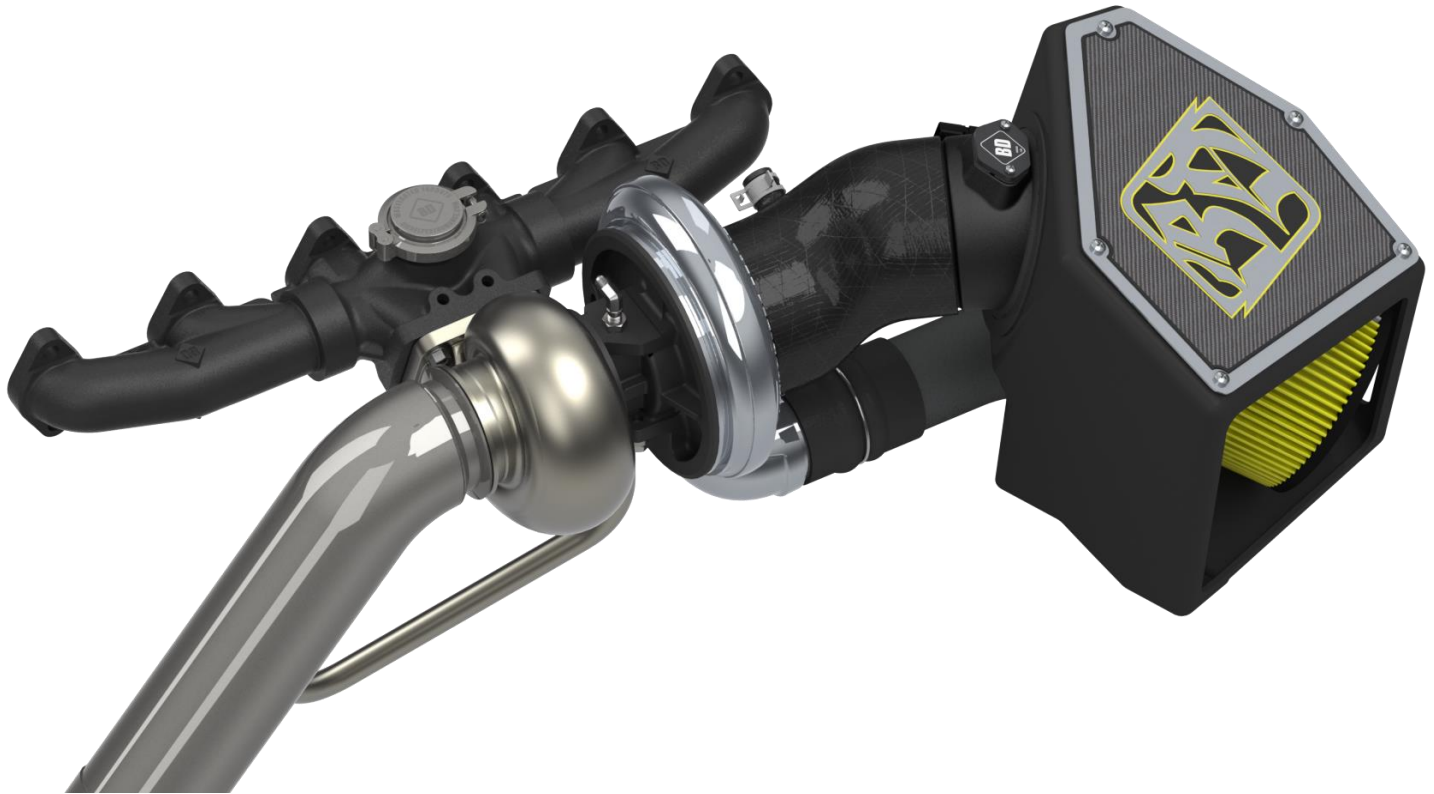




BD TrackMaster S400

2003-2007 Dodge HPCR

Installation Instructions

1045703

2003-2007 Dodge 5.9L TMS400

PLEASE READ ALL INSTRUCTIONS BEFORE INSTALLATION.

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

“This is a high performance street and competition turbo and is not intended for towing applications.”

BD Engine Brake Inc.

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Please be aware that non-wastegated turbochargers are extremely sensitive to over speed failures. Please size the turbo correctly to your fueling level and EGTs. EGTs over 1500° can possibly indicate an undersized turbocharger. High boost pressure can also indicate over speed, do not exceed 50psi of compressor outlet pressure.

Note a factory intercooler can have up to a 5psi pressure drop across the cooler. You would only see 45psi in the intake manifold. Increasing the operating RPM of your engine will also increase turbo speed. A 500 engine RPM increase can increase turbo speeds over 10,000RPM.

Overspeed can result in split compressor wheels, separated turbine wheels, worn journal bearings and damaged thrust surfaces.



Using a wastegate will help you control turbo speed. For the cost there is no better insurance.

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Engine:	Dodge 5.9	Max Compressor Outlet Pressure: 50psi			
	Turbo:	Not intake manifold pressure			
Turbine A/R	S467/83	Tuning Only	Tuning & 60 HP Injectors	Tuning & 90 HP Injectors	Tuning & 120 HP Injectors
	0.9	No Wastegate Needed	No Wastegate Needed	No Wastegate Needed * Must not use highest tuning Levels (Street on H&S)	Wastegate Needed
	1.0	No Wastegate Needed	No Wastegate Needed	No Wastegate Needed * Must not use highest tuning Levels (Street on H&S)	Wastegate Needed
	1.1	No Wastegate Needed	No Wastegate Needed	No Wastegate Needed	No Wastegate Needed * Must not use highest tuning Levels (Street on H&S)
	1.25	No Wastegate Needed	No Wastegate Needed	No Wastegate Needed	No Wastegate Needed * Must not use highest tuning Levels (Street on H&S)
Note you can always overspeed a turbocharger. Play it safe, there are no warranties for overspeed. Factory intercooler can have a 5 psi pressure drop across. ie 45psi manifold pressure = 50 psi compressor Outlet pressure. All our testing is done at the standard RPM range of the engine. If you exceed this RPM, your turbo speed will also increase. Extended injection duration will contribute to turbo over speed					

