

(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



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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BD Duramax Screamer Turbo

Drop-in Turbo Replacement

Part #	Compressor Size	Model years
1045840	65 mm	2004.5-2010 Duramax LLY, LBZ, LMM
1045830	64 mm	2011-2016 Duramax LML

LLY trucks require vane position adapter PN: 771864-0001.

1045830 meets CARB requirements for the following models: 2011-2016 2500/3500 6.6L Diesel Pickup Trucks (**EO D-553-11**)

1045840 meets CARB requirements for the following models: 2004-2010 2500/3500 6.6L Diesel Pickup Trucks, 06-07 Express/Savana (**EO-D-553-23**)

PRE-INSTALLATION

A new turbocharger will not solve the following failures:

- Oil contamination
- Restrictive oil drain
- Over speed due to a boost leak
- Exhaust leaks due to faulty bellows, clamps, or seals

Turbo over speed will lead to premature turbo failure. Boost pressure can be used to estimate turbo speed. The table below shows maximum allowable turbo speed for a stock motor at 3500rpm. A turbo intake restriction, clogged filter, high altitude or boost leak will cause increased wheel speed.

Turbo	Estimated Airflow (lb/min)	Max Wheel speed (rpm)	Max boost (psi)	Max Boost with clogged filter (psi)
LLY, LBZ, LMM	85	121,000	40	37
LML	80	121,000	39	36

Kit Contents

1045830



Turbo; Screamer 2011-16 LML

Qty: 1

1045840

Turbo; Screamer 2004.5-2010 LLY, LBZ, LMM

Qty: 1***Introduction***

The BD Screamer turbo series is now available for the 2004.5-2016 Duramax. The Screamer turbo is designed to be a drop-in stock-appearing performance turbocharger that increases the total airflow without affecting low-end drivability.

BD's Duramax screamer line-up utilizes a custom mixed flow turbine (MFT) wheel with a large 65mm exducer. In the GT37 VNT, a MFT wheel geometry offers increased efficiency in both initial spool up and high flow operation. At high flow operation, the increased efficiency of the MFT wheel allows the variable nozzle technology to open up and act like a larger turbine housing, which reduces drive pressure and lowers the required exhaust gas temperatures. During turbocharger spool up, the vanes close, creating high velocity "jets" used to spool the turbocharger. The geometry of the MFT more efficiently harnesses these high velocity jets, allowing the use of a larger compressor wheel without compromising on drivability.

Installation

The 2004.5-2010 Duramax Screamer turbo fits all LLY, LBZ, and LMM engine codes. The LLY engines will require the vane positions sensor adapter, part number 771864-0001.

Please follow GM's factory replacement instructions for detailed year specific turbocharger replacement procedure.

1. Prior to beginning installation, confirm the vane position sensor is installed on the turbo. Some turbos models are shipped disassembled to prevent shipping damage.

If not installed, first ensure the mating surfaces are dry and clean.

Thread in and torque the sensor to **21 lb ft** in the position shown.

