

FASTENER IDENTIFICATION (Continued)

**Bolt Markings and Torque - Metric**

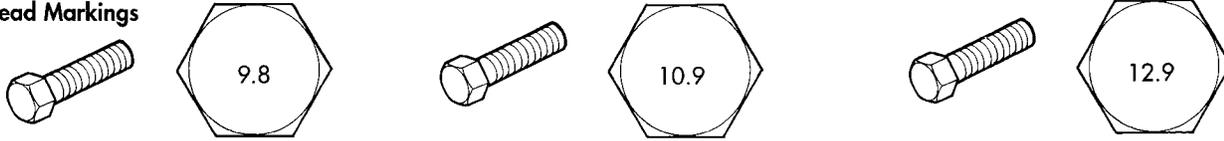
Commercial Steel Class

9.8

10.9

12.9

Bolt Head Markings



Body Size	Torque				Torque				Torque			
	Cast Iron		Aluminum		Cast Iron		Aluminum		Cast Iron		Aluminum	
	Diam. mm	N•m	ft-lb	N•m	ft-lb	N•m	ft-lb	N•m	ft-lb	N•m	ft-lb	N•m
6	9	5	7	4	14	9	11	7	14	9	11	7
7	14	9	11	7	18	14	14	11	23	18	18	14
8	25	18	18	14	32	23	25	18	36	27	28	21
10	40	30	30	25	60	45	45	35	70	50	55	40
12	70	55	55	40	105	75	80	60	125	95	100	75
14	115	85	90	65	160	120	125	95	195	145	150	110
16	180	130	140	100	240	175	190	135	290	210	220	165
18	230	170	180	135	320	240	250	185	400	290	310	230

**Bolt Markings and Torque Values - U.S. Customary**

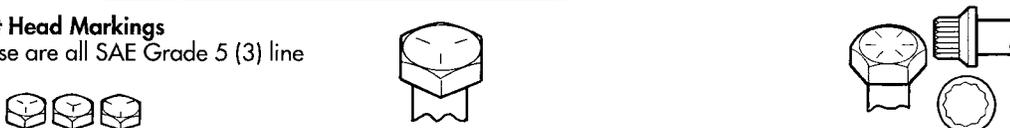
SAE Grade Number

5

8

Bolt Head Markings

These are all SAE Grade 5 (3) line



Bolt Torque - Grade 5 Bolt

Bolt Torque - Grade 8 Bolt

Body Size	Cast Iron		Aluminum		Cast Iron		Aluminum	
	N•m	ft-lb	N•m	ft-lb	N•m	ft-lb	N•m	ft-lb
1/4 - 20	9	7	8	6	15	11	12	9
- 28	12	9	9	7	18	13	14	10
5/16 - 18	20	15	16	12	30	22	24	18
- 24	23	17	19	14	33	24	25	19
3/8 - 16	40	30	25	20	55	40	40	30
- 24	40	30	35	25	60	45	45	35
7/16 - 14	60	45	45	35	90	65	65	50
- 20	65	50	55	40	95	70	75	55
1/2 - 13	95	70	75	55	130	95	100	75
- 20	100	75	80	60	150	110	120	90
9/16 - 12	135	100	110	80	190	140	150	110
- 18	150	110	115	85	210	155	170	125
5/8 - 11	180	135	150	110	255	190	205	150
- 18	210	155	160	120	290	215	230	170
3/4 - 10	325	240	255	190	460	340	365	270
- 16	365	270	285	210	515	380	410	300
7/8 - 9	490	360	380	280	745	550	600	440
- 14	530	390	420	310	825	610	660	490
1 - 8	720	530	570	420	1100	820	890	660
- 14	800	590	650	480	1200	890	960	710

Fig. 6 FASTENER IDENTIFICATION

MAINTENANCE SCHEDULES (Continued)

**Schedule "B"**

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

- Day or night temperatures are below 0°C (32°F)
- Stop and go driving
- Excessive engine idling
- Driving in dusty conditions
- Short trips of less than 16.2 km (10 miles)

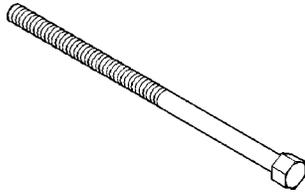
- More than 50% of your driving is at sustained high speeds during hot weather, above 32°C (90°F)
- Trailer towing
- Taxi, police, or delivery service (commercial service)
- Off-road or desert driving
- **If equipped for and operated with E-85 (ethanol) fuel.**

Miles (Kilometers)	3,000 (5 000)	6,000 (10 000)	9,000 (14 000)	12,000 (19 000)	15,000 (24 000)
Change the engine oil and engine oil filter.	X	X	X	X	X
<b>Inspect the engine air filter element, replace if necessary.</b>					X
Lubricate the steering linkage tie rod ends.	X	X	X	X	X
Lubricate the steering and suspension ball joints.		X		X	
Inspect the brake linings.				X	
Drain and refill the front and rear axle fluid‡				X	

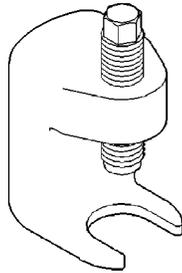
Miles (Kilometers)	18,000 (29 000)	21,000 (34 000)	24,000 (38 000)	27,000 (43 000)	30,000 (48 000)
Change the engine oil and engine oil filter.	X	X	X	X	X
<b>Inspect the engine air filter element, replace if necessary.</b>					X
<b>Inspect the PCV Valve, and replace if necessary.</b> ◇					X
<b>Replace the spark plugs.</b>					X
Lubricate the steering linkage tie rod ends.	X	X	X	X	X
Lubricate the steering and suspension ball joints.	X		X		X
Inspect the brake linings.			X		
Drain and refill the front and rear axle fluid‡			X		
Inspect the transfer case fluid, add if necessary.					X

Miles (Kilometers)	33,000 (53 000)	36,000 (58 000)	39,000 (62 000)	42,000 (67 000)	45,000 (72 000)
Change the engine oil and engine oil filter.	X	X	X	X	X
<b>Inspect the engine air filter element, replace if necessary.</b>					X
Lubricate the steering linkage tie rod ends.	X	X	X	X	X
Lubricate the steering and suspension ball joints.		X		X	
Inspect the brake linings.		X			
Drain and refill the front and rear axle fluid‡		X			

FRONT (Continued)



**Bolt, Special 7604**

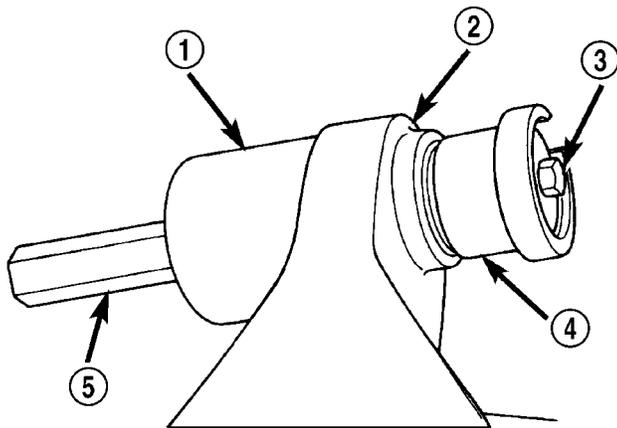


**Remover C-4150A**

**BUSHINGS**

**REMOVAL**

- (1) Remove the upper suspension arm from axle.
- (2) Position Spacer 7932-3 over the axle bushing on a 4x2 vehicle and right side on a 4x4 vehicle.
- (3) Place Receiver 7932-1 over flanged end of the bushing. (Fig. 1).
- (4) Place small end of Remover/Install 7932-2 against other side of the bushing.
- (5) Install bolt 7604 through remover, bushing and receiver.
- (6) Install Long Nut 7603 and tighten nut too pull bushing out of the axle bracket.



