

(I-00300)

BD Engine Brake LIMITED WARRANTY STATEMENT

BD Engine Brake (the "Seller") warrants the following product(s):

All products manufactured or rebuilt by the Seller are to be free from defects in material or workmanship, which includes but is not limited to Turbochargers, Exhaust and Intake manifolds, Exhaust brakes, Intercoolers, Flex Plates, Transmissions, Torque Converters, Oil pans, Fuel pumps and systems, Electronic monitors and control systems. The Seller warrants to the original buyer of the product (the "Buyer") that it will repair or replace, free of charge, any product which has a defect in material or workmanship within the warranty period described below. Copy of original invoice is required to qualify for warranty.

A defect is defined as a condition within the product that would render the product inoperable under normal conditions of use and service. The Seller's responsibility under this Warranty is limited to the repair or replacement, at the Seller's option, of any warrantable product returned prepaid with complete service history and proof of purchase. A valid proof of purchase is a dated bill of sale or receipt.

A Return Material Authorization (RMA) number, obtained in advance from a customer service representative of the Seller and the dated bill of sale or receipt, must accompany any product returned by the Buyer for warranty determination. The Seller will be the final authority on the approval of all warranty claims hereunder. The issuance of a RMA number does not represent an approval of a warranty claim. BD reserves the right to return or replace Warranty Approved items freight Prepaid. While warranty denied or rejected, claims will be returned freight collect. Accepted warranty products, which have been replaced, will become the sole property of BD.

Until the Seller has approved a warranty claim, the Buyer will be responsible for all costs. Replacement parts and the labor costs incurred by the removal and replacement of the product while performing warranty work will be the responsibility of the Buyer. In no case does the obligation of the Seller exceed the original purchase price of the product as indicated on the original bill of sale or receipt. Under no circumstances will the Seller be liable for any travel time incurred in diagnosis for defects, or any other contingent expenses.

Only once the claim is approved, and depending on if the warrantable product is eligible, labor costs will be considered for the removal and replacement if an eligible part at an hourly rate of \$100.00 per hour. The end user may be responsible for the difference between the BD warranty labor rate and the authorized service dealer's labor rate. BD recommends the end user negotiate these conditions before the service is performed. As well the end user may be responsible for additional freight charges from FOB Abbotsford, BC / Washington.

To the extent permitted by law, the Buyer hereby waives all rights other than those expressly set out herein and acknowledges that this warranty sets out the Buyer's exclusive remedies with respect to products covered by it. This warranty shall not be extended, amended or varied except by written instrument signed by the Seller and the Buyer. If the buyer replaces the product from the Seller with another from another manufacturer, the Buyer-Seller warranty contract is void and the RMA Claim will be terminated. Any claim for remuneration will be rejected.

The Seller will administer warranty requests on products sold by the Seller and not manufactured by the Seller by forwarding claims made by a Buyer under the manufacturer's warranty to the manufacturer. The final disposition of such claims will be made by the manufacturer and ruled by the laws of British Columbia, Canada.

Customer assumes risk in purchasing product with in 30 days may return the product for exchange of other BD products or services only. No cash refunds are available.

The installation of BD aftermarket parts may void the OE warranty. BD is not responsible for OE warranties or how they are administered. Residents of the U.S.A. can reference the Magnuson-Moss warranty act that protects the consumer on the installation of aftermarket parts, please research this act to base your decisions accordingly.

In the case the warranty is denied, BD at its discretion, may offer to refurbish (where applicable) the product at discounted rate for the end user.

Please refer to Warranty time limitation per product.

NOT COVERED UNDER THIS WARRANTY

This warranty is limited to the original purchaser of the product and is not transferable to subsequent owners. Specifically excluded from this warranty are failures of products caused by misuse, misapplication, negligence of the Buyer, accidents, modification, abuse, improper storage, installation, repair or operation, use of unauthorized parts or other mistreatment of the Buyer or his agent. Any competitive use, sled pulling, drag racing will void warranty on product. A sheared or twisted shaft, broken planetary gear sets, burned clutches, broken drive hubs, sun gear damage, cracked housings are not covered. Damage caused from debris in oil contaminated coolers, improper fluids and filters or damage caused from fuel or air contamination, Biodiesel, low fluid levels are also not covered. This warranty does not cover deterioration of plating, paint or any other coating, linings or parts that are subject to normal wear and tear, such as light bulbs, fuses, bearing wear, seal wear, etc.

In the case of BD transmissions, a BD torque convertor must be installed at the time of installation of the transmission. Use of a 3rd party or OE convertor may invalidate the transmission warranty.

If product is not installed by a trained and authorized BD dealer, installation facility must prove it is properly tooled and has certified training to have installed or to carry out repair of product.

The Seller also disclaims any liability for incidental or consequential damages including but not limited to, repair labor, rental vehicles, hotel cost or any other inconvenience cost. To the extent permitted by law, this warranty is in lieu of all other warranties or guarantees, either expressed or implied, included the implied warranties of merchantability and fitness for a particular purpose and shall not extend to any Buyer or to any person other than the original purchaser residing within the boundaries of the continental U.S. or Canada. As well the seller is not responsible or obligated to update previously manufactured parts that are currently under the above warranty.

NOTE THAT THIS GUARANTEE WILL BE VOID IF THE USER BREACHES THE CONDITIONS IN THE SECTION LABELED "NOT COVERED UNDER THIS WARRANTY" AND IS ONLY APPLICABLE ON THE PRODUCTS THE SELLER MANUFACTURES.

DISCLAIMER OF LIABILITY

Other than as expressly set forth herein, the Seller, together with its distributors, jobbers and dealers shall in no way be responsible for the product's proper use and service. In no event shall the Seller be liable for any special, incidental, indirect or consequential damages of any kind or nature, whether or not the Buyer was advised of the possibility of damage, arising or resulting from the use or performance of the product, and the Buyer hereby waives any and all such claims.

The Buyer acknowledges that he/she/it is not relying on the Seller's skill or judgment to select or furnish goods suitable for any particular purpose and that the Seller has no liability that will extend beyond the scope of the limited warranty contained herein, and the Buyer hereby waives all remedies or liabilities, expressed or implied, arising by operation of law or otherwise, (including, without limitation, any obligations of the Seller with respect to fitness for any particular purpose; merchantability; and special, incidental, indirect or consequential damages) or whether or not occasioned by the Seller's negligence.

The Seller disclaims any warranty and expressly disclaims any liability for personal injury or damages related to the Buyer's use of the product. The Buyer acknowledges and agrees that the disclaimer of any liability for personal injury is a material term for this Agreement and the Buyer agrees to indemnify the Seller and hold the Seller harmless from any claim related to the product and its use or performance. Under no circumstances will the Seller be liable for any damages, liabilities, costs or expenses incurred as a result of by reason of the use, performance or sale of the product, including without limitation, any damages, liabilities, costs or expenses incurred by reason of the Buyer's negligence related to those uses of the product as a result of the removal of the speed limiter.

The Seller assumes no liability regarding the improper installation or misapplication of the product. It is the installer's responsibility to check for proper installation, and, if in doubt, contact the manufacturer.

