Instrumentation, Message Center and Warning Chimes

Pinpoint Tests

Pinpoint Test BD: DTC B1555, DTC B2A20 or DTC U2472

Refer to Wiring Diagram Set 60, Instrument Cluster for schematic and connector information. See: Diagrams\Electrical\Diagrams By Number

Normal Operation

With the ignition switch in the START or RUN position, the Instrument Cluster (IC) receives voltage from the Smart Junction Box (SJB) through circuit CBP36 (BU/BN). With the ignition switch in the OFF position, the IC receives its keep-alive voltage from the SJB through circuit SBP26 (YE/RD). The IC also monitors the ignition switch position data received from the SJB over the Medium Speed Controller Area Network (MS-CAN) communication bus.

- DTC B1555 (Ignition Run/Start Circuit Failure) - an on-demand DTC that sets in the IC when the SJB messaged ignition state indicates the ignition is in OFF/ACC and the hardwired RUN/START input indicates RUN/START for more than 5 seconds.
- DTC B2A20 (Ignition Stuck in START) - a continuous memory DTC that sets in the IC when the IC detects the SJB messaged ignition state in START for greater than 15 seconds.
- DTC U2472 (Unexpected Ignition State) - a continuous and on-demand DTC that sets in the IC when the cluster detects a discrepancy between the hardwired voltage input and the messaged ignition state inputs from the SJB. The SJB messaged input indicates RUN while the hardwired input indicates RUN/START for more than 5 seconds.

This pinpoint test is intended to diagnose the following:

- Fuse(s)
- Wiring, terminals or connectors
- IC

PINPOINT TEST BD: DTC B1555, DTC B2A20 OR DTC U2472

NOTICE: Use the correct probe adapter(s) when making measurements. Failure to use the correct probe adapter(s) may damage the connector.

BD1 RETRIEVE THE RECORDED DTCs FROM THE IC SELF-TEST

- Check for recorded IC DTCs from the self-test.
- **Is DTC B2A20 recorded?**

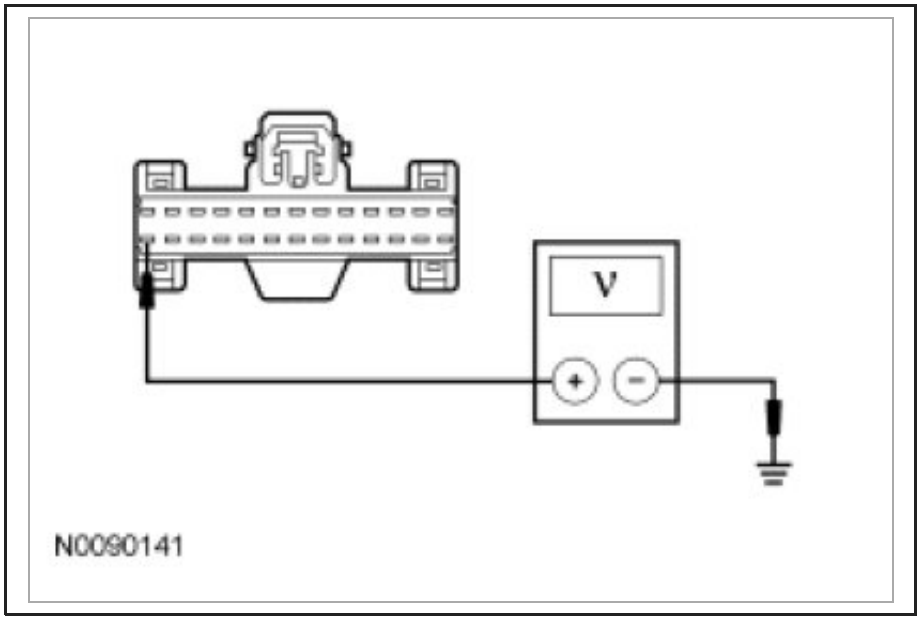
Yes
GO to BD3.

No

GO to BD2.

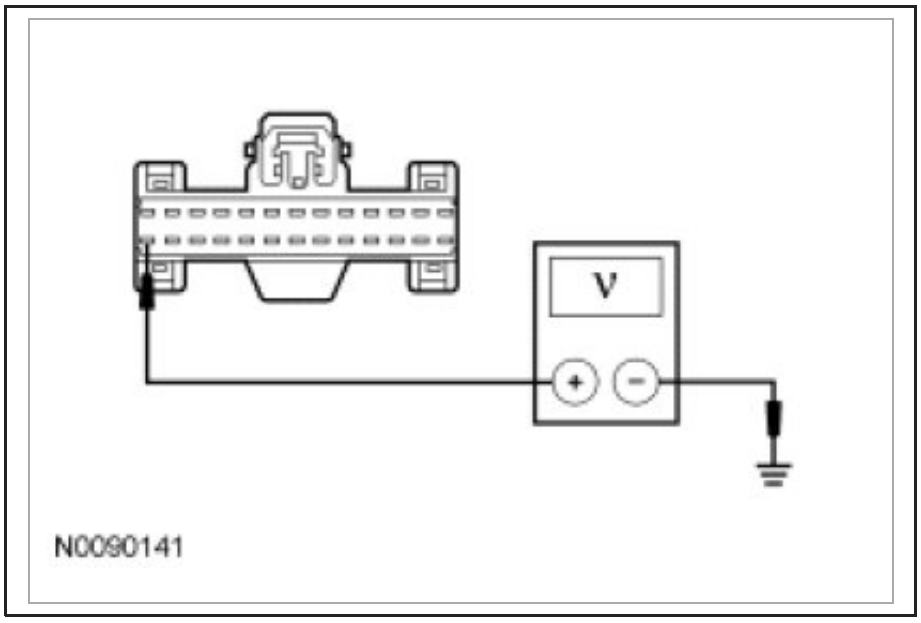
BD2 CHECK THE IC RUN/START VOLTAGE SUPPLY

- Ignition OFF.
- Measure the voltage between the IC C220-26, circuit CBP36 (BU/BN), harness side and ground.



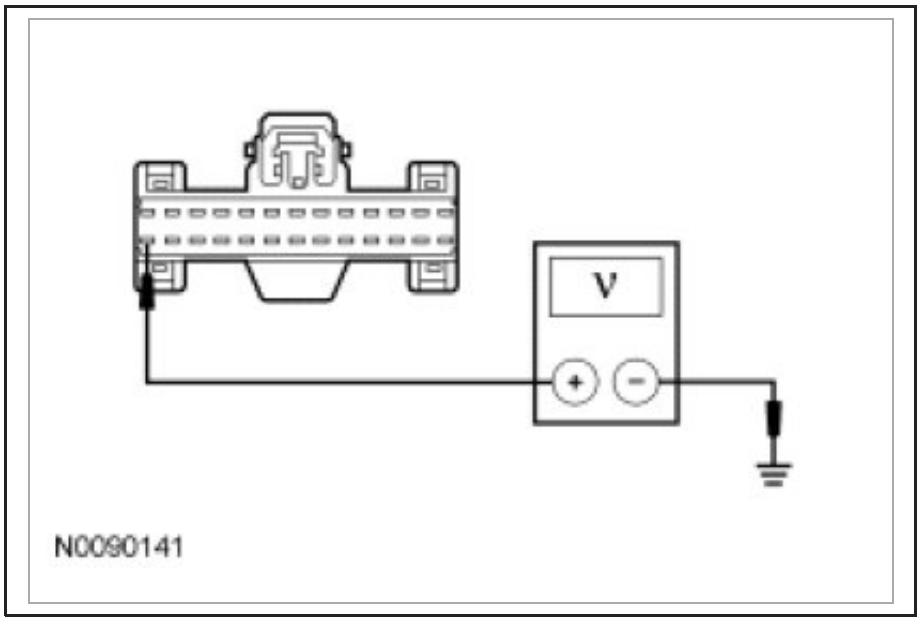
Zoom | Sized for Print

- Ignition ON.
- Measure the voltage between the IC C220-26, circuit CBP36 (BU/BN), harness side and ground.



Zoom Sized for Print

- Ignition OFF.
- Remove the PCM power relay.
- Place the ignition in the START position.
- Measure the voltage between the IC C220-26, circuit CBP36 (BU/BN), harness side and ground.



Zoom Sized for Print

- **Is the voltage 0 volts in the OFF position and greater than 10 volts in the RUN and START positions?**

Yes
REINSTALL the PCM power relay.

For DTC U2472 or B2A20 only, GO to BD3.

For both B1555 and U2472 together, INSTALL a new IC. REFER to Instrument Cluster (IC) See: Instrument Cluster / Carrier\Service and Repair\Instrument Cluster\Instrument Cluster (IC). TEST the system for normal operation.

No
REINSTALL the PCM power relay. CLEAR the DTCs. REPEAT the self-test.

BD3 CHECK THE SJB INPUT PIDs FROM THE IGNITION SWITCH

- Ignition ON.
- Enter the following diagnostic mode on the scan tool: SJB DataLogger.
- Select the SJB ignition switch ACC (IGN_A_ECU), ignition switch OFF (IGN_O_ECU), ignition switch RUN (IGN_R_ECU), and ignition switch START (IGN_S_ECU) PIDs. Monitor the ignition switch PIDs while cycling the

ignition switch from ACC, OFF, RUN and START.

- **Do the SJB PIDs match the ignition switch position?**

Yes

GO to BD4.

No

REFER to Steering Column to diagnose the ignition switch outputs to the SJB. See: Steering and Suspension\Steering\Steering Column\Testing and Inspection

---

BD4 CHECK THE IC DTCs

- Enter the following diagnostic mode on the scan tool: IC Self-Test.
- Repeat the IC self-test. Clear the DTCs.
- **Is DTC B1555, B2A20 or U2472 still present?**

Yes

INSTALL a new SJB. TEST the system for normal operation.

No

The system is operating correctly at this time. The DTC may have been set due to high network traffic.