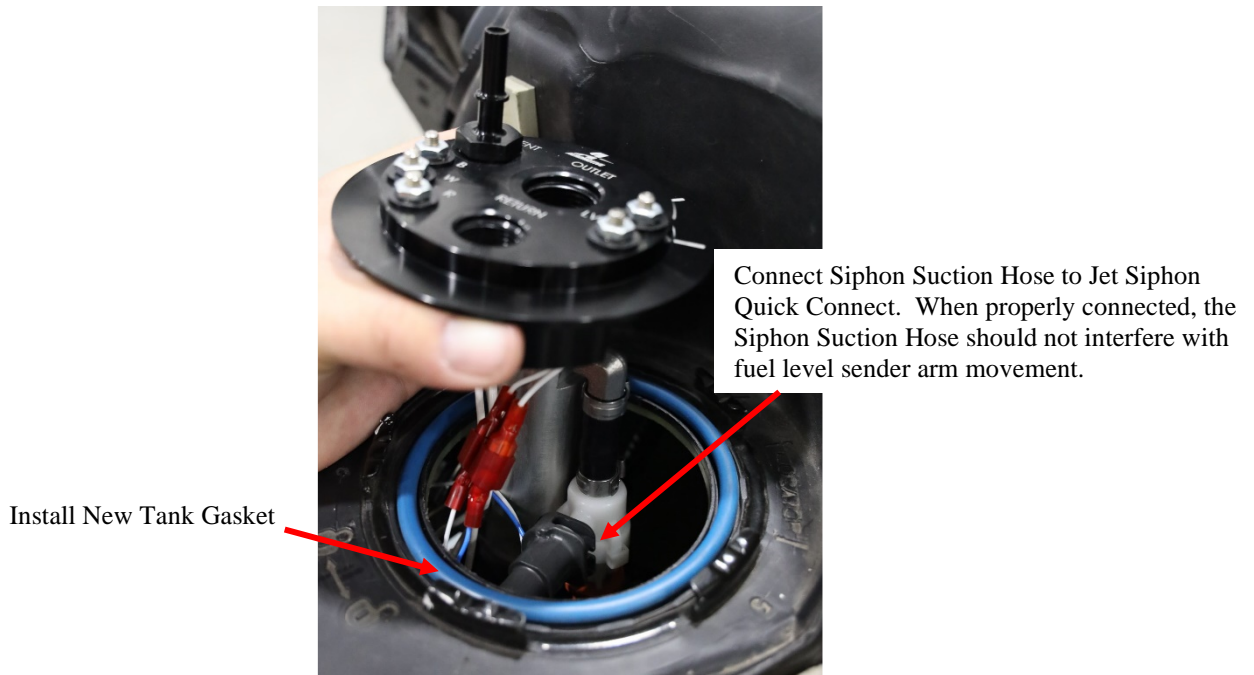
Tank Vent Hose – 5/16”
Quick Connect

Use straight edge to hold
back Vent Hose if needed
while inserting pump in
tank.

