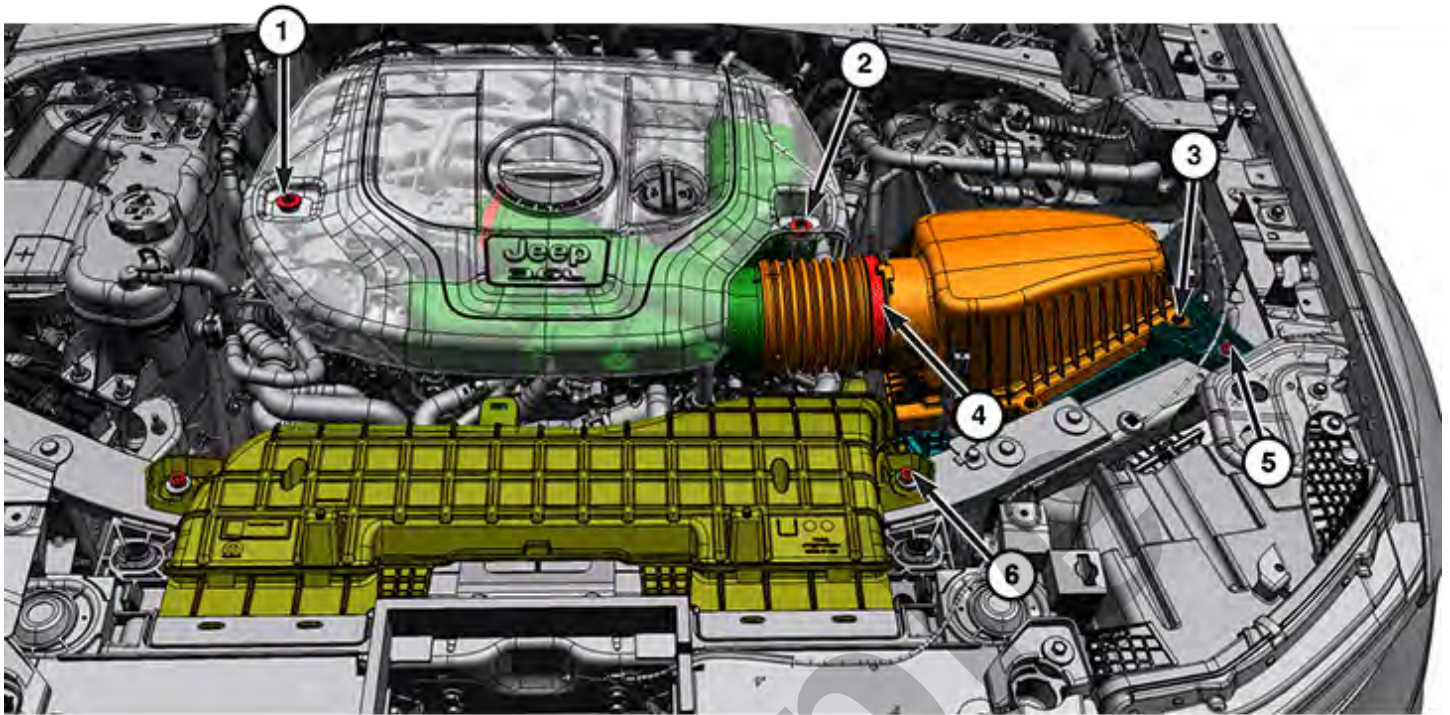


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2009 JEEP Commander OEM Service and Repair Workshop Manual

