INSTALLATION INSTRUCTIONS

PRODUCT: POWERFLO® LIFT PUMP FOR 2011-2016 LML DURAMAX

FITMENT: 2011-2016 LML 6.6L Duramax equipped Chevy and GMC 2500/3500 Pickups

KIT P/N: FPE-34563 (short bed), FPE-34564 (long bed)

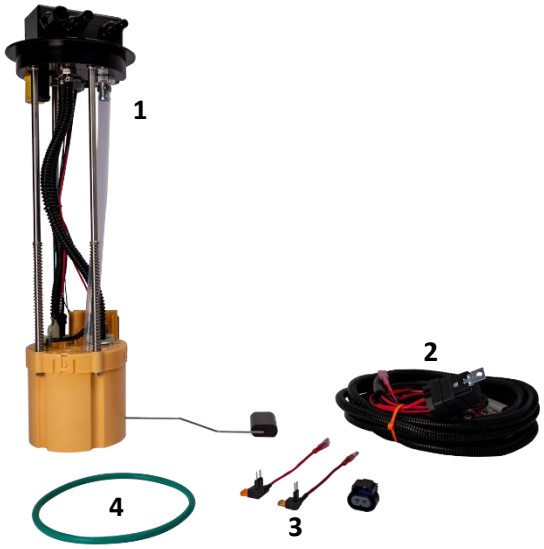
ESTIMATED INSTALLATION TIME: 2 Hours

TOOLS REQUIRED: 1/4" drive ratchet, 1/4" drive 8mm socket, 1/2" drive impact or ratchet, 1/2" drive 15mm socket, 1/2" drive 13mm socket, ½" drive 11mm socket, large hammer, and punch or chisel.

SPECIFICATIONS:
OPERATING PRESSURE: 10-13 psi at idle
OPERATING PRESSURE WITH CP3 CONVERSION SPRING: 2-3 psi at idle
REPLACES: GM P/N's 13578388 & 13578389

KIT CONTENTS:

Item	Description	Quantity
1	PowerFlo lift pump with float arm	1
2	Wiring harness with zip ties	1
3	Micro and Mini fuse tap leads (5A)	1
4	O-ring	1
5	Fuel Pressure Regulating Spring (CP3 converted vehicles only)	1



WARNINGS:

- Use of this product may void or nullify the vehicle's factory warranty.
- User understands that motorsports are dangerous, and that installation of this product may subsequently require special driving skills or techniques to safely operate the vehicle.
- User assumes sole responsibility for the safe & proper use of the vehicle at all times.
- The purchaser and end user releases, indemnifies, discharges, and holds harmless Fleece Performance Engineering, Inc. from any and all claims, damages, causes of action, injuries, or expenses resulting from or relating to the use or installation of this product that is in violation of the terms and conditions on this page, the product disclaimer, and/or the product installation instructions. Fleece Performance Engineering, Inc. will not be liable for any direct, indirect, consequential, exemplary, punitive, statutory, or incidental damages or fines cause by the use or installation of this product.
- Fuel lines must be clean before installation.

IMPORTANT NOTE: If your vehicle has been converted and is currently utilizing a CP3 fuel injection pump, replacement of the fuel pressure regulating spring is required. A lower rated spring is included in your kit. Follow the steps below to replace the fuel pressure regulating spring on your PowerFlo lift pump.

1. Locate the hex plug on the side of the cap.

2. Using a 3/8” allen wrench or socket, remove the hex plug from the side of the cap.

3. Remove the spring from the cap and replace it with the lower rated spring provided in your kit. Reinstall the hex plug and tighten until snug.

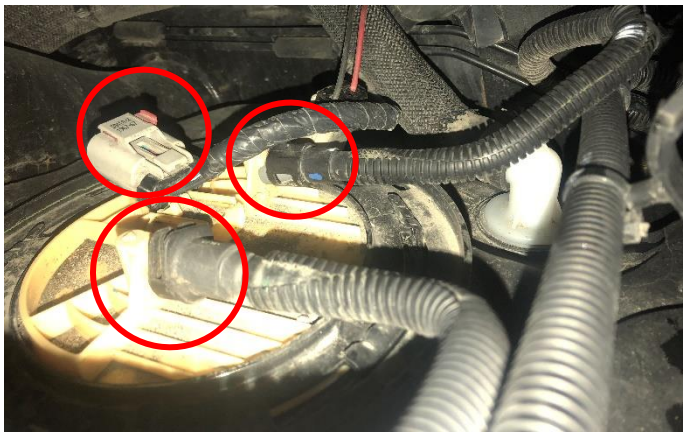
INSTALLATION PROCEDURE:

STEP 1: Ensure that the vehicle has at least ¼ tank of fuel remaining. Disconnect batteries and block the tires.

