

advanced FLOW engineering

Instruction Manual P/N: 42-12035

Make: **RAM** Model: **Diesel Trucks** Year: **2013-2016** Engine: **L6-6.7L (td)**



- Please read the entire instruction manual before proceeding.
- Ensure all components listed are present.
- Ensure you have all necessary tools before proceeding.
- Do not attempt to work on your vehicle when the engine is hot.
- Disconnect the negative battery terminal before proceeding.
- Retain factory parts for future use.

Label	Qty.	Description	Part Number
A	1	Fuel Manifold Assembly	05-60565
B	1	Filter, Fuel	44-FF019
C	1	Bowl, Water Separator	05-60487
D	1	Bracket, Frame; Carbon Steel	05-60677
E	1	Bolt, Flange Hd Cap: 3/8" - 16 x 3-1/2"	03-50487
F	1	Washer, Flat; 3/8"ID, 1.25"OD	03-50065
G	1	Spacer, Aluminum	05-60690
H	4	Nut, Hex Nylon Lock: 3/8" - 16	03-50047
I	4	Screw, Socket Hd Cap: M6x1.0x50mm	03-50443
J	4	Washer, M6 (Fiber)	03-50457
K	4	Washer, M6	03-50444
L	4	Nut, Flanged Nyloc: M6	03-50445
M	2	Fitting; 3/8" NPT to AN -6 (Blk, Straight)	05-60685
N	1	Harness, Relay	05-60551
O	1	Connector, Add a harness & fuse	05-60583
P	1	Hose, Fuel Return	05-60689
Q	18	Ties, Nylon Cable, 12"	05-60167
R	1	Harness, Power	05-60523
S	1	Hose, Fuel Inlet	05-60673
T	1	Hose, Fuel Outlet	05-60681
U	1	Strainer Tube w/ filter	05-60579
V	1	Return Tube	05-60570
W	2	Clamps	05-60578

Note: Legal in California for use on race vehicles only. The use of this device on vehicles used on public streets or high ways is strictly prohibited in California and others states that have adopted California emission regulations.





Figure 1

Step 1: Locate the hole in the driver's side frame rail behind the DEF tank and in front of the fuel tank.



Figure 2

Step 2: Gently pull the hard lines off of the frame rail. Be careful not to bend or kink the hard lines.



Figure 3

Step 3: Place the supplied bracket between the frame and the hard lines.

Step 4: Line up the bracket with the hole located in Step 1.



Figure 4

Step 5: Install the supplied 3/8" bolt into the bracket and through the frame rail.



Figure 5

Step 6: Install the supplied aluminum spacer onto the 3/8" bolt.



Figure 6

Step 7: Using the supplied 3/8" nut and washer, tighten the bracket on to the frame rail.



Figure 7

Step 8: Re-install the hard lines onto the frame rail.

**Figure 8**

Step 9: Install the four (4) supplied M6x1.0 x 50mm bolts, M6 washers, and fiber washer. The fiber washers go between the DFS780 manifold and the bracket.

**Figure 9**

Step 10: Connect the DFS780 manifold to the bracket using the four (4) supplied M6 flange nuts (make sure the fiber washers isolate the pump body from the bracket).