Limited Warranty Details			
Product Name	Parts (Months/Miles) ¹	Labor (Months/Miles) ^{1,2}	Notes
Torque Converters	36/ 150,000	12/12,000	No Race abuse covered
Transmissions (TowMaster & TorqueMaster)	36/ 150,000	12/ 24,000	No Race abuse or broken shafts covered. Remote filter required for inspection with a cooler flow rate in GPM at Oil/Air transmission cooler outlet. Freight provision allowed.
Transmissions (RoadMaster)	24/ 100,000	12/ 24,000	
Rebuild/Repair Transmission	12/ 24,000	12/ 24,000	Defined as "Cost of Repair" or repaired units that fall outside of the retail warranty period.
Race Transmissions	12/ 24,000	Not Eligible	
Valve / Accumulators Bodies	12/ 24,000	12/ 24,000	
Transmission Pans	36/ 150,000	Not Eligible	
Flex Plates	36/ 150,000	Not Eligible	
Injectors (Mechanical) & Injection Pumps	12/ 24,000	12/ 24,000	VP44/P7100 Race Pumps 90 days parts/No labor coverage
Performance Injector Nozzles (Common Rail)	Not Eligible	Not Eligible	
Common Rail Injectors	24 Months	Not Eligible	Manufacturing and material defects are only covered. Cracks caused by high fuel pressure are not covered. High Return flow not covered after 12 months on Performance Injectors. For No Hassle Eligibility, see https://us.bddiesel.com/pages/extended-warranty
	24 Months + No Hassle	Not Eligible	
Performance Tuners and Chips	Manufacturer ³	Not Eligible	
BD Electronic Modules (TSB, VVB, etc)	24/ 48,000	Not Eligible	
Intake / Exhaust Manifolds	36/ 75,000	Not Eligible	
Exhaust Up pipes	12/24,000	Not Eligible	Surface rust not eligible.
Exhaust Kits	Manufacturer ³	Manufacturer ³	
Hoses / Clamps	12/ 24,000	Not Eligible	
BD Xtruded Transmission Cooler	12/ 24,000	Not Eligible	
Manual Transmission Clutches	Manufacturer ³	Manufacturer ³	
Short Shifters	12/ 24,000	Not Eligible	
Engine / Head Stud kits	Manufacturer ³	Manufacturer ³	
Positive Air Shutoff / Electronic Positive Air Shutoff	24/ 24,000	Not Eligible	
Exhaust Brakes	24/ 24,000	12/ 24,000	
Gauges and Mounts	Manufacturer ³	Manufacturer ³	
Screamer Turbos	24 Months	Not Eligible	24 Month warranty effective for sales after 11/01/2024
Performance/OEM Turbos	12 Months	Not Eligible	
Remanufactured ISX Turbos	90 Days	Not Eligible	See I-00437 for more details. For 1045880, see OEM Turbos.
Auxiliary Fuel Pumps	12/ 12,000	Not Eligible	
BD FICM	12 Months	Not Eligible	
Fuel Control Plate/Pin (VE & P7100)	24 Months	Not Eligible	
Distributed Product (Not Manufactured by BD)	Manufacturer ³	Manufacturer ³	
Replacement Components	12 Months	Not Eligible	
Transmission Rebuild/Build It Kits	12 Months	Not Eligible	Material Defects Only
Steering & Suspension Parts (Track Bar, Caster kit, Steering Stabilizer, Bars and links)	Limited Lifetime (12 months if not registered)	Not Eligible	Must register online within 30 days of purchase to be eligible. See website https://warranty.bddiesel.com/limited-lifetime/ for details. Excludes normal wear & tear (boots, bushings, joints, bearings) and improper use.
Venom/FlowMAX Fuel Lift Pump Kit	Limited Lifetime (12 months if not registered)	Not Eligible	Must register online within 30 days of purchase to be eligible. See website https://warranty.bddiesel.com/limited-lifetime/ for details. Excludes normal wear/service items (hose, filters) and improper use.

A Return Material Authorization (RMA) number, obtained in advance from a customer service representative of the Seller and the dated bill of sale or receipt, must accompany any product returned by the buyer for warranty determination.

¹ Warranty is based on whichever occurs first (Months or Mileage).

² Prior approvals must be given to qualify for labor reimbursement.

³ As per Manufacturer's warranty

Updated 10/21/2024



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BD High Flow CP3 Pump Kit

1050551

**Dodge Cummins 03-18
5.9L/6.7L**

PLEASE READ ALL INSTRUCTIONS BEFORE INSTALLATION

SEE APPENDIX A FOR PUMP FLOW VS. COMMAND DETAILS**Kit Contents**

1502019	1500680	1502041
		
M12 Seal Washer Qty: 2	High Pressure Outlet Fitting Qty: 1	5/16" Barb 12mm Fitting Qty: 1
FT-0480748	CTL-8.5	1604031
		
O-ring 2mm x 9mm Qty: 1	Hose Clamp Qty: 2	5/16" Fuel Hose Qty: 12"

Tools Required

- 17,19mm Wrench
- 13mm & 15/16" Socket
- 3/8" Ratchet
- Gear Puller
- 1 3/8" Socket (Filter)
- Torque Wrench (up to 77 ft/lbs)

Removal

1. Disconnect both negative battery cables at both batteries. Cover and isolate ends of both cables.
2. Remove intake manifold air intake tube (above injection pump) and its rubber connector hose.
3. Remove accessory drive belt.
4. Thoroughly clean rear of injection pump, and attachment points for its fuel lines. Also clean the opposite ends of these same lines at their attachment points.



Caution: Whenever a fuel line fitting is connected to a secondary fitting, always use a back-up wrench on the secondary fitting. Do not allow the secondary fitting to rotate.

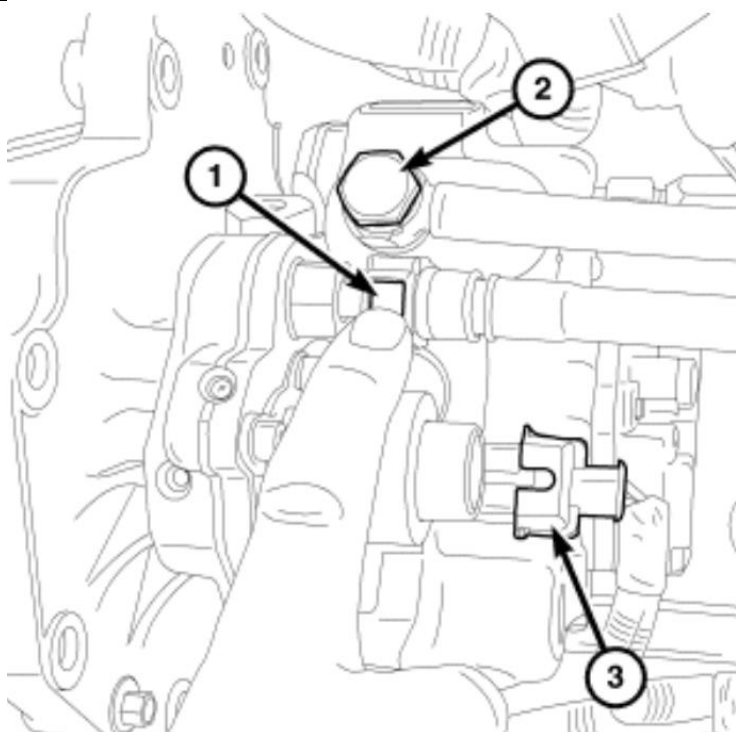
5. Disconnect quick-connect fitting by pressing on button (1).

Note: 5.9L will have a banjo at this connection and a spring clamp at the hard line to fuel bowl to remove with hose section.

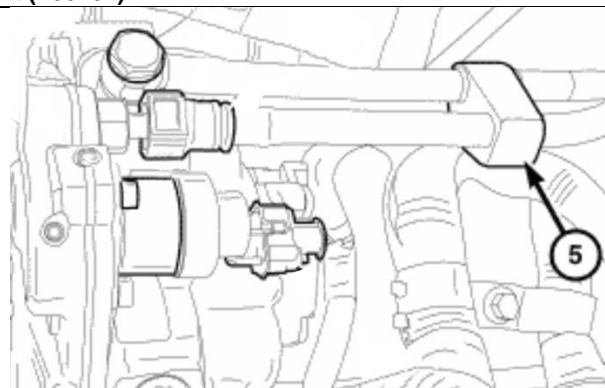
6. Remove high-pressure fuel line to fuel rail.

7. Remove banjo bolt (2).

8. Disconnect FCA (Fuel Control Actuator) electrical connector (3).

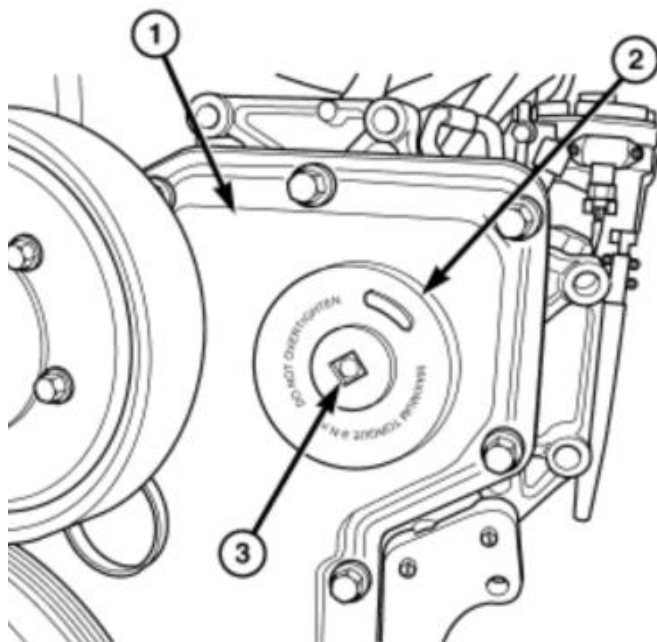


9. Remove line clamp (5).



10. Remove fuel pump drive gear access cover with a 3/8" drive ratchet. Access cover (2) is threaded to timing gear cover.

