05BP1−03

# DESCRIPTION

## 1. Overview

(a) The new CAMRY meets the Partial Zero Emission Vehicle (PZEV) requirements.

(b) The PZEV requirements are as follows:

(1) Exhaust emission meets the Super Ultra−Low Emission Vehicle (SULEV) requirements. (table attached below)

| | Mile | HC (g/mile) | CO (g/mile) | NOx (g/mile) |
|---|---|---|---|---|
| ULEV requirements | 50,000 | 0.04 | 1.7 | 0.2 |
| | 100,000 | 0.055 | 2.1 | 0.3 |
| SULEV requirements | 150,000 | 0.01 | 1.0 | 0.02 |

(2) Evaporative emission meets the PZEV requirements. (table attached below)

| | | |
|---|---|---|
| LEV I requirements | | 2.0 g/test |
| PZEV requirements | Fuel Systems | 0.054 g/test |
| | Non Fuel Systems | 0.35 g/test |

## 2. Structure

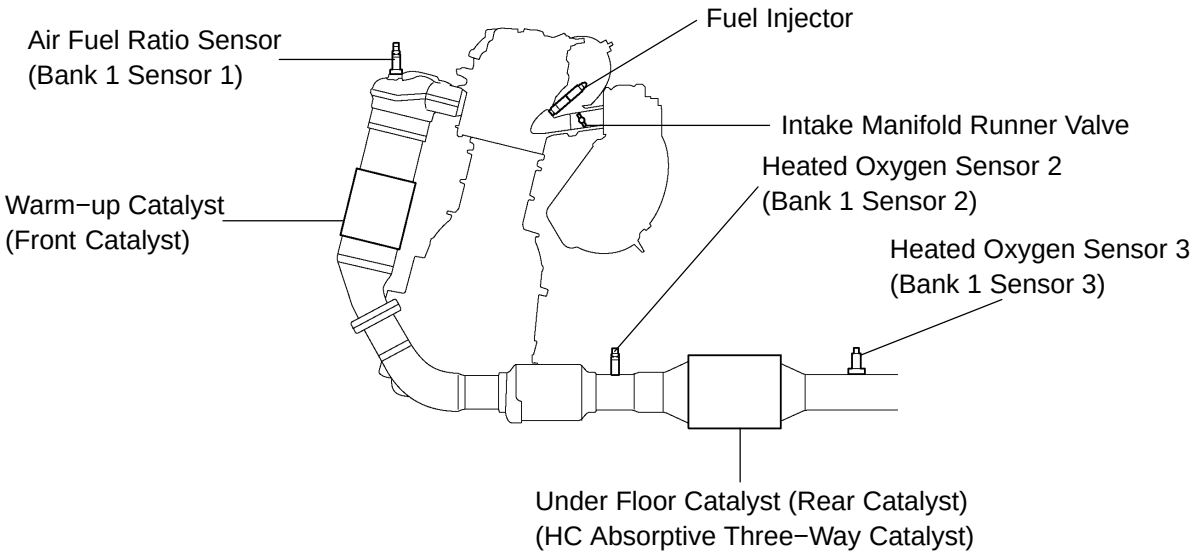
(a) The exhaust emission system has been changed to meet the SULEV requirements.

| | | | ’03MY Spec. (SULEV) | ’02MY Spec. (ULEV) |
|---|---|---|---|---|
| Displacement | | | → | 2,362 cc |
| Bore x Stroke | | | → | 88.5 mm x 96.0 mm |
| Number of Cylinder | | | → | 4 |
| Number of Valves | | | → | IN 2, EX 2 |
| Valve Timing | Intake | Open | BTDC 3° to 46° | ATDC 4° to BTDC 46° |
| | | Close | ABDC 60° to 17° | ABDC 60° to 10° |
| | Exhaust | Open | → | BBDC 45° |
| | | Close | → | ATDC 3° |
| Compression Ratio | | | → | 9.6 |
| Fuel Injector | | | 295 cc/minutes (12 holes improved design) | 265 cc/minutes (12 holes) |
| Intake Manifold | | | With Intake Manifold Runner Valve *1 | Less Intake Manifold Runner Valve |
| Exhaust Manifold | | | Stainless Steel Compact Single (Double Structure Type) | Stainless Steel Single |
| Warm−up Catalyst (Front Catalyst) | | | → | 1.1 L |
| Under Floor Catalyst (Rear Catalyst) | | | 1.3 L (HC Absorptive Three−Way Catalyst) | 0.9 L |
| Air Fuel Ratio Sensor (Bank 1 Sensor 1) | | | Planar Type *2 (Fast Activate type) | Cup Type |
| Heated Oxygen Sensor 2 (Bank 1 Sensor 2) | | | Super Stability Type | Normal Type |
| Heated Oxygen Sensor 3 (Bank 1 Sensor 3) | | | For detecting deterioration of ”HC Absorptive Three−Way Catalyst” | — |

*1: The intake manifold runner valve generates ”tumble” air flow in the cylinder, and the ”tumble” air flow improves engine combustion.

*2: The sensor element is a new, narrow, planar−type, replacing the previous cup−type design. The new design accelerates the activation of the A/F sensor.

