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## 2010 Jeep CHEROKEE Service Manual

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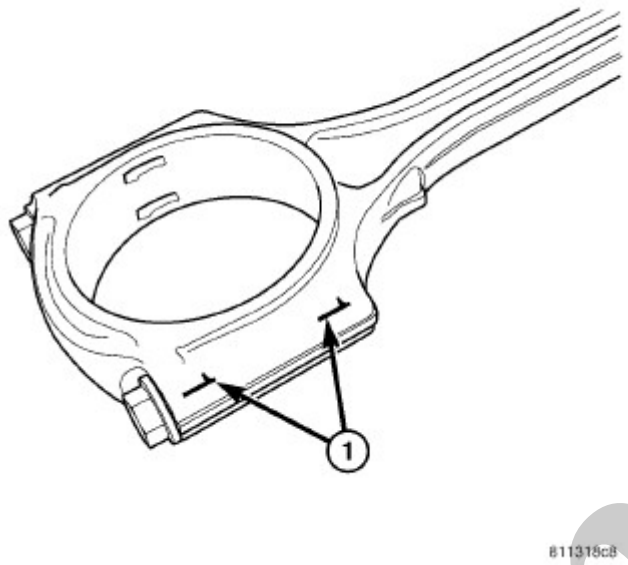
1 - Main Bearing Cap Bolt Removal Sequence

4. Remove the eight main bearing cap bolts from the windage tray reversing the sequence shown, starting with 8 then ending with 1 and remove the windage tray.

   Typical connecting rod shown, graphic for reference only.




1 - Connecting Rod And Bearing Cap Position

5. If necessary, remove the top ridge of the cylinder bores with a reliable ridge reamer before removing the pistons from the engine block. **Be sure to keep the tops of pistons covered during this operation.** Pistons and connecting rods must be removed from the top of the engine block. When removing piston and connecting rod assemblies from the engine, rotate the crankshaft clockwise so that each connecting rod is centered in the cylinder bore.

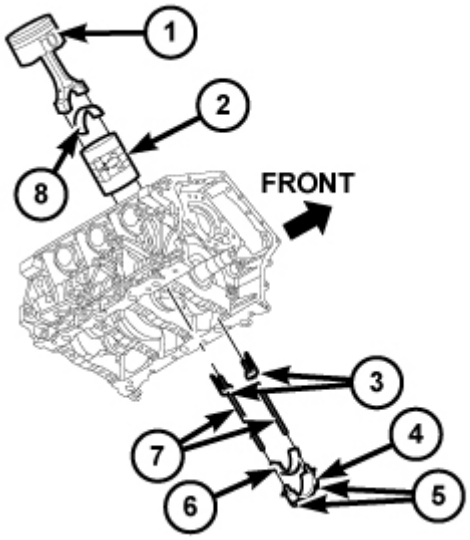
**CAUTION**

DO NOT use a number stamp or a punch to mark connecting rods or caps, as damage to connecting rods could occur.

**NOTE**

Connecting rods and bearing caps are not interchangeable and should be marked before removing to

- Oil ring expander gap
- Oil ring lower side rail end gap
- Oil ring upper side rail end gap
- No. 2 (intermediate) ring end gap
- No. 1 (upper) ring end gap




| | |
|---|---|
| 1 - Piston And Connecting Rod | 5 - Connecting Rod Cap Bolts |
| 2 - Piston Ring Compressor | 6 - Bearing Shell |
| 3 - Plastic Guide Plates | 7 - Guide Pins |
| 4 - Connecting Rod Cap | 8 - Bearing Shell |

**NOTE**

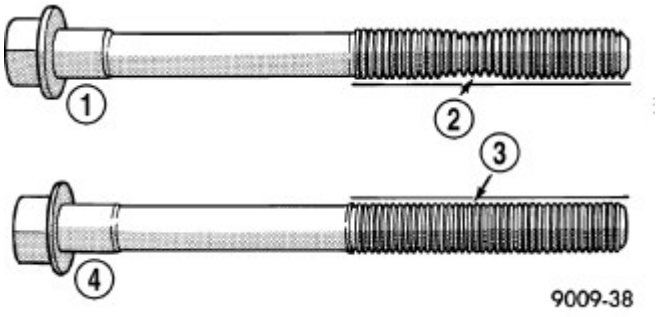
Ensure the position of the ring end gaps does not change when installing the ring compressor.

