



AURORA
TURBO SYSTEMS

REMOVAL/INSTALLATION INSTRUCTION MANUAL




TURBOCHARGER REMOVAL /INSTALLATION INSTRUCTIONS

2013-2018 RAM 4WD 2500/3500 6.7L CUMMINS



**Turbocharger Removal / Installation Manual v1.0:
2013-2018 Ram 6.7L Cummins**

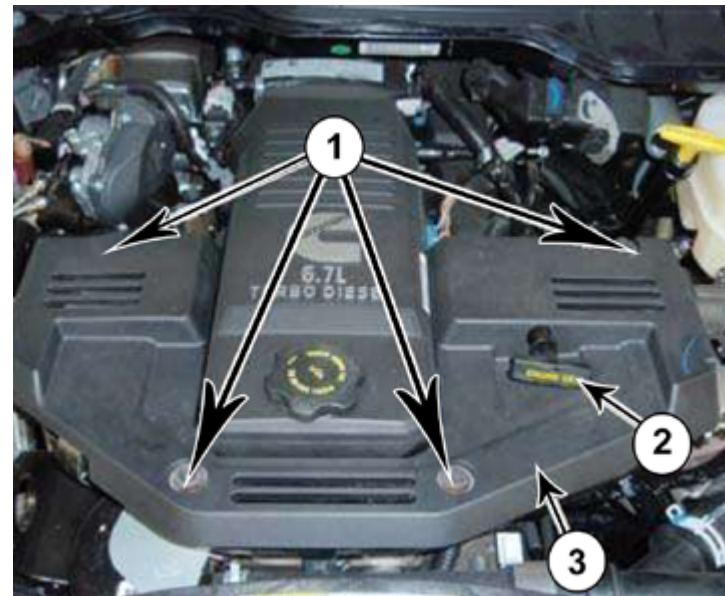
Special Tool(s)

| | |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
|  | 9866 - Wrench, Turbo Charger Bolt Originally Shipped In Kit Number(s) 9860. |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------|

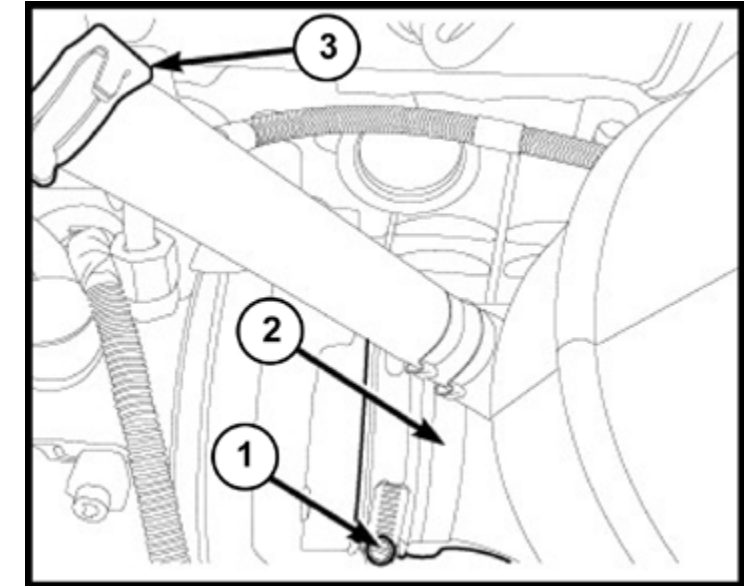
Please read all instructions before attempting removal / installation.

