1974-79 EXHAUST EMISSION SYSTEMS
Mazda Crankcase Ventilation

All Models

DESCRIPTION & OPERATION

Piston Engines - The Mazda closed crankcase ventilation system consists of a PCV valve and various connecting hoses. On piston engine applications, a hose leads from the valve cover, through a PCV valve and into the intake manifold below the carburetor. There is another hose which leads from the air cleaner into the valve cover to supply fresh air to the crankcase when engine vacuum overcomes crankcase pressure.

Air flows through the air cleaner-to-valve cover hose, mixes with the blow-by gases and crankcase vapors, and is drawn out through the ventilation hose and the in-line PCV valve and back into the engine to be reburned with the incoming air/fuel mixture. The PCV regulates the amount of air flow to meet changes in operating conditions of the engine.

Rotary Engines - The system used on the rotary engine models is also a closed system and operates basically the same way as the piston engine arrangement. Filtered air is drawn into the system through the air cleaner, mixed with the gases and vapors that blow by the rotor during engine operation, and is drawn out through a ventilation valve and into the intake runner. The ventilation valve operates as the PCV valve in this system.

TESTING

Piston Engines - With engine idling at normal operating temperature, disconnect hose from PCV valve. Close off PCV valve with finger and check that idle speed drops. If idle speed does not drop, replace PCV valve.

1974 Rotary Engines - Check system by connecting a vacuum gauge between ventilation valve and oil filler tube. With engine running at 2500-3000 RPM, vacuum reading should be under 2.36 inches of Mercury (Hg).

1975-78 Rotary Engines - Disconnect hose from oil filler pipe. With engine idling, place finger over disconnected hose and check that idle speed drops. If idle speed does not drop or if engine stalls, replace PCV valve.

1979 Rotary Engines - **1)** Disconnect hoses "A" & "B" from valve. Start engine and idle. Check vacuum at port "A". If vacuum is present, place finger over port "A" and check vacuum at port "B".

2) If vacuum is present, continue holding finger over port "A" and disconnect port "C" making sure there is no vacuum at port "B". *See Fig. 2*. Stop engine.

3) Disconnect hose "D" and attach a long vacuum hose. Blow through valve and make sure air does not pass through. If any of above tests fail, replace PCV valve.

MAINTENANCE

Piston Engines - Every 15,000 miles or 15 months, clean and check ventilation system.

Rotary Engines - Every 12,500 miles or 12 months, clean and check ventilation valve and system.

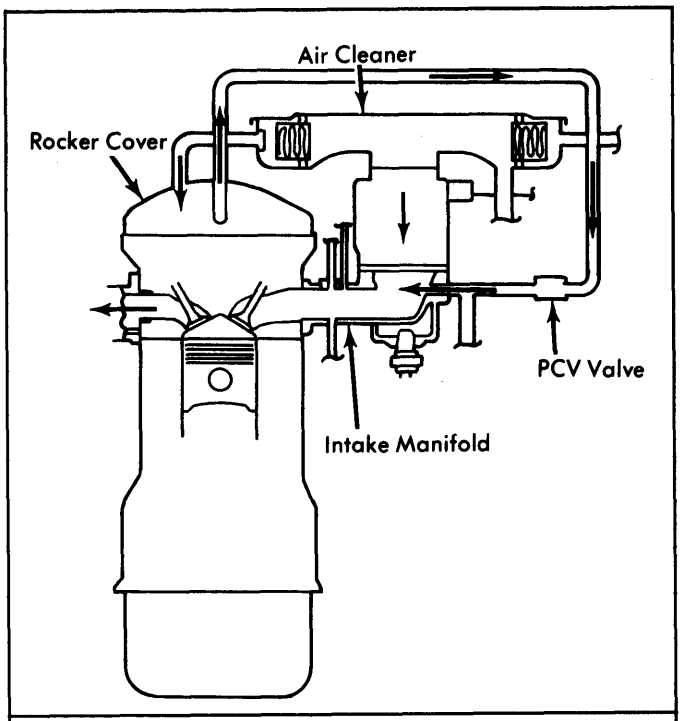

Fig. 1: Crankcase Ventilation System (Piston Engine)

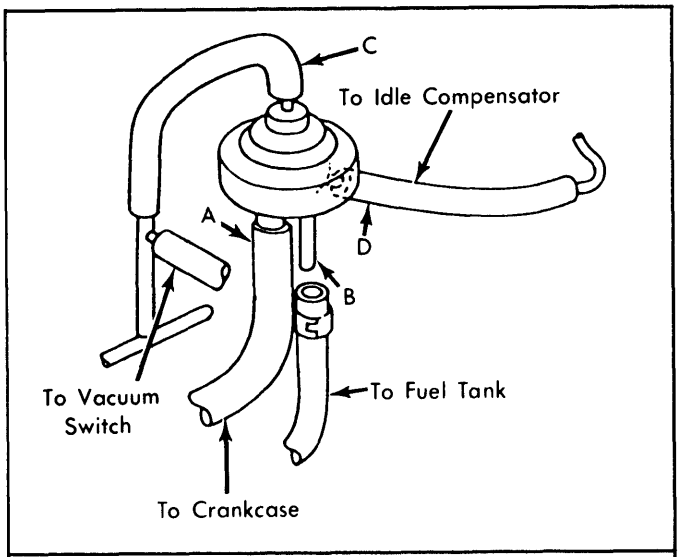

Fig. 2: Crankcase Ventilation Valve (RX7 Rotary Engine)