INSTRUMENT PANEL SYSTEMS

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DESCRIPTION AND OPERATION

INSTRUMENT CLUSTER

DESCRIPTION

The instrumentation gauges on NS vehicles are contained in a subdial assemblies within the instrument cluster. The individual gauges are not serviced separately. If one of the cluster gauges becomes faulty the entire subdial would require replacement and all gauges will have to be calibrated. Refer to the proper Body Diagnostic Procedure Manual for calibration procedures.

The mechanical instrument cluster with a tachometer is equipped with a electronic vacuum fluorescent transmission range indicator (PRND3L), odometer, and trip odometer display.

The mechanical instrument cluster without a tachometer is equipped with a cable operated transmission range indicator (PRND21).

The instrument cluster is equipped with the following warning lamps.

DESCRIPTION AND OPERATION (Continued)

- Lift Gate Ajar
- Low Fuel Level
- Low Windshield Washer Fluid Level
- Cruise
- Battery Voltage
- Fasten Seat Belt
- Door Ajar

OPERATION

Refer to the vehicle Owner's Manual for operation instructions and conditions for the Instrument Cluster Gauges.

DIAGNOSIS AND TESTING

DIAGNOSTIC PROCEDURES

NS vehicle instrument clusters are equipped with a self diagnostic test feature to help identify electronic problems. Prior to any test, perform Self Diagnostic Test. The self diagnostic system monitors the CCD bus messages. If an electronic problem occurs, a Diagnostic Trouble Code (DTC) will be displayed in the odometer window of the cluster.

The following CCD bus messages are continuously monitored by the diagnostic system:

- Body Control Module
- Powertrain Control Module
- Transmission Control Module, if equipped

HEADLAMP SWITCH

Using a Digital Multimeter equipped with a diode test, perform the Headlamp Switch Continuity test and the Rheostat Continuity test, referring to (Fig. 1).

Switch position possibilities are open (no continuity), continuity, resistance value in ohms, or diode test. Use the values in the third column to determine meter setting. If Headlamp Switch is not within specifications replace as necessary.

The Chrysler Town and Country is available with optional Automatic Headlamps. For diagnosis, refer to the proper Body Diagnostic Procedures Manual.

HEADLAMP SWITCH CONTINUITY

HEADLAMP SWITCH POSITION	8-WAY CONNECTOR TERMINALS	RESISTANCE VALUE
OFF	2 TO 1 2 TO 5 2 TO 6 2 TO 7 2 TO 8	5.2 OHMS (AVERAGE) OPEN OPEN OPEN OPEN
PARKING LAMPS ON	2 TO 3 2 TO 5 2 TO 6 2 TO 7 2 TO 8	OPEN OPEN OPEN OPEN CONTINUITY
HEADLAMPS ON	2 TO 3 2 TO 5 2 TO 6 2 TO 7 2 TO 8	CONTINUITY OPEN OPEN OPEN CONTINUITY
FRONT FOG LAMPS ON (WITH HEADLAMPS)	2 TO 3 2 TO 6 2 TO 8 5 TO 2 2 TO 7	CONTINUITY CONTINUITY CONTINUITY DIODE CONTINUITY OPEN
AUTO ON	2 TO 3 2 TO 5 2 TO 6 2 TO 7 2 TO 8	CONTINUITY OPEN OPEN CONTINUITY CONTINUITY
FOG LAMP ON (WITH AUTO)	2 TO 3 2 TO 6 2 TO 8 5 TO 2 2 TO 7	CONTINUITY CONTINUITY CONTINUITY DIODE CONTINUITY CONTINUITY

DIAGNOSIS AND TESTING (Continued)

RHEOSTAT CONTINUITY

RHEOSTAT (THUMBWHEEL)	12-WAY CONNECTOR TERMINALS	RESISTANCE VALUES
DOME LAMPS ON	6 TO 4 6 TO 5 6 TO 12 3 TO 9 10 TO 11	CONTINUITY OPEN 8K TO 12K OHMS CONTINUITY
DAYTIME RUNNING MODE	6 TO 4 6 TO 5 6 TO 12 3 TO 9 10 TO 11	OPEN CONTINUITY 8K TO 12K OHMS CONTINUITY
I/P LAMPS IN BRIGHT POSITION	6 TO 4 6 TO 5 6 TO 12 3 TO 9 10 TO 11	OPEN OPEN 8K TO 12K OHMS CONTINUITY
IF LAMPS IN DIM POSITION	6 TO 4 6 TO 5 6 TO 12 3 TO 9 10 TO 11	OPEN OPEN 0 TO 500 OHMS CONTINUITY
COURTESY LAMPS DEFEAT	6 TO 4 6 TO 5 6 TO 12 3 TO 9 10 TO 11	OPEN OPEN 0 TO 500 OHMS OPEN

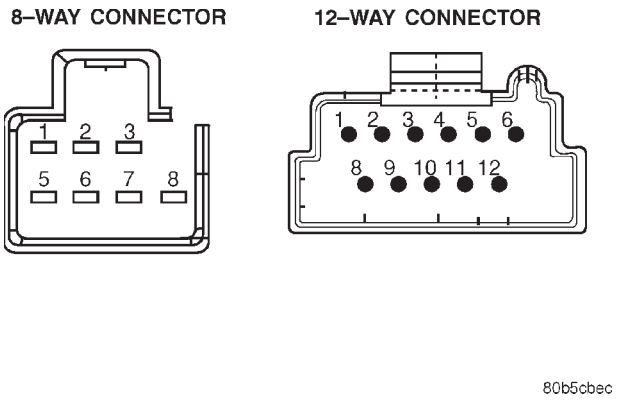

Fig. 1 Headlamp Switch Connectors (switch side)

SELF DIAGNOSTIC TEST

To activate self diagnostic program:

(1) With the ignition switch in the OFF position, depress the TRIP and RESET buttons.

(2) While holding the TRIP and RESET button turn the ignition switch to the ON position.

(3) Continue to hold the TRIP and RESET buttons until the word CODE appears in the odometer windows (about five seconds) then release the buttons. If a problem exists, the system will display Diagnostic Trouble Codes (DTC's). If no problem exists, the code 999 (End Test) will momentarily appear.

INSTRUMENT CLUSTER DTC TABLE

DTC	DESCRIPTION
110	MEMORY FAULT IN CLUSTER
111	CALIBRATION FAULT IN CLUSTER
905	NO CCD BUS MESSAGES FROM TCM
921	ODOMETER FAULT FROM BCM
940	NO CCD BUS MESSAGES FROM PCM
999	END OF CODES

DIM TEST

When CHEC-0 is displayed in the odometer window, the cluster's vacuum fluorescent (VF) displays will dim down. If the VF display brightness does no change, a problem exists in the cluster.

CLUSTER CALIBRATION TABLE

Speedometer	**Calibration Point**
1	0 mph (0 Km/h)
2	20 mph (40 Km/h)
3	55 mph (80 Km/h)
4	75 mph (120 Km/h)

Tachometer	**Calibration Point**
1	0 rpm
2	1000 rpm
3	3000 rpm
4	6000 rpm

Fuel Gauge	**Calibration Point**
1	Empty (E)
2	1/8 Filled
3	1/4 Filled
4	Full (F)

Temperature Gauge	**Calibration Point**
1	Cold (C)
2	Low Normal
3	High Normal
4	Hot (H)

DIAGNOSIS AND TESTING (Continued)

CALIBRATION TEST

When CHEC-1 is displayed in the odometer window, each of the cluster's gauge pointers will move sequentially through each calibration point. The Calibration Table contains the proper calibration points for each gauge. If the gauge pointers are not calibrated, a problem exists in the cluster. If any gauge is out of calibration it will have to be calibrated using a DRB lll® scan tool. Refer to the proper Body Diagnostic Procedure Manual for calibration procedures.

ODOMETER SEGMENT TEST

When CHEC-2 is displayed in the odometer window, each digit of the odometer will illuminate sequentially. If a segment in the odometer does not illuminate normally, a problem exists in the display.

ELECTRONIC TRANSMISSION RANGE INDICATOR SEGMENT TEST

When CHEC-3 is displayed in the odometer window, each segment of the transmission range indicator will illuminate sequentially. If a segment in the transmission range indicator does not illuminate normally, a problem exists in the display board.

CONDITIONS

Refer to the following tables:

- Instrument Cluster
- Speedometer
- Tachometer
- Fuel Gauge
- Temperature Gauge
- Odometer
- Electronic Transmission Range Indicator (PRND3L) or (PRND1234-Autostick equipped)
- Mechanical Transmission Range Indicator (PRND21)

for possible/problems/causes and corrections.

INSTRUMENT CLUSTER DIAGNOSIS

CONDITION	POSSIBLE CAUSES	CORRECTION
INSTRUMENT CLUSTER INOPERATIVE-NO RESPONSE	NO CCD BUS MESSAGES FROM THE BODY CONTROL MODULE (BCM).	1. USE A SCAN TOOL TO CHECK THE BCM. IF OK, LOOK FOR ANOTHER POSSIBLE CAUSE FOR CLUSTER FAILURE. IF NOT OK, REFER TO THE PROPER BODY DIAGNOSTIC PROCEDURE MANUAL.
	SPREAD TERMINAL(S) ON WIRING HARNESS CLUSTER CONNECTOR.	1. REMOVE CLUSTER FROM INSTRUMENT PANEL AND CHECK WIRING HARNESS CONNECTOR FOR SPREAD TERMINAL. IF OK, LOOK FOR ANOTHER POSSIBLE CAUSE FOR THE CLUSTER FAILURE. IF NOT OK, REPAIR CONNECTOR.
	BODY CONTROL MODULE (BCM) IS NOT RECEIVING PROPER INPUT FROM THE IGNITION SWITCH.	1. USE A SCAN TOOL TO VERIFY IGNITION SWITCH STATUS INTO THE BCM. IF NOT OK, GO TO STEP (2). IF OK, LOOK AT ANOTHER POSSIBLE CAUSE OF FAILURE. 2. CHECK IGNITION SWITCH FUNCTION AND WIRING.
	INTERNAL CLUSTER FAILURE.	1. REPLACE MAIN CLUSTER PC BOARD AND USE A SCAN TOOL TO CALIBRATE CLUSTER.

DIAGNOSIS AND TESTING (Continued)

SPEEDOMETER DIAGNOSIS

CONDITION	POSSIBLE CAUSES	CORRECTION
NO POINTER MOVEMENT	1. INTERNAL CLUSTER FAILURE.	1. (A) PERFORM CLUSTER SELF DIAGNOSTIC TEST AND CHECK FOR FAULT CODES. • IF SPEEDOMETER POINTER MOVES TO CALIBRATION POINTS DURING TEST AND FAULT CODES 110 OR 111 DON'T APPEAR IN THE ODOMETER DISPLAY THEN FAILURE IS NOT IN THE CLUSTER. LOOK FOR ANOTHER POSSIBLE CAUSE OF FAILURE. • IF THE POINTER DOESN'T MOVE DURING TEST, GO TO STEP (B). • IF FAULT CODE 110 IS DISPLAYED IN THE ODOMETER, GO TO STEP (B). • IF FAULT CODE 111 IS DISPLAYED IN THE ODOMETER THEN GO TO STEP (F). • IF FAULT CODES 905, 920, OR 940 ARE DISPLAYED IN THE ODOMETER DISPLAY REFER TO THE FAULT CODE CHART TO IDENTIFY WHICH MODULE IS CAUSING THE FAULT AND REPAIR MODULE. (B) REPLACE MAIN CLUSTER PC BOARD. GO TO STEP (C). (C) CONNECT CLUSTER INTO INSTRUMENT PANEL WIRING HARNESS. PLACE IT BACK INTO THE PROPER POSITION IN THE INSTRUMENT PANEL. PUT IN THE TOP TWO MOUNTING SCREWS TO HOLD THE CLUSTER IN PLACE. DO NOT COMPLETELY INSTALL CLUSTER TO INSTRUMENT PANEL UNTIL UNIT IS CALIBRATED AND TESTED. GO TO STEP (D). (D) USE A SCAN TOOL TO CALIBRATE CLUSTER AND PERFORM SELF DIAGNOSTIC TEST. IF OK, COMPLETE INSTALLATION. IF NOT OK, GO TO STEP (E). (E) REPLACE SUBDIAL ASSEMBLY AND USE A SCAN TOOL TO CALIBRATE CLUSTER. IF NOT OK, LOOK AT ANOTHER POSSIBLE CAUSE FOR THE SPEEDOMETER FAILURE. (F) USE A SCAN TOOL TO CALIBRATE SPEEDOMETER AND PERFORM SELF DIAGNOSTIC TEST. IF OK, STOP. IF NOT OK, GO TO STEP (B).
	2. NO SPEED CCD BUS MESSAGE OR ZERO MPH CCD SPEED BUS MESSAGE.	2. (A) CHECK THE BODY CONTROL MODULE (BCM) USING A SCAN TOOL. IF OK, GO TO STEP (B). IF NOT OK, REFER TO THE BCM SECTION OF THE SERVICE MANUAL TO REPAIR THE BCM. (B) CHECK THE POWERTRAIN CONTROL MODULE (PCM) USING A SCAN TOOL. IF OK, GO TO STEP (C). IF NOT OK, REFER TO THE PCM SECTION OF THE SERVICE MANUAL TO REPAIR THE PCM. (C) CHECK THE SPEED SIGNAL INPUT INTO THE PCM. THE SPEED SIGNAL ORIGINATES FROM ONE OF THE FOLLOWING SOURCES: • A DISTANCE SENSOR FOR VEHICLES WITH 3 SPEED AUTOMATIC TRANSMISSION. CHECK CONTINUITY FROM DISTANCE SENSOR TO PCM. IF OK, REPLACE DISTANCE SENSOR. IF NOT OK, REPAIR WIRING. • THE ELECTRONIC TRANSMISSION CONTROL MODULE (TCM) FOR VEHICLES WITH THE 4 SPEED ELECTRONIC TRANSMISSIONS. CHECK CONTINUITY FROM TCM TO PCM. IF OK, USE A SCAN TOOL TO CHECK TCM. REFER TO THE ELECTRONIC TCM SECTION OF THE SERVICE MANUAL TO REPAIR THE TCM. IF NOT OK, REPAIR WIRING.

