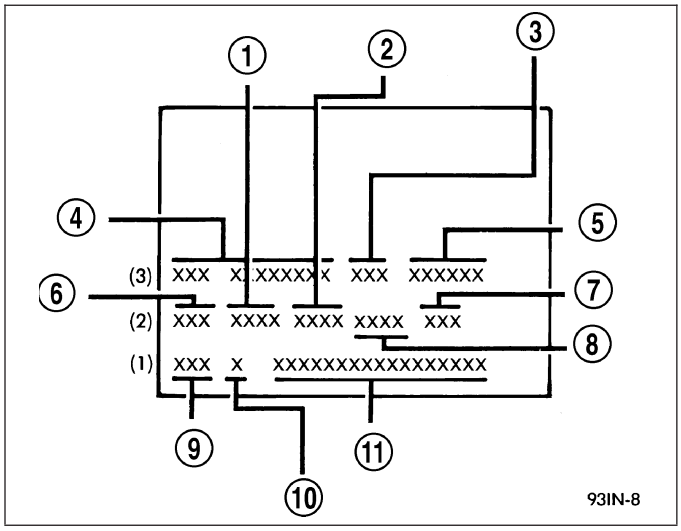
BODY CODE PLATE

DESCRIPTION

LOCATION AND DECODING

The Body Code Plate is located in the engine compartment on the front right side shock tower mounting front panel.



BODY CODE PLATE

1 - PRIMARY PAINT
2 - SECONDARY PAINT
3 - VINYL ROOF
4 - VEHICLE ORDER NUMBER
5 - CAR LINE SHELL
6 - PAINT PROCEDURE
7 - ENGINE
8 - TRIM
9 - TRANSMISSION
10 - MARKET
11 - VIN

BODY CODE PLATE LINE 3

There are seven lines of information on the body code plate. Lines 4, 5, 6, and 7 are not used to define service information. Information reads from left to right, starting with line 3 in the center of the plate to line 1 at the bottom of the plate.

DIGITS 1, 2, AND 3

Paint procedure

DIGIT 4

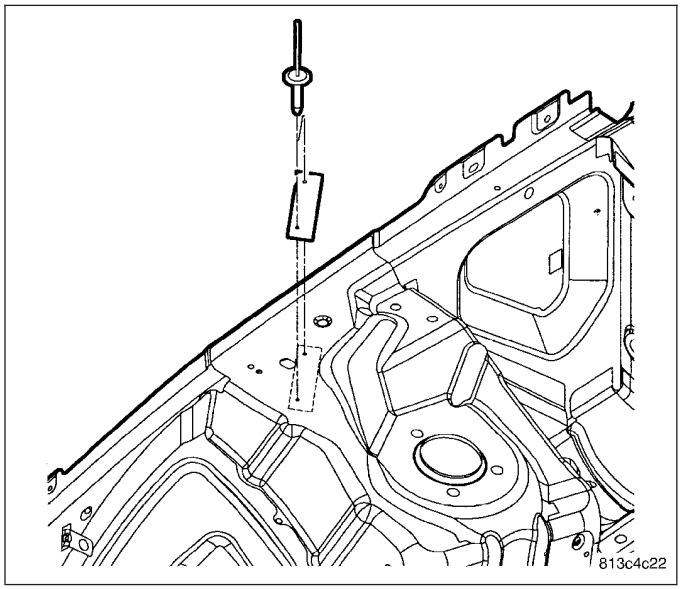
Open Space

DIGITS 5 THROUGH 7

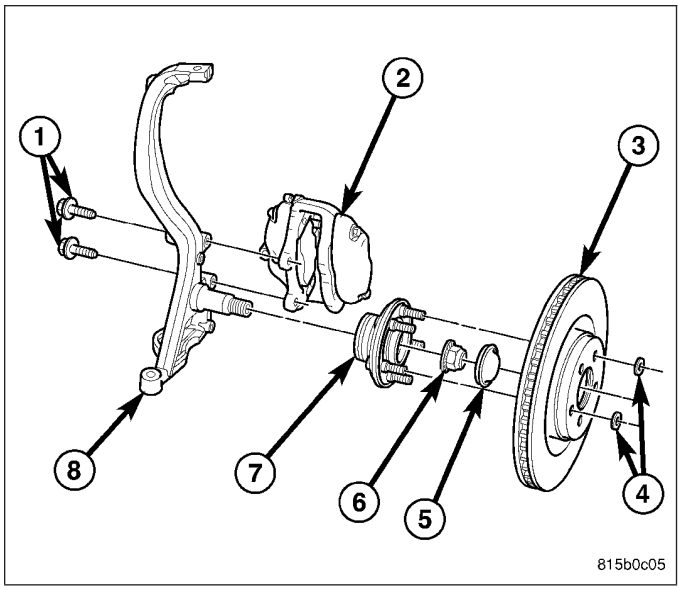
Primary Paint

DIGIT 8 AND 9

Open Space



The front knuckle (8) for the SRT8 is different from the standard RWD knuckle. Although similar in appearance, the knuckle has been modified to accept the larger 20 inch tire and wheel assembly. Also, the mounting bosses for the disc brake caliper have been moved downward to allow for mounting of the Brembo four-piston disc brake caliper (2).



Although serviced the same, the components of the SRT8 shock assembly are unique to this vehicle. The front shock absorber is manufactured by Bilstein®. It can be easily identified by its color. It is painted yellow. Because the shock absorber is a mono-tube design, it is important to handle it with care and not support the shock by it tubular housing.

