

This is a high performance turbo not intended for towing applications

BD Super "B" Special Single Turbo **2003-2007 Dodge 5.9L Cummins 24v ISBe**

Part # 1045130

PLEASE READ ALL INSTRUCTIONS BEFORE INSTALLATION.

This turbo system is not compatible with an AFE intake system WITHOUT MODIFICATIONS. The BD Stainless Intake is a recommended replacement.

BD ENGINE BRAKE, INC.

Plant Address: A10-33733 King Rd, Abbotsford, BC, Canada V2S 7M9

US Shipping Address: 88-446 Harrison St, Sumas, WA 98295 US Mailing Address: PO Box 231, Sumas, WA 98295

Phone: 604-853-6096 Fax: 604-853-8749 Internet: 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 your truck.

DODGE 2003-2007 "SUPER B" SPECIAL SINGLE TURBO KIT (1045130)				
1405131	1452225	1453251	1040142	1453240
				
<i>Super "B" Single Turbo</i>	<i>V-Band Clamp</i>	<i>Elbow O-Ring</i>	<i>Exhaust Pipe Heat Wrap</i>	<i>Wastegate Follower</i>
Qty: 1	Qty: 1	Qty: 1	Qty: 1	Qty: 1

1040145	1452226	1502032
		
<i>Heat Wrap Wire (/ft)</i>	<i>Cast Outlet Elbow</i>	<i>Containment Washer</i>
Qty: 4'	Qty: 1	Qty: 1

1452811	1452812	1452813	1452814	1452815
				
<i>Bolt - 10mm x 1.5 x 20mm</i>	<i>Bolt - 10mm x 1.5 x 30mm</i>	<i>Bolt - 3/8"NF x 1 3/4"</i>	<i>3/8"NF Nut</i>	<i>3/8" Washer</i>
Qty: 1	Qty: 1	Qty: 2	Qty: 2	Qty: 6

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Installation Notes

A turbocharger is driven solely on exhaust energy. Therefore, if the vehicles current exhaust manifold is cracked or is leaking, it is recommend that new exhaust gaskets and a heavy-duty exhaust manifold be used.

Installation should occur on a cold vehicle, as turbo and exhaust components become very hot with use.

The BD turbo system is recommended for trucks with 400-500 RWHP with a maximum efficient boost pressure of 45psi. For optimum performance the turbo should be operate between 37-45psi.

It is highly recommended that when installing this turbo, that our high performance two piece manifold be installed at the same time. This new manifold utilizes pulse technology/duel volute to spool the turbo faster than the stock single volute manifold. As well this manifold can handle much higher temperatures than the stock one.

Manifold part # 1045987

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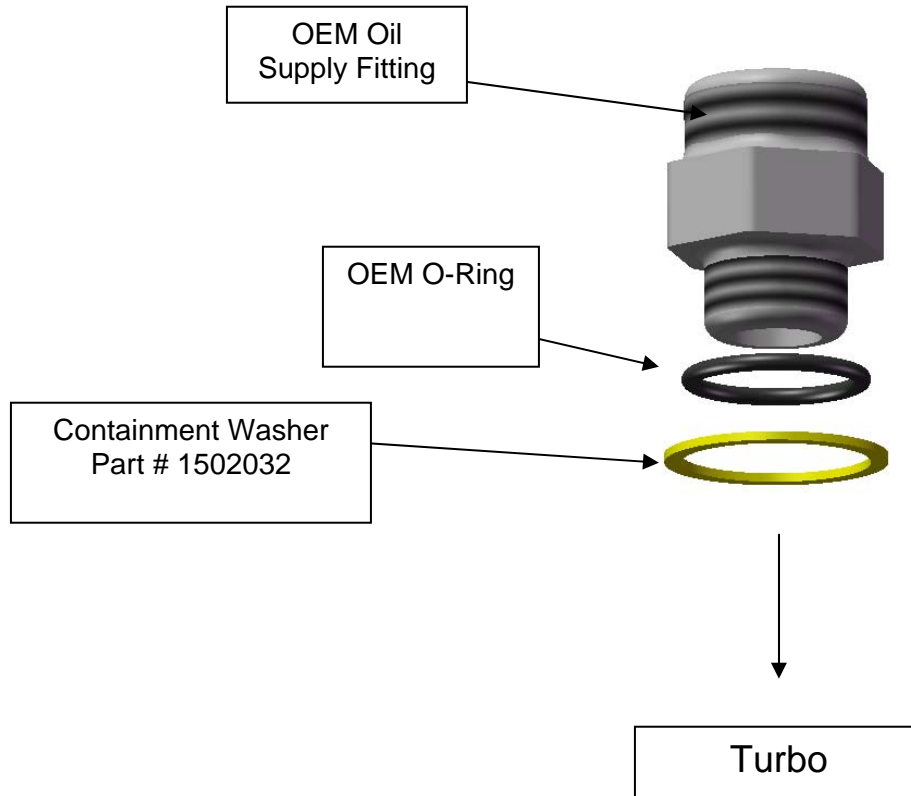
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On the 03-07 Super B Specials an O-Ring containment washer will need to be installed between the factory oil fitting and then new Super B Special turbo. This turbo prevents the sealing oring from being pinched and loosing its sealing capabilities.

