

advanced FLOW engineering

Instruction Manual P/N: 42-12031

Diesel Fuel System

Make: **Dodge** Model: **Diesel Trucks** Year: **2005-2010** Engine: **L6-5.9L / 6.7L**



- 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	05-60504
E	1	Spacer, Bracket	05-60577
F	2	Washer, 5/8"	03-50458
G	1	Nut, Hex: 5/8"-11	03-50450
H	4	Screw, Socket Head Cap M6x1.0x50mm	03-50443
I	4	Washer, M6 (Fiber)	03-50457
J	4	Washer, M6	03-50444
K	4	Nut, Flanged Nyloc: M6	03-50445
L	2	Fitting: 3/8" NPT to AN (Installed)	05-60509
M	1	Harness Relay	05-60551
N	1	Connector, Add a harness	05-60583
O	1	Hose, Fuel Return	05-60570
P	1	Screw, Cap: 5/8"-11x8"	03-50449
Q	12	Ties, Nylon Cable, 12"	05-60167
R	1	Strainer Tube	05-60579
S	1	Return Tube	05-60570
T	2	Clamps	05-60578
U	1	Harness, Power	05-60523
V	1	Hose, Fuel Inlet	05-60568
W	1	Hose, Fuel Outlet	05-60569

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

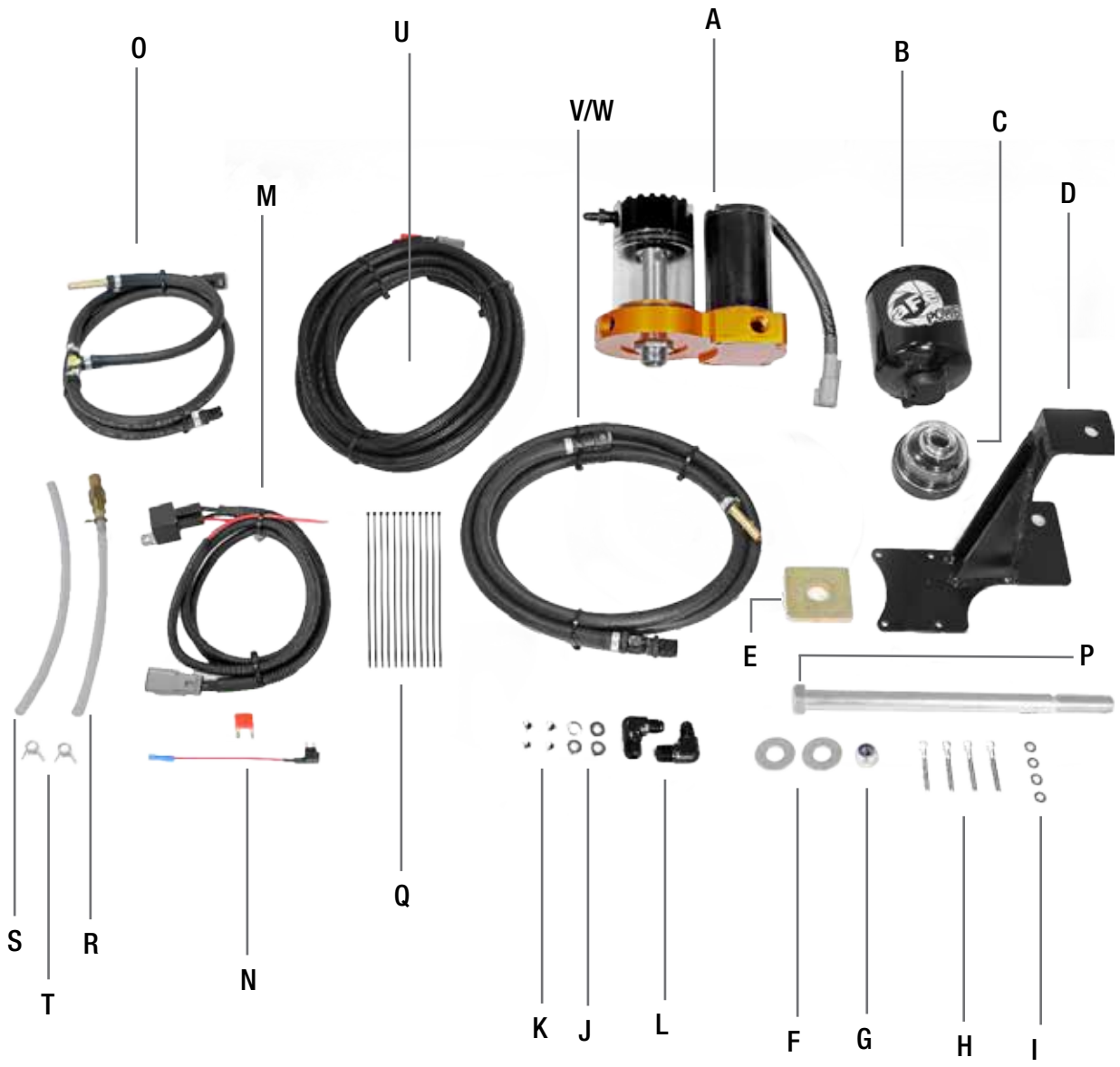




Figure 1

Note: The bed will need to be removed or the fuel tank needs to be removed prior to step number 1.

Step 1: Connect the bracket to the manifold using the four (4) supplied M6x1.0 x 50mm bolts, M6 washers and M6 flange nuts.

REMOVAL



Figure 2

Step 2: Remove the rear differential vent hose from the shock tower.



Step 3: Remove the factory wire harness from the two mounting holes. (As circled above)

INSTALL



Figure 4

Step 4: Install the bracket onto the frame.



Figure 5

Step 5: Install the supplied 5/8"-11 x 8" bolt, and 5/8" washer through the bottom of the bracket into the factory hole in the frame.



Figure 6

Step 6: Install the other supplied 5/8" washer and 5/8" nut onto the bolt and tighten using a 15/16" wrench and socket.



Figure 7

Step 7: The mounting tab located on the stock wire harness, needs to be cut off.
(Location shown above)

INSTALL



Figure 8

Step 8: Reattach the differential vent tube back onto the shock tower. Reinsert the stock wire harness back into the stock mounting location.

**Figure 9**

Step 13: Clean area around stock fuel pump sender assembly to prevent dirt from falling into the tank.

Step 14: Unclip and remove the stock feed and return fuel lines.

