

# INTRODUCTION

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## VEHICLE IDENTIFICATION NUMBER

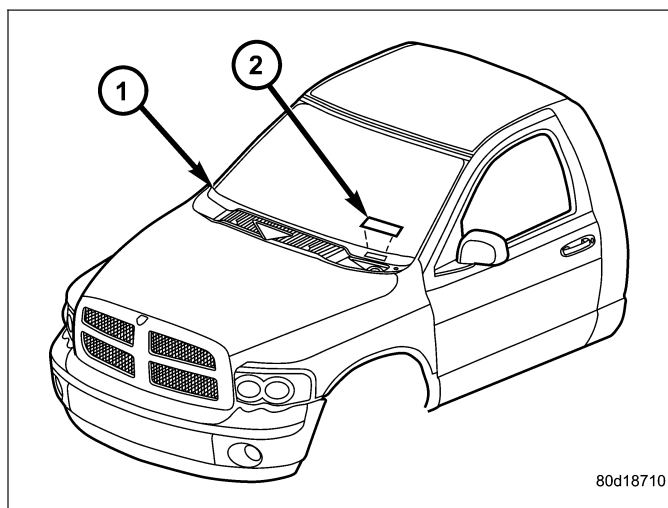
### DESCRIPTION – VIN CODING/LOCATIONS

The Vehicle Identification Number (VIN) plate (2) is located on the lower windshield fence near the left a-pillar. The VIN contains 17 characters that provide data concerning the vehicle. Refer to the VIN decoding chart to determine the identification of a vehicle.

The VIN is also imprinted on the:

- Body Code Plate.
- Equipment Identification Plate.
- Vehicle Safety Certification Label.
- Frame rail.

To protect the consumer from theft and possible fraud the manufacturer is required to include a Check Digit at the ninth position of the VIN. The check digit is used by the manufacturer and government agencies to verify the authenticity of the vehicle and official documentation. The formula to use the check digit is not released to the general public.



POSITION	INTERPRETATION	CODE = DESCRIPTION
1	Country of Origin	1 = Manufactured By DaimlerChrysler Corporation 3 = Manufactured By DaimlerChrysler De Mexico
2	Make	D = Dodge

## VEHICLE EMISSION CONTROL INFORMATION (VECI)

### DESCRIPTION

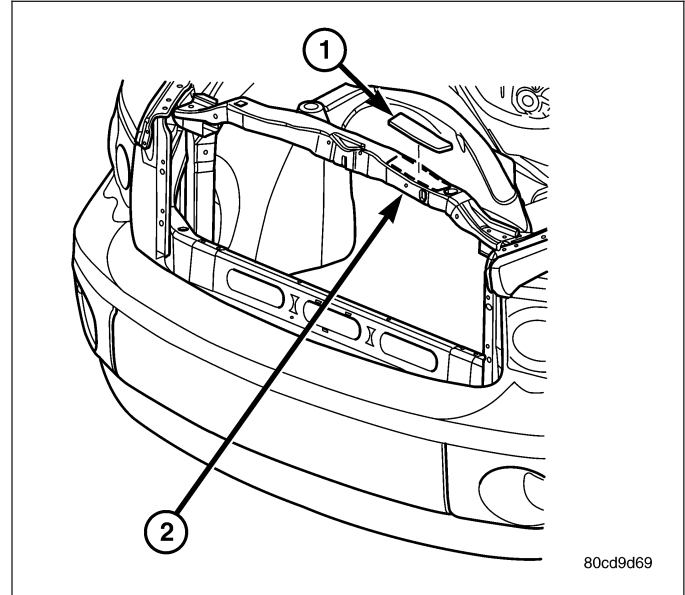
All models have a Vehicle Emission Control Information (VECI) Label (1). DaimlerChrysler permanently attaches the label in the engine compartment. The label cannot be removed without defacing label information and destroying label.

The label contains the vehicle's emission specifications and vacuum hose routings. All hoses must be connected and routed according to the label.

The label also contains an engine vacuum schematic. There are unique labels for vehicles built for sale in the state of California and the country of Canada. Canadian labels are written in both the English and French languages.

