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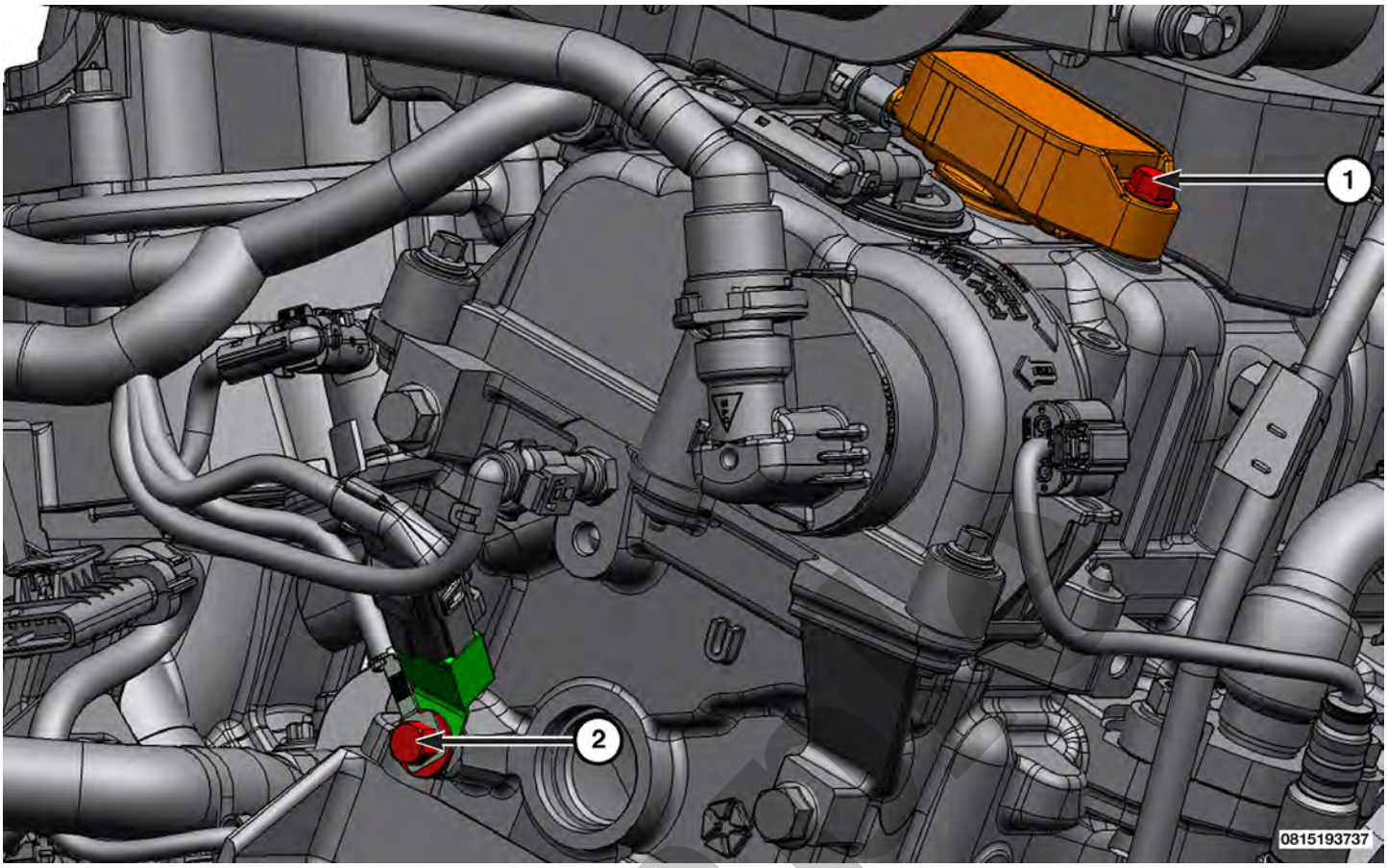
2010 JEEP Wrangler Unlimited Rubicon OEM Service and Repair Workshop Manual