Figure 10

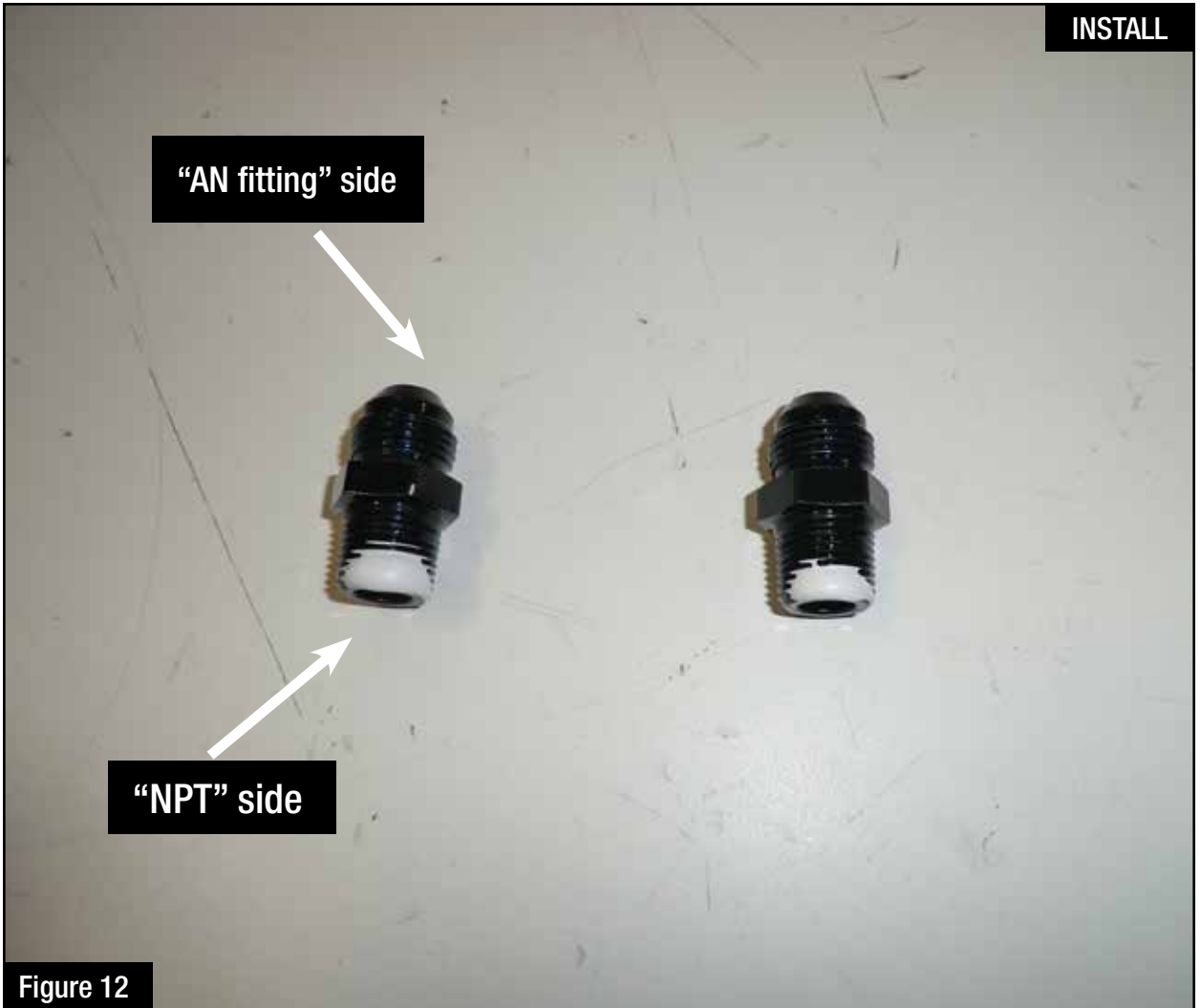
Step 11: Turn sight glass to the desired angle. Using a 1-1/4" wrench, tighten the center nut under the DFS780 manifold.

NOTE: The pump should look like the picture above.



Figure 11

Step 12: Using a light oil, lube the gasket on the fuel filter before installation. Thread supplied water separator bowl onto the supplied fuel filter.



Step 13: Apply Teflon tape (PTFE) or Teflon paste (PTFE) to the 2 x 3/8" NPT to -6 AN fittings.

NOTE: Only apply Teflon to the NPT side of the fitting.



Figure 13

Step 14: Install the 2 x 3/8" NPT to -6 AN fittings into the DFS780 manifold (DO NOT overtighten).



Step 15: Locate the factory fuel feed and return lines. They are located at the top of the fuel tank near the center of the tank.

Step 16: Clean the area around the fuel lines to prevent dirt and debris from going into the lines.

Step 17: Disconnect the fuel feed and return lines.

NOTE: It may be necessary to remove the driveshaft in order to access the top of the fuel tank.

