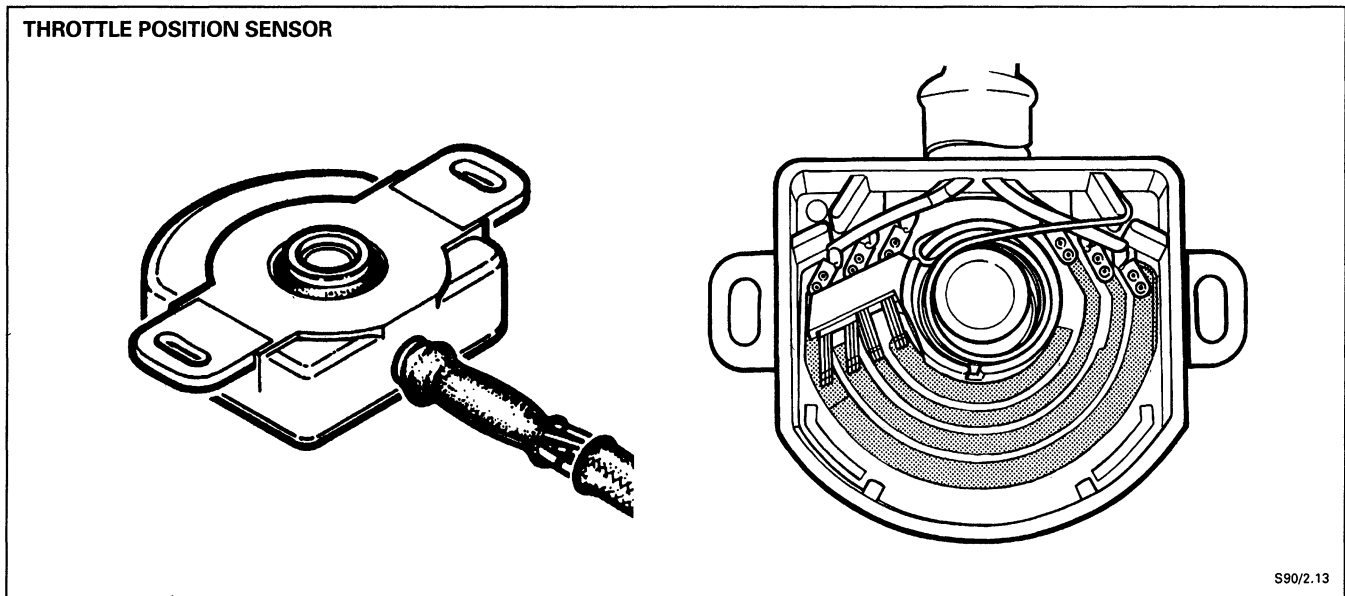


Throttle Position Sensor

The throttle position sensor is a twin track design containing two separate potentiometer tracks with wipers driven by a common spindle. The sensor is mounted on the throttle housing with the spindle connected to the throttle shaft. One potentiometer track is used by the engine management system; the other track is used by the transmission control system. Both potentiometers have the same resistance, voltage and angle of rotation characteristics. The range of resistance is approximately 500 ohms to 5.5 kilo ohms. The throttle position sensor provides a voltage signal to the ECM that indicates throttle position and movement. The theoretical full range of the signal is 0 to 5 volts.

The throttle position sensor output relative to the throttle valve position is set at closed throttle using JDS or PDU. The ECM software function that recognizes closed throttle is "adaptive" and will "learn" that voltage in a range from 0.25 to 0.75 volts is the closed throttle position. However, to avoid the ECM having to relearn the idle setting each time the battery is disconnected, the idle voltage should be set very close to 0.6 volts.



The ECM uses the voltage signal provided by the sensor for a number of ECM functions:

Throttle Position	ECM Function
Throttle closed (signal 0.25 – 0.75 volts)	Idle speed control function Ignition idle strategy Overrun fuel cut-off Idle fuel trim (adjustable mass air flow sensor potentiometer only) Adaptive idle fueling trim
Part throttle (signal above closed throttle voltage and below full throttle voltage)	Main fuel metering strategy Main ignition strategy EGR enabled
Opening throttle (signal voltage increasing)	Acceleration enrichment
Closing throttle (signal voltage decreasing)	Deceleration leaning
Full throttle (signal greater than 3 volts)	Full load enrichment (load dependent)

NOTE: Other sensor inputs are required for the initiation of most of the above listed ECM functions.