Go to manual page



CALLOUT	DESCRIPTION	SPECIFICATION	COMMENTS
1	Ignition Coil to Cylinder Head Cover	**8 N·m (71In. Lbs.)**	–
2	Ignition Capacitor to Cylinder Head	**10 N·m (89 In. Lbs.)**	–
–	Spark Plugs	**20 N·m (15Ft. Lbs.)**	–

Refer To List:

List 1

- 09 - Engine, 2.0L / Ignition Control / COIL, Ignition / Removal and Installation
- 09 - Engine, 3.6L / Ignition Control / COIL, Ignition / Removal and Installation
- 09 - Engine, 5.7L / Ignition Control / COIL, Ignition / Removal and Installation

Oil Cooler

OIL COOLER

OIL COOLER

NOTE

In the event that the oil cooler is contaminated, the oil cooler cannot be flushed out. If the engine requires rebuilding or replacement, replace the oil cooler.

NOTE

The oil cooler is replaced as an assembly with the oil filter housing, for removal and installation (Refer to Engine/Lubrication/HOUSING, Oil Filter/Removal and Installation).

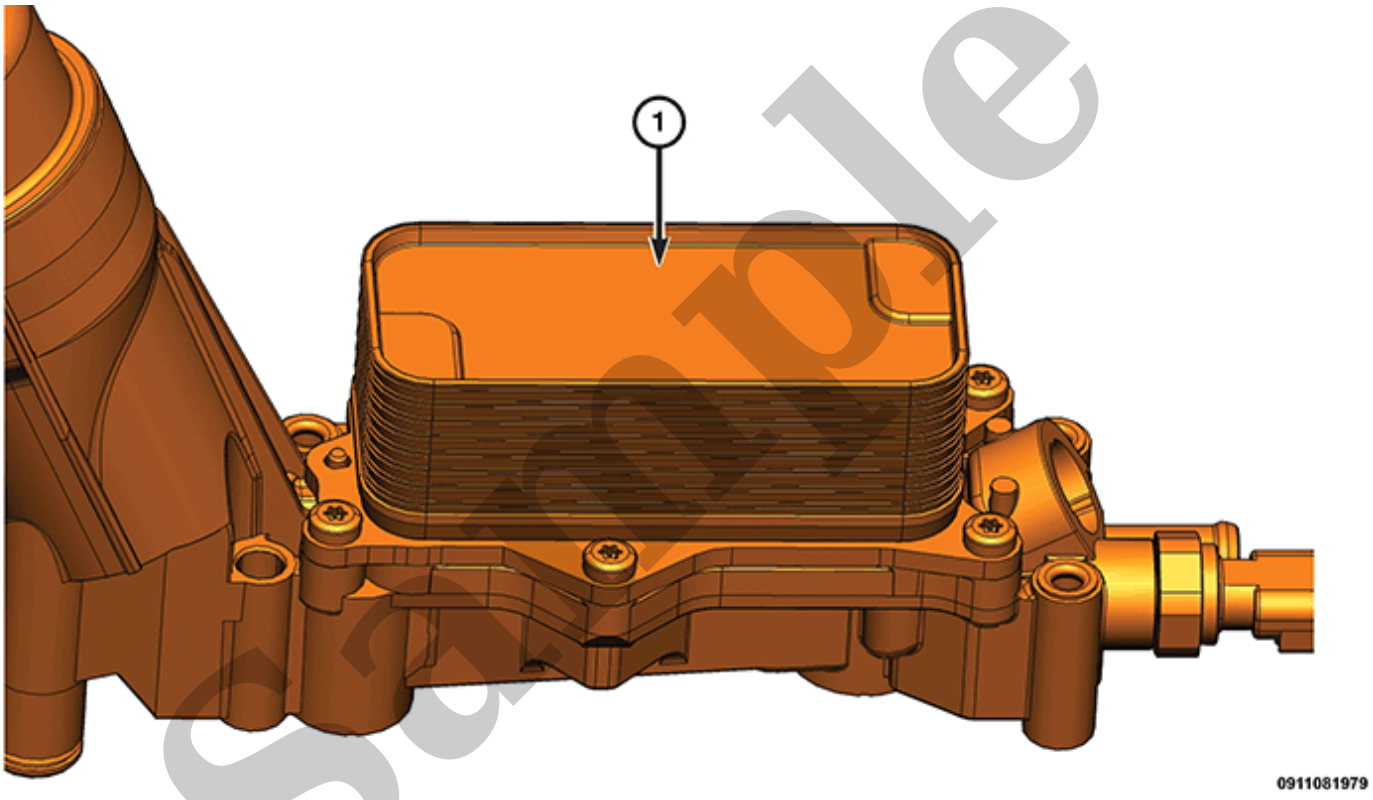
INSTALLATION

NOTE

The oil cooler is serviced as an assembly with the oil filter housing, for installation of the oil cooler (Refer to Engine/Lubrication/HOUSING, Oil Filter/Removal and Installation).