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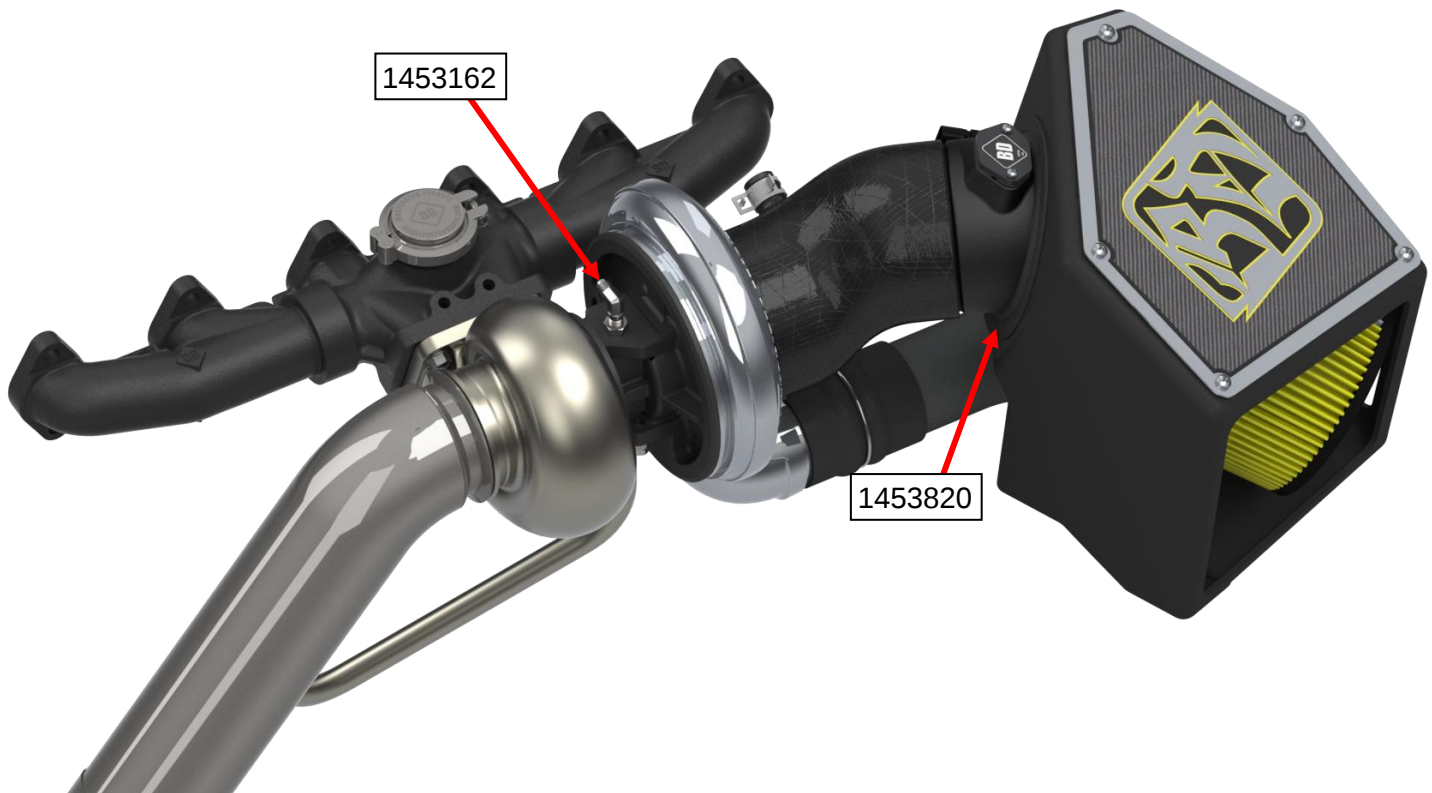


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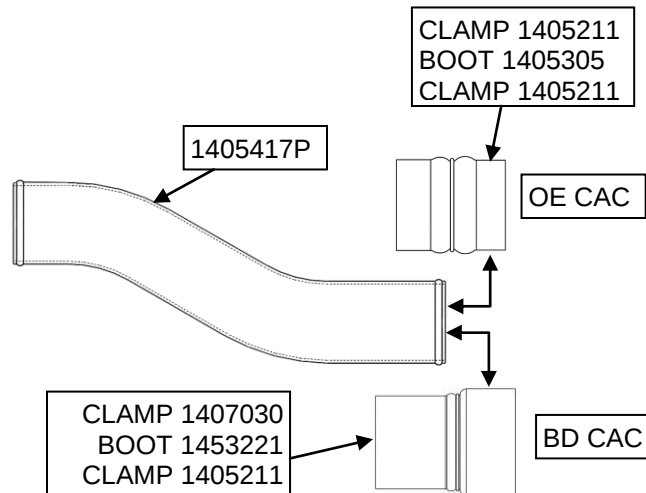
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CHARGE AIR COOLER PIPE

