



BD's Revolutionary New Heavy-Duty Lift Pump System

2005-09 5.9L/6.7L DODGE CUMMINS ***BD FLOWMax^{V2} LIFT PUMP KIT***

Installation Instructions






P/N # 1050310B

PLEASE READ ALL INSTRUCTIONS CAREFULLY BEFORE INSTALLATION.

The BD auxiliary lift pump kit will provide the safety and performance of enhanced fuel flow to your Cummins engine.

BD Engine Brake Inc.
Plant Address: 33541 MacLure Rd. Abbotsford, BC, Canada V2S 7W2
U.S. Shipping Address: 88-446 Harrison St, Sumas, WA 98295 U.S. Mailing Address: P.O. Box 231, Sumas, WA 98295
Phone: 604-853-6096 | Fax: 604-853-8749 | Internet: www.bd-power.com

Kit Contents:

			
<p>1500350-L-REV-A</p>	<p>1500357</p>	<p>1500359</p>	<p>1500355</p>
<p>FLOWMAX Lift Pump</p>	<p>Flat Washer</p>	<p>Self Threading 3/8\" Bolt</p>	<p>Mounting Bracket</p>
<p>Qty: 1</p>	<p>Qty: 3</p>	<p>Qty: 3</p>	<p>Qty: 1</p>
			
<p>1500356</p>	<p>1505001</p>	<p>1500361</p>	<p>1500311</p>
<p>Anti-Vibration Mount</p>	<p>Hose Clamp</p>	<p>Drill Jig</p>	<p>-AN 8 ORB x 3/8\" Barb</p>
<p>Qty: 3</p>	<p>Qty: 8</p>	<p>Qty: 1</p>	<p>Qty: 2</p>
			
<p>1502034</p>	<p>1500358</p>	<p>1502033</p>	
<p>-8 JICF x 3/8\" 90\" ADAPTER</p>	<p>T-Bolt Clamp</p>	<p>M12 x -8 JICM Adapter</p>	
<p>Qty: 1</p>	<p>Qty: 2</p>	<p>Qty: 1</p>	
			
<p>1500309-B</p>	<p>1502021</p>	<p>1300529</p>	<p>1500340</p>
<p>FlowMAX Lift Pump Wiring Harness</p>	<p>3/8 Fuel Hose</p>	<p>Self Tap</p>	<p>Inline Fuel Strainer</p>
<p>Qty: 1</p>	<p>Qty: 84\"</p>	<p>Qty: 1</p>	<p>Qty: 1</p>

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Optional Accessories:

- **1081130** - Low Fuel Pressure LED Alarm kit
- **1085220** – X-Monitor Digital Gauge Package (2003-07)
- **1080156** – Fuel Pressure Kit (X-Monitor Accessory)

Required Tools:

- 5mm Allen wrench
- Drill
- 1/8" and 21/64" Drill bits
- Pliers
- 3/16" Flat Screwdriver
- 10 mm Socket or wrench
- Small Pipe Cutter
- Knife To Cut Fuel Hose
- 9/16" Socket or Wrench
- 7/16" Socket or Wrench

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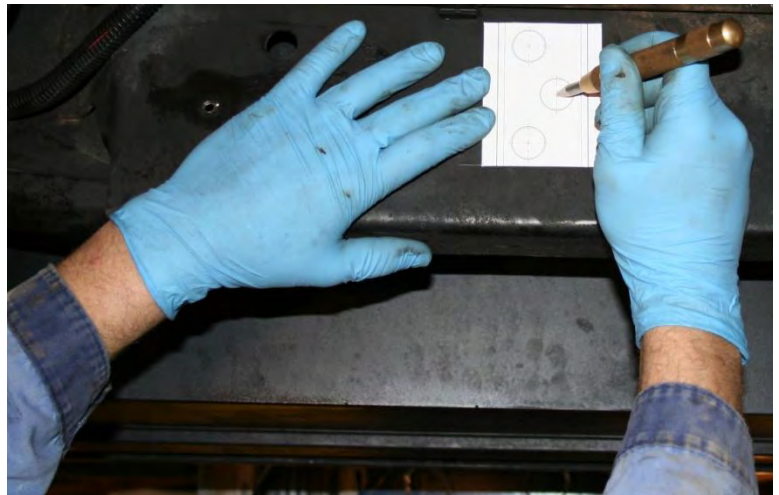
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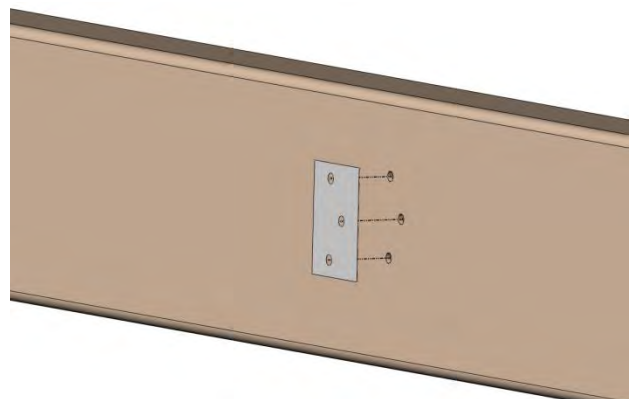
Installation:

1. Disconnect both batteries.
2. Raise the vehicle and support it safely.
3. Located the factory fuel filter. On the rear of the fuel filter, remove the banjo bolt and hard fuel line assembly. Note that you can not actually remove the hard fuel line at this time. This will be accomplished in a later step.
4. Thread the JICM adapter (1502033) into the rear of the filter housing. Do not over-torque as this is an o-ring seal. Then thread on the JICF adapter (1502034) position the barbed end and tighten. *Note the JICM adapter has a loose washer around the oring ensure this does not fall off the adapter during installation.*
5. Connect the supplied 3/8" hose (1502021) to the Barb adapter and secure with one of the provided hose clamps (1330149).
6. Route the 3/8 Fuel hose along the frame rail down to the approximate mounting location of the FlowMAX pump. **DO NOT CUT HOSE AT THIS TIME.**



7. From underneath the vehicle, locate the cross member bracket on the outside of the driver's frame rail. Position and tape drill template onto frame rail just about weld. Place fuel pump and bracket in place to ensure ample clearance.

Mark holes with center punch. Remove drill template and drill pilot holes to 1/8". Drill main holes to 21/64".

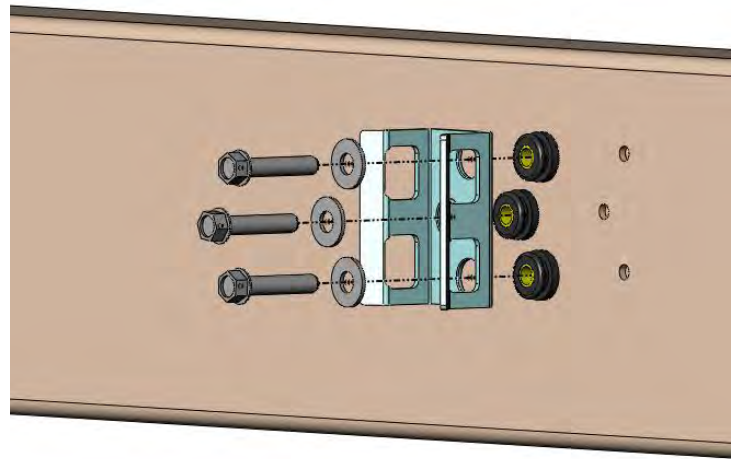


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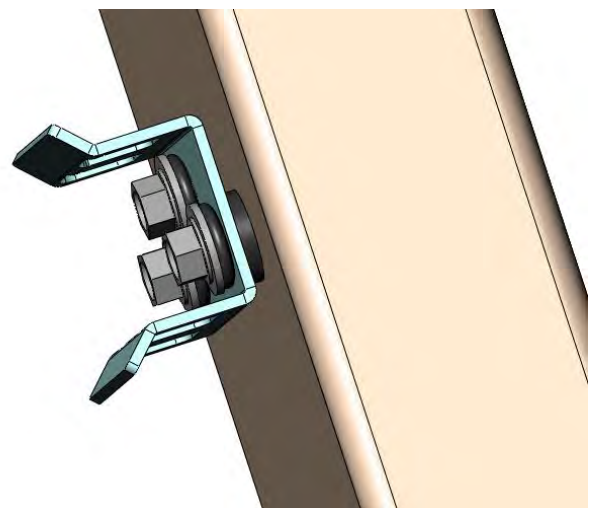
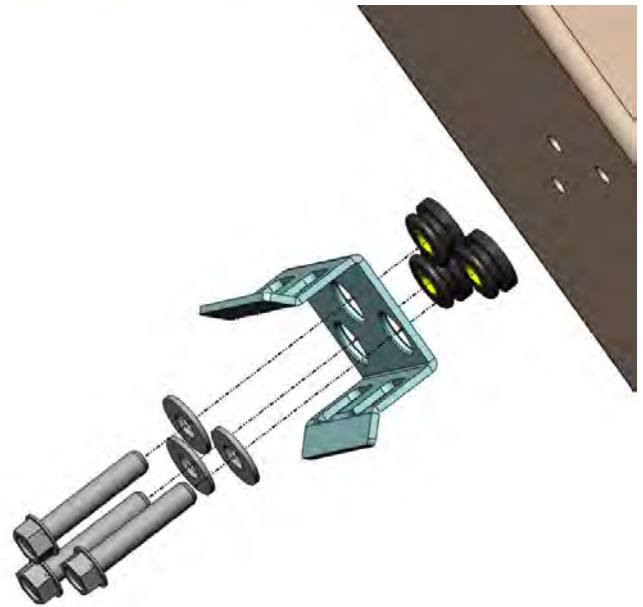


8. Insert the three rubber isolators into the support bracket. Use some water to aid in lubricating the isolators as they slide into the bracket.