Oil Cooler

OIL COOLER

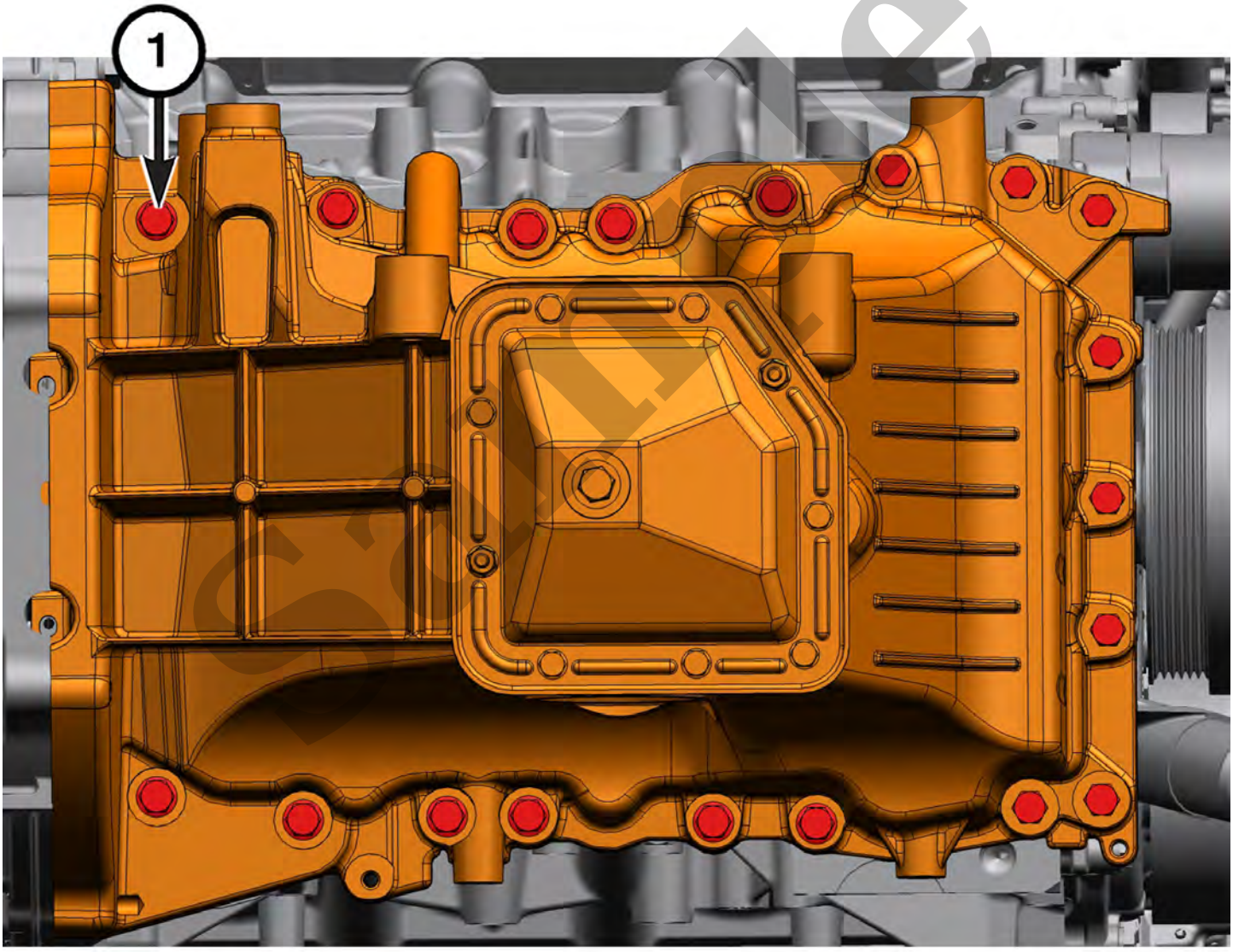


The oil cooler (1) is attached to the top of the oil filter housing which is located in the V of the cylinder block. The oil cooler is a plate style coolant-to-oil heat exchanger.

OPERATION

Oil Pan

OIL PAN