**PZEV Exhaust Emission System**

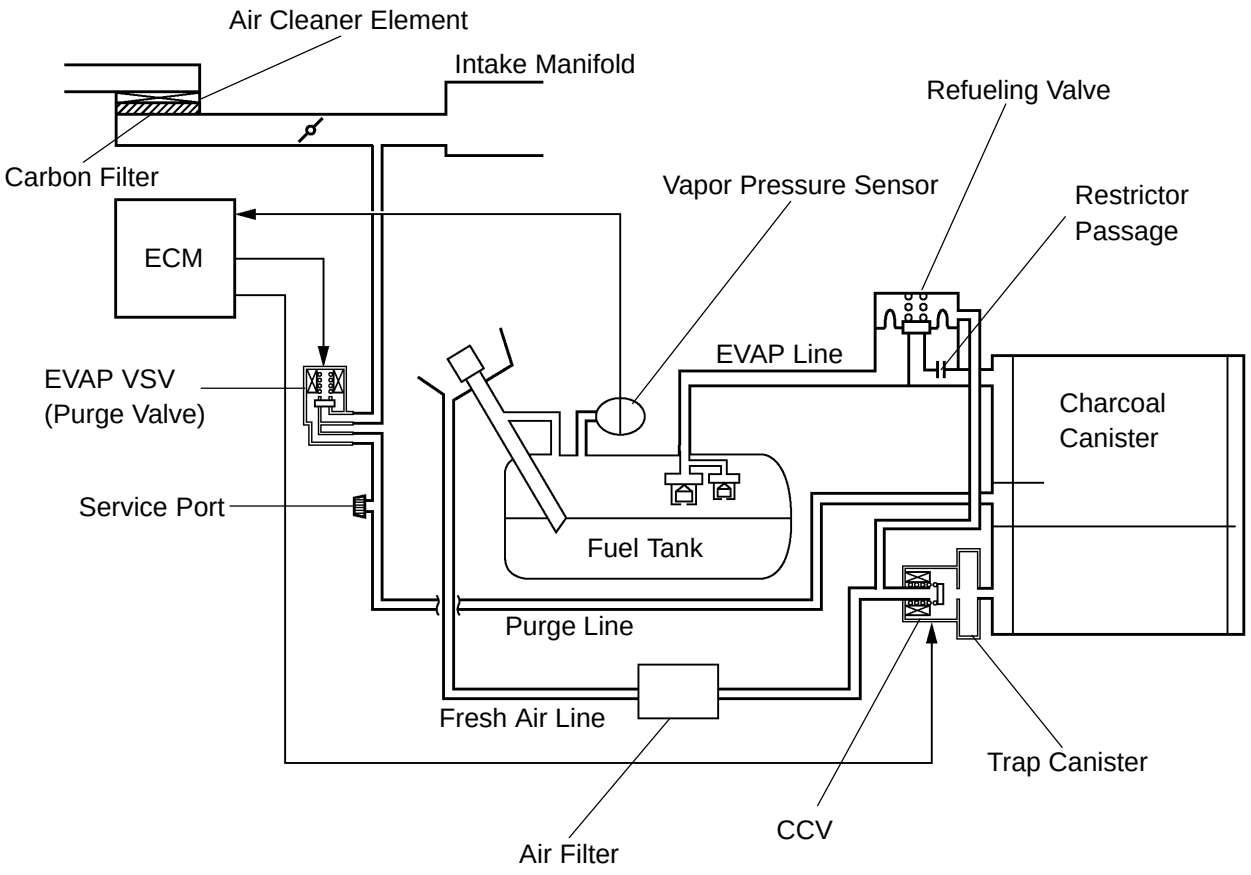



Y A76842

(b) The construction of the evaporative emission control system has been changed.

| Component | Function |
|---|---|
| Canister Closed Valve | The ECM opens and closes this valve to introduce fresh air into the canister. |
| Purge Valve | The ECM opens the purge valve to allow fuel tank vapors that were absorbed in the canister to pass into the intake manifold. During the system monitoring mode, this valve controls the introduction of the vacuum into the fuel tank. |
| Charcoal Canister | Contains activated charcoal which absorbs vapors created in the fuel tank. |
| Vapor Pressure Sensor | Detects the pressure in the fuel tank and sends the signals to the ECM. |
| Refueling Valve | Controls the flow rate of vapors from the fuel tank to the charcoal canister when the system is purging or during refueling. |
| Air Filter | Prevents dust and debris in the fresh air from entering the system. |
| Service Port | This port is used for connecting a vacuum gauge during inspection of the system. |
| ECM | Controls the canister closed valve and the purge valve in accordance with the signals from various sensors, in order to achieve a purge volume that suits the driving conditions. In addition, the ECM monitors the system for leakage and VSV malfunction, and then outputs a DTC if a malfunction is found. |
| Carbon Filter | Adsorbs the HC (hydrocarbons) vapors that remain in the intake system after the engine is stopped. |
| Trap Canister | Catches the vapors from the charcoal canister. |

**Evaporative Emission Control System**




Y

A76844