

AURORA

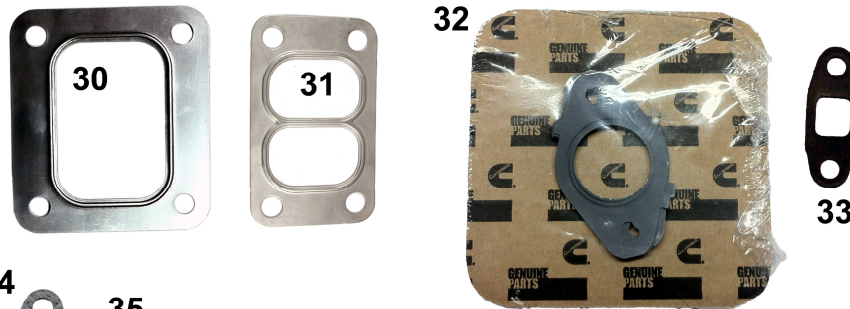
TURBO SYSTEMS

Installation Manual v1.1

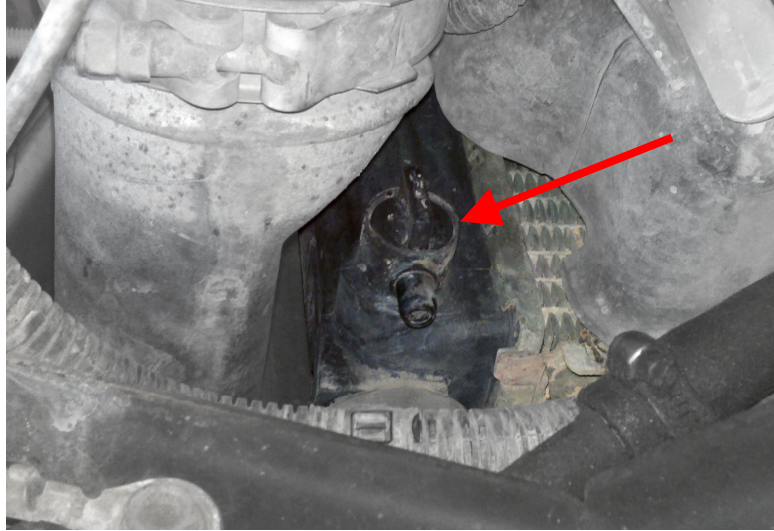
ATS Aurora 3000/6000 Compound Turbo Kit
1998½-2002 Dodge Ram 5.9L Cummins 24V



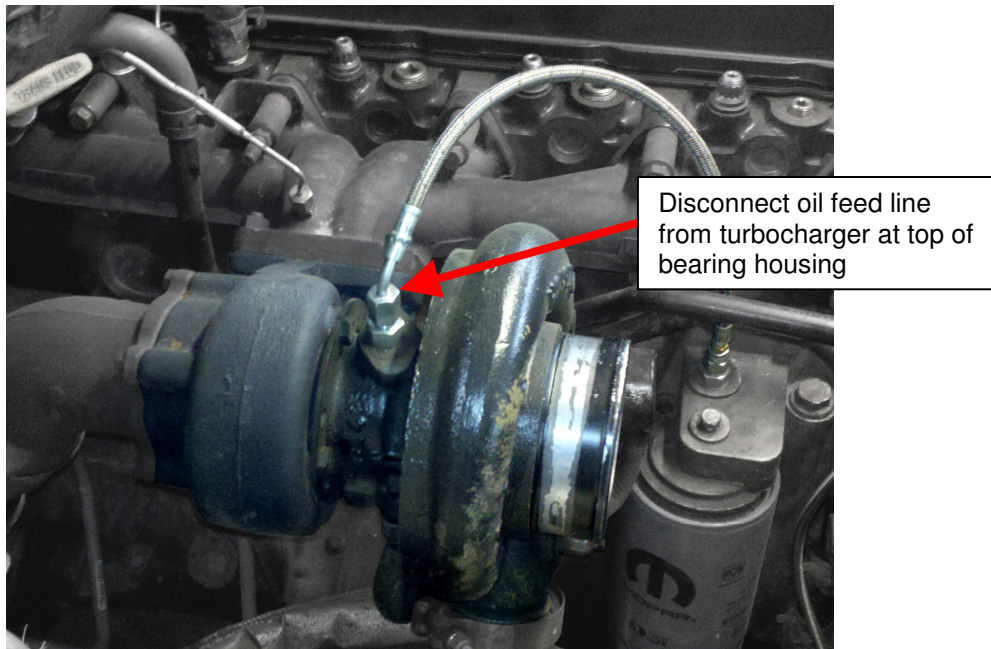
PLEASE READ ALL INSTRUCTIONS BEFORE INSTALLING!

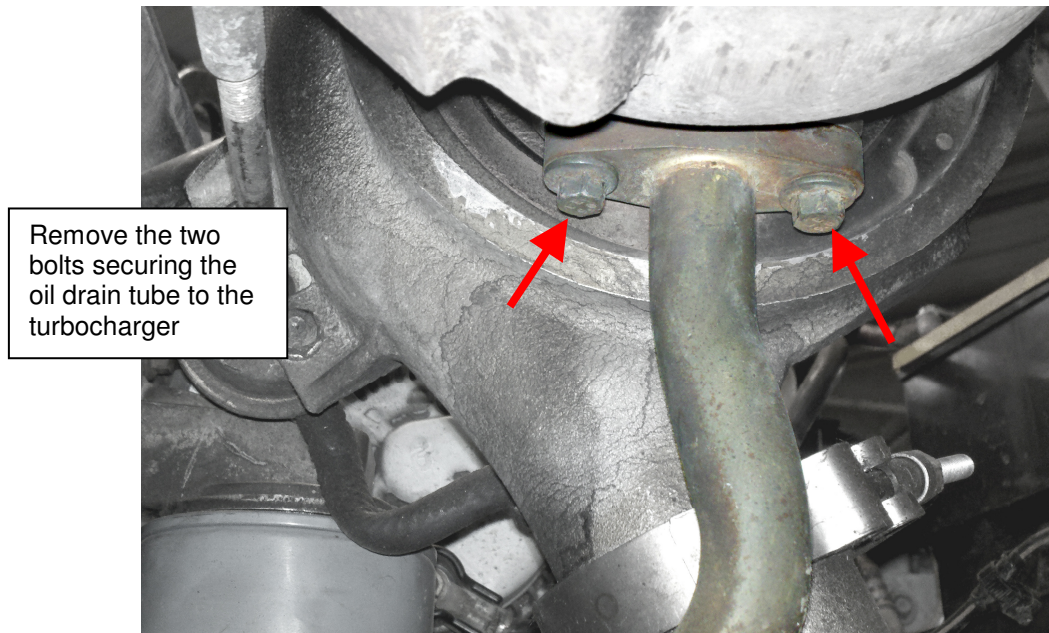


1. Before beginning installation, please check to make sure all of the parts pictured above were packaged in your kit. A complete corresponding list of components can be found at the end of this instruction manual.
2. Disconnect the negative battery cables and secure them away from the battery terminals.
3. Drain all the coolant from the engine and cooling system. The petcock is located at the bottom of the radiator on the driver's side.

