

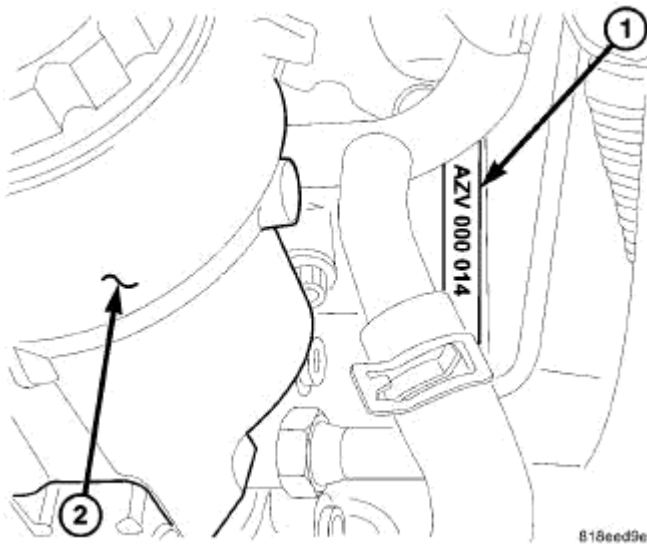
2009 ENGINE**2.0L Diesel - Service Information - Journey****DESCRIPTION****DESCRIPTION**

Fig. 1: Serial Number
Courtesy of CHRYSLER LLC

This is an 2.0L electronic unit injector turbo diesel engine. The engine serial number is located on the rear flange of the engine block behind the oil filter housing (2).

STANDARD PROCEDURE**COMPRESSION TESTING ENGINE**

CAUTION: Injector retaining bolts must be replaced after performing compression test.

1. Warm up engine to operating temperature (approximately 80 °C, 176°F).
2. Shut off engine.
3. Remove engine cover. See **Removal** .
4. Disconnect fuel feed and return lines from the fuel filter.
5. Operate a vacuum pump connected to the return line until no more fuel comes out.
6. Remove injectors. Refer to **Fuel System/Fuel Injection/INJECTOR(S), Fuel - Removal** .

- Air leak through the oil filler neck, may be caused by piston, ring, or cylinder sleeve.

If none of the above evidence supports a failure, the engine may be assembled and run until operating temperature is reached. Reconnect engine leak down tester on a warm engine with a few drops of clean engine oil in the cylinder being tested. Engine oil seals the clearance between the piston and cylinder for a short length of time. If under this condition a smaller pressure loss occurs for a shorter length of time, it is possible that the cause is piston, ring or cylinder sleeve related.

ENGINE GASKET SURFACE PREPARATION

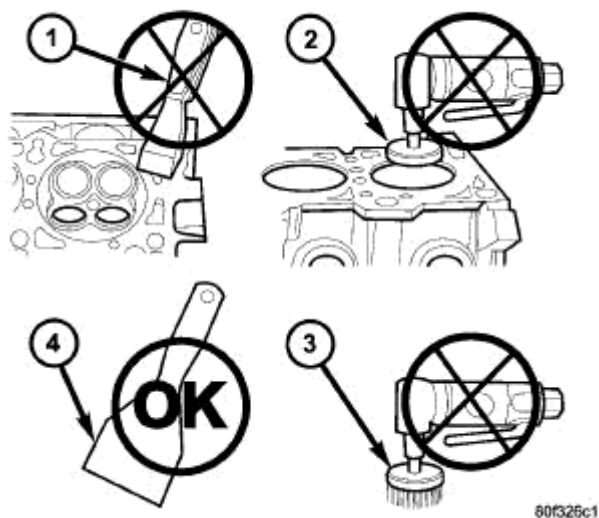


Fig. 2: Proper Tool Usage For Surface Preparation

Courtesy of CHRYSLER LLC

To ensure engine gasket sealing, proper surface preparation must be performed, especially with the use of aluminum engine components and multi-layer steel cylinder head gaskets.

Never use the following to clean gasket surfaces:

- Metal scraper (1).
- High speed power tool with an abrasive pad or paper to clean cylinder block and head (2).
- High speed power tool with 3M Roloc™ Bristle Disc (white or yellow) (3).

NOTE: Multi-Layer Steel (MLS) head gaskets require a scratch free sealing surface.

Only use the following for cleaning gasket surfaces:

- Solvent or a commercially available gasket remover.
- Plastic or wood scraper (4).