The VECI label contains the following:

- Engine family and displacement
- Evaporative family
- Emission control system schematic
- Certification application
- Engine timing specifications (if adjustable)
- Idle speeds (if adjustable)
- Spark plug and gap



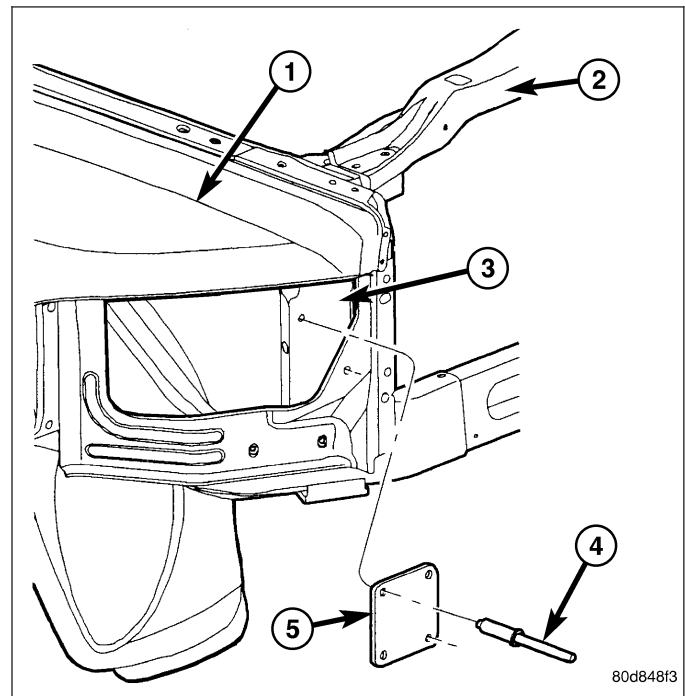
## BODY CODE PLATE

### DESCRIPTION

The Body Code Plate is located on the right front hydroform fender rail just behind the headlight assembly. There are seven lines of information on the body code plate. Lines 5, 6, and 7 are not used to define service information. Information reads from left to right, starting with line 4 in the center of the plate to line 1 at the bottom of the plate.

The last code imprinted on a vehicle code plate will be followed by the imprinted word END. When two vehicle code plates are required, the last available spaces on the first plate will be imprinted with the letters CTD (for continued).

When a second vehicle code plate is necessary, the first four spaces on each row will not be used because of the plate overlap.



**Schedule "B"**

Follow schedule "B" if you usually operate your vehicle under one or more of the following conditions.

- Frequent short trips where the engine does not achieve full operating temperature (operating temperature defined as 190° F (66° C ) coolant temperature).
- Extensive engine idling (over 10 minutes per hour of operation) at ambient temperatures less than 32° F (0° C).
- Driving in dusty conditions.
- Frequent trailer towing.
- Taxi, police, or delivery service (commercial service).
- Off-road or desert operation.
- Extensive operation at high engine speeds (greater than 2900 rpm) and loads (greater than 70% throttle).

<b>Miles (Kilometers)</b>	<b>3,750 (6 000)</b>	<b>7,500 (12 000)</b>	<b>11,250 (18 000)</b>	<b>15,000 (24 000)</b>	<b>18,750 (30 000)</b>
Change engine oil and engine oil filter.		X		X	
Rotate tires.		X		X	
Lubricate outer tie rod ends 2500/3500 (4X4) models only.		X		X	
Inspect water pump weep hole for blockage.				X	
Replace fuel filter element. Clean the water in fuel sensor.				X	
Change rear axle fluid.				X	
Change front axle fluid (4X4).				X	
Inspect brake linings.				X	
Inspect and adjust parking brake if necessary.				X	

<b>Miles (Kilometers)</b>	<b>22,500 (36 000)</b>	<b>26,250 (42 000)</b>	<b>30,000 (48 000)</b>	<b>33,750 (54 000)</b>	<b>37,500 (60 000)</b>
Change engine oil and engine oil filter.	X		X		X
Rotate tires.	X		X		X
Lubricate outer tie rod ends 2500/3500 (4X4) models only.	X		X		X
Inspect drive belt, replace as required.	X				
Inspect fan hub.			X		
Inspect damper.			X		
Inspect water pump weep hole for blockage.			X		
Replace fuel filter element. Clean the water in fuel sensor.			X		
Change rear axle fluid.			X		
Change front axle fluid (4X4).			X		
Check transfer case fluid level (4X4).			X		
Drain and refill automatic transmission fluid. Replace filter and adjust bands (48RE only).			X		

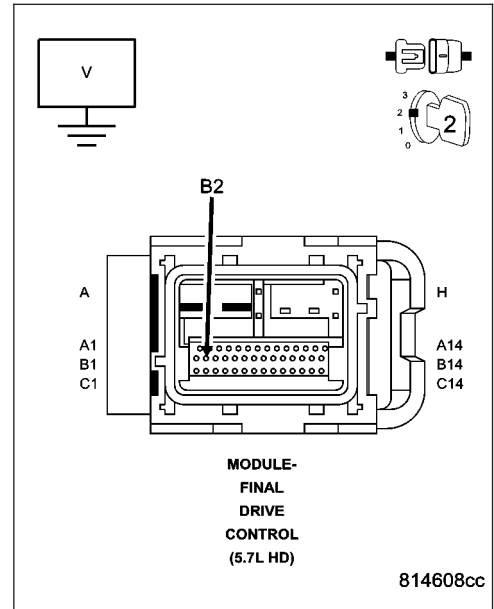
**C2311-STABILIZER/DIFFERENTIAL INDICATOR SUPPLY CIRCUIT HIGH (CONTINUED)**

**3. (T536) SWITCH SUPPLY CIRCUIT SHORTED TO VOLTAGE**

Turn the ignition off.  
 Disconnect the Axle Locker Switch harness connector.  
 Disconnect the Disconnecting Stabilizer Bar Switch harness connector.  
 Disconnect the FDCM harness connector.  
 Turn the ignition on.  
 Measure the voltage on the (T536) Switch Supply circuit in the Axle Locker Switch harness connector.