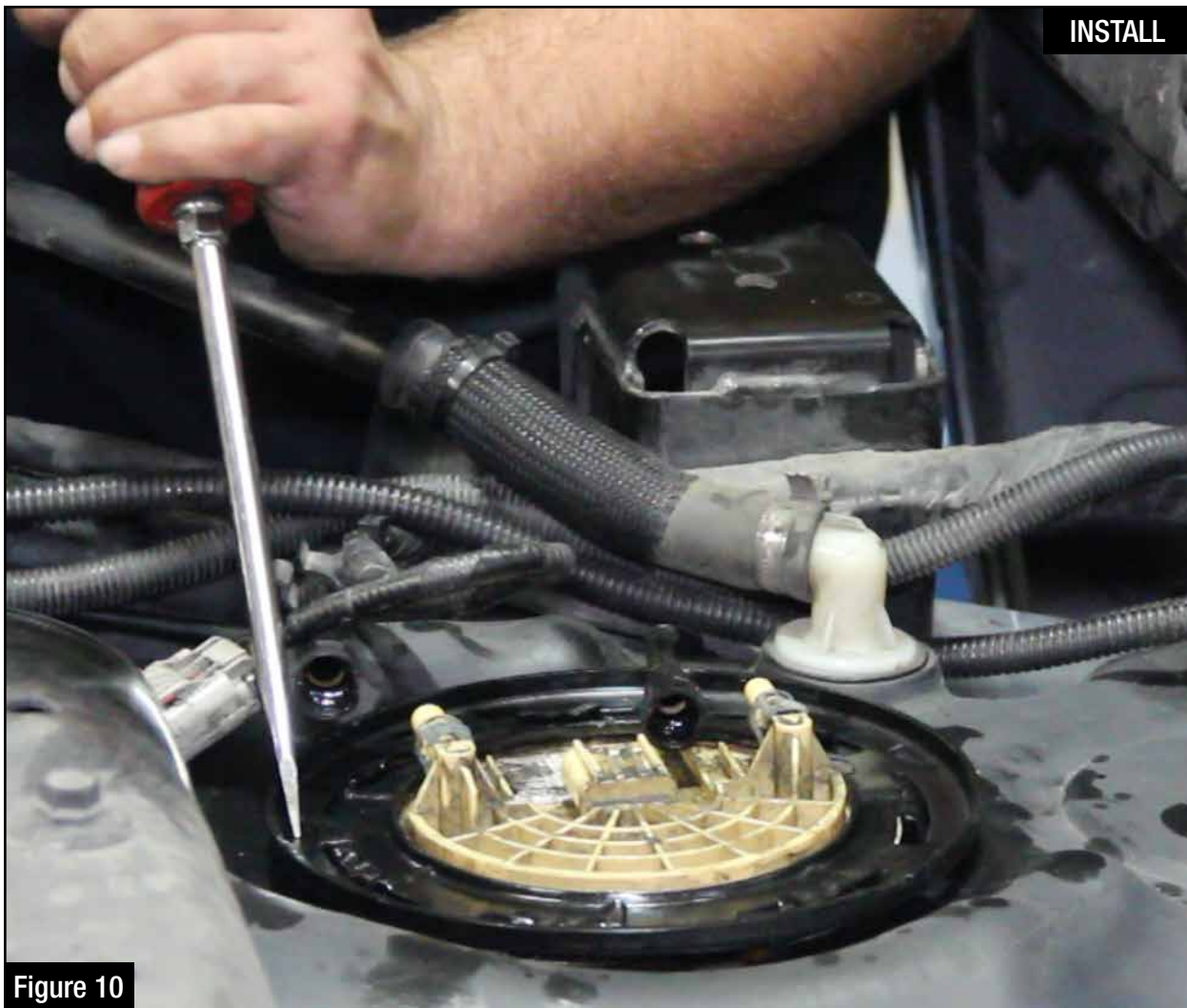


Figure 10

Step 15: Remove the lock ring for the stock fuel pump sender assembly.

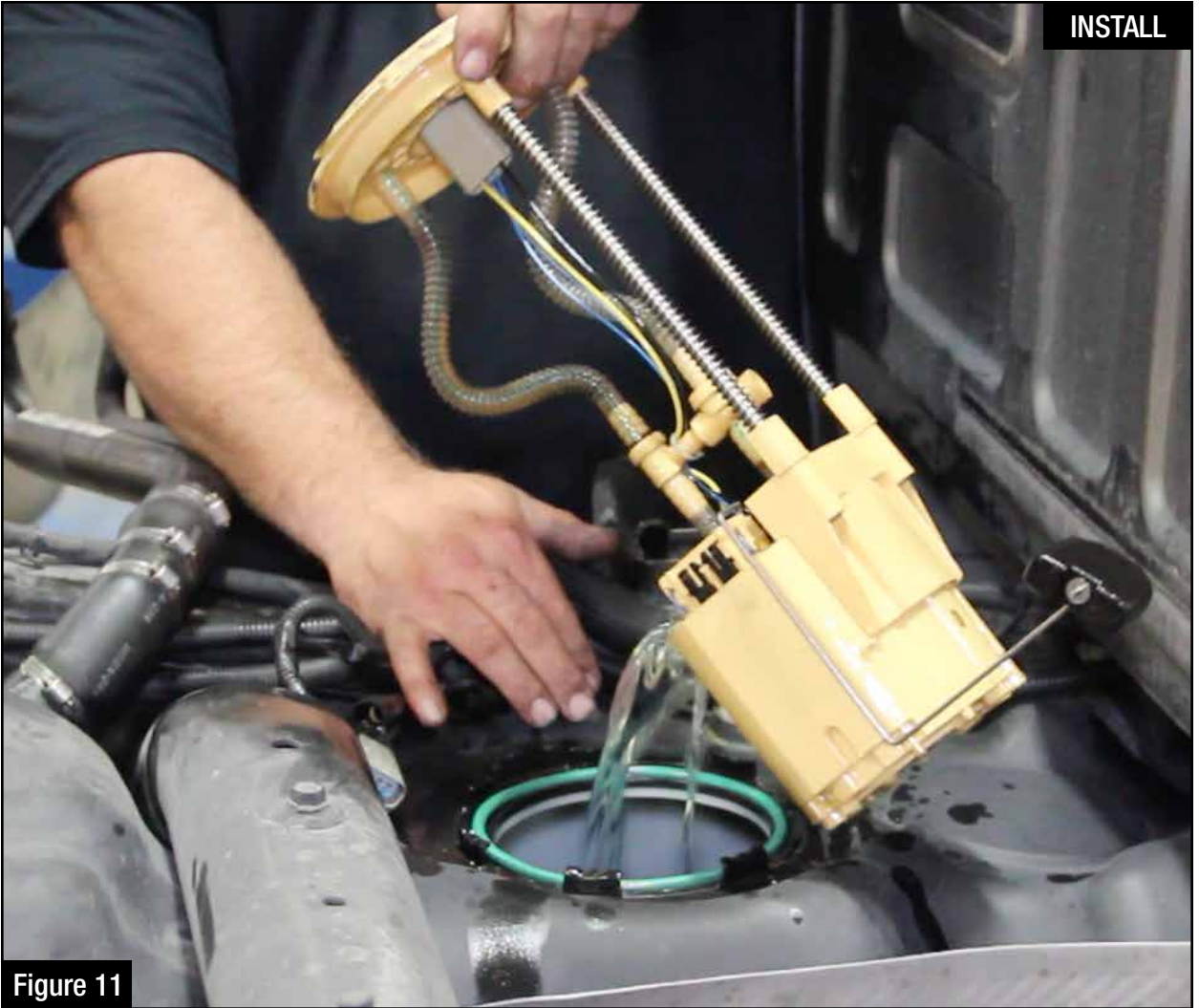


Figure 11

Step 16: Remove the stock fuel pump sender assembly. Be sure to pour out any remaining fuel.