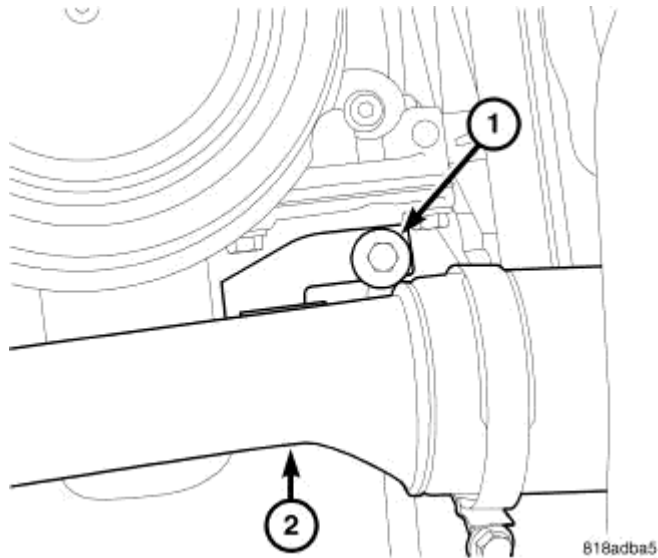


Fig. 14: Air Inlet Tube
Courtesy of CHRYSLER LLC

31. Remove turbocharger inlet and outlet tubes.
32. Remove air tube retaining bolt (1) and remove air inlet tube (2).

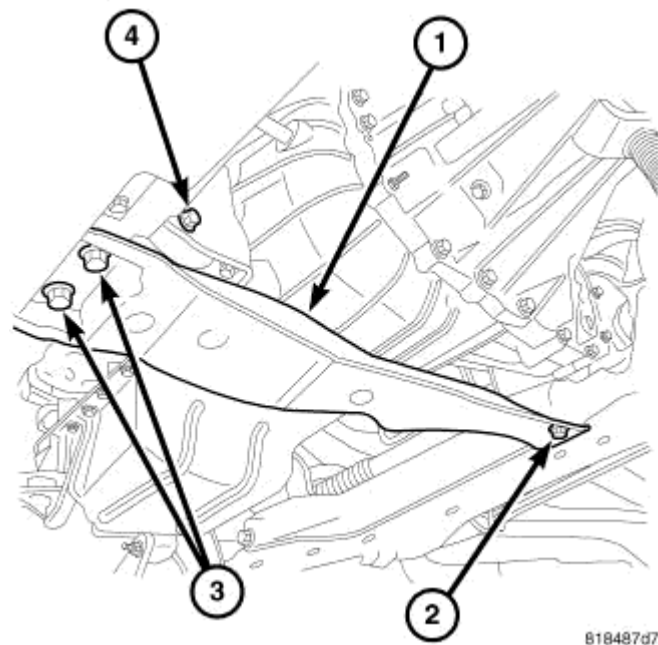


Fig. 15: Transmission Crossmember
Courtesy of CHRYSLER LLC

33. Remove front transaxle mount through bolt (4).
34. Remove fore/aft member retaining bolts (2,3) and remove fore/aft member (1).

32. Install serpentine belt tensioner and install serpentine belt.

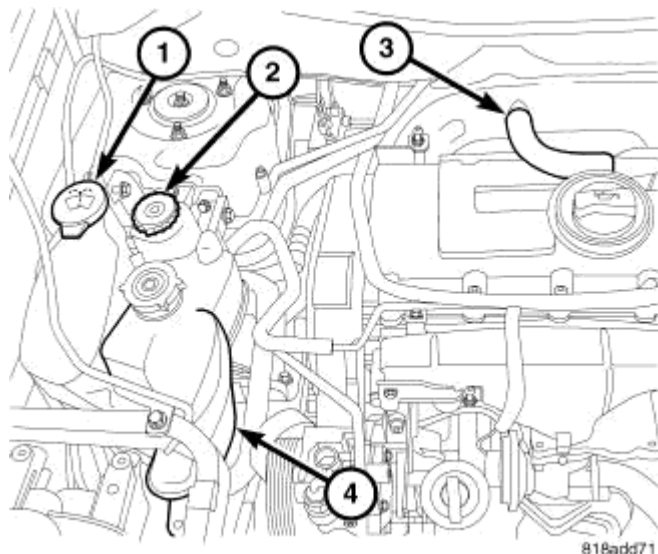


Fig. 34: Coolant Reservoir
Courtesy of CHRYSLER LLC

33. Install coolant reservoir (4).
34. Install coolant module, connect cooling fan connectors.
35. Connect upper and lower radiator hoses.
36. Connect charge air hoses to intercooler.
37. Connect A/C lines to condenser and connect electrical connectors.
38. Fill engine with coolant. Refer to **Cooling - Standard Procedure**.

