

**B147A-CHANNEL 6 AUDIO SPEAKER OUTPUT CIRCUIT LOW (CONTINUED)**

For the Amplifier circuit diagram (Refer to 8 - ELECTRICAL/AUDIO - SCHEMATICS AND DIAGRAMS).

For a complete wiring diagram **Refer to Section 8W.**

- **When Monitored:**  
With the ignition on.
- **Set Condition:**  
The Amplifier detects a shorted to ground condition on the speaker output circuit.

Possible Causes
(X206) AMPLIFIED RIGHT REAR DOOR SPEAKER (+) CIRCUIT SHORTED TO GROUND (X296) AMPLIFIED RIGHT REAR DOOR SPEAKER (-) CIRCUIT SHORTED TO GROUND RIGHT REAR DOOR SPEAKER AMPLIFIER

**Diagnostic Test****1. CHECK FOR AN INTERMITTENT CONDITION**

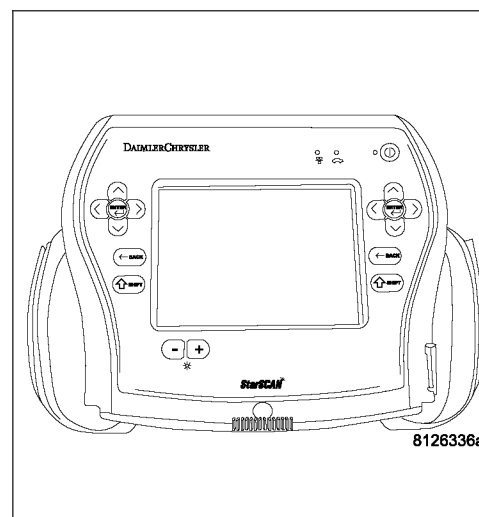
Turn the ignition on, then off, and then on again.

With the scan tool, read Amplifier DTCs.

**Does the scan tool display active: B147A-CHANNEL 6 AUDIO SPEAKER OUTPUT CIRCUIT LOW?**

**Yes** >> Go To 2

**No** >> The conditions that caused this code to set are not present at this time. Using the wiring diagram/schematic as a guide, inspect the wiring and connectors.  
Perform BODY VERIFICATION TEST VER-1.

**2. CHECK THE (X206) AMPLIFIED RIGHT REAR DOOR SPEAKER (+) CIRCUIT FOR A SHORT TO GROUND**

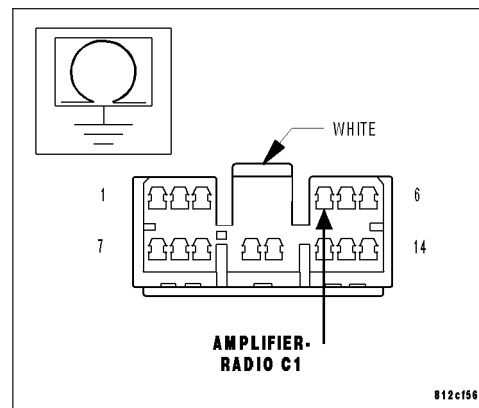
Disconnect the Amplifier C1 harness connector.

Measure the resistance between ground and the (X206) Amplified Right Rear Door Speaker (+) circuit.

**Is the resistance below 10K ohms?**

**Yes** >> Repair the (X206) Amplified Right Rear Door Speaker (+) circuit for a short to ground.  
Perform BODY VERIFICATION TEST VER-1.

**No** >> Go To 3



**\*NO RESPONSE FROM CCN (CLUSTER) (CONTINUED)****2. (A924) (A920) (A117) FUSED B(+) CIRCUITS OPEN OR SHORTED**

Turn the ignition off.

Disconnect the Cluster harness connectors.

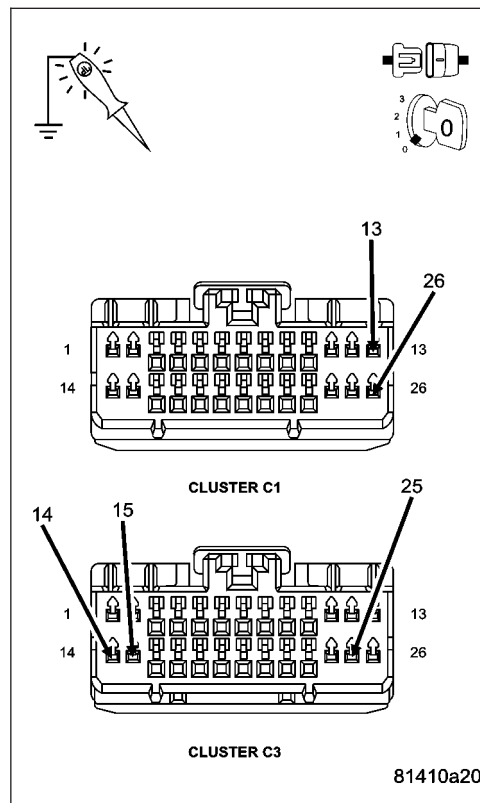
Using a 12-volt test light connected to ground, check each (A924) (A920) (A117) Fused B(+) circuit.

**Does the test light illuminate brightly for each circuit?**

**Yes** >> Go To 3

**No** >> Repair the (A924) (A920) (A117) Fused B(+) circuit for an open or short.

Perform BODY VERIFICATION TEST - VER 1. (Refer to BODY VERIFICATION TEST - VER 1).

