

This is a high performance turbo and is 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 X-Intake is a recommended replacement.

UNLESS AN EO# IS LISTED, THIS PRODUCT IS LEGAL IN CALIFORNIA FOR RACING VEHICLES ONLY, WHICH MAY NEVER BE USED UPON A HIGHWAY.

BD Engine Brake Inc.

Plant Address: 33541 MacLure Rd. Abbotsford, BC, Canada V2S 7W2

U.S. Shipping Address: 88-446 Harrison St, Sumas, WA 98295 U.S. Mailing Address: P.O. 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 of 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 Footer</i>
Qty: 1	Qty: 1	Qty: 1	Qty: 1	Qty: 1
1040145	1452226	1502032	1452815	1452814
				
<i>Heat Wrap Wire (ft)</i>	<i>Cast Outlet Elbow</i>	<i>Containment Washer</i>	<i>3/8" Washer</i>	<i>3/8" NF Nut</i>
Qty: 4'	Qty: 1	Qty: 1	Qty: 6	Qty: 2
1452811	1452812	1452813	1452822	
				
<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>Bolt - 3/8" NF x 1 1/2"</i>	
Qty: 1	Qty: 1	Qty: 2	Qty: 2	

REQUIRED TOOLS

- Wrench : 9/16", 13mm, 15mm, 17mm, 19mm, 21mm
- Sockets : 5/16", 7/16", 9/16", 7mm, 10mm, 11mm

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

Upgrade Options

Description	Part#
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

If you are installing a BD Engine Brake with this turbo you will require:

(1) Turbo Plate PN# 1453238

(5) M8-1.25 x 20mm bolts

Reuse the existing (5) hardened M8 washers.

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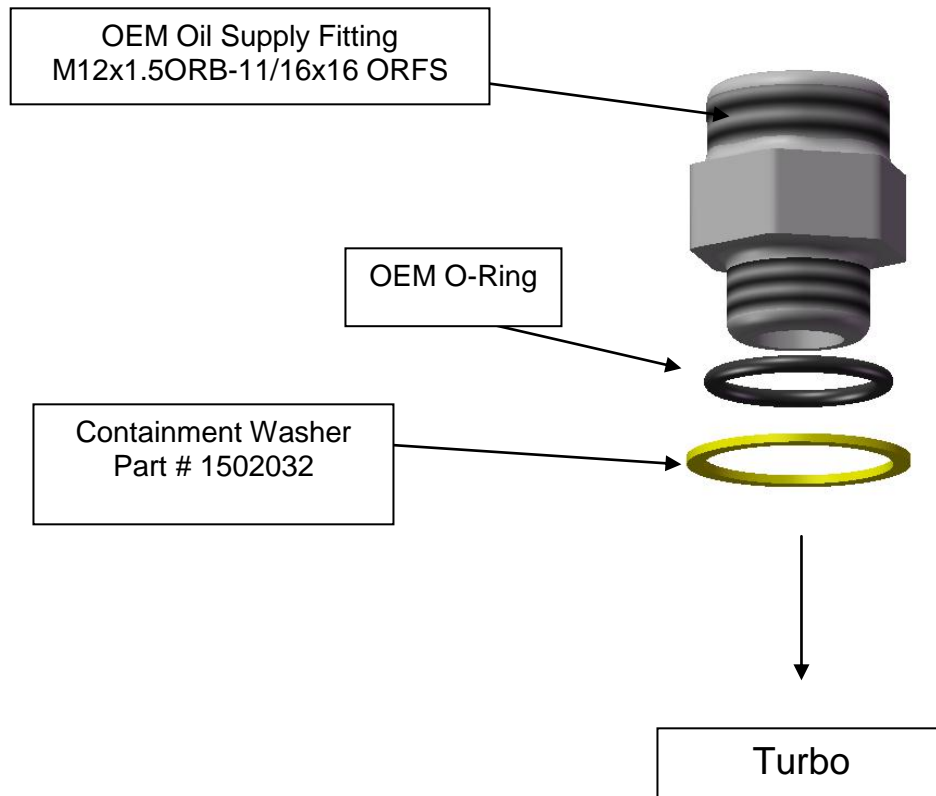
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Important Fitting Note

On the 2003-07 Super B Specials, an O-Ring containment washer will need to be installed between the factory oil fitting and the new Super B Special turbo. This containment washer prevents the sealing o-ring from being pinched and losing its sealing capabilities.