2003-2007



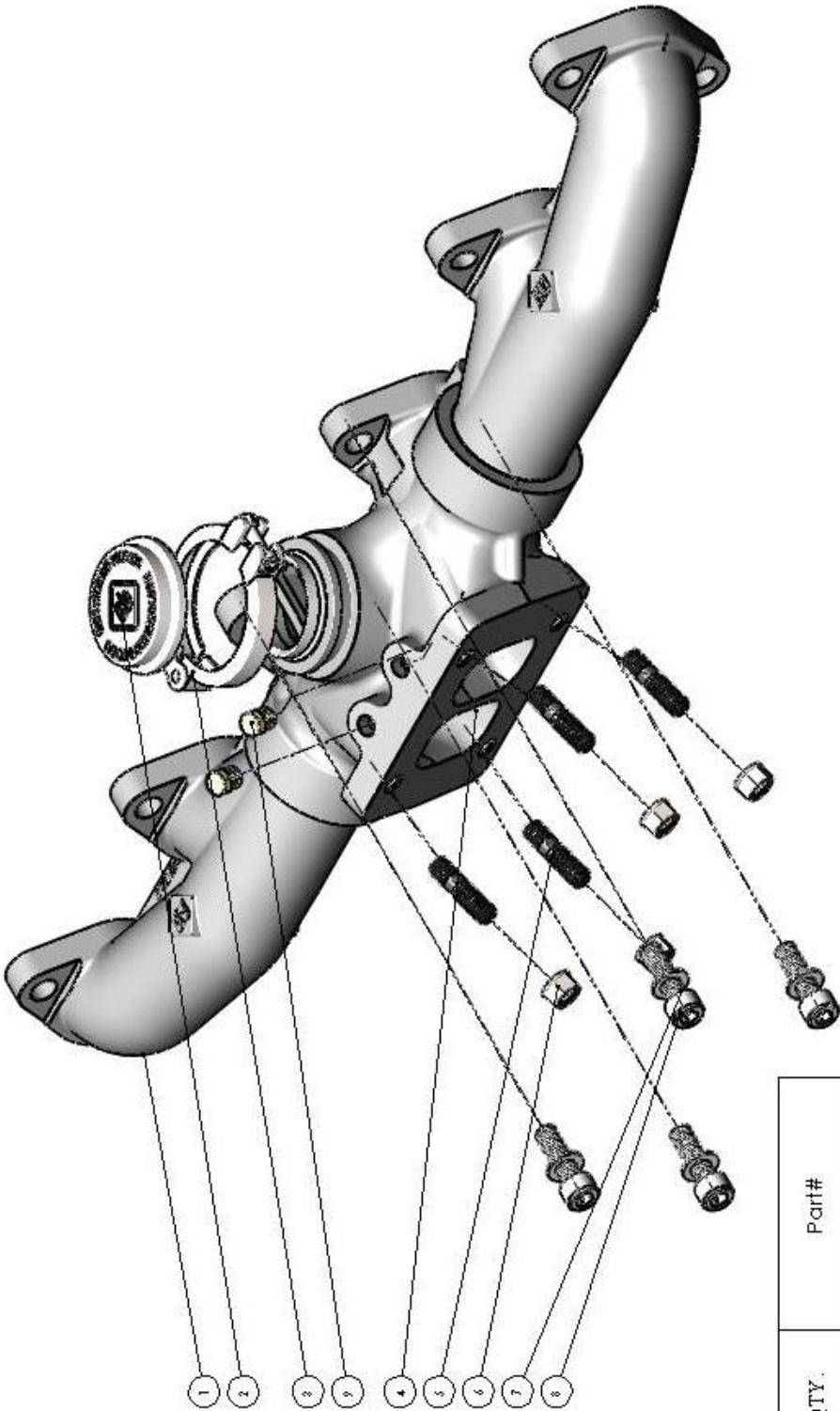
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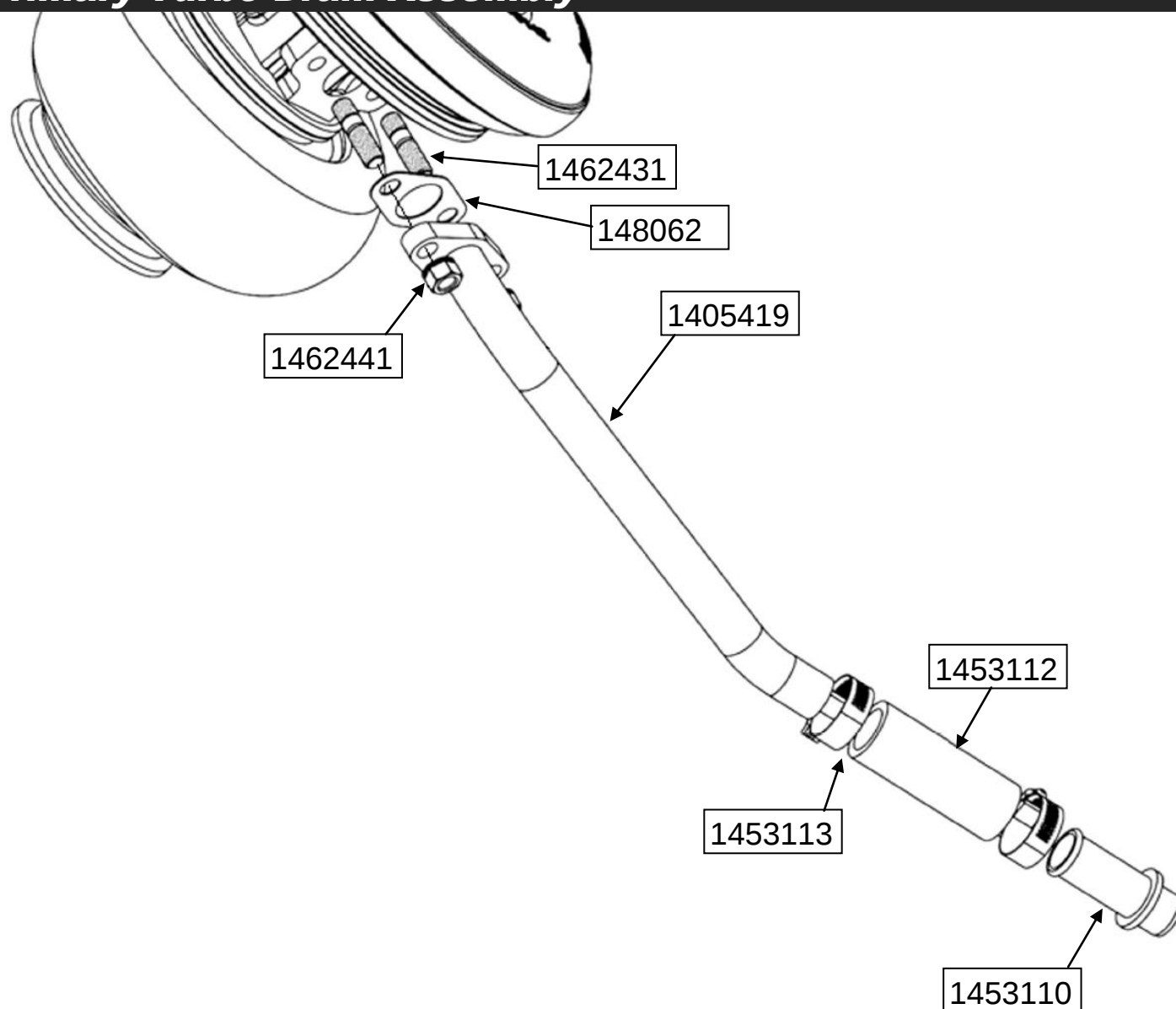
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Manifold assembly



ITEM NO.	QTY.	Part#
1	2	1405972
2	1	1405975
3	1	1405969
4	1	1405974-T4 or T6
5	4	1462430
6	4	1462441
7	4	FT-11509452
8	4	1405981
9	2	1200208

Primary Turbo Drain Assembly



Options

Description	Part #
BD Torque Converter 2003-2007	1070217X
BD HD Transmission	CALL
BD Stroked CP3 Pump 2008-2012	1050500
BD Injectors	CALL
BD Intercooler 2003-2009	1042525
BD Staging Limiter	1057720 / 721

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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 of your truck.

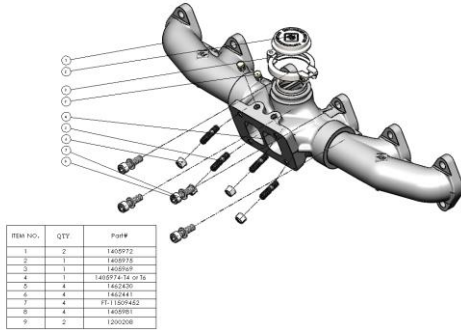
DODGE 5.9L GENERAL KIT				
1405415	1453726-1	FT-0173590	1453726-2	1405416
				
<i>Intake tube S400</i>	<i>Gasket; Dodge MAF</i>	<i>#8 Pan Hd Screws</i>	<i>Gasket; Dodge IAT 5.9L</i>	<i>Intake Boot</i>
Qty: 1	Qty: 1	Qty: 4	Qty: 1	Qty: 1
1456739	1453115	1453130-B		1453162
				
<i>5/8" Barbed Plug</i>	<i>Oil Feed Adapter (1/8MPT x -6MJIC)</i>	<i>Turbo Oil Feed Hose (-6 JICM 90° x -6 JICF)</i>		<i>Primary Turbo Oil Inlet Adapter (1/4MPTx-6JIC)</i>
Qty: 1	Qty: 1	Qty: 1		Qty: 1
1453112	1462441	1462431	1405419	
				