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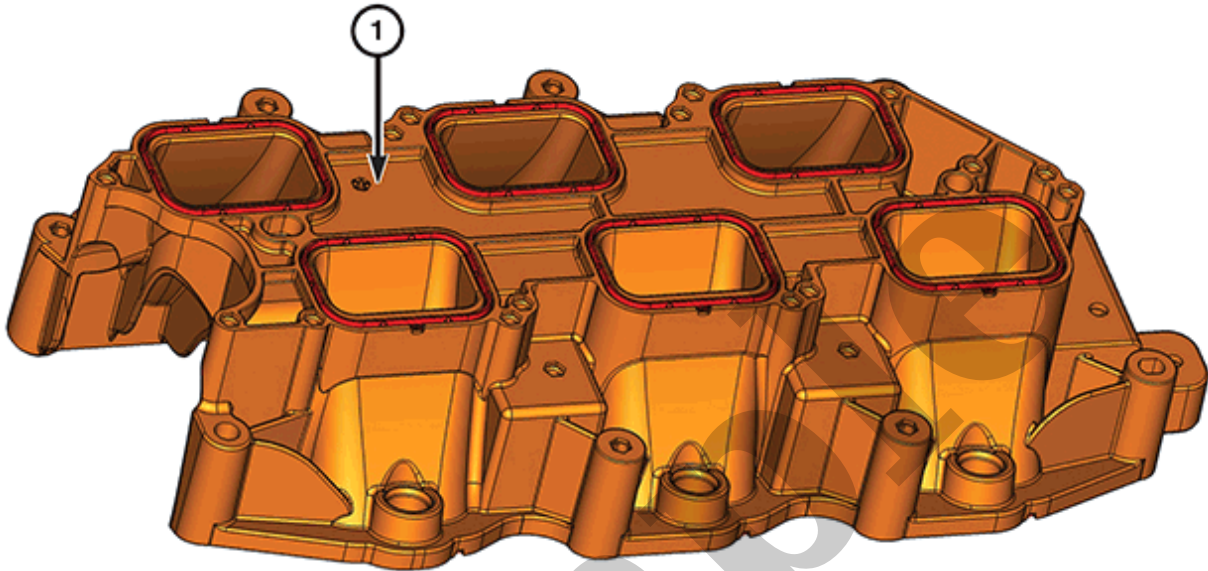


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CALLOUT	DESCRIPTION	SPECIFICATION	COMMENTS
1	Engine Cover Bolts	5 N·m (44 In. Lbs.)	–
2	Air Cleaner Resonator to Support Bracket Nut	7 N·m (62 In. Lbs.)	–
3	Air Cleaner Cover Screws	4 N·m (35 In. Lbs.)	–
4	Air Cleaner Resonator Clamps	4 N·m (35 In. Lbs.)	–
5	Air Cleaner Body Bolts	7 N·m (62 In. Lbs.)	–
6	Intake Air Tube Bolts	7 N·m (62 In. Lbs.)	–
–	Engine Cover Ball Stud to Intake Manifold	6 N·m (53 In. Lbs.)	–

The Electronic Throttle Control (ETC) and Manifold Air Pressure (MAP) sensor are attached directly to the upper intake manifold. The upper intake manifold also provides vacuum ports for brake booster, positive crankcase ventilation (PCV) and emissions control.

