



**Installation Manual v1.1:  
204-927-2326  
2-Piece Pulse Flow Exhaust Manifold, Stock Replacement  
2007.5-2016 6.7L Cummins**

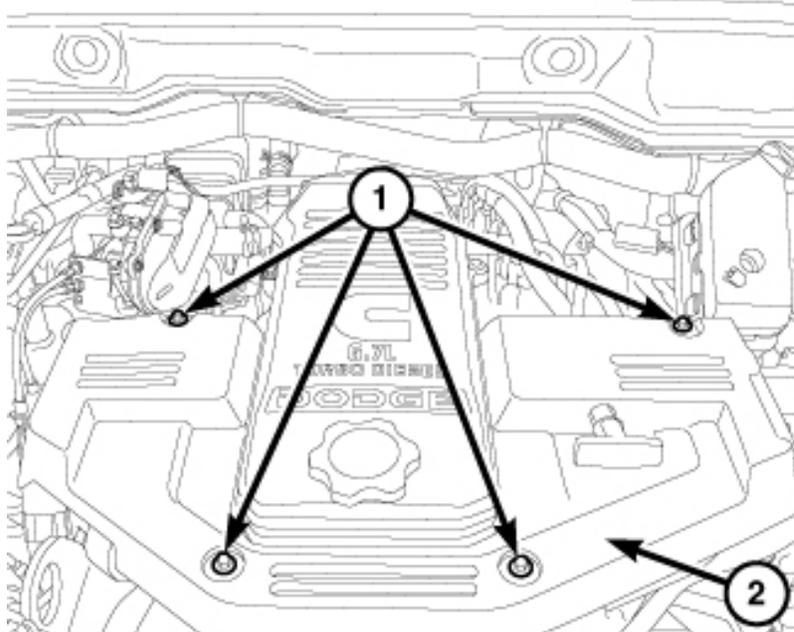
**Please read all instructions before installation.**

We suggest purchasing new gaskets and before starting the installation. The following list includes the factory part numbers for the parts. Not all are required but having them on hand will make for an easier installation.

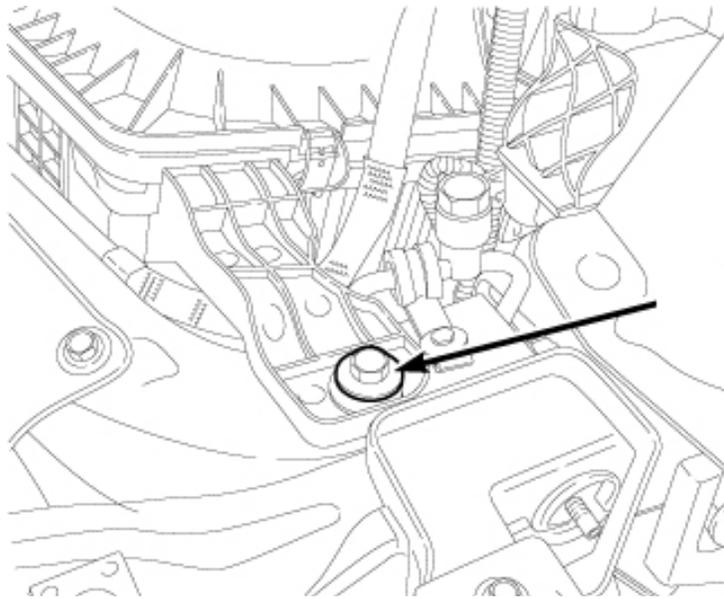
- Rear EGR Cooler Gasket - 68206031AA
- Front EGR Cooler Gasket - 68206022AB
- (6) Exhaust Manifold Gaskets - 5135789AB
- Turbocharger Gasket - 68005334AB
- EGR Crossover Tube Gasket - 68005465AA