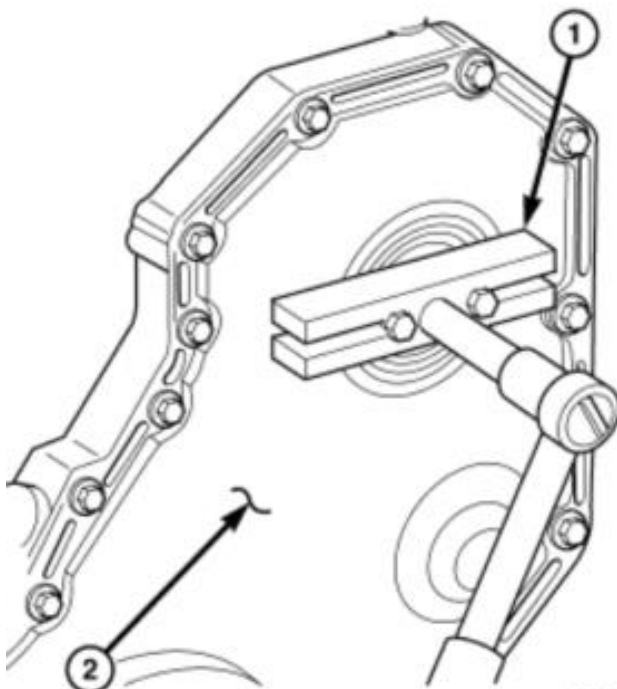
Number	Description
1	Front Timing Gear Cover
2	Gear Access Plate (Cover)
3	Square Drive (For Cover Removal)



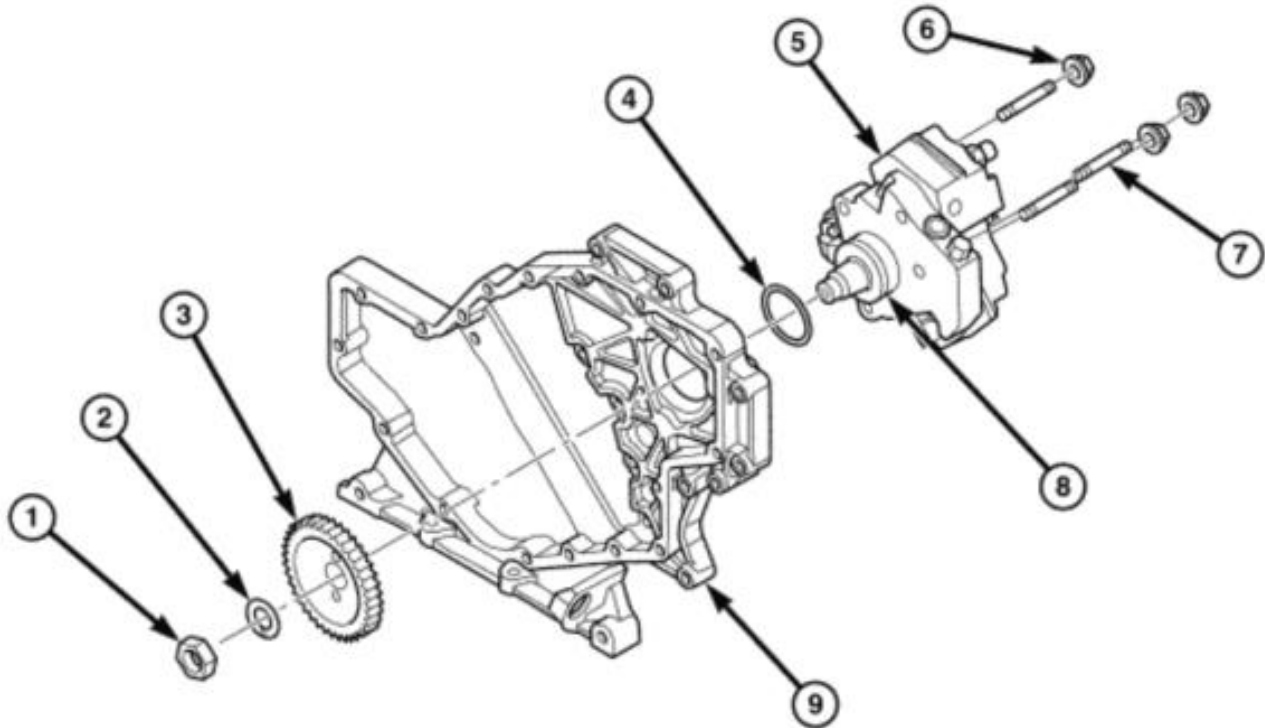
11. Remove fuel pump drive gear mounting nut and washer.

12. Attach C3428B, or L4407A (or equivalent) gear puller to pump drive gear with 2 bolts, and separate gear from pump (a keyway is not used on this particular injection pump). Leave drive gear hanging loose within timing gear cover.

<i>Number</i>	<i>Description</i>
1	Front Timing Gear Cover
2	Gear Puller Tool



13. Remove three injection pump mounting nuts (6), and remove pump from engine.



<i>Number</i>	<i>Description</i>	<i>Number</i>	<i>Description</i>
1	Pump Drive Gear Nut	6	Pump Mounting Nuts
2	Washer	7	Pump Mounting Studs
3	Pump Drive Gear	8	O-Ring Machined Groove
4	Rubber O-ring	9	Front Timing Gear Housing
5	Fuel Injection Pump		

Installation

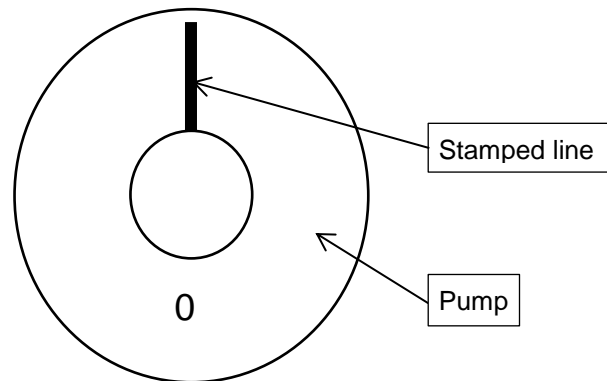
Caution: Cleanliness cannot be overemphasized when handling or replacing diesel fuel system components. This especially includes the fuel injectors, high-pressure fuel lines and fuel injection pump. Very tight tolerances are used with these parts. Dirt contamination could cause rapid part wear and possible plugging of fuel injector nozzle tip holes. This in turn could lead to possible engine misfire. Always wash/clean any fuel system component thoroughly before disassembly and then air dry. Cap or cover any open part after disassembly. Before assembly, examine each part for dirt, grease or other contaminants and clean if necessary. When installing new parts, lubricate them with clean engine oil or clean diesel fuel only.

1. Inspect pump mounting surfaces at pump and mounting flange and pilot bore for nicks, cuts or damage. Inspect O-ring surfaces for nicks, cuts or damage.
2. Clean injection pump mounting flange and pilot bore at gear housing. Also clean front of injection pump.
3. Apply clean engine oil to injection pump O-ring and pilot bore only. The machined tapers on both injection pump shaft and injection pump gear must be absolutely dry, clean and free of any dirt or oil film. This will ensure proper gear-to-shaft tightening.
4. Clean pump gear and pump shaft at machined tapers with an evaporative type cleaner such as brake cleaner.

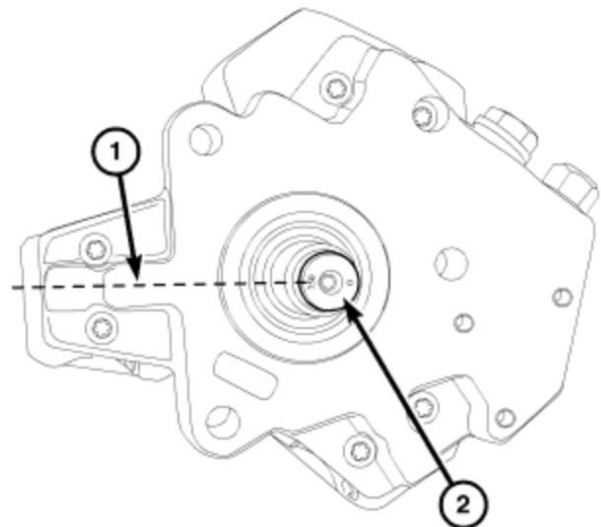
Note: 5.9L Models please refer to section on pages 10 and 11 before proceeding.

5. **FUEL INJECTION PUMP PHASING:** Perform the following phasing procedure anytime the injection pump has been removed and re-installed.

