



BD TrackMaster S400

2008-2012 Dodge HPCR

Installation Instructions

1045701	2008-2009 Dodge 6.7L TMS400
1045702	2010-2012 Dodge 6.7L TMS400
1045704	2013-2015 Dodge 6.7L TMS400

PLEASE READ ALL INSTRUCTIONS BEFORE INSTALLATION.

NOTE: This kit will require a race tuner and deletion of the EGR cooler.

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. For towing applications please refer to our 6.7L RT700 & RT850 Twin Kit’s; part series 1045480x”

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

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 6psi pressure drop across the cooler. You would only see 44psi 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.

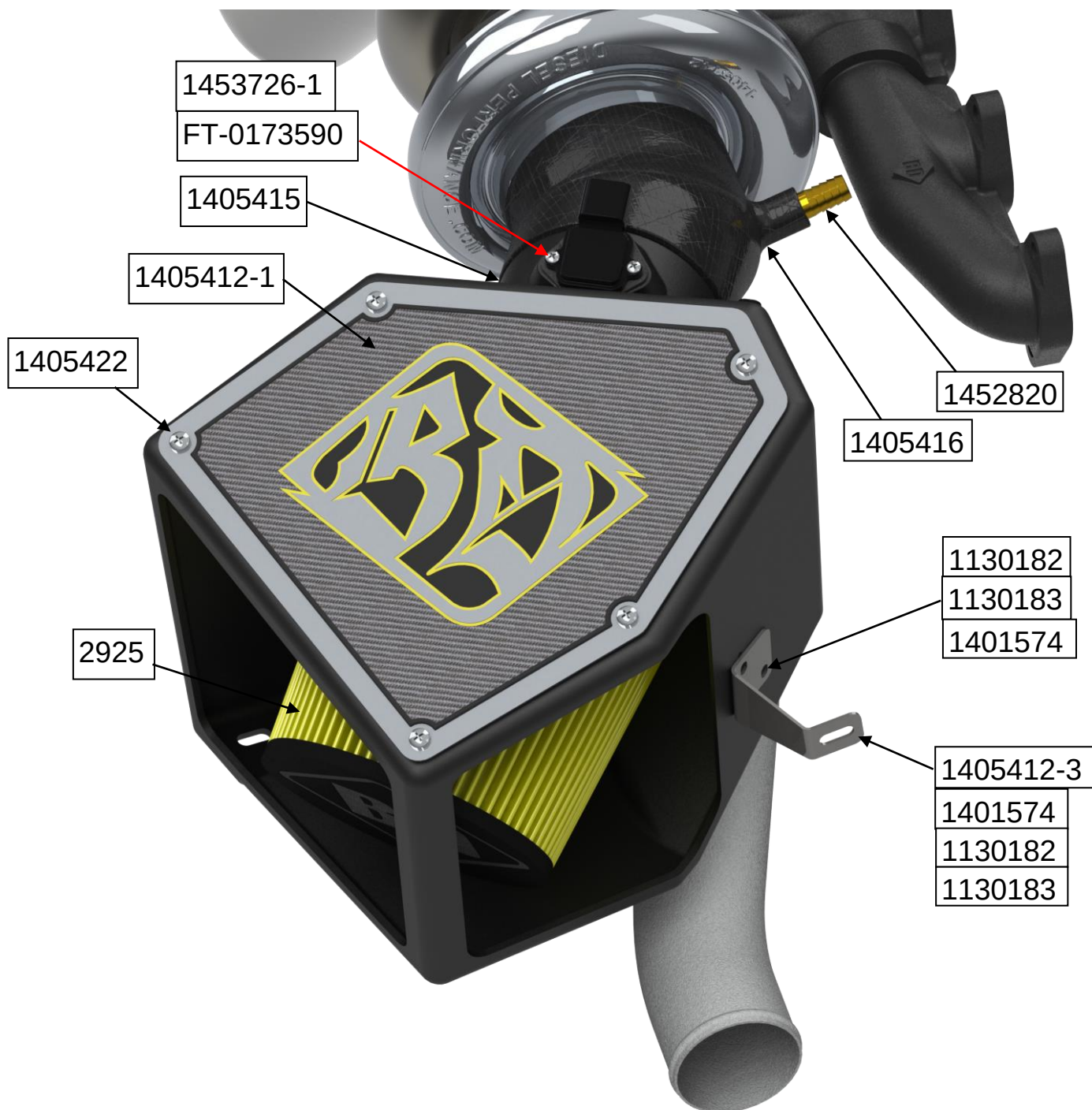
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Engine:	Dodge 6.7	Max Compressor Outlet Pressure: 50psi				*Not intake manifold pressure
Turbo	S467/83					
Turbine A/R	Tuning Only	Tuning & 60 HP Injectors		Tuning & 90 HP Injectors		Tuning & 120 HP Injectors
0.9	Wastegate Needed	Wastegate Needed	Wastegate Needed	Wastegate Needed	Wastegate Needed	Wastegate Needed
1.0	Wastegate Needed	Wastegate Needed	Wastegate Needed	Wastegate Needed	Wastegate Needed	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)	Wastegate Needed	Wastegate Needed
1.25	No Wastegate Needed	No Wastegate Needed	No Wastegate Needed	No Wastegate Needed * Must not use highest tuning Levels (Street on H&S)	Wastegate Needed	Wastegate Needed
Engine:	Dodge 6.7	Max Compressor Outlet Pressure: 50psi				*Not intake manifold pressure
Turbo	S471/87					
Turbine A/R	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	No Wastegate Needed * Must not use highest tuning Levels (Street on H&S)	Wastegate Needed	Wastegate Needed
1.0	No Wastegate Needed	No Wastegate Needed	No Wastegate Needed	No Wastegate Needed * Must not use highest tuning Levels (Street on H&S)	Wastegate Needed	Wastegate Needed
1.1	No Wastegate Needed	No Wastegate Needed	No Wastegate Needed	No Wastegate Needed	Wastegate Needed	Wastegate Needed
1.25	No Wastegate Needed	No Wastegate Needed	No Wastegate Needed	No Wastegate Needed	No Wastegate Needed	No Wastegate Needed
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 test 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 cause turbo over speed						