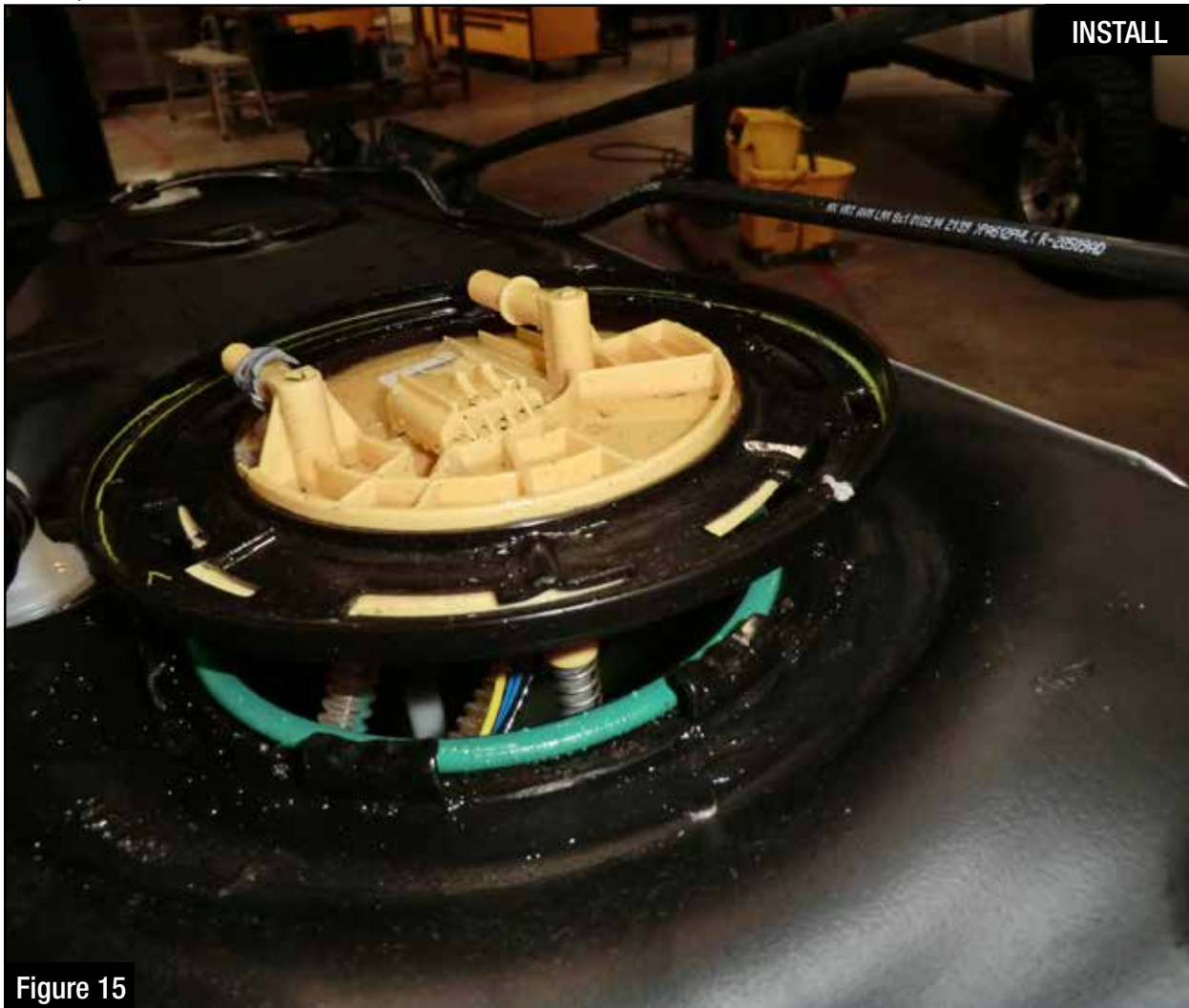
