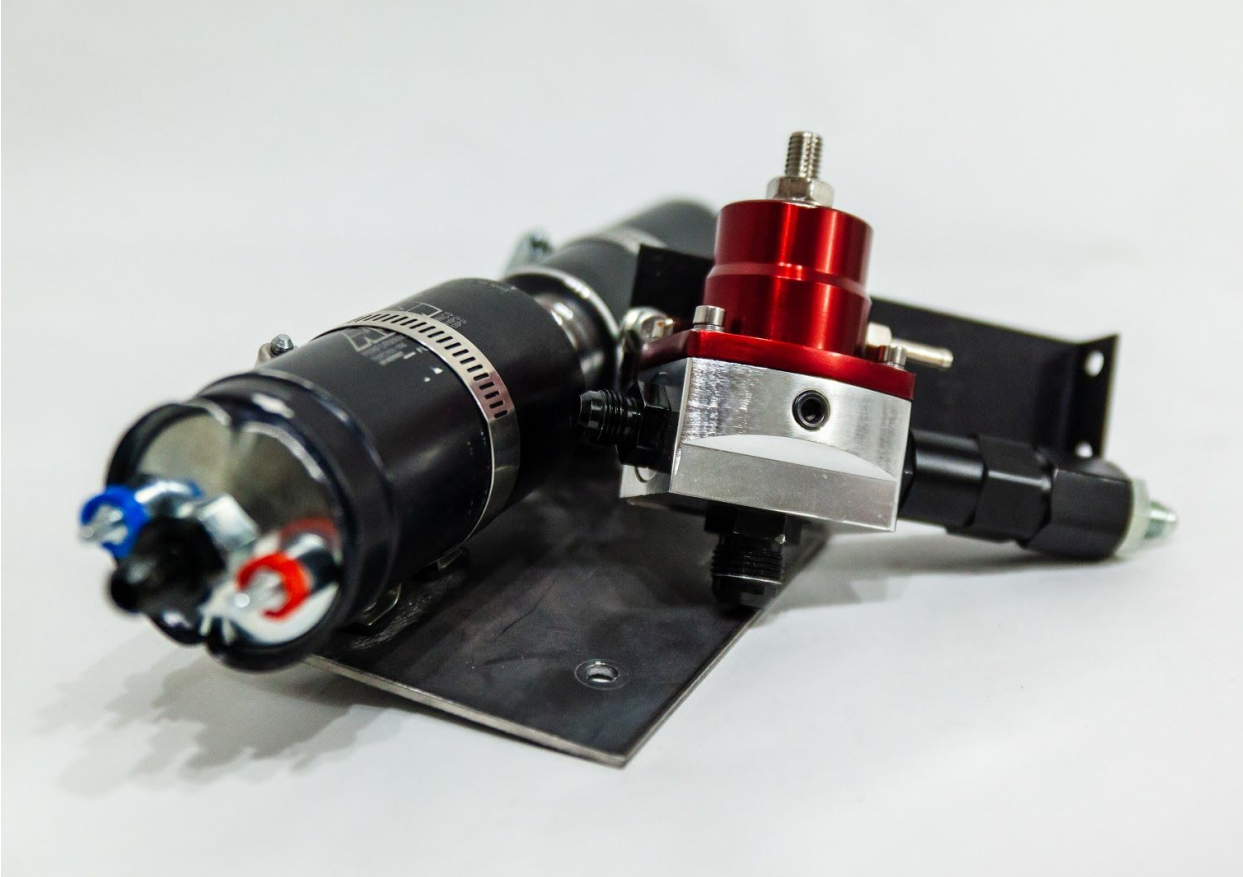
GEN 2 CTS-V FUEL SYSTEM KIT

Basic Guidelines for Installation



Parts included:

- **AEM Fuel Pump**
- **Inline Fuel Filter**
- **O-rings (for fuel pump and filter)**
    - **10AN O-ring x3**
    - **8AN O-ring x2**
    - **6AN O-ring x4**
- **Stainless Steel Braided Hoses**
    - **51” -6 Pump to Regulator**

