WARNING CHIMES > PINPOINT TESTS > PINPOINT TEST C : INCORRECT FUEL GAUGE INDICATION > PINPOINT TEST C : INCORRECT FUEL GAUGE INDICATION

NOTE: Following any fuel gauge repairs, remove BCM fuse 13 (7.5A) for one minute then reinstall to reset the fuel gauge timers.

C1 CARRY OUT THE IPC (INSTRUMENT PANEL CLUSTER) SELF-TEST

Ignition ON.

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

Check for recorded Diagnostic Trouble Codes (DTCs) from the IPC self-test.

Are any Diagnostic Trouble Codes (DTCs) recorded?

Yes	For DTC P0460:11 or P1346:11, GO to C2For DTC P0460:13 or P1346:13, GO to C6For DTC P1243:06, GO to C14

No	GO to C13

C2 CHECK THE FUEL INPUT FOR A SHORT TO GROUND

Ignition OFF.

Disconnect Fuel Pump Assembly C433 (DTC P0460:11).

Disconnect Fuel Level Sensor C4374 (DTC P1346:11).

Ignition ON.

Wait one minute.

NOTE: DTC P0460:11 or P1346:11 can also be present when carrying out this step and should be disregarded at this time.

Using a diagnostic scan tool, repeat the IPC on-demand self-test.

Is DTC P0460:13 or P1346:13 present?

Yes	GO to C16

No	GO to C3

C3 CHECK THE FUEL PUMP ASSEMBLY AND FUEL LEVEL SENSOR SIGNAL CIRCUIT FOR A SHORT TO GROUND AT THE IPC (INSTRUMENT PANEL CLUSTER)

Ignition OFF.

Disconnect IPC C220 .

Measure:

Positive Lead	Measurement / Action	Negative Lead
C220-10 (DTC P0460:11)	Ω	Ground
C220-9 (DTC P1346:11)	Ω	Ground

Are the resistances greater than 10, 000 ohms?

Yes	For DTC P0460:11, GO to C4For DTC P1346:11, GO to C5

No	REPAIR the circuit in question.

C4 CHECK THE FUEL PUMP ASSEMBLY SIGNAL AND RETURN CIRCUITS FOR A SHORT TOGETHER AT THE IPC (INSTRUMENT PANEL CLUSTER)

Measure:

Positive Lead	Measurement / Action	Negative Lead
C220-10	Ω	C220-2

Is the resistance greater than 10, 000 ohms?

Yes	GO to C21

No	REPAIR the circuits.

C5 CHECK THE FUEL LEVEL SENSOR SIGNAL AND RETURN CIRCUITS FOR A SHORT TOGETHER AT THE IPC (INSTRUMENT PANEL CLUSTER)

Measure:

Positive Lead	Measurement / Action	Negative Lead
C220-9	Ω	C220-1

Is the resistance greater than 10, 000 ohms?

Yes	GO to C21

No	REPAIR the circuits.

C6 CHECK THE FUEL PUMP ASSEMBLY OR FUEL LEVEL SENSOR FOR AN OPEN

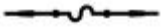
Ignition OFF.

Disconnect Fuel Pump Assembly C433 (DTC P0460:13).

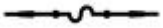
Disconnect Fuel Level Sensor C4374 (DTC P1346:13).

Connect a fused jumper wire:

DTC P0460:13

Lead 1	Measurement / Action	Lead 2
C433-1		C433-2

DTC P1346:13

Lead 1	Measurement / Action	Lead 2
C4374-1		C4374-2

Ignition ON.

Wait one minute.

NOTE: DTC P0460:13 or P1346:13 can also be present when carrying out this step and should be disregarded at this time.

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

Is DTC P0460:11 or P1346:11 present?

Yes	REMOVE the fused jumper wire. GO to C16

No	REMOVE the fused jumper wire. For DTC P0460:13, GO to C7REMOVE the fused jumper wire. For DTC P1346:13, GO to C10

C7 CHECK THE FUEL LEVEL SIGNAL CIRCUIT FOR A SHORT TO VOLTAGE AT THE IPC (INSTRUMENT PANEL CLUSTER)

Ignition OFF.

Disconnect IPC C220 .

Ignition ON.