LOWER INTAKE MANIFOLD

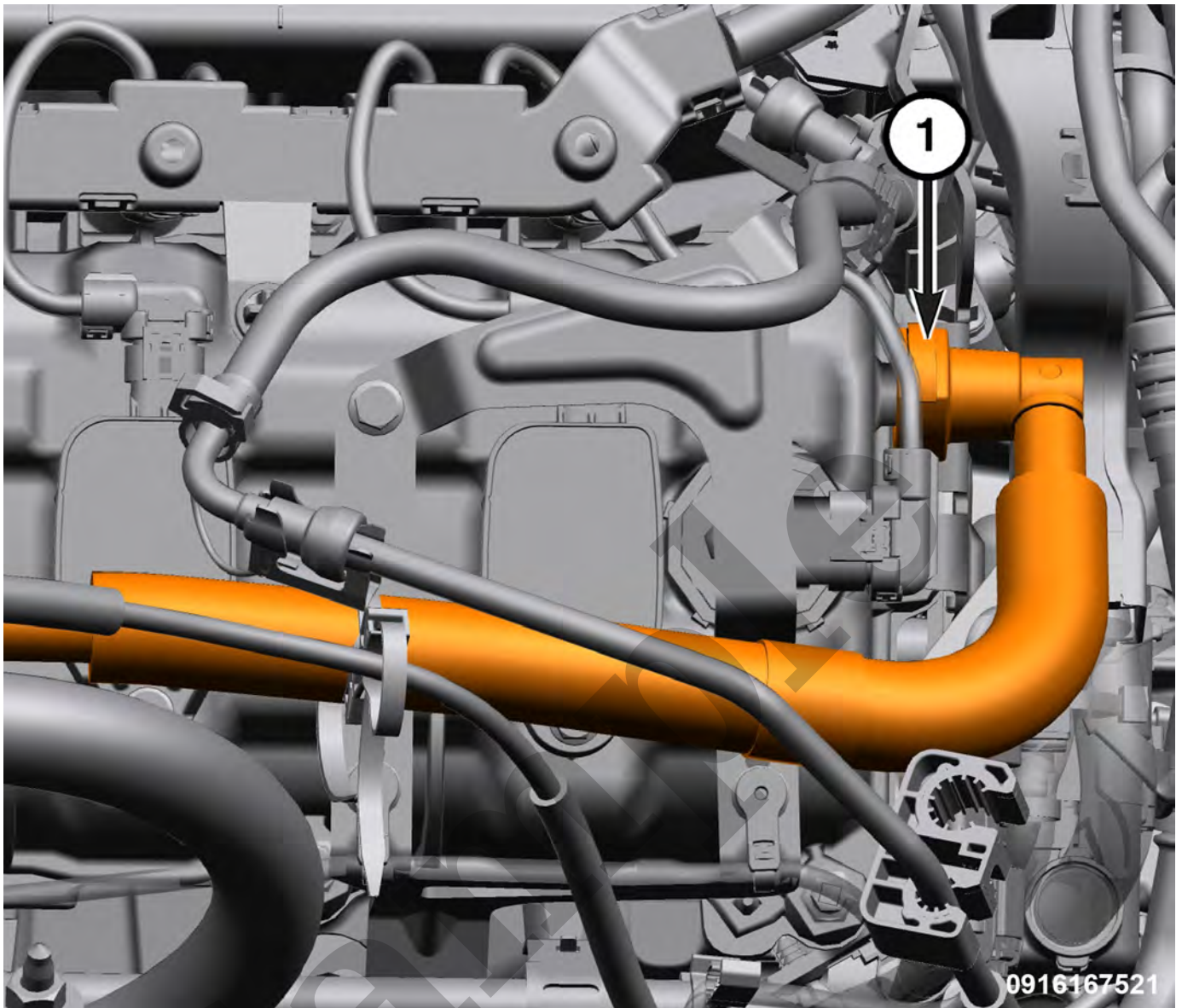


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The lower intake manifold (1) is an injection molded nylon composite design. The lower intake manifold is sealed to the cylinder heads using six individual press-in-place Fluoroelastomer (FKM) gaskets. Inspect the gaskets whenever the lower intake manifold is removed from the engine. The gaskets may be reused if no issues are found. The eight upper intake manifold fasteners thread directly into the composite lower intake manifold and are a self-tapping design.