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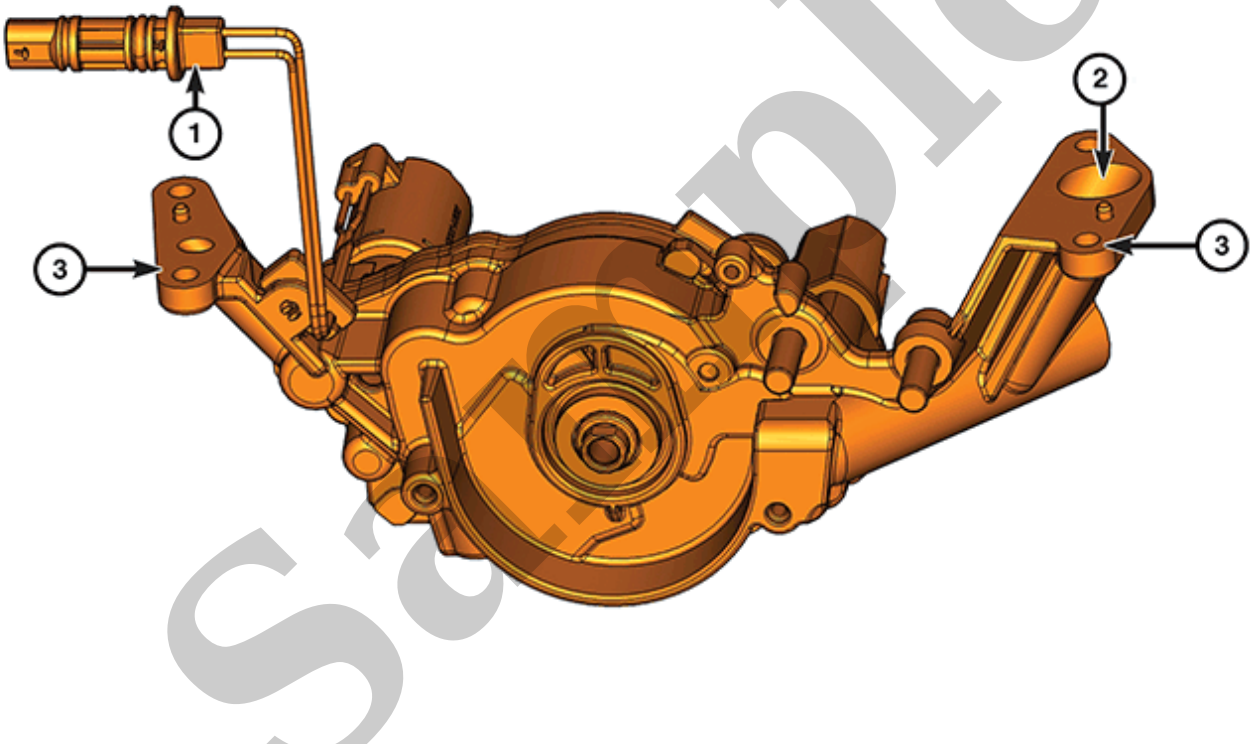
On 4X4 models, there is an upper and lower oil pan (1). The upper oil pan is cast aluminum and also serves as the lower end structural support. The differential is mounted to the side of the upper oil pan and the axle

