Low Pressure Fuel Pump
VW MK6 GTI

Low Pressure Fuel Pump Upgrade

Installation and User Guide

Thank you and congratulations on the purchase of your new Stratified Low Pressure Fuel Pump System. Follow this document to ensure safe and proper installation and operation of your new device.

WARNINGS AND WARRANTY – PLEASE READ CAREFULLY

ALL parts are sold for OFF ROAD RACE-ONLY ground vehicle use only.
Aftermarket systems interacting with engine function are not for use on pollution controlled vehicles. Alteration of emission related components constitutes tampering under most local emission regulation guidelines and can lead to fines and penalties.

Limited Warranty

This Stratified product is warranted against defects in materials and workmanship for ninety (90) days from date of purchase. During the warranty period, Stratified will repair, or at its option replace at no charge, components that prove to be defective. The product must be returned, shipping prepaid, to a Stratified facility. This limited warranty does not apply if the product is damaged by accident or misuse. The foregoing warranty is in lieu of all other warranties expressed or implied including but not limited to any implied warranty of merchantability, fitness, or adequacy for any particular purpose or use. Stratified Automotive Controls Ltd. is not responsible for any fines, injuries, or damages incurred as a result of the installation or use or misuse of our products. It is the complete responsibility of the purchaser of such products to ensure that they are used in a legal, safe, and appropriate manner.

DISCONNECT THE NEGATIVE BATTERY TERMINAL BEFORE PERFORMING ANY ELECTRICAL WORK ON YOUR VEHICLE. IF YOU DO NOT FEEL COMFORTABLE MAKING THESE MODIFICATIONS, HAVE THEM PERFORMED BY A PROFESSIONAL.

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1. Features and Benefits

Protects your Engine from Fuel Starvation:
To make more power you need two main components. Air and Fuel. With more boost and bigger turbochargers or superchargers, your OEM direct injection components can't supply the fuel needed for safe high power operation. This low pressure fuel pump will stabilize your low pressure fuel pump when there is a high demand of power. This will allow fuel to be readily available up to the limitation of the fuel injection system.

Provides The Fuel you Need for More Boost and Power:
Direct injection cars use expensive and complex components. When upgrading your vehicle to produce more power than stock, more fuel is needed. By upgrading your low pressure fuel pump, more fuel will be readily available for the OEM injectors or port injection.

Easy Installation:
We have worked very hard to make our systems as plug and play as possible. The kit you purchased is built and tested for your vehicle. This means everything fits right and works as it should from the get-go making it a painless and effective installation process.

Tested, Proven, Safe Solution:
We don't build and sell anything that we don't thoroughly test. The fuel pump is a proven, safe solution for increasing fueling on your vehicle and we stand behind its performance, capabilities, and reliability.

E85 Safe, Simple Adjustments:
All kit components are E85 safe. We make adjusting the fueling as simple as possible to make sure you get to your results quickly whether we tune the system or someone else does.

2. Introduction and Precautions

***IMPORTANT*: When installing and working with the Low Pressure Fuel Pump System you are working with flammable fluids. Take all safety precautions necessary during installation and operation of the fuel kit to prevent any fires or injuries. This means ensuring you are installing the system in a well-ventilated area away from any spark or flame source. After the installation and periodically thereafter check that the system continues to be leak free.**

The direct injection (DI) system in your vehicle is designed to supply enough fuel to run the OEM vehicle with OEM components. When converting to an aftermarket turbo, you will require to deliver more fuel. By use of an auxiliary system or upgraded high pressure fuel pump, there will be a lack of fuel delivery to those components. The low pressure fuel pump will be able to deliver the necessary amount of fuel to the engine.

3. Parts Included

Verify that all these components are included with your Stratified in-tank fuel pump. The pump will be assembled and ready to drop in. Below are the items that are included in the assembly.

