TT417: Cruise Control Diagnostics

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Electrical

APPLIES TO	SYMPTOMS
2008-later Touring	• Intermittent or Erratic Electrical Operation

Cruise Control Diagnostics

This Tech Tip will help you become more familiar with cruise control function and diagnostics on 2008-later Touring Models. The Electronic Diagnostic manual should also be used when studying and diagnosing cruise control related issues. The Digital Technician II is a great tool for diagnosing cruise control. ECM data items include all inputs necessary for cruise operation. A road test recording is a great place to start diagnosing any cruise control concern.

The following are the components that are involved in cruise operation:

- Integrated ECM and Cruise Module
- Throttle Control Actuator
- Sensors and Switches: TGS, Cap/Nacelle, VSS, Set/Resume, CKP, Brake, Clutch, TPS

The importance and utility of each of these parts can be seen by understanding what information the ECM needs in order to enable, engage, and cancel cruise.

Cruise Enable

To enable cruise and turn on the red cruise indicator on the tachometer, the ECM only needs to see power on the R/GN wire from the cruise ON/OFF switch. When the ECM receives this 12V switch power, a J1850 signal is sent to the tachometer to illuminate the red light indicating that the cruise is enabled.

NOTE

The cruise control will not enable unless cruise is enabled on the DT II. This can be verified on the Vehicle Set-Up page.

Cruise Engage

The cruise control will only engage if the following conditions are met:

- Cruise control must be enabled
- The ECM must receive battery voltage from the set switch
- None of the cruise cancel requests are present
- Vehicle must be above 30 MPH but below 80 MPH
- Engine speed must be above 1200 RPM but below 5000 RPM
- Must be in or above third gear.

Cruise Disengage/Cancel

The following Cruise Drop-out Requests are items that will cause the ECM to disengage cruise control:

- Cruise over/under target speed
- Both the SET/COAST and the RESUME/ACCELERATE switches are pressed at the same time
- Excessive vehicle acceleration rate
- Excessive engine speed acceleration
- Vehicle speed exceeds minimum/maximum cruise speed limit
- Engine speed exceeds minimum/maximum engine speed limit
- Engine run time minimum not met
- Ignition input voltage greater than 16 volts

Rider Drop-out / Cancel Requests

The following Rider Drop-out Requests are common requests to the ECM from the rider to disengage cruise control:

- Brake is applied
- Twist grip roll-off
- Clutch lever is pulled in
- Transmission is in too low a gear or in (N)

NOTE

If the vehicle begins to decelerate while cruise is engaged and the green cruise light is illuminated, the cruise did not cancel. It is possible that the set-resume switch is faulty and bleeding voltage without the switch being depressed.

The table below indicates some of the most common reasons why Cruise will not set.

Cruise Will Not Enable (No Red Light)	Cruise Will Not Engage (No Green Light)
No power to ECM from Cruise on/off switch	Check ALL drop out requests with DT
Cruise function not enabled on DT	Test Set/Res switch, follow P0577 flowcharts