**Does the voltmeter indicate voltage present?**

- Yes** >> Repair the short to voltage in the Switch Supply circuit.
- No** >> Go To 4

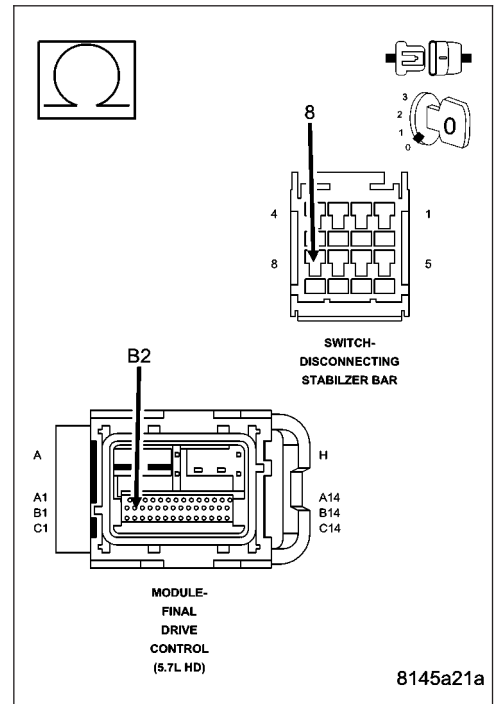


**4. (t536) SWITCH SUPPLY CIRCUIT OPEN FROM THE AXLE LOCKER SWITCH AND THE FDCM**

Turn the ignition off.  
 Measure the resistance of the (T536) Switch Supply circuit between the Axle Locker Switch harness connector and the FDCM harness connector.

**Is the resistance below 5.0 ohms?**

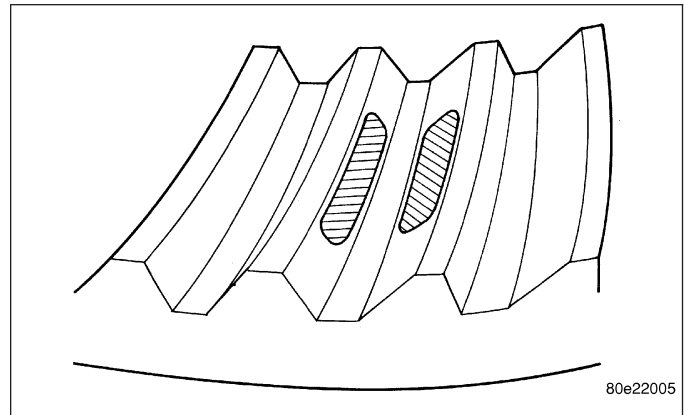
- Yes** >> Go to 5
- No** >> Repair the open in the Switch Supply circuit.  
 Perform FDCM VERIFICATION TEST.



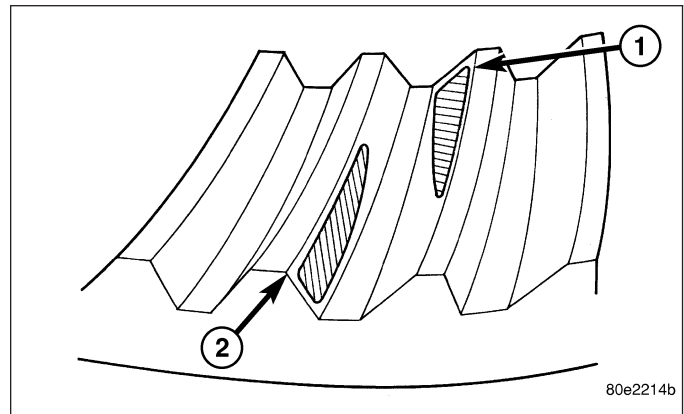
## GEAR CONTACT PATTERN

1. Wipe clean each tooth of the ring gear.
2. Apply gear marking compound to all of the ring gear teeth.
3. Verify bearing cap bolts are torque specification.
4. Apply the brakes lightly to create at 14 N·m (10 ft. lbs.) pinion rotating torque.
5. Rotate the pinion/pinion yoke 4 full revolutions in each directions.
6. Read gear tooth contact pattern.