STEP 2: Remove the rear driveshaft. On short wheelbase trucks, only remove the four 11mm bolts on the yoke on the rear end. On long wheel base trucks, the carrier bearing mount must be removed as well.

STEP 3: Remove the fuel tank skid plate with two 13mm bolts and pull the cover over the tabs on the right side of the tank by swinging it downward.

STEP 4: Support the fuel tank with a jack. Loosen the front and rear fuel tank straps using a 15mm deep socket. Remove the front strap first, and leave the rear strap loose and attached at this time. Lowering the front of the fuel tank downward will allow access to unplug the sending unit and remove the fuel line quick disconnects and vent line.



STEP 5: Remove the fuel line quick disconnects. Disconnect the sending unit connector.

STEP 6: Remove the filler neck hose at the tank with a 8mm socket to loosen the clamp. Remove the filler neck hose from the fuel tank. Remove the rear fuel tank strap and lower the complete fuel tank to the ground. Move the tank into an area where you have clear access to the tank.

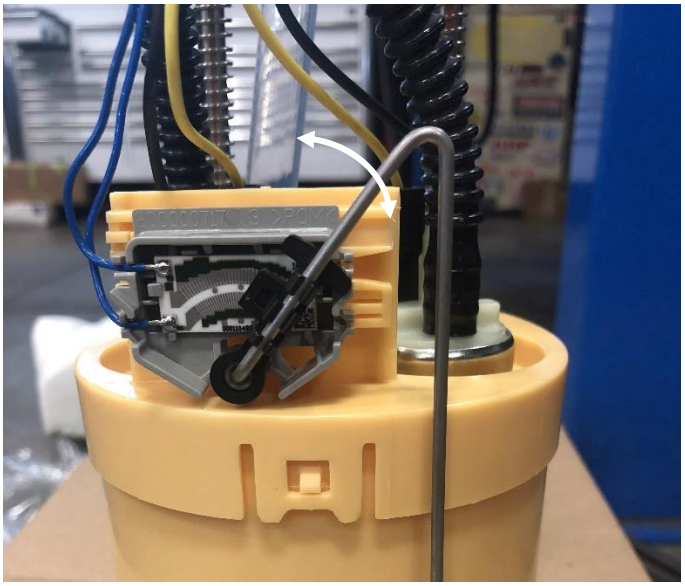
STEP 7: Clean the area around the sending unit with pressurized air to remove debris. Wipe the area around the pump with a clean rag.

NOTE: Mark the orientation of the sending unit relative to the tank to ensure proper orientation of the PowerFlo pump during installation.

Using a hammer and punch, rotate the retaining ring counter clockwise. Remove the retaining ring that holds the OEM sending unit into the tank and remove the sending unit from the tank by lifting it upward. Remove the sealing o-ring from the tank.

STEP 8: Clean the tank sealing surface and place your new o-ring supplied in the kit for the PowerFlo lift pump onto the top of the tank.

STEP 9: Install the fuel level float arm onto the PowerFlo lift pump by gently clipping the arm into the fuel level sensor. With the pump resting on a flat surface, press down on the cap to simulate the installed the position of the cap - move the float arm up and down and ensure that the arm does not contact the pump wires or fuel tubes in the full up or full down position. If the tubes or wires contact the float arm, this will affect the fuel gauge reading. Check and confirm clearance before installing.



STEP 10: Install the PowerFlo pump assembly into the tank and reinstall the retaining ring using a hammer and punch by rotating it clockwise to the fully engaged position. Ensure proper orientation of the pump and fittings by matching the orientation of the original sending unit.

NOTE: Use caution when installing the pump to not damage the float arm. Do not rotate the pump once installed in the tank, you may damage the float arm or sending unit – align the pump before you place it into the tank.

