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## **2010-16 Cummins Fuel Bowl Delete Installation Instructions**

<b>Part Number</b>	<b>1050371</b>
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**UNLESS AN EO# IS LISTED, THIS PRODUCT IS LEGAL IN CALIFORNIA FOR RACING VEHICLES ONLY, WHICH MAY NEVER BE USED UPON A HIGHWAY.**

**PLEASE READ ALL INSTRUCTIONS BEFORE INSTALLATION**

BD ENGINE BRAKE, INC.

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Phone: 604-853-6096 Fax: 604-853-8749 Internet: [www.bd-power.com](http://www.bd-power.com)

# **KIT CONTENTS:**

Please check to make sure that you have all the parts listed in this kit **before** you start the disassembly of your truck.

<b>1500422</b>		<b>1500423</b>		<b>1500409</b>	
					
<i>Fuel Return Block</i>		<i>Fuel Feed Block</i>		<i>-8 ORB to -8 JIC</i>	
<b>Qty: 1</b>		<b>Qty: 2</b>		<b>Qty: 2</b>	
<b>1604049</b>	<b>1500410</b>	<b>1500411</b>	<b>1452821</b>	<b>FT-0216801</b>	
					
<i>-8 JIC Swept Fitting</i>	<i>-8 ORB Plug</i>	<i>-6 ORB Plug</i>	<i>1/2" Hose Clamp</i>	<i>1-1/4" loop Clamp</i>	
<b>Qty: 2</b>		<b>Qty: 1</b>		<b>Qty: 1</b>	
<b>1500413</b>	<b>1502019</b>	<b>1300130</b>	<b>FT-135939</b>	<b>FT-11115722</b>	
					
<i>1/8NPT Plug</i>	<i>Seal Washer</i>	<i>Zip Ties</i>	<i>M8 x 40 Screw</i>	<i>M8 x 16 Screw</i>	
<b>Qty: 1</b>		<b>Qty: 4</b>		<b>Qty: 6</b>	
<b>Qty: 2</b>		<b>Qty: 2</b>		<b>Qty: 1</b>	

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### **REQUIRED TOOLS**

- SAE & Metric Allen Key Set
- 7/8" Wrench
- 17mm socket
- 10mm Socket
- 8mm Socket
- 6mm Hex Bit
- Side cutters

### **OPTIONAL ACCESSORIES**

Flow-Max lift pump kit	<b>1050311D</b>
Flow-Max add-on water separator filter kit	<b>1050340-WSP</b>
Flow-Max add-on fine particle fuel filter kit	<b>1050350-PFF</b>
Flow-Max Monster 1/2" fuel line kit	<b>1050331</b>
Flow-Max Fuel Heater Kit	<b>1050346 / 1050347 / 1050348</b>
Flow-Max Water In Fuel kit	<b>1050351</b>
Flow-Max tank sump kit	<b>1050330</b>
Flow-Max high flow top draw straw kit	<b>1050345</b>

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## INTRODUCTION

When producing more power from a Dodge RAM 2500/3500 with a Cummins engine, more fuel is typically required. To supply the injection pump with additional fuel, upgraded lift pumps are added, often with additional filters and water separators to ensure the fuel is always clean. With these upgrades, the factory fuel filter assembly becomes a redundant restriction, or is bypassed completely. The BD Diesel Fuel Bowl Delete kit is designed to remove the factory fuel filter assembly, and allow the addition of a fuel pressure sensor. The kit can also be used as a distribution block for applications using dual CP3 kits.

Please note that this kit is intended to be an accessory in addition to an auxiliary lift pump and filter assembly. If the factory CP3 pump feed line has not been upgraded to ½" hose, an upgraded feed line assembly will be required. See optional accessories for details.

**WARNING:** The use of this kit without auxiliary filters and water separators installed is strongly discouraged. Without a fuel filter in place, the injection system on the diesel engine could become damaged.

## REMOVAL OF FACTORY FUEL FILTER ASSEMBLY



**VEHICLE SHOULD BE SAFELY SECURED BEFORE INSTALLATION.**

1. To gain access to the fuel bowl, the intake horn will need to be removed.

Do this by removing the dipstick mounting bolt, 6 intake bolts and boot clamp. Some other components may need to be removed as well for ease of access.

**Note:** It's helpful to cover the exposed grid heater, and charge air pipe with a rag or towel to prevent debris from entering during work.



