

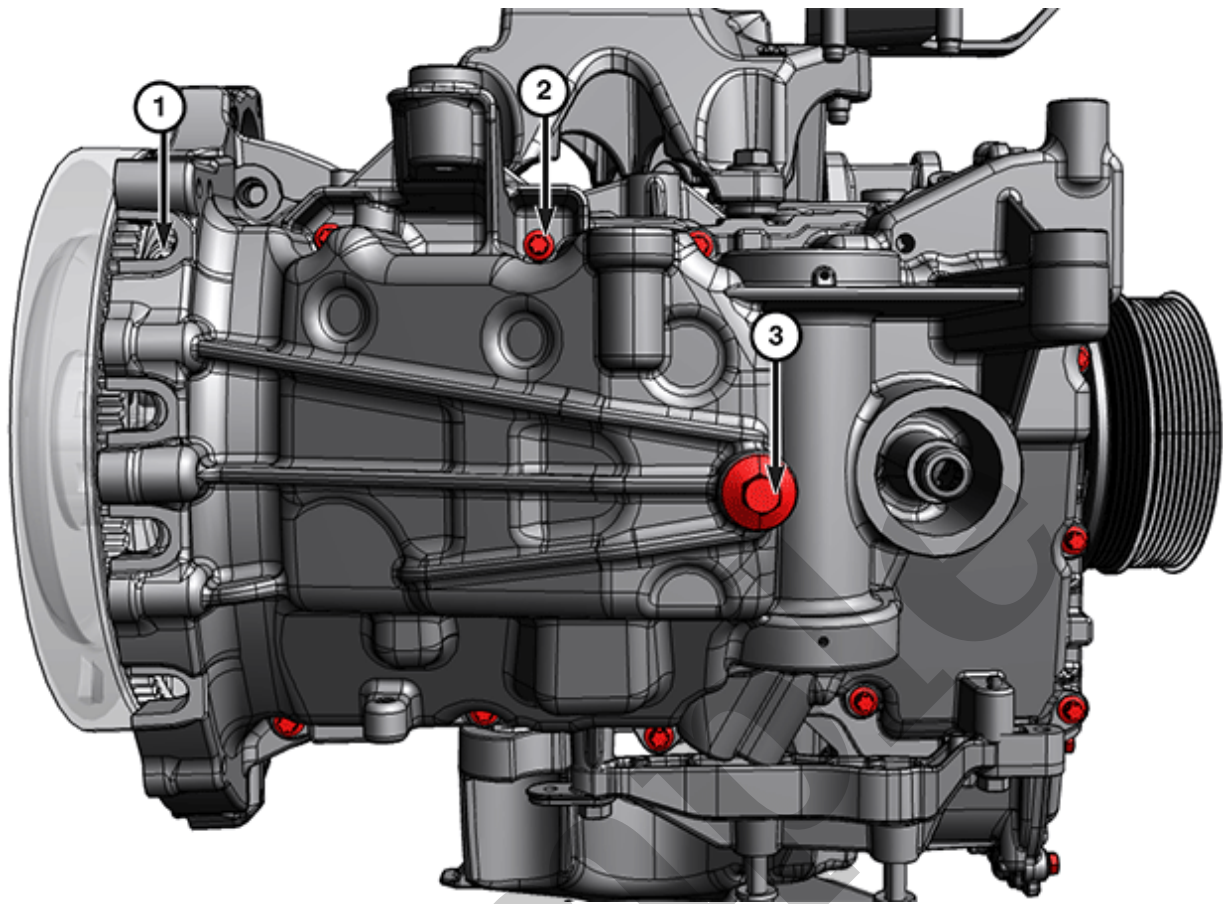
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2008 JEEP Wrangler Unlimited OEM Service and Repair Workshop Manual

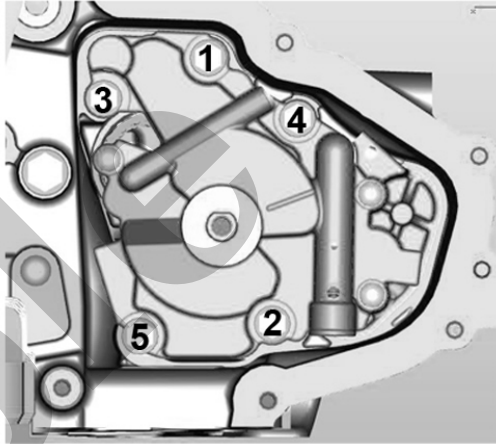
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TORQUE SPECIFICATIONS - LUBRICATION