REMOVAL

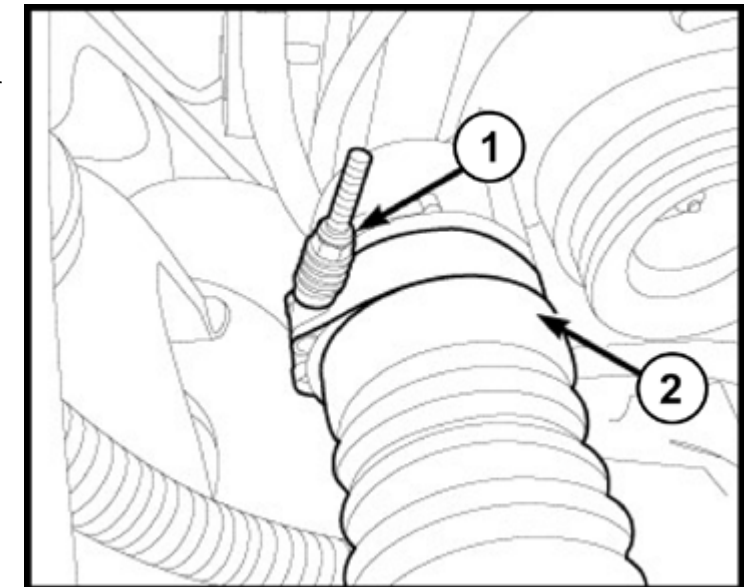
1. Disconnect and isolate both of the negative battery cables.
2. Remove the right battery tray.
3. Remove the engine oil dip stick (2).
4. Remove the bolts (1) and the engine cover (3).



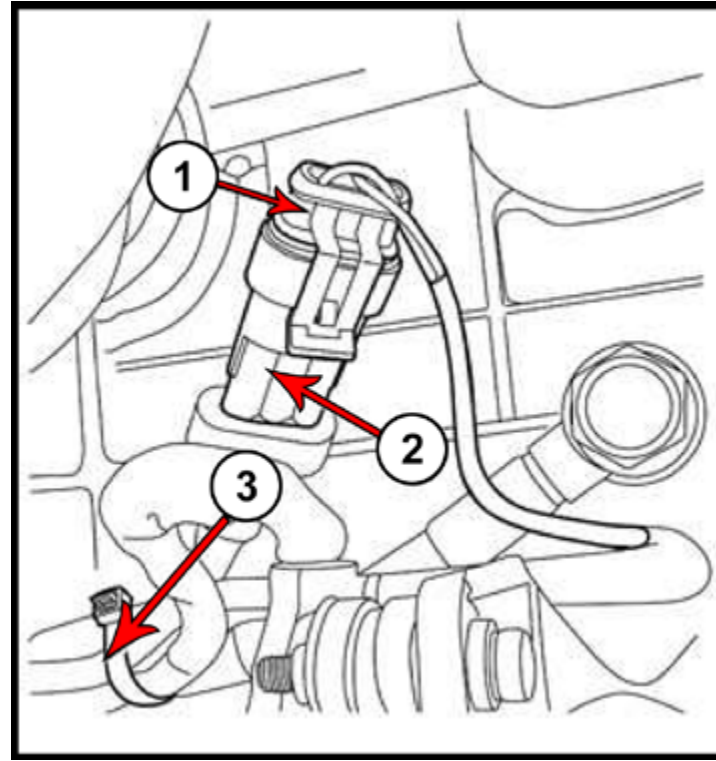
5. Remove the air cleaner body.
6. Disconnect the breather hose (3).
7. Loosen the clamp (1) and remove the inlet tube (2) from the turbocharger.



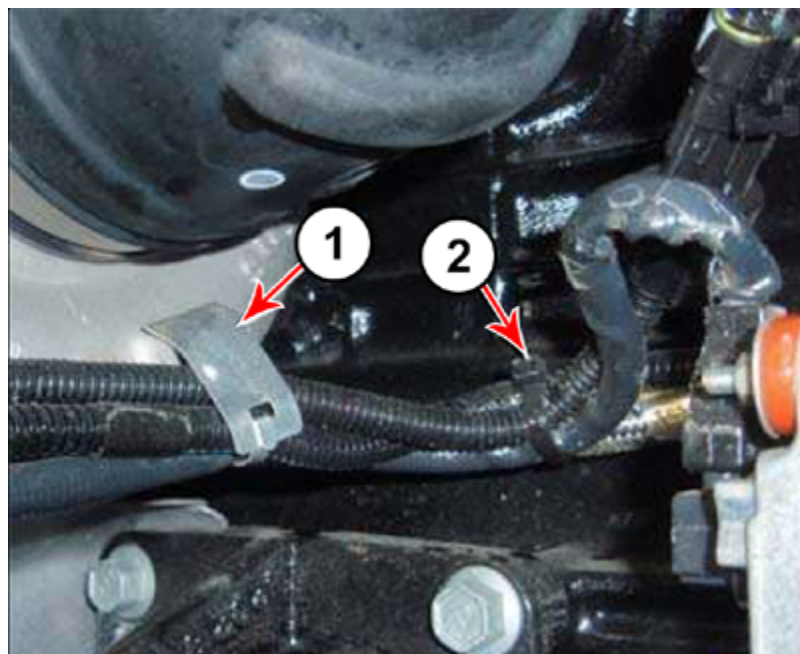
8. Remove the right side wheelhouse splash shield.
9. Loosen the clamp (1) and remove the right Charge Air Cooler (CAC) tube (2).