CAUTION: NEVER RUN THE PUMP DRY OR WITHOUT FUEL IN THE TANK

WIRING HARNESS OVERVIEW:

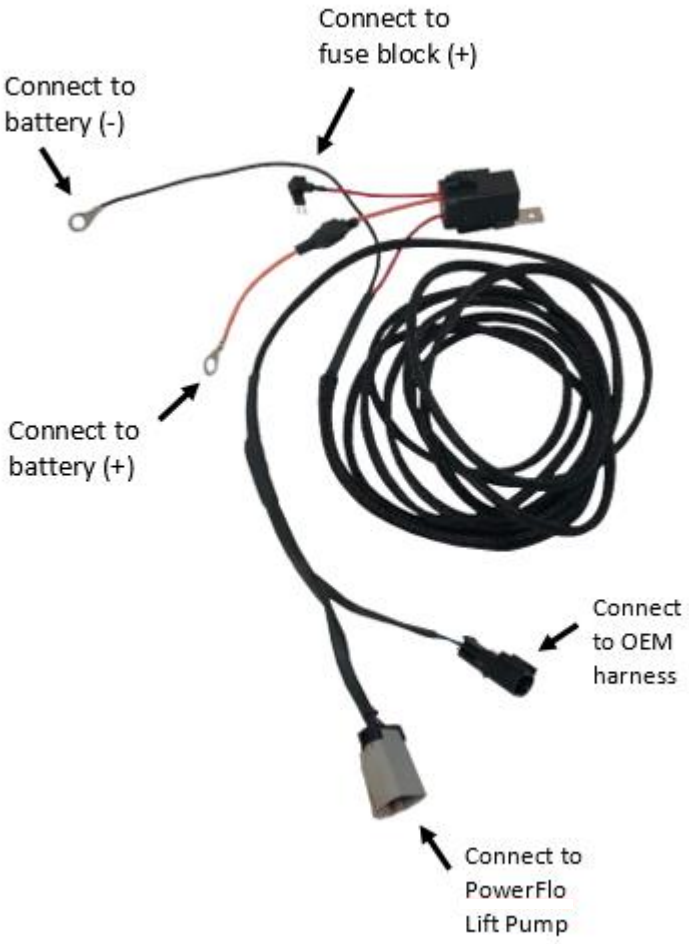
Black Wire – To battery negative (-) terminal
Orange Wire – To battery positive (+) terminal
Red Wire – To switched ignition (+) in fuse block

The switched ignition line includes two fuse taps for either micro2 (MY15-16) or mini (MY11-14) and contains a 5A fuse. Transfer the 10A fuse from the fuse block tap location to the second fuse location on the fuse tap (see STEP 14).

Gray Connector – To PowerFlo lift pump
Black Connector – To OEM harness

Relay – Provides switched 12v power to the PowerFlo pumps.

IMPORTANT: Never use a higher rated fuse than provided with the harness. If you experience a blown fuse always troubleshoot the problem before replacing the fuse. A blown fuse can be an indication of a short to ground in the harness, the relay, or inside the pump assembly.

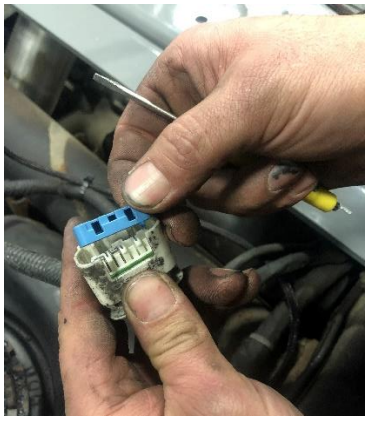


STEP 11: DE-POPULATE OEM SENDING UNIT CONNECTOR

Locate the OEM electrical connector that was connected to the original factory sending unit. You will be de-populating the two pins from this connector and transferring them to a new connector. Only socket locations 3 and 4 will be populated on the 4 pin connector. These two pins are used to supply the fuel gauge on the dash with a resistance reading from the sending unit on the pump assembly.

Using a small flat screwdriver, gently pry the locking tab from the front of the connector body.

With the locking tab removed, press down gently on the retaining tab that secures the electrical pin and pull the wire and electrical pin out from the back side of the connector. Do this one pin at a time. The cavity seals will remain on the harness and will be used on the new connector body assembly. Completely remove the two electrical pins from the connector body and clean them with electrical parts cleaner if required.