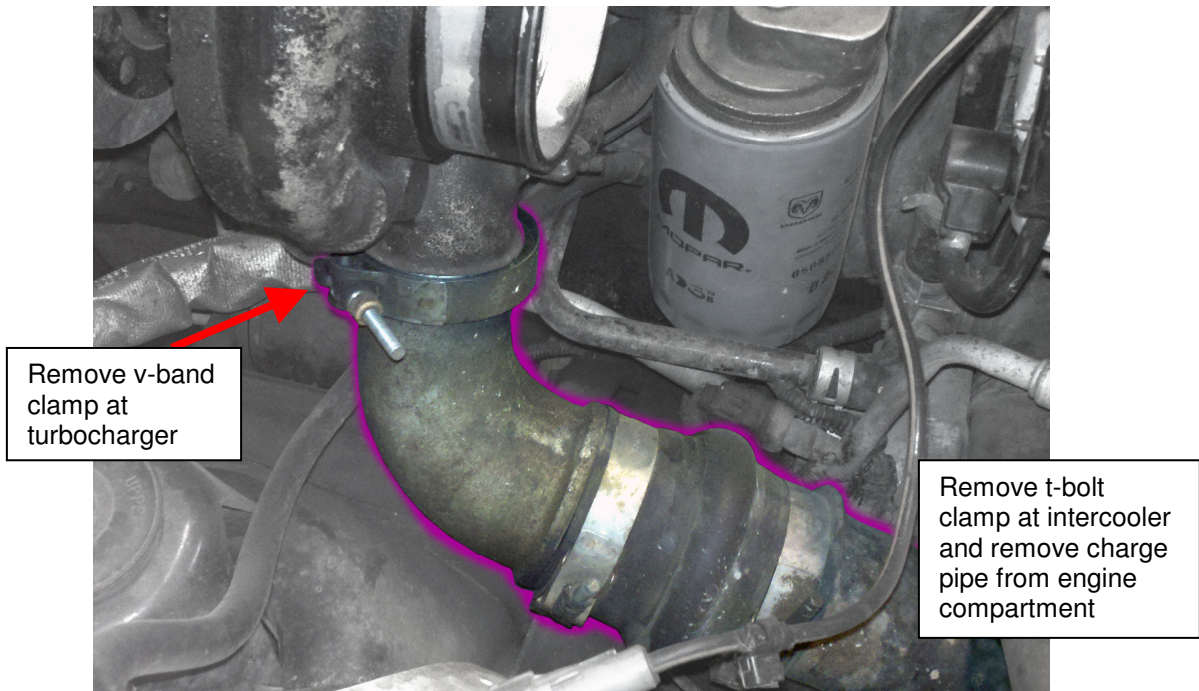


4. Remove the air filter and intake assembly.
5. Disconnect the oil feed line and oil drain line from the turbocharger.

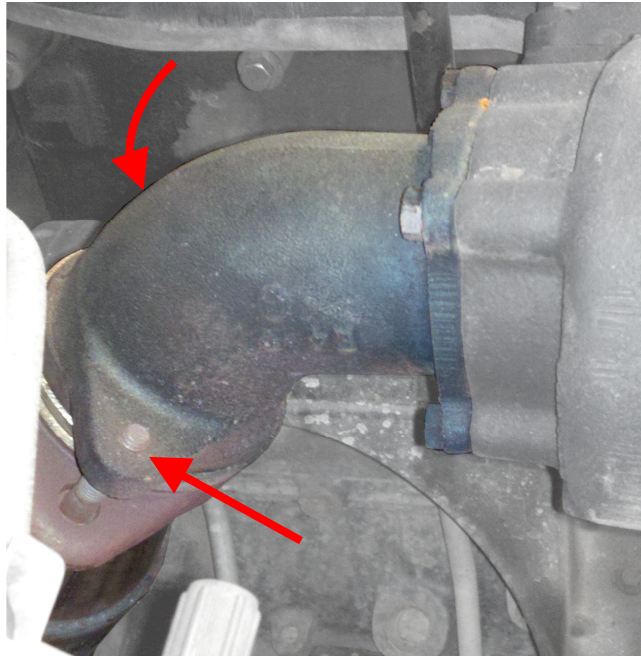




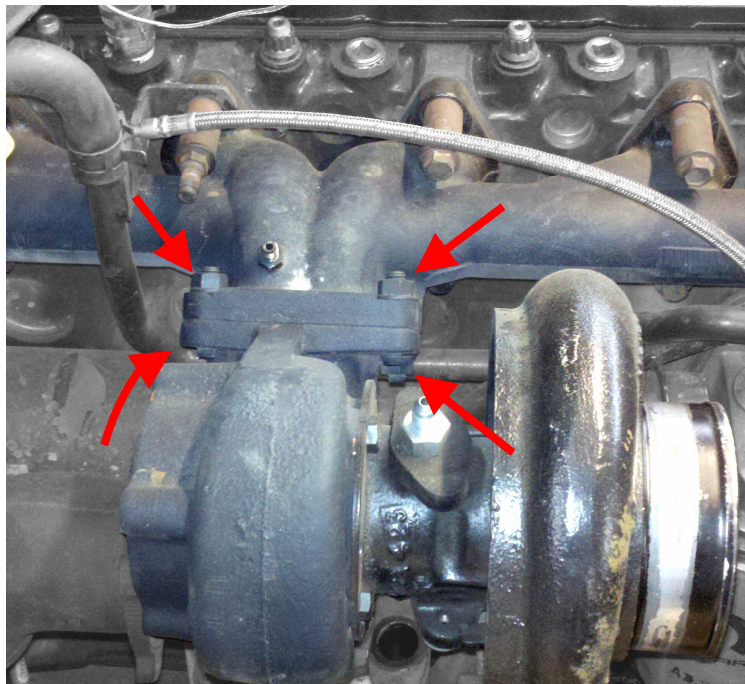
6. Disconnect and remove the charge pipe by removing the v-band clamp at the turbocharger and the t-bolt clamp at the intercooler.



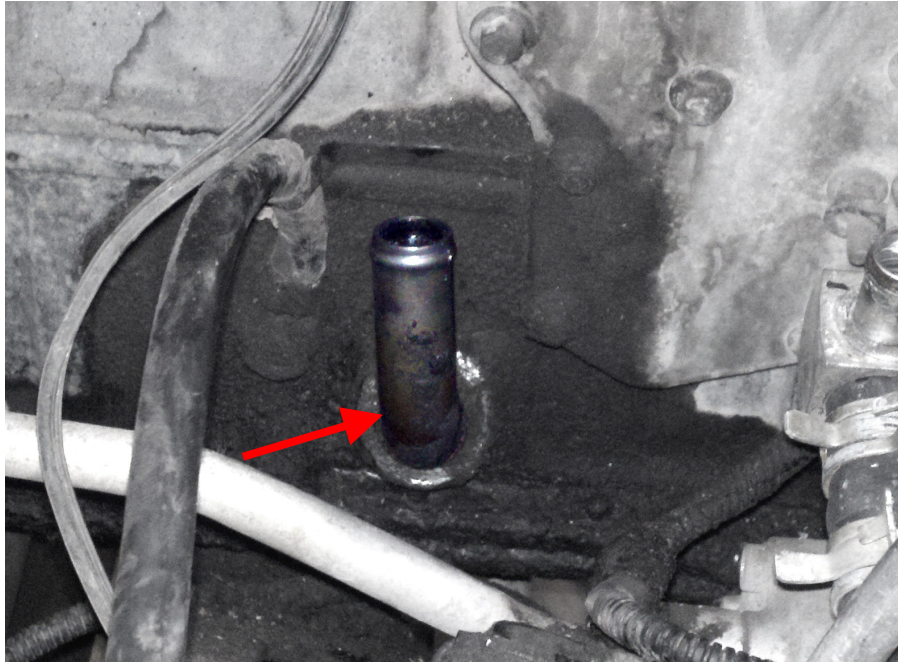
7. Separate the downpipe from the turbocharger by removing the 2 bolts on the elbow.



