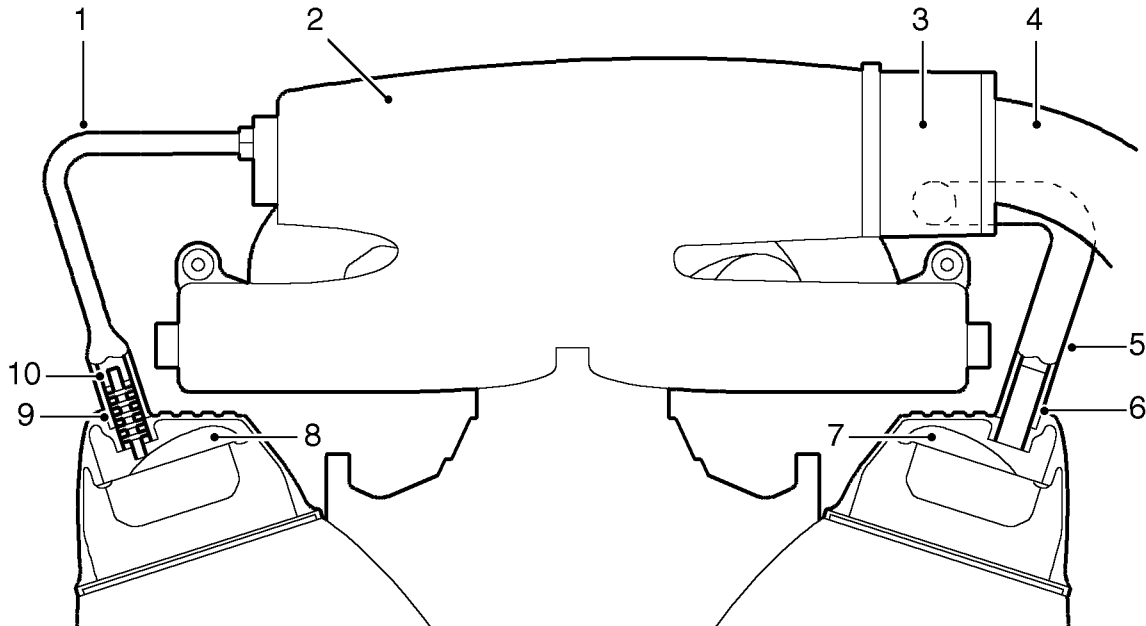




Crankcase ventilation system - from 99MY



M17 0160

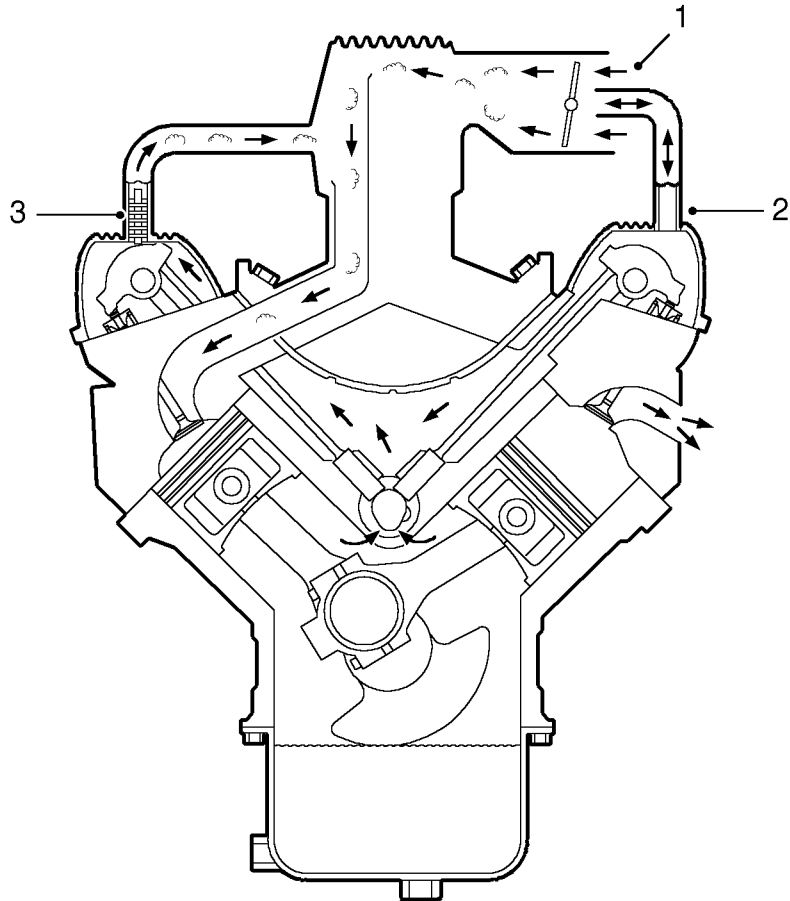
1. Hose - RH rocker cover to inlet manifold
2. Inlet manifold
3. Throttle body
4. Air intake
5. Hose - LH rocker cover to inlet manifold
6. LH rocker cover breather tube (without oil separator)
7. LH rocker cover baffle
8. RH rocker cover baffle
9. RH rocker cover breather tube
10. Oil separator (integral with breather tube)

A spiral oil separator is located in the stub pipe to the ventilation hose on the right hand cylinder rocker cover, where oil is separated and returned to the cylinder head. The rubber ventilation hose from the right hand rocker cover is routed to a port on the right hand side of the inlet manifold plenum chamber, where the returned gases mix with the fresh inlet air passing through the throttle butterfly valve. The stub pipe on the left hand rocker cover does not contain an oil separator, and the ventilation hose is routed to the throttle body housing at the air inlet side of the butterfly valve. The ventilation hoses are attached to the stub pipe by metal band clamps.

Oil laden noxious gas in the engine crankcase is drawn through the spiral oil separator. The mass of fresh air which is drawn in from the atmospheric side of the throttle butterfly to mix with the returned crankcase gas depends on the throttle position and the engine speed.



Crankcase emission control system



M17 0155

1 Intake air

2 LH rocker cover breather tube

3 Oil separator in RH rocker breather tube

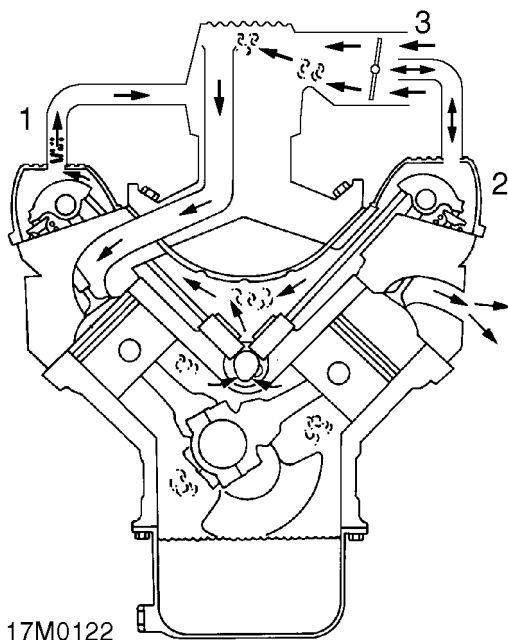
Crankcase ventilation system

The concentration of hydrocarbons in the crankcase of an engine is much greater than that in the vehicle's exhaust system. In order to prevent the emission of these hydrocarbons into the atmosphere, crankcase emission control systems are employed and are a standard legal requirement.

The crankcase ventilation system is an integral part of the air supply to the engine combustion chambers and it is often overlooked when diagnosing problems associated with engine performance. A blocked ventilation pipe, filter or excessive air leak into the inlet system through a damaged pipe or leaking gasket can affect the air:fuel mixture, performance and economy of the engine. Periodically check the ventilation hoses are not cracked and that they are securely fitted to form airtight connections at their relevant ports.

When the engine is running in cruise conditions, or at idle, manifold pressure is low and the majority of gasses are drawn into the inlet manifold through an oil/vapour separator (1), located in the RH rocker cover. At the same time, filtered air is drawn from the throttle body (3) into the engine via the LH rocker cover (2). The oil/vapour separator serves to prevent oil mist being drawn into the engine.

During periods of driving at Wide Open Throttle (WOT), pressure at either side of the throttle disc equalizes (manifold depression collapses). The larger ventilation opening (3), positioned in the fast moving stream of intake air, now offers more 'pull' than the small opening (1) in the RH rocker cover, and the flow of ventilation reverses. Gases are drawn from the LH rocker cover into the throttle body (3).



The purpose of the crankcase ventilation system is to ensure that any noxious gas generated in the engine crankcase is rendered harmless by burning them in the combustion chambers. Burning the crankcase vapours in a controlled manner decreases the HC pollutants that could be emitted and helps to prevent the development of sludge in the engine oil as well as increasing fuel economy.