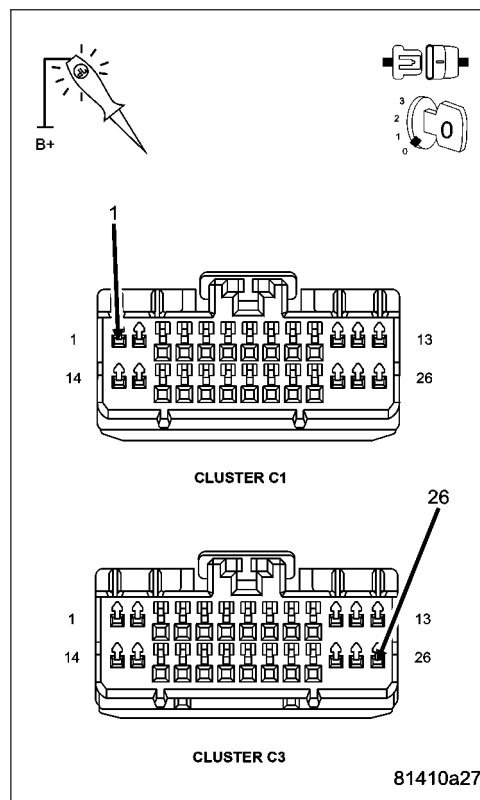
**3. (Z946) (Z948) GROUND CIRCUITS OPEN**

Using a 12-volt test light connected to 12-volts, check each (Z946) (Z948) ground circuit.

**Does the test light illuminate brightly for each circuit?**

**Yes** >> Go To 4

**No** >> Repair the (Z946) (Z948) ground circuit for an open. Perform BODY VERIFICATION TEST - VER 1. (Refer to BODY VERIFICATION TEST - VER 1).



## LEARN A SMOOTH 1-2 UPSHIFT AND 3-2 KICKDOWN

Use the following steps to have the TCM learn the 2C shift volume.

**NOTE: The transmission oil temperature must be above 110°F (43°C).**

1. With a vehicle speed below 48 km/h (30 MPH) and the transmission in 3rd gear, perform multiple 3-2 kickdowns.
2. Repeat Step 1 until the 3-2 kickdowns become smooth and the 2C CVI becomes stable.

## LEARN A SMOOTH MANUAL 2-1 PULLDOWN SHIFT AS WELL AS A NEUTRAL TO REVERSE SHIFT

**NOTE: The transmission oil temperature must be above 110°F (43°C).**

Use the following steps to have the TCM learn the LR volume.

1. With the vehicle speed around 40-48 km/h (25-30 MPH) in Manual 2nd, perform manual pulldowns to Low or 1st gear at closed throttle.
2. Repeat Step 1 until the LR CVI becomes stable and the manual 2-1 becomes smooth.

## LEARN A SMOOTH NEUTRAL TO REVERSE SHIFT

**NOTE: The transmission oil temperature must be above 110°F (43°C).**

1. With the vehicle at a stop, perform Neutral to Reverse shifts until the shift is smooth. An unlearned Neutral to Reverse shift may be harsh or exhibit a double bump.
2. If any of the shifts are still not smooth after the clutch volume stabilizes, an internal transmission problem may be present.

## LEARN A SMOOTH 4-5 UPSHIFT

**NOTE: The transmission oil temperature must be above 110°F (43°C).**

Use the following steps to have the TCM learn the Alt 2C CVI.

1. Accelerate the vehicle through 88 km/h (55mph) at a steady 10-15 degree throttle opening and perform multiple 4-5 upshifts.
2. Repeat Step 1 until the 4-5 shift become smooth and the Alt 2C CVI become stable. There is a separate 2C volume used and learned for 4-5 shifts, 2CA. It is independent of the 2C CVI learned on 3-2 kickdowns.

Starting System Diagnosis		
CONDITION	POSSIBLE CAUSE	CORRECTION
STARTER ENGAGES, FAILS TO TURN ENGINE.	1. Battery discharged or faulty.	1. Refer to Battery. Charge or replace battery if required.
	2. Starting circuit wiring faulty.	2. Refer to 8, Wiring Diagrams. Test and repair starter feed and/or control circuits if required.
	3. Starter motor faulty.	3. If all other starting system components and circuits test OK, replace starter motor assembly.
	4. Engine seized.	4. Refer to Engine Diagnosis in the Diagnosis and Testing section of 9, Engine.
STARTER ENGAGES, SPINS OUT BEFORE ENGINE STARTS.	1. Starter ring gear faulty.	1. Refer to Starter Motor Removal and Installation. Remove starter motor to inspect starter ring gear. Replace starter ring gear if required.
	2. Starter motor faulty.	2. If all other starting system components and circuits test OK, replace starter motor assembly.
STARTER DOES NOT DISENGAGE.	1. Starter motor improperly installed.	1. Refer to Starter Motor Removal and Installation. Tighten starter mounting hardware to correct torque specifications.
	2. Starter relay faulty.	2. Refer to Starter Relay Diagnosis and Testing. Replace starter relay if required.
	3. Ignition switch faulty.	3. Refer to Ignition Switch and Key Lock Cylinder. Replace ignition switch if required.
	4. Starter motor faulty.	4. If all other starting system components and circuits test OK, replace starter motor.