Item	Specifics
1x – Assembled Low Pressure Fuel Pump	• **1x** – AEM Fuel Pump and Filter • **1x** – New Corrugated Hose • **2x** – Tightened Oetiker Clamps • **1x** – Fuel Float and Mechanism • **1x** – New Fuel Pump Basket • **1x** – 16-18 Guage Positap • **1x** – Ground Wire w/ Ring Terminal • **1x** – M6 Nut

4. Hardware Installation Instructions

***IMPORTANT*: When installing and working with the Low Pressure Fuel Pump System you are working with flammable fluids. Take all safety precautions necessary during installation and operation of the fuel kit to prevent any fires or injuries. This means ensuring you are installing the system in a well-ventilated area away from any spark or flame source. After the installation and periodically thereafter check that the system continues to be leak free.**

WARNING: Before working on or disconnecting any of the fuel tubes or fuel system components, relieve the fuel system pressure to prevent accidental spraying of fuel. Fuel in the fuel system remains under high pressure, even when the engine is not running. Failure to follow this instruction may result in serious personal injury.

WARNING: Do not smoke, carry lighted tobacco or have an open flame of any type when working on or near any fuel-related component. Highly flammable mixtures are always present and may be ignited. Failure to follow these instructions may result in serious personal injury.

WARNING: Clean all fuel residue from the engine compartment. If not removed, fuel residue may ignite when the engine is returned to operation. Failure to follow this instruction may result in serious personal injury.

WARNING: Do not carry personal electronic devices such as cell phones, pagers or audio equipment of any type when working on or near any fuel-related component. Highly flammable mixtures are always present and may be ignited. Failure to follow these instructions may result in serious personal injury.

WARNING: Always disconnect the battery ground cable at the battery when working on an evaporative emission (EVAP) system or fuel-related component. Highly flammable mixtures are always present and may be ignited. Failure to follow these instructions may result in serious personal injury.

WARNING: When handling fuel, always observe fuel handling precautions and be prepared in the event of fuel spillage. Spilled fuel may be ignited by hot vehicle components or other ignition sources. Failure to follow these instructions may result in serious personal injury.

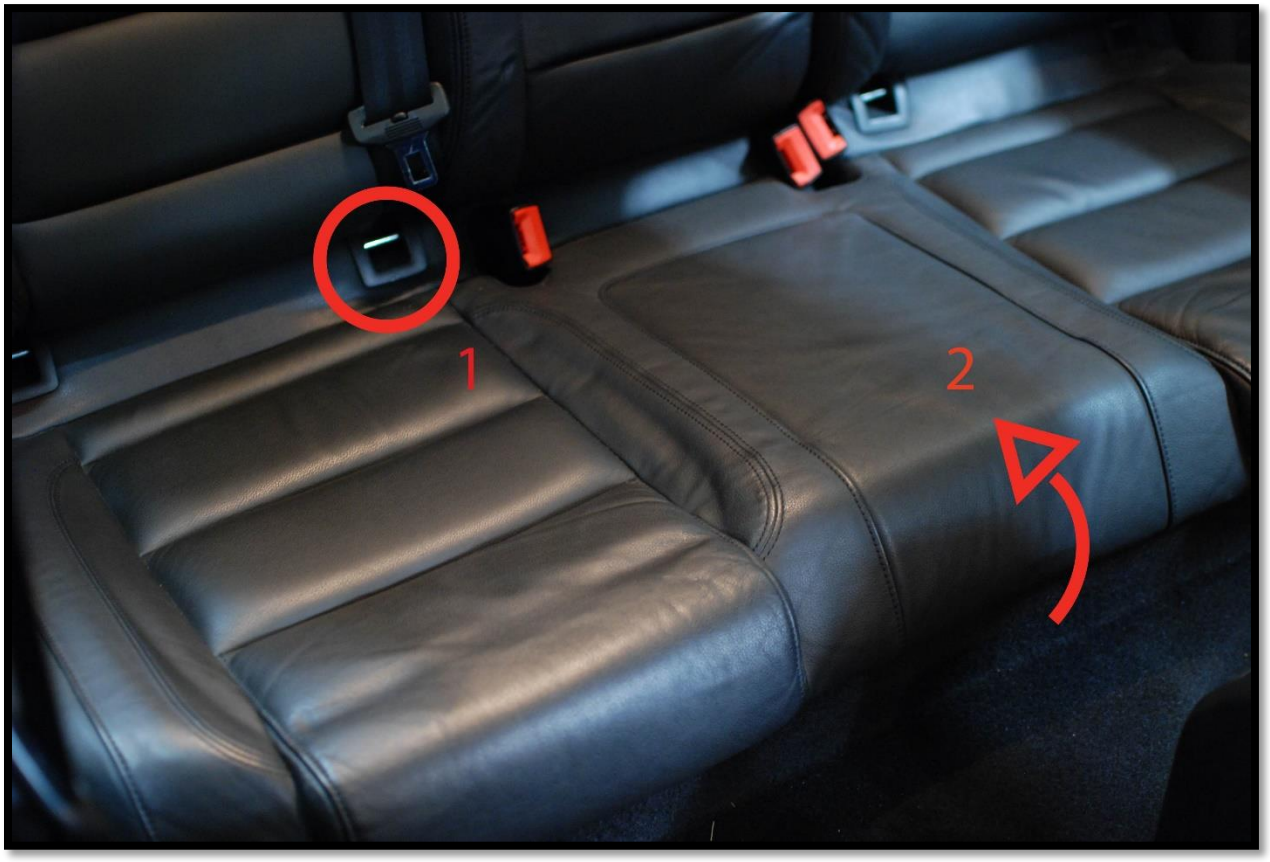
WARNING: Avoid contact with fuel during a visual inspection for fuel leaks with the engine running. Do not work on the fuel system until the pressure has been released and the engine has cooled. Fuel in the high-pressure fuel system is hot and under very high pressure. High-pressure fuel may cause cuts and contact with hot fuel may cause burns. Failure to follow these instructions may result in serious personal injury

