Electronic Accelerator Pedal

Turbo diesel models are equipped with an electronic accelerator pedal assembly (AM General P/N 6007221). The assembly consists of a pedal and arm, mounting bracket, and potentiometer module.
The pedal assembly mounts in a conventional location. The pedal potentiometer module contains three potentiometers that send varying voltage signals to the PCM. By comparing the different voltage signals against a standard, the PCM can determine fuel delivery rate based on accelerator pedal position.

A “check throttle” warning light is used to alert the driver of a problem with the pedal assembly. Some faults in the pedal potentiometer module or related wiring will trigger the check throttle warning light. The light is located in the status center. Some faults will cause loss of cruise control only and multiple faults in the APP circuit can result in decreased performance or engine idle only.

POWERTRAIN CONTROL MODULE (PCM)
The PCM controls operation of all of the engine and transmission outputs. It is on a bracket attached to floor under the center console. The data link connector is the access point for the scan tool. The connector is under the instrument panel at the left side of the steering column. It is a multi-pin connector with integral mounting bracket.

Signal inputs used by the PCM include:
- Coolant temperature
- Intake air temperature
- Boost/baro pressure
- Optical/fuel temperature sensor
- Crankshaft position sensor
- Accelerator pedal position sensors (APP)
- Cruise control
- A/C request
- Vehicle speed sensor
- Automatic transmission fluid pressure manual valve position switch
- Transmission input speed sensor
- Transfer case low range switch
- Transmission fluid temperature sensor
- Diagnostic request
Electronic Accelerator Pedal Tests
The pedal module contains three potentiometer-type sensors that provide voltage signals to the PCM. Each potentiometer is scaled differently to provide varying voltage signals. The PCM compares the voltage variance between them to determine throttle position (Figure 3-22).

A fault in only one of the potentiometer sensors will not cause a trouble code to set. Two or more sensors must develop a fault before the check throttle light will illuminate.

A fault in two sensors will cause the warning light to illuminate and engine power will be limited by the PCM. A fault in all three sensors, will cause the PCM to illuminate the light and limit engine speed idle rpm only.

Trouble codes will set under the following circumstances:

- Two sensors generate voltage of 4.75 volts or more for a minimum of two seconds.
- Two sensors generate a voltage of 0.25 volts or less for a minimum of two seconds.
- Voltage difference between sensors 1 and 2 of 6% or more.
- Voltage difference of 10% or more, between sensors 1, 2, and 3.
- Fault in all three sensors (above or below normal signal voltage).

The Tech 1 scan tool is required for accurate sensor diagnosis. However, the sensor circuit wires can be tested for shorts, opens, grounds with 12 volt test lamp and/or multimeter.

Figure 3-22
Figure 5-24: Transmission Wiring Diagrams 3 of 6