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2012 Jeep LIBERTY Service Manual

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YOUR CURRENT VEHICLE

Rear Crankshaft Oil Seal Retainer

REAR CRANKSHAFT OIL SEAL RETAINER

REMOVAL

NOTE

The crankshaft rear oil seal is integral to the crankshaft rear oil seal retainer and must be replaced as an assembly.

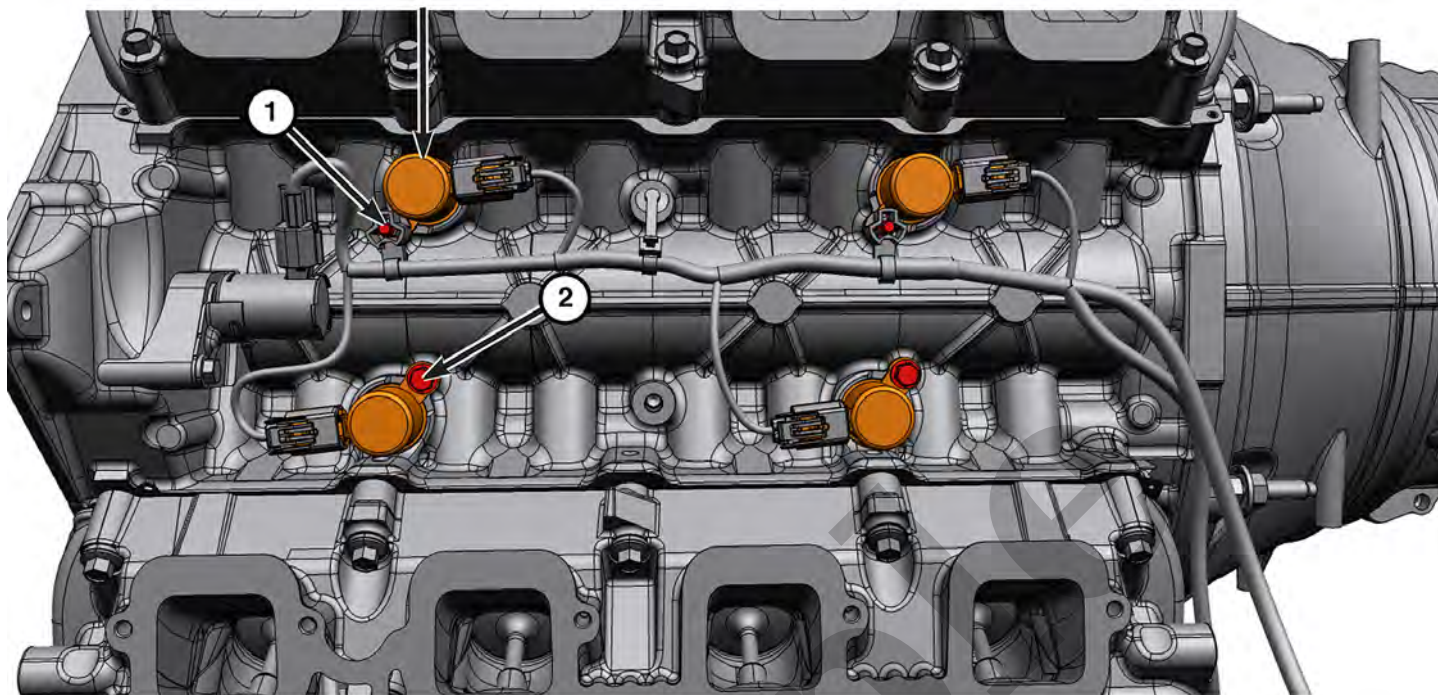
NOTE

The crankshaft rear oil seal retainer cannot be reused after removal.

NOTE

This procedure can be performed in vehicle.

1. Remove the engine ([Refer to Engine/Engine Assembly/Removal and Installation](#))(Refer To List 1).
2. Remove the oil pan ([Refer to Engine/Lubrication/PAN, Oil/Removal and Installation](#))(Refer To List 2).