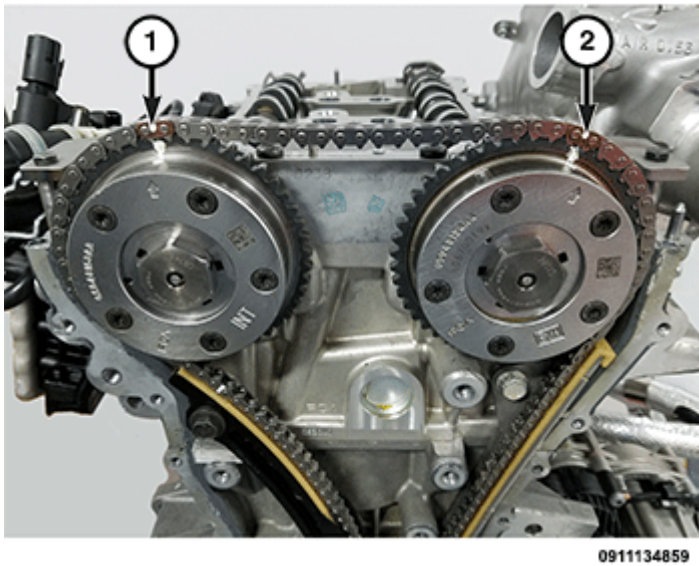


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CALLOUT	DESCRIPTION	SPECIFICATION	COMMENTS
1, 2	Oil Pan Bolts - M6 Oil Pan Bolts - M8 Oil Pan Bolts - M10	10 N·m (89 In. Lbs.) 25 N·m (18 Ft. Lbs.) 60 N·m (44 Ft. Lbs.)	<p style="text-align: center;">Tightening sequence</p>
3	Engine Oil Drain	27 N·m (20 Ft. Lbs.)	-

CALLOUT	DESCRIPTION	SPECIFICATION	COMMENTS
2	Oil Pump Drive Chain Guide M6 Bolts	10 N·m (89 In. Lbs.)	-
3	Oil Pump to Cylinder Block	10 N·m (89 In. Lbs.)	<p>Tightening Sequence</p> 
4	Oil Pump Sprocket M8 Bolt	Torque Procedure: 1. 20 N·m (15 Ft. Lbs.) 2. + 45°	-
5	Oil Pump Drive Chain Tensioner M6 Bolts	9 N·m (80 In. Lbs.)	-
6	Balance Shaft Retaining Plate Bolt	10 N·m (89 In. Lbs.)	-
-	Coolant Hoses Retainer M6 Nuts	5 N·m (44 In. Lbs.)	-
-	Oil Dipstick Tube M6 Nut	10 N·m (89 In. Lbs.)	-
-	Oil Filter	14 N·m (10 Ft. Lbs.)	-

If the timing chain plated links can no longer be seen, the timing chain links corresponding to the timing mark must be marked prior to removal if the timing chain is to be reused.



1 - Camshaft Sprocket Timing To Corresponding Chain Link Marks

2 - Camshaft Sprocket Timing To Corresponding Chain Link Marks

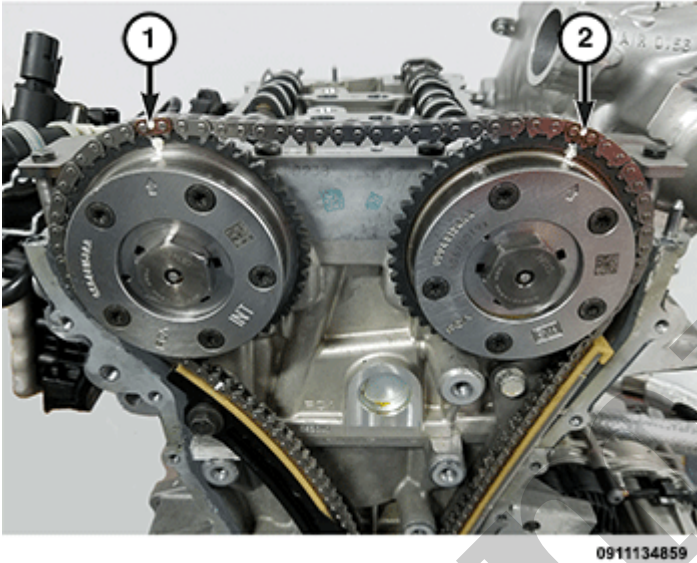
3. Using a paint pen or equivalent, mark both camshaft sprocket timing marks and corresponding chain links to aid in reassembly.

1 - Timing Chain

2 - Timing Chain Plated Links

3 - Crankshaft Sprocket Timing Mark

1. Install the timing chain starting from the crankshaft sprocket, position the timing chain painted chain links at the crankshaft sprocket timing mark.