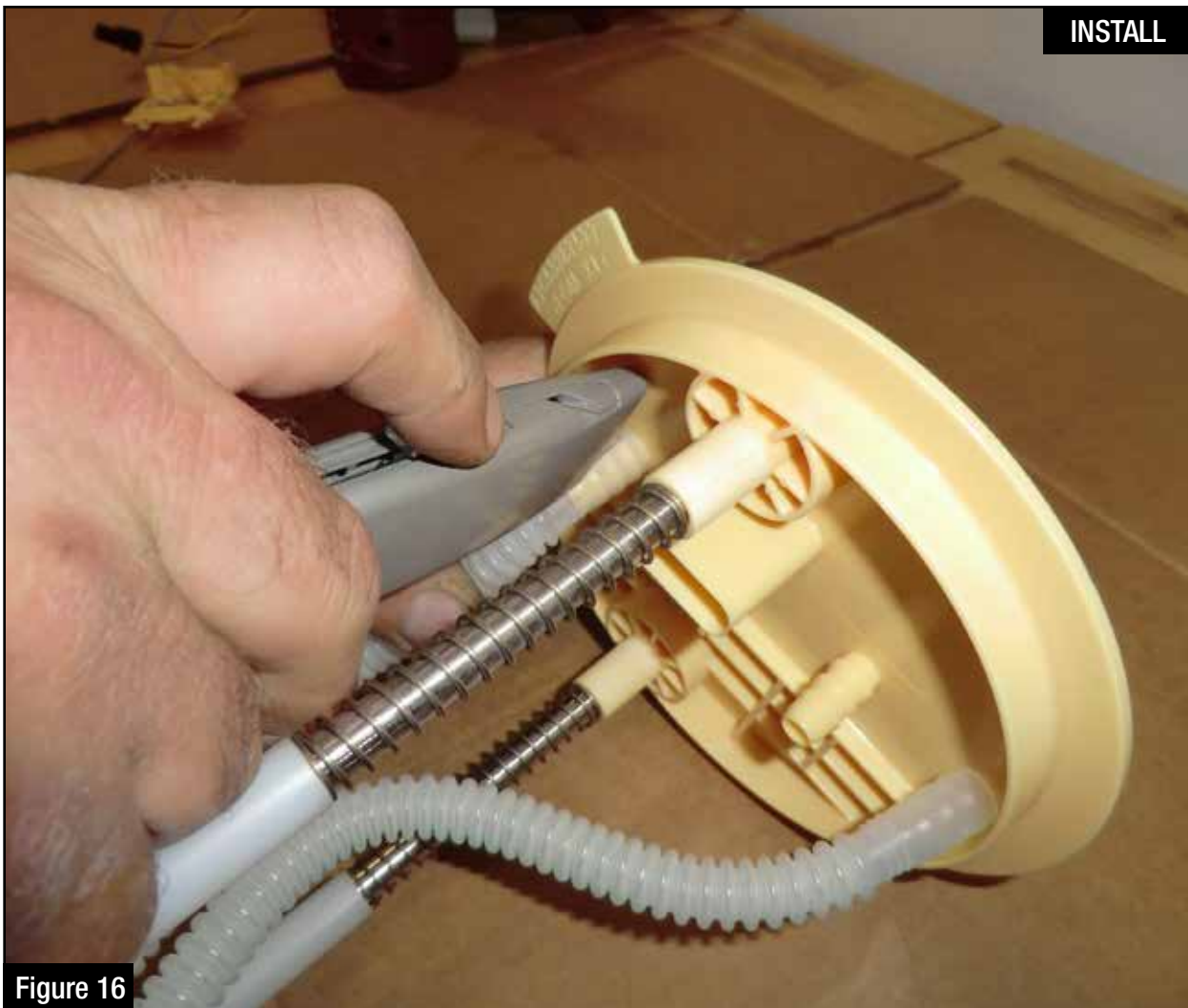