Oil Pump

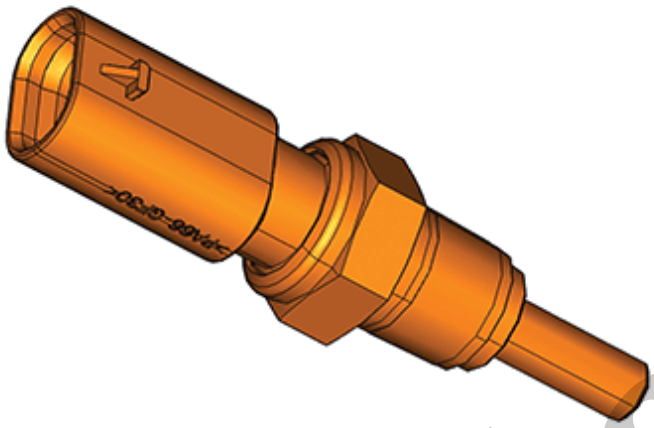
OIL PUMP

DESCRIPTION



The vane type engine oil pump (2) is mounted to the underside of the cylinder block (3) and is driven by the oil pump chain off the crankshaft at a 1.15:1 drive ratio:

- This pump location improves efficiency compared to an on-crankshaft location
- The pump is driven with a silent chain which is tensioned using a spring loaded tensioner
- The pump is not timed to the engine
- An internal mechanical ball and spring type relief valve prevents excess pressure in the engine by dumping oil into the sump and provides emergency protection at conditions such as a cold start with high engine speed



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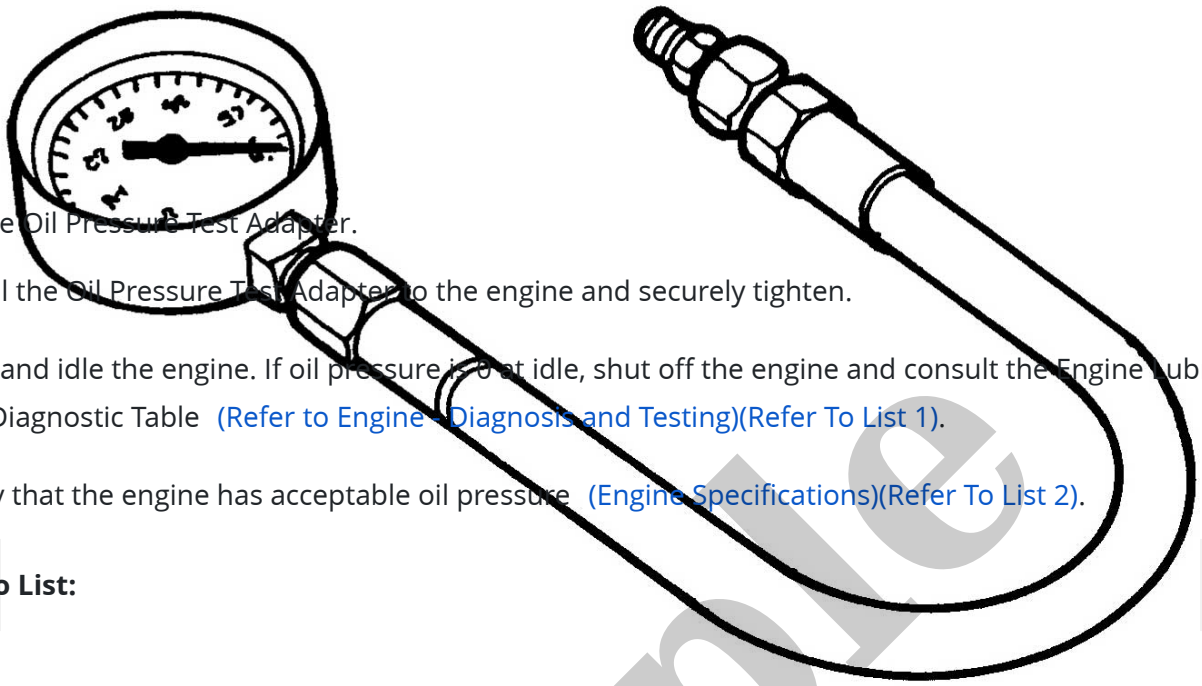
The oil temperature sensor is a variable resistor that measures the temperature of the engine oil. The Powertrain Control Module (PCM) supplies a 5 volt reference and a ground to the sensors low reference signal circuit. When the oil temperature is low, the sensor resistance is high. When the oil temperature is high, the sensor resistance is low.