The front stabilizer bar diameter has been increased for the SRT8 to the size of that used on Export vehicles, 30 mm. It is serviced in the same manner as the standard RWD bar.

SPECIFICATIONS

FRONT SUSPENSION FASTENER TORQUE

DESCRIPTION	N·m	Ft. Lbs.	In. Lbs.
ENGINE CRADLE MOUNTING BOLTS	185	136	—
HUB NUT - AWD	212	157	—
HUB NUT - RWD	250	184	—
KNUCKLE DUST SHIELD SCREWS	10	7	89
LOWER CONTROL ARM CRADLE NUT	176	130	—
LOWER CONTROL ARM BALL JOINT NUT - AWD	122	90	—
LOWER CONTROL ARM BALL JOINT NUT - RWD	68 + 90° TURN	50 + 90° TURN	—
TENSION STRUT CRADLE NUT	176	130	—
TENSION STRUT BALL JOINT NUT	68 + 90° TURN	50 + 90° TURN	—
SHOCK ABSORBER CLEVIS BRACKET LOWER BOLT - AWD	174	128	—
SHOCK ABSORBER CLEVIS BRACKET PINCH BOLT - AWD	61	45	—
SHOCK ABSORBER LOWER MOUNTING BOLT - RWD	174	128	—
SHOCK ABSORBER UPPER MOUNTING NUTS	27	20	239
SHOCK ABSORBER SHAFT NUT	95	70	—
STABILIZER BAR LINK UPPER (SHOCK) NUT	128	95	—

BALL JOINT - UPPER

DESCRIPTION

The upper ball joint is pressed into the upper control arm. The ball joint is a “sealed for life” component and cannot be maintenance lubricated. This ball joint is lubricated for life at the time of assembly. **No attempt should be made to ever add any lubrication to this ball joint.**

Neither the upper ball joint, nor the seal boot can be serviced as a separate component. The entire upper control arm must be replaced if either are damaged.

The ball joint connection at the knuckle is achieved by an interference fit created by the tapered stud of the ball joint and a tapered hole in the steering knuckle. The ball joint stud is retained in the steering knuckle using a locking nut.

DIAGNOSIS AND TESTING

UPPER BALL JOINT

1. Raise vehicle on a drive-on hoist.

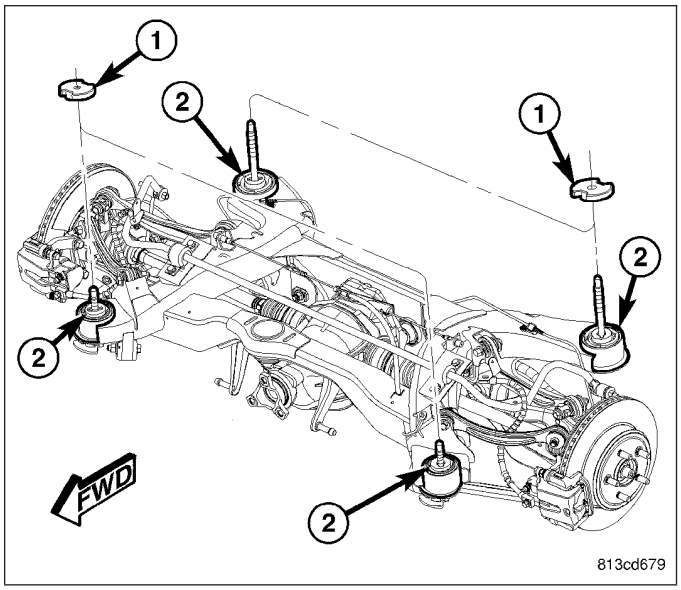
NOTE: If a drive-on hoist is not available, use wooden blocks with jack stands to support the lower control arm in the ball joint area. Place the jack stands appropriately and lower the hoist placing weight on the lower control arm. The lower control arms should now be supporting the vehicle weight.

2. Using a jack, lift the front end off the hoist and position a wooden block underneath lower control arm supporting that corner of the vehicles weight.
3. Remove tire and wheel assembly. (Refer to 22 - TIRES/WHEELS - REMOVAL)
4. Attach a dial indicator to body of upper control arm, then align dial indicator’s contact pointer with direction of stud axis and touch machined flat on end of knuckle near ball joint. Zero dial indicator.

NOTE: Use care when applying the load to the knuckle so as to not damage components of suspension.

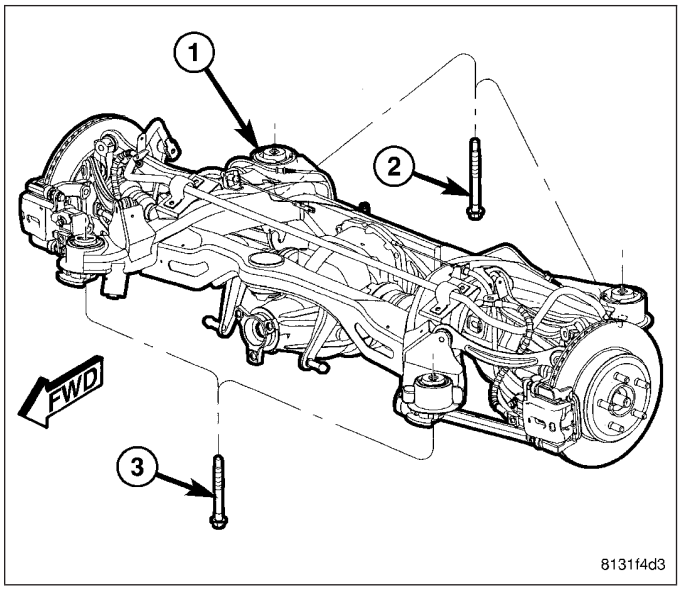
5. Insert a pry bar and rest it against bottom of upper control arm and use lever principle to push arm upward until dial indicator no longer moves.
6. Record any ball joint movement. If movement in the control arm exceeds 1.5 mm (.059 in.), the ball joint is faulty.
7. If the ball joint needs replaced, the entire upper control arm needs to be replaced. (Refer to 2 - SUSPENSION/ FRONT/UPPER CONTROL ARM - REMOVAL)