Figure 15

Step 18: Lower and remove fuel tank from vehicle.

Step 19: Remove the lock ring and the stock fuel pump sender assembly.

**Figure 16**

Step 20: Unplug the electrical connector at the top of the fuel pump sender assembly.

Step 21: Unplug the two wires connected to the fuel pump.

Step 22: Carefully cut the supply and return tubes and disconnect them from the top of the fuel pump sender assembly.

NOTE: It is recommended but, not required to remove the fuel level sending unit before performing Steps 23 to 26.



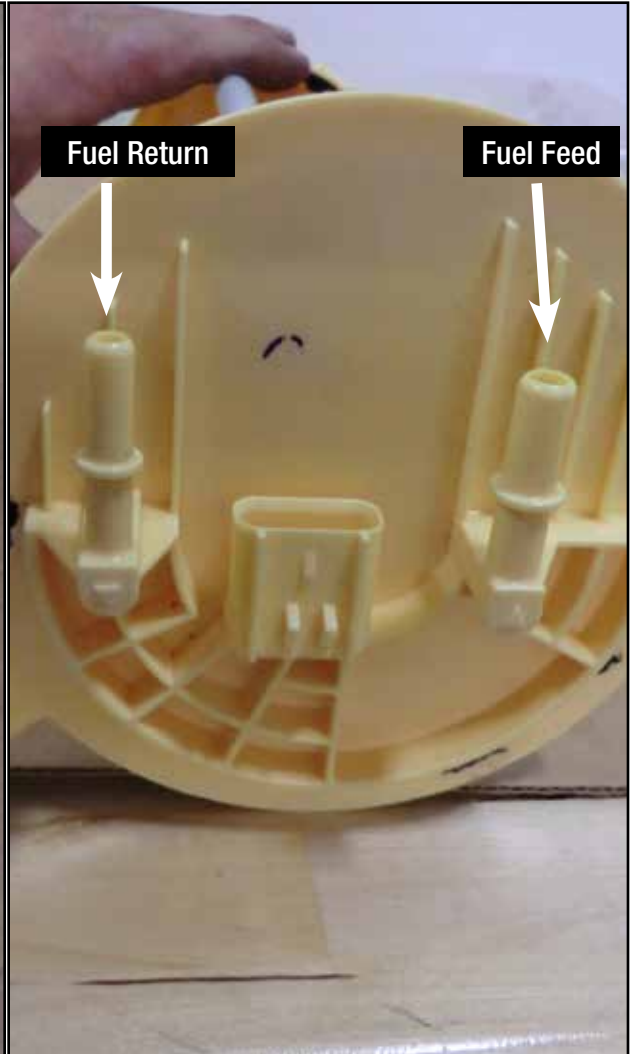
Figure 17

Step 23: Carefully cut the three supports for the fuel pump.



Figure 18

Step 24: Remove the fuel pump, fuel feed and fuel return line from the fuel pump sender assembly.



Step 25: Using the provided clamp, install the new fuel feed hose/filter assembly onto the fuel feed side of the fuel pump sender assembly.

Step 26: Using the provided clamp, install the new fuel return hose onto the fuel return side of the fuel pump sender assembly.

NOTE: Be careful to NOT kink the fuel feed and return hoses during installation.

**Figure 20**

Step 27: If the fuel level sending unit was removed, reinstall at this time.

Step 28: Reconnect the electrical connector on the top of the fuel pump sender assembly and secure the loose wires to the fuel return tube.

Step 29: Gently push the filter to the bottom of the fuel bowl. This will assure that the fuel filter is at its lowest point when installed in the fuel tank.



Figure 21

Step 30: Install the fuel pump sender assembly into the fuel tank.

Step 31: Install the fuel tank into the vehicle but, do not reconnect the fuel feed and return lines.