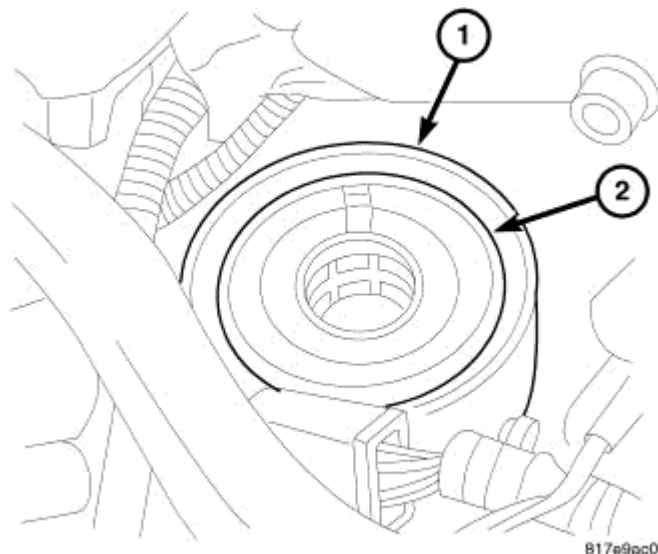
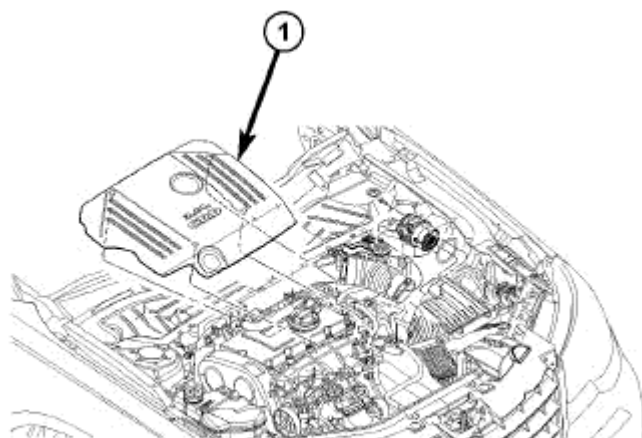


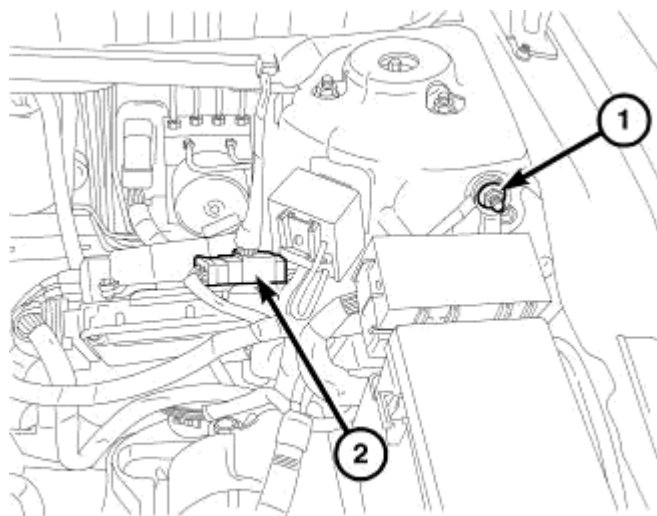
Fig. 35: Filter In Housing
Courtesy of CHRYSLER LLC



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Fig. 47: Engine Cover-Removal/Installation
Courtesy of CHRYSLER LLC

1. Remove engine cover (1).



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Fig. 48: Battery Cable
Courtesy of CHRYSLER LLC

2. Disconnect negative battery cable (1).

39. Remove harmonic balancer (4).
40. Remove timing belt. See **Removal** .
41. Remove oil feed pipe from turbo and remove pipe retainers.
42. Remove exhaust manifold.

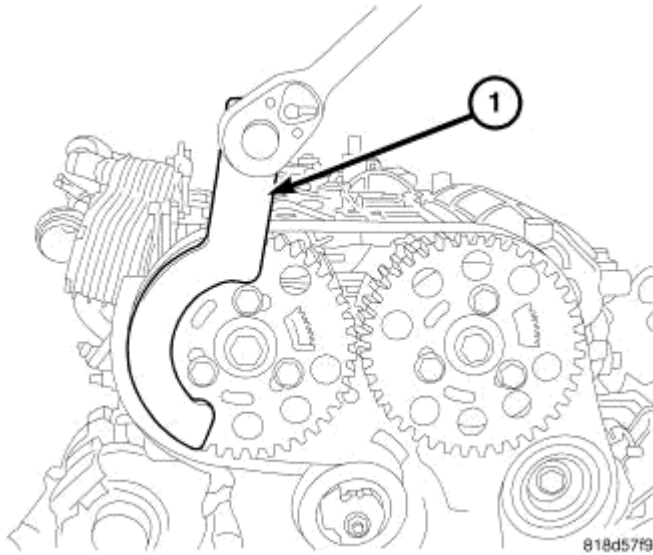
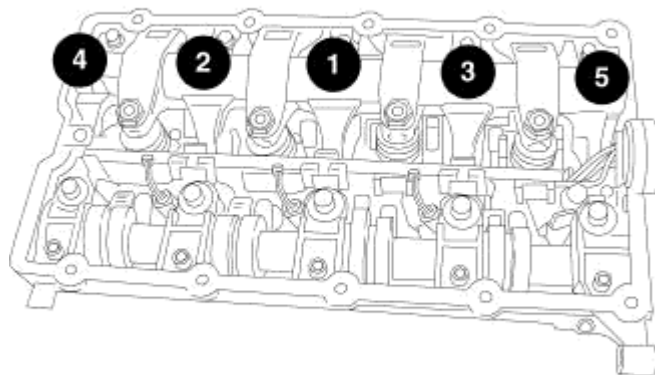