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CALLOUT	DESCRIPTION	SPECIFICATION	COMMENTS
1	Multiple Displacement Solenoid (MDS) Stud Bolts	11 N·m (8 Ft. Lbs.)	–
2	Multiple Displacement Solenoid (MDS)	11 N·m (8 Ft. Lbs.)	–
3	Multiple Displacement Solenoid (MDS) Bolt	11 N·m (8 Ft. Lbs.)	–
–	Engine Block Coolant Plug (3/8 NPT)	27 N·m (20 Ft. Lbs.)	–
–	Engine Block Coolant Plug (1/4 - 18 NPT)	34 N·m (25 Ft. Lbs.)	–
–	Engine Block Oil Galley Plug (1/4 - 18 NPT)	20 N·m (15 Ft. Lbs.)	–
–	Lifter Guide Holder	12 N·m (9 Ft. Lbs.)	–
–	Rear Main Seal Retainer Bolts	13 N·m (10 Ft. Lbs.)	–

TORQUE SPECIFICATIONS - TRANSMISSION - 8HP75

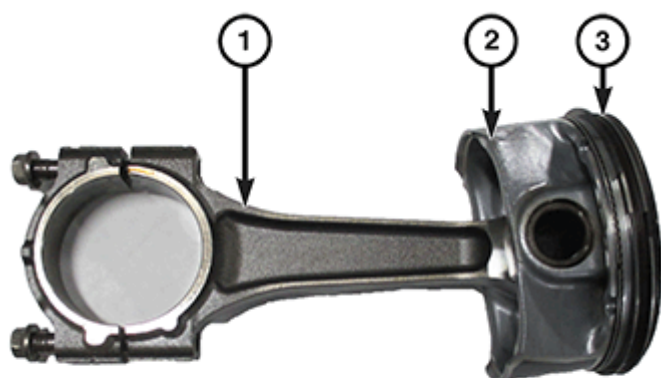
- 09 - Engine, 5.7L / Engine Assembly / Removal and Installation

List 2

- 09 - Engine, 2.0L / Lubrication / PAN, Oil / Removal and Installation
- 09 - Engine, 3.6L / Lubrication / PAN, Oil / Removal and Installation
- 09 - Engine, 5.7L / Lubrication / PAN, Oil / Removal and Installation

Sample

7. Carefully remove the piston from the cylinder bore, repeat this procedure for each piston being removed.



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1 - Connecting Rod
2 - Piston
3 - Top Ring

8. Immediately after removing the piston and connecting rod, install the bearing cap on the mating connecting rod to prevent damage to the fractured cap and rod surfaces.

9. Carefully remove the piston rings from the piston(s), starting from the top ring down.

PISTON RING FITTING

PISTON RING END GAP

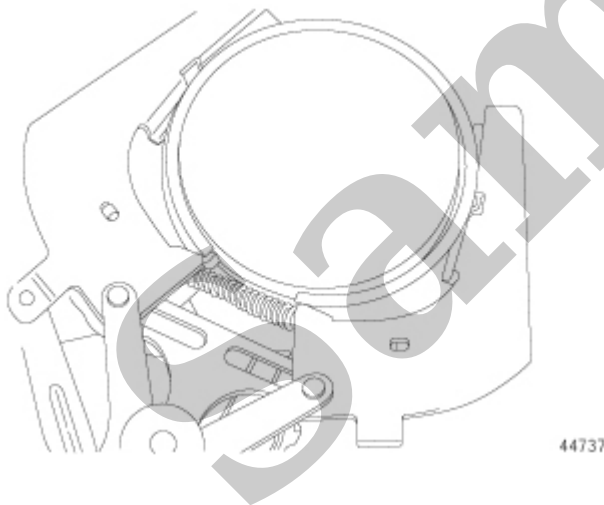
The No. 1 and No. 2 piston rings have a different cross section. Ensure No. 2 ring is installed with manufacturers I.D. mark (Dot) facing up, towards top of the piston.

NOTE

Piston rings are installed in the following order:

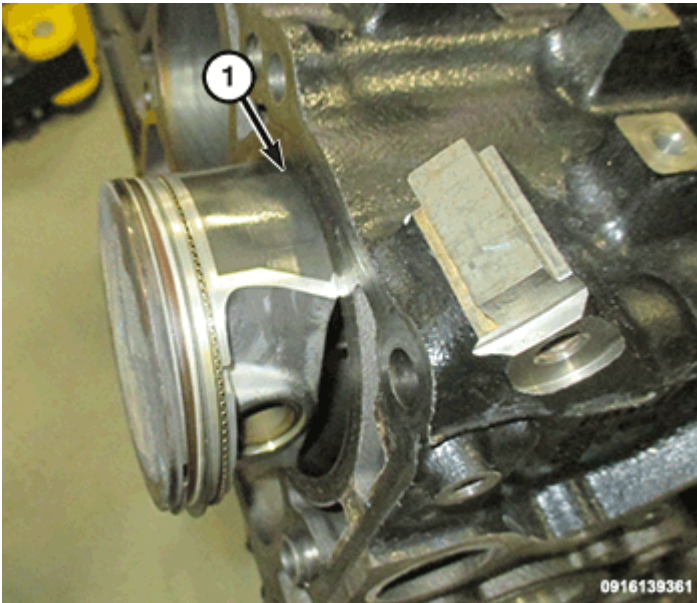
- Oil ring expander
- Lower oil ring side rail
- Upper oil ring side rail
- No. 2 Intermediate piston ring
- No. 1 Upper piston ring

