

# SYSTEM OVERVIEW

Emission Control (Aux. Emission Control Devices)

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## 1. System Overview

There are three emission control systems which are as follows:

- Crankcase emission control system
- Exhaust emission control system
  - Three-way catalyst system
  - Air/fuel (A/F) control system
  - Ignition control system
- Evaporative emission control system
  - On-board refueling vapor recovery (ORVR) system

# SYSTEM OVERVIEW

Emission Control (Aux. Emission Control Devices)

Item		Main components	Function
Crankcase emission control system		Positive crankcase ventilation (PCV) valve	Draws blow-by gas into intake manifold from crankcase and burns it together with air-fuel mixture. Amount of blow-by gas to be drawn in is controlled by intake manifold pressure.
Exhaust emission control system	Catalyst system	Front	Three-way catalyst Oxidizes HC and CO contained in exhaust gases as well as reducing NOx.
		Rear	
	A/F control system	Engine control module (ECM)	Receives input signals from various sensors, compares signals with stored data, and emits a signal for optimal control of air-fuel mixture ratio.
		Front oxygen (A/F) sensor	Detects quantity of oxygen contained exhaust gases.
		Rear oxygen sensor	Detects density of oxygen contained exhaust gases.
		Throttle position sensor	Detects throttle position.
		Intake manifold pressure sensor*1	Detects absolute pressure of intake manifold.
		Intake air temperature sensor*1	Detects intake air temperature of air cleaner case.
		Intake air temperature and pressure sensor*2	Detects absolute pressure of intake manifold.
	Detects intake air temperature of intake manifold.		
	Ignition control system	ECM	Receives various signals, compares signals with basic data stored in memory, and emits a signal for optimal control of ignition timing.
		Crankshaft position sensor	Detects engine speed (Revolution).
		Camshaft position sensor	Detects reference signal for combustion cylinder discrimination.
Engine coolant temperature sensor		Detects coolant temperature.	
Knock sensor		Detects engine knocking.	
Evaporative emission control system		Canister	Absorbs evaporative gas which occurs in fuel tank when engine stops, and releases it to combustion chambers for a complete burn when engine is started. This prevents HC from being discharged into atmosphere.
		Purge control solenoid valve	Receives a signal from ECM and controls purge of evaporative gas absorbed by canister.
		Pressure control solenoid valve	Receives a signal from ECM and controls evaporative gas pressure in fuel tank.
ORVR system		Vent valve	Controls evaporation pressure in fuel tank.
		Drain valve	Closes the evaporation line by receiving a signal from ECM to check the evaporation gas leak.

\*1: MT vehicles

\*2: AT vehicles