DIAGNOSIS AND TESTING (Continued)

CONDITION	POSSIBLE CAUSES	CORRECTION
ERRATIC POINTER MOVEMENT	1. ERRATIC MESSAGE FROM ANOTHER MODULE.	1. (A) CHECK THE BCM USING A SCAN TOOL IF OK, GO TO STEP (B). IF NOT OK, REFER TO THE BCM SECTION OF THE SERVICE MANUAL TO REPAIR THE BCM. (B) CHECK THE PCM USING A SCAN TOOL. IF OK, GO TO STEP (C). IF NOT OK, REFER TO THE PCM SECTION OF THE SERVICE MANUAL TO REPAIR THE PCM. (C) CHECK THE SPEED SIGNAL INPUT INTO THE PCM. THE SPEED SIGNAL ORIGINATES FROM ONE OF THE FOLLOWING SOURCES: • A DISTANCE SENSOR FOR VEHICLES WITH 3 SPEED AUTOMATIC TRANSMISSION. CHECK CONTINUITY FROM DISTANCE SENSOR TO PCM. IF OK, REPLACE DISTANCE SENSOR. IF NOT OK, REPAIR WIRING. • THE ELECTRONIC TRANSMISSION CONTROL MODULE (TCM) VEHICLES WITH THE 4 SPEED ELECTRONIC TRANSMISSIONS. CHECK CONTINUITY FROM TCM TO ENGINE CONTROLLER. IF OK, USE A SCAN TOOL TO CHECK TCM. REFER TO THE ELECTRONIC SECTION OF THE SERVICE MANUAL TO REPAIR THE TCM. IF NOT OK, REPAIR WIRING.
	2. INTERNAL CLUSTER FAILURE.	2. (A) PERFORM CLUSTER SELF DIAGNOSTIC TEST AND CHECK FOR FAULT CODES. • IF THE POINTER MOVES DURING TEST BUT STILL APPEARS ERRATIC AND FAULT CODES 110 OR 111 DON'T APPEAR IN THE ODOMETER DISPLAY, THEN GO TO STEP (B). • IF FAULT CODE 110 IS DISPLAYED IN THE ODOMETER, GO TO STEP (E). • IF FAULT CODE 111 APPEARS IN THE ODOMETER DISPLAY GO TO STEP (D). • IF FAULT CODES 905, 920, OR 940 ARE DISPLAYED IN THE ODOMETER DISPLAY REFER TO THE FAULT CODE CHART TO IDENTIFY WHICH MODULE IS CAUSING THE FAULT AND REPAIR MODULE. (B) REPLACE CLUSTER SUBDIAL ASSEMBLY. TO STEP (C). (C) CONNECT CLUSTER INTO INSTRUMENT PANEL WIRING HARNESS. PLACE IT BACK INTO THE PROPER POSITION IN THE INSTRUMENT PANEL. PUT IN THE TOP TWO MOUNTING SCREWS TO HOLD THE CLUSTER IN PLACE. DO NOT COMPLETELY INSTALL CLUSTER TO INSTRUMENT PANEL UNTIL UNIT IS CALIBRATED AND TESTED. GO TO STEP (D). (D) USE A SCAN TOOL TO CALIBRATE CLUSTER AND PERFORM SELF DIAGNOSTIC TEST. IF OK, CONTINUE INSTALLATION. IF NOT OK, GO TO STEP (E). REPLACE MAIN CLUSTER PC BOARD AND USE A SCAN TOOL TO CALIBRATE CLUSTER. IF NOT OK, LOOK AT ANOTHER POSSIBLE CAUSE FOR THE SPEEDOMETER FAILURE.

DIAGNOSIS AND TESTING (Continued)

CONDITION	POSSIBLE CAUSES	CORRECTION
SPEEDOMETER INACCURATE.	1. SPEEDOMETER OUT OF CALIBRATION.	1. (A) PERFORM CLUSTER SELF DIAGNOSTIC TEST. • IF SPEEDOMETER IS ACCURATE TO THE CALIBRATION POINTS THEN LOOK FOR ANOTHER POSSIBLE CAUSE OF INACCURACY. • IF SPEEDOMETER IS NOT ACCURATE TO THE CALIBRATION POINTS, GO TO STEP (B). (B) USE A SCAN TOOL TO CALIBRATE SPEEDOMETER.
	2. WRONG SPEEDOMETER PINION SIZE FOR TIRE SIZE.	2. (A) IF VEHICLE HAS A 4 SPEED ELECTRONIC TRANSMISSION GO TO STEP (C). OTHERWISE GO TO STEP (B). (B) CHECK IF CORRECT SPEEDOMETER PINION IS BEING USED WITH TIRES ON VEHICLE. REFER TO TRANSMISSION SECTION OF MANUAL FOR TEST AND REPAIR PROCEDURE. • IF THE INCORRECT PINION IS IN TRANSMISSION THEN REPLACE WITH CORRECT PINION. • IF THE CORRECT PINION IS IN THE TRANSMISSION CALIBRATE SPEEDOMETER USING A SCAN TOOL TO CORRECT FOR THE INACCURACY. (C) USE A SCAN TOOL TO CHECK THE TCM TO SEE IF THE CORRECT TIRE SIZE HAS BEEN PROGRAMMED INTO THE TCM. • IF THE INCORRECT TIRE SIZE WAS SELECTED, SELECT THE PROPER TIRE SIZE. • IF THE CORRECT TIRE SIZE WAS SELECTED, CALIBRATE SPEEDOMETER TO CORRECT FOR THE INACCURACY.
	3. BAD SPEED SENSOR.	3. REFER TO THE PROPER SECTION OF THE SERVICE MANUAL FOR TEST AND REPAIR PROCEDURE.

DIAGNOSIS AND TESTING (Continued)

TACHOMETER DIAGNOSIS

CONDITION	POSSIBLE CAUSES	CORRECTION
NO POINTER MOVEMENT	1. INTERNAL CLUSTER FAILURE.	1. (A) PERFORM CLUSTER SELF DIAGNOSTIC TEST AND CHECK FOR FAULT CODES. • IF TACHOMETER POINTER MOVES TO CALIBRATION POINTS DURING TEST AND FAULT CODES 110 OR 111 DON'T APPEAR IN THE ODOMETER DISPLAY THEN FAILURE IS NOT IN THE CLUSTER. LOOK FOR ANOTHER POSSIBLE CAUSE OF FAILURE. • IF THE POINTER DOESN'T MOVE DURING TEST, GO TO STEP (B). • IF FAULT CODE 110 IS DISPLAYED IN THE ODOMETER, GO TO STEP (B). • IF FAULT CODE 111 IS DISPLAYED IN THE ODOMETER THEN GO TO STEP (F). • IF FAULT CODES 920 OR 940 ARE DISPLAYED IN THE ODOMETER DISPLAY REFER TO THE FAULT CODE CHART TO IDENTIFY WHICH MODULE IS CAUSING THE FAULT AN REPAIR MODULE. (B) REPLACE MAIN CLUSTER PC BOARD. GO TO STEP (C). (C) CONNECT CLUSTER INTO INSTRUMENT PANEL WIRING HARNESS. PLACE IT BACK INTO THE PROPER POSITION IN THE INSTRUMENT PANEL. PUT IN THE TOP TWO MOUNTING SCREWS TO HOLD THE CLUSTER IN PLACE. DO NOT COMPLETELY INSTALL CLUSTER TO INSTRUMENT PANEL UNTIL UNIT IS CALIBRATED AND TESTED. GO TO STEP (D). (D) USE A SCAN TOOL TO CALIBRATE CLUSTER AND PERFORM SELF DIAGNOSTIC TEST. IF OK, CONTINUE INSTALLATION. IF NOT OK, GO TO STEP (E). (E) REPLACE SUBDIAL ASSEMBLY AND USE A SCAN TOOL TO CALIBRATE CLUSTER. IF NOT OK, LOOK AT ANOTHER POSSIBLE CAUSE FOR THE TACHOMETER FAILURE. (F) USE A SCAN TOOL TO CALIBRATE TACHOMETER AND PERFORM SELF DIAGNOSTIC TEST. IF OK, STOP. IF NOT OK, GO TO STEP (B).
	2. NO RPM CCD BUS MESSAGE OR ZERO RPM CCD BUS MESSAGE FROM ENGINE CONTROLLER.	2. CHECK THE PCM USING A SCAN TOOL. REFER TO THE PCM SECTION OF THE MANUAL TO PROPERLY DIAGNOSE AND REPAIR.

DIAGNOSIS AND TESTING (Continued)

CONDITION	POSSIBLE CAUSES	CORRECTION
ERRATIC POINTER MOVEMENT.	1. BAD CCD BUS MESSAGE FROM ENGINE CONTROLLER.	1. CHECK THE PCM USING A SCAN TOOL. REFER TO THE PCM SECTION OF THE MANUAL TO PROPERLY DIAGNOSE AND REPAIR.
	2. INTERNAL CLUSTER FAILURE.	2. (A) PERFORM CLUSTER SELF DIAGNOSTIC TEST AND CHECK FOR FAULT CODES. • IF THE POINTER MOVES DURING TEST BUT STILL APPEARS ERRATIC AND FAULT CODES 110 OR 111 DON'T APPEAR IN THE ODOMETER DISPLAY, GO TO STEP (B). • IF FAULT CODE 110 IS DISPLAYED IN THE ODOMETER, GO TO STEP (E). • IF FAULT CODE 111 APPEARS IN THE ODOMETER DISPLAY GO TO STEP (D). • IF FAULT CODES 920 OR 940 ARE DISPLAYED IN THE ODOMETER DISPLAY REFER TO THE FAULT CODE CHART TO IDENTIFY WHICH MODULE IS CAUSING THE FAULT AND REPAIR MODULE. (B) REPLACE CLUSTER SUBDIAL ASSEMBLY. GO TO STEP (C). (C) CONNECT CLUSTER INTO INSTRUMENT PANEL WIRING HARNESS. PLACE IT BACK INTO THE PROPER POSITION IN THE INSTRUMENT PANEL. PUT IN THE TOP TWO MOUNTING SCREWS TO HOLD THE CLUSTER IN PLACE DO NOT COMPLETELY INSTALL CLUSTER TO INSTRUMENT PANEL UNTIL UNIT IS CALIBRATED AND TESTED. GO TO STEP (D). (D) USE A SCAN TOOL TO CALIBRATE CLUSTER AND PERFORM SELF DIAGNOSTIC TEST. IF OK, CONTINUE INSTALLATION. IF NOT OK, GO TO STEP (E). (E) REPLACE MAIN CLUSTER PC BOARD AND USE A SCAN TOOL TO CALIBRATE CLUSTER. IF NOT OK, LOOK AT ANOTHER POSSIBLE CAUSE FOR THE TACHOMETER FAILURE.
TACHOMETER INACCURATE.	1. TACHOMETER OUT OF CALIBRATION.	1. CALIBRATE TACHOMETER USING A SCAN TOOL.