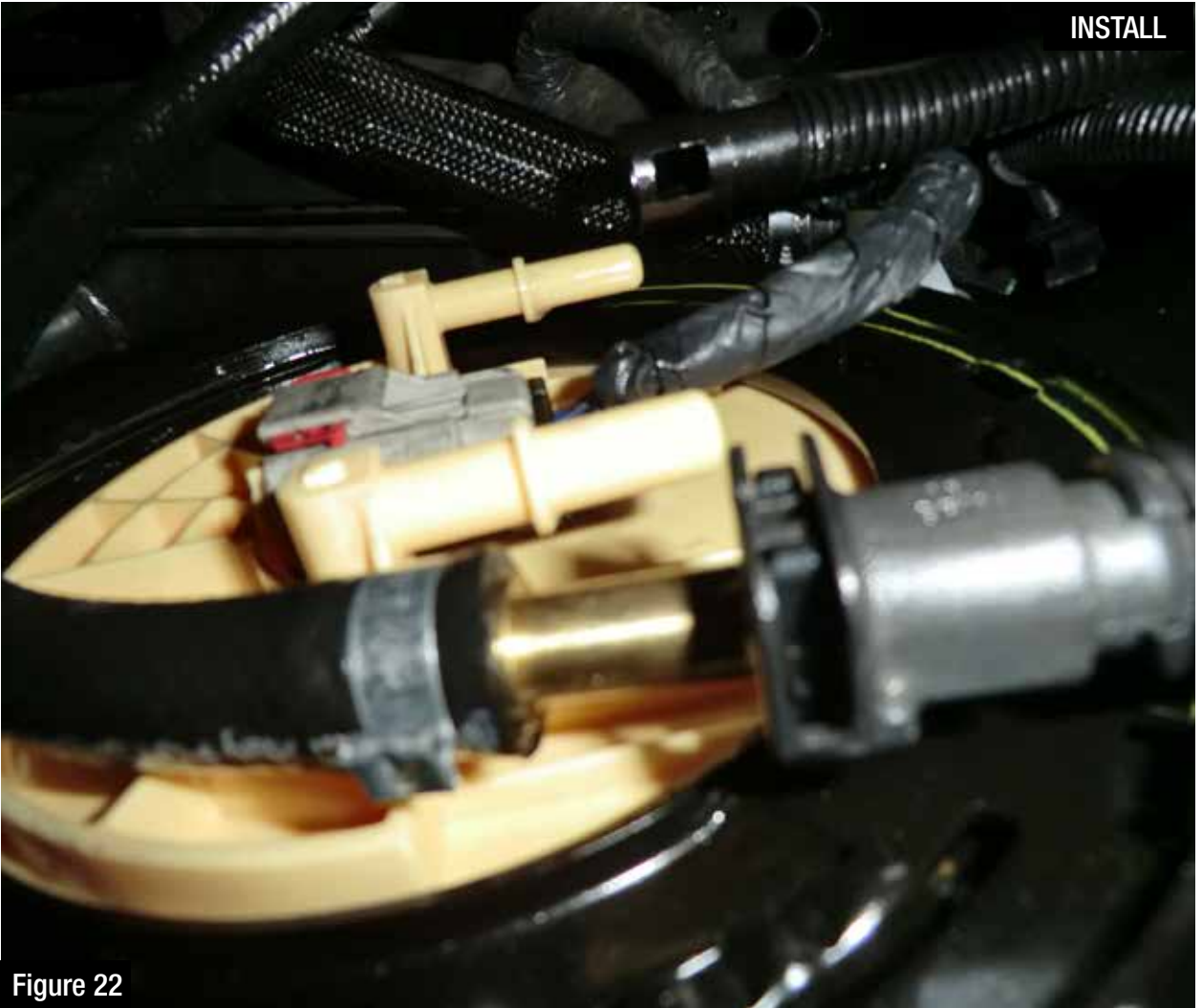


Figure 22

Step 32: Install the 3/8" quick disconnect fitting (male connection) on the supplied fuel outlet hose into the quick disconnect fitting (female connection) on the stock fuel feed line.



Step 33: Install the supplied fuel return line (female connection) onto the fuel pump sender assembly (male connection).

Step 34: The fuel line should point towards the center of the vehicle.