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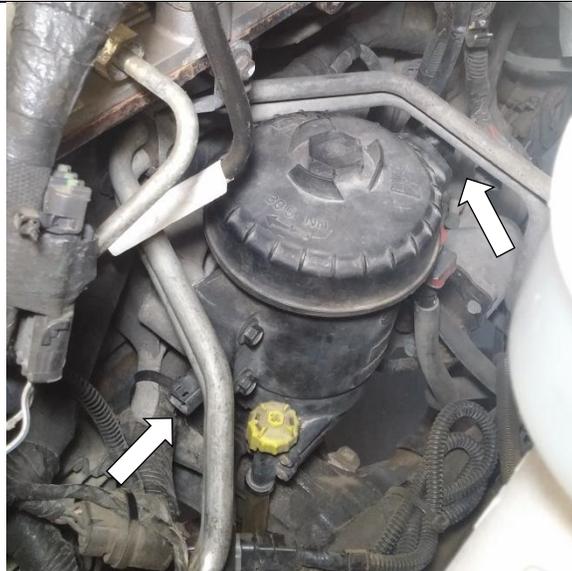
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2. Place a pan or bucket below the fuel bowl and drain as much fuel out as possible by turning the drain valve. This will help reduce fuel spill when the fuel lines are disconnected.

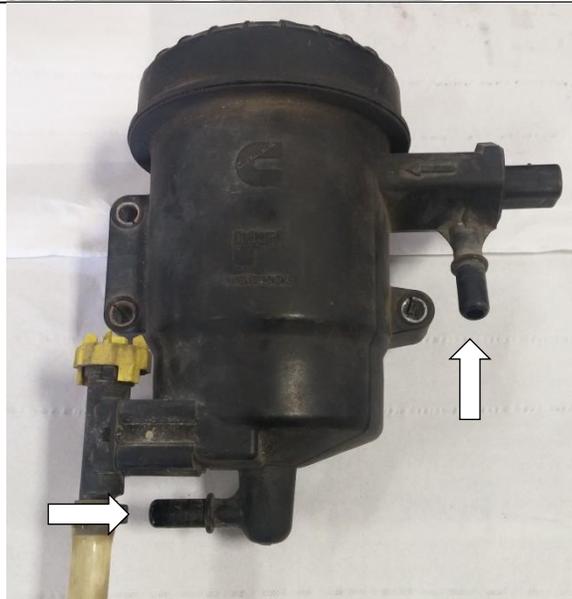


3. Disconnect the fuel heater and WIF sensor connectors.



4. Disconnect the factory fuel quick connects from the fuel bowl, if still in use. (Fuel bowl shown removed for clarity)

**Note:** Keep a rag handy, as more fuel may drain out of the bowl at this time.



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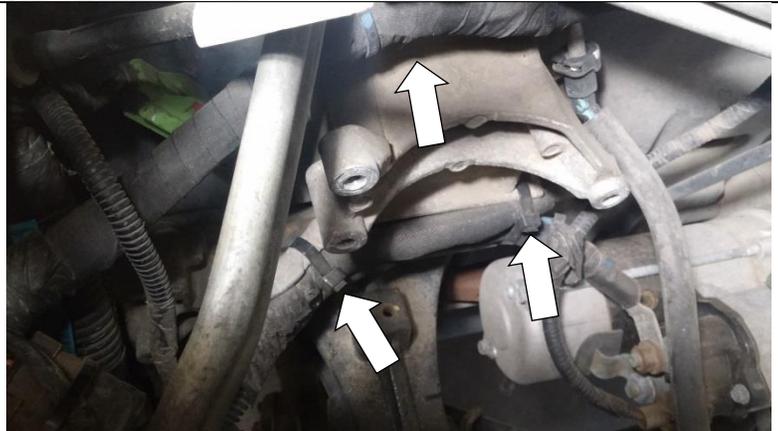
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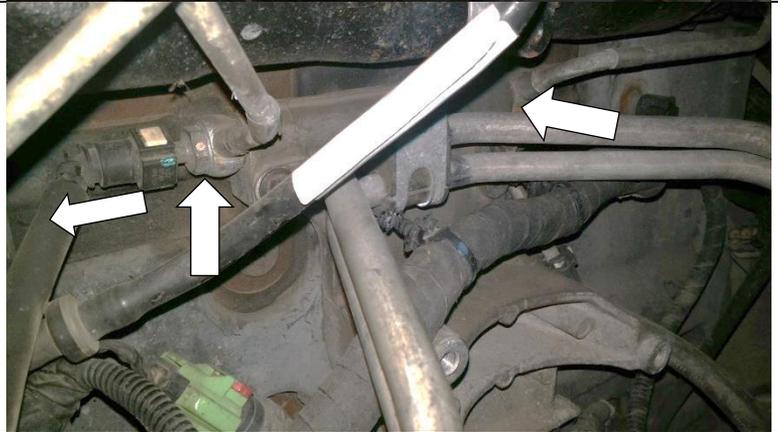
5. Remove the three (3) bolts holding the fuel bowl and filter assembly using a 10mm socket, and remove the bowl from the engine bay.