DIAGNOSIS AND TESTING (Continued)

FUEL GAUGE DIAGNOSIS

CONDITION	POSSIBLE CAUSES	CORRECTION
NO POINTER MOVEMENT.	1. INTERNAL CLUSTER FAILURE.	1. (A) PERFORM CLUSTER SELF DIAGNOSTIC TEST AND CHECK FOR FAULT CODES. •IF FUEL GAUGE POINTER MOVES TO CALIBRATION POINTS DURING TEST AND FAULT CODES 110 OR 111 DON'T APPEAR IN THE ODOMETER DISPLAY THEN FAILURE IS NOT IN THE CLUSTER. LOOK FOR ANOTHER POSSIBLE CAUSE OF FAILURE. •IF THE POINTER DOESN'T MOVE DURING TEST, GO TO STEP (B). •IF FAULT CODE 110 IS DISPLAYED IN THE ODOMETER, GO TO STEP (B). •IF FAULT CODE 111 IS DISPLAYED IN THE ODOMETER THEN GO TO STEP (F). •IF FAULT CODE 920 IS DISPLAYED IN THE ODOMETER REFER TO THE FAULT CODE CHART TO IDENTIFY WHICH MODULE IS CAUSING THE FAULT AND REPAIR MODULE. (B) REPLACE MAIN CLUSTER PC BOARD. GO TO STEP (C). (C) CONNECT CLUSTER INTO INSTRUMENT PANEL WIRING HARNESS. PLACE IT BACK INTO THE PROPER POSITION IN THE INSTRUMENT PANEL. PUT IN THE TOP TWO MOUNTING SCREWS TO HOLD THE CLUSTER IN PLACE. DO NOT COMPLETELY INSTALL CLUSTER TO INSTRUMENT PANEL UNTIL UNIT IS CALIBRATED AND TESTED. GO TO STEP (D). (D) USE A SCAN TOOL TO CALIBRATE CLUSTER AND PERFORM SELF DIAGNOSTIC TEST. IF OK, CONTINUE INSTALLATION. IF NOT OK, GO TO STEP (E). (E) REPLACE SUBDIAL ASSEMBLY AND USE A SCAN TOOL TO CALIBRATE CLUSTER. IF NOT OK, LOOK AT ANOTHER POSSIBLE CAUSE FOR THE FUEL GAUGE FAILURE. (F) USE A SCAN TOOL TO CALIBRATE FUEL GAUGE AND PERFORM SELF DIAGNOSTIC TEST. IF OK, STOP. IF NOT OK, GO TO STEP (B).
	2. NO CCD FUEL MESSAGE OR EMPTY CCD BUS MESSAGE FROM BODY CONTROLLER.	2. (A) CHECK THE BCM USING A SCAN TOOL. IF OK, GO TO STEP (B). IF NOT OK, REFER TO THE BCM SECTION OF THE MANUAL TO PROPERLY DIAGNOSE AND REPAIR. (B) REFER TO THE FUEL SECTION OF THE SERVICE MANUAL FOR THE FUEL LEVEL SENDING UNIT TEST PROCEDURE. TEST UNIT AND REPAIR AS INSTRUCTED.
ERRATIC POINTER MOVEMENT.	1. BAD CCD FUEL MESSAGE FROM THE BODY CONTROLLER.	1. (A) USE A SCAN TOOL TO CHECK THE BCM. IF OK, GO TO STEP (B). IF NOT OK, REFER TO THE BCM SECTION OF THE SERVICE MANUAL TO PROPERLY DIAGNOSE AND REPAIR. (B) REFER TO THE FUEL SECTION OF THE SERVICE MANUAL FOR THE FUEL LEVEL SENDING UNIT TEST PROCEDURE. TEST UNIT. IF OK, LOOK FOR ANOTHER POSSIBLE CAUSE FOR FUEL GAUGE FAILURE. IF NOT OK, REPAIR SENDING UNIT.

DIAGNOSIS AND TESTING (Continued)

CONDITION	POSSIBLE CAUSES	CORRECTION
	2. INTERNAL CLUSTER FAILURE.	2. (A) PERFORM CLUSTER SELF DIAGNOSTIC TEST AND CHECK FOR FAULT CODES. • IF THE POINTER MOVES DURING TEST BUT STILL APPEARS ERRATIC AND FAULT CODES 110 OR 111 DON'T APPEAR IN THE ODOMETER DISPLAY, GO TO STEP (B). • IF FAULT CODE 110 IS DISPLAYED IN THE ODOMETER, GO TO STEP (E). • IF FAULT CODE 111 APPEARS IN THE ODOMETER DISPLAY TO STEP (D). • IF FAULT CODE 920 IS DISPLAYED IN THE ODOMETER REFER TO THE FAULT CODE CHART TO IDENTIFY WHICH MODULE IS CAUSING THE FAULT AND REPAIR MODULE. (B) REPLACE CLUSTER SUBDIAL ASSEMBLY. GO TO STEP (C). (C) CONNECT CLUSTER INTO INSTRUMENT PANEL WIRING HARNESS. PLACE IT BACK INTO THE PROPER POSITION IN THE INSTRUMENT PANEL. PUT IN THE TOP TWO MOUNTING SCREWS TO HOLD THE CLUSTER IN PLACE. DO NOT COMPLETELY INSTALL CLUSTER TO INSTRUMENT PANEL UNTIL UNIT IS CALIBRATED AND TESTED. GO TO STEP (D). (D) USE A SCAN TOOL TO CALIBRATE CLUSTER AND PERFORM SELF DIAGNOSTIC TEST. IF OK, CONTINUE INSTALLATION. IF NOT OK, GO TO STEP (E). (E) REPLACE MAIN CLUSTER PC BOARD AND USE A SCAN TOOL TO CALIBRATE CLUSTER. IF NOT OK, LOOK AT ANOTHER POSSIBLE CAUSE FOR THE FUEL GAUGE FAILURE.
FUEL GAUGE INACCURATE.	1. FUEL GAUGE OUT OF CALIBRATION.	1. (A) PERFORM CLUSTER SELF DIAGNOSTIC TEST. IF POINTER IS ACCURATE TO THE CALIBRATION POINTS LOOK FOR ANOTHER POSSIBLE CAUSE OF FAILURE. IF POINTER IS INACCURATE TO THE CALIBRATION POINTS, TO STEP (B). (B) USE A SCAN TOOL TO CALIBRATE FUEL GAUGE.
	2. FUEL LEVEL SENDING UNIT IS OUT OF CALIBRATION.	2. (A) REFER TO THE FUEL SECTION OF THE SERVICE MANUAL FOR TEST AND REPAIR PROCEDURE.

DIAGNOSIS AND TESTING (Continued)

TEMPERATURE GAUGE DIAGNOSIS

CONDITION	POSSIBLE CAUSES	CORRECTION
NO POINTER MOVEMENT	1. INTERNAL CLUSTER FAILURE.	1. (A) PERFORM CLUSTER SELF DIAGNOSTIC TEST AND CHECK FOR FAULT CODES. • IF TEMPERATURE GAUGE POINTER MOVES TO CALIBRATION POINTS DURING TEST AND FAULT CODES 110 OR 111 DON'T APPEAR IN THE ODOMETER DISPLAY THEN FAILURE IS NOT IN THE CLUSTER. LOOK FOR ANOTHER POSSIBLE CAUSE OF FAILURE. • IF THE POINTER DOESN'T MOVE DURING TEST, GO TO STEP (B). • IF FAULT CODE 110 IS DISPLAYED IN THE ODOMETER, GO TO STEP (B). • IF FAULT CODE 111 IS DISPLAYED IN THE ODOMETER THEN GO TO STEP (F). • IF FAULT CODES 920 OR 940 ARE DISPLAYED REFER TO THE FAULT CODE CHART TO IDENTIFY WHICH MODULE IS CAUSING THE FAULT AND REPAIR MODULE. (B) REPLACE MAIN CLUSTER PC BOARD. GO TO STEP (C). (C) CONNECT CLUSTER INTO INSTRUMENT PANEL WIRING HARNESS. PLACE IT BACK INTO THE PROPER POSITION IN THE INSTRUMENT PANEL. PUT IN THE TOP TWO MOUNTING SCREWS TO HOLD THE CLUSTER IN PLACE. DO NOT COMPLETELY INSTALL CLUSTER TO INSTRUMENT PANEL UNTIL UNIT IS CALIBRATED AND TESTED. GO TO STEP (D). (D) USE A SCAN TOOL TO CALIBRATE CLUSTER AND PERFORM SELF DIAGNOSTIC TEST. IF OK, CONTINUE INSTALLATION. IF NOT OK, GO TO STEP (E). (E) REPLACE SUBDIAL ASSEMBLY AND USE A SCAN TOOL TO CALIBRATE CLUSTER. IF NOT OK, LOOK AT ANOTHER POSSIBLE CAUSE FOR THE TEMPERATURE GAUGE FAILURE. (F) USE A SCAN TOOL TO CALIBRATE TEMPERATURE GAUGE AND PERFORM SELF DIAGNOSTIC TEST. IF OK, STOP. IF NOT OK, GO TO STEP (B).
	2. NO CCD TEMPERATURE MESSAGE OR COLD CCD BUS MESSAGE FROM THE BODY CONTROL MODULE.	2. (A) CHECK BCM FAULT CODES USING A SCAN TOOL. IF THERE ARE NOT FAULTS, GO TO STEP (B). IF THERE ARE FAULTS, REFER TO THE BCM SECTION OF THE MANUAL TO PROPERLY DIAGNOSE AND REPAIR. (B) CHECK PCM FAULT CODES USING A SCAN TOOL. IF THERE ARE NO FAULTS, GO TO STEP (C). IF THERE ARE FAULTS, REFER TO THE PCM SECTION OF THE MANUAL TO PROPERLY DIAGNOSE AND REPAIR. (C) REFER TO THE COOLANT SENSOR SECTION OF THE SERVICE MANUAL FOR THE COOLANT SENSOR TEST PROCEDURE. REPAIR SENSOR AS NEEDED.

DIAGNOSIS AND TESTING (Continued)

CONDITION	POSSIBLE CAUSES	CORRECTION
ERRATIC POINTER MOVEMENT.	1. BAD CCD BUS MESSAGE FROM THE BODY CONTROL MODULE.	1. (A) CHECK BCM FAULT CODES USING A SCAN TOOL. IF THERE ARE NO FAULTS, GO TO STEP (B). IF THERE ARE FAULTS, REFER TO THE BCM SECTION OF THE MANUAL TO PROPERLY DIAGNOSE AND REPAIR. (B) CHECK PCM FAULT CODES USING A SCAN TOOL. IF THERE ARE NO FAULTS, GO TO STEP (C). IF THERE ARE FAULTS, REFER TO THE PCM SECTION OF THE MANUAL TO PROPERLY DIAGNOSE AND REPAIR. (C) REFER TO THE COOLANT SENSOR SECTION OF THE SERVICE MANUAL FOR THE COOLANT SENSOR TEST PROCEDURE. REPAIR SENSOR AS NEEDED.
	2. INTERNAL CLUSTER FAILURE.	2. (A) PERFORM CLUSTER SELF DIAGNOSTIC TEST AND CHECK FOR FAULT CODES. • IF THE POINTER MOVES DURING TEST BUT STILL APPEARS ERRATIC AND FAULT CODES 110 OR 111 DON'T APPEAR IN THE ODOMETER DISPLAY, GO TO STEP (B). • IF FAULT CODE 110 IS DISPLAYED IN THE ODOMETER, GO TO STEP (E). • IF FAULT CODE 111 APPEARS IN THE ODOMETER DISPLAY GO TO STEP (D). • IF FAULT CODE 920 OR 940 IS DISPLAYED REFER TO THE FAULT CODE CHART TO IDENTIFY WHICH MODE IS CAUSING THE FAULT AND REPAIR MODULE. (B) REPLACE CLUSTER SUBDIAL ASSEMBLY. GO TO STEP (C). (C) CONNECT CLUSTER INTO INSTRUMENT PANEL WIRING HARNESS. PLACE IT BACK INTO THE PROPER POSITION IN THE INSTRUMENT PANEL. DO NOT COMPLETELY INSTALL CLUSTER TO INSTRUMENT PANEL UNTIL UNIT IS CALIBRATED AND TESTED. GO TO STEP (D). (D) USE A SCAN TOOL TO CALIBRATE CLUSTER AND PERFORM SELF DIAGNOSTIC TEST. IF OK, CONTINUE INSTALLATION. IF NOT OK, GO STEP (E). (E) REPLACE MAIN CLUSTER PC BOARD AND USE A SCAN TOOL TO CALIBRATE CLUSTER. IF NOT OK, LOOK AT ANOTHER POSSIBLE CAUSE FOR THE TEMPERATURE GAUGE FAILURE.
TEMPERATURE GAUGE INACCURATE.	1. TEMPERATURE GAUGE OUT OF CALIBRATION.	1. (A) PERFORM CLUSTER SELF-DIAGNOSTIC TEST. • IF POINTER IS ACCURATE TO THE CALIBRATION POINTS LOOK FOR ANOTHER POSSIBLE CAUSE OF FAILURE. • IF POINTER IS INACCURATE TO THE CALIBRATION POINTS, GO THE STEP (B). (B) USE A SCAN TOOL TO CALIBRATE TEMPERATURE GAUGE.
	2. COOLANT SENSOR OUT OF CALIBRATION.	2. REFER TO THE COOLING SECTION OF THE SERVICE MANUAL FOR TEST AND REPAIR PROCEDURE.

