

INSTALLATION INSTRUCTIONS

PRODUCT: POWERFLO SENDING UNIT FOR 1991-1998 DODGE w/ CUMMINS

FPE-2021-83
November, 2022

FITMENT: 1991 – 1998 Dodge with Cummins

KIT P/N: FPE-PF-CUMM-9198

ESTIMATED INSTALLATION TIME: 4 Hours – Installation completed with the use of a vehicle hoist or with bed removed.

TOOLS REQUIRED: 1/4" drive ratchet, 1/4" drive 7mm socket, 1/2" drive impact or ratchet, 1/2" drive 10, 13 and 15mm sockets, 11/16" wrench, strap wrench or MATCO #FTR730, needle nose pliers.

KIT CONTENTS:

Item	Description	Qty
1	PowerFlo sending unit assembly	1
2	Fuel float arm	1
3	Fuel tank seal ring	1
4	5/16" fuel line retainer clip	1
5	45 degree -8AN to 1/2" pushlock hose fitting	2
6	Banjo fitting, -8AN to 12mm	1
7	Banjo bolt (91-93' trucks only)	1
8	12 mm copper crush washer	2
9	8 mm copper crush washer (94-98' trucks only)	2
10	Main pressure spring (p-pump application only)	1
11	Mechanical fuel pump block off plate and h/w	1
12	16' of 1/2" fuel hose	1
13	Wiring harness with ATO and Mini fuse block taps.	1



WARNINGS:

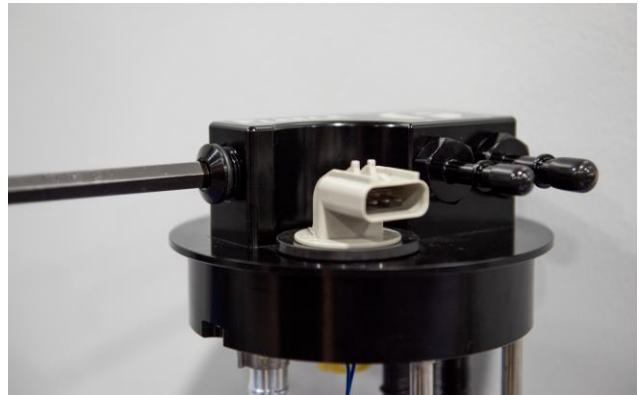
- The fuel tank and all fuel lines including the return fuel side of the system must be clean prior to operation of the pump.
- The purchaser and end user releases, indemnifies, discharges, and holds harmless Fleece Performance Engineering, Inc. from any and all claims, damages, causes of action, injuries, 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.

INSTALLATION INSTRUCTIONS

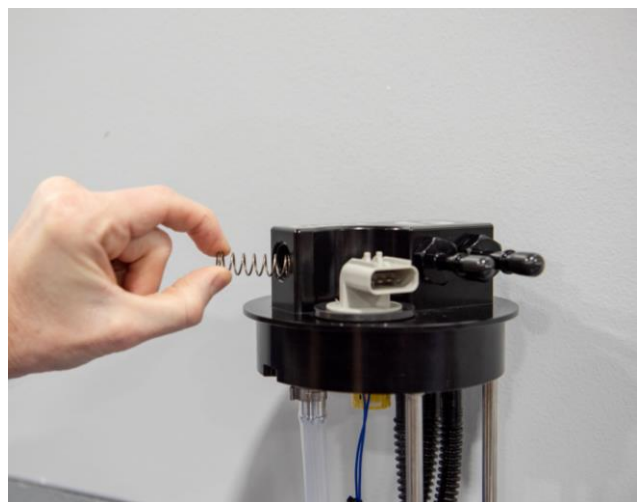
IMPORTANT: For all P-pump applications, replacement of the fuel pressure regulating spring is required. Remove the hex plug on the cap with a 3/8" allen wrench, remove and replace the spring in the bore with the labeled spring attached to the lift pump cap. Reinstall the hex plug and proceed with pump installation as outlined in these installation instructions.