TIP: We recommend running your tank as low as possible before swapping pumps to make it easier to pull out the old pump and insert the new one with minimal fuel spills.

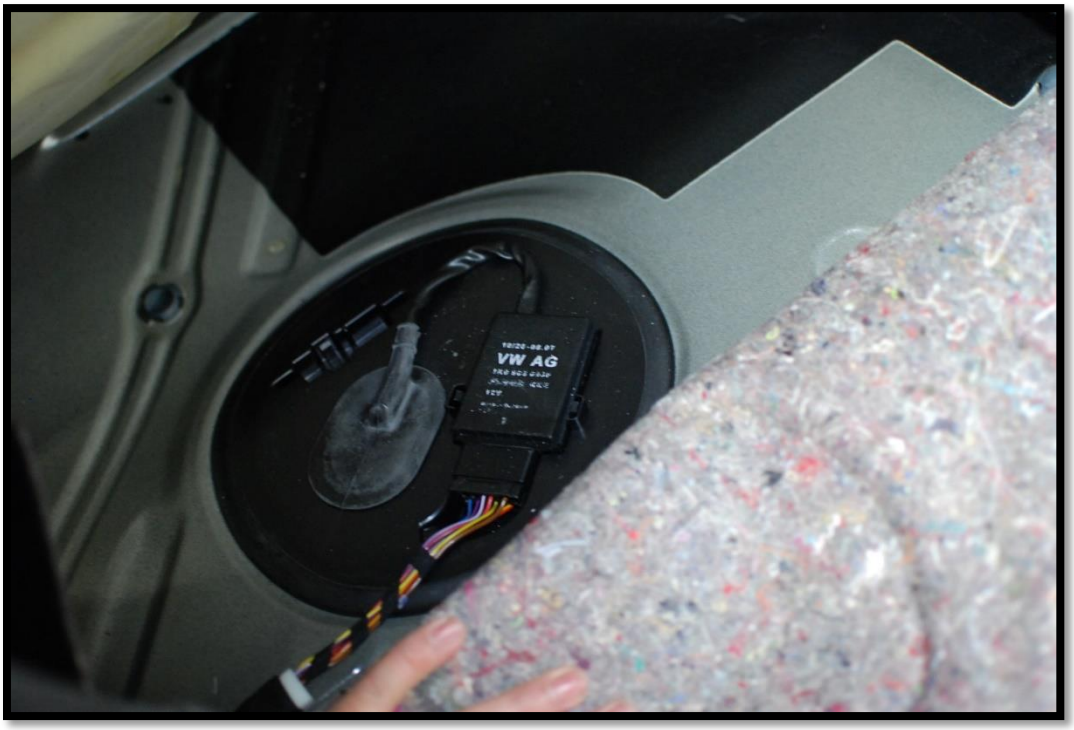
1. Disconnect the negative terminal of the battery.
2. You must first relieve the fuel pressure in the OEM fuel system. This is done by pulling fuse shown below from the panel the side of the dash.
3. Remove the panel.