Fig. 58: Cam Holder
Courtesy of CHRYSLER LLC

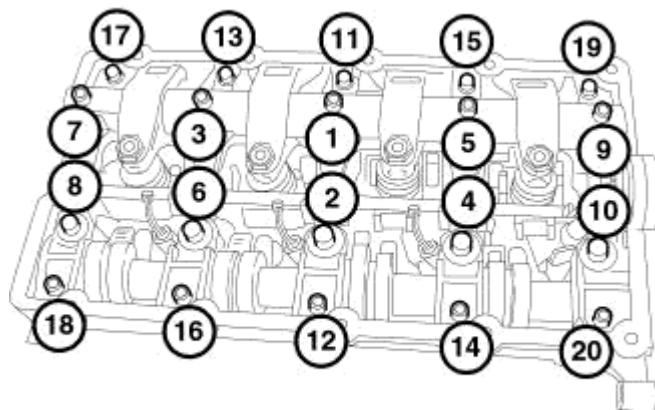
43. Remove camshaft sprockets.
44. Remove camshaft sprocket hubs.
45. Remove injector rocker arm shaft.
46. Remove bearing frame.
47. Remove camshafts.



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Fig. 82: Rocker Arm Shaft Bolt Removal/Installation Sequence
Courtesy of CHRYSLER LLC

11. Remove rocker arm shaft and bearing frame retaining bolts.
12. Remove rocker arm shaft.

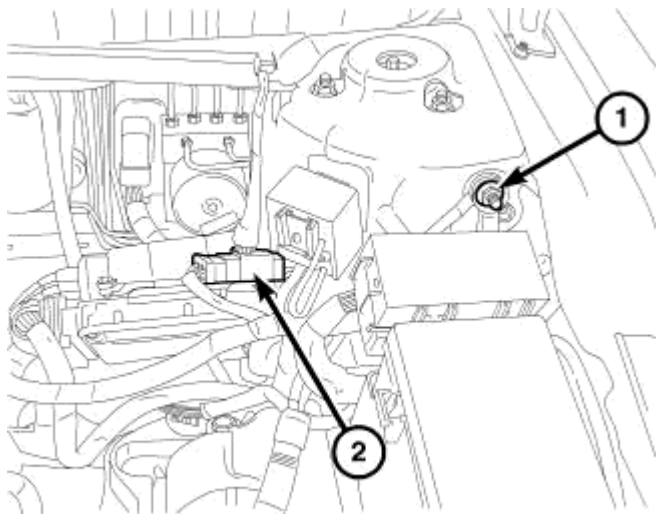


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Fig. 83: Cam Bearing Frame Torque
Courtesy of CHRYSLER LLC

13. Remove bearing frame.

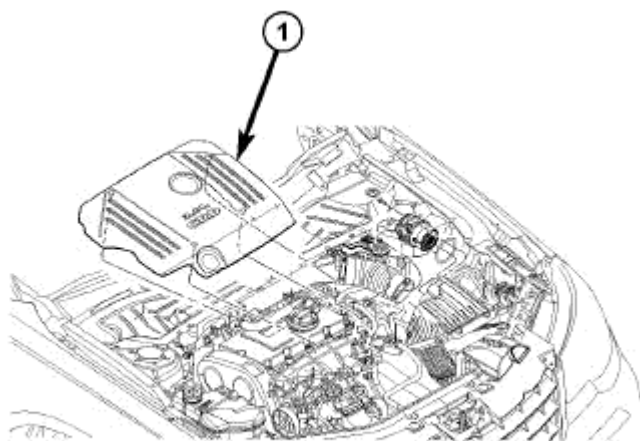
NOTE: If bearing shells are to be reused, clean them and identify location with a marker.



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Fig. 108: Battery Cable
Courtesy of CHRYSLER LLC

1. Disconnect negative battery cable (1).



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Fig. 109: Engine Cover-Removal/Installation
Courtesy of CHRYSLER LLC

2. Remove engine cover (1). See **Removal** .
3. Remove camshafts. See **Removal** .
4. Position piston of cylinder to be processed to TDC by rotating the crankshaft clockwise. **DO NOT crank engine. DO NOT rotate engine backward.**

REMOVAL

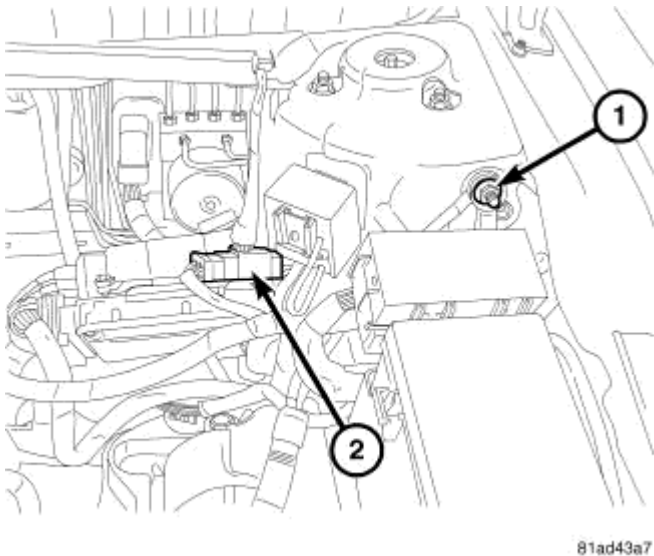


Fig. 128: Battery Cable
Courtesy of CHRYSLER LLC

NOTE: The engine must be removed from the vehicle to service crankshaft.