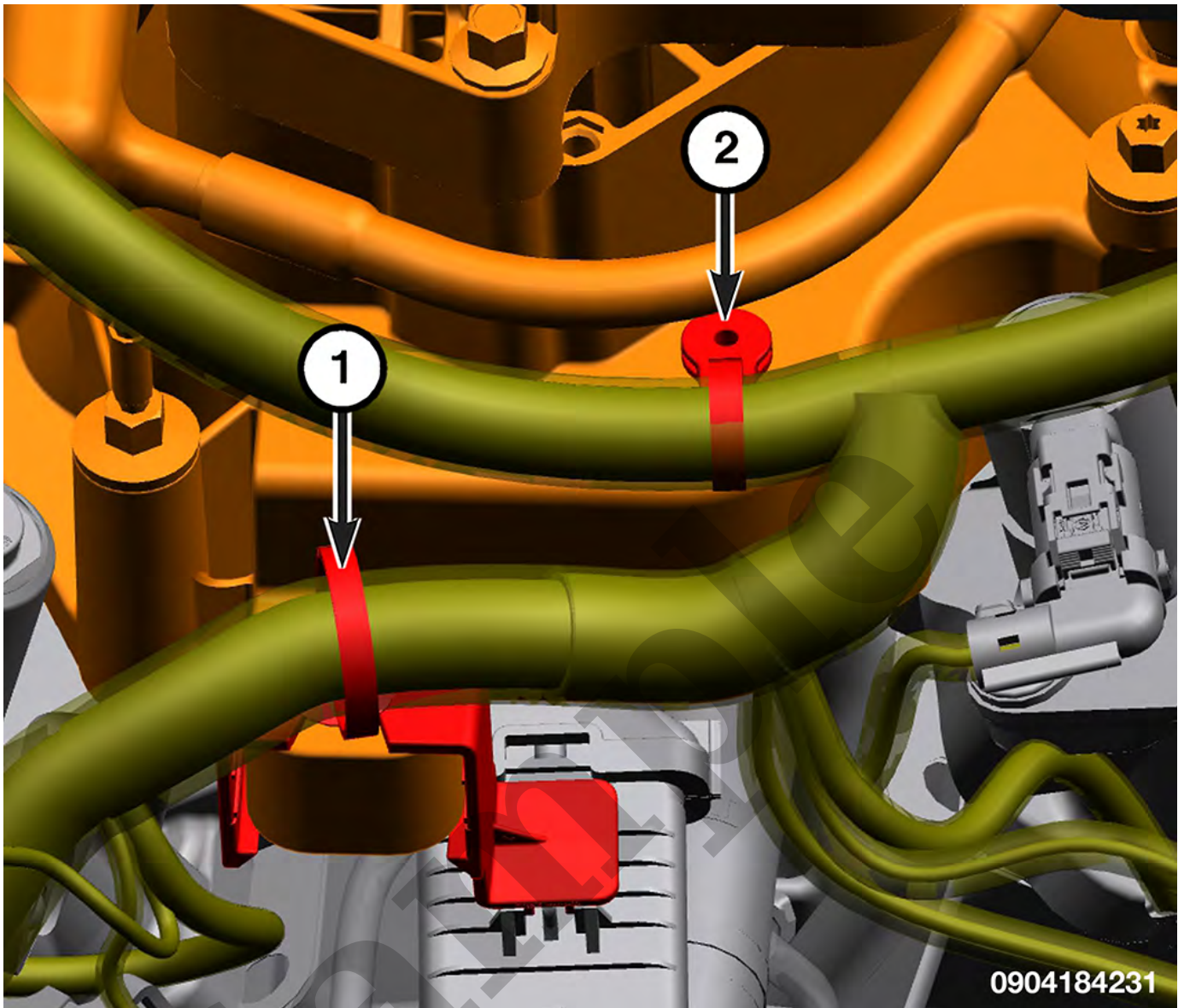
The four fuel rail fasteners also thread directly into the composite lower intake manifold and are a self-tapping design. The lower intake manifold can be serviced without removing the fuel injector rail. The fuel rail and fuel injectors must be installed into the lower intake manifold as an assembly. Do not attempt to install the fuel rail when the injectors are in the manifold. Always install new O-rings on the fuel injectors.

If the lower intake manifold is damaged or cracked, it must be replaced.



