

This turbo is intended for high performance applications and is not to be used for towing applications

# **BD SUPER "B" SPECIAL**

1994-2002 Dodge 5.9L Cummins 24v ISB

**Part# 1045120**

**PLEASE READ ALL INSTRUCTIONS BEFORE INSTALLATION**

**KIT CONTENTS:**

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

<b>DODGE 1994-2002 "SUPER B" SPECIAL TURBO KIT (BD# 1045120)</b>			
<b>1405121</b>	<b>1405926</b>	<b>1045927</b>	<b>1100740</b>
			
<i>Super "B" Special Turbo</i>	<i>Turbo Clamp</i>	<i>4" Down Pipe</i>	<i>4" Stainless Steel Down Pipe Clamp</i>
<b>Qty: 1</b>	<b>Qty: 1</b>	<b>Qty: 1</b>	<b>Qty: 1</b>

<b>1405986</b>	<b>1453152</b>	<b>1453153</b>	<b>1452815</b>	<b>1130315</b>
				
<i>Manifold bolt (Used on 12V Installs)</i>	<i>1/4NPT to ORFS</i>	<i>Viton O-Ring</i>	<i>3/8" Washer</i>	<i>3/8NC x 1"</i>
<b>Qty: 2</b>	<b>Qty: 1</b>	<b>Qty: 1</b>	<b>Qty: 2</b>	<b>Qty: 2</b>

BD ENGINE BRAKE, INC.

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

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## *Pre-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 Super B system is recommended for trucks with 400-500 RWHP with a maximum efficient boost pressure of 45psi. For optimum performance, the turbo should operate between 37–45psi.

## *Upgrade Options*

<b><u>Description</u></b>	<b><u>Part #</u></b>
BD 'X' Torque Converter	1070215X
BD Transmission	CALL
BD High Flow Injectors	CALL
BD Lift pump kit 24V	1050226
BD High Flow Banjo Bolts 24V	10502XX
Heavy Duty Exhaust Manifold 24V	1045985
Heavy Duty Exhaust Manifold 12V	1045980
BD X-Monitor	CALL
BD High Pressure Intercooler Boots	1405220
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 radio settings and disconnect both battery terminals on both batteries.

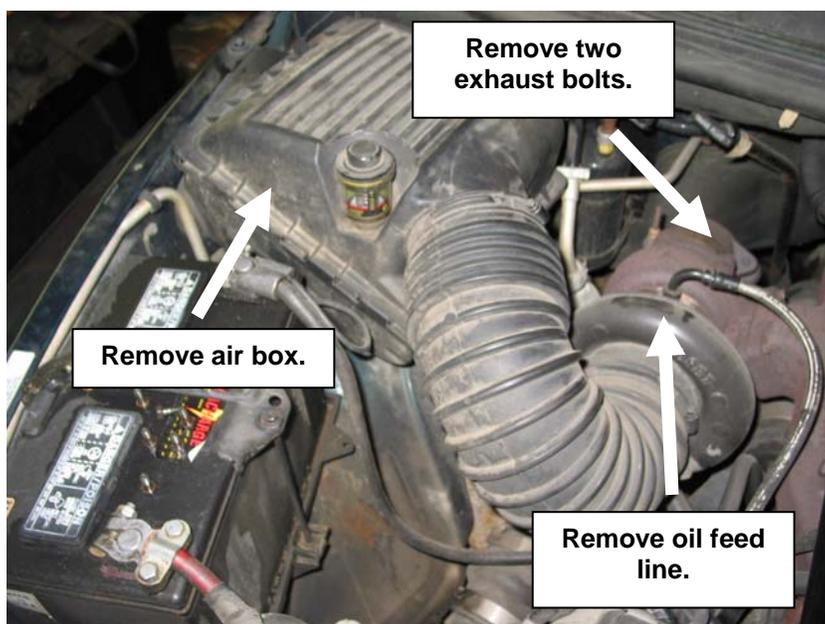
Lay a protective cover over the passenger side fender to eliminate any scratches.

Remove the air box assembly and intake tube from the inlet of the turbocharger.

Remove the two 13mm bolts connecting the exhaust down pipe to the turbo flange.

Remove the v-band clamp on the turbo compressor-housing outlet that connects to the intercooler. Be sure not to lose the orange o-ring from the intercooler inlet tube elbow. Also make sure that you cover the intercooler tube so debris does not fall inside.

Remove the turbo oil feed line and un-bolt the turbo oil drain tube and



cover the inlet to protect it from contamination. Remove the four nuts holding the turbo to the exhaust manifold. Remove the stock turbo and set it aside.

Inspect the exhaust manifold for shrinkage, cracks and leaks. If none are found, remove the original turbo gasket and clean the turbo-mating surface. If any cracks are found, you will need to replace the manifold with a stock replacement or a heavy-duty aftermarket version.

Remove the turbo down pipe. Note that it is assumed that the user has a full 4" exhaust system at the time of install, not a CAT-back system or stock exhaust.

Remove the original gasket from the oil drain tube sealing flange and replace with the new gasket provided.

Install the "Super B" turbo with the supplied gasket and the four factory nuts (gasket direction is unimportant) to the exhaust manifold. Torque to **24 lbs-ft.** For 12V installations, two M10x1.5x45mm bolts have been provided.

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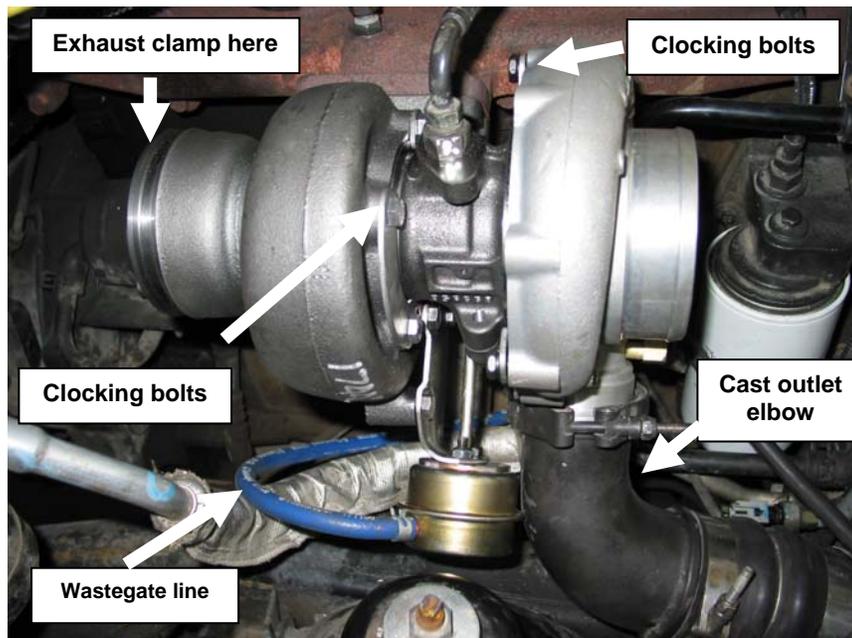
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### *Turbo Clocking / Aligning (If Necessary)*

Loosen the four bolts clamping the exhaust housing to the turbo body, and then rotate the body until the oil feed 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 housing to align it with the intercooler tube. You need to align the compressor outlet to the stock cast aluminum elbow with the orange o-ring in it. Now tighten the eight bolts holding the compressor housing to the body to secure its position.



Ensure the orange o-ring is in place and use the factory v-band clamp to connect to compressor housing to the intercooler elbow and tube.

Adjustment of the first intercooler boot may be required for a proper fit.

**NOTE: You will need to drill out the two bolt holes of the oil drain flange using a 13/32" bit. You can then use the provided 3/8NC x 1" bolts and washers to secure the oil drain to the turbo. This will not be required on future versions of this turbocharger.**

Connect the oil drain tube to the bottom of the turbo using the supplied gasket and the original hardware. You will need to slide the oil drain adapter as far as possible away from the wastegate arm to prevent any contact. In some rare cases the wastegate arm may need to be bent.

Be sure to squirt fresh oil down the oil feed port while rotating the compressor wheel. This will ensure a smooth start-up and reduce the chance of damaging the bearings.

Remove the oil feed line adapter from stock turbo and install in the "Super B" turbo. Be sure to inspect the adapters' o-ring for any damage to reduce the chance of an oil leak. Install the oil feed line using the 1/4" NPT to ORFS adapter.

Ensure that the brass barb fitting in the compressor housing is tight, install the blue rubber wastegate hose, and then clamp the end to the wastegate.

Install the new down pipe to the rear of the turbo. It is highly recommended to loosely clamp all exhaust pieces together to ensure proper fit before completely tightening

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anything. Position all exhaust clamps  $\frac{1}{4}$ " from joints and if possible tack weld all pipes to prevent twisting.

You can now install the factory air box and intake tube. Double check all clamps to ensure they are tight.

Re-connect 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 unusually sounds or leaks during this time.

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

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**BD ENGINE BRAKE, INC.**  
**LIMITED WARRANTY STATEMENT**

THE INSTALLATION OF THIS PRODUCT INDICATES THAT THE BUYER HAS READ AND UNDERSTANDS THIS AGREEMENT AND ACCEPTS ITS TERMS AND CONDITIONS.

**DISCLAIMER OF LIABILITY**

BD Engine Brake Inc., its successors, distributors, jobbers, and dealers (hereafter "**BD**") shall in no way be responsible for the product's proper use and service. THE BUYER HEREBY WAIVES ALL LIABILITY CLAIMS.

**BD** disclaims any warranty and expressly disclaims any liability for personal injury or damages. **BD** also disclaims any liability for incidental or consequential damages including, but not limited to, repair labor, rental vehicles, hotel costs, or any other inconvenience costs by reason of use or sale of any such equipment. 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 **BD** and to hold **BD** harmless from any claim related to the item of any equipment purchased.

This warranty shall not apply to any unit that has been improperly stored or installed, or to misapplication, improper operation conditions, accidents, neglect, or which has been improperly repaired or altered or otherwise mistreated by the **BUYER** or his agent. **BD** also assumes no liability regarding the improper installation or misapplication of its products. It is the installer's responsibility to check for proper installation and if in doubt, contact the manufacturer.

**LIMITATION OF WARRANTY**

BD Engine Brake Inc. (hereafter "**BD**") warrants to the **BUYER** that any parts purchased shall be free from defects in material workmanship. A defect is defined as a condition within the product that would render the product inoperable. **BD** gives Limited Warranty as to description, quality, merchantability, fitness for any product's purpose, productiveness, or any other matter of **BD's** product sold herewith. **BD** shall be in no way responsible for the product's open use and service and the **BUYER** hereby waives all rights other than those expressly written herein. This Warranty shall not be extended or varied except by a written instrument signed by **BD** and the **BUYER**.

**The Warranty is Limited to one (1) year from the date of sale. Until BD has approved the claim, the consumer may be responsible for these costs.**

A Return Material Authorization (RMA) number, obtained in advance from **BD**, must accompany all products returned for warranty consideration. All products must be returned, shipping prepaid, to **BD** and must be accompanied by a dated proof of purchase receipt. All Warranty claims are subject to approval by **BD** and repaired or replaced product will be returned to the customer freight collect. Accepted warranty units, which have been replaced, become the sole property of **BD**.

This warranty is in lieu of all other warranties or guaranties, either expressed or implied, and shall not extend to any consumer or to any person other than the original purchaser residing within the boundaries of the continental U.S. or Canada.

IN THE EVENT THAT THE BUYER DOES NOT AGREE WITH THIS AGREEMENT, THE BUYER MAY PROMPTLY RETURN THIS PRODUCT, IN A NEW AND UNUSED CONDITION, WITH A DATED PROOF OF PURCHASE, TO THE PLACE OF PURCHASE WITHIN THIRTY (30) DAYS FROM DATE OF PURCHASE FOR A FULL REFUND.

Damaged or blown head gaskets will not be covered under warranty. It is the responsibility of the user to regulate cylinder pressures to protect the head gasket and turbo.

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