DIAGNOSIS AND TESTING (Continued)

ODOMETER DIAGNOSIS

CONDITION	POSSIBLE CAUSES	CORRECTION
NO DISPLAY	1. NO CCD ODOMETER BUS MESSAGE FROM BODY CONTROL MODULE.	1. USE A SCAN TOOL TO CHECK THE BCM. REFER TO THE BCM SECTION OF THE MANUAL TO PROPERLY DIAGNOSE AND REPAIR.
	2. INTERNAL CLUSTER FAILURE.	2. (A) PERFORM CLUSTER SELF DIAGNOSTIC TEST AND CHECK FOR FAULT CODES. • **IF ODOMETER PASSES THE DIM TEST AND SEGMENT CHECK AND FAULT CODES 110 OR 111 DON'T APPEAR IN THE ODOMETER DISPLAY THEN FAILURE IS NOT IN THE CLUSTER. LOOK FOR ANOTHER POSSIBLE CAUSE OF FAILURE.** • IF ODOMETER DOESN'T WORK GO TO STEP (B). •IF FAULT CODE 110 IS DISPLAYED IN THE ODOMETER, GO TO STEP (B). • IF FAULT CODE 920 OR 921 IS DISPLAYED USE A SCAN TOOL TO CHECK BCM. (B) REMOVE CLUSTER FROM INSTRUMENT PANEL AND VERIFY THAT ODOMETER ASSEMBLY IS PROPERLY CONNECTED TO MAIN PC BOARD. IF OK, GO TO STEP (C). IF NOT OK, RECONNECT ODOMETER ASSEMBLY TO MAIN PC BOARD. (C) REPLACE ODOMETER ASSEMBLY. GO TO STEP (D). (D) CONNECT CLUSTER INTO INSTRUMENT PANEL WIRING HARNESS. PLACE IT BACK INTO THE PROPER POSITION IN THE INSTRUMENT PANEL. DO NOT COMPLETELY INSTALL CLUSTER TO INSTRUMENT PANEL UNTIL UNIT IS TESTED. GO TO STEP (E). (E) PERFORM SELF DIAGNOSTIC TEST. IF OK, CONTINUE INSTALLATION. IF NOT OK, GO TO STEP (F). (F) REPLACE MAIN CLUSTER PC BOARD AND USE A SCAN TOOL TO CALIBRATE CLUSTER. IF NOT OK, LOOK AT ANOTHER POSSIBLE CAUSE FOR THE ODOMETER FAILURE.

DIAGNOSIS AND TESTING (Continued)

CONDITION	POSSIBLE CAUSES	CORRECTION
ERRATIC DISPLAY	1. INTERNAL CLUSTER FAILURE.	1. (A) PERFORM CLUSTER SELF DIAGNOSTIC TEST AND CHECK FOR FAULT CODES. • IF ODOMETER PASSES THE DIM TEST AND SEGMENT CHECK AND FAULT CODES 110 OR 111 DON'T APPEAR IN THE ODOMETER DISPLAYED THEN FAILURE IS NOT IN THE CLUSTER. LOOK FOR ANOTHER POSSIBLE CAUSE OF FAILURE. • IF ODOMETER DOESN'T WORK GO TO STEP (B). • IF FAULT CODE 110 IS DISPLAYED IN THE ODOMETER, GO TO STEP (B). • IF FAULT CODE 920 OR 921 IS DISPLAYED USE A SCAN TOOL TO CHECK BCM. (B) REMOVE CLUSTER FROM INSTRUMENT PANEL AND VERIFY THAT ODOMETER ASSEMBLY IS PROPERLY CONNECTED TO MAIN PC BOARD. IF OK, GO TO STEP (C). IF NOT OK, RECONNECT ODOMETER ASSEMBLY TO MAIN PC BOARD. (C) REPLACE ODOMETER ASSEMBLY. GO TO STEP (D). (D) CONNECT CLUSTER INTO INSTRUMENT PANEL WIRING HARNESS. PLACE IT BACK INTO THE PROPER POSITION IN THE INSTRUMENT PANEL. DO NOT COMPLETELY INSTALL CLUSTER TO INSTRUMENT PANEL UNTIL UNIT TESTED. GO TO STEP (E). (E) PERFORM SELF DIAGNOSTIC TEST. IF OK, CONTINUE INSTALLATION. IF NOT OK, GO TO STEP (F). (F) REPLACE MAIN CLUSTER PC BOARD AND USE A SCAN TOOL TO CALIBRATE CLUSTER. IF NOT OK, LOOK AT ANOTHER POSSIBLE CAUSE FOR THE ODOMETER FAILURE.
	2. BAD CCD BUS MESSAGE FROM BODY CONTROLLER MODULE.	2. USE A SCAN TOOL TO CHECK THE BCM. REFER TO THE BCM SECTION OF THE MANUAL TO PROPERLY DIAGNOSE AND REPAIR.
ODOMETER WON'T GO INTO TRIP MODE.	1. TRIP SWITCH DOESN'T WORK.	1. USE A SCAN TOOL TO PERFORM TRIP SWITCH ACTIVATION TEST. IF OK, LOOK FOR ANOTHER POSSIBLE CAUSE OF FAILURE. IF NOT OK, REPLACE ODOMETER ASSEMBLY.
TRIP ODOMETER WON'T RESET.	1. RESET SWITCH DOESN'T WORK.	1. USE A SCAN TOOL TO PERFORM RESET SWITCH ACTIVATION TEST. IF OK, LOOK FOR ANOTHER POSSIBLE CAUSE OF FAILURE. IF NOT OK, REPLACE ODOMETER ASSEMBLY.

DIAGNOSIS AND TESTING (Continued)

ELECTRONIC GEAR INDICATOR DISPLAY DIAGNOSIS

CONDITION	POSSIBLE CAUSES	CORRECTION
NO DISPLAY	1. INTERNAL CLUSTER FAILURE.	1. (A) PERFORM CLUSTER SELF DIAGNOSTIC TEST AND CHECK FOR FAULT CODES. • **IF PRND3L (PRND1234 IF AUTOSTICK EQUIPPED) PASSES THE DIM TEST AND SEGMENT CHECK AND FAULT CODES 110 OR 111 DON'T APPEAR IN THE ODOMETER DISPLAY THEN FAILURE IS NOT IN THE CLUSTER. LOOK FOR ANOTHER POSSIBLE CAUSE OF FAILURE.** • IF PRND3L (PRND1234 IF AUTOSTICK EQUIPPED) DOESN'T WORK GO TO STEP (B). • IF FAULT CODE 110 IS DISPLAYED IN THE ODOMETER, GO TO STEP (B) • IF FAULT CODE 905 IS DISPLAYED USE A DRB III® SCAN TOOL TO CHECK ELECTRONIC TCM. (B) REMOVE CLUSTER FROM INSTRUMENT PANEL AND VERIFY THAT PRND3L (PRND1234 IF AUTOSTICK EQUIPPED) ASSEMBLY IS PROPERLY CONNECTED TO MAIN PC BOARD. IF OK, GO TO STEP (C). IF NOT OK, RECONNECT PRND3L (PRND1234 IF AUTOSTICK EQUIPPED) ASSEMBLY TO MAIN PC BOARD. (C) REPLACE PRND3L (PRND1234 IF AUTOSTICK EQUIPPED) ASSEMBLY. GO TO STEP (D). (D) CONNECT CLUSTER INTO INSTRUMENT PANEL WIRING HARNESS. PLACE IT BACK INTO THE PROPER POSITION IN THE INSTRUMENT PANEL. DO NOT COMPLETELY INSTALL CLUSTER TO INSTRUMENT PANEL UNTIL UNIT IS TESTED. GO TO STEP (E). (E) PERFORM SELF DIAGNOSTIC TEST. IF OK, CONTINUE INSTALLATION. IF NOT OK, GO TO STEP (F). (F) REPLACE MAIN CLUSTER PC BOARD AND USE A DRB III® SCAN TOOL TO CALIBRATE CLUSTER. IF NOT OK, LOOK AT ANOTHER POSSIBLE CAUSE FOR THE PRND3L (PRND1234 IF AUTOSTICK EQUIPPED) FAILURE.

DIAGNOSIS AND TESTING (Continued)

CONDITION	POSSIBLE CAUSES	CORRECTION
ERRATIC DISPLAY	1. INTERNAL CLUSTER FAILURE.	1. (A) PERFORM CLUSTER SELF DIAGNOSTIC TEST AND CHECK FOR FAULT CODES. • IF PRND3L (PRND1234 IF AUTOSTICK EQUIPPED) PASSES THE DIM TEST AND SEGMENT CHECK AND FAULT CODES 110 OR 111 DON'T APPEAR IN THE ODOMETER DISPLAY THEN FAILURE IS NOT IN THE CLUSTER. LOOK FOR ANOTHER POSSIBLE CAUSE OF FAILURE. • IF PRND3L (PRND1234 IF AUTOSTICK EQUIPPED) DOESN'T WORK GO TO STEP (B). • IF FAULT CODE 110 IS DISPLAYED IN THE ODOMETER, GO TO STEP (F). • IF FAULT CODE 111 IS DISPLAYED IN THE ODOMETER DISPLAY THEN USE A DRB III® SCAN TOOL TO CALIBRATE CLUSTER. • IF FAULT CODE 905 IS DISPLAYED USE A SCAN TOOL TO CHECK ELECTRONIC TCM. (B) REMOVE CLUSTER FROM INSTRUMENT PANEL AND VERIFY THAT ODOMETER ASSEMBLY IS PROPERLY CONNECTED TO MAIN PC BOARD. IF OK, GO TO STEP (C). IF NOT OK, RECONNECT PRND3L (PRND1234 IF AUTOSTICK EQUIPPED) ASSEMBLY TO MAIN PC BOARD. (C) REPLACE PRND3L (PRND1234 IF AUTOSTICK EQUIPPED) ASSEMBLY. GO TO STEP (D). (D) CONNECT CLUSTER INTO INSTRUMENT PANEL WIRING HARNESS. PLACE IT BACK INTO THE PROPER POSITION IN THE INSTRUMENT PANEL. DO NOT COMPLETELY INSTALL CLUSTER TO INSTRUMENT PANEL UNTIL UNIT IS TESTED. GO TO STEP (E). (E) PERFORM SELF DIAGNOSTIC TEST. IF OK, CONTINUE INSTALLATION. IF NOT OK, GO TO STEP (F). (F) REPLACE MAIN CLUSTER PC BOARD AND USE A DRB III® SCAN TOOL TO CALIBRATE CLUSTER. IF NOT OK, LOOK AT ANOTHER POSSIBLE CAUSE FOR THE PRND3L (PRND1234 IF AUTOSTICK EQUIPPED) FAILURE.
	2. BAD CCD BUS MESSAGE FROM THE ELECTRONIC TRANSMISSION CONTROL MODULE (TCM).	2. USE A DRB III® SCAN TOOL TO CHECK THE ELECTRONIC TCM. REFER TO THE ELECTRONIC TCM SECTION OF THE MANUAL TO PROPERLY DIAGNOSE AND REPAIR.