1. Disconnect negative battery cable (1).

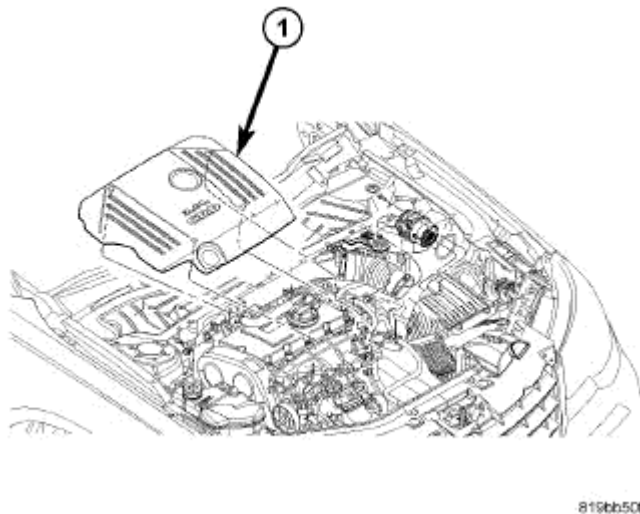


Fig. 129: Engine Cover-Removal/Installation
Courtesy of CHRYSLER LLC

2. Remove engine cover (1).
3. Remove engine. See **Removal** .

3. Connect vacuum pump to line and operate pump until no more fuel comes out.

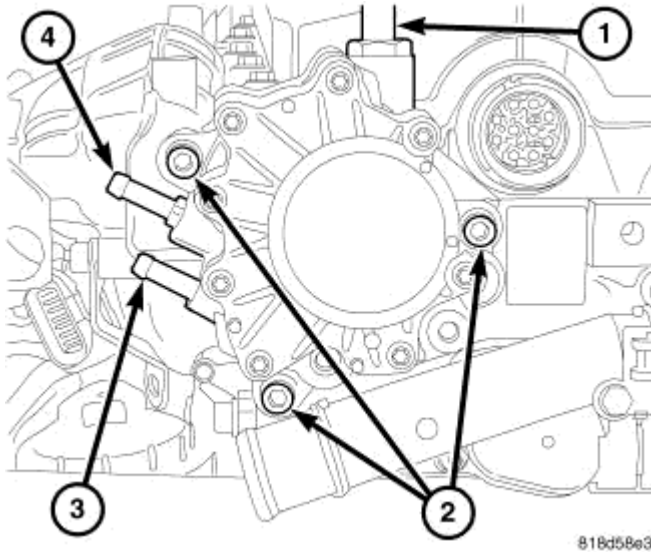


Fig. 151: Tandem Pump
Courtesy of CHRYSLER LLC

4. Remove fuel feed line (4).
5. Remove fuel return line (3).
6. Remove retaining bolts (2) and remove pump.

Installation

INSTALLATION

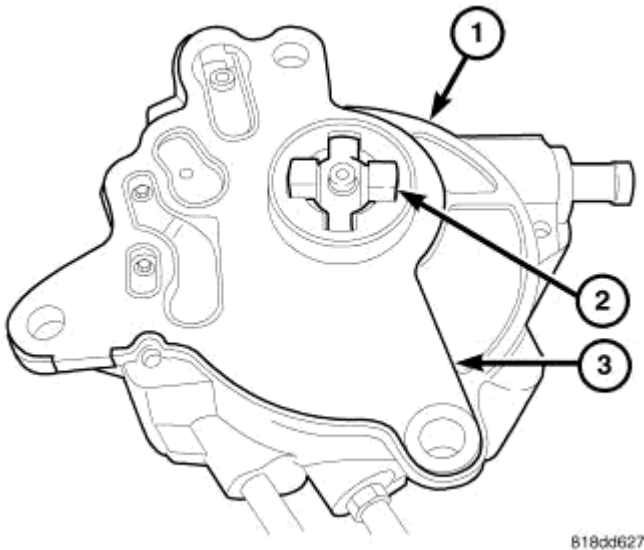


Fig. 152: Pump And Gasket