Measure:

Positive Lead	Measurement / Action	Negative Lead

C220-10	V	Ground

Is any voltage present?

Yes	REPAIR the circuit.

No	GO to C8

C8 CHECK THE FUEL LEVEL SIGNAL CIRCUIT FOR AN OPEN BETWEEN THE IPC (INSTRUMENT PANEL CLUSTER) AND THE FUEL PUMP ASSEMBLY

Ignition OFF.

Measure:

Positive Lead	Measurement / Action	Negative Lead
C220-10	Ω	C433-2

Is the resistance less than 3 ohms?

Yes	GO to C9

No	REPAIR the circuit.

C9 CHECK THE FUEL LEVEL RETURN CIRCUIT FOR AN OPEN BETWEEN THE IPC (INSTRUMENT PANEL CLUSTER) AND THE FUEL PUMP ASSEMBLY

Measure:

Positive Lead	Measurement / Action	Negative Lead
C220-2	Ω	C433-1

Is the resistance less than 3 ohms?

Yes	GO to C21

No	REPAIR the circuit.

C10 CHECK THE FUEL LEVEL SENSOR SIGNAL CIRCUIT FOR A SHORT TO VOLTAGE AT THE IPC (INSTRUMENT PANEL CLUSTER)

Ignition OFF.

Disconnect IPC C220 .

Ignition ON.

Measure:

Positive Lead	Measurement / Action	Negative Lead
C220-9		Ground

Is any voltage present?

Yes	REPAIR the circuit.

No	GO to C11

C11 CHECK THE FUEL LEVEL SENSOR SIGNAL CIRCUIT FOR AN OPEN BETWEEN THE IPC (INSTRUMENT PANEL CLUSTER) AND THE FUEL LEVEL SENSOR

Ignition OFF.

Measure:

Positive Lead	Measurement / Action	Negative Lead
C220-9	Ω	C4374-2

Is the resistance less than 3 ohms?

Yes	GO to C12

No	REPAIR the circuit.

C12 CHECK THE FUEL LEVEL SENSOR RETURN CIRCUIT FOR AN OPEN BETWEEN THE IPC (INSTRUMENT PANEL CLUSTER) AND THE FUEL LEVEL SENSOR

Measure:

Positive Lead	Measurement / Action	Negative Lead
C220-1	Ω	C4374-1

Is the resistance less than 3 ohms?

Yes	GO to C21

No	REPAIR the circuit.

C13 CARRY OUT THE IPC (INSTRUMENT PANEL CLUSTER) FUEL GAUGE ACTIVE COMMAND USING A DIAGNOSTIC SCAN TOOL

Ignition ON.

Using a diagnostic scan tool, view the IPC Parameter Identifications (PIDs).

Select the IPC fuel gauge (FUELLEVEL) active command.

Command the fuel gauge from 0% to 25%, 50%, 75% and 100% while observing the fuel gauge.

Does the fuel gauge begin at E (empty), move to approximately 1/4, 1/2, 3/4 and F (full)?

Yes	GO to C14

No	GO to C21

C14 INSPECT THE FUEL TANK

Visually inspect the fuel tank for any damage or deformation.

Is the fuel tank OK?

Yes	GO to C15

No	INSTALL a new fuel tank. Refer to the appropriate article for the procedure.

C15 INSPECT THE FUEL TANK TRANSFER TUBE CONNECTIONS

Remove the fuel pump assembly and the fuel level sensor. Refer to the appropriate article for the procedure.

Inspect the fuel tank transfer tube, connections, the fuel pump assembly and the fuel level sensor for any damage or deformation.

Are the fuel tank transfer tube, connections, the fuel pump assembly and the fuel level sensor OK?

Yes	For DTC P1243:06, INSTALL a new fuel pump module. Refer to the appropriate article for the procedure. For all other concerns, GO to C16

No	INSTALL a new fuel tank transfer tube, fuel pump assembly or fuel level sensor as necessary. Refer to the appropriate article for the procedure.

C16 CHECK THE FUEL PUMP ASSEMBLY AND FUEL LEVEL SENSOR

Disconnect and inspect the fuel pump assembly and fuel level sensor connectors.