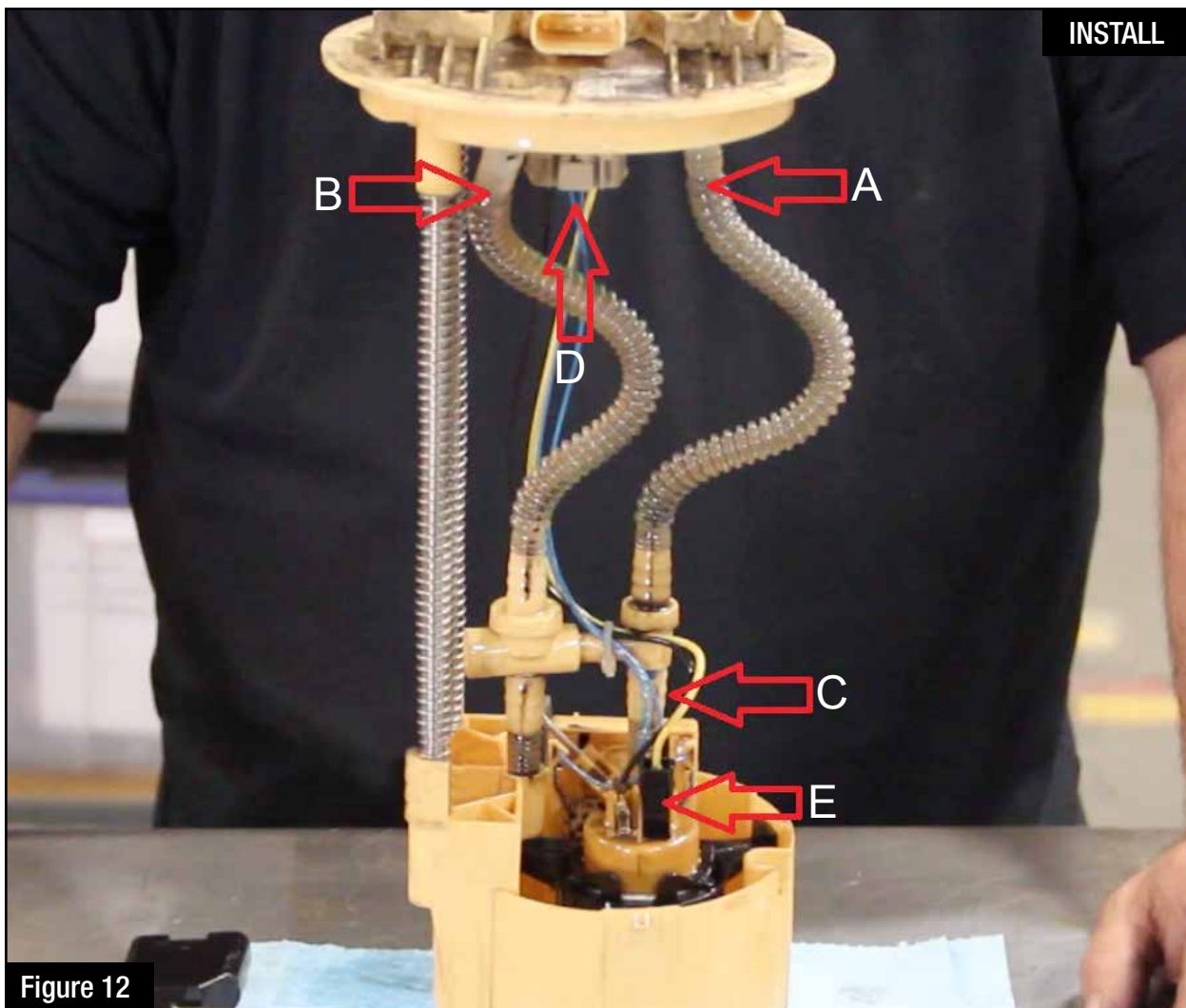
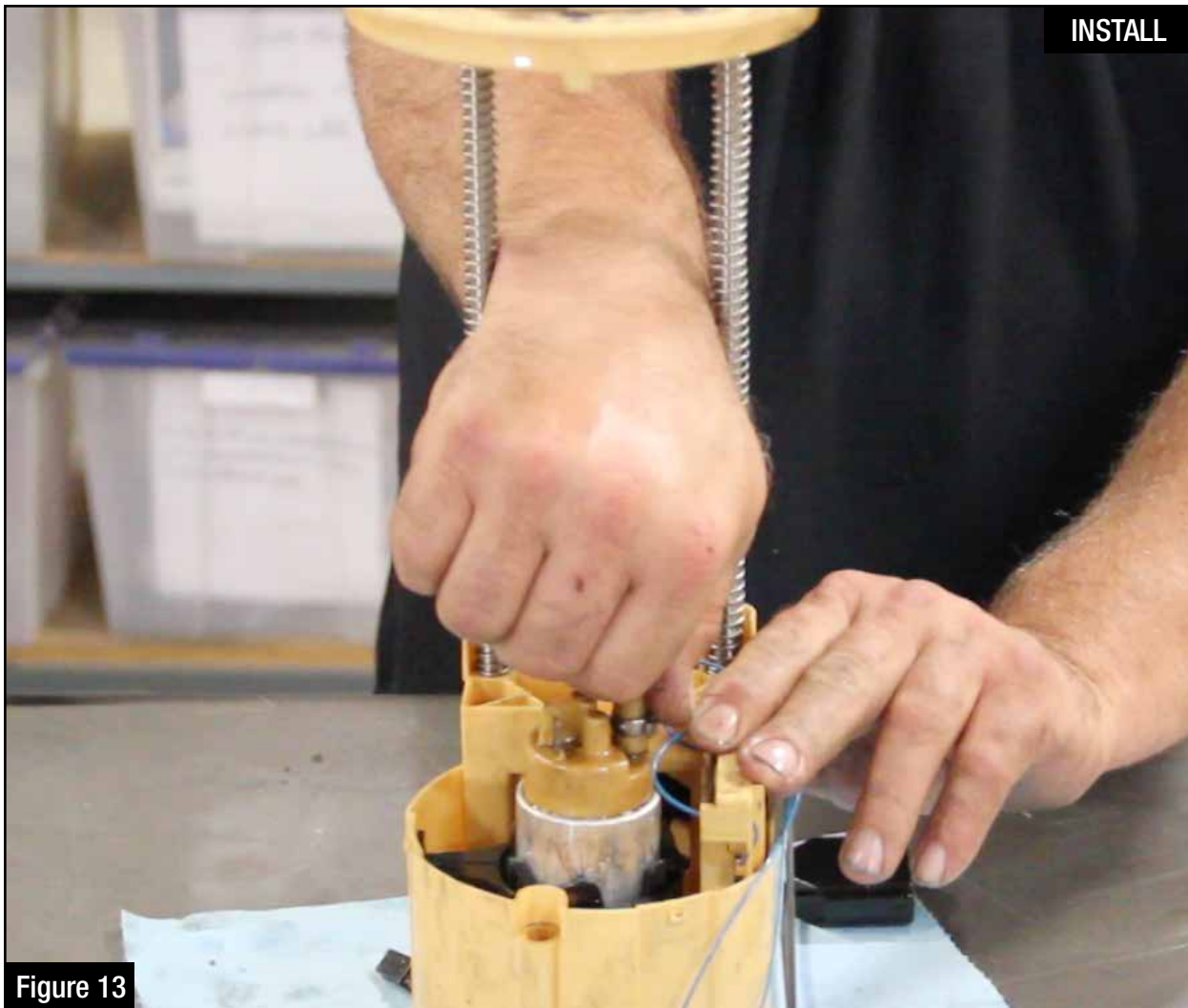


Figure 12

Step 17: Carefully cut the tubing at point A, B, and C. Remove supply tubes from assembly.

Step 18: Carefully unplug the harness from points D and E.

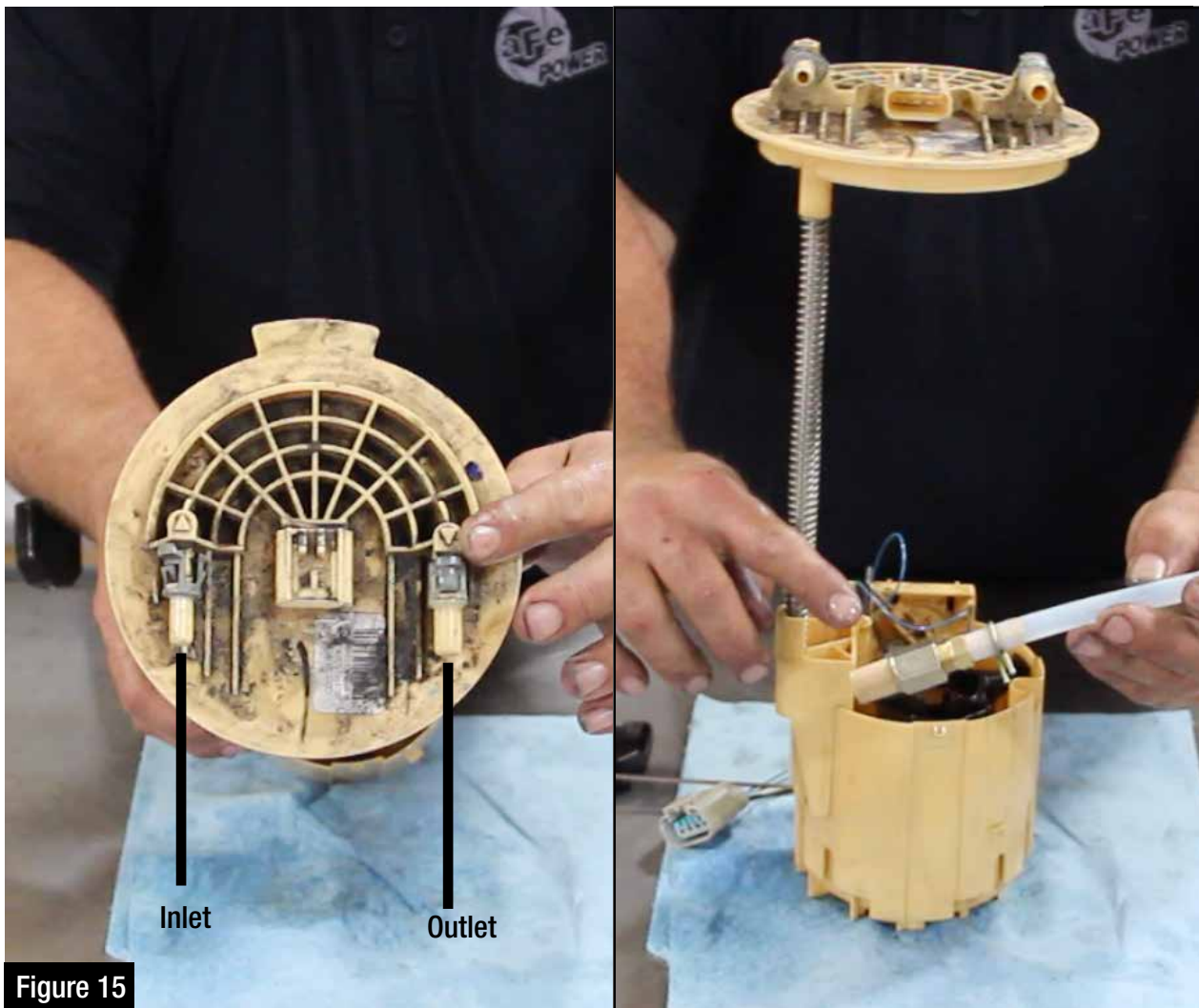
**Figure 13**

Step 19: Remove the fuel pump from the assembly. There are 3 tabs inside that need to be unfastened in order to remove pump.