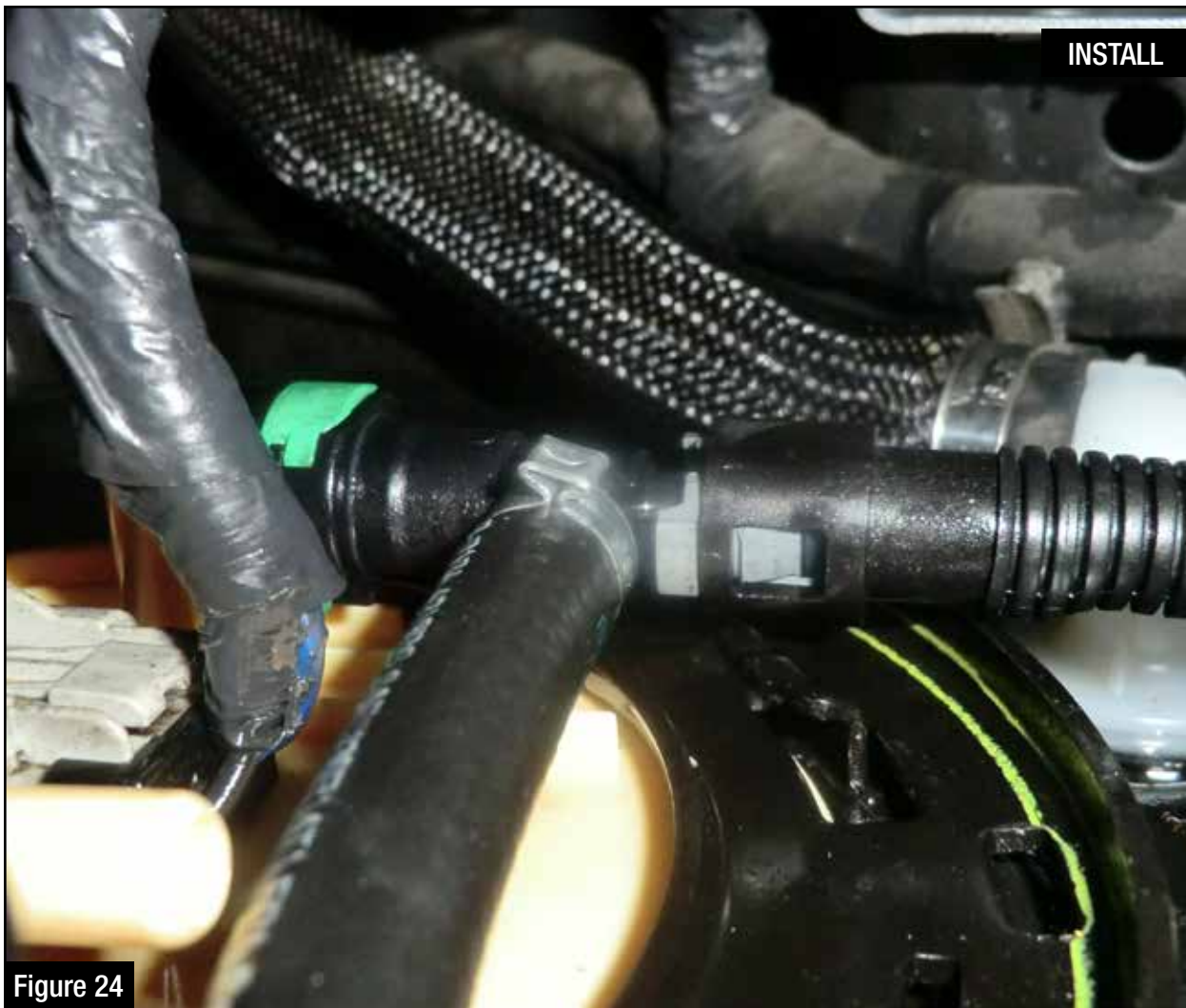


Figure 24

Step 35: Connect the factory fuel return line (female connection) onto the tee fitting at the end of the supplied fuel return line (male connection).