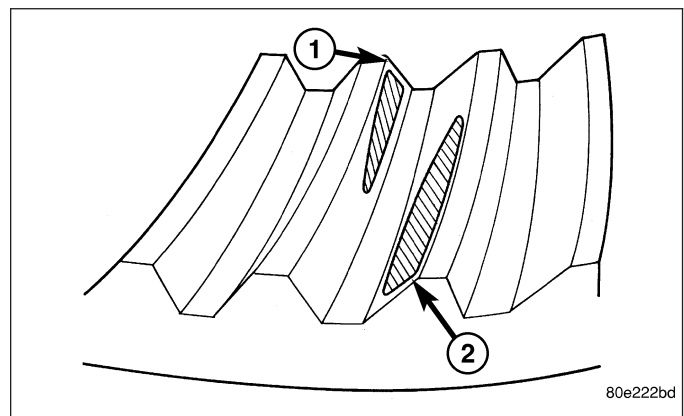
Gear contact pattern correct. Backlash and pinion depth is correct.



Ring gear too far away from pinion gear coast side toe (1) drive side heel (2). Decrease backlash by moving the ring closer to the pinion gear.

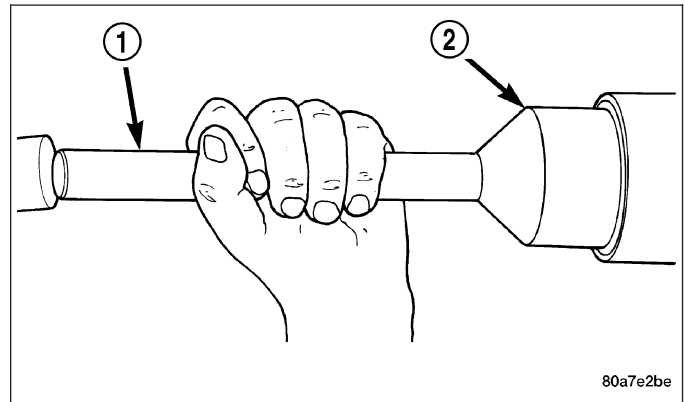


Ring gear too close to pinion gear drive side toe (1) coast side heel (2). Increase backlash, by moving the ring away from the pinion gear.



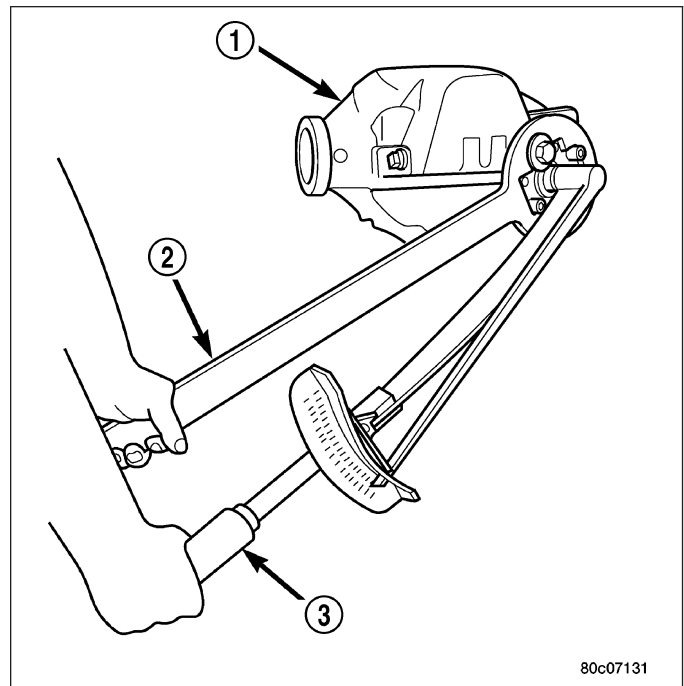
## INSTALLATION

1. Apply a light coating of gear lubricant on the lip of pinion seal.
2. Install seal with Installer 8695 (2) and Handle C-4171 (1).
3. Install companion flange onto the pinion with Installer C-3718 and Holder 6719A.



4. Position holder (2) against the companion flange and install four bolts and washers into the threaded holes. Tighten the bolt and washer so that the holder is held to the flange.
5. Install a **new** pinion nut onto the pinion shaft and tighten the pinion nut until there is zero bearing end-play

**CAUTION: Do not exceed 271 N-m (200 ft. lbs.) the minimum tightening torque when installing the companion flange at this point. Never loosen pinion nut to decrease pinion bearing rotating torque and never exceed specified preload torque. Failure to these instruction will damage the axle.**



## FRONT AXLE - 9 1/4 AA

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## FRONT AXLE - 9 1/4 AA

### DIAGNOSIS AND TESTING

#### FRONT AXLE - 9 1/4 AA

#### GEAR NOISE

Axle gear noise can be caused by insufficient lubricant, incorrect backlash, tooth contact, worn/damaged gears or the carrier housing not having the proper offset and squareness.