**Disassembly:**

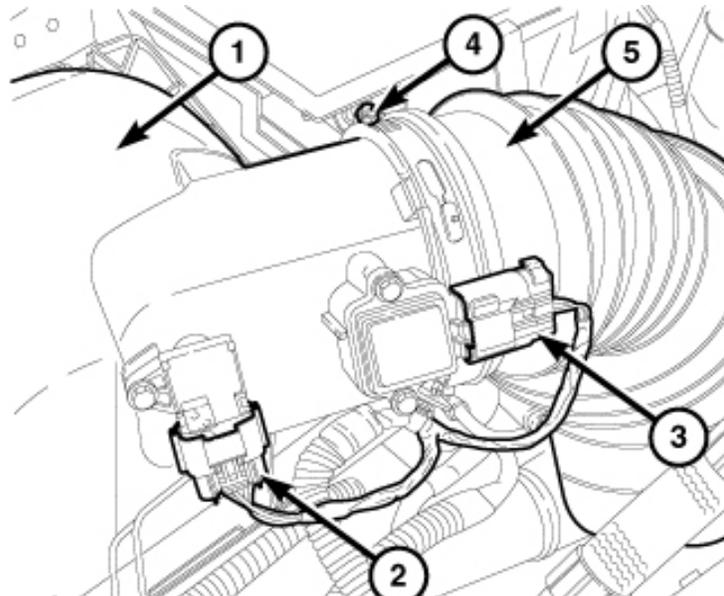
1. Disconnect the negative battery cables.
2. Drain the coolant into a clean container and set it aside. It is not necessary to completely drain the system, just to below the level of the turbocharger.
3. Remove the 4 bolts (1) and the EGR crossover tube cover (2).



4. Remove the front air box bolt.



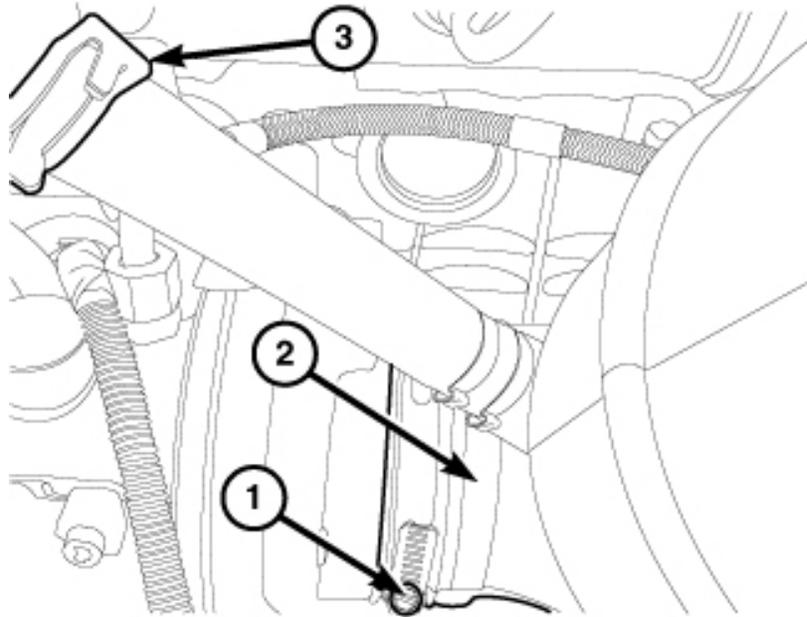
5. Disconnect the MAF sensor (3).
6. Disconnect the TBAP sensor (2).
7. Loosen the clamp (4) and disconnect the intake air tube (5) from the air cleaner body (1).



