1961-67 CADILLAC OPEN SYSTEM (Cont.)

2) Valve stuck in backfire (open or engine off) position.

Engine Operation Good, But Breather Backflow At Heavy Throttle, Only Engine Compartment.

Valve stuck in idle (closed) position.

SERVICE INFORMATION

It is very important that the ventilator valve and other components of the system be serviced regularly to insure that they are operating properly. The 1961 through 1964 Cadillac requires servicing of the system at each oil change. The 1965 through 1967 Cadillac requires replacement of the ventilator valve every 12,000 miles, or every 12 months, whichever comes first. The rest of the system should be serviced at the same interval.

Ventilator Valve Servicing (1961-64) - The valve used in 1961-64 can be cleaned. After removing the valve insert a .080-.090" wire (1963); .090-.100" wire (1964), in the smaller end of the valve to clean the orifice inside of valve. Immerse in any good cleaning solvent and blow dry with compressed air by placing air hose against the larger end of the valve. When replacing the valve apply a small amount of silicone on both ends of the valve. *NOTE - Positive crankcase vent valve is not interchangeable with those of other engines. Use of other than the proper valve may result in breather backflow and engine damage.* All valves cannot be disassembled.

1965-67 - These valves cannot be cleaned or taken apart. Whenever the valve is not operating properly it must be replaced.

Breather Cap Service - The cleaning of the oil filler cap or Eldorado crankcase filter, is very important. Since all the air entering the engine must pass through this filter, any restriction will eventually reduce the amount of air to the carburetor thus affecting carburetor calibration.

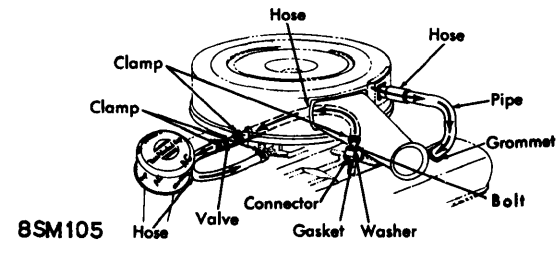
1965-67 CADILLAC CLOSED SYSTEM

DESCRIPTION

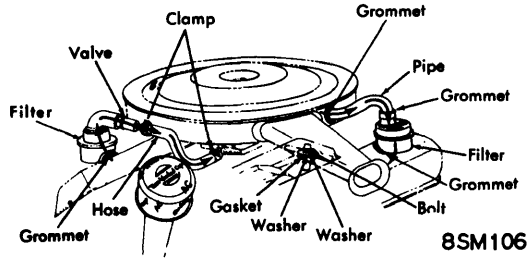
In 1965, Cadillac began installing a "closed" positive crankcase ventilation system on all California cars. This system is a "Type 4" design. System consists of a non-vented oil filler cap, an air cleaner strainer, and an air cleaner-to-rocker arm cover hose and pipe, along with a positive crankcase ventilator valve and hose. On all models, except 1967 Eldorado, one end of the hose and pipe is attached to strainer, which is located inside air cleaner housing, and the other end connected to the left rocker arm valve cover. On the 1967 Eldorado a strainer, mounted on the left rocker arm cover, is used instead of one located inside air cleaner housing. This strainer is connected by a pipe to the air cleaner. The "closed" type oil filler cap used in this system is painted a distinctive color and has identification printed on it. *NOTE — Never install a closed type cap on a car equipped with the standard ventilation system. So doing will prevent crankcase ventilation and could result in engine oil seal failure, engine rusting and other major engine damage.*

OPERATION

Air enters the system through the air cleaner to the strainer which contains an oil soaked ribbon filter either in the carburetor air cleaner or on the left rocker arm cover. It then flows into the rocker arm cover, into the valve lifter compartment and combines with the blow-by gas consisting of exhaust gas and unburned air-fuel mixture. After the fumes have circulated they are picked up at the connector at the rear of the valve cover. From the connector the fumes flow through a hose to the ventilator valve, which directs the fumes to the base of the carburetor and into the intake manifold. On the 1967 Eldorado the fumes are forced through an oil separator mounted on the right rocker arm cover, through the ventilator valve and hose to the base of the carburetor. From here the fumes move into the intake manifold and are added to the normal fuel and air mixture and burned. The ventilator valve operates the same as the valve in the "Type I" system, however at certain engine operations more blow-by gases are created than the ventilator valve can handle. In this case the excess amount is returned to the air cleaner



HOSE CONNECTIONS STANDARD SERIES (CLOSED)



HOSE CONNECTIONS ELDORADO (CLOSED)

1965-67 CADILLAC CLOSED SYSTEM (Cont.)

by way of the rocker-arm-valve-cover pipe and strainer. These gases are burned in the engine, instead of being released out of the oil filler cap as on the "open" system.

SERVICE PROCEDURES

The critical point of this system is the ventilator valve. In time this valve may become restricted or stuck, due to the accumulation of blow-by gases and oil and water vapor deposits. The valve should be in proper working order at all times. Valve should be replaced every 12,000 miles or every 12 months, whichever comes first. Another important part of the "closed" positive crankcase device is the strainer. This unit should be serviced at every oil change. The ribbon in strainer should be cleaned in solvent and re-oiled with engine oil.

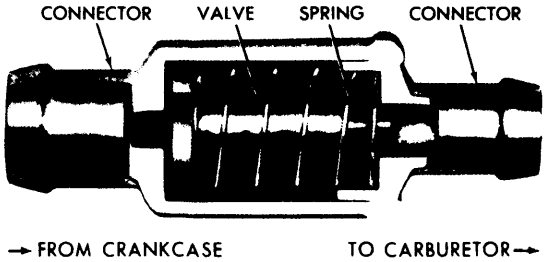
1968-74 CADILLAC CLOSED SYSTEM

DESCRIPTION

The 1968-74 Cadillac incorporates a "closed" positive crankcase ventilation system. System consists of a vacuum controlled ventilator (PCV) valve, located on right rocker arm cover, a hose interconnected between valve and intake manifold, a ventilating breather, located on left rocker arm cover, and hose interconnecting ventilator breather assembly and carburetor air cleaner.

OPERATION

Air enters system through air cleaner and breather, located on left rocker cover. Breather contains a hog's hair element. Air then flows into left rocker cover and into valve lifter compartment, where it combines with blow-by gas, and unburned air-/fuel mixture. These fumes are drawn through right rocker arm cover and PCV valve into base of carburetor and intake manifold where they are burned with the air/fuel mixture. PCV valve is designed to remain closed when engine is not operating. This prevents an accumulation of hydrocarbons from collecting in intake manifold, which could result in hard starting. When engine is started, manifold vacuum pulls valve open against spring pressure and, as long as there is engine vacuum, the valve floats, permitting crankcase fumes to enter intake manifold. During certain engine operations where more blow-by is created than PCV valve can handle, excess amount is returned to air cleaner and to carburetor by way of left rocker cover and breather assembly and burned in engine.



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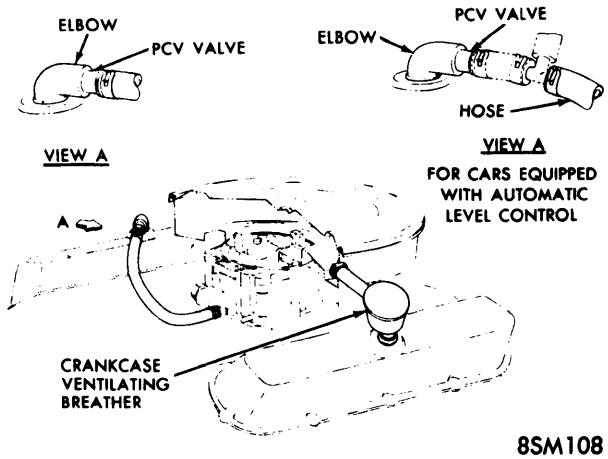
CADILLAC VENTILATOR (PCV) VALVE

SERVICE PROCEDURES

The two critical points of system are the ventilator valve and ventilating breather. It is important that these elements and all other elements are in proper working order at all times. Ventilator valve must be changed every 12,000 miles or 12 months (1968-70), or every 24,000 miles or 24 months (1971-74), whichever occurs first. Ventilation breather should be cleaned every 4 months or 6,000 miles. Other components of system should be inspected, cleaned and/or replaced as necessary every 12,000 miles or 12 months (1969-70), or every 24,000 miles or 24 months (1971-74).



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1968-74 CRANKCASE VENTILATION SYSTEM

Crankcase Ventilating Breather Assembly – To remove, pull breather assembly from grommet on side of air cleaner. Remove breather from grommet on left rocker arm cover. To install, reverse removal procedure.

Positive Crankcase Ventilator Valve – To remove, disconnect valve from rubber elbow on right rocker arm cover. Release hose clamp and hose from PCV valve grommet. To install, place a small amount of silicone on both ends of new valve. Install new valve with smaller end into hose. Secure hose to valve with clamp. Install larger end of valve to right rocker arm cover grommet.