21. If vehicle is equipped with AWD, insert spacers (1) on top of left crossmember mount bushings (2) before crossmember is raised into place.

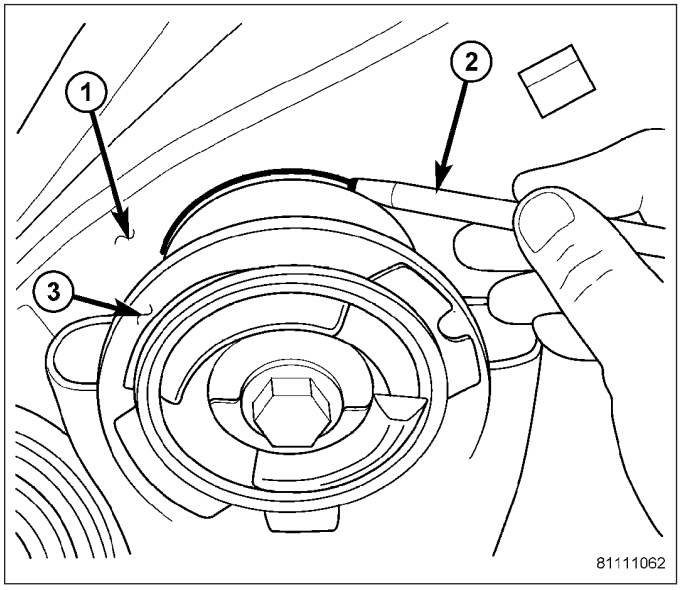


NOTE: There are four crossmember mounting bolts. Rear mounting bolts (2) are longer than front mounting bolts (3). Do not interchange mounting bolts.

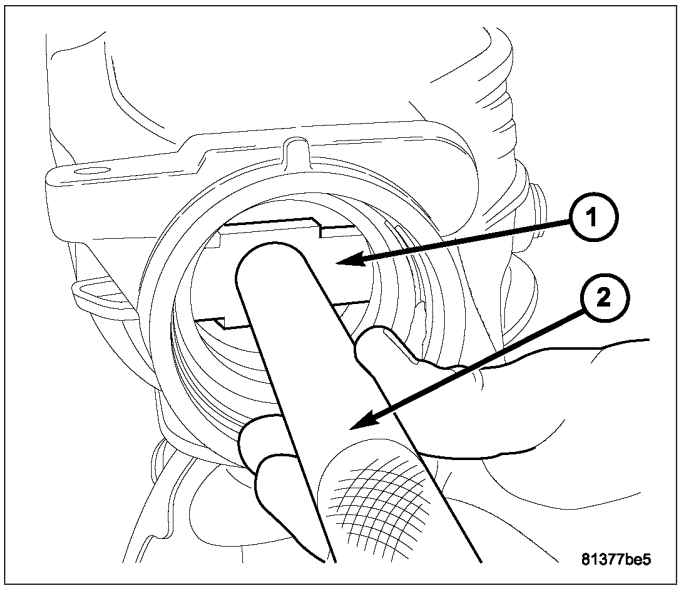
22. Raise left side of crossmember (1) into mounted position. Install left side crossmember mounting bolts (2 and 3). **Snug, but do not fully tighten bolts at this time.**



23. Shift crossmember as necessary to line up mounts (3) with location marks drawn on body (1) before removal.



12. Using Tool C-4171 (2) and Remover 9084 (1), drive out pinion head bearing cup and insert specified shim.



ADJUSTMENT — SIDE BEARING PRELOAD AND RING GEAR BACKLASH

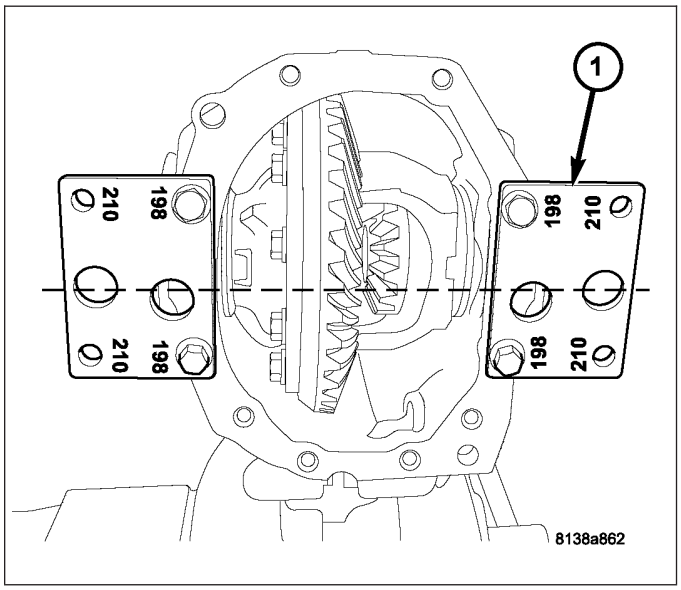
DIFFERENTIAL SIDE BEARING PRELOAD MEASUREMENT/CORRECTION

Differential side bearing preload should be measured and adjusted after the following scenarios:

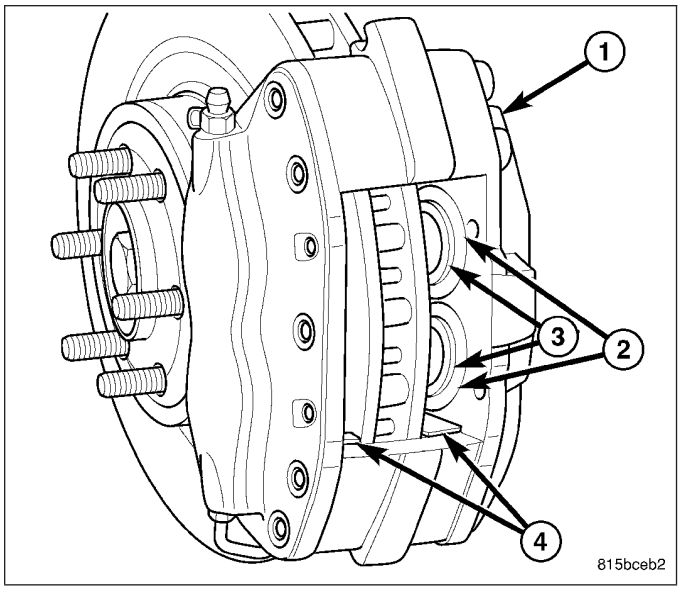
- Differential case replacement
- Differential side bearing replacement
- Axle housing replacement
- Loss or replacement of side bearing snap rings

If none of these situations apply, refer to Adjustment — Ring Gear Backlash

1. Install Spreader Adapter Plates 9226 (1).



8. Once brake pads are removed from caliper (1), inspect all four caliper pistons (3) and dust boots (2) for evidence of brake fluid leakage. Also inspect dust boots on all caliper pistons for any cuts, tears or heat cracks and brake pad supports (4) (if equipped) for excess wear or damage. If caliper fails inspection, it should be replaced.



CLEANING

WARNING: Dust and dirt accumulating on brake parts during normal use may contain asbestos fibers from production or aftermarket brake linings. Breathing excessive concentrations of asbestos fibers can cause serious bodily harm. Exercise care when servicing brake parts. Do not sand or grind brake lining unless equipment used is designed to contain the dust residue. Do not clean brake parts with compressed air or by dry brushing. Cleaning should be done by dampening the brake components with a fine mist of water, then wiping the brake components clean with a dampened cloth. Dispose of cloth and all residue containing asbestos fibers in an impermeable container with the appropriate label. Follow practices prescribed by the Occupational Safety And Health Administration (OSHA) and the Environmental Protection Agency (EPA) for the handling, processing, and disposing of dust or debris that may contain asbestos fibers.

INSPECTION

Visually inspect brake pads for uneven lining wear. Also inspect for excessive lining deterioration. Check the clearance between the tips of the wear indicators (if equipped) on the pads and the brake rotors.

If a visual inspection does not adequately determine the condition of the lining, remove the disc brake pads from the calipers and perform a physical check.

NOTE: It is important to inspect both front and rear brake pads during the same inspection. Typically, front and rear brake pads wear out at the same time.

When servicing, replace **both** disc brake pads (inboard and outboard) for each caliper. It is necessary to replace the pads on the opposite side of the vehicle as well as the pads failing inspection.

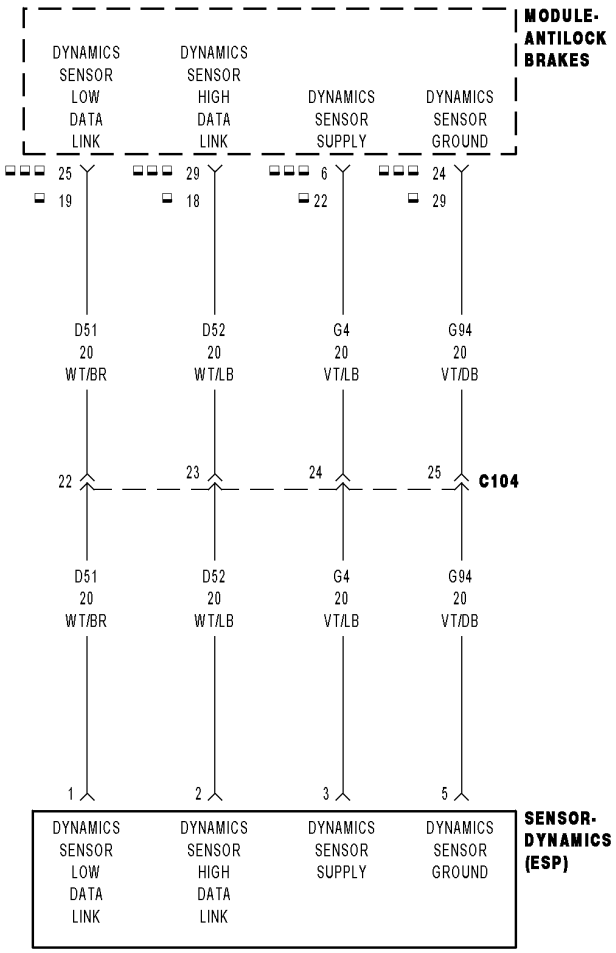
If the brake pads do not require replacement, be sure to reinstall the brake pads in the original position they were remove from.

