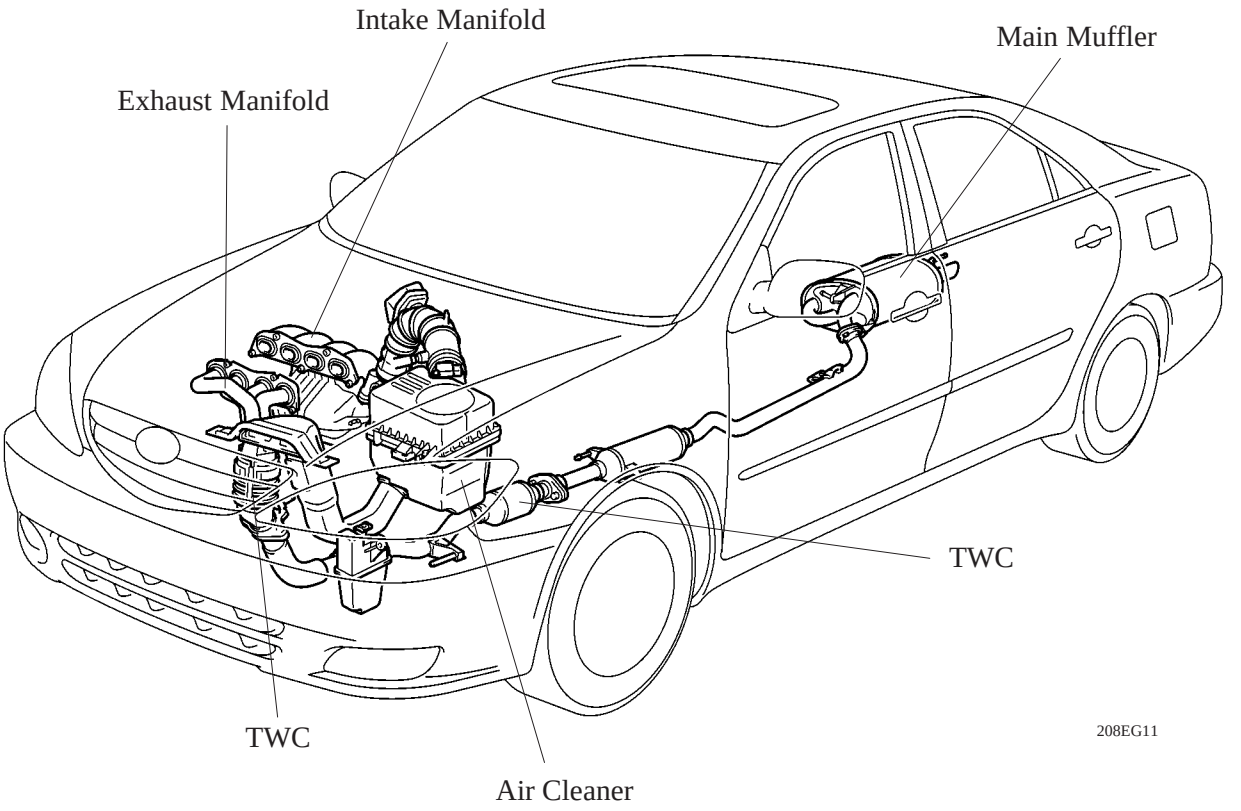
■INTAKE AND EXHAUST SYSTEM

1. General

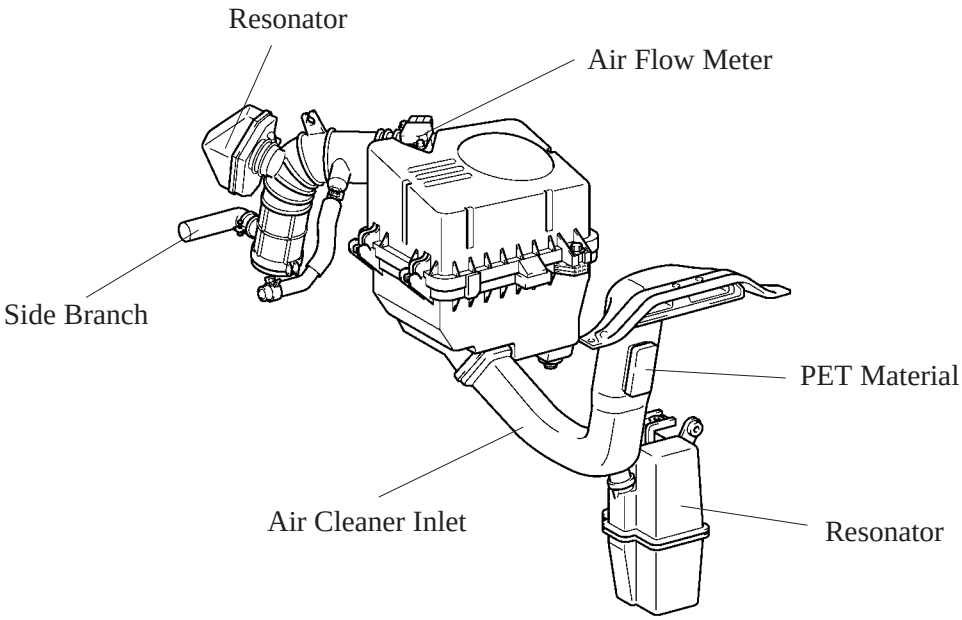
- The two resonators, the side branch and PET* (Polyethylene Terephthalate) material have been newly adopted to air cleaner inlet and air cleaner hose.
- The adoption of ETCS-i (Electronic Throttle Control System-intelligent) has realized excellent throttle control.
- The intake manifold has been made of plastic to reduce the weight and the amount of heat transferred from the cylinder head.