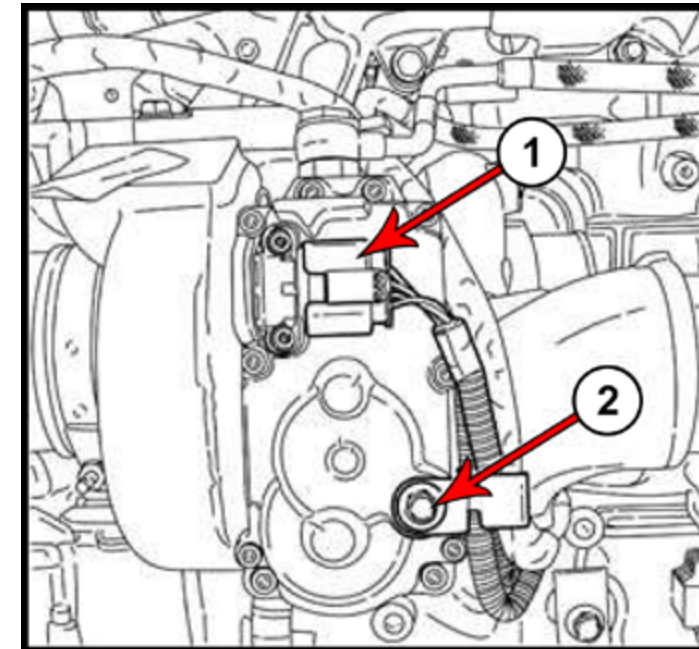
- 10. Drain the coolant system.
- 11. Remove the pressurized coolant bottle and position aside.
- 12. Disconnect the turbocharger speed sensor wire harness connector (1).



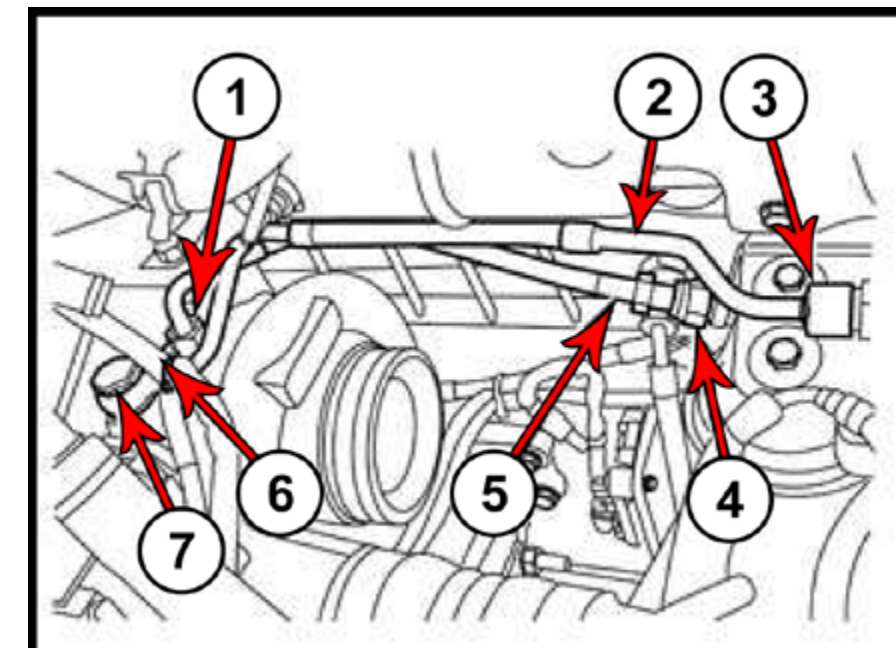
- 13. Cut the cable tie (2) securing the speed sensor wire harness to the turbocharger speed sensor wire harness.
- 14. Open clip (1) securing NOx wire harness and the turbocharger speed sensor wire harness.