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



Battery Disconnect

Record preset radio settings (if desired). Disconnect the negative terminals on both of the vehicle's batteries, and then disconnect the positive terminals.

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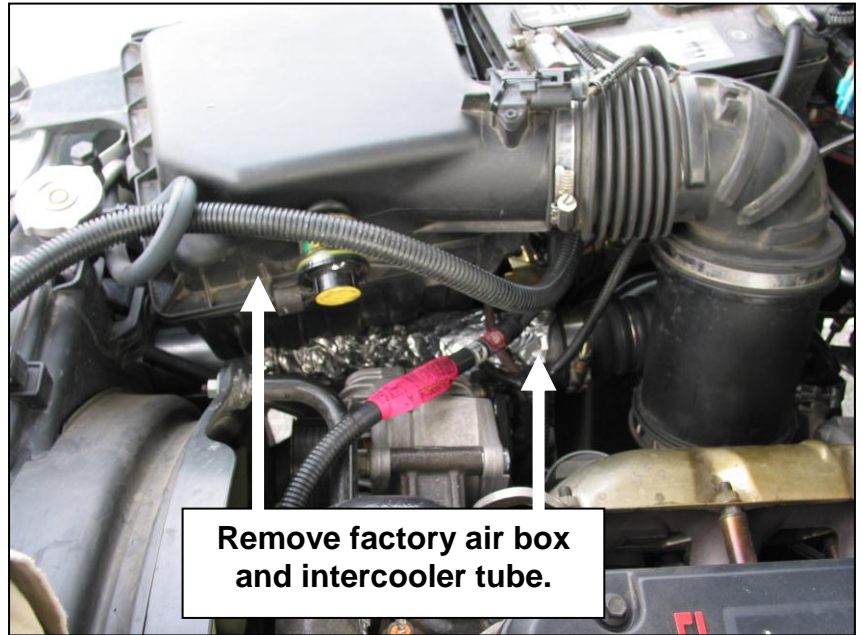
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Installation

Disconnect airflow sensor and intake tube 5/16". 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 21mm wrench and the oil drain line with 10 mm socket. Pull the oil drain tube out of the engine block.