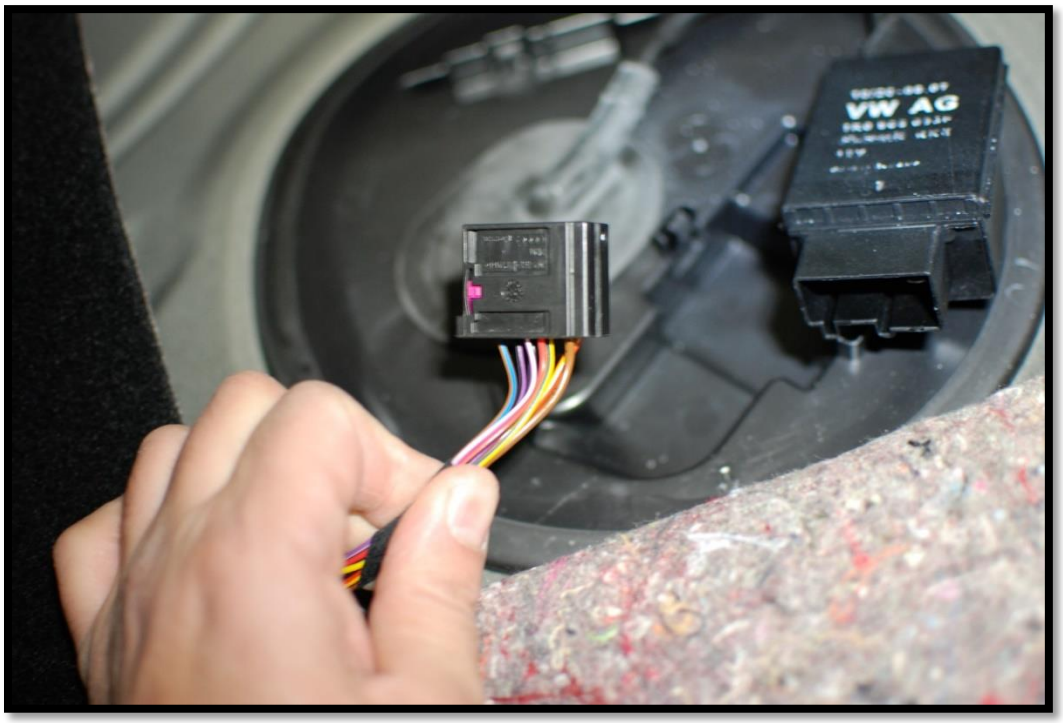
4. Remove the 15A fuse.

5. Remove rear seat clips and lower rear seat.

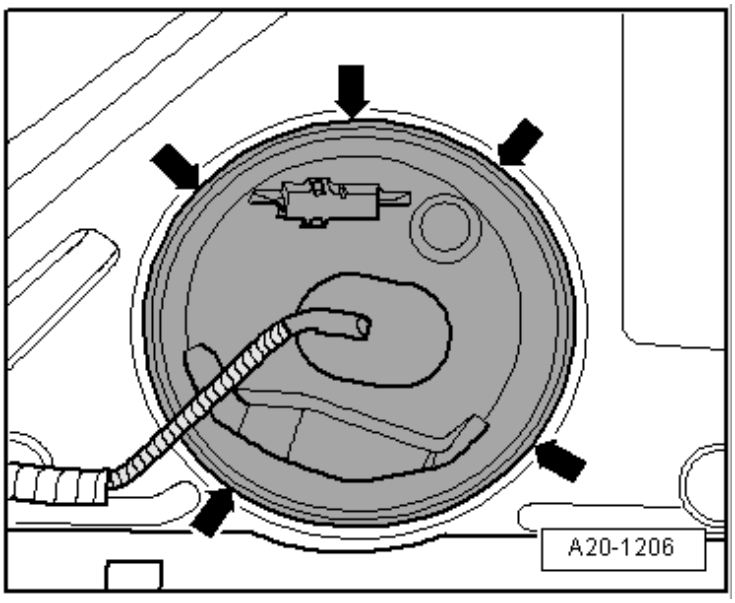


6. Locate and unplug fuel pump controller harness.





7. Remove Fuel pump cover. There are 5 tabs holding this in place and you can push these in with a flat head screwdriver to release them.



8. Disconnect controller from fuel pump top hat.

TIP: Take a picture or mark the location of the lock ring with respect to the locking tabs as well as the pump top hat tab and fuel line locations. This will make sure you install the new pump correctly.