- 2-way exhaust control system is provided to reduce noise and vibration in the main muffler.

*: Using porous material that permits it to breath, air intake pulsating pressure will be let out to the outside of air cleaner inlet.



2. Air Cleaner

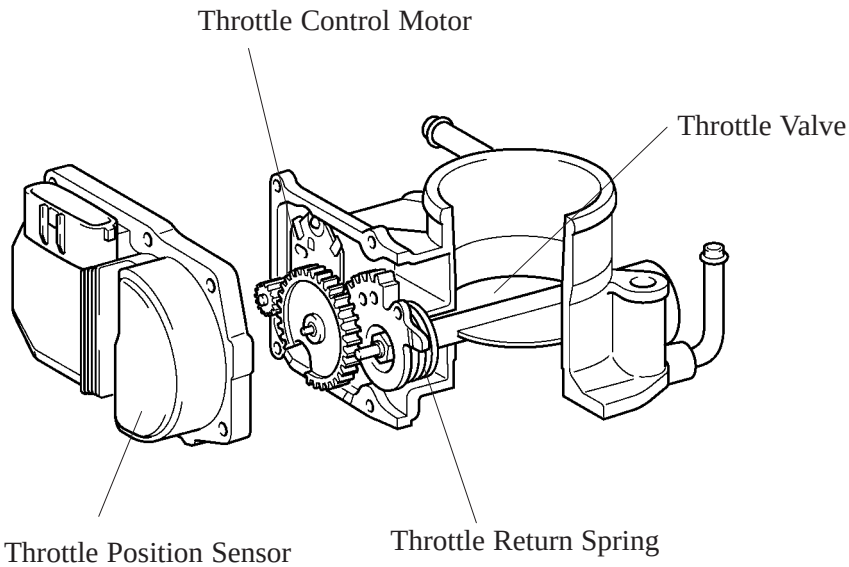
- A flameless, full-fabric air filter has been adopted to reduce weight and to simplify its disposal.
- The two resonators, the side branch and PET material have been newly adopted to air cleaner inlet and air cleaner hose to reduce the intake air noise.