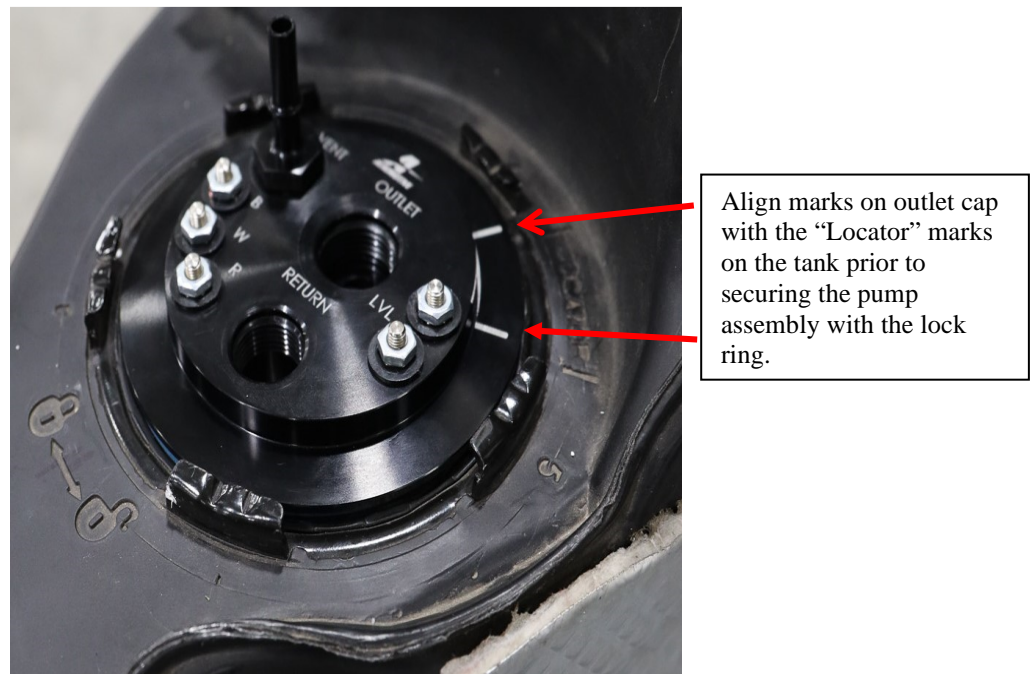


13. Once the pump assembly is loosely inserted inside the tank, first connect the Tank Vent Hose to the Vent Fitting on the bottom of the Outlet Cap as shown in the image above. Ensure the connector is fully engaged and is secured on the fitting with the fitting retainer clip. **Note: If the quick connect fitting retainer clip is damaged during disassembly, stop and replace the retainer clip prior to continuing with the installation. The hose will not stay connected to the fitting if this clip is missing or damaged. Note: It is sometimes helpful to use a straight edge to hold the Vent Hose back when inserting the pump assembly in the tank, so it doesn't catch on the bottom of the pump.**





14. Once all internal tank hose connections are made, install a new tank gasket (not included) around the outlet cap and position in the tank seal groove. Ensure the gasket is properly seated in the groove prior to fully installing the fuel pump assembly.
15. Rotate the pump assembly to align the marking on the outlet cap with the “Locator” marking on the tank. **Note: Ensure these two markings are properly aligned prior to securing the lock ring, the fuel level sender will read incorrectly if the markings are misaligned.**

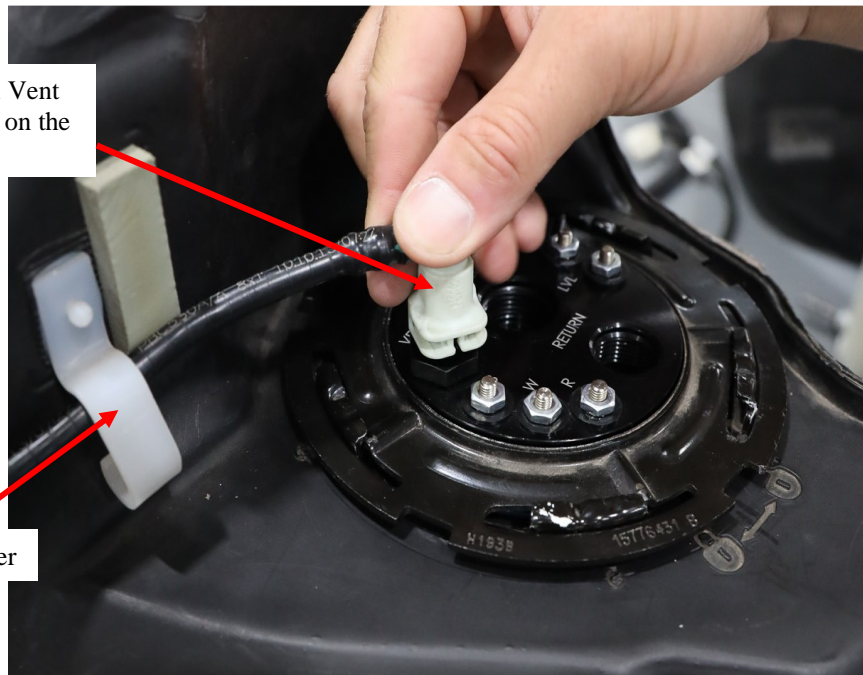


16. Once the markings are properly aligned, secure the pump assembly to the tank with the OEM lock ring.



17. Re-install the external vent tube on the outside of the tank that was removed during disassembly. Secure the quick connect fitting and push the tube back into the OEM tank retainer as shown in the below images.

