

SPARK KNOCK/OIL CONSUMPTION - INTAKE PAN GASKET LEAK

TECHNICAL SERVICE BULLETIN

Reference Number(s): 09-05-00, 09-06-99, Date of Issue: February 25, 2000

SPARK KNOCK AND ENGINE OIL CONSUMPTION DUE TO INTAKE MANIFOLD PAN GASKET OIL LEAK

Model(s): 1994-1999 Dodge (AB) Ram Van

1994-1999 Dodge (AN) Dakota

1994-1999 Dodge (BR/BE) Ram Truck

1998-1999 Dodge (DN) Durango

1994-1998 Jeep (ZJ) Grand Cherokee

1996-1998 Jeep (ZG) Grand Cherokee

Group: Engine

Bulletin No.: 09-05-00

Date: February 25, 2000

NOTE: This bulletin supersedes Technical Service Bulletin 09-06-99 dated September 10, 1999.

OVERVIEW

This bulletin involves the replacement of the engine intake manifold plenum pan gasket.

NOTE: This bulletin applies to vehicle equipped with a 3.9L, 5.2L, or 5.9L gasoline engine.

SYMPTOM/CONDITION

An engine intake manifold plenum pan gasket oil leak may occur on some V-6 and V-8 style engines. The oil leak is internal to the engine so no external oil leakage will be present. Two symptoms of this oil leak condition may be present. The vehicle operator may experience an engine spark knock during acceleration and/or an increase in the amount of engine oil consumed by the engine.

DIAGNOSIS

Make sure Technical Service Bulletin (TSB) [18-48-98](#) has been performed.

NOTE: It is important that the coil and spark plug wires are routed exactly as specified in TSB [18-48-98](#) to achieve the most benefit.

Inspect the Positive Crankcase Ventilation (PCV) valve. Shake the PCV valve to verify that the pintle inside of the PCV valve is free. Replace the PVC if the pintle is not free.

If the intake manifold plenum pan gasket is leaking, an additional vacuum source will be created inside of the engine at the location of the pan gasket leakage. Engine combustion blow-by gases, oil vapor, and air from the crankcase filter/breather may be drawn past the leaking pan gasket and into the intake manifold. In most cases when this condition occurs, an engine at idle will create the highest vacuum and lowest amount of engine blow-by.

1. Allow the engine to reach normal operating temperature.
2. Stop the engine.
3. Disconnect the breather hose from the air cleaner.
4. Attach a vacuum/pressure gauge to the end of the breather hose ([Fig. 1](#)).
5. Disconnect the PCV valve hose from the intake manifold.
6. Seal off the intake manifold PCV valve hose port opening.
7. Seal off the open end of the PCV valve hose ([Fig. 2](#)).

NOTE: During this diagnosis, it would be normal for the engine to develop pressure within the engine crankcase. This is due to the normal process of exhaust blow-by gases leaking past the engine piston rings and accumulating in the engine crankcase. Do not allow more than 3 psi (20.7 kPa) of pressure to build within the engine when performing the following diagnostic procedure.

8. Start the warmed engine and observe the vacuum gauge.
9. Allow the engine to idle for approximately 30 seconds. Do not allow more than 3 psi (20.7 kPa) of pressure to develop in the engine crankcase.
10. If the attached vacuum/pressure gauge does not indicate that a vacuum is present in the engine crankcase, then the intake manifold plenum pan gasket is good and no further internal engine vacuum leak diagnosis is required.
11. If an internal vacuum leak is present then perform the **REPAIR PROCEDURE**.

PARTS REQUIRED

PARTS INFORMATION - 5.2L/5.9L

Qty.	Part Number	Description
1	04897383AC	Package, Intake Manifold Flange Gasket and Bolts
1	05017208AA	Gasket, Intake Manifold Plenum Pan
15	06034583	Bolt, Intake Manifold Plenum Pan
1	53030541	Gasket, Throttle Body

2 (AR)	04318001	Conditioner, Combustion Chamber
--------	----------	---------------------------------

PARTS INFORMATION - 3.9L

Qty.	Part Number	Description
1	04897382AC	Package, Intake Manifold Flange Gasket and Bolts
1	05017207AA	Gasket, Intake Manifold Plenum Pan
14	06034583	Bolt, Intake Manifold Plenum Pan
1	53030541	Gasket, Throttle Body
2 (AR)	04318001	Conditioner, Combustion Chamber

REPAIR PROCEDURE

1. Refer to the appropriate year Service Manual, Section 9: ENGINE for removal and installation instructions.

NOTE: Clean all oil residue from the interior surfaces of the plenum pan and the intake manifold plenum chamber.