- 15. Remove bolt (2) and separate retainer clip securing NOx wire harness and the turbocharger speed sensor wire harness to turbocharger actuator.
- 16. Disconnect turbocharger actuator wire harness connector (1) from the turbocharger by cleaning the connector to remove debris, pulling the light gray release lever away from the locked position with your thumb nail until it clicks into the unlocked position, then holding the light grey release lever down while pulling the connector apart.



- 17. Remove the turbocharger oil pressure line (1).
- 18. Remove banjo bolt (7) and the turbocharger coolant line (2).



19. Remove the right side engine mount.

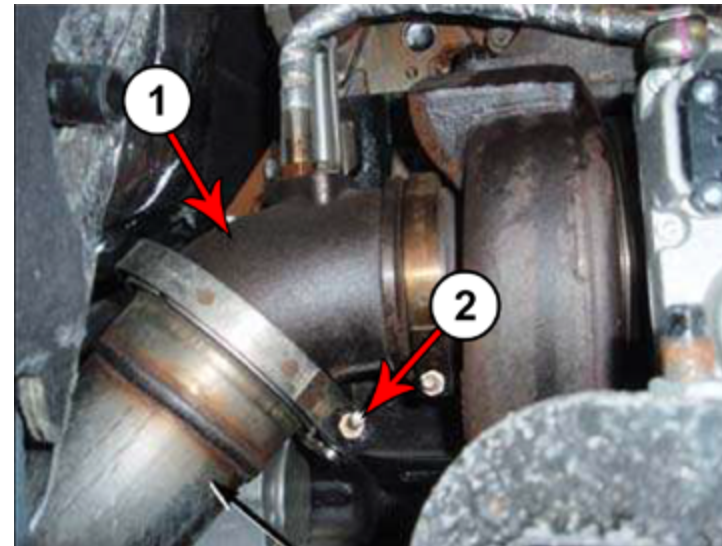


NOTICE: The right engine mount does not need to be fully removed just repositioned.

20. Raise and support the vehicle.

21. Remove the exhaust steady rest bracket from transmission.

22. Remove the V-clamp (2) from the turbocharger exhaust outlet (1).



23. Remove the bolts (1) and the turbocharger drain tube (5) from the turbocharger.

24. Remove the turbocharger oil drain tube (5) from the cylinder block.

25. Remove the banjo bolt (4) and the coolant tube (3) from the turbocharger.

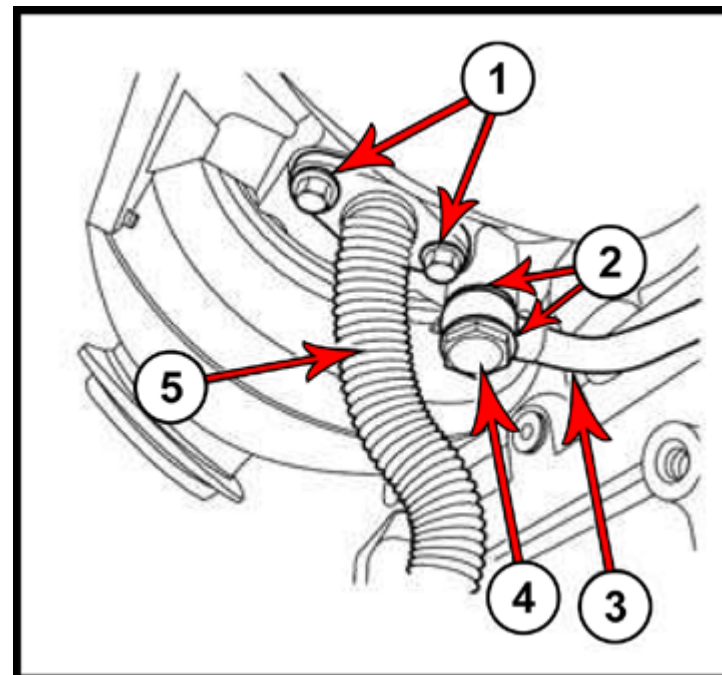
26. Remove support and lower the vehicle.