1. Install the oil ring expander.
2. Install upper side rail by placing one end between the piston ring groove and the expander ring. Hold end firmly and press down the portion to be installed until side rail is in position. Repeat this step for the lower side rail.



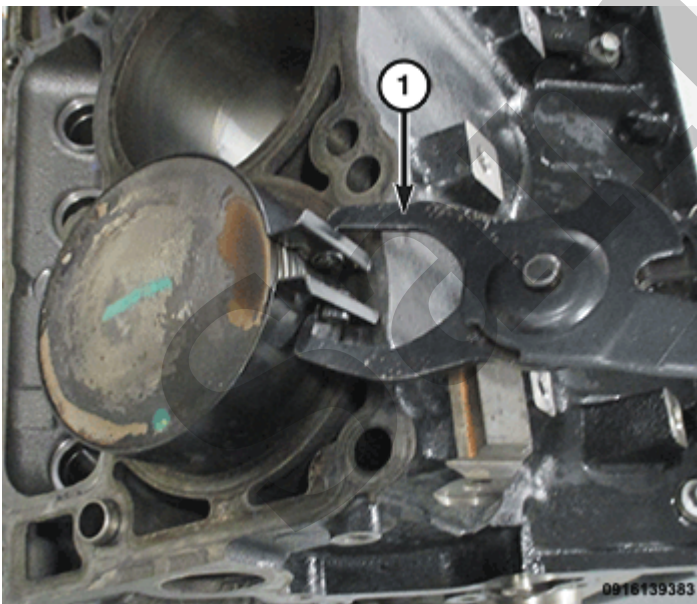
Installing Intermediate and Upper Piston Rings

3. Install No. 2 intermediate piston ring using a piston ring installer.
4. Install No. 1 upper piston ring using a piston ring installer.