REMOVE the allen plug with a 3/8" wrench



REMOVE and REPLACE the spring with the new spring provided in the bag labeled P-PUMP SPRING.



INSTALLATION INSTRUCTIONS

INSTALLATION PROCEDURE:

STEP 1: With the truck on a hoist, disconnect the fuel filler hose and vent.



STEP 2: Reaching over the top side of the tank, disconnect the fuel lines and electrical connection for the OEM sending unit.



STEP 3: Remove the cross-member located at the front of the fuel tank. There will be (4) - 15mm bolts to remove.

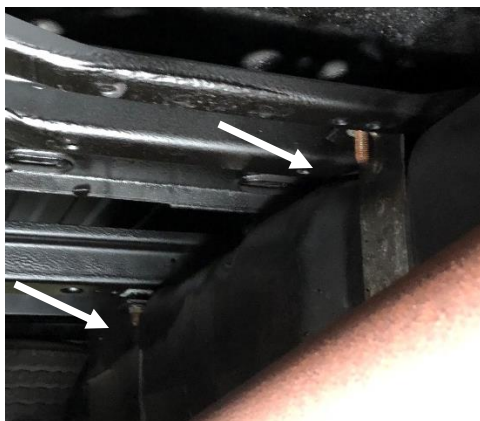


INSTALLATION INSTRUCTIONS

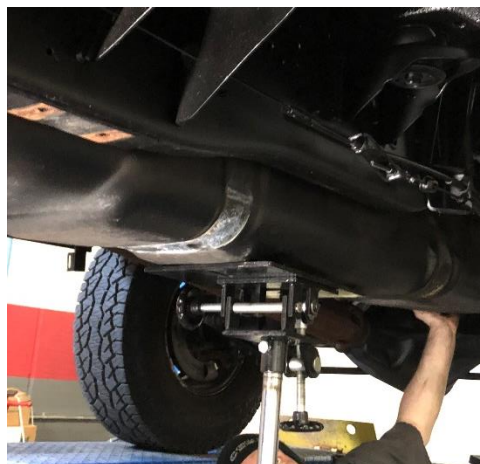
STEP 4: Secure the tank with a lift or jack to lower the tank down to the ground.



STEP 5: Remove 15 mm nuts that retain the fuel tank straps at the front and rear of the tank. Remove the tank straps.



STEP 6: Slowly lower the tank.



INSTALLATION INSTRUCTIONS

STEP 7: SENDING UNIT REMOVAL

With the tank on the ground, make note of the orientation of the OEM sending unit in the tank. The PowerFlo lift pump will be oriented in the same manner during installation.



Using a strap wrench, or MATCO tool [#FTR730](#), rotate the sending unit's retaining ring (OE P/N: 52005389) counterclockwise. MATCO tool shown at right for reference. Remove the retaining ring and remove the sending unit assembly from the tank. Have a bucket nearby to catch fuel from the OE sending unit when removed.



INSTALLATION INSTRUCTIONS

STEP 8: Remove and discard the original seal ring from the tank. Clean the area around the sealing surface of any debris. Check the fuel tank for debris and clean the tank if any debris is observed.



STEP 9: Once the area is clean, install the new seal ring included in the kit into the fuel tank.



INSTALLATION INSTRUCTIONS

STEP 10: Install the fuel level float arm onto the PowerFlo lift pump by gently clipping the arm into the fuel level sensor.

STEP 11: Install the PowerFlo assembly into the tank. Check that the gasket is fully seated.

NOTE: Use caution when installing the PowerFlo 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 it before you place it into the tank.



STEP 12: Ensure proper orientation of the PowerFlo by matching the orientation of the original sending unit. Reinstall the retaining ring and tighten using a strap wrench or MATCO tool [#FTR730](#) by rotating it clockwise to the fully engaged position.



INSTALLATION INSTRUCTIONS

STEP 13: Remove the protective shipping caps from the fittings and install the new fuel line locking tab that is included in your kit onto the return side fitting.