8. Lift up and remove the air cleaner body.

9. Disconnect the breather hose (3).

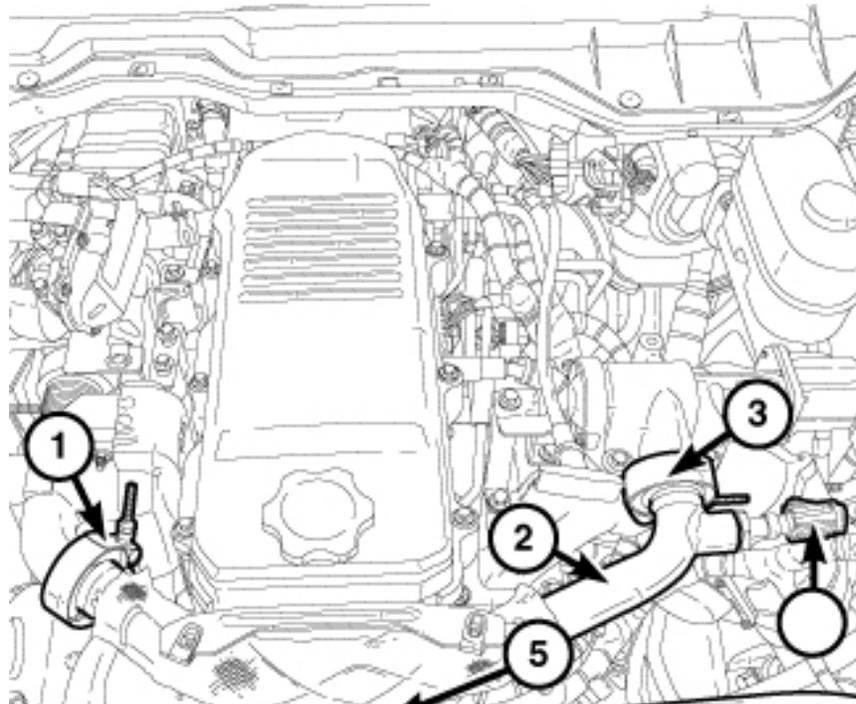
10. Loosen the clamp (1) and remove the inlet tube (2) from the turbocharger.



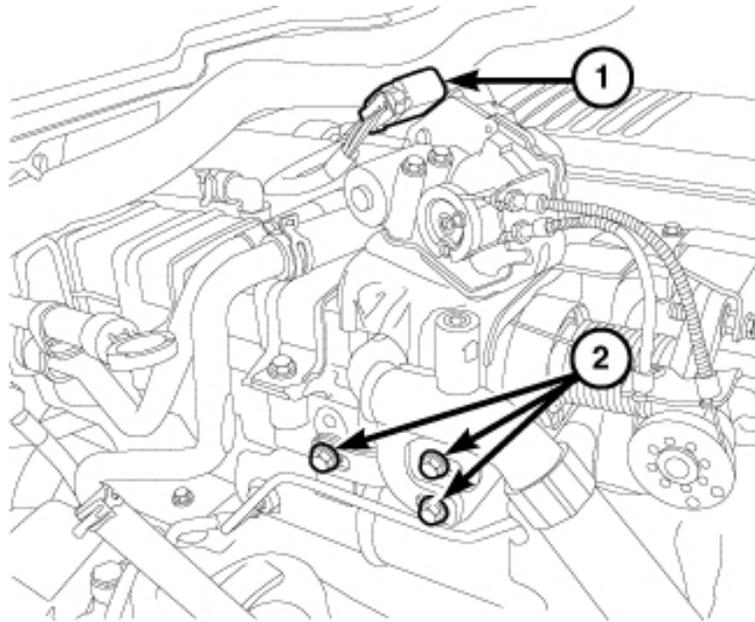
11. Remove the clamp (1) on the passenger side of the crossover tube (2).