Place the large washers on the inside of the bracket against the rubber isolator.

Using an air ratchet (9/16" socket) tighten the self-threading 3/8" bolt through each hole of the support bracket assembly and into the frame. Repeat this step for the other 2 bolts.

Torque the three bolts to 25ft-lbs.



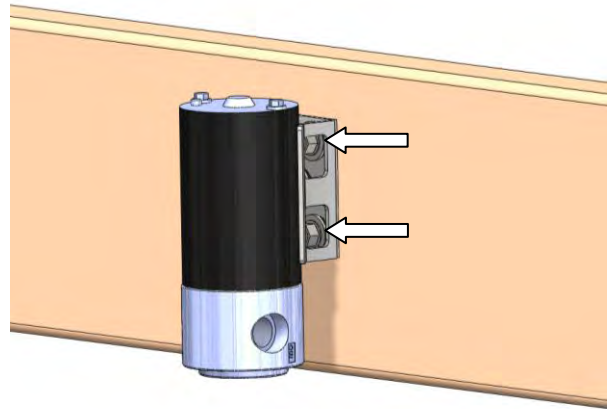
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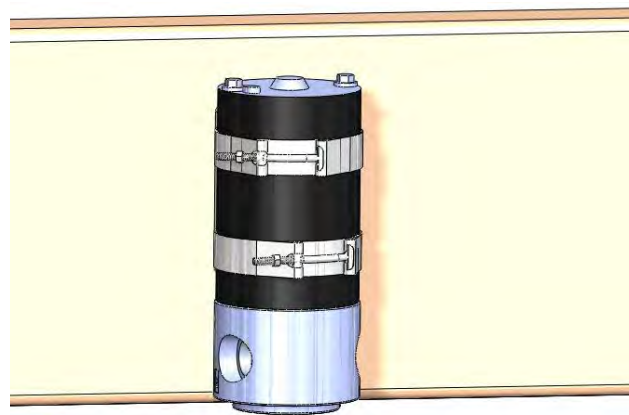
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9. Locate the two supplied T Bolt band clamps; unthread the nut (7/16" Socket) from each of them. Spread the clamps apart and insert them through boxed cutouts.

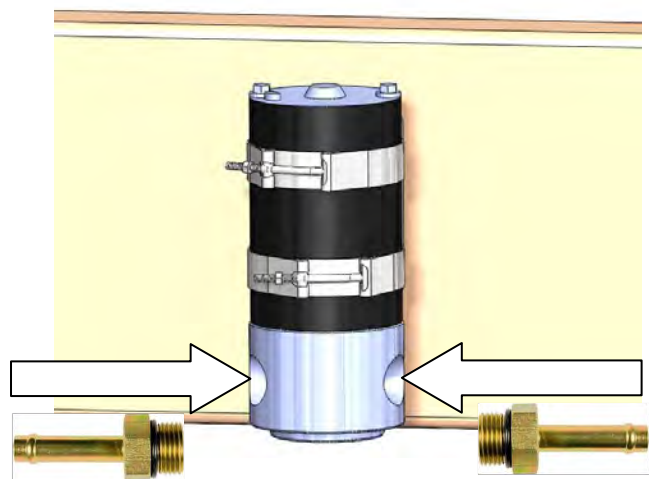


With both clamps inserted, place the pump into place and align the inlet and outlet parallel to the frame. The **inlet** should be pointed towards the fuel tank.

Tighten the clamps around the motor body, rather than the aluminum pump head. Torque nuts to 80 inlbs.



10. Insert the ORB-Barb fittings to the inlet and outlet of the pump. Do not over tighten as they use an o-ring for sealing.