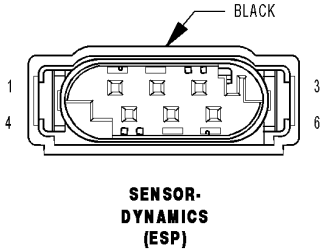
INSTALLATION

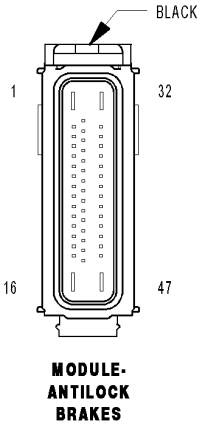
NOTE: Perform Step 1 through Step 10 on each side of vehicle to complete pad set installation before proceeding with Step 11.

1. Make sure all caliper pistons are fully seated (bottomed) in bores.

C1210–G SENSOR INPUT CIRCUIT PERFORMANCE







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

U0401–IMPLAUSIBLE DATA RECEIVED FROM ECM/PCM

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

- **When Monitored:**
  Continuously with the ignition on, one valid CAN message received at least once, and no U0002-CAN C Bus Off Performance DTC present.
- **Set Condition:**
  When the Anti-Lock Brake Module detects an incorrect CAN message from the Engine Control Module (ECM).

Possible Causes
ABM CAN BUS DTCS
ENGINE DTCS
ANTI-LOCK BRAKE MODULE

Diagnostic Test

1. CHECK FOR DTC U0401-IMPLAUSIBLE DATA RECEIVED FROM ECM/PCM

NOTE: This DTC must be active for the results of this test to be valid.
Turn the ignition on.
With the scan tool, record and erase DTCs.
Cycle the ignition switch from off to on.
With the scan tool, read DTCs.

Does the scan tool display: U0401-IMPLAUSIBLE DATA RECEIVED FROM ECM/PCM?

Yes >> Go To 2

No >> Refer to the INTERMITTENT CONDITION diagnostic procedure.
Perform ABS VERIFICATION TEST - VER 1. (Refer to 5 - BRAKES - STANDARD PROCEDURE). Diagnostic Test

2. CHECK IF FCM CAN BUS DTCs ARE PRESENT

With the scan tool, read FCM DTCs.

Are there any FCM CAN BUS DTCs present?

Yes >> Refer to 8-ELECTRICAL/ELECTRONIC CONTROL MODULES - DIAGNOSIS AND TESTING and diagnose the appropriate symptom.
Perform ABS VERIFICATION TEST - VER 1. (Refer to 5 - BRAKES - STANDARD PROCEDURE).

No >> Go To 3

3. CHECK IF ENGINE DTCs ARE PRESENT

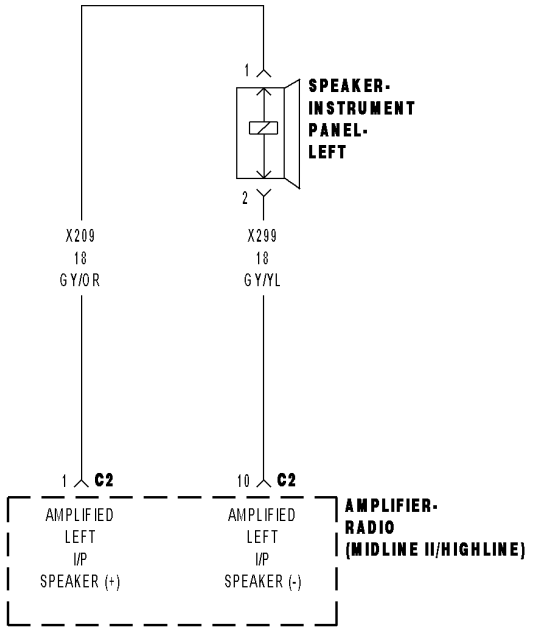
With the scan tool, read Engine DTCs.

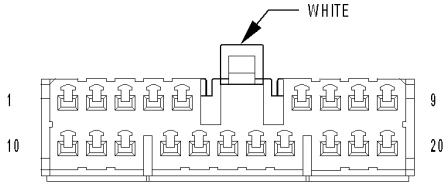
Are there any Engine DTCs present?

Yes >> Refer to the 9 - ENGINE ELECTRICAL DIAGNOSTICS and diagnose the appropriate symptom.
Perform ABS VERIFICATION TEST - VER 1. (Refer to 5 - BRAKES - STANDARD PROCEDURE).

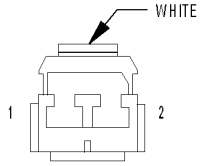
No >> Using the schematics as a guide, check the Anti-Lock Brake Module pins, terminals, and connectors for corrosion, damage, or terminal push out. Pay particular attention to all power and ground circuits. If no problems are found, replace the Anti-Lock Brake Module per the Service Information.
Perform ABS VERIFICATION TEST - VER 1. (Refer to 5 - BRAKES - STANDARD PROCEDURE).

B1463-CHANNEL 1 AUDIO SPEAKER OUTPUT CIRCUIT OPEN





AMPLIFIER-
RADIO C2
(MIDLINE II/HIGHLINE)



SPEAKER-
INSTRUMENT PANEL-
LEFT

813c5b8e

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

NOISE SUPPRESSION COMPONENTS-RADIO

DESCRIPTION

Radio noise suppression devices are installed on this vehicle. Radio Frequency Interference (RFI) and ElectroMagnetic Interference (EMI) can be produced by any on-board or external source of electromagnetic energy. These electromagnetic energy sources can radiate electromagnetic signals through the air, or conduct them through the vehicle electrical system.