**Fig. 1 Bushing Removal**

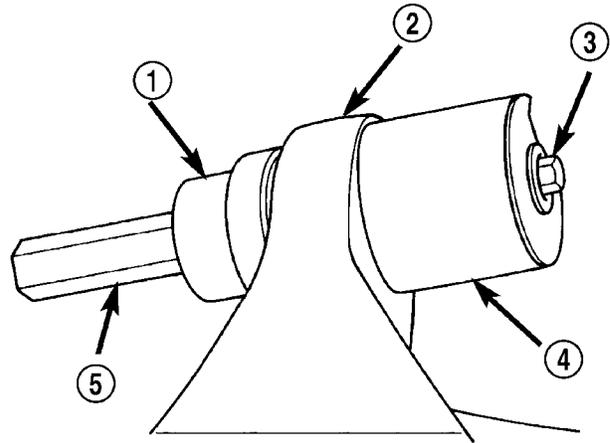
- 1 - RECEIVER
- 2 - AXLE BRACKET
- 3 - BOLT
- 4 - REMOVER/INSTALLER
- 5 - LONG NUT

- (7) Remove nut, bolt, receiver, remover and bushing.

**NOTE: On 4x2 vehicle and right side of 4x4 vehicle, leave Spacer 7932-3 in position for bushing installation.**

**INSTALLATION**

- (1) Place Receiver 7932-1 on the other side of the axle bracket.
- (2) Position new bushing up to the axle bracket., and large end of Remover/Install 7932-2 against the bushing (Fig. 2).
- (3) Install bolt 7604 through receiver, bushing and installer.
- (4) Install Long Nut 7603 and tighten nut to draw the bushing into the axle bracket.



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**Fig. 2 Bushing Installation**

- 1 - REMOVER/INSTALLER
- 2 - AXLE BRACKET
- 3 - BOLT
- 4 - RECEIVER
- 5 - LONG NUT

- (5) Remove tools and install the upper suspension arm.

**HUB / BEARING**

**DESCRIPTION**

The bearing used on the front hub of this vehicle is the combined hub and bearing unit type assembly. This unit assembly combines the front wheel mounting hub (flange) and the front wheel bearing into a one piece unit. The wheel mounting studs are the only replaceable component of the hub/bearing assembly.

DIFFERENTIAL COVER (Continued)

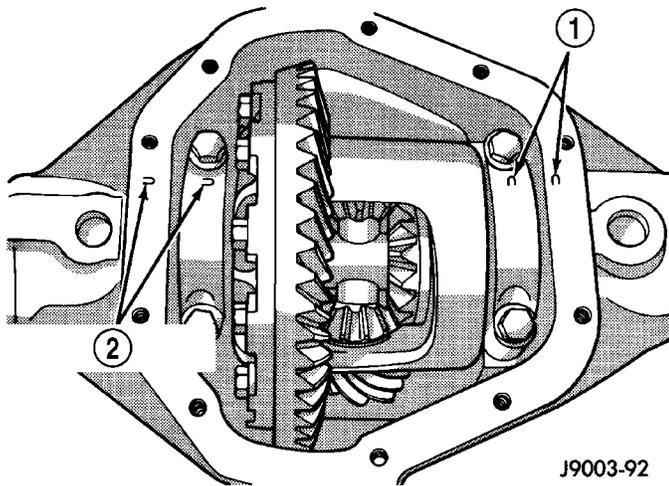
**CAUTION:** If housing cover is not installed within 3 to 5 minutes, the cover must be cleaned and new RTV applied. Failure to heed caution may result in damage.

- (2) Install cover and identification tag. Tighten cover bolts in a criss-cross pattern to 41 N·m (30 ft. lbs.).
- (3) Fill differential to specifications.
- (4) Install fill plug and tighten to 34 N·m (25 ft. lbs.).

DIFFERENTIAL

REMOVAL

- (1) Remove differential cover and fluid to drain.
- (2) Remove hub bearings and axle shafts.
- (3) Note the installation reference letters stamped on the bearing caps and housing machined sealing surface (Fig. 48).

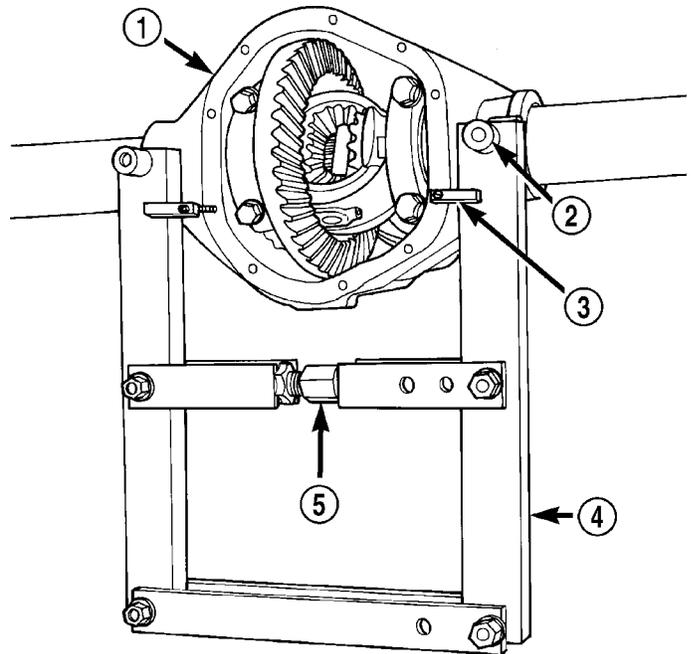


**Fig. 48 BEARING CAP IDENTIFICATION**

- 1 - INSTALLATION REFERENCE LETTERS
- 2 - INSTALLATION REFERENCE LETTERS

- (4) Loosen the differential bearing cap bolts.
- (5) Position Spreader W-129-B and Adapter from Kit 6987, with the tool dowel pins seated in the locating holes (Fig. 49). Install holddown clamps and tighten the tool turnbuckle finger-tight.

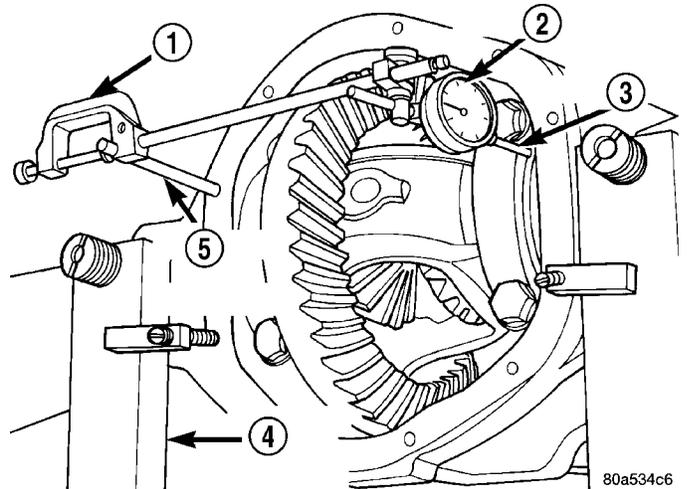
- (6) Install Pilot Stud C-3288-B at the left side of the differential housing. Attach Dial Indicator C-3339 to guide pin. Load indicator plunger against the opposite side of the housing (Fig. 50) and zero indicator.