208EG12

3. Throttle Body

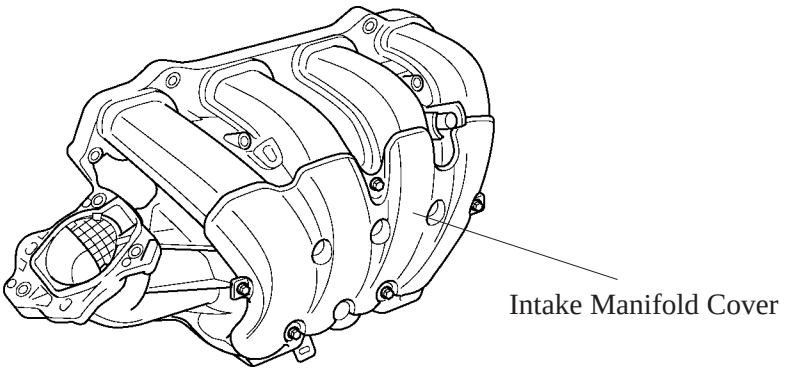
- The adoption of the link-less type ETCS-i has realized excellent throttle control.
  For details of ETCS-i control, refer to see page EG-41.
- A DC motor with excellent response and minimal power consumption is used for the throttle control motor. The engine ECU performs the duty ratio control of the direction and the amperage of the current that flows to the throttle control motor in order to regulate the opening angle of the throttle valve.



208EG13

4. Intake Manifold

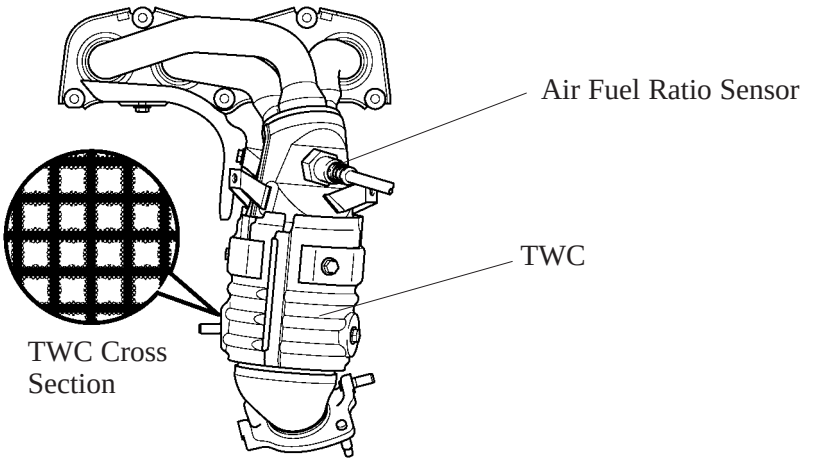
- The intake manifold has been made of plastic to reduce the weight and the amount of heat transferred from the cylinder head. As a result, it has become possible to reduce the intake air temperature and improve the intake volumetric efficiency.
- A resonator is installed inside the air intake chamber which makes use of the intake pulse to improve torque in the mid-speed range.
- The intake manifold cover is used on the intake manifold to reduce intake air noise.



198EG34

5. Exhaust Manifold

- A stainless steel exhaust manifold is used for weight reduction.
- An ultra thin-wall, high-cell ceramic type TWC (Three-Way Catalytic Converter) has been adopted. This TWC enables to improve exhaust emissions by optimizing the cells density.

