



advanced FLOW engineering

DFS 780

Instruction Manual P/N: 42-14012

Make: **GM** Model: **Diesel Trucks** Year: **2001-2010** Engine: **V8-6.6L (td) Duramax**
Fuel Pressure: **8-10 psi (boost operated)**



- 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.

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	05-60655
E	1	Bolt, M8 x 1.25 x 25mm	03-50442
F	1	Washer, Flat: 24mm ODxM8 ID	03-50065
G	1	Nut, Hex Nylon Lock: M8 x 1.25	03-50244
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 -8 (Black)	05-60685
M	1	Harness Relay	05-60551
N	1	Connector, Add a harness & Fuse	05-60583
O	1	Hose, Fuel Return	05-60689
P	12	Ties, Nylon Cable, 12"	05-60167
Q	1	Harness, Power	05-60632
R	1	Hose, Fuel Inlet	05-60673
S	1	Hose, Fuel Outlet	05-60681
T	1	Jumper, Priming	05-70004

Warranty Information available at: <https://afepower.com/contact#warranty>

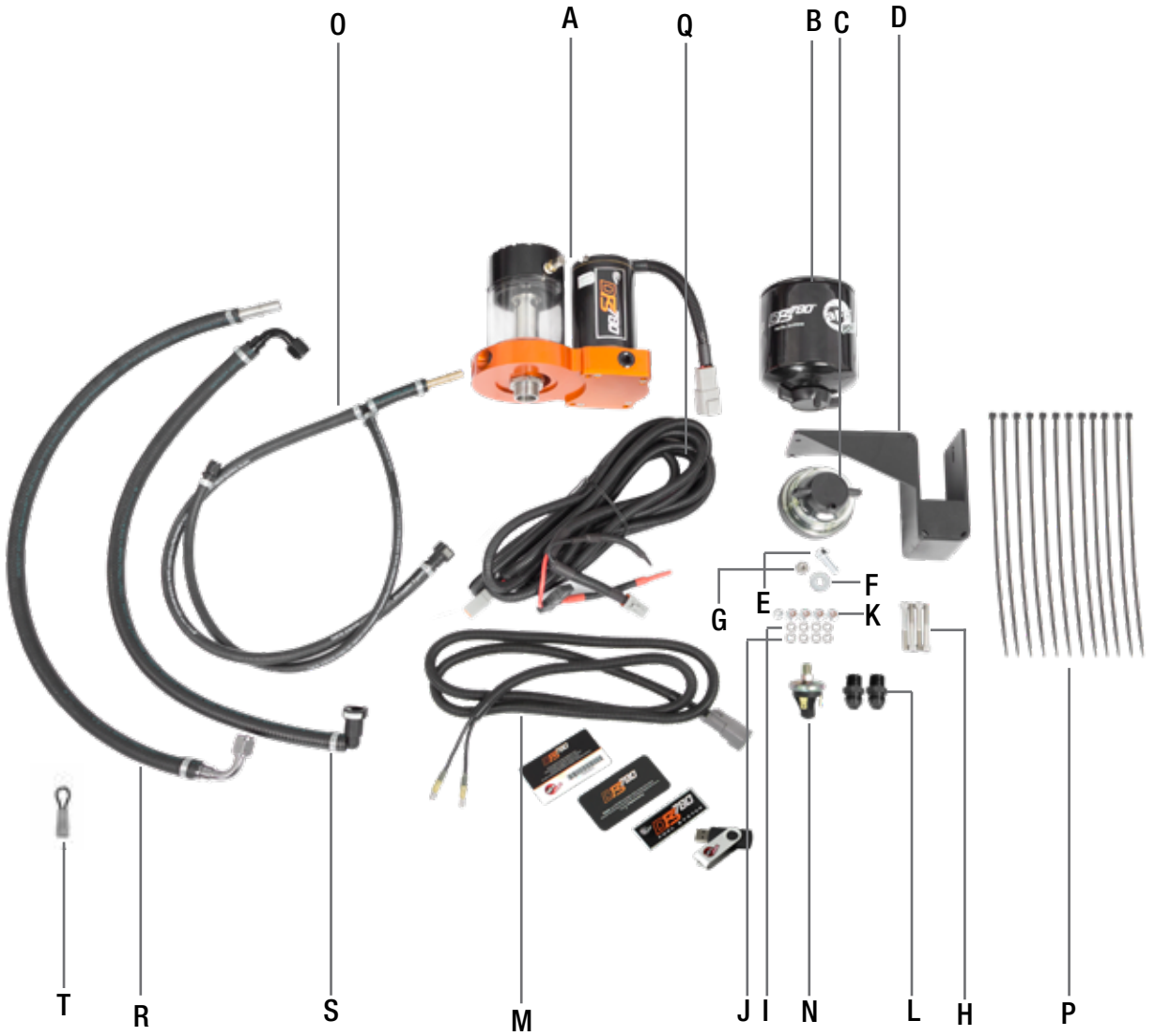



Figure 1

- Step 1: Looking at the driver's side of the truck, on the inside of the frame rail, you will see two hard lines. These are the fuel supply and return lines for the engine. They are held in place by plastic retainers that are bolted to the frame (shown above).
- Step 2: Locate the retainer that is below the driver's side door (labeled as "2" above).
- Step 3: Remove the nuts from the backside of the three (3) stock fuel line retainers (leave the fuel lines in their retainers).

**Figure 2**

Step 4: Gently pull the fuel lines/retainers off of the frame rail. Be careful not to bend or kink the fuel lines.

Step 5: Place the supplied carbon steel frame bracket between the frame and the stock fuel line retainer located in Step 2.

Step 6: While making sure the carbon steel frame bracket is sitting on the bottom of the frame, reinstall and tighten the factory nuts removed in Step 3.

NOTE: If the fuel line retainers are not there please use the supplied hardware to attach the bracket to the frame.

