



advanced FLOW engineering

Instruction Manual P/N: 42-22021

DFS780 PRO

Make: Dodge Model: Ram 2500/3500 Year: 2005-2016 Engine: I6 5.9L/6.7L (td) Cummings

Label	Qty.	Description	Part Number
A	1	Fuel Manifold Assembly	05-60584
B	1	Bracket, Frame; Carbon Steel	05-60795
C	1	Filter, Fuel	44-FF018
D	4	Washer, M6 (Fiber)	03-50457
E	4	Washer, M6	03-50444
F	4	Locknut, Flanged; M6	03-50445
G	4	Bolt, M6 x 1.0 x 50mm	03-50443
H	3	Rivet Nuts	03-50569
I	1	Screw, Hex Hd Cap: 3/8"-16 x 1-1/2"	03-50046
J	3	Nut, 3/8" -16 Flange	03-50568
K	3	Washer: 3/8" AN	03-50230
L	12	Ties, Nylon Cable, 12", 50 lb.,	05-60167
M	1	Connector, Add-A-Harness & Fuse (ATM)	05-60583
N	1	Connector, Add-A-Harness & Fuse (Micro2)	05-60691
O	3	Bolt, 3/8"-16 x 1"	03-50124
P	1	Fitting; 1/2" Push-On to AN -6 (Straight)	03-50549B
Q	3	Clamp, Spring	05-60578
R	1	Fitting; 1/2" Push-On to AN -6 (90°)	05-60683B
S	1	Harness, Power	05-60632
T	1	Harness Relay	05-60551
U	1	Hose, Fuel Inlet/Outlet; Dodge (td)	05-60871
V	1	Hose, Fuel Return; Dodge (td)	05-60870
W	1	Nut, 3/8"-16	03-50568
X	1	Washer: 3/8"	03-50488
Y	2	Fitting; 3/8" NPT to AN -6 (Straight)	05-60685
Z	1	Tube, Suction; 12" (with angle cut)	05-60579
AA	1	Tube, Return; 12"	05-60570

- **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.
- Please read the entire instruction manual before proceeding.
- Ensure all components listed are present.
- If you are missing any of the components, call customer support at 951-493-7100.
- 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





Note: Drive the truck till the fuel level is empty. This will help in the removal of the tank.

1. Remove the filler neck and overflow tube by loosening the hose clamps.
2. Disconnect the factory fuel feed and return lines.
3. Disconnect the factory electrical harness on top of the fuel tank.
4. Remove the fuel tank from the vehicle by loosening the straps that hold it to the frame.
5. Clean the area around the fuel lines to prevent dirt and debris from going into the lines.
6. Remove the lock ring and the stock fuel sender assembly.



7. Unplug the electrical connector at the top of the fuel sender assembly.
8. Unplug the two wires connected to the stock fuel pump.
9. Carefully cut the factory suction and return lines and disconnect them from the top of the fuel sender assembly.