6. Lubricate the piston rings with clean engine oil. Position Piston Compressor

Compressor, Piston

Do not lubricate the threads of the connecting rod cap bolts.

15. Install the connecting rod cap and bearing with the tang on the same side as the rod. Tighten the **NEW** connecting rod cap bolts to the proper torque specification in the torque table below.
16. If required, check the connecting rod side clearance (Refer to Engine/Engine Block/Standard Procedure) (Refer To List 5).
17. Repeat the previous steps for each piston being installed.

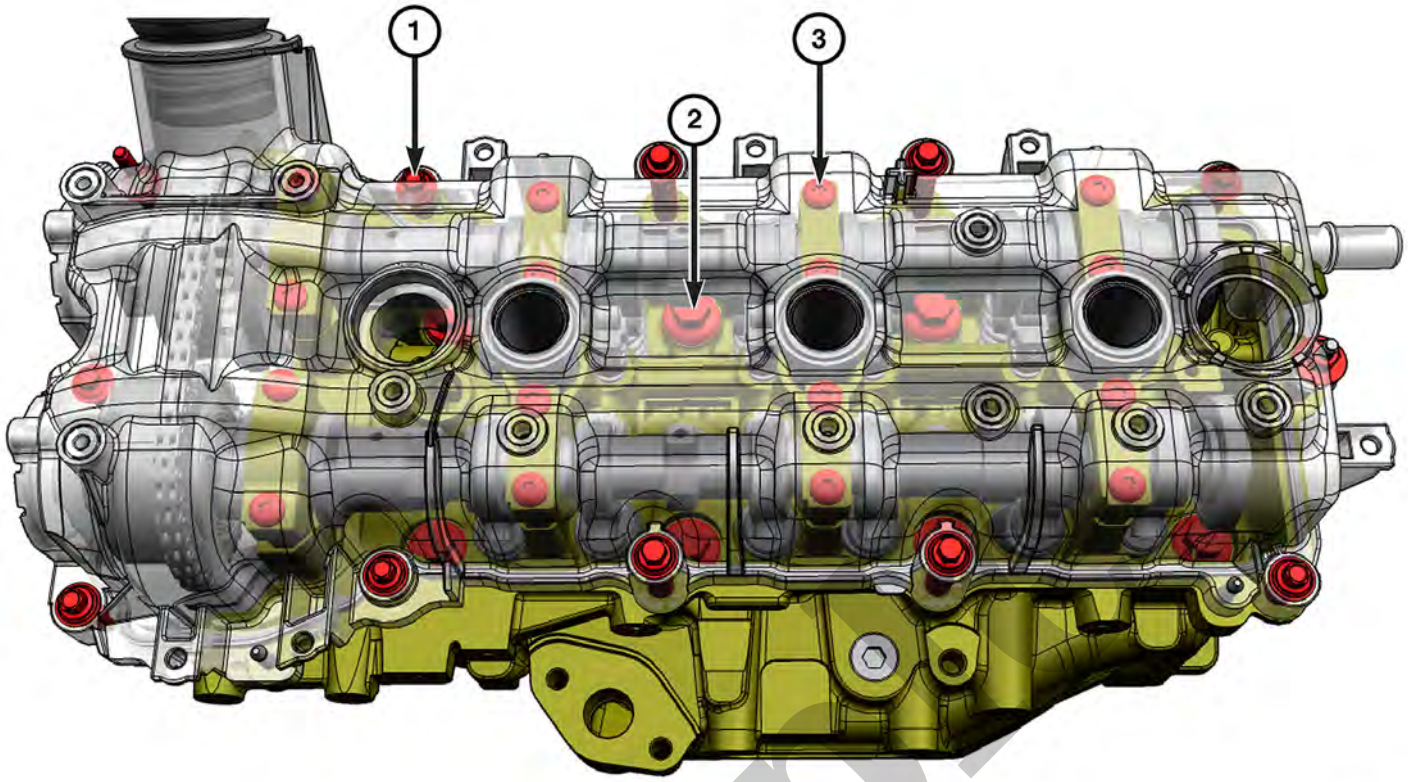



| |
|---|
| 1 - Bolt |
| 2 - Bad Bolt With Straight Edge |
| 3 - Normal Bolt With Straight Edge |
| 4 - Bolt |

**CAUTION**

The main bearing cap bolts are tightened using a torque plus angle procedure. The bolts must be examined BEFORE reuse. If the threads are necked down the bolts must be replaced.