NOTE: The proper bolt torque and tightening sequence is critical and must be followed when tightening both the plenum pan bolts and the intake manifold flange bolts.

3.9L BOLT TIGHTENING SEQUENCE AND TORQUE PROCEDURE

Refer to [Fig. 3](#) and [Fig. 4](#).

3.9L PLENUM PAN BOLT TORQUE PROCEDURE

Step	Which Bolt	Torque
1	All Bolts	5.4 N.m (48 in-lbs.)
2	All Bolts	9.5 N.m (84 in-lbs.)
3	Check All Bolts	9.5 N.m (84 in-lbs.)

3.9L INTAKE MANIFOLD FLANGE BOLT TORQUE PROCEDURE

Step	Which Bolt	Torque
1	1 and 2	1.4 N.m (12 in-lbs.)
2	1 and 2	2.7 N.m (24 in-lbs.)
3	1 and 2	4.1 N.m (36 in-lbs.)
4	1 and 2	5.4 N.m (48 in-lbs.)
5	1 and 2	6.7 N.m (60 in-lbs.)
6	1 and 2	8.1 N.m (72 in-lbs.)
7	3 through 12	8.1 N.m (72 in-lbs.)
8	Check All Bolts	8.1 N.m (72 in-lbs.)
9	All Bolts	16.3 N.m (12 ft-lbs.)
10	Check All Bolts	16.3 N.m (12 ft-lbs.)

5.2L/5.9L BOLT TIGHTENING SEQUENCE AND TORQUE PROCEDURE

Refer to [Fig. 5](#) and [Fig. 6](#).

5.2L/5.9L PLENUM PAN BOLT TORQUE PROCEDURE

Step	Which Bolt	Torque
1	All Bolts	5.4 N.m (48 in-lbs.)
2	All Bolts	9.5 N.m (84 in-lbs.)
3	Check All Bolts	9.5 N.m (84 in-lbs.)

5.2L/5.9L INTAKE MANIFOLD FLANGE BOLT TORQUE PROCEDURE

Step	Which Bolt	Torque
1	1 and 4	1.4 N.m (12 in-lbs.)
2	1 and 4	2.7 N.m (24 in-lbs.)
3	1 and 4	4.1 N.m (36 in-lbs.)
4	1 and 4	5.4 N.m (48 in-lbs.)
5	1 and 4	6.7 N.m (60 in-lbs.)
6	1 and 4	8.1 N.m (72 in-lbs.)
7	5 through 12	8.1 N.m (72 in-lbs.)
8	Check All Bolts	8.1 N.m (72 in-lbs.)
9	All Bolts	16.3 N.m (12 ft-lbs.)
10	Check All Bolts	16.3 N.m (12 ft-lbs.)

1. With the engine reassembled, inspect the coil and spark plug wires for proper routing. Refer to TSB [18-48-98](#) for additional assistance.
2. Start the engine and allow it to warm to normal engine operating temperature.
3. Decarbon the combustion chamber using Mopar Combustion Chamber Conditioner (P/N 04318001) per the instructions.

NOTE: Allow the combustion chamber cleaner to soak inside of the engine for 2 to 2.5 hours.

NOTE: A second application of the combustion chamber conditioner may be required if there was a large quantity of oil leakage past the intake plenum pan gasket.

4. Verify proper engine oil level.

WARRANTY INFORMATION

POLICY: Reimbursable within the provisions of the warranty.

LABOR OPERATION NO.: 09-50-15-91

TIME ALLOWANCE: 3.0 Hrs.

OPTIONAL EQUIPMENT: 09-50-15-60 - Air Conditioning Equipped (AN/BR-BE/DN/ZJ).....0.2 Hrs.

09-50-15-60 - Air Conditioning Equipped (AB).....0.8 Hrs.

09-50-15-62 - Air Injection Pump Equipped (BR/BE).....0.2 Hrs.

09-50-15-65 - Power Steering Pump Equipped (if 5.2L and AN/BR-BE/DN/ZJ)...0.2 Hrs.

FAILURE CODE: P8- New Part

[Fig. 1: Vacuum/Pressure Gauge Attachment To Breather Hose](#)

[Fig. 2: Capped Off PCV Valve & Intake Manifold PCV Port](#)

[Fig. 3: 3.9L Intake Plenum Pan Bolt Tightening Sequence](#)

[Fig. 4: 3.9L Intake Manifold Bolt Tightening Sequence](#)

[Fig. 5: 5.2L/5.9L Intake Plenum Pan Bolt Tightening Sequence](#)

[Fig. 6: 5.2L/5.9L Intake Manifold Bolt Tightening Sequence](#)

© 2006 Mitchell Repair Information Co., LLC.