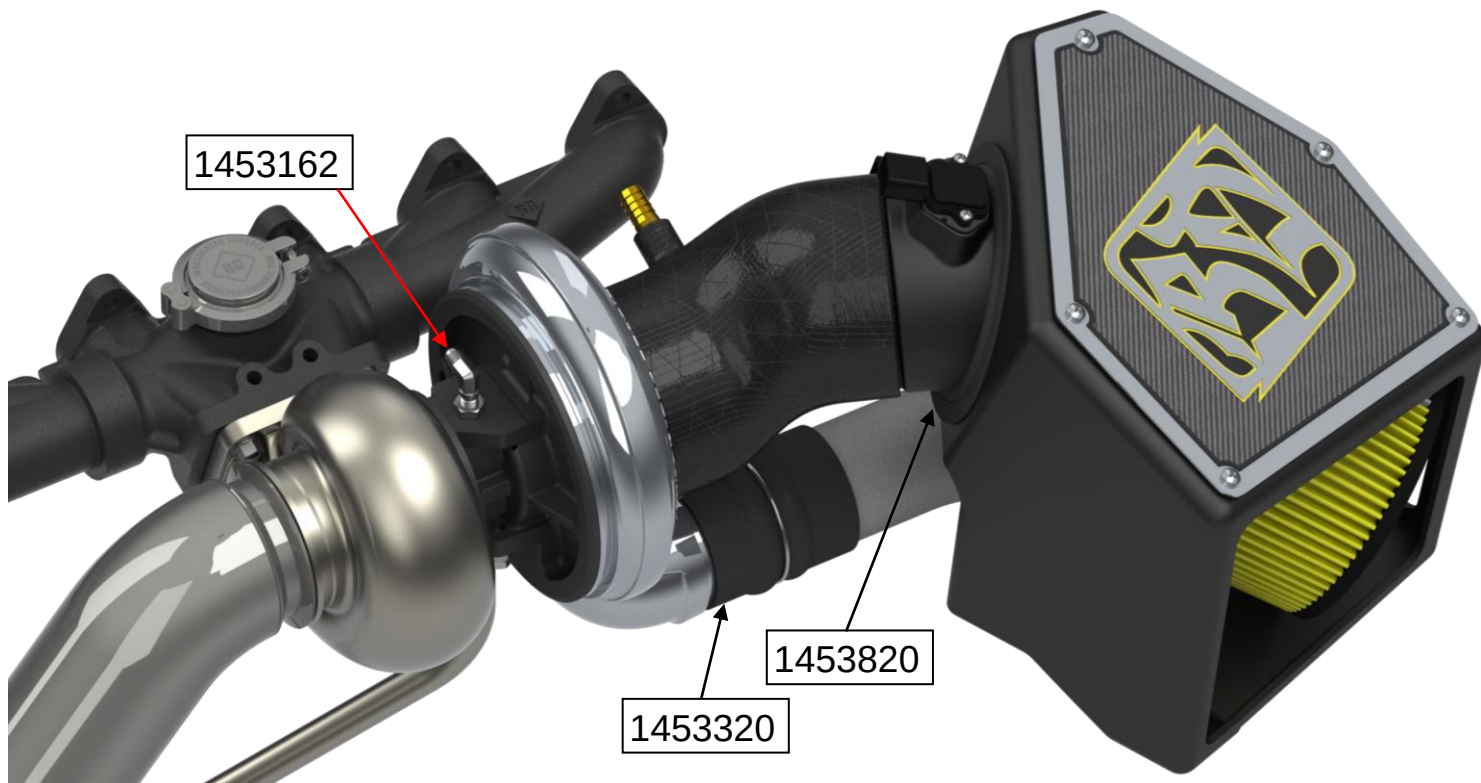


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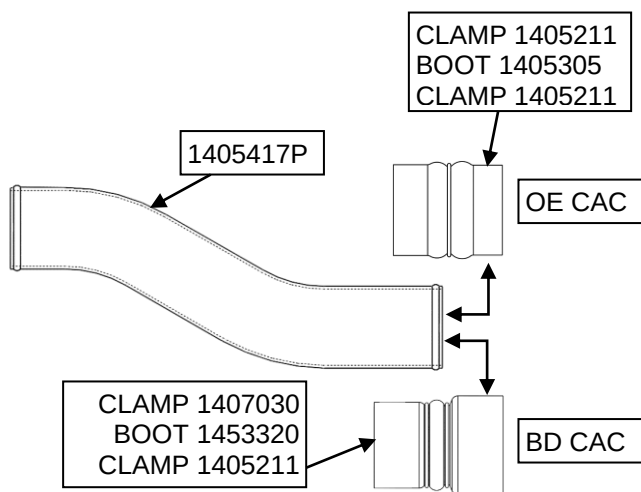
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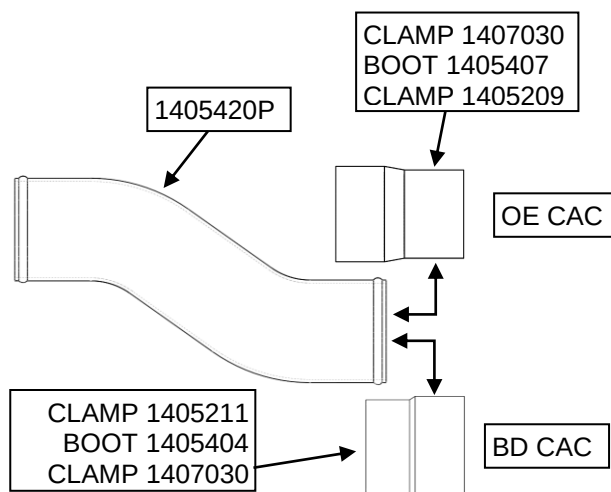


CHARGE AIR COOLER PIPE

2008-2009



2010-2012

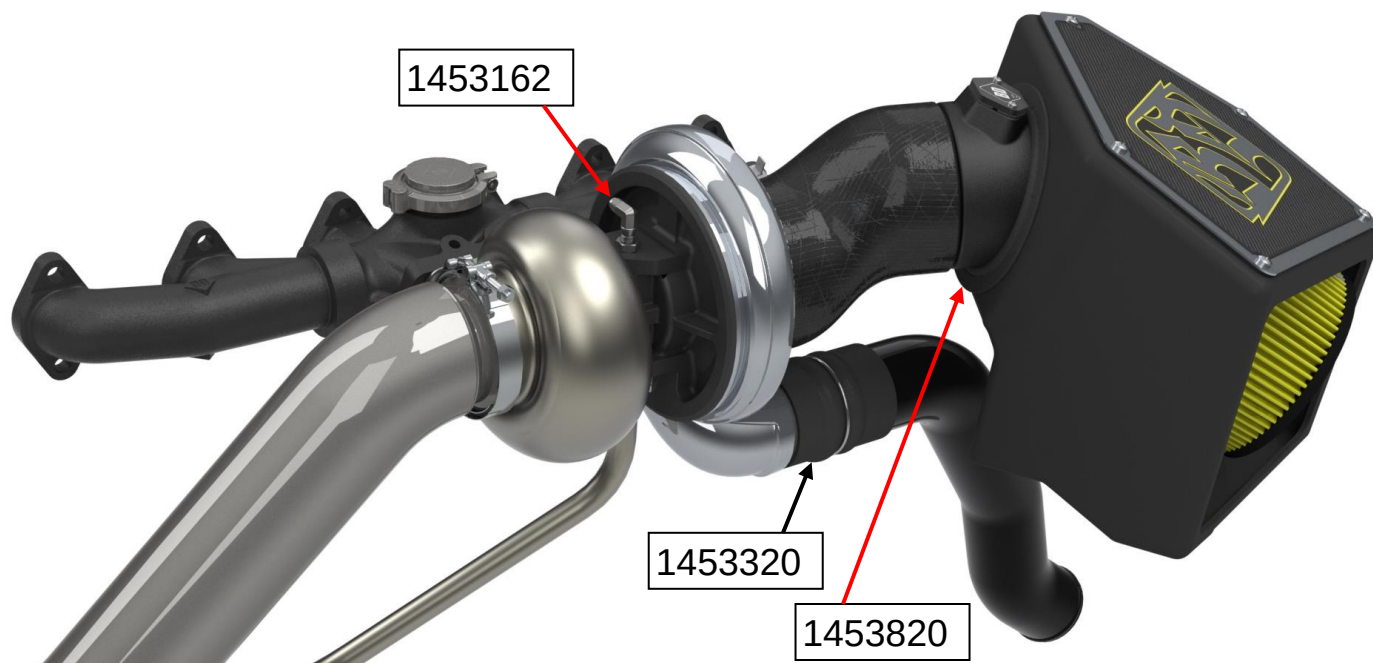


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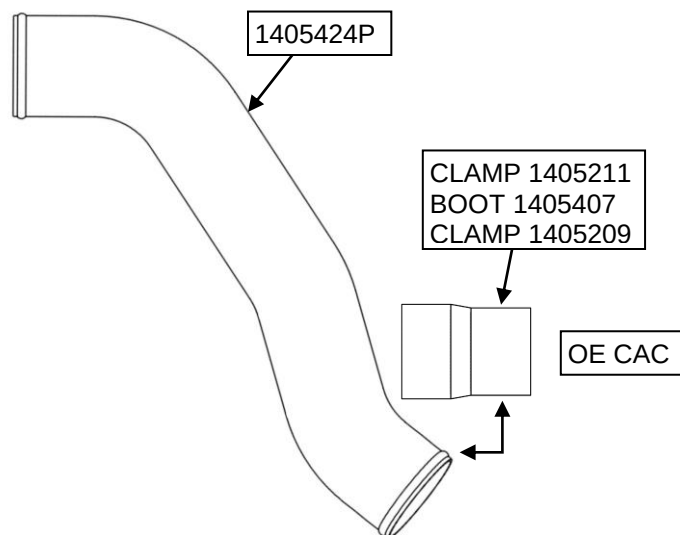
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CHARGE AIR COOLER PIPE