Courtesy of CHRYSLER LLC

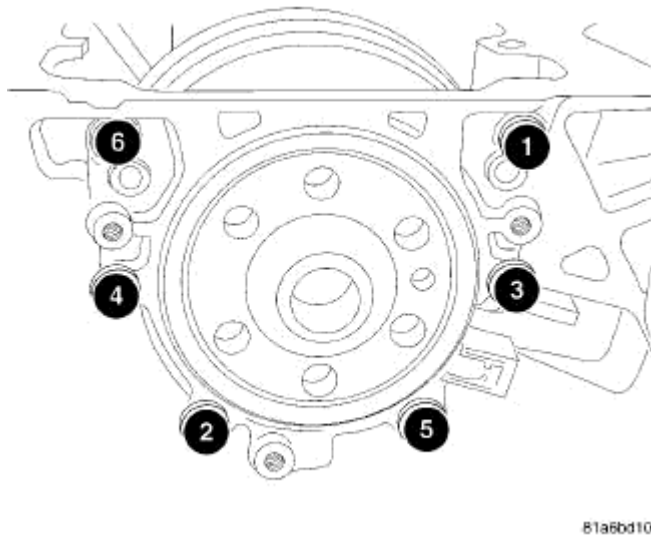


Fig. 176: Tighten Rear Main Bolts In Sequence
Courtesy of CHRYSLER LLC

10. If dimension is attained, tighten rear sealing flange bolts to 15 N.m (133 in. lbs.) in the sequence shown in illustration.

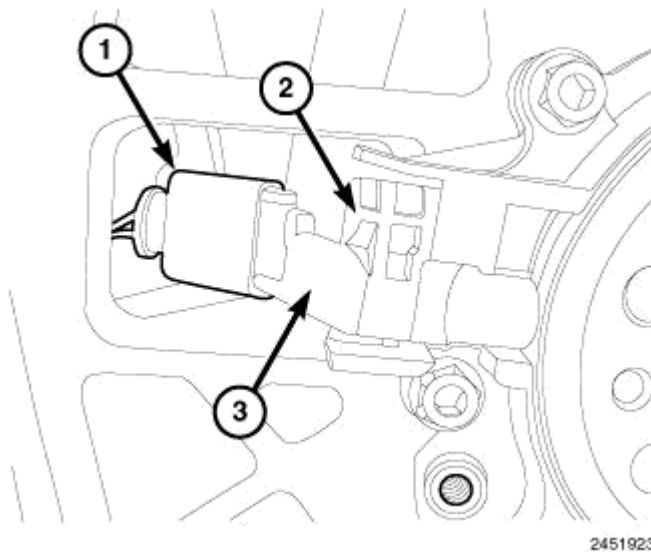
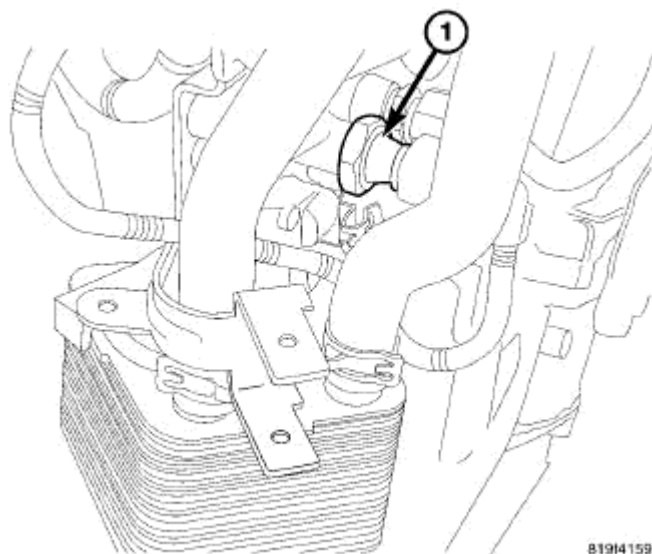
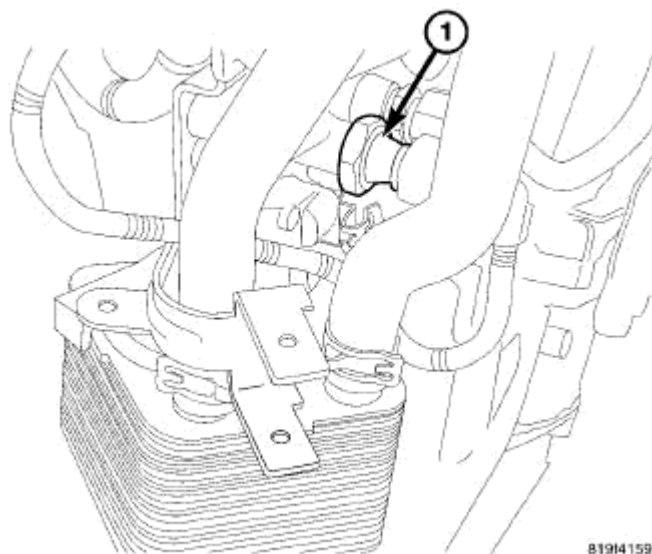


Fig. 177: Crankshaft Position Sensor
Courtesy of CHRYSLER LLC

11. Install crankshaft position sensor (3). Tighten bolt (2) to 5 N.m (44 in. lbs.).
12. Connect the crankshaft position sensor harness connector (1).