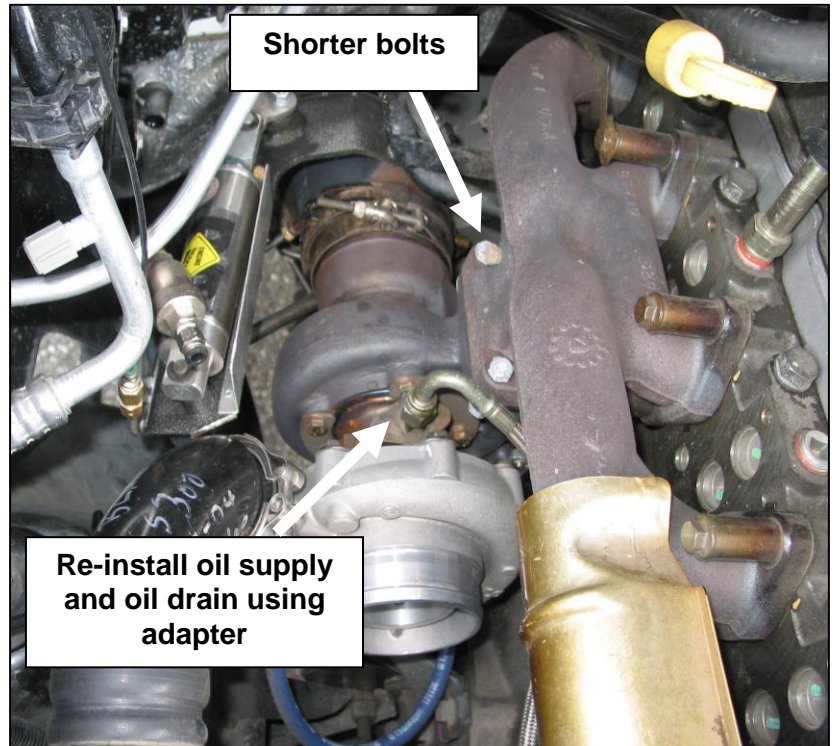


Remove the passenger side intercooler hose band clamps with a 7/16" deep socket. Remove the intercooler tube from the engine compartment.

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 locating pins from cast adapter.

04.5-07 TRUCKS ONLY

You will need to disconnect the plug for the electronic wastegate actuator. At this time you can install the female wastegate fooler plug that is supplied with this kit (see the kit contents page if unsure). Insert the wastegate fooler into the female factory wiring harness and secure with a zip tie away from anything that has moving parts or from parts that are hot. Turbo and exhaust manifold can be removed as an assembly if desired. This allows easier access to turbo mounting hardware.



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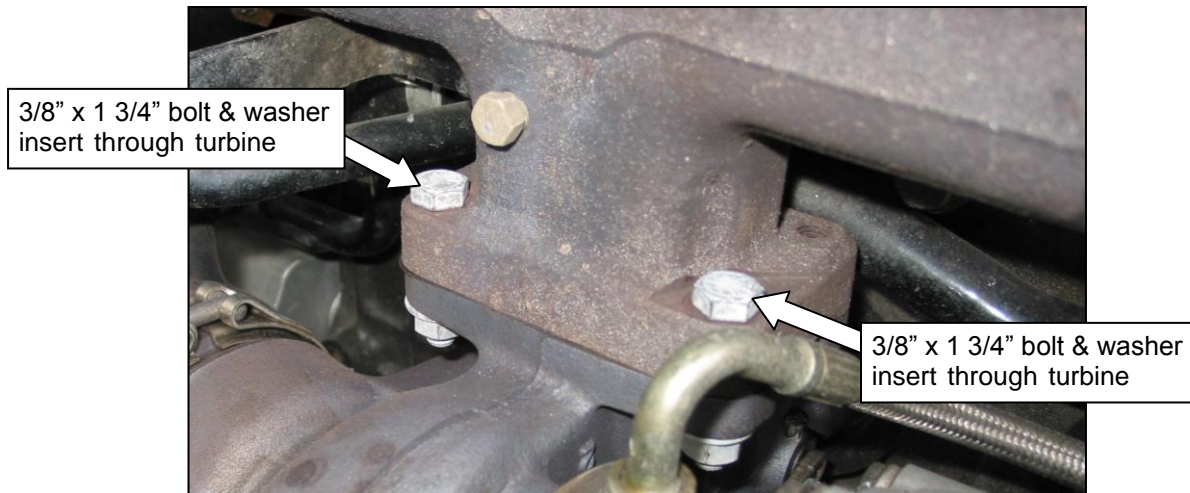
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Carefully lower the **Super 'B' Special** into place, making sure there is a 1/4" gap between the waste gate actuator and the cast engine mount. Most trucks will have sufficient room, but due to casting tolerances, you may have to lightly grind the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

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

Installing turbo with Stock Manifold

Mount the **Super 'B' Special** turbo and new gasket in place using the metric 10mm bolts into the threaded holes in the manifold (shorter bolt to the rear of the engine). If you are mounting the turbo to a stock manifold you will require the supplied **3/8" x 1 3/4"** bolts for the unthreaded holes. These bolts should be inserted from the manifold side and fastened to the turbine housing using the supplied washers and nuts. Use an offset 17mm wrench to accommodate tightening of the inner bolts and two 9/16" for the outer bolts and torque turbo to manifold bolts to 32 ft/lbs.



