

SECTION 14B

Positive Crankcase Ventilation (PCV) Systems

Contents

Description and Operation	14B-1
Positive Crankcase Ventilation (PCV) Systems	14B-1
Positive Crankcase Ventilation (PCV) Valve	14B-1
Diagnosis and Testing	14B-2
System Inspection	14B-2
Pinpoint Tests — PCV	14B-3

Description and Operation

Positive Crankcase Ventilation (PCV) Systems

The Positive Crankcase Ventilation (PCV) system vents harmful blow-by fumes from the engine crankcase into the engine air intake for burning with the fuel and air mixture. The PCV valve limits the air flow to suit the engine demand and serves to prevent combustion backfiring into the crankcase. Thus, the benefits from the PCV system include the ability to:

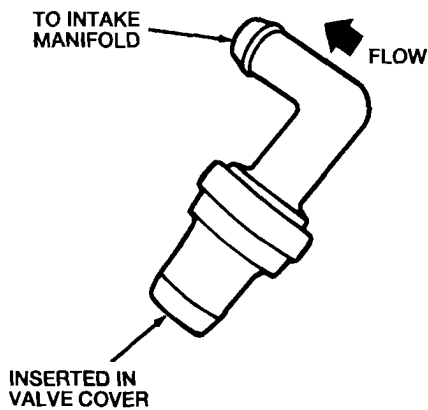
- Maximize the oil cleanliness by venting moisture and corrosion from the crankcase.
- Protect against crankcase explosions.
- Automatically regulate the ventilation system airflow to the engine air intake as required by engine operating conditions.

For further information regarding the makeup of the system and its relationship to other engine / emission systems, refer to the schematic diagrams in Engine Supplement — Car, Section 3B of this manual.

Positive Crankcase Ventilation (PCV) Valve

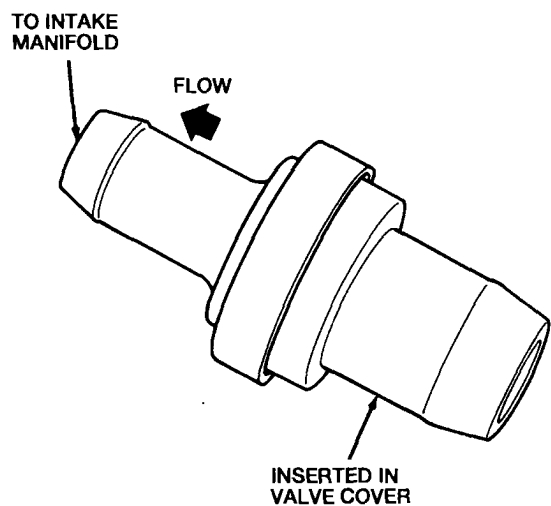
The amount of blow-by gas allowed into the intake manifold from the crankcase is controlled by the Positive Crankcase Ventilation (PCV) valve. The PCV valve acts as a one-way valve; it does not allow anything from the intake manifold to pass into the crankcase.

1.3L, 2.0L, 2.5L



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1.6L, 1.8L



A14614-C

Engine	Location
1.3L, 1.6L, 1.8L, 2.0L, 2.5L	Plugged into the top of the valve cover.

Diagnosis and Testing

System Inspection

1. Visually inspect the components of the PCV system.

VISUAL INSPECTION CHART

Mechanical	Electrical
<ul style="list-style-type: none"> ● Loose, leaking, clogged, or damaged hoses ● Plugged or inoperative PCV valve ● Cracked, split, or missing PCV grommet 	<ul style="list-style-type: none"> ● None

2. Check the fresh air inlet hose and the PCV hose for air leakage or flow restriction due to loose engagement, kinking, nipple damage, rubber grommet fit, elasticity, or any other damage.
3. Check engine for rough idle, slow starting, or high oil consumption.
4. If a component is suspected as the obvious cause of a malfunction, correct the cause before proceeding to the next step.
5. If all checks are OK, proceed to Pinpoint Test PCV1.