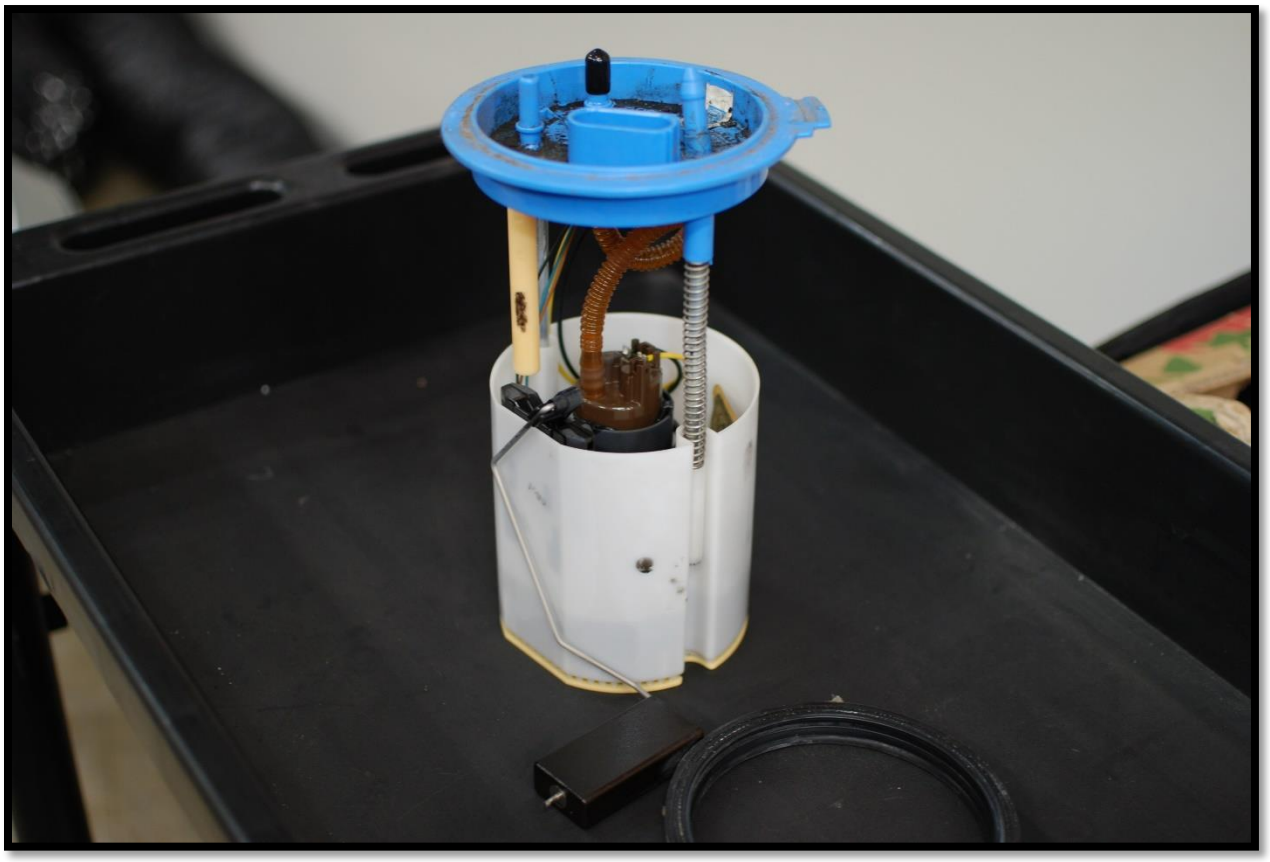
9. Unplug the 2 quick connect feed and return lines. These are blue and black in the image below.

   TIP: It is a good idea to clean the area around the pump and the retaining ring as this debris can end up in your fuel tank.