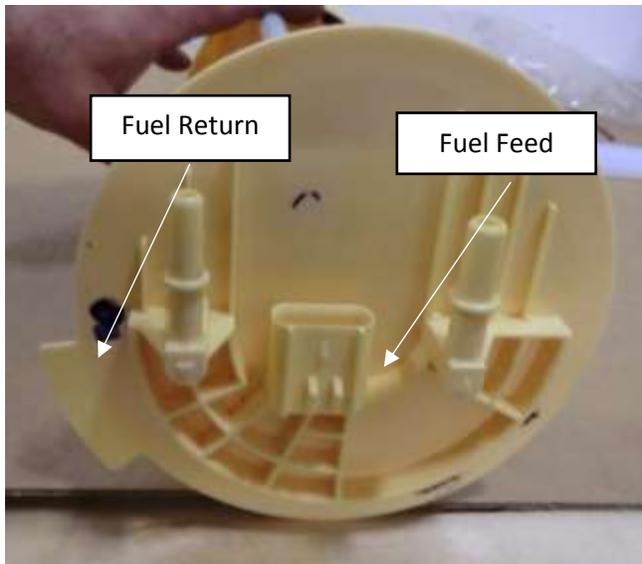
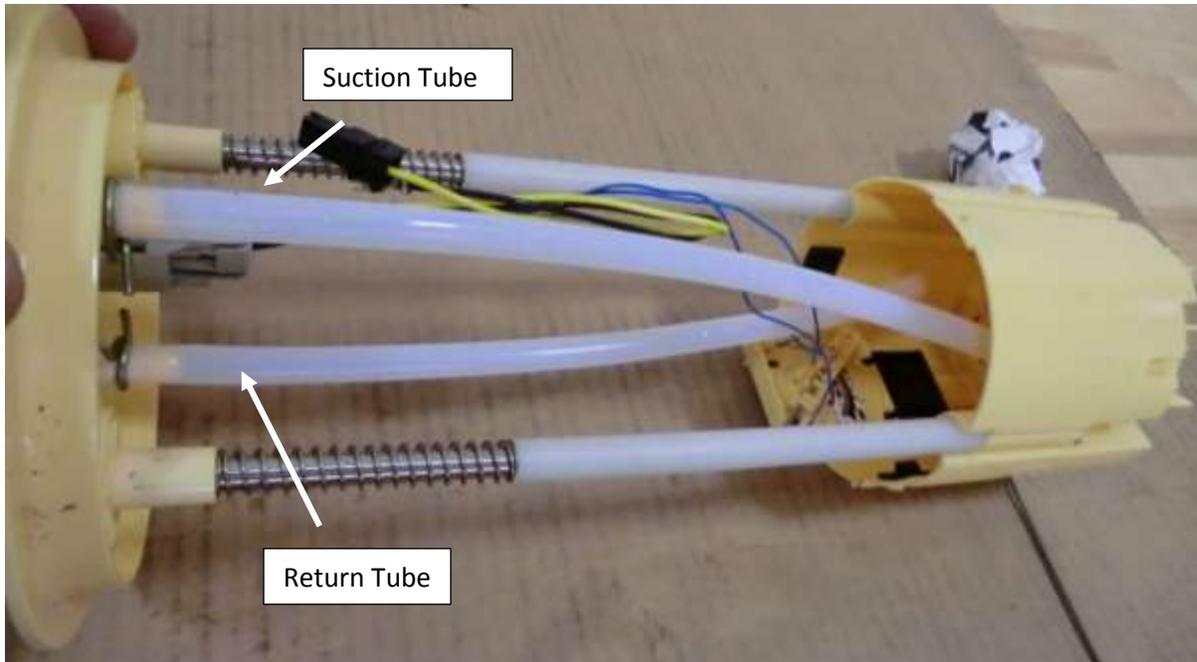
NOTE: It is recommended but not required to remove the fuel level sending unit before performing Steps 10 to 12.