27. Using the Turbocharger Bolt Wrench Tool 9866 , remove the turbocharger to exhaust manifold mounting nuts.

28. Remove the turbocharger from the vehicle coming through the right side wheel.

29. Clean the turbocharger mating surfaces.

30. Inspect the turbocharger for damage, if necessary replace the turbocharger.



INSTALLATION

Special Tools:

| | |
|--|-------------------------------------------------------------------------------------------|
| | <p>9866 - Wrench, Turbo Charger Bolt</p> <p>Originally Shipped In Kit Number(s) 9860.</p> |
|--|-------------------------------------------------------------------------------------------|



CAUTION: Ensure that turbocharger and charge air cooler are free of excess oil and debris. Do not allow any water or solvents to enter the turbocharger inlet or outlet. If necessary, clean turbocharger and the charge air cooler.

1. Clean the turbocharger mating surfaces.

2. Pre-lube the turbocharger with 29.9 - 59.14 ml (1 - 2 oz) clean engine oil.



NOTE: If old gasket appeared to be leaking, check the turbocharger/exhaust manifold mounting flanges for warping. Using a straight edge and feeler gauge measure along the two longest sides of the flanges for warpage. Spec is 0.1 mm (0.004 in.) for the turbocharger flange and 0.05 mm (0.002 in.) maximum.

3. Using a **NEW** gasket, install the turbocharger onto the exhaust manifold studs by coming through right side wheel well and tighten the nuts finger tight.

4. Using Turbocharger Bolt Wrench Tool 9866, tighten the nuts using a cross pattern to 43 N·m (32 ft. lbs.).

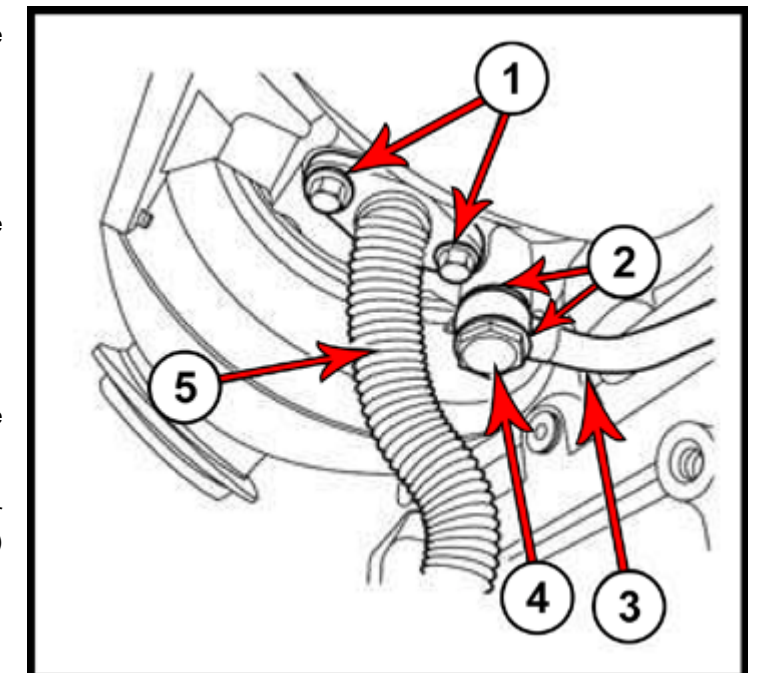
5. Raise and support the vehicle.

6. Inspect the oil drain tube O-rings for nicks or cuts. Replace if necessary. Lubricate the O-rings seals with clear oil.