Diagnosis and Testing	All Engines	PCV
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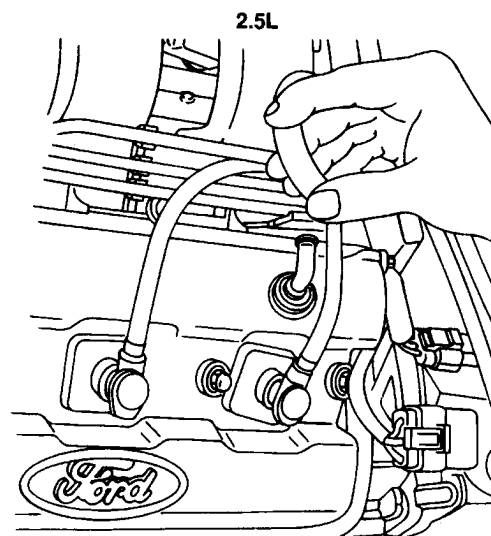
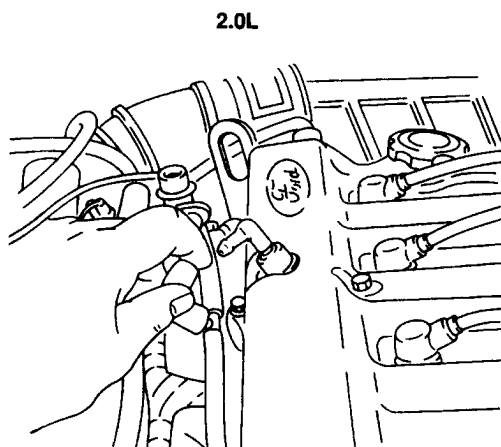
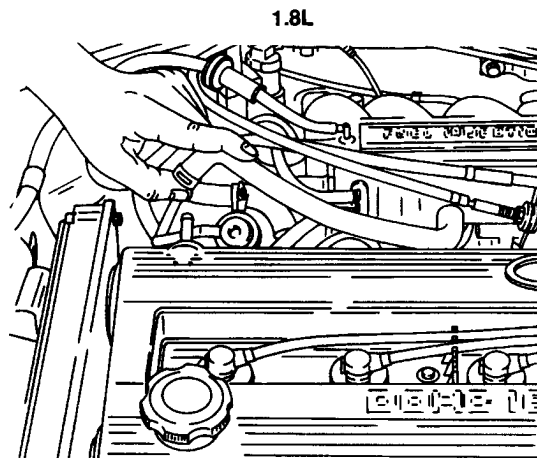
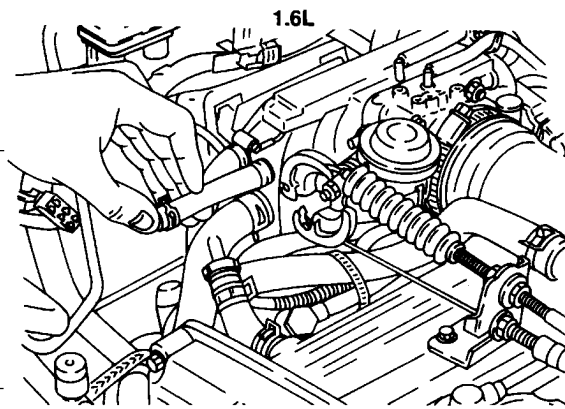
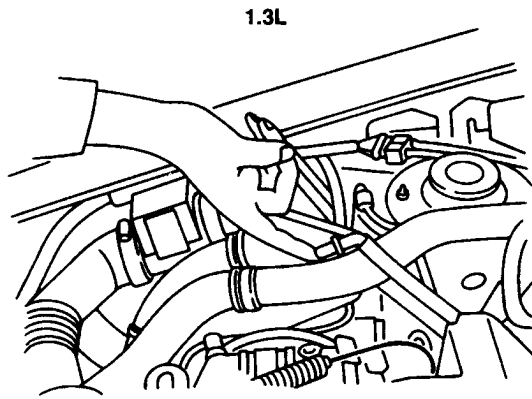
Pinpoint Tests — PCV

TEST STEP		RESULT	ACTION TO TAKE
PCV1	PERFORM PCV VALVE SHAKE TEST		
	<ul style="list-style-type: none"> ● Remove the PCV valve from the engine valve cover and disconnect the valve from the PCV hose. ● Vigorously shake the PCV valve and confirm that the valve plunger is free to move and rattle within the valve body. ● Is the plunger free to move? 	Yes No	<ul style="list-style-type: none"> ▶ GO to PCV2. ▶ REPLACE the PCV valve.
PCV2	CHECK PCV SYSTEM FUNCTION		
	<ul style="list-style-type: none"> ● Run the engine at idle until warmed up. ● Remove the fresh air inlet hose at the air inlet end, and plug the nipple immediately to prevent stalling (refer to the illustration on the following page). ● Verify by feel that the vacuum is present at the inlet end of the hose. ● Is vacuum present? <p>NOTE: If air pressure, oil, or oily sludge is present at the intake end of the fresh air supply hose, the engine has excessive blow-by caused by cylinder bore, piston ring or valve stem wear, or by a defective or incorrect PCV valve.</p>	Yes No (No vacuum) No (Oil or sludge present)	<ul style="list-style-type: none"> ▶ RETURN to the Diagnostic Routines, Section 2B. ▶ CHECK fresh air and PCV hoses for leaks, loose connections, blockage, or loose oil dipstick. CORRECT as required until vacuum can be felt. ▶ RETURN to the Diagnostic Routines, Section 2B.

Diagnosis and Testing

All Engines

PCV



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