INSTALLATION INSTRUCTIONS

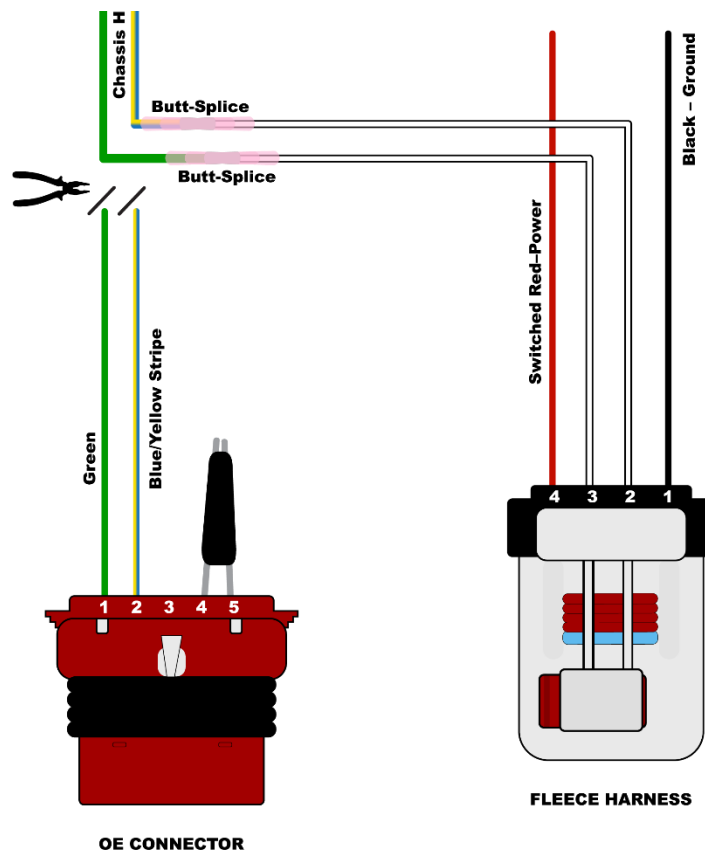
ELECTRICAL CONNECTION FOR MODEL YEARS 1991-1993

Locate the OE sending unit chassis connector and the wires in pin locations #1 and #2. The wire in pin #2 will be blue with a yellow stripe, the wire in pin #1 will be green.

Cut wires #1 and #2 approximately 2-3" back from the OE sending unit connector. The chassis wires leading to the gauge panel will be spliced into the new Fleece harness provided in the kit.

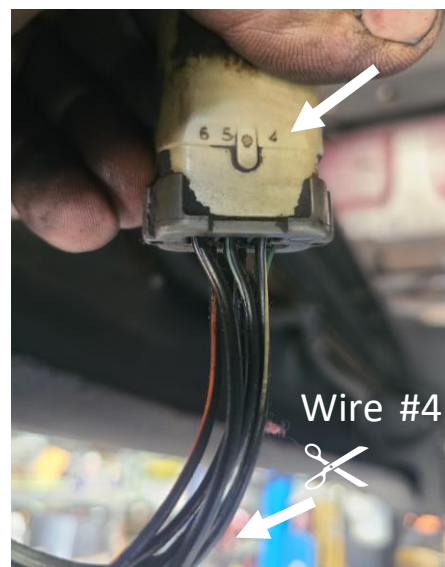
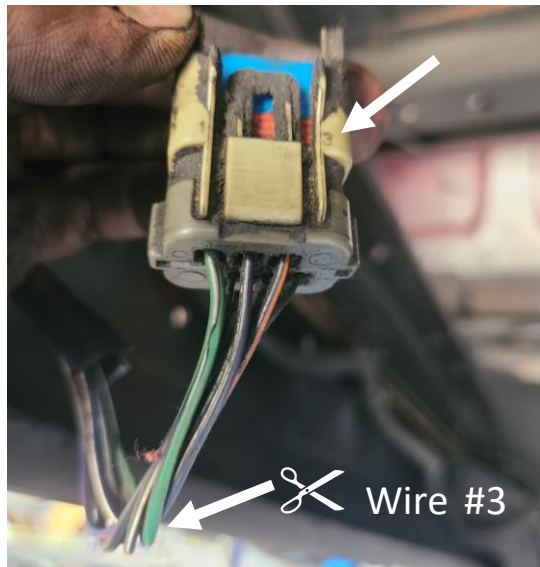
Strip the insulation on these two wires leading to the gauge panel and using the butt splice connectors included in the kit, connect them to the new harness leads. There are no polarity requirements – the wires can be connected to either wire on the new pigtail. The OE connector will no longer be utilized and can be tied up out of the way on the vehicle.