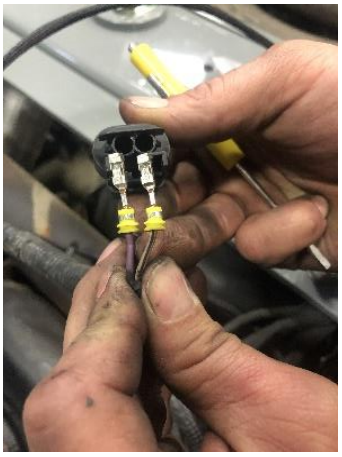


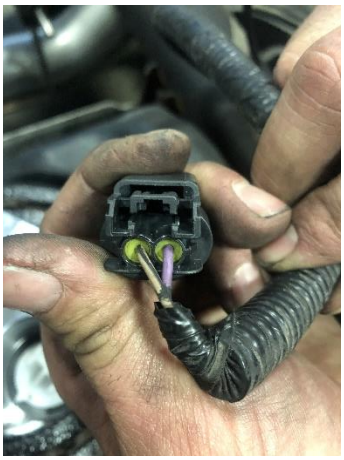
STEP 12: INSTALL OEM PINS INTO NEW CONNECTOR BODY

Locate the new connector body and locking tab provided with the Fleece electrical harness. You will be transferring the two pins to the new connector body.

Insert the pins with the cavity plugs intact into the rear of the new connector body. The pins can be inserted into either cavity. Once inserted, gently tug on the wires to make sure the pins are locked in place.

Install the locking tab onto the front of the connector body to lock the pins in place.





STEP 13: ROUTE FLEECE HARNESS TO THE ENGINE BAY FUSE BOX

Route the Fleece harness along the frame rails to the fuse block location under the hood - located on the driver's side, behind the battery. Route the harness in a manner that it will not interfere with any moving parts and retain it with zip ties.

Mount or secure the relay in the engine bay.

NOTE: Leave sufficient slack on the harness at the pump end to allow for plugging in the connection at the pump before raising the tank back up into position.

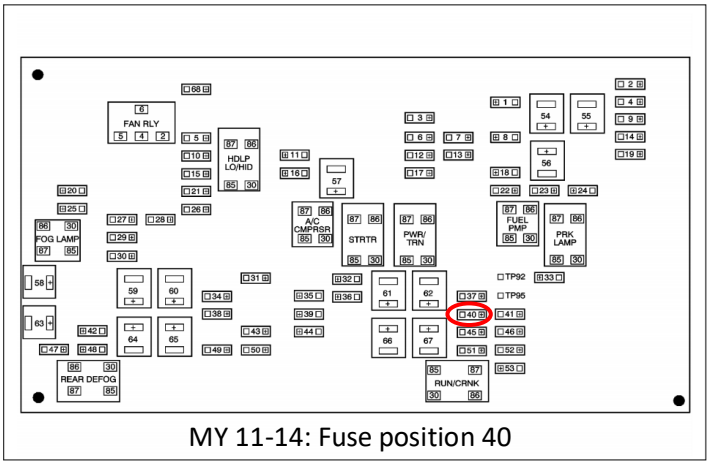
STEP 14: FUSE BLOCK CONNECTIONS FOR SWITCHED IGNITION

For MY 11-14: Remove the 10 A fuse from the fuse block in position 40, labeled "MISC IGN Fuse". Install the removed fuse into the fuse tap on the Fleece harness. Insert the mini fuse tap into the same location as the 10A fuse was removed. Connect the fuse tap lead to the red spade terminal of the pump harness.

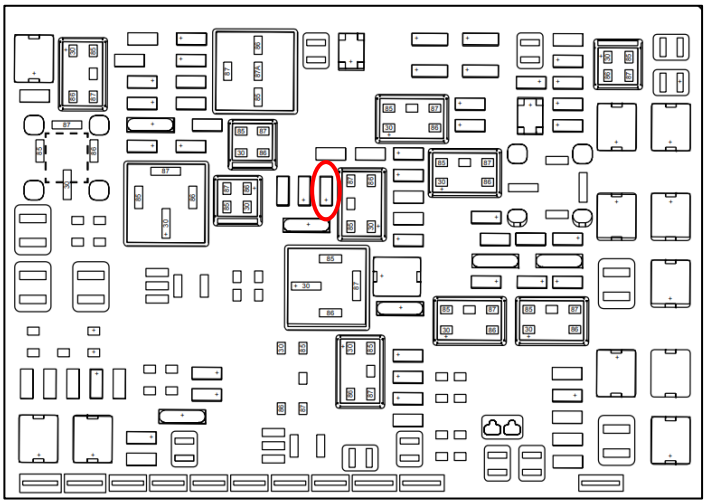
For MY 15-16: Remove the 15 A fuse from the fuse block in position 39, labeled "MISC IGN (15A)". Install the removed fuse into the fuse tap on the Fleece harness. Insert the micro2 fuse tap into the same location as the 15A fuse was removed. Connect the fuse tap lead to the red spade terminal of the pump harness.