***2006 Fuel Pump assembly shown (some assemblies will look different)**



10. Remove the factory fuel pump, suction line and return line from the fuel sender assembly.

***2006 Fuel Pump assembly shown (some assemblies will look different)**

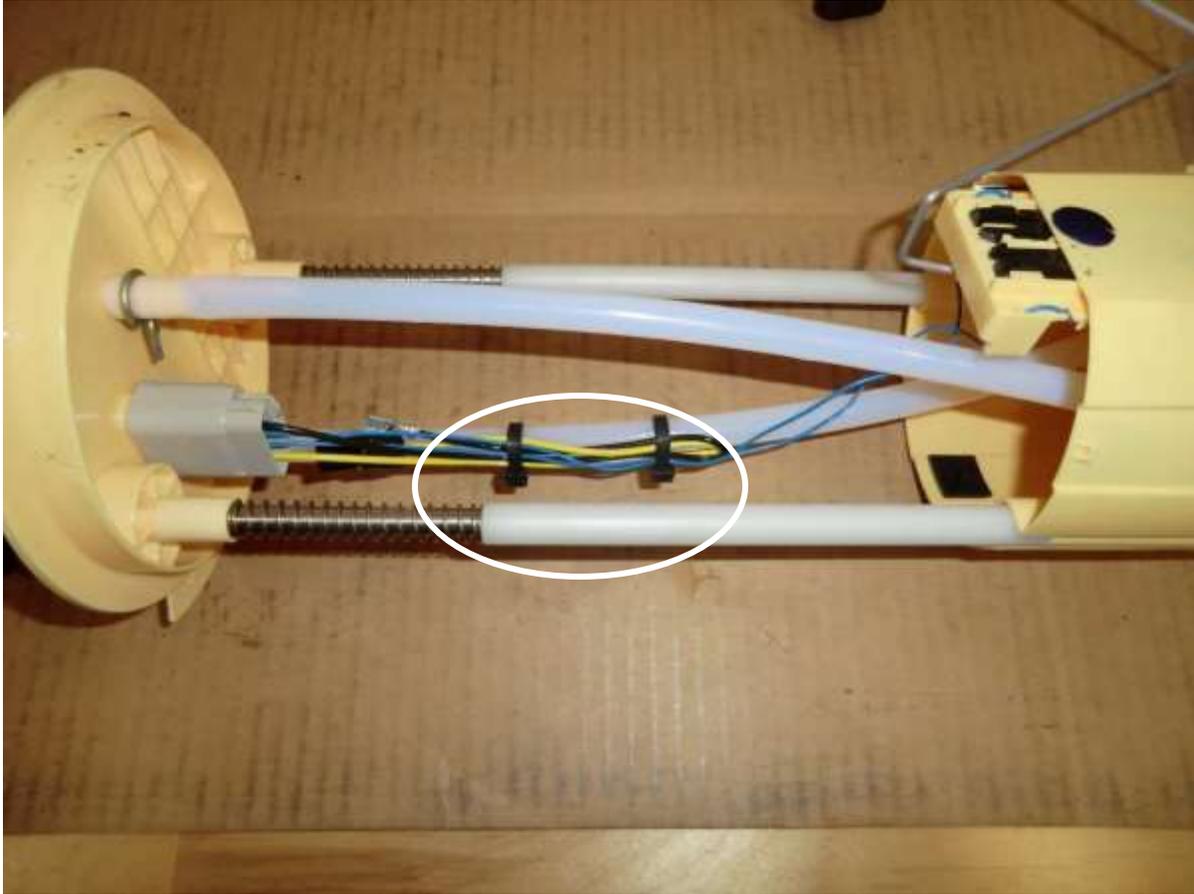


11. Using a supplied spring clamp, install the supplied suction tube (with angle cut) onto the fuel feed side of the fuel sender assembly.

12. Using a spring clamp, install the supplied return tube onto the fuel return side of the fuel sender assembly.

NOTE: Be careful to not kink the fuel suction and return tubes during installation