18. Check the main bearing cap bolts for necking by holding a scale or straight edge against the threads. If all the threads do not contact the scale the bolt must be replaced.
19. Install the windage tray with eight main bearing cap bolts. Tighten the main bearing cap bolts in the sequence shown in the torque table below.
20. Install the engine oil pump and oil pump pick-up (Refer to Engine/Lubrication/PUMP, Engine Oil/Removal and Installation)(Refer To List 3).

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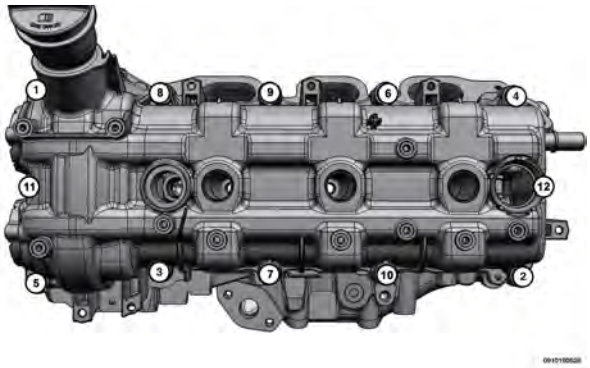
| CALLOUT | DESCRIPTION | SPECIFICATION | COMMENTS |
|---|---|---|---|
| 1 | Cylinder Head Cover M6 Bolts | **12 N·m (9 Ft. Lbs.)** | Tightening Sequence - Left<br>  <br>Tightening Sequence - Right |

| | | | |
|---|---|---|---|
| 8 | Camshaft Chain Tensioner (Primary) Bolt | **12 N·m (9 Ft. Lbs.)** | — |
| 9 | Camshaft Chain LH Tensioner (Secondary) Bolt | **12 N·m (9 Ft. Lbs.)** | — |

**Refer To List:**

List 1

- 09 - Engine, 2.0L / Engine Assembly / Removal and Installation
- 09 - Engine, 3.6L / Engine Assembly / Removal and Installation
- 09 - Engine, 5.7L / Engine Assembly / Removal and Installation

List 2

- 09 - Engine, 2.0L / Cylinder Head / Cylinder Head Assembly / Removal and Installation
- 09 - Engine, 3.6L / Cylinder Head / Cylinder Head Assembly / Removal and Installation
- 09 - Engine, 5.7L / Cylinder Head / Cylinder Head Assembly / Removal and Installation

List 3

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

List 4

- 09 - Engine, 2.0L / Engine Block / RING(S), Piston / Removal and Installation
- 09 - Engine, 3.6L / Engine Block / RING(S), Piston / Removal and Installation