12. Loosen but do not remove the clamp (3) on the driver side of the crossover tube.

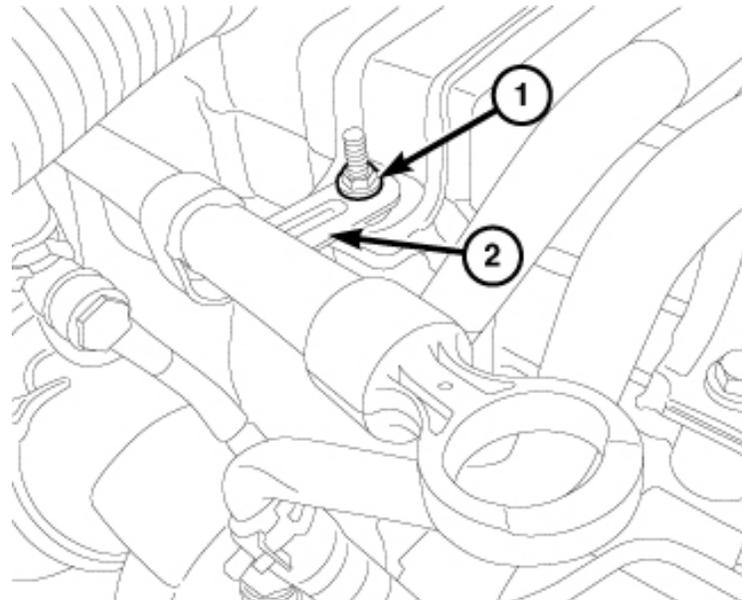
13. Remove the tube mounting bolt (5) at the bottom/center of the EGR crossover tube.



14. Disconnect EGR bypass valve harness connector (1).



15. If equipped, remove the retaining nut and position the transmission dipstick/fill tube away from the EGR cooler.



16. If equipped, detach coolant hose support (1) from EGR cooler stud.

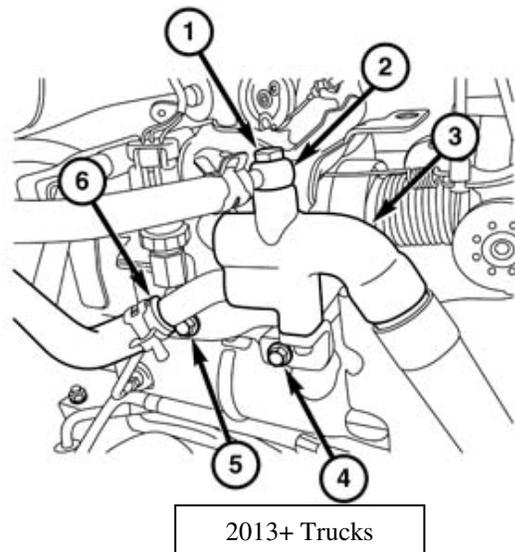
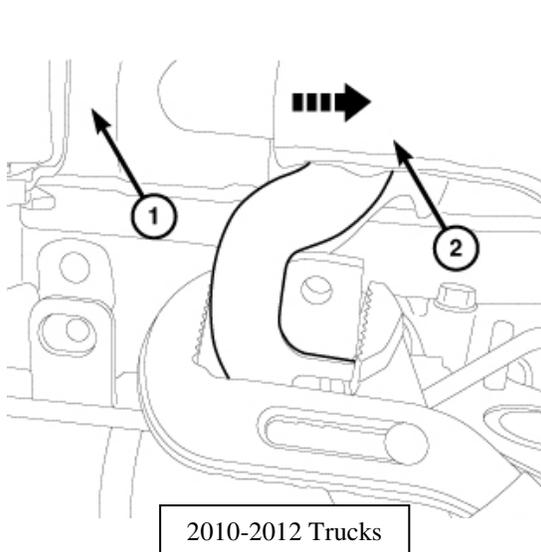