***2006 Fuel Pump assembly shown (some assemblies will look different)**



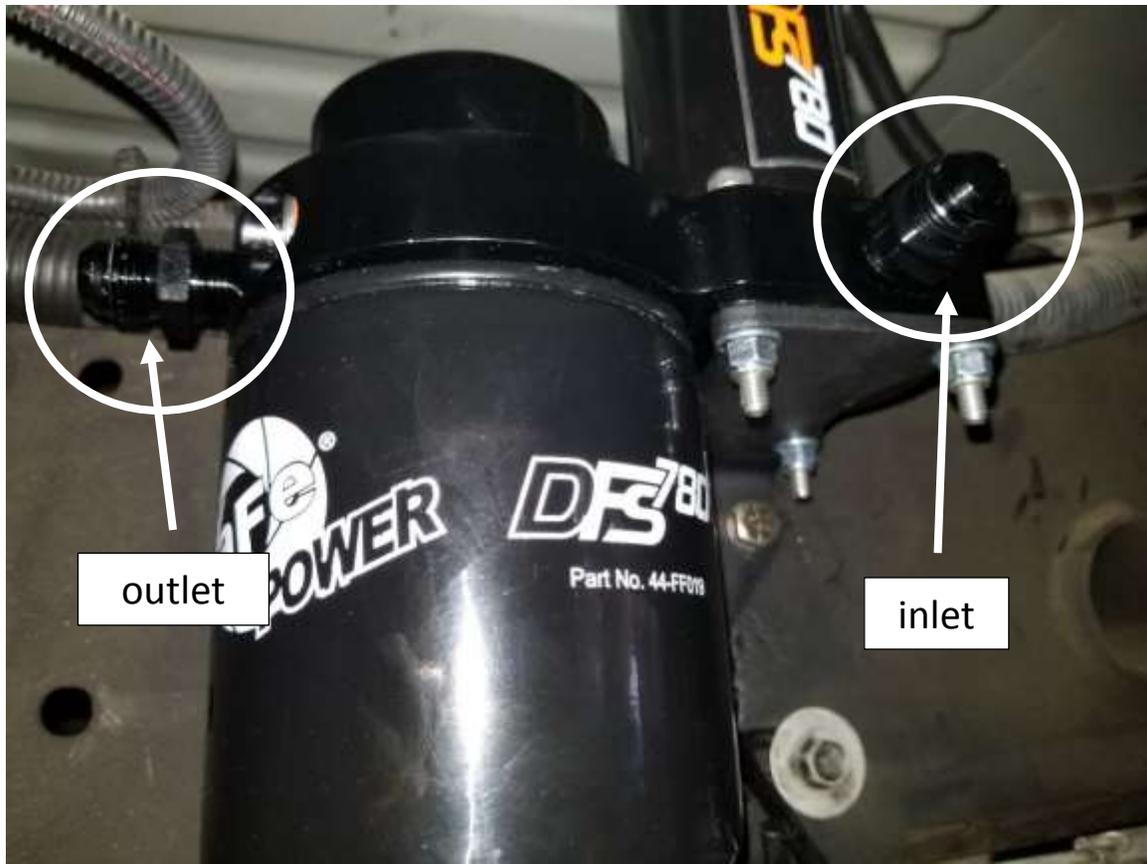
NOTE: If the fuel level sending unit was removed, reinstall it at this time.

13. Reconnect the electrical connector on the top of the fuel sender assembly.
14. Secure the loose wires to the fuel return tube, making sure the exposed electrical connectors do not touch.

***2006 Fuel Pump assembly shown (some assemblies will look different)**



- 15.** Reinstall the fuel sender assembly into the fuel tank.
- 16.** Reinstall the fuel tank into the vehicle and tighten the straps that hold it to the frame.
- 17.** Reconnect the factory fuel feed and return lines.
- 18.** Reconnect the factory electrical harness on top of the fuel tank.
- 19.** Reattach the filler neck and overflow tube and tighten the hose clamp.



20. Mount the supplied fuel manifold assembly to the supplied carbon steel frame bracket using the supplied hardware and tighten:

- (4) M6 x1.0 x 50mm bolts
- (4) M6 washers
- (4) M6 fiber washers
- (4) M6 flanged locknuts

Note: The fiber washers go between the fuel manifold assembly and the carbon steel bracket.

21. Install the two (2) supplied 3/8" NPT to -6 AN fittings to the fuel manifold assembly using thread sealant.

Note: Installing the fuel filter loosely will give you an idea of the overall assembly size when looking for a mounting location.

Note: Mounting location shown in photos is on the outside of the frame, under the driver's door.