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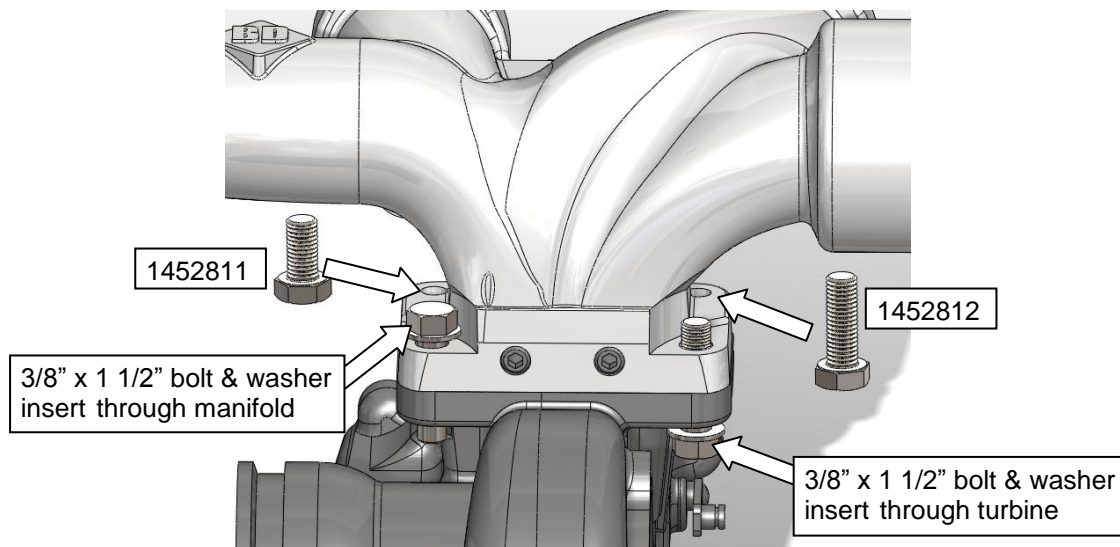
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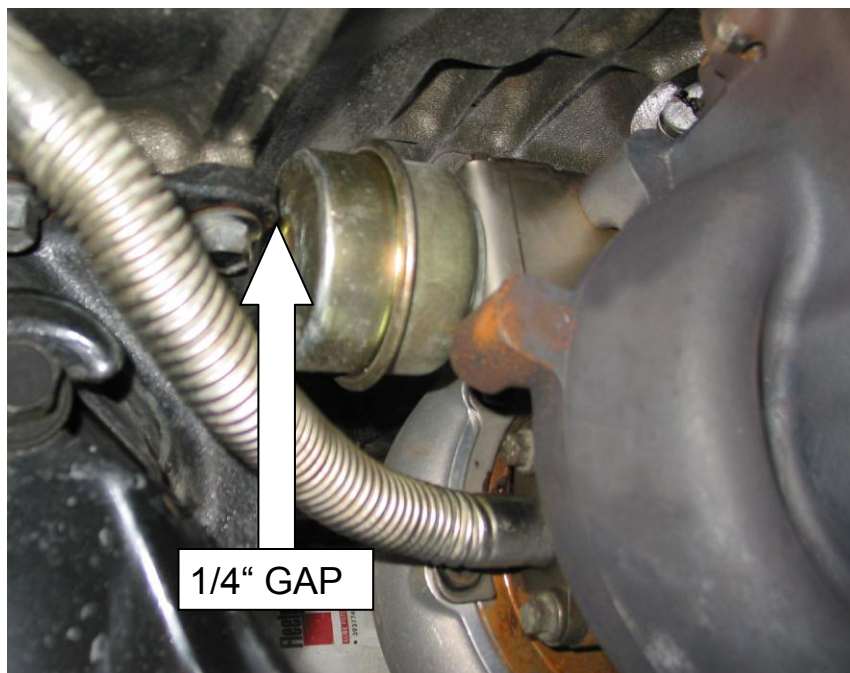


Turbo Clocking / Aligning (If Necessary)

Loosen the four bolts clamping the exhaust housing to the turbo body and 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.



