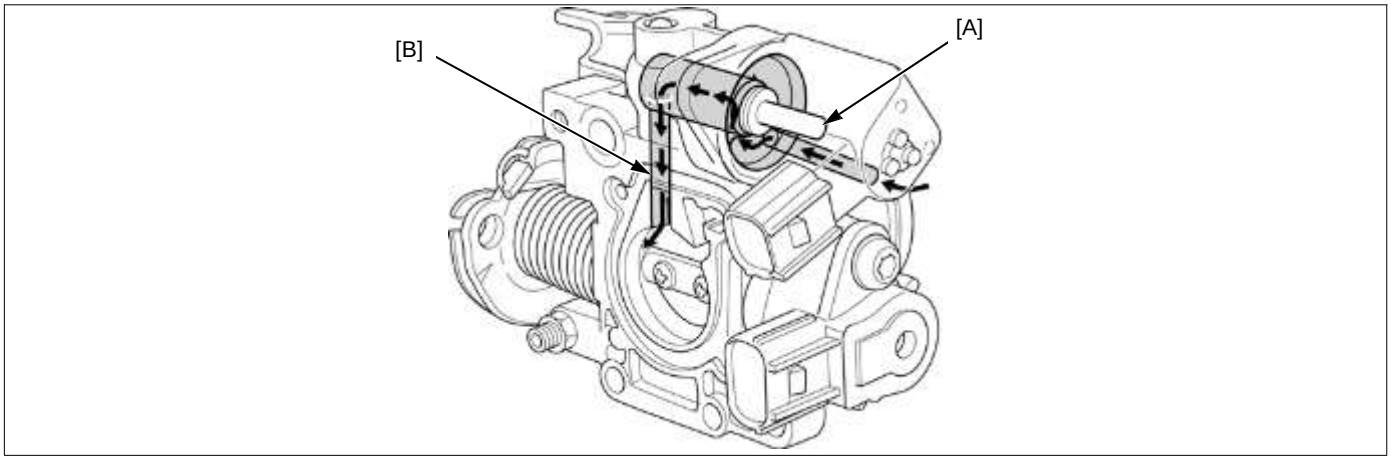
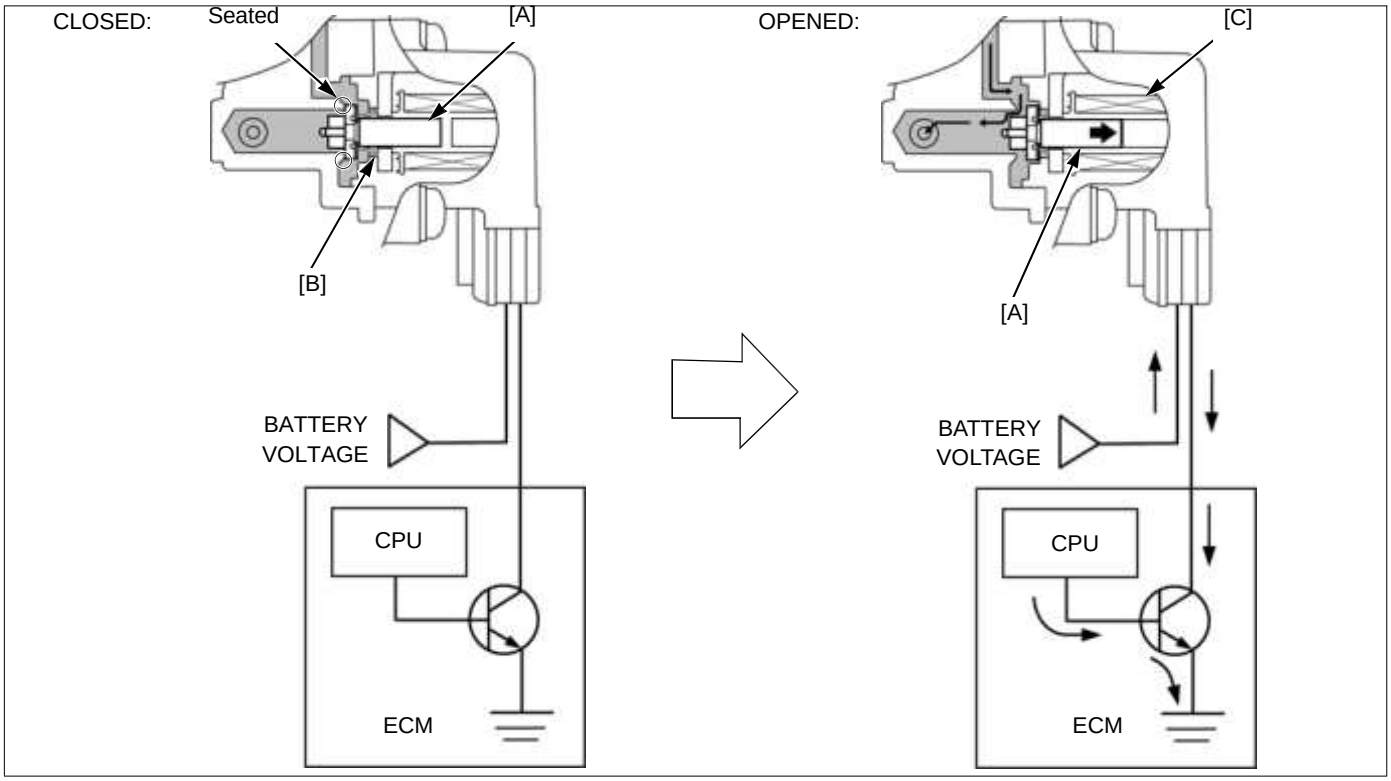
FAST IDLE SOLENOID VALVE (if equipped)

Instead of the IACV in conventional system, the fast idle solenoid valve [A] provides a supplemental air passage [B] in the throttle body in order to maintain the fast idle speed while the engine is cold.



OPERATION:



When the solenoid valve is not operated, the valve seat [A] is pushed against the seat area of the throttle body by the spring [B], closing the supplemental air passage.
The battery supplies constant voltage to the solenoid valve while the ignition switch is turned ON.
When the crankshaft pulse signal is detected as the engine is started, ECM grounds the solenoid coil circuit in order to provide current in the coil.
The magnetic force generated by the solenoid coil [C] attracts the solenoid valve seat. The pulling force of the coil overcomes the force of the spring, creating a gap between the valve seat and seat area of the throttle body, thus opens the supplemental air passage.

When the engine oil temperature is less than 90°C/194°F and starting the engine, the solenoid valve is operated.
The duration of the valve operation is determined by the internal timer in the ECM, which is controlled according to the engine temperature information detected by the EOT/ECT sensor.
When the engine is adequately warmed up, the internal ground circuit of solenoid coil line shuts down, which stops current in the coil.
In result, as the magnetic force of the solenoid valve disappears, the valve seat is returned to its original position by force of the spring, closing the supplemental air passage.