22. When looking for a location to mount the assembly, please make sure you take into account the length of hose that was supplied as well as the orientation of the inlet and outlet ports.



23. Place the fuel manifold assembly on to the truck and mark the three holes using the carbon steel frame bracket.

Note: Be careful when drilling. Check behind where you are drilling for anything that might get damaged and move it before drilling.

24. If you are using the supplied rivet nuts, you will need to drill three (3) $17/32$ " holes into sheet metal with a minimum thickness of $5/32$ " (0.156"). Otherwise, you will need to drill three (3) $3/8$ " holes into sheet metal with a minimum thickness of $3/16$ " (0.188").

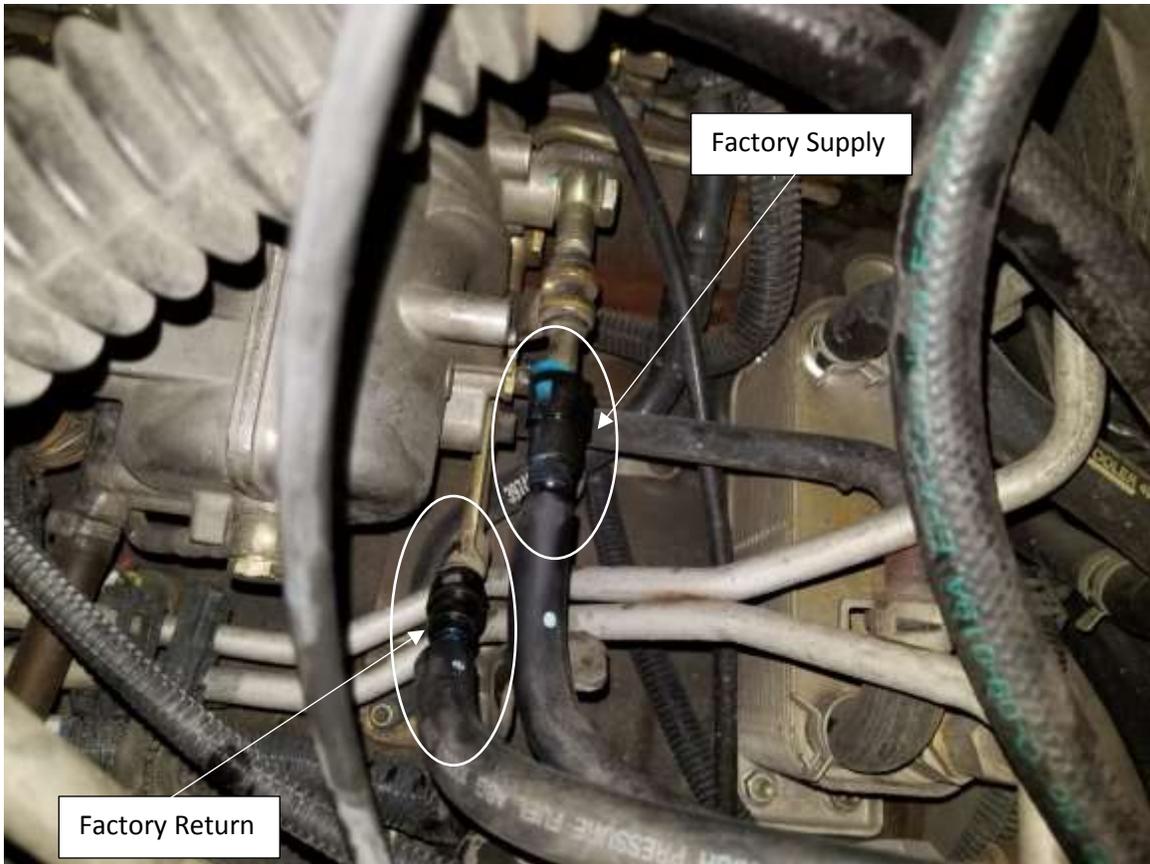
25. If installing the rivet nuts, use the supplied $3/8$ "-16 x $1-1/2$ " bolt, $3/8$ "-16 nut and $3/8$ " washer to make the installation tool (as shown below).