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**Fig. 49 SPREADER LOCATION**

- 1 - AXLE HOUSING
- 2 - DOWEL
- 3 - SAFETY HOLD DOWN
- 4 - SPREADER
- 5 - TURNBUCKLE



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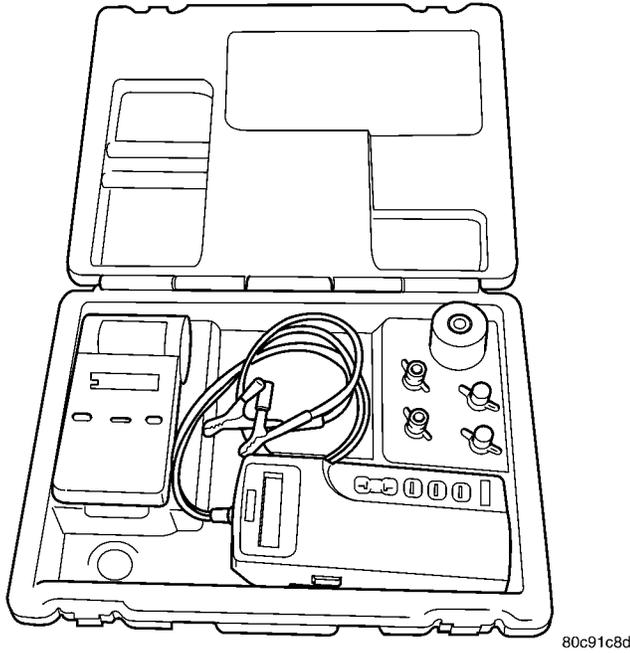
**Fig. 50 DIAL INDICATOR LOCATION**

- 1 - INDICATOR CLAMP
- 2 - DIAL INDICATOR
- 3 - LEVER ADAPTER
- 4 - SPREADER
- 5 - PILOT STUD

BATTERY SYSTEM (Continued)

SPECIAL TOOLS

BATTERY SYSTEM SPECIAL TOOLS

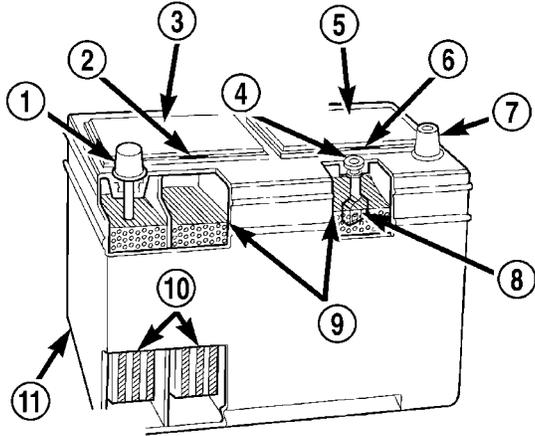


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**MICRO 420 BATTERY TESTER**

BATTERY

DESCRIPTION



80accfel

**Fig. 4 Low-Maintenance Battery - Typical**

- 1 - POSITIVE POST
- 2 - VENT
- 3 - CELL CAP
- 4 - VENT
- 5 - CELL CAP
- 6 - VENT
- 7 - NEGATIVE POST
- 8 - GREEN BALL
- 9 - ELECTROLYTE LEVEL
- 10 - PLATE GROUPS
- 11 - LOW-MAINTENANCE BATTERY

A large capacity, low-maintenance storage battery (Fig. 4) is standard factory-installed equipment on this model. Refer to Battery Specifications for the proper specifications of the factory-installed batteries available on this model. Male post type terminals made of a soft lead material protrude from the top of the molded plastic battery case to provide the means for connecting the battery to the vehicle electrical system. The battery positive terminal post is physically larger in diameter than the negative terminal post to ensure proper battery connection. The letters **POS** and **NEG** are also molded into the top of the battery case adjacent to their respective positive and negative terminal posts for identification confirmation (Refer to 8 - ELECTRICAL/BATTERY SYSTEM/CABLES - DESCRIPTION).

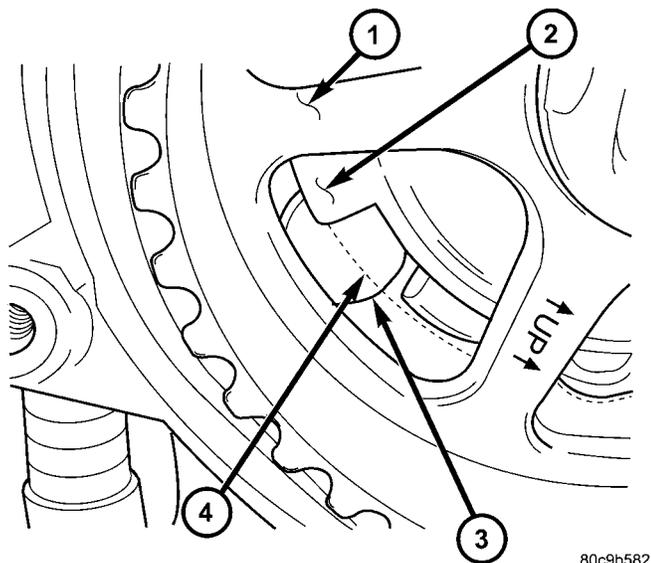
The battery is made up of six individual cells that are connected in series. Each cell contains positively charged plate groups that are connected with lead straps to the positive terminal post, and negatively charged plate groups that are connected with lead straps to the negative terminal post. Each plate consists of a stiff mesh framework or grid coated with lead dioxide (positive plate) or sponge lead (negative plate). Insulators or plate separators made of a non-conductive material are inserted between the positive and negative plates to prevent them from contacting or shorting against one another. These dissimilar metal plates are submerged in a sulfuric acid and water solution called an electrolyte.

The factory-installed battery has a built-in test indicator (hydrometer). The color visible in the sight glass of the indicator will reveal the battery condition. Refer to Standard Procedures for the proper built-in indicator test procedures. **The factory-installed low-maintenance battery has removable battery cell caps.** Water can be added to this battery. The battery is not sealed and has vent holes in the cell caps. The chemical composition of the metal coated plates within the low-maintenance battery reduces battery gassing and water loss, at normal charge and discharge rates. Therefore, the battery should not require additional water in normal service. If the electrolyte level in this battery does become low, water must be added. However, rapid loss of electrolyte can be caused by an overcharging condition. Be certain to diagnose the charging system after replenishing the water in the battery for a low electrolyte condition and before returning the vehicle to service (Refer to 8 - ELECTRICAL/CHARGING - DIAGNOSIS AND TESTING).

## CAMSHAFT POSITION SENSOR - 2.4L (Continued)

netic field causes the voltage to switch high, resulting in a sync signal of approximately 5 volts.

When the trailing edge of the target wheel cutout leaves the tip of the CMP, the change of the magnetic field causes the sync signal voltage to switch low to 0 volts.



**Fig. 5 CMP FACE AT TARGET WHEEL-2.4L**

- 1 - CAMSHAFT DRIVE GEAR
- 2 - TARGETWHEEL (TONEWHEEL)
- 3 - FACE OF CMP SENSOR
- 4 - CUTOUT (NOTCH)

## REMOVAL - 2.4L

The Camshaft Position Sensor (CMP) on the 2.4L 4-cylinder engine is bolted to the right-front side of the cylinder head (Fig. 6). Sensor position (depth) is adjustable.