- (1) M8 x 1.25 x 25mm bolt
- (1) M8 washer
- (1) M8 locknut

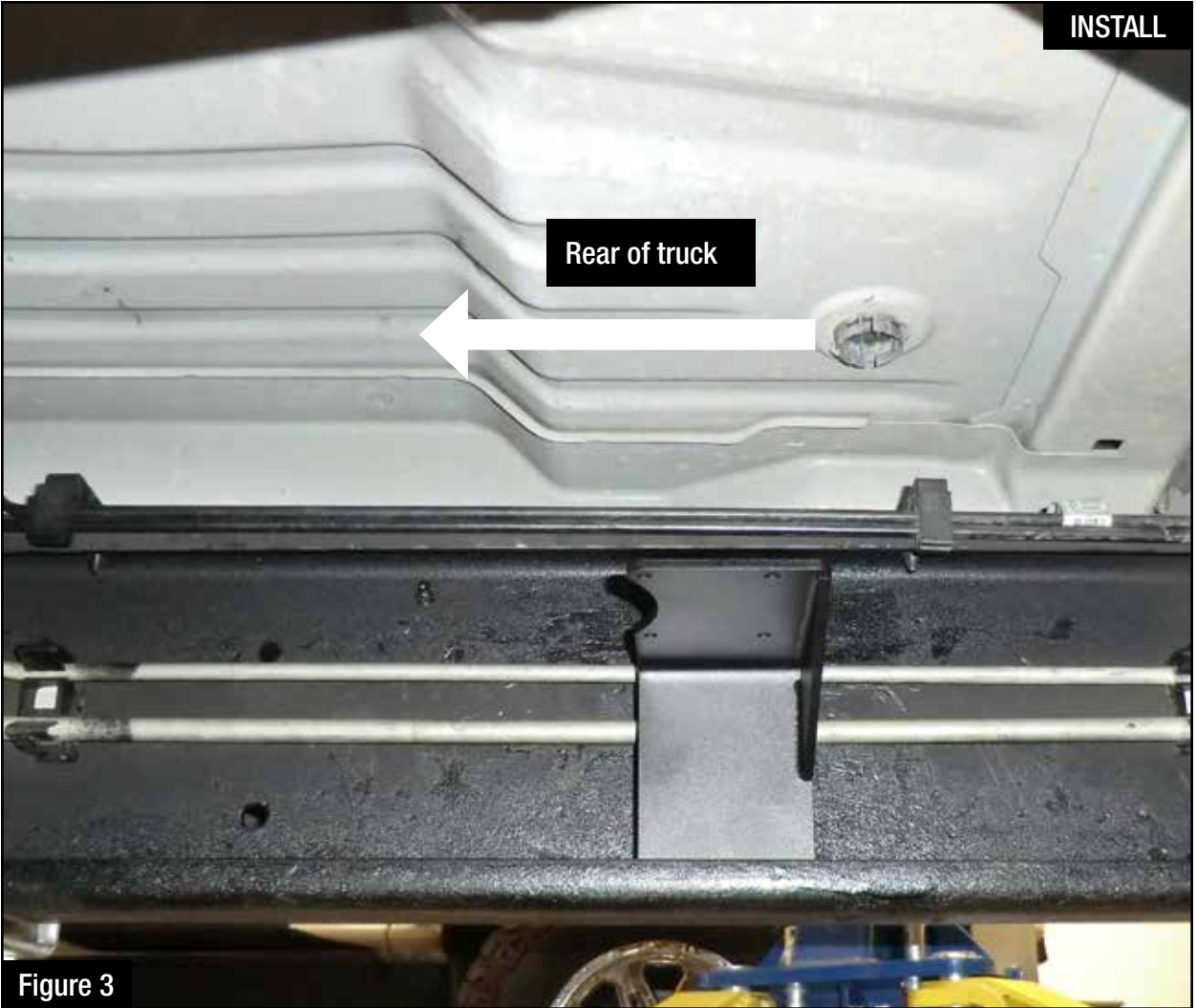


Figure 3

NOTE: This is what the bracket looks like when installed correctly.



Figure 4

Step 7: Mount the supplied fuel manifold assembly to the carbon steel frame bracket using the supplied hardware and tighten.

- (4) M6x1.0 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.



Figure 5

Step 8: Turn sight glass to the desired angle and using a 1-1/4" wrench, tighten the center nut under the fuel manifold.

NOTE: The pump should look like the picture above.



Figure 6

Step 9: Using a light oil, lube the gasket on the supplied fuel filter and install on the fuel manifold assembly. Thread the supplied water separator bowl onto the fuel filter.