This picture shows the fuel connections for 2007.5 – 2016.

26. Using the tool assembled in step #24, attach the rivet nut to the drilled material by holding the bolt steady and turning the nut clockwise. This will force the rivet nut to collapse and tighten onto the drilled material.
27. Install the fuel manifold assembly and the carbon steel frame bracket to the frame using the supplied hardware:
 - (3) 3/8" - 16 x 1" bolts
 - (3) 3/8" AN washer
 - (3) 3/8"- 16 flanged nuts (if not using the rivet nuts)
28. Install the supplied fuel filter and tighten.
29. Find the factory fuel supply lines. They are located near the factory fuel filter housing in the engine compartment on the driver's side.

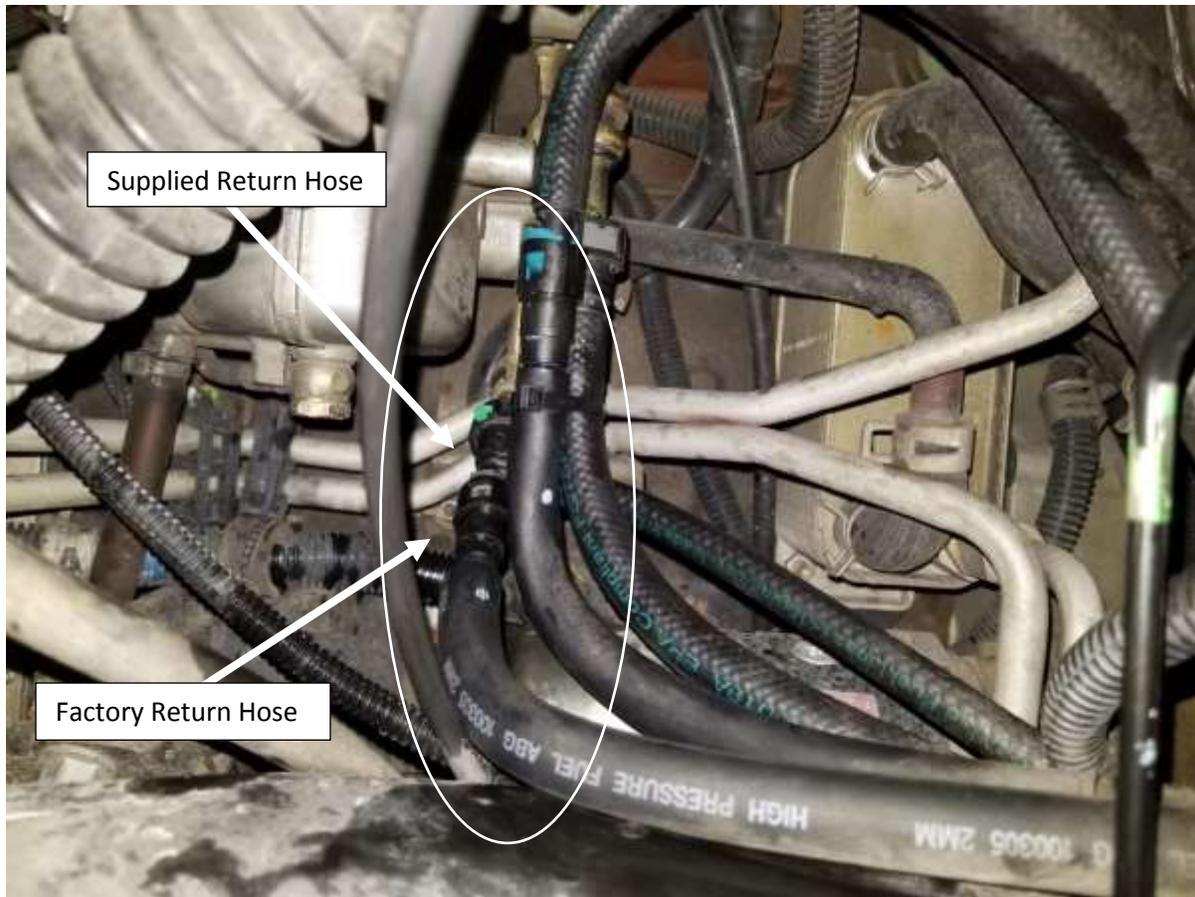


- 30.** Disconnect the factory fuel supply line. Attach the male quick disconnect fitting on the supplied inlet/outlet hose to the factory female quick disconnect fitting on the factory fuel supply line. Route the hose to the inlet port on the fuel manifold assembly, making sure not to kink the hose or allow it near moving or hot parts. Carefully mark and then cut the hose to the correct length.
- 31.** Using the other end of the hose you just cut, attach the female quick disconnect fitting to the factory male quick disconnect fitting on the factory fuel supply line. Carefully route this hose to the outlet port on the fuel manifold assembly, making sure not to kink the hose or allow it near moving parts. Carefully mark the hose and then cut and remove any excess.
- 32.** Using a small amount of lightweight oil on the barbed ends, install the supplied 3/8" push-on to -6 AN fittings (straight & 90°) onto the cut ends of the hoses (determine which fitting works best for both the inlet and outlet port). Make sure both fittings fully seat into the hoses.

Note that these fitting are “self-locking” and do not require a clamp.



33. Attach the fittings to the inlet & outlet ports of the fuel manifold assembly. Make sure all connections are tight.



- 34.** Disconnect the factory fuel return line. Attach the supplied fuel return hose between the male and female factory fuel fittings. Push all connections together.