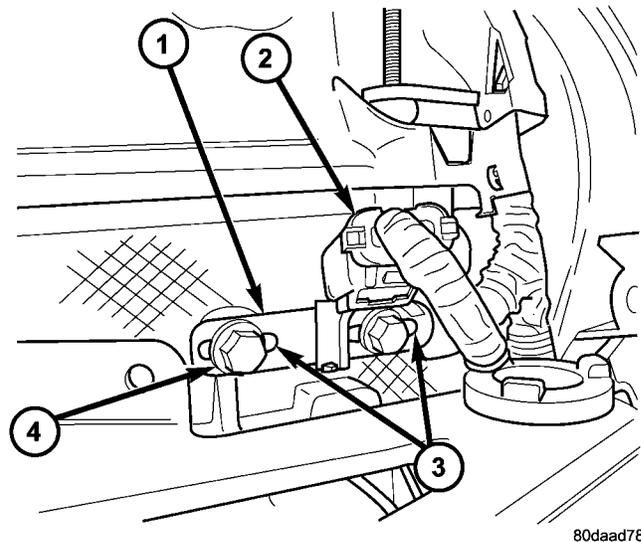
- (1) Disconnect electrical connector at CMP sensor.
- (2) Remove 2 sensor mounting bolts.
- (3) Remove sensor from cylinder head by sliding towards rear of engine.

## INSTALLATION - 2.4L

The Camshaft Position Sensor (CMP) on the 2.4L 4-cylinder engine is bolted to the right-front side of the cylinder head. **Sensor position (depth) is adjustable.**

(1) Remove plastic, upper timing belt cover (timing gear cover) (Fig. 7) by removing 3 bolts. Before attempting to remove cover, remove electrical connector from Engine Coolant Temperature (ECT) sensor (Fig. 7). This will prevent damage to sensor.

(2) Rotate (bump over) engine until camshaft timing gear and target wheel (tonewheel) are positioned and aligned to face of sensor as shown in (Fig. 8). **If not positioned as shown in (Fig. 8), damage to both sensor and target wheel will occur when**



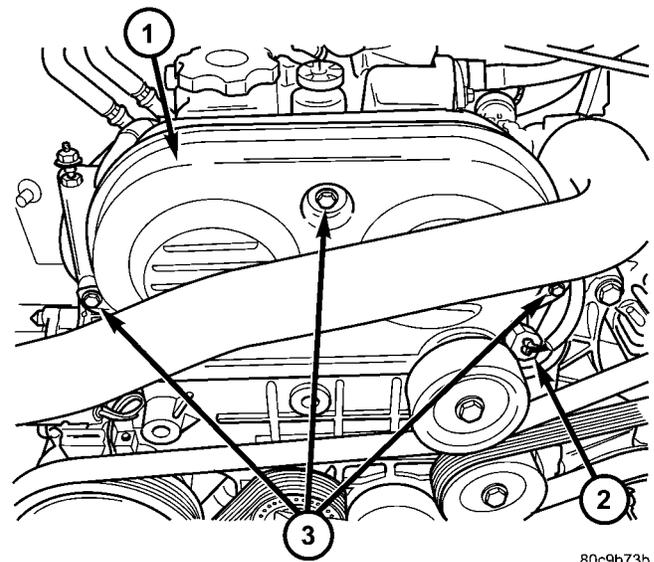
**Fig. 6 CMP LOCATION - 2.4L**

- 1 - CMP SENSOR
- 2 - ELECTRICAL CONNECTOR
- 3 - SLOTTED HOLES
- 4 - MOUNTING BOLTS (2)

**attempting to start engine. Face of sensor MUST be behind target wheel while adjusting.**

(3) Position sensor to cylinder head and install 2 sensor mounting bolts finger tight.

(4) **SENSOR AIR GAP: .030"** Set air gap between rear of target wheel and face of sensor to .030". This can best be accomplished using an L-shaped, wire-type spark plug gapping gauge (Fig. 9). A piece of .030" brass shim stock may also be used.



**Fig. 7 UPPER TIMING BELT COVER/BOLTS-2.4L**

- 1 - UPPER TIMING BELT COVER
- 2 - ELECTRICAL CONNECTOR (ECT)
- 3 - MOUNTING BOLTS (3)

## SKIS INDICATOR (Continued)

whether the system is in good operating condition. The SKIM then sends the proper SKIS lamp-on or lamp-off messages to the instrument cluster. For further diagnosis of the SKIS indicator or the instrument cluster circuitry that controls the indicator, (Refer to 8 - ELECTRICAL/INSTRUMENT CLUSTER - DIAGNOSIS AND TESTING). If the instrument cluster turns on the SKIS indicator after the bulb test, either solid or flashing, it indicates that a SKIS malfunction has occurred or that the SKIS is inoperative. For proper diagnosis of the SKIS, the PCI data bus, or the electronic message inputs to the instrument cluster that control the SKIS indicator, a DRBIII® scan tool is required. Refer to the appropriate diagnostic information.

## SPEEDOMETER

## DESCRIPTION

MPH km/h

*Fig. 25 Speedometer Text*

A speedometer is standard equipment on all instrument clusters. The speedometer is located next to the tachometer, just to the right of center in the instrument cluster. The speedometer consists of a movable gauge needle or pointer controlled by the instrument cluster circuitry and a fixed 210 degree primary scale on the cluster overlay that reads left-to-right either from "0" to "100" mph, from "0" to "110" mph, or from "0" to "180" km/h, depending upon the requirements of the market for which the vehicle is manufactured. Each version also has a secondary inner scale on the cluster overlay that provides the equivalent opposite units from the primary scale. Text appearing on the cluster overlay just below the hub of the speedometer needle abbreviates the unit of measure for the primary scale (i.e.: MPH or km/h), followed by the unit of measure for the secondary scale (Fig. 25). The speedometer graphics are white (primary scale) and blue (secondary scale) against a black field, making them clearly visible within the instrument cluster in daylight. When illuminated from behind by the panel lamps dimmer controlled cluster illumination lighting with the exterior lamps turned On, the white graphics appear white and the blue graphics appear blue. The orange gauge needle is internally illuminated. Gauge illumination is provided by replaceable incandescent bulb and bulb holder units located on the instrument cluster electronic circuit board. The speedometer is serviced as a unit with the instrument cluster.

## OPERATION

The speedometer gives an indication to the vehicle operator of the vehicle road speed. This gauge is controlled by the instrument cluster circuit board based upon cluster programming and electronic messages received by the cluster from the Powertrain Control Module (PCM) over the Programmable Communications Interface (PCI) data bus. The speedometer is an air core magnetic unit that receives battery current on the instrument cluster electronic circuit board through the fused ignition switch output (run-start) circuit whenever the ignition switch is in the On or Start positions. The cluster is programmed to move the gauge needle back to the low end of the scale after the ignition switch is turned to the Off position. The instrument cluster circuitry controls the gauge needle position and provides the following features:

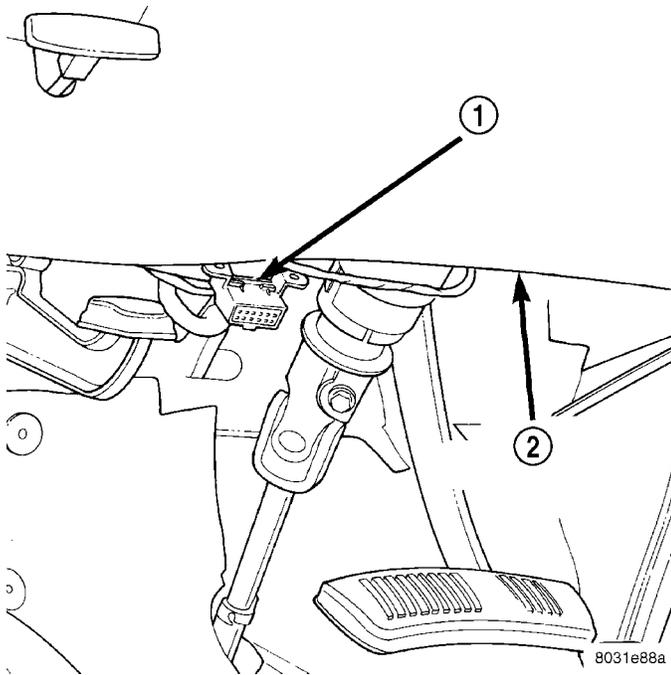
- **Vehicle Speed Message** - Each time the cluster receives a vehicle speed message from the PCM it will calculate the correct vehicle speed reading and position the gauge needle at that relative speed position on the gauge scale. The cluster will receive a new vehicle speed message and reposition the gauge pointer accordingly about every 86 milliseconds. The gauge needle will continue to be positioned at the actual vehicle speed position on the gauge scale until the ignition switch is turned to the Off position.