6. Locate the end of the fuel injection pump shaft, a "line" is stamped into the end of the shaft.

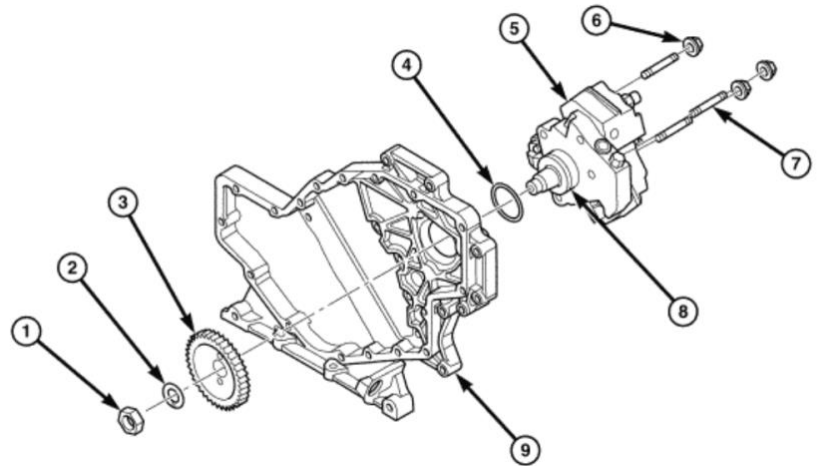


7. Rotate the injection pump shaft until the "line" is positioned at 9 o'clock (1).



8. Position injection pump to mounting flange on gear housing while aligning injection pump shaft through back of injection pump gear. Be sure the “line” is still at the 9 o'clock position (1).
9. Bring the engine to TDC position. Do this by rotating the crankshaft until the TDC mark on the crankshaft damper is at 12 o'clock position. It does not matter if cylinder #1 or #6 is at TDC. Again, check to be sure the “line” is still at the 9 o'clock position (1). Rotate pump shaft accordingly.

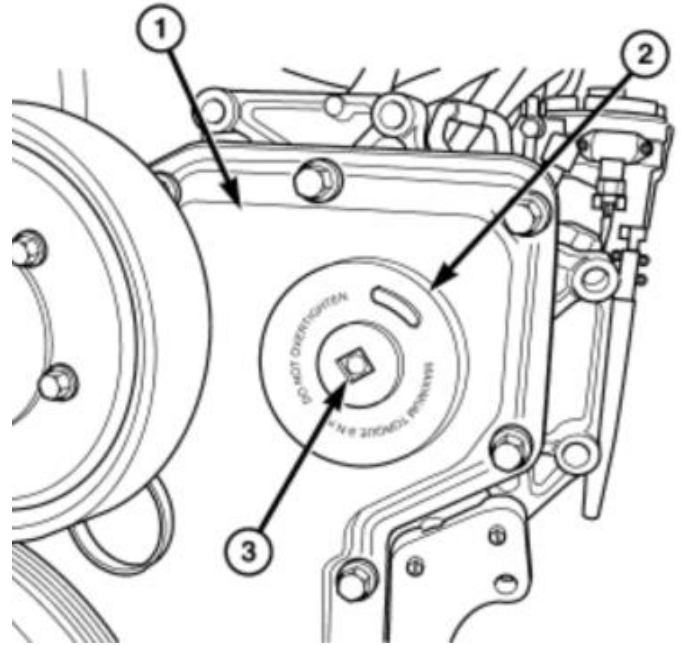
Number	Description
1	Pump Drive Gear Nut
2	Washer
3	Pump Drive Gear
4	Rubber O-ring
5	Fuel Injection Pump
6	Pump Mounting Nuts
7	Pump Mounting Studs
8	O-Ring Machined Groove
9	Front Timing Gear Housing



10. After pump is positioned flat to mounting flange, install three pump mounting nuts (6) and tighten **finger tight only**. Do not attempt a final tightening at this time. **Do not attempt to tighten (pull) pump to gear housing using mounting nuts. Damage to pump or gear housing may occur. The pump must be positioned flat to its mounting flange before attempting to tighten three mounting nuts.**

11. To prevent damage or cracking of components, install and tighten nuts in the following sequence:
- Install injection pump shaft washer and nut to pump shaft. Tighten nut **finger tight only**.
- Do preliminary (light) tightening of injection pump shaft nut (1).
 - Tighten three injection pump mounting nuts to 24 N.m (18 ft. lbs.).
 - Do a final tightening of pump shaft nut (1) to 105 N.m (77 ft. lbs.).

Number	Description
1	Front Timing Gear Cover
2	Gear Access Plate (Cover)
3	Square Drive (For Cover Installation)

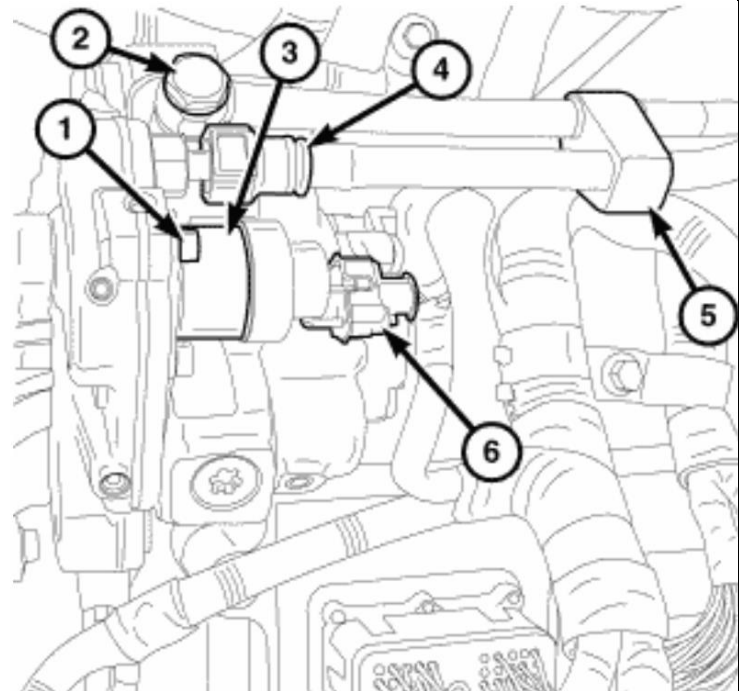


12. Install drive gear access cover (2) using a 3/8" drive ratchet. Access cover is threaded to timing gear cover. Tighten to 8 N.m (71 in. lbs.) torque.

13. Install fuel return line with supplied seal washers (1502019). Tighten banjo bolt (2) to 24 N.m (18 ft. lbs.) torque.

14. Install quick-connect fitting (4).

Note: For 5.9L engines BD has supplied a new fuel inlet fitting #1502041 in the CP3. You will need to discard the factory hard line if you have not already. Use the #**CTL-8.5** spring clamps and the 12" section of **5/16" fuel hose** to connect to the fuel filter. (BD has 1/2" fittings available for high performance applications # 1502040.)

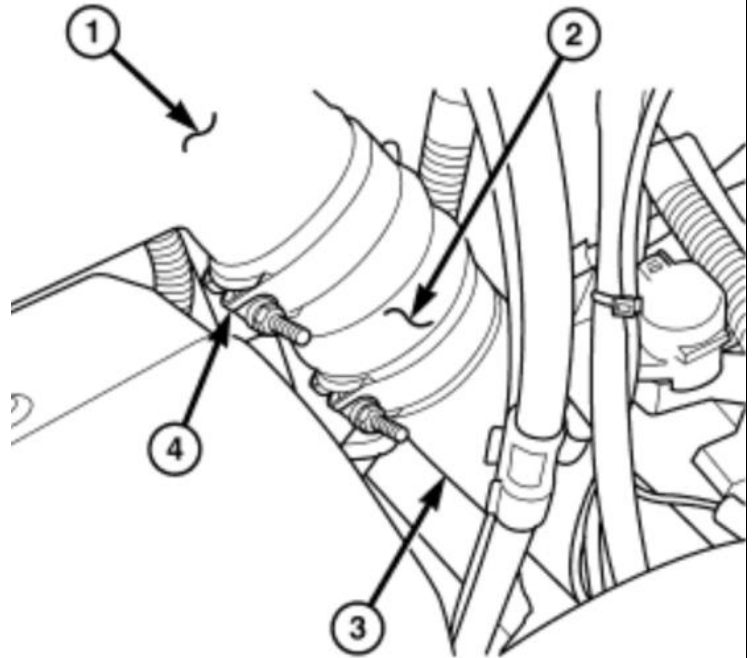


15. Install fuel line (injection pump-to-fuel rail). Using a backup wrench, tighten fitting at fuel pump to 40 N.m (30 ft. lbs.) torque. Tighten fitting at fuel rail to 40 N.m (30 ft. lbs.) torque.