Re-attach OEM external Vent Tube to the Vent Fitting on the Outlet Cap.



OEM Vent Tube Retainer

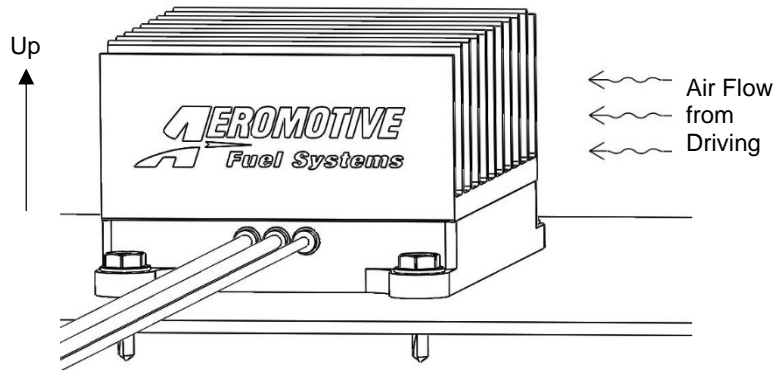
NOTE: You must install a bypass style regulator (Aeromotive part # 13303 for A1000, 13305 for Eliminator, or 13134 for 3.5 and 5.0) with a return line for the fuel pump to function correctly. Failure to do so will result in poor performance and fuel pump/system failure.

18. Feed and return lines need to be plumbed into the vehicle now. It's recommended to run -AN-08 feed for A1000, Eliminator, 3.5, and 5.0 pump assemblies. The return line should be AN-08. Install the included outlet and return fittings in the outlet cap (PN's: 15757 (Return Port) and 15690 (Outlet Port). **Note: Install the Outlet Port fitting first, then using two wrenches, install the return port fitting. Hold the top portion of the fitting with one wrench and carefully turn the lower hex to tighten fitting to the Outlet Cap surface. Use the wrenches to clock the fitting outlets in the desired positions.** Fuel lines should be routed and secured away from moving suspension components and exhaust pipes. Attach a suitable fuel pressure gauge to the fuel system Schrader valve,

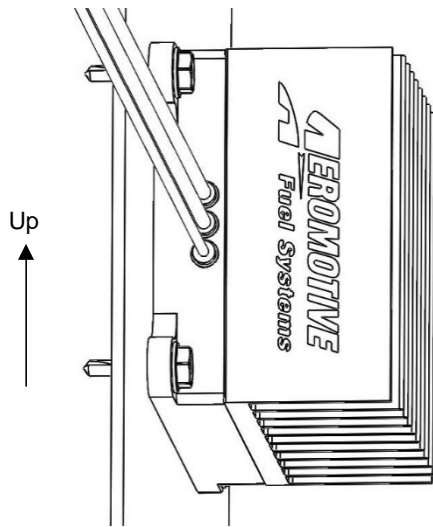
fuel rail, or fuel pressure regulator test port. Examples: **Aeromotive P/N 15633 0-100 PSI (1 ½") Fuel Pressure Gauge.**

19. The Brushless Aeromotive fuel pump controller requires its own relay and 12V power wire along with a 0-5 volt analog input for the use of the True Variable Speed function. The use of Aeromotive fuel pump wiring kit (part # 16307) is recommended to power the A1000, Eliminator, and 3.5 remote mount brushless pump controller, use (part # 16308) for the 5.0 remote mount brushless pump controller. **Note: Since the factory fuel pump is pulse modulated you CANNOT use the factory fuel pump wires to trigger the relay or the 0-5v input for the True Variable Speed function.**
20. As mentioned above, the Brushless Pump Assemblies are controlled by a remote mount brushless pump controller, which must be installed correctly for the pump to function properly. Refer to the following instructions on wiring the brushless controller or refer to the instructions provided with the included controller itself, PN: 180-48A1-0F-01.
21. Determine a suitable location to mount the new controller remote from the pump considering the following:
 - a. It is recommended to keep the controller-to-motor lead wire lengths as short as possible for best pump performance.
 - b. If desired, motor lead extensions can be used but should be kept as short as possible and lead extensions should be sized large to keep electrical resistance low (you may even want to use a larger size for the extensions than the provided leads for long extensions).
 - c. The controller is fully sealed so it can be mounted externally (frame rail, e.g.). The controller sink is designed to be able to handle low air flow so it can also be mounted internally (trunk, e.g.). However, for best results, it is recommended to mount the controller such that it will receive the most and coolest air flow.