To install just slip the containment washer over the bottom exposed O-Ring of the OEM fitting. Then continue to tighten the fitting into the turbo.



Upgrade Options

<u>Description</u>	<u>Part#</u>
BD "X" Torque Convertor	1070217X
BD HD Transmission	CALL
BD High Flow Injectors	CALL
BD Auxiliary Lift Pump Kit	1050226
BD HD Exhaust Manifold	1045977
BD X-Monitor	1085220
BD Cool Down Timer	1081150

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Battery Disconnect

Disconnect the negative terminals on both of the vehicle's batteries, and then disconnect the positive terminals.

Installation

Record preset radio settings (if desired).

Disconnect airflow sensor and remove air box with 10 mm socket.

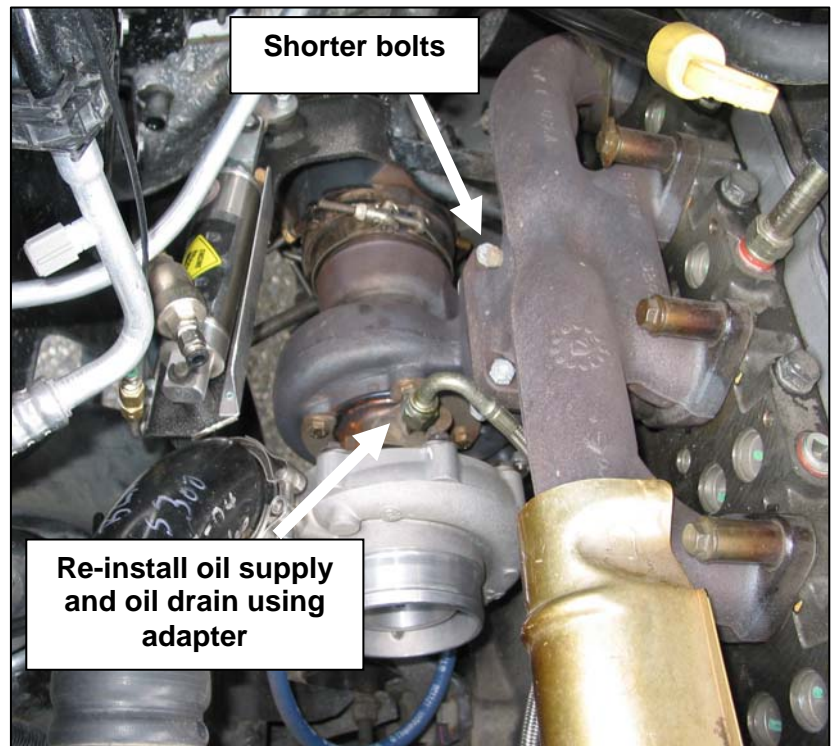
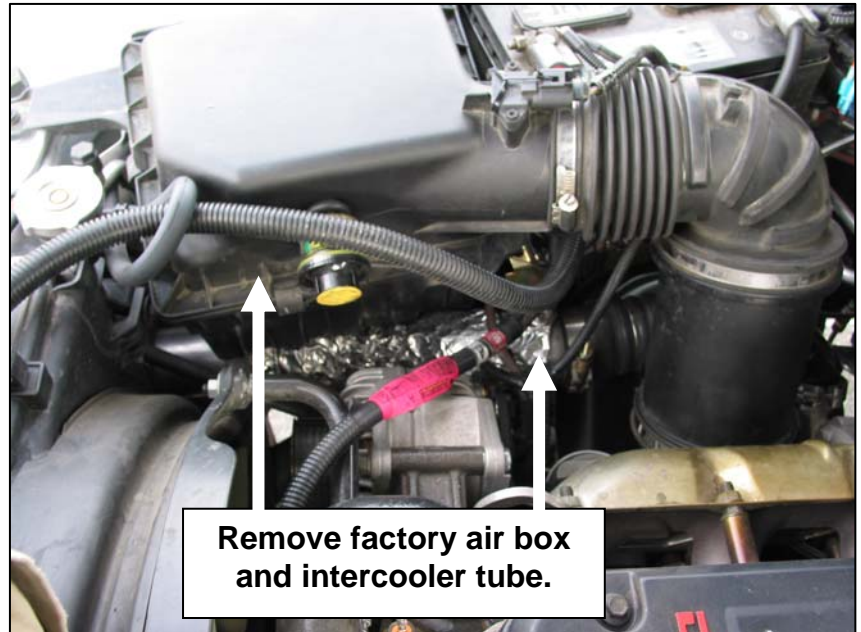
Remove the passenger side inner fender well with a 5/16 socket (for easier access).