16. Install clamp (5).

17. Connect Fuel Control Actuator (FCA) electrical connector (6) to rear of injection pump.

18. Install rubber intake manifold air intake tube (2). Tighten clamps (4).

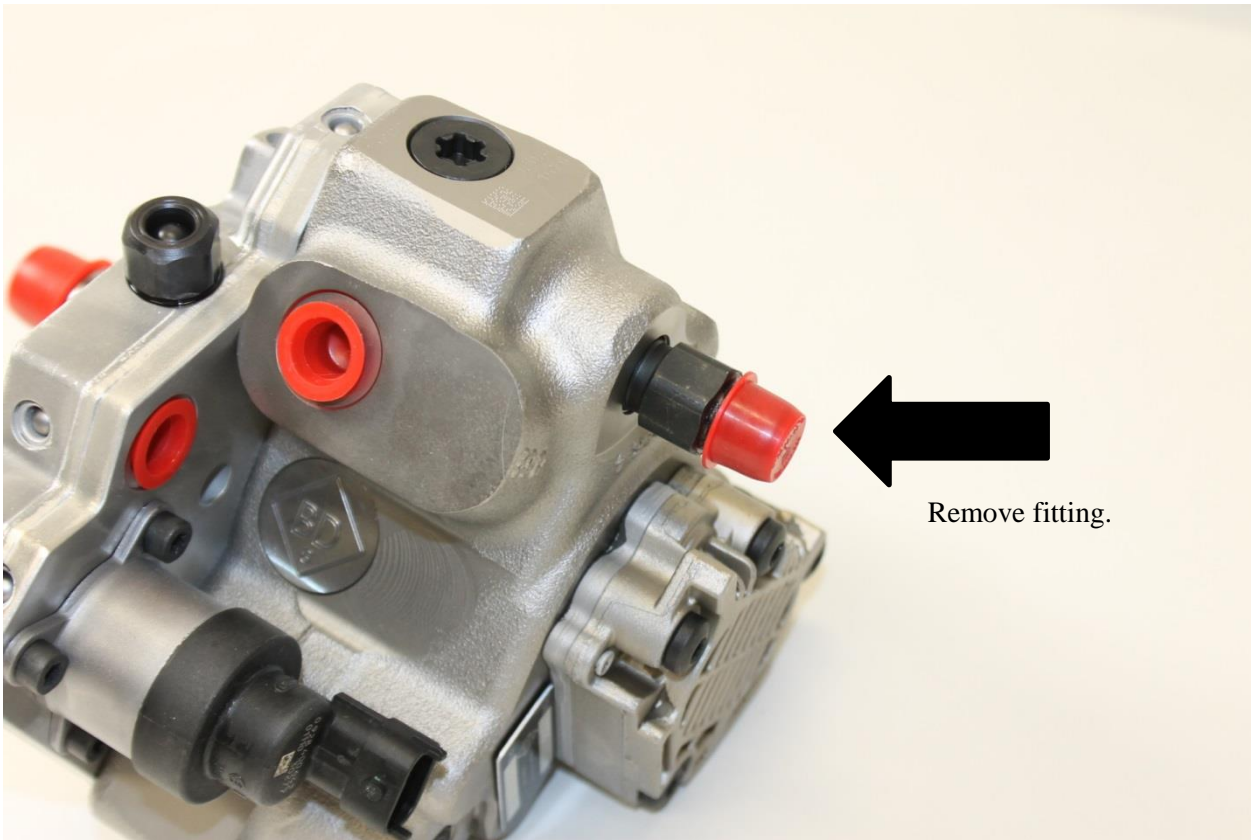


19. Install accessory drive belt.

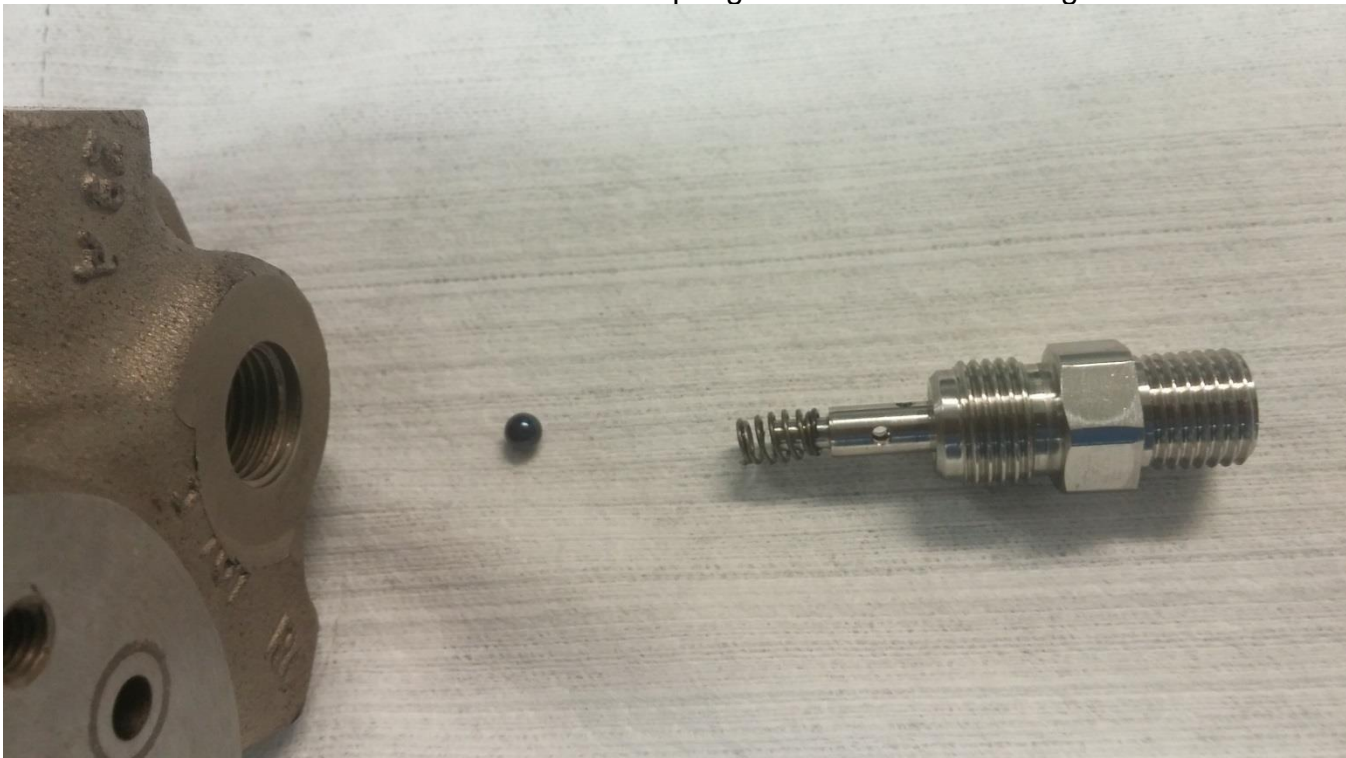
20. Connect both negative battery cables to both batteries.

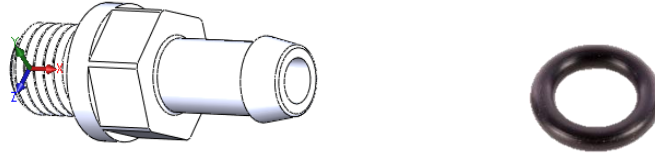
21. Check system for fuel or engine oil leaks.

5.9L Special Steps

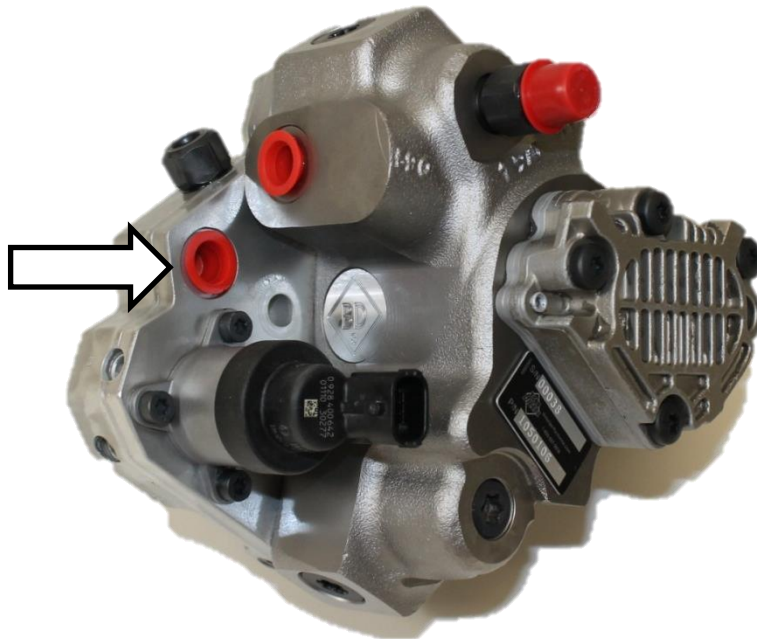


Transfer Ball and Spring to # 1500680 BD fitting.