17. Remove the forward coolant tube from EGR cooler.

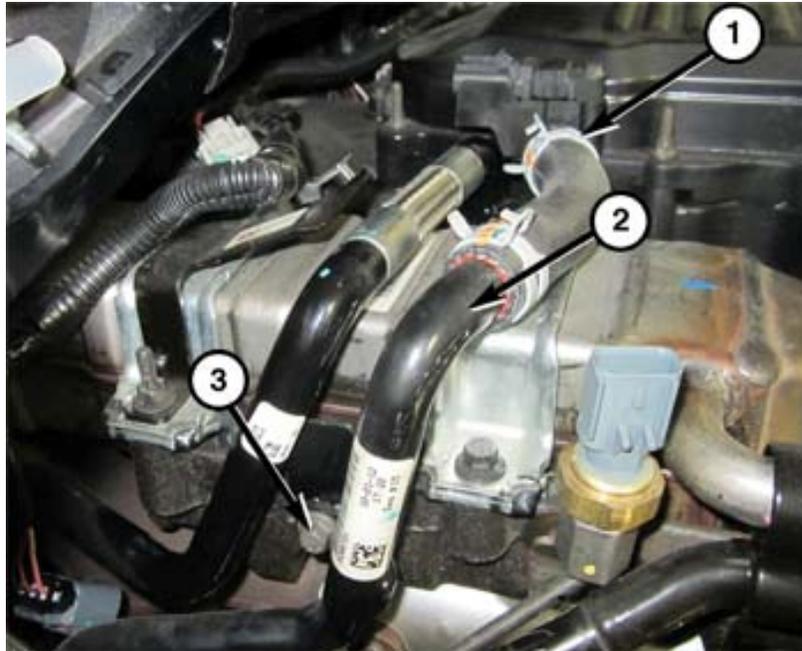
2007.5-09 - Disconnect the rubber hose.

2010-12 - Use a pair of channel lock pliers as shown to remove the coolant tube from the cooler.

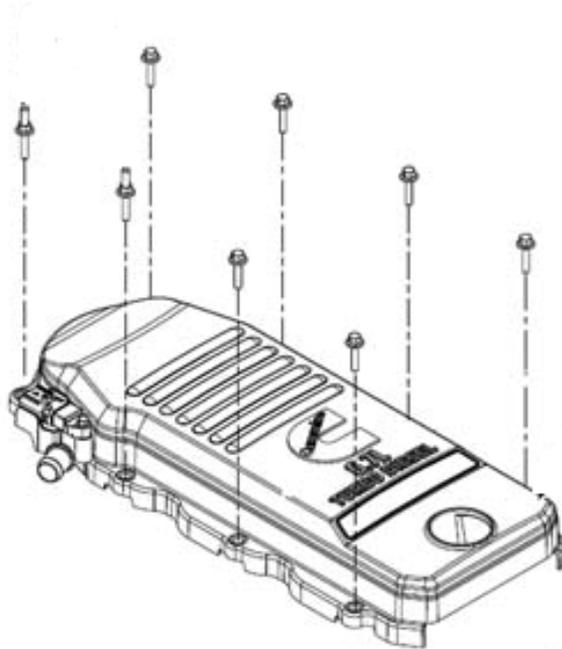
2013+ - Remove the heater hose (6) from EGR cooler outlet tube (3). If necessary, remove the banjo bolt (1) and position aside coolant vent hose. remove bolt (4) and slide the EGR coolant outlet tube (3) forward to disconnect.