- 35.** Carefully route the ¼" hose to the fitting on the top of the fuel manifold assembly, making sure not to kink the hose or allow it near moving parts. Carefully mark and then cut the hose to the correct length. Using a spring clamp, attach the hose to the nipple on the top of the air chamber on the fuel manifold assembly.



36. Plug the weatherproof connector on the end of the supplied power harness into the mating connector on the fuel manifold assembly motor.
37. Route the power harness along the inside of the frame and into the engine compartment.
38. Organize the power harness and secure with the supplied nylon cable ties.
39. Connect the red wire ring terminal on the power harness to the positive side of the battery.

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

40. Connect the black wire ring terminal on the power harness to the negative side of the battery.
41. Plug the supplied relay harness into the weatherproof connector on the power harness.
42. Secure the relay harness using a cable tie.
43. Remove the fuse box cover. Locate a 12-volt source inside the fuse box that only comes on with the key in the “run” position. Once a 12-volt source is located, remove the fuse from the fuse box.

Locations for 12-volt fuse (under the dash fuse block):

2005 – 2007.5	F30	Spare
2007.5 - 2012	F44	Ign. Mod.
2013 - 2016:	F51	Ign. Mod.



- 44.** Select the correct style of the supplied add-a-harness fuse connector: 2005-2012“ATM” style fuse, 2013-2016 “Micro 2”.
- 45.** Attach the power wire from the relay harness to the add-a-harness fuse connector.
- 46.** Insert the fuse removed in Step 42 into the open location on the add a harness fuse connector (not in line with the wire).
- 47.** Insert the add a harness fuse connector (with installed fuses) into the 12-volt source location from Step 42.
- 48.** Carefully route the power wire outside the fuse box and reinstall the cover (making sure not to pinch the wire).
- 49.** Organize the wire harnesses and secure with the remaining nylon cable ties.
- 50.** Turn the key to the “Run” position and wait for 30 seconds. Start the engine.
- 51.** Installation is now complete. Make sure that all fittings are tight and that fuel is not leaking from any of the connections made during installation.



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