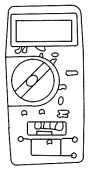
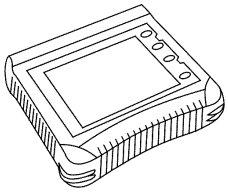
DIAGNOSIS AND TESTING

Audio System

Refer to Wiring Diagrams Cell 130 for schematic and connector information.

Special Tool(s)

 ST1137-A	73III Automotive Meter 105-R0057 or equivalent
 ST2332-A	Worldwide Diagnostic System (WDS) Vehicle Communication Module (VCM) with appropriate adapters, or equivalent diagnostic tool

Inspection and Verification

1. Verify the customer concern.
2. Visually inspect the following for obvious signs of mechanical or electrical damage.

Visual Inspection Chart

Mechanical	Electrical
• Audio unit • Antenna or antenna cable(s) • Speakers, mounting/speaker cones • Radio ignition interference capacitors, radio frequency interference suppression bond, and radio receiver hood bonding strap • Subwoofers, speakers/mounting	• Smart junction box (SJB) fuse(s): — 6 (5A) (audio unit) — 20 (10A) (audio unit) • Bussed electrical center (BEC) fuse(s): — 5 (30A) (luggage compartment amplifiers) — 8 (30A) (luggage compartment amplifiers) — 14 (30A) (door amplifiers) — 56 (20A) (audio unit) • Circuitry

3. If an obvious cause for an observed or reported concern is found, correct the cause (if possible) before proceeding to the next step.
4. If the cause is not visually evident, connect the diagnostic tool to the data link connector (DLC) and select the vehicle to be tested from the diagnostic tool menu. If the diagnostic tool does not communicate with the vehicle:
   - check that the program card is correctly installed.
   - check the connections to the vehicle.
   - check the ignition switch position.
5. If the diagnostic tool still does not communicate with the vehicle, refer to the diagnostic tool operating manual.
6. Carry out the diagnostic tool data link test. If the diagnostic tool responds with:
   - CAN circuit fault; all electronic control units no response/not equipped, refer to Section 418-00.
   - No response/not equipped for the audio unit, GO to Pinpoint Test A.
   - **NOTE:** Do not press any buttons on the audio unit while the audio unit is carrying out the self-test.

     System passed, retrieve and record the continuous diagnostic trouble codes (DTCs), erase the continuous DTCs, and carry out self-test diagnostics for the audio unit.
7. If the DTCs retrieved are related to the concern, go to Audio Control Module Diagnostic Trouble Code (DTC) Index.
8. If no DTCs related to the concern are retrieved, and the concern is not visually evident, proceed to the Speaker Walk-Around Test and the Audio Unit Self-Diagnostic Mode.

Speaker Walk-Around Test

NOTE: To enter the speaker walk-around test or audio unit self-diagnostic mode, the audio unit must be turned on and in radio tuner mode (AM/FM).

1. To enter the speaker walk-around test, simultaneously press and hold the audio unit preset buttons 3 and 6.
2. The speaker walk-around test applies sound to each speaker for about 1 to 2 seconds. Each speaker is tested and displayed on the audio unit in the following sequence: RF, LF, LR, RR, and SUBWOOFER.

DIAGNOSIS AND TESTING (Continued)

3. To exit the speaker walk-around test, turn the ignition switch off, turn the audio unit off, or press preset button 1 for DIA.

Audio Unit Self-Diagnostic Mode

NOTE: To enter the speaker walk-around test or the audio unit self-diagnostic mode, the audio unit must be turned on and in radio tuner mode (AM/FM).

1. To enter the following tests, press the desired preset button while in the speaker walk-around test or while in the audio unit self-diagnostic mode.
2. To exit the audio unit self-diagnostic mode, turn the ignition switch or the audio unit off.
3. If the concern remains and the fault is not detected, GO to Symptom Chart.
4. The self-diagnostic mode has 6 manual tests available:
   - Preset button 1 = ENTER DIAGNOSTICS. This test enters the audio self-test from the speaker walk-around test. Press the tune > button after the audio self-test to display the diagnostic trouble codes.
   - Preset button 2 = View continuous DTCs. Press the tune > button to scroll through the DTCs.
   - Preset button 3 = SIGNAL STRENGTH.
   - Preset button 4 = Software configuration level. This test queries each radio system controller for its software configuration level. Press the tune > button to scroll through the software levels.
   - Preset button 5 = DISPLAY TEST. This test lights all the display segments for 5 seconds and then turns all segments off.
   - Preset button 6 = MODULE CONFIGURATION. Press the tune > button to scroll through the configuration list.
5. To exit the self-diagnostic mode, turn the ignition switch off or the audio unit off.
6. If the concern remains and the fault is not detected, GO to Symptom Chart.

DIAGNOSIS AND TESTING (Continued)

Audio Unit Diagnostic Trouble Code (DTC) Index

DTC	Description	Source	Action
B1317	Battery Voltage High	Audio Unit	DOCUMENT and CLEAR the DTCs. REPEAT the audio unit self-test. If DTC B1317 is retrieved again, REFER to Section 414-00 to continue diagnosis of the charging system. CLEAR the DTCs. REPEAT the self-test.
B1318	Battery Voltage Low	Audio Unit	DOCUMENT and CLEAR the DTCs. REPEAT the audio unit self-test. If DTC B1318 is retrieved again, REFER to Section 414-00 to continue diagnosis of the charging system. CLEAR the DTCs. REPEAT the self-test.
B1342	ECU is Faulted	Audio Unit	DOCUMENT and CLEAR the DTCs. REPEAT the audio unit self-test. If DTC B1342 is retrieved again, REMOVE the audio unit. REFER to Section 415-01. SEND it to an authorized repair facility. REPEAT the self-test after the repair.
B2405	Audio Disc CD Player Thermal Shutdown Fault	Audio Unit	Allow the unit to cool - Disregard.

DIAGNOSIS AND TESTING (Continued)

Audio Unit Diagnostic Trouble Code (DTC) Index (Continued)

DTC	Description	Source	Action
B2406	Audio Disc CD Player Internal Fault	Audio Unit	DOCUMENT and CLEAR the DTCs. REPEAT the audio unit self-test. If DTC B2406 is retrieved again, REMOVE the audio unit. REFER to Section 415-01. SEND it to an authorized repair facility. REPEAT the self-test after the repair.
B2477	Module Configuration Failure	Audio Unit	REFER to Section 418-01.
B2924	Audio Button Stuck	Audio Unit	DOCUMENT and CLEAR the DTCs. REPEAT the audio unit self-test. If DTC B2924 is retrieved again, REMOVE the audio unit. REFER to Section 415-01. SEND it to an authorized repair facility. REPEAT the self-test after the repair.
B2965	Audio System Speaker Circuit Fault	Audio Unit	GO to Pinpoint Test D.
U0073	Control Module Communication BUS Off	Audio Unit	REFER to Section 418-00.
U1900	CAN Communication BUS Fault - Receiver Error	Audio Unit	REFER to Section 418-00.

Symptom Chart

Symptom Chart

Condition	Possible Sources	Action
• No communication with the audio unit	• Circuitry • Audio unit	• GO to Pinpoint Test A.
• The audio unit is inoperative/does not operate correctly	• Circuitry • Audio unit	• GO to Pinpoint Test B.
• Poor reception	• Antenna • Antenna connections • Noise suppression equipment • Audio unit	• GO to Pinpoint Test C.

DIAGNOSIS AND TESTING (Continued)

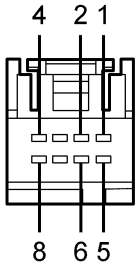
Symptom Chart (Continued)

Condition	Possible Sources	Action
• Continuous SEEK/SCAN in AM/FM	• Antenna • Antenna connections • Noise suppression equipment • Audio unit	• GO to Pinpoint Test C.
• Poor quality/distorted sound from one or more speakers (not all speakers)	• Speaker(s) • Circuitry • Audio unit	• GO to Pinpoint Test D.
• Poor quality/distorted sound from all speakers	• Antenna • Antenna connections • Audio unit	• GO to Pinpoint Test E.
• No sound from one or more of the speakers (not all speakers)	• Speaker(s) • Circuitry • Audio unit	• GO to Pinpoint Test D.
• No sound from all speakers	• Circuitry • Audio unit	• REMOVE the audio unit. REFER to Section 415-01. SEND it to an authorized repair facility. TEST the system for normal operation after the repair.
• The subwoofer is inoperative	• Circuitry • Audio unit • Subwoofer amplifier	• GO to Pinpoint Test F.
• Loud popping sound when cycling the ignition switch	• Circuitry • Audio unit • Subwoofer amplifier(s)	• GO to Pinpoint Test G.
• Audio unit illumination is inoperative.	• Circuitry • Audio unit	• REFER to Section 413-00 for diagnosis of the instrument cluster and panel illumination.
• The vehicle speed sensitive volume feature does not operate correctly.	• Audio unit • Medium speed - controller area network (CAN) communication network	• REFER to Section 418-00 for diagnosis of the CAN communication network. If the CAN passes the diagnosis, REMOVE the audio unit. REFER to Section 415-01. SEND the audio unit to an authorized repair facility. TEST the system for normal operation after the repair.

DIAGNOSIS AND TESTING (Continued)

Connector Circuit Reference

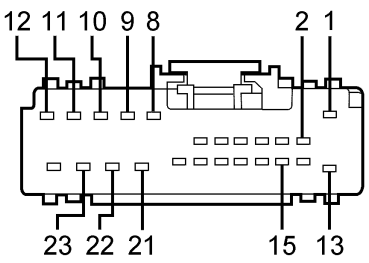
Audio Unit C290b



N0009037

Pin Number(s)	Circuit Designation/Description	Normal Condition/Measurement
1	167 (BN/OG) audio unit output to front subwoofer amplifiers	Less than 5 ohms between the audio unit and the front subwoofer amplifiers. Greater than 10,000 ohms between the audio unit and ground with the front subwoofer amplifiers disconnected.
2	168 (RD/BK) audio unit return from the front subwoofer amplifiers	Less than 5 ohms between the audio unit and the subwoofer amplifier. Greater than 10,000 ohms between the audio unit and ground with the front subwoofer amplifiers disconnected.
4	173 (DG/VT) audio unit front subwoofers enable/clip	Less than 5 ohms between the audio unit and the front subwoofer amplifiers. Greater than 10,000 ohms between the audio unit and ground with the front subwoofer amplifiers disconnected.
5	176 (PK/LG) audio unit output to rear subwoofer amplifiers	Less than 5 ohms between the audio unit and the rear subwoofer amplifiers. Greater than 10,000 ohms between the audio unit and ground with the rear subwoofer amplifiers disconnected.
6	179 (OG/RD) audio unit return from the rear subwoofer amplifiers	Less than 5 ohms between the audio unit and the rear subwoofer amplifiers. Greater than 10,000 ohms between the audio unit and ground with the rear subwoofer amplifiers disconnected.
8	174 (GY/BK) audio unit rear subwoofers enable/clip	Less than 5 ohms between the audio unit and the rear subwoofer amplifiers. Greater than 10,000 ohms between the audio unit and ground with the rear subwoofer amplifiers disconnected.