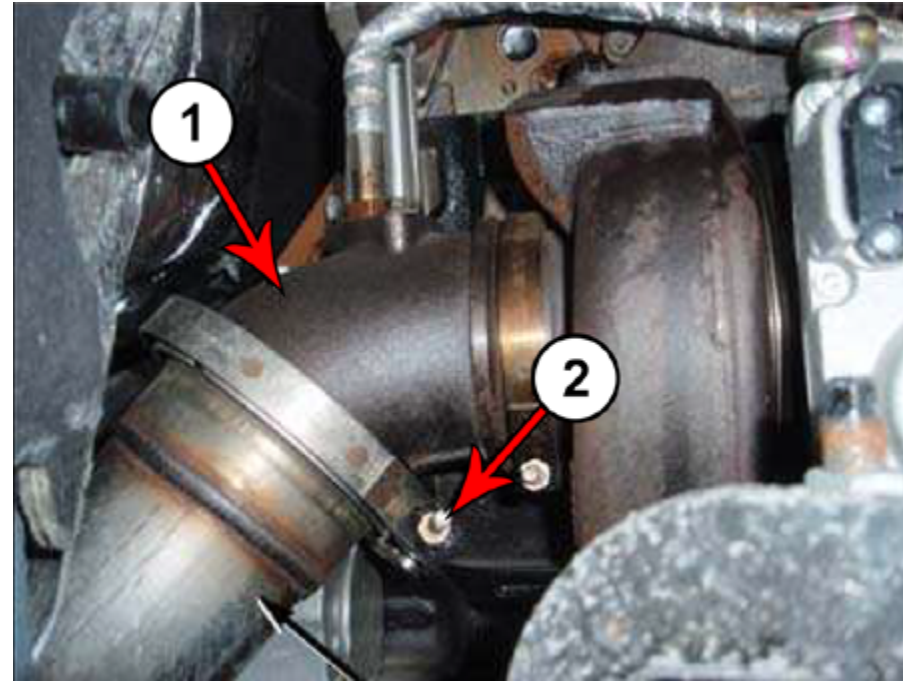
7. Install the turbocharger drain tube (5) into engine block.

8. Using a **NEW** gasket, install the turbocharger drain tube bolts (1) and tighten to 24 N·m (18 ft. lbs.).

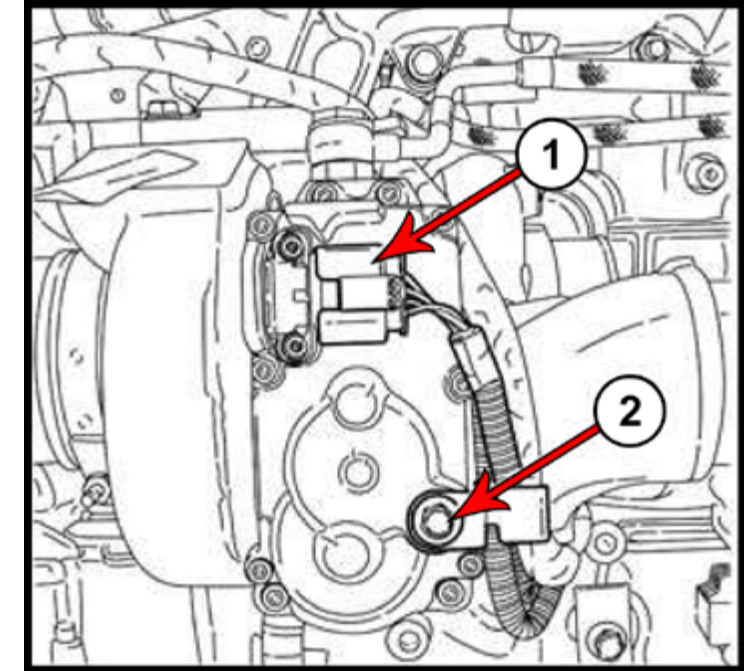
9. Using **NEW** sealing washers (2), install the lower turbocharger coolant line (3) and tighten the banjo bolt (4) to 24 N·m (18 ft. lbs.).