REMOVAL**Fig. 192: Oil Pressure Sender****Courtesy of CHRYSLER LLC**

1. Disconnect oil pressure sensor electrical connector.
2. Remove oil pressure sensor (1).

Installation**INSTALLATION****Fig. 193: Oil Pressure Sender**

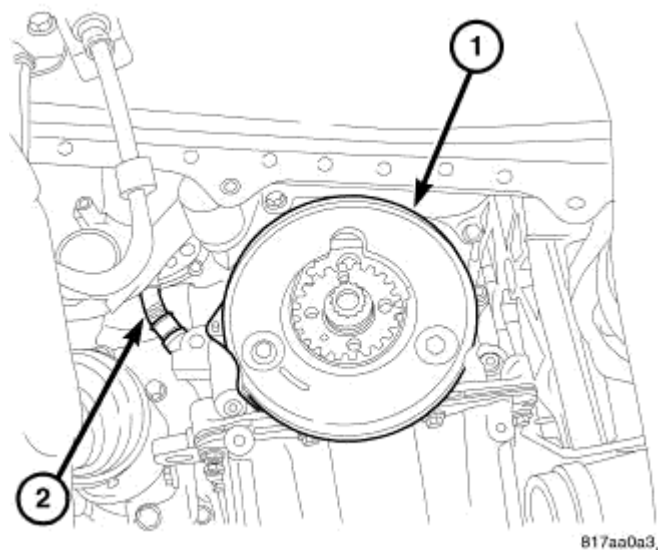


Fig. 208: Lower Timing Belt Cover
Courtesy of CHRYSLER LLC

2. Remove lower timing belt cover (1).
3. Position piston of number #1 cylinder to ignition TDC.

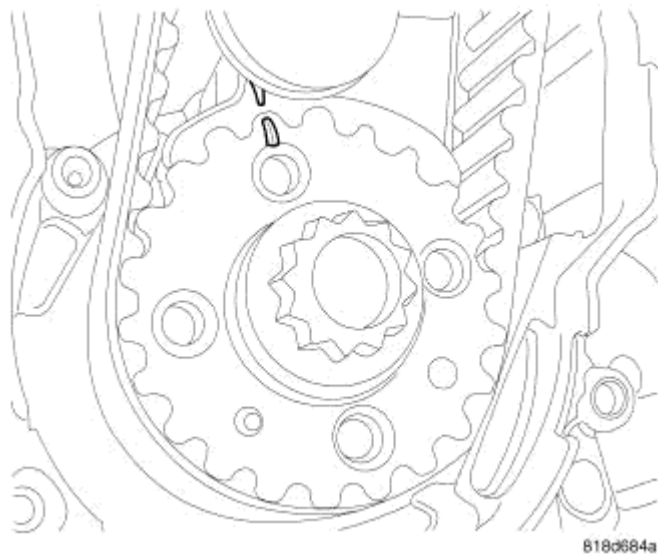


Fig. 209: Crankshaft Timing Marks
Courtesy of CHRYSLER LLC

4. Install crankshaft lock 9883.