Gear noise usually happens at a specific speed range. The noise can also occur during a specific type of driving condition. These conditions are acceleration, deceleration, coast, or constant load.

When road testing, first warm-up the axle fluid by driving the vehicle at least 5 miles and then accelerate the vehicle to the speed range where the noise is the greatest. Shift out-of-gear and coast through the peak-noise range. If the noise stops or changes greatly check for:

- Insufficient lubricant.
- Incorrect ring gear backlash.
- Gear damage.

Differential side gears and pinions can be checked by turning the vehicle. The side gears are loaded during turns. They usually do not cause noise during straight-ahead driving when the gears are unloaded. A worn pinion mate shaft can also cause a snapping or a knocking noise.

#### BEARING NOISE

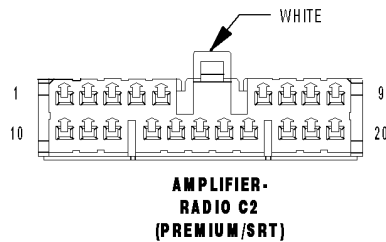
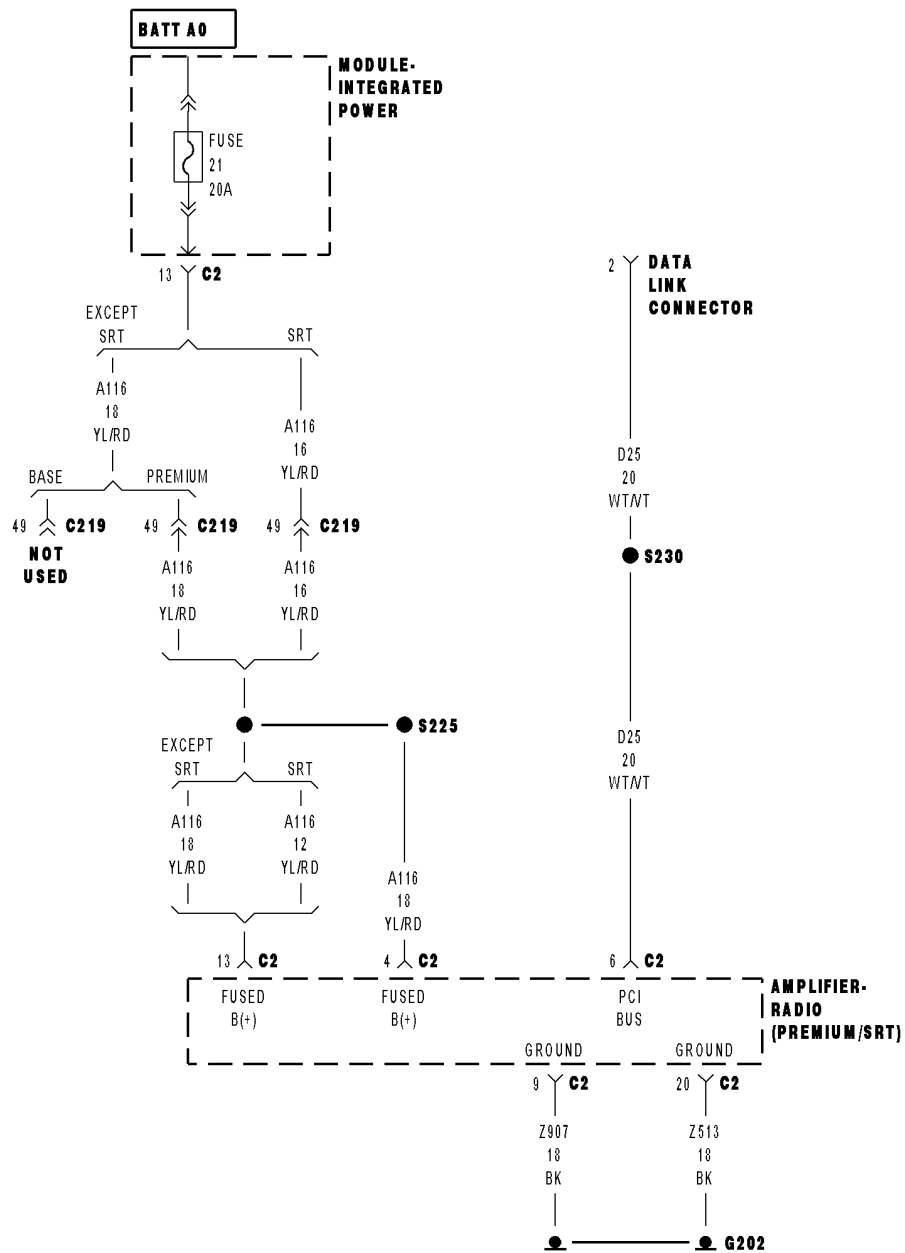
The axle shaft, differential and pinion bearings can all produce noise when worn or damaged. Bearing noise can be either a whining, or a growling sound.