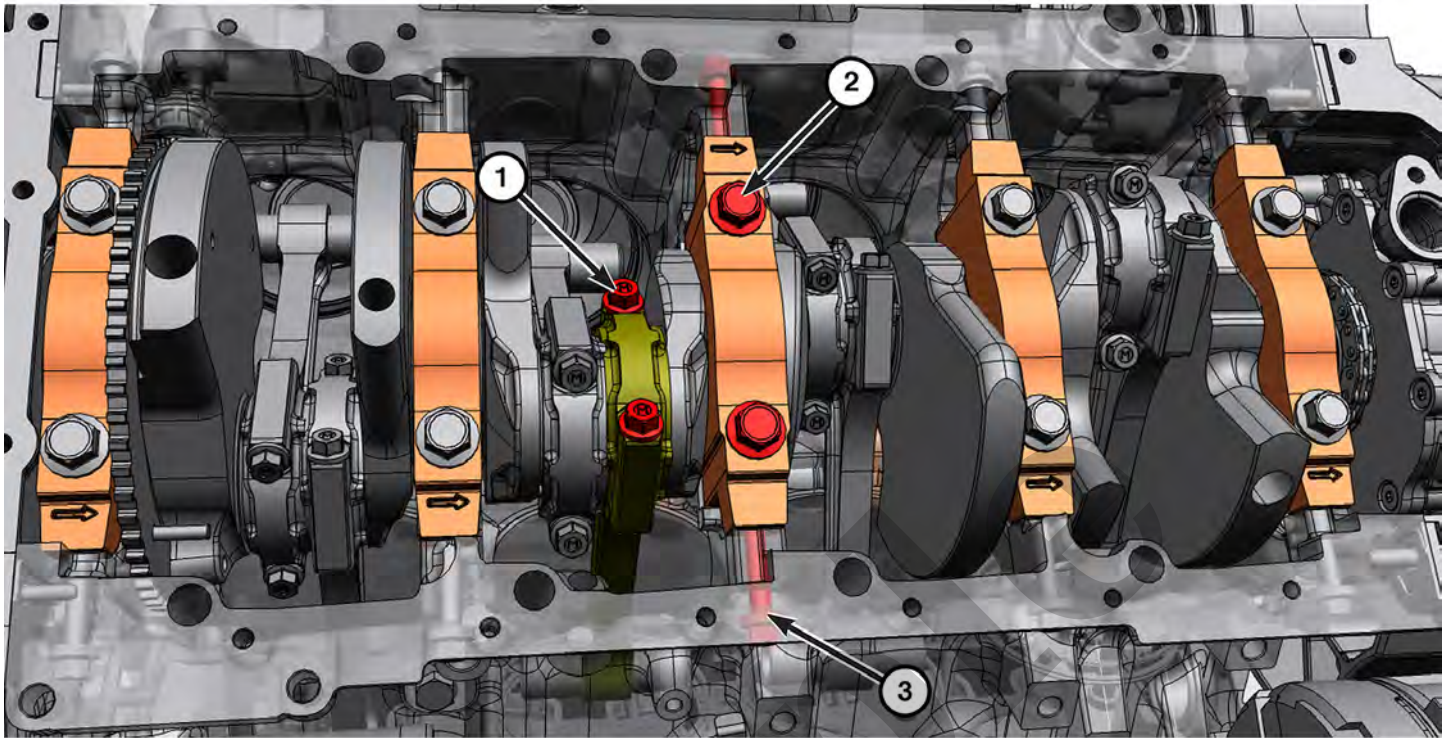
1 - Piston

9. Insert the piston and rod assembly into the cylinder bore and carefully position the connecting rod over the crankshaft journal.

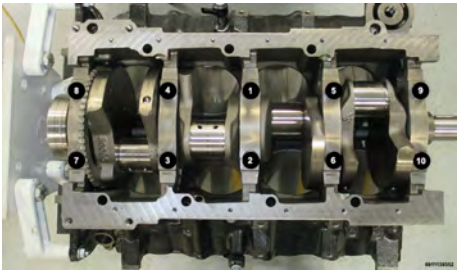


1 - Piston Ring Compressor

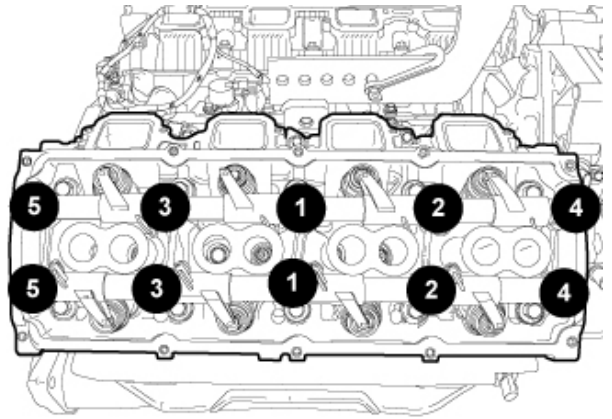
10. Compress the piston rings using a commercially available piston ring compressor, and then tap the piston down into the cylinder bore using a hammer handle while guiding the connecting rod into position on the rod journal.



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CALLOUT	DESCRIPTION	SPECIFICATION	COMMENTS
1	Connecting Rod Cap Bolts	20 N·m + 90° Turn (15 Ft. Lbs. + 90° Turn)	—
2	Main Bearing Cap Bolts	Torque Procedure 1. Tighten bolts to 13 N·m (10 ft. lbs.) 2. Tighten bolts to 28 N·m (21 ft. lbs.) 3. Rotate an additional 90°	Tightening Sequence 
3	Main Bearing Cap Cross-Bolts NOTE	Torque Procedure 1. Tighten bolts to 31 N·m (23 ft. lbs.) 2. Repeat cross-bolt tightening using the	Tightening Sequence NOTE

2. Torque to 23 N·m (17 ft. lbs.)
3. Individually loosen by 1/2 turn and re-torque to 23 N·m (17 ft. lbs.)
4. Turn an additional 30°



