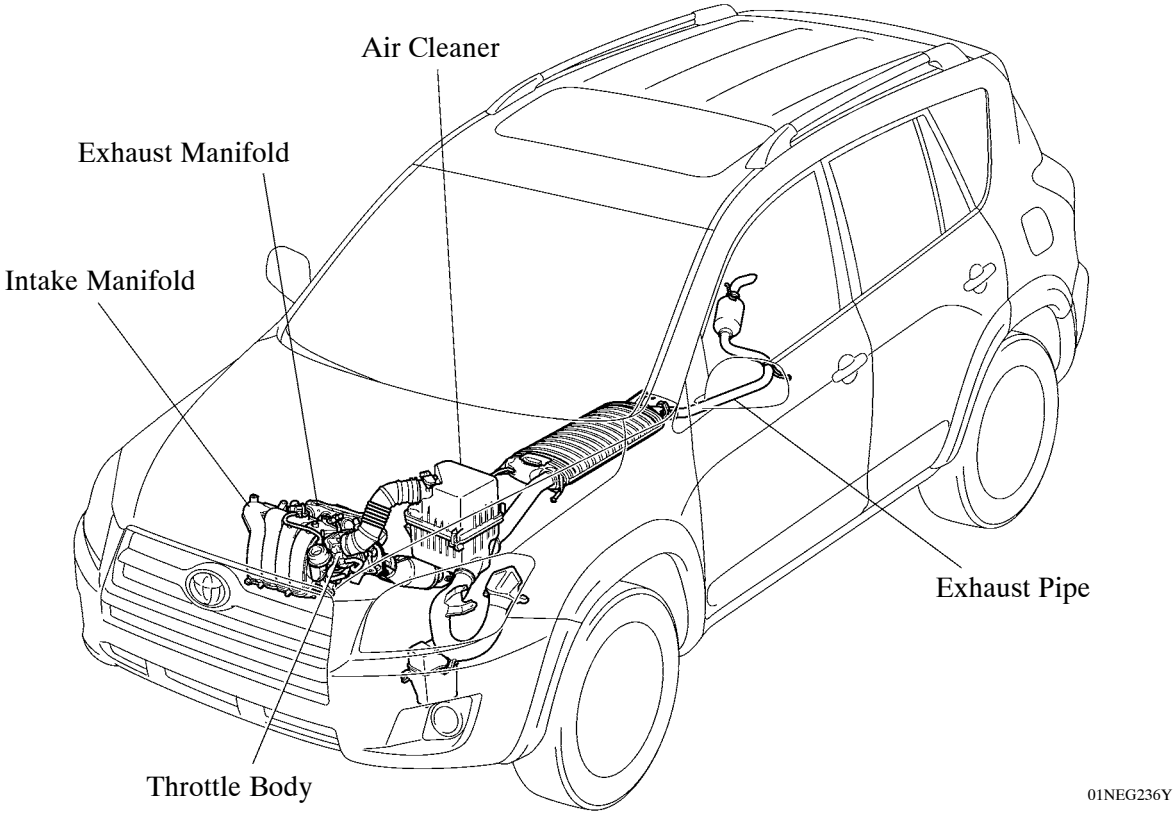
■INTAKE AND EXHAUST SYSTEM

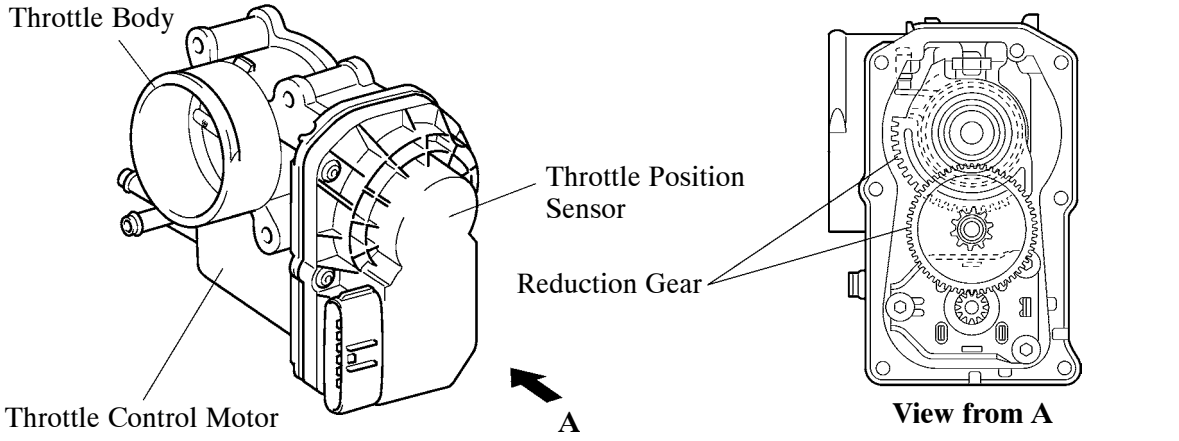
1. General

- The intake manifold has been made from 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.
- The linkless-type throttle body assembly is used to achieve excellent throttle control.
- Electronic Throttle Control System-intelligent (ETCS-i) is used to provide excellent throttle control. For details, see page 74.
- The Acoustic Control Induction System (ACIS) is used to improve the engine performance. For details, see page 93.
- A stainless steel exhaust manifold is used for weight reduction.