## INSPECTION

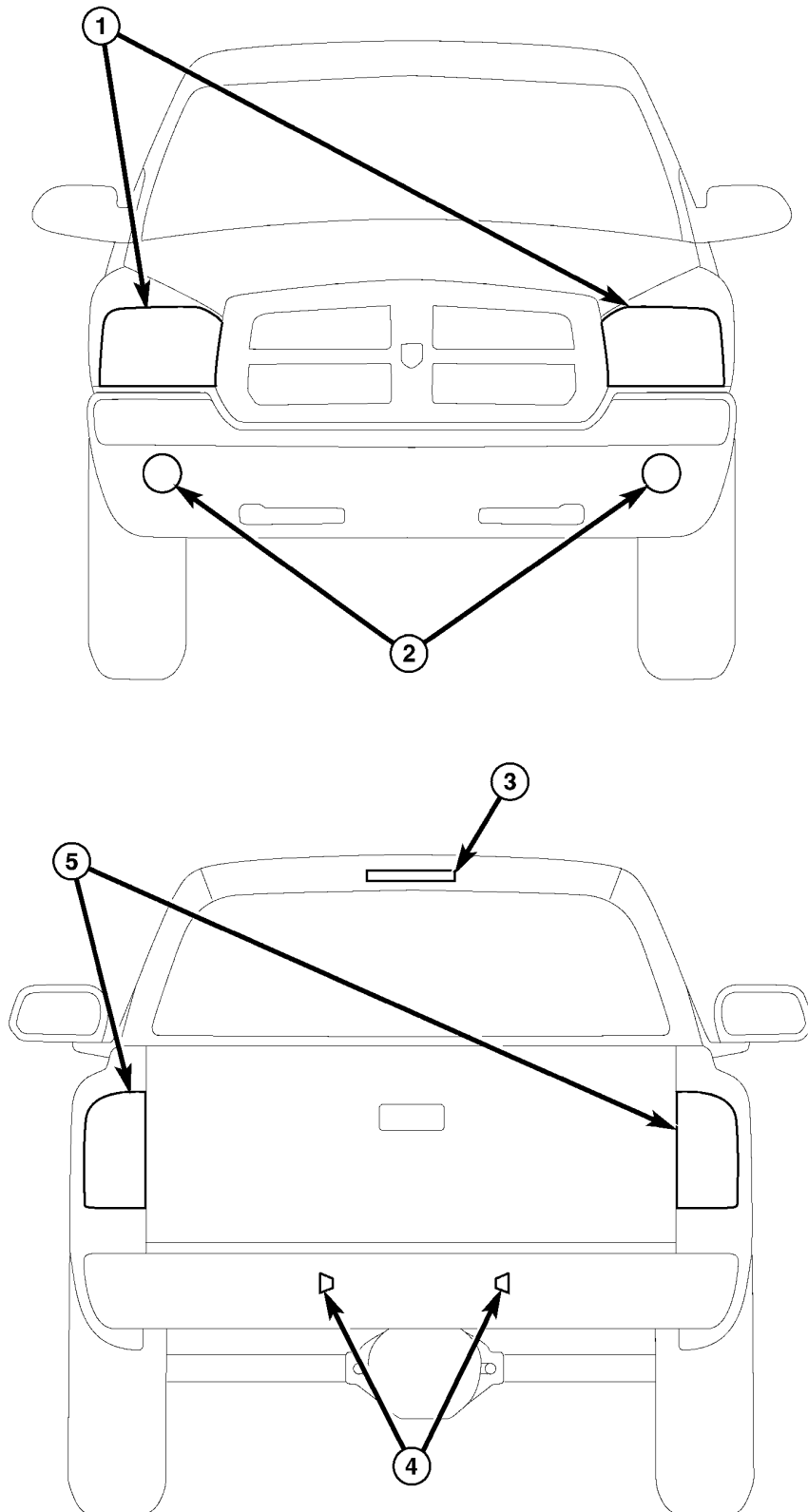
For complete starter wiring circuit diagrams, refer to 8, Wiring Diagrams. Before removing any unit from starting system for repair or diagnosis, perform the following inspections:

**WARNING: ON VEHICLES EQUIPPED WITH AIRBAGS, REFER TO 8, PASSIVE RESTRAINT SYSTEMS, BEFORE ATTEMPTING ANY STEERING WHEEL, STEERING COLUMN, OR INSTRUMENT PANEL COMPONENT DIAGNOSIS OR SERVICE. FAILURE TO TAKE THE PROPER PRECAUTIONS COULD RESULT IN ACCIDENTAL AIRBAG DEPLOYMENT AND POSSIBLE PERSONAL INJURY.**

- **Battery** - Visually inspect battery for indications of physical damage and loose or corroded cable connections. Determine state-of-charge and cranking capacity of battery. Charge or replace battery if required. Refer to **Battery** in 8, Battery. **Note: If equipped with diesel engine, a dual battery system may be used, and both batteries must be inspected.**
- **Ignition Switch** - Visually inspect ignition switch for indications of physical damage and loose or corroded wire harness connections. Refer to **Ignition Switch and Key Lock Cylinder**.
- **Clutch Pedal Position Switch** - If equipped with manual transmission, visually inspect clutch pedal position switch for indications of physical damage and loose or corroded wire harness connections. Refer to **Clutch Pedal Position Switch** in 6, Clutch.
- **Park/Neutral Position Switch** - If equipped with automatic transmission, visually inspect park/neutral position switch for indications of physical damage and loose or corroded wire harness connections. Refer to **Park/Neutral Position Switch** in 21, Transmission.
- **Starter Relay** - Visually inspect starter relay for indications of physical damage and loose or corroded wire harness connections.
- **Starter Motor** - Visually inspect starter motor for indications of physical damage and loose or corroded wire harness connections.
- **Starter Solenoid** - Visually inspect starter solenoid for indications of physical damage and loose or corroded wire harness connections.
- **Wiring** - Visually inspect wire harnesses for damage. Repair or replace any faulty wiring, as required. Refer to 8, Wiring Diagrams.

