

BD Cummin\$ 1988-93 VE Fuel Pin Kit

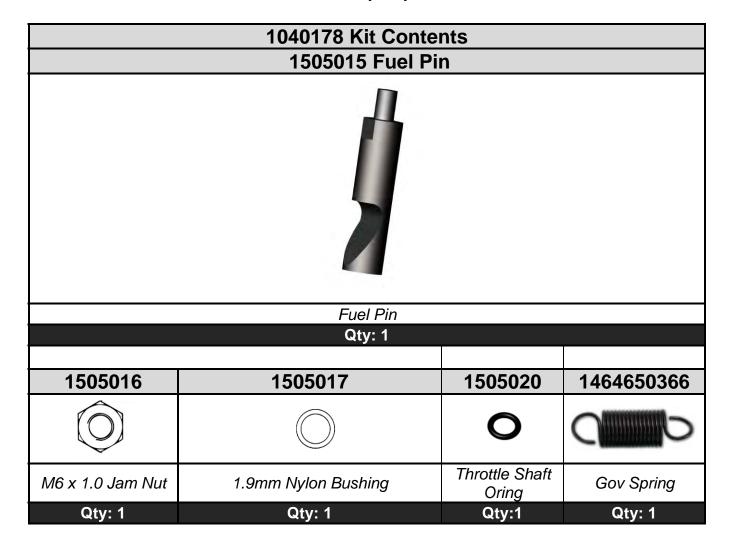
P/N# 1040178

PLEASE READ ALL INSTRUCTIONS BEFORE INSTALLATION

Please note this product has not been evaluated by the EPA or CARB so it is therefore illegal to use on road or off road. RACE USE ONLY.

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.



Welcome

Thank you for purchasing the Dodge Fuel Pin. This fuel pin is design for the 1988-93 Dodge Cummins with the VE pump. You will notice the quality of the fuel surpasses all others in the aftermarket. The pin is made from Chromalloy steel, hardened to factory specification and then precision ground.

Supplied in the kit is a Bosch 1.9mm bushing to give you even more power. This combination is designed to give you roughly additional 30HP and 80 ftlbs of torque. With the governor spring installed you will increase your available power band by roughly 500 RPM and increase HP by another 10HP over the fuel pin.

Recommended Upgrades

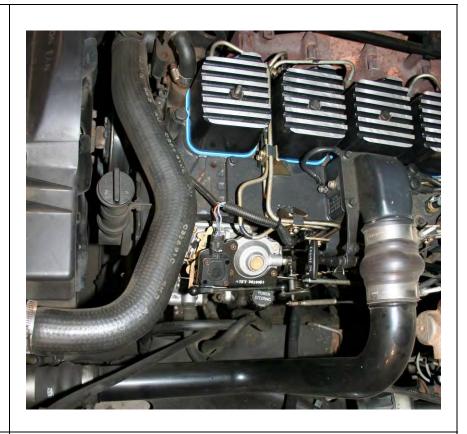
Description	Part #	
Cool Covers (Valve Covers)	ve Covers) 1061800-6	
Quick spool 16cm Exhaust housing	1045911	
Pyro and Boost Gauge	Call	

Required Tools

- Ratchet
- Blade Screw Driver
- 13mm socket and wrench
- 17mm wrench
- Metric rounded tip allen key set (5mm)

INSTALLATION

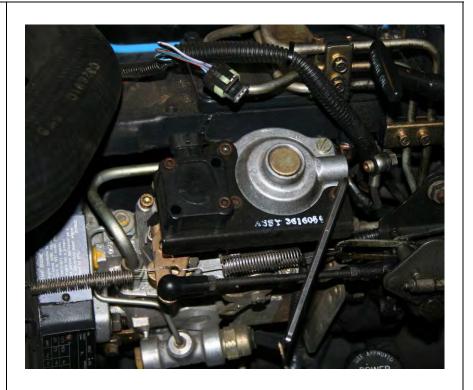
 Clean off top and surrounding area of the VE injection pump.



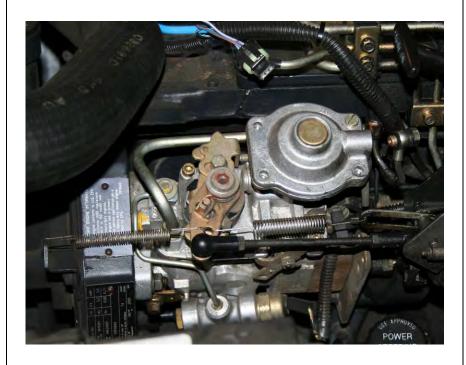
2. Remove 12mm banjo from the rear of the AFC housing.



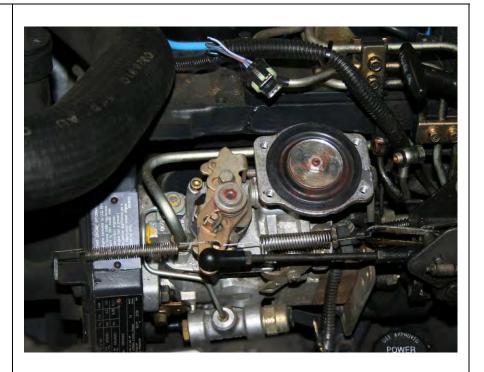
3. Remove APPS Sensor and bracket. Manual transmissions do not have an APPS.



4. Remove the four screws on the top of the AFC and remove the cover.



5. Remove diaphragm. Lift up slowly and carefully. You must keep this area very clean.



6. Remove the factory white nylon bushing. It may be stuck to the bottom of the diaphragm, or at its base in the fuel pump.



7. Remove the factory fuel pin from the diaphragm by using two 10mm wrenches. One on the jam nut the other on the rectangular slots on the fuel pin.

DO NOT TEAR DIAPHRAGM.

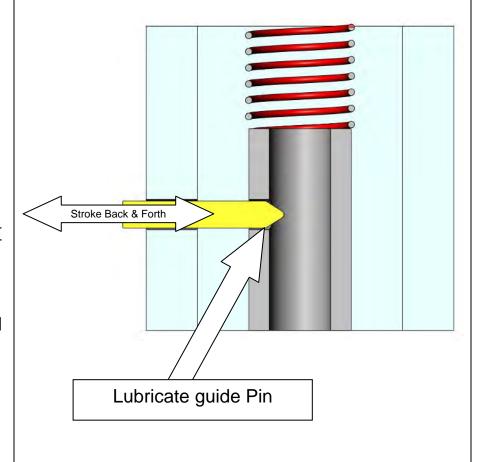
8. Swap the diaphragm, lock washer to the new fuel pin. Install newly supplied jam nut and secure the threads with blue loctite.

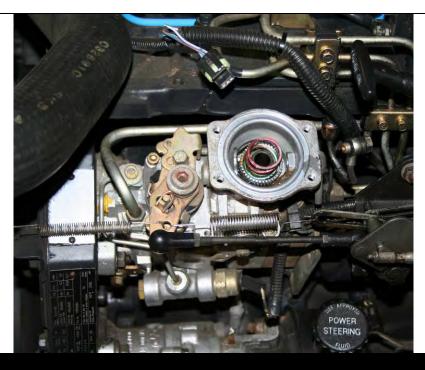


9. Before inserting new pin assembly, stroke the throttle linkage back and forth <u>slightly</u>. You can use some lubrication at the same time to assist you.

DO NOT FULLY STROKE THE APPS TO FULL THROTTLE. OTHERWISE THE GUIDE PIN MAY FALL OUT.

Once this is done you will need to push the guide pin back towards the front of the pump. This is easily done using a long thin tool.





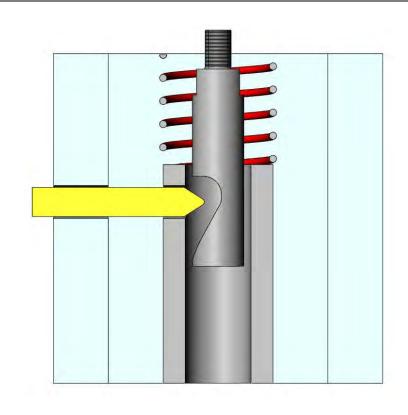
GOVERNOR SPRING INSTALLATION POINT

Please note that if you are going to install the governor spring now is the time to do so. The governor installation instructions are at the end of the current section on page 11. Please keep in mind it is a complex installation and should only be performed by a trained individual.

10. Lubricate the pin with a small amount of diesel fuel, then install the new fuel pin assembly into the pump with the new nylon bushing. The bushing goes below the diaphragm.

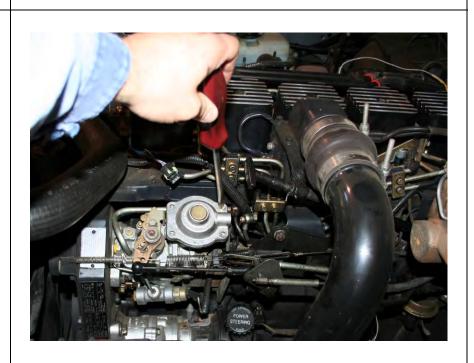


11. Ensure the ground fuel pin profile faces directly forward. To ensure this, lift the fuel pin assembly slightly and stroke the accelerator linkage from 0% to 100%. Do this while twisting the fuel pin slightly. You will feel a point of no resistance or when the rotational movement comes to a center point. This is the correct alignment.



Profile must face directly forward.

12. Re-install the AFC using the 4 screws you removed earlier.



13. Re-install the APPS and the bracket, if so equipped.



14. Re-install the 12mm Banjo bolt at the rear of the AFC.

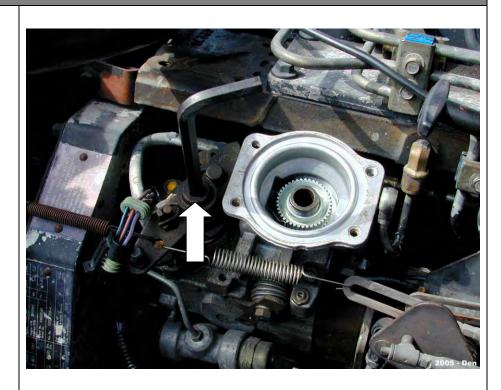


You should be all set to go. Take the truck for a test drive and ensure everything is working correctly.

Governor Spring Installation

Please note that the governor spring installation is quite complex and should only be done by a trained technician.

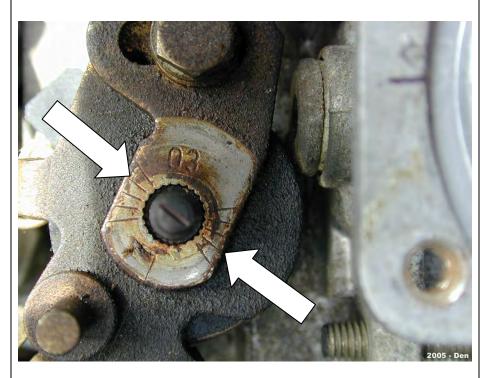
1. Insert 8mm allen wrench into throttle lever. Remove the external throttle and kick down springs. Remove the 8mm screw, as well as the 2 washers.



2. Before removing the throttle lever you will need to mark the lever's position on the splined throttle shaft.

99% of the time the mark is inline with the second groove.

Remove the throttle lever.





3. Remove the throttle return spring as well as the 2 plastic parts (top and bottom). Lift these off in one piece as they have to go back in place in the same order.



4. Remove the tamper proof cap on the high idle screw. Simply grab the cap with pliers or vice grips and pull towards the rear of the vehicle.



5. Using a 10mm socket, remove the jam nut that secures the reminder of the tamper proof cap. Throw away tamper proof cap pieces.



Picture shows cap and extra jam nut removed.

tamper proof cap on the main fuel screw. You can either use vice grips and a hammer or a blade screw driver and a hammer.

Using vice grips, grip the cap near the end and tighten the vice grips. Then use the hammer to hit the vice grips towards the rear of the vehicle. This will break off the safety cap.

6. Next remove the other



7. With the tamper proof cap removed, back the screw out until the oring is visible.



8. You will need to use a rounded tip 5mm allen key for the next step.



9. Using the rounded end of the allen key remove the 4 bolts holding the cover on. You will need to use a wrench on the end of the allen key as the bolts are quite tight.







10. With the 4 bolts removed pull up on the cover while pushing down on the throttle shaft.



11. With the cover off you can now access the governor spring. Using your fingers just replace the spring. Be careful as one end is under spring tension.





12. Replace oring on throttle shaft, with the oring supplied (#1505020).

Do not damage the oring, it will help if you have a small pick to remove and install the new oring.



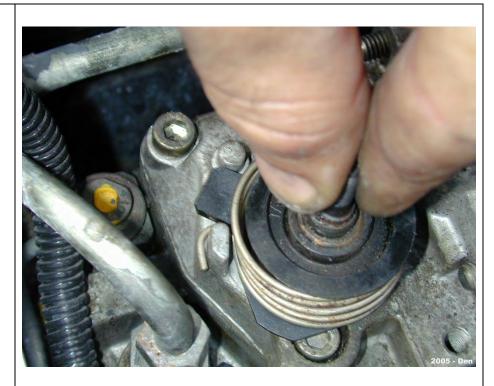
13. Slide the throttle shaft through the top cover.



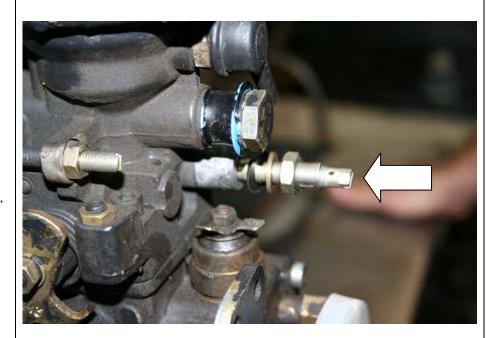
14. With the spring back in place, hold the governor spring assembly in position so that you can replace the top cover. Tighten the four cap screw bolts.



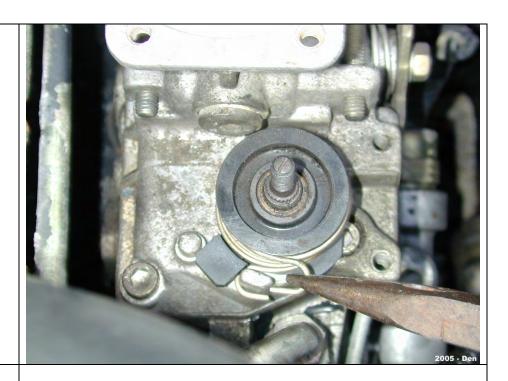
15. Install the throttle shaft spring assembly. Hook the bottom spring hook in and then the lower plastic piece will hold it in place. Pull up on the throttle shaft to get it in position.



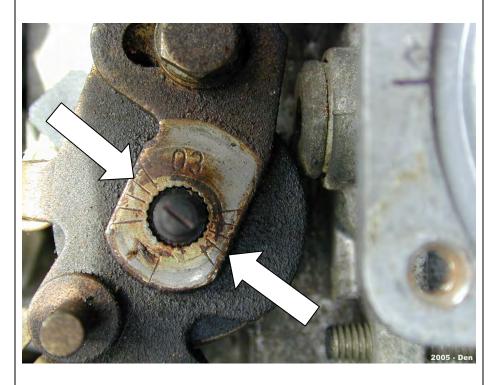
16. Now tighten the main fuel screw back in to the previous position.



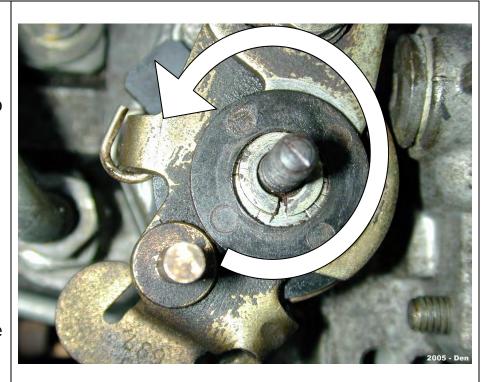
17. Place plastic spring assembly into place.



18. Remember to align the correct alignment notches/lines on the shaft to the lower lever.



- 19. You will need to pull the spring around the back side of the lever so that it locks into place. A handy trick is to use some wire and pull the spring tab around into place.
- 20. Install the two washers. The steel one first and then the plastic one. Make sure the plastic one is around the steel one.



21. Clean and grease the bolt and place it back into the lever and install the top lever.



You can return to the fuel pin section to complete the installation on page 8.

Troubleshooting

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, or post a message on the BD Discussion Forums located at:

http://forum.bd-power.com/



Visit our Internet forums at http://www.dieselperformance.com and share your comments or technical support questions with some of the industry's leading experts in the diesel field.

LIMITED WARRANTY STATEMENT

BD Engine Brake, Inc., Valley Fuel Injection Ltd., BD Diesel Performance, Turbocharger.net (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 a 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. All repaired or replaced products will be returned to the Buyer freight collect. Accepted warranty products, which have been replaced, will become the sole property of the Seller.

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.

Once the claim is approved and with in a 1 year period of original purchase Labor costs incurred will be considered for the removal and replacement of an eligible part while performing warranty work, at a rate of 55.00 per hour at authorized centers with prior approval of the Seller. Freight is FOB Abbotsford, B.C. Canada.

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.

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.

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 is not covered. Fluids and filters or damage caused from fuel or air contamination, BioDiesel, low fluid levels. 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.

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 guaranties, 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 Parts Labour Product Name (Months/Miles) ¹ (Months/Miles) ^{1, 2} Notes			
Torque Converters (Dodge)	36/ 150,000	12/12,000	No Race abuse covered
Torque Converters (Ford & Allison)	36/ 150,000	12/ 12,000	No Race abuse covered
Transmissions	36/ 150,000	12/ 24,000	No Race abuse covered
Race Transmissions	12/ 24,000	Not Eligible	
Valve / Accumulators Bodies	12/ 24,000	12/ 24,000	
Transmission Pans	36/ 150,000	Not Eligible	
Auto / Torq / Towloc's	12 / 24,000	Not Eligible	
Flex Plates	36/ 150,000	Not Eligible	
Injectors & Injection Pumps	12 / 24,000	12/ 24,000	Race Pumps 90 days parts/No labour
Tuners and Chips	Manufacturer ³	Not Eligible	
X-Monitor / Cool Down Timers	12/ 24,000	Not Eligible	
Intake / Exhaust Manifolds	36/ 75,000	Not Eligible	
Exhaust Kits	24 Months	Not Eligible	Surface rust not eligible
Turbo Guards / Boost Builders / Waste Gate Kits	12/ 24,000	Not Eligible	
Intercoolers / Hoses / Clamps	12/ 24,000	Not Eligible	
Transmission Coolers	Manufacturer ³	Manufacturer ³	
Manual Transmission Clutches	Manufacturer ³	Manufacturer ³	
Short Shifters	12/ 24,000	Not Eligible	
Engine / Head Stud kits	Manufacturer ³	Manufacturer ³	
Engine Brakes	24/ 24,000	12/ 24,000	
Steering Stabilizers / Sway bars	12/ 24,000	Not Eligible	
Boost Coolers	Manufacturer ³	Manufacturer ³	
Gauges and Mounts	Manufacturer ³	Manufacturer ³	
Performance Turbos	12/ 12,000	Not Eligible	
FlowMAX Fuel Pumps	60/ 75,000	Not Eligible	
Auxiliary Fuel Pumps	12/ 12,000	Not Eligible	

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 labour reimbursement.

³ As per Manufacturer's warranty