



**BD SUPER "B"**  
**2003-2004 Dodge 24v ISBe**  
(Non 600 motors)  
Part # 1045230

**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](http://www.bd-power.com)

## K I T C O N T E N T S :

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

<b>DODGE 2003-2004 "SUPER B" SINGLE TURBO KIT (BD# 1045230)</b>				
1405228	1452225	1453251	1040142	
				
<i>Super "B" Single Turbo</i> Qty: 1	<i>V-Band Clamp</i> Qty: 1	<i>Elbow O-Ring (Viton)</i> Qty: 1	<i>Exhaust Pipe Heat Wrap</i> Qty: 1	
1040145	1405926	1452520	1452226	
				
<i>Heat Wrap Wire (ft)</i> Qty: 4'	<i>V-Band Clamp</i> Qty: 1	<i>Flange Adapter</i> Qty: 1	<i>Cast Outlet Elbow</i> Qty: 1	
1452811	1452812	1452813	1452814	1452815
				
<i>Bolt - 10mm x 1 1/2 x 20mm</i> Qty: 1	<i>Bolt - 10mm x 1 1/2 x 30mm</i> Qty: 1	<i>Bolt - 3/8 NF x 1 3/4"</i> Qty: 2	<i>3/8 NF Nut</i> Qty: 2	<i>3/8 Washer</i> Qty: 6

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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 300-400 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

### Upgrade Options

<u>Description</u>	<u>Part #</u>
BD 'X' Torque Converter	1070215X
BD Transmission	CALL
BD High Flow Injectors	CALL
BD Lift pump kit 24V	1050226
Heavy Duty Exhaust Manifold 24V	1045977
BD X-Monitor	CALL
BD Twin Turbo Kit	CALL
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.

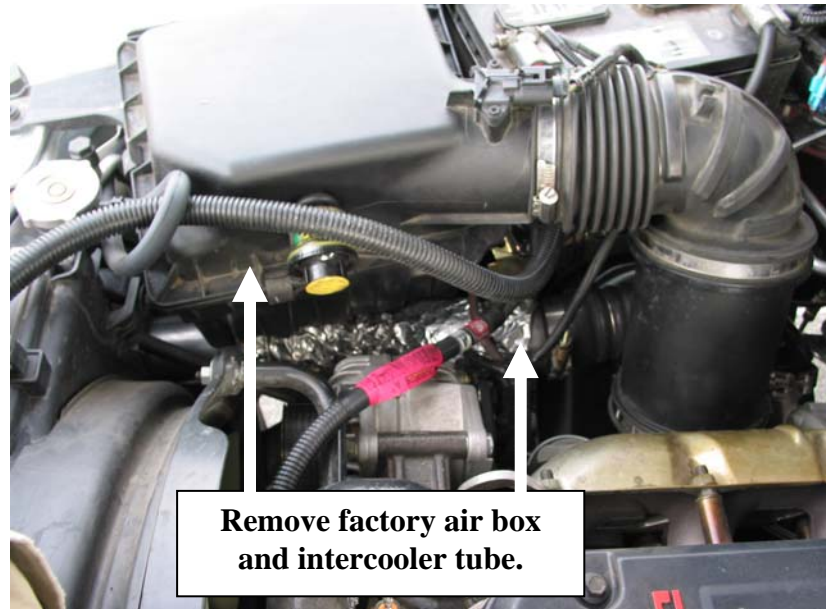
**INSTALLATION**

Record preset radio settings (if desired).

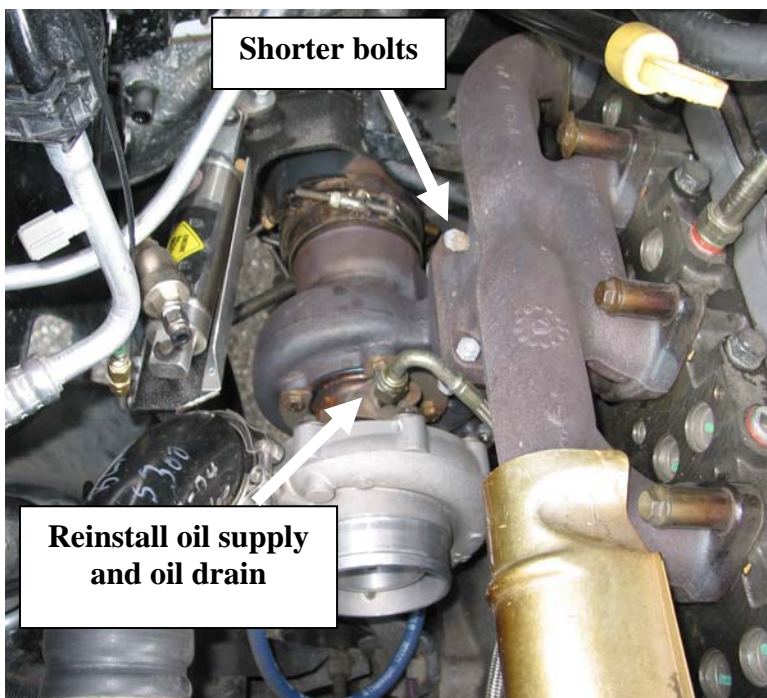
Disconnect airflow sensor and remove air box with 10 mm socket.