2013-2015



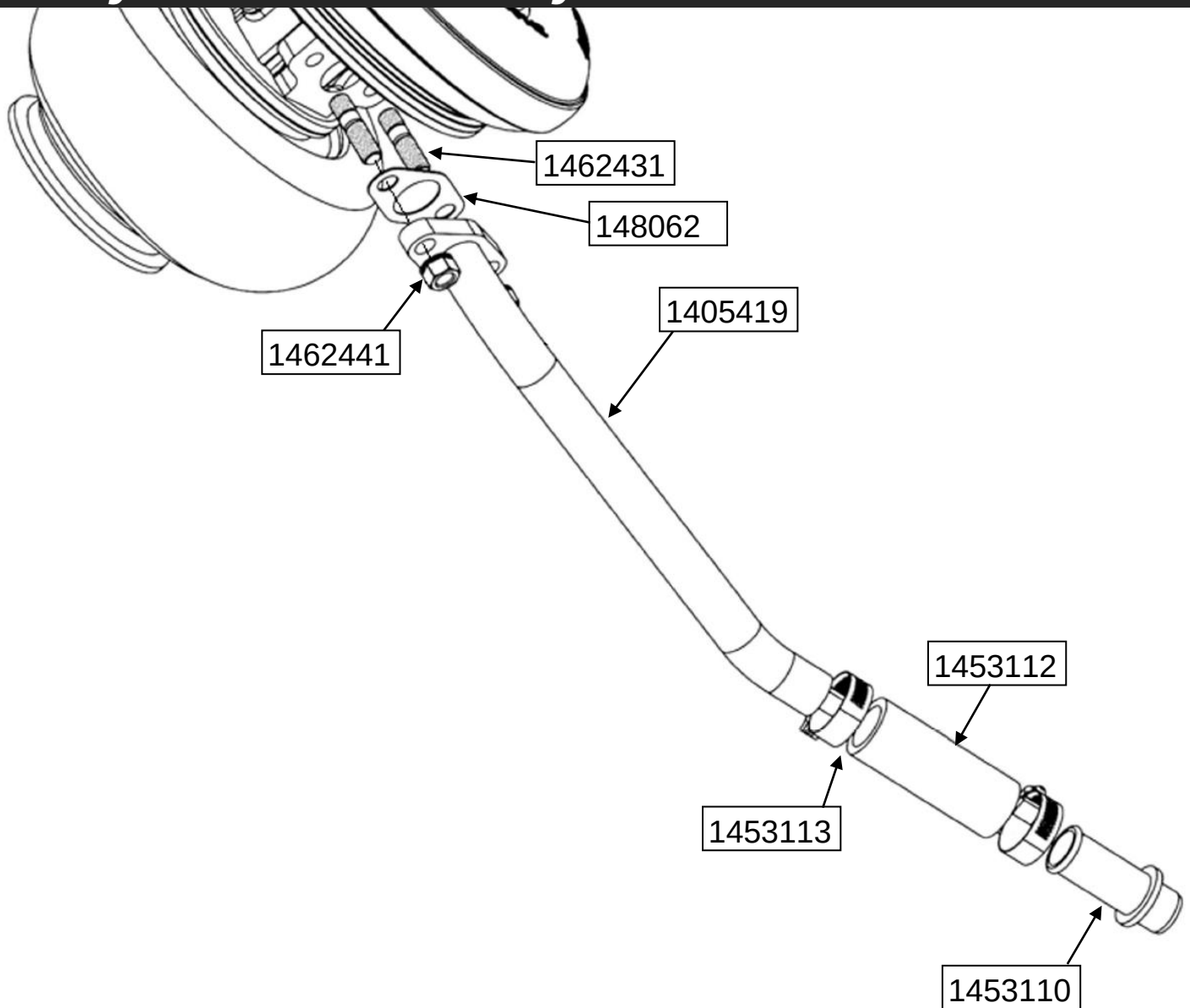
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Primary Turbo Drain Assembly



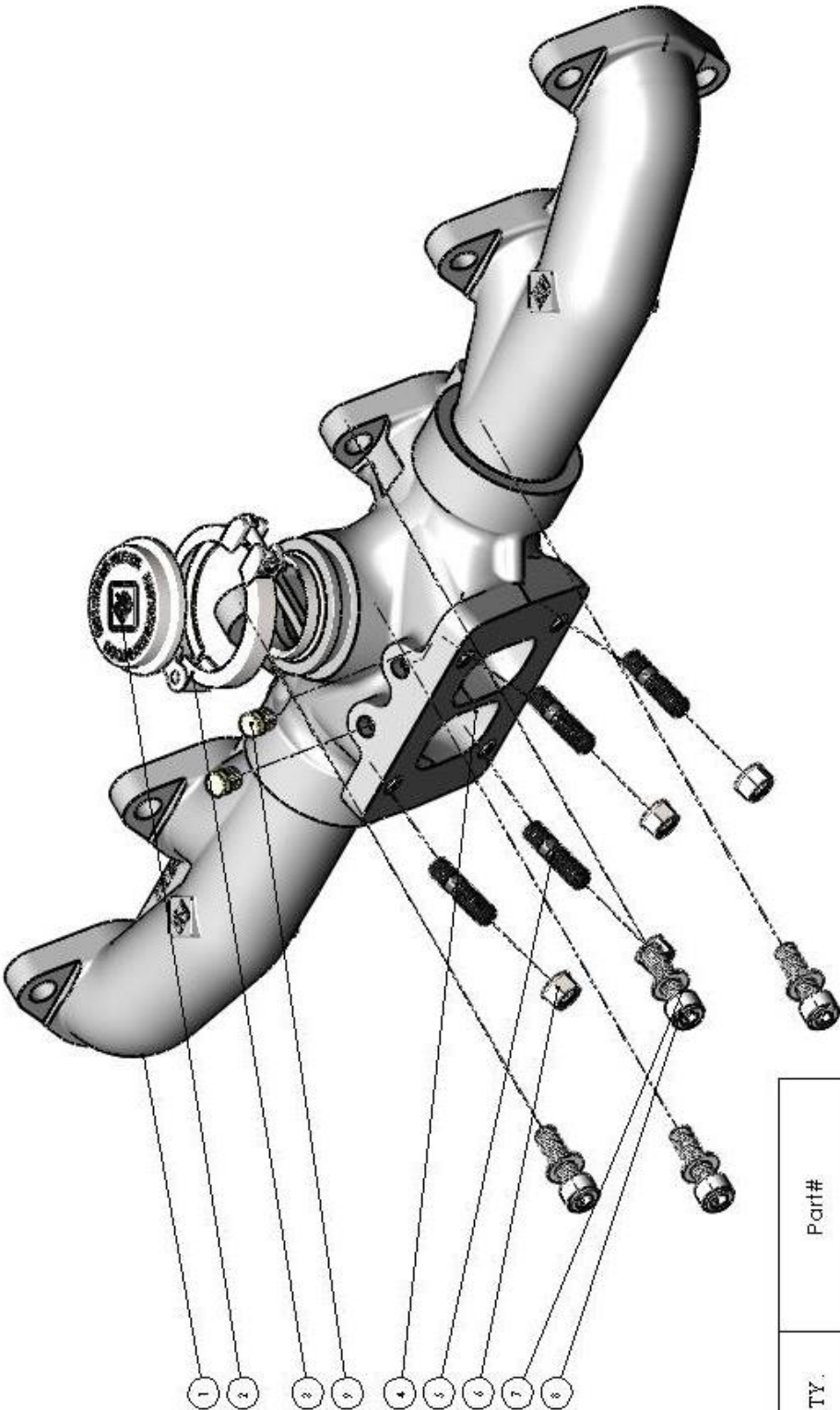
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Manifold assembly



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

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.

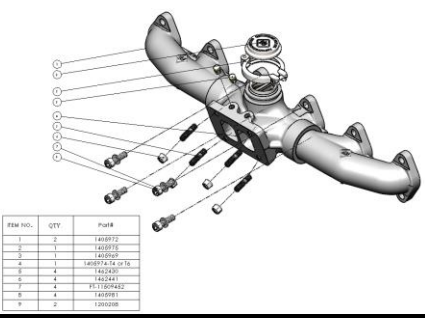
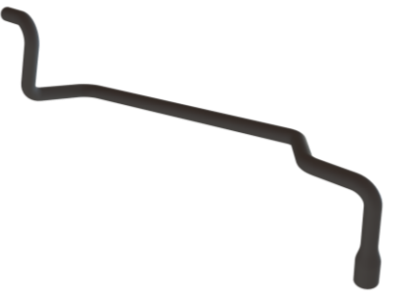
DODGE 6.7L GENERAL KIT				
1405415	1453726-1	FT-0173590	1453726-3	1405416
				
<i>Intake tube S400</i>	<i>Gasket; Dodge MAF</i>	<i>#8 Pan Hd Screws</i>	<i>Gasket; Dodge IAT 6.7L</i>	<i>Intake Boot</i>
Qty: 1	Qty: 1	Qty: 3	Qty: 1	Qty: 1
1452820	1453115	1453130-B		1453162
				
<i>5/8" Double Barb</i>	<i>Oil Feed Adapter (1/8MPT x -6MJIC)</i>	<i>Primary 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>Adapter Elbow Nut</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	
					
Primary Turbo Drain		Manifold; with Wastegate Port		Exhaust Manifold Gasket Set	
Qty: 1		Qty: 1		Qty: 1	
1120125	1405976	1453113	1120124	1400113	1453138
					
Insulated Clamp 1" ID	M10 Spacer	Oil Drain Clamps	M8-1.25 x 20mm Flange Bolt	Insulated Clamp 1.25" ID	Plug; ORB M12-1.5
Qty: 2	Qty: 1	Qty: 2	Qty: 2	Qty: 1	Qty: 1
1453728		1453137	1302198	1120126	1453724
					
5/8" Molded Coolant Hose		10mm O-Ring	Hose Clamp	Gear Clamp	5/8" Molded CCV Hose
Qty: 1		Qty: 1	Qty: 4	Qty: 1	Qty: 1
1405418-2		1405418-1		1453522	
					
Downpipe; S400 Single 2of2		Downpipe; S400 Single 1of2		Turbine Housing Blanket	
Qty: 1		Qty: 1		Qty: 1	

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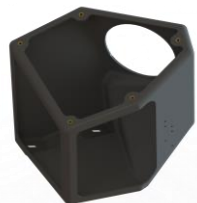
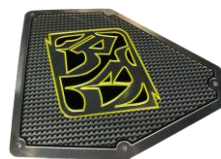
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1100740	1405237	1453602	1900037
			
4" Stainless Steel Down Pipe Clamp	Reducer Clamp 4"-6"	Down Pipe V-Band Clamp	M6-1.0 x 12mm Flange Bolt
Qty: 2	Qty: 2	Qty: 1	Qty: 1

1453725	1300131	1130183	1130182
			
Auto Trans Tube Bracket	Cable Tie (Med)	Lockwasher; M6	Bolt; M6-1.0x16mm
Qty: 1	Qty: 4	Qty: 2	Qty: 2

1401589	1405422	1453820	**1405412-3	1401574
				
M16 Coolant Plug	Screw M6-1.0 X 12	Air Intake Seal (in)	Air Box Bracket	Acorn Nut; M6
Qty: 1	Qty: 5	Qty: 20	Qty: 1	Qty: 2

1405412	1405412-1	2925	1456737	1456738
				
Intake Box S400	Lid: Air Box	Air Box Filter	Unut; M8-1.25 long	Bolt: M8-1.25x30mm
Qty: 1	Qty: 1	Qty: 1	Qty: 2	Qty: 2

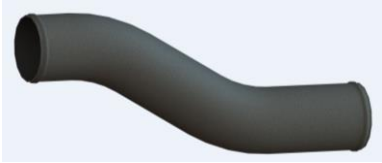
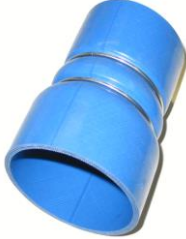
** 1045704 Kit does not use 1405412-3 and therefore is not provided.