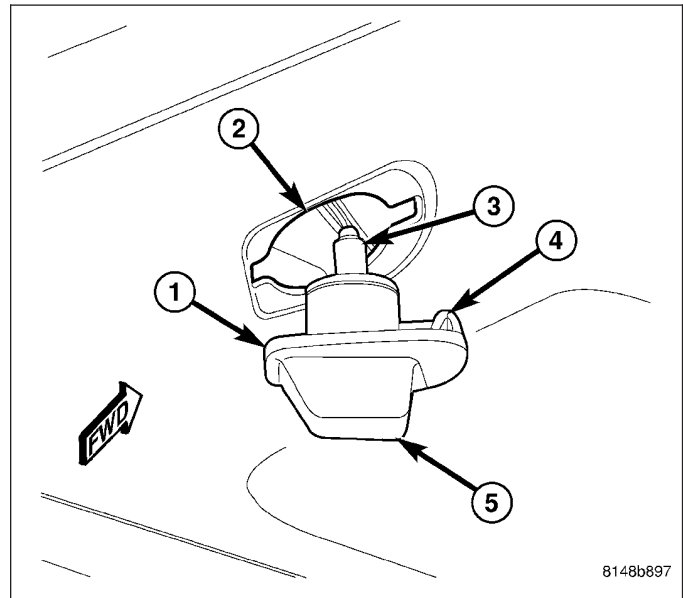
## LAMPS/LIGHTING - EXTERIOR - SERVICE INFORMATION

### DESCRIPTION



## LAMP

1. Disconnect and isolate the battery negative cable.
2. Using hand pressure, press the rear edge of the license plate lamp lens/housing (5) toward the front of the vehicle against the spring pressure of the retaining clip (4), then pull the rear edge of the lamp outward to disengage it from the mounting hole (2) in the rear bumper.
3. Pull the lamp out from the rear bumper far enough to access the bulb socket (3) on the back of the lamp lens/housing.
4. Firmly grasp the socket on the back of the housing and rotate it counterclockwise about 30 degrees to unlock it.
5. Pull the socket and bulb straight out from the keyed opening in the lamp housing.
6. Remove the lamp from the rear bumper.

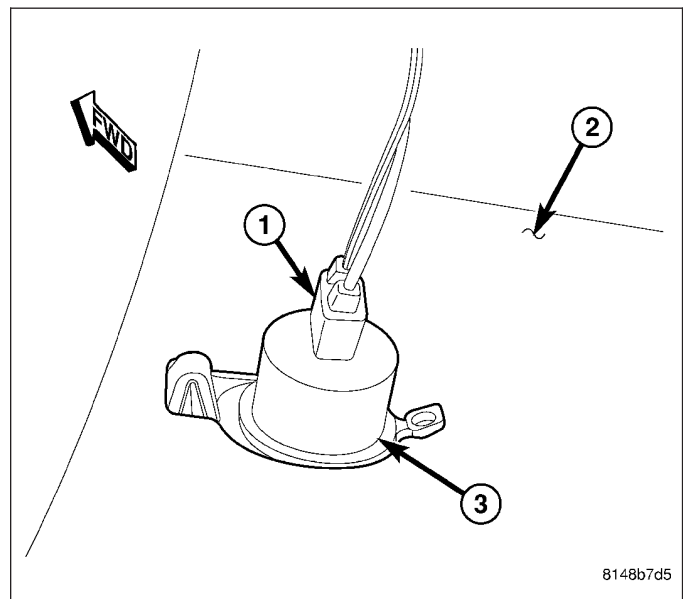


## INSTALLATION

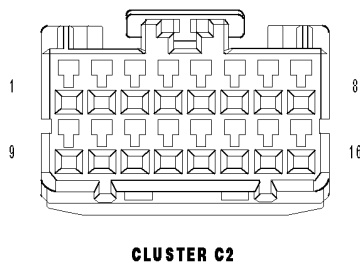
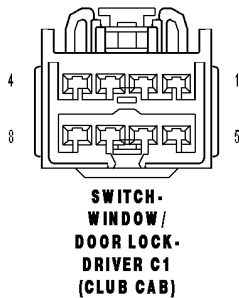
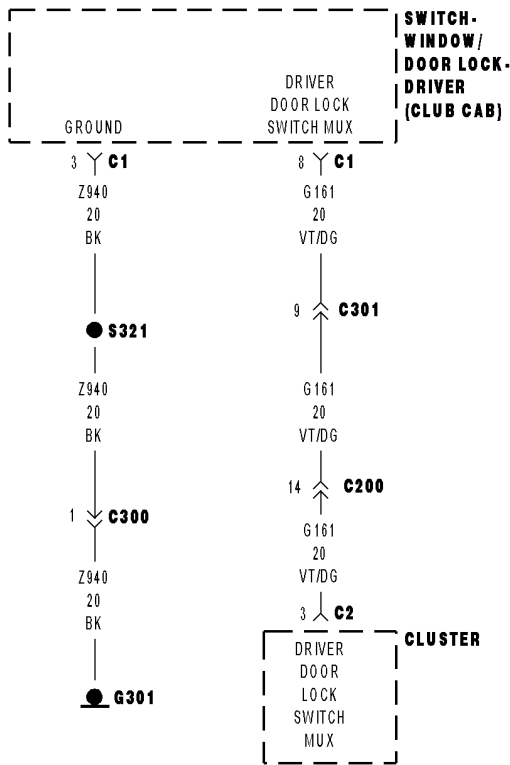
### BULB