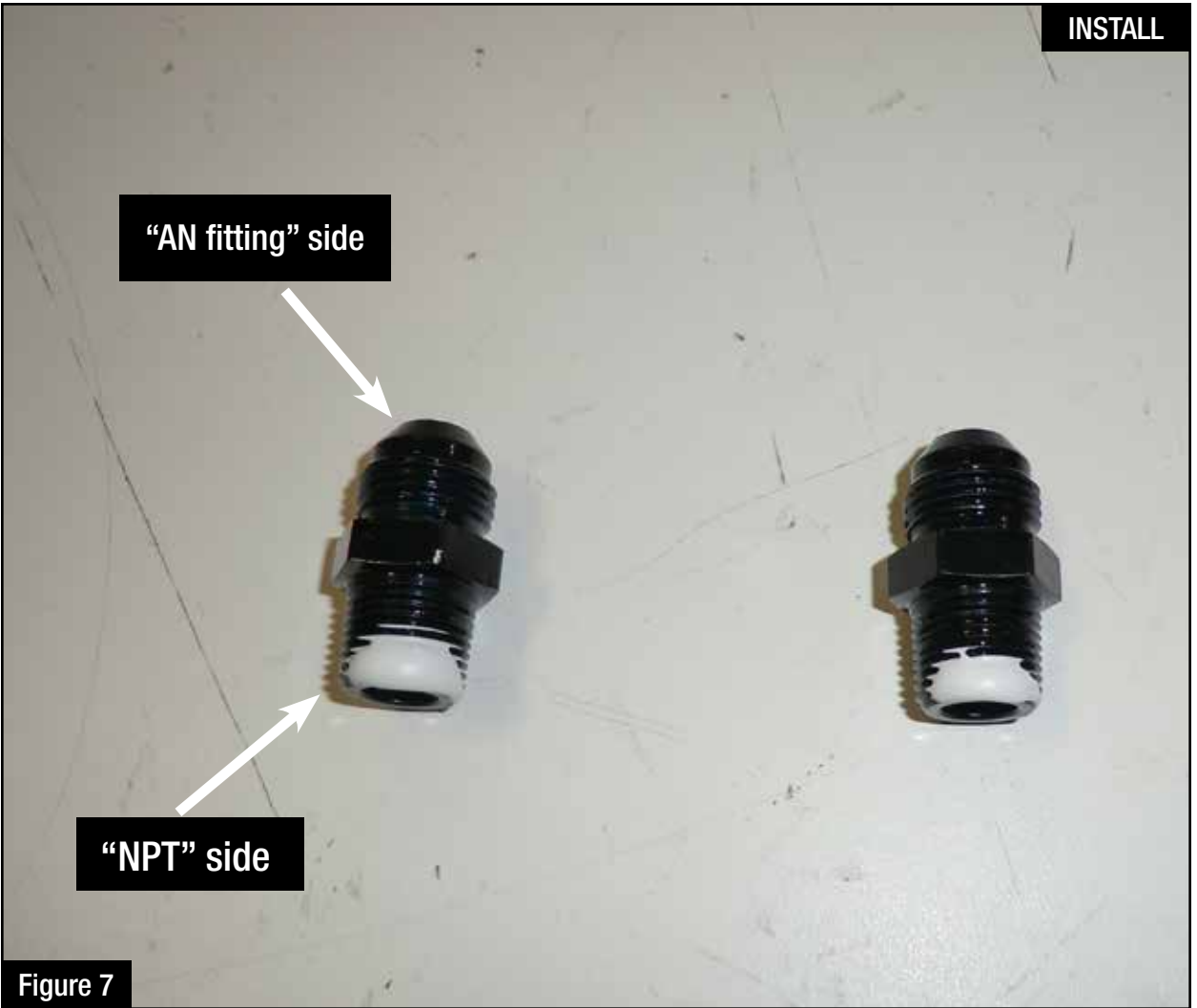


Figure 7

Step 10: Apply Teflon tape with (PTFE) or Teflon paste with (PTFE) to the 2 x 3/8" NPT to -8 AN fittings.

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



Figure 8

Step 11: Install the 2 x 3/8" NPT to -8 AN fittings into the fuel manifold assembly (as shown above).