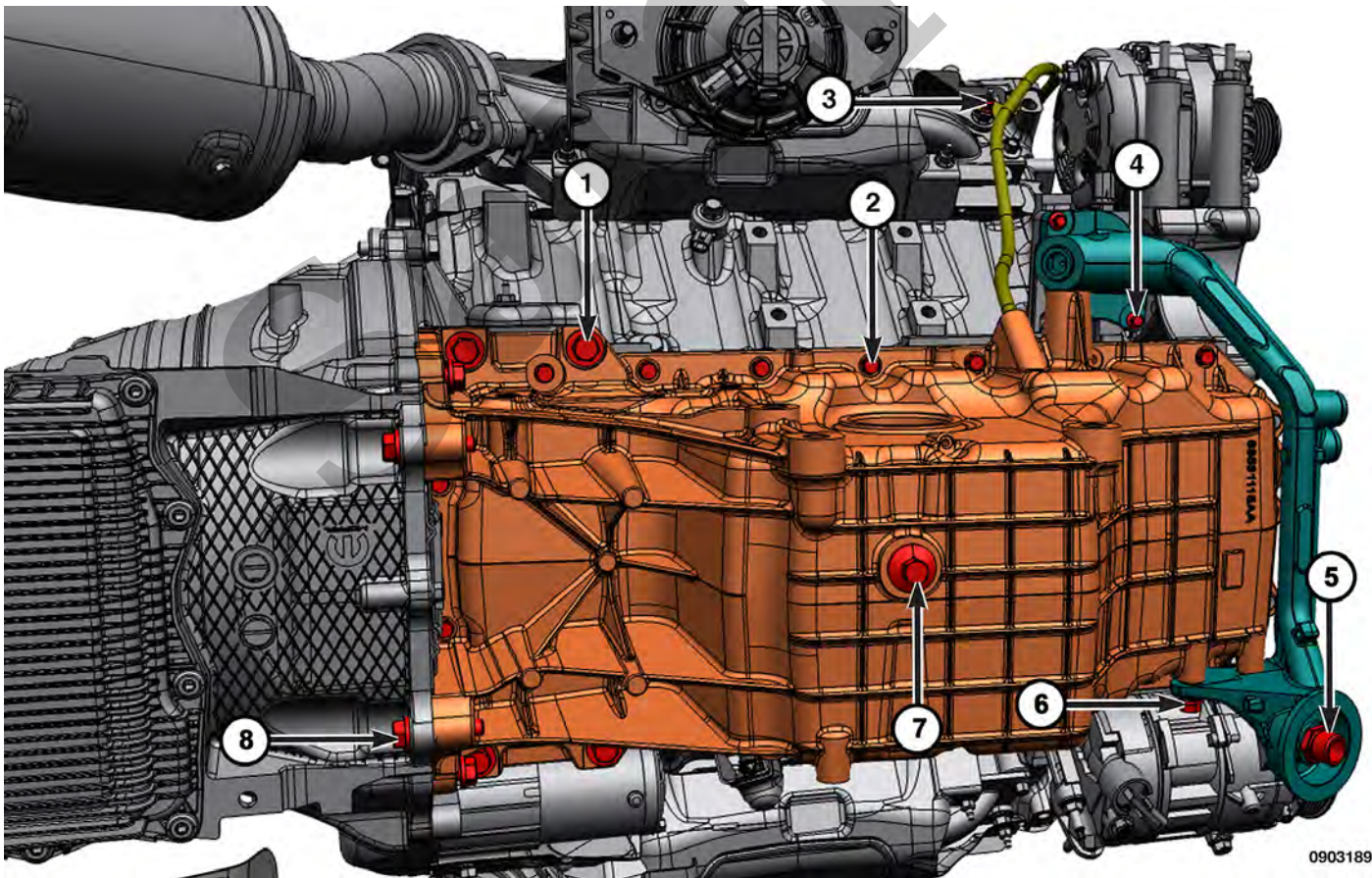
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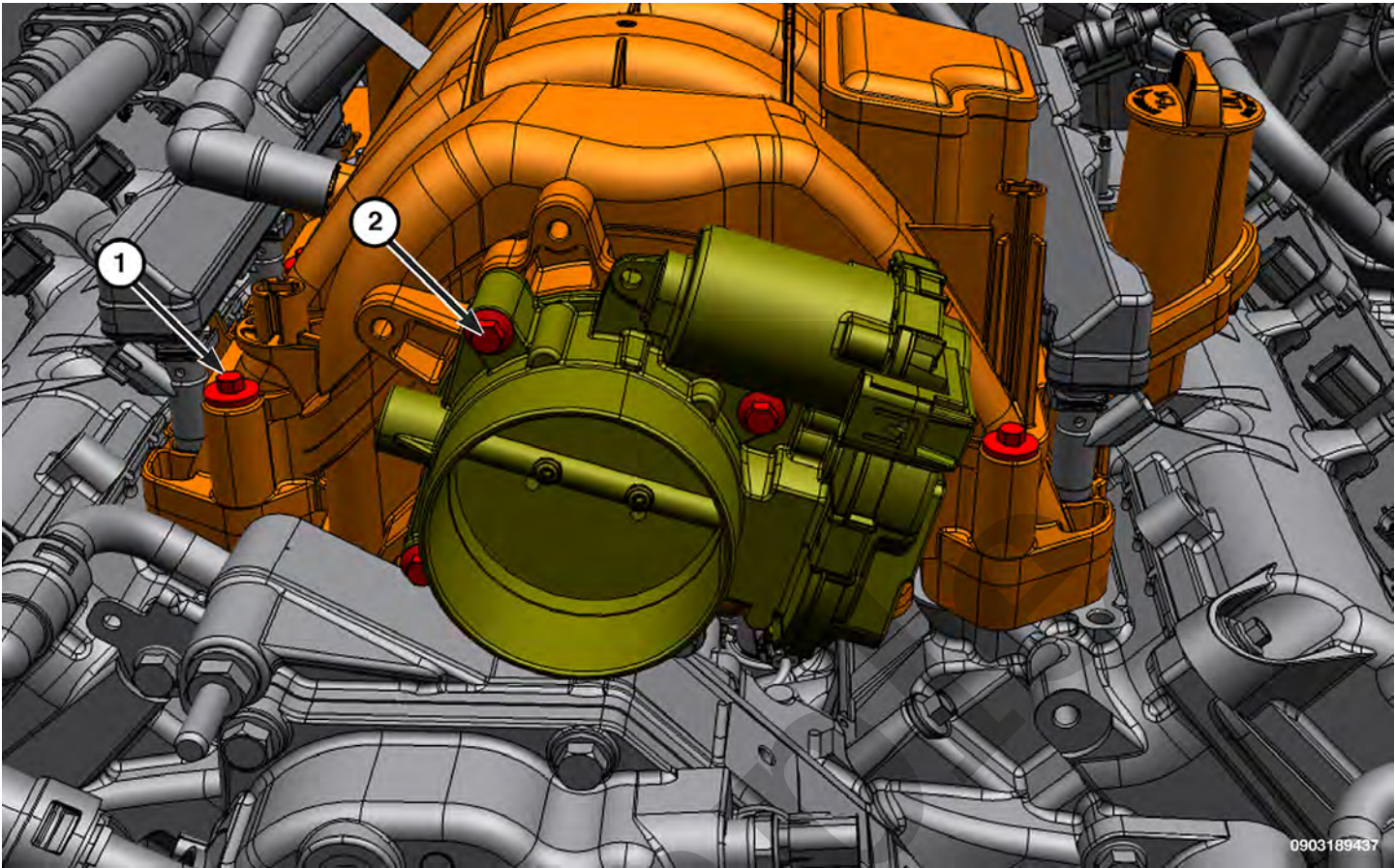
Cylinder Head
Cover Stud Bolts