DIAGNOSIS AND TESTING (Continued)

CONDITION	POSSIBLE CAUSES	CORRECTION
ALL SEGMENTS ARE ON	1. NO CCD BUS MESSAGE FROM THE ELECTRONIC TRANSMISSION CONTROL MODULE (TCM).	1. (A) PERFORM CLUSTER SELF DIAGNOSTIC TEST. IF PRND3L (PRND1234 IF AUTOSTICK EQUIPPED) PASSES TEST GO TO STEP (B). IF PRND3L (PRND1234 IF AUTOSTICK EQUIPPED) FAILS TEST GO TO STEP (C). (B) CHECK ELECTRONIC TCM USING A DRB III® SCAN TOOL. REFER TO THE ELECTRONIC TCM SECTION OF THE MANUAL TO PROPERLY DIAGNOSE AND REPAIR. (C) REPLACE PRND3L (PRND1234 IF AUTOSTICK EQUIPPED) ASSEMBLY. CONNECT CLUSTER INTO INSTRUMENT PANEL WIRING HARNESS. PLACE IT BACK INTO THE PROPER POSITION IN THE INSTRUMENT PANEL. DO NOT COMPLETELY INSTALL CLUSTER TO INSTRUMENT PANEL UNTIL UNIT IS TESTED. GO TO STEP (D). (D) PERFORM SELF DIAGNOSTIC TEST. IF OK, CONTINUE INSTALLATION. IF NOT OK, GO TO STEP (E). (E) REPLACE MAIN CLUSTER PC BOARD AND USE A DRB III® SCAN TOOL TO CALIBRATE CLUSTER. IF NOT OK, LOOK AT ANOTHER POSSIBLE CAUSE FOR THE PRND3L (PRND1234 IF AUTOSTICK EQUIPPED) FAILURE.

MECHANICAL TRANSMISSION RANGE INDICATOR (PRND21) DIAGNOSIS

CONDITION	POSSIBLE CAUSES	CORRECTION
INDICATOR DOES NOT SHOW PROPER GEAR OR NO INDICATION.	MIS-ADJUSTED.	1. (A) VERIFY TRANSMISSION SHIFT SYSTEM CORRECTLY ADJUSTED. (B) VERIFY CORRECT ROUTING AND ATTACHMENT OF PRNDL CABLE AND GUIDE TUBE. (C) RE-ADJUST PRNDL INDICATOR IN NEUTRAL USING ADJUSTER WHEEL BELOW STEERING COLUMN.
INDICATOR DOES NOT FOLLOW GEAR SHIFT LEVER.	NOT ATTACHED.	1. (A) VERIFY INDICATOR CABLE CONNECTED TO SHIFT LEVER PIN IN THE GROOVE. (B) VERIFY INDICATOR CLIP SECURE AND ATTACHED TO STEERING COLUMN/TRANSMISSION SHIFT CABLE BRACKET AND CLIP NOT BROKEN. IF BROKEN, REPLACE CLIP ON INDICATOR.
INDICATOR DOES NOT MAKE FULL TRAVEL (“P” < > “1”).	1. CABLE DISLODGED FROM ITS PATH ON THE INDICATOR BASE. 2. INCORRECT ATTACHMENT OF CABLE TO SHIFT LEVER PIN.	1. VERIFY CORRECT ATTACHMENT OF INDICATOR CABLE TO SHIFT LEVER PIN (UNDER HOOP OF TRANS. SHIFT CABLE) AND CLIP ONTO STEERING COLUMN/SHIFT CABLE BRACKET. 2. VERIFY INDICATOR TRAVEL BY PULLING ON CABLE GENTLY OVER FULL TRAVEL RANGE. IF STILL PROBLEM, REMOVE CLUSTER AND LENS TO ACCESS INDICATOR BASE AND CONFIRM CABLE PATH.

DIAGNOSIS AND TESTING (Continued)

TRACTION CONTROL SWITCH

(1) Remove over steering column bezel. Refer to Over Steering Column Bezel. Removal and Installation in this section.

(2) Using an ohmmeter check for continuity reading between pins. Refer to Switch Continuity test table.

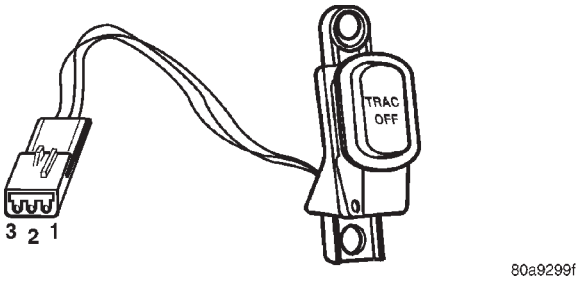

Fig. 2 Traction Control Switch Connector

TRACTION CONTROL SWITCH CONTINUITY

SWITCH POSITION	CONTINUITY BETWEEN
ACTUATED	PINS 1 AND 2
ILLUMINATION	PINS 1 AND 3

REMOVAL AND INSTALLATION

BODY CONTROL MODULE (BCM)

REMOVAL

(1) Disconnect and isolate the battery negative cable (Fig. 6).

(2) Remove lower steering column cover and knee blocker reinforcement.

(3) Disconnect two wire connectors from bottom of Body Control Module (BCM)

(4) Remove bolts holding Junction Block to dash panel mounting bracket (Fig. 3).

(5) Remove Junction Block from mounting bracket.

(6) Remove screws holding Body Control Module to Junction Block.

(7) Slide Body Control Module downward to disengage guide studs on Junction Block from channels on BCM mounting bracket.

(8) Remove Body Control Module from Junction Block.

INSTALLATION

For installation, reverse the above procedures.

CONVENIENCE BIN - CUP HOLDER

REMOVAL

(1) Pull the convenience bin open (Fig. 4).

(2) Push lock tab at rear center downward.

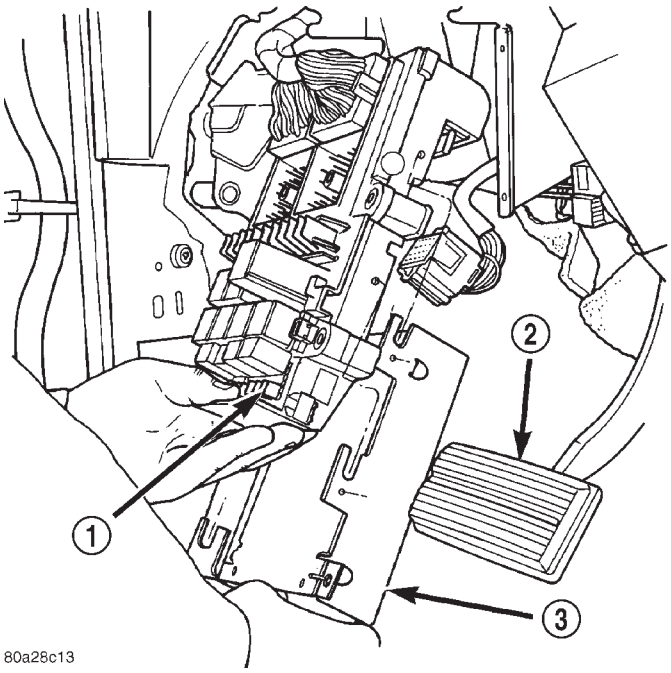

Fig. 3 Body Control Module Location

1 – JUNCTION BLOCK
2 – BRAKE PEDAL
3 – BODY CONTROL MODULE

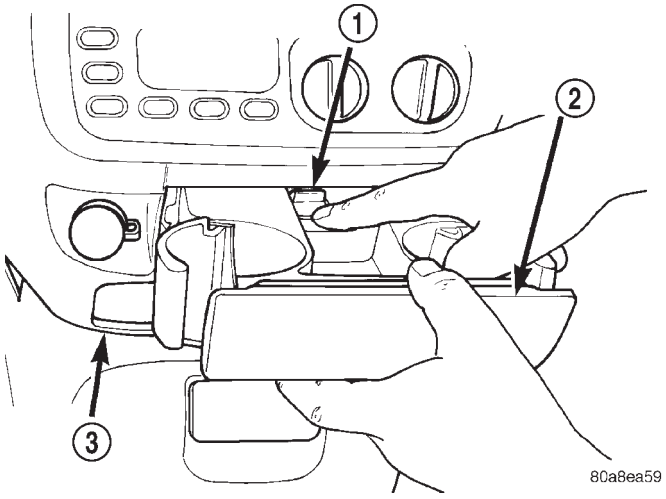

Fig. 4 Convenience Bin – Cup Holder

1 – LOCK
2 – CONVENIENCE BIN CUP HOLDER
3 – INSTRUMENT PANEL

(3) Pull the convenience bin - cup holder from track in instrument panel.

(4) Remove convenience bin - cup holder.

INSTALLATION

For installation, reverse the above procedures.

REMOVAL AND INSTALLATION (Continued)

CONVENIENCE BIN LAMP

If the lamp is not used refer to (Fig. 5).

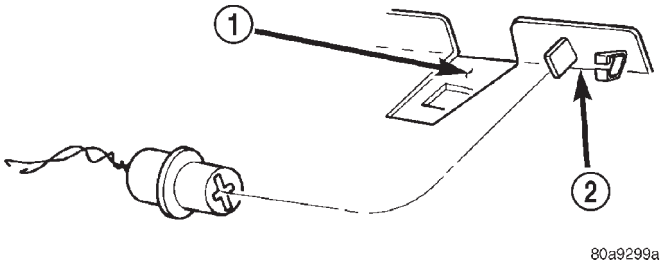

Fig. 5 Unused Convenience Bin Lamp Socket Location

1 – CONVENIENCE BIN TRACK
2 – FACE PLATE

REMOVAL

(1) Disconnect and isolate the battery negative cable (Fig. 6).

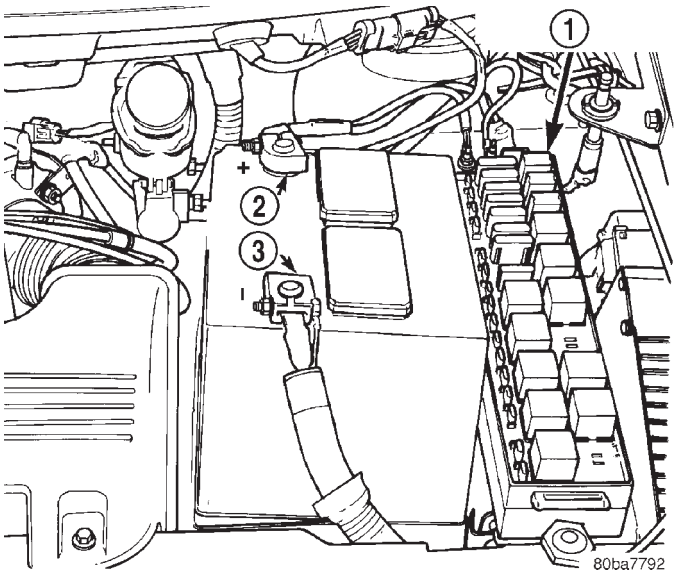

Fig. 6 Battery Negative Cable

1 – PDC
2 – POSITIVE
3 – NEGATIVE

(2) Pull out and remove the convenience bin - cup holder. Refer to Convenience Bin - Cup Holder removal in this section.

(3) Insert the trim stick (special tool #C-4755) between access cover and radio bezel, above convenience bin - cup holder.

(4) Carefully pry the access cover from the instrument panel (Fig. 7).

(5) Separate the access cover from the vehicle.

(6) Using needle-nose pliers, carefully squeeze the vertical metal legs of the lamp hood.

(7) Lift the lamp hood upward from the cup holder tray.

(8) Carefully pull the lamp and wiring rearward from the instrument panel (Fig. 8).

(9) Pull the lamp hood from the lamp socket.

(10) Pull bulb from socket.

INSTALLATION

For installation, for reverse the above procedures.

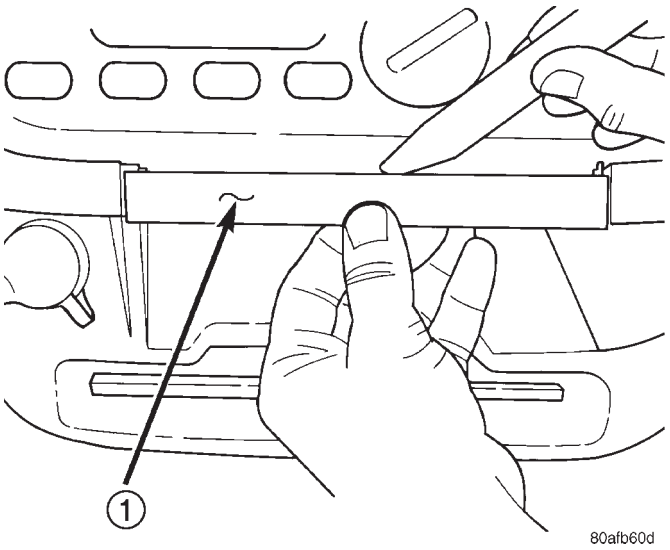

Fig. 7 Convenience Bin Access Cover

1 – ACCESS COVER

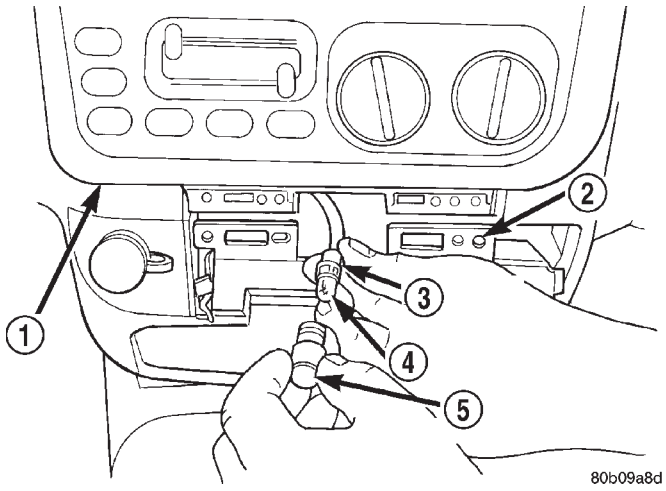

Fig. 8 Convenience Bin Lamp Bulb

1 – HVAC
2 – TRACK
3 – SOCKET
4 – BULB
5 – CONVENIENCE BIN LAMP

REMOVAL AND INSTALLATION (Continued)

CONVENIENCE BIN TRACK

REMOVAL

(1) Remove the convenience bin - cup holder. Refer to Convenience Bin - Cup Holder Removal and Installation procedure in this section.

(2) Remove the screw access cover from the bottom of the radio bezel (Fig. 7).

(3) Remove the center bezel.

(4) Remove the convenience bin track attaching screws and pull the convenience bin track rearward to disengage the rear guide studs from instrument panel (Fig. 9).

(5) Disengage the clip holding convenience bin lamp to track.

(6) Remove the convenience bin track.

INSTALLATION

For installation, reverse the above procedures.

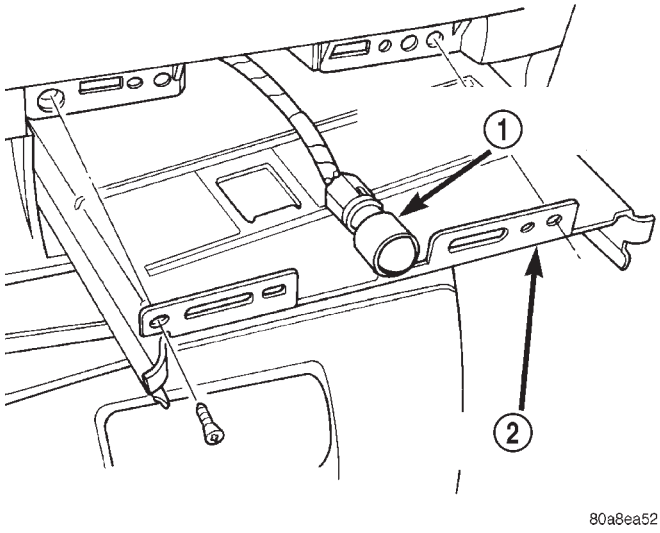

Fig. 9 Convenience Bin Track

1 – CONVENIENCE BIN LAMP
2 – CONVENIENCE BIN CUP HOLDER TRACK

GLOVE BOX

REMOVAL (FIG. 4)

(1) Open glove box (Fig. 10).

(2) Disengage clip holding checkstraps to glove box door.

(3) Pivot glove box downward and disengage hinge hooks from instrument panel.

(4) Remove glove box.

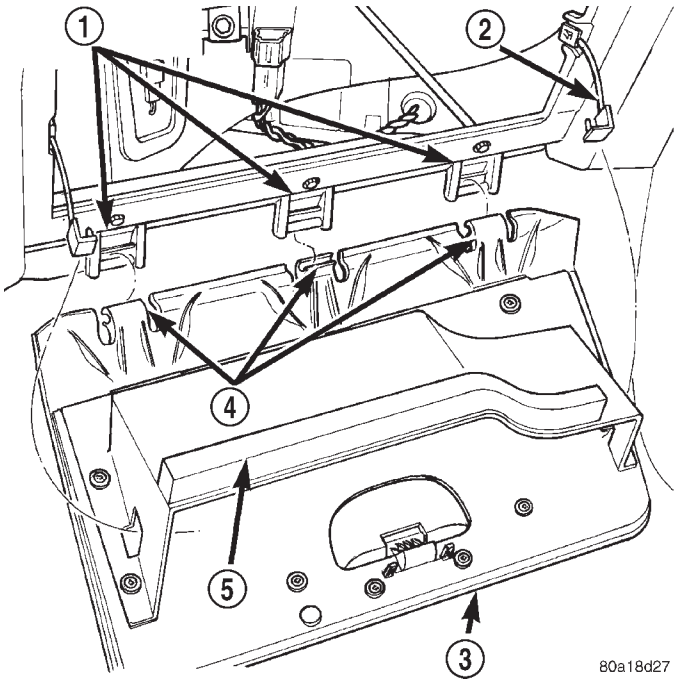

Fig. 10 Glove Box

1 – HINGE LOOPS
2 – CHECKSTRAP
3 – GLOVE BOX DOOR
4 – HINGE HOOKS
5 – FOAM STRIP

INSTALLATION

(1) Place glove box in position.

(2) Engage hinge hooks into instrument panel and pivot glove box upward.

(3) Engage clip to hold checkstraps to glove box door.

(4) Close glove box door.

GLOVE BOX LAMP AND SWITCH

REMOVAL

(1) Disconnect and isolate the battery negative cable (Fig. 6).

(2) Open glove box door (Fig. 11).

(3) Using a trim stick (special tool #C-4755), lightly pry glove box lamp/switch from instrument panel.

(4) Disengage wire connector from glove box lamp and switch.

(5) Remove glove box lamp and switch.

(6) Remove lamp (Fig. 12).

REMOVAL AND INSTALLATION (Continued)

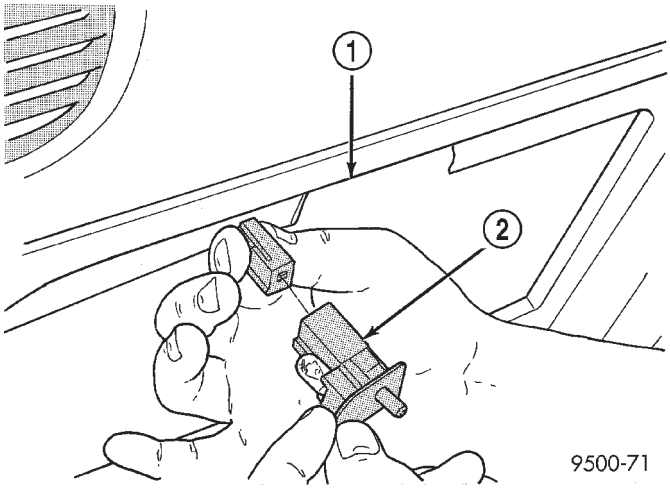

Fig. 11 Glove Box Lamp and Switch

1 – GLOVE BOX OPENING
2 – GLOVE BOX LAMP AND SWITCH

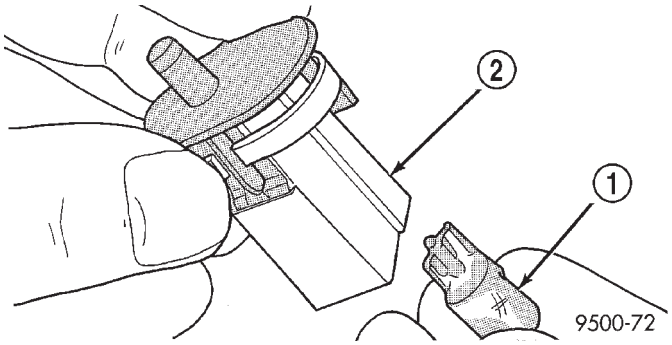

Fig. 12 Glove Box Lamp

1 – GLOVE BOX LAMP AND SWITCH
2 – BULB

INSTALLATION

For installation, reverse the above procedures.

GLOVE BOX LOCK STRIKER

REMOVAL

(1) Open glove box door (Fig. 13).

(2) Disengage clip holding checkstraps to glove box door.

(3) Remove screws holding lock striker to instrument panel.

(4) Remove glove box lock striker.

INSTALLATION

For installation, reverse the above procedures.

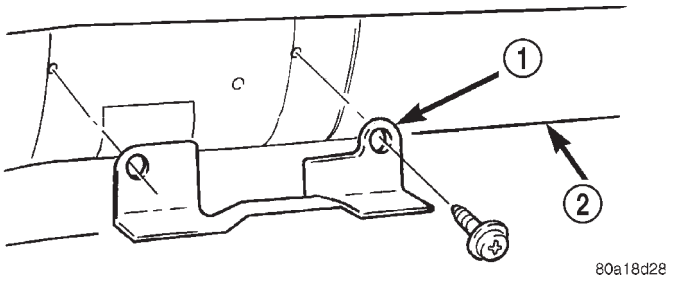

Fig. 13 Glove Box Lock Striker

1 – GLOVE BOX LOCK STRIKER
2 – INSTRUMENT PANEL

HEADLAMP SWITCH

REMOVAL

(1) Disconnect and isolate the battery negative cable (Fig. 6).

(2) Remove instrument cluster bezel (Fig. 14). Refer to Instrument Cluster Bezel Removal and Installation in this section.

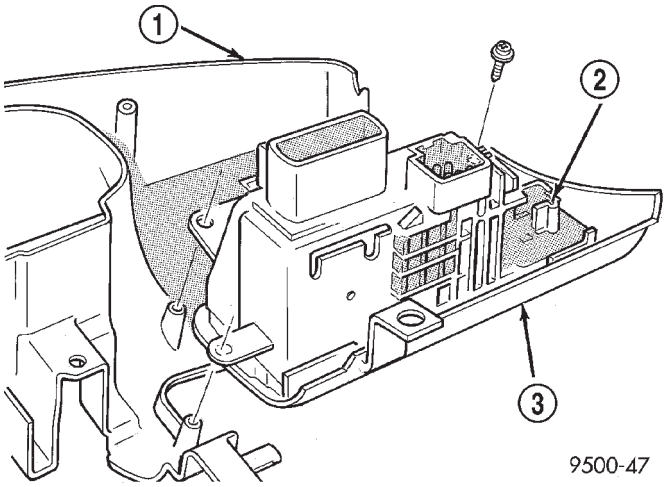

Fig. 14 Headlamp Switch

1 – INSTRUMENT CLUSTER BEZEL
2 – POWER MIRROR SWITCH
3 – HEADLAMP SWITCH

(3) Remove screws holding the headlamp switch bezel to cluster bezel.

(4) Disconnect the wire connectors from the headlamp switch and wire connector from the power mirror switch.

(5) Remove headlamp switch bezel from cluster bezel.

INSTALLATION

For installation, reverse the above procedures.

REMOVAL AND INSTALLATION (Continued)

HEADLAMP SWITCH LAMP(S)

REMOVAL

(1) Disconnect and isolate the battery negative cable (Fig. 6).
(2) Remove instrument cluster bezel.
(3) Disconnect wire connectors.
(4) Remove headlamp switch bezel from instrument cluster bezel.
(5) Rotate bulb socket counterclockwise one quarter turn (Fig. 15).