- **Communication Error** - If the cluster fails to receive a speedometer message, it will hold the gauge needle at the last indication for about six seconds, or until the ignition switch is turned to the Off position, whichever occurs first. After six seconds, the gauge needle will return to the left end of the gauge scale.

- **Actuator Test** - Each time the cluster is put through the actuator test, the gauge needle will be swept to several calibration points on the gauge scale in a prescribed sequence in order to confirm the functionality of the gauge and the cluster control circuitry.

The PCM continually monitors the vehicle speed sensor to determine the vehicle road speed, then sends the proper vehicle speed messages to the instrument cluster. For further diagnosis of the speedometer or the instrument cluster circuitry that controls the gauge, (Refer to 8 - ELECTRICAL/INSTRUMENT CLUSTER - DIAGNOSIS AND TESTING). For proper diagnosis of the vehicle speed sensor, the PCM, the PCI data bus, or the electronic message inputs to the instrument cluster that control the speedometer, a DRBIII® scan tool is required. Refer to the appropriate diagnostic information.

## RESTRAINTS (Continued)



**Fig. 5 16-Way Data Link Connector - Typical**

- 1 - 16-WAY DATA LINK CONNECTOR
- 2 - BOTTOM OF INSTRUMENT PANEL

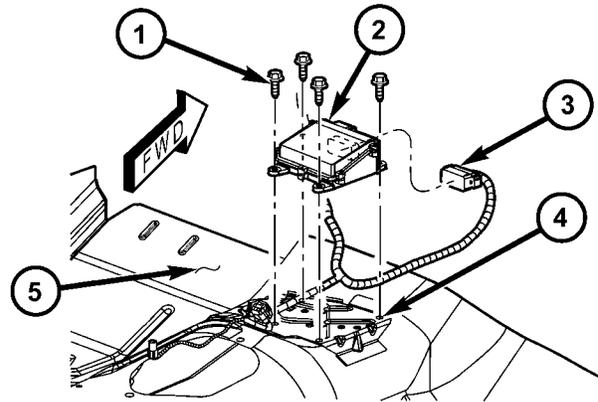
erase. Refer to the appropriate diagnostic information to diagnose any stored DTC that will not erase. If the stored DTC information is successfully erased, go to Step 9.

(9) Turn the ignition switch to the Off position for about fifteen seconds, and then back to the On position. Observe the airbag indicator in the instrument cluster. It should illuminate for six to eight seconds, and then go out. This indicates that the supplemental restraint system is functioning normally and that the repairs are complete. If the airbag indicator fails to light, or lights and stays on, there is still an active supplemental restraint system fault or malfunction. Refer to the appropriate diagnostic information to diagnose the problem.

## AIRBAG CONTROL MODULE

### DESCRIPTION

The Airbag Control Module (ACM) is secured with four screws to the top mounting surface of a stamped steel bracket welded onto the top of the floor panel transmission tunnel below the instrument panel and forward of the center floor console in the passenger compartment of the vehicle (Fig. 6). Concealed within a hollow in the center of the die cast aluminum ACM housing is the electronic circuitry of the ACM which includes a microprocessor, an electronic impact sensor, an electromechanical safing sensor, and an energy storage capacitor. A stamped metal cover



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**Fig. 6 Airbag Control Module**

- 1 - SCREW (4)
- 2 - AIRBAG CONTROL MODULE
- 3 - WIRE HARNESS CONNECTOR
- 4 - MOUNTING BRACKET
- 5 - FRONT FLOOR PANEL

plate is secured to the bottom of the ACM housing with four screws to enclose and protect the internal electronic circuitry and components.

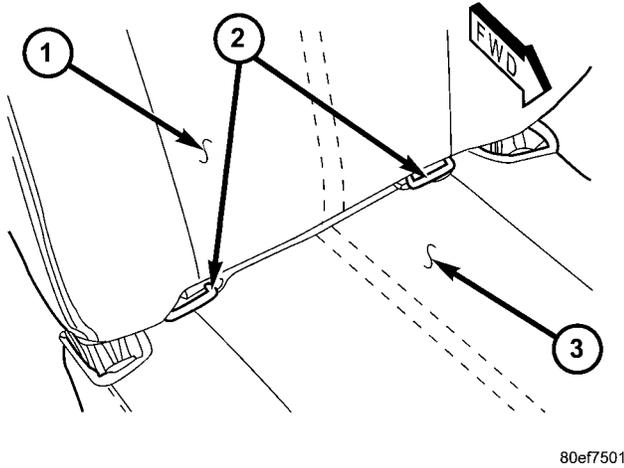
The ACM housing has an integral mounting flange on each side. Each mounting flange has an integral locating pin on its lower surface and two round mounting holes. An arrow cast into the top of the ACM housing near the rear provides a visual verification of the proper orientation of the unit, and should always be pointed toward the front of the vehicle. A molded plastic electrical connector receptacle containing twenty-three terminal pins exits the forward facing side of the ACM housing. These terminal pins connect the ACM to the vehicle electrical system through a dedicated take out and connector of the body wire harness.

The impact sensor and safing sensor internal to the ACM are calibrated for the specific vehicle, and are only serviced as a unit with the ACM. The ACM cannot be repaired or adjusted and, if damaged or faulty, it must be replaced.

### OPERATION

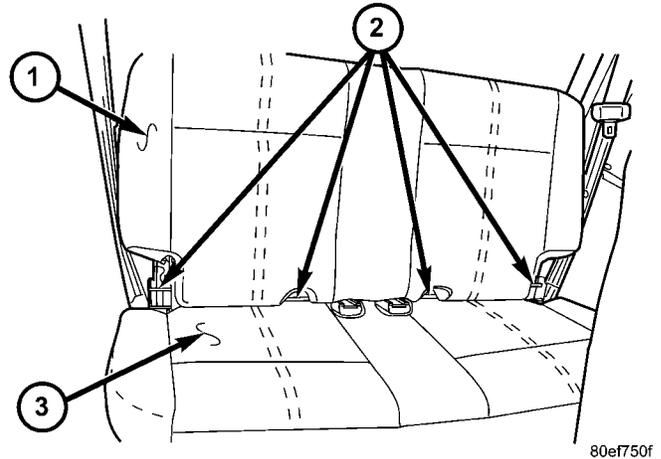
The microprocessor in the Airbag Control Module (ACM) contains the front supplemental restraint system logic circuits and controls all of the supplemental restraint system components. The ACM uses On-Board Diagnostics (OBD) and can communicate with other electronic modules in the vehicle as well as with the DRBIII® scan tool using the Programmable Communications Interface (PCI) data bus network. This method of communication is used for control of the airbag indicator in the ElectroMechanical Instrument Cluster (EMIC) and for supplemental