Figure 14

Step 20: Remove both the stock fuel strainer and diverter that are in the bowl.



Step 21: Install the 10-1/2" clear tube with the strainer to the outlet of the stock fuel pump sender assembly. Be sure that the supplied clamp is pushed all the way to the top of the tube to prevent leakage.

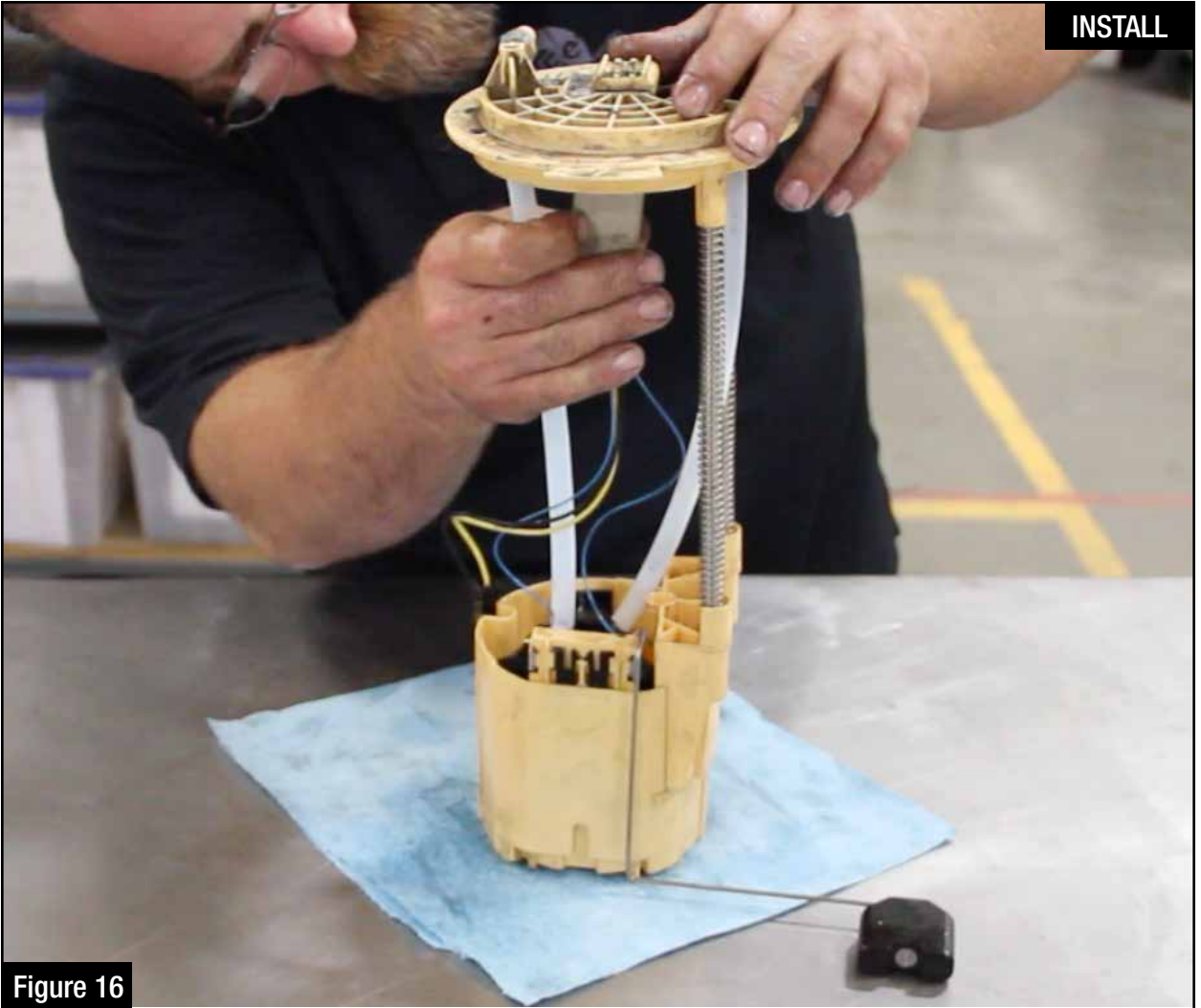


Figure 16

Step 22: Install the 12" clear tube to the inlet side of the pump sender assembly and plug the harness back into the top of the assembly.

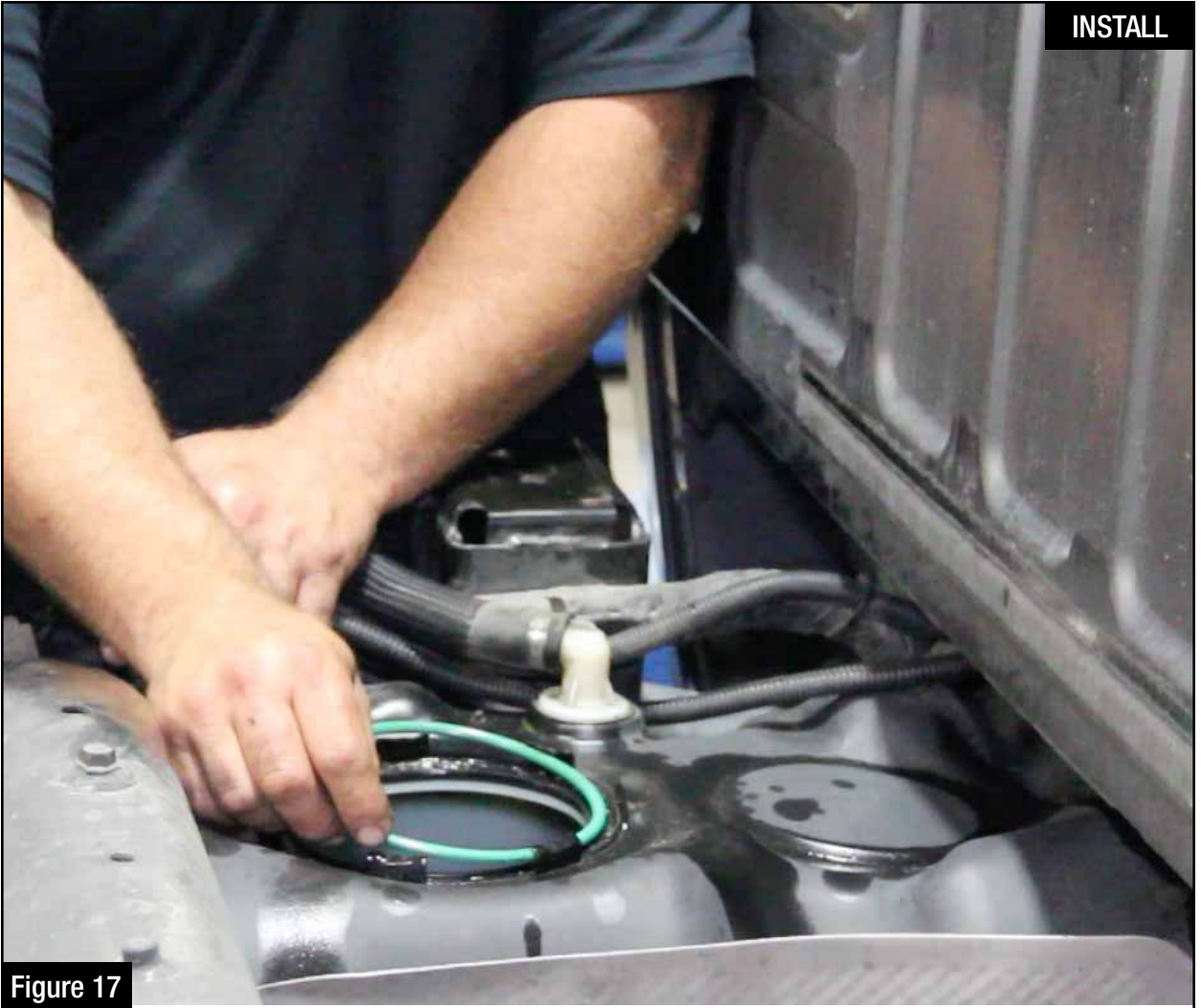


Figure 17

Step 23: Wipe around the fuel tank thoroughly and install the stock o-ring back in place.