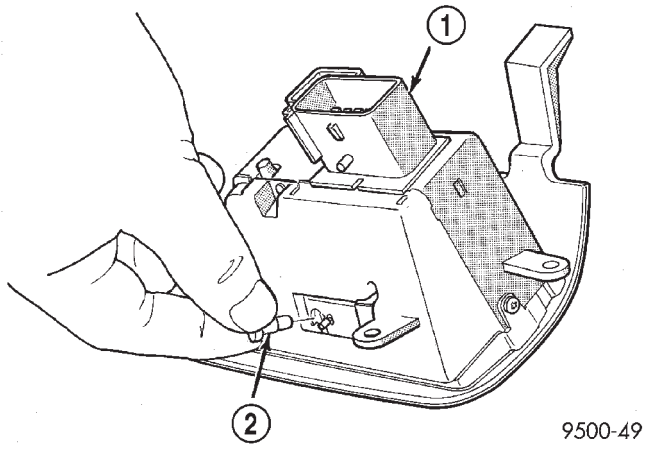

Fig. 15 Headlamp Switch Lamp

1 – HEADLAMP SWITCH
2 – LAMP BULB

(6) Pull bulb socket from headlamp switch.

INSTALLATION

For installation, reverse the above procedures.

HVAC CONTROL LAMP

REMOVAL

(1) Disconnect and isolate the battery negative cable (Fig. 6).
(2) Remove radio bezel and HVAC Control (Fig. 16).
(3) Remove rear cover from HVAC control.
(4) Rotate bulb socket counterclockwise one quarter turn.
(5) Pull bulb socket from HVAC.

INSTALLATION

For installation, reverse the above procedures.

INSTRUMENT CLUSTER BACK PANEL

REMOVAL

(1) Disconnect and isolate the battery negative cable (Fig. 6).

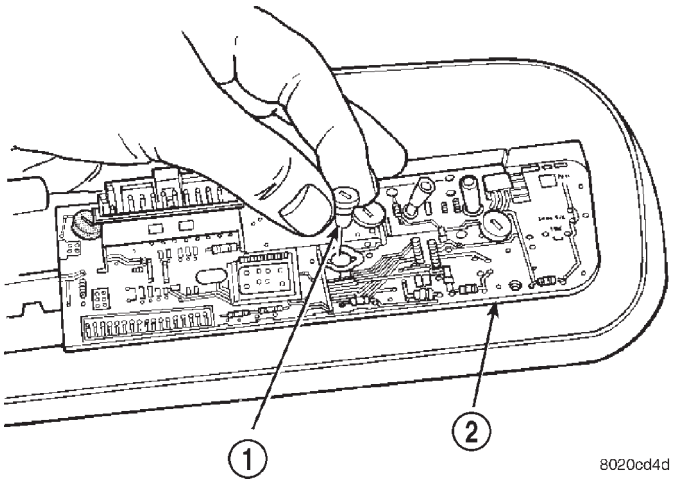

Fig. 16 HVAC Control Lamps

1 – LAMP BULB
2 – HVAC CONTROL

(2) Remove instrument cluster. Refer to Instrument Cluster with Mechanical Transmission Range Indicator Removal and Installation in this section.
(3) Remove screws holding back panel to instrument cluster (Fig. 17).

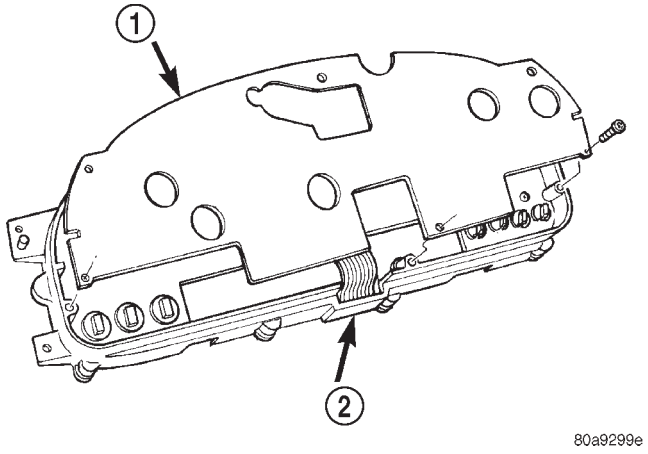

Fig. 17 Instrument Cluster Back Panel

1 – INSTRUMENT CLUSTER BACK PANEL
2 – INSTRUMENT CLUSTER

(4) Remove back panel.

INSTALLATION

For installation, reverse the above procedures.

INSTRUMENT CLUSTER BEZEL

REMOVAL

(1) Disconnect and isolate the battery negative cable (Fig. 6).
(2) Remove Over Steering Column Bezel Removal and Installation in this section.

REMOVAL AND INSTALLATION (Continued)

(3) Remove over steering column bezel.
(4) Remove left end cover.
(5) Remove screw at left end of cluster bezel and headlamp switch.
(6) Remove screws holding cluster bezel to instrument panel from each side of steering column.
(7) Disconnect clip holding cluster bezel to instrument panel from above right vent louver.
(8) Separate cluster bezel from instrument pane (Fig. 18) l.

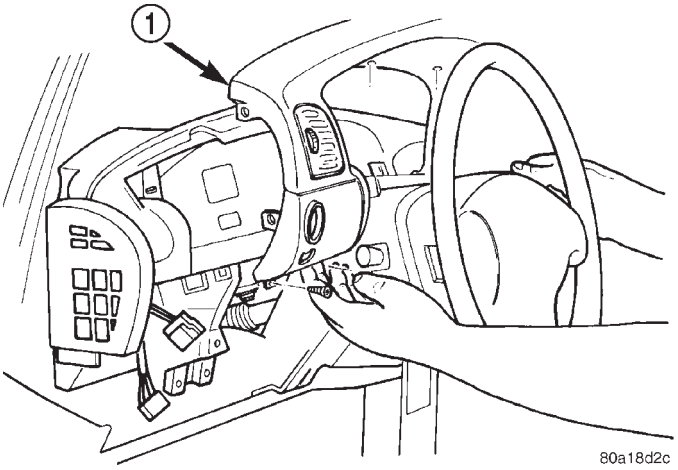

Fig. 18 Instrument Cluster Bezel
1 – INSTRUMENT CLUSTER BEZEL

(9) Disconnect wire connectors from back of the bezel.

INSTALLATION

(1) Connect wire connectors into back of the bezel.
(2) Place cluster bezel in position on instrument panel. Use care not to place hands on louvers.
(3) Connect clips to hold cluster bezel to instrument panel. Use care not to add pressure on the A/C louvers to seat the cluster bezel clips.
(4) Install screws to hold cluster bezel to instrument panel on each side of steering column.
(5) Install screw at left end of cluster bezel and headlamp switch.
(6) Install left end cover.
(7) Install over steering column bezel.
(8) Install lower steering column cover.

INSTRUMENT CLUSTER ELECTRONIC ODOMETER AND TRANSMISSION RANGE INDICATOR

REMOVAL

(1) Remove instrument cluster. Refer to Instrument Cluster with Mechanical Transmission Range Indicator Removal and Installation in this section.
(2) Remove cluster lens.
(3) Disconnect wire connector from odometer and transmission range indicator.
(4) Remove screws holding odometer and transmission range indicator to cluster shell.
(5) Remove odometer and transmission range indicator from cluster.

INSTALLATION

(1) Install odometer and transmission range indicator and attach to cluster shell.
(2) Connect wire connector into odometer and transmission range indicator.
(3) Install cluster lens.
(4) Install instrument cluster.

INSTRUMENT CLUSTER LAMPS

REMOVAL

(1) Remove the instrument cluster. Refer to Instrument Cluster with Mechanical Transmission Range Indicator Removal and Installation in this section.
(2) Locate the lamp (Fig. 19) and (Fig. 20).
(3) Remove the lamps from cluster with a 1/4 turn twist.

INSTALLATION

For installation, reverse the above procedures.

INSTRUMENT CLUSTER LENS

REMOVAL

(1) Remove the instrument cluster. Refer to Instrument Cluster with Mechanical Transmission Range Indicator Removal and Installation in this section.
(2) Remove the screws holding the lens to the instrument cluster (Fig. 21).
(3) Remove the lens from cluster.

INSTALLATION

For installation, reverse the above procedures.

INSTRUMENT CLUSTER LENS - MECHANICAL TRANSMISSION RANGE INDICATOR (PRND21)

REMOVAL

(1) Remove the instrument cluster and disconnect the range indicator cable at both attaching points. Refer to Instrument Cluster with Mechanical Transmission Range Indicator Removal and Installation in this section.
(2) Remove the screws holding the cluster lens to the rear shell from around perimeter of lens.
(3) Remove the lens from the cluster, guide the shift indicator cable through cluster shell.
(4) Remove the screws holding the shift indicator to the lens.

REMOVAL AND INSTALLATION (Continued)

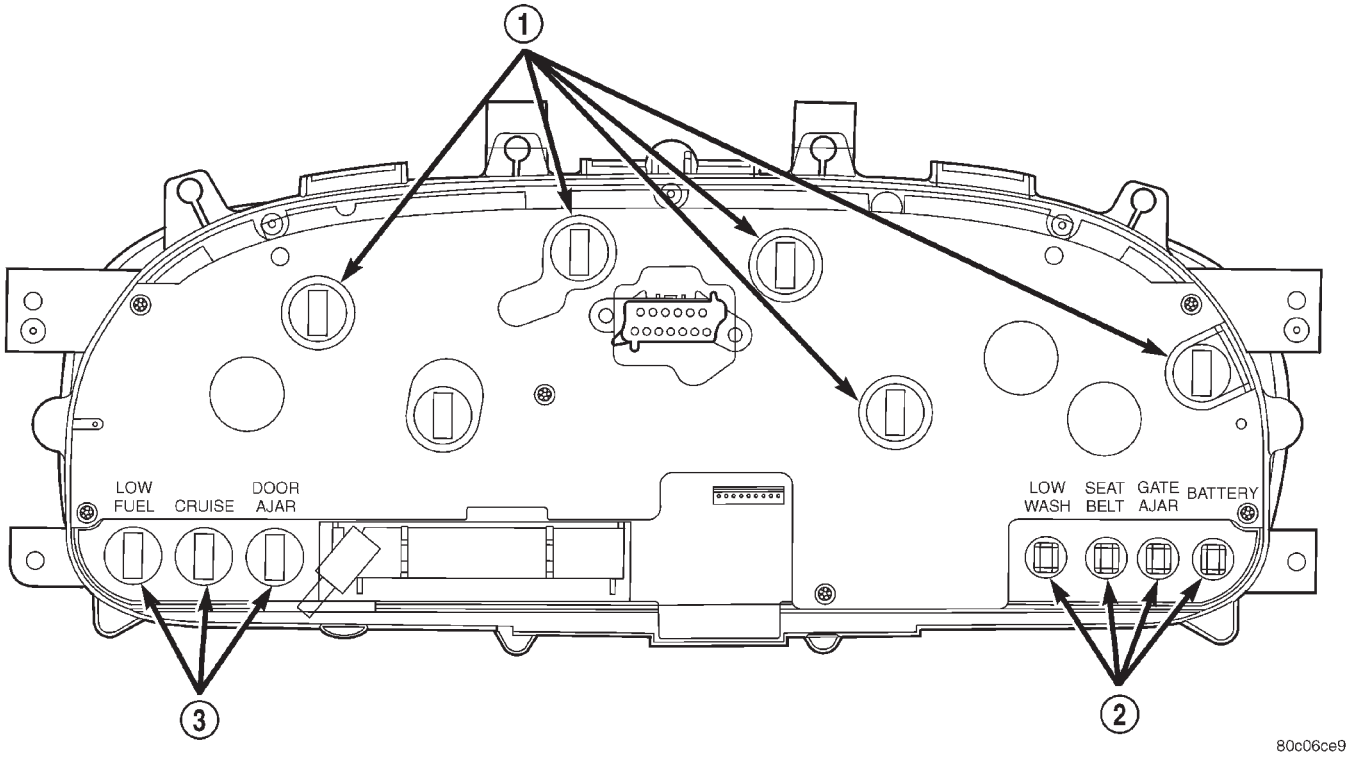

Fig. 19 Base/Midline Cluster Lamp Location

1 – ILLUMINATION BULBS (PC 194)
2 – WARNING LAMP BULBS (PC 74)
3 – WARNING LAMP BULBS (PC 194)