**HYDRAULIC/MECHANICAL****SPECIFICATIONS****SPECIFICATIONS - TORQUE CHART****TORQUE SPECIFICATIONS**

<b>DESCRIPTION</b>	<b>N·m</b>	<b>Ft. Lbs.</b>	<b>In. Lbs.</b>
Brake Booster Mounting Nuts	28	21	250
Master Cylinder Mounting Nuts	18	—	160
Caliper Bleed Screws	19	14	168
Caliper Mounting Pins Front	32	24	—
Caliper Mounting Pins Rear	30	22	—
Caliper Adapter Mounting Bolts Front LD	176	130	—
Caliper Adapter Mounting Bolts Front HD & SRT-10	339	250	—
Caliper Adapter Mounting Bolts Rear LD	135	100	—
Caliper Adapter Mounting Bolts Rear HD & SRT-10	197	145	—
Junction Block Bolts To Frame	10	7.5	—
Brake Pedal Assembly Bracket Nuts	28	21	—
Support Plate Mounting Bolts/Nuts LD	64	47	—
Support Plate Mounting Bolts/Nuts SRT-10 & HD	203	150	—
Brake Line Fittings Master Cylinder	19	14	170



**\*NO RESPONSE FROM AMPLIFIER**



# HEATED GLASS - SERVICE INFORMATION

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## HEATED GLASS - SERVICE INFORMATION

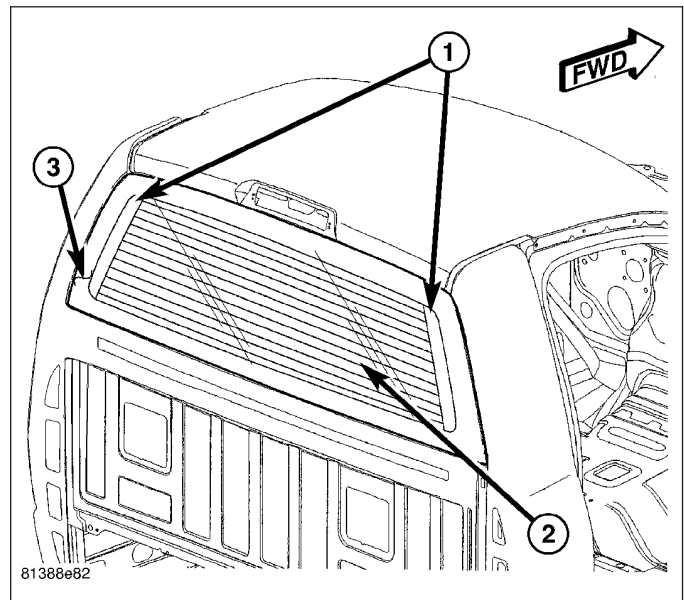
### DESCRIPTION

**CAUTION:** Grid lines can be damaged or scraped off with sharp instruments. Care should be taken in cleaning glass or removing foreign materials, decals or stickers. Normal glass cleaning solvents or hot water used with rags or toweling is recommended.

The rear window defogger system, also known as electric backlight (EBL), consists of two vertical bus bars (1) linked by a series of grid lines (2) fired onto the inside surface of the rear window (3).

The EBL system is turned On or Off by a switch and a timing circuit integral to the A/C-heater control located at the center of the instrument panel.

Circuit protection is provided by two cartridge fuses located in the integrated power module (IPM). One fuse is for the control circuit and the other fuse is for the heated grid circuit.



## OIL TEMPERATURE SENSOR

1. Disconnect the engine wire harness connector from the oil temperature sensor.
2. Using an ohmmeter and a test thermometer, test the resistance versus the oil temperature relationship of the sensor between the two terminals of the sensor as shown in the Oil Temperature Sensor Tests table.