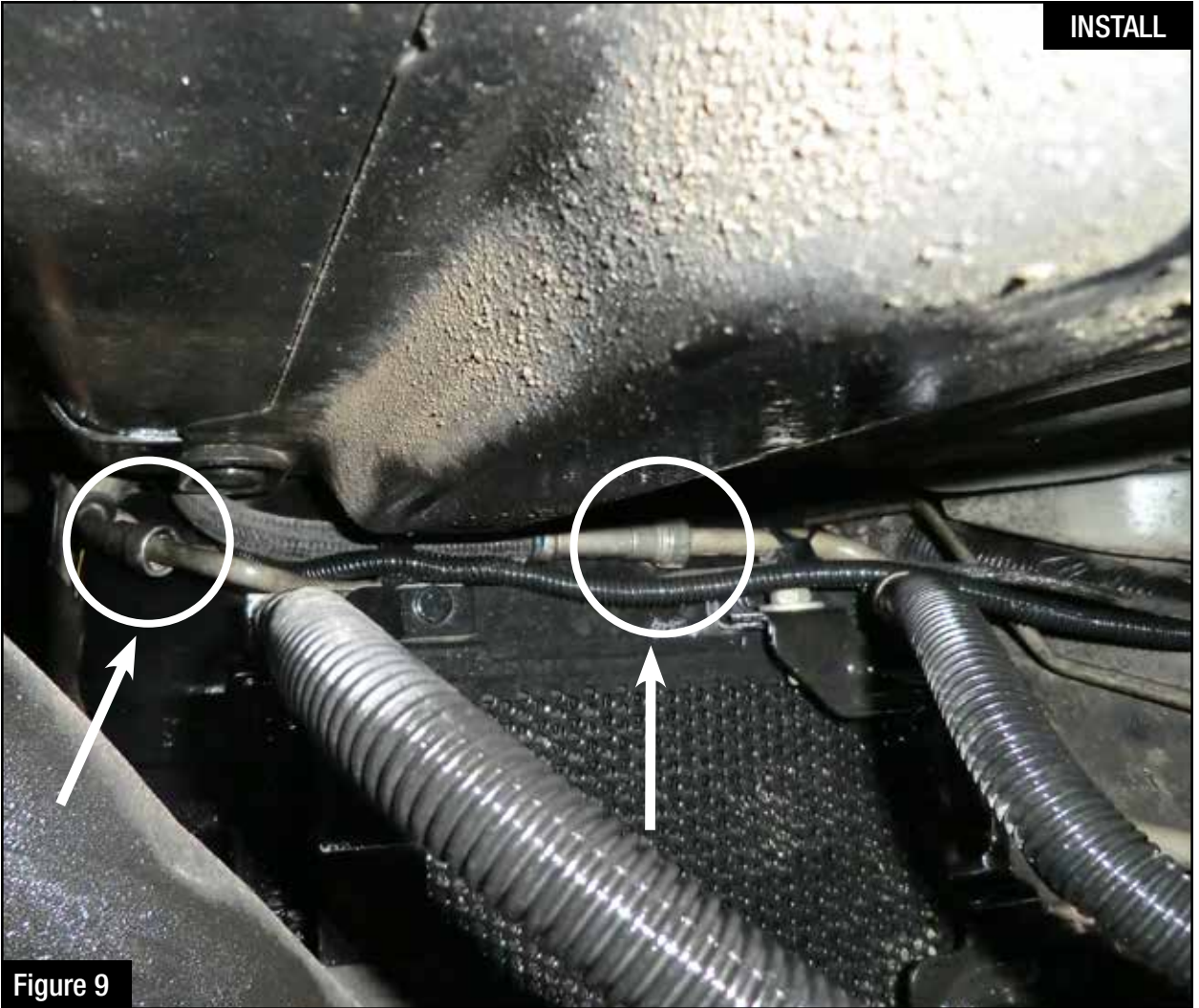


Figure 9

NOTE: If you have a 2001 - 2008 truck and the fittings look like the above picture, you will need a special tool to release the fuel line from the connectors.

You can get this tool at your local parts store.