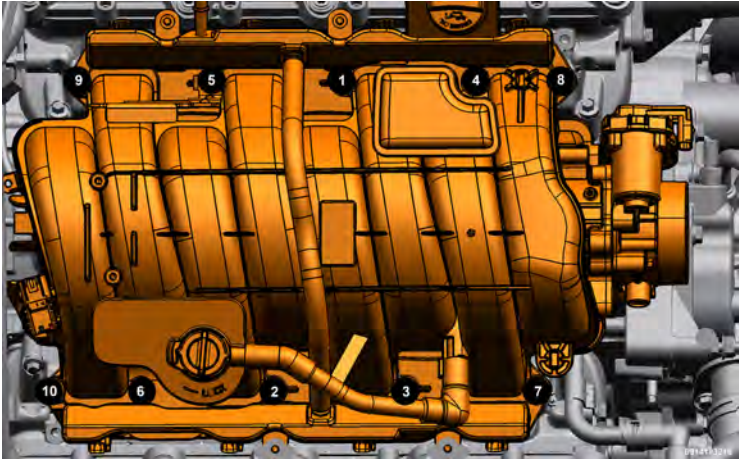
11 N·m (8 Ft. Lbs.)

TORQUE SPECIFICATIONS - LUBRICATION



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CALLOUT	DESCRIPTION	SPECIFICATION	COMMENTS
1	Intake Manifold Bolts	12 N·m (9 ft. Lbs.)	Tightening Sequence 
2	Throttle Body Bolts	5 N·m (44 In. Lbs.)	Tighten bolts in a crisscross sequence