<i>Oil Drain Hose</i>	<i>Nut; M10-1.5</i>	<i>Stud M10-1.5 x 025</i>	<i>Drain tube; S400 Single 6.7L</i>	
Qty: 3"	Qty: 2	Qty: 2	Qty: 1	

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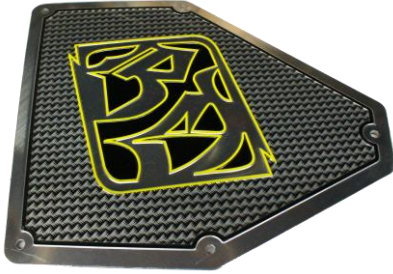
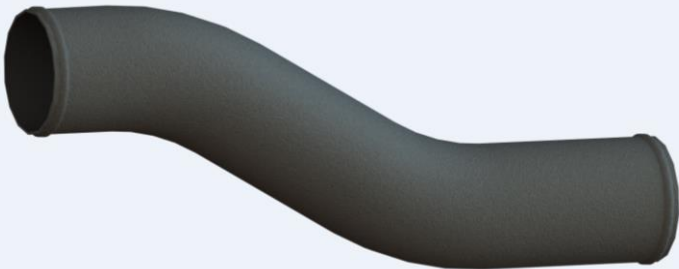
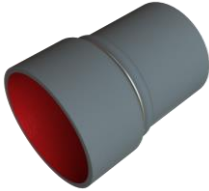
1453110		1045996-T4		1045986-T4	
					
Turbo Drain		Manifold; with Wastegate Port		Exhaust Manifold Gasket Set	
Qty: 1		Qty: 1		Qty: 1	
1453137	1302198	1453113	1456740	1453138	
					
10mm O-Ring	Spring Clamp	Oil Drain Clamps	MAF Blocker Plate	Plug; ORB M12-1.5	
Qty: 1	Qty: 1	Qty: 2	Qty: 1	Qty: 1	
1453522		1405418-2		1405418-1	
					
S400 Housing Blanket		Downpipe; S400 Single 2of2		Downpipe; S400 Single 1of2	
Qty: 1		Qty: 1		Qty: 1	
1100740		1405237	1453602	1300131	
					
4 inch Stainless Steel Down Pipe Clamp		Reducer Clamp 4 inch-6 inch		Cable Tie (Med)	
Qty: 2		Qty: 2		Qty: 4	

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1405412		1405412-1		2925	
					
<i>Intake Box S400</i>		<i>Lid: Air Box</i>		<i>Air Box Filter</i>	
Qty: 1		Qty: 1		Qty: 1	
1130183	1130182	1453820	1405412-2	1405422	1401574
					
<i>Lockwasher; M6</i>	<i>Bolt; M6-1.0x16mm</i>	<i>Air Intake Seal (in)</i>	<i>Air Box Bracket 5.9L</i>	<i>Screw M6-1.0 X 12</i>	<i>Acorn Nut; M6</i>
Qty: 2	Qty: 2	Qty: 20	Qty: 1	Qty: 5	Qty: 2
1456737		1456738	1407030	1405211	
					
<i>Unut; M8-1.25 long</i>		<i>Bolt; M8-1.25x30mm</i>	<i>Clamp (3.50")</i>	<i>Clamp (3.00-3.38")</i>	
Qty: 2		Qty: 2	Qty: 1	Qty: 4	
1405417P			1453221	1405305	
					
<i>Tube; CAC inlet S400 LM PC</i>			<i>Boot 3.0-3.5"</i>	<i>3 x 4"L Boot</i>	
Qty: 1			Qty: 1	Qty: 2	

If you believe you are missing any parts that are displayed here, please contact BD Power at 1-(800)-887-5030 for replacements.

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Pre-Installation

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

Also note that a stock transmission will not handle this power and torque, transmission modifications are a must.

REMOVAL



It is recommended to upgrade to head studs and a performance transmission when using this kit.

1. Secure the vehicle from rolling, disconnect the negative leads on both batteries and remove the passenger side inner fender.

2. Raise vehicle on hoist.

3. Disconnect the exhaust pipe from the turbocharger elbow.

4. Remove the bolts from the turbocharger oil drain tube.

5. Disconnect wastegate command valve connector.

6. Remove two lower turbocharger mounting nuts.

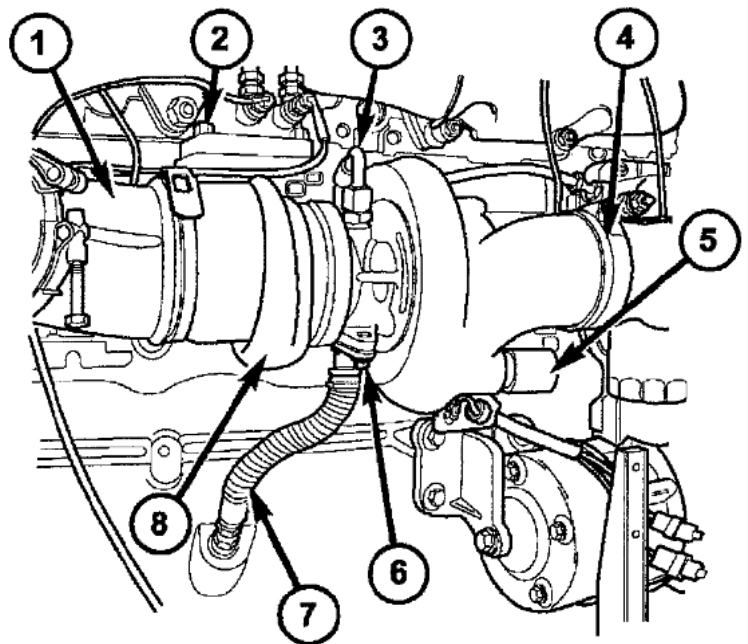
7. Lower vehicle.