1 - Makeup Air Hose

5. Disconnect the makeup air hose from the rear of the left cylinder head cover.

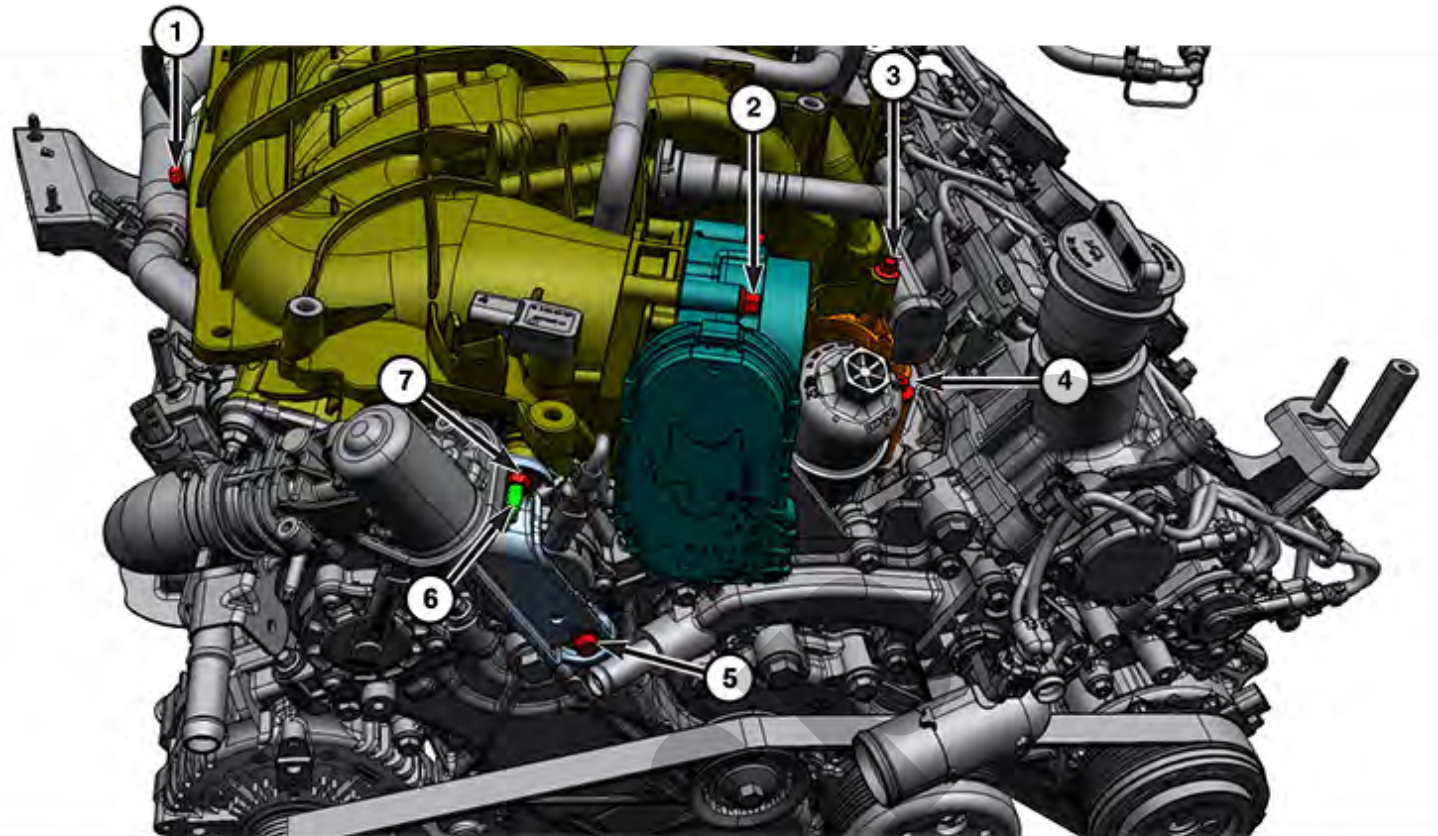


1 - Wire Harness Retainer to Bracket

2 - Wire Harness Retainer to Manifold

9. Remove the wire harness retainer from the lower intake manifold.
10. Clip and remove the wire harness retainer to bracket.
11. Position the engine wire harness aside.

-	Engine Cover Ball Stud to Intake Manifold	6 N·m (53 In. Lbs.)	-
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CalloUT	DEscriPtion	SPeCifiCation	COmmenTs
1	Intake Manifold Support Bracket Upper Bolts	8 N·m (71 In. Lbs.)	-
2	Throttle Body Bolts	7 N·m (62 In. Lbs.)	-
3	Intake Manifold (Upper) M6 Bolts	10 N·m (89 In. Lbs.)	Tightening Sequence

1	Radiator Support Bracket Bolt	12 N·m (9 Ft. Lbs.)	–
2	Cooling Fan Bolts	7 N·m (62 In. Lbs.)	–
3	Upper Radiator Crossmember Bolts	15 N·m (11 Ft. Lbs.)	–
4	PTRN BRKT TO HOT BOTTLE BRKT (Pressurized Coolant Bottle Nuts)	8 N·m (71 In. Lbs.)	–
–	Coolant Tube Bolt	9 N·m (80 In. Lbs.)	–