STEP 15: BATTERY CONNECTIONS
Run the orange fused line to the positive (+) terminal of the battery. Run the black line to the negative (-) terminal of the battery.

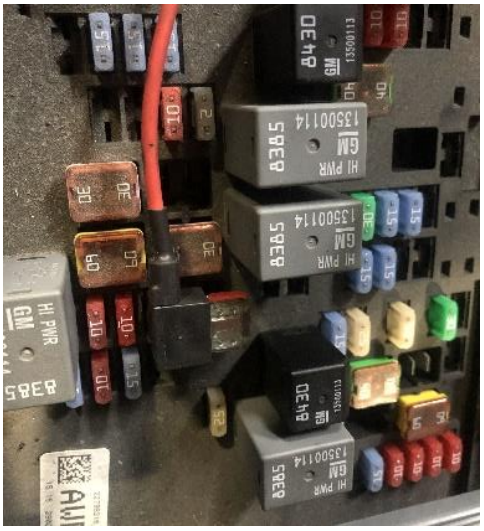
Fuse Block - Underhood Top View - Diesel



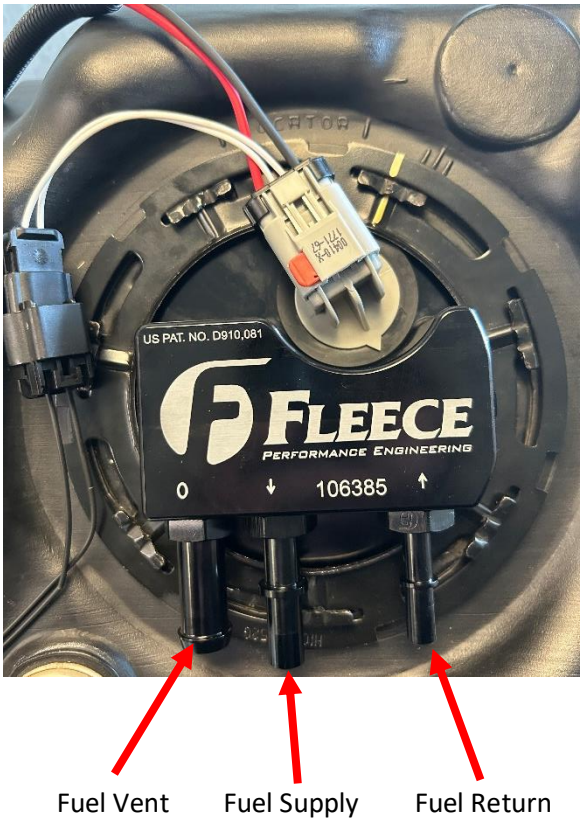
MY 11-14: Fuse position 40



MY 15-16: Fuse position 39



STEP 16: Connect the electrical wiring harness to the OEM harness and PowerFlo lift pump.



STEP 17: Reinstall the fuel tank, leaving the front hanger off and loosely installing the rear hanger first to provide better access to the electrical and fuel connections on the top of the fuel tank. Make the proper connections for the fuel lines, vent, fill tube, and electrical connection. Make sure the quick disconnect fuel lines are fully seated with retaining clips in place. When the quick disconnect fitting is fully seated you will not be able to pull it back off the pump fitting without releasing the retaining clip.

STEP 18: Reinstall the rear driveshaft and carrier bearing mount if removed.

NOTE: Use red Loctite on the bolts and properly torque to factory specifications.

STEP 19: Reinstall all vehicle battery connections. The fused lead from the Fleece supplied harness should be connected to the positive (+) battery terminal and the black lead will should be connected to the negative (-) battery terminal.

STEP 20: Add sufficient fuel back into the tank to submerge the pump bucket.

CAUTION: *Never run the pump dry or without fuel in the tank.*

WARRANTY REGISTRATION

Buyer MUST complete Warranty Registration Form within 30 days of purchase or warranty will be VOID. To complete the registration, go to: www.fleeceperformance.com/resources/reg.html . Buyer must accept the terms of the Limited Warranty including coverages and exclusions provided by Fleece Performance Engineering.