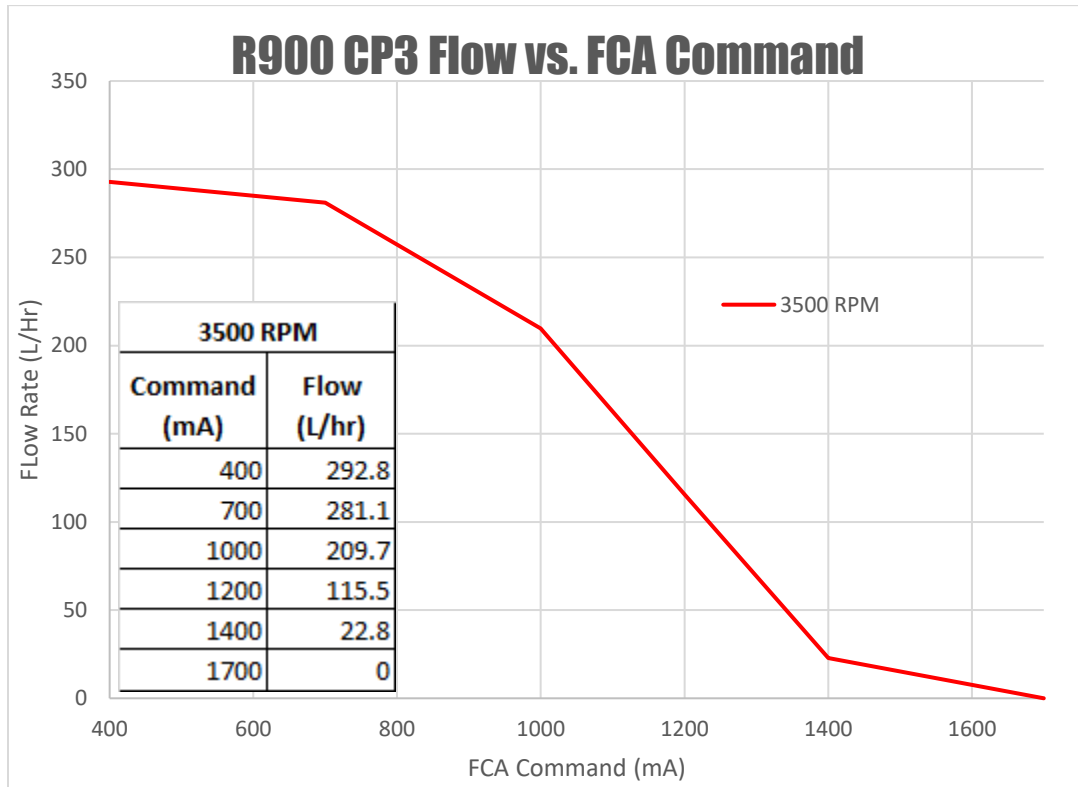


Install #1502041 5/16" Barb Fuel Supply fitting here with supplied #FT-0480748 Oring



Appendix A

The below chart shows R900 CP3 pump output flow versus Fuel Control Actuator (FCA) command.





General Policy

All core returns must be,

- like for like, no mixed models
- drained of all fluids (\$50 Charge)
- be returned in the original packaging
- Part Disassembled
- No junkyard cores (core must have been removed from vehicle)
- No fire damage
- Free of excessive Rust or Water Damage

Returned cores that fail to follow the above conditions will be disallowed and scrapped or returned at the customer's expense. Freight and removal damage are not covered. BD Diesel reserves the right to adjudicate cores as it sees fit and may deviate from its policy.

BD FUEL INJECTION CORE ACCEPTANCE POLICY

Model	Deduction	No Credit
P7100 Injection Pump	<ul style="list-style-type: none"> • AFC Housing Damaged (25% Deduction) • Governor Housing Damaged Front or Back (25% Deduction) 	<ul style="list-style-type: none"> • Contaminated/Bio Diesel • Damaged Camshaft on 911/913 pumps. • Main Body Damaged
Bosch VE Pump	<ul style="list-style-type: none"> • AFC Housing Damaged (25% Deduction) • Cold Advanced Housing Damaged (50% Deduction) • Governor housing damaged front or back (25% deduction) • Main Body Damaged (50% Deduction) 	<ul style="list-style-type: none"> • Contaminated/Bio Diesel • Seized Head (Does not turn)
CP3		<ul style="list-style-type: none"> • Contaminated/Bio Diesel • Seized (Does not turn) • Catastrophic Shaft Failure (Frost Plugs Damaged or Missing) • Front Cover Damaged
VP44	<ul style="list-style-type: none"> • Damaged Electronics (50% Deduction) 	<ul style="list-style-type: none"> • Contaminated/Bio Diesel • Seized Head (Does not turn)
Common Rail Injectors	<ul style="list-style-type: none"> • Solenoid melted or destroyed, stretched terminals (25% Deduction) • 5.9/6.7 Broken Solenoid Terminal Divider (No Deduction) 	<ul style="list-style-type: none"> • Contaminated/Bio Diesel • Damaged Body
Mechanical Injectors		<ul style="list-style-type: none"> • Contaminated/Bio Diesel • Damaged Body

BD TURBOCHARGER CORE ACCEPTANCE POLICY

Turbo Model/ Application	Deduction	No Credit
Cummins ISX VGT Air or Electronic Actuated	<ul style="list-style-type: none"> • Damaged Electronics (50% Deduction) • Missing Clamps (25% Deduction) • Missing Parts or Actuators (50% Deduction) • Turbine Wheel Separation (50% Deduction) 	<ul style="list-style-type: none"> • Knock Off Models (Not Genuine) • Part Disassembled
Caterpillar (Ball Bearing) Models		<ul style="list-style-type: none"> • Knock Off Models (Not Genuine) • Wheel Separation
Caterpillar (Standard Turbocharger) 704604-9007, 704604-9011		<ul style="list-style-type: none"> • Knock Off Models (Not Genuine) • Turbo with 3 support Webs

Detroit Diesel VGT	<ul style="list-style-type: none"> • Damaged Electronics (50% Deduction) 	<ul style="list-style-type: none"> • Knock Off Models (Not Genuine) • Wheel Separation
Ford 6.4 Powerstroke	<ul style="list-style-type: none"> • Missing Parts or Actuators (50% Deduction) 	<ul style="list-style-type: none"> • Knock Off Models (Not Genuine) • Part disassembled • Wheel Separation
Ford 6.7 Powerstroke	<ul style="list-style-type: none"> • Missing Parts or Actuators (50% Deduction) 	<ul style="list-style-type: none"> • Wheel Separation
GM 6.6 L5P	<ul style="list-style-type: none"> • L5D Version (due to incorrect compressor cover) (25% Deduction) • Missing Parts or Actuators (50% Deduction) 	<ul style="list-style-type: none"> • Knock Off Models (Not Genuine) • Wheel Separation
Dodge Cummins 6.7 HE351VG/HE300VG	<ul style="list-style-type: none"> • Missing Parts or Actuators (50% Deduction) 	<ul style="list-style-type: none"> • Knock Off Models (Not Genuine)
Standard Turbochargers (All Models, Non VGT)	<ul style="list-style-type: none"> • Damaged Electronics (50% Deduction) • Missing Clamps (25% Deduction) • Missing Parts or Actuators (50% Deduction) 	<ul style="list-style-type: none"> • Knock Off Models (Not Genuine) • Wheel Separation

The above criteria apply to customer core returns. The following criteria will apply for core purchases.