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1045701 - DODGE 2008-2009 KIT				
1405417P	1407030	1405211	1453320	1405305
				
<i>Tube; CAC inlet S400 LM PC</i>	<i>Clamp (3.50")</i>	<i>Clamp (3.00-3.38")</i>	<i>Boot 3.0-3.5"</i>	<i>3 x 4"L Boot</i>
Qty: 1	Qty: 1	Qty: 4	Qty: 1	Qty: 2

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1045702 - DODGE 2010-2012 KIT

1453155	1453723-1	1453723-2	1453723-3	1456733
				
Coolant Port Oring	Fitting, Coolant Hose Twin 6.7L	Fitting, Coolant Hose Clamp	Fitting, Barb Coolant 1.125"x 3/4NPT	TC Coolant Adapter
Qty: 1	Qty: 1	Qty: 1	Qty: 1	Qty: 1

1453735	1302198	1456736	1405420P
			
5/8" Barb-1/2" MNPT Fitting	Hose Clamp	Bracket; Dodge coolant support	Tube; CAC inlet S400 LM PC
Qty: 2	Qty: 2	Qty: 1	Qty: 1

1900037	1453126	1453127	1400283
			
M6-1.0 x 12mm Flange Bolt	Support Bracket Bolt	Support Bracket Washer	Oring
Qty: 2	Qty: 1	Qty: 1	Qty: 1

1405209	1405211	1407030	1405404	1405407	1405305
					
Clamp (2.75"-3.09")	Clamp (3.00-3.38")	Clamp (3.28-3.63")	3-3.25" CAC Boot	Boot 2.75"-3.0"	3 x 4"L Boot
Qty: 1	Qty: 3	Qty: 1	Qty: 1	Qty: 1	Qty: 1

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1045704 - DODGE 2013-2015 KIT

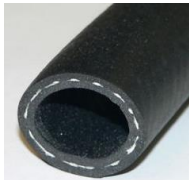
1453155	1453723-1	1453723-2	1453723-3	1456733	
					
Coolant Port Oring	Fitting, Coolant Hose Twin 6.7L	Fitting, Coolant Hose Clamp	Fitting, Barb Coolant 1.125"x 3/4NPT	TC Coolant Adapter	
Qty: 1	Qty: 1	Qty: 1	Qty: 1	Qty: 1	
1453735	1302198	1456736		1405424P	
					
5/8" Barb-1/2" MNPT Fitting	Hose Clamp	Bracket; Dodge coolant support		Pipe; S400 CAC 13-16	
Qty: 2	Qty: 3	Qty: 1		Qty: 1	
1900037	1453126	1453127	1402608	FT-90700	1400283
					
M6-1.0 x 12mm Flange Bolt	Support Bracket Bolt	Support Bracket Washer	Washer; M6	Nut; M6-1.0 flange	Oring
Qty: 4	Qty: 1	Qty: 1	Qty: 4	Qty: 4	Qty: 1
1405209	1405211	1300131	1452823	1405407	1405305
					
Clamp (2.75"-3.09")	Clamp (3.00-3.38")	Cable Tie (Med)	Tee 5/8" barb	Boot 2.75"-3.0"	3 x 4"L Boot
Qty: 1	Qty: 3	Qty: 2	Qty: 1	Qty: 1	Qty: 1

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1405448	1405449	1405450	1405451	1405452
				
<i>Bracket; Coolant Bottom PS</i>	<i>Bracket; Coolant Bottom DS</i>	<i>Bracket; Air Box (Trk side)</i>	<i>Bracket; Air Box (box side)</i>	<i>Bracket; Coolant Bottom</i>
Qty: 1	Qty: 1	Qty: 1	Qty: 1	Qty: 1
1604054	1462123	1500387	1453736	
				
<i>1/2" Fuel hose</i>	<i>1/2" Hose Plug</i>	<i>Spring Clamp; - 13/16</i>	<i>Coolant line</i>	
Qty: 2	Qty: 1	Qty: 2	Qty: 1	

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

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.

Options

Description	Part #
BD Torque Converter 2007.5-2012	1071219X
BD HD Transmission	CALL
BD Stroked CP3 Pump 2008-2012	1050550
BD Injectors	CALL
BD Intercooler 2003-2009	1042525
BD Intercooler 2010 - 2012	1042530
BD Staging Limiter	1057722

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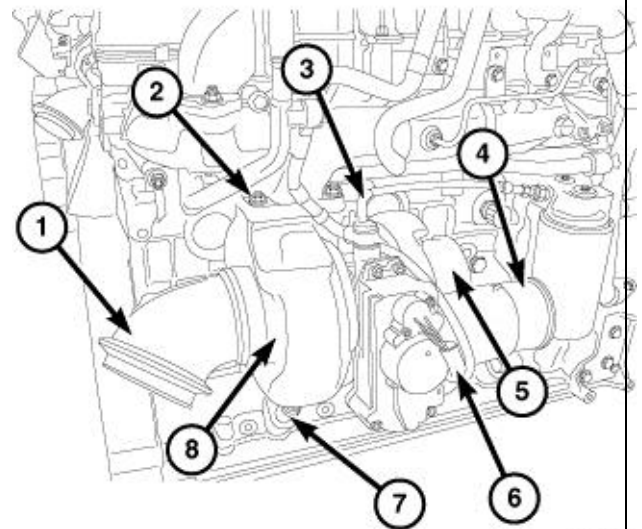
This kit requires the use of head studs, EGR & DPF delete and a performance transmission.

REMOVAL



Please refer to the EGR Delete manual for removal of the EGR system.

1. Secure the vehicle from rolling, disconnect the negative leads on both batteries and remove the passenger side inner fender.
2. Disconnect and re-position the right hand side positive battery cable away from the battery.
3. Drain the coolant from the radiator and engine.
4. Remove the air filter housing.
5. Remove the intake air tube at the turbocharger
6. Disconnect the crankcase vent hose at the turbocharger air intake
7. Remove the charge air cooler inlet tube at the turbocharger outlet
8. Disconnect the turbocharger speed sensor electrical connector
9. Disconnect turbocharger actuator wire harness connector
10. Remove the turbocharger oil pressure line
11. Remove the turbocharger coolant lines at the engine block and turbocharger.
12. Raise and support the vehicle.
13. Remove the exhaust support bracket from transmission.



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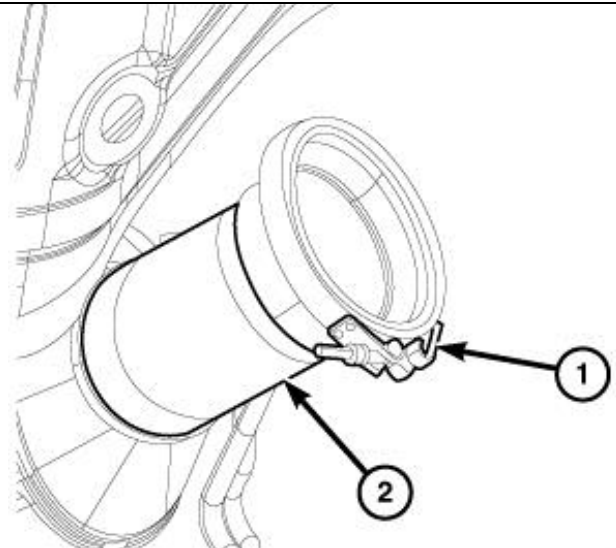
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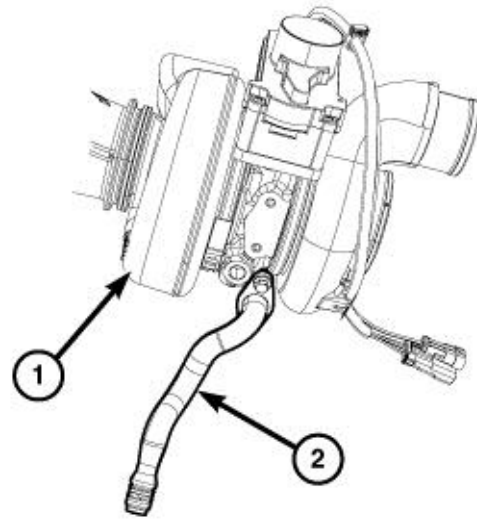
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14. Remove the V-clamp (1) from the turbocharger exhaust outlet



15. Remove the turbocharger drain tube (2) at the turbocharger (1)



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16. Remove the turbocharger drain tube from the cylinder block.