When mounting the controller externally and in a location that will likely receive air flow from driving, mount the controller with fins parallel to the airflow and, if possible, upward (not required with sufficient air flow) as in the following image.



When mounting the controller internally or behind obstructions in a location that will not receive much air flow from driving, mount the controller with the fins vertically as in the following image to achieve the maximum natural convective cooling.

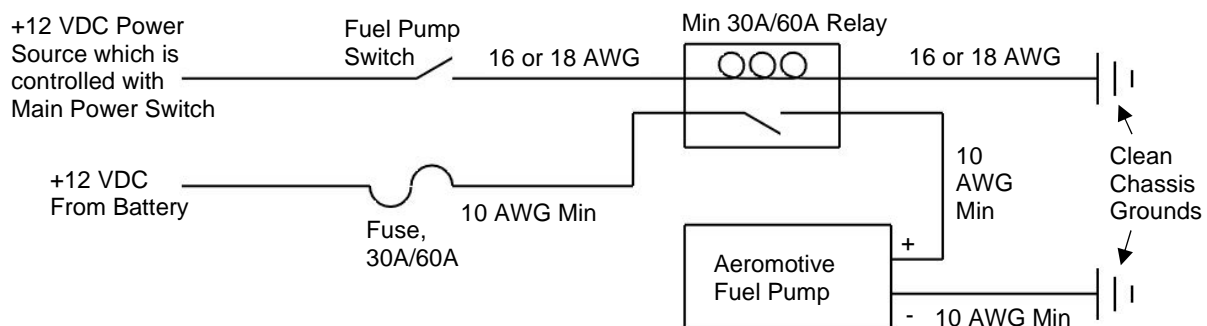


- d. **NOTE: THIS CONTROLLER CAN GET HOT** when using full power (60A) continuously with little air flow. **Mount away from locations prone to fuel vapor (e.g., tank vent).**
22. Once a suitable location is found, mount the controller in the recommended orientation using the four #10 self-drilling screws.
23. Crimp the #10 ring terminals to the motor lead wires after cutting to length if not using extensions.
24. Connect the three motor leads from the new controller to the pump matching the colors to the previous wire locations (In most cases, the black lead connects to the “B”, red to “R”, and white to “W”). Secure connections using the #10-32 nuts, firmly holding the terminal end in place while tightening.

CAUTION: Ensure that any spilled fuel and any fuel-soaked shop towels are cleaned up and removed from the vicinity of the vehicle before proceeding.

25. Reconnect power to the new pump controller as shown in the following diagram, +12VDC to the red lead, Ground to the black lead. **NOTE: POWER TO THE PUMP MUST BE FLAT DC, NOT PULSE WIDTH MODULATED!**

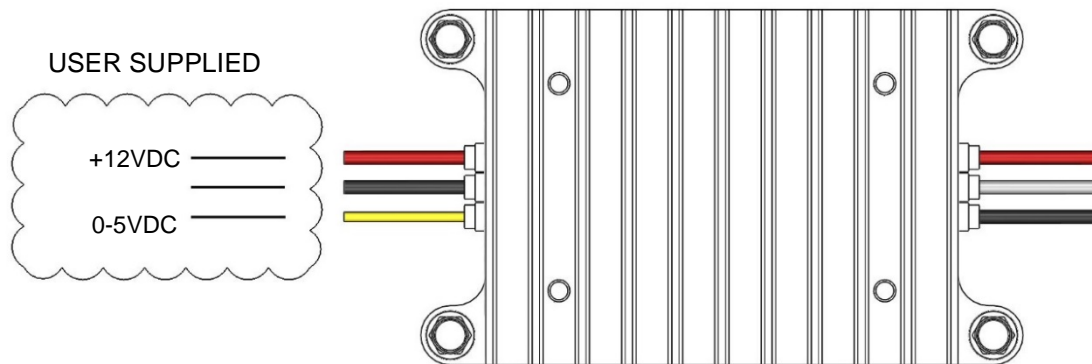
CAUTION: DO NOT REVERSE THE POLARITY-CONNECT AS ABOVE. Reversing the polarity will render the controller inoperable and will void all warranties for this product!