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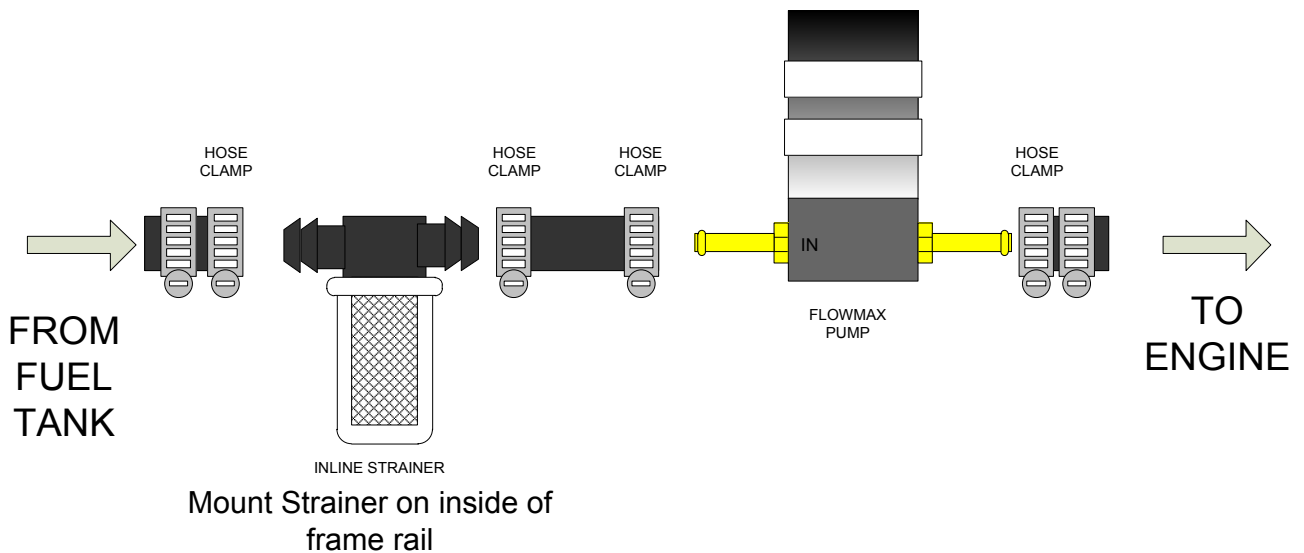
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- 11. With the pump mounted, cut the hard fuel line about 12" ahead of the pump on the inside of the frame rail. The fuel supply line is the thickest of all three lines. Discard the remainder/cut portion of the cut fuel line.

A tube cutter does not need to be used for this cut.

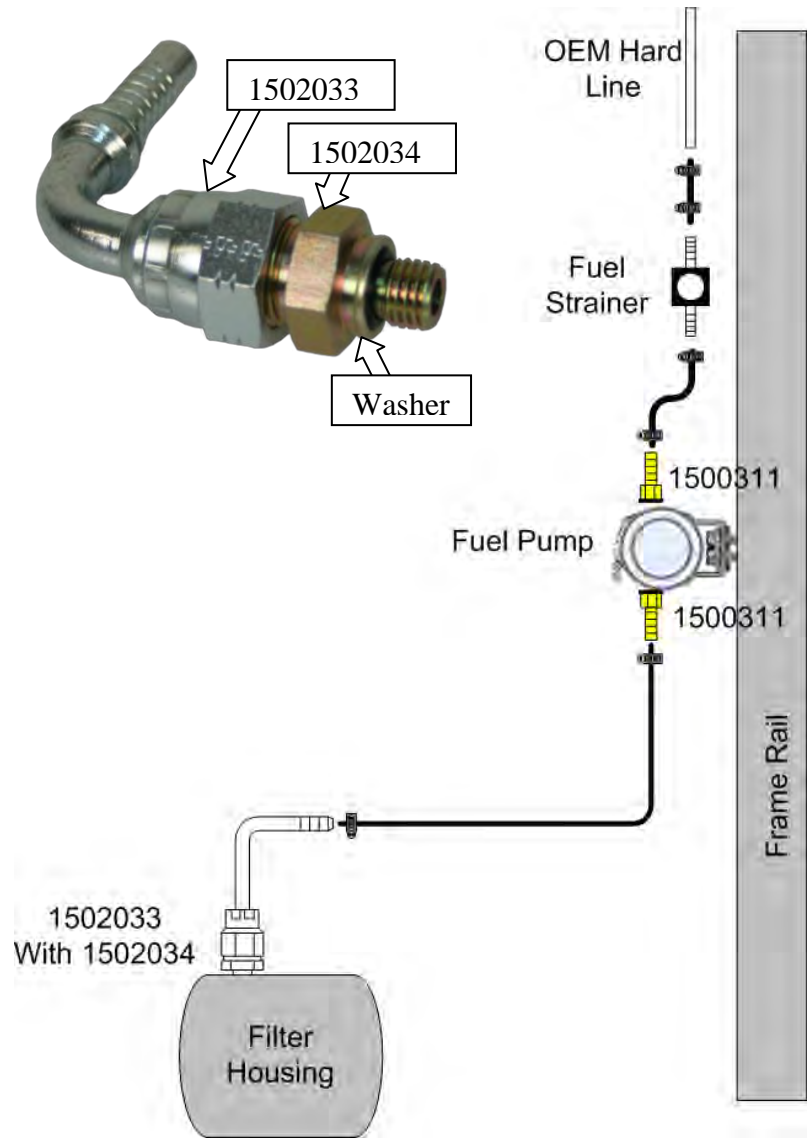


- 12. Route the fuel line that you connected from the front of the vehicle to the outlet of the pump. Use a hose clamp to secure this connection. Trim to fit, the remainder of the hose will be used for the inlet of the pump.