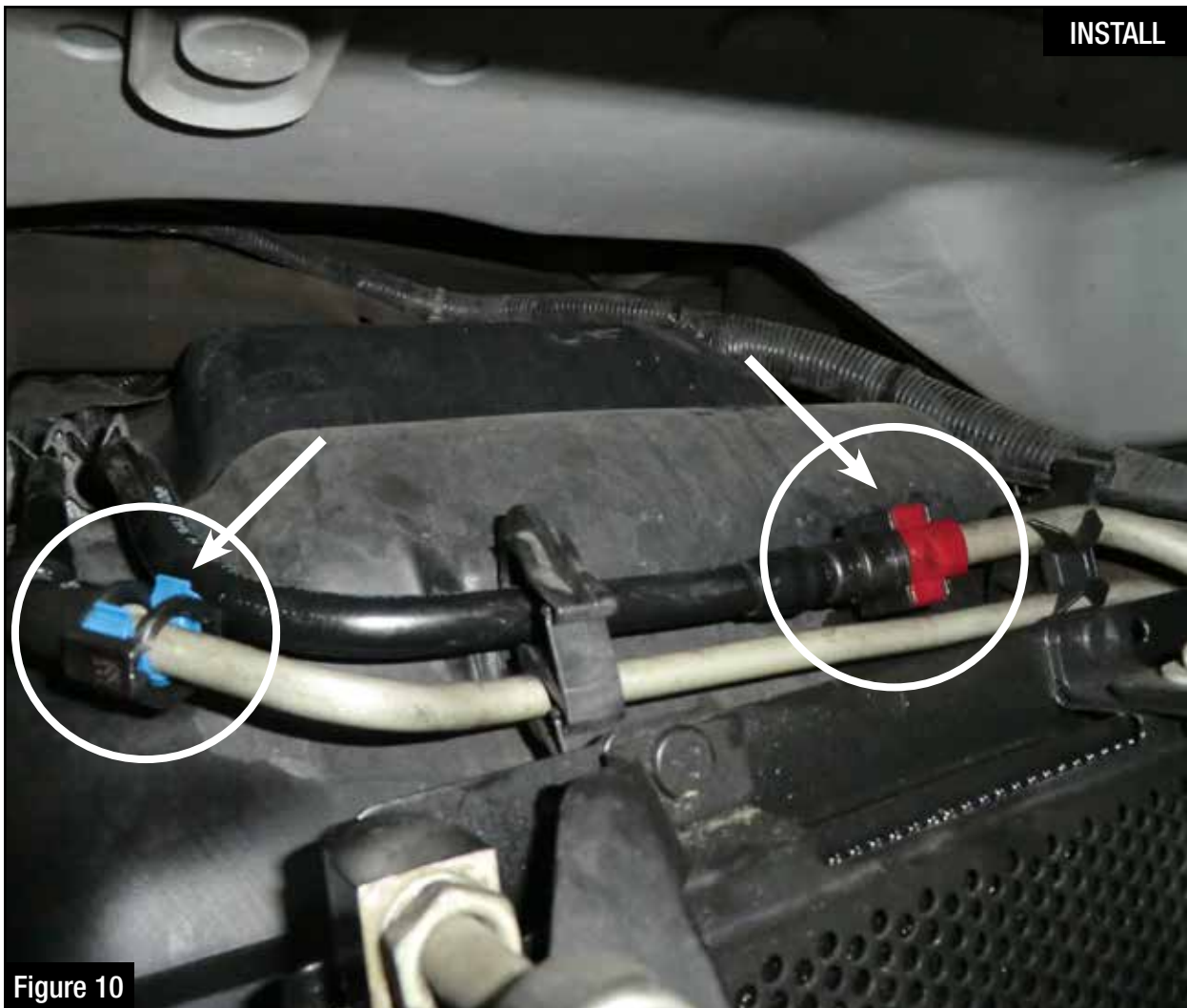


Figure 10

NOTE: This is what the connections look like on the 2009 – 2010 truck.



Figure 11

Step 12: Clean the area around the fuel lines to prevent dirt and debris from going into the lines.

NOTE: 2009-2010 model shown in the pictures.



Figure 12

Step 13: Disconnect the 1/2" fuel feed line.

NOTE: 2009 -2010 model shown in the pictures.




Figure 13

Step 14: Install the straight male quick disconnect fitting on the supplied fuel inlet hose (silver 90° -8 AN fitting - shown below) into the female side of the stock fuel feed line.



NOTE: 2009 - 2010 model shown in the pictures.



90° Female quick disconnect

Figure 14

Step 15: Install the 90° female quick disconnect fitting on the supplied fuel outlet hose (black 90° -8 AN fitting - shown below) onto the male side of the stock fuel feed line.



NOTE: 2009 - 2010 model shown in the pictures.



Figure 15
Step 16: Locate the factory fuel return line. It is located at the front of the fuel tank near the center of the truck.

NOTE: 2009 - 2010 model shown in the pictures.



Figure 16

Step 17: Disconnect the stock fuel return line.

NOTE: 2009 - 2010 model shown in the pictures.



Figure 17

Step 18: Install the straight male quick disconnect fitting on the supplied fuel return hose (shown below) into the female side of the stock fuel return line.



NOTE: 2009 - 2010 model shown in the picture



Figure 18

Step 19: Install the straight female quick disconnect fitting on the fuel return hose (shown below) onto the male connection of the stock fuel return line.



NOTE: Make sure that the line doesn't kink while making connections.



Figure 19

Step 20: Install the fuel inlet hose (silver 90° -8 AN fitting) onto the male -8 AN fitting on the fuel inlet port of the fuel manifold assembly.



Figure 20

Step 21: Install the fuel outlet hose (black 90° -8 AN fitting) onto the male -8 AN fitting on the fuel outlet port of the fuel manifold assembly.



Figure 21

Step 22: Install the fuel return hose (-4 AN fitting) onto male -4 AN fitting on the top of the sight glass cover.



Step 23: Using the supplied nylon cable ties, secure the new hoses (as shown above).

NOTE: 2009 - 2010 model shown in the pictures.