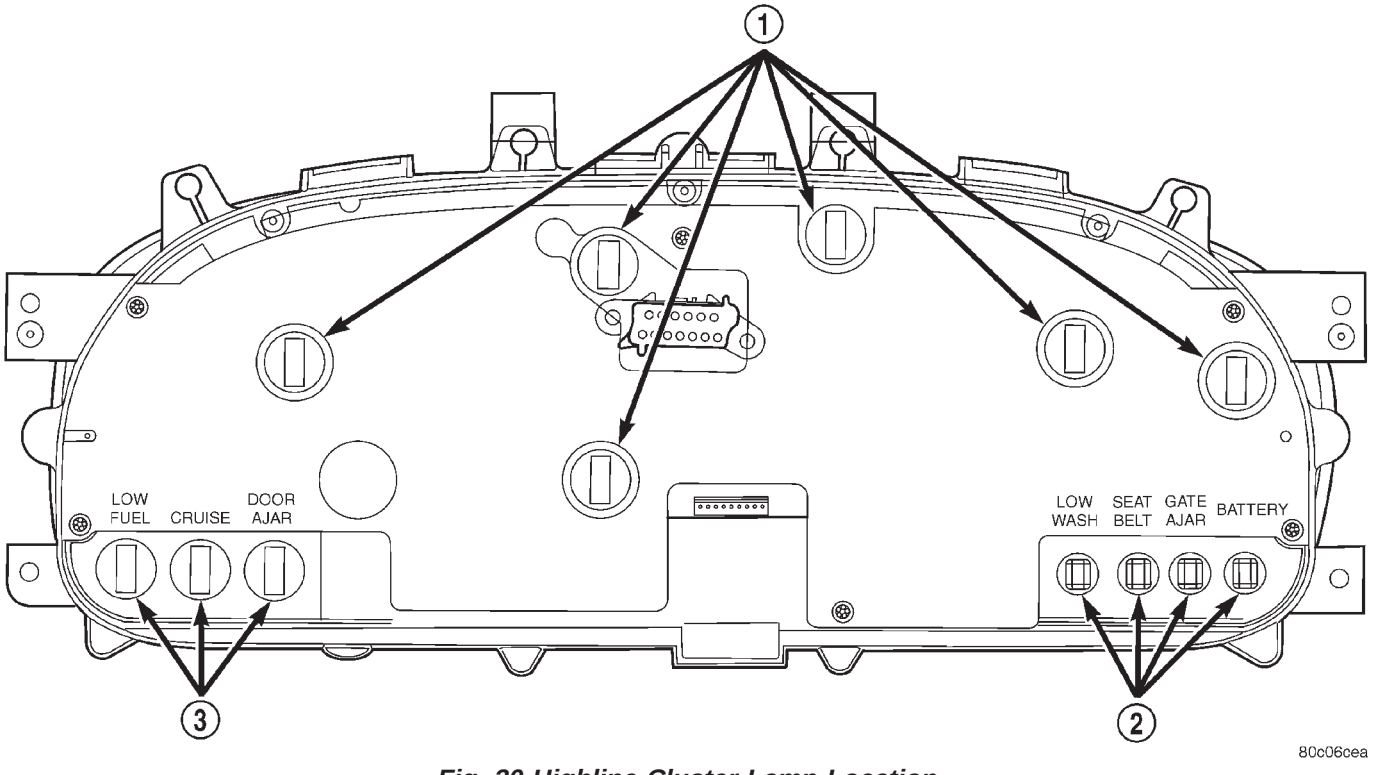

Fig. 20 Highline Cluster Lamp Location

1 – ILLUMINATION BULBS (PC 194)
2 – WARNING LAMP BULBS (PC 74)
3 – WARNING LAMP BULBS (PC 194)

REMOVAL AND INSTALLATION (Continued)

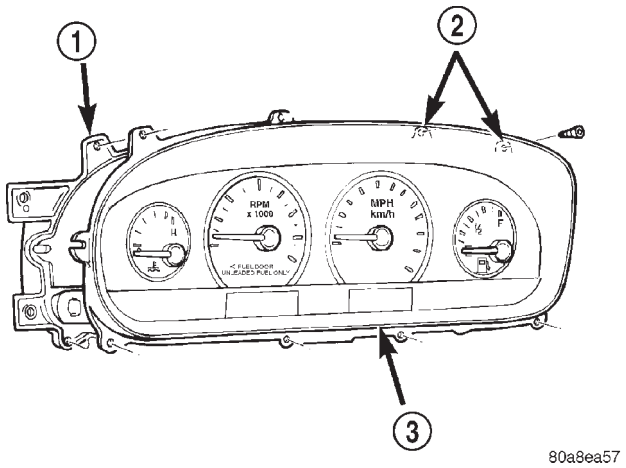

Fig. 21 Instrument Cluster Lens

1 – INSTRUMENT CLUSTER
2 – GHOST VIEW
3 – CLUSTER LENS

INSTALLATION

(1) Install the shift indicator and screws to cluster lens.

(2) Position the lens on cluster and carefully guide the shift indicator cable and guide through cluster opening.

(3) Install the cluster lens and screws to the rear shell around perimeter of lens.

(4) Install the instrument cluster.

INSTRUMENT CLUSTER PRINTED CIRCUIT BOARD

REMOVAL

(1) Remove the instrument cluster. Refer to Instrument Cluster with Mechanical Transmission Range Indicator Removal and Installation in this section.

(2) Remove the instrument cluster back panel.

(3) Disconnect the electronic cluster wire connector from the printed circuit board (Fig. 22).

(4) Remove the screws holding wire connector insulator to the instrument cluster shell and the printed circuit board.

(5) Remove the screws holding printed circuit board to the cluster shell.

(6) Remove the printed circuit board from the cluster.

INSTALLATION

For installation, reverse the above procedures. After installing the print circuit board it will have to be calibrated using a scan tool (DRB III). Refer to the proper Body Diagnostic Procedure Manual for calibration procedures.

NOTE: Speedometer and/or Tachometer will not operate properly until all gauges have been calibrated

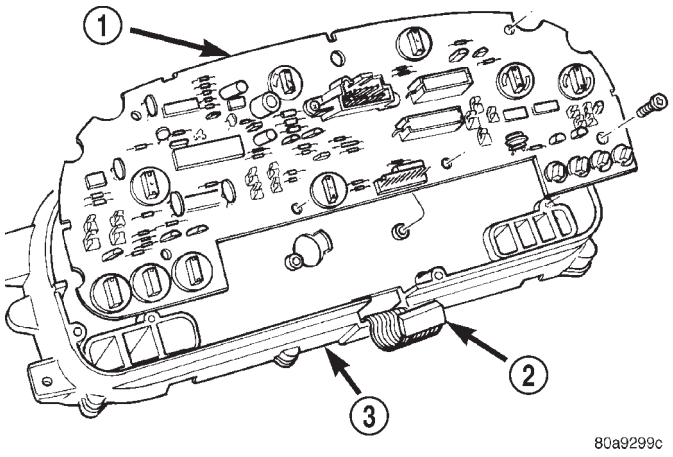

Fig. 22 Instrument Cluster Printed Circuit Board

1 – PRINTER CIRCUIT BOARD
2 – ELECTRONIC ODOMETER CONNECTOR
3 – INSTRUMENT CLUSTER SHELL

INSTRUMENT CLUSTER SUBDIAL

REMOVAL

(1) Remove the instrument cluster. Refer to Instrument Cluster with Mechanical Transmission Range Indicator Removal and Installation in this section.

(2) Remove the cluster lens.

(3) Disconnect the temperature/fuel gauge and the tachometer terminals from the connectors in cluster by pulling the subdial straight away from the cluster (Fig. 23).

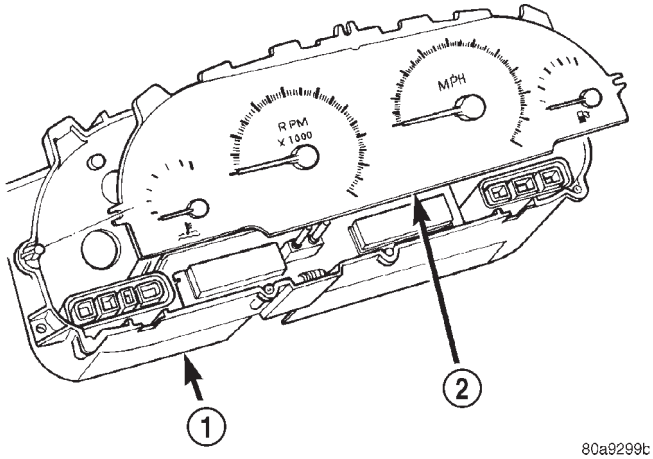

Fig. 23 Instrument Cluster Subdial

1 – INSTRUMENT CLUSTER
2 – CLUSTER SUBDIAL

(4) Remove the subdial from the cluster.

INSTALLATION

For installation, reverse the above procedures.

REMOVAL AND INSTALLATION (Continued)

INSTRUMENT CLUSTER SUBDIAL—MECHANICAL TRANSMISSION RANGE INDICATOR

REMOVAL

(1) Remove instrument cluster. Refer to Instrument Cluster with Mechanical Transmission Range Indicator Removal and Installation in this section.
(2) Remove screws holding cluster lens to the rear shell from around perimeter of lens.
(3) Remove lens from cluster, guide shift indicator cable through cluster shell.
(4) Remove gauge subdial from cluster.

INSTALLATION

(1) Position gauge subdial on cluster.
(2) Position lens on cluster, guide shift indicator cable through cluster shell.
(3) Install cluster lens and screws to the rear shell around perimeter of lens.
(4) Install instrument cluster.

INSTRUMENT CLUSTER WITH ELECTRONIC TRANSMISSION RANGE INDICATOR

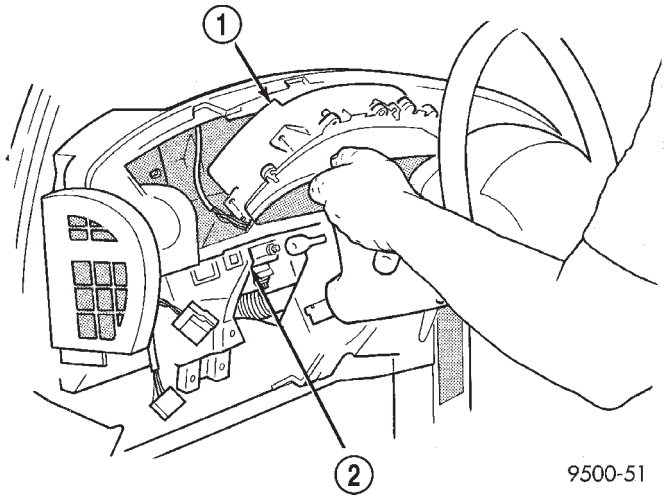

Fig. 24 Instrument Panel With Electronic Transmission Range Indicator

1 – INSTRUMENT CLUSTER
2 – INSTRUMENT PANEL

REMOVAL

(1) Remove instrument cluster bezel. Refer to Instrument Cluster Bezel Removal and Installation in this section
(2) Remove screws holding instrument cluster to instrument panel.
(3) Rotate top of cluster outward.
(4) Remove instrument cluster from instrument panel.
(5) Disconnect wire connector from back of instrument cluster.
(6) Remove instrument cluster.

INSTALLATION

(1) Place instrument cluster in instrument panel, bottom first.
(2) Connect wire connector into back of instrument cluster.
(3) Position instrument cluster in instrument panel.
(4) Install instrument cluster mounting screws to instrument panel.
(5) Install instrument cluster bezel.

INSTRUMENT CLUSTER WITH MECHANICAL TRANSMISSION RANGE INDICATOR

REMOVAL

(1) Disconnect and isolate the battery negative cable (Fig. 6).
(2) Remove the lower steering column cover. Refer to Lower Steering Column Cover Removal and Installation in this section.
(3) Remove the metal knee blocker reinforcement. Refer to Knee Blocker Reinforcement Removal and Installation in this section.
(4) Disconnect the transmission range indicator cable end from shift lever by flexing the HOOP on the transmission shift cable rearward and slip the indicator cable loop off the lever pin (Fig. 25).
(5) Disconnect the clip holding the indicator cable to the steering column/transmission shift cable bracket.
(6) Remove the instrument cluster bezel. Refer to Instrument Cluster Bezel Removal and Installation in this section.
(7) Rotate top of the cluster rearward.
(8) Disconnect the wire connector from back of the instrument cluster.
(9) Remove the instrument cluster carefully while guiding the range indicator cable and guide tube through the opening to avoid any damage (Fig. 26).

INSTALLATION

(1) Verify the free travel of the range indicator cable from P to 1 by gently pulling on the cable and relaxing the cable. DO NOT SNAP THE CABLE ONCE IT IS PULLED.
(2) Position the instrument cluster in instrument panel and route the indicator cable and guide tube through the opening in