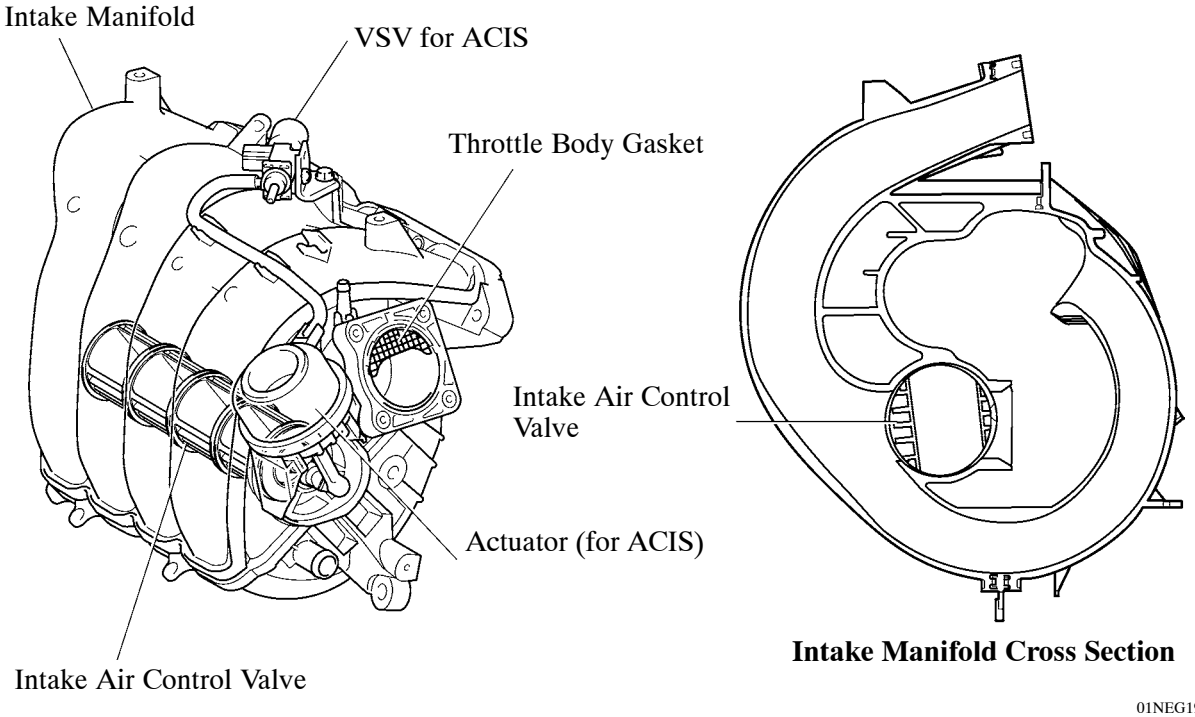
2. Throttle Body

- The linkless-type throttle body is used, achieving excellent throttle control.
- A DC motor with excellent response and minimal power consumption is used for the throttle control motor. The ECM performs the duty cycle 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.



3. Intake Manifold

- The intake manifold is made of lightweight plastic.
- A rotary type intake air control valve, which has less intake air resistance, is provided in the intake manifold. It opens and closes to change the effective length of the intake manifold in two stages. The intake air control valve is activated by the Acoustic Control Induction System (ACIS).
- A vacuum type actuator for the ACIS is provided to the intake manifold. The ACIS actuator is laser-welded onto the intake air chamber. The actuator opens and closes the intake air control valve by the vacuum pressure controlled by the VSV for ACIS.
- A VSV for ACIS is provided on the intake manifold. The VSV controls the vacuum applied to the actuator by way of the signal (ACIS) that is output by the ECM.
- A mesh type throttle body gasket is used between the throttle body and the intake manifold to improve the flow of air within the intake manifold.



Intake Manifold Cross Section

01NEG198I

— REFERENCE —

Laser-welding:

In laser-welding, a laser-absorbing material (for the intake manifold) is joined to a laser-transmitting material (for the ACIS actuator). Laser beams are then irradiated from the laser-transmitting side. The beams penetrate the laser-transmitting material to heat and melt the surface of the laser-absorbing material. Then, the heat of the laser-absorbing material melts the laser-transmitting material and causes both materials to become welded.

4. Exhaust Pipe

- The exhaust pipe uses 2 ball joints in order to achieve a simple construction and to ensure reliability.
- 2 TWCs are used. The TWC can improve exhaust emissions by optimizing the cell density and the wall thickness.