13. Cut the hard fuel supply line once again, this time about 8" before the inlet of the pump. This time you will need to use a tube cutter.

Install a small section of hose, then the fuel strainer. Connect the outlet of the fuel strainer to the inlet of the pump which will be on the other side of the frame rail.



14. Secure each connection with a hose clamp. Use two hose clamps when securing the rubber hose to the hard line.



15. You will now need to drop the factory fuel tank. Be very careful as a full fuel tank is very heavy.
- Use a transmission jack or something of the sort to support the fuel tank.
 - Locate the support straps that secure the fuel tank to the vehicle. Loosen and remove.
 - With the tank loose, reach up on top of the tank and un-clip and remove the factory fuel line quick connects.
 - Lower the fuel tank.



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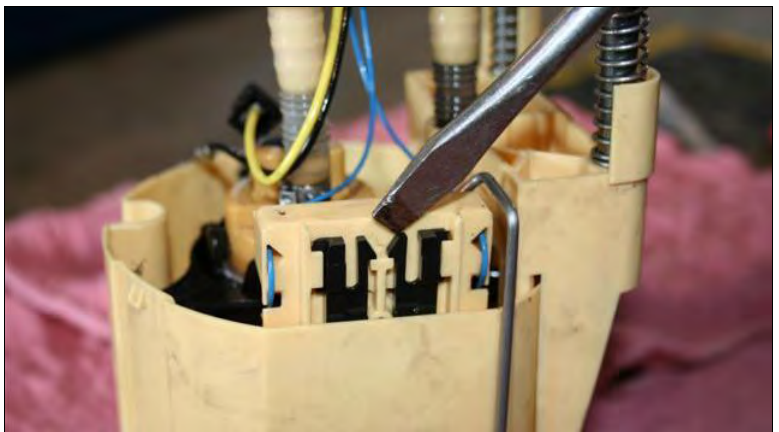
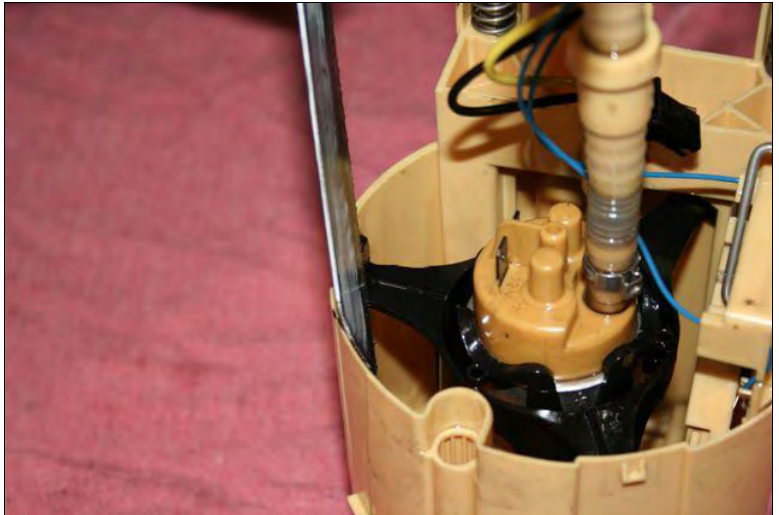
16. Remove the factory pickup can/basket from the top of the tank. Note that there is a locking clip to secure the can/basket.



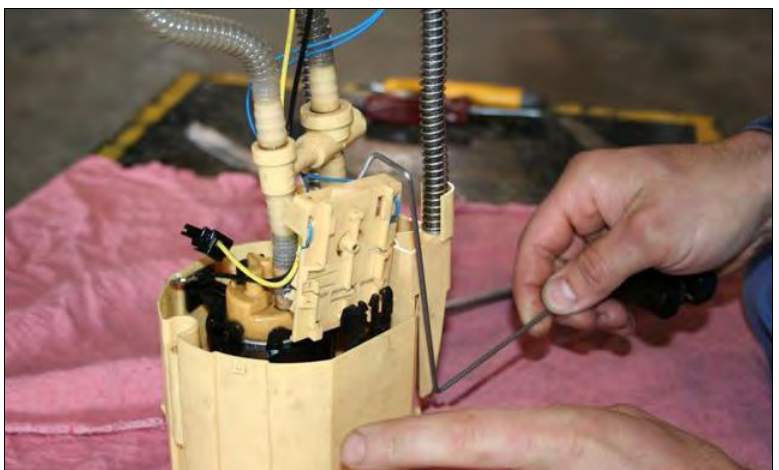
17. With the basket removed, use a hack saw blade and cut the three supports from the OE lift pump.