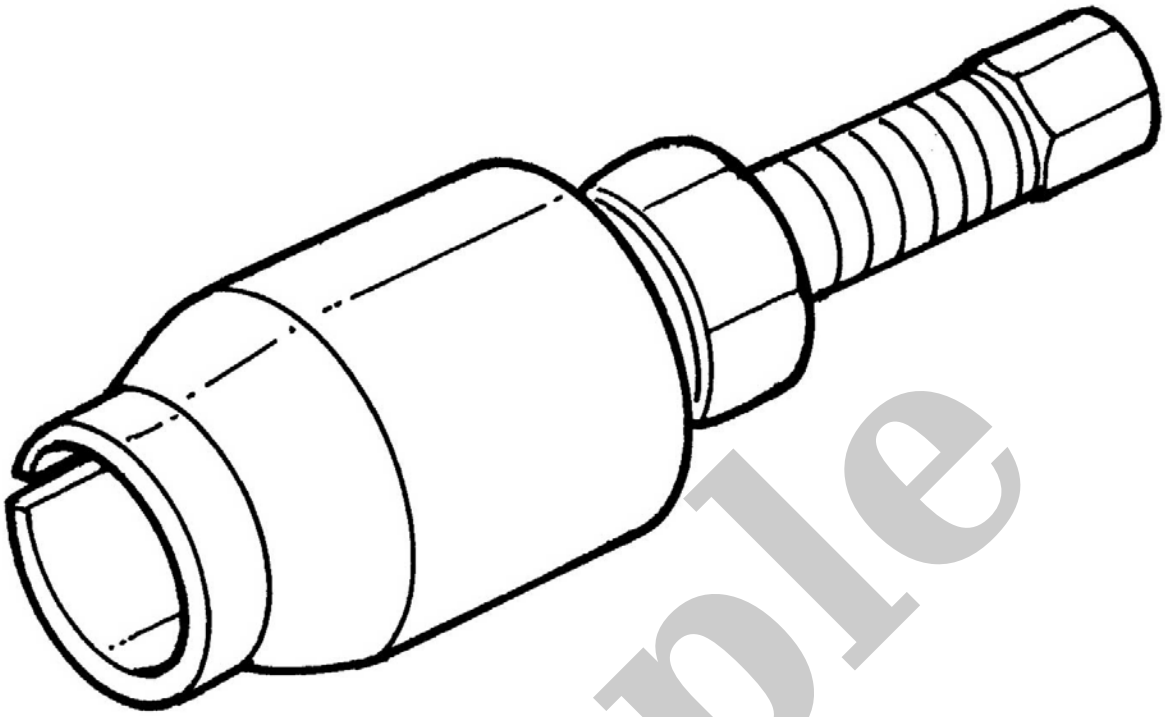
List 5

- 09 - Engine, 2.0L / Engine Block / Standard Procedure
- 09 - Engine, 3.6L / Engine Block / Standard Procedure
- 09 - Engine, 5.7L / Engine Block / Standard Procedure

List 6

- 09 - Engine, 2.0L / Lubrication / Standard Procedure
- 09 - Engine, 3.6L / Lubrication / Standard Procedure
- 09 - Engine, 5.7L / Lubrication / Standard Procedure

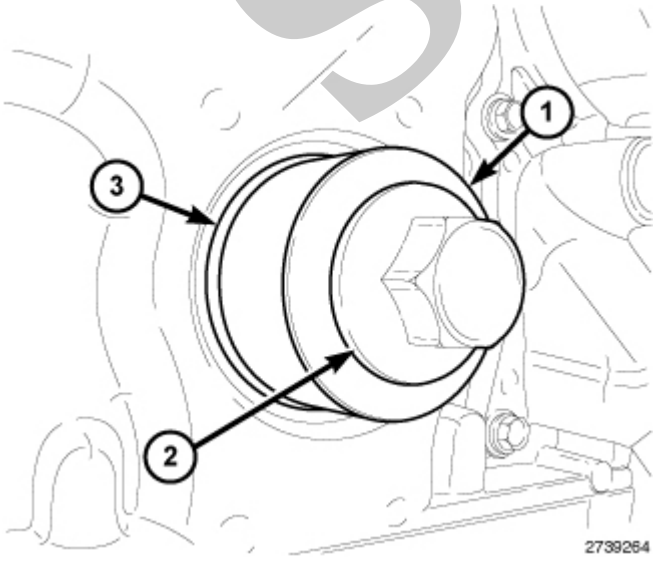
Remover, Seal



. Hold the seal remover stationary and tighten the extractor screw against the sleeve until the front crankshaft oil seal is removed from the engine timing 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.

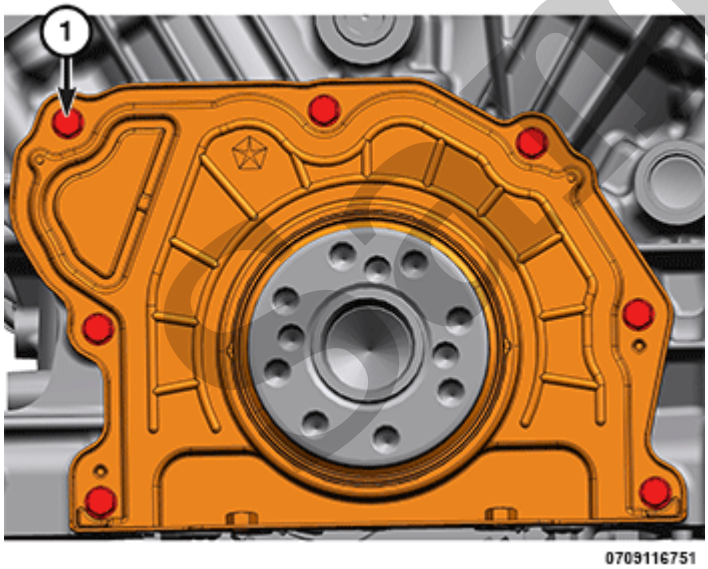


# Rear Main Oil Seal

## REAR MAIN OIL SEAL

### REMOVAL

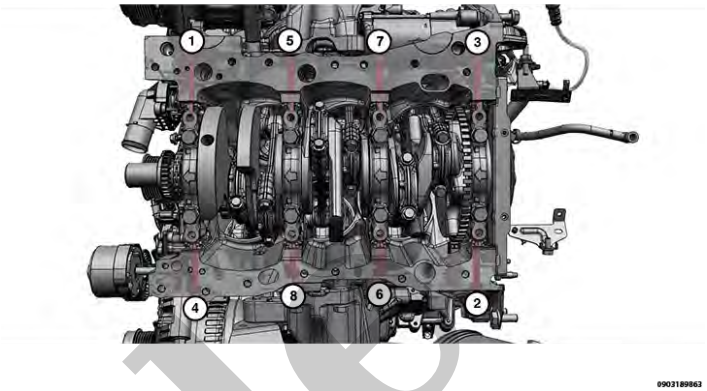
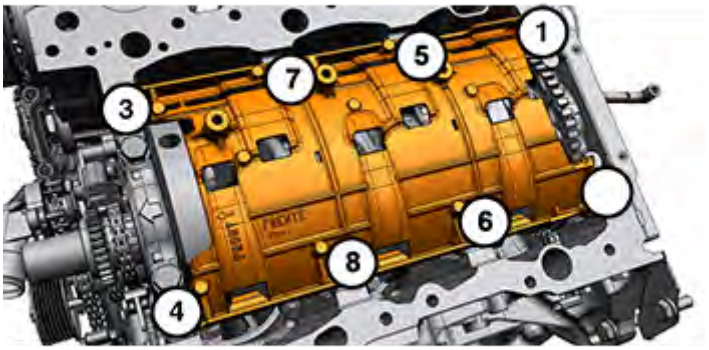
1. Remove the engine assembly (Refer to Engine/Engine Assembly/Removal and Installation)(Refer To List 1).
2. Remove the flexplate (Refer to Transmission and Transfer Case/Automatic/FLEXPLATE/Removal and Installation)(Refer To List 2).
3. Remove the oil pan (Refer to Engine/Lubrication/PAN, Oil/Removal and Installation)(Refer To List 3).




1 - Rear Crankshaft Oil Seal Retainer Bolts

4. Remove the rear crankshaft oil seal retainer bolts.

**NOTE**

| | | | |
|---|---|---|---|
| 2 | Connecting Rod Cap Bolts | **20 N·m (15 Ft. Lbs.) + 90° Turn** | – |
| 3 | Crankshaft Side Main Bearing Cap (Tie Bolt) M8 Bolts | **30 N·m (22 Ft. Lbs.)** | Tightening Sequence   0903189863 |
| 4 | Piston Oil Cooler Jet to Engine Block Bolt | **6 N·m (63 In. Lbs.)** | – |
| – | Crankshaft Outer Main Bearing Cap and Windage Tray M8 Bolts | **21 N·m (15 Ft. Lbs.) + 90° Turn** | Tightening Sequence   0903189851 |
| – | Crankshaft Target Wheel to | **11 N·m (8 Ft. Lbs.)** | – |

| Bearing Marking | Size mm (in.) |
|---|---|
| **1** | 1.583 - 1.580 mm (0.0623 - 0.0622 in.) |
| **2** | 1.580 - 1.577 mm (0.0622 - 0.0620 in.) |
| **3** | 1.577 - 1.574 mm (0.0621 - 0.0619 in.) |