8. Disconnect the turbocharger air inlet hose.

9. Disconnect the turbocharger oil supply line from the turbocharger.

10. Disconnect the charge air cooler inlet pipe from the turbocharger compressor outlet.

11. Remove two upper turbocharger mounting nuts.



1 - TURBOCHARGER EXHAUST ELBOW

2 - TURBOCHARGER

3 - OIL SUPPLY LINE

4 - TURBOCHARGER COMPRESSOR OUTLET

5 - ELECTRONICALLY CONTROLLED WASTEGATE COMMAND VALVE

6 - TURBOCHARGER OIL DRAIN TUBE BOLT

7 - TURBOCHARGER OIL DRAIN TUBE

8 - TURBINE HOUSING

G03564691

12. Remove the turbocharger and gasket from the exhaust manifold.

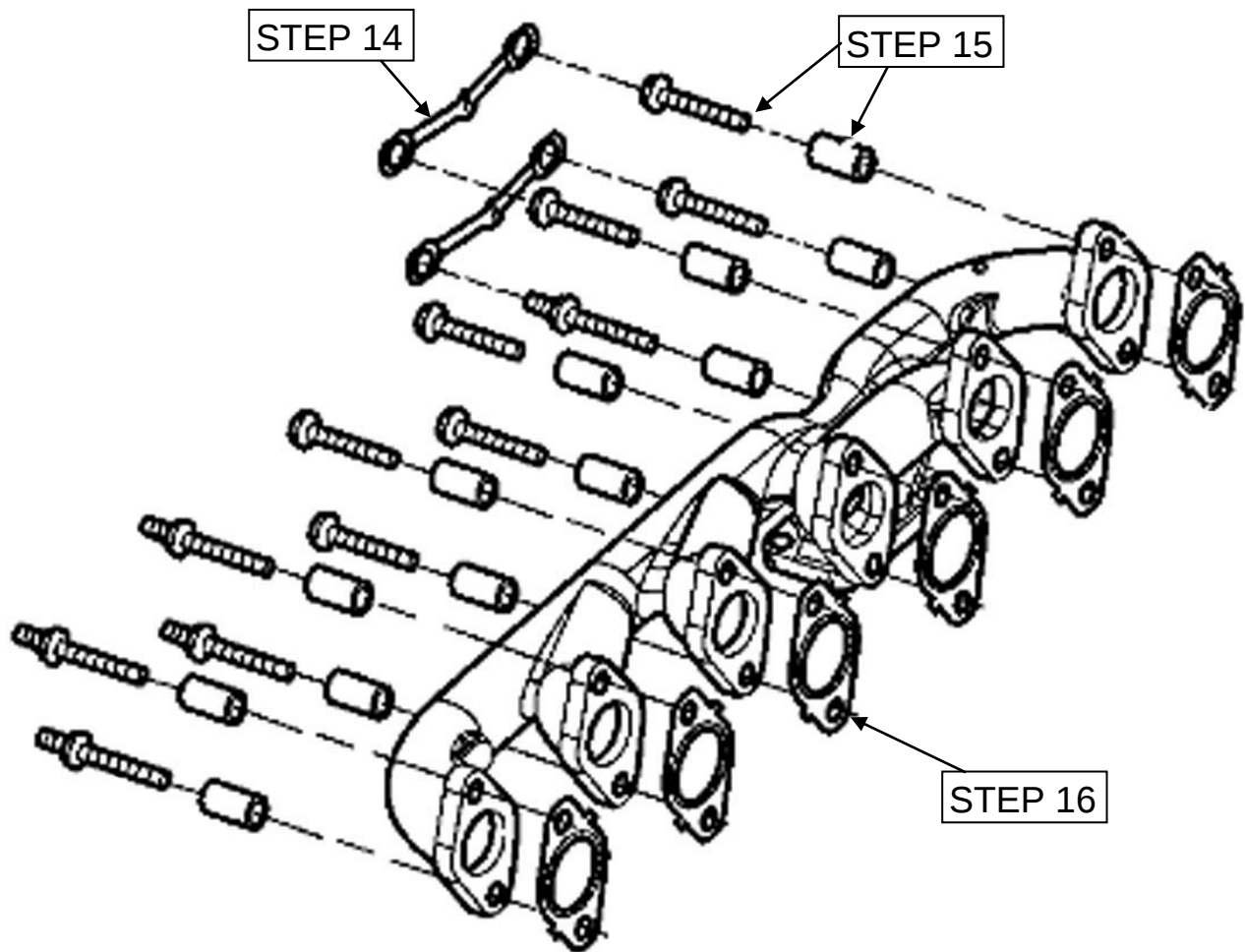
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13. Remove the cab heater return pipe nuts from the exhaust manifold stud. Position the tube out of the way. Remove the heat shield.



14. Remove the exhaust manifold bolt lock plates.

15. Remove the exhaust manifold-to-cylinder head bolts and spacers.

16. Remove the exhaust manifold and gaskets.

17. Disconnect and remove the grid heater relay & bracket.

INSTALLATION

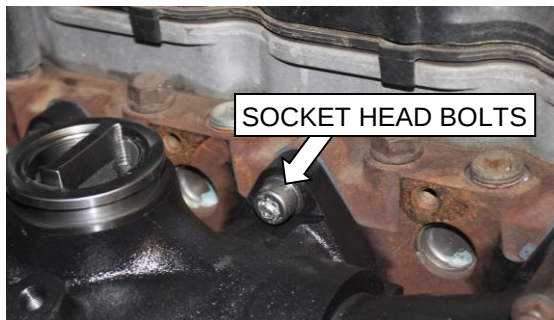
1. Install the oil drain adapter into the motor, note this is a press fit and will require to be tapped with a punch to completely seat the flange.

Optional apply retaining compound onto the adapter before inserting into the block.



2. Clean mating surface on cylinder head exhaust ports.

Install the manifold with the supplied gaskets (13mm socket) & (8mm allen socket). Tighten the exhaust manifold bolts to (37 ft. lbs.) Starting from the center and moving in an outward pattern.



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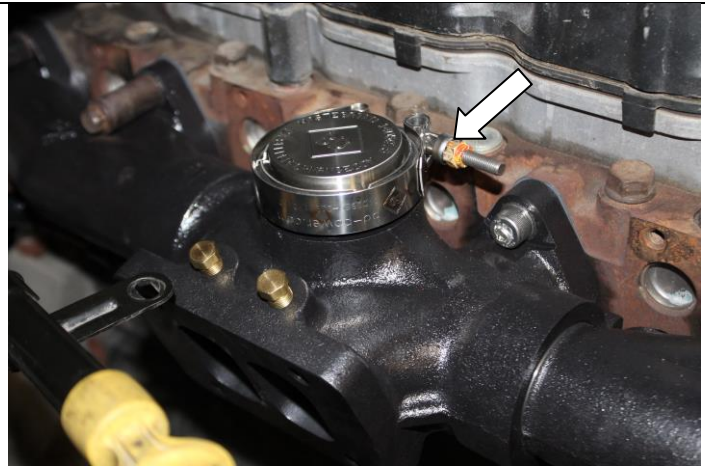
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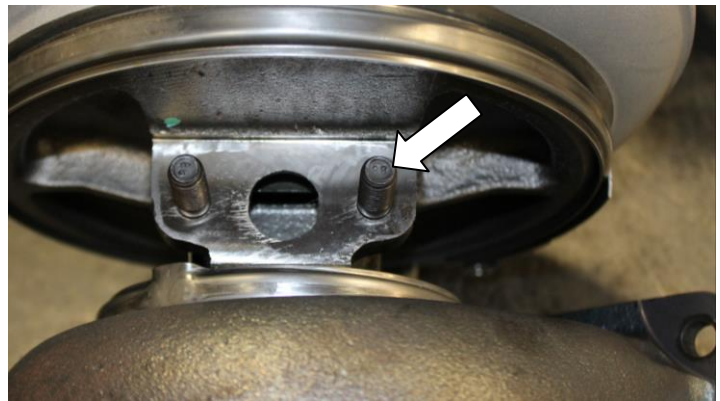
3. Install the turbosmart hypergate 45mm or wastgate blocker plate onto the manifold using the supplied clamp. (11mm socket)

If not using a pyro, insert the two 1/8" NPT plugs into the manifold.