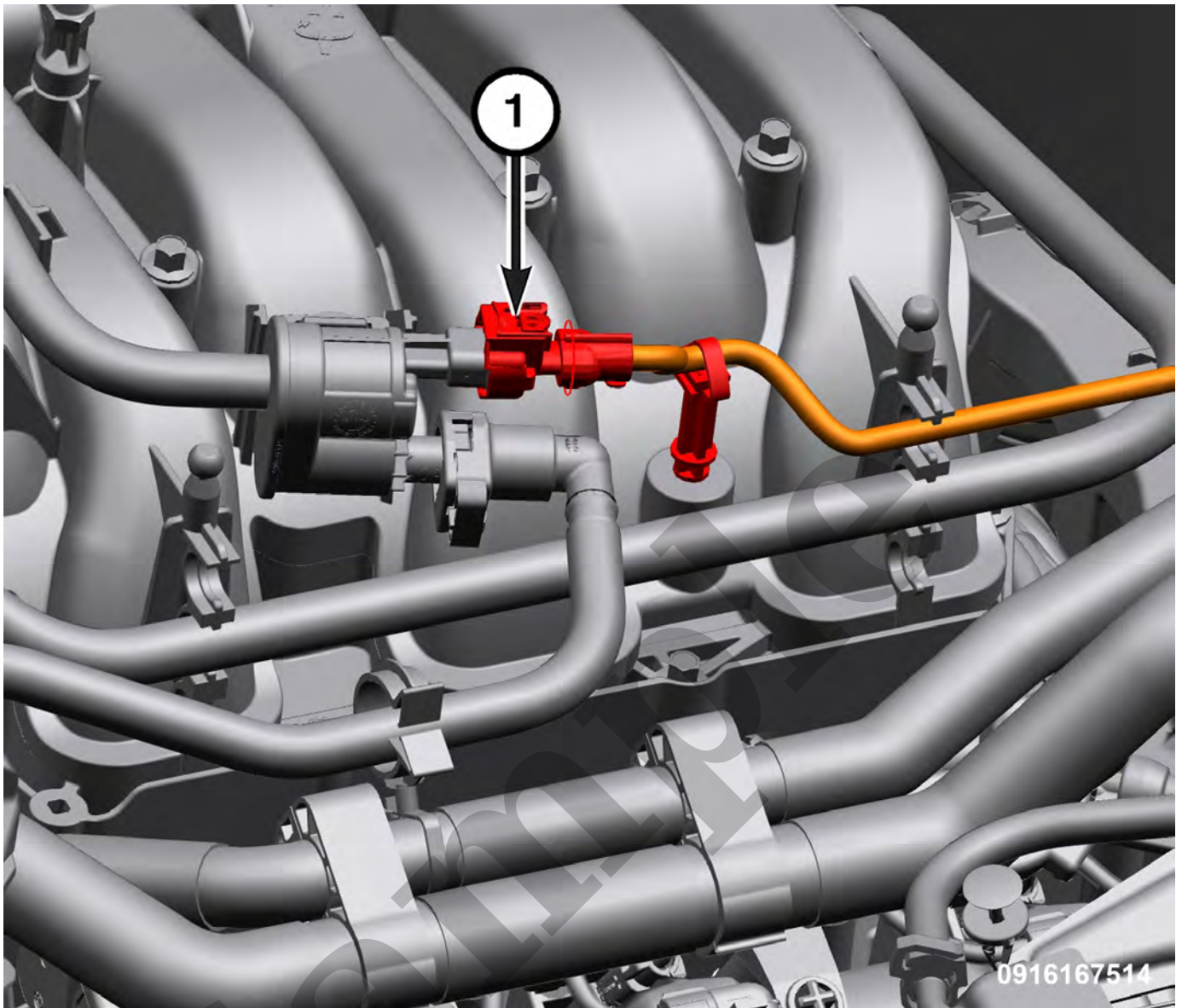
Refer To List:

List 1

- [09 - Engine, 2.0L / Fuel System / Standard Procedure](#)
- [09 - Engine, 3.6L / Fuel System / Standard Procedure](#)
- [09 - Engine, 5.7L / Fuel System / Standard Procedure](#)

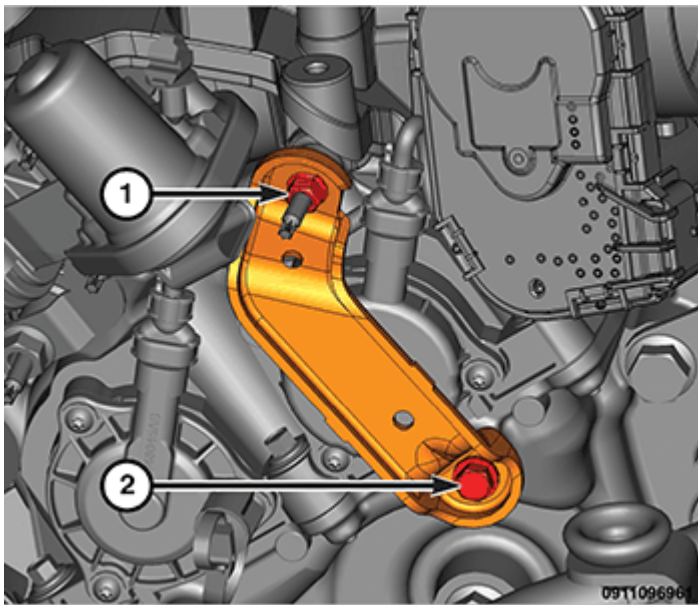
List 2

- [09 - Engine, 2.0L / Air Intake System / MANIFOLD, Intake / Removal and Installation](#)
- [09 - Engine, 3.6L / Air Intake System / MANIFOLD, Intake / Removal and Installation](#)
- [09 - Engine, 5.7L / Air Intake System / MANIFOLD, Intake / Removal and Installation](#)



1 - Purge Solenoid Wire Harness Connector

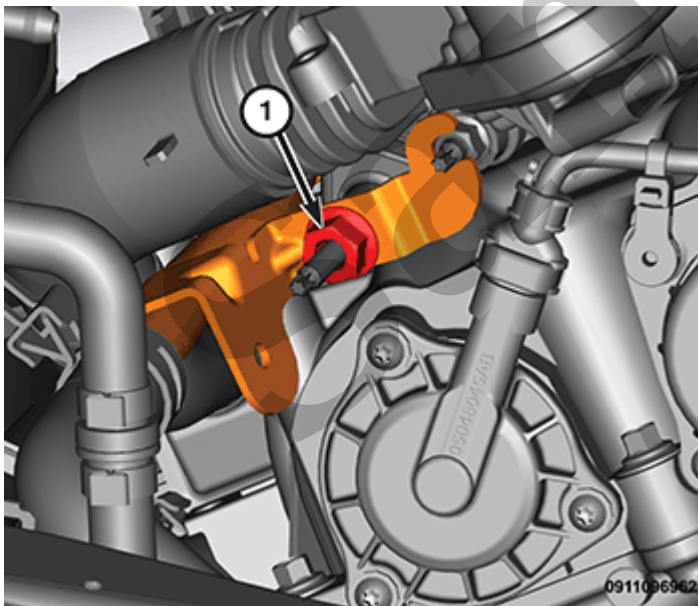
7. Disconnect the purge solenoid wire harness connector and detach the wire harness retainer from the manifold.



1 - Throttle Body Support Bracket Nut

2 - Throttle Body Support Bracket Bolt

11. Remove the throttle body support bracket nut, throttle body support bracket bolt, and the throttle body support bracket.