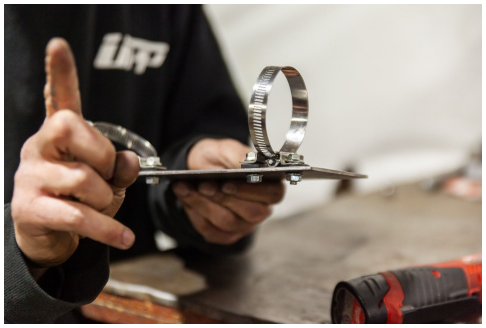
    - **63” -10 Tank to Filter**
    - **97” -8 Return Line (Regulator to Tank)**
    - **5” -4 Regulator to Fuel Rail**
- **AN Fittings**
- **Fuel Pump Mounting Bracket & Hardware**
- **Fuel Pressure Regulator**
- **Fuel Pressure Regulator Mounting Bracket & Hardware**
- **Relay**
- **5 PSI Hobbs Switch**
- **Check Valve**

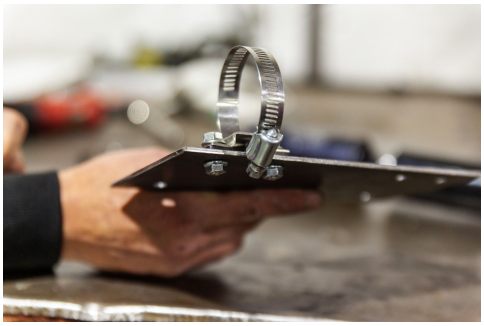
You Will Need:

- **10 gauge wire**
- **Butt connectors**
- **Appropriate tools**

Preparing your Fuel System Kit for installation:

1. **Attach the two U-shaped brackets to the plate bracket using the supplied bolts and nuts. Place the worm clamps between the plate and the brackets, making sure that the adjustment on the clamps are not between brackets.**





2. **Attach and tighten nuts on the bottom of the plate.**

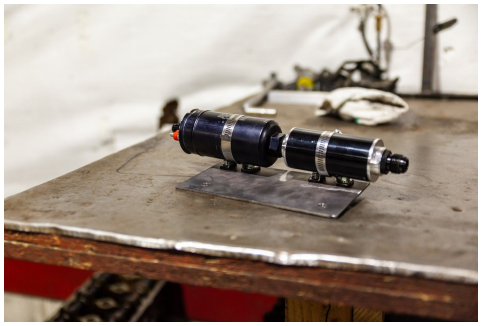
3. **Install the appropriate o-rings on your fittings prior to screwing them in. You will need an o-ring on <u>all</u> connections NOT connected to a hose or a line.**




4. **Find the inlet side of your filter by placing your finger in either end: if you can feel the filter, you've found the inlet. Install the -10AN fitting that has two o-rings into the inlet.**
5. **Screw the inlet side of the filter into the outlet side of the fuel pump.**
6. **Install the remaining -10AN into the outlet side of the inline filter.**
7. **Install the -6AN fitting into the outlet side of the fuel pump.**

8. **Slide the fuel pump & filter assembly into the worm clamps on the bracket.**

9. **Tighten the worm clamps.**

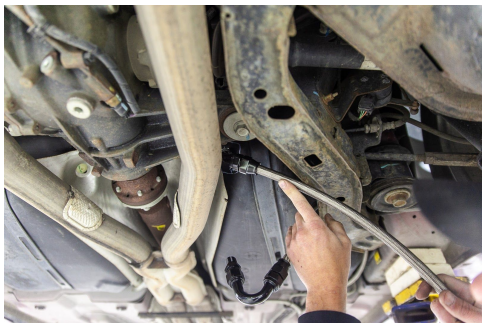


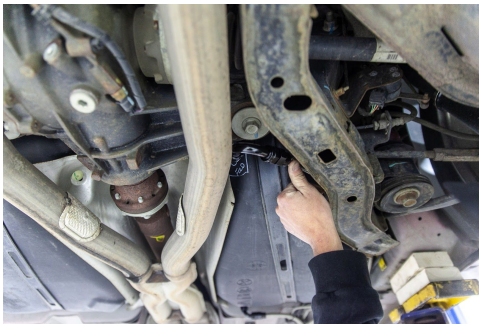
Installing the Fuel Lines:

1. **Drain your fuel tank.**
2. **Mark on either side of the fuel tank where you plan to drill and tap for the feed and return lines. The feed will need to be drilled on the rear of the tank, and the return on the front. Please refer to the photos for the appropriate**

locations.

3. We supply you with two different AN fittings for the feed line into the tank. Use the fitting that fits best with your vehicle. This will likely be dependent on what exhaust system you are running.

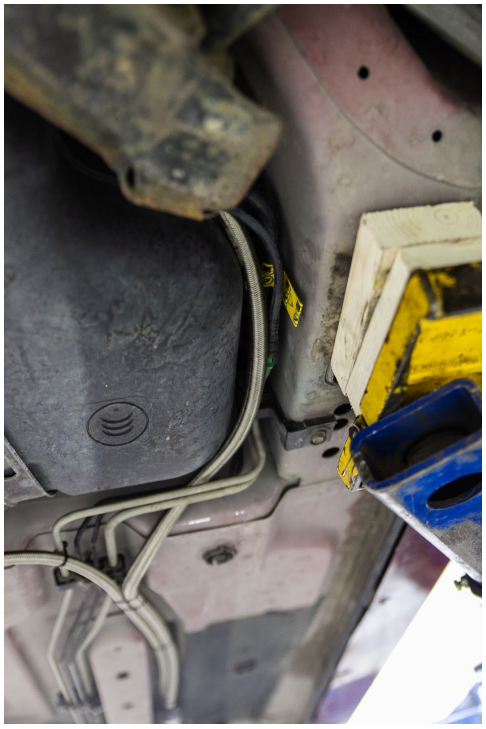


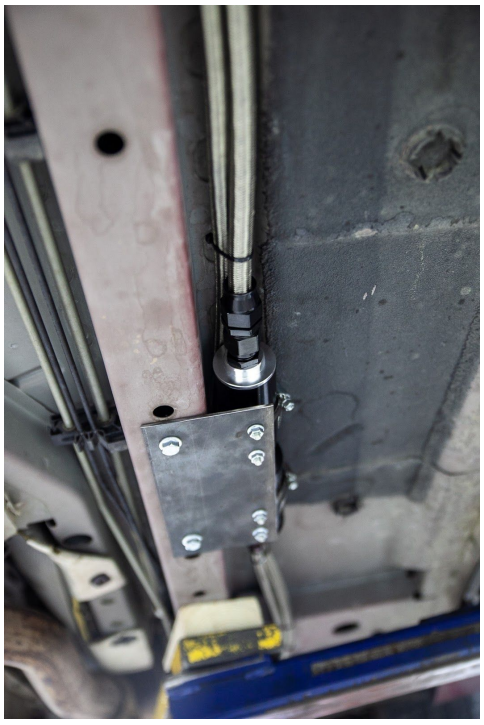


4. Drill holes, tap threads, and install fittings and lines.

Routing the Fuel Lines:

1. Refer to the photos for proper routing of lines. We ran the feed line up and alongside the passenger's side of the fuel tank, zip-tied the feed and return lines together at the front of the tank, and ran both lines parallel along the right side of the frame rail.