INSTALL

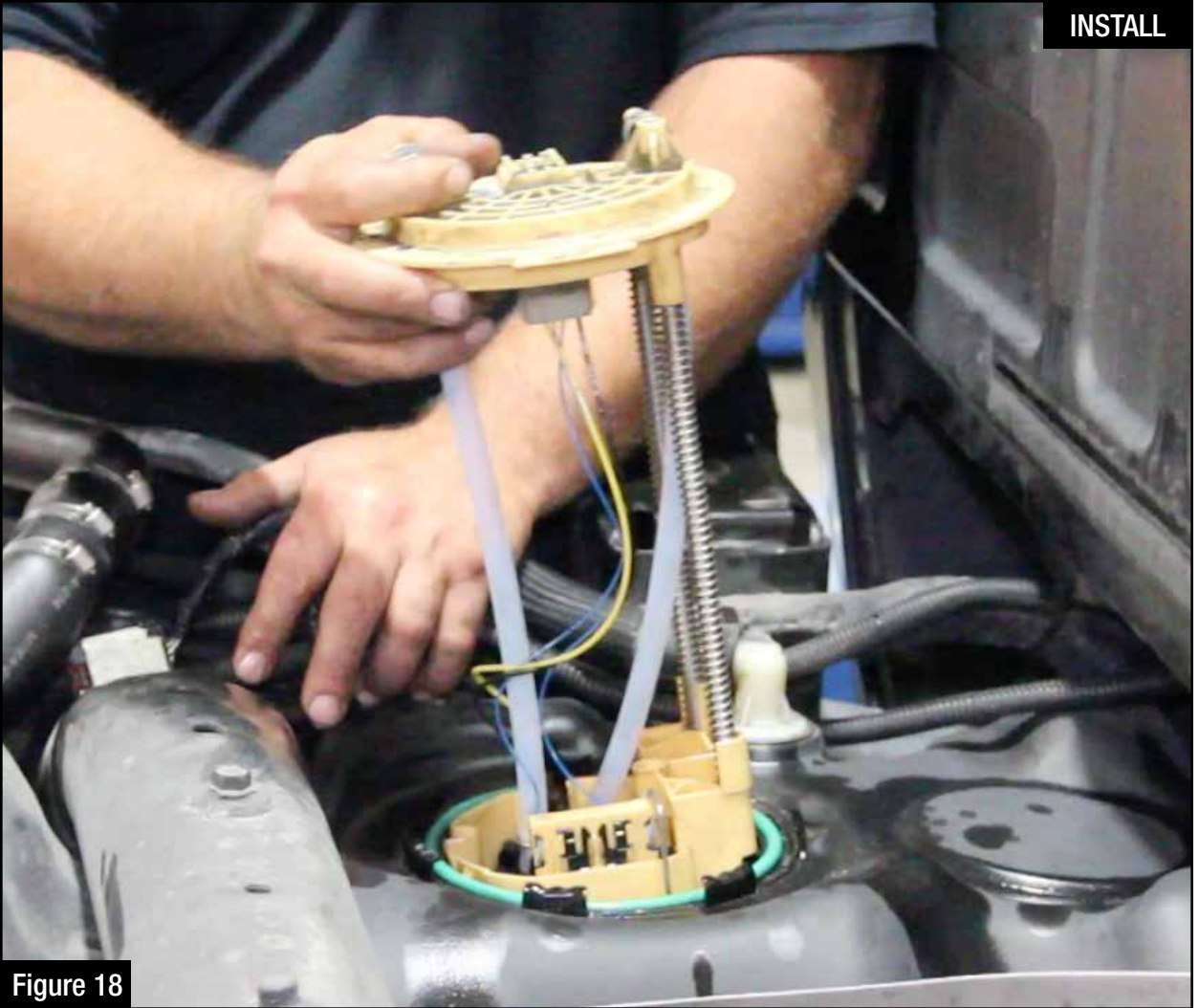
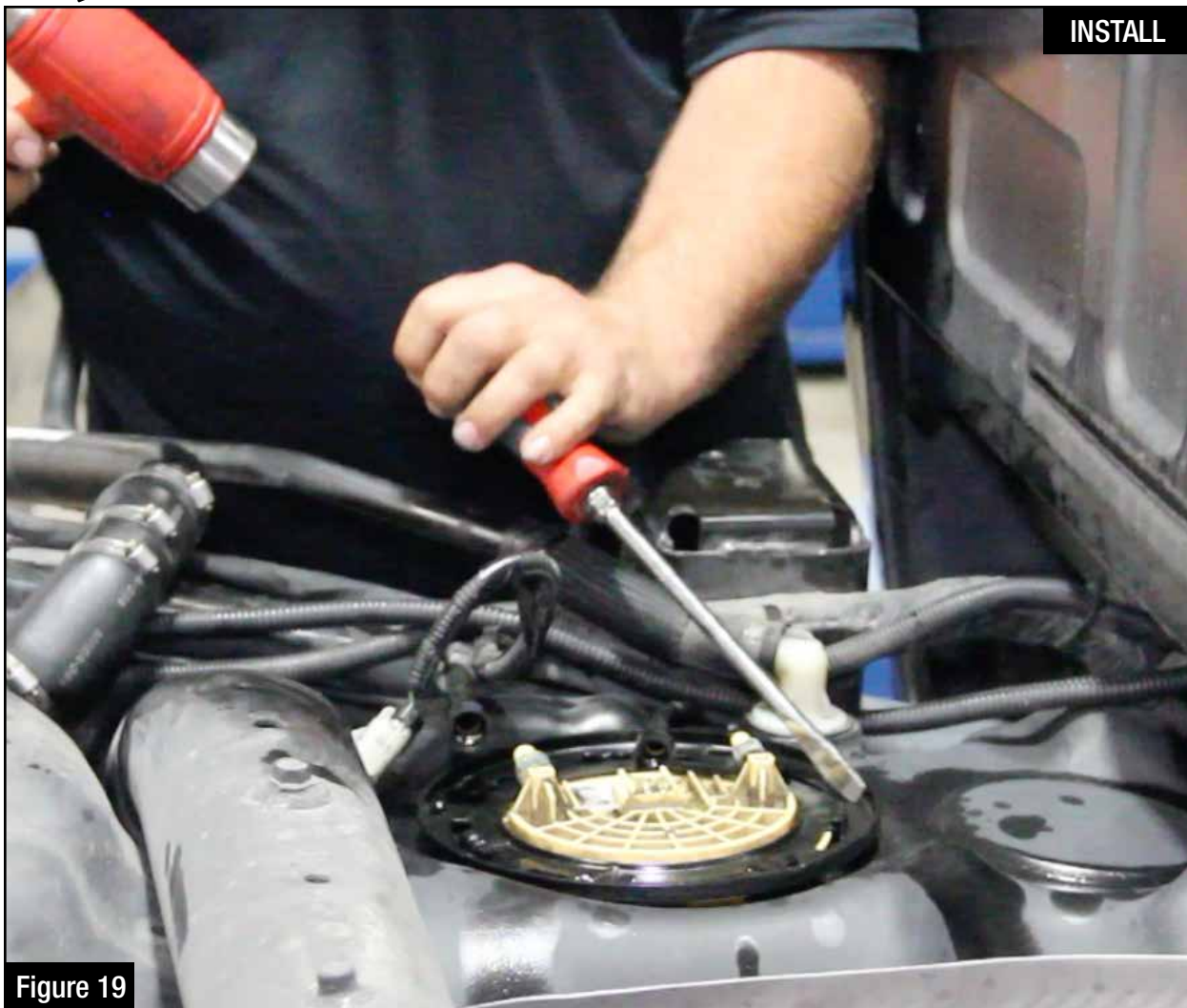


Figure 18

Step 24: Install the fuel pump sender assembly back into the tank.



Step 25: Reinstall the lock ring back in place. Make sure the fuel pump sender assembly is fully seated and the lock ring is tight.

INSTALL



Figure 20

Step 26: Reinstall the stock harness back into the fuel pump sender assembly.



Figure 21

Step 27: Install the supplied fuel line (silver “AN” fitting) onto the larger (outlet) side of the fuel pump sender assembly.