Remove the turbo oil feed line with a 13/16" wrench and the oil drain line with 10 mm socket. Pull the oil drain tube out of the engine block.

Remove the passenger side intercooler hose band clamps with a 7/16" deep socket. Remove the intercooler tube from the engine compartment.

Remove the factory cast exhaust elbow or turbo mount brake using a 7/16" deep socket for the upper V-band clamp and a 10mm deep socket for the lower/rear V-band clamp.

Remove the four nuts holding the turbo to the exhaust manifold with a 15mm wrench. With the turbo now unbolted from the manifold, carefully lift it out of the engine and set it aside. **Now remove the two studs from the factory manifold.**



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Carefully lower the **Super 'B' Special** in to place, making sure there is a 1/4" gap between the waste gate actuator and the cast engine mount. Most trucks will have sufficient room, but due to casting tolerances, you may have to lightly grind the engine mount.

NOTE: YOU MAY NEED TO REMOVE TWO LOCATING DOWELS FROM THE FACE OF THE CAST EXHAUST ELBOW.

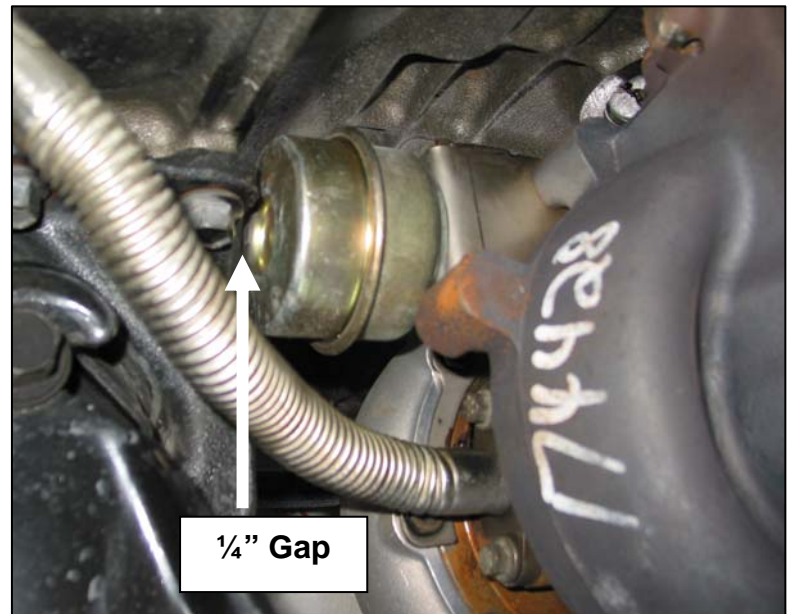
Mount the **Super 'B' Special** turbo and new gaskets in place using the metric 10mm bolts into the threaded holes in the manifold (shorter bolt to the rear of the engine). The 3/8NFx1.75" bolts, washers, and nuts should be inserted in the unthreaded holes. Use an offset 5/8" wrench to accommodate tightening of the inner bolts and two 9/16" for the outer bolts.

Turbo Clocking / Aligning (If Necessary)

Loosen the four bolts clamping the exhaust housing to the turbo body and rotate it until the oil feed and drains are straight up and down. Re-tighten the four bolts.

Loosen the eight bolts clamping the turbo compressor housing to the body and rotate the housing to align it with the intercooler tube. Tighten the eight bolts holding the compressor housing to the body to secure its position.

Once everything is tight, double check the waste gate actuator clearance to make sure you have 1/4" to the cast engine mount.



Install the powder coated compressor outlet elbow, o-ring, and v-band clamp. At this time, you may insert the intercooler tube that you removed earlier. Don't forget to clean and secure all intercooler boots and tighten the hose clamps.

