

Instruction Manual v1.2

P/N: 202-302-2326/202-402-2326

Aurora 3000/4000 VFR Turbocharger

Fits: 2007.5-2012 6.7L Cummins

Removal

1. Disconnect both negative battery terminals
2. Drain engine coolant into a clean suitable container or bucket
3. Loosen clamps on the intake tube at the air filter housing and the turbocharger inlet.
4. Remove bolt attaching CCV tube to EGR cooler bracket.
5. Move tension clamp attaching CCV hose to the valve cover towards the EGR cooler.
6. Remove the intake tube and CCV tube as an assembly.
7. Disconnect electrical connectors from the MAF and Intake Temperature sensors on the air filter housing.
8. Remove the bolt holding the air filter housing to the radiator core support and then remove the air filter housing from the vehicle.
9. Loosen the t-bolt clamp on the charge pipe boot on the outlet of the turbocharger and remove the boot from the turbocharger.
10. Remove the turbocharger oil feed line from the oil filter housing and then top of the turbocharger.
11. Remove the turbocharger coolant line from the heater core tube and the top of the turbocharger.
12. Disconnect the turbocharger speed sensor electrical connector.
13. Disconnect the turbocharger actuator electrical connector.
14. Loosen the turbocharger to downpipe V-band clamp to disconnect the downpipe from the turbocharger outlet elbow.
15. Remove the exhaust hanger from the transmission bellhousing.
16. Remove the (2) oil drain line bolts from the bottom of the turbocharger.
17. Remove the coolant line banjo bolt from the bottom of the turbocharger.
18. Loosen the passenger side engine mount retaining nut.
19. Using an engine hoist lift engine from the passenger side lifting bracket.
20. Remove (4) engine mount bolts and position engine mount aside.
21. Disconnect turbocharger from exhaust manifold by removing (4) nuts.
22. Remove turbocharger from the vehicle.
23. Loosen v-band clamp attaching turbocharger outlet elbow to the turbocharger.
24. Remove the turbocharger oil feed line fitting from the turbocharger.
25. Remove the bolt retaining turbocharger speed sensor into the turbocharger center section and carefully remove the sensor from the turbocharger.

Installation

26. Replace o-ring on turbocharger speed sensor with provided o-ring.
27. Lubricate o-ring on turbocharger speed sensor with clean engine oil and install sensor into Aurora VFR turbocharger using the bolt removed from the factory turbocharger.
28. Replace o-ring on turbocharger oil feed fitting with provided o-ring.
29. Lubricate o-ring on oil feed fitting with clean engine oil and install fitting into Aurora VFR turbocharger.
30. Install turbocharger outlet elbow onto the Aurora VFR turbocharger. *****ENSURE ALIGNMENT PIN ON ELBOW GOES INTO ALIGNMENT HOLE ON TURBOCHARGER FOR CORRECT EXHAUST ALIGNMENT*****
31. Make sure the v-band clamp attaching the turbocharger outlet elbow to the turbocharger outlet is aligned properly and tighten the clamp.
32. Install (3) provided M10-1.5 studs into the turbocharger to exhaust manifold flange.
 - a. NOTE: If vehicle has an ATS manifold (or you are installing one at this time) the correct stud must be used in the turbocharger to exhaust manifold flange in the hole towards the front of the turbo and towards the fender of the vehicle.
33. Install provided turbocharger flange gasket onto turbocharger.
34. Ensure the exhaust manifold flange is clean and flat prior to installing turbocharger.
35. Ensure turbocharger oil drain line flange is clean and none of the original gasket is still attached to the flange or leaks will occur.
36. Install turbocharger into vehicle, taking care not to bend oil drain tube.
37. Install turbocharger mounting nuts and torque to 32 ft lbs.
38. Install passenger side engine mount onto engine block.
39. Lower engine back into cradle on frame, ensuring the mount fully seats and the retaining bolt is flat and fully seated into the channel.
40. Tighten engine mount retaining nut and bolt.
41. Replace coolant line banjo bolt seals with provided seals.
42. Install coolant line onto the bottom of the turbocharger using the factory banjo bolt.
43. Install provided oil drain tube gasket onto turbo oil drain tube and attach tube to turbocharger using factory bolts.
44. Align exhaust downpipe with the turbocharger outlet elbow and install v-band clamp onto mating flanges.
45. Ensure the clamp is aligned properly all the way around the flanges and then tighten the clamp.
46. Install exhaust hanger back onto transmission bellhousing.
47. Using the supplied adapter connect the turbocharger actuator electrical connectors ensuring the harness is routed away from any hot or sharp surfaces.
48. Connect the turbocharger speed sensor connector, ensuring the harness is routed away from any hot or sharp surfaces.
49. Install new seals onto the upper coolant line banjo bolts and install line onto the turbocharger and heater core tube.
50. Install oil feed line onto the top of the turbocharger and the oil filter housing.

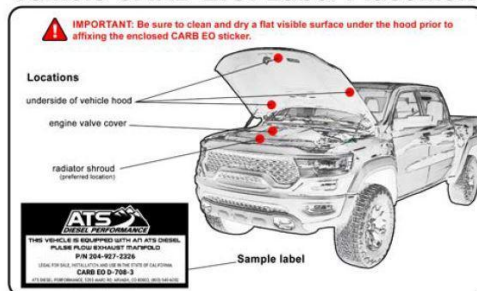
51. Reconnect the hot side charge pipe boot to the turbocharger outlet and then tighten the t-bolt clamp.
52. Re-install the air filter housing into the vehicle and re-install the bolt into the radiator core support.
53. Re-connect the MAF and Intake Temperature sensor electrical connectors.
54. Install intake tube onto the turbocharger inlet and onto the air filter housing outlet. Then tighten the clamps.
55. Install CCV tube onto valve cover and install clamp onto the valve cover outlet tube.
56. Install bolt to attach the CCV tube onto the EGR cooler bracket.
57. Re-fill engine cooling system.
58. Re-connect both negative battery terminals.
59. Start the vehicle and check for any leaks.
60. Test drive vehicle to test for proper turbocharger operation. Using the vehicle's exhaust brake function will help ensure turbocharger vanes are fully sweeping.
61. After test drive, ensure vehicle has no fluid or exhaust leaks.

CARB E.O. Label

Clean a flat visible surface under the hood and affix the enclosed CARB EO sticker for SMOG purposes. See the illustration below for acceptable locations to affix to vehicle. ATS Diesel recommends using the radiator shroud if possible.



Vehicle CARB E.O. Label Placement



Bill of Materials for 202-302-2326

<u>Part Number</u>	<u>Description</u>	<u>Quantity</u>
202-301-2326	Aurora 3000 VFR Turbocharger	1
202-251-2326	Turbo Installation/Hardware Kit	1
202-010-2326	Turbocharger Actuator Adapter Harness	1

Bill of Materials for 202-402-2326

<u>Part Number</u>	<u>Description</u>	<u>Quantity</u>
202-401-2392	Aurora 4000 VFR Turbocharger	1
202-251-2326	Turbo Installation/Hardware Kit	1
202-010-2326	Turbocharger Actuator Adapter Harness	1

Turbo Installation/Hardware Kit Contents

<u>Part Number</u>	<u>Description</u>	<u>Quantity</u>
1616BP	16mm Bonded Seal Washer	8
202-059-1000	2 Inch Round Hole Drain Tube Gasket	1
5260648	Turbo Flange Gasket	1
38801791	Oil Feed Fitting O-Ring	1
9262K603	Turbo Speed Sensor O-Ring	1
93675A325	M10-1.5x40mm Stud	4