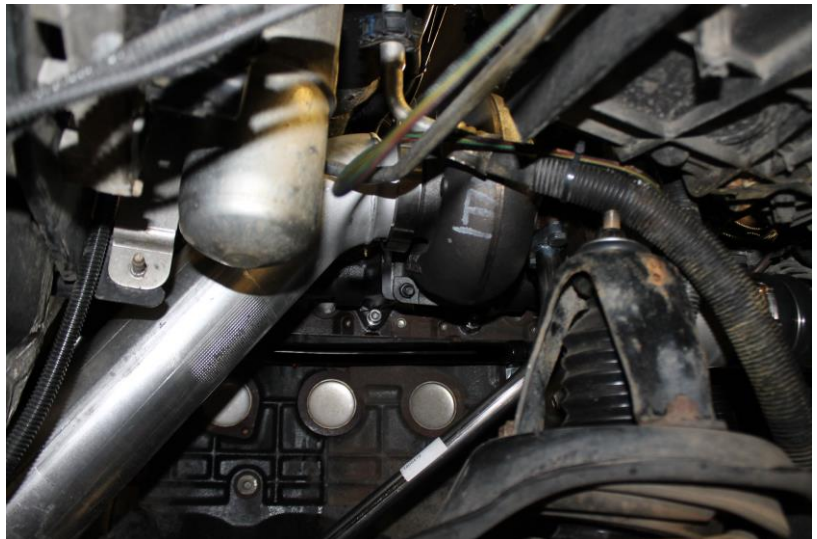
4. Install the oil drain gasket & two M10 X 25mm studs into the turbo.
5. Install the four supplied studs into the manifold (short thread into manifold) with the gasket.

Mount the turbo onto manifold, fasten with the mounting nuts provided (14mm wrench). Torque to 32 ft/lbs.



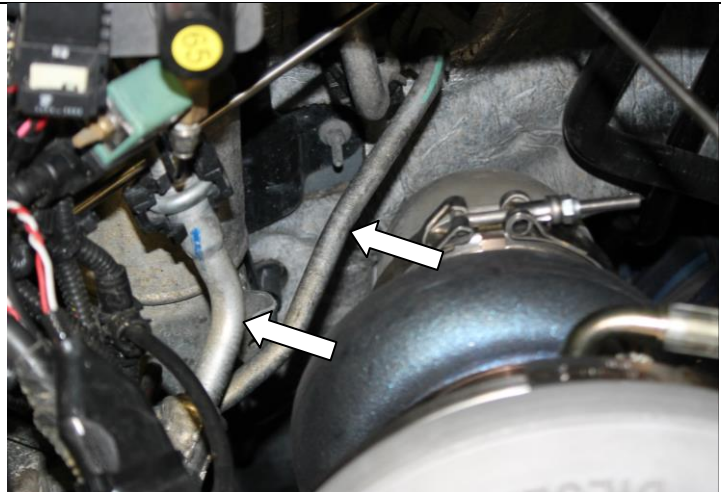
6. Test fit the downpipe to mark and cut the exhaust system to the correct length.
7. Attach the down pipe to the turbine housing using the v-band clamp. (1453602)

The second part of the two piece down pipe will need to be clamped with the two (1100740) clamp(s) or welded to the rest of the exhaust system. **If you are using an exhaust brake, these connections will need to be welded.*



DO NOT ADJUST THE DOWN-PIPE ONCE THE V-BAND CLAMP HAS BEEN TIGHTENED. FAILURE TO ADHERE TO THIS WILL DESTROY THE V-BAND CLAMP AND ITS ABILITY TO SEAL.

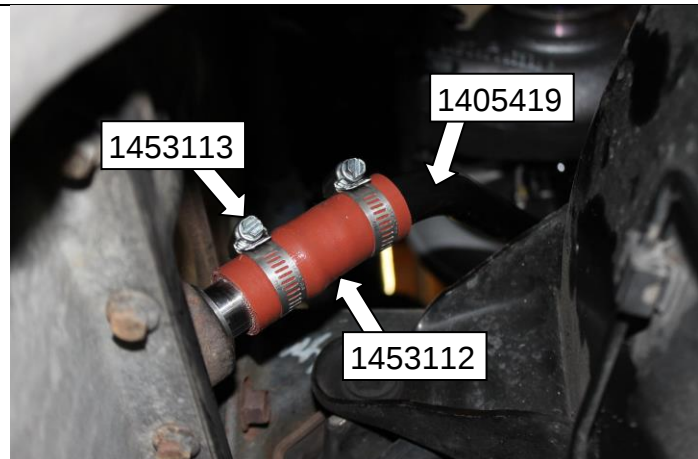
8. The AC lines will need to be reshaped to avoid chaffing against the turbine housing/downpipe. Reshape these carefully out of the way.
9. Install the turbine housing blanket onto the turbine.



10. Slide the hose & clamps onto the oil drain.

Fasten the oil drain to the turbo using the mounting nuts (1462441) provided (14mm wrench) and the hose to the drain adapter.

Tighten clamps with an 8mm socket.



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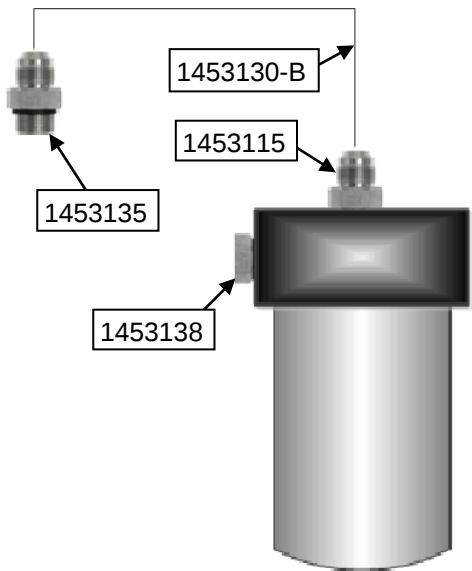
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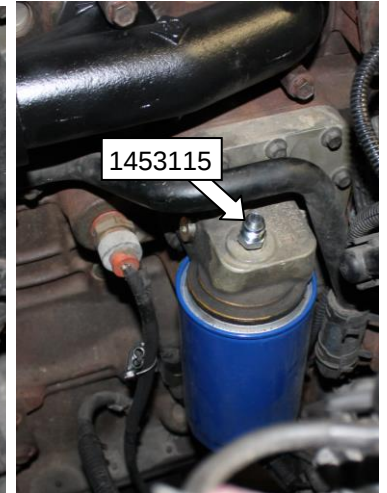
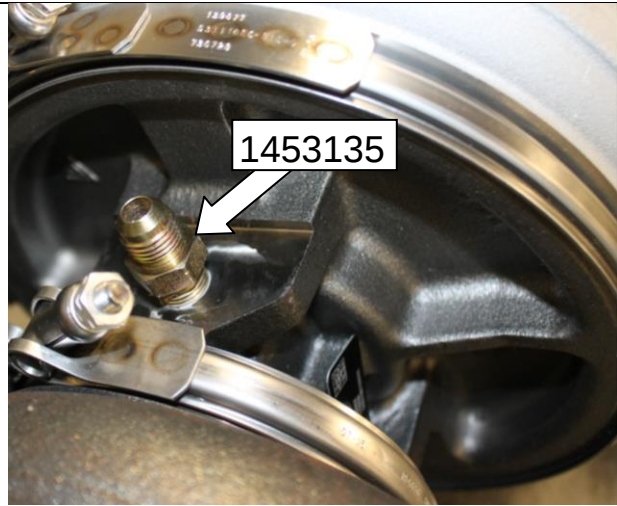
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11. Preoil the turbo then install the oil inlet fitting (1453135) using a 17mm deep socket to 27ft/lbs, and the oil filter housing fitting (1453115) using a 14mm wrench. (outer most port)