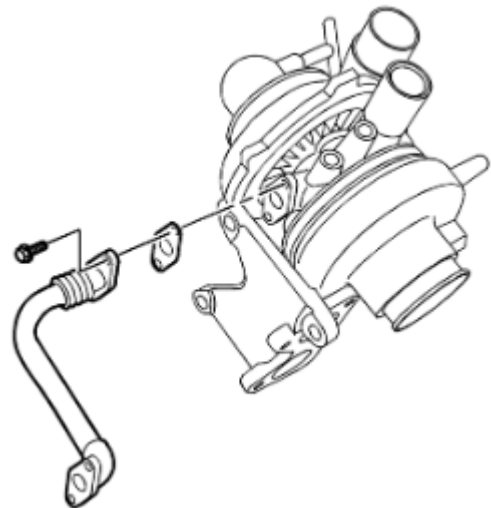


2. Install the oil return pipe using a new gasket.

Torque to **21 Nm (15 lb ft)**

3. Install the turbocharger outlet coolant pipe banjo bolt and washers.

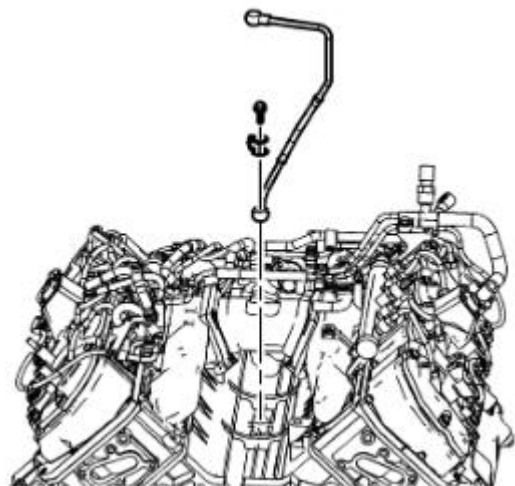
Torque to **26 Nm (19 lb ft)**



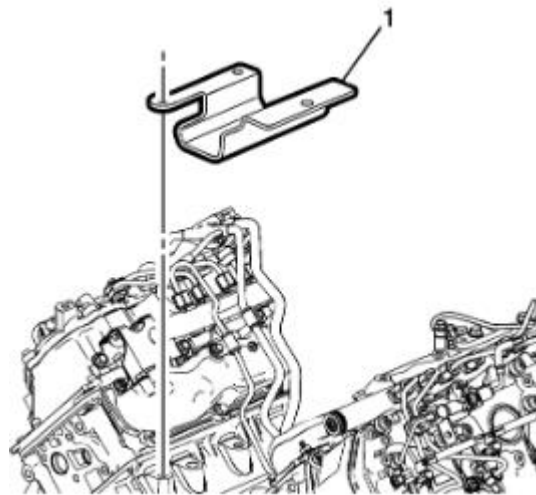
4. Install the oil feed pipe, washer, and bolt.

Do not twist the oil feed pipe.

Torque to **34 Nm (25 lb ft)**



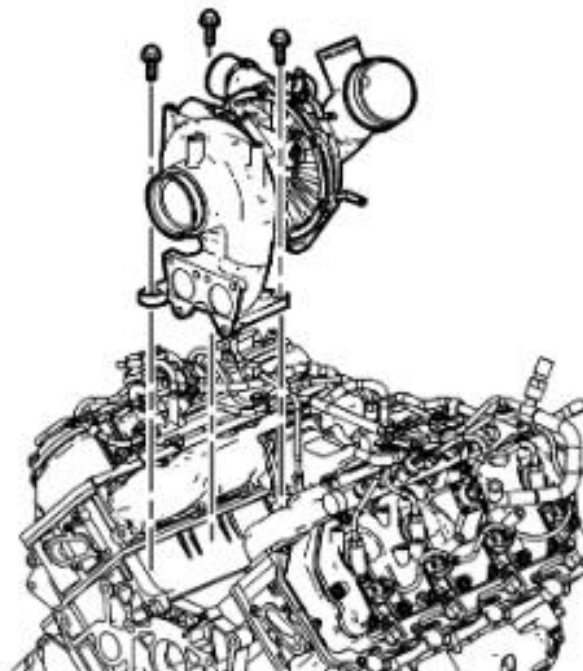
5. Install the turbocharger lower heat shield.



6. Install the turbocharger with the oil return pipe.

Torque the turbocharger mounting bolts to **78 Nm (58 lb ft)**

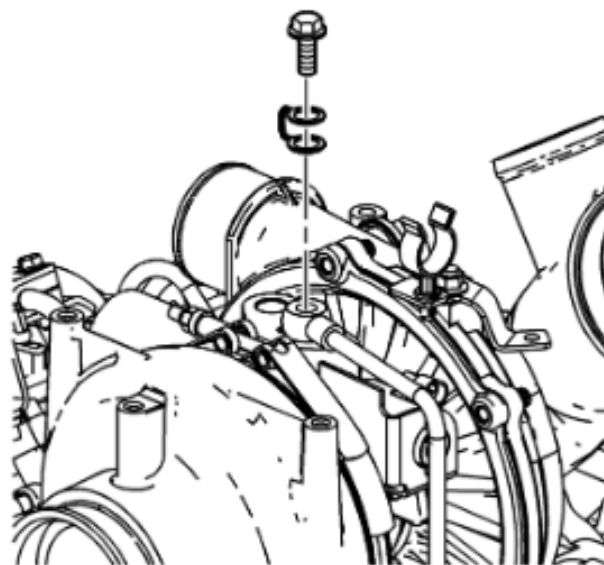
7. Install the oil return pipe nuts at the top of the flywheel housing. Torque to **25 Nm (18 lb ft)**.