6. Cut zip-ties holding battery cables, and pull the upper wiring harness off the fuel bowl bracket.



7. Remove the return quick-connect and remove banjo bolts from both sides of the fuel return bracket with a 17mm socket. Set these aside, as they will be re-used later for install.



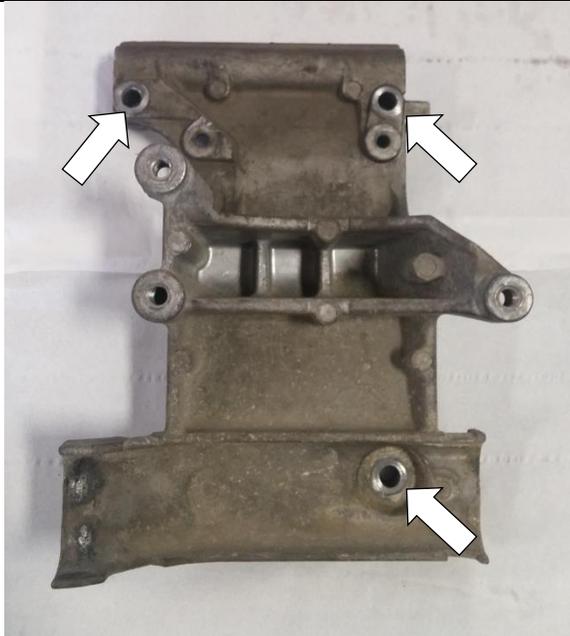
**Note:** Keep a rag handy, as some fuel may drain out when the banjo bolts are removed.

8. If you have a 2010-12 model year truck, you may have to remove the bolt holding the transmission lines in place to gain clearance for bracket access.



9. Remove the three (3) screws holding the bracket to the engine using a 10mm socket. Remove bracket from engine.

**Note:** It may be helpful to remove the starting power cables for better access.



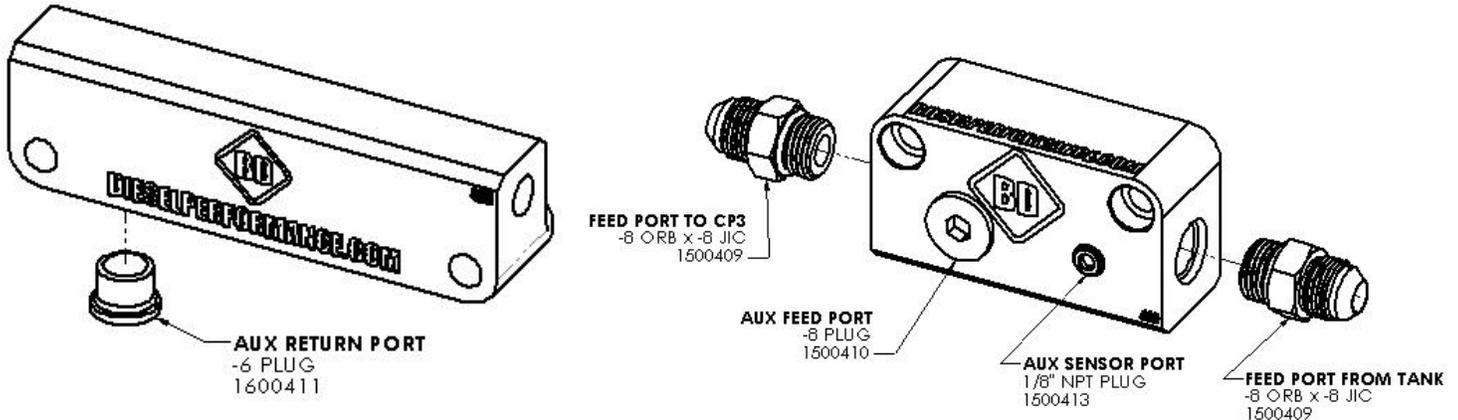
10. The fuel return lines should now be ready for install of the fuel bowl delete.



## INSTALLATION OF FUEL DISTRIBUTION BLOCKS

11. Install the supplied plugs and fittings into the Return and Feed Distribution blocks. The -8 feed fittings can be arranged to suit the application. The image shows a suggested arrangement.

**Note:** If you require an additional fuel return and or feed for a second CP3, the ORB plugs can be replaced by fittings.



12. Shown is how a typical install could look like with the fuel feed block.

If you want to include a pressure sensor, install that now into the 1/8" NPT port.

If you have dual CP3 pumps, you could remove the -8 plug and insert another -8 JIC fitting for it.