17. Lower the vehicle.

18. Remove and set aside the grid heater relay from the battery tray

19. Using Tool 9866 or 15mm box end wrench, remove the turbocharger to exhaust manifold mounting nuts.



20. Remove the turbocharger from the vehicle by lifting from the top of the engine compartment.



21. Relocate the grid heater solenoid from the side edge of the battery tray to the top edge.



Suggested Relocation

Predrill 3/32" holes into the top edge of the battery tray reusing the OE screws and a *T20 Torx Bit*.

2013-2015 models only (If installing a 1045701 or 1045702 kit skip this step)

22. Remove the positive battery from the battery connection cables, then remove the passenger side battery and tray.

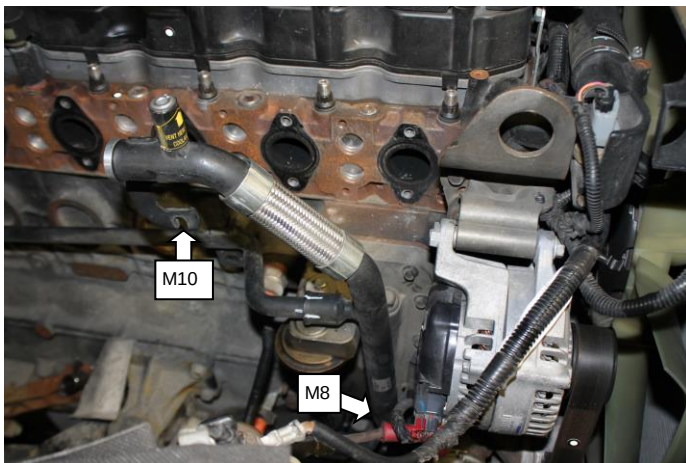
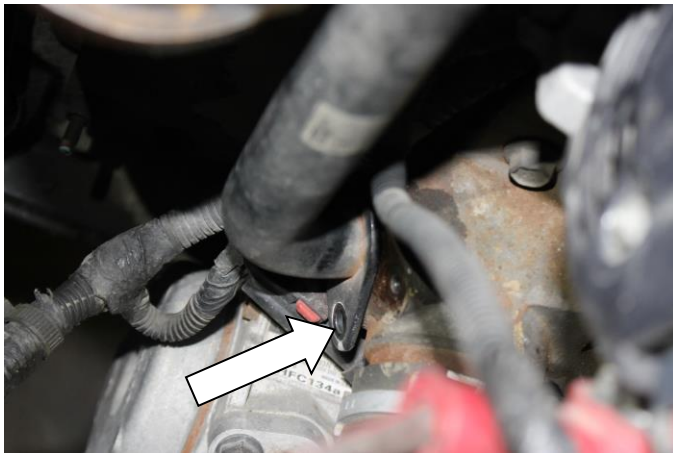
Remove coolant reservoir.

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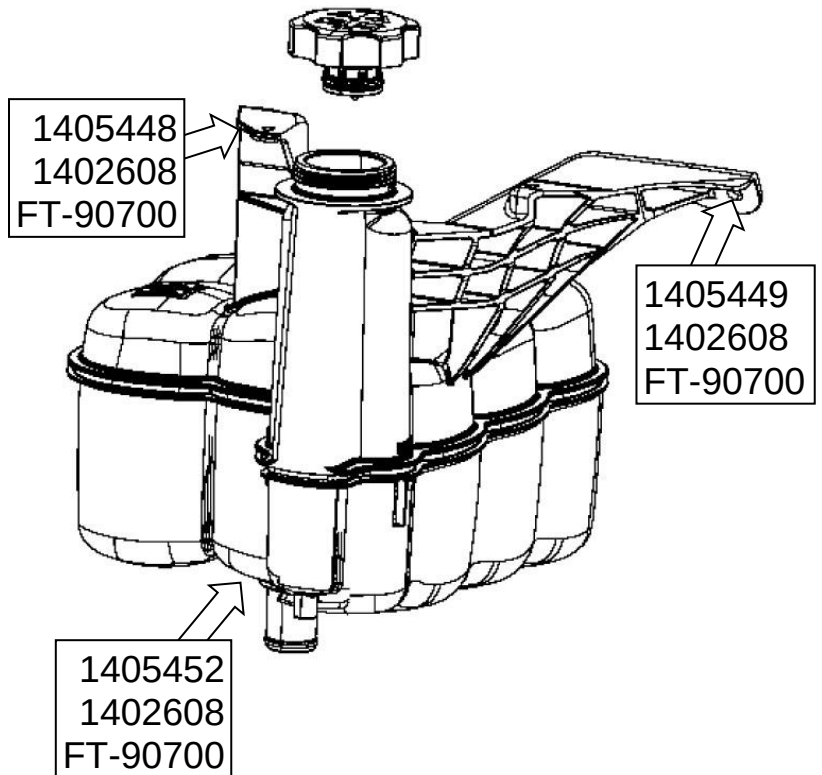


23. Remove the coolant line from the heater core and engine block port (M10 & M8 sockets required).

Remove exhaust manifold and clean cylinder head mating surface.

INSTALLATION

1. Install coolant reservoir with relocation brackets. Reinstall battery tray and battery.



2. Install the transmission dipstick relocation support bracket (1453725) to the valve cover using the OEM hardware; attach dipstick tube to the bracket using the supplied bolt (1130182).
8mm & 10mm socket

NOTE: You will need to reshape the dip stick tube to align with the bracket.



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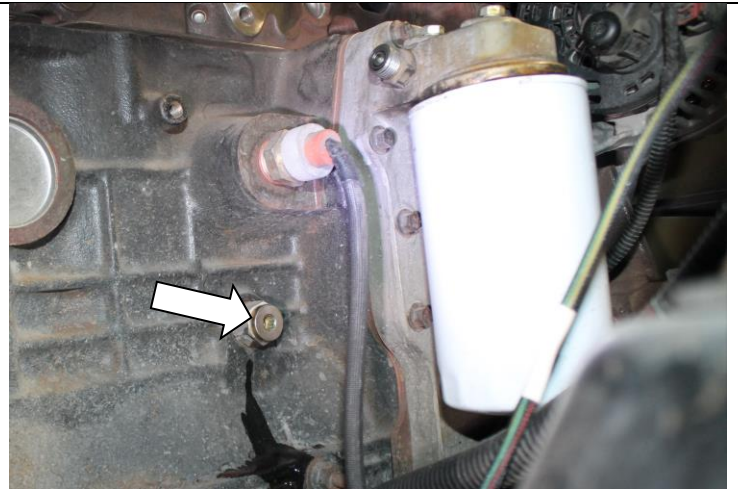
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3. Install the supplied coolant plug (8mm allen key) into the block until the oring is compressed.

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 thread lock onto the adapter before inserting into the block.



*** 2008-2009 Models skip to step 3 ***

4. **2010-2012 Models (If equipped);**

Thread in the two brass barbs (1453735) into the TC coolant adapter (1456733) and bolt the coolant adapter onto the coolant support bracket (1456736) using the supplied M6 hardware. (1900037)

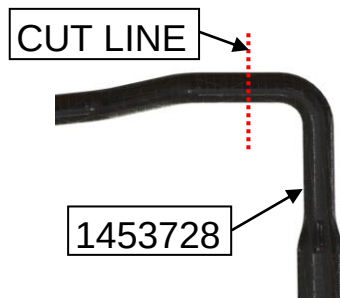
7/8" wrench & 10mm socket

Bolt TC coolant assembly to the block. Top bolt uses OE hardware / bottom bolt is 1453126 & 1453127

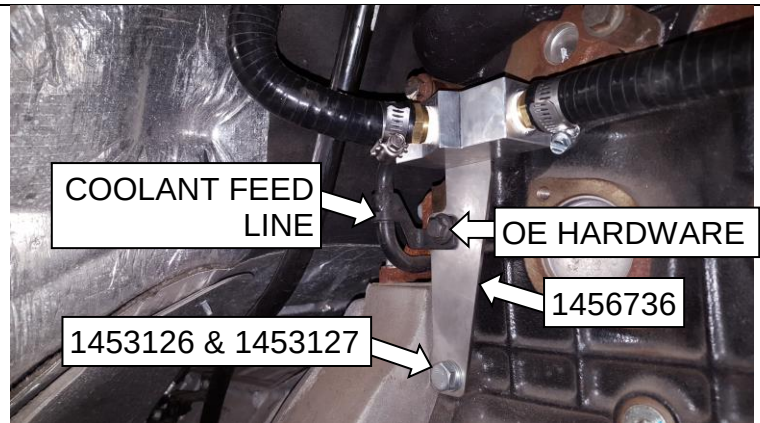
Connect the coolant hose (1453728) to the engine block then trim the hose to connect to the TC assembly. Now connect the hose that was cut off to the heater core and trim that hose to fit the TC assembly. Tighten all clamps. Continue to step 4.

