Section C13
Positive Crankcase Ventilation (PCV) System

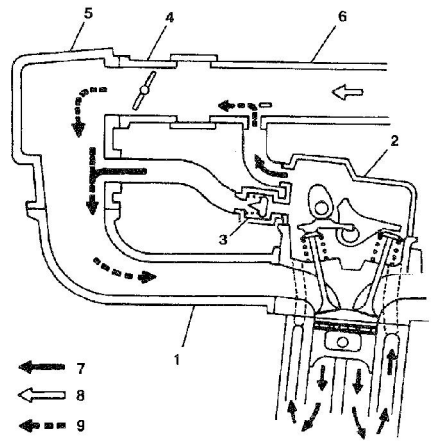
Contents

General Description

"Blowby gas" is the compressed gas and exploded gas which passes by the piston into the crankcase. Blowby gas contains a large amount of unburned gases such as CO and HC. The Positive Crankcase Ventilation (PCV) system is provided to prevent the blowby gas from being emitted into the atmosphere, and it operates as follows:

- When the vacuum in the intake manifold is low (throttle valve open), the PCV valve is wide open due to its spring force. Thus a large amount of the blowby gas is drawn into the intake manifold.
- On the other hand, when the vacuum in the manifold is high, the PCV valve opening is limited due to the high vacuum. Thus the amount of the blowby gas drawn into the intake manifold is small.

Figure C13-1 - PCV System Operation



1 INTAKE MANIFOLD
2 CYLINDER HEAD COVER
3 PCV VALVE
4 THROTTLE BODY
5 INTAKE SURGE TANK
6 AIR INTAKE PIPE
7 BLOW – BY GAS
8 FRESH AIR
9 BLOW – BY GAS AND FRESH AIR MIXTURE

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Diagnosis

Results Of Incorrect Operation

- A plugged valve or hose may cause
  - Rough idle.
  - Stalling or slow idle speed.
  - Oil leaks.
  - Oil in air cleaner.
  - Sludge in engine.
- A leaking valve or hose would cause
  - Rough idle.
  - Stalling.
  - High idle speed.

PCV Valve

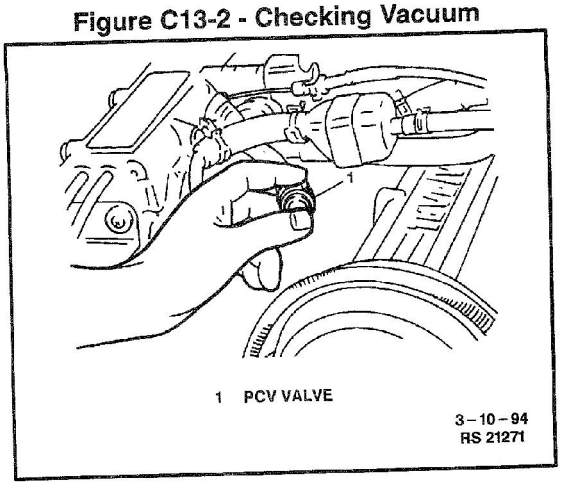
Inspect

- Run the engine at idle.
- Place your finger over the end of the PCV valve to check for vacuum. If there is no vacuum, check for clogged valve. Replace as necessary (*Figure C13-2*).

Notice: If engine is idling rough, this may be caused by a clogged PCV valve or plugged hoses; therefore, never adjust idle speed without first checking PCV valve and hoses.

- Remove PCV valve from PCV hose. Shake PCV valve and listen for a rattle. If valve does not rattle, replace PCV valve.

Figure C13-2 - Checking Vacuum



PCV Hose

Check hoses for proper connection, leakage, clog and deterioration. Replace as necessary.

On-Vehicle Service

PCV Valve

An engine which is operated without any crankcase ventilation can be damaged. Therefore, it is important to replace the Positive Crankcase Ventilation (PCV) valve at intervals shown in *Section 0B*.

Periodically inspect the hoses and clamps and replace if showing signs of deterioration.

Remove or Disconnect

1. Negative (-) battery cable.
2. Three bolts and throttle cover.
3. One clamp and PCV hose from PCV valve.
4. Rubber insulator from PCV valve.
5. PCV valve from intake manifold.

Install or Connect

1. PCV valve to intake manifold.
2. Rubber insulator to PCV valve.
3. PCV hose to PCV valve; secure with one clamp.
4. Throttle cover; secure with three bolts.

Tighten

- Throttle cover bolts to 15 N•m (11 lb. ft.).

5. Negative (-) battery cable.

Tighten

- Negative (-) battery cable-to-negative (-) battery terminal retainer to 15 N•m (11 lb. ft.).

Specifications

Engine Fastener Tightening Specifications

Application	N•m	Lb Ft	Lb In
Negative (-) Battery Cable-to-Negative (-) Battery Terminal Retainer	15	11	—
Throttle Cover Bolts	15	11	—