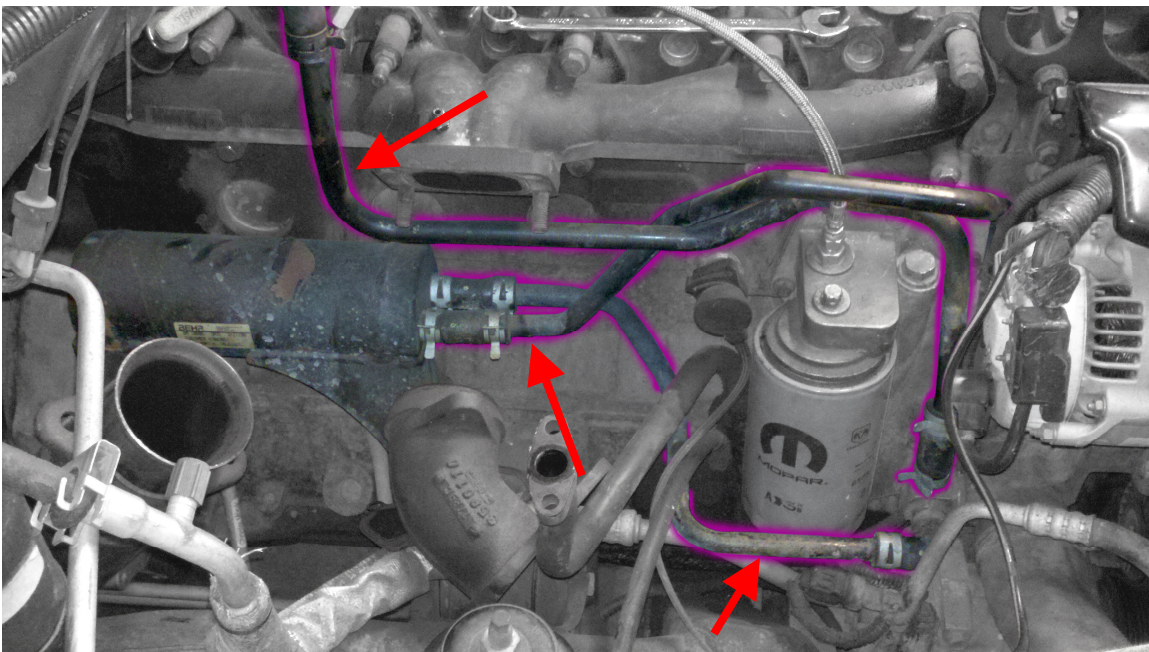
8. Remove the turbocharger from the exhaust manifold by removing the 4 M10 nuts.



9. Remove the factory turbo oil drain from the engine block. Be sure to clean around the base of the drain tube prior to removal to ensure foreign debris does not fall into the oil pan. Remove the oil filter to allow easier access to the drain tube.



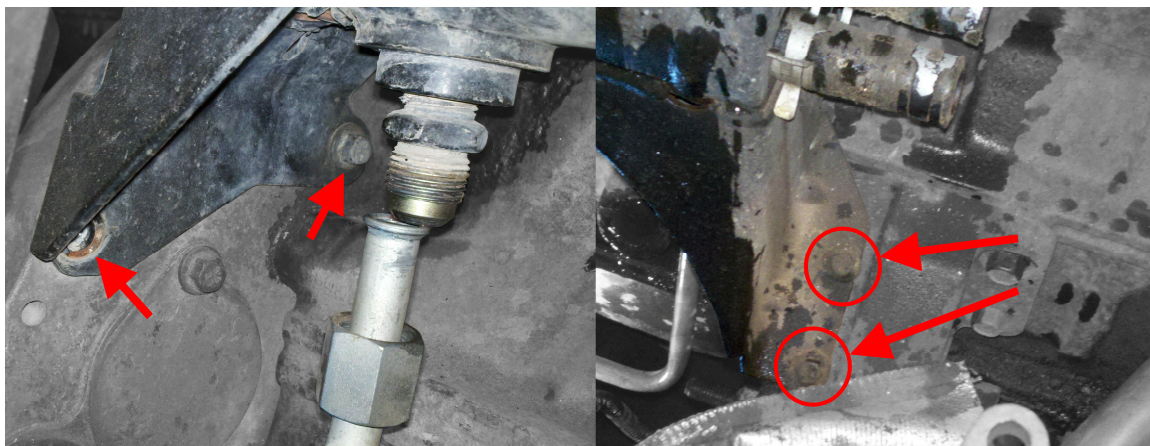
10. Remove the heat exchanger. This can get messy due to coolant and transmission fluid in the heat exchanger. Be sure to place a drain pan under the truck to keep cleanup to a minimum.
 - a. Disconnect and remove all coolant lines (3 total).



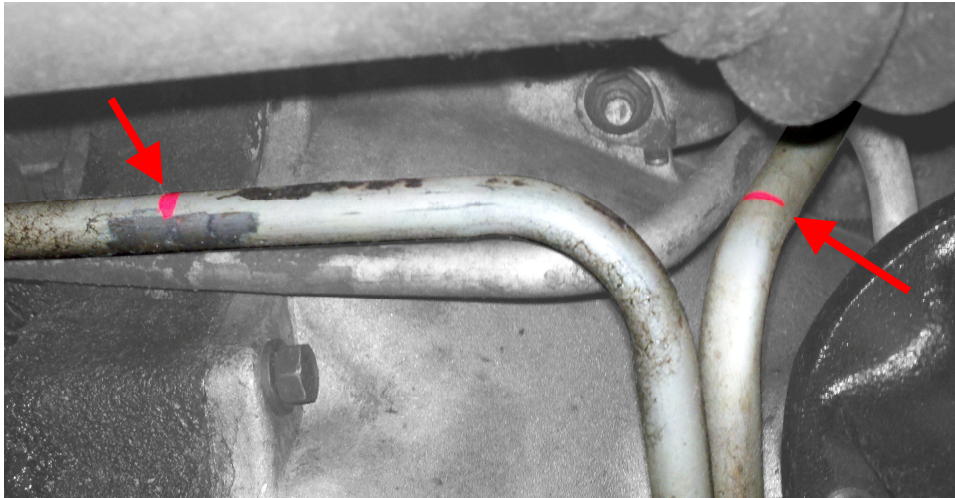
- b. Disconnect the 2 transmission fluid lines from the bottom of the cooler with a 24mm wrench.