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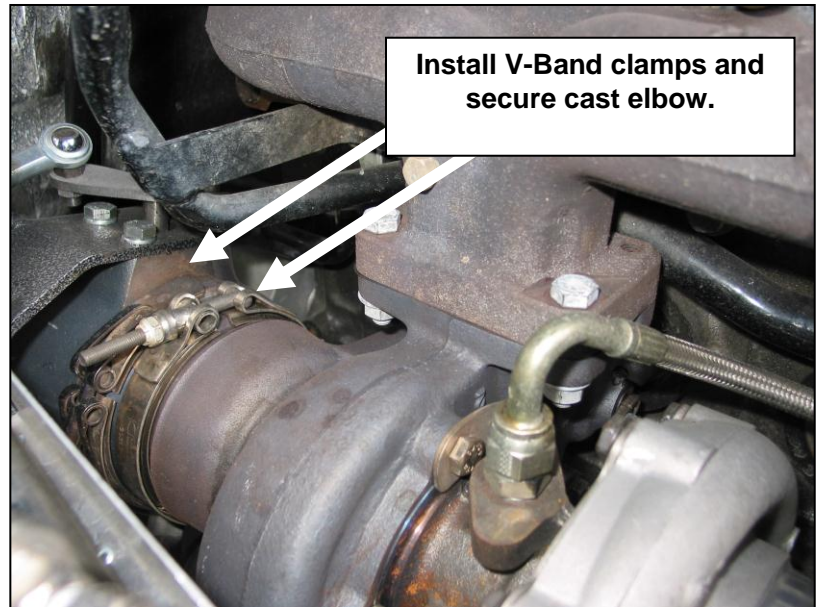
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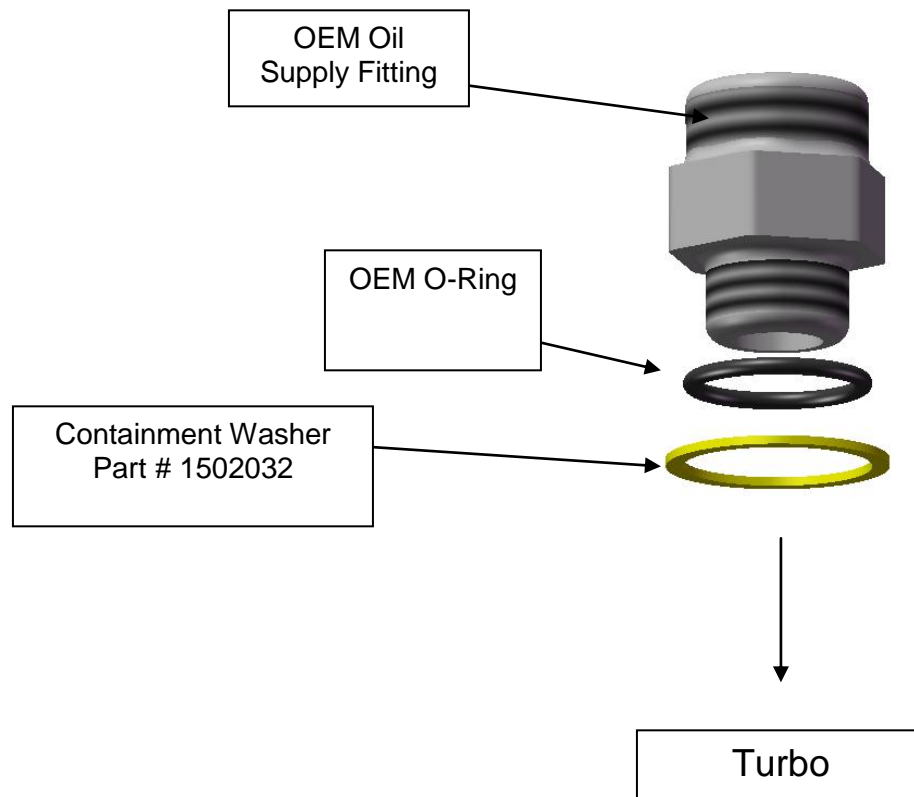
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Install the powder coated compressor outlet elbow, o-ring, and v-band clamp. At this time, you may insert the intercooler tube that you removed earlier. Don't forget to clean and secure all intercooler boots and tighten the hose clamps.

