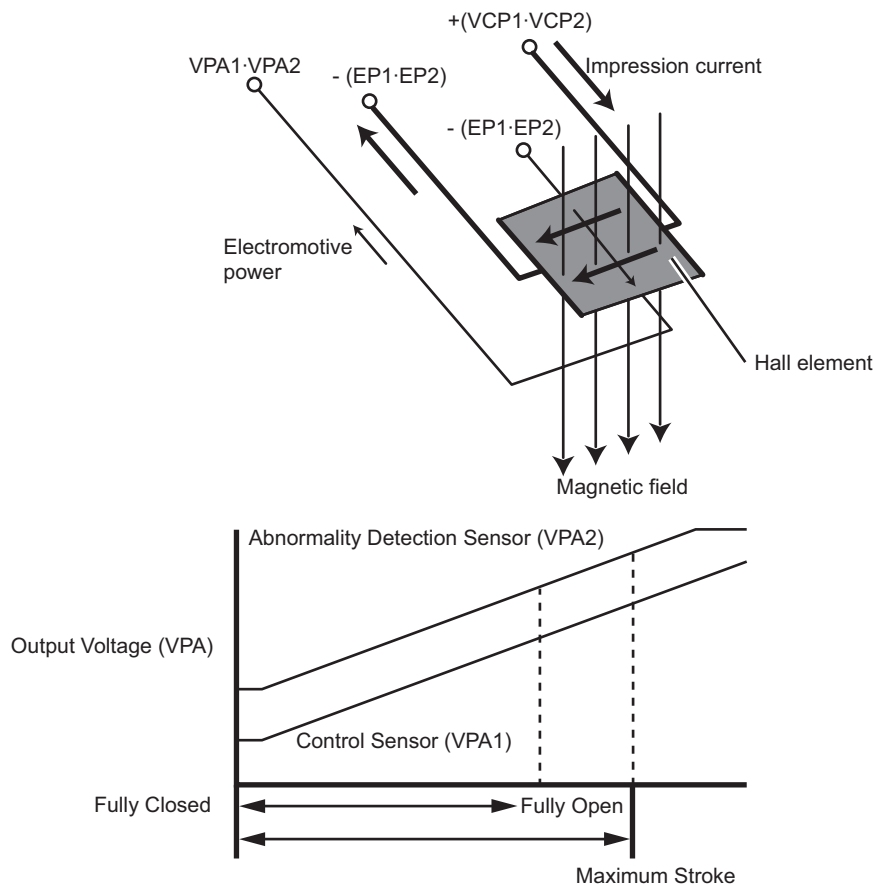
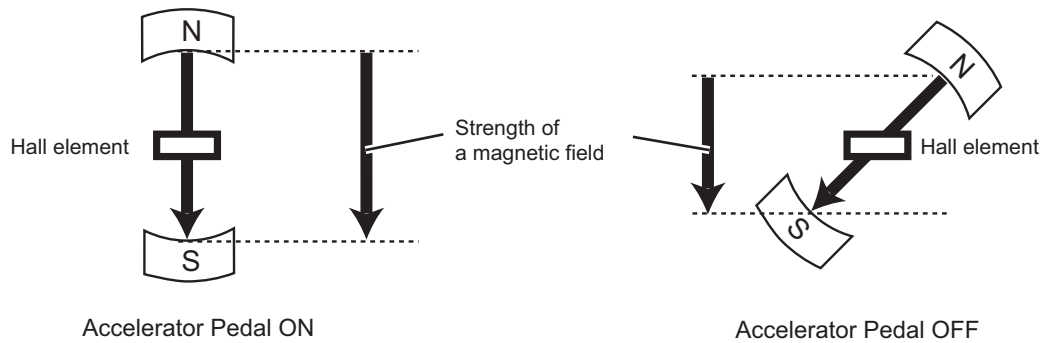


Accelerator Pedal Position sensor

- 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.