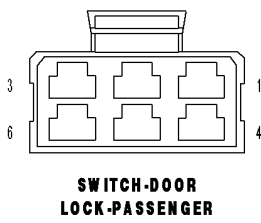
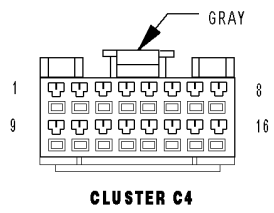
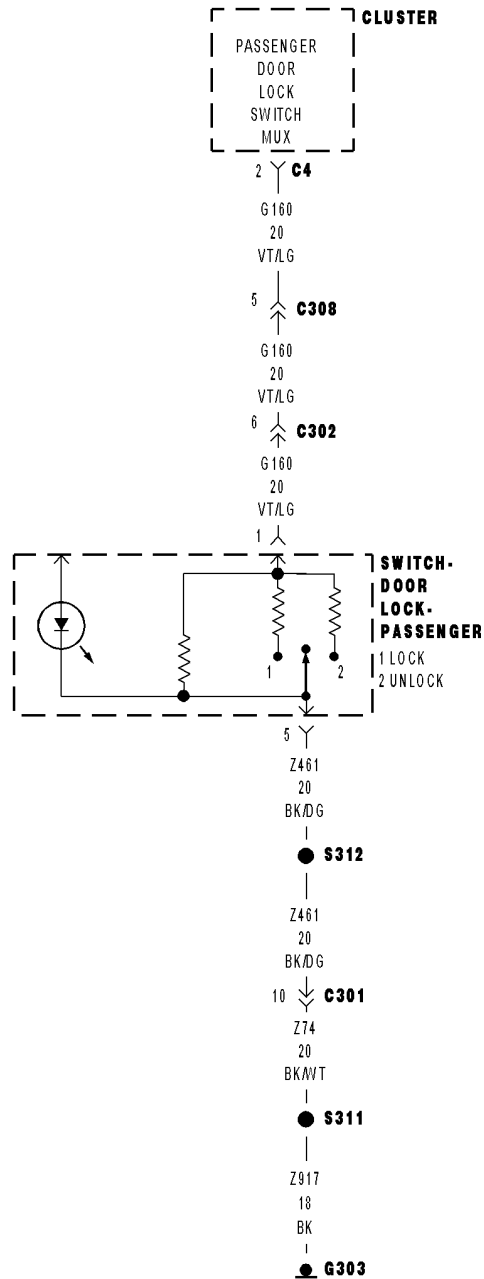
OIL TEMPERATURE SENSOR TESTS		
TEMPERATURE		RESISTANCE RANGE (KILOHMS)
°C	°F	
(40)	(40)	291.49 - 381.71
(20)	(4)	85.85 - 108.39
(10)	14	49.25 - 61.43
0	32	29.33 - 35.99
10	50	17.99 - 21.81
20	68	11.37 - 13.61
25	77	9.12 - 10.88
30	86	7.37 - 8.75
40	104	4.90 - 5.75
50	122	3.33 - 3.88
60	140	2.31 - 2.67
70	158	1.63 - 1.87
80	176	1.17 - 1.34
90	194	0.86 - 0.97
100	212	0.64 - 0.72
110	230	0.48 - 0.54
120	248	0.37 - 0.41
130	266	0.28 - 0.32

3. If the sensor fails any of these tests, replace the faulty oil temperature sensor as required.

## REMOVAL

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

### PASSENGER DOOR LOCK SWITCH INPUT CIRCUIT SHORTED



**PASSENGER SQUIB 1 CIRCUIT OPEN (CONTINUED)****6. STORED ORC DTC**

With the scan tool, record and erase all DTC's from all Airbag System Modules.

If any ACTIVE codes are present they must be resolved before diagnosing any stored codes.

**WARNING: To avoid personal injury or death, turn the ignition off, disconnect the battery and wait two minutes before proceeding.**

Using the wiring diagram/schematic as a guide, inspect the wiring and connectors.

Look for chaffed, pierced, pinched, or partially broken wires and broken, bent, pushed out, spread, corroded, or contaminated terminals.

The following additional checks may assist you in identifying a possible intermittent problem.

Reconnect any disconnected components and harness connector.

**WARNING: To avoid personal injury or death, turn the ignition on, then reconnect the battery.**

With the scan tool monitor active codes as you work through the following steps.

Wiggle the wiring harness and connectors of the related airbag circuit or component.

If codes are related to the Driver Airbag circuits, rotate the steering wheel from stop to stop.

If only stored codes return continue the test until the problem area has been isolated.

In the previous steps you have attempted to recreate the conditions responsible for setting active DTC in question.

**Are any ACTIVE DTCs present?**

**Yes** >> Select the appropriate diagnostic procedure from the Table of Contents in this section.

**No** >> No problem found at this time. Erase all codes before returning vehicle to customer.

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**GENERAL MICROPHONE FAULT (CONTINUED)**

For a complete wiring diagram Refer to Section 8W.

- **When Monitored:**  
With the ignition on.
- **Set Condition:**  
The Hands Free Module detects a fault in any of the microphone circuits.