3. **2013-2015 Models:**

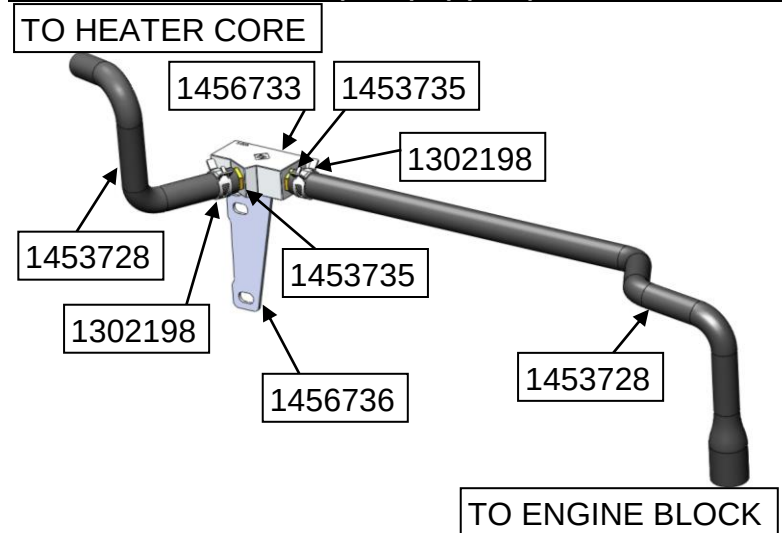
The 1453728 hose will need to be cut and then inserted onto the tee.



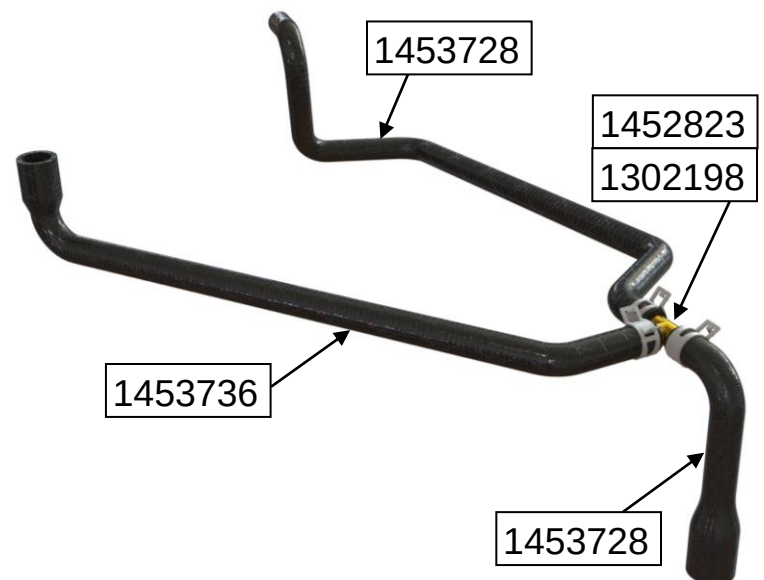
1453728 hose modification for
2013-2015 ONLY



2010-2012 Models (if equipped)



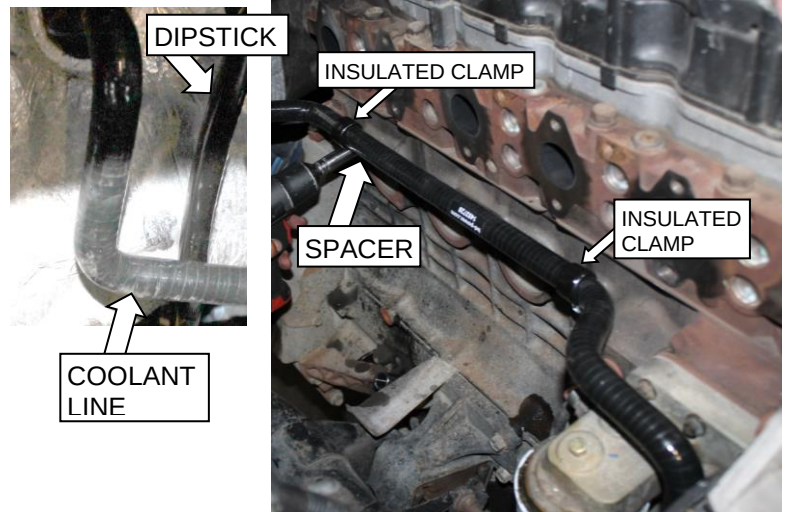
2013-2015 Models



5. Install the coolant hose into the heater core and engine block port, using the supplied insulated clamps (1120125) to support the center of the hose, two spring clamps (1302198) for the ends, spacer (back mounting bolt only) and bolts (1120124) (13mm socket)



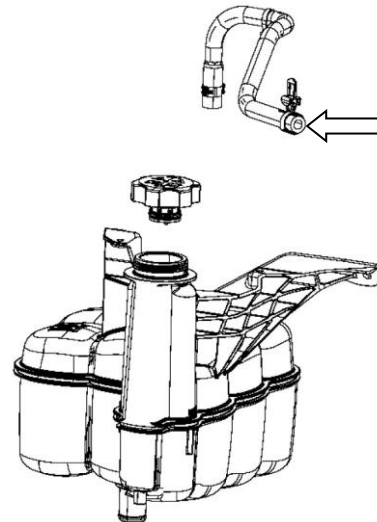
Spacer not used on 2010-12 models



Adjust insulated clamps to prevent coolant hose from rubbing.

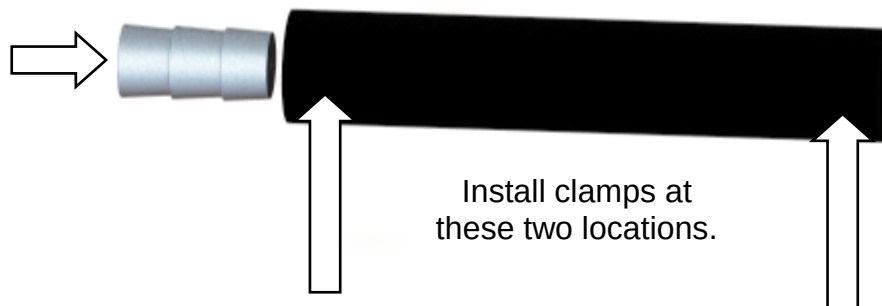
NOTE: The transmission dipstick must go behind the coolant hose (closest to firewall) as it will be relocated later.

4. Remove small coolant hose from driver side top of reservoir.



2013-2015 models only (If installing a 1045701 or 1045702 kit skip this step)

6. Install 1/2" hose (1604054), hose fitting (1462123) and clamps (1500387) to cap off the post on top of the coolant reservoir.



Install clamps at these two locations.

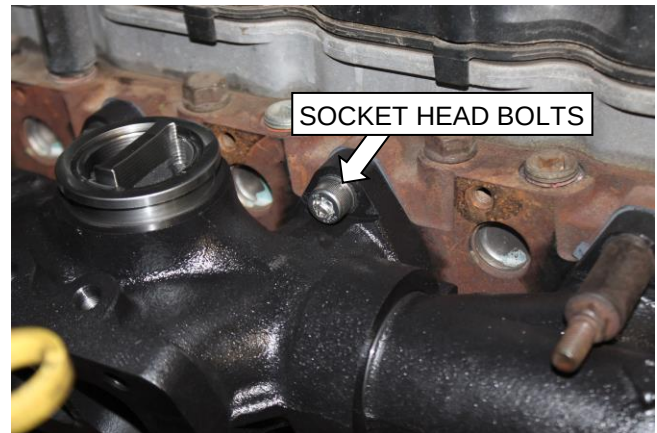
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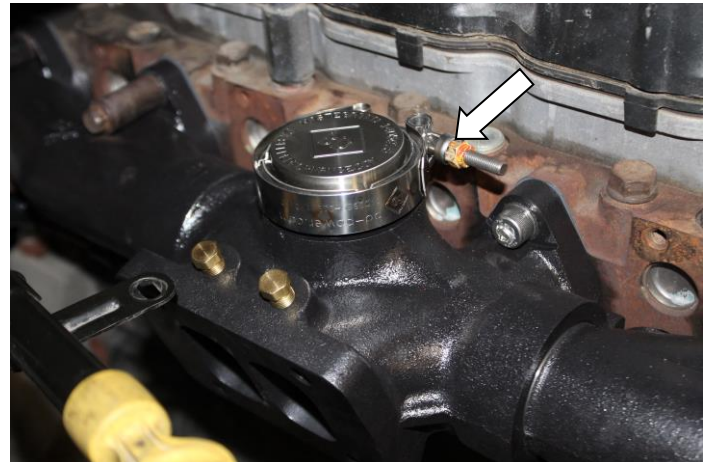
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7. Install the manifold with the supplied gaskets (13mm socket) & (8mm allen socket) Starting from the center and moving in pattern outward, tighten the exhaust manifold bolts to (37 ft. lbs.)



