



Emissions Controls

The burning of gasoline in your car's engine produces several byproducts. Some of these are carbon monoxide (CO), oxides of nitrogen (NOx) and hydrocarbons (HC). Gasoline evaporating from the tank also produces hydrocarbons. Controlling the production of NOx, CO, and HC is important to the environment. Under certain conditions of sunlight and climate, NOx and HC react to form photochemical "smog." Carbon monoxide does not contribute to smog creation, but it is a poisonous gas.

The Clean Air Act

The United States Clean Air Act* sets standards for automobile emissions. It also requires that automobile manufacturers explain to owners how their emissions controls work and what to do to maintain them. This section summarizes how the emissions controls work. Scheduled maintenance is on page [218](#).

* In Canada, Acura vehicles comply with the Canadian Motor Vehicle Safety Standards (CMVSS) for Emissions valid at the time they are manufactured.

Crankcase Emissions Control System

Your car has a Positive Crankcase Ventilation System. This keeps gasses that build up in the engine's crankcase from going into the atmosphere. The Positive Crankcase Ventilation valve routes them from

the crankcase back to the intake manifold. They are then drawn into the engine and burned.

Evaporative Emissions Control System

As gasoline evaporates in the fuel tank, an evaporative emissions control canister filled with charcoal adsorbs the vapor. It is stored in this canister while the engine is off. After the engine is started and warmed up, the vapor is drawn into the engine and burned during driving.

Onboard Refueling Vapor Recovery

The Onboard Refueling Vapor Recovery (ORVR) system captures the fuel vapors during refueling. The vapors are adsorbed in a canister filled with activated carbon. While driving, the fuel vapors are drawn into the engine and burned off.



Exhaust Emissions Controls

The exhaust emissions controls include four systems: PGM-FI, Ignition Timing Control, Exhaust Gas Recirculation and Three Way Catalytic Converter. These four systems work together to control the engine's combustion and minimize the amount of HC, CO, and NOx that comes out the tailpipe. The exhaust emissions control systems are separate from the crankcase and evaporative emissions control systems.

PGM-FI System

The PGM-FI System uses sequential multiport fuel injection. It has three subsystems: Air Intake, Engine Control, and Fuel Control. The Powertrain Control Module (PCM) uses various sensors to determine how much air is going into the engine. It then controls how much fuel to inject under all operating conditions.

Ignition Timing Control System

This system constantly adjusts the ignition timing, reducing the amount of HC, CO and NOx produced.

Exhaust Gas Recirculation (EGR) System

The Exhaust Gas Recirculation (EGR) system takes some of the exhaust gas and routes it back into the intake manifold. Adding exhaust gas to the air/fuel mixture reduces the amount of NOx produced when the fuel is burned.

Three Way Catalytic Converter

The three way catalytic converter is in the exhaust system. Through chemical reactions, it converts HC, CO, and NOx in the engine's exhaust to carbon dioxide (CO₂), dinitrogen (N₂), and water vapor.

Replacement Parts

The emissions control systems are designed and certified to work together in reducing emissions to levels that comply with the Clean Air Act. To make sure the emissions remain low, you should use only new Genuine Acura replacement parts or their equivalent for repairs. Using lower quality parts may increase the emissions from your car.