

Accelerator Pedal Position sensor

- This sensor, which is mounted on the accelerator pedal, detects the amount of pedal effort applied to the accelerator. By using a Hall element, this electronic position sensor enables accurate control and ensures permanent reliability. When the amount of pedal effort applied to the accelerator changes, this sensor sends the angle of the magnetic field in relation to the flow of the applied current in the Hall element (VCP1 → EP1, VCP2 → EP2) in the form of an accelerator pedal effort signal to the engine ECU. In addition, this sensor consists of a dual system having different output characteristics to ensure reliability.

(See page EG-121)

Throttle Position Sensor

- This sensor, which is located in the throttle body, detects the position of the throttle valve. By using a Hall element, in the same way as the accelerator position sensor, this electronic position sensor enables accurate control and ensures permanent reliability. In addition, this sensor consists of a dual system having different output characteristics to ensure reliability.

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ETCS-i (Electronic Throttle Control System-intelligent)

- In the conventional throttle body, the throttle valve opening is determined invariably by the amount of the accelerator pedal effort. In contrast, the ETCS-i uses the engine ECU to calculate the optimal throttle valve opening that is appropriate for the respective driving condition and uses a throttle control motor to control the opening.
- The functions of the ordinary throttle position control (nonlinear control), idle speed control (ISC), traction control (including VSC), and cruise control have been integrated in the single-valve electronically controlled throttle body.
- Excellent driving stability and comfort have been achieved by effecting integrated control with the power train, and vehicle stability has been ensured through cooperative control with the ECT and VSC systems.
- Two CPUs, one for the ETCS-i, and the other for the EFI control, monitor each other to ensure a reliable system.
- A dual system is used so that the vehicle can continue to operate in the event of a problem, thus ensuring reliability.

(See page EG-112)