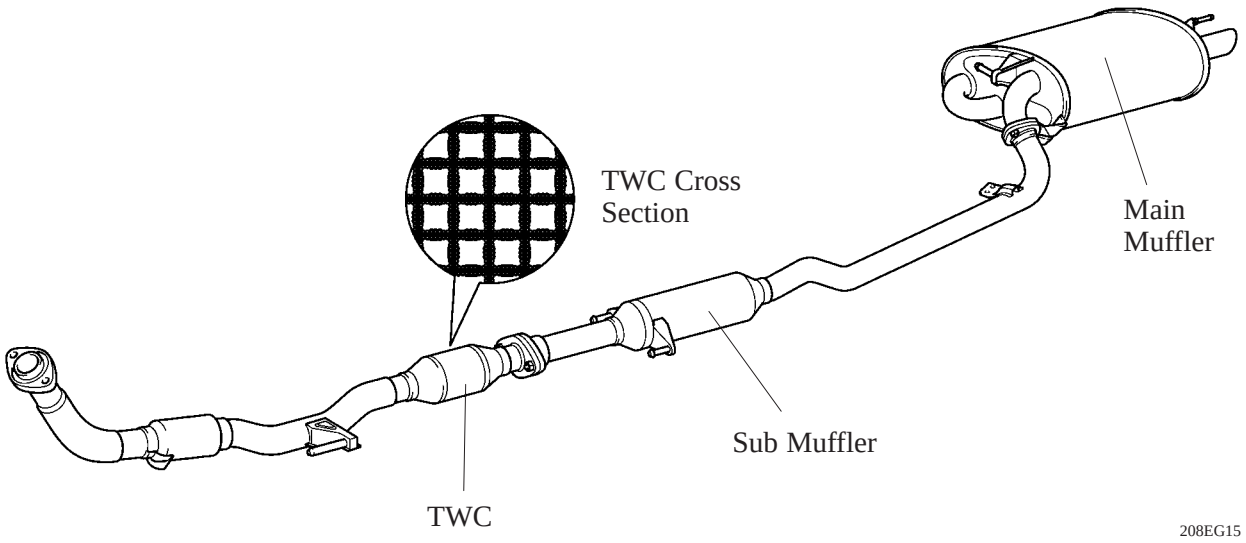


208EG14

6. Exhaust Pipe

General

- An ultra thin-wall, high-cell ceramic type TWC (Three-Way Catalytic Converter) has been adopted. This TWC enables to improve exhaust emissions by optimizing the cells density.
- 2-way exhaust control system is provided to reduce noise and vibration in the main muffler.



2-Way Exhaust Control System

- A 2-way exhaust control system is used. This system reduces the back pressure by opening and closing a variable valve that is enclosed in the main muffler, thus varying the exhaust gas pressure.
- The valve opens steplessly in accordance with the operating condition of the engine, thus enabling a quieter operation at lower engine speeds, and reducing back pressure at higher engine speeds.

1) Construction

The control valve is enclosed in the main-muffler. When the exhaust gas pressure overcomes the spring pressure, the control valve opens steplessly in accordance with the exhaust gas pressure.

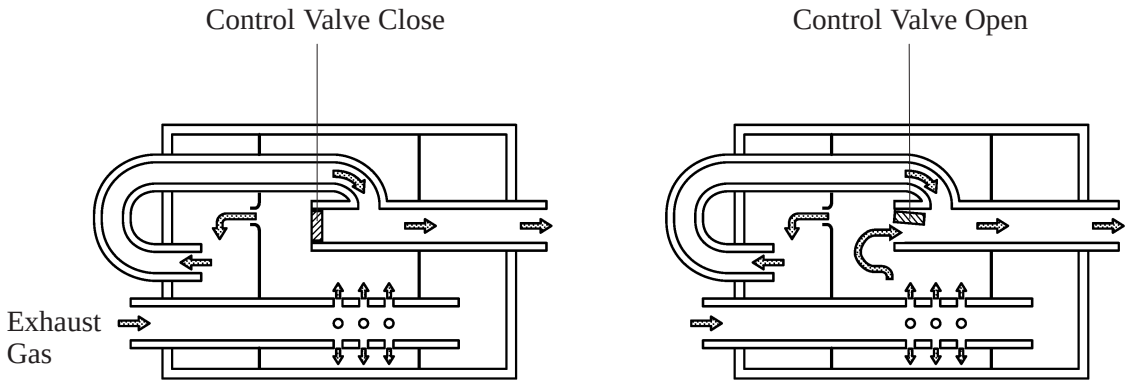
2) Operation

a. When Control Valve is Closed (low engine speed)

Since the pressure in the main muffler is low, the control valve is closed. Hence exhaust gas does not pass the bypass passage, and exhaust noise decreased by the main muffler.

b. When Control Valve is Open (middle to high engine speed)

The valve opens more as the engine speed and the back pressure in the muffler increase. This allows a large volume of exhaust gas to pass the bypass passage, thereby substantially decreasing the back pressure.



Low Engine Speed **Middle to High Engine Speed**

208EG16