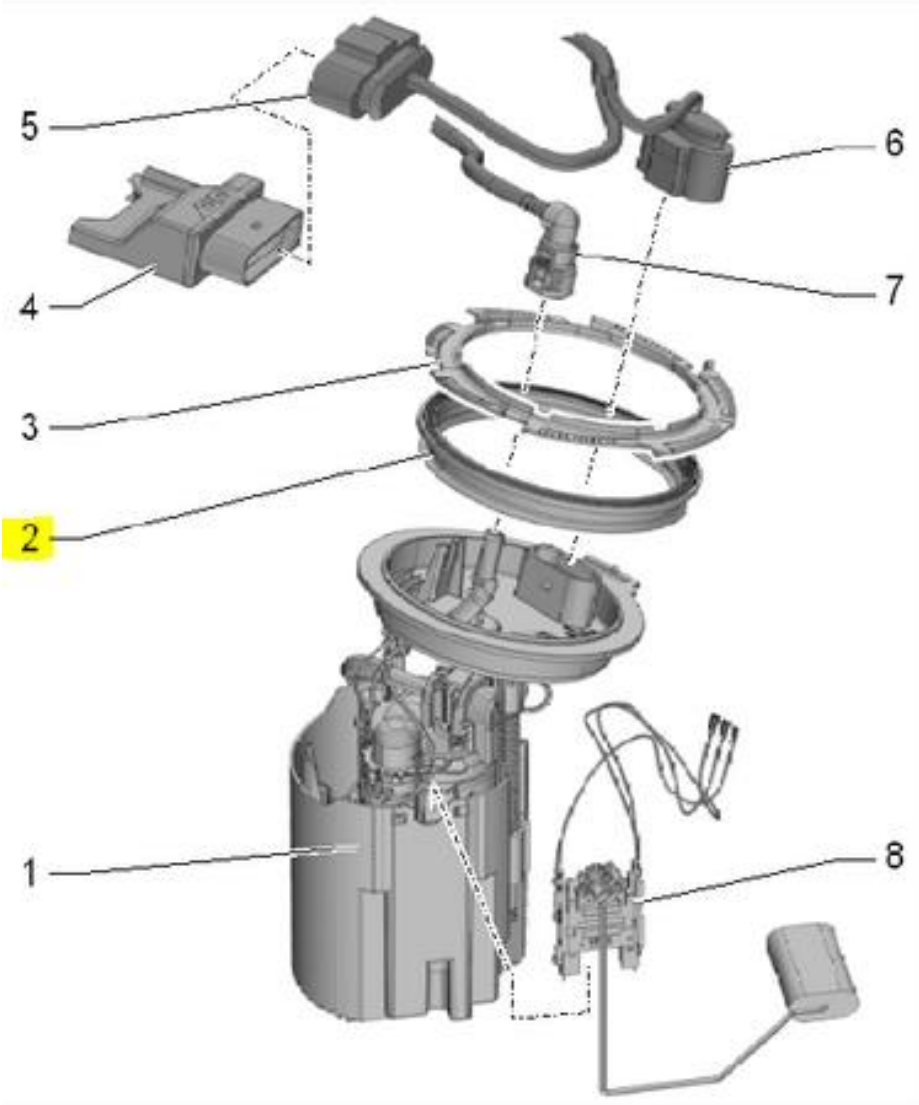
   TIP: Make sure you have the windows and doors open prior to opening the tank in this next step to vent fuel fumes.

10. Remove retaining ring by tapping it gently with chisel/screwdriver and a hammer on the metal tabs of the ring. To remove it you need to spin it in the counter-clockwise direction. Work your way around the ring tapping individual tabs. Once the ring is removed the fuel tank is opened, the fuel pump can be removed.

11. Remove OEM pump assembly carefully. Some fuel will remain the bucket so make sure to not spill it in the vehicle.



12. Move the fuel pump top hat gasket to the new pump assembly.



13. Insert the new pump carefully not to damage the fuel level float.

14. Orient the new pump bucket to match the position of the old pump that was removed. This will line up the tab on the top hat, the fuel lines and the locking ring. The picture you took before Step 6 will help here.