1 - EGR Coolant Tube Nut

12. Remove the EGR coolant tube nut and position EGR coolant tube aside.

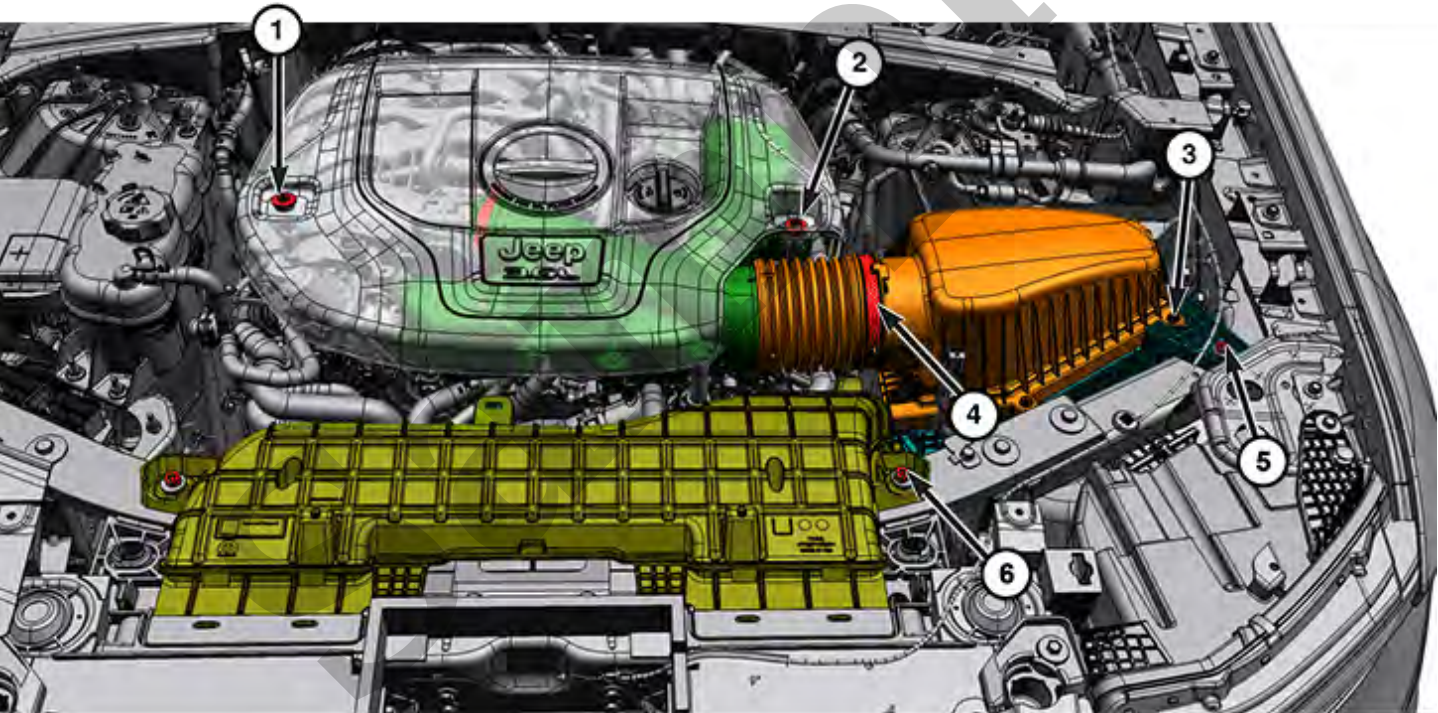
19. If necessary, remove the insulator from the right cylinder head cover.

INSTALLATION

Follow the removal procedure in reverse for general reassembly of the components on the vehicle. The steps listed below are calling out specific procedures that should be followed during installation.

- Prior to installing the upper intake manifold, verify that the four fuel rail bolts were not inadvertently loosened.
- Clean and inspect the sealing surfaces. The gaskets may be reused if no issues are found.
- Make sure the fuel injectors and wiring harnesses are in the correct position to prevent interference during the upper intake manifold installation.
- The upper intake manifold bolts must be tightened in the sequence shown in the torque table below.

TORQUE SPECIFICATIONS - AIR INTAKE



0903190044

CALLOUT	DESCRIPTION	SPECIFICATION	COMMENTS
1	Engine Cover Bolts	5 N·m (44 In. Lbs.)	–
2	Air Cleaner Resonator to Support Bracket Nut	7 N·m (62 In. Lbs.)	–