Use a heat gun to seal the butt splice connector after the connection is securely made.

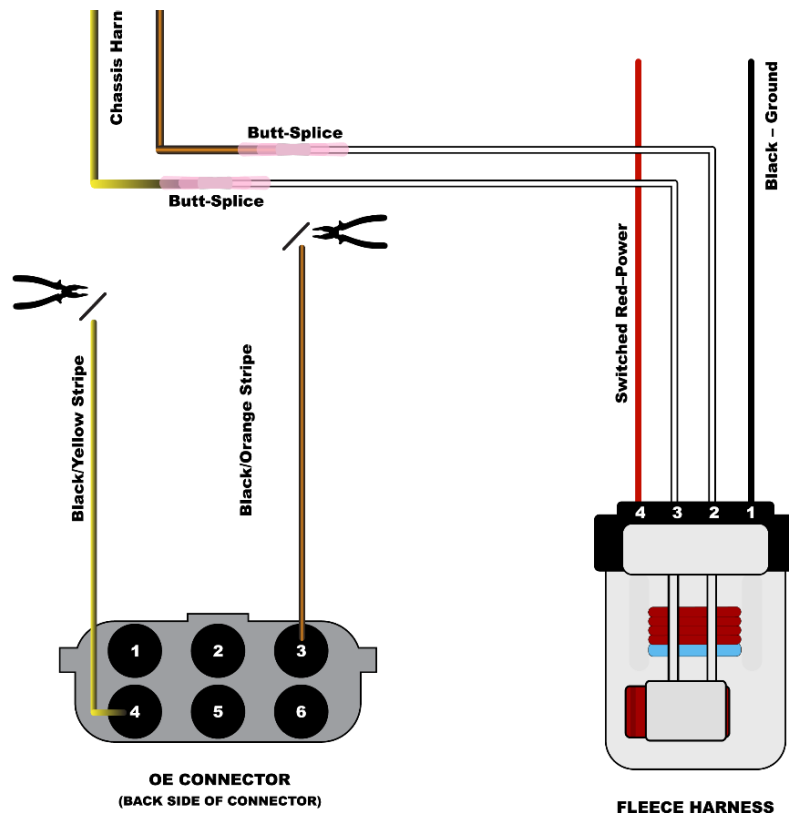


INSTALLATION INSTRUCTIONS

ELECTRICAL CONNECTION FOR MODEL YEARS 1996-1997 (6-PIN CONNECTOR)



Locate the OE sending unit connector on the chassis harness. The OE connector will be labeled with the pin locations on the body of the connector. The wire in pin location #3 is black with an orange stripe and wire in pin location #4 is black with a yellow stripe. Cut wires #3 and #4 approximately 2-3 inches back from the OEM sending unit connector. The chassis wires leading to the gauge panel will be spliced into the new Fleece harness. Strip the insulation on these two wires leading to the gauge panel and using the butt splice connectors included in the kit, connect them to the new Fleece harness. There are no polarity requirements – the wires can be connected to either wire on the new pigtail. The OE connector will no longer be utilized and can be tied up out of the way on the vehicle. Use a heat gun to seal the butt splice connector after the connection is securely made.