1 - Camshaft Sprocket Timing To Corresponding Chain Link Marks

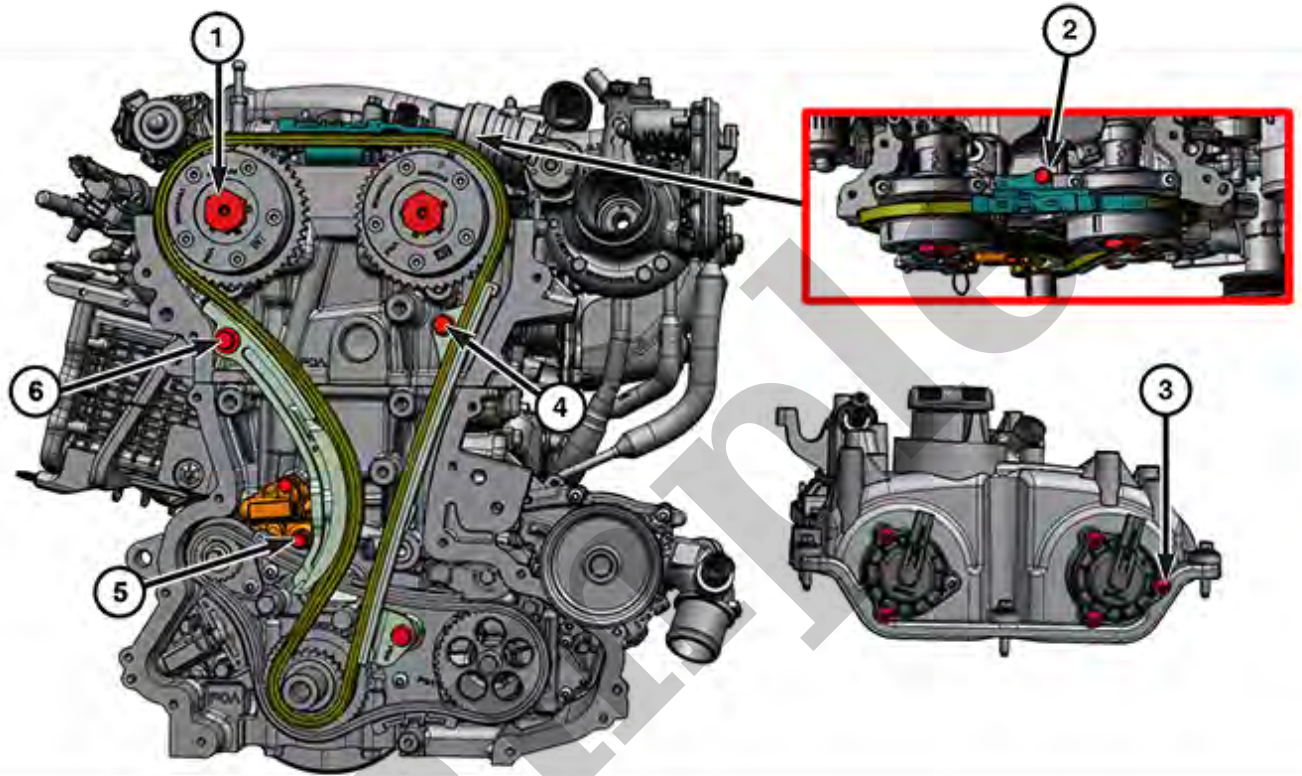
2 - Camshaft Sprocket Timing To Corresponding Chain Link Marks

2. Install the timing chain on the camshaft sprockets, so that the camshaft sprocket timing marks align with the painted chain links.

10. If removed, install the oil filter and fill the engine crankcase with the proper oil to the correct level (Refer to Engine/Lubrication/Standard Procedure)(Refer To List 3).

11. Run the engine until it reaches normal operating temperature. Check cooling system for correct fluid level (Refer to Engine/Cooling Systems/Engine Cooling/Standard Procedure)(Refer To List 4).