When the audio system converts RFI or EMI to an audible acoustic wave form, it is referred to as radio noise. This undesirable radio noise is generally manifested in the form of “buzzing,” “hissing,” “popping,” “clicking,” “crackling,” and/or “whirring” sounds. In most cases, RFI and EMI radio noise can be suppressed using a combination of vehicle and component grounding, filtering and shielding techniques. This vehicle is equipped with radio noise suppression devices that were designed to minimize exposure to typical sources of RFI and EMI; thereby, minimizing radio noise complaints.

Radio noise suppression is accomplished primarily through circuitry or devices that are integral to the radios, audio power amplifiers and other on-board electrical components such as generators, wiper motors, blower motors, and fuel pumps that have been found to be potential sources of RFI or EMI. External radio noise suppression devices that are used on this vehicle to control RFI or EMI, and can be serviced, include the following:

- **Engine-to-frame ground strap** - This length of braided ground strap has an eyelet terminal connector crimped to each end. One end is secured to the engine cylinder heads. The other is secured to the frame.
- **Resistor-type spark plugs** - This type of spark plug has an internal resistor connected in series between the spark plug terminal and the center electrode to help reduce the production of electromagnetic radiation that can result in radio noise.
- **Exhaust-to-frame ground strap** - This length of braided ground strap has an eyelet terminal connector crimped to each end. One end is secured to the exhaust pipe. The other is secured to the frame.

OPERATION

There are two common strategies that can be used to suppress Radio Frequency Interference (RFI) and Electro-Magnetic Interference (EMI) radio noise. The first suppression strategy involves preventing the production of RFI and EMI electromagnetic signals at their sources. The second suppression strategy involves preventing the reception of RFI and EMI electromagnetic signals by the audio system components.

The use of braided ground straps in key locations is part of the RFI and EMI prevention strategy. These ground straps ensure adequate ground paths, particularly for high current components such as many of those found in the starting, charging, ignition, engine control and transmission control systems. An insufficient ground path for any of these high current components may result in radio noise caused by induced voltages created as the high current seeks alternative ground paths through components or circuits intended for use by, or in close proximity to the audio system components or circuits.

Preventing the reception of RFI and EMI is accomplished by ensuring that the audio system components are correctly installed in the vehicle. Loose, corroded or improperly soldered wire harness connections, improperly routed wiring and inadequate audio system component grounding can all contribute to the reception of RFI and EMI. A properly grounded antenna body and radio chassis, as well as a shielded antenna coaxial cable with clean and tight connections will each help reduce the potential for reception of RFI and EMI.

B210D-BATTERY VOLTAGE LOW

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

- **When Monitored:**
  With the ignition on.
- **Set Condition:**
  Battery voltage less than 9 volts for approximately 5 to 6 seconds.

Possible Causes
RESISTANCE IN THE BATTERY POSITIVE CIRCUIT
RESISTANCE IN THE GENERATOR CASE GROUND
GENERATOR OPERATION
(K20) GENERATOR FIELD CONTROL CIRCUIT OPEN
(K20) GENERATOR FIELD CONTROL CIRCUIT SHORTED TO GROUND
GROUND CIRCUIT OPEN
PCM

Diagnostic Test

1. CHECK FOR ANY POWERTRAIN CONTROL MODULES DTCS

NOTE: Make sure the Battery is in good condition. Using the Midtronics Battery Tester, test the Battery before continuing.

NOTE: Inspect the vehicle for after market accessories that may exceed the Generator System output.

NOTE: Make sure the generator drive belt is in good operating condition.

NOTE: Inspect the fuses in the IPM. If an open fuse is found, use the wire diagram/schematic as a guide, inspect the wiring and connectors for damage.

Turn the ignition on.

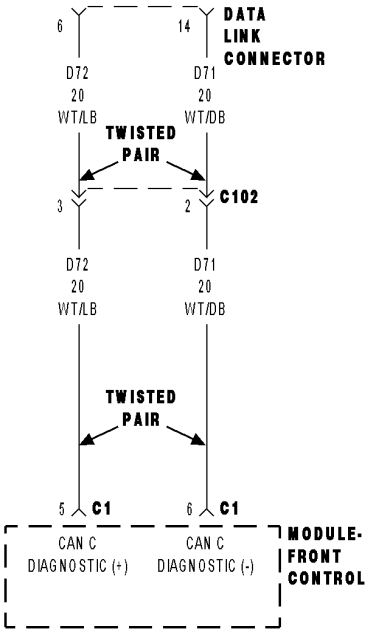
With the scan tool, read active PCM DTC's.

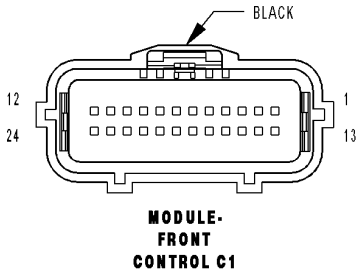
Does the scan tool display any active PCM DTC's?

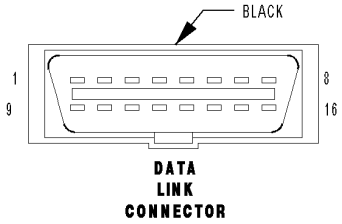
Yes >> (Refer to 9 - ENGINE - DIAGNOSIS AND TESTING) for the diagnostic test procedure.