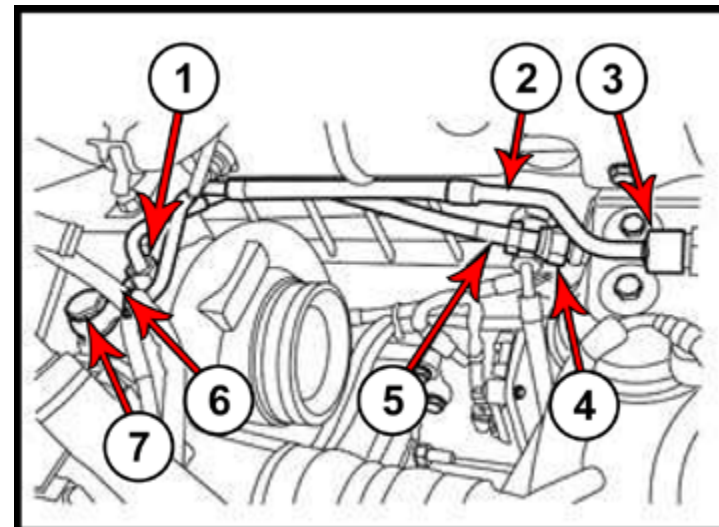
10. Using a **NEW** gasket and a **NEW** clamp (2), connect the exhaust pipe to the turbocharger exhaust outlet (1) with the clamp facing down as shown. Tighten the clamp (2) to 17 N·m (13 ft. lbs.). Using a rubber mallet, hit the exhaust pipe to turbocharger clamp three times around the perimeter of the clamp (2) and tighten the clamp (2) to 17 N·m (13 ft. lbs.).



16. Connect the turbocharger actuator wire harness connector (1).
17. Position the NOx wire harness and the turbocharger speed sensor wire harness into retainer clip.
18. Install the bolt (2) to turbocharger actuator and tighten to 11 N·m (8 ft. lbs.).



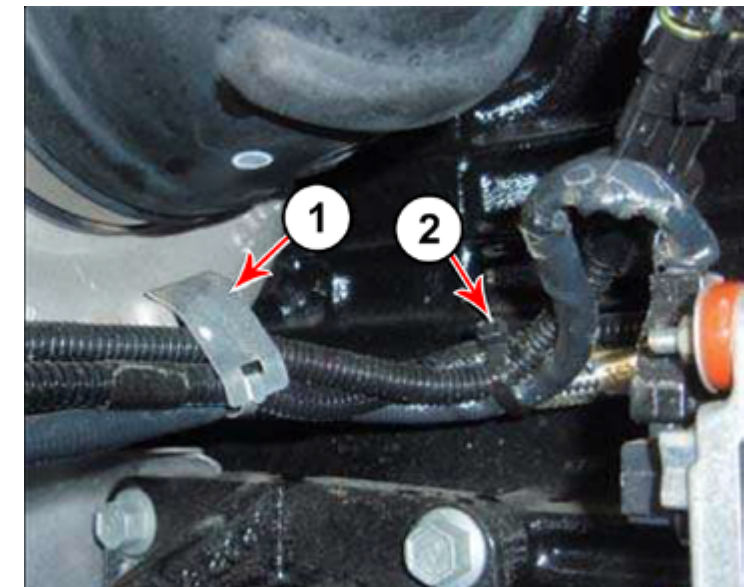
11. Install the exhaust steady rest bracket to the transmission and tighten the bolts to 43 N·m (32 ft. lbs.).
12. Install the right engine mount.
13. Remove support and lower the vehicle.
14. Using **NEW** sealing washers, install the coolant line (2) to the turbocharger and tighten the banjo bolt (7) and fitting (3) to 24 N·m (18 ft. lbs.).