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'* 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.

Mount the *Super 'B'* 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 3/8" 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 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  $\frac{1}{4}$ " 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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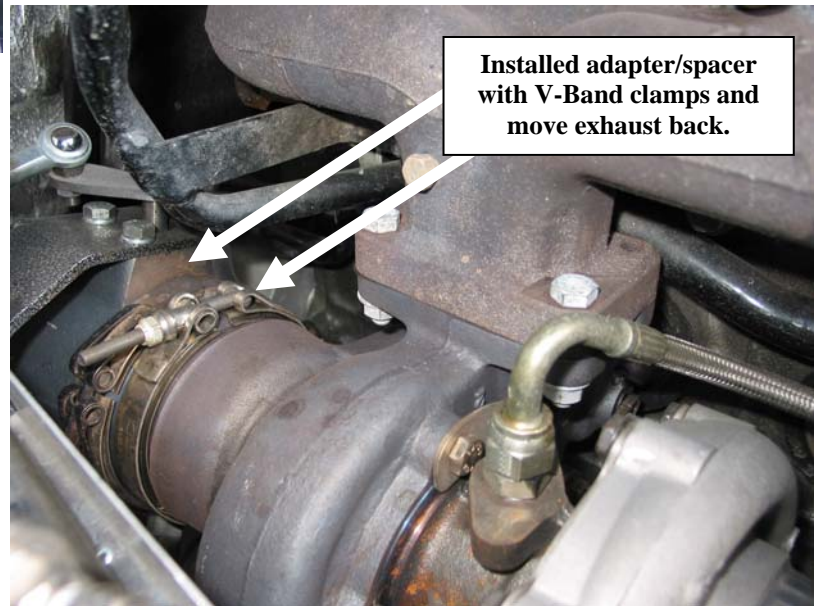


Install new elbow and secure with provided V-band clamp.

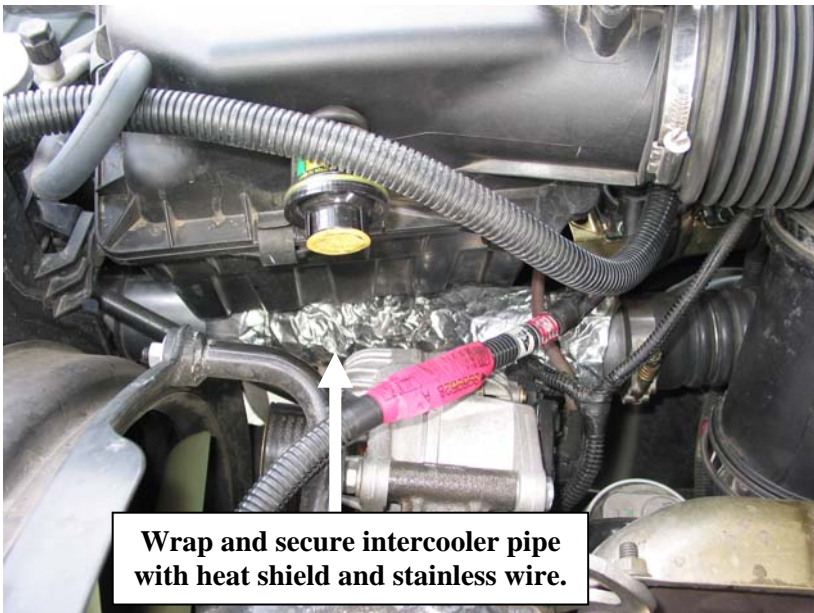
Reinstall the turbo oil drain into the block and to the bottom of the turbo with new gasket before pre oiling the turbo. Squirt liberal amounts of fresh 15w40 diesel oil into the new turbo while spinning the compressor wheel. Re-install the oil supply line to the top of the turbo.

Now install the supplied adapter/spacer and V-band clamp to the back of the *Super 'B'* turbo. Notice that this adapter will push the exhaust system back about an inch.

Reinstall 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.



Installed adapter/spacer with V-Band clamps and move exhaust back.



Wrap and secure intercooler pipe with heat shield and stainless wire.

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.**

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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 ( $>400^{\circ}$ ). This will cause oil coking and damage the turbo. The *BD Cool Down Timer* can automate this process for you.

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<p style="text-align: center;"><b>BD ENGINE BRAKE, INC.</b> <b>LIMITED WARRANTY STATEMENT</b></p>
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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.

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11/20/2008

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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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