CHILD RESTRAINT ANCHOR (Continued)



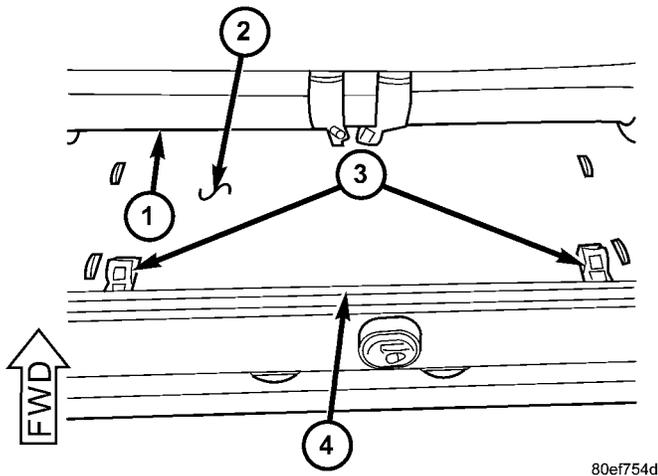
**Fig. 11 Front Passenger Seat Lower Anchors**

- 1 - SEAT BACK
- 2 - LOWER ANCHOR (2)
- 3 - SEAT CUSHION



**Fig. 13 Rear Seat Lower Anchors**

- 1 - SEAT BACK
- 2 - LOWER ANCHOR (4)
- 3 - SEAT CUSHION



**Fig. 12 Rear Seat Upper Anchors**

- 1 - REAR SEAT
- 2 - REAR CARGO FLOOR
- 3 - UPPER ANCHOR (2)
- 4 - TAILGATE OPENING SILL

opening, and are accessed from behind the rear seat. The upper tether anchors for the rear seat are available for individual service replacement. The four fixed lower anchors are integral to the rear seat back frame and are accessed from the front of the rear seat, where the seat back meets the seat cushion. The two inboard lower anchors are constructed from round steel bar stock that is formed into a U-shape, then securely welded at each end to the rear seat back frame. The two outboard lower anchors are machined steel pins that are secured between the two seat back hinge plates above the pivot pin on each outboard side of the rear seat back frame. These lower anchors cannot be adjusted or repaired and, if

faulty or damaged, they must be replaced as a unit with the rear seat back frame.

**WARNING: DURING AND FOLLOWING ANY SEAT BELT OR CHILD RESTRAINT ANCHOR SERVICE, CAREFULLY INSPECT ALL SEAT BELTS, BUCKLES, MOUNTING HARDWARE, RETRACTORS, TETHER STRAPS, AND ANCHORS FOR PROPER INSTALLATION, OPERATION, OR DAMAGE. REPLACE ANY BELT THAT IS CUT, FRAYED, OR TORN. STRAIGHTEN ANY BELT THAT IS TWISTED. TIGHTEN ANY LOOSE FASTENERS. REPLACE ANY BELT THAT HAS A DAMAGED OR INOPERATIVE BUCKLE OR RETRACTOR. REPLACE ANY BELT THAT HAS A BENT OR DAMAGED LATCH PLATE OR ANCHOR PLATE. REPLACE ANY CHILD RESTRAINT ANCHOR OR THE UNIT TO WHICH THE ANCHOR IS INTEGRAL THAT HAS BEEN BENT OR DAMAGED. NEVER ATTEMPT TO REPAIR A SEAT BELT OR CHILD RESTRAINT COMPONENT. ALWAYS REPLACE DAMAGED OR FAULTY SEAT BELT AND CHILD RESTRAINT COMPONENTS WITH THE CORRECT, NEW AND UNUSED REPLACEMENT PARTS LISTED IN THE DAIMLERCHRYSLER MOPAR PARTS CATALOG.**

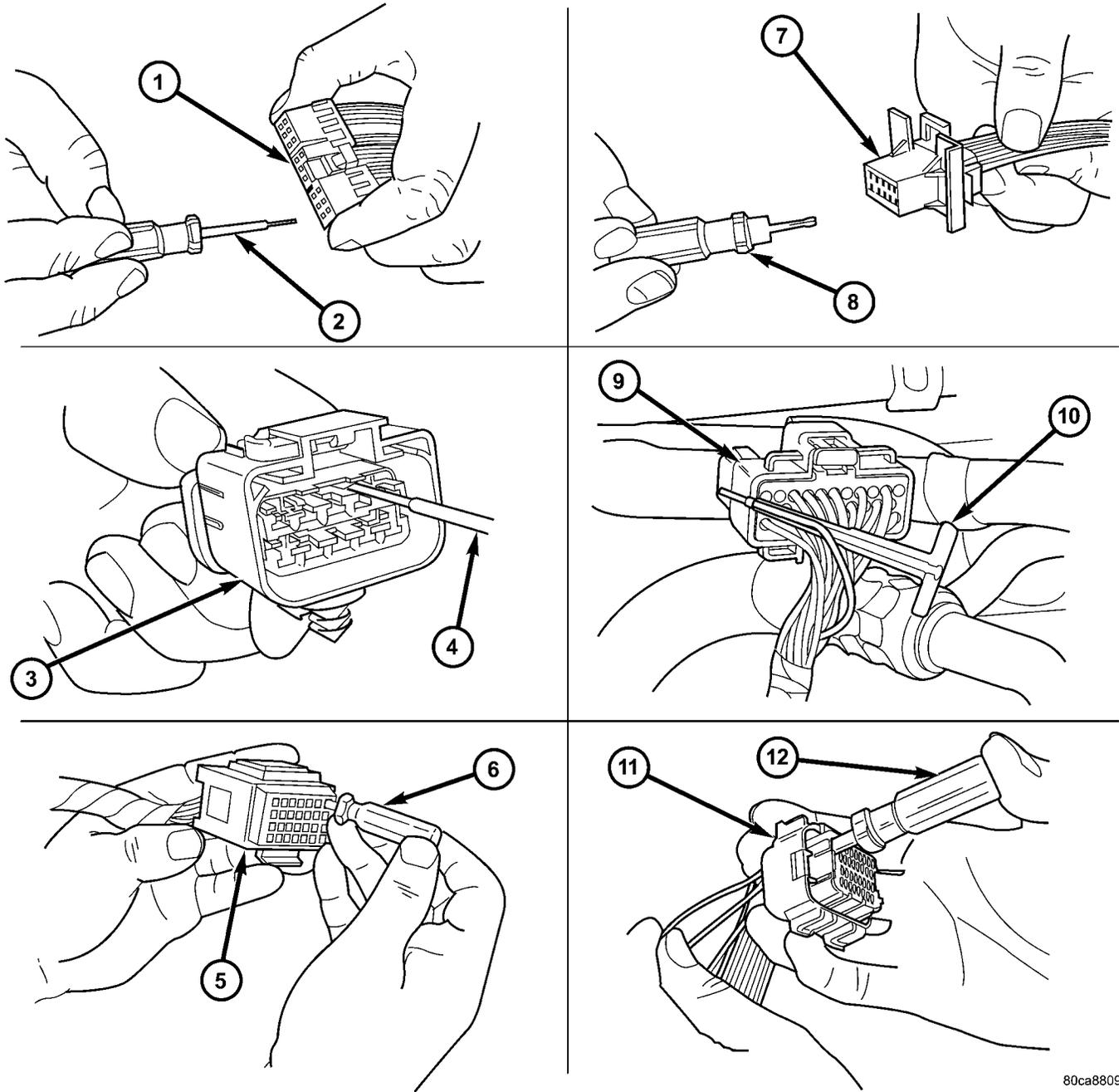
**OPERATION**

See the owner's manual in the vehicle glove box for more information on the proper use of all of the factory-installed child restraint anchors.