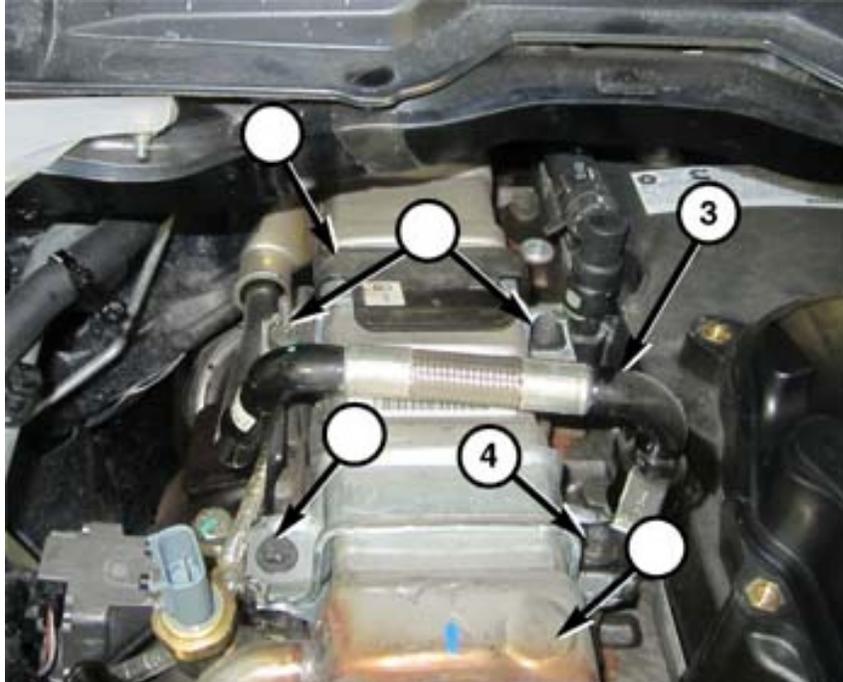
18. Disconnect breather hose (1), remove bolt (3) and the breather tube (2).



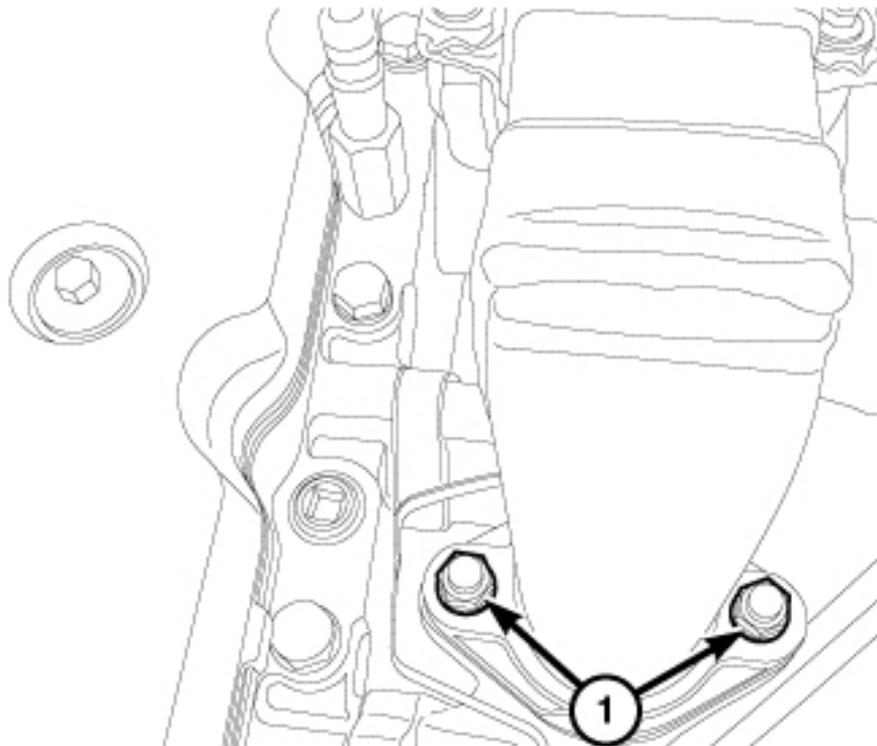
19. On 2013+ vehicles, remove the crank case vent cover.