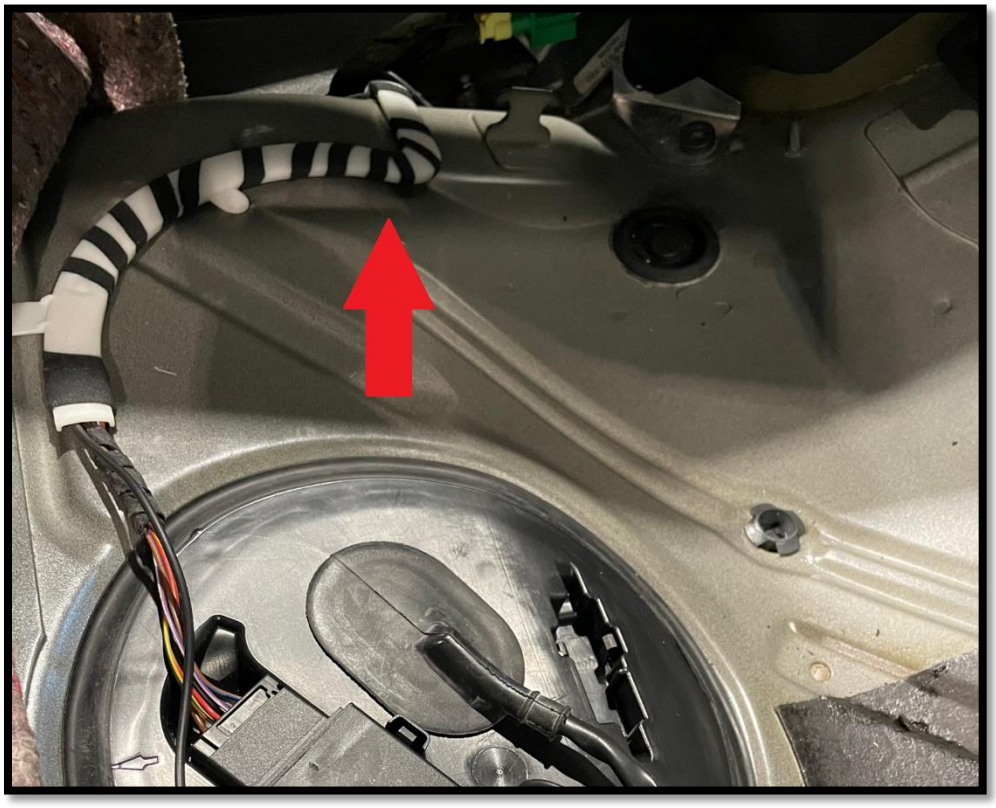
15. Tap the locking ring back in place while ensuring the gasket is not pinched or damaged.

16. Once the ring is locked in place, and fuel lines are connected, connect the fuel pump controller to the top hat and the controller to the vehicle harness. Reconnect the negative battery terminal and test the pump. The installation is now complete.

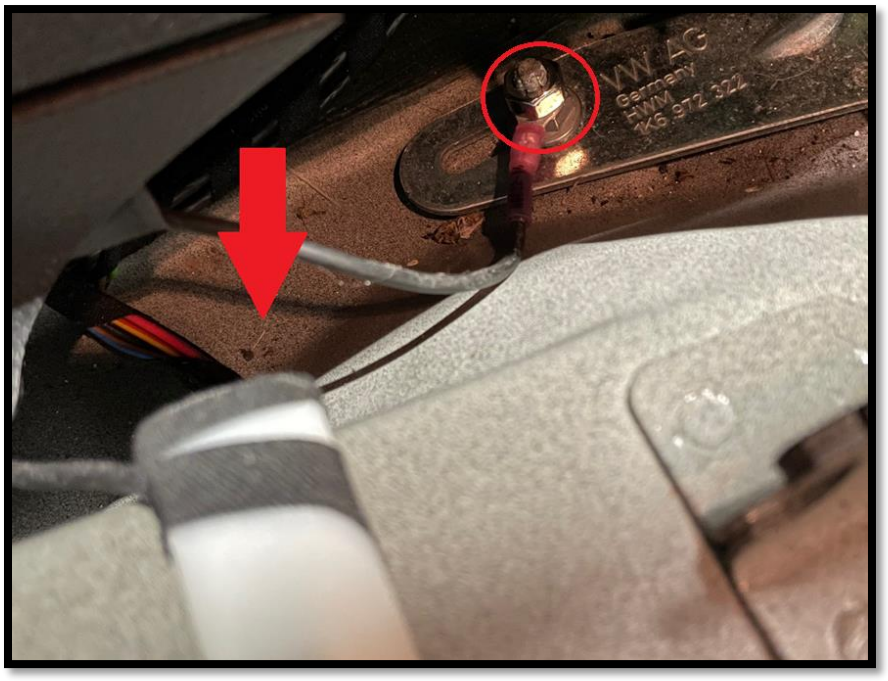
Installing Separate Ground Wire

On some vehicles the OEM pump controller may overheat and temporarily shut down under sustained high boost. Installing this ground wire lowers the amount of current going through the controller and reduces heat load.

