DIAGNOSIS AND TESTING - INSTRUMENT CLUSTER

WARNING: To avoid serious or fatal injury on vehicles equipped with airbags, disable the Supplemental Restraint System (SRS) before attempting any steering wheel, steering column, airbag, seat belt tensioner, impact sensor or instrument panel component diagnosis or service. Disconnect and isolate the battery negative (ground) cable, then wait two minutes for the system capacitor to discharge before performing further diagnosis or service. This is the only sure way to disable the SRS. Failure to take the proper precautions could result in accidental airbag deployment.

If all of the Instrument Panel Cluster (IPC) gauges and indicators are ineffective, be certain to check the IPC fused B(+) fuse and the IPC fused B(+) and ground circuits for shorts or opens. Refer to the appropriate wiring information. The wiring information includes wiring diagrams, proper wire and connector repair procedures, details of wire harness routing and retention, connector pin-out information and location views for the various wire harness connectors, splices and grounds. The wiring information includes wiring diagrams, details of wire harness routing and retention, connector pin-out information and location views for the various wire harness connectors, splices and grounds. For proper wire repair, (Refer to 29 - Non-DTC Diagnostics/Circuit Testing Procedures/Standard Procedure) and connector repair procedures, (Refer to 29 - Non-DTC Diagnostics/Circuit Testing Procedures/Removal) and (Refer to 29 - Non-DTC Diagnostics/Circuit Testing Procedures/Installation).

If an individual hard-wired gauge or indicator is ineffective, refer to the diagnosis and testing service information for that specific gauge or indicator. If an individual Controller Area Network (CAN) data bus message-controlled gauge or indicator is ineffective, perform the Self-Diagnostic Test.

CAUTION: Instrument clusters used in this vehicle automatically configure themselves for compatibility with the features and optional equipment in the vehicle in which they are initially installed. The instrument cluster is programmed to do this by embedding the Vehicle Identification Number (VIN) and other information critical to proper cluster operation into electronic memory. This embedded information is learned through electronic messages received from other electronic modules in the vehicle over the Controller Area Network (CAN) data bus and through certain hard-wired inputs received when the cluster is connected to the vehicle electrically. Once configured, the instrument cluster memory may be irreparably damaged and certain irreversible configuration errors may occur if the cluster is connected electrically to another vehicle; or, if an electronic module from another vehicle is connected that provides data to the instrument cluster (including odometer values) that conflicts with that which was previously learned and stored. Therefore, the practice of exchanging (swapping) instrument clusters and other electronic modules in this vehicle with those removed from another vehicle must always be avoided. Failure to observe this caution may result in instrument cluster damage, which is not reimbursable under the terms of the product warranty. Service replacement instrument clusters are provided with the correct VIN and the certified odometer values embedded into cluster memory, but will otherwise be automatically configured for compatibility with the features and optional equipment in the vehicle in which they are initially installed.

NOTE: Certain indicators in this instrument cluster are automatically configured. This feature allows those indicators to be activated or deactivated for compatibility with certain optional equipment. If the problem being diagnosed involves improper illumination of an indicator for equipment options the vehicle does not have, disconnect and isolate the battery negative cable. After about five minutes, reconnect the battery negative cable and turn the ignition switch to the ON position. The instrument cluster should automatically relearn the equipment in the vehicle and properly configure the indicators accordingly.

SELF TEST

The self-diagnostic test will put the IPC into its test mode. In this mode the IPC can perform an actuator test that will confirm that the circuitry, the gauges and the indicators are capable of operating as designed. During the test the IPC circuitry will position each of the gauge needles at various calibration points, illuminate each of the segments in the Thin Film Transistor (TFT) display unit and turn all of the indicators ON and OFF again.

Successful completion of the self-diagnostic test will confirm that the IPC is operational. However, there may still be a problem with the Controller Area Network (CAN) data bus or another electronic control module that provides electronic message inputs to the IPC, or the inputs to one of these electronic control modules. Use a diagnostic scan tool to diagnose these components. Refer to the appropriate diagnostic information.

1. Begin the test with the ignition switch in the OFF position.
2. Depress the Electronic Vehicle Information Center (EVIC) **Down / Scroll** switch button on the left steering wheel spoke.
3. While still holding the **Down / Scroll** switch button depressed, turn the ignition switch to the ON position, but do not start the engine.
4. Release the **Down / Scroll** switch button.
5. The IPC will simultaneously begin to illuminate all of the operational segments in the TFT display unit and perform a bulb check of each operational Light Indicating Diode (LED) unit indicator. The TFT display segments and LED unit indicators remain illuminated as each gauge needle is swept to several calibration points and back. If a TFT display segment or an LED unit indicator fails to illuminate, or if a gauge needle fails to sweep through the calibration points and back during this test, the IPC must be replaced.
6. The self-diagnostic test is now complete. The IPC will automatically exit the self-diagnostic test mode and return to normal operation at the completion of the test. The self-diagnostic test will be aborted if the ignition switch is turned to the OFF position, or if an electronic **vehicle speed** message indicating that the vehicle is moving is received over the CAN data bus during the test.
7. Repeat the test, if necessary.