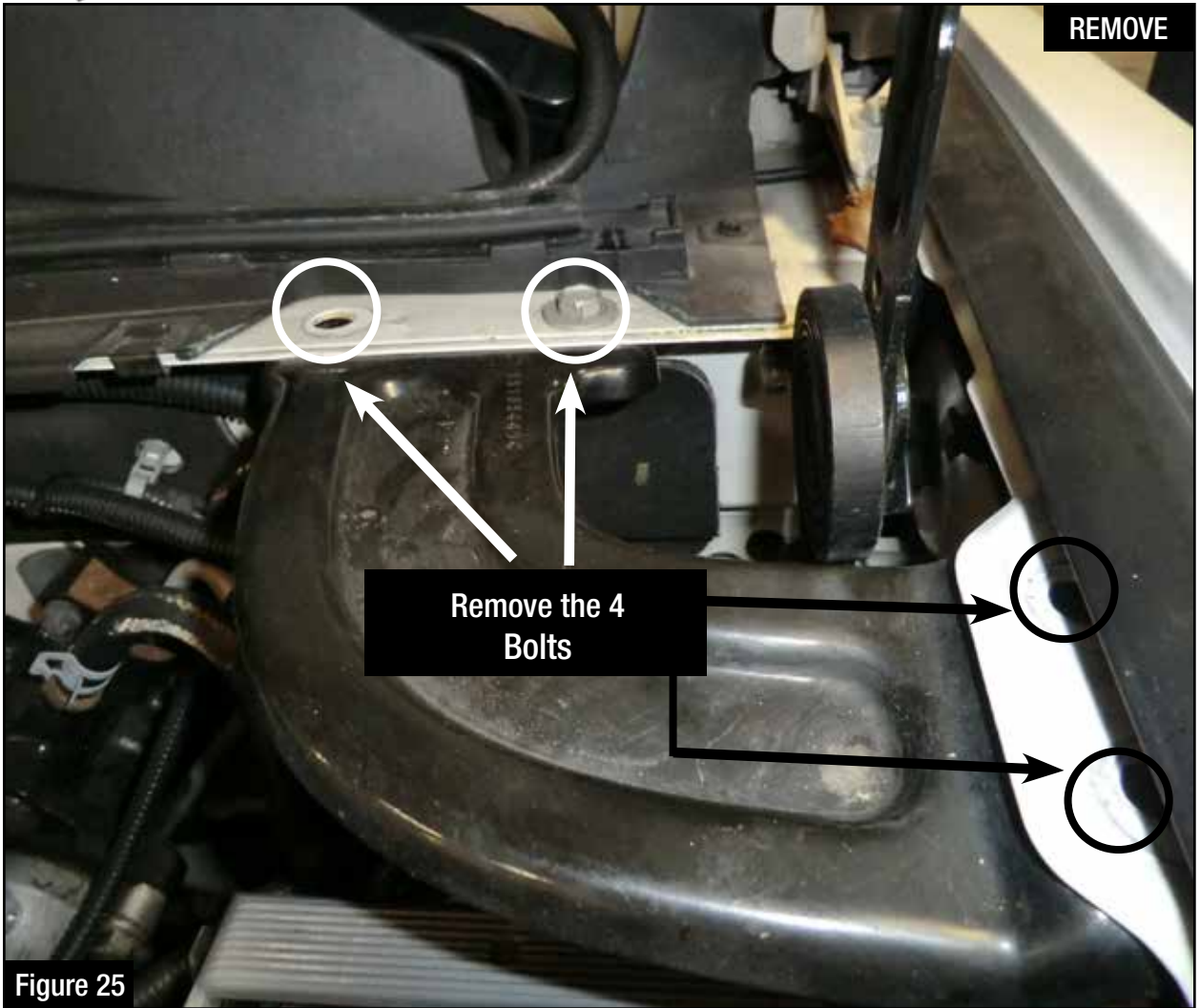
Figure 23

Step 24: Using the supplied nylon cable ties, secure the new hoses (as shown above).



Figure 24

- Step 25: From the inside of the frame, plug the Deutsch connector on the supplied power harness into the mating connector on the fuel pump motor.
- Step 26: Route the power harness along the inside of the frame towards the front of the vehicle.
- Step 27: Organize the power harness and secure with the supplied nylon cable ties.



Step 28: Remove the four (4) bolts holding the corner brace in the engine compartment. Remove the brace and hardware and retain for re-installation.



Figure 26

Step 29: Run the other end of the power harness along the inside of the frame into the engine compartment.



Figure 27

Step 30: 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.



