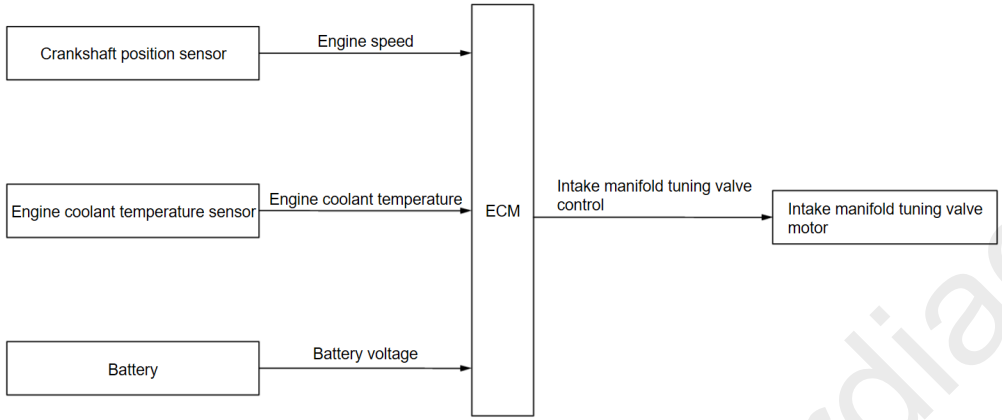
[Previous] [Next]

System Description

SYSTEM DIAGRAM



Component parts	Function
Crankshaft position sensor	Refer to Crankshaft Position Sensor.
Engine coolant temperature sensor	Refer to Engine Coolant Temperature Sensor.
Battery	ECM detects the battery voltage.
ECM	Refer to ECM.
Intake manifold tuning valve motor	Refer to Intake Manifold Tuning Valve.

SYSTEM DESCRIPTION

This system switches the length of intake air path according to the low-to-medium speed range or high speed range. Torque is increased in the low-to-medium speed range and the engine output is improved in the high speed range.

Engine speed: Low and medium speed range

Since the intake manifold tuning (IMT) valve is closed when the engine speed is less than 5,000 rpm, the length of the effective intake air path is from the mouth of intake manifold collector to the intake valve. This long path brings the inertia effect of intake air, contributing to the improvement in intake air efficiency and the generation of high torque.

Engine speed: High speed range

When engine speed is 5,000 rpm or more, ECM turns ON the intake manifold tuning valve motor to open the intake manifold tuning valve. The length of the effective intake air path at this time is from the intake manifold tuning valve to the intake valve. This short path brings the inertia effect of intake air in the high speed range, contributing to the torque improvement while the engine is running at high speeds. (The highest engine output is improved.)

Intake Manifold Tuning Valve Operating Condition

ECM opens the intake manifold tuning valve when all of the following conditions are satisfied.

- Engine speed: 5,000 rpm or more
- Engine coolant temperature: -30°C (-22°F) or more
- Battery voltage: 16 V or less