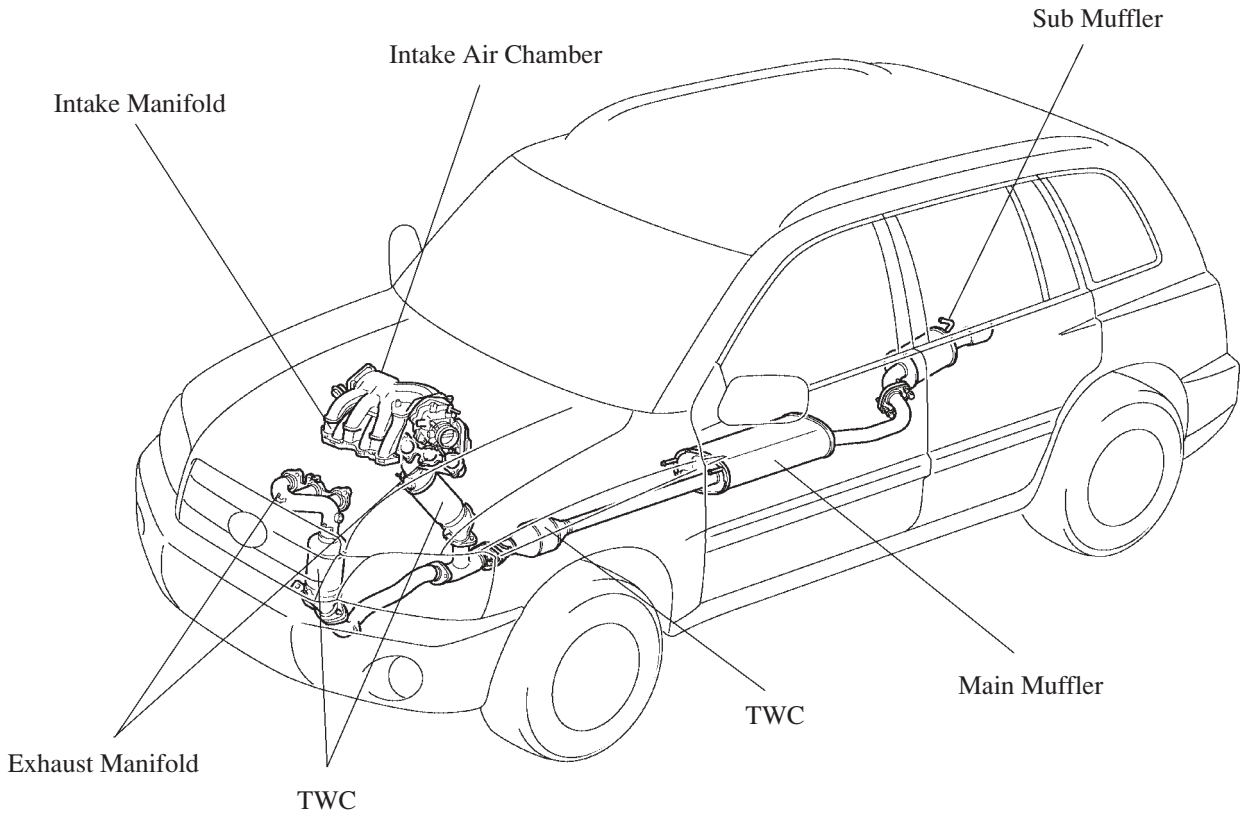
■INTAKE AND EXHAUST SYSTEM

1. General

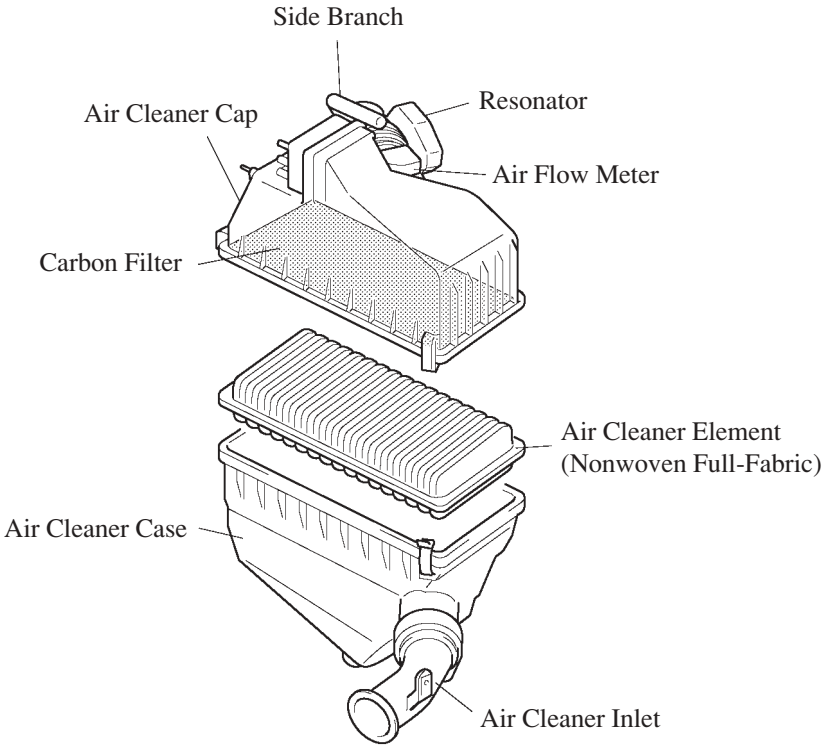
- The ACIS (Acoustic Control Induction System) is used to improve the engine performance.
- 2-way exhaust control system is used in the main muffler to reduce noise and back pressure.
- The adoption of the ETCS-i (Electronic Throttle Control System-intelligent) has realized excellent throttle control.
- The link-less type throttle body has been adopted.
- The intake air chamber is made of plastics to realize lightweight.
- A high temperature resistant exhaust manifold with an integrated TWC (Three-Way Catalytic converter) has been adopted.
- An ultra thin-wall ceramic type TWC has been adopted on exhaust manifold.
- A frameless, nonwoven full-fabric type air cleaner element has been adopted.



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2. Air Cleaner

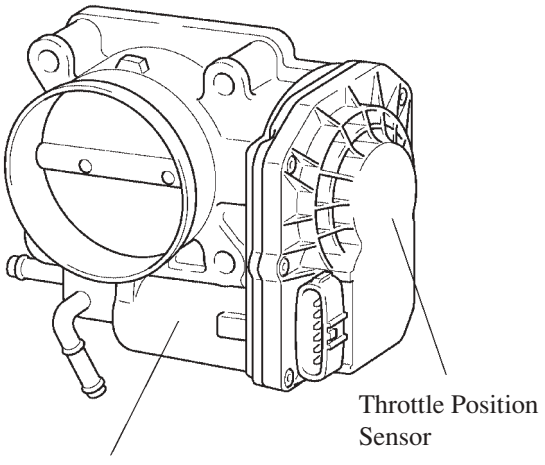
- A carbon filter, which adsorbs the HC that accumulates in the intake system when the engine is stopped, has been adopted in the air cleaner case in order to reduce evaporative emissions.
  This filter is maintenance-free.
- A frameless, nonwoven, full-fabric type air cleaner element has been adopted to reduce weight and to simplify its disposal.



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3. Throttle Body

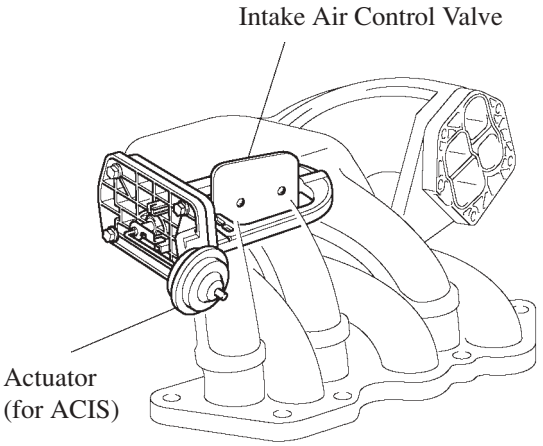
- A DC motor with excellent response and minimal power consumption is used for the throttle control motor. The engine ECU performs the duty ratio control of the direction and the amperage of the current that flows to the throttle control motor in order to regulate the opening angle of the throttle valve.
- The link-less type throttle body has been adopted and it realizes excellent throttle control.
  For details of ETCS-i control, refer to see page EG-47.



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4. Intake Air Chamber

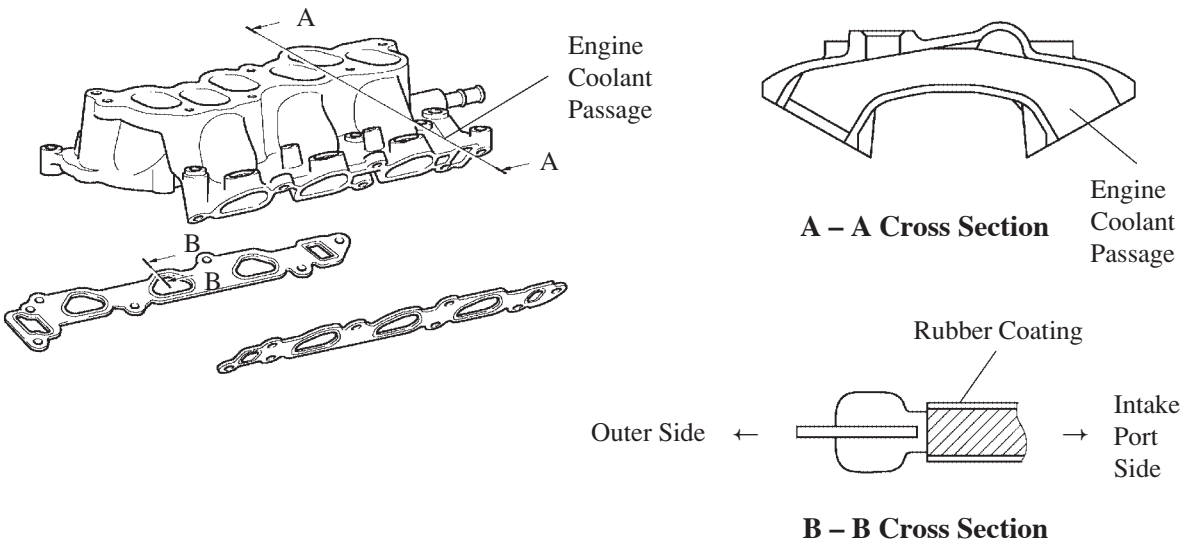
The intake air chamber is made of plastics to realize lightweight.
The intake air chamber consists of upper and lower sections and contains an intake air control valve. This valve is activated by ACIS (Acoustic Control Induction System) actuator and is used to alter the intake pipe length to improve the engine performance in all speed ranges. For details of ACIS control, see page EG-56.



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5. Intake Manifold

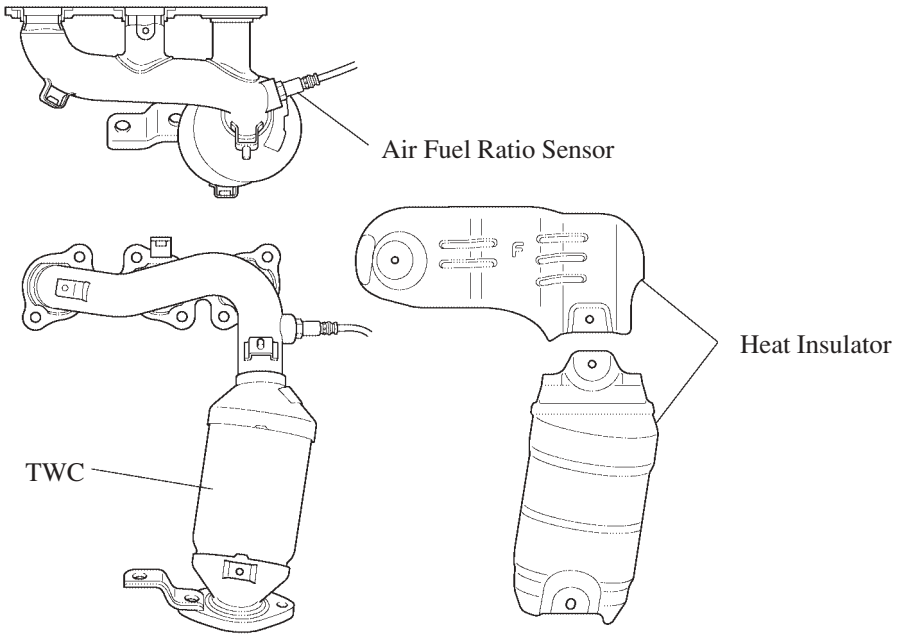
- The port diameter of the intake manifold and the port length have been optimized.
- An engine coolant passage connects the left and right banks at the rear end of the intake manifold.
- The intake manifold gaskets have rubber coating applied onto surface, and provide superior durability.



