Technical Service Bulletin

NUMBER: 09-05-00

GROUP: Engine

DATE: Feb. 25, 2000

THIS BULLETIN SUPERSEDES TECHNICAL SERVICE BULLETIN 09-06-99, DATED SEP. 10, 1999, WHICH SHOULD BE REMOVED FROM YOUR FILES. THIS IS A COMPLETE REVISION AND NO ASTERISKS HAVE BEEN USED TO HIGHLIGHT REVISIONS.

SUBJECT:
Spark Knock And Engine Oil Consumption Due To Intake Manifold Pan Gasket Oil Leak

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

MODELS:

1994 – 1999 (AB)	Ram Van
1994 – 1999 (AN)	Dakota
1994 – 1999 (BR/BE)	Ram Truck
1998 – 1999 (DN)	Durango
1994 – 1998 (ZJ)	Grand Cherokee
1996 – 1998 (ZG)	Grand Cherokee

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.

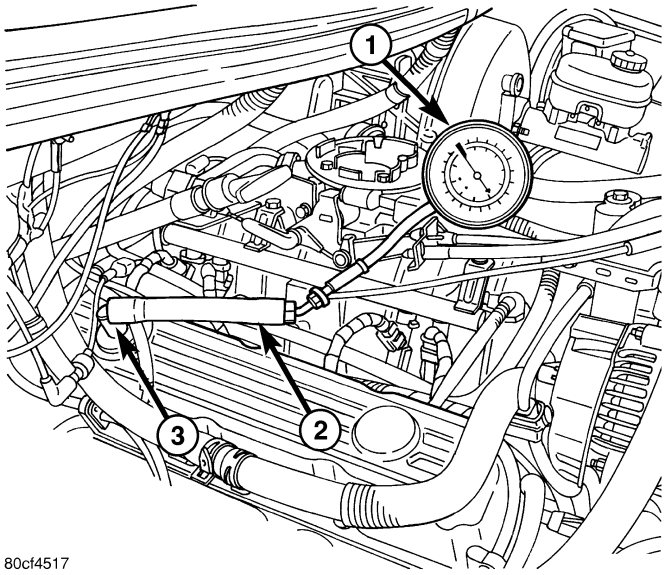
DIAGNOSIS:
Make sure Technical Service Bulletin (TSB) 18-48-98 has been performed.

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 (Figure 1).



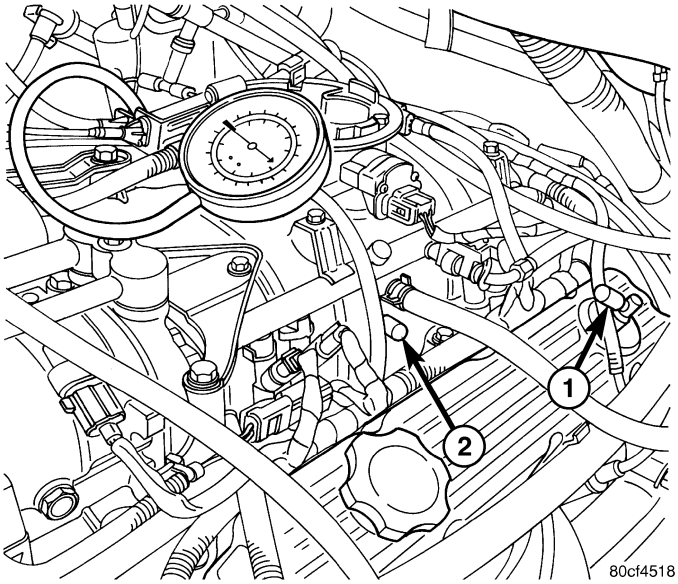
1 – VACUUM / PRESSURE GAUGE
2 – BREATHER HOSE
3 – VALVE COVER BREATHER HOSE PORT

FIGURE 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 (Figure 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.



1 – CAPPED OFF PCV VALVE
2 – CAPPED OFF INTAKE MANIFOLD PCV PORT

FIGURE 2

11. If an internal vacuum leak is present then perform the Repair Procedure.

PARTS REQUIRED:

For the 5.2L / 5.9L:

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

For the 3.9L:

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

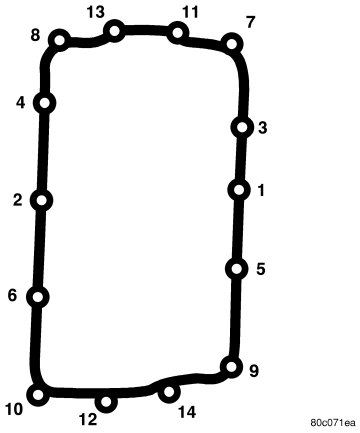
REPAIR PROCEDURE:

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.

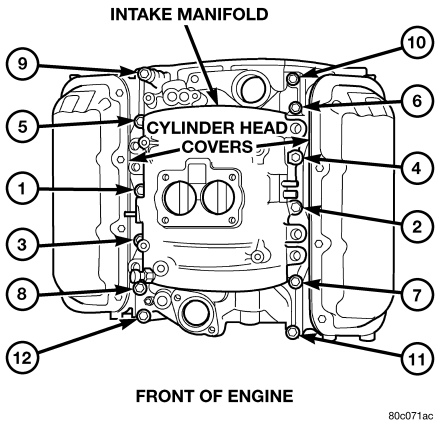
NOTE: THE PROPER BOLT TORQUE AND TIGHTENING SEQUENCE IS CRITICAL AND MUST BE FOLLOWED WHEN TIGHTENING BOTH THE PLENUM PAN BOLTS AND THE INTAKE MANIFOLD FLANGE BOLTS.

3.9L Bolt Tightening Sequence and Torque Procedure:



3.9L Intake Plenum Pan Bolt Tightening Sequence

FIGURE 3



3.9L Intake Manifold Bolt Tightening Sequence

FIGURE 4

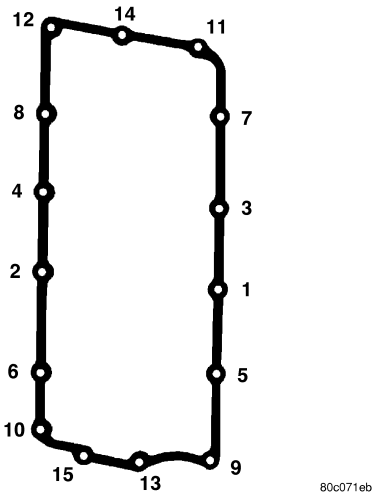
3.9L Plenum Pan Bolt Torque Procedure

STEP	WHICH BOLT	TORQUE
1	All Bolts	5.4 Nm (48 in. lbs.)
2	All Bolts	9.5 Nm (84 in. lbs.)
3	Check All Bolts	9.5 Nm (84 in. lbs.)

3.9L Intake Manifold Flange Bolt Torque Procedure

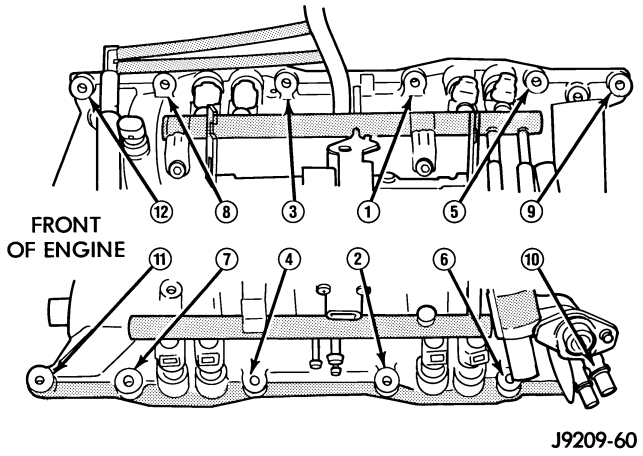
STEP	WHICH BOLT	TORQUE
1	1 and 2	1.4 Nm (12 in. lbs.)
2	1 and 2	2.7 Nm (24 in. lbs.)
3	1 and 2	4.1 Nm (36 in. lbs.)
4	1 and 2	5.4 Nm (48 in. lbs.)
5	1 and 2	6.7 Nm (60 in. lbs.)
6	1 and 2	8.1 Nm (72 in. lbs.)
7	3 through 12	8.1 Nm (72 in. lbs.)
8	Check All Bolts	8.1 Nm (72 in. lbs.)
9	All Bolts	16.3 Nm (12 ft. lbs.)
10	Check All Bolts	16.3 Nm (12 ft. lbs.)

5.2L / 5.9L Bolt Tightening Sequence and Torque Procedure:



5.2L / 5.9L Intake Plenum Pan
Bolt Tightening Sequence

FIGURE 5



5.2L / 5.9L Intake Manifold
Bolt Tightening Sequence

FIGURE 6

5.2L / 5.9L Plenum Pan Bolt Torque Procedure

STEP	WHICH BOLT	TORQUE
1	All Bolts	5.4 Nm (48 in. lbs.)
2	All Bolts	9.5 Nm (84 in. lbs.)
3	Check All Bolts	9.5 Nm (84 in. lbs.)

5.2L / 5.9L Intake Manifold Flange Bolt Torque Procedure

STEP	WHICH BOLT	TORQUE
1	1 and 4	1.4 Nm (12 in. lbs.)
2	1 and 4	2.7 Nm (24 in. lbs.)
3	1 and 4	4.1 Nm (36 in. lbs.)
4	1 and 4	5.4 Nm (48 in. lbs.)
5	1 and 4	6.7 Nm (60 in. lbs.)
6	1 and 4	8.1 Nm (72 in. lbs.)
7	5 through 12	8.1 Nm (72 in. lbs.)
8	Check All Bolts	8.1 Nm (72 in. lbs.)
9	All Bolts	16.3 Nm (12 ft. lbs.)
10	Check All Bolts	16.3 Nm (12 ft. lbs.)

2. With the engine reassembled, inspect the coil and spark plug wires for proper routing. Refer to TSB 09-48-98 for additional assistance.
3. Start the engine and allow it to warm to normal engine operating temperature.
4. 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.

5. Verify proper engine oil level.

POLICY: Reimbursable within the provisions of the warranty.

TIME ALLOWANCE:
Labor Operation No:
09-50-15-91 …….. 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