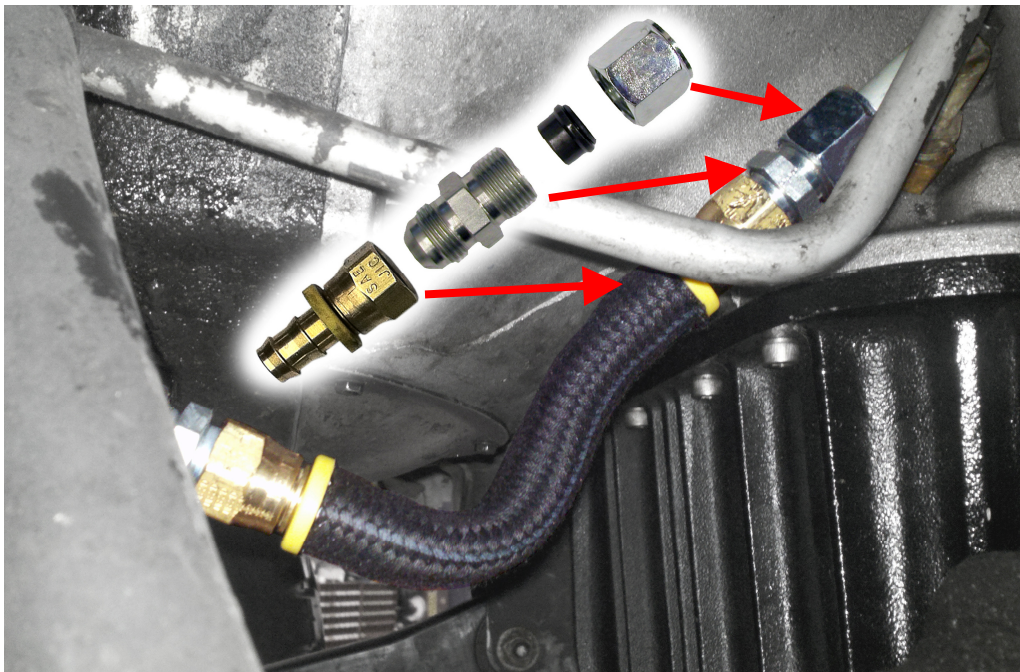
- c. To remove the cooler, remove the 2 bolts at the engine mount and the 2 on the rear plate.



- d. Cut the tranny lines with a tubing cutter as shown. Remove the sections that run beneath the transmission to the heat exchanger. Start close to the bends.

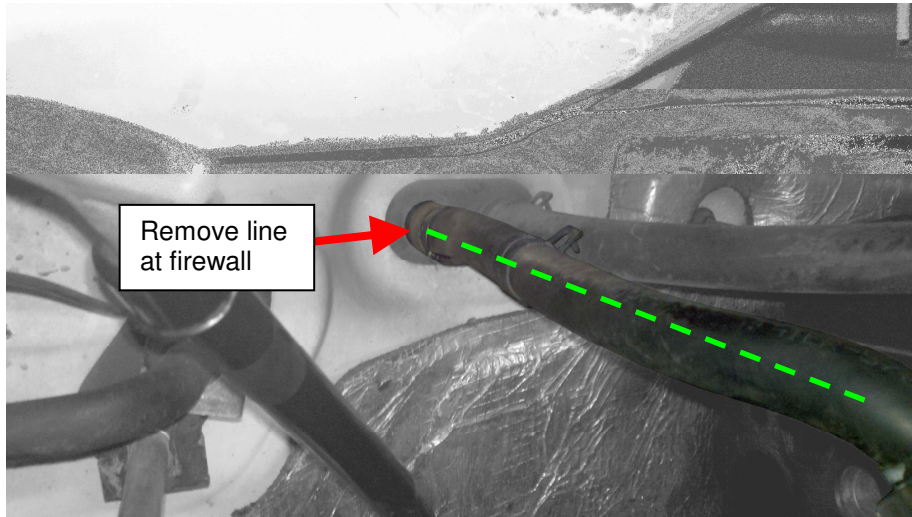


- e. Add a compression fitting to each side and hand tighten each compression nut. Hand tighten the brass barbed fittings on the compression fittings. With the 1/2" hose, figure about how much you will need to run between the barbed fittings and cut it to length. If more trimming is needed, do so conservatively (removing more is easier than adding it back). Continue test fitting until proper fitment is achieved. Tighten the compression fittings and barbed fittings.

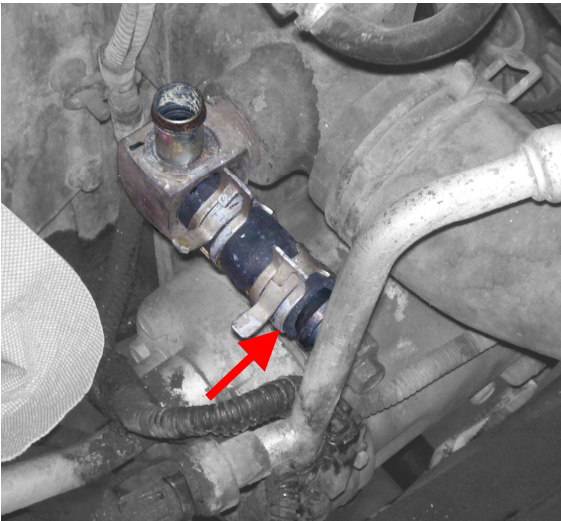


- f. Slide the 1/2" hose over the barbed fittings until they hose touches the yellow backing covers. Hose clamps are not necessary.

11. Remove the exhaust manifold.
12. With the exhaust manifold off the engine, remove the passenger side coolant line.

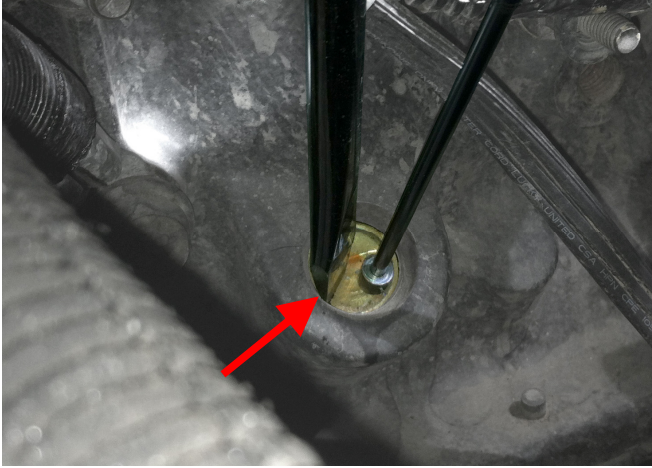


13. Block off the remaining coolant ports with the supplied plugs (2 total). One is located next to the alternator. The other is below the alternator near the lower radiator hose. Secure them in place using the factory clamps.



14. Remove the rear freeze plug from the engine as shown.

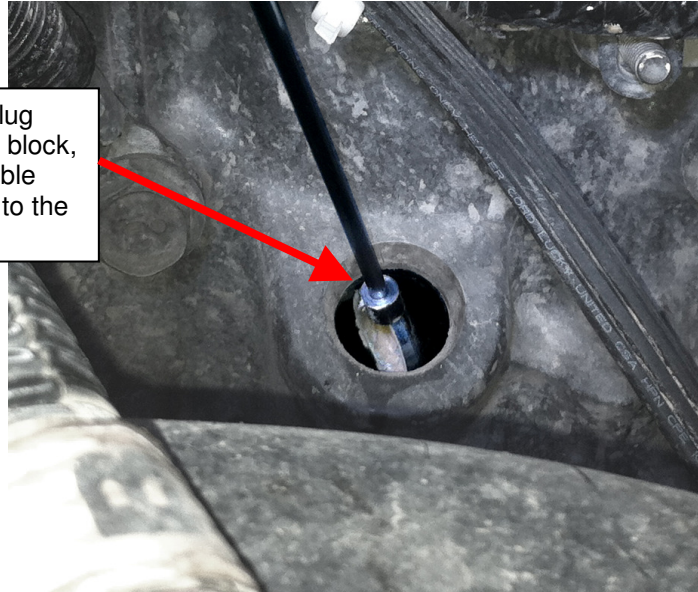
NOTE: Be sure to clean around the freeze plug and remove all debris from the cup of the freeze plug to ensure nothing drops into the oil pan.