20. Remove the bolt (4) and rear coolant tube (3).



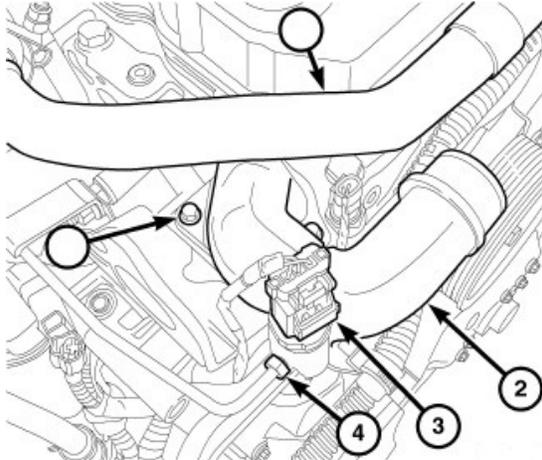
21. Remove the front and rear EGR cooler flange nuts (1).



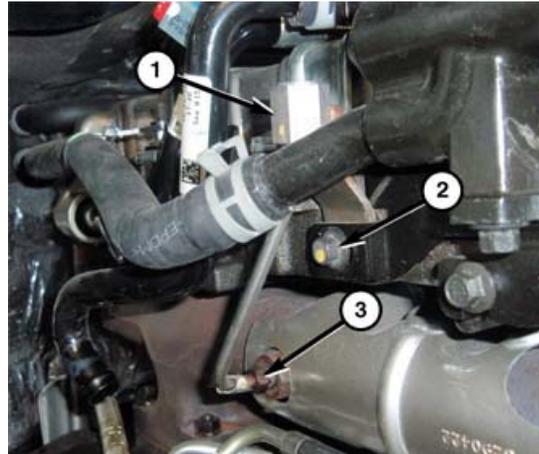
22. Remove the exhaust backpressure sensor tube from the exhaust manifold.

On 2007.5-2012 trucks, the tube will run from the manifold to the thermostat housing. Disconnect both ends and remove the nut that attaches it to the engine. Set the tube aside.

On 2013+ trucks, the sensor and tube are mounted to a bracket. Remove the bolt (2) and disconnect the tube from the manifold. Disconnecting the electrical connector is not necessary, you can simply move it out of the way.



2007.5-2012 Trucks



2013+ Trucks

23. Remove the heat shield that covers the front half of the manifold by removing the nuts attached to the exhaust manifold studs.

24. Remove the bolts on the bottom of the EGR cooler bracket and lift the entire EGR assembly out of the engine compartment and set aside.

25. Remove the exhaust steady rest bracket from the transmission bellhousing. This will allow some movement of the turbo for the installation.

26. Remove the turbocharger to exhaust manifold mounting nuts. The turbocharger will not move much because it is still mounted to other components. Completely removing the turbo is not necessary.

27. Remove the two rear exhaust manifold cap screw lock plates.

28. Remove the cab heater tubing/bracket from the exhaust manifold stud.

29. Remove the exhaust manifold studs. At each cylinder

30. Slide the factory exhaust manifold upward out of the turbo and remove the manifold. Keep the studs in order as most of them will be reused. Discard the old gaskets.