**CAUTION:** Always use the correct bulb size and type for replacement. An incorrect bulb size or type may overheat and cause damage to the lamp, the socket and/or the lamp wiring.

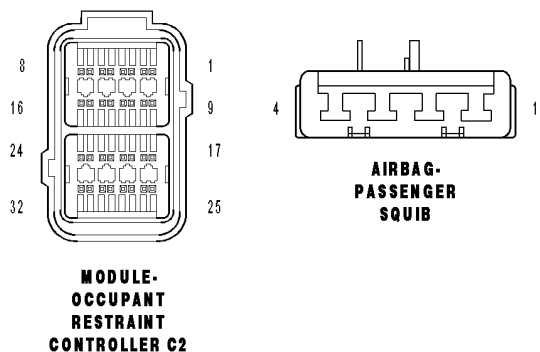
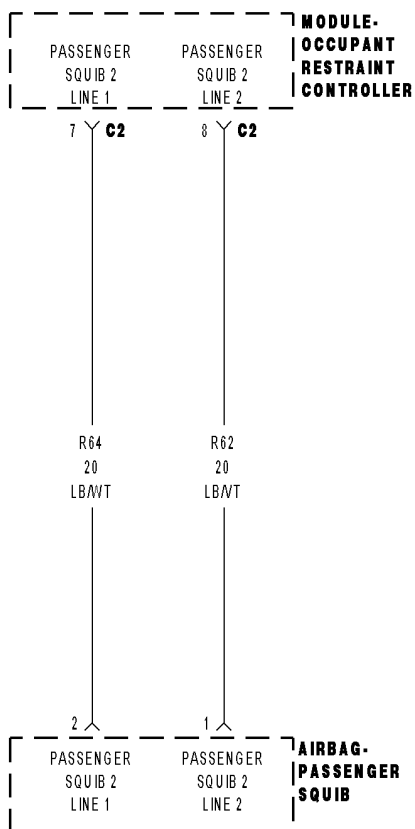
1. Align the base of the bulb with the license plate lamp socket (1).
2. Push the bulb straight into the socket until the base is firmly seated.
3. Align the socket and bulb with the keyed opening on the back of the license plate lamp housing (3).
4. Insert the socket and bulb into the housing until the socket is firmly seated.
5. Rotate the socket clockwise about 30 degrees to lock it into place.
6. Reconnect the battery negative cable.



\*DRIVER DOOR LOCK/UNLOCK SWITCH INPUT STUCK LOCK



## B1B0D-PASSENGER AIRBAG SQUIB 2 CIRCUIT HIGH





**B2101-IGNITION RUN/START INPUT LOW (CONTINUED)****3. FUSED IGNITION SWITCH OUTPUT (RUN-START) CIRCUIT OPENED**

**NOTE:** Check the related fuses to the Fused Ignition Switch Output (Run-Start) circuit. If the fuse is found to be open, repair the circuit for a shorted condition.

Turn the ignition off.

Disconnect the SKREEM harness connector.

Turn the ignition on.

Using a 12 volt test light connected to ground, probe the Fused Ignition Switch Output (Run-Start) circuit in the SKREEM harness connector.

**Does the test light illuminate brightly?**

**Yes** >> Go to 4

**No** >> Repair the Fused Ignition Switch Output (Run-Start) circuit for an open.  
Perform SKREEM VERIFICATION TEST. (Refer to 8 - ELECTRICAL/VEHICLE THEFT SECURITY - STANDARD PROCEDURE)

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**4. SKREEM**

**NOTE:** A dirty (partial) ground can cause abnormal conditions within a system. Ensure the module has a good ground before continuing.

Turn the ignition off.

Reconnect the SKREEM connector

Back probe the Fused Ignition Switch Output (Run-Start) circuit.

Start the engine.

Using the scan tool, view battery voltage under Data Display in the Engine category.