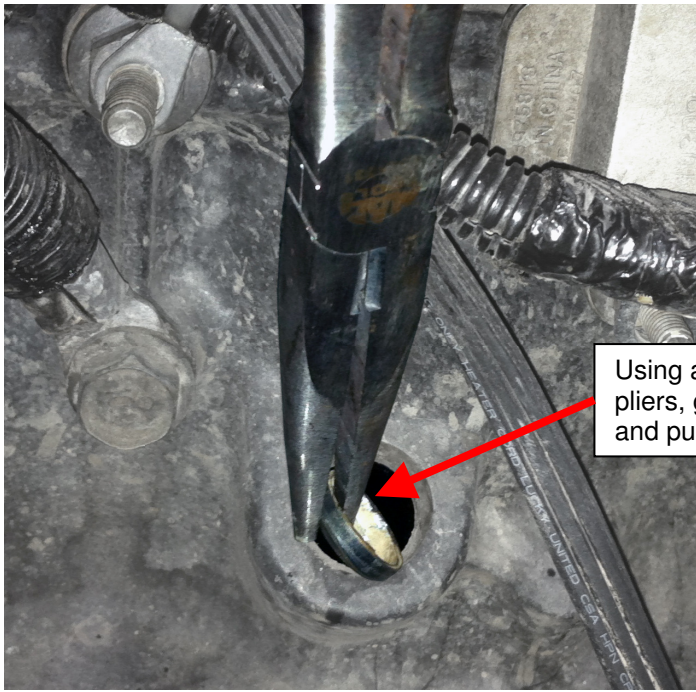


Using a flat blade screwdriver or punch, gently tap on the outer rim of the freeze plug to rotate it in the block.

Place an extendable magnet on the freeze plug. This will ensure that if the plug is accidentally hit into the block, it can be caught with the magnet so it doesn't drop into the oil pan.

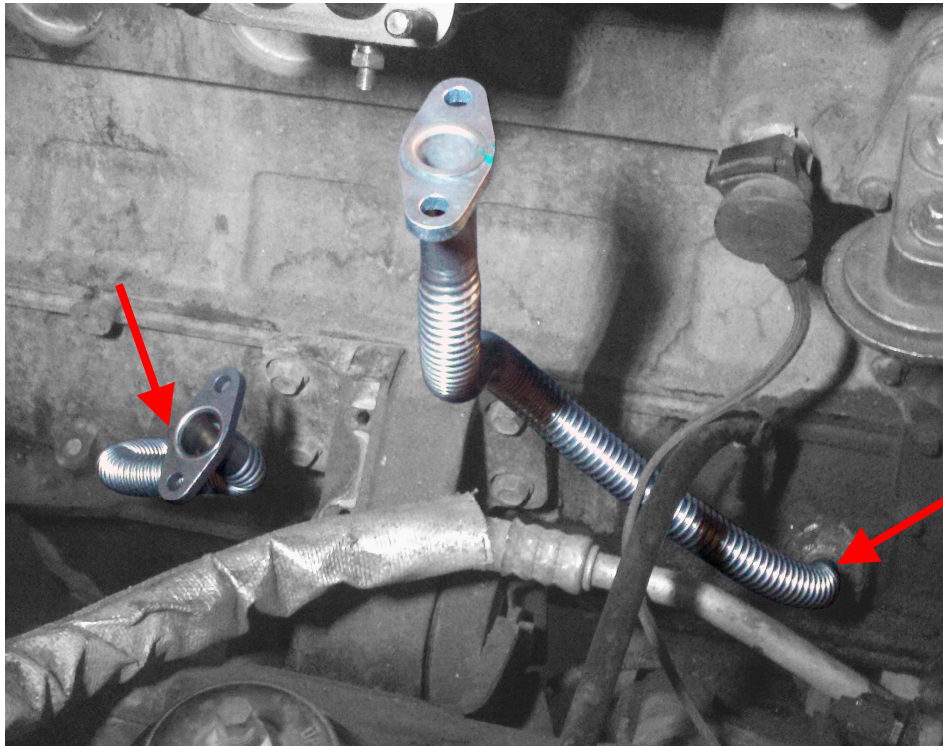
With the freeze plug rotated inside the block, keep the extendable magnet attached to the freeze plug.



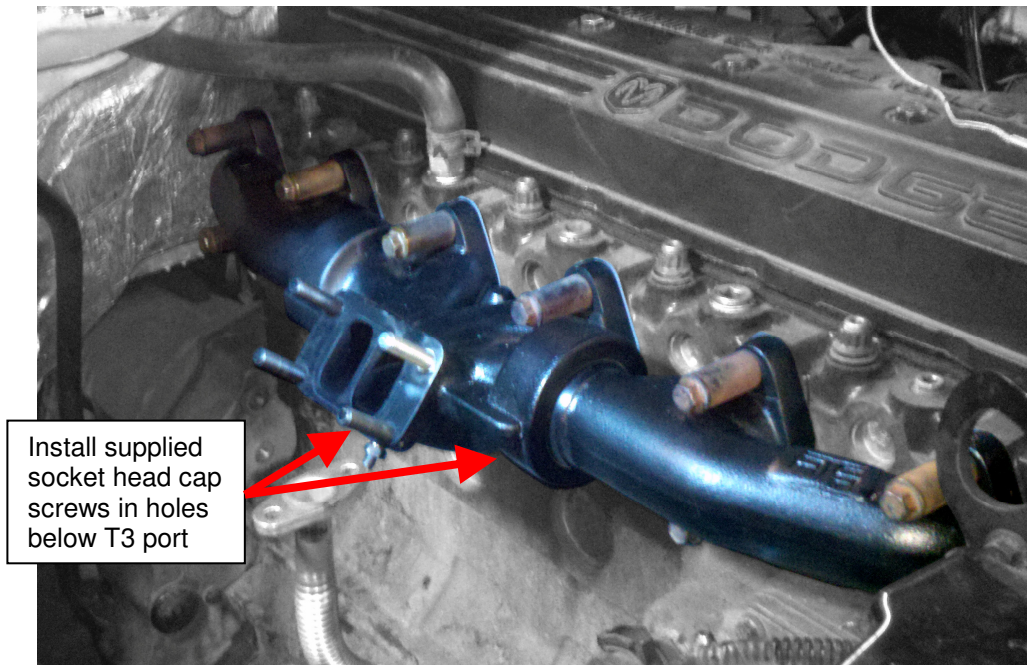


Using a pair of needle nose pliers, grab the freeze plug and pull it out of the block.

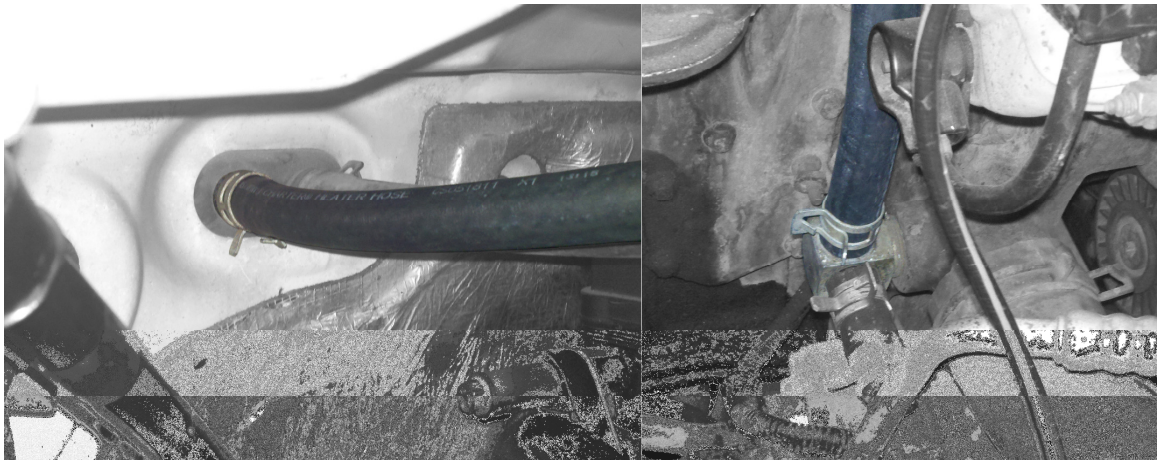
15. Install the new oil drain tubes in the engine block placing the short one in the rear port and the long one in front port.