Audio Unit C290d



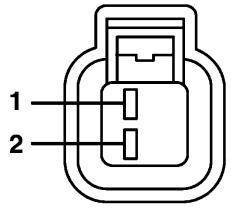
N0012339

DIAGNOSIS AND TESTING (Continued)

Pin Number(s)	Circuit Designation/Description	Normal Condition/Measurement
1	797 (LG/VT) B+ battery feed (hot at all times)	Greater than 10 volts between the audio unit and ground. Greater than 10,000 ohms between the audio unit and ground.
2	687 (GY/YE) B+ feed with the key in the ON and ACC positions	Greater than 10 volts between the audio unit and ground with the ignition switch in the ON or ACC positions. Greater than 10,000 ohms between the audio unit and ground.
8	1723 (OG/LG) LH front speaker output	Less than 5 ohms between the audio unit and the speaker. Greater than 10,000 ohms between the audio unit and ground.
9	1726 (GY/LB) LH rear speaker output	Less than 5 ohms between the audio unit and the speaker. Greater than 10,000 ohms between the audio unit and ground.
10	1781 (OG/RD) RH rear speaker output	Less than 5 ohms between the audio unit and the speaker. Greater than 10,000 ohms between the audio unit and ground.
11	1778 (WH/LG) RH front speaker output	Less than 5 ohms between the audio unit and the speaker. Greater than 10,000 ohms between the audio unit and ground.
12	1777 (DG/OG) RH front speaker return	Less than 5 ohms between the audio unit and the speaker. Greater than 10,000 ohms between the audio unit and ground.
13	1204 (BK/OG) audio unit ground	Less than 5 ohms between the audio unit and ground.
15	1000 (RD/BK) audio unit ignition START audio inhibit.	Greater than 10 volts with the ignition switch in the START position. Greater than 10,000 ohms between the audio unit and ground.
21	1722 (LB/WH) LH front speaker return	Less than 5 ohms between the audio unit and the speaker. Greater than 10,000 ohms between the audio unit and ground.
22	1725 (TN/YE) LH rear speaker return	Less than 5 ohms between the audio unit and the speaker. Greater than 10,000 ohms between the audio unit and ground.
23	1780 (BN/PK) RH rear speaker return	Less than 5 ohms between the audio unit and the speaker. Greater than 10,000 ohms between the audio unit and ground.

DIAGNOSIS AND TESTING (Continued)

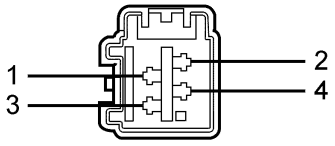
LH Rear Speaker C484, RH Rear Speaker C485, LH Front Speaker C523, RH Front Speaker C612



A0037812

Pin Number(s)	Circuit Designation/Description	Normal Condition/Measurement
1 (C484)	1726 (GY/LB) LH rear speaker audio output	Less than 5 ohms between the LH rear speaker and the audio unit. Greater than 10,000 ohms between the LH rear speaker and ground.
1 (C485)	1781 (OG/RD) RH rear speaker audio output	Less than 5 ohms between the RH rear speaker and the audio unit. Greater than 10,000 ohms between the RH rear speaker and ground.
1 (C523)	1723 (OG/LG) LH front speaker audio output	Less than 5 ohms between the LH front speaker and the audio unit. Greater than 10,000 ohms between the LH front speaker and ground.
1 (C612)	1778 (WH/LG) RH front speaker audio output	Less than 5 ohms between the RH front speaker and the audio unit. Greater than 10,000 ohms between the RH front speaker and ground.
2 (C484)	1725 (TN/YE) LH rear speaker audio return	Less than 5 ohms between the LH rear speaker and the audio unit. Greater than 10,000 ohms between the LH rear speaker and ground.
2 (C485)	1780 (BN/PK) RH rear speaker audio return	Less than 5 ohms between the RH rear speaker and the audio unit. Greater than 10,000 ohms between the RH rear speaker and ground.
2 (C523)	1722 (LB/WH) LH front speaker audio return	Less than 5 ohms between the LH front speaker and the audio unit. Greater than 10,000 ohms between the LH front speaker and ground.
2 (612)	1777 (DG/OG) RH front speaker audio return	Less than 5 ohms between the RH front speaker and the audio unit. Greater than 10,000 ohms between the RH front speaker and ground.

LH Front Subwoofer C536, RH Front Subwoofer C628

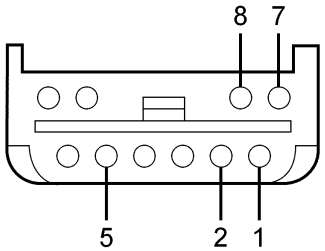


N0009034

DIAGNOSIS AND TESTING (Continued)

Pin Number(s)	Circuit Designation/Description	Normal Condition/Measurement
1 (C536)	804 (OG/LG) LH front subwoofer speaker 1 audio output	Less than 5 ohms between the LH front subwoofer speaker and the LH front subwoofer amplifier. Greater than 10,000 ohms between the LH front subwoofer speaker and ground.
1 (C628)	805 (WH/LG) RH front subwoofer speaker 1 audio output	Less than 5 ohms between the RH front subwoofer speaker and the RH front subwoofer amplifier. Greater than 10,000 ohms between the RH front subwoofer speaker and ground.
2 (C536)	813 (LB/WH) LH front subwoofer speaker 1 audio return	Less than 5 ohms between the LH front subwoofer speaker and the LH front subwoofer amplifier. Greater than 10,000 ohms between the LH front subwoofer speaker and ground.
2 (C628)	811 (DG/OG) RH front subwoofer speaker 1 audio return	Less than 5 ohms between the RH front subwoofer speaker and the RH front subwoofer amplifier. Greater than 10,000 ohms between the RH front subwoofer speaker and ground.
3 (C536)	820 (DB/YE) LH front subwoofer speaker 2 audio output	Less than 5 ohms between the LH front subwoofer speaker and the LH front subwoofer amplifier. Greater than 10,000 ohms between the LH front subwoofer speaker and ground.
3 (C628)	816 (LG/VT) RH front subwoofer speaker 2 audio output	Less than 5 ohms between the RH front subwoofer speaker and the RH front subwoofer amplifier. Greater than 10,000 ohms between the RH front subwoofer speaker and ground.
4 (C536)	819 (LG/WH) LH front subwoofer speaker 2 audio return	Less than 5 ohms between the LH front subwoofer speaker and the LH front subwoofer amplifier. Greater than 10,000 ohms between the LH front subwoofer speaker and ground.
4 (C628)	815 (LG/OG) RH front subwoofer speaker 2 audio return	Less than 5 ohms between the RH front subwoofer speaker and the RH front subwoofer amplifier. Greater than 10,000 ohms between the RH front subwoofer speaker and ground.

LH Front Subwoofer Amplifier C2993a, RH Front Subwoofer Amplifier C2994a, Luggage Compartment Subwoofer Speaker 1 Amplifier C4157a, Luggage Compartment Subwoofer Speaker 2 Amplifier C4158a, Luggage Compartment Subwoofer Speaker 2 Amplifier C4159a, Luggage Compartment Subwoofer Speaker 1 Amplifier C4160a,

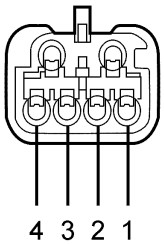


A0062270

DIAGNOSIS AND TESTING (Continued)

Pin Number(s)	Circuit Designation/Description	Normal Condition/Measurement
1 (C2993a, C2994a)	173 (DG/VT) front subwoofer amplifier enable/clip from audio unit	Greater than 4 volts between the subwoofer amplifier and ground with the audio unit ON. Less than 5 ohms between the subwoofer amplifier and the audio unit. Greater than 10,000 ohms between the subwoofer amplifier and ground.
1 (C4157a, C4158a, C4159a, C4160a)	174 (GY/BK) luggage compartment subwoofer speaker amplifier enable/clip from audio unit	Greater than 4 volts between the subwoofer amplifier and ground with the audio unit ON. Less than 5 ohms between the subwoofer amplifier and the audio unit. Greater than 10,000 ohms between the subwoofer amplifier and ground.
2	1204 (BK/OG) subwoofer amplifier ground	Less than 5 ohms between the subwoofer amplifier and ground.
5 (C2993a, C2994a)	829 (WH/VT) front subwoofer amplifier voltage	Greater than 10 volts between the subwoofer amplifier and ground.
5 (C4158a, C4160a)	828 (VT/LB) luggage compartment subwoofer amplifier voltage	Greater than 10 volts between the subwoofer amplifier and ground.
5 (C4157a, C4159a)	830 (PK/YE) luggage compartment subwoofer amplifier voltage	Greater than 10 volts between the subwoofer amplifier and ground.
7 (C2993a, C2994a)	167 (BN/OG) LH front subwoofer amplifier audio input (+)	Less than 5 ohms between the subwoofer amplifier and the audio unit. Greater than 10,000 ohms between the subwoofer amplifier and ground.
7 (C4157a, C4158a, C4159a, C4160a)	176 (PK/LG) luggage compartment subwoofer speaker amplifier audio input (+)	Less than 5 ohms between the subwoofer amplifier and the audio unit. Greater than 10,000 ohms between the subwoofer amplifier and ground.
8 (C2993a, C2994a)	168 (RD/BK) LH front subwoofer amplifier audio input (-)	Less than 5 ohms between the subwoofer amplifier and the audio unit. Greater than 10,000 ohms between the subwoofer amplifier and ground.
8 (C4157a, C4158a, C4159a, C4160a)	179 (OG/RD) luggage compartment subwoofer amplifier audio input (-)	Less than 5 ohms between the subwoofer amplifier and the audio unit. Greater than 10,000 ohms between the subwoofer amplifier and ground.

LH Front Subwoofer Amplifier C2993b, RH Front Subwoofer Amplifier C2994b, Luggage Compartment Rear Subwoofer Speaker 1 Amplifier C4157b, Luggage Compartment Subwoofer Speaker 2 Amplifier C4158b, Luggage Compartment Subwoofer Speaker 2 Amplifier C4159b, Luggage Compartment Subwoofer Speaker 1 Amplifier C4160b,



N0009033

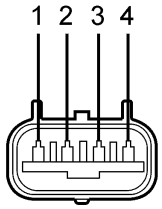
DIAGNOSIS AND TESTING (Continued)