When re-installing the intercooler tube, rotate the tube so that it is clear and free from the air box and the plastic inlet tube. Be careful that the compressor outlet elbow does not contact the shock tower.

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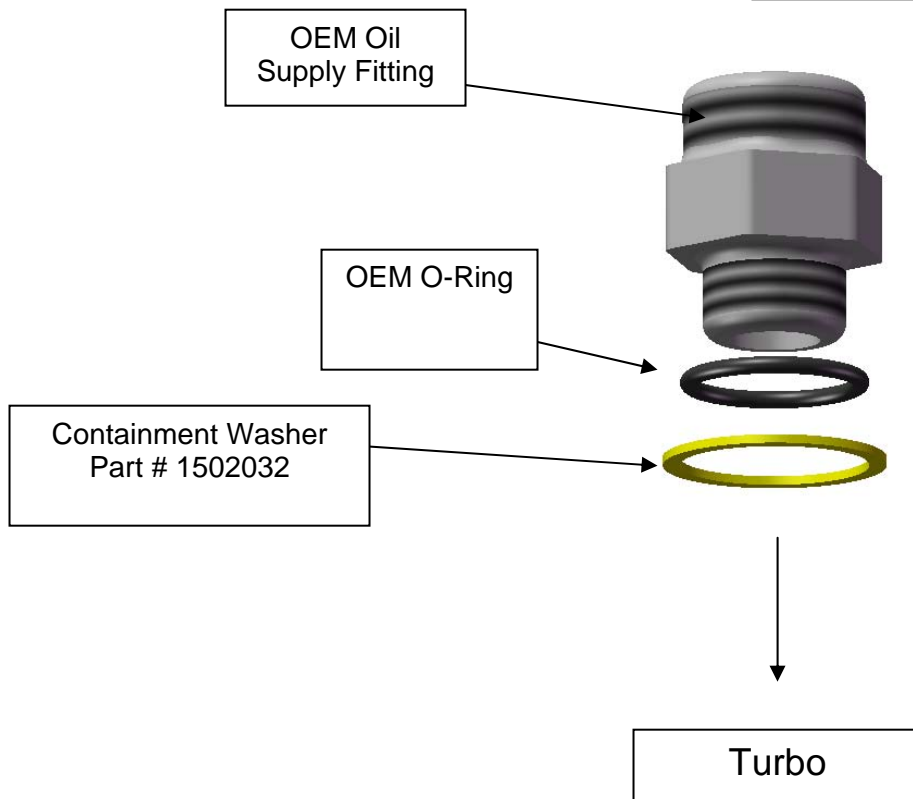
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Re-install your turbo mount brake or remove the locating pins from the factory cast exhaust elbow and clamp it on the back of the turbo adapter assembly with the factory clamps you removed earlier.

Reinstall the turbo oil drain into the block. Be sure to install the containment washer to secure the o-ring.



Then using the factory bolts to secure the drain to the bottom of the turbo with a new gasket before pre oiling the turbo.

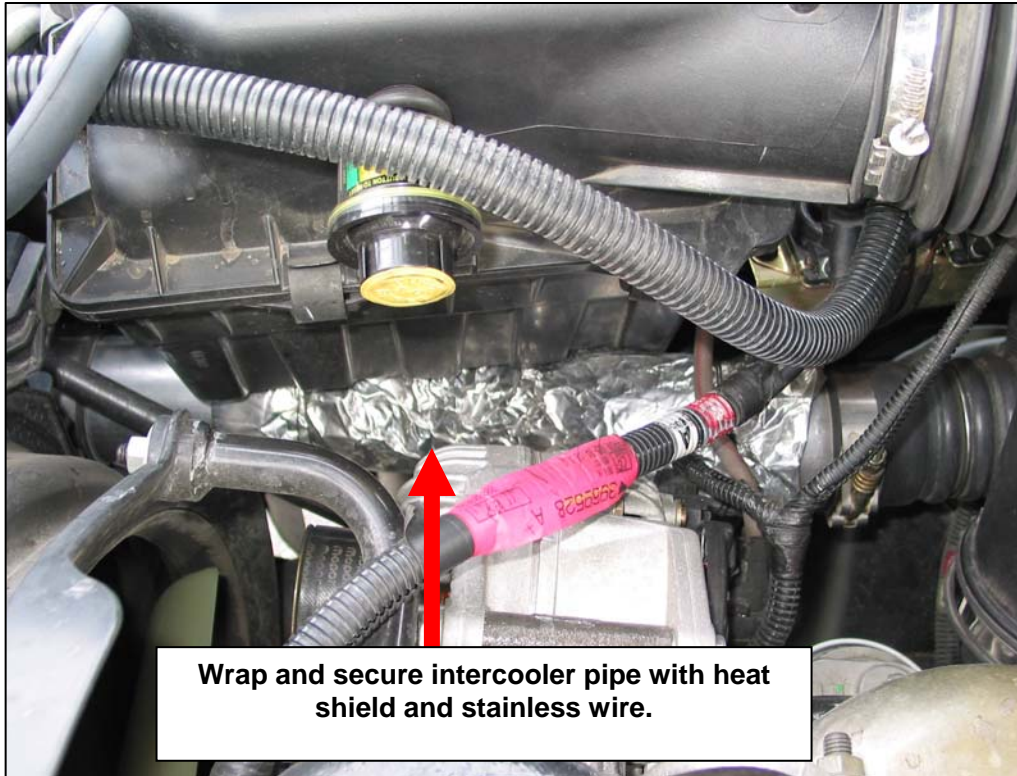
Squirt liberal amounts of fresh 15w40 diesel oil into the new turbo while spinning the compressor wheel. Remove the factory adapter from the stock turbo and screw it into the Super B turbo.