Deduction	No Credit
<ul style="list-style-type: none"> • Cracked or Damaged due to freight • Damaged Electronics • Missing Parts or Actuators • Heavily Damaged Wheels and/or Shaft • Missing Clamps • Turbine Wheel Separation • Heavily Modified Turbochargers 	<ul style="list-style-type: none"> • Knock Off Models (Not Genuine)

BD TRANSMISSION/TORQUE CONVERTOR CORE ACCEPTANCE POLICY

Model	Deduction	No Credit
Transmissions	<ul style="list-style-type: none"> • Cracked Overdrive housings (\$100 Deduction) • 68rfe Cracked Case (25% Deduction) • Part disassembled (50% Deduction) • Missing Transmission Shipping Crate (\$200 Deduction) • Missing TC/Transmission bracket (\$50 Deduction) 	<ul style="list-style-type: none"> • Cracked Case (Except 68rfe)
Torque Convertors	<ul style="list-style-type: none"> • Hub and Impeller damaged. (50% Deduction) 	<ul style="list-style-type: none"> • Excessive corrosion • Part disassembled
Valve Bodies	<ul style="list-style-type: none"> • Missing electronics (25% Deduction) 	<ul style="list-style-type: none"> • Excessive corrosion • Part disassembled

GENERAL CORE ACCEPTANCE POLICY

Model	Deduction	No Credit
EGR Cooler		<ul style="list-style-type: none"> • Brackets broken

Please note that all cores have a time eligibility restriction. Please see BD Terms & Conditions for further details. https://cdn.bddiesel.com/downloads/bd_terms_general.pdf



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6.7L Cummins Performance Fuel Injectors

1715870	2007.5-2018	Performance (60HP)
1715871	2007.5-2018	Performance (90HP)
1715872	2007.5-2018	Performance (120HP)

Premium line injectors are built with new Bosch solenoids, nozzles and control valves

PLEASE READ ALL INSTRUCTIONS BEFORE INSTALLATION

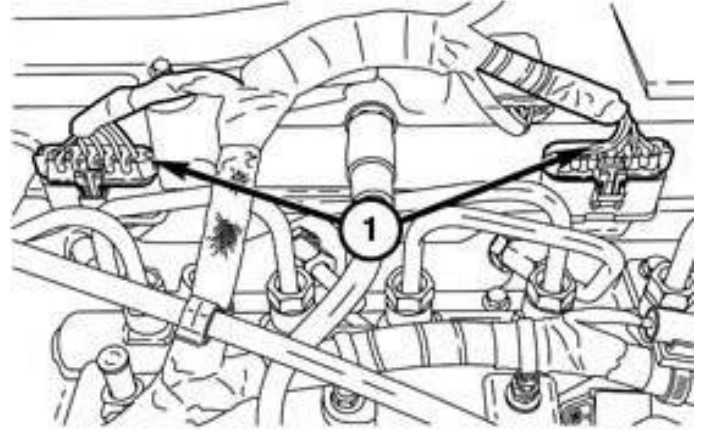
Removal

1. Disconnect both vehicle batteries before installation for safety.

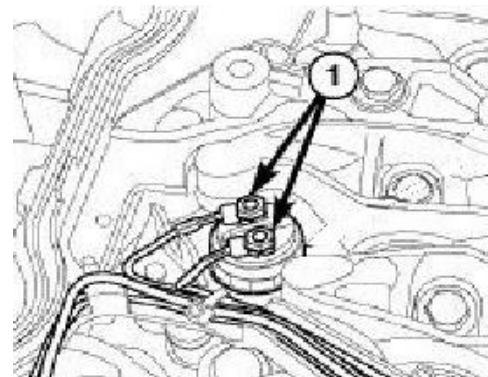
2. Remove cylinder head cover

Only 2013-2018 models

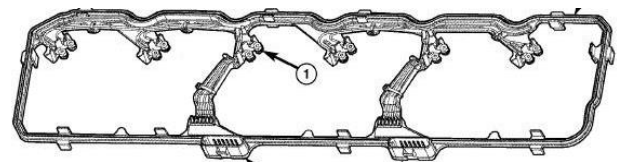
3. Disconnect both fuel injector harness connectors



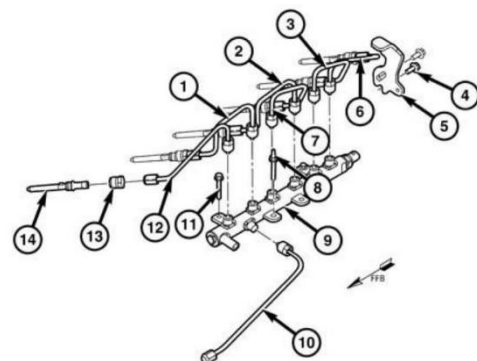
4. Remove all fuel injector wire harness nuts securing the integrated wiring harness to all fuel injectors.



5. Remove the cylinder cover gasket.



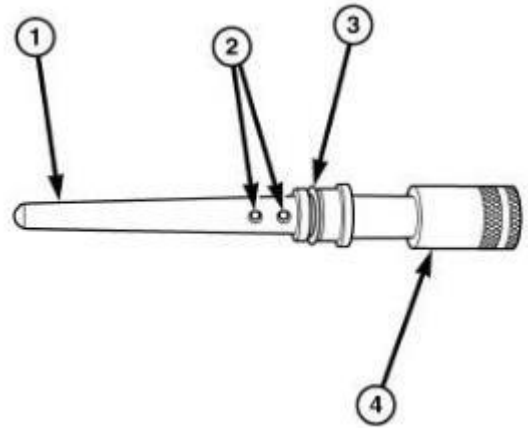
6. Remove the six high pressure fuel feed lines.



7. Remove the fuel injector connector nut.

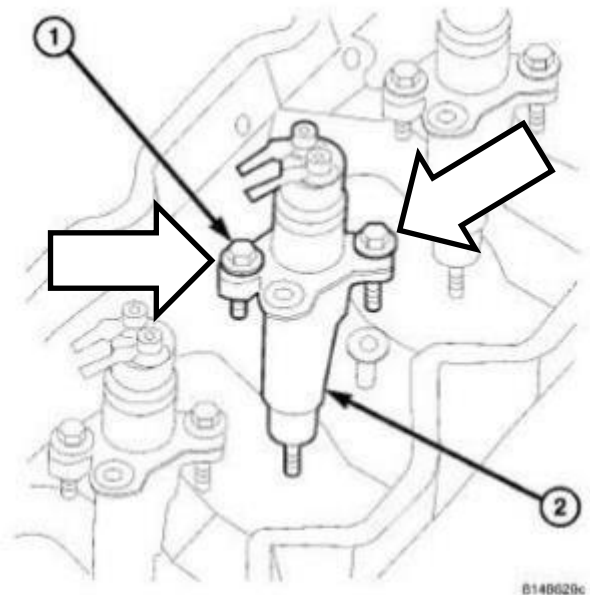
Install the High Pressure Connector Remover onto the fuel injector connector tube located in cylinder head.

Use the High Pressure Connector Remover pry and remove the fuel injector connector tubes from the cylinder head.



8. Slowly loosen the injector hold down clamp bolts.

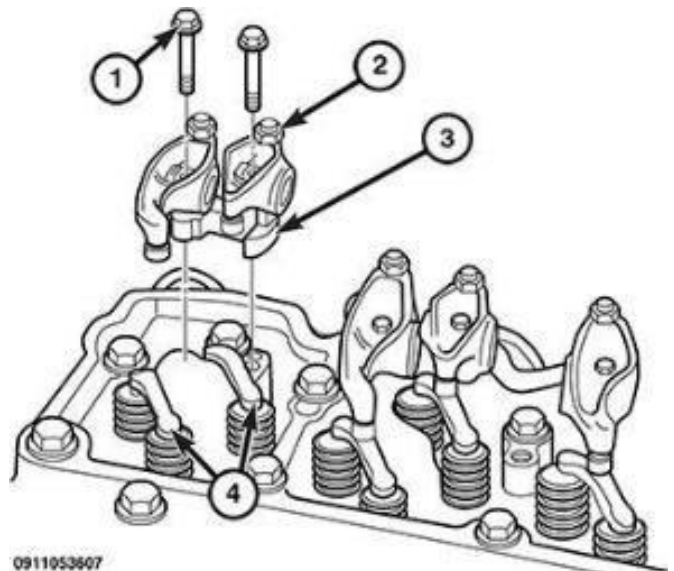
Sequentially turn one bolt counterclockwise 1 rotation, then switch to the other bolt, repeat.



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9. Remove the bolts, rocker arms, pedestals, and crossheads from the cylinder head.

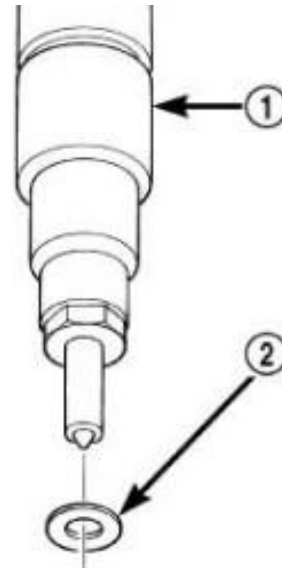
Note: Mark each component so they can be installed in their original position.



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10. Ensure the fuel injector sealing washer has been removed and has not remained in the injector bore.

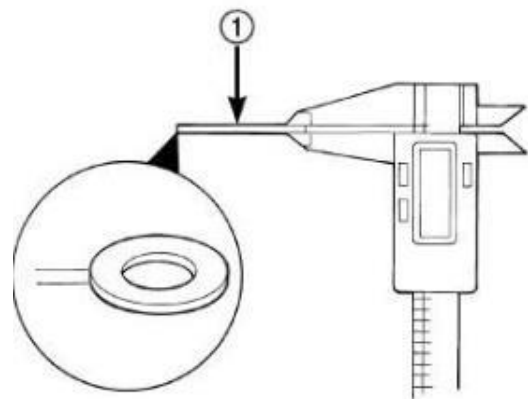
Discard the used seal, a new washer seal will need to be used.