Repair:

corrosion (install new connector or terminals-clean module pins)

damaged pins-install new terminals/pins

pushed-out pins-install new pins as necessary

Reconnect the fuel pump assembly and fuel level sensor connectors. Make sure they seat and latch correctly.

Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	GO to C17

No	The system is operating correctly at this time. The concern may have been caused by component connections. ADDRESS the root cause of any connector or pin issues.

C17 CHECK THE FUEL PUMP ASSEMBLY AND FUEL LEVEL SENSOR

Remove the fuel pump assembly or fuel level sender. Refer to the appropriate article for the procedure.

NOTE: The fuel resistance measures between 10 ohms ± 2 ohms at the upper stop position and 180 ohms ± 4 ohms at the lower stop position.

Measure the resistance between the fuel level sender (float and card) input wire and the fuel level sender (float and card) ground while slowly moving the float arm between the lower and upper stop position.

Fuel Pump Assembly

Positive Lead	Measurement / Action	Negative Lead
Fuel Pump Assembly (Component Side) - Pin 1	Ω	Fuel Pump Assembly (Component Side) - Pin 2

Fuel Level Sensor

Positive Lead	Measurement / Action	Negative Lead
Fuel Level Sensor (Component Side) - Pin 1	Ω	Fuel Level Sensor (Component Side) - Pin 2

Does the resistance slowly decrease from approximately 180 ohms at the lower stop to 10 ohms at the upper stop?

Yes	GO to C19

No	GO to C18

C18 CHECK THE FUEL PUMP ASSEMBLY AND THE FUEL LEVEL SENSOR FOR CORRECT OPERATION

Remove the fuel pump assembly or fuel level sensor. Refer to the article for the procedure.

Disconnect the fuel level sender (float and card) input wire from the fuel pump assembly or fuel level sensor.

> *NOTE: The fuel resistance measures between 10 ohms ± 2 ohms at the upper stop position and 180 ohms ± 4 ohms at the lower stop position.*

Measure the resistance between the fuel level sender (float and card) input wire and the fuel level sender (float and card) ground while slowly moving the float arm between the lower and upper stop position.

Positive Lead	Measurement / Action	Negative Lead
Fuel Level Sensor - Pin 1	Ω	Fuel Level Sensor - Pin 2

Does the resistance slowly decrease from approximately 180 ohms at the lower stop to 10 ohms at the upper stop?

Yes	INSTALL a new fuel pump assembly or fuel level sensor. Refer to the appropriate article for the procedure.

No	INSTALL a new fuel level sender (float and card). Refer to the appropriate article for the procedure.

C19 CHECK THE FUEL PUMP ASSEMBLY SIGNAL AND RETURN CIRCUITS FOR HIGH RESISTANCE

Ignition OFF.

Disconnect IPC C220 .

Connect a fused jumper wire:

Lead 1	Measurement / Action	Lead 2
C433-1		C433-2

Measure:

Positive Lead	Measurement / Action	Negative Lead
C220-10	Ω	C220-2

Is the resistance less than 3 ohms?

Yes	REMOVE the fused jumper wire. GO to C20

No	REMOVE the fused jumper wire. REPAIR the circuits for high resistance.

C20 CHECK THE FUEL LEVEL SENSOR SIGNAL AND RETURN CIRCUITS FOR HIGH RESISTANCE

Ignition OFF.

Connect a fused jumper wire:

Lead 1	Measurement / Action	Lead 2
C4374-1		C4374-2

Measure:

Positive Lead	Measurement / Action	Negative Lead
C220-9	Ω	C220-1

Is the resistance less than 3 ohms?

Yes	GO to C21

No	REMOVE the fused jumper wire. REPAIR the circuits for high resistance.

C21 CHECK FOR CORRECT IPC (INSTRUMENT PANEL CLUSTER) OPERATION

Ignition OFF.

Disconnect and inspect IPC connector.

Repair:

corrosion (install new connector or terminals - clean module pins)

damaged or bent pins - install new terminals/pins

pushed-out pins - install new pins as necessary

Reconnect the IPC connector. Make sure it seats and latches correctly.

Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	CHECK OASIS for any applicable Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW TSB instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new IPC. REFER to: Instrument Panel Cluster (IPC) .