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Re-install the plastic fender well liner, followed by the air box and tube.

Note: Unless you have a high flow Stainless **BD X-Intake** system, the heat wrap should be used to insulate the factory plastic air box from the intercooler tube. You can use the provided stainless wire to secure the wrap.

Reconnect the negative battery terminals and start the vehicle. **Check for any exhaust or oil leaks.**

Take it easy on the turbo for the first 100 miles to allow a proper break-in period. Be very cautious of any unusual sounds or leaks during this time. Make sure that all clamps are tight.

Note: The exhaust housing of the turbo may smoke when new as manufacturing residue on housing must burn off.

Also take care that when shutting the vehicle down that you do not shut the vehicle down when it's still hot (>400°). This will cause oil coking and damage the turbo. The **BD Cool Down Timer** can automate this process for you.

Questions

Please call our Technical Hotline at (800) 887-5030 if you experience problems or have questions about this kit, Monday to Friday, 8:30am – 5:00pm Pacific Standard Time (PST).

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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.

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 Labor costs incurred will be considered for the removal and replacement of a 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.

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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 (transmissions are limited to 400RWHP), 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. This warranty does not cover deterioration of plating, paint or any other coating or parts that are subject to normal wear and tear, such as light bulbs, fuses, bearing wear, seal wear, etc.

Except as set forth herein or in our parts outline, the Seller disclaims any implied warranties of merchantability and fitness for a particular purpose. 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, including 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 updated previously manufactured parts that are currently under the above warranty.

IN THE EVENT THE BUYER DOES NOT AGREE WITH THIS AGREEMENT OR IS NOT SASTISFIED WITH THE PRODUCT, THE BUYER MAY PROMPTLY RETURN THIS PRODUCT, WITH A DATED PROOF OF PURCHASE, TO THE PLACE OF PURCHASE WITHIN THIRTY (30) DAYS FROM DATE OF PURCHASE FOR A FULL PARTS REFUND. THE SELLER OR INSTALLER IS NOT RESPONSIBLE FOR INCIDENTAL CHARGES SUCH AS OUTGOING OR INCOMING FREIGHT, RE & RE LABOR OR ANY OTHER COSTS IN RELATION TO THE PRODUCT. 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.

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Limited Warranty Details			
Product Name	Parts	Labour	Notes
	(Months/Miles)¹	(Months/Miles)^{1, 2}	
Torque Converters (Dodge)	24/ 24,000	12/12,000	Limited to 400RWHP
Torque Converters (Ford & Allison)	12/ 12,000	12/ 12,000	Limited to 400RWHP
Transmissions	12/ 24,000	12/ 24,000	Limited to 400 RWHP
Extended Warranty Package (Transmissions & Torque Converter)	36/ 100,000	36/ 100,000	Limited to 400 RWHP
Race Transmissions	12/ 24,000	Not Eligible	
Valve / Accumulators Bodies	12/ 24,000	12/ 24,000	
Transmission Pans	12/ 24,000	Not Eligible	
Auto / Torq / Towloc's	12 / 24,000	Not Eligible	
Flex Plates	12 / 24,000	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	12/ 24,000	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	
MaxFlow 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

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