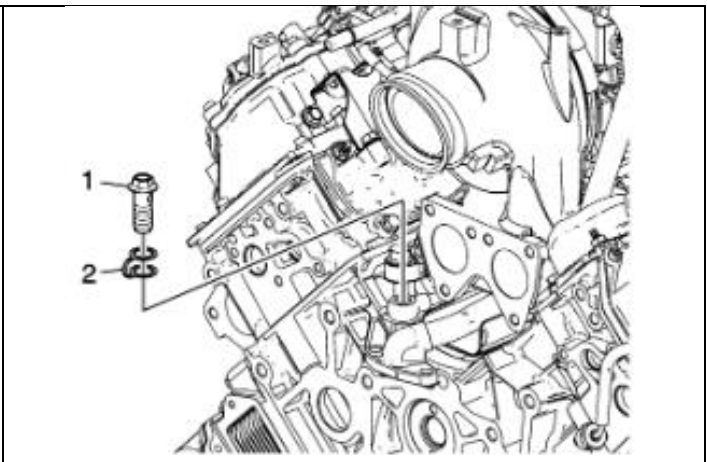
8. Connect the vane position sensor connector.

9. Pre-lube and add **120-150cc** of clean engine oil in the turbocharger oil feed pipe while rotating the impeller.

10. Install the oil feed pipe, washer, and banjo bolt. Torque to **34 Nm (25 lb ft)**

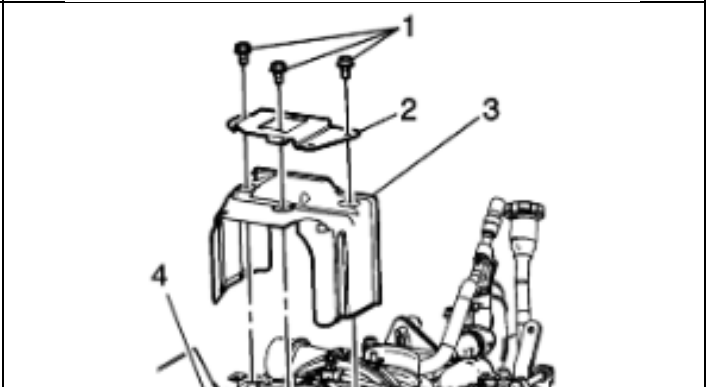


11. Install PCV hose/pipe.
12. Install the cooling outlet hose eye bolt and any remaining coolant hoses.



13. Install the turbocharger heat shield and bolts.

Torque to **9 Nm (7 lb ft)**



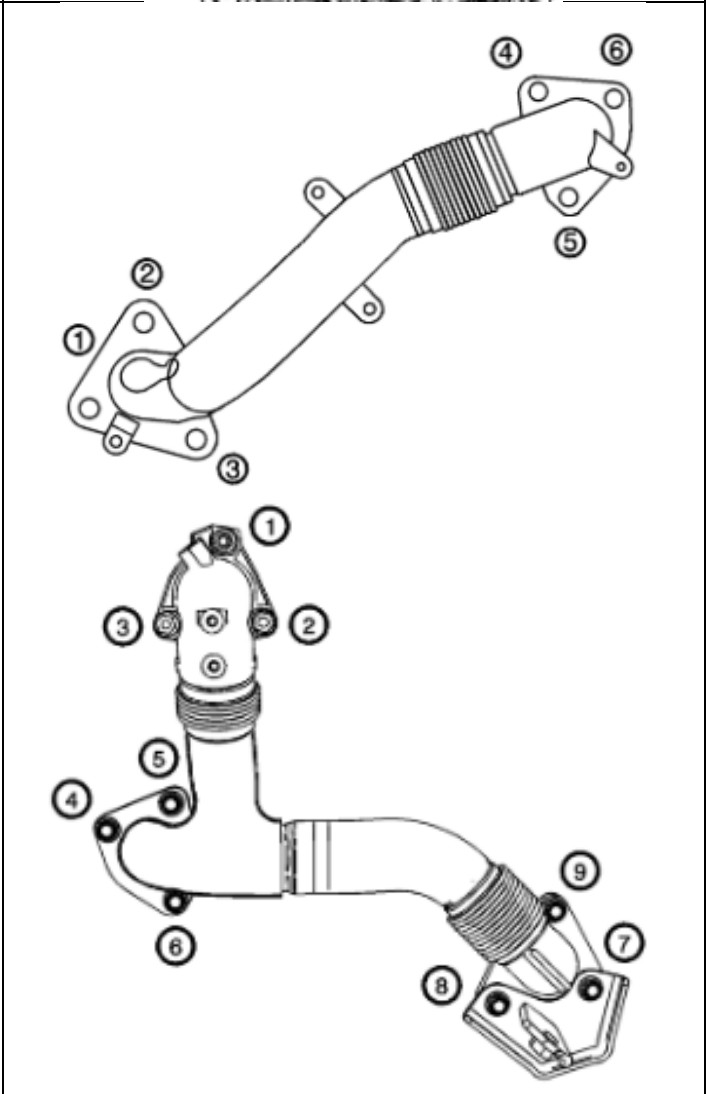
14. Install the exhaust manifold outlet pipes.

Tighten in the sequence shown.

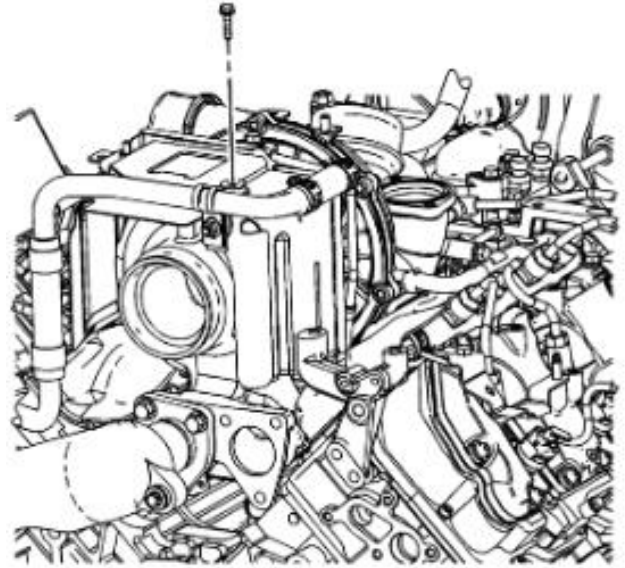
Torque the manifold bolts to **53 Nm (39 lb ft)**

Torque the turbocharger bolts to **25 Nm (18 lb ft)**

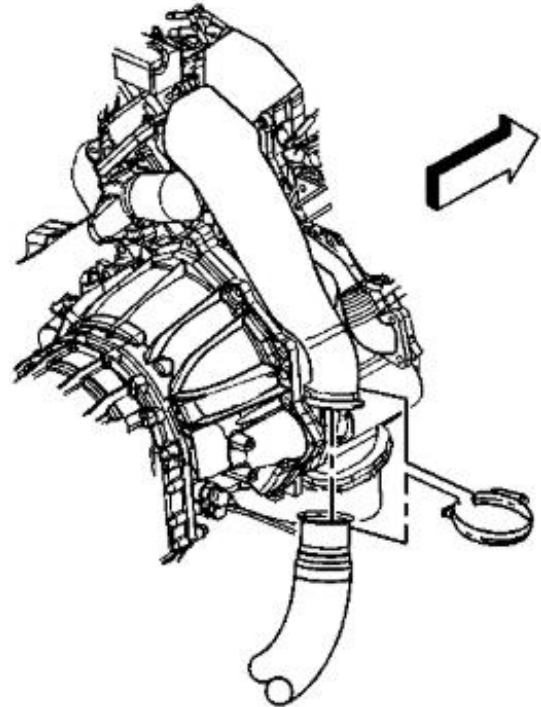
Torque the EGR bolts to **25 Nm (18 lb ft)**



- 15. Reinstall the EGR cooler.
- 16. Reinstall the glow plug module and both brackets.
- 17. Install the EGR cooler pipe bolt.
Torque to **9 Nm (6.6 lb ft)**



- 18. Install the charge air cooler inlet pipe.
- 19. Install the turbocharger air intake pipe.
- 20. Install the exhaust downpipe.
Tighten clamp to **40 Nm (30 lb ft)**



21. **Required For California Customers Only:** Apply the CARB EO decal underneath the hood as indicated.

IMPORTANT: Only for applicable models as listed on page 1 of this installation manual.



22. Perform the turbocharger learn procedure.

Turbocharger Learn Procedure

The engine control module performs the turbocharger learn procedure automatically when the engine coolant temperature is at least 72°C (162°F). After each ignition cycle, and before the enable criteria have been met, the ECM will use the previously learned value. If the ECM does not have a previously learned value, it will default to a stored calibrated value. The ECM will use this value until the enable criteria have been met. It will then perform this procedure to learn the new value. If the ECM attempts to perform the turbocharger learn procedure and fails, DTCs P003A or P2563 may set.

If a TC learn is not performed after a related turbocharger repair, the ECM will use a stored vane position value that may be invalid. The ECM may then cause a diagnostic to fail and set and invalid DTC. Certain enable criteria must be met for the ECM to perform this procedure.

The turbocharger learn procedure is required when the following service procedures have been performed.

- TC vane position control solenoid valve replacement
- TC vane position sensor replacement
- ECM replacement
- TC replacement
- Any service that disrupts the TC components