

Car Care Cuts Air Pollution

What Helps Here Also Saves Money for Auto Owner

Good car care takes on added importance these days — to you, your pocketbook, and the air you breathe. This is especially so if you own a car built during the past seven years, according to the American Petroleum Institute.

If your car is a 1963 or later model, it is equipped with a device to control pollutants that would otherwise come from the engine crankcase. If you own a 1968 or 1969 model, it also has a system for reducing tailpipe emissions.

These devices and systems, however, will continue to work properly — and, what's more, allow the engine to perform satisfactorily — only if you have your car checked regularly. A periodic tune-up will save you money in fuel and repair costs, give you a smoother running car, and help cut down on air pollution.

1963: Crankcase Controls

The first device to control automotive pollution was installed nationally in all 1963 cars. The device — called the "positive crankcase ventilation," or PCV valve — was designed to recirculate unburned hydrocarbons back to the engine where they have another chance to burn.

Formerly, these unburned gases (called blowby gases) escaped past the piston rings into the crankcase, where they were vented into the air. Installation of the PCV device cut total hydrocarbon emissions from the typical car by

34 per cent, compared with cars without the device.

The PCV valve will continue to do its job in controlling hydrocarbon emissions if it's periodically inspected and serviced as required under your car warranty. Otherwise, you may be in for trouble. Over a period of time, crankcase fumes tend to build up gums or varnishes. These could cause the valve to stick and not function.

Result: Poor Starting

If the valve gets stuck in the open position, the carburetor will feed the engine too lean a mixture of fuel and air. The result: poor starting and possible frequent stalling while you wait and idle at a stoplight.

In the more likely event that the valve sticks in the closed position, crankcase fumes will be trapped in the crankcase. These fumes will either escape through the oil filler breather cap (if the breather cap is clean), or form sludge in the crankcase. This can create corrosive acids, which ruin engine bearings.

The best way to prevent formation of these acids is to have the valve checked each time you have your oil changed or engine tuned.

Most car manufacturers recommend periodic replacement of the PCV valve. This can be done inexpensively and easily by your service station mechanic. This preventive maintenance can prove to be cheap insurance against an expensive bearing replacement job.

1968: Exhaust Controls

The second significant step in automotive pollution control occurred, nationally, with the installation of exhaust control systems, beginning with 1968 cars. These systems are designed to control both hydrocarbon and carbon monoxide emissions.

In most 1968 and 1969 cars, the exhaust control system is based on modification of the engine to achieve a lean fuel mixture and retarded ignition to produce higher combustion temperatures.

Cuts Carbon Monoxide

These exhaust control systems, together with the PCV valve, reduce total hydrocarbon emissions about two-thirds. Exhaust controls also cut carbon monoxide emissions by around 60 per cent, compared to earlier cars without such controls.

These systems are thus very effective in reducing tailpipe emissions but they make regular maintenance all the more essential. Here's why:

An engine — no matter what its age — with one bad spark plug will not only perform poorly; it may also emit up to 25 times more hydrocarbons than a properly tuned engine.

- Your spark plugs run hotter and may have to be replaced more often.
- Only periodic tune-ups can keep the pollution control system and its parts (air pumps, pump drive belts, air hoses, and other hardware) working at top efficiency — both to insure satisfactory and economical engine operation and to minimize exhaust emissions.

The auto and oil industries are continuing to work to further reduce auto pollution. The 1970 models will have improved exhaust controls to reduce hydrocarbon and carbon monoxide emissions by some 50 per cent below the levels of the 1968 and 1969 models. The 1971 models are expect-

ed to have devices that will virtually eliminate evaporation of fuel from the carburetor and fuel tank. With this step, total hydrocarbon emissions will have been reduced by around 85 per cent. And farther on down the road are systems, now in the experimental stage, that have the potential to control auto pollution even more.

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