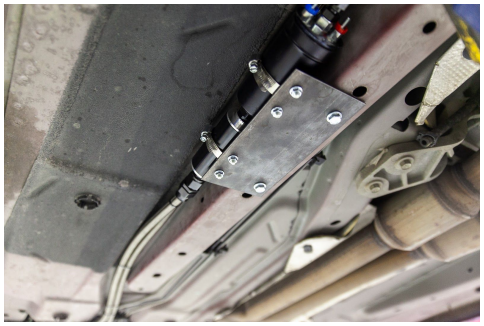



2. **Mark where the length runs out on the feed line. This is where you will mount your fuel pump & filter assembly (pictured already installed).**
3. **Tuck the return line up alongside the frame rail to allow room for the fuel pump & filter assembly.**
4. **Install Fuel Pump Assembly. (See next section)**

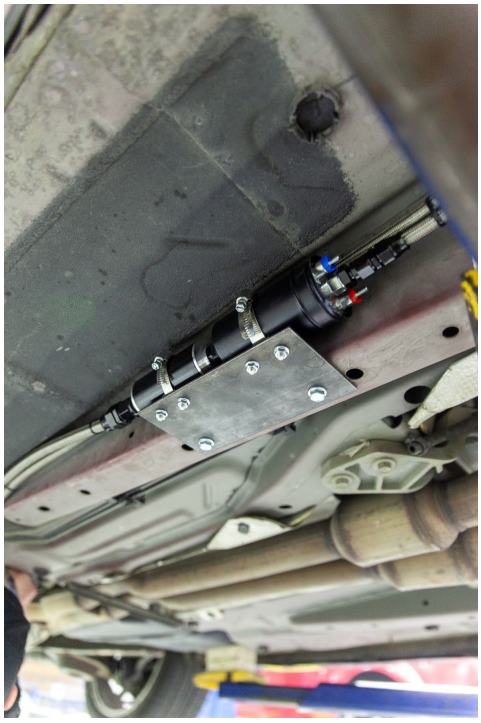
5. **Once installed, attach the remaining braided line to the filter side.**
6. **Run this line alongside the return line up into the engine bay where the fuel pressure regulator will be mounted (next to the coolant fill neck for the supercharger).**
7. **Secure lines to each other and wherever convenient on the underside of your vehicles with zip ties.**
8. **Click this link when viewing in PDF mode for a video showing how we routed the lines on the underside of our CTS-V.**

Installing Fuel Pump Assembly:

1. **Once your lines are mocked up, determine where your fuel pump & filter assembly fits best. Ours sat parallel to the factory cats, but yours might sit slightly different. It will always mount to the passenger's side frame rail.**




2. **Mark the frame rail where you plan to mount the bracket.**
3. **Drill holes and install supplied nutserts.**
4. **Attach fuel pump & filter assembly to nutserts with supplied hardware. The fuel pump will sit closer to the front of the vehicle, with the filter sitting behind it.**

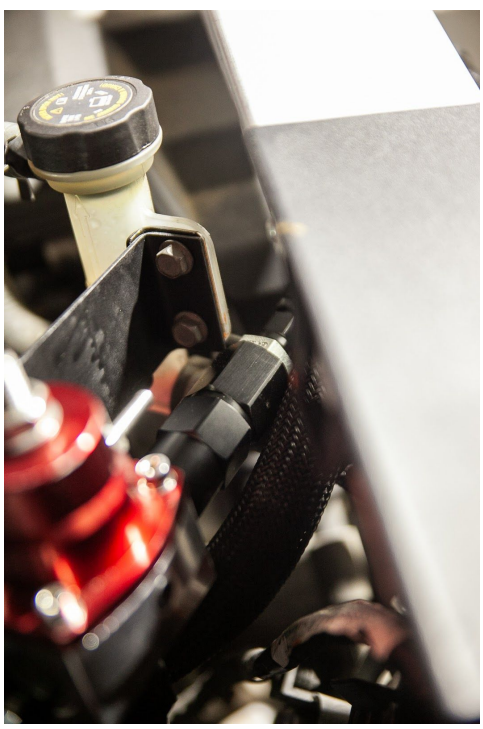


5. **Fasten AN fittings to the inlet side of the fuel pump and outlet side of the fuel filter.**

Install the Fuel Pressure Regulator:

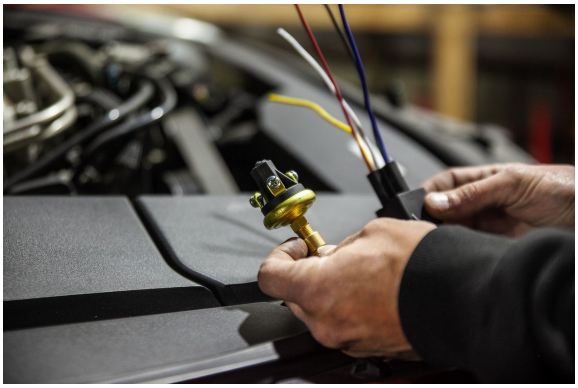
1. **Remove beauty covers from engine bay for ease of access.**
2. **Refer to photos: trim your engine cover as shown in paint marker. This is necessary to clear installed parts while securing the engine cover.**

3. **Attach appropriate fittings and o-rings to either side of the check valve.**
4. **Place o-ring between fuel pressure regulator and check valve assembly. Assemble together.**
5. **Attach AN fittings to the bottom and other side of the fuel pressure regulator.**
6. **Attach line going from the check valve to the fuel rail.**
7. **Secure FPR mounting bracket to the supercharger fill bracket.**
8. **Install FPR to the mounting bracket using supplied hardware.**
9. **Finish installing fuel lines. The return line attaches to the bottom of the fuel pressure regulator.**



10. **The feed line screws into the fitting on the opposite side from the check valve.**
11. **If you are running the OEM fuel system, your fuel rail will have a -4AN fitting from the factory. Remove the schrader valve from inside this fitting, and attach the remaining braided fuel line.**

Wiring the Fuel System:



1. **Disconnect the battery.**
2. **Please be aware that your wiring harness may be colored differently than what is shown. For simplicity, this guide will reference the pin numbers on the actual relay.**
3. **Tap from pin 87 into a reliable power source using 10ga wire. This source should be fused.**
4. **Wire pin 86 into an ignition source. We typically tie this into the fuel injector harness. You can use any fuel injector and tap into the pink wire.**
5. **30 will need to be wired to the positive terminal on the fuel pump. The negative on the fuel pump can be grounded wherever is convenient.**
6. **The hobbs switch has three terminals. These are differentiated by small letters on the plastic next to the terminals. Wire "C" to a chassis ground. Wire "NO" to pin 85 on your relay.**
7. **Do not wire "NC" on the Hobbs switch. Trim, cap, or ignore the wire for pin 87a.**
8. **Tie the Hobbs switch into a boost source. This could be your air intake, part of an intercooler system, or (using the provided adapter fitting) a vacuum line. The Hobbs switch will trigger the secondary fuel pump at 5 PSI.**
9. **If necessary, you can adjust the Hobbs switch by removing the rubber grommet on top and using an allen key to change when the switch triggers.**

Turn clockwise to increase pressure, and counter-clockwise to decrease pressure.

10. **Reconnect battery.**

Setting Fuel Pressure:

1. **Mount the gauge into the fuel pressure regulator.**
2. **Key the ignition to the "ON" position.**
3. **Run a jumper wire across the "C" and "NO" terminals on the Hobbs switch. This will trigger the secondary fuel pump. Verify all connections are good and there are no leaks.**
4. **With the system triggered, check the fuel pressure gauge.**
5. **Fuel pressure is adjusted via the stud on top of the fuel pressure regulator. Unscrew the lock nut.**
6. **Using a 3/16" allen key, turn the stud clockwise to increase pressure or counter-clockwise to decrease pressure. Adjust until the gauge reads around 60psi. ***The factory system runs at around 58psi. Try not to exceed 60psi so as to not overwhelm the factory system. Disregard if your aftermarket system instructs you otherwise.***
7. **Tighten the lock nut.**
8. **For general installations, do not connect the boost reference line. Leave it vented to the atmosphere. If you are running an aftermarket primary fuel system that requires the boost reference, skip this step.**
9. **Remove the jumper wire. Installation is now complete.**