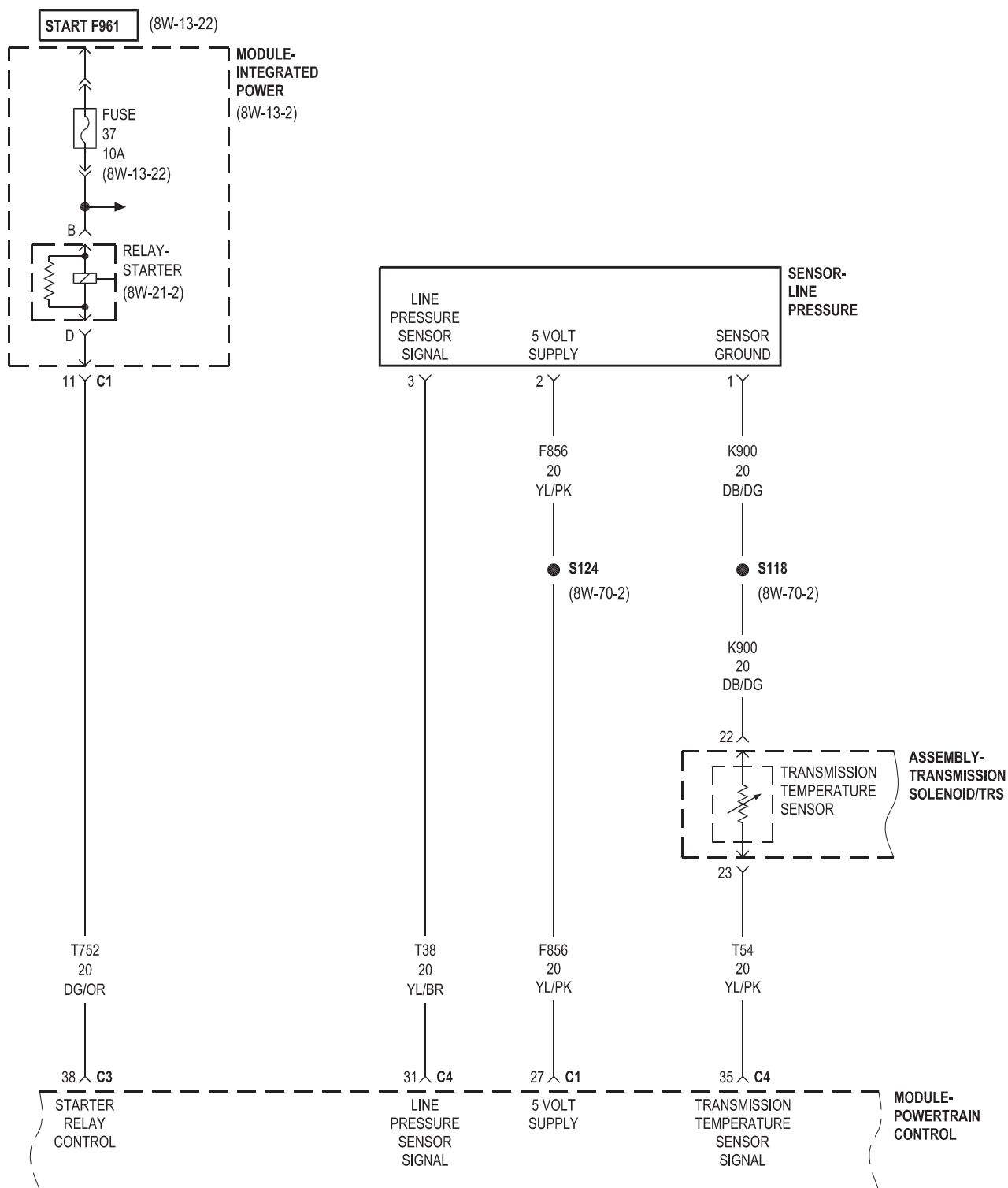
Compare the voltage on the scan tool to the voltage reading on the voltmeter.

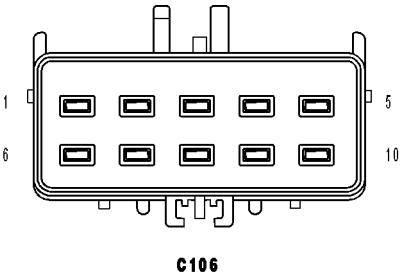
**Is the voltage on the scan tool equal to the voltmeter reading +/- .5 volt?**

**Yes** >> Replace and program the SKREEM in accordance with the Service Information.  
Perform SKREEM VERIFICATION TEST. (Refer to 8 - ELECTRICAL/VEHICLE THEFT SECURITY - STANDARD PROCEDURE)

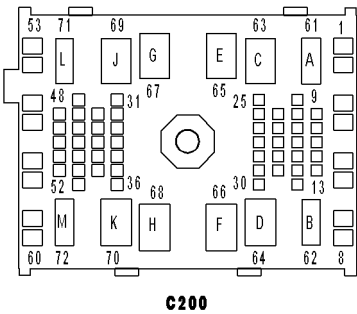
**No** >> Repair the Fused Ignition Switch Output (Run-Start) circuit for high resistance.  
Perform SKREEM VERIFICATION TEST. (Refer to 8 - ELECTRICAL/VEHICLE THEFT SECURITY - STANDARD PROCEDURE)

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C106 - (CHASSIS SIDE)	
CAV	CIRCUIT
1	L76 20PK/RD (TRAILER TOW)
2	A100 12RD/VT (TRAILER TOW)
3	L62 18WT/OR
4	L63 18WT/DG
5	Z362 20BK/BR
6	Z363 20BK/DG
7	Z945 18BK
8	L1 18WT/LG
9	-
10	-



C200 - (BODY SIDE)	
CAV	CIRCUIT
1	-
2	-
3	X735 20B/DG
4	X835 20BK/TN
5	-
6	X51 16DG/DB
7	-
8	X57 16DG/OR
9	-
10	L14 20WT/BK
11	-
12	-
13	G75 20VT
14	G161 20VT/DG
15	G778 18VT/BK
16	-
17	G160 20VT/LG
18	G74 20VT/WT
19	-
20	-
21	-
22	-
23	-
24	-
25	-
26	-
27	-
28	-
29	-
30	-
31	X53 20DG
32	X712 20BK/GY
33	X55 20DG/BR
34	-
35	X917 20DG
36	-
37	X17 20DG/OR
38	B25 20DG/WT
39	X16 20DG/LB

## P0068-MANIFOLD PRESSURE/THROTTLE POSITION CORRELATION (CONTINUED)

**11. EXCESSIVE RESISTANCE IN THE (F856) 5-VOLT SUPPLY CIRCUIT**

Turn the ignition off.