26. This pump controller allows the ability to change the speed of the pump via a 0-5VDC analog input to the yellow signal wire. **THE CONTROL SIGNAL MUST BE A TRUE ANALOG INPUT, NOT PWM.** The signal wire used to control the speed of the pump may be connected in ONE of multiple configuration examples as shown in the following illustrations to control the speed of the pump.
27. This pump controller has a minimum floor for pump speed of approximately 40% depending on the pump. This means that fuel pump speed will not fall below 40% of full speed with zero input voltage on the yellow control signal wire.

28. This pump controller has a minimum voltage threshold of approximately 0.5VDC. Voltage above 0.5VDC on the yellow input wire will increase the speed of the pump. Signal input of voltage below 0.5VDC will have no effect on pump speed. This ensures allowance for minimum, closed throttle TPS settings of up to 0.5VDC without affecting fuel pump speed at idle.
29. This pump controller has a full pump speed voltage threshold of approximately 3.7VDC, where the full pump speed will be achieved with signal input voltage at or above 3.7VDC and above which no further change in pump speed will occur. This ensures that when a TPS signal is used to drive pump speed that typical throttle openings of 70-75% and higher will ensure full fuel pump volume is delivered to the fuel rail or carburetor. Voltage between 0.5VDC and 3.7VDC will vary the speed of the fuel pump according to the voltage applied.

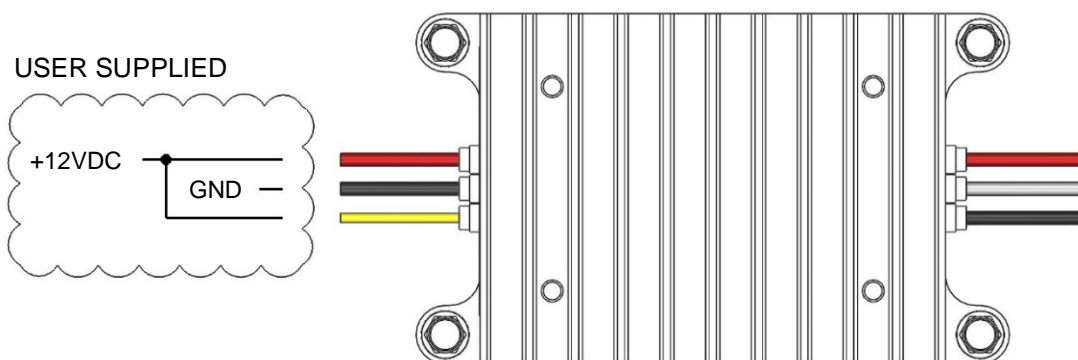
CONTROL CONFIGURATIONS:



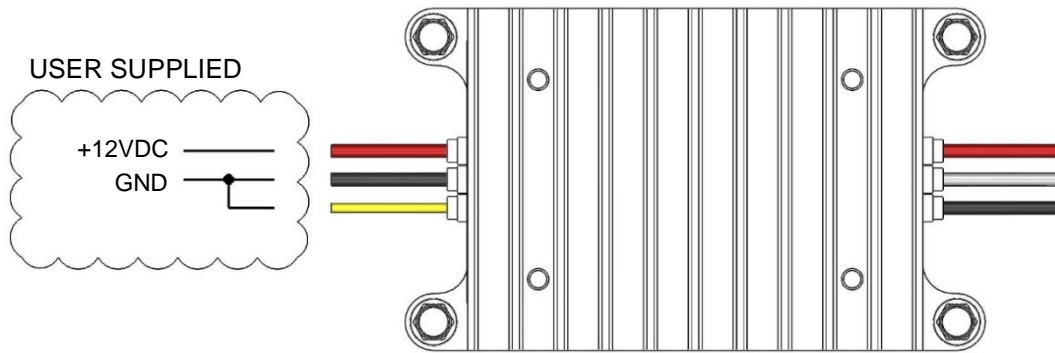
MODE 1 – TPS or Other 0-5VDC Input Control