**REMOVAL**

The following procedure applies only to the rear seat upper child tether anchors used on models equipped with an optional rear seat. The child

CONNECTOR (Continued)



80ca8809

**Fig. 12 TERMINAL REMOVAL**

- 1 - TYPICAL CONNECTOR
- 2 - PICK FROM SPECIAL TOOL KIT 6680
- 3 - APEX CONNECTOR
- 4 - PICK FROM SPECIAL TOOL KIT 6680
- 5 - AUGAT CONNECTOR
- 6 - SPECIAL TOOL 6932

- 7 - MOLEX CONNECTOR
- 8 - SPECIAL TOOL 6742
- 9 - THOMAS AND BETTS CONNECTOR
- 10 - SPECIAL TOOL 6934
- 11 - TYCO CONNECTOR
- 12 - SPECIAL TOOL 8638

## BODY (Continued)

ITEM	FEATURES	APPLICATIONS	SERVICE TEMP
Black Nylon Flock	Nylon Flock with an aggressive acrylic adhesive. Provides for cushioning and compression fit, also isolates components. Water-resistant.	Between metal and metal, metal and plastic, vinyl and plastic. Examples: Pull cups, bezels, clips, ducts, top cover to glass, cowl panel.	-40° to 180° Fahrenheit (-40° to 82° Celsius)
High Density Urethane Foam	Tear resistant, highly resilient and durable.	Between metal and metal, metal and plastic. Water-resistant. Examples: I/P, heavy metal rattles, isolating brackets.	-40° to 180° Fahrenheit (-40° to 82° Celsius)
Open Cell Foam Tape	Soft foam conforms to irregular surfaces.	Wire harness and connector wrap. Examples: Seals, gasket, wiring, heat ducts.	-40° to 180° Fahrenheit (-40° to 82° Celsius)
Closed Cell Low Density Foam Tape	Soft, conformable. Water-resistant.	Wherever bulk is needed. Prevents closing flutters and rattles when applied to door watershield. Examples: Door, I/P.	-40° to 180° Fahrenheit (-40° to 82° Celsius)
NYE® Grease 880	Long life.	Suspensions. Examples: Strut busings, sway bars.	-40° to 390° Fahrenheit (-40° to 200° Celsius)
Krytox® Oil	Long life. Will not dry out or harm plastics or rubber.	When access is not possible, oil will migrate to condition. Vinyl, rubber, plastic, metal. Examples: Convertible top bushings, pull cups trim panel inserts.	-30° to 400° Fahrenheit (-34° to 205° Celsius)
Krytox® Grease	Long life. Will not dry out or harm plastics or rubber.	Vinyl, rubber, plastic, metal, glass. Examples: Weather-strips, backlite and windshield moldings.	-30° to 400° Fahrenheit (-34° to 205° Celsius)

## SPECIFICATIONS - TORQUE

## TORQUE SPECIFICATIONS

DESCRIPTION	N-m	Ft. Lbs.	In. Lbs.
Body side guard/side bolts	5	—	45
Body side guard/support tab bolts	11	8	—
Hood assist spring bolt	3	—	25
Hood catch nuts	18	13	—
Hood catch bracket nuts	11	8	—
Hood hinge screws	24	18	—
Hood safety latch bolt	9	—	80
Bucket seat front anchor bolt	47	35	—

WELD LOCATIONS (Continued)

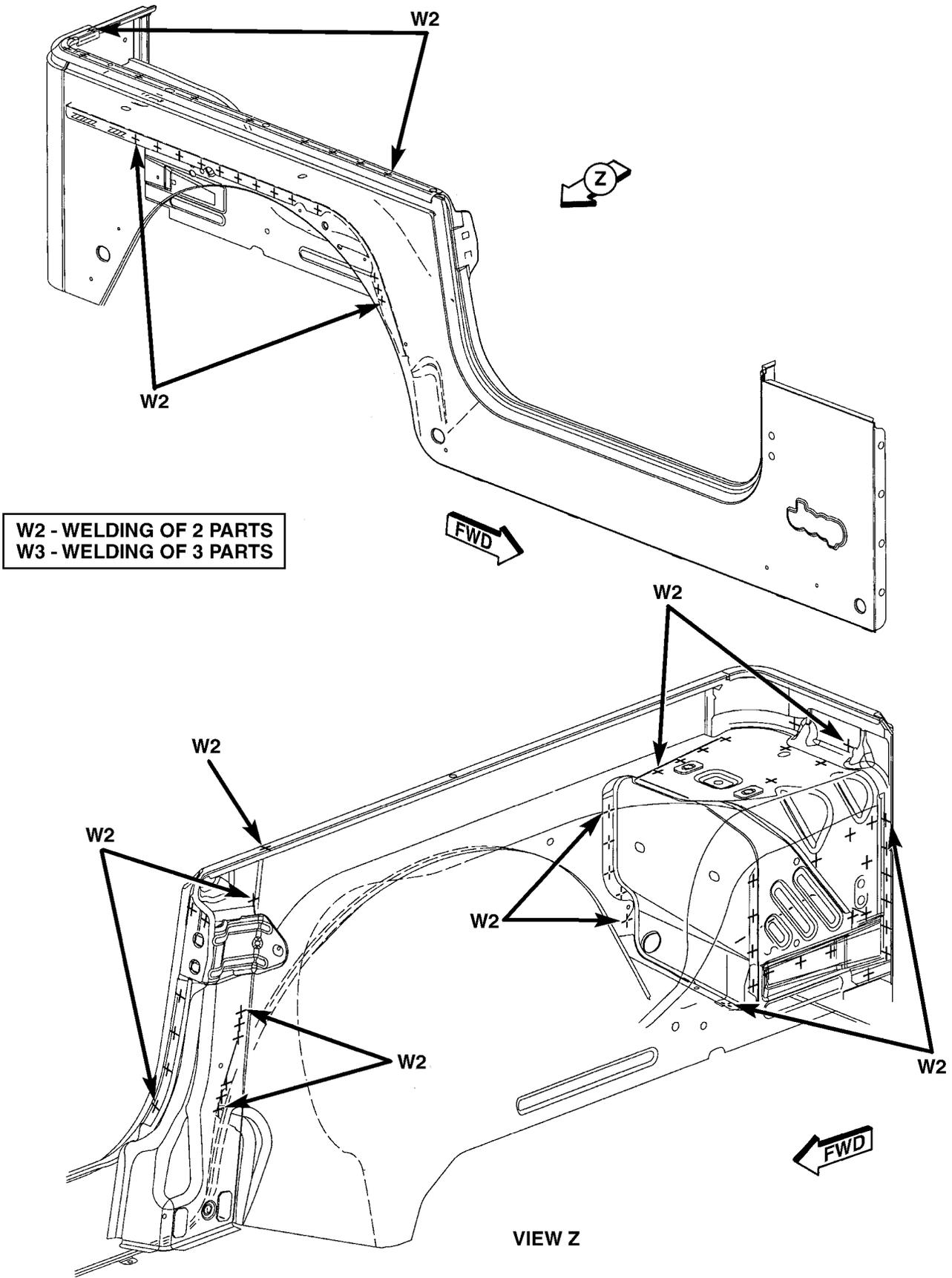


Fig. 69 BODY SIDE (1 OF 2)

**Symptom:**

**P0122-THROTTLE POSITION SENSOR VOLTAGE TOO LOW**

**When Monitored and Set Condition:**

**P0122-THROTTLE POSITION SENSOR VOLTAGE TOO LOW**

When Monitored: With the ignition on and battery voltage above 10.4 volts.