TORQUE SPECIFICATIONS - VALVE TIMING



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CALLOUT	DESCRIPTION	SPECIFICATION	COMMENTS
1	Variable Valve Timing Phaser/Exhaust Oil Control Valve Bolt	150 N·m (110 Ft. Lbs.)	-
2	Cam to Cam Guide Bolt	10 N·m (89 In. Lbs.)	-
3	Actuator to Valve Cover	4 N·m (35 In. Lbs.)	-
4	Timing Chain Guide M8 Bolts	23 N·m (16 Ft. Lbs.)	-
5	Timing Chain Tensioner M6 Bolts	10 N·m (89 In. Lbs.)	-
6	Primary Tensioner Arm M8 Bolt	28 N·m (21 Ft. Lbs.)	-

Engine Timing Cover

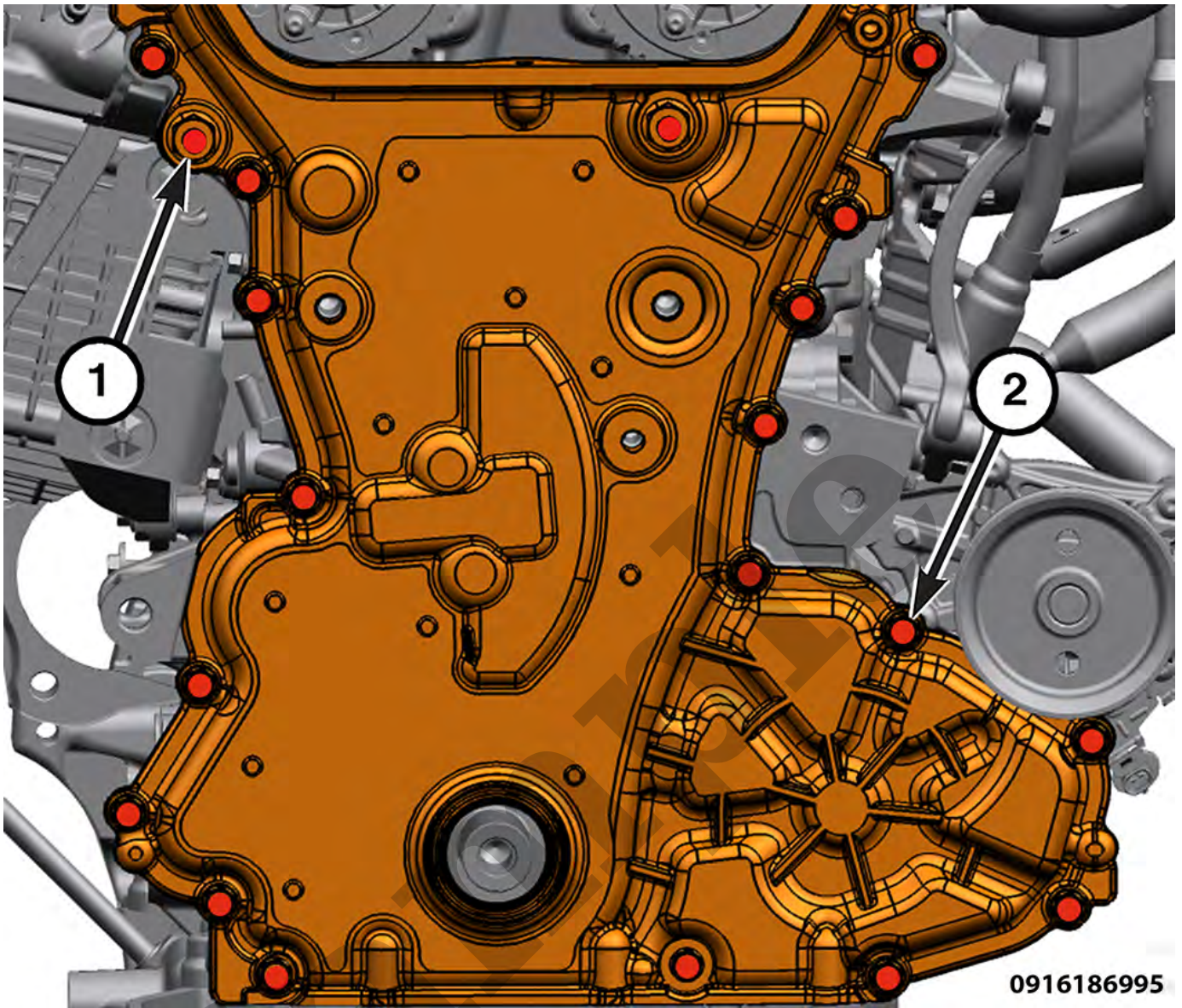
ENGINE TIMING COVER

WARNING

On vehicles equipped with the high voltage system, disconnecting the 12-volt battery negative cable alone will not power down the 12-volt system. You must perform the 12-volt Power Down procedure before proceeding. Failure to follow these instructions may result in possible serious or fatal injury.