8. 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.



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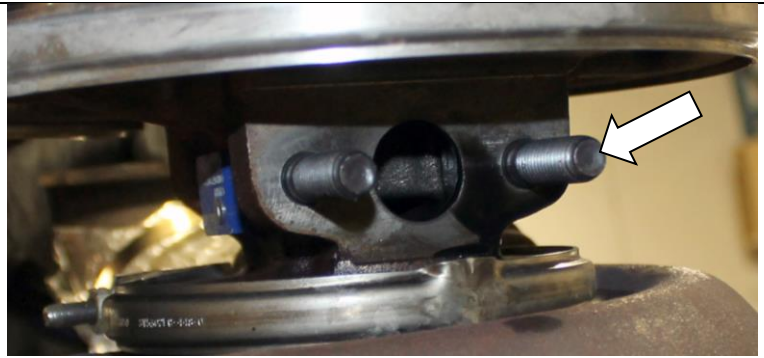
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9. Install the oil drain gasket & two M10 X 25mm studs into the turbo.

10. 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).



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

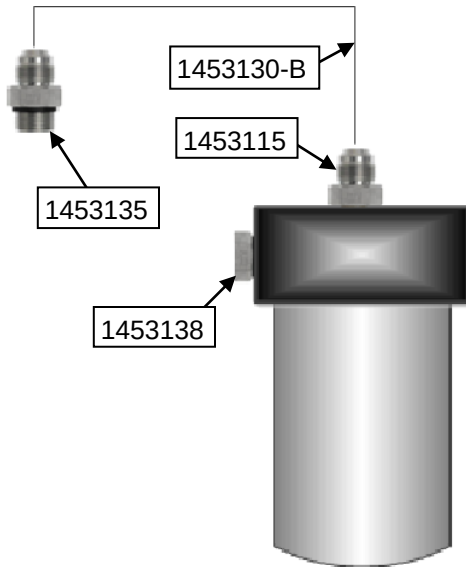
Fasten the oil drain to the turbo using the mounting nuts (1462441) provided (14mm wrench) and the hose to the drain adapter.

Tighten clamps with an 8mm socket.

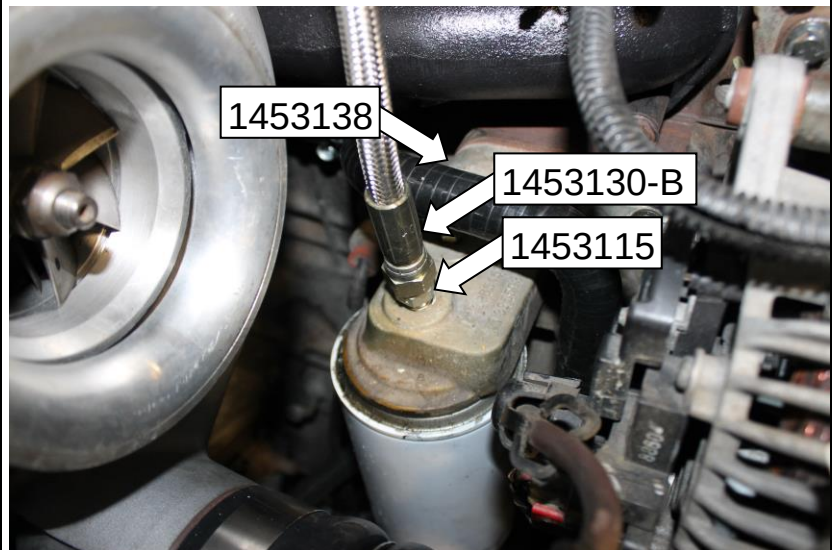
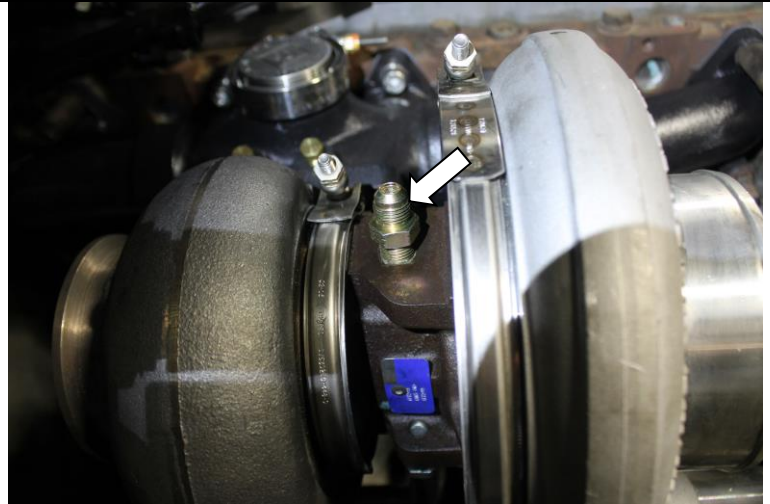


12. Preoil the turbo then install the oil inlet fitting (1453135) using a 17mm deep socket, and the oil filter housing fitting (1453115) using a 14mm wrench. (outer most port)

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).



13. 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.



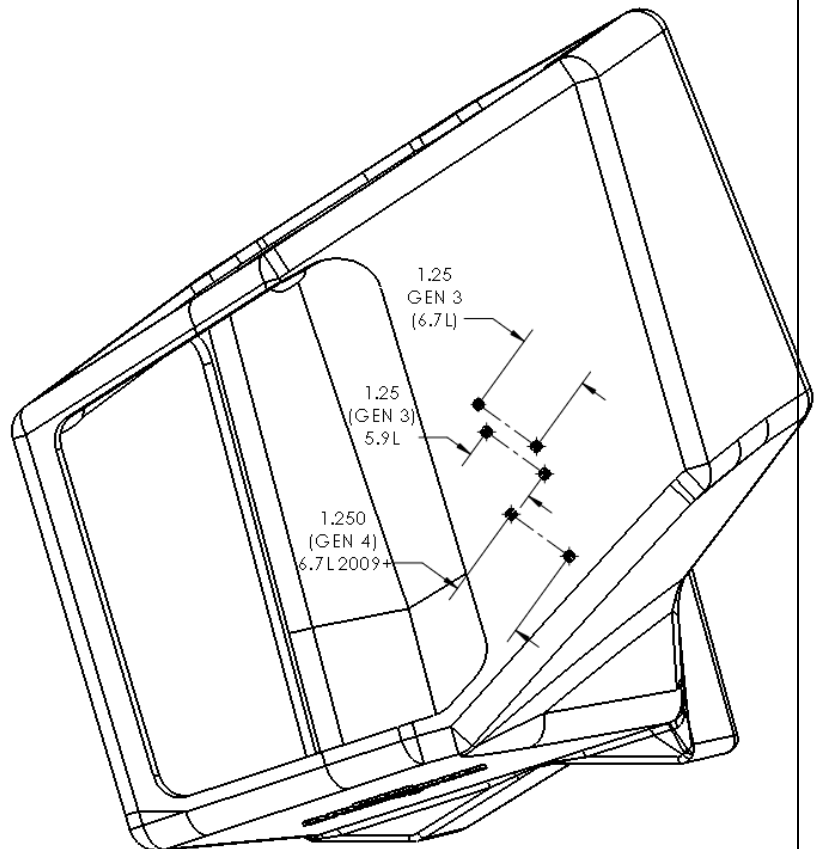
Ensure all connections and mounting hardware are tightened correctly at this point.

14. 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).

NOTE: If installing a **1045704** kit you will NOT need to drill the airbox.