Set Condition: Throttle Position Sensor voltage at the PCM is lower than 0.1 of a volt for 1.3 seconds.

**POSSIBLE CAUSES**

TP SENSOR SWEEP  
 INTERMITTENT CONDITION  
 (K7) 5-VOLT SUPPLY CIRCUIT OPEN  
 (K7) 5-VOLT SUPPLY CIRCUIT SHORTED TO GROUND  
 TP SENSOR  
 (K22) TP SENSOR NO.1 SIGNAL CIRCUIT SHORTED TO GROUND  
 (K22) TP SENSOR NO.1 SIGNAL CIRCUIT SHORTED TO (K4) SENSOR GROUND CIRCUIT  
 TCM INTERNALLY SHORTED THROTTLE POSITION SIGNAL CIRCUIT  
 PCM

TEST	ACTION	APPLICABILITY
1	Ignition on, engine not running. With the DRBIII®, read DTCs and record the related Freeze Frame data. Check for any related TSBs. With the DRBIII®, read the Throttle Position Sensor voltage. Is the voltage below 0.2 of a volt?  Yes → Go To 2 No → Go To 10	All
2	Turn the ignition off. Disconnect the Throttle Position Sensor harness connector. Ignition on, engine not running. Measure the voltage on the (K7) 5-volt Supply circuit in the TP Sensor harness connector. Is the voltage between 4.5 to 5.2 volts?  Yes → Go To 3 No → Go To 7	All
3	With the DRBIII®, monitor the TP Sensor voltage with the Sensor disconnected. Is the voltage above 4.5 volts?  Yes → Replace the Throttle Position Sensor. Perform POWERTRAIN VERIFICATION TEST VER - 5.  No → Go To 4	All

**Symptom List:**

**P1595-SPEED CONTROL SOLENOID CIRCUITS**

**P1683-SPD CTRL PWR RELAY; OR S/C 12V DRIVER CKT**

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**Test Note: All symptoms listed above are diagnosed using the same tests. The title for the tests will be P1595-SPEED CONTROL SOLENOID CIRCUITS.**

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**When Monitored and Set Condition:**

**P1595-SPEED CONTROL SOLENOID CIRCUITS**

**When Monitored:** With the ignition key on, the speed control switched on, the SET switch pressed and the vehicle in drive gear moving above 35 MPH.

**Set Condition:** The powertrain control module actuates the vacuum and vent solenoids but they do not respond.

**P1683-SPD CTRL PWR RELAY; OR S/C 12V DRIVER CKT**

**When Monitored:** With the ignition key on and the speed control switched on.

**Set Condition:** The speed control power supply circuit is either open or shorted to ground.

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**POSSIBLE CAUSES**

(Z1) GROUND CIRCUIT OPEN

INTERMITTENT CONDITION

(V30) S/C BRAKE SWITCH OUTPUT CIRCUIT

(V30) S/C BRAKE SWITCH OUTPUT CIRCUIT OPEN

BRAKE LAMP SWITCH

(V32) S/C POWER SUPPLY CIRCUIT OPEN

S/C VACUUM SOLENOID

(V36) S/C VACUUM SOL CONTROL CIRCUIT OPEN

(V36) S/C VACUUM SOL CONTROL CIRCUIT SHORTED TO GROUND

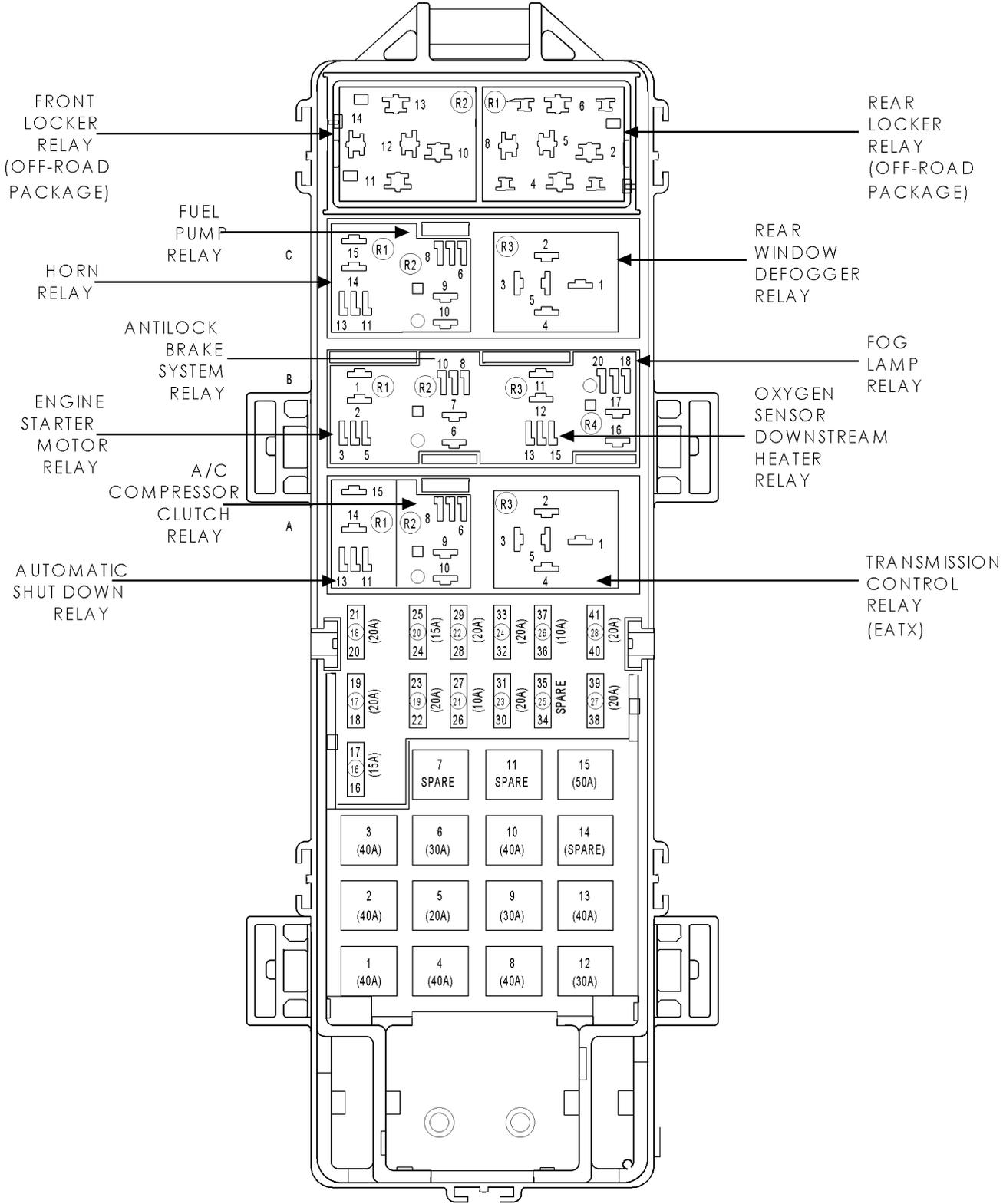
S/C VENT SOLENOID

(V35) S/C VENT SOL CONTROL CIRCUIT OPEN

(V35) S/C VENT SOL CONTROL CIRCUIT SHORTED TO GROUND

PCM

POWER DISTRIBUTION CENTER



CONNECTOR PINOUTS