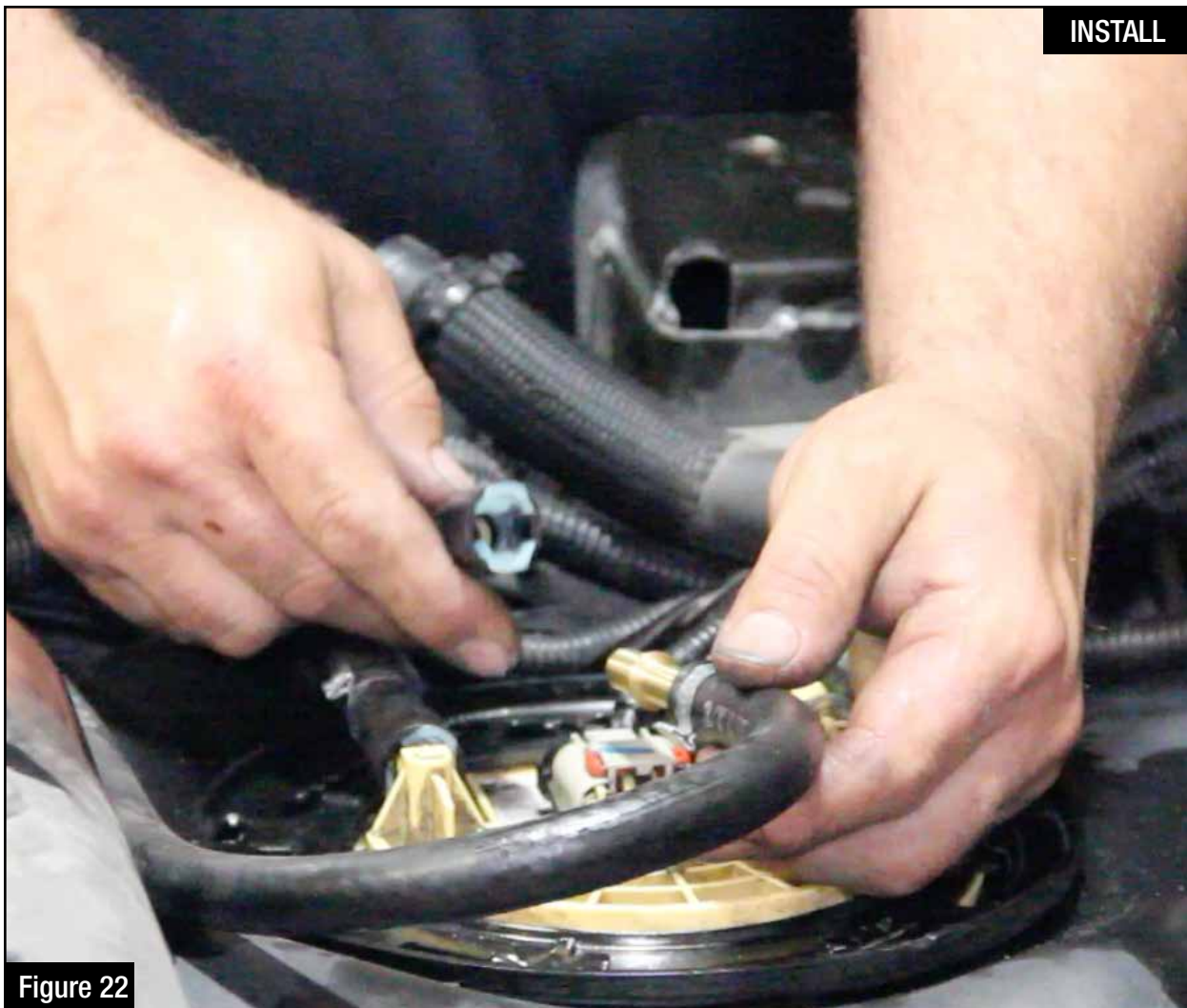


Figure 22

Step 28: Install the 3/8" brass fitting on the other supplied fuel line (black "AN" fitting) into the quick disconnect fitting on the stock fuel feed line.

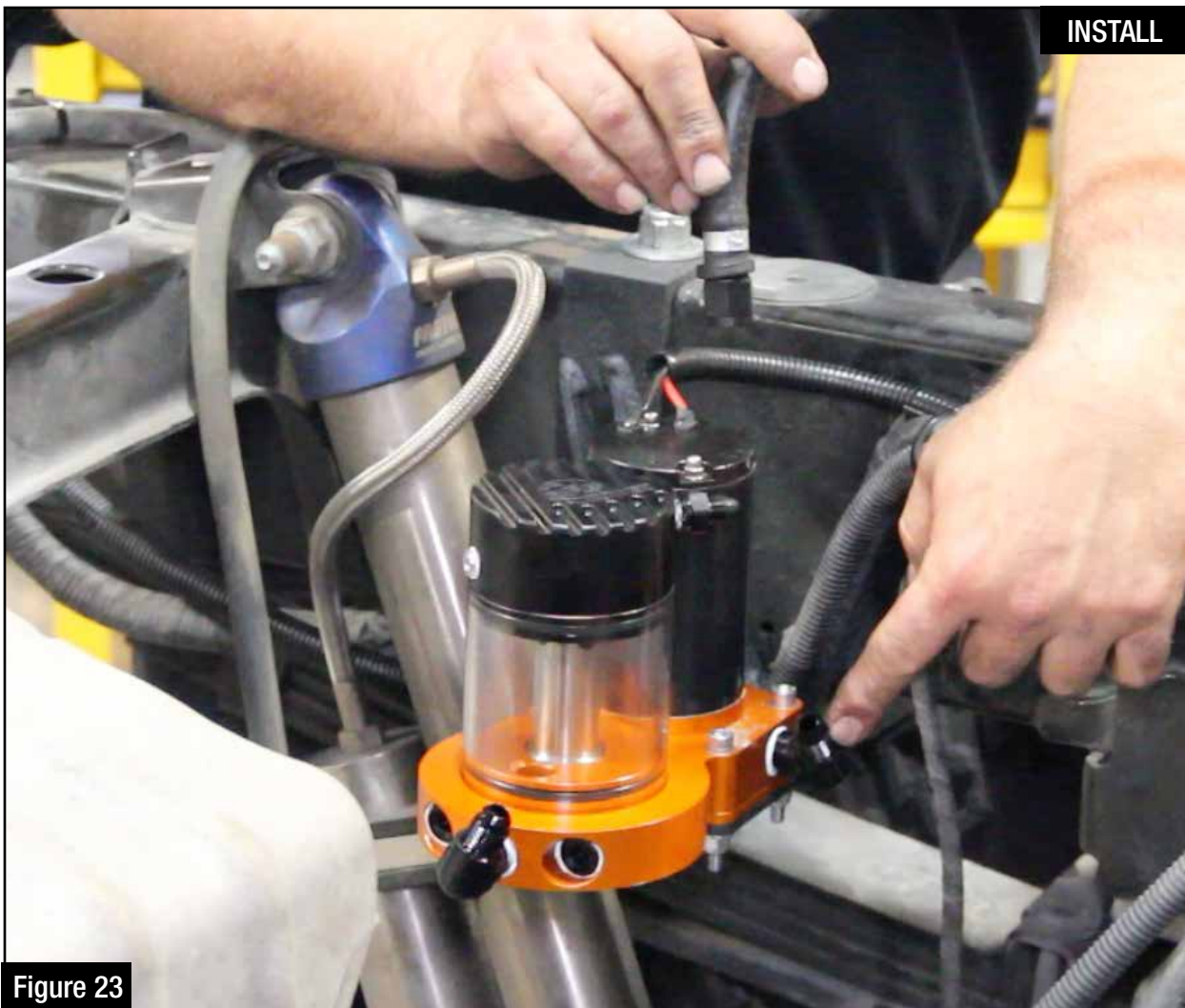


Figure 23

Step 29: Install the supplied fuel line (silver “AN” fitting) onto the fuel inlet port of the DFS780.



