



Squaremax Fuel System Installation

'73-'87 GM C & K Series / '88-'91 GM R & V Series

Revision 00 (08/06/18)

Fuel System Notes

Depending on if you have a Truck, Blazer or Suburban this will dictate whether you will be using a single or dual fuel tank system. Either way the only OEM fuel system components you will retain is the fuel tank, filler assembly and fuel tank selector valve. All of the OEM fuel supply, return and vent lines will need to be removed. The best place to begin is by performing the fuel pick-up modifications listed below and working forward to the engine.

We often get many questions regarding the OEM Duramax fuel filtration system working with our Squaremax conversion. Truthfully there are three options that will ultimately help you make this decision.

- 1. The first option is to retain the OEM fuel filtration system to save some dollars by not having to purchase a lift pump assembly. If you choose to do this, you will need to re-locate the fuel filtration system further forward or remote mount it to the passenger side inner fender. If you do decide to remote mount the fuel filtration system don't forget you will need to either extend or build an extension harness for the "water in fuel" warning light. This will provide the necessary clearance and allow the OEM air conditioning system to be retained and un-modified.*
- 2. The second option is to retain the OEM fuel filtration housing along with the "water in fuel" warning light and fuel primer but will omit the fuel filter.*

You can do this by re-locating the fuel filtration housing further forward or remote mount it to the passenger side inner fender. If you do decide to remote mount the fuel filtration system don't forget you will need to either extend or build an extension harness for the "water in fuel" warning light. Please note you will need to purchase a Duramax fuel filter delete kit. This is available in our online store. Once this is completed you would proceed to install the Pureflow AirDog lift pump assembly and follow the step-by-step installation instructions listed below.

- 3. The third option is to completely omit the OEM fuel filtration system. This decision will also omit the "water in fuel" warning light as well as the fuel primer. The Pureflow AirDog lift pump assembly will solely handle the water, air and fuel filtration. Proceed by following the step-by-step installation instructions listed below.*

Another good question we get is regarding the OEM Duramax fuel cooler. Common knowledge would suggest that the fuel cooler is not necessary and can be omitted in our Squaremax conversion. Well that is partially true. When the fuel enters the CP3 pump and injection system it is rapidly heated. This ultimately decreases fuel mileage, performance and over a period of time takes a toll on injector life. Let us take a moment and explain:

- When the fuel tank is full there is a large volume of fuel that drastically helps the heat transfer and dissipation. Before the fuel heads back to the engine it travels through the fuel cooler where it is exposed to the ambient airflow for one last chance before it enters the CP3 pump and injection system.*
- As the fuel level drops the volume of fuel decreases so does the ability to cool the fuel. With the decreased cooling efficiency from the varying fuel level, the fuel's last resort is to be cooled in the fuel cooler.*

With the fuel cooling system explained the choice is ultimately yours. We would highly suggest installing the fuel cooler if you are planning on performance or towing applications. If you decide to install a fuel cooler make sure you plumb it in-line after to the Pureflow AirDog lift pump. This will ensure that the fuel is cooler after exiting the lift pump.

Fuel Pick-up Modification

- 1. We will begin by removing the fuel tank or tanks.*
- 2. Next remove the OEM steel fuel pick-up tube from the fuel pick-up assembly from the fuel tank or tanks.*
- 3. Using a Butane Torch, heat the solder that is holding the fuel pick-up tube and remove it from the plate.*
- 4. Once removed drill the plate using a cordless drill and step-bit to 5/8"*
- 5. Carefully deburr the edges of the hole.*
- 6. Install the bulkhead fitting and check fitment.*
- 7. Loosely install the fuel pick-up assembly into the fuel tank. Check clocking of the fitting and tighten.*
- 8. Install the suction tube onto the bottom of the bulkhead fitting.*
- 9. Replace the O-Ring seal on top of fuel tank and re-install the pick-up assembly.*
- 10. Re-install the fuel tank or tanks. Secure using the OEM bracketry and straps.*
- 11. Connect Pureflow AirDog fuel hose and check for leaks.*

Installation of the Pureflow AirDog Lift Pump

- 1. Since the fuel inlet and return lines are located on the driver side of the Duramax engines it is a good idea to mount the Pureflow AirDog lift pump to the driver side frame rail just forward of the rear cab mounts.*
- 2. If you are retaining the OEM dual tank system, now is the time to re-locate the fuel tank selector valve to the driver side frame rail.*
- 3. Connect the fuel supply hose to the bulkhead fitting and carefully route the hose away from any moving parts or exhaust system.*
- 4. Secure the fuel hose or hoses to the chassis using rubber isolated clamps to prevent chafing from rubbing on any sharp metal edges or objects.*
- 5. Connect the 1/2" fuel supply hose to the transfer valve by using our 1/2"-3/8" Hi-Flow hose reducer. These are available in our online store and sold ala carte. Secure with a stainless steel worm drive clamp.*

6. *Once again if you are retaining the OEM dual tank system you will need to purchase additional 1/2" fuel hose with the quick-connect fittings. They are available in our online store. The hose is sold in various lengths and the quick-connect fittings are sold ala carte.*
7. *Connect the 1/2" fuel supply hose to the transfer valve by using our 1/2"-3/8" Hi-Flow hose reducer and route the hose to the fuel inlet on the Pureflow AirDog lift pump. Secure the fuel hose to the chassis by using rubber isolated clamps to prevent chafing from rubbing on any sharp metal edges or objects.*
8. *Re-connect fuel tank selector harness to fuel transfer valve and secure harness using rubber isolated clamps to prevent chafing from rubbing on any sharp metal edges or objects.*
9. *Carefully route the 1/2" fuel supply hose to the engine's fuel inlet using a quick-connect fitting. Secure the fuel hose using rubber isolated clamps to prevent chafing from rubbing on any sharp metal edges or objects.*
10. *Follow Pureflow AirDog's installation instructions regarding the wiring harness installation and remember to secure the wiring using pine-tree clips and cable ties to prevent chafing from rubbing on any sharp metal edges or objects.*