Disconnect the factory power and ground wires from the pump. Tie these out of the way.

DO NOT USE A ZIP TIE AS IT WILL DISENTEGRATE IN DIESEL FUEL.



18. With a flat head screw driver, release the two locking clips that secure the float. With the float out, you should have more room to work with.

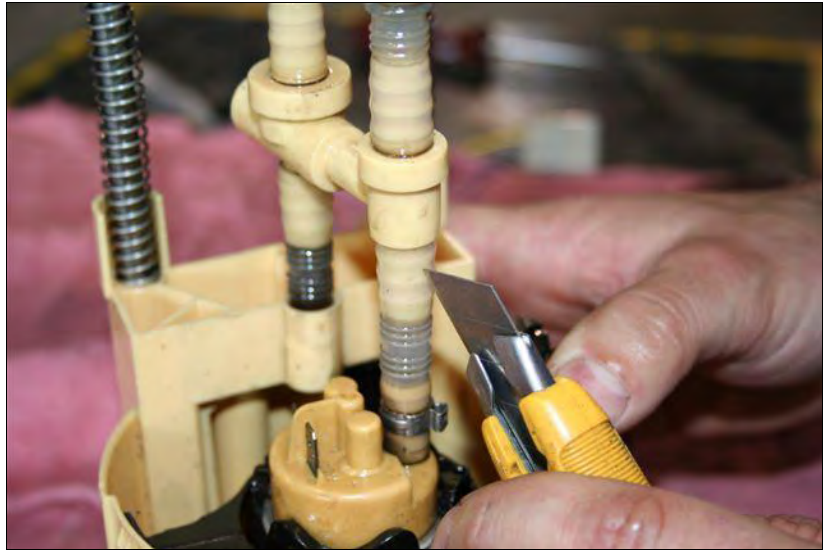


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19. With a sharp knife, score the plastic tube to release the outer tube and expose the 3/8" barb.

You should now be able to lift the OE pump out of the basket.

DO NOT CUT INTO THE PLASTIC BARB.



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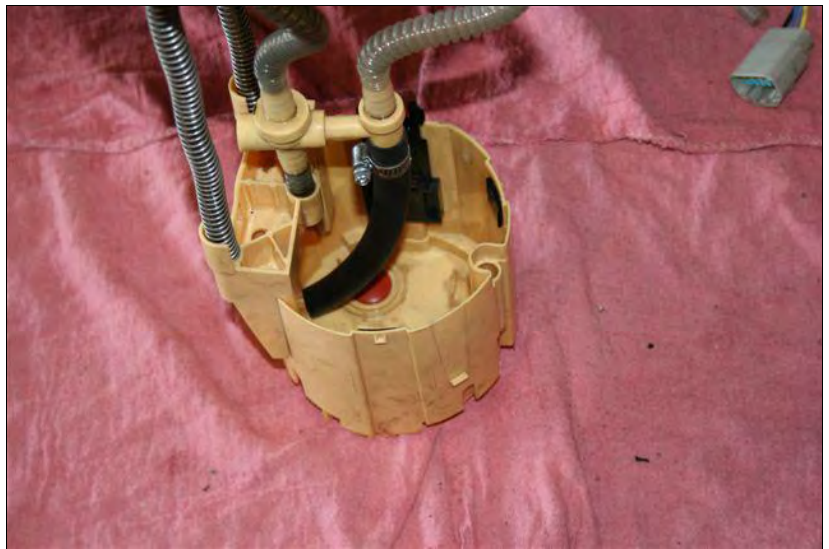
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20. Use the supplied 3/8" hose and stainless hose clamp to attach the hose to 3/8" barb.

You will need to trim the hose to the exact length so it sits flush with the bottom of the basket.

BE SURE TO CUT THE HOSE AT AN ANGLE OR V-NOTCH THE BOTTOM, OTHERWISE THE HOSE WILL SUCTION TO THE BOTTOM OF THE BASKET.

IF YOU CUT THE V-NOTCH TOO HIGH THEN THE TRUCK MAY RUN OUT OF FUEL PREMATURLY.



21. Re-attach the float. Drop the modified basket into the fuel tank and secure with the locking ring.
22. Lift the fuel tank back into the truck using the lift. Re-attached the factory fuel quick connects. Secure the tank using the factory support straps.
23. You will now need to locate the OE fuel pump trigger wire. This wire is located underneath the Total Integrated Power Module (TIPM), which is located on the driver's side of the engine compartment.

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Electrical Installations

Locate the releasing clips on the side of the TIPM.

Press the clips to release.

Rotate the TIPM so that it is upside down.



2005 Trucks Only

Locate Pin #7 on the **C6** connector. **(OR/RED)**.