<b>Possible Causes</b>
(X712) MICROPHONE 1 IN (+) CIRCUIT OPEN
(X722) MICROPHONE 2 IN (+) CIRCUIT OPEN
(X792) MICROPHONE IN (-) CIRCUIT OPEN
(X712) (X722) (X792) MICROPHONE CIRCUITS SHORTED TO GROUND
(X712) (X722) (X792) MICROPHONE CIRCUITS SHORTED TO VOLTAGE
(X712) (X722) (X792) MICROPHONE CIRCUITS SHORTED TOGETHER
INSIDE REARVIEW MIRROR
HANDS FREE MODULE

**Diagnostic Test****1. CHECK FOR ACTIVE DTC**

Turn the ignition on.

With the DRB, read and record the HFM DTC's and then erase the DTC's.

Attempt to make a phone call with the system.

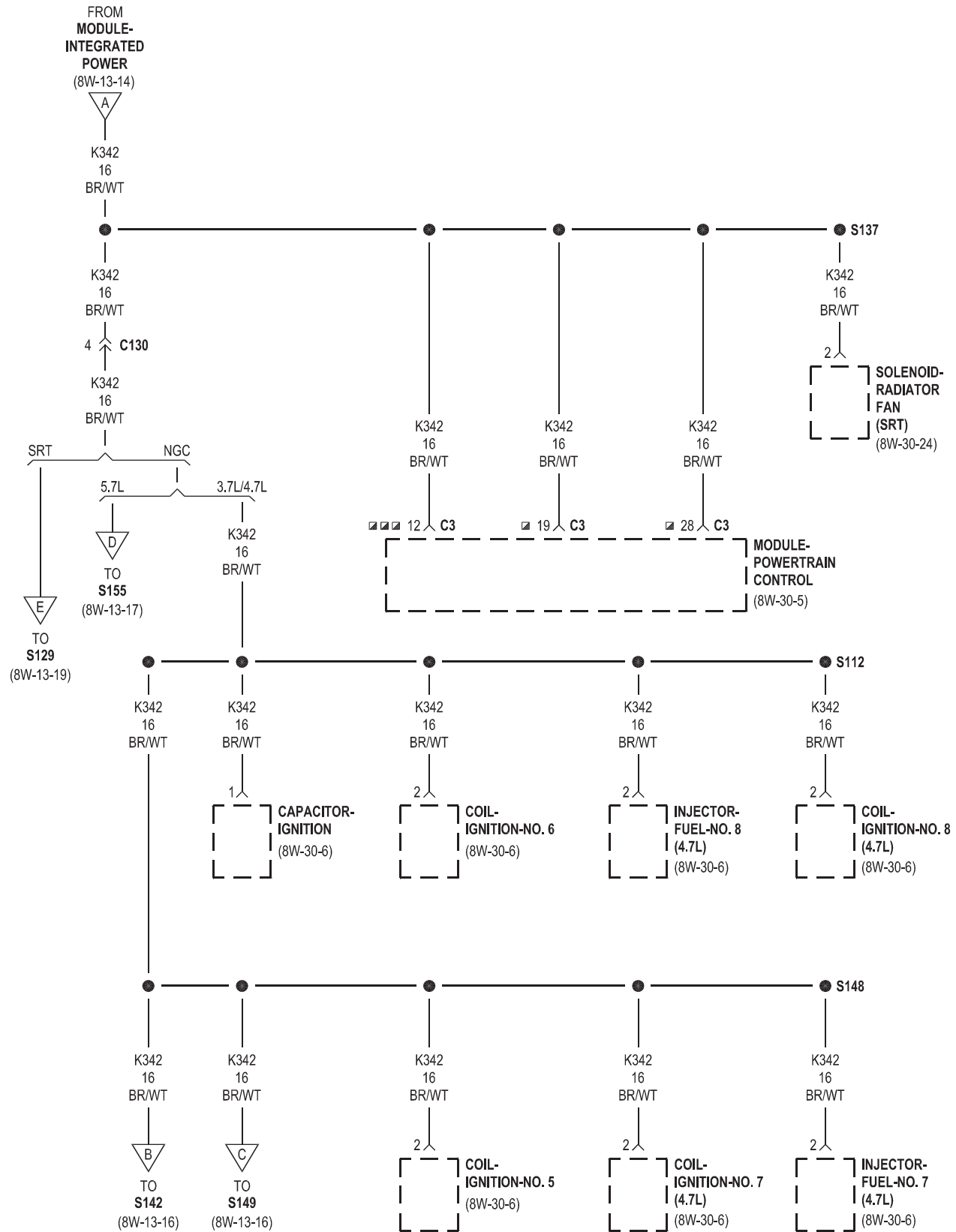
With the DRB, read the HFM DTC's.

**Did this DTC reset?**

**Yes** >> Go To 2

**No** >> The condition that set this DTC is no longer present. Using the wiring diagram/schematic as a guide, inspect the wiring for chafed, pierced, pinched, and partially broken wires and the wiring harness connectors for broken, bent, pushed out, and corroded terminals.

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▣ NGC  
 ▣▣▣ SRT