Disconnect the MAP Sensor harness connector.

Disconnect the C1 PCM harness connector.

**CAUTION: Do not probe the PCM harness connectors. Probing the PCM harness connectors will damage the PCM terminals resulting in poor terminal to pin connection. Install Miller Special Tool #8815 to perform diagnosis.**

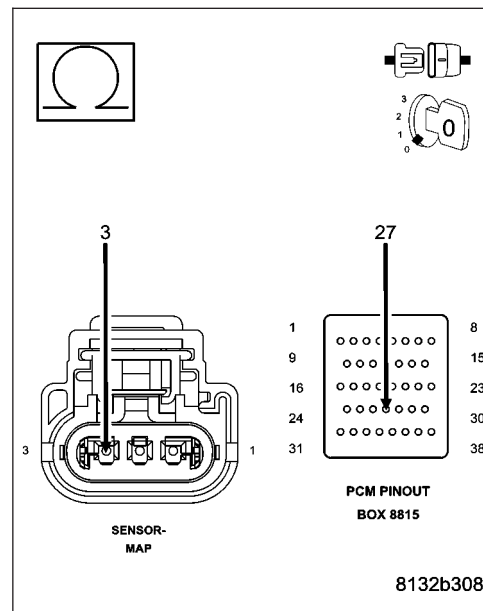
Measure the resistance of the (F856) 5-volt Supply circuit from the MAP Sensor harness connector to the appropriate terminal of special tool #8815.

**Is the resistance below 5.0 ohms?**

**Yes** >> Go To 12

**No** >> Repair the excessive resistance in the (F856) 5-volt Supply circuit.

Perform POWERTRAIN VERIFICATION TEST. (Refer to 9 - ENGINE - STANDARD PROCEDURE)

**12. (F856) 5-VOLT SUPPLY CIRCUIT SHORTED TO GROUND**

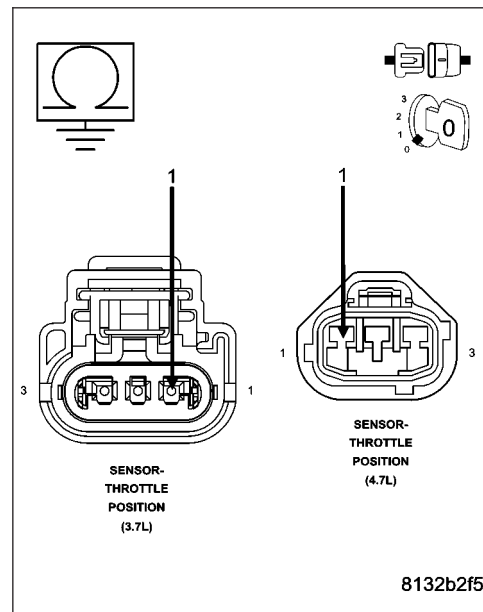
Measure the resistance between ground and the (F856) 5-volt Supply circuit in the MAP Sensor harness connector.

**Is the resistance above 100k ohms?**

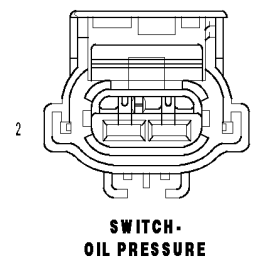
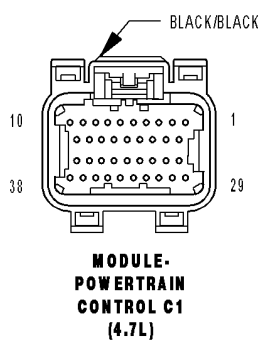
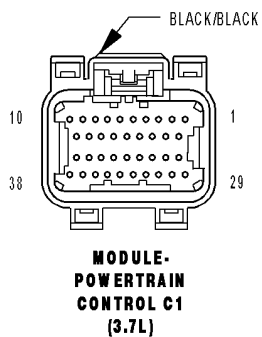
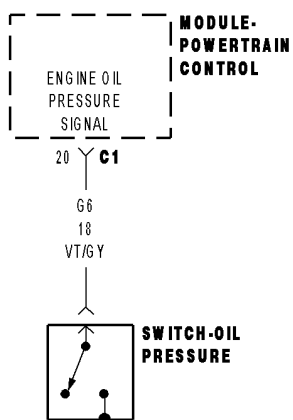
**Yes** >> Go To 13

**No** >> Repair the short to ground in the (F856) 5-volt Supply circuit.

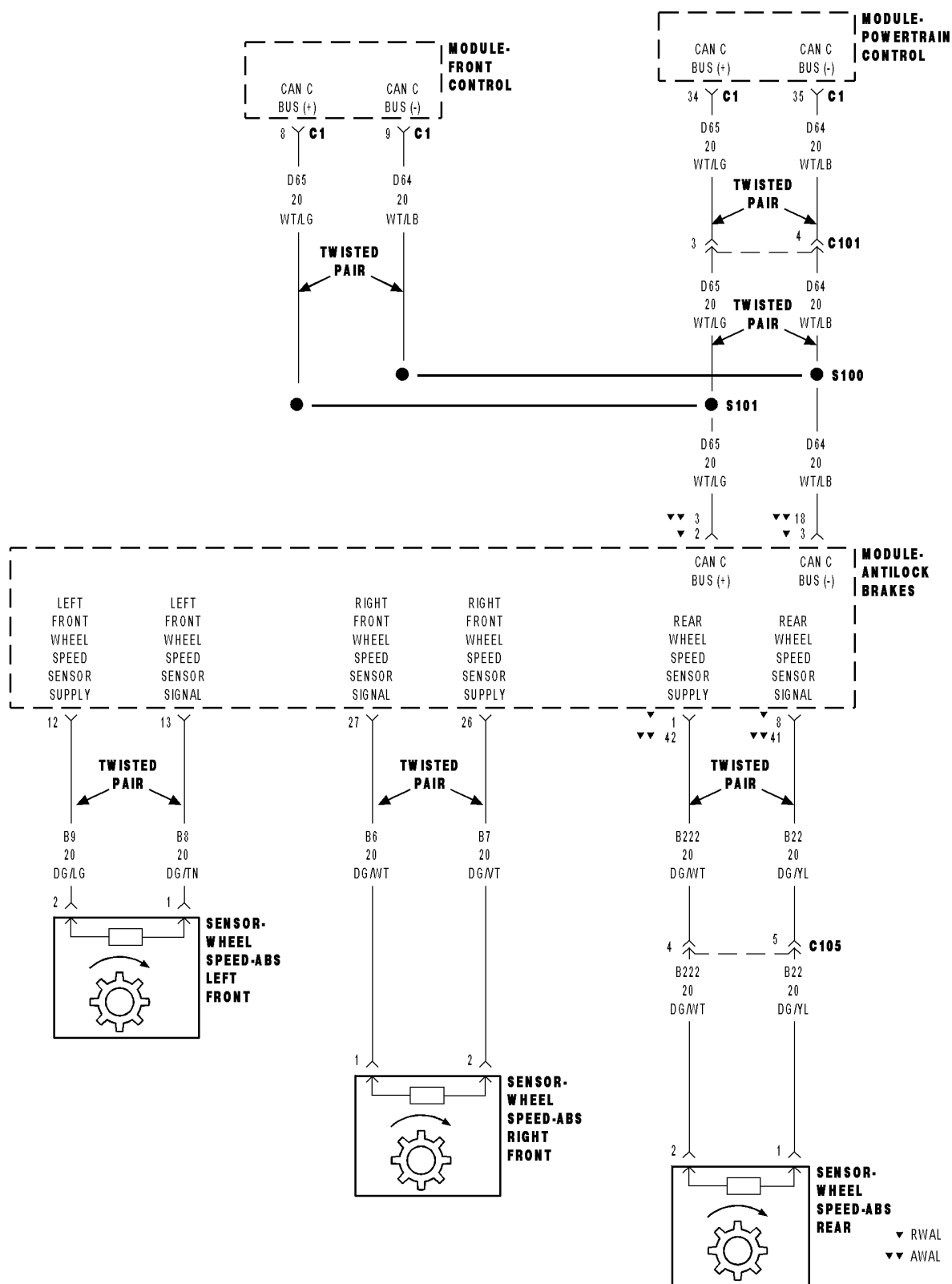
Perform POWERTRAIN VERIFICATION TEST. (Refer to 9 - ENGINE - STANDARD PROCEDURE)



## P0522-OIL PRESSURE TOO LOW



# U1412-IMPLAUSIBLE VEHICLE SPEED SIGNAL RECEIVED



## INSTALLATION

**CAUTION:** To prevent severe damage to the Crankshaft, Damper or Special Tool 8512-A, thoroughly clean the damper bore and the crankshaft nose before installing Damper.

1. Align crankshaft damper slot with key in crankshaft. Slide damper onto crankshaft slightly.

**CAUTION:** Special Tool 8512-A, is assembled in a specific sequence. Failure to assemble this tool in this sequence can result in tool failure and severe damage to either the tool or the crankshaft.

2. Assemble Special Tool 8512-A as follows, The nut (2) is threaded onto the shaft first. Then the roller bearing (1) is placed onto the threaded rod (3) (The hardened bearing surface of the bearing (1) **MUST** face the nut (2)). Then the hardened washer (5) slides onto the threaded rod. Once assembled coat the threaded rod's threads with Mopar® Nickel Anti-Seize or equivalent.
3. Using Special Tool 8512-A, press damper onto crankshaft (1).
4. Install then tighten crankshaft damper bolt to 175 N·m (130 ft. lbs.).
5. Install fan blade assembly (Refer to 7 - COOLING/ENGINE/FAN DRIVE VISCOUS CLUTCH - INSTALLATION).
6. Install radiator upper shroud and tighten fasteners to 11 N·m (95 in. lbs.).
7. Connect electrical connector for shroud fan.
8. Install radiator upper hose.
9. Install accessory drive belt (Refer to 7 - COOLING/ACCESSORY DRIVE/DRIVE BELTS - INSTALLATION).
10. Refill cooling system (Refer to 7 - COOLING - STANDARD PROCEDURE).
11. Connect negative cable to battery.