Cut this wire and attach the yellow wire to the cut section that is connected to the C6 connector.

Re-attach the TIPM.



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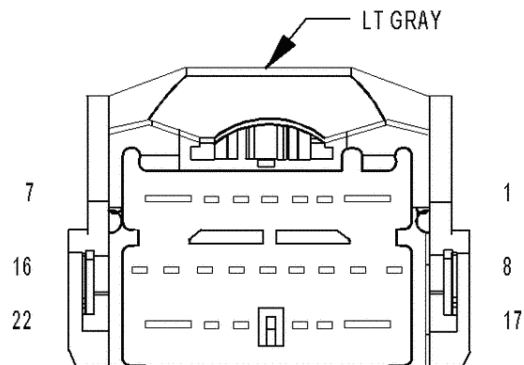
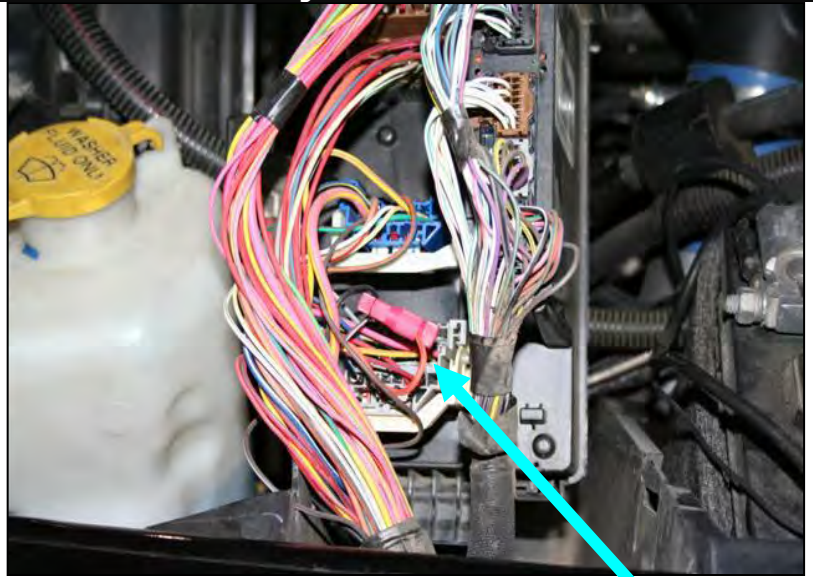
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2006-08 Trucks Only

At the very bottom you will locate the C10 connector or the L connector. In position 18 you will locate an **OR/RD** wire. Cut this wire leaving enough wire length to manipulate the wire.

You will need to connect to the cut wire on the same side of the connector.

Connect the supplied wiring harness to this connection. Use the supplied connectors to make this connection. As an alternative, you can solder and heat shrink this connection.



PIN 18 OR/RD

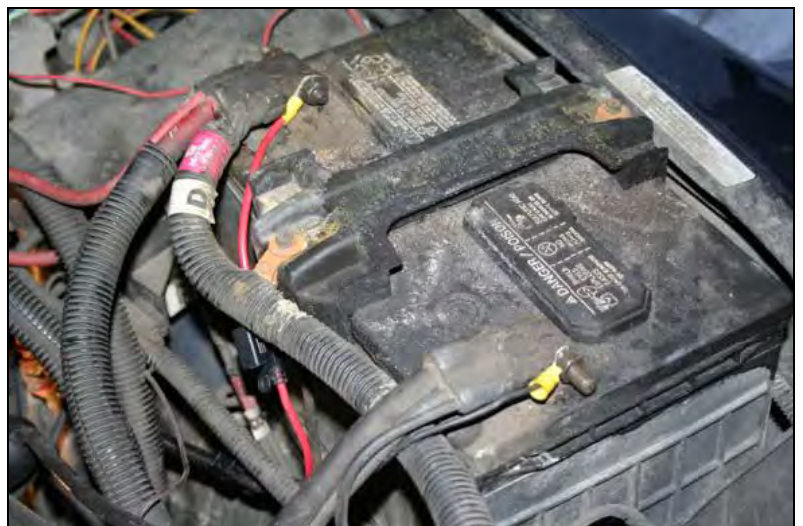
**MODULE-
TOTALLY
INTEGRATED
POWER C10**

24. Now that you have connected to the OE pump wire trigger VIA the TIPM, lay out the wiring harness, plug it into the new FlowMAX Fuel Pump, and place the positive and negative terminals in the appropriate battery terminals.

Once the routing paths have been chosen and laid out, install the relay to the firewall with the use of the self tapping screw (P/N# 1300529).



25. Wiring should be attached with the use of supplied tie wraps so that the wiring will be away from contacting hot surfaces and/or moving components. Once the wiring is attached and everything is in place the positive and negative terminals can be attached to the battery.



