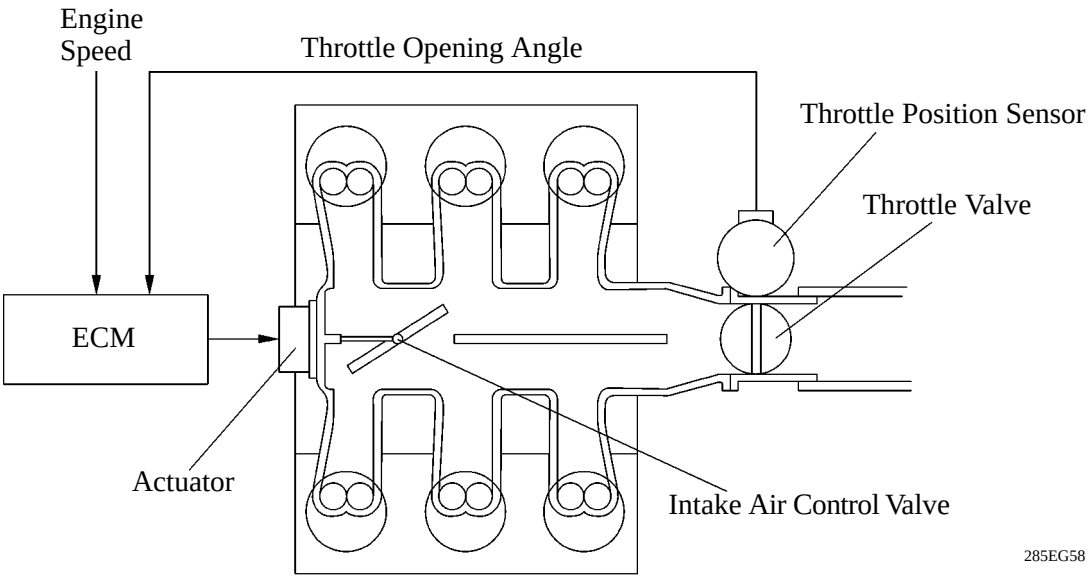
8. ACIS (Acoustic Control Induction System)

General

The ACIS is realized by using a bulkhead to divide the intake manifold into 2 stages, with an intake air control valve in the bulkhead being opened and closed to vary the effective length of the intake manifold in accordance with the engine speed and throttle valve opening angle. This increases the power output in all ranges from low to high speed.

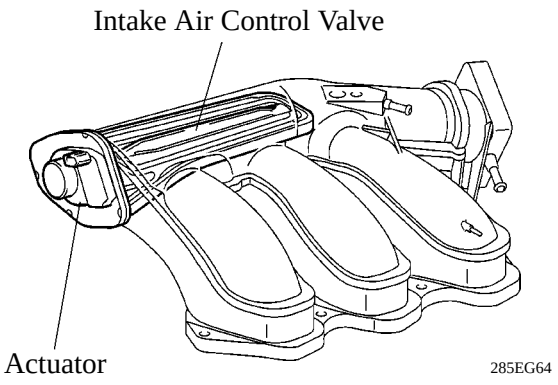
▶ System Diagram ◀



Construction

1) Intake Air Control Valve

The intake air control valve, which is provided in the intake air chamber, open and close to change the effective length of the intake manifold in 2 stages.



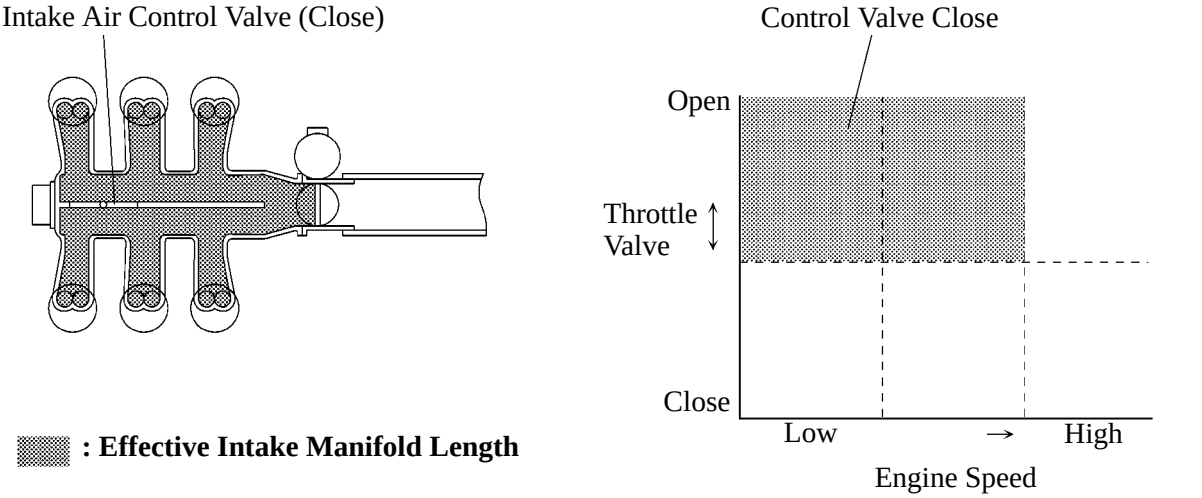
2) Actuator (Motor)

The actuator activates the intake air control valve based on signals from the ECM.

Operation

1) When the Intake Air Control Valve Closes

While the engine is running at middle speed under high load, the ECM controls the actuator to close the control valve. As a result, the effective length of the intake manifold is lengthened and the intake air efficiency, in the medium speed range, is improved due to the dynamic effect of the intake air, thereby increasing power output.



2) When the Intake Air Control Valve Open

Under any condition except when the engine is running at middle speed under high load, the ECM controls the actuator to open the control valve. When the control valve is open, the effective length of the intake air chamber is shortened and peak intake efficiency is shifted to the low-to-high engine speed range, thus providing greater output at low-to-high engine speeds.