to the Oil Pressure Test Adapter.

4. Install the Oil Pressure Test Adapter to the engine and securely tighten.
5. Start and idle the engine. If oil pressure is 0 at idle, shut off the engine and consult the Engine Lubrication and Diagnostic Table (Refer to Engine - Diagnosis and Testing)(Refer To List 1).
6. Verify that the engine has acceptable oil pressure (Engine Specifications)(Refer To List 2).

Refer To List:

List 1

- 09 - Engine, 2.0L / Diagnosis and Testing
- 09 - Engine, 3.6L / Diagnosis and Testing
- 09 - Engine, 5.7L / Diagnosis and Testing

List 2

- 09 - Engine, 2.0L / Technical Specifications
- 09 - Engine, 3.6L / Technical Specifications
- 09 - Engine, 5.7L / Technical Specifications

b. Where leakage tends to run straight down, possible causes are a porous block, rear oil seal retainer, oil galley pipe plug and rear seal retainer to oil pan mating surfaces.

5. If no leaks are detected, use the Air Leak Detection Method as outlined in Engine Oil Leak (Refer to Engine/Lubrication - Diagnosis and Testing)(Refer To List 1).

CAUTION

Do not subject the engine assembly to more than 20.6 kPa (3 psi) of test pressure.

6. If the leak is not detected, very slowly turn the crankshaft and watch for leakage. If a leak is detected between the crankshaft and seal while slowly turning the crankshaft, it is possible the crankshaft seal surface is damaged. The seal area on the crankshaft could have minor nicks or scratches that can be polished out with emery cloth.

CAUTION

Use extreme caution when crankshaft polishing is necessary to remove minor nicks or scratches. The crankshaft seal flange is specially machined to complement the function of the rear oil seal.

7. For bubbles that remain steady with shaft rotation, no further inspection can be done until disassembled (Refer to Engine/Engine Block/SEAL, Crankshaft Oil, Rear/Removal and Installation) (Refer To List 2).

Refer To List:

List 1

- 09 - Engine, 2.0L / Lubrication / Diagnosis and Testing
- 09 - Engine, 3.6L / Lubrication / Diagnosis and Testing
- 09 - Engine, 5.7L / Lubrication / Diagnosis and Testing

List 2

- 09 - Engine, 2.0L / Engine Block / SEAL, Crankshaft Oil, Rear / Removal and Installation
- 09 - Engine, 3.6L / Engine Block / SEAL, Crankshaft Oil, Rear / Removal and Installation

Oil Filter

OIL FILTER

REMOVAL

All engines are equipped with a high quality full-flow, disposable type oil filter. A Mopar® or equivalent oil filter is recommended.

CAUTION

When performing an engine oil change, the oil filter cap must be removed. Removing the oil filter cap releases oil held within the oil filter cavity and allows it to drain into the sump. Failure to remove the cap prior to reinstallation of the drain plug will not allow complete draining of the used engine oil.