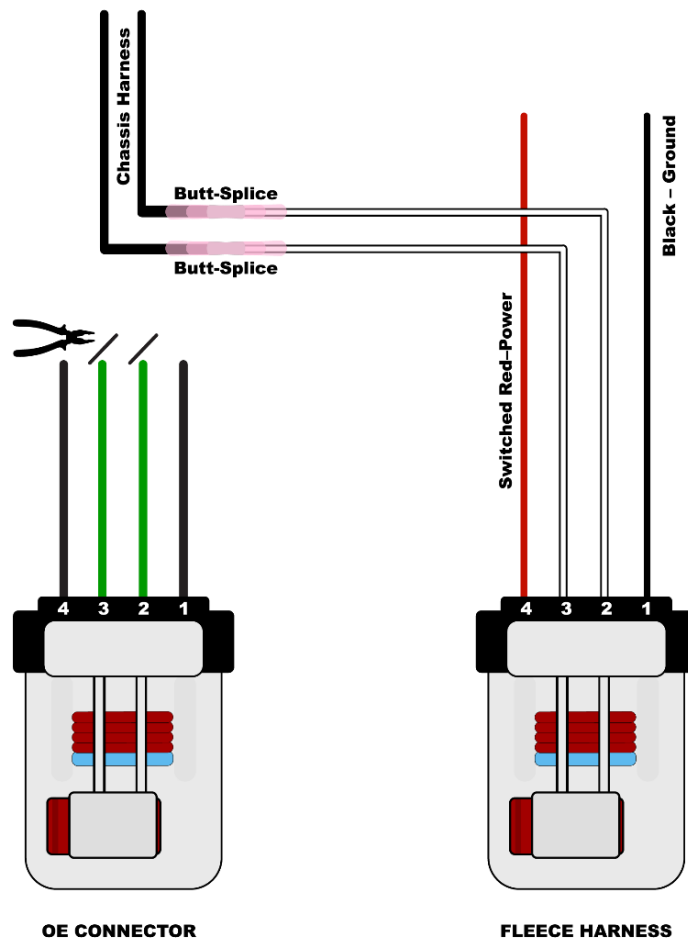
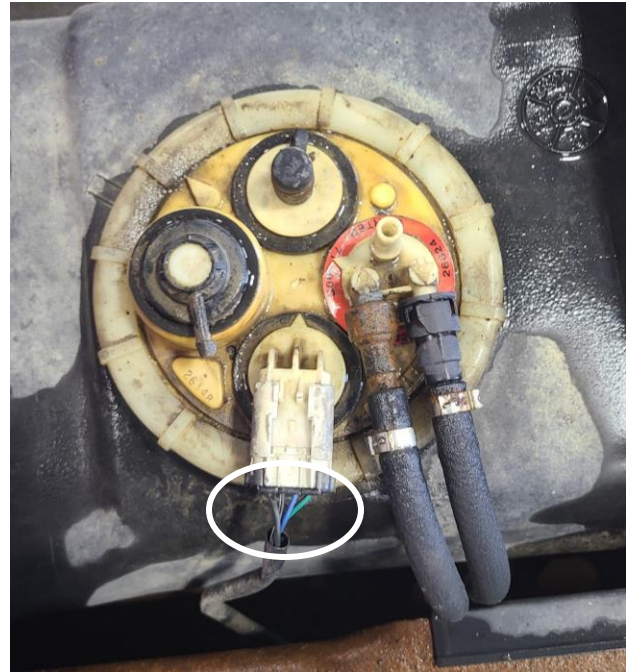
INSTALLATION INSTRUCTIONS

ELECTRICAL CONNECTION FOR MODEL YEARS 1994, 1995, 1996 AND 1998

While the original chassis connector will be the same as what is supplied on the Fleece harness, you **MUST** use the supplied Fleece chassis harness to power the pump, you will no longer utilize the factory connector.

The two inside wires on the original chassis connector (pins #2 and #3) will be utilized and connected to the wire extensions on the new Fleece harness that are pre-crimped on one side with a butt-splice connector.

Cut and strip the insulation on wires #2 and #3 and using the butt splice connectors included in the kit, connect them to the leads on the new Fleece harness. There are no polarity requirements – the wires can be run to either wire on the new harness. The OE connector will no longer be utilized and can be tied up out of the way on the vehicle. Use a heat gun to seal the butt splice connector after the connection is securely made.