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

Attach the bracket (1405412-3) onto the airbox using the supplied bolts (1130182), washer (1130183) and acorn nuts (1401574)

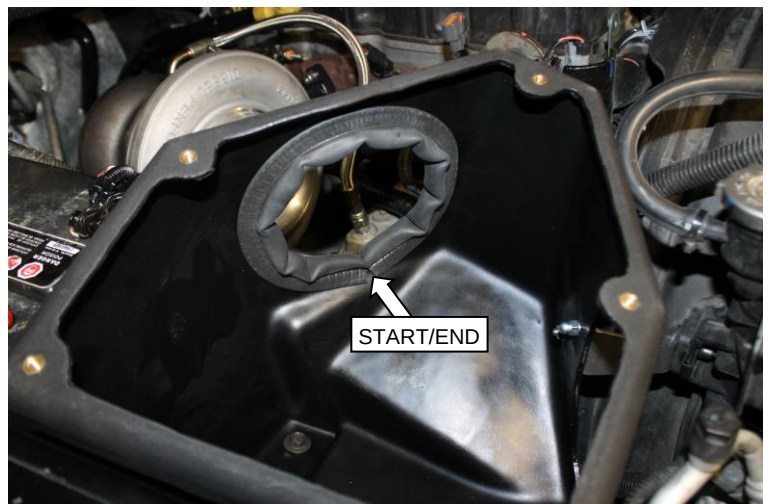
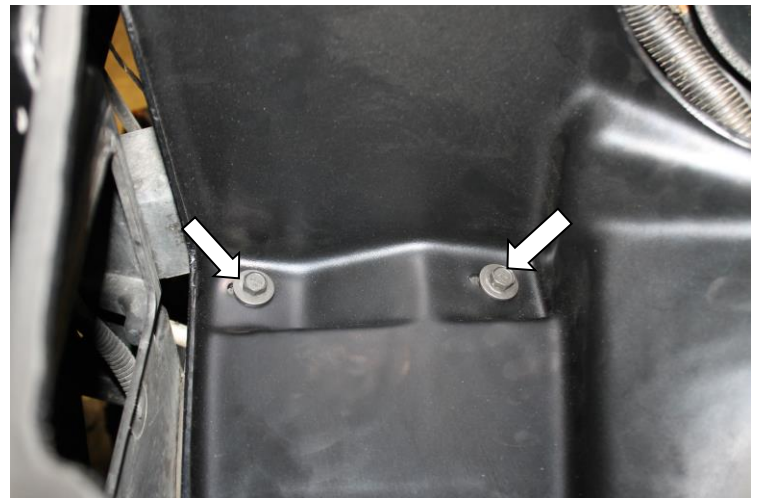
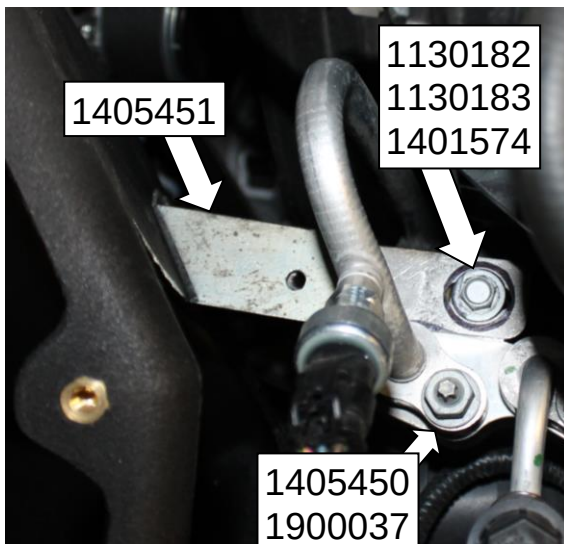
Mount the airbox assembly into the vehicle with the supplied 1456738 bolts and OE radiator shroud bolt.

Install the airbox seal.

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

2013-2015 models only

Install air box mounting bracket to the a/c block located at the radiator.



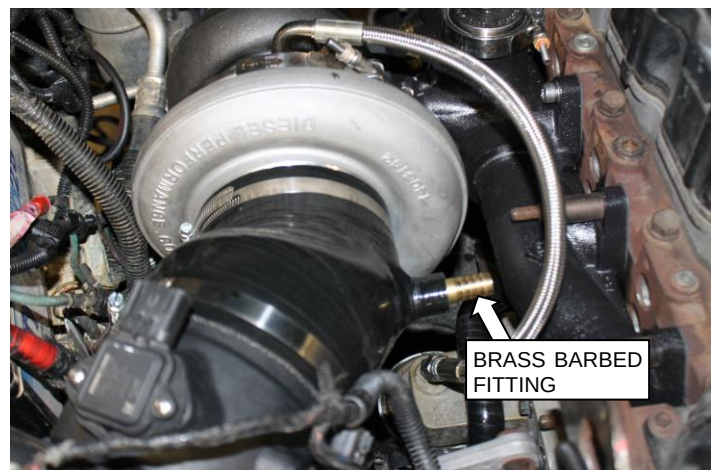
16. Remove the MAF sensor and the air temp/pressure sensor from the OEM airbox assembly and install them onto the BD intake tube (1405415) using the supplied gaskets and supplied #8 pan screws.
(FT-0173590)
(Philips head screwdriver).



17. 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.

Rotate the boot and intake tube to proper alignment and tighten clamps (1405237).



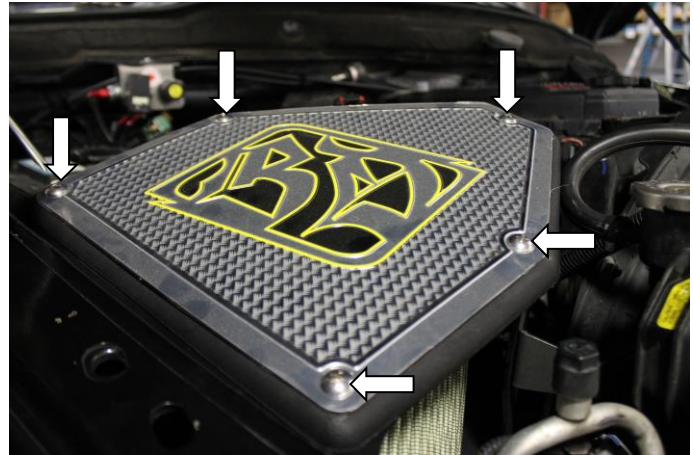
18. Connect the MAF & Air temp/pressure harnesses to their sensors.

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

(1405422)

(Philips head screwdriver)

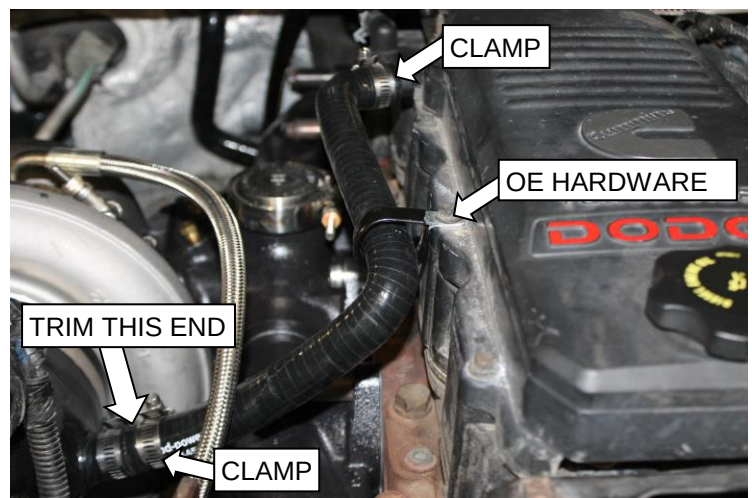
Insert brass fitting (1452820) into boot nipple (1405416).



This hose will need to be trimmed before installation

19. Install the PCV venting hose (1453724) using the supplied clamps (1302198 x3) & (1400113) and OEM hardware. Check to make sure the hose will not rub.

Install the insulated clamp to the rocker cover to support the PVC hose.

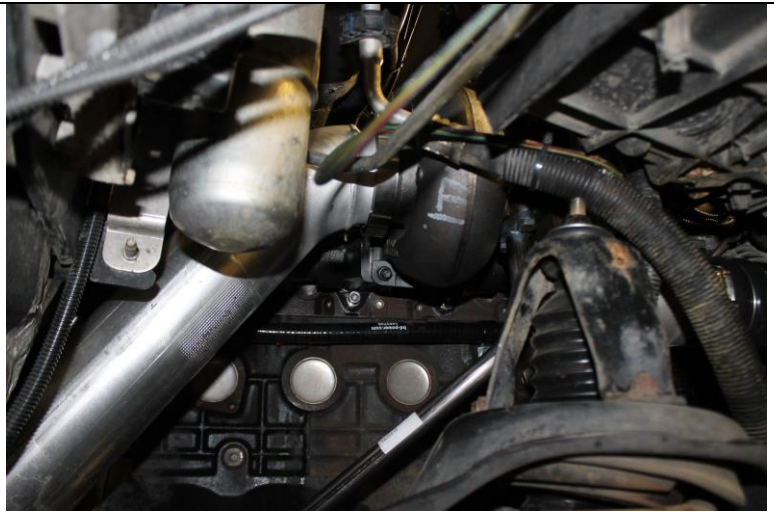


20. Test fit the downpipe to mark and cut the exhaust system to the correct length.

21. 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.

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.



22. The AC lines & coolant bottle heat shield will need to be reshaped to avoid chaffing against the turbine housing/downpipe. Reshape these carefully out of the way.



23. Reshape positive battery clamp and cable end to fit with coolant reservoir clearance.



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24. Reinstall the inner fender & wheel onto the Vehicle, refill coolant, and reconnect battery terminals.

8mm Socket

BE SURE TO PURGE THE
AIR FROM THE COOLANT
SYSTEM BEFORE
RUNNING THE VEHICLE.



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.