Then install the oil feed line (1453130-B) to the turbo and oil filter housing.

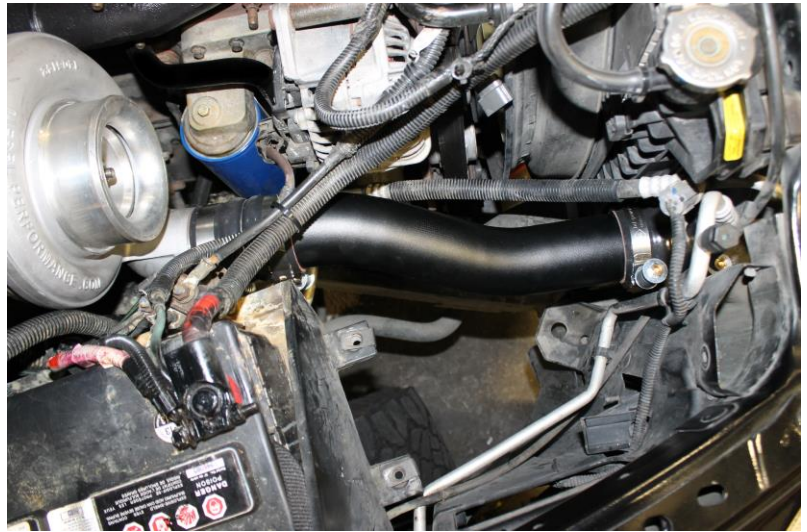


Install the plug (1453138) with oring (1453137) for the oil inlet into the back side of the oil filter housing (6mm Allen socket).



12. Install the passenger side CAC pipe.

Please refer to the Charge Air Cooler Pipe diagram on page 5 for the correct pipe and boot combination.

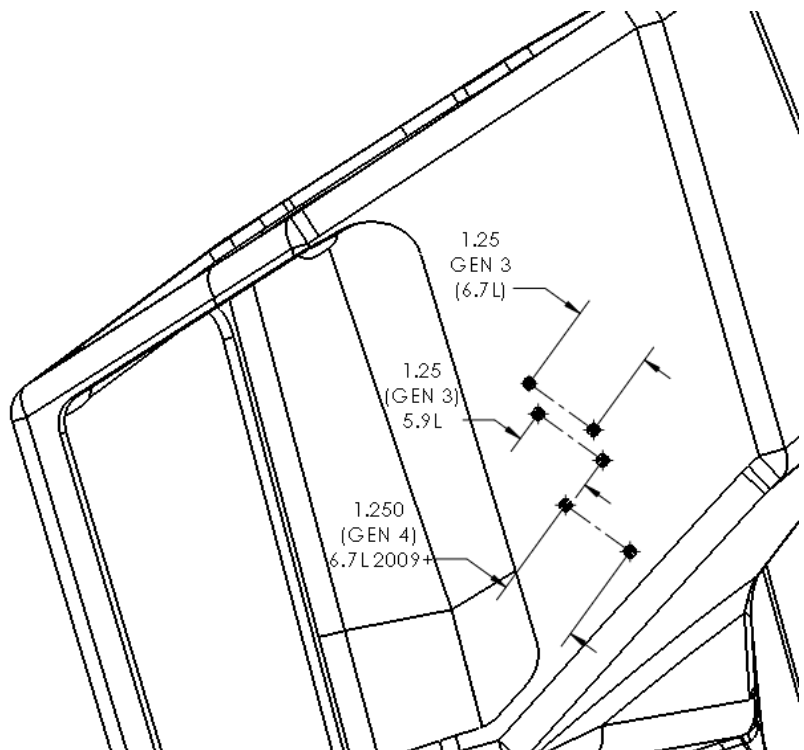


Ensure all connections and mounting hardware are tightened correctly at this point. Reinstall grid heater relay & bracket to OE location and connect.

13. Locate the mounting position for your model truck from the diagram (to right).

Then drill the two mounting holes using a 6.6mm (G size) or 1/4" drill bit, in the appropriate dimpled spots.

Install the bracket onto the airbox using the supplied bolts (1130182), lock washer (1130183) and acorn nuts (1401574).



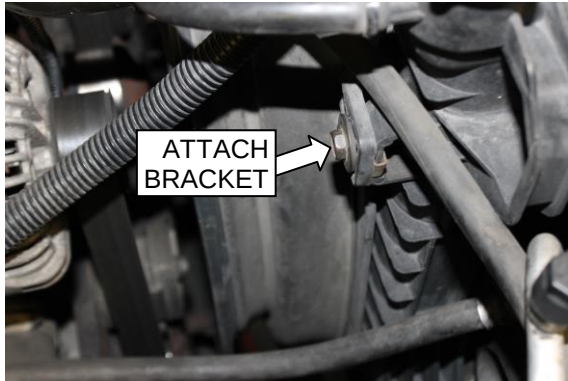
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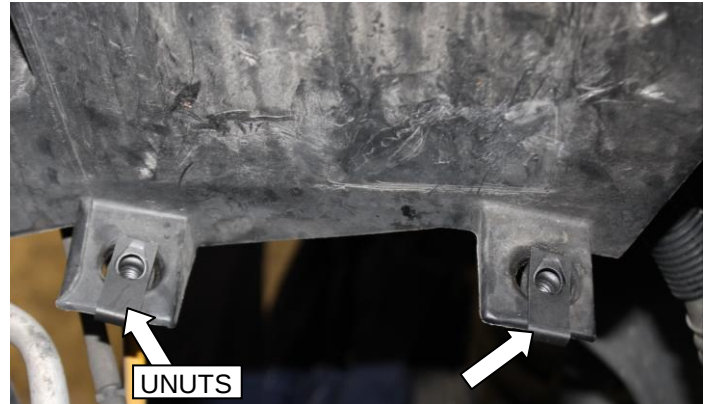
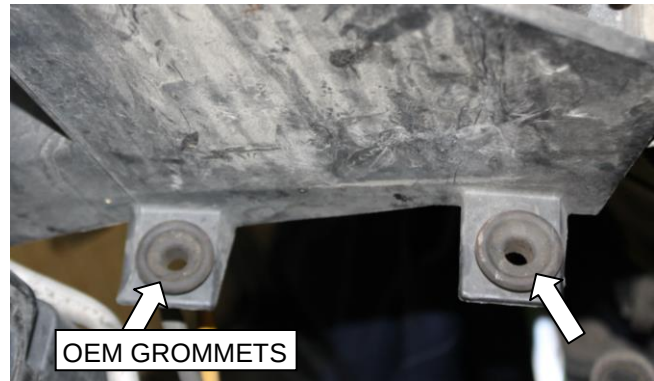
14. Remove the stock air box mounting grommets and install the supplied u-nuts (1456737).