INSTALLATION INSTRUCTIONS

POWER, GROUND, AND SWITCHED POWER CONNECTIONS FOR 91-98

Route the chassis harness from the PowerFlo lift pump to the engine bay. Secure the harness along the frame rail. Mount the relay in the engine bay and connect the appropriate eyelets directly to the battery positive (+) and battery ground (-). Select the appropriate size fuse tap for your vehicle (ATO or Mini). Select an IGNITION ON fuse in the under hood fuse box. Remove the fuse from the fuse box and insert it into the fuse tap alongside the supplied fuse. Insert the fuse tap into the fuse panel and connect the spade terminal to the lift pump harness. If you do not fill the secondary fuse tap location, the pump will not operate.

RED WIRE WITH EYELET CONNECTION: 12V BATTERY POSITIVE (+)

BLACK WIRE WITH EYELET CONNECTION: 12V BATTERY NEGATIVE (-)

RELAY IGNITION CONTROL: IGNITION SENSE FUSE TAP



INSTALLATION INSTRUCTIONS

UNDERHOOD FUEL ROUTING FOR MODEL YEARS 1991-1993

STEP 1: Remove the fuel supply hose from the frame rail to the mechanical lift pump.

STEP 2: Remove the 12mm banjo bolt from the fuel supply line to the filter housing.

STEP 3: Remove the fuel line from the mechanical lift pump to the fuel filter housing.

STEP 4: Remove the factory mechanical fuel pump from the side of the engine.



STEP 5: Install the new banjo fitting, 12mm banjo bolt and two, 12mm copper crush washers included in the kit onto the open port on the fuel filter housing.

Attach the 45 degree -8AN fitting onto the new 1/2" push lock hose. Attach and tighten the 45 degree AN fitting to the banjo fitting

Safely route and secure the fuel hose along the frame rail to the PowerFlo lift pump.



INSTALLATION INSTRUCTIONS

UNDERHOOD FUEL ROUTING FOR MODEL YEARS 1994-1998

STEP 1: Remove the fuel supply hose from the frame rail to the mechanical lift pump.

STEP 2: Remove the 8mm and 12mm banjo bolts from the fuel supply line to the filter housing.

STEP 3: Remove the fuel line from the mechanical lift pump to the fuel filter housing.

STEP 4: Remove the factory mechanical fuel pump from the side of the engine.

STEP 5: Re-use the original 12mm banjo bolt (#3 at right) that was removed from the filter head. Install the new supplied banjo fitting (#4 at right), using two new 12mm copper crush washers included in the kit. Install the original 8mm banjo bolt (#1 at right) along with two new 8mm crush washers onto the top of the 12mm banjo bolt for the return fuel line banjo (#2 at right).

Attach the 45 degree -8AN fitting onto the new ½" push lock hose. Attach and tighten the 45 degree AN fitting to the banjo fitting (#5 at right).

Safely route and secure the fuel hose along the frame rail to the PowerFlo lift pump.



INSTALLATION INSTRUCTIONS

FUEL ROUTING FOR MODEL YEARS 1991-1998

Route the new fuel hose back to the fuel tank and PowerFlo lift pump. Cut the fuel hose to length and insert the 45 degree AN fitting on the end of the ½" fuel hose. Attach and tighten the AN fitting to the PowerFlo pump output.

Connect the return fuel line to the PowerFlo lift pump.



Clean the mechanical fuel pump mounting surface and install the fuel pump block off plate included in the kit.



INSTALLATION INSTRUCTIONS

TANK RE-INSTALLATION

Lift the fuel tank into place. Re-install the (2) tank straps that secure the tank with the (2) - 15mm nuts. Install the center support with the (4) - 15mm bolts that were removed.



From the driver's side rear wheel-well, connect the electrical wiring harness to the PowerFlo. Key on the vehicle and ensure the fuel level is reading appropriately and confirm the pump is running. Cycle the ignition, allowing the pump to build pressure and clear air from the system. Start the engine and check for any fuel leaks before operating the vehicle.