No >> Check the above conditions that can cause a low voltage condition. Repair as necessary. Perform BODY VERIFICATION TEST – VER 1. (Refer to BODY VERIFICATION TEST – VER 1).

*BOTH CAN C DIAGNOSTIC (+) AND CAN C DIAGNOSTIC (-) CIRCUITS OPEN







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

- Four large easy to read gauges: Fuel, 140-mph speedometer, tachometer and engine temperature.
- Non-lit orange pointers.
- Dot-matrix Electronic Vehicle Information Center with Driver-Interactive Display.
- 160-mph speedometer.

APPEARANCE AND LIGHTING

White gauge faces with black nomenclature provide excellent visibility in daylight. Pointers are non-lit orange. With the headlamps on, the electroluminescent gauges glow white. The lighting intensity of the gauges can be adjusted to suit the driver's preference, using the thumbwheel dimmer control that is part of the headlamp switch. Electroluminescent lighting is uniform and glare free for optimum driver visibility.

FIXED SEGMENT DISPLAYS

The standard cluster features two fixed—segment vacuum fluorescent digital displays to show transmission range and odometer reading. The fixed-segment odometer display also includes the following indicators:

ODOMETER DISPLAY INDICATORS

INDICATOR	DISPLAY	COLOR
Hatch Ajar	ISO	Blue/Green
Low Wash	ISO	Blue/Green
Door Ajar	ISO	Blue/Green
Outside Temperature	Numeric	Blue/Green

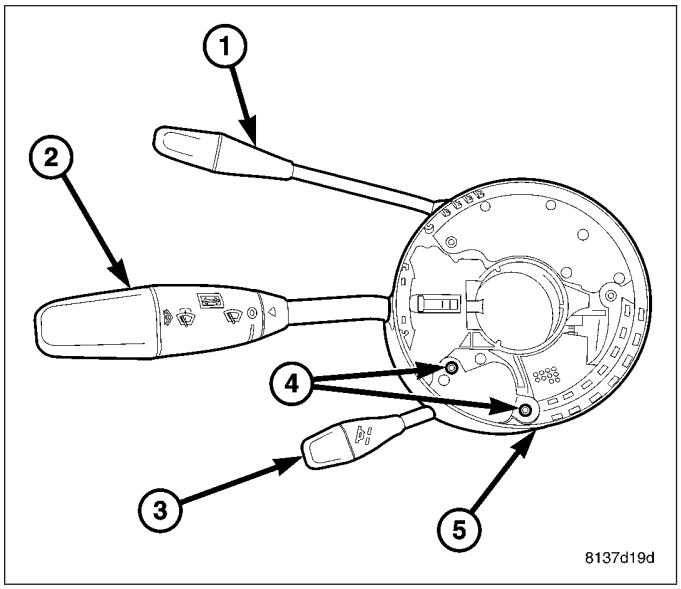
INDICATOR LAMPS

The following indicator lamps are included in all instrument clusters. Actual usage depends on how the vehicle is equipped.

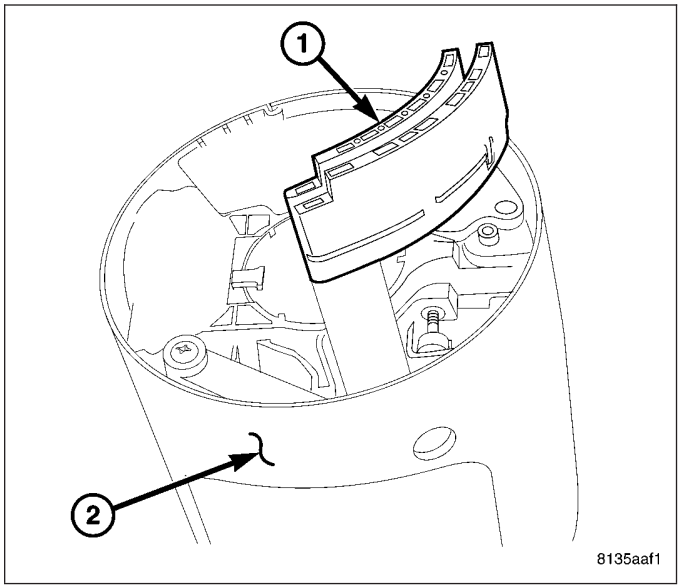
INDICATOR LAMPS

INDICATOR	DISPLAY	COLOR
Right Turn	ISO	Green
Left Turn	ISO	Green
Front Fog Lamps	ISO	Green
High Beam	ISO	Blue
Brake	Word U.S. only/ISO Export	Red
Seat Belt	ISO	Red
Airbag	ISO	Red
Electronic Throttle Control	ISO	Red
Low Oil Pressure	ISO	Red
Engine Temperature	ISO	Red
Charge	ISO	Red
VTA (Vehicle Theft Alarm)	Dot	Red
ABS	ISO	Amber
Check Engine	ISO	Amber
BAS (Brake Assist)	ISO	Amber
ASR/ESP (Anti-Slip Regulation/Electronic Stability Program)	ISO	Amber
Low Fuel	ISO	Amber
TPM (Tire Pressure Monitor)	ISO	Amber