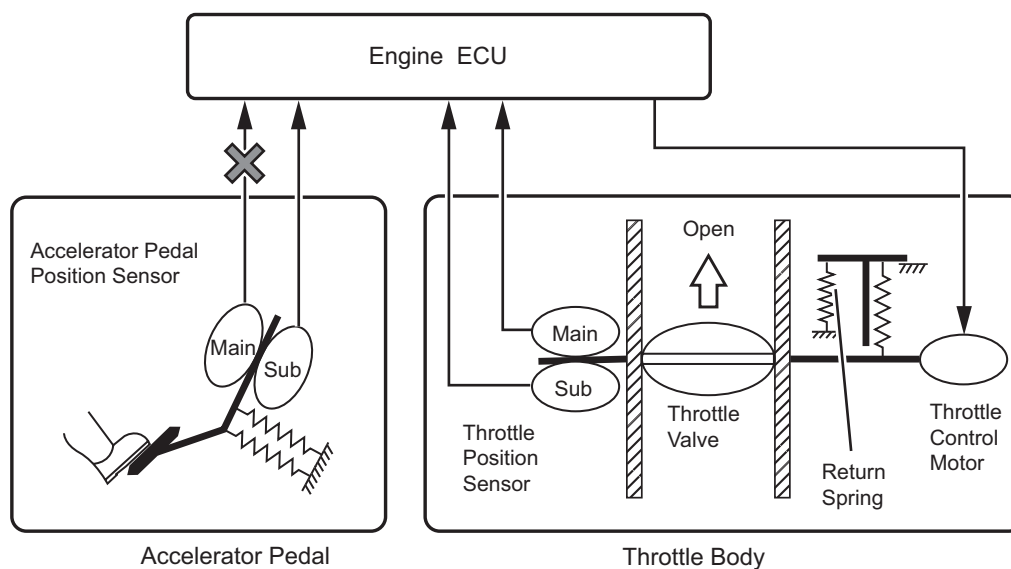
Accelerator Position Sensor Output Voltage Characteristics

Fail Safe

- The accelerator position sensor comprises two (main, sub) sensor circuits, to detect the pedal position. In case of an abnormal condition in the signal, the engine ECU switches to the failsafe driving mode.

System 1 Failure

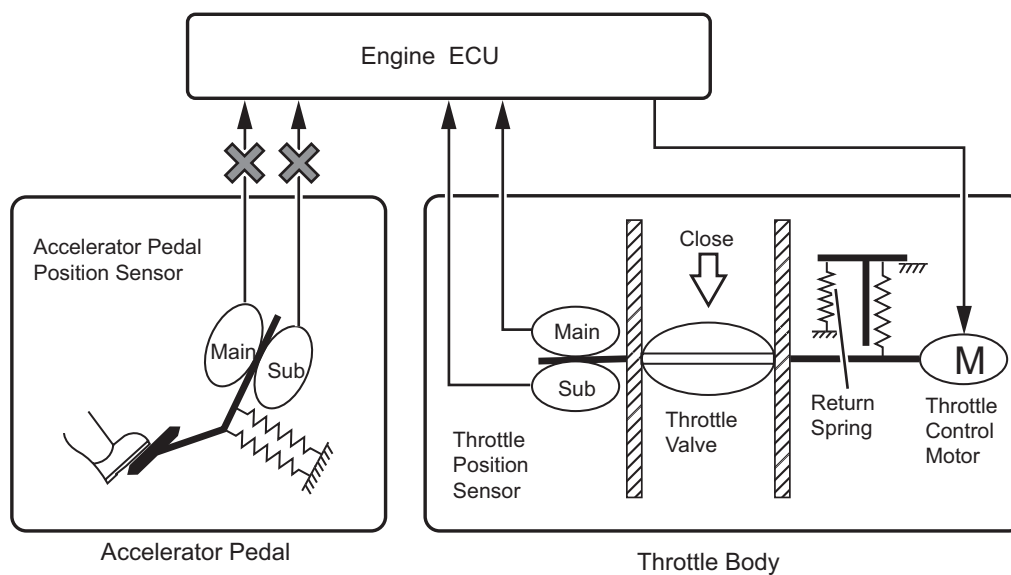
The accelerator pedal position sensor comprises two (main, sub) sensor circuits. If a malfunction occurs in either one of the sensor circuits, the engine ECU detects the abnormal signal voltage difference between these two sensor circuits and switches to the limp mode. In the limp mode, the remaining circuit is used to calculate the accelerator pedal opening, in order to operate the vehicle under limp mode control.



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System 2 Failure

If both systems malfunction, the engine ECU detects the abnormal signal voltage between these two sensor circuits and regards that the opening angle of the accelerator pedal is fully opened and then continues the throttle control. At this time, the vehicle can be driven within its idling range.



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