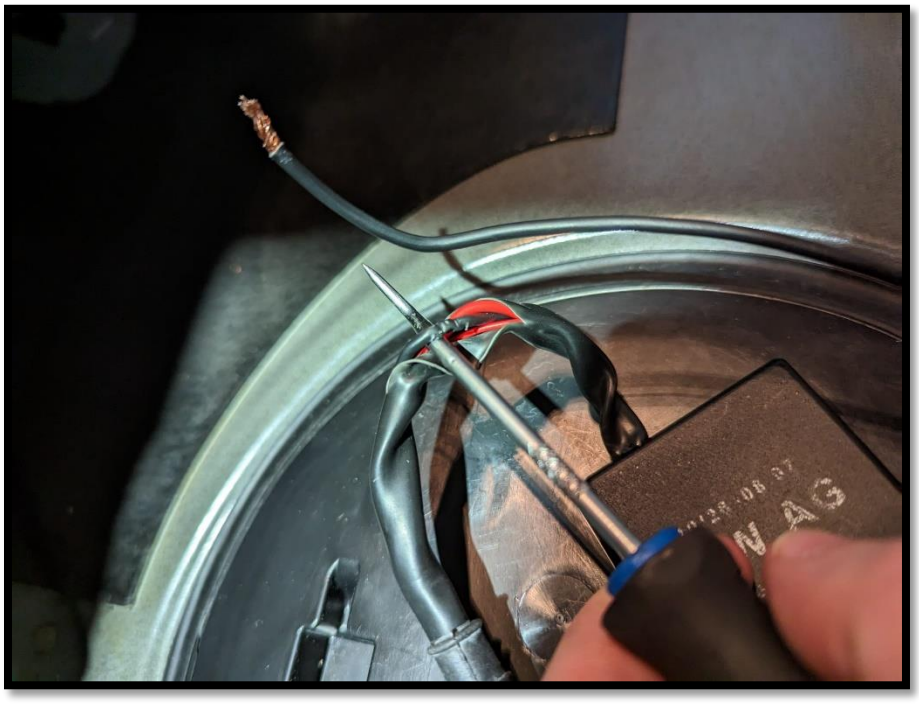
1. We will be installing the ground wire through this factory loom and connecting it to the chassis ground found near the end of this loom towards the outside of the vehicle.



2. Feed the open end of the ground wire through the wire harness protector towards the fuel pump and install the ring terminal with supplied M6 nut to the chassis.



3. Carefully splice into the wire harness between the cover of the fuel pump and the fuel controller and identify the thickest black ground wire.



4. Install positap on the above pump ground wire then insert the open end of the new ground wire onto the top of the positap and screw it down.

TIP: Before putting the seat cushion down, key on and listen for the pump priming. Check your fuel level display as well to make sure it is reading correctly.

TIP: The ECU controls the pump voltage and therefore the output of the pump. We STRONGLY recommend getting the car tuned to dial in your new pump and make sure it is delivering the correct amount of fuel while not having too high of a pressure which can overheat the pump controller.

5. Pump Use And Troubleshooting Information

- After installing this pump, we strongly recommend tuning the OEM fuel pump controller to best make use of this pump as a plug and play solution. This is the first step to ensuring the OEM controller does not overheat. We also recommend using a new fuel filter.

- Beyond a certain flow rate, the OEM fuel pump controller in your car may overheat and shut down. If this happens waiting 5-10 minutes and restarting the car will bring it back online. Every car is different and this overheating point will depend on your car and the amount of fuel flow it requires.

- Here are the steps to mitigate this issue if it comes up. We recommend doing them in this order. We recommend that everyone does step 1, but all the other steps will depend on your particular car and fuel requirements.

1. Ensure the tune is setup for this pump and that you have a new fuel filter.

2. Replace the OEM fuel pump control module with an up to date OEM unit (1K0906093J).

3. Upgrade the fuel pump control module with an aftermarket PM4 unit.

The AEM pump in this kit flows 340 litres/hour (84 gallons/hour) at 43psi and can flow enough fuel for beyond 500whp when paired with the correct supporting modifications.