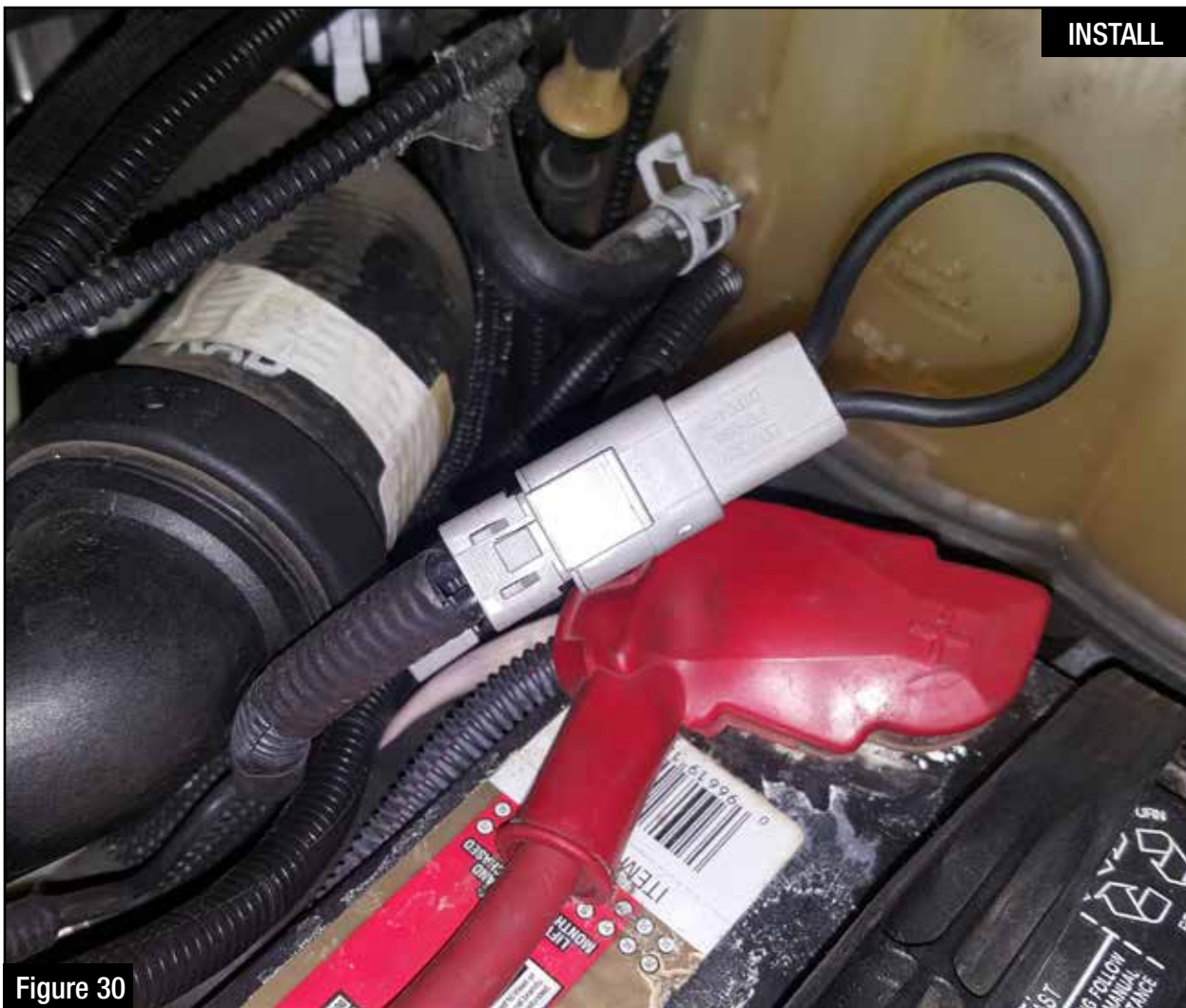
Figure 28

Step 31: Connect the black wire ring terminal on the power harness to the negative side of the battery.



Figure 29

Step 32: Plug the supplied pressure switch harness into the pressure sensor.

**Figure 30**

Step 33: Make sure that all fittings are tight. Install the priming jumper onto the Deutsch connector on the power harness. The DFS780 will turn on. Use the Schrader valve (on top of the DFS780) to release trapped air. The DFS780 should fill the sight glass with fuel and prime the fuel system. If the DFS780 does not prime, start the engine. Check for any leaks

Step 34: Once the system is primed and the truck is running, remove the priming jumper from the power harness and shut the truck off.

NOTE: Failure to remove priming jumper will result in the DFS780 continuing to run, even with the vehicle shut off. This could result in a dead battery.



Figure 31

Step 35: Plug the supplied pressure switch harness into the Deutsch connector on the power harness.
Step 36: Organize wire harness and secure with the remaining nylon cable ties.



Figure 32

Step 37: 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.

NOTE: Place enclosed CARB EO sticker on or near the device on a smooth/clean surface. EO identification label is required to pass the smog test inspection.



advanced FLOW engineering, inc.
252 Granite Street Corona, CA 92879
TEL: 951.493.7100 • TECH: 951.493.7100 x23
E-Mail: Tech@aFepower.com