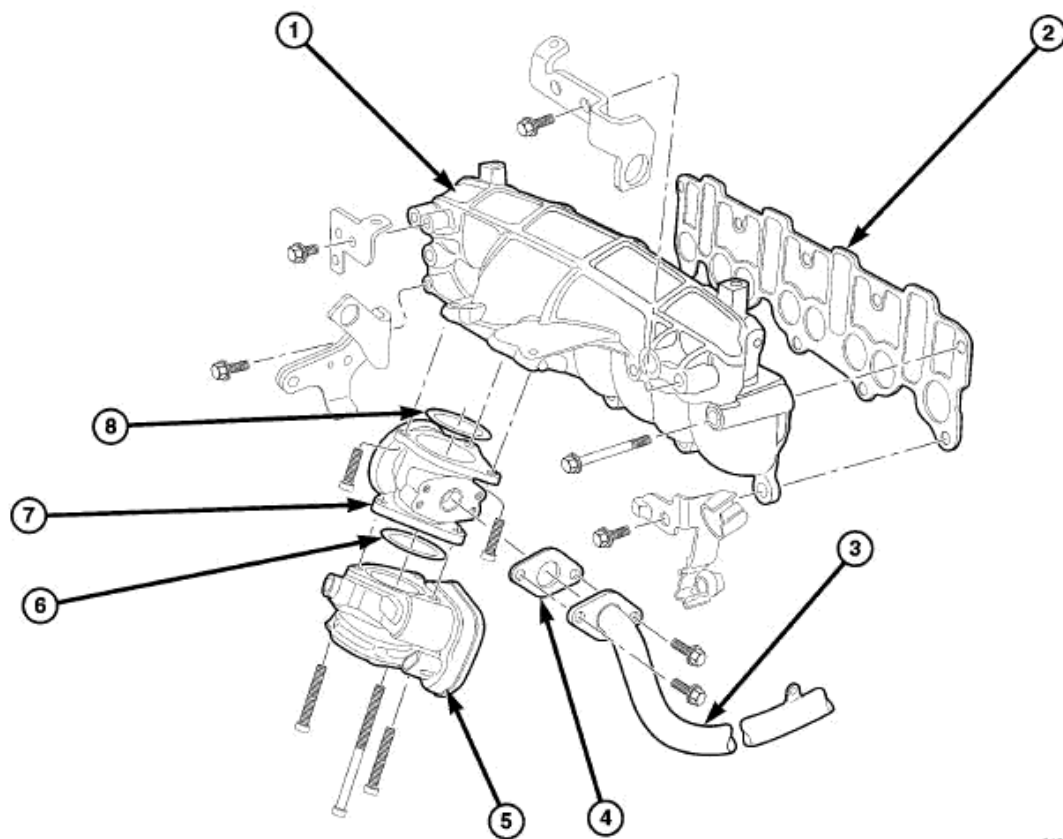


Fig. 235: Intake Manifold
Courtesy of CHRYSLER LLC

8. Release air inlet pipe from throttle body.
9. Remove EGR pipe (3).

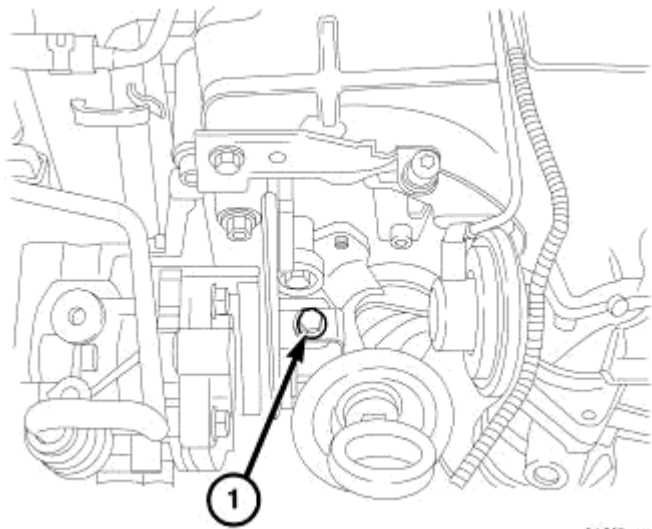


Fig. 236: Dipstick Support Retaining Bolt

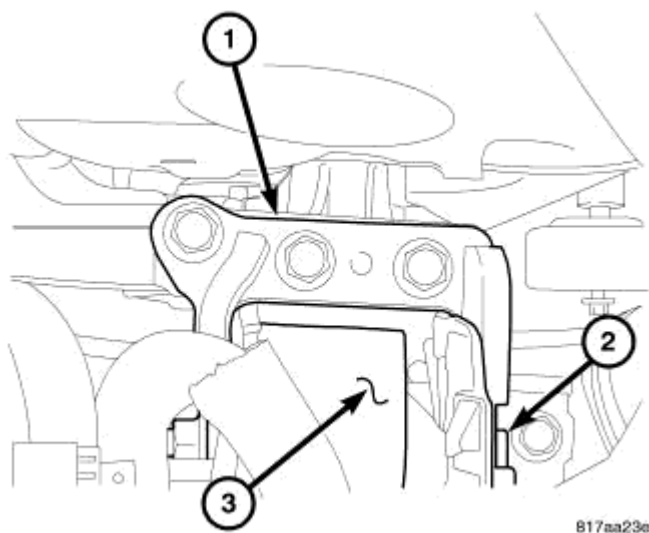


Fig. 252: Right Engine Mount
Courtesy of CHRYSLER LLC

4. Install mount (3). See **Installation** .

INSULATOR, ENGINE MOUNT, LEFT

Removal

REMOVAL

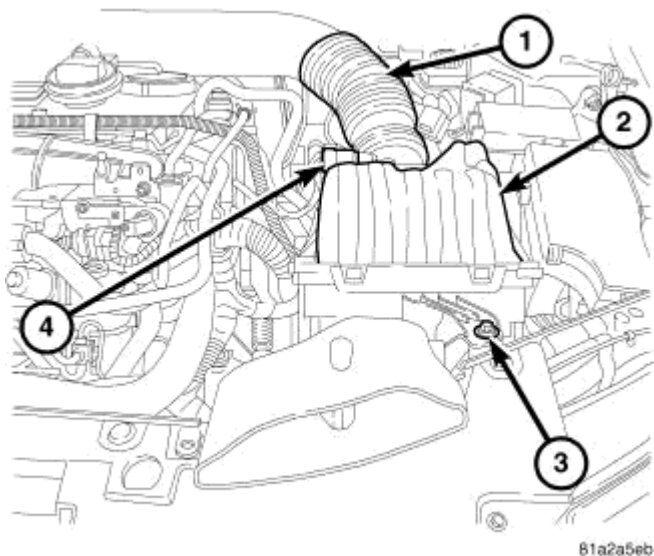


Fig. 253: AIR CLEANER HOUSING
Courtesy of CHRYSLER LLC

1. Remove air cleaner assembly (2).