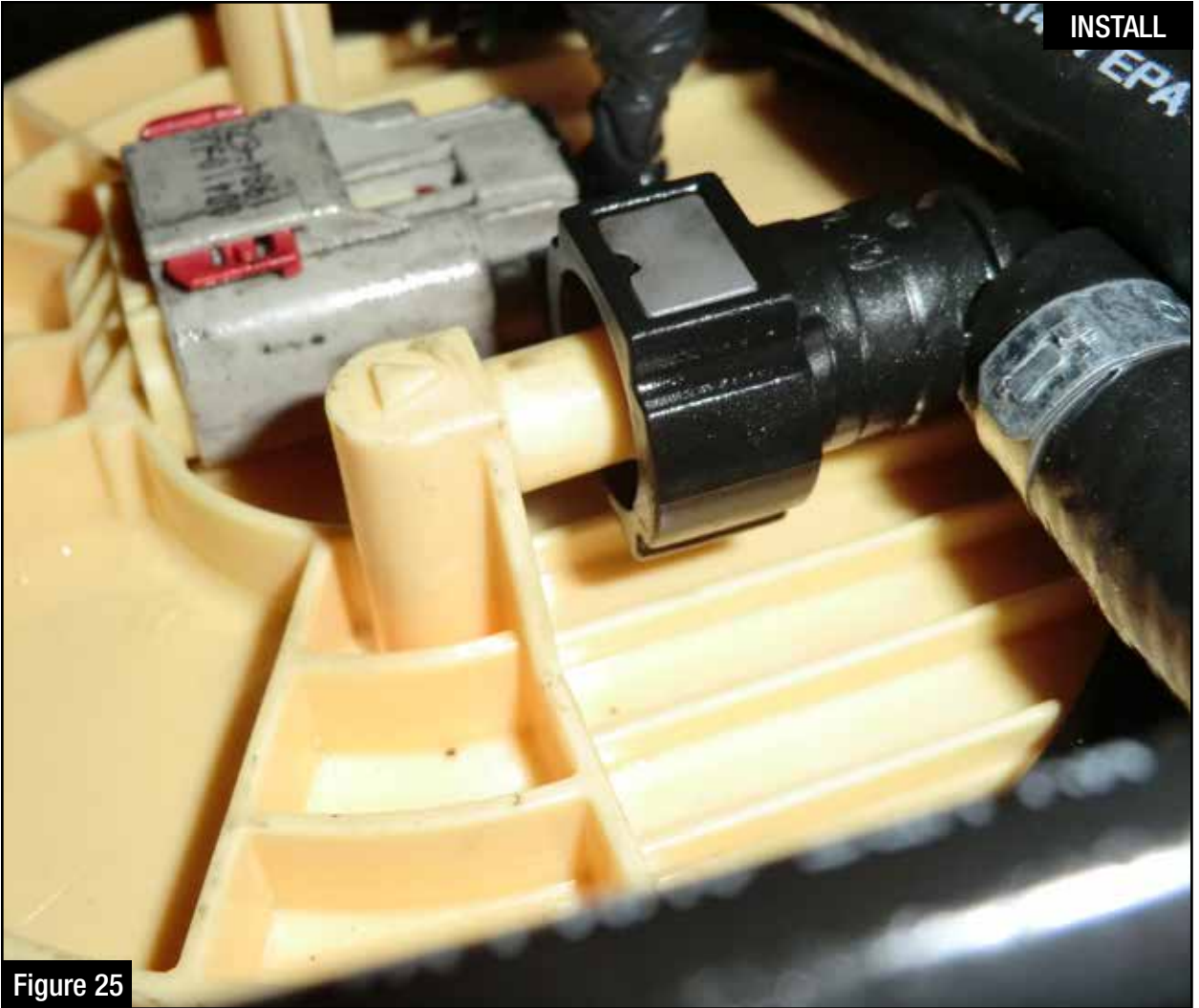


Figure 25

- Step 36: Install the 90° 3/8" quick disconnect fitting (female connection) on the supplied fuel inlet hose onto the quick disconnect fitting (male connection) on the fuel pump sender assembly.
- Step 37: The fuel line should point towards the center of the vehicle.



Figure 26

Step 38: Route the hoses as shown and secure with the supplied nylon cable ties.



Figure 27

Step 39: Route the hoses as shown and secure with the supplied nylon cable ties.



Figure 28

Step 40: Install the supplied inlet fuel line (90° silver “AN” fitting) onto the fuel inlet port of the DFS780 manifold.

Step 41: Install the supplied outlet fuel line (90° black “AN” fitting) onto the fuel outlet port of the DFS780 manifold.

Step 42: Install the supplied return line (-4 AN fitting) onto the top of the DFS780 sight glass.

**Figure 29**

Step 43: Route the hoses as shown and secure with the supplied nylon cable ties.

Step 44: Plug the Deutsch connector of the supplied wire harness into the mating connector on the DFS780 pump and route the harness along the frame.

**Figure 30**

Step 45: Run the remaining wire harness along the frame to the engine compartment. Secure using supplied nylon cable ties.



Figure 31

Step 46: Connect the red wire ring terminal to the positive side of the battery.

NOTE: Check the fuse to make sure it is already installed in the connector.



Figure 32

Step 47: Connect the black wire ring terminal to the negative side on the battery.



Figure 33

Step 48: Plug the supplied relay harness into the Deutsch connector on the power harness.

Step 49: Organize any of the loose wire harness and secure with supplied nylon cable ties.



Figure 34

Step 50: Secure the supplied relay.



Figure 35

Step 51: Attach the power wire from the relay to the inline fuse adapter.



Figure 36

Step 52: Find a 12 volt ignition source inside the fuse box that only comes on with the key in the “run” position. The suggested fuse location is F51 “IGN MOD”. Once a 12 volt source is located, pull fuse from the fuse box.



Figure 37

Step 53: Using the supplied inline fuse adapter, install the fuse removed in Step 52 and insert it into the open location on the fuse adapter (not in line with the wire).


Figure 38

Step 54: Install into the 12 volt ignition source inside the fuse box.

Step 55: Organize any of the loose wire harness and secure with the remaining nylon cable ties.

Step 56: Reinstall the fuse cover.

Step 57: Turn the key to the “Run” position and watch to see if the DFS780 sight glass fills with fuel. If the DFS780 sight glass does not fill with fuel, use the Schrader valve (on the top of the DFS780 sight glass) to release trapped air which will allow the DFS780 sight glass to fill. If the DFS780 sight glass still does not fill, try starting the engine.

Step 58: Installation is now complete. Make sure that all fittings are tight and that fuel is not leaking from any of the connections made while installing.