

PINPOINT TEST AJ : THE COMPASS IS INOPERATIVE

Normal Operation and Fault Conditions

See Compass Display. REFER to: Message Center - System Operation and Component Description (413-01 Instrumentation, Message Center and Warning Chimes, Description and Operation) .

If the compass direction message is missing or invalid for 5 seconds or less, the compass displays the last vehicle direction based upon the last known good compass display message received.

If the compass direction message is invalid or missing for more than 5 seconds, the IPC defaults the display to all dashes (--).

Possible Sources

- Communication concern
- APIM concern
- IPC

AJ1 RETRIEVE THE RECORDED DIAGNOSTIC TROUBLE CODES (DTCS) FROM THE APIM (SYNC MODULE) SELF-TEST

- Ignition ON.
- Using a diagnostic scan tool, perform the APIM self-test.

Are any Diagnostic Trouble Codes (DTCs) recorded?

Yes	REFER to: Information and Entertainment System (415-00B Information and Entertainment System - General Information - Vehicles With: SYNC 3, Diagnosis and Testing) .
No	GO to AJ2

AJ2 RETRIEVE THE RECORDED DIAGNOSTIC TROUBLE CODES (DTCS) FROM THE IPC (INSTRUMENT PANEL CLUSTER) SELF-TEST

- Using a diagnostic scan tool, perform the IPC self-test.

Are any Diagnostic Trouble Codes (DTCs) recorded?

Yes	REFER to the IPC DTC Chart.
No	Click here to access Guided Routine (APIM).

PINPOINT TEST AK : THE DTE (DISTANCE TO EMPTY) DISPLAY IS INCORRECT OR FLUCTUATES

NOTE: The DTE display and the fuel gauge both use the fuel level input from the fuel tank to provide their

respective functions. If the fuel gauge doesn't function correctly, both the fuel gauge and the DTE display are affected.

NOTE: The actual DTE can be higher or lower than the DTE displayed in the message center due to changes in driving conditions. It is important to understand how the DTE is calculated and the factors that impact the DTE display when determining how to address any DTE concerns.

NOTE: Even if the fuel economy is relatively constant, the DTE can vary in the short term by up to 50 miles, but is usually within 10 miles.

Normal Operation and Fault Conditions

See DTE /Average Fuel Economy (AFE). REFER to: Message Center - System Operation and Component Description (413-01 Instrumentation, Message Center and Warning Chimes, Description and Operation) .

The DTE is calculated in the IPC using the Running Average Fuel Economy (RAFE), which is the fuel economy over a much longer distance than the Instantaneous Fuel Economy (IFE), and the fuel level input from the fuel sender(s) to determine how many miles the vehicle can be driven based on the remaining fuel in the tank.

The IPC defaults to a base programmed fuel economy when the battery is initially connected and adjusts upward or downward based on driving habits and conditions.

Since the DTE is calculated and averaged over a longer period of time, varying driving conditions can have a significant impact on the current or short term DTE as opposed to the displayed DTE . This difference often leads to customer complaints of incorrect or invalid DTE .

The following list provides some (not all) of the driving conditions that may lead to an incorrect or fluctuating DTE concern:

- Changing between towing/not towing
- Changing driving between city and highway
- Allowing the vehicle to idle for long periods of time
- Using the remote start feature (if equipped) frequently or allowing the vehicle to warm up, particularly when parked on a grade
- Parking or driving on grades
- Not using a type of fuel consistently
- Over-fueling or not filling the tank completely (partial refueling)

To better illustrate the affects of how driving conditions can affect DTE , please refer to the examples below.

The example below illustrates how the following observations are normal and expected since the low fuel reminder is triggered from a fuel volume and not from a fixed distance to empty.

If while driving, the low fuel reminder (low fuel indicator and low fuel warning message) displays when the DTE equals 94.4 km (59 miles) and the driver adds 11.36 L (3 gallons) of fuel, the new DTE may become 124.8 km (78 miles). After continued driving, the low fuel reminder may now display when the DTE equals 83.2 km (52 miles).

The next example (below) illustrates what occurs when idling on an incline. In this example, the customer should be made aware of how the condition will correct after a few minutes of idling on a level surface.

If the customer stops and parks the vehicle on an incline in a driveway, then in the morning remote starts the vehicle, allowing the engine to idle, the DTE may now equal 184 km (115 miles). As the customer drives, the low fuel reminder displays when the DTE equals 148.8 km (93 miles). Finally, after 5 more minutes of driving,

the DTE is back to 80 km (50 miles).

In this example, the fuel gauge and the DTE display can be out of sync, but self-corrects after several minutes of driving.

Possible Sources

- BCM
- Fuel gauge concern
- Changes in driving conditions such as:
 - towing
 - extended idle times
 - parking on any grades
 - alcohol in the fuel
 - refueling patterns

Visual Inspection and Pre-checks

- Make sure to record the Running Average Fuel Economy (RAFE) prior to disconnecting the battery or removing the IPC fuse. If any of the previous conditions occur, the vehicle must be driven over time to allow the DTE calculations to adjust.

AK1 REVIEW AND INVESTIGATE THE FOLLOWING DRIVING CONDITIONS WITH THE CUSTOMER

- Determine whether the driver changes the following driving conditions:
 - changing between towing/not towing, city/highway driving
 - use of extended idle times
 - use of remote start frequently (if equipped)
 - parking/driving on grades
 - use of E85 fuel exclusively or switching to non-Ethanol fuel
 - over filling the fuel tank or not filling the tank completely (partial refueling)

Does the driver change driving conditions?

Yes	Advise the customer how changing driving conditions can affect the current short-term DTE as opposed to the displayed long-term DTE .
No	GO to AK2

AK2 CHECK THE FUEL GAUGE FOR CORRECT OPERATION

- Ignition ON.
- Verify the fuel gauge is functioning and correctly indicating the remaining fuel level.

Is the fuel gauge operating correctly?

Yes	GO to AK3
No	GO to Pinpoint Test C

This one has wiring checks and has you pull BCM fuse for 1 minute then reinstall, this resets fuel gauge

AK3 RETRIEVE THE RECORDED DIAGNOSTIC TROUBLE CODES (DTCs) FROM THE IPC (INSTRUMENT PANEL CLUSTER) SELF-TEST

- Using a diagnostic scan tool, perform the IPC self-test.

Are any Diagnostic Trouble Codes (DTCs) recorded?

Yes	REFER to the IPC DTC Chart.
No	GO to AK4

AK4 PERFORM THE BCM (BODY CONTROL MODULE) SELF-TEST

- Using a diagnostic scan tool, perform the BCM self-test.

Are any Diagnostic Trouble Codes (DTCs) recorded?

Yes	REFER to: Body Control Module (BCM) (419-10 Multifunction Electronic Modules, Diagnosis and Testing) .
No	The vehicle configuration is most likely incorrect for the fuel tank size. INSTALL As-Built data from PTS following scan tool instructions.

I think you can do this in ForScan

PINPOINT TEST AL : THE OFF ROAD DISPLAY IS INOPERATIVE