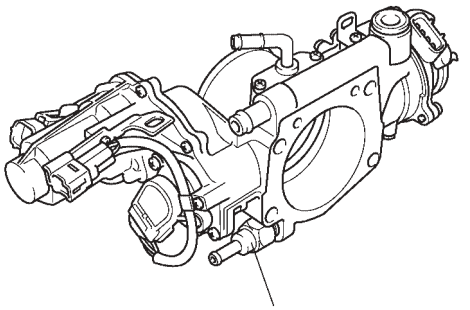
■INTAKE AND EXHAUST SYSTEM

1. Throttle Body

- The adoption of the ETCS-i has realized excellent throttle control.
- The ISC system and cruise control system are controlled comprehensively by the ETCS-i. Thus, the ISC valve has been discontinued.
- A thermostat is installed in the throttle body. The thermostat uses the thermal expansion of the wax to open and close the valve to shut off the flow of warm coolant when the coolant temperature is high in the throttle body's warm coolant passage. This prevents the throttle body temperature from rising more than the needed level, thus restraining the rise in the intake air temperature.



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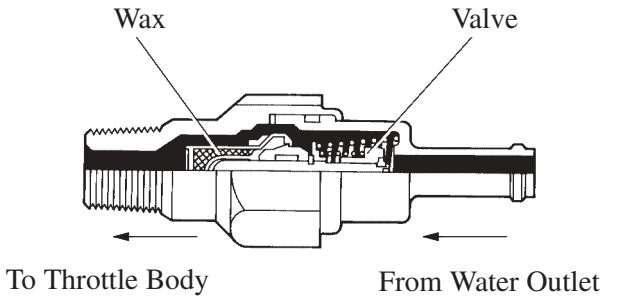

Thermostat

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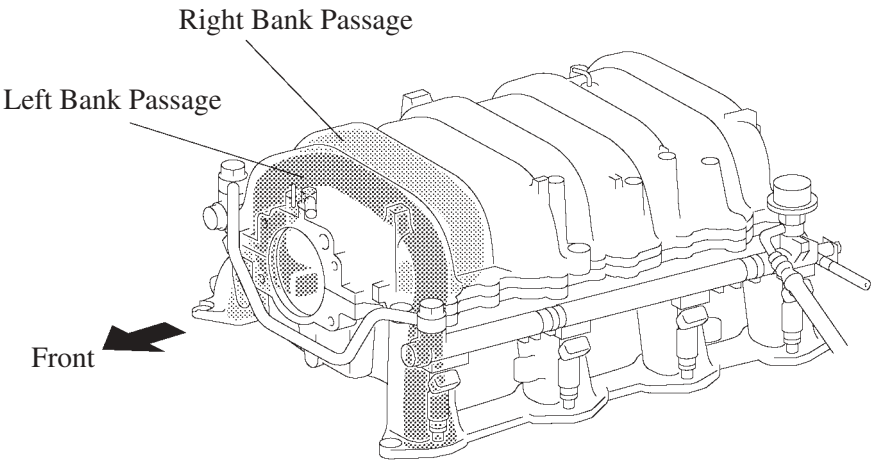
2. Intake Manifold

The low-to mid-speed range torque has been improved by increasing the length of the intake manifold port.



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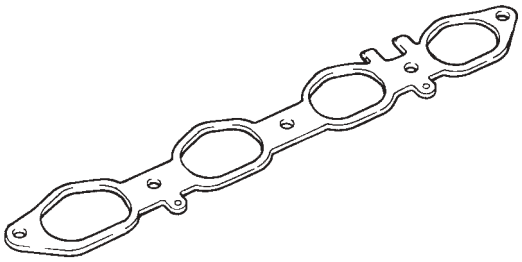
3. Intake Manifold Gasket

- A heat-barrier gasket has been adopted for use between the cylinder head and the intake manifold. This gasket, which restrains the heat transfer from the cylinder head to the intake manifold, helps restrain the intake air temperature and improve the charging efficiency.
- The construction of the gasket consists of resin that is sandwiched between metal gaskets.



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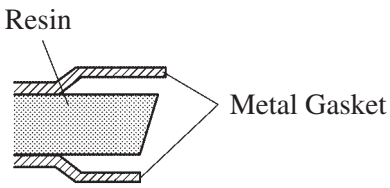

Cross Section

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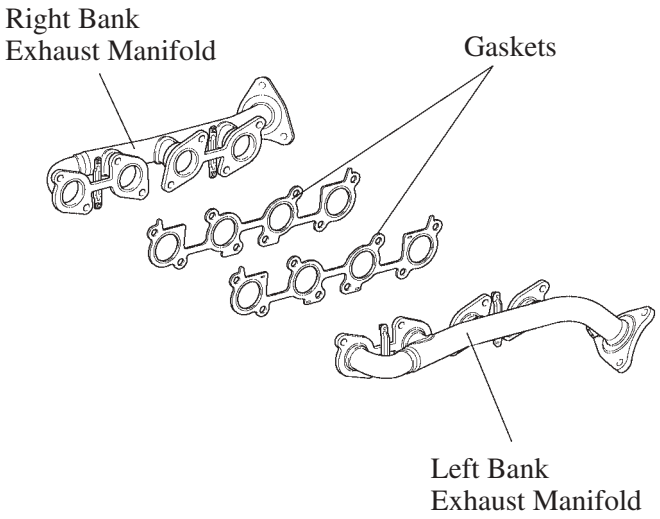
4. Exhaust Manifold

The exhaust manifolds are made of stainless steel for weight reduction.



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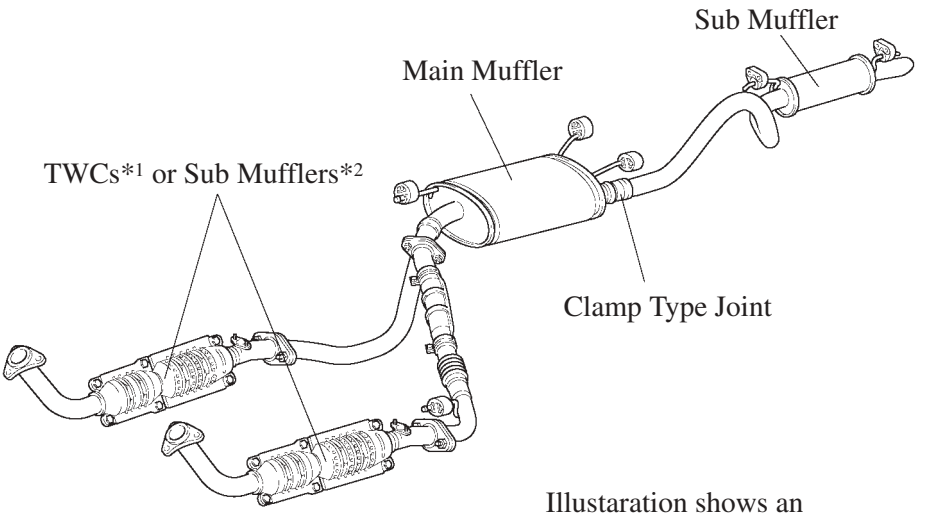
5. Exhaust Pipe

General

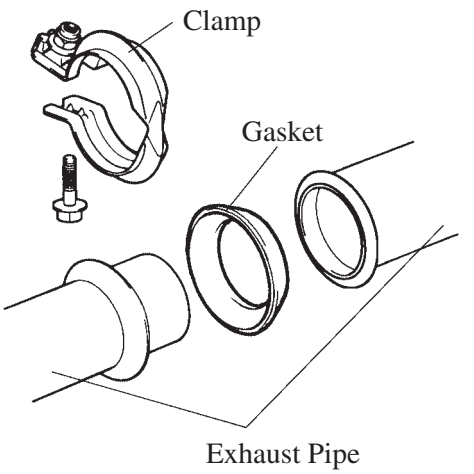
- The exhaust pipe is made of stainless steel for improved rust resistance.
- A clamp type joint is used to join the center pipe and tail pipe to realize weight reduction.
- A 2-way exhaust control system has been adopted to improve engine performane and to ensure an even quieter operation.



Illustaration shows an European Model

*1: Europe Model
*2: Except Europe Model

156EG05



Connecting Exhaust Pipe

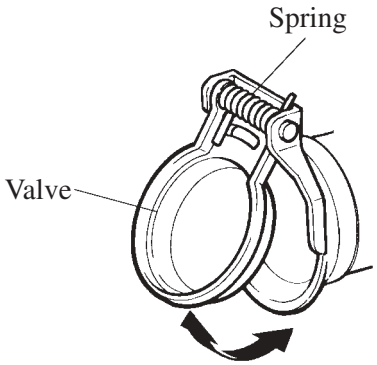
156EG06

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 passage.
- 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.



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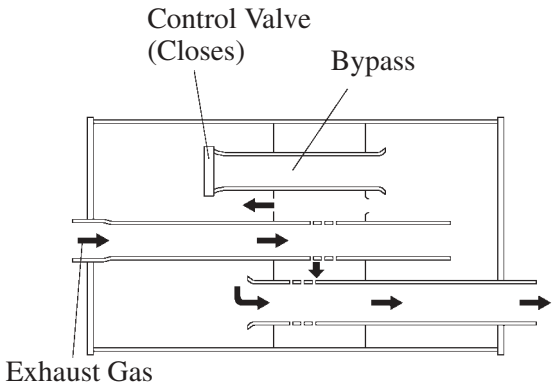
2) Operation

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 is 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 alarge volume of exhaust gas to pass the bypass passage, thereby substantially decreasing the back pressure.



Control Valve Closed

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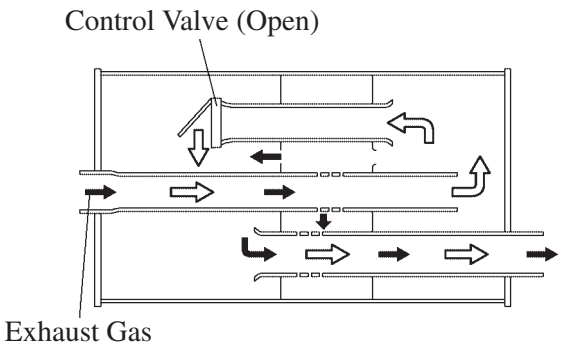

Control Valve Open

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