13. Shown is the return block with the -6 plug being installed.

If you have dual CP3 pumps, you could remove this plug and insert a -6 JIC fitting for the return line from the second pump.



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14. Collect the banjo bolts removed from the fuel bowl, and remove the old seal washers. Using supplied seal washers, install one onto each banjo bolt as shown.



15. Install assembled fuel return block into place between the return banjo fittings, using the two factory bolts.

Leave them hand tight at this step.



16. Slide a seal washer between the fuel block and return line, and install the original banjo bolt with the new washers. Do this on both sides.

Tighten the banjo bolts using a 17mm socket to **18 Ft-lbs.**

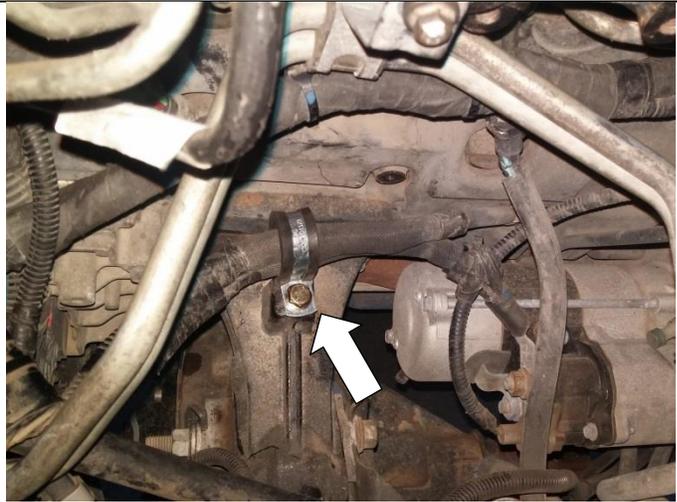


17. Tighten the two bolts holding the fuel distribution block to the engine block using a 10mm socket to **24 Ft-lbs.**



18. Using the supplied insulated loop clamp, and bolt. Secure the starter cables to the top of the motor mount.  
Use a 13mm socket to tighten the bolt, in the location shown.

The return lines and fuel bowl delete is now installed. Continue on in the instructions for install of the feed distribution block.



19. Install the assembled feed distribution block to the empty threaded holes on the side of the cylinder head, using the supplied M8 fasteners. Torque fasteners to **24 Ft-lbs** using 6mm hex bit

Model year 2010-2012 may need to sandwich the transmission cooler line bracket behind the block (as shown).



20. If running the fuel feed through the distribution block, attach the supplied swept -8 JIC to a 1/2" fuel hose (not supplied), and connect the hoses to their respective fittings.



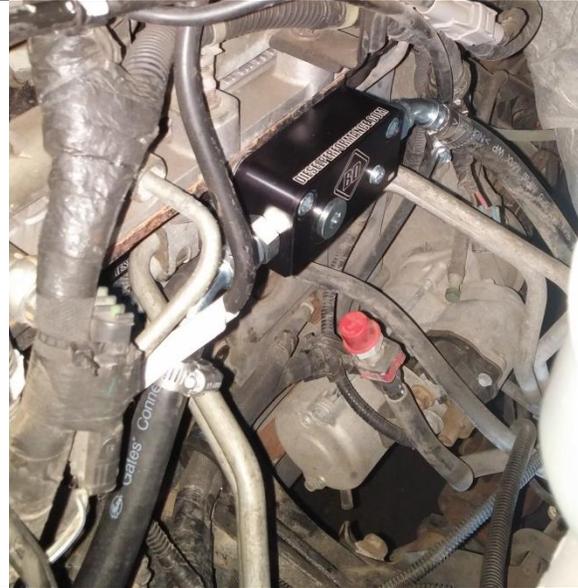
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21. Ensure all fittings are tight, and hoses are zip tied away from any hot or moving parts in the engine bay.



22. The connections for the factory WIF sensor and fuel heater will now be exposed. It is highly recommended that a WIF extension harness be installed into the factory connector to allow the use of an auxiliary WIF sensor.

- Cover the fuel heater connector with electrical tape, or equivalent, to protect the circuit from water.
- Remove the factory WIF sensor from the fuel bowl, and plug it into the wiring harness. Cover the sensor with electrical tape, or equivalent, to keep the sensor from seeing water.
- Strap both both connectors away from hot or moving engine parts.

23. Re-install intake horn, and any other parts removed for access to the fuel bowl.

24. Prime the fuel system and check for leaks at the connections before driving.

**If you have any technical difficulties, concerns, comments, or complaints, please phone our Technical Support hotline at (800) 887-5030 between 8:30am-5:00pm PST (Pacific Standard Time) Monday to Friday.**

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