Aeromotive recommends the “Mode 1” control method where the 0-5VDC signal input is tied to a Throttle Position Sensor using the output wire to the ECU. The intent for this control is to reduce the fuel pump output (and thus the amount of returned fuel flow) during low throttle opening (low engine demand) to reduce excess recycling of fuel to help keep fuel tank temperatures low. Alternatively, other 0-5VDC analog output sensors (some MAF sensors, a 2 or 3-Bar MAP sensor, etc.) or voltage dividing/regulating/switching components may be used. It is the customer’s responsibility to ensure a signal supply and control strategy where the fuel flow is sufficient to meet engine demand.

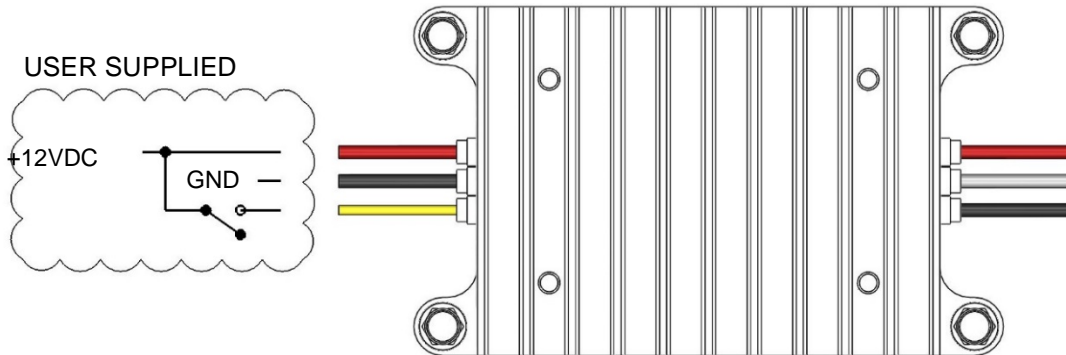
If no signal supply is suitable or desired, the controller can still be wired for use as in Modes 2 – 4, as shown following, to allow different fuel pump speed and flow outputs from the pump.



MODE 2 – Constant Full Speed



MODE 3 – Constant Low Speed



MODE 4 – Switched Speed On - Demand from Low to High

Mode 4 can be activated by any relay or switch providing 5VDC or higher (system voltage up to 19VDC is fine) to the control wire. A relay for this purpose could be activated using the programmable output from a tunable ECU, or via a boost Hobb's or WOT switch connected to 12VDC to name a few examples.

Ensure that any spilled fuel and any fuel-soaked shop towels are cleaned up and removed from the vicinity of the vehicle.

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

30. Turn the ignition to ON **without starting the engine**, allow the pump to run for several seconds and check the fuel pressure. If there is no pressure, turn the ignition to OFF, wait one minute, then turn the ignition to ON and recheck the pressure. Repeat this ignition OFF and ON procedure until the gauge registers pressure or you detect a fuel leak. 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. **IF THE PUMP IS RUNNING BACKWARDS, REPEAT THE ABOVE STEPS SWITCHING ANY OF THE TWO MOTOR LEAD WIRES FROM STEP 21**, then reconnect and retest the pump.

CAUTION: DO NOT REVERSE THE TWO POWER LEADS EXTERNAL TO THE CAP! Reversing the polarity of the main power and ground wires going into the controller will render the controller inoperable and will void all warranties for this product!

32. Once the fuel pressure gauge registers pressure, start the engine. The gauge on the fuel pressure regulator should register between 35 and 60 psi. Adjust the fuel pressure regulator to the desired setting.
33. 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 or complete the online form under the "Rebuilds" section at www.aeromotiveinc.com.

- **Shipping & Returns**
Aeromotive Inc.
10955 Mill Creek Road
Lenexa, KS 66219

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.