REMOVAL

1. Power down the 12-volt system ([Refer to Electrical/Battery System/Standard Procedure](#)).
2. Drain the engine oil ([Refer to Engine/Lubrication/Standard Procedure](#))([Refer To List 1](#)).
3. Remove the cylinder head cover ([Refer to Engine/Cylinder Head/COVER\(S\), Cylinder Head/Removal and Installation](#))([Refer To List 2](#)).
4. Detach the wire harness retainer from the timing chain cover.



1 - Timing Chain Cover Stud Bolts

2 - Timing Chain Cover Bolts

11. Remove the timing chain cover stud bolts from the timing chain cover.

12. Remove the timing chain cover bolts.

Pry Points

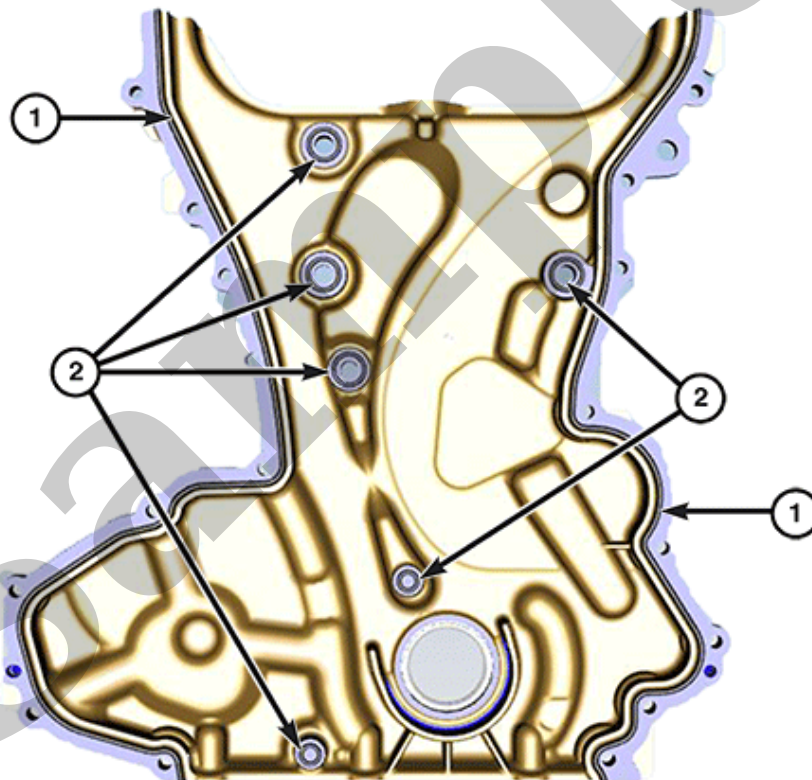
2 - Mopar® Threebond Engine RTV Sealant

3 - Chamfer

- Clean the engine timing cover, cylinder head and cylinder engine block mating surfaces with isopropyl alcohol in preparation for sealant application.
- Apply a 3 to 4 mm bead of Mopar® Threebond Engine RTV Sealant to the engine timing chain cover flange. Apply the bead of sealant 0 - 2 mm from the edge of the chamfer.

NOTE

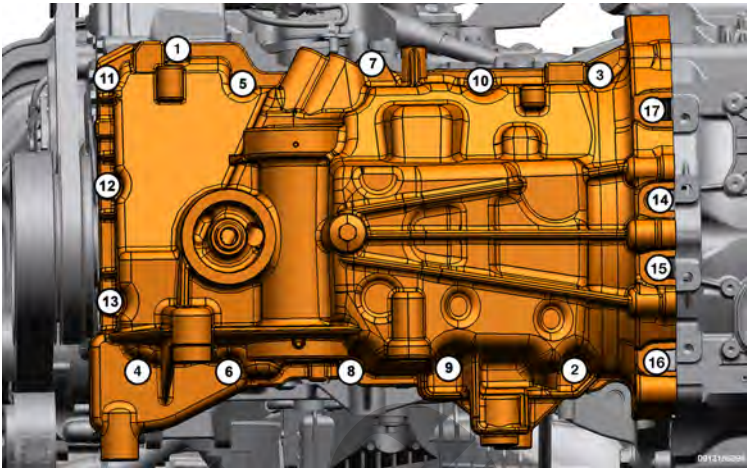
The bead of sealant must be uninterrupted.



1 - Engine Timing Chain Cover

2 - Mopar® Threebond Engine RTV Sealant Locations

- Apply a 2 to 3 mm bead of Mopar® Threebond Engine RTV Sealant to the perimeter of the six locations indicated in the central zone of the timing chain cover.

CALLOUT	DESCRIPTION	SPECIFICATION	COMMENTS
			
3	Engine Oil Drain M14 Plug	27 N·m (20 Ft. Lbs.)	