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. 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.



Secure the oil drain to the bottom of the turbo with the factory bolts. Use a new gasket before pre-oiling the turbo.

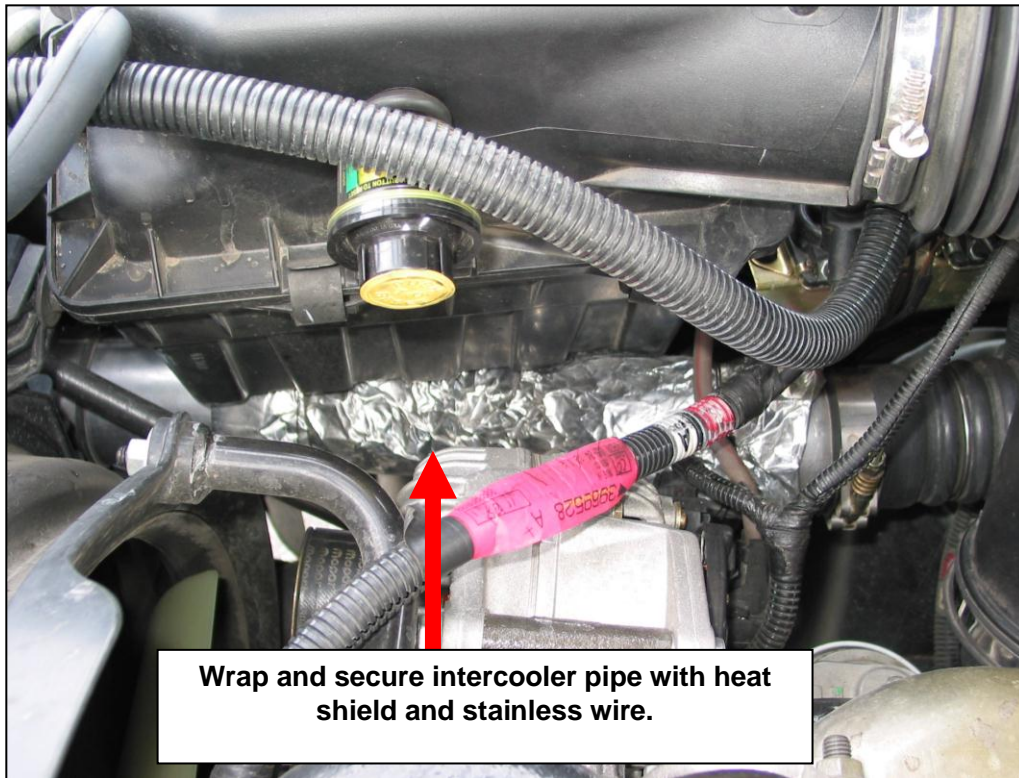
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Squirt liberal amounts of fresh 15w40 diesel oil into the new turbo while spinning the compressor wheel. Remove the factory oil inlet adapter from the stock turbo and screw it into the Super B turbo. Using the supplied containment washer.



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 **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 your EGT's are below 400°. EGT's hotter than this will cause oil coking and damage the turbo. The **BD Cool Down Timer** can automate this process for you.

IMPORTANT When idled for any length of time some oil may leak from the turbo. If the performance/boost is satisfactory and the wheel is not touching the housing (There will be some small movement), the excess oil is not a concern. Simply wipe with a clean cotton cloth and continue use.

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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