26. Make certain that all fuel lines, wiring harness' are fixed in place well.
27. Lower the vehicle and re-install the battery cables.

If you experience any problems or difficulties with this kit, please contact the BD Technical Department at 1-604-853-6096 or fax at 1-604-853-8749, between 8:00am and 4:30pm Pacific Time.

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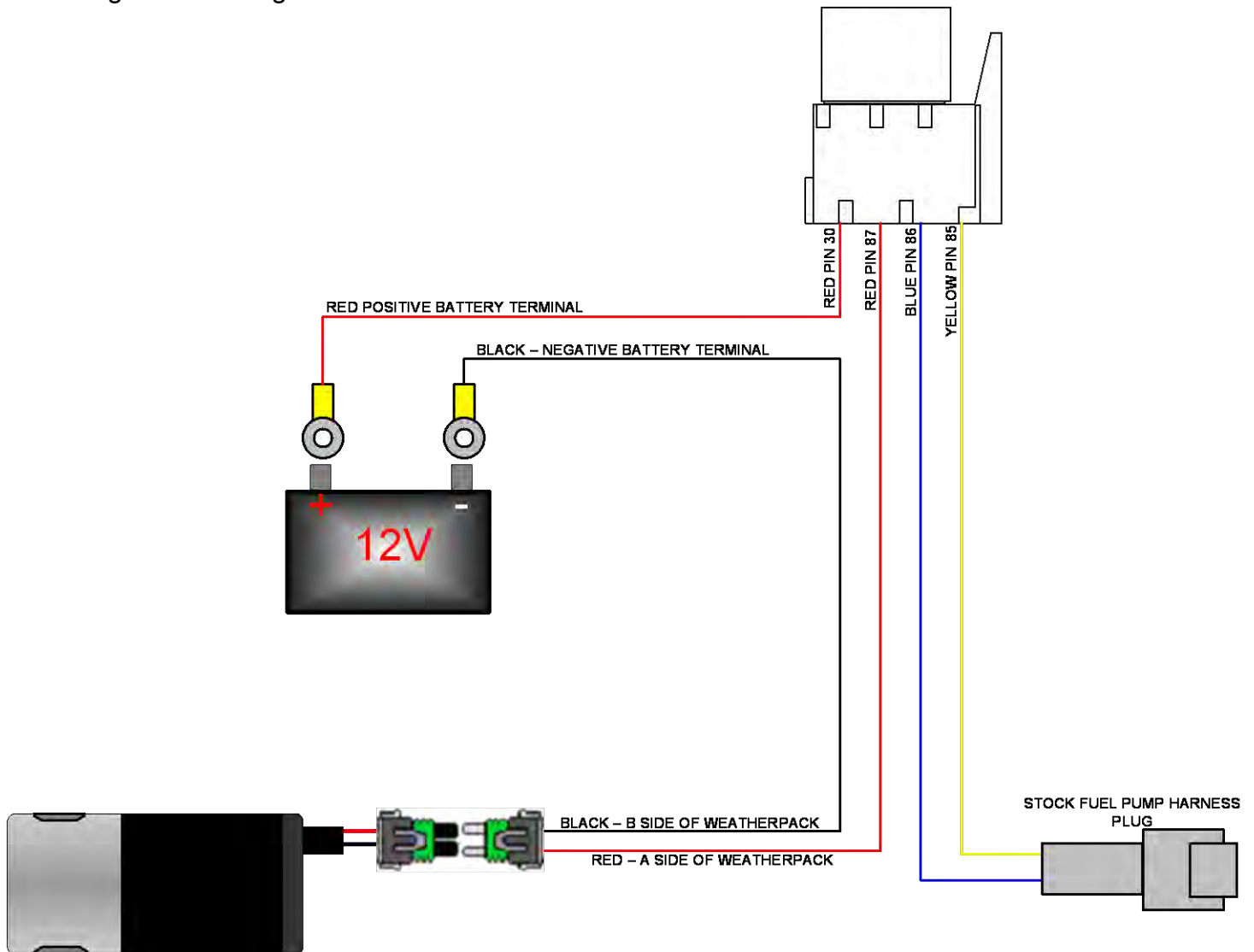
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Trouble Shooting

Wiring harness diagram



If you have problems, complete the following tests or procedures,

- Clean and re-tighten battery terminals.
- Ensure there are no crimped/pinched sections of fuel line.
- Change Fuel Filter
- Check that you have at least 12 volts at the electrical connector at the pump.
- Check that fuse in supplied harness near battery terminal is not blown.
- Check that all plugs are securely clipped together
- Run a hose from a fuel can full of diesel to the pump inlet to see if the pressure changes. If the pressure increases the problem is a restriction in the line possibly a clogged fuel screen.

The pump should operate between 16 and 18psi with 14V at idle. If you have lower voltage the pump pressure will also be lower.

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