## Installation

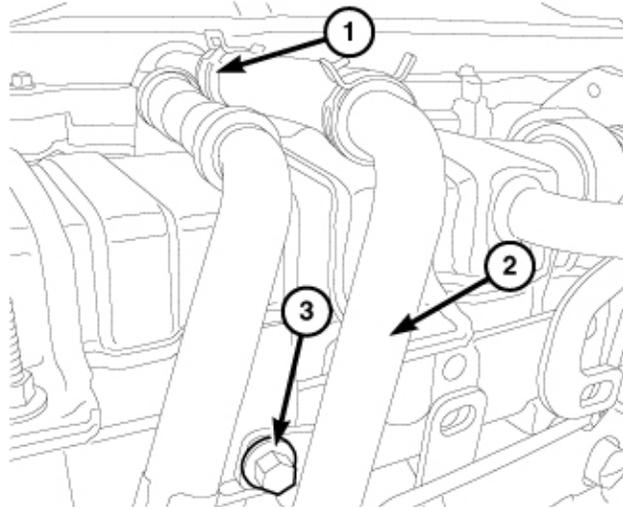
31. Clean the gasket sealing surfaces on the head, EGR cooler and turbo.
32. Install one of the M10-1.5x50mm studs in the threaded hole on the turbo flange of the exhaust manifold.
33. Install an M10-1.5x50mm stud in the lower hole of the #5 cylinder.
34. Place a new exhaust manifold gasket over the stud. Align the upper hole of the gasket with the upper hole on the #5 cylinder and use a small piece of tape to keep it in place.
35. Place a new turbo flange gasket over the 3 studs on the turbo.
36. Carefully slide the exhaust manifold over turbo studs into the holes on the exhaust manifold and start to thread on the nuts. At the same time, slide the manifold over the stud installed on the head.
37. Using the factory hardware, thread the nuts onto the turbo studs by hand. Due to tight clearances on the manifold, we suggest working the nuts down the studs a little at a time, slowly joining the two parts.
38. Install the factory standoff and bolt in the upper hole of the #5 cylinder but do not tighten it down. Remove the tape securing the gasket in place.
39. Install the supplied nut on the stud in the bottom of #5 but do not tighten it.
40. Working cylinder port to cylinder port, slide a gasket behind the flange and reinstall the factory hardware. Do not tighten any of the hardware until all are installed.
41. Starting from the center and moving in a pattern outward, tighten the exhaust manifold bolts and nut to **32 ft-lbs**.
42. Torque the turbo to manifold nuts to **32 ft-lbs**.
43. Reinstall the exhaust backpressure sensor tube. Torque the mounting flange bolt to **89 in-lbs** and the flare nut(s) to **89 in-lbs**.
44. Install four (4) of the M10-1.5x50mm studs into the EGR ports on the new manifold. The studs should protrude approximately 1" (25mm) above the surface of the EGR port.
45. Place new front and rear EGR gaskets over the studs.
46. Slide the EGR cooler assembly over the studs installed in the manifold.

47. Check clearance between the EGR support bracket and the junction bell of the manifold. In most cases there is no interference but in rare cases the EGR bracket can hit junction bell of the manifold. If this occurs, mark the location on the support bracket, take it out of the engine compartment and grind some material away from the marked location.



48. Line up the holes on the support bracket and reinstall bolts hand tight.
49. Install the factory flange nuts on the manifold studs hand tight.
50. Reinstall the EGR crossover tube and clamp using a new gasket on the EGR side. Do not tighten the clamp, just put it in place.
51. Reinstall the crossover tube bolt.
52. Once all the components are installed hand tight. Torque the hardware in the following order:
- a. Front EGR port nuts - **32 ft-lbs**
  - b. Rear EGR port nuts - **44 ft-lbs**
  - c. EGR crossover tube clamps - **89 in-lbs**
  - d. EGR support bracket bolts - **27 ft-lbs**
53. Reinstall the exhaust steady rest bracket from the transmission bellhousing.
54. Reinstall dipstick tube and /or coolant hose support if equipped.
55. Reinstall the rear EGR coolant tube. Torque the mount bolt to **18 ft-lbs**.
56. If equipped, reinstall the crank case vent cover and install bolts to **89 in-lbs**.

57. Reinstall the breather (2) and connect breather hose (1). Torque the bolt (3) to **18 ft-lbs.**



58. Reinstall the forward coolant tube.
59. Reinstall the air filter assembly and sensor connections.
60. Reinstall the engine cover and torque the bolts to **89 in-lbs.**
61. Refill the coolant.
62. Reconnect the negative battery cables.
63. Start the engine and check for leaks. If no leaks are present, the vehicle is ready to drive.

## **Have Any Questions?**

Thank you for purchasing the ATS 2-Piece Pulse Flow Exhaust Manifold. 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**

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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. 2-Piece Pulse Flow Exhaust Manifold
2. (6) M10-1.5x50mm Stud
3. (2) M10-1.5mm Serrated Flange Nut