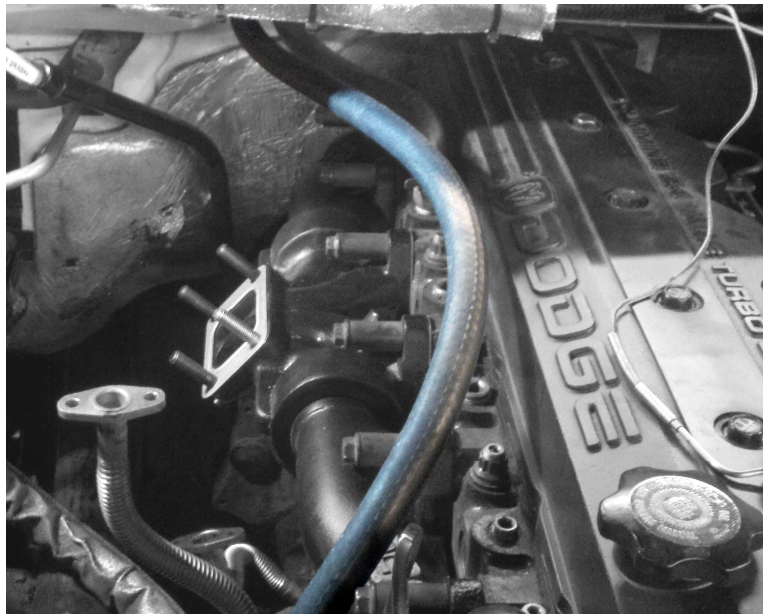


16. Install the new Pulse Flow exhaust manifold with the T3 port facing up using the new gaskets. Install each bolt by hand, torque the bolts to **32 ft-lbs** in a clockwise pattern from the center out.



17. Install the supplied heater hose between the remaining open coolant ports.

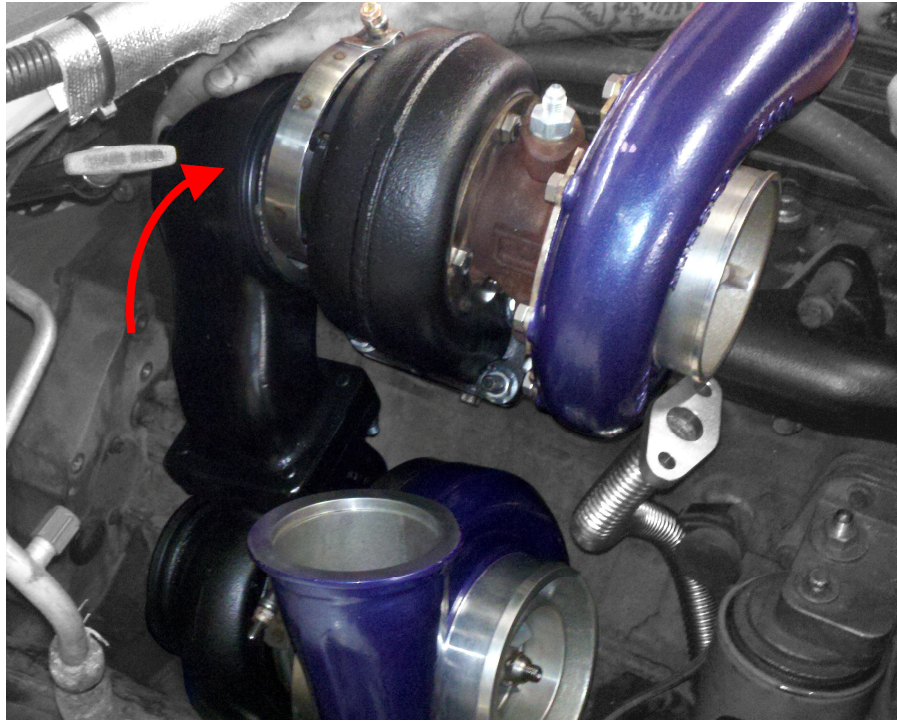




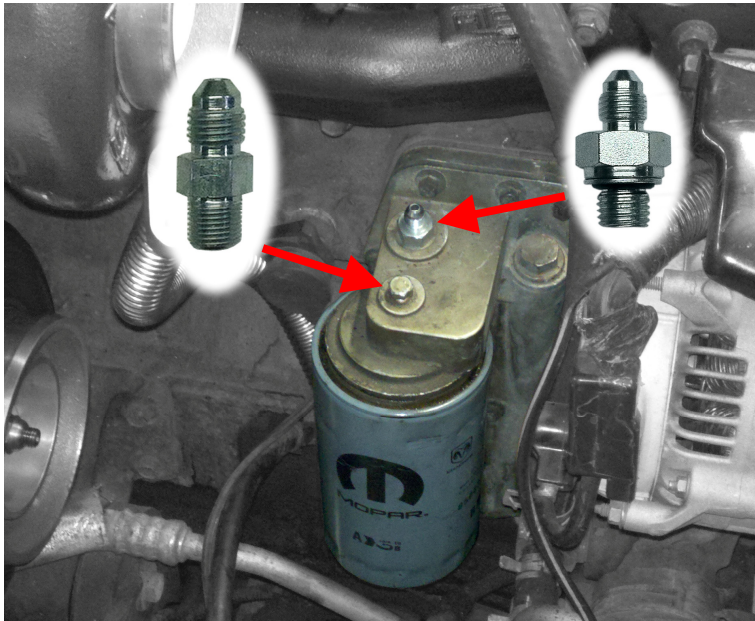
18. Install the Aurora 3000 by bolting the turbine housing to exhaust manifold (don't forget the gasket!). Align the bearing housing as vertically as possible to ensure proper lubrication to the bearings.
19. Thread 4 of the M10-1.5x50mm studs into the exhaust elbow. Connect the Aurora 6000 to the compound elbow and gently rest it in the engine bay.

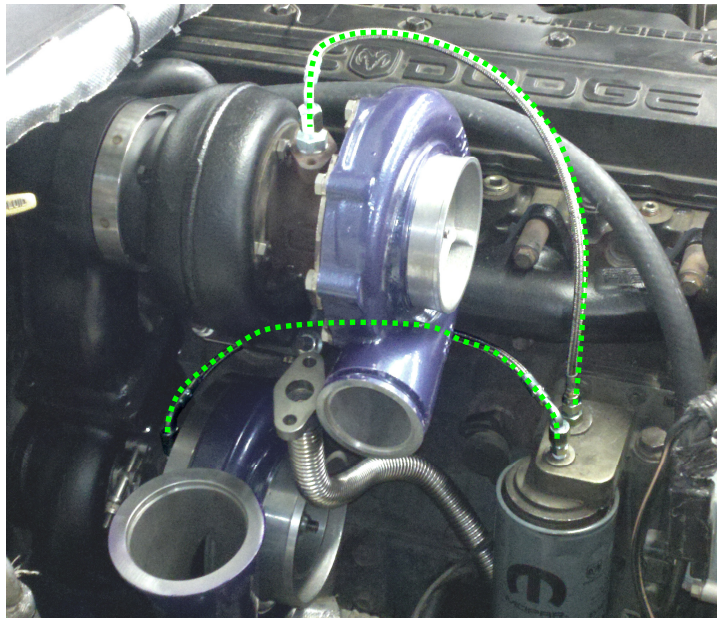


20. Attach the Aurora 6000 and elbow to the exhaust discharge of the Aurora 3000 leaving the clamp loose.

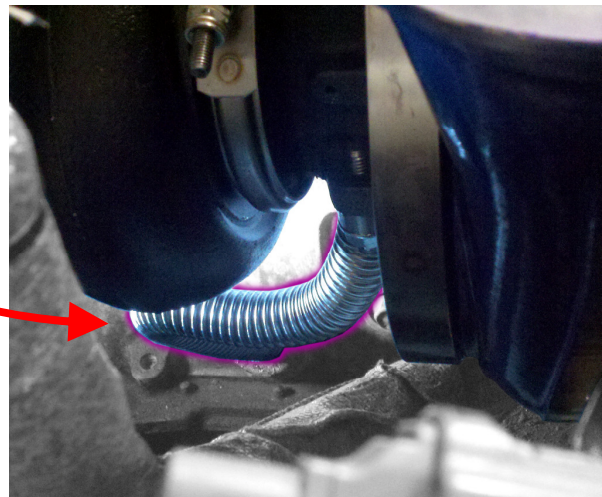
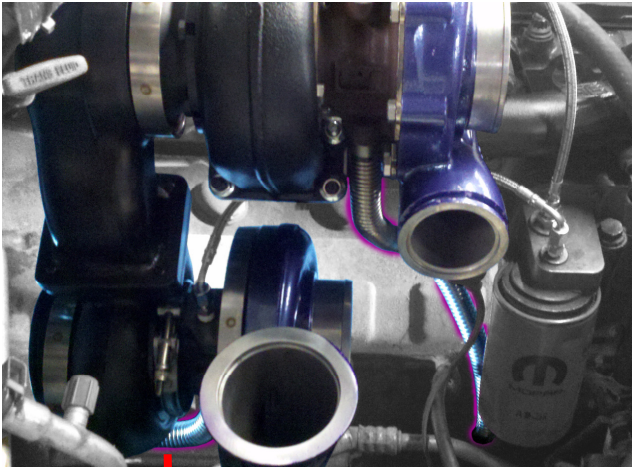


21. Remove the plug and the factory oil supply fitting in the oil filter housing. Replace with the fittings shown and connect the oil feed lines as shown.





22. Connect the oil drain tubes to the bottom of the bearing housings using the new gaskets provided.

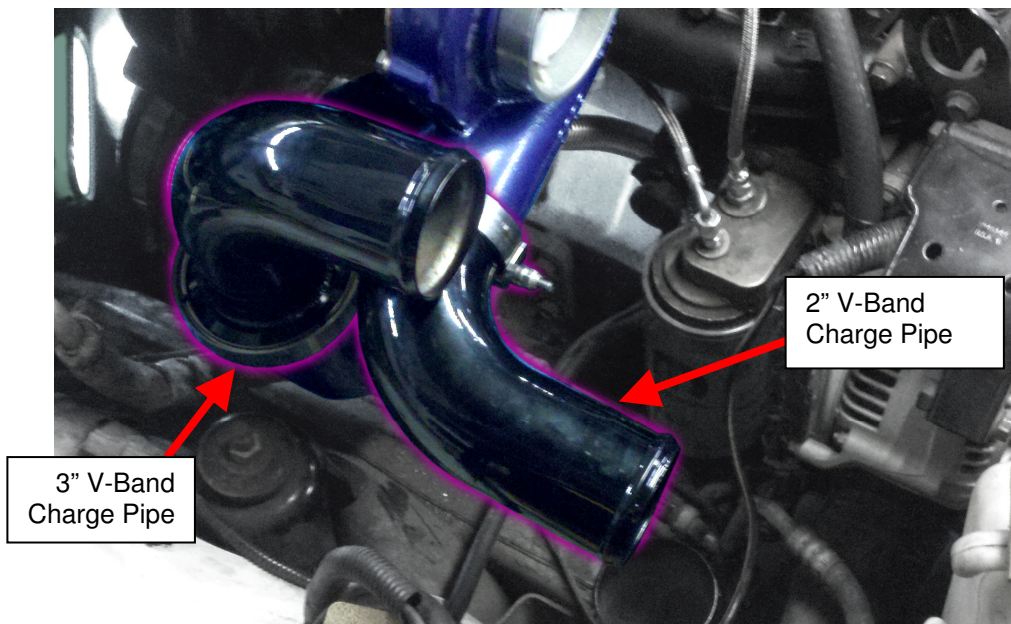


23. Install charge pipe "S2" into the intercooler boot.

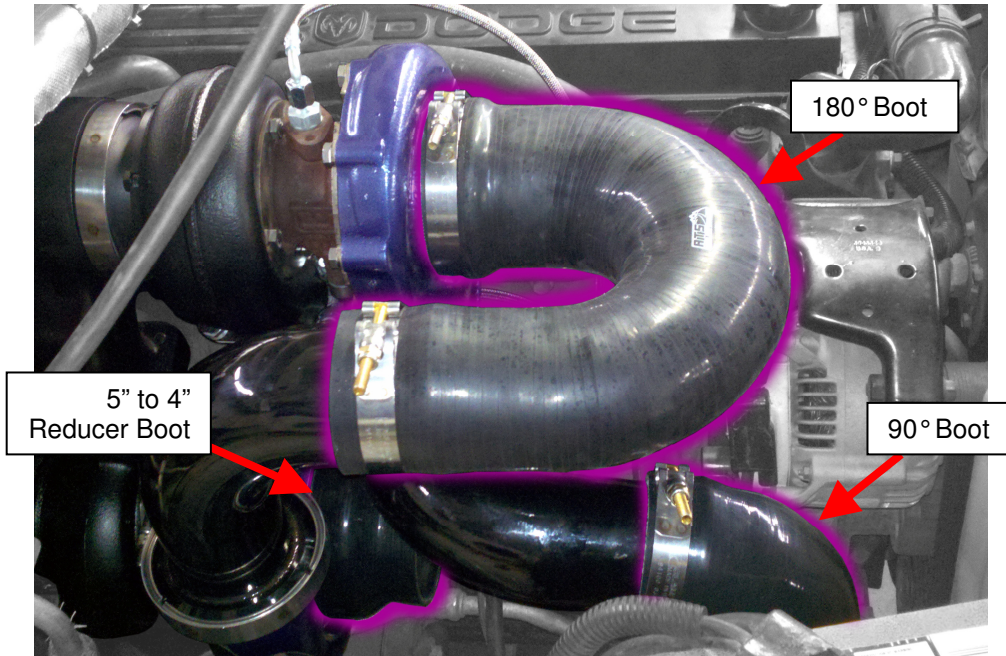


24. Connect the 2" v-band to the outlet of the Aurora 3000.

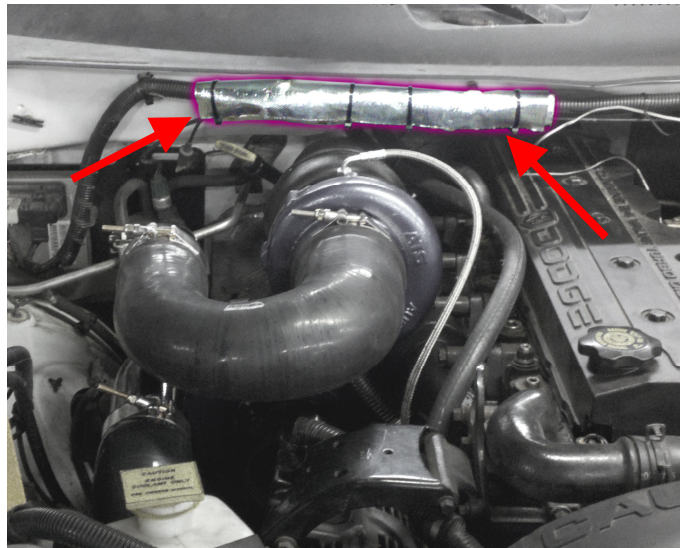
25. Connect the 3" v-band to the outlet of the Aurora 6000.



26. Align each charge pipe as shown, and then install the 180° and 90° silicone boots.

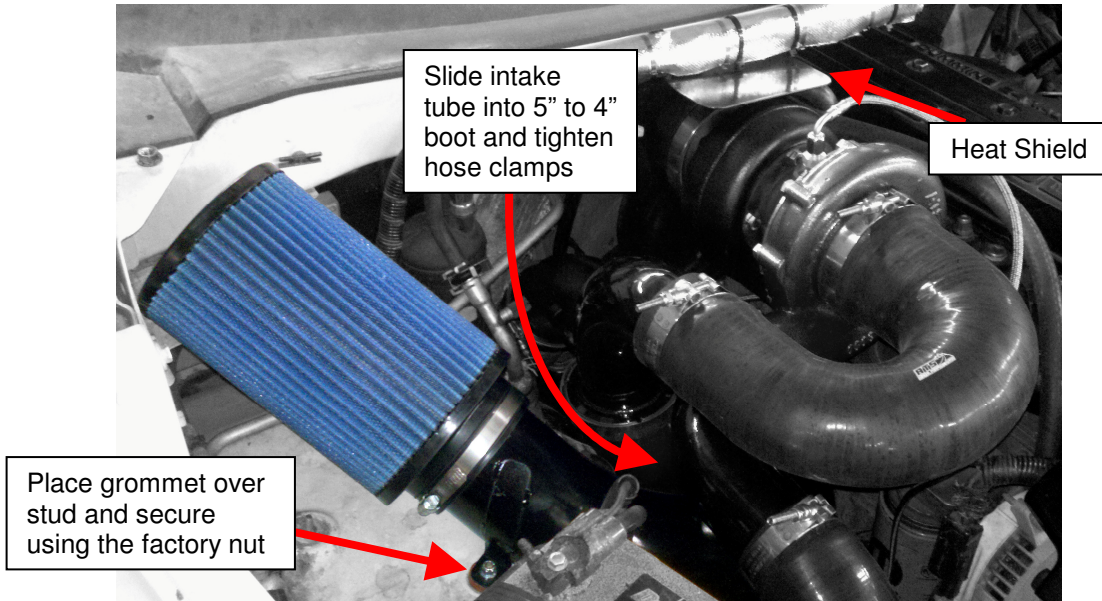


27. Install all the clamps and align each piece for good fitment.
28. Wrap the wiring harness on the firewall with the protective heat barrier. Use the supplied stainless steel zip ties to hold it in place.



29. Tighten all clamps, compressor housings and turbine housings to secure alignment.

30. Install the 5" to 4" boot and intake horn. Bolt it to the stud on the fenderwell putting the rubber grommet between the fenderwell and intake horn tab.



31. Install the heat shield using the M8-1.25x12mm bolts provided.
32. Set the new 4" downpipe in place of the factory downpipe.
33. Install the factory Cummins elbow, leaving the clamp loose, to the discharge of the Aurora 6000 Turbo.



34. Align it with the downpipe and tighten the clamps.
35. Double check all clamps, fittings and hoses to ensure everything is secure.

36. Refill the coolant system.
37. Start the engine and check for coolant or oil leaks and allow the truck to idle for a few minutes.
38. Check the transmission fluid level before driving.

Have Any Questions?

Thank you for purchasing the Aurora 3K/6K Compound Turbo Kit. Please check our website at <http://www.atsdiesel.com> for technical support and other performance products such as the 5-Star™ torque converter, ATS High Performance Valve Body and ATS High Performance Transmission along with our full line of power enhancers. Please call or e-mail our Technical Service Department, 8:00am to 5:30pm Mountain Standard Time, Monday through Friday.

Contact Information

Toll Free: 800-949-6002
Local: 303-431-7973
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Website: www.ATSDiesel.com
Email: info@ATSDiesel.com

We strive to make our instructions as clear and complete as possible. To achieve this, our instructions are under constant construction. We encourage you to visit our website to check for the most up-to-date manuals and diagrams as well as other information. If you have any suggestions as to how we can improve this installation manual, let us know at <mailto:Suggestions@ATSDiesel.com>.

Bill of Materials

1. Aurora 3000 Turbocharger, Straight Discharge 202-301-2218
2. Aurora 6000 Turbocharger, T4 with 3" V-band Discharge 202-602-1000
3. T4 Compound Exhaust Elbow 202-041-2272
4. Exhaust Elbow Heat Shield 202-043-2218
5. 3-Piece Pulse Flow Exhaust Manifold, T3 204-300-2218
6. Cummins Exhaust Elbow 4035122
7. Downpipe, 4" 205-005-2218
8. Silicone 180° Boot 202-040-2164
9. Silicone 90° Boot SIL000036
10. 5" to 4" Silicone Boot SIL000551
11. Charge Pipe S2, 2in V-Band 202-054-2218
12. Charge Pipe S1, 3in V-Band 202-027-2218
13. Charge Pipe S3, Intercooler 202-055-2218
14. 4" Intake with Mounting Tab 206-015-2218
15. ATS Air Filter 24-90008
16. 12x24" Heat Barrier Pack 13575
17. Oil Drain (long) 202-056-2218
18. Oil Drain (short) 202-048-2218
19. Oil Feed (long) 202-028-2218
20. Oil Feed (short) 202-046-2218
21. (12") 1/2 Hose 821-8
22. (42") 5/8" Heater Hose 28401
23. 2" V-Band Clamp 995W7-0296
24. 3" V-Band Clamp 134348
25. (3) 4.4" V-Band Clamp 9956V-0450
26. (4) 3.5" T-Bolt Clamp 94100-0350
27. 4.5" T-Bolt Clamp 94100-0450
28. 5" Worm Drive Clamp SS-88
29. 4" Worm Drive Clamp ET-72
30. T4 Gasket 204-010-1000

31. T3 Gasket 204-005-1000
32. (6) Exhaust Manifold Gasket 204-004-2218
33. A3K Oil Drain Gasket 311496
34. A6K Oil Drain Gasket 311585
35. (5) Stainless Steel Zip Ties 15" STAINLESS ZIP TIE
36. (2) 5/8" Barbed Hose Plug 105-005-1000
37. M12-1.5 to JIC-4 Fitting 7400-4-12
38. 1/8 NPT to JIC-4 Fitting 4FTX-S
39. (2) 1/2" Compression to JIC-8 Fitting 8-XHBU
40. (2) JIC-8 to 1/2" Push-Lok Fitting 30682-8-8B
41. Hardware Kit 202-001-2218
 - (2) M10-1.5 x 35mm Socket Head Cap Screws
 - (2) M10 Lock Washers
 - (2) M10 Flat Washers
 - (2) M8-1.25 x 20mm Bolts
 - (2) M8-1.25 x 12mm Bolts
 - (2) M10-1.5 x 20mm Bolts
 - (8) M10-1.5 x 50mm Studs
 - (8) M10-1.5 Flange Nuts
 - (1) M6-1.0 Nylock Nut
 - (1) Vibration Damping Grommet