Mount the airbox assembly into the vehicle with the supplied 1456738 bolts and OE radiator shroud bolt.

Install the airbox seal.

NOTE: The start/end of the seal should be at the bottom.



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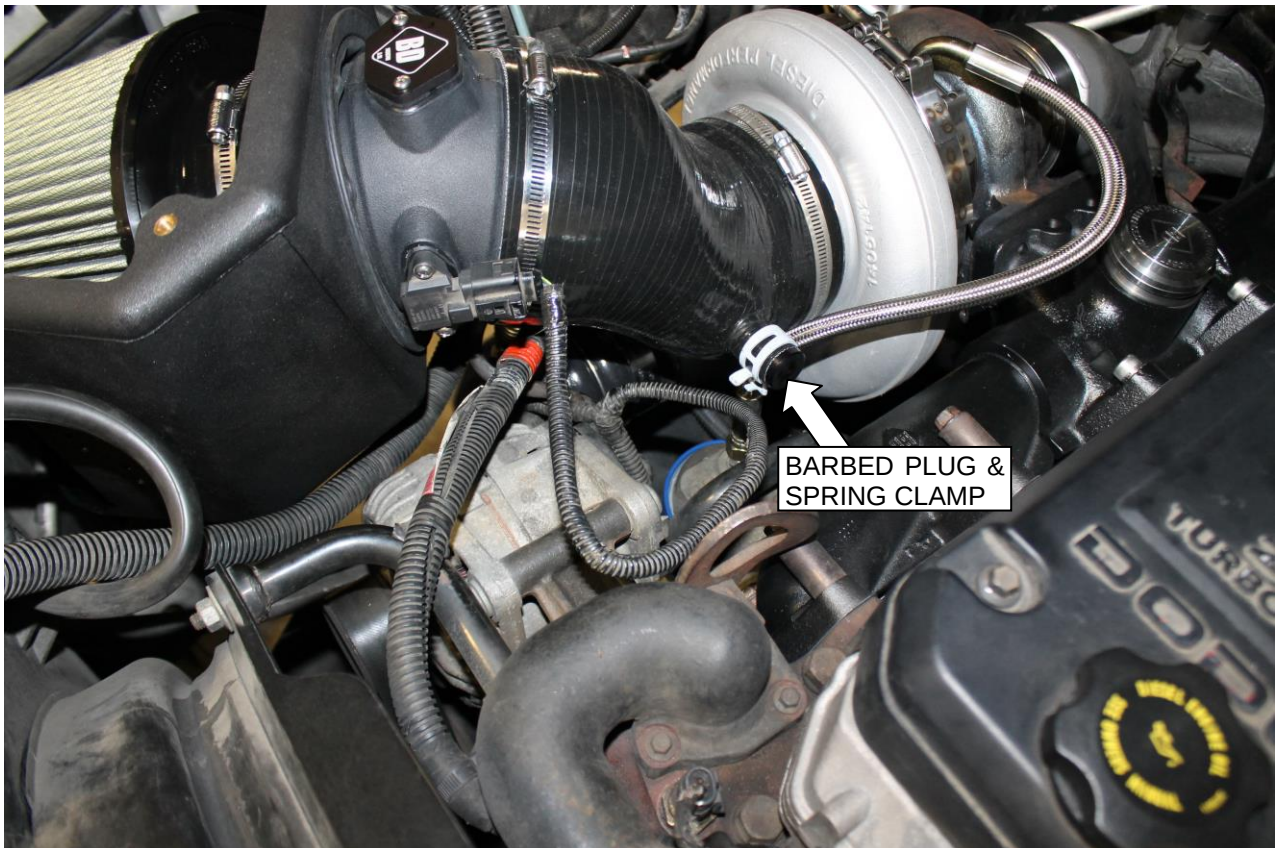
Phone: 604-853-6096 | Fax: 604-853-8749 | Internet: www.bd-power.com

15. Remove IAT from OEM airbox and install onto the BD intake tube (1405415) along with the MAF blocker plate using the supplied gaskets and supplied #8 pan screws.
(FT-0173590)
(Philips head screwdriver).



16. Place the air filter in the airbox and connect the plastic intake tube to the air filter. Install the intake boot (1405416) onto the turbo ensuring the boot nipple is on the bottom side closest to the turbo compressor housing. (part # facing downward)

Rotate the boot and intake tube to proper alignment and tighten clamps (1405237). Install 5/8" barbed plug with spring clamp (1302198) install boot nipple. Adjust oil feed and intake boot to avoid contact.



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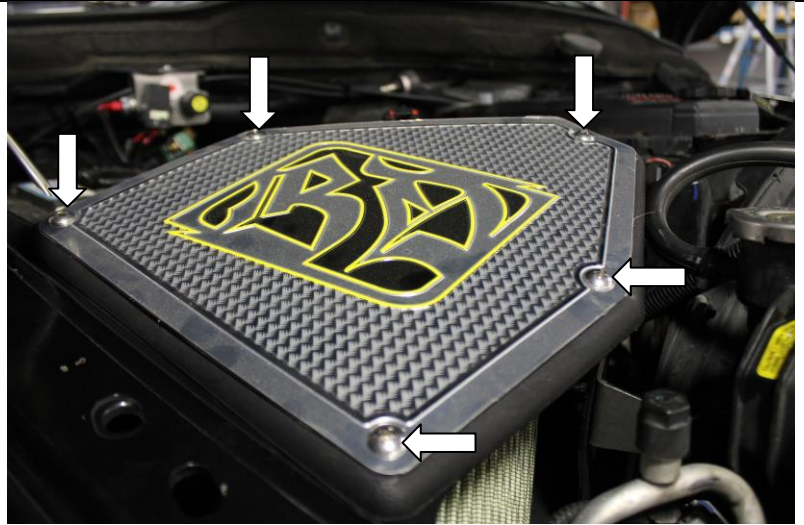
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17. Connect IAT harness to sensor.

Place the lid on top and fasten with the hardware included.

(1405422)

(Philips head screwdriver)



18. Reinstall the inner fender & wheel onto the vehicle, reconnect battery terminals and check fluids.

8mm Socket



19. Lower vehicle & remove from hoist.

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.

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