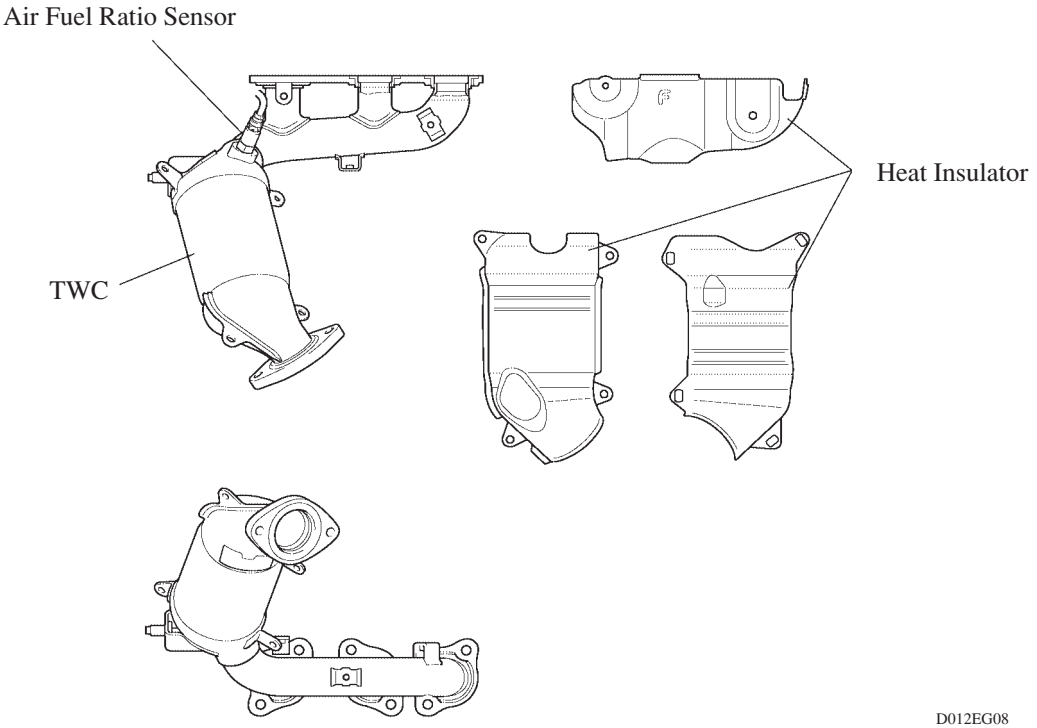
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6. Exhaust Manifold

- A stainless steel exhaust manifold is used for improving the warm-up of TWC (Three-Way Catalytic converter) and for weight reduction.
- The air fuel ratio sensor has been adopted to the exhaust manifold.
- A high temperature resistant exhaust manifold with an integrated TWC has been adopted.
- A ceramic type TWC has been adopted. This TWC enables to improve exhaust emissions by optimizing the cells density and thickness of wall.



for Right Bank

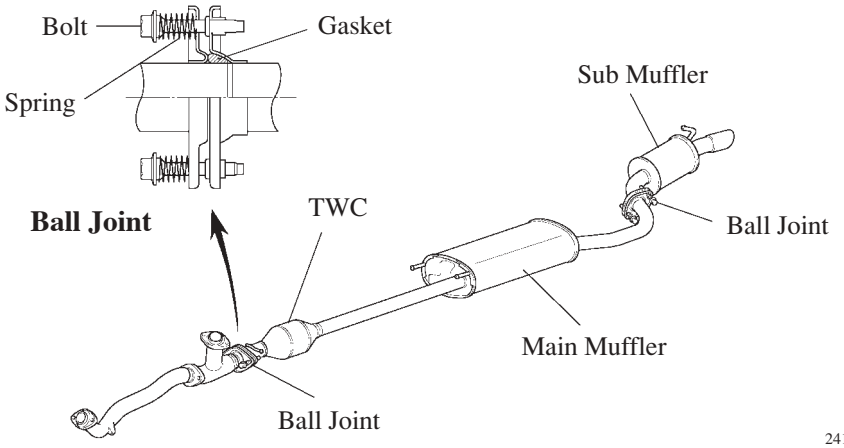


for Left Bank

7. Exhaust Pipe

General

- A ceramic type TWC has been adopted. This TWC enables to improve exhaust emissions by optimizing the cells density and thickness of wall.
- 2- way exhaust control system is provided to reduce noise and back pressure in the main muffler.
- A ball joint is used to join the exhaust front pipe, exhaust center pipe and exhaust tail pipe. As a result, a simple construction and improved reliability have been realized.



2-Way Exhaust Control System

- A 2-way exhaust control system is used.
- At lower engine speed, this system enables a quieter operation with control valve to close in main muffler.
- The valve opens steplessly in accordance with engine condition and this system reduces the back pressure at higher engine speed.

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.