Installation

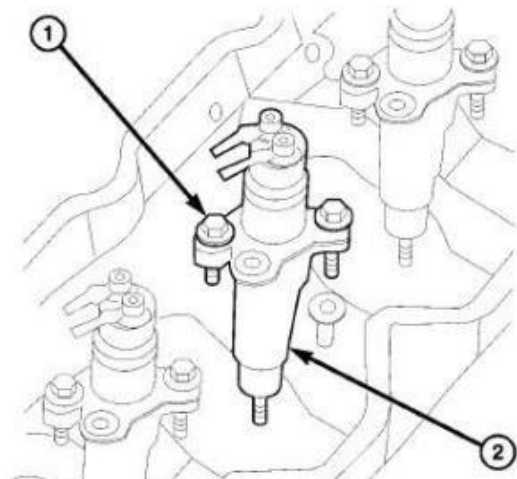
1. Measure the copper washer thickness, (.060"). Apply a light coating of clean engine oil to the washer to keep it in place during installation. Ensure the new copper sealing washer is installed on the injector.

Apply a small amount of clean engine oil to the O-ring and injector bore and then seat the injector into the cylinder head.

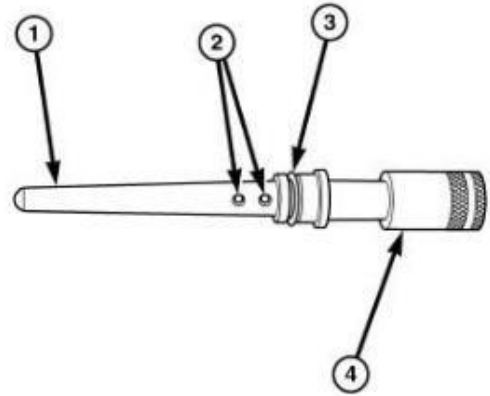


2. Follow the tightening sequence listed in steps a-f below. The connector tubes must be seated in the center of the injector and perpendicular to the injector to seal properly.

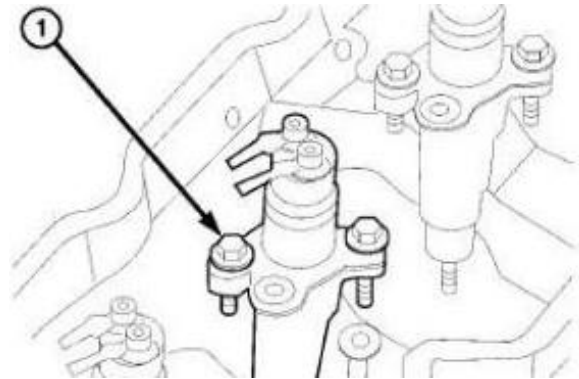
- a. Seat the fuel injector into the cylinder head.
- b. Ensure both bolts are threaded in evenly, preliminarily tighten down the two injector hold down bolts to 44 **in-lb**.
- c. Relieve bolt torque, but leave both bolts threaded in place.



- d. By hand, thread in the fuel injector connector tubes to ensure the fuel injector is centered and perpendicular to the connector tube. You can gently rotate the injector until the connector tube is correctly positioned. Do a preliminary tightening of the connector tube nut to 133 **in-lb**.

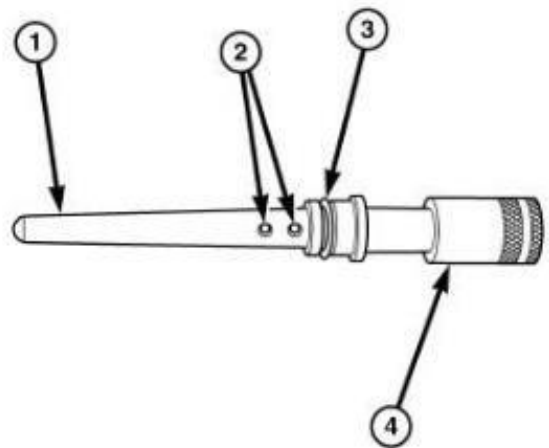


- e. Alternating tightening sequence, tighten the injector hold-down bolts to 71 **in-lb**.



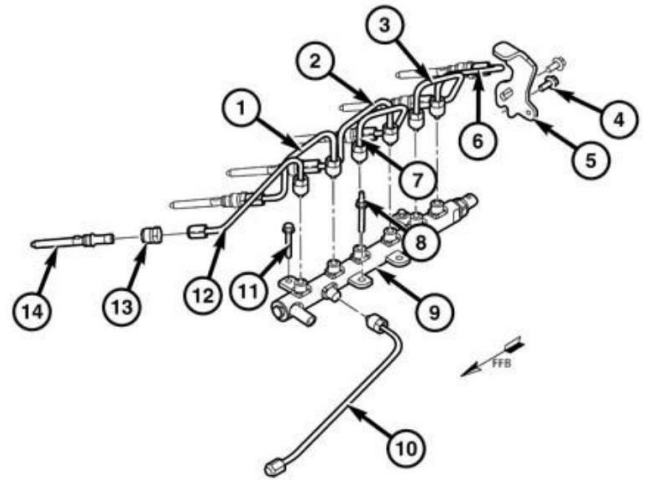
- f. Do a final tightening of the fuel injector tube nut.

Tighten to 41 **ft-lb**.



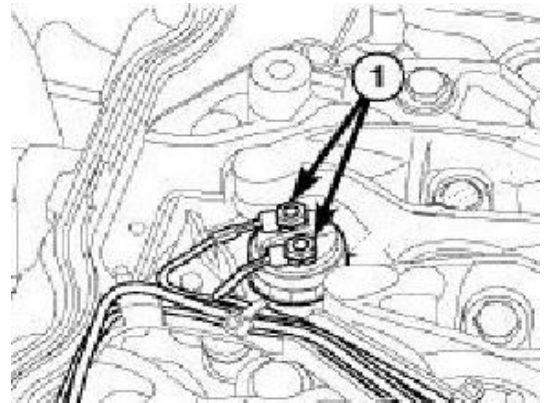
3. Install the correct fuel tubes to the correct injectors on the engine. Ensure each fuel line is free from debris and the sealing surfaces are in good condition.

Bracket (No. 5) must be loosened to install fuel tube No. 6. After all tubes are installed, torque the bracket (No. 5) to 32 **ft-lb**.



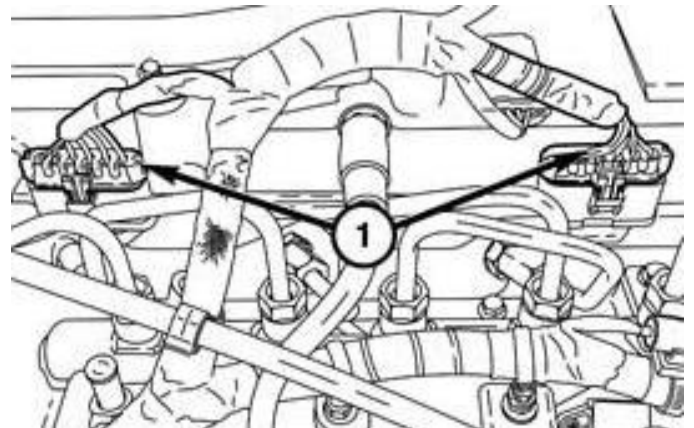
4. Connect the fuel injector solenoid wires and nuts to the top of the injectors. Tighten the connector nuts to 13 **in-lb**.

Note: Be very careful not to overtighten these nuts as damage to fuel injector will occur



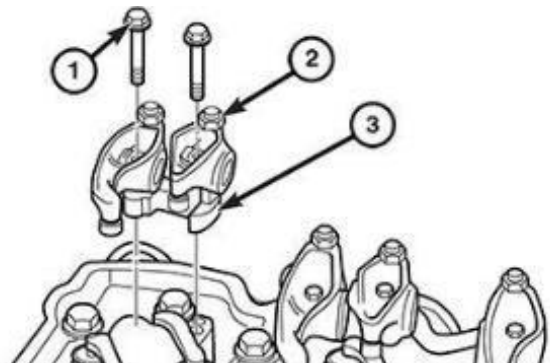
Only 2013-2018 models

5. Reconnect both fuel injector harness connectors.



6. Install the intake and exhaust rocker arm assemblies.

Torque bolts to 27 **ft-lb**.



7. Ensure valve lash is within OEM specifications.

	Intake	Exhaust
MIN	.006"	.021"
PREF	.010"	.026"
MAX	.015"	.034"



8. Reinstall rocker housing and cylinder head cover.

Connect both negative battery cables.