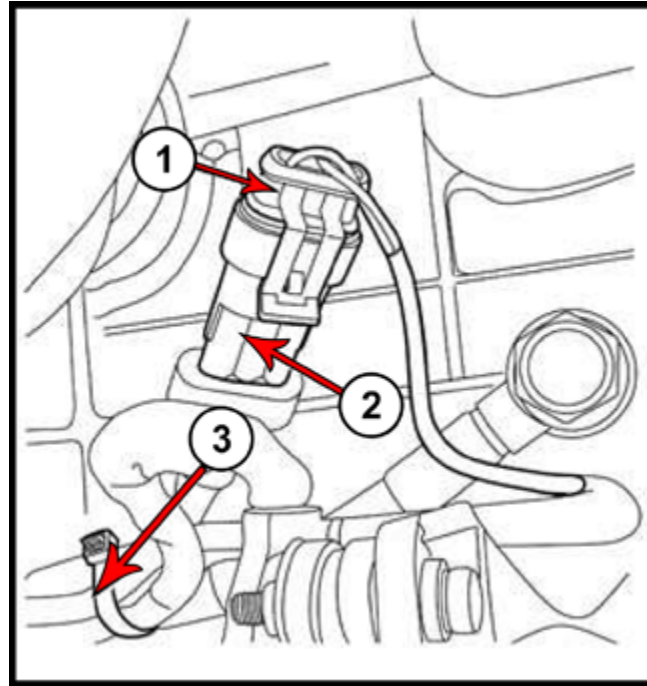
! **NOTE:** Maintain 10 mm minimum distance between oil supply line and turbine housing or exhaust manifold. Maintain a 5 mm minimum distance between oil supply line and any other component.

15. Install the turbocharger oil pressure line (5) and tighten the fittings (1, 4) to 24 N·m (18 ft. lbs.).

19. Position the NOx wire harness and the turbocharger speed sensor wire harness into the retainer and close retainer clip (1).
20. Using a cable tie (2), tie the NOx sensor wire harness and turbocharger speed sensor wire harness together.



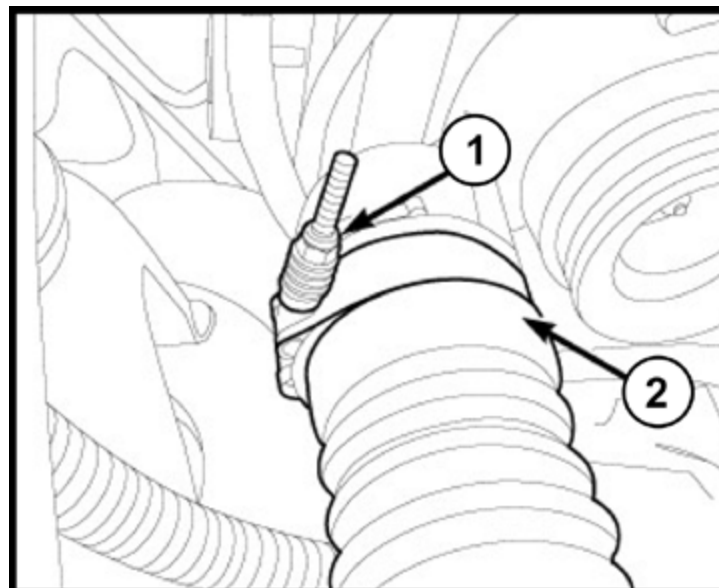
21. Connect the turbocharger speed sensor wire harness connector (1).



22. Install the pressurized coolant bottle.

23. Install the right Charge Air Cooler (CAC) tube (2) to the turbocharger and tighten the clamp (1) to 11 N·m (8 ft. lbs.).

24. Install the right side wheelhouse splash shield.



NOTES

CONTACT US

ATS Diesel Performance, Inc.
 5293 Ward Rd.
 Arvada, CO 80002

Toll Free: (800) 949-6002

Local: (303) 431-7973

Fax: (303) 431-0135

Website: www.atsdiesel.com

Email: info@atsdiesel.com



TROUBLESHOOTING:

This manual is to assist you with the removal and installation of your vehicle's turbocharger. Please use the contact information to the left for assistance with any questions regarding this installation. If you are removing/installing the unit for a customer, please pass this manual on to your customer for future reference.

PATENTED INNOVATION MEANS MORE POWER TO THE GROUND.

ATS WARRANTY
5yr/500k



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