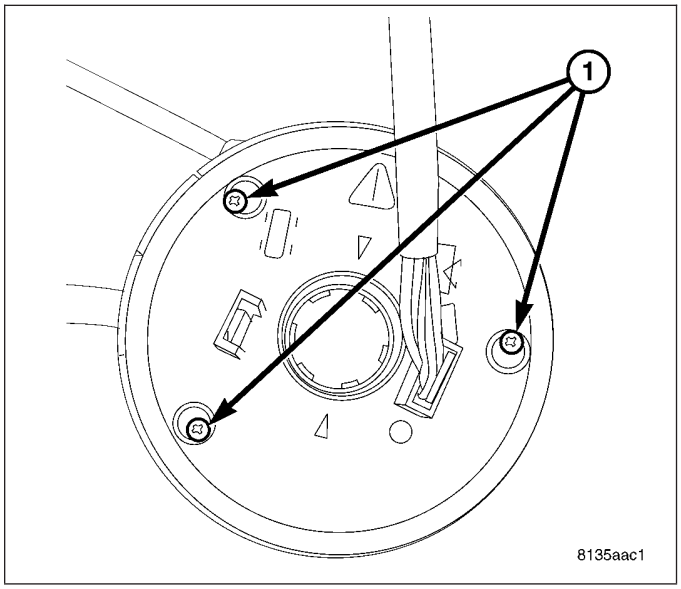
2. Install the screws (4) fastening the telescoping steering lever to the SCCM (5).



3. **If equipped with ESP**, install the steering angle sensor (1) to the SCCM (2).



4. Install the clockspring screws (1). (Refer to 8 - ELECTRICAL/RESTRAINTS/CLOCKSPRING - REMOVAL).



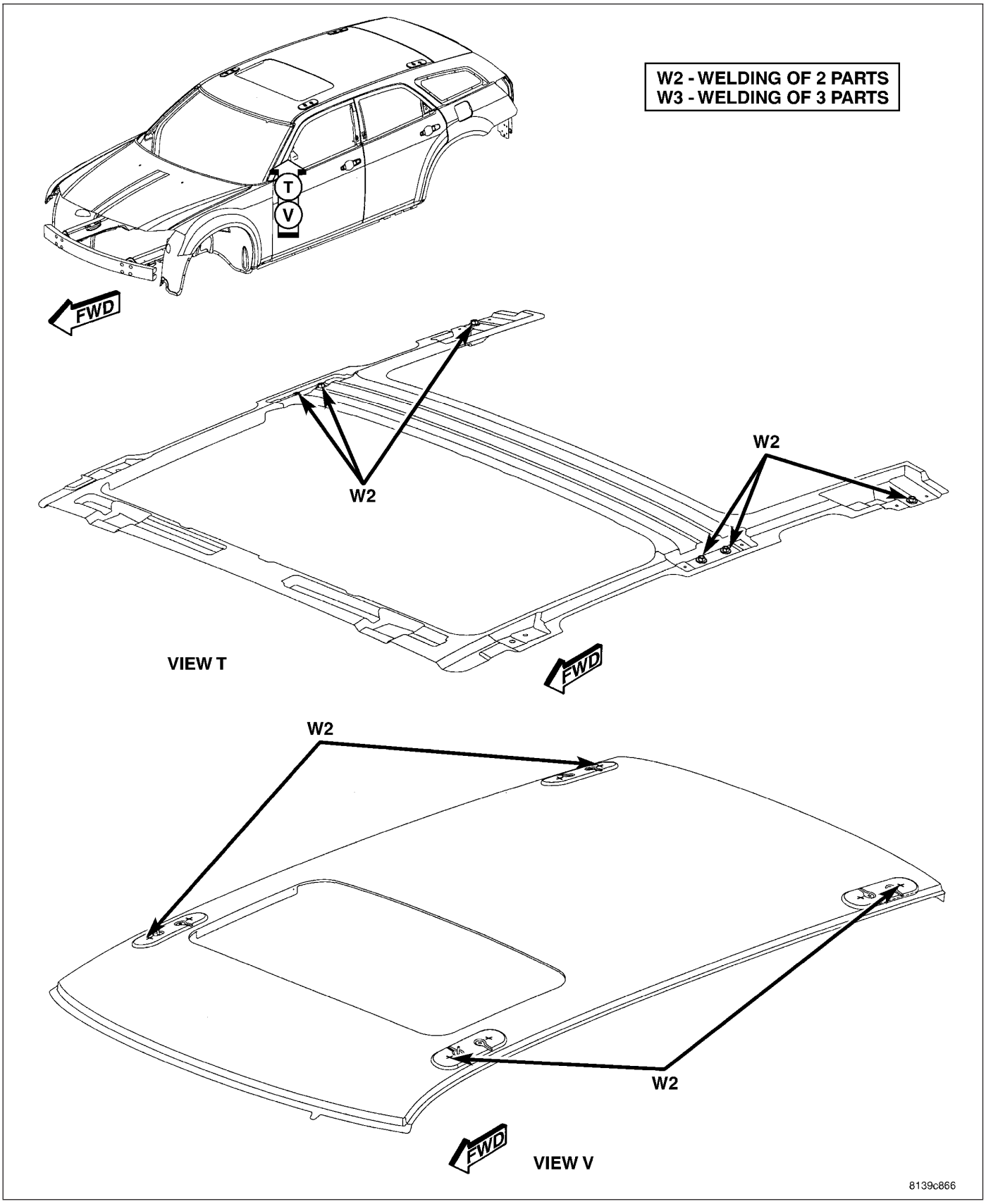


Fig. 118 ROOF (1 OF 4)