Pin Number(s)	Circuit Designation/Description	Normal Condition/Measurement
1 (C2993b)	804 (OG/LG) LH front subwoofer speaker 1 amplifier output	Less than 5 ohms between the subwoofer amplifier and the subwoofer speaker. Greater than 10,000 ohms between the subwoofer amplifier and ground.
1 (C2994b)	805 (WH/LG) RH front subwoofer speaker 1 amplifier output	Less than 5 ohms between the subwoofer amplifier and the subwoofer speaker. Greater than 10,000 ohms between the subwoofer amplifier and ground.
2 (C2993b)	813 (LB/WH) LH front subwoofer speaker 1 amplifier return	Less than 5 ohms between the subwoofer amplifier and the subwoofer speaker. Greater than 10,000 ohms between the subwoofer amplifier and ground.
2 (C2994b)	811 (DG/OG) RH front subwoofer speaker 1 amplifier return	Less than 5 ohms between the subwoofer amplifier and the subwoofer speaker. Greater than 10,000 ohms between the subwoofer amplifier and ground.
3 (C2993b)	820 (DB/YE) LH front subwoofer speaker 2 amplifier output	Less than 5 ohms between the subwoofer amplifier and the subwoofer speaker. Greater than 10,000 ohms between the subwoofer amplifier and ground.
3 (C2994b)	816 (LG/VT) RH front subwoofer speaker 2 amplifier output	Less than 5 ohms between the subwoofer amplifier and the subwoofer speaker. Greater than 10,000 ohms between the subwoofer amplifier and ground.
3 (C4157b)	801 (TN/YE) luggage compartment subwoofer speaker 1 amplifier return	Less than 5 ohms between the subwoofer amplifier and the subwoofer speaker. Greater than 10,000 ohms between the subwoofer amplifier and ground.
3 (C4158b)	807 (PK/LG) luggage compartment subwoofer speaker 2 amplifier return	Less than 5 ohms between the subwoofer amplifier and the subwoofer speaker. Greater than 10,000 ohms between the subwoofer amplifier and ground.
3 (C4159b)	827 (TN/WH) luggage compartment subwoofer speaker 2 amplifier return	Less than 5 ohms between the subwoofer amplifier and the subwoofer speaker. Greater than 10,000 ohms between the subwoofer amplifier and ground.
3 (C4160b)	803 (BN/PK) luggage compartment subwoofer speaker 1 amplifier return	Less than 5 ohms between the subwoofer amplifier and the subwoofer speaker. Greater than 10,000 ohms between the subwoofer amplifier and ground.
4 (C2993b)	819 (LG/WH) LH front subwoofer speaker 2 amplifier return	Less than 5 ohms between the subwoofer amplifier and the subwoofer speaker. Greater than 10,000 ohms between the subwoofer amplifier and ground.
4 (C2994b)	815 (LG/OG) RH front subwoofer speaker 2 amplifier return	Less than 5 ohms between the subwoofer amplifier and the subwoofer speaker. Greater than 10,000 ohms between the subwoofer amplifier and ground.
4 (C4157b)	800 (GY/LB) luggage compartment subwoofer speaker 1 amplifier output	Less than 5 ohms between the subwoofer amplifier and the subwoofer speaker. Greater than 10,000 ohms between the subwoofer amplifier and ground.

DIAGNOSIS AND TESTING (Continued)

Pin Number(s)	Circuit Designation/Description	Normal Condition/Measurement
4 (C4158b)	806 (PK/LB) luggage compartment subwoofer speaker 2 amplifier output	Less than 5 ohms between the subwoofer amplifier and the subwoofer speaker. Greater than 10,000 ohms between the subwoofer amplifier and ground.
4 (C4159b)	825 (TN/LG) luggage compartment subwoofer speaker 2 amplifier output	Less than 5 ohms between the subwoofer amplifier and the subwoofer speaker. Greater than 10,000 ohms between the subwoofer amplifier and ground.
4 (C4160b)	802 (OG/RD) luggage compartment subwoofer speaker 1 amplifier output	Less than 5 ohms between the subwoofer amplifier and the subwoofer speaker. Greater than 10,000 ohms between the subwoofer amplifier and ground.

Luggage Compartment Subwoofer C4161, Luggage Compartment Subwoofer C4162



N0009035

Pin Number(s)	Circuit Designation/Description	Normal Condition/Measurement
1 (C4161)	800 (GY/LB) luggage compartment subwoofer speaker 1 audio output	Less than 5 ohms between the LH rear subwoofer speaker and the LH rear subwoofer amplifier. Greater than 10,000 ohms between the LH rear subwoofer speaker and ground.
1 (C4162)	802 (OG/RD) luggage compartment subwoofer speaker 1 audio output	Less than 5 ohms between the RH rear subwoofer speaker and the RH rear subwoofer amplifier. Greater than 10,000 ohms between the RH rear subwoofer speaker and ground.
2 (C4161)	801 (TN/YE) luggage compartment subwoofer speaker 1 audio return	Less than 5 ohms between the LH rear subwoofer speaker and the LH rear subwoofer amplifier. Greater than 10,000 ohms between the LH rear subwoofer speaker and ground.
2 (C4162)	803 (BN/PK) luggage compartment subwoofer speaker 1 audio return	Less than 5 ohms between the RH rear subwoofer speaker and the RH rear subwoofer amplifier. Greater than 10,000 ohms between the RH rear subwoofer speaker and ground.
3 (C4161)	806 (PK/LB) luggage compartment subwoofer speaker 2 audio output	Less than 5 ohms between the LH rear subwoofer speaker and the LH rear subwoofer amplifier. Greater than 10,000 ohms between the LH rear subwoofer speaker and ground.

DIAGNOSIS AND TESTING (Continued)

Pin Number(s)	Circuit Designation/Description	Normal Condition/Measurement
3 (C4162)	825 (TN/LG) luggage compartment subwoofer speaker 2 audio output	Less than 5 ohms between the RH rear subwoofer speaker and the RH rear subwoofer amplifier. Greater than 10,000 ohms between the RH rear subwoofer speaker and ground.
4 (C4161)	807 (PK/LG) luggage compartment subwoofer speaker 2 audio return	Less than 5 ohms between the LH rear subwoofer speaker and the LH rear subwoofer amplifier. Greater than 10,000 ohms between the LH rear subwoofer speaker and ground.
4 (C4162)	827 (TN/WH) luggage compartment subwoofer speaker 2 audio return	Less than 5 ohms between the RH rear subwoofer speaker and the RH rear subwoofer amplifier. Greater than 10,000 ohms between the RH rear subwoofer speaker and ground.

Pinpoint Test A: No Communication With The Audio Unit

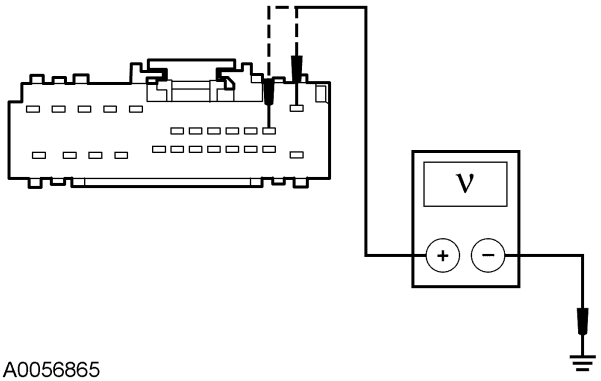
Normal Operation

Voltage is supplied to the audio unit on circuits 797 (LG/VT) and 687 (GY/YE). The audio unit is grounded through circuit 1204 (BK/OG).

Possible Causes

- audio unit
- circuit 797 (LG/VT) open
- circuit 687 (GY/YE) open
- circuit 1204 (BK/OG) open

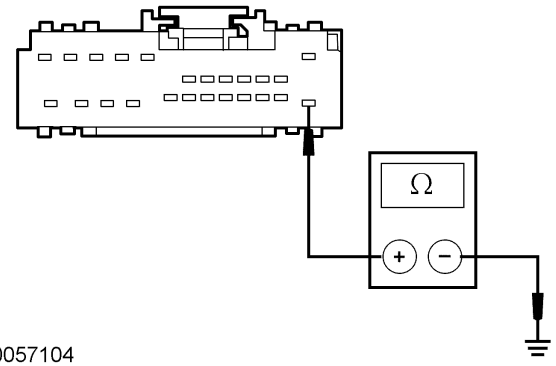
PINPOINT TEST A: NO COMMUNICATION WITH THE AUDIO UNIT

Test Step		Result / Action to Take
A1	**CHECK CIRCUITS 797 (LG/VT) AND 687 (GY/YE) FOR VOLTAGE**	
	• Disconnect: Audio Unit C290d. • Key in ON position. • Measure the voltage between the audio unit C290d-1, circuit 797 (LG/VT), harness side and ground; and between the audio unit C290d-2, circuit 687 (GY/YE), harness side and ground.  A0056865 • **Are the voltages greater than 10 volts?**	**Yes** GO to **A2**. **No** REPAIR the circuit in question. TEST the system for normal operation.
A2	**CHECK CIRCUIT 1204 (BK/OG) FOR AN OPEN**	
	• Key in OFF position.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST A: NO COMMUNICATION WITH THE AUDIO UNIT (Continued)

Test Step		Result / Action to Take
A2	**CHECK CIRCUIT 1204 (BK/OG) FOR AN OPEN (Continued)**	
	• Measure the resistance between the audio unit C290d-13, circuit 1204 (BK/OG), harness side and ground.  A0057104 • **Is the resistance less than 5 ohms?**	**Yes** REFER to Section 418-00 to continue diagnosis of the network communication. **No** REPAIR the circuit. TEST the system for normal operation.

Pinpoint Test B: The Audio Unit is Inoperative/Does Not Operate Correctly

Normal Operation

Voltage is supplied to the audio unit when the ignition switch is in the ON or ACC position. The audio unit provides audio signals to the speakers, thus producing sound.

Possible Causes

- circuit 797 (LG/VT) open
- circuit 687 (GY/YE) open
- circuit 1000 (RD/BK) short to voltage
- circuit 1204 (BK/OG) open
- audio unit

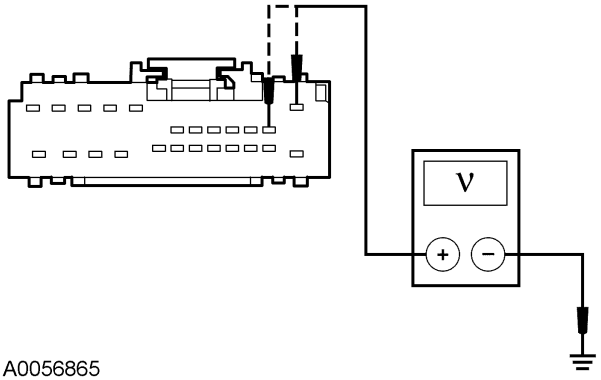
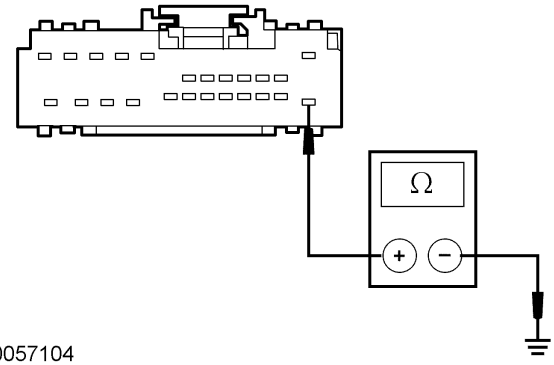
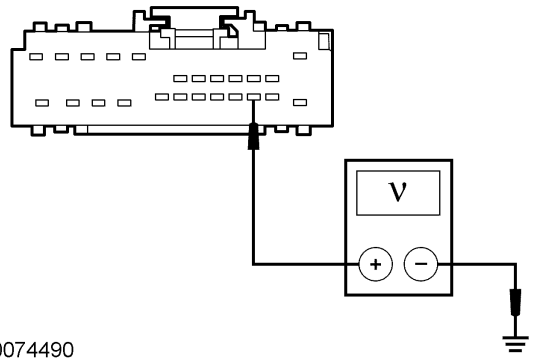
PINPOINT TEST B: THE AUDIO UNIT IS INOPERATIVE/DOES NOT OPERATE CORRECTLY