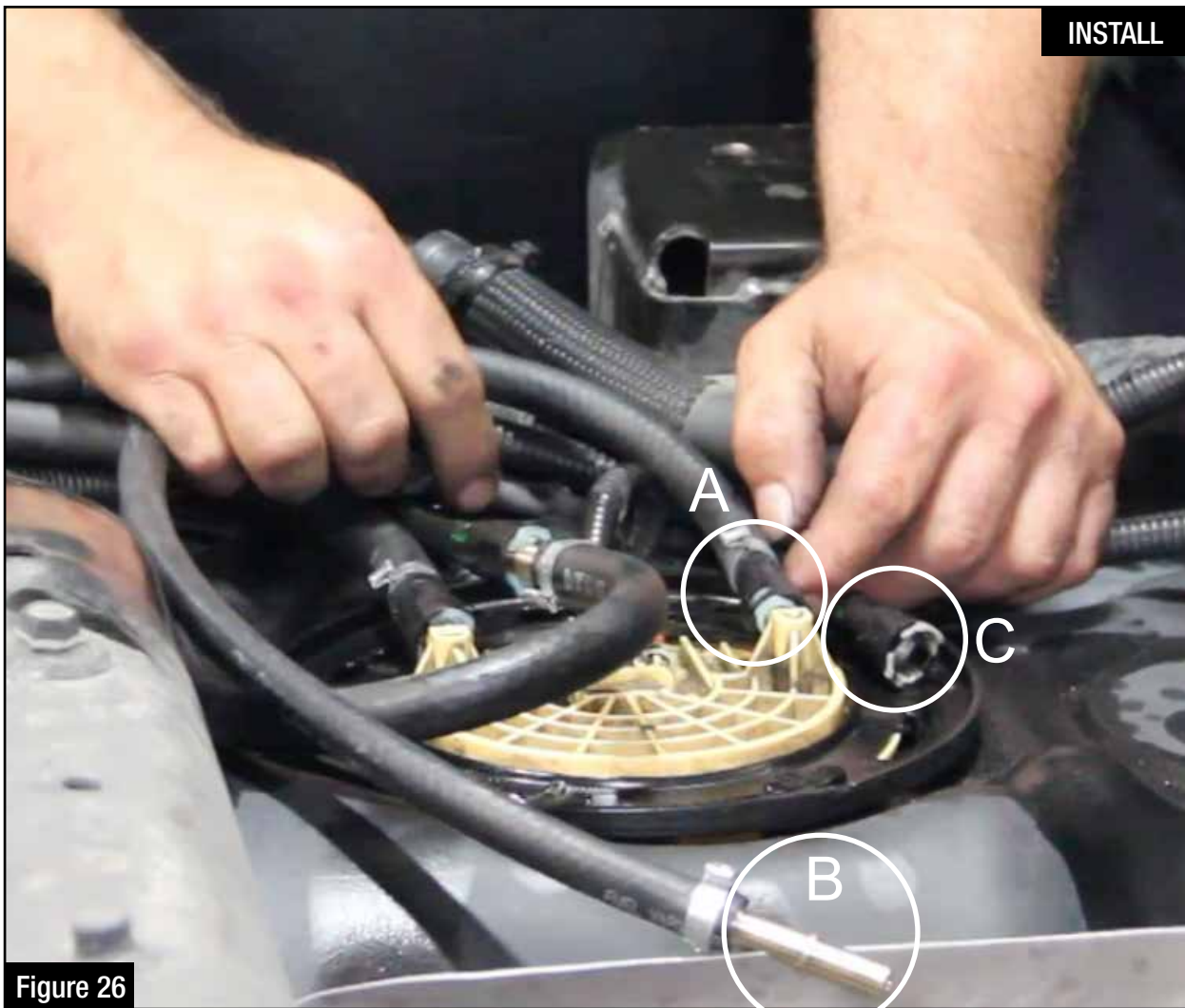
Figure 24

Step 30: Install the supplied fuel line (black "AN" fitting) onto the fuel outlet port of the DFS780.



Figure 25

Step 31: Turn sight glass to the desired angle and using a 1-1/4" wrench, tighten the center nut under the DFS780 manifold.

**Figure 26**

Step 32: Install the supplied return line (-4 AN fitting) onto the top of the DFS780.

Step 33: Route the return line along the frame following the new fuel lines.

Step 34: Install the new return line onto the inlet side of the fuel pump sender assembly.
(as shown in circle A)

Step 35: Install the 5/16" brass fitting (as shown in circle B) onto the quick disconnect fitting on the stock return line (as shown in circle C)



Figure 27

Step 36: Using a lite oil lube the gasket on the fuel filter before installation.



Figure 28

Step 37: Screw the fuel filter assembly onto the manifold and tighten.



Figure 29

Step 38: Route the supplied wiring harness along the frame.

Step 39: Plug the Deutsch connector into the mating connector on the DFS780.

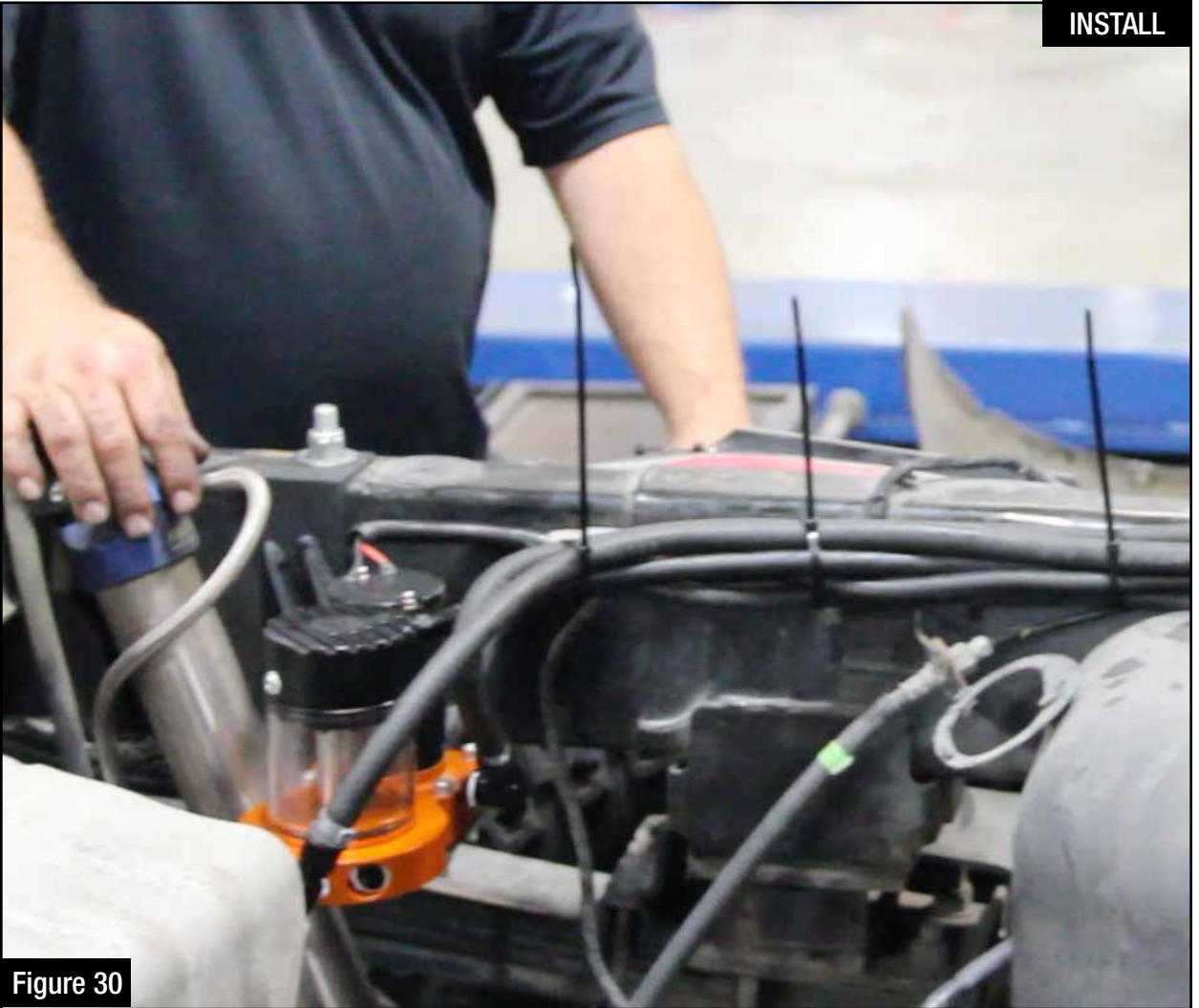


Figure 30

Step 40: Organize the wire harness and fuel lines and secure with the supplied zip ties.



Figure 31

Step 41: Run the remaining wire harness along the frame to the engine compartment. Secure using supplied zip ties.



Figure 32

Step 42: Connect the black wire ring terminal to the negative side on the battery.



Figure 33

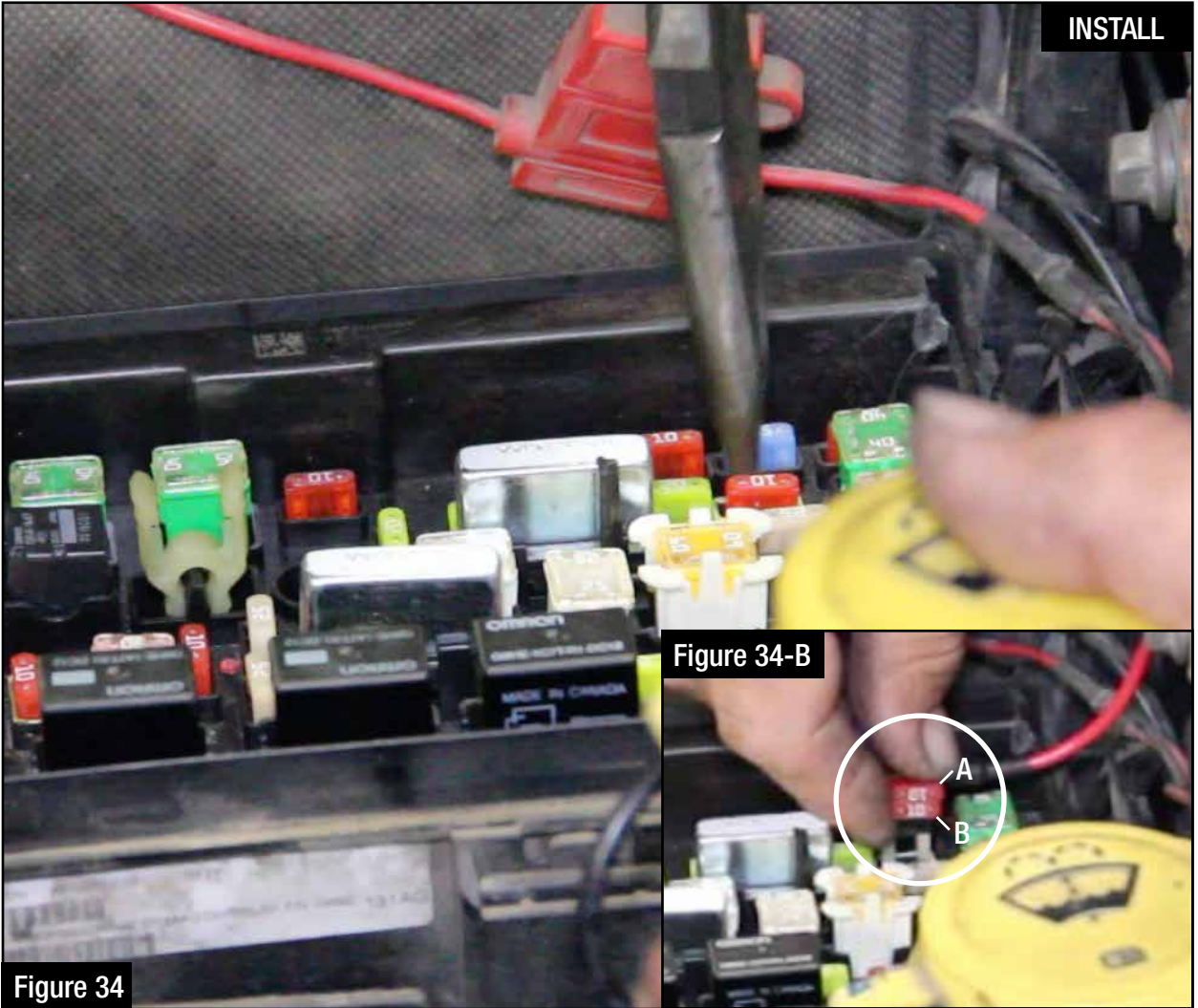
Step 43: Connect the red wire ring terminal to the positive side of the battery.

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



Figure 34

Step 44: Organize any of the loose wire harness and secure with the remaining zip ties.



- Step 45: Find a 12 volt ignition source inside the fuse box that only comes on with the key in the “run” position. Once a 12 volt source is located, pull fuse from the fuse box.
- Step 46: Using the supplied create a circuit, install the removed fuse from step 45 and insert it into the open location on the create a circuit (B) (not in line with the wire).
- Step 47: Install the supplied fuse into the open location on the create a circuit (A) (in line with the wire), and install into the 12 volt ignition source inside the fuse box.

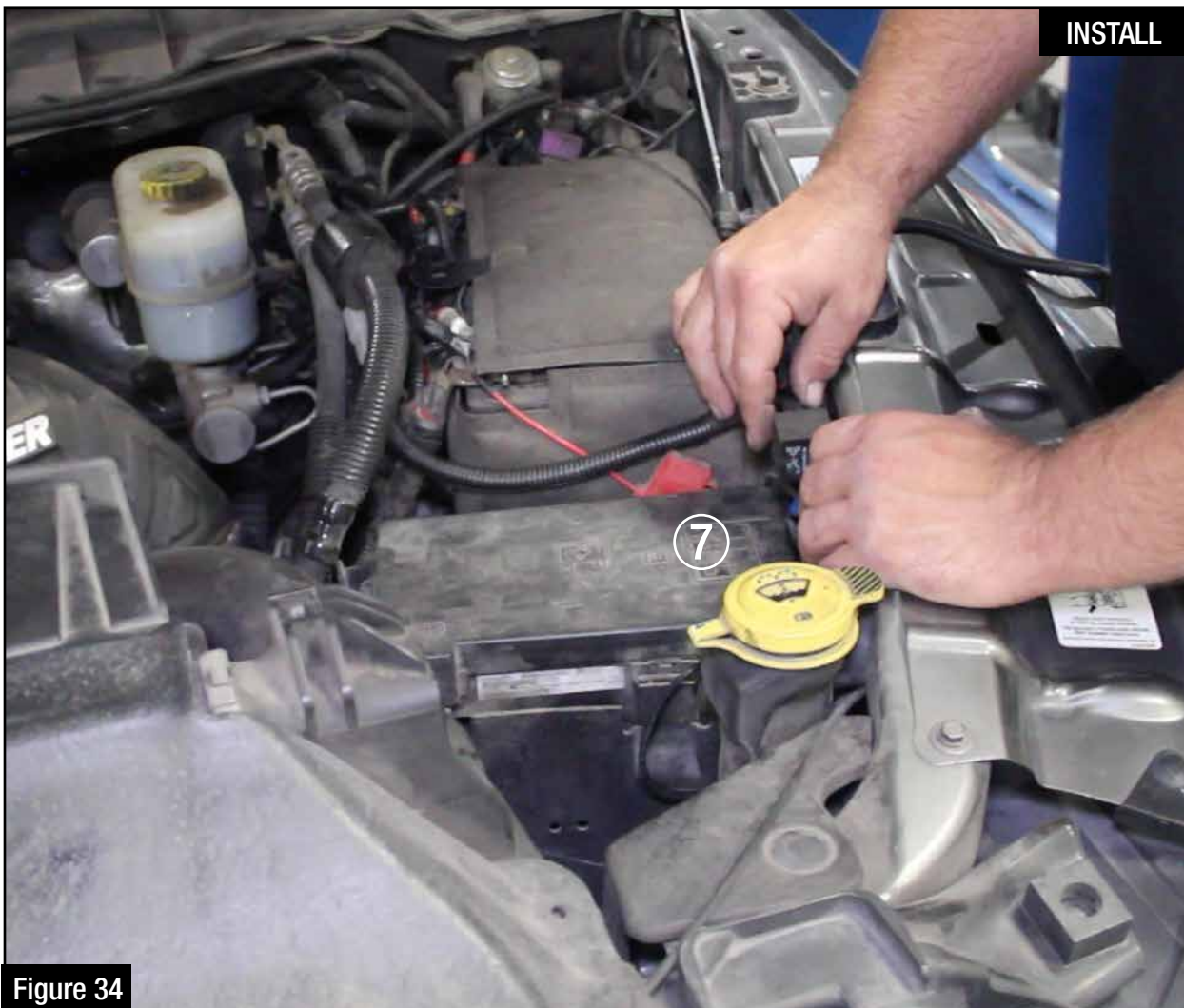


Figure 34

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

Step 49: Secure the relay.

Step 50: Attached power wire to the create a circuit.



Figure 35

- Step 45: Turn the key to the “Run” position and watch to see if the DFS780 fills with fuel. If the DFS780 does not fill with fuel, use the supplied tank valve (on the top of the DFS780) to release trapped air which will allow DFS780 to fill. If DFS780 still does not fill, try starting the engine.
- Step 46: 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.