1974-79 EXHAUST EMISSION SYSTEMS
Mercedes-Benz Crankcase Ventilation

All Models

DESCRIPTION

Diesel Engines - System consists of a sealed oil filler cap, a calibrated orifice, a water separator, and vacuum lines. Separator is located on intake pipe, in air filter, or at back of carburetor on intake pipe.

The blow-by gases and crankcase vapors from the engine flow to the water separator, which on some models, is located on the clean side of the air filter. Water and impurities settle on the walls of the separator.

Engine vacuum draws the condensation and blow-by gases through the calibrated orifice where they join with the air/fuel mixture and enter the combustion chambers.

During lower and partial load range operation, additional clean air is drawn into the engine due to high intake manifold vacuum and depending on the accumulation of condensate and blow-by gases. In the upper load range, the blow-by gases and crankcase vapors flow directly to the clean air side of the air filter where they are drawn, along with intake air, via the carburetor into the combustion chambers.

Turbo Diesel Engines - The blow-by gases and crankcase vapors flow through the hose connection on cylinder head cover to intake line in front of compressor. Together with intake air, they are drawn into the combustion chambers. A by-pass line, located between clean air end of air filter and breather line enables the compressor to draw up clean air at high speeds along with blow-by gases and crankcase vapors. The additional intake of clean air will restrict the vacuum in crankcase.

280 Models With Vent Valve - System consists of a sealed oil filler cap, a vent valve in camshaft housing, and a hose connecting either the air filter, or purge port below throttle valve to cylinder head cover. The blow-by gases and crankcase vapors are routed through an oil separator in cylinder head cover to vent valve, continuing through to air filter, or purge port and into combustion chamber.

NOTE: Use only cylinder head covers with oil protection ribs.

At idle and low speeds, engine vacuum draws clean air from the air filter which picks up blow-by gases and vapors via the vent valve, drawing them into the intake manifold to be burned in combustion chamber. Depending on intake vacuum, the valve will be pulled or pressed and change the amount of blow-by gases taken in from the crankcase. At higher speeds, blow-by gases and crankcase vapors flow from cylinder head cover into air filter and into engine to be burned in combustion chamber.

280 Models With Vent Jet - System consists of a sealed oil filler cap, a vent jet in camshaft housing, and a hose connecting either air filter, or purge port to cylinder head cover.

The engine blow-by gases and crankcase vapors are routed from the cylinder head cover to the idle air duct in the intake manifold via the vent jet. From this point gases flow through the intake manifold to the combustion chamber.

In the lower and partial load range, intake manifold vacuum draws clean air from the air filter through the air hose connected to the cylinder head cover, picking up blow-by gases from the engine along the way.

In the upper load range and depending on the blow-by volume, blow-by gases and crankcase vapors also flow to the clean side of the air filter. Together with intake air, they flow via the air flow sensor and intake manifold to the combustion chambers.

450 & 6.9 Models - System consists of a hose connected from air cleaner to left-hand cylinder head cover. An oil separator in cylinder head cover, idle air distributor, with either a bleeder throttle or vent valve, and a hose connecting idle air distributor with manifold.

During engine idle, blow-by gases and crankcase vapors are drawn past the bleeder throttle or vent valve, together with idle air and are passed through distribution tubes to intake manifold. At low and medium speeds, engine is supplied with air from hose in right-hand cylinder head cover.

At higher speeds, blow-by gases and crankcase vapors pass from cylinder head cover into air cleaner and into engine to be burned. To prevent freezing of bleeder throttle or vent valve, the idle air distributor is heated by engine coolant.

MAINTENANCE

Every 12,000 miles, check condition of all hoses and clean flame arrestor (if equipped). Replace components as necessary.

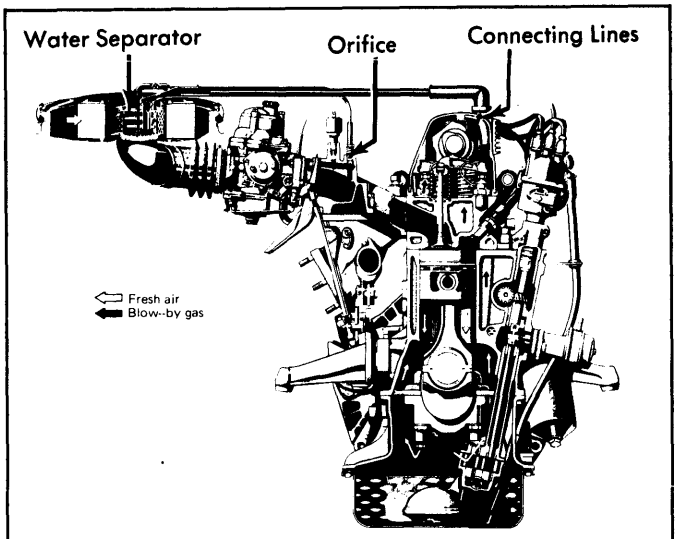

Fig. 1: 240 & 300 Series Crankcase Ventilation System

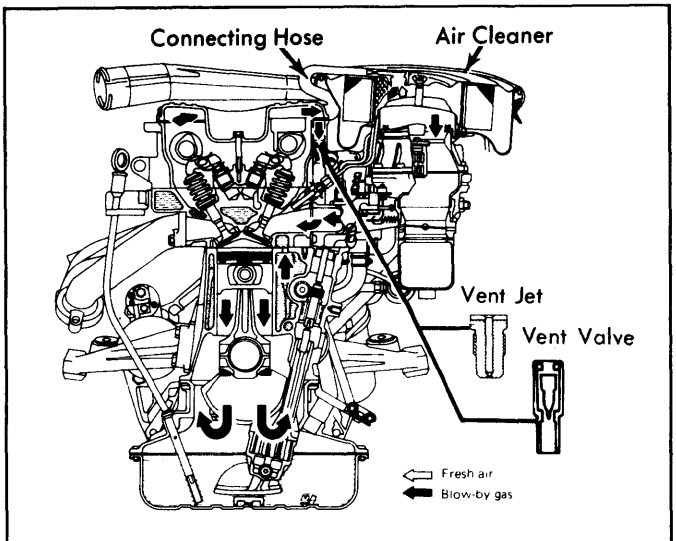

Fig. 2: 280 Series Crankcase Ventilation System

Mercedes-Benz Crankcase Ventilation (Cont.)

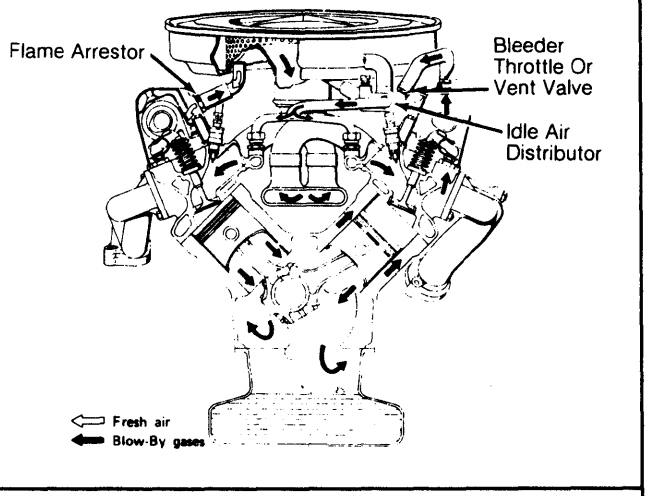

Fig. 3: 450 & 6.9 Crankcase Ventilation System