Test Step		Result / Action to Take
B1	**CHECK OPERATION OF THE AUDIO UNIT**	
	• Key in ON position. • Turn the audio unit on. • **Is the audio unit display illuminated?**	**Yes** GO to **B2**. **No** GO to **B4**.
B2	**CHECK FOR SOUND COMING FROM THE SPEAKERS**	
	• Carry out the Speaker Walk-Around Test. • **Is sound coming from the all speakers?**	**Yes** GO to **B3**. **No** GO to Symptom Chart for correct diagnosis.
B3	**CARRY OUT THE CONTROLS AND FEATURES TEST**	
	• Verify that all the audio system controls and features operate correctly. Refer to the Owner's Literature. • **Do all the controls and features operate correctly?**	**Yes** INFORM the customer how to correctly operate the audio system controls and features. **No** REMOVE the audio unit. REFER to Section 415-01. SEND it to an authorized repair facility. TEST the system for normal operation after the repair.
B4	**CHECK CIRCUITS 797 (LG/VT) AND 687 (GY/YE) FOR VOLTAGE**	
	• Key in OFF position. • Disconnect: Audio Unit C290d. • Key in ON position.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST B: THE AUDIO UNIT IS INOPERATIVE/DOES NOT OPERATE CORRECTLY (Continued)

Test Step		Result / Action to Take
B4	**CHECK CIRCUITS 797 (LG/VT) AND 687 (GY/YE) FOR VOLTAGE (Continued)**	
	• Measure the voltage between the audio unit C290d-1, circuit 797 (LG/VT), harness side and ground; and between the audio unit C290d-2, circuit 687 (GY/YE), harness side and ground.  A0056865 • **Are the voltages greater than 10 volts?**	**Yes** GO to **B5**. **No** REPAIR the circuit in question. TEST the system for normal operation.
B5	**CHECK CIRCUIT 1204 (BK/OG) FOR AN OPEN**	
	• Key in OFF position. • Measure the resistance between the audio unit C290d-13, circuit 1204 (BK/OG), harness side and ground.  A0057104 • **Is the resistance less than 5 ohms?**	**Yes** GO to **B6**. **No** REPAIR the circuit. TEST the system for normal operation.
B6	**CHECK CIRCUIT 1000 (RD/BK) FOR A SHORT TO VOLTAGE**	
	• While cycling the ignition switch from OFF, through ACC, to ON, measure the voltage between the audio unit C290d-15, circuit 1000 (RD/BK), harness side and ground.  A0074490 • **Is any voltage present?**	**Yes** REPAIR the circuit. TEST the system for normal operation. **No** GO to **B7**.

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST B: THE AUDIO UNIT IS INOPERATIVE/DOES NOT OPERATE CORRECTLY (Continued)

Test Step		Result / Action to Take
B7	**CHECK FOR CORRECT AUDIO UNIT OPERATION**	

	• Disconnect the audio unit connectors.
	• Check for:
	  • corrosion
	  • pushed-out pins
	• Connect the audio unit connectors and make sure they seat correctly.
	• Operate the system and determine if the concern is still present.
	• **Is the concern still present?**
		Yes
		REMOVE the audio unit. REFER to Section 415-01. SEND it to an authorized repair facility. TEST the system for normal operation after the repair.
		No
		The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector.

Pinpoint Test C: Poor Reception or Continuous Seek/Scan in AM/FM

Normal Operation

The radio antenna receives AM and FM radio signals. The radio signals are sent to the audio unit through the radio antenna lead-in cable.

Possible Causes

- antenna
- antenna connections
- audio unit

PINPOINT TEST C: POOR RECEPTION OR CONTINUOUS SEEK/SCAN IN AM/FM

Test Step		Result / Action to Take
C1	**CHECK THE OPERATION OF THE SEEK/SCAN FUNCTIONS**	
	• Key in ON position. • Operate the SEEK/SCAN functions with the audio unit in both AM and FM tuner modes. • **Do the SEEK/SCAN functions search continuously?**	**Yes** GO to **C2**. **No** The system is OK.
C2	**CHECK THE ANTENNA FOR DAMAGE**	
	• Key in OFF position. • Disconnect: Antenna Lead Terminal. • Measure the resistance between the antenna cable lead terminal and the end of the antenna. • **Is the resistance less than 8 ohms?**	**Yes** GO to **C3**. **No** INSTALL a new antenna. REFER to Section 415-02
C3	**SUBSTITUTE THE ANTENNA EXTENSION CABLE**	
	• Substitute a known good antenna cable between the audio unit and the antenna. • Key in ON position. • Check the operation of the audio unit. • **Has reception improved or SEEK/SCAN locate a station?**	**Yes** Permanently INSTALL a new antenna extension cable. REFER to Section 415-02. TEST the system for normal operation. **No** INSTALL the original cable. REMOVE the audio unit. REFER to Section 415-01. SEND it to an authorized repair facility. TEST the system for normal operation.

Pinpoint Test D: DTC B2965 Audio System Speaker Circuit Fault, Poor Quality/Distorted Sound or No Sound from One or More Speakers (Not All Speakers)

Normal Operation

The audio unit directs the audio signals to the speakers through separate positive and negative circuits for each of the 4 audio channels LH front, RH front, LH rear, and RH rear. The audio unit provides internal circuit protection for shorts to ground, shorts to voltage or shorts between any output circuits.

Possible Causes

- circuit 1722 (LB/WH) open or short to ground
- circuit 1723 (OG/LG) open or short to ground
- circuit 1725 (TN/YE) open or short to ground
- circuit 1726 (GY/LB) open or short to ground
- circuit 1777 (DG/OG) open or short to ground
- circuit 1778 (WH/LG) open or short to ground
- circuit 1780 (BN/PK) open or short to ground

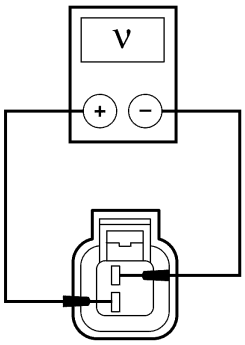
DIAGNOSIS AND TESTING (Continued)

- circuit 1781 (OG/RD) open or short to ground
- speakers
- audio unit

PINPOINT TEST D: DTC B2965 AUDIO SYSTEM SPEAKER CIRCUIT FAULT, POOR QUALITY/DISTORTED SOUND OR NO SOUND FROM ONE OR MORE SPEAKERS (NOT ALL SPEAKERS)

Test Step		Result / Action to Take
D1	**CHECK FOR SOUND**	
	• Key in ON position. • Turn the audio unit ON. • Adjust the speaker controls front to rear, and left to right. • **Do all speakers have poor quality/distorted sound or no sound?**	**Yes** GO to Pinpoint Test E for correct diagnosis. **No** GO to **D2**.
D2	**CHECK FOR SUBWOOFER OPERATION**	
	• Turn the audio unit ON. • **Do the subwoofers have poor quality/distorted sound or no sound?**	**Yes** GO to Pinpoint Test F for correct diagnosis. **No** GO to **D3**.
D3	**CHECK FOR AN AUDIO SIGNAL OUTPUT TO THE SPEAKER WITH POOR QUALITY/DISTORTED SOUND OR NO SOUND**	
	• Key in OFF position. • Disconnect: Suspect Speaker. • Key in ON position. • Turn the audio unit ON. • Measure the voltage between pin 1 and pin 2 of the suspect speaker as follows:	

Suspect Speaker	Connector-Pin	Circuit
LH front	C523-1 C523-2	1723 (OG/LG) 1722 (LB/WH)
RH front	C612-1 C612-2	1778 (WH/LG) 1777 (DG/OG)
LH rear	C484-1 C484-2	1726 (GY/LB) 1725 (TN/YE)
RH rear	C485-1 C485-2	1781 (OG/RD) 1780 (BN/PK)



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• **Is there a fluctuating AC voltage?**

Yes
GO to **D4**.
No
GO to **D5**.

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST D: DTC B2965 AUDIO SYSTEM SPEAKER CIRCUIT FAULT, POOR QUALITY/DISTORTED SOUND OR NO SOUND FROM ONE OR MORE SPEAKERS (NOT ALL SPEAKERS) (Continued)

Test Step	Result / Action to Take
D4 CHECK FOR CORRECT SPEAKER OPERATION • Replace the suspect speaker with a known good speaker. • **Does the speaker operate correctly?**	**Yes** Permanently INSTALL a new speaker. CLEAR the DTCs. REPEAT the self-test. **No** GO to **D6**.
D5 CHECK CIRCUITS 1722 (LB/WH), 1723 (OG/LG), 1725 (TN/YE), 1726 (GY/LB), 1777 (DG/OG), 1778 (WH/LG), 1780 (BN/PK), AND 1781 (OG/RD) FOR AN OPEN AND A SHORT TO GROUND • Key in OFF position. • Disconnect: Audio Unit C290d. • Measure the resistance between the suspect speaker, harness side and the audio unit, harness side; and between the suspect speaker, harness side and ground as follows:	

Suspect Speaker	Speaker Connector-Pin	Audio Unit Connector-Pin	Circuit
LH front	C523-1	C290d-8	1723 (OG/LG)
LH front	C523-2	C290d-21	1722 (LB/WH)
RH front	C612-1	C290d-11	1778 (WH/LG)
RH front	C612-2	C290d-12	1777 (DG/OG)
LH rear	C484-1	C290d-9	1726 (GY/LB)
LH rear	C484-2	C290d-22	1725 (TN/YE)
RH rear	C485-1	C290d-10	1781 (OG/RD)
RH rear	C485-2	C290d-23	1780 (BN/PK)

• **Are the resistances less than 5 ohms between the suspect speaker and the audio unit, and greater than 10,000 ohms between the suspect speaker and ground?**	**Yes** GO to **D6**. **No** REPAIR the circuit in question. CLEAR the DTCs. REPEAT the self-test.

D6 CHECK FOR CORRECT AUDIO UNIT OPERATION
• Disconnect the audio unit connectors.
• Check for:
  • corrosion
  • pushed-out pins
• Connect the audio unit connectors and make sure they seat correctly.
• Operate the system and determine if the concern is still present.
• **Is the concern still present?**
	Yes
	REMOVE the audio unit. REFER to Section 415-01. SEND it to an authorized repair facility. TEST the system for normal operation after the repair.
	No
	The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. CLEAR the DTCs. REPEAT the self-test.

Pinpoint Test E: Poor Quality/Distorted Sound From All Speakers

Normal Operation

The radio antenna receives AM and FM radio signals. The radio signals are sent to the audio unit through the radio antenna lead-in cable.

The radio suppression equipment reduces interference transmitted through the speakers by the engine ignition and electrical systems. When installing any new radio suppression equipment components, make sure that a good contact is made at all connections. Remove any paint or dirt from between a component and its ground. Tighten all connectors and screws securely according to torque specifications.

DIAGNOSIS AND TESTING (Continued)

Possible Causes

- antenna
- antenna cable(s)
- radio frequency interference suppression equipment
- audio unit

PINPOINT TEST E: POOR QUALITY/DISTORTED SOUND FROM ALL SPEAKERS

Test Step		Result / Action to Take
E1	**CHECK THE ANTENNA GROUND**	
	• Measure the resistance between the antenna base and the battery ground cable. • **Is the resistance less than 5 ohms?**	**Yes** GO to **E3**. **No** GO to **E2**.
E2	**CHECK THE ANTENNA CABLE CONNECTIONS**	
	• Key in OFF position. Check the antenna connections, including the extension cable. • Check to make sure the antenna is securely mounted to the vehicle body at ground points. • **Are the connections clean, secure, and in metal-to-metal contact?**	**Yes** GO to **E3**. **No** CLEAN and SECURE the antenna connections as needed. TEST the system for normal operation.
E3	**CHECK THE SUPPRESSION EQUIPMENT/MOUNTING AND CONNECTING CIRCUITS**	
	• Check all necessary suppression equipment and the radio frequency interference suppression bond. • Check the radio receiver bonding strap for integrity, cleanliness and metal-to-metal contact. • **NOTE:** The capacitor mounting points are used to complete the electrical circuit and must be mounted securely to clean surfaces. Check the mounting and connecting circuits of the radio ignition interference capacitor for integrity, cleanliness, and metal-to-metal contact. • **Are the connections clean, secure, and in metal-to-metal contact?**	**Yes** GO to **E4**. **No** CLEAN, SECURE or INSTALL new suppression equipment as necessary. TEST the system for normal operation.
E4	**CHECK THE RADIO IGNITION INTERFERENCE CAPACITOR**	
	• Key in OFF position. • Check the operation of the radio ignition interference capacitor by installing a known good component. • Start the engine. • Turn the audio unit on and check the radio reception. • **Is the noise eliminated?**	**Yes** INSTALL a new radio ignition interference capacitor. TEST the system for normal operation. **No** GO to **E5**.
E5	**CHECK THE GENERATOR**	
	• Key in OFF position. • Check the generator by disconnecting the voltage regulator. • Start the engine. • Turn the audio unit on and check the radio reception. • **Is the noise eliminated?**	**Yes** INSTALL a new generator. REFER to Section 414-02. TEST the system for normal operation. **No** GO to **E6**.
E6	**CHECK THE IGNITION CIRCUITS**	
	• Key in OFF position. • Check the ignition circuits for correct routing, grounding and integrity of connections. • Check the spark plugs and the spark plug wires. • **Are the ignition components OK?**	**Yes** GO to **E7**. **No** REPAIR the ignition system as necessary. TEST the system for normal operation.
E7	**SUBSTITUTE THE ANTENNA**	
	• Substitute a known good antenna. Ground the antenna base to an unpainted metal surface on the vehicle. • Start the engine. • Verify the operation of the audio unit. • **Is the noise eliminated?**	**Yes** INSTALL a new antenna. REFER to Section 415-02. TEST the system for normal operation. **No** INSTALL the original antenna. GO to **E8**.

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST E: POOR QUALITY/DISTORTED SOUND FROM ALL SPEAKERS (Continued)

Test Step		Result / Action to Take
E8	**SUBSTITUTE THE ANTENNA EXTENSION CABLE**	
	• Key in OFF position. • Substitute a known good antenna extension cable. • Start the engine. • Verify the operation of the audio unit. • **Is the noise eliminated?**	**Yes** INSTALL a new antenna extension cable. REFER to Section 415-02. TEST the system for normal operation. **No** INSTALL the original antenna extension cable. GO to **E9**.
E9	**SUBSTITUTE THE AUDIO UNIT**	
	• Key in OFF position. • Substitute a known good audio unit. • Key in START position. • Verify the operation of the audio unit. • **Is the noise eliminated?**	**Yes** SEND the original audio unit to an authorized repair facility. TEST the system for normal operation after the repair. **No** INSTALL the original audio unit. GO to **E10**.
E10	**REPOSITION THE COMPONENTS**	
	• Key in OFF position. • Determine if the noise can be eliminated by repositioning the antenna extension cable, speaker circuits or audio unit power feed circuits away from other circuits and brackets. • Key in START position. • Verify the operation of the audio unit. • **Is the noise eliminated?**	**Yes** Permanently REPOSITION the components as needed. TEST the system for normal operation. **No** GROUND various parts of the vehicle to the frame using a jumper cable (for example: engine, fenders, quarter panels, stone deflectors, body sheet metal). When the noise is eliminated, PROVIDE a permanent ground where necessary. TEST the system for normal operation.

Pinpoint Test F: The Subwoofer is Inoperative

Normal Operation

The subwoofers are powered from a separate subwoofer amplifier for each subwoofer speaker. The enable/clip circuits, 173 (DG/VT), for the 2 front subwoofer amplifiers, and 174 (GY/BK), for the 4 rear subwoofer amplifiers, carries out 2 functions; to turn on the subwoofer amplifiers, and to indicate to the audio unit when the subwoofer output distortion signal reaches a damaging level. The audio unit then reduces the audio output signal to the subwoofer amplifiers. The 2 front subwoofer amplifiers receive voltage on circuit 829 (WH/VT). The 2 LH rear subwoofer amplifiers receive voltage on circuit 828 (VT/LB) and the 2 RH rear subwoofer amplifiers receive voltage on circuit 830 (PK/YE). The 2 front subwoofer amplifiers share a common ground through circuit 1204 (BK/OG). The 4 rear subwoofer amplifiers also share a common ground through circuit 1204 (BK/OG).

Possible Causes

- circuit 173 (DG/VT) open or short to ground
- circuit 174 (GY/BK) open or short to ground
- circuit 829 (WH/VT) open
- circuit 828 (VT/LB) open
- circuit 830 (PK/YE) open
- circuit 1204 (BK/OG) open
- subwoofer amplifier
- subwoofer
- audio unit

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST F: THE SUBWOOFER IS INOPERATIVE

<table>
<tr><th colspan="2">Test Step</th><th>Result / Action to Take</th></tr>
<tr><td>F1</td><td>CHECK FOR FRONT AND REAR SPEAKER OPERATION</td><td rowspan="2">Yes
GO to F2.
No
GO to Pinpoint Test D for correct diagnosis.</td></tr>
<tr><td colspan="2">• Key in ON position.
• Turn the audio unit ON.
• Is concern with just the subwoofer speakers?</td></tr>
<tr><td>F2</td><td>CHECK FOR FRONT SUBWOOFER CONCERN</td><td rowspan="2">Yes
GO to F3.
No
GO to F10.</td></tr>
<tr><td colspan="2">• Observe the front and rear subwoofers.
• Does the concern involve just the front subwoofer(s)?</td></tr>
<tr><td>F3</td><td>CHECK FOR AC VOLTAGE AT THE FRONT SUBWOOFER SPEAKERS</td><td rowspan="2">Yes
INSTALL a new front subwoofer speaker in question. TEST the system for normal operation.
No
GO to F4.</td></tr>
<tr><td colspan="2">• Key in OFF position.
• Disconnect: Suspect Subwoofer Speaker.
• Key in ON position.
• Turn the audio unit on.
• Measure the AC voltage between the suspect front subwoofer speaker audio output circuit, harness side and the suspect front subwoofer speaker audio return circuit, harness side as follows:
<table>
<tr><th>Subwoofer Speaker</th><th>Connector-Pin</th><th>Circuit</th></tr>
<tr><td>LH front door subwoofer speaker</td><td>C536-1
C536-2
C536-3
C536-4</td><td>+ 804 (OG/LG)
- 813 (LB/WH)
+ 820 (DB/YE)
- 819 (LG/WH)</td></tr>
<tr><td>RH front door subwoofer speaker</td><td>C628-1
C628-2
C628-3
C628-4</td><td>+ 805 (WH/LG)
- 811 (DG/OG)
+ 816 (LG/VT)
- 815 (LG/OG)</td></tr>
</table>
• Is there fluctuating AC voltage?</td></tr>
<tr><td>F4</td><td>CHECK CIRCUITS 804 (OG/LG), 805 (WH/LG), 811 (DG/OG), 813 (LB/WH), 815 (LG/OG), 816 (LG/VT), 819 (LG/WH) AND 820 (DB/YE) FOR AN OPEN AND A SHORT TO GROUND</td><td></td></tr>
<tr><td colspan="2">• Key in OFF position.
• Disconnect: Subwoofer amplifier C2993b or C2994b.
• Measure the resistance between the suspect front subwoofer speaker, harness side and the subwoofer amplifier, harness side; and between the suspect front subwoofer speaker, harness side and ground as follows:</td><td></td></tr>
</table>

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST F: THE SUBWOOFER IS INOPERATIVE (Continued)

<table>
<tr><th colspan="2">Test Step</th><th>Result / Action to Take</th></tr>
<tr><td>F4</td><td>CHECK CIRCUITS 804 (OG/LG), 805 (WH/LG), 811 (DG/OG), 813 (LB/WH), 815 (LG/OG), 816 (LG/VT), 819 (LG/WH) AND 820 (DB/YE) FOR AN OPEN AND A SHORT TO GROUND (Continued)</td><td rowspan="3">Yes
GO to F5.
No
REPAIR the circuit in question. TEST the system for normal operation.</td></tr>
<tr><td colspan="2">
<table>
<tr><th>Suspect Front Subwoofer Speaker</th><th>Subwoofer Speaker Connector-Pin</th><th>Subwoofer Amplifier Connector-Pin</th><th>Circuit</th></tr>
<tr><td>LH front door subwoofer speaker</td><td>C536-1</td><td>C2993b-1</td><td>804 (OG/LG)</td></tr>
<tr><td>LH front door subwoofer speaker</td><td>C536-2</td><td>C2993b-2</td><td>813 (LB/WH)</td></tr>
<tr><td>LH front door subwoofer speaker</td><td>C536-3</td><td>C2993b-3</td><td>820 (DB/YE)</td></tr>
<tr><td>LH front door subwoofer speaker</td><td>C536-4</td><td>C2993b-4</td><td>819 (LG/WH)</td></tr>
<tr><td>RH front door subwoofer speaker</td><td>C628-1</td><td>C2994b-1</td><td>805 (WH/LG)</td></tr>
<tr><td>RH front door subwoofer speaker</td><td>C628-2</td><td>C2994b-2</td><td>811 (DG/OG)</td></tr>
<tr><td>RH front door subwoofer speaker</td><td>C628-3</td><td>C2994b-3</td><td>816 (LG/VT)</td></tr>
<tr><td>RH front door subwoofer speaker</td><td>C628-4</td><td>C2994b-4</td><td>815 (LG/OG)</td></tr>
</table>
• Is the resistance less than 5 ohms between the suspect speaker and the amplifier, and greater than 10,000 ohms between the suspect speaker and ground?
</td></tr>
<tr><td>F5</td><td>CHECK CIRCUIT 829 (WH/VT) FOR VOLTAGE</td></tr>
<tr><td colspan="2">
• Measure the voltage between the suspect front subwoofer amplifier, harness side and ground as follows:
<table>
<tr><th>Suspect Subwoofer Amplifier</th><th>Subwoofer Amplifier Connector-Pin</th><th>Circuit</th></tr>
<tr><td>LH front door</td><td>C2993a-5</td><td>829 (WH/VT)</td></tr>
<tr><td>RH front door</td><td>C2994a-5</td><td>829 (WH/VT)</td></tr>
</table>
• Is the voltage greater than 10 volts?
</td><td>Yes
GO to F6.
No
REPAIR the circuit. TEST the system for normal operation.</td></tr>
<tr><td>F6</td><td>CHECK CIRCUIT 1204 FOR AN OPEN</td><td></td></tr>
<tr><td colspan="3">• Measure the resistance between the suspect subwoofer amplifier, harness side and ground as follows:</td></tr>
</table>

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST F: THE SUBWOOFER IS INOPERATIVE (Continued)

<table>
<tr><th colspan="2">Test Step</th><th>Result / Action to Take</th></tr>
<tr><td>F6</td><td>CHECK CIRCUIT 1204 FOR AN OPEN (Continued)

<table><tr><th>Suspect Subwoofer Amplifier</th><th>Subwoofer Amplifier Connector-Pin</th><th>Circuit</th></tr><tr><td>LH front door</td><td>C2993a-2</td><td>1204 (BK/OG)</td></tr><tr><td>RH front door</td><td>C2994a-2</td><td>1204 (BK/OG)</td></tr></table>• Is the resistance less than 5 ohms?</td><td>Yes
GO to F7.
No
REPAIR the circuit. TEST the system for normal operation.</td></tr>
<tr><td>F7</td><td>CHECK CIRCUITS 167 (BN/OG) AND 168 (RD/BK) FOR AC VOLTAGE
• Key in ON position.
• Turn the audio unit on.
• Measure the AC voltage between the suspect subwoofer amplifier audio signal input circuit, harness side and the suspect subwoofer amplifier audio signal return circuit, harness side as follows:

<table><tr><th>Suspect Subwoofer Amplifier</th><th>Subwoofer Amplifier Connector-Pin</th><th>Circuit</th></tr><tr><td>LH front door</td><td>C2993a-7
C2993a-8</td><td>167 (BN/OG)
168 (RD/BK)</td></tr><tr><td>RH front door</td><td>C2994a-7
C2994a-8</td><td>167 (BN/OG)
168 (RD/BK)</td></tr></table>• Is there a fluctuating AC voltage?</td><td>Yes
GO to F8.
No
GO to F9.</td></tr>
<tr><td>F8</td><td>CHECK CIRCUIT 173 (DG/VT) FOR AN OPEN AND A SHORT TO GROUND
• Key in OFF position.
• Disconnect: Audio Unit C290b.
• Measure the resistance between the suspect subwoofer amplifier, harness side and the audio unit, harness side; and between the suspect subwoofer amplifier, harness side and ground as follows:

<table><tr><th>Suspect Subwoofer Amplifier</th><th>Subwoofer Amplifier Connector-Pin</th><th>Audio Unit Connector-Pin</th><th>Circuit</th></tr><tr><td>LH front door</td><td>C2993a-1</td><td>C290b-4</td><td>173 (DG/VT)</td></tr><tr><td>RH front door</td><td>C2994a-1</td><td>C290b-4</td><td>173 (DG/VT)</td></tr></table>• Is the resistance less than 5 ohms between the subwoofer amplifier and the audio unit, and greater than 10,000 ohms between the subwoofer amplifier and ground?</td><td>Yes
REMOVE the subwoofer amplifier in question. REFER to Section 415-01. SEND it to an authorized repair facility. TEST the system for normal operation after the repair.
No
REPAIR the circuit. TEST the system for normal operation.</td></tr>
<tr><td>F9</td><td>CHECK CIRCUITS 167 (BN/OG) AND 168 (RD/BK) FOR AN OPEN AND A SHORT TO GROUND
• Key in OFF position.
• Disconnect: Audio Unit C290b.
• Measure the resistance between the suspect subwoofer amplifier, harness side and the audio unit, harness side; and between the suspect subwoofer amplifier, harness side and ground as follows:</td><td></td></tr>
</table>

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST F: THE SUBWOOFER IS INOPERATIVE (Continued)

<table>
<tr><th colspan="2">Test Step</th><th>Result / Action to Take</th></tr>
<tr><td>F9</td><td>CHECK CIRCUITS 167 (BN/OG) AND 168 (RD/BK) FOR AN OPEN AND A SHORT TO GROUND (Continued)</td><td rowspan="2">Yes
GO to F22.
No
REPAIR the circuit in question. TEST the system for normal operation.</td></tr>
<tr><td colspan="2">
<table>
<tr><th>Suspect Subwoofer Amplifier</th><th>Subwoofer Amplifier Connector-Pin</th><th>Audio Unit Connector-Pin</th><th>Circuit</th></tr>
<tr><td>LH front door</td><td>C2993a-7</td><td>C290b-1</td><td>167 (BN/OG)</td></tr>
<tr><td>LH front door</td><td>C2993a-8</td><td>C290b-2</td><td>168 (RD/BK)</td></tr>
<tr><td>RH front door</td><td>C2994a-7</td><td>C290b-1</td><td>167 (BN/OG)</td></tr>
<tr><td>RH front door</td><td>C2994a-8</td><td>C290b-2</td><td>168 (RD/BK)</td></tr>
</table>
• Are the resistances less than 5 ohms between the subwoofer amplifier and the audio unit, and greater than 10,000 ohms between the subwoofer amplifier and ground?
</td></tr>
<tr><td>F10</td><td>CHECK FOR LUGGAGE COMPARTMENT SUBWOOFER CONCERN</td><td rowspan="2">Yes
If the concern is with both luggage compartment subwoofer speakers GO to F11, otherwise GO to F14.
No
GO to F22.</td></tr>
<tr><td colspan="2">• Observe both luggage compartment subwoofer speakers.
• Does the concern involve just the luggage compartment subwoofer(s)?</td></tr>
<tr><td>F11</td><td>CHECK CIRCUITS 176 (PK/LG) AND 179 (OG/RD) FOR AC VOLTAGE AT ANY LUGGAGE COMPARTMENT SUBWOOFER AMPLIFIER</td><td rowspan="2">Yes
GO to F12.
No
GO to F13.</td></tr>
<tr><td colspan="2">
• Disconnect: Luggage Compartment Subwoofer Amplifier C4157a, C4158a, C4159a, or C4160a.
• Key in ON position.
• Turn the audio unit on.
• Measure the AC voltage between the luggage compartment subwoofer amplifier audio input circuit, harness side, and the luggage compartment subwoofer audio return circuit, harness side as follows:
<table>
<tr><th>Luggage Compartment Subwoofer Speaker</th><th>Luggage Compartment Subwoofer Amplifier Connector-Pin</th><th>Circuit</th></tr>
<tr><td>Luggage compartment subwoofer speaker</td><td>C4157a-7
C4157a-8</td><td>176 (PK/LG)
179 (OG/RD)</td></tr>
<tr><td>Luggage compartment subwoofer speaker</td><td>C4158a-7
C4158a-8</td><td>176 (PK/LG)
179 (OG/RD)</td></tr>
<tr><td>Luggage compartment subwoofer speaker</td><td>C4160a-7
C4160a-8</td><td>176 (PK/LG)
179 (OG/RD)</td></tr>
<tr><td>Luggage compartment subwoofer speaker</td><td>C4159a-7
C4159a-8</td><td>176 (PK/LG)
179 (OG/RD)</td></tr>
</table>
• Is there a fluctuating AC voltage?
</td></tr>
<tr><td>F12</td><td>CHECK CIRCUIT 174 (GY/BK) FOR AN OPEN AND A SHORT TO GROUND</td><td></td></tr>
<tr><td colspan="2">• Key in OFF position.
• Disconnect: Audio Unit C290b.
• Measure the resistance between the subwoofer amplifier, harness side and the audio unit, harness side; and between the subwoofer amplifier, harness side and ground as follows:</td><td></td></tr>
</table>

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST F: THE SUBWOOFER IS INOPERATIVE (Continued)

<table>
<tr><th colspan="2">Test Step</th><th>Result / Action to Take</th></tr>
<tr><td>F12</td><td>CHECK CIRCUIT 174 (GY/BK) FOR AN OPEN AND A SHORT TO GROUND (Continued)</td><td rowspan="2">Yes
GO to F22.
No
REPAIR the circuit. TEST the system for normal operation.</td></tr>
<tr><td colspan="2">
<table>
<tr><th>Luggage Compartment Subwoofer Speaker</th><th>Luggage Compartment Subwoofer Amplifier Connector-Pin</th><th>Audio Unit Connector-Pin</th><th>Circuit</th></tr>
<tr><td>Luggage compartment subwoofer speaker</td><td>C4157a-1</td><td>C290b-8</td><td>174 (GY/BK)</td></tr>
<tr><td>Luggage compartment subwoofer speaker</td><td>C4158a-1</td><td>C290b-8</td><td>174 (GY/BK)</td></tr>
<tr><td>Luggage compartment subwoofer speaker</td><td>C4160a-1</td><td>C290b-8</td><td>174 (GY/BK)</td></tr>
<tr><td>Luggage compartment subwoofer speaker</td><td>C4159a-1</td><td>C290b-8</td><td>174 (GY/BK)</td></tr>
</table>
• Are the resistances less than 5 ohms between the subwoofer amplifier and the audio unit, and greater than 10,000 ohms between the subwoofer amplifier and ground?
</td></tr>
<tr><td>F13</td><td>CHECK CIRCUITS 176 (PK/LG) AND 179 (OG/RD) FOR AN OPEN AND A SHORT TO GROUND</td><td rowspan="2"></td></tr>
<tr><td colspan="2">• Key in OFF position.
• Disconnect: Audio Unit C290b.
• Measure the resistance between the subwoofer amplifier, harness side and the audio unit, harness side; and between the subwoofer amplifier, harness side and ground as follows:</td></tr>
</table>

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST F: THE SUBWOOFER IS INOPERATIVE (Continued)

Test Step		Result / Action to Take
F13	CHECK CIRCUITS 176 (PK/LG) AND 179 (OG/RD) FOR AN OPEN AND A SHORT TO GROUND (Continued)	

Luggage Compartment Subwoofer Speaker	Luggage Compartment Subwoofer Amplifier Connector-Pin	Audio Unit Connector-Pin	Circuit
Luggage compartment subwoofer speaker	C4157a-7	C290b-5	176 (PK/LG)
Luggage compartment subwoofer speaker	C4157a-8	C290b-6	179 (OG/RD)
Luggage compartment subwoofer speaker	C4158a-7	C290b-5	176 (PK/LG)
Luggage compartment subwoofer speaker	C4158a-8	C290b-6	179 (OG/RD)
Luggage compartment subwoofer speaker	C4160a-7	C290b-5	176 (PK/LG)
Luggage compartment subwoofer speaker	C4160a-8	C290b-6	179 (OG/RD)
Luggage compartment subwoofer speaker	C4159a-7	C290b-5	176 (PK/LG)
Luggage compartment subwoofer speaker	C4159a-8	C290b-6	179 (OG/RD)

- **Are the resistances less than 5 ohms between the subwoofer amplifier and the audio unit, and greater than 10,000 ohms between the subwoofer amplifier and ground?**

Yes
GO to **F22**.

No
REPAIR the circuit in question. TEST the system for normal operation.

F14	CHECK THE LUGGAGE COMPARTMENT SUBWOOFER SPEAKER CIRCUITS FOR AC VOLTAGE	

- Key in OFF position.
- Disconnect: Suspect Subwoofer Speaker.
- Key in ON position.
- Turn the audio unit on.
- Measure the AC voltage between the suspect subwoofer speaker audio output circuit, harness side and the suspect subwoofer speaker audio return circuit, harness side as follows:

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST F: THE SUBWOOFER IS INOPERATIVE (Continued)

<table>
<tr><th colspan="2">Test Step</th><th>Result / Action to Take</th></tr>
<tr><td>F14</td><td>CHECK THE LUGGAGE COMPARTMENT SUBWOOFER SPEAKER CIRCUITS FOR AC VOLTAGE (Continued)</td><td rowspan="2">Yes
INSTALL a new speaker enclosure. REFER to Section 415-03. TEST the system for normal operation.
No
GO to F15.</td></tr>
<tr><td colspan="2">
<table>
<tr><th>Suspect Subwoofer Speaker</th><th>Luggage Compartment Subwoofer Speaker Connector-Pin</th><th>Circuit</th></tr>
<tr><td>Luggage compartment subwoofer speaker</td><td>C4161-1
C4161-2</td><td>800 (GY/LB)
801 (TN/YE)</td></tr>
<tr><td>Luggage compartment subwoofer speaker</td><td>C4161-3
C4161-4</td><td>806 (PK/LB)
807 (PK/LG)</td></tr>
<tr><td>Luggage compartment subwoofer speaker</td><td>C4162-1
C4162-2</td><td>802 (OG/RD)
803 (BN/PK)</td></tr>
<tr><td>Luggage compartment subwoofer speaker</td><td>C4162-3
C4162-4</td><td>825 (TN/LG)
827 (TN/WH)</td></tr>
</table>
• Is there a fluctuating AC voltage?
</td></tr>
<tr><td>F15</td><td>CHECK CIRCUITS 800 (GY/LB), 801 (TN/YE), 802 (OG/RD), 803 (BN/PK), 806 (PK/LB), 807 (PK/LG), 825 (TN/LG), AND 827 (TN/WH) FOR AN OPEN AND A SHORT TO GROUND</td><td></td></tr>
<tr><td colspan="2">• Key in OFF position.
• Disconnect: Suspect Subwoofer Amplifier.
• Measure the resistance between the suspect subwoofer speaker, harness side and the subwoofer amplifier, harness side; and between the suspect subwoofer speaker, harness side and ground as follows:</td><td></td></tr>
</table>

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST F: THE SUBWOOFER IS INOPERATIVE (Continued)

Test Step		Result / Action to Take
F15	CHECK CIRCUITS 800 (GY/LB), 801 (TN/YE), 802 (OG/RD), 803 (BN/PK), 806 (PK/LB), 807 (PK/LG), 825 (TN/LG), AND 827 (TN/WH) FOR AN OPEN AND A SHORT TO GROUND (Continued)	

Suspect Subwoofer Speaker	Subwoofer Speaker Connector-Pin	Subwoofer Amplifier Connector-Pin	Circuit
Luggage compartment subwoofer speaker	C4161-1	C4157b-4	800 (GY/LB)
Luggage compartment subwoofer speaker	C4161-2	C4157b-3	801 (TN/YE)
Luggage compartment subwoofer speaker	C4161-3	C4158b-4	806 (PK/LB)
Luggage compartment subwoofer speaker	C4161-4	C4158b-4	807 (PK/LG)
Luggage compartment subwoofer speaker	C4162-1	C4160b-4	802 (OG/RD)
Luggage compartment subwoofer speaker	C4162-2	C4160b-3	803 (BN/PK)
Luggage compartment subwoofer speaker	C4162-3	C4159b-4	825 (TN/LG)
Luggage compartment subwoofer speaker	C4162-4	C4159b-3	827 (TN/WH)

- **Are the resistances less than 5 ohms between the subwoofer speaker and the subwoofer amplifier, and greater than 10,000 ohms between the subwoofer speaker and ground?**

Yes
GO to **F16**.

No
REPAIR the circuit in question. TEST the system for normal operation.

F16	CHECK CIRCUITS 828 (VT/LB) AND 830 (PK/YE) FOR VOLTAGE	

- Measure the voltage between the suspect subwoofer amplifier, harness side and ground as follows:

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST F: THE SUBWOOFER IS INOPERATIVE (Continued)

<table>
<tr><th colspan="2">Test Step</th><th>Result / Action to Take</th></tr>
<tr><td>F16</td><td>CHECK CIRCUITS 828 (VT/LB) AND 830 (PK/YE) FOR VOLTAGE (Continued)

<table>
<tr><th>Suspect Luggage Compartment Subwoofer Speaker</th><th>Luggage Compartment Subwoofer Amplifier Connector-Pin</th><th>Circuit</th></tr>
<tr><td>Luggage compartment subwoofer speaker</td><td>C4157a-5</td><td>830 (PK/YE)</td></tr>
<tr><td>Luggage compartment subwoofer speaker</td><td>C4158a-5</td><td>828 (VT/LB)</td></tr>
<tr><td>Luggage compartment subwoofer speaker</td><td>C4160a-5</td><td>828 (VT/LB)</td></tr>
<tr><td>Luggage compartment subwoofer speaker</td><td>C4159a-5</td><td>830 (PK/YE)</td></tr>
</table>
• Is the voltage greater than 10 volts?</td><td>Yes
GO to F17.
No
REPAIR the circuit in question. TEST the system for normal operation.</td></tr>
<tr><td>F17</td><td>CHECK CIRCUIT 1204 FOR AN OPEN
• Measure the resistance between the suspect subwoofer amplifier, harness side and ground as follows:

<table>
<tr><th>Suspect Luggage Compartment Subwoofer Speaker</th><th>Luggage Compartment Subwoofer Amplifier Connector-Pin</th><th>Circuit</th></tr>
<tr><td>Luggage compartment subwoofer speaker</td><td>C4157a-2</td><td>1204 (BK/OG)</td></tr>
<tr><td>Luggage compartment subwoofer speaker</td><td>C4158a-2</td><td>1204 (BK/OG)</td></tr>
<tr><td>Luggage compartment subwoofer speaker</td><td>C4160a-2</td><td>1204 (BK/OG)</td></tr>
<tr><td>Luggage compartment subwoofer speaker</td><td>C4159a-2</td><td>1204 (BK/OG)</td></tr>
</table>
• Is the resistance less than 5 ohms?</td><td>Yes
GO to F18.
No
REPAIR the circuit. TEST the system for normal operation.</td></tr>
<tr><td>F18</td><td>CHECK CIRCUITS 176 (PK/LG) AND 179 (OG/RD) FOR AC VOLTAGE
• Key in ON position.
• Turn the audio unit on.
• Measure the AC voltage between the suspect subwoofer amplifier audio input circuit, harness side, and the suspect subwoofer amplifier audio return circuit, harness side as follows:</td><td></td></tr>
</table>

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST F: THE SUBWOOFER IS INOPERATIVE (Continued)

<table>
<tr><th colspan="2">Test Step</th><th>Result / Action to Take</th></tr>
<tr><td>F18</td><td>CHECK CIRCUITS 176 (PK/LG) AND 179 (OG/RD) FOR AC VOLTAGE (Continued)</td><td rowspan="2">Yes
GO to F20.
No
GO to F19.</td></tr>
<tr><td colspan="2">
<table>
<tr><th>Suspect Subwoofer Speaker</th><th>Subwoofer Amplifier Connector-Pin</th><th>Circuit</th></tr>
<tr><td>Luggage compartment subwoofer speaker</td><td>C4157a-7
C4157a-8</td><td>176 (PK/LG)
179 (OG/RD)</td></tr>
<tr><td>Luggage compartment subwoofer speaker</td><td>C4158a-7
C4158a-8</td><td>176 (PK/LG)
179 (OG/RD)</td></tr>
<tr><td>Luggage compartment subwoofer speaker</td><td>C4160a-7
C4160a-8</td><td>176 (PK/LG)
179 (OG/RD)</td></tr>
<tr><td>Luggage compartment subwoofer speaker</td><td>C4159a-7
C4159a-8</td><td>176 (PK/LG)
179 (OG/RD)</td></tr>
</table>
• Is there a fluctuating AC voltage?
</td></tr>
<tr><td>F19</td><td>CHECK CIRCUITS 176 (PK/LG) AND 179 (OG/RD) FOR AN OPEN AND A SHORT TO GROUND</td><td></td></tr>
<tr><td colspan="2">• Key in OFF position.
• Disconnect: Audio Unit C290b.
• Measure the resistance between the suspect subwoofer amplifier, harness side and the audio unit, harness side; and between the suspect subwoofer amplifier, harness side and ground as follows:</td><td></td></tr>
</table>

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST F: THE SUBWOOFER IS INOPERATIVE (Continued)

Test Step		Result / Action to Take
F19	CHECK CIRCUITS 176 (PK/LG) AND 179 (OG/RD) FOR AN OPEN AND A SHORT TO GROUND (Continued)	

Suspect Subwoofer Speaker	Subwoofer Amplifier Connector-Pin	Audio Unit Connector-Pin	Circuit
Luggage compartment subwoofer speaker	C4157a-7	C290b-5	176 (PK/LG)
Luggage compartment subwoofer speaker	C4157a-8	C290b-6	179 (OG/RD)
Luggage compartment subwoofer speaker	C4158a-7	C290b-5	176 (PK/LG)
Luggage compartment subwoofer speaker	C4158a-8	C290b-6	179 (OG/RD)
Luggage compartment subwoofer speaker	C4160a-7	C290b-5	176 (PK/LG)
Luggage compartment subwoofer speaker	C4160a-8	C290b-6	179 (OG/RD)
Luggage compartment subwoofer speaker	C4159a-7	C290b-5	176 (PK/LG)
Luggage compartment subwoofer speaker	C4159a-8	C290b-6	179 (OG/RD)

- **Are the resistances less than 5 ohms between the subwoofer amplifier and the audio unit, and greater than 10,000 ohms between the subwoofer amplifier and ground?**

Yes
GO to F22.

No
REPAIR the circuit in question. TEST the system for normal operation.

F20	CHECK CIRCUIT 174 (GY/BK) FOR VOLTAGE	

- Measure the voltage between the suspect subwoofer amplifier, harness side and ground as follows:

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST F: THE SUBWOOFER IS INOPERATIVE (Continued)

<table>
<tr><th colspan="2">Test Step</th><th>Result / Action to Take</th></tr>
<tr><td>F20</td><td>CHECK CIRCUIT 174 (GY/BK) FOR VOLTAGE (Continued)

<table>
<tr><th>Suspect Subwoofer Speaker</th><th>Subwoofer Amplifier Connector-Pin</th><th>Circuit</th></tr>
<tr><td>Luggage compartment subwoofer speaker</td><td>C4157a-1</td><td>174 (GY/BK)</td></tr>
<tr><td>Luggage compartment subwoofer speaker</td><td>C4158a-1</td><td>174 (GY/BK)</td></tr>
<tr><td>Luggage compartment subwoofer speaker</td><td>C4160a-1</td><td>174 (GY/BK)</td></tr>
<tr><td>Luggage compartment subwoofer speaker</td><td>C4159a-1</td><td>174 (GY/BK)</td></tr>
</table>
• Is any voltage present?</td><td>Yes
SEND the subwoofer amplifier to an authorized repair facility. TEST the system for normal operation after the repair.
No
GO to F21.</td></tr>
<tr><td>F21</td><td>CHECK CIRCUIT 174 (GY/BK) FOR AN OPEN AND A SHORT TO GROUND

• Key in OFF position.
• Disconnect: Audio Unit C290b.
• Measure the resistance between the suspect subwoofer amplifier, harness side and the audio unit, harness side; and between the suspect subwoofer amplifier, harness side and ground as follows:

<table>
<tr><th>Suspect Subwoofer Speaker</th><th>Subwoofer Amplifier Connector-Pin</th><th>Audio Unit Connector-Pin</th><th>Circuit</th></tr>
<tr><td>Luggage compartment subwoofer speaker</td><td>C4157a-1</td><td>C290b-8</td><td>174 (GY/BK)</td></tr>
<tr><td>Luggage compartment subwoofer speaker</td><td>C4158a-1</td><td>C290b-8</td><td>174 (GY/BK)</td></tr>
<tr><td>Luggage compartment subwoofer speaker</td><td>C4160a-1</td><td>C290b-8</td><td>174 (GY/BK)</td></tr>
<tr><td>Luggage compartment subwoofer speaker</td><td>C4159a-1</td><td>C290b-8</td><td>174 (GY/BK)</td></tr>
</table>
• Are the resistances less than 5 ohms between the subwoofer amplifier and the audio unit, and greater than 10,000 ohms between the subwoofer amplifier and ground?</td><td>Yes
GO to F22.
No
REPAIR the circuit. TEST the system for normal operation.</td></tr>
<tr><td>F22</td><td>CHECK FOR CORRECT AUDIO UNIT OPERATION

• Disconnect the audio unit connectors.
• Check for:
  • corrosion
  • pushed-out pins
• Connect the audio unit connectors and make sure they seat correctly.
• Operate the system and determine if the concern is still present.
• Is the concern still present?</td><td>Yes
REMOVE the audio unit. REFER to Section 415-01. SEND it to an authorized repair facility. TEST the system for normal operation after the repair.
No
The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector.</td></tr>
</table>

DIAGNOSIS AND TESTING (Continued)

Pinpoint Test G: Loud Popping Sound When Cycling The Ignition Switch

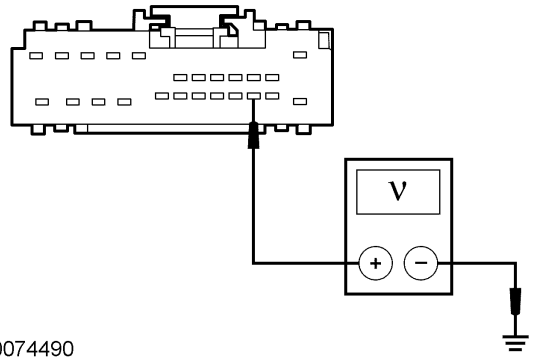
Normal Operation

Voltage is supplied to the audio unit through circuit 1000 (RD/BK) when the ignition switch is turned to the START position. The audio unit then immediately mutes all speaker outputs and subwoofer amplifier enable circuits to eliminate the possibility of speaker pops during engine cranking.

Possible Causes

- circuit 1000 (RD/BK) open
- circuit 173 (DG/VT) short to voltage
- circuit 174 (GY/BK) short to voltage
- subwoofer amplifier
- audio unit

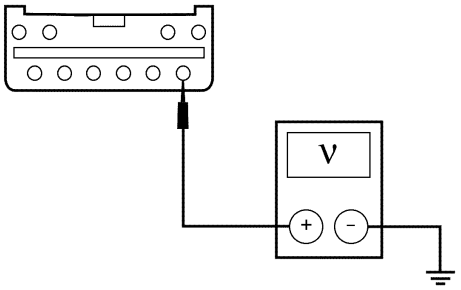
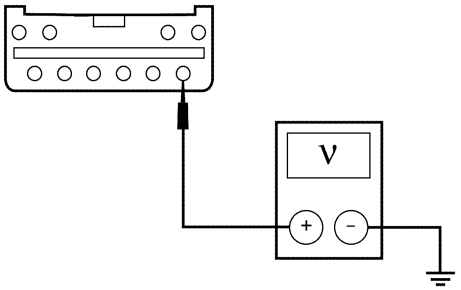
PINPOINT TEST G: LOUD POPPING SOUND WHEN CYCLING THE IGNITION SWITCH

Test Step		Result / Action to Take
G1	**CHECK CIRCUIT 1000 (RD/BK) FOR VOLTAGE**	
	• Key in OFF position. • Disconnect: Audio Unit C290d. • Disconnect: Smart Junction Box (SJB) Fuse 20 (10A). • Key in ON position. • With ignition switch in the RUN and START positions, measure the voltage between the audio unit C290d-15 circuit 1000 (RD/BK), harness side and ground.  A0074490 • **Is no voltage present with ignition switch in the RUN position, and greater than 10 volts with ignition switch in the START position?**	**Yes** GO to **G2**. **No** REPAIR the circuit. TEST the system for normal operation.
G2	**CHECK FOR FRONT/REAR SUBWOOFER**	
	• Turn the audio unit on. • **Does the concern involve just the front subwoofer(s)?**	**Yes** GO to **G3**. **No** GO to **G6**.
G3	**CHECK CIRCUIT 173 (DG/VT) FOR A SHORT TO VOLTAGE**	
	• Key in OFF position. • Disconnect: Subwoofer Amplifier C2993a, C2994a. • Key in START position.	

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST G: LOUD POPPING SOUND WHEN CYCLING THE IGNITION SWITCH (Continued)

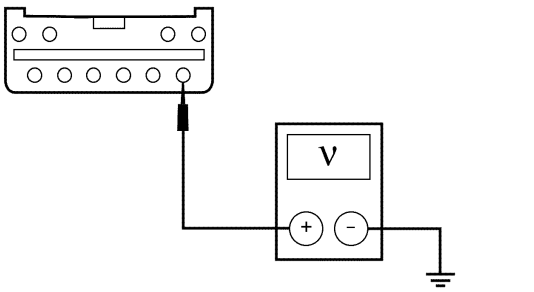
Test Step		Result / Action to Take
G3	**CHECK CIRCUIT 173 (DG/VT) FOR A SHORT TO VOLTAGE (Continued)**	
	• Measure the voltage between the LH front subwoofer amplifier C2993a-1, circuit 173 (DG/VT), harness side and ground; or between the RH front subwoofer amplifier C2994a-1, circuit 173 (DG/VT), harness side and ground.  GK5296-A • **Is any voltage present?**	**Yes** GO to **G4**. **No** SEND the subwoofer amplifier to an authorized repair facility. TEST the system for normal operation after the repair.
G4	**CHECK CIRCUIT 173 (DG/VT) FOR A SHORT TO VOLTAGE WITH THE AUDIO UNIT DISCONNECTED**	
	• Key in OFF position. • Disconnect: Audio Unit C290b. • Key in START position. • Measure the voltage between the LH front subwoofer amplifier C2993a-1, circuit 173 (DG/VT), harness side and ground; or between the RH front subwoofer amplifier C2994a-1, circuit 173 (DG/VT), harness side and ground.  GK5296-A • **Is any voltage present?**	**Yes** GO to **G5**. **No** SEND the subwoofer amplifier to an authorized repair facility. TEST the system for normal operation after the repair.
G5	**CHECK THE SUBWOOFER AMPLIFIER**	
	• Key in OFF position. • Install a known good subwoofer amplifier. • Key in START position. • **Is the popping sound still present?**	**Yes** GO to **G8**. **No** SEND the original subwoofer amplifier to an authorized audio system repair facility. TEST the system for normal operation after the repair.
G6	**CHECK CIRCUIT 174 (GY/BK) FOR A SHORT TO VOLTAGE**	
	• Key in OFF position. • Disconnect: Subwoofer Amplifier C4157a, C4158a, C4159a, or C4160a. • Key in START position. • Measure the voltage between the suspect rear subwoofer amplifier, harness side and ground as follows:	

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST G: LOUD POPPING SOUND WHEN CYCLING THE IGNITION SWITCH (Continued)

<table>
<tr><th>Test Step</th><th>Result / Action to Take</th></tr>
<tr><td>G6 CHECK CIRCUIT 174 (GY/BK) FOR A SHORT TO VOLTAGE (Continued)

<table>
<tr><th>Suspect Luggage Compartment Subwoofer Speaker</th><th>Luggage Compartment Subwoofer Amplifier Connector-Pin</th><th>Circuit</th></tr>
<tr><td>Luggage compartment subwoofer speaker</td><td>C4157a-1</td><td>174 (GY/BK)</td></tr>
<tr><td>Luggage compartment subwoofer speaker</td><td>C4158a-1</td><td>174 (GY/BK)</td></tr>
<tr><td>Luggage compartment subwoofer speaker</td><td>C4160a-1</td><td>174 (GY/BK)</td></tr>
<tr><td>Luggage compartment subwoofer speaker</td><td>C4159a-1</td><td>174 (GY/BK)</td></tr>
</table>


GK5296-A
• Is any voltage present?</td><td>Yes
GO to G7.
No
SEND the subwoofer amplifier to an authorized repair facility. TEST the system for normal operation after the repair.</td></tr>
<tr><td>G7 CHECK CIRCUIT 174 (GY/BK) FOR A SHORT TO VOLTAGE WITH THE AUDIO UNIT DISCONNECTED

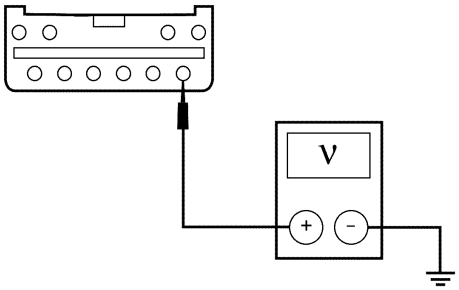
• Key in OFF position.
• Disconnect: Audio Unit C290b.
• Key in START position.
• Measure the voltage between the suspect rear subwoofer amplifier, harness side and ground as follows:

<table>
<tr><th>Suspect Luggage Compartment Subwoofer Speaker</th><th>Luggage Compartment Subwoofer Amplifier Connector-Pin</th><th>Circuit</th></tr>
<tr><td>Luggage compartment subwoofer speaker</td><td>C4157a-1</td><td>174 (GY/BK)</td></tr>
<tr><td>Luggage compartment subwoofer speaker</td><td>C4158a-1</td><td>174 (GY/BK)</td></tr>
<tr><td>Luggage compartment subwoofer speaker</td><td>C4160a-1</td><td>174 (GY/BK)</td></tr>
<tr><td>Luggage compartment subwoofer speaker</td><td>C4159a-1</td><td>174 (GY/BK)</td></tr>
</table></td><td></td></tr>
</table>

(Continued)

DIAGNOSIS AND TESTING (Continued)

PINPOINT TEST G: LOUD POPPING SOUND WHEN CYCLING THE IGNITION SWITCH (Continued)

Test Step		Result / Action to Take
G7	**CHECK CIRCUIT 174 (GY/BK) FOR A SHORT TO VOLTAGE WITH THE AUDIO UNIT DISCONNECTED (Continued)**	
	 GK5296-A • **Is any voltage present?**	**Yes** GO to **G7**. **No** SEND the subwoofer amplifier to an authorized repair facility. TEST the system for normal operation after the repair.
G8	**CHECK FOR CORRECT AUDIO UNIT OPERATION**	

	• Disconnect the audio unit connectors.
	• Check for:
	  • corrosion
	  • pushed-out pins
	• Connect the audio unit connectors and make sure they seat correctly.
	• Operate the system and determine if the concern is still present.
	• **Is the concern still present?**
		Yes
		REMOVE the audio unit. REFER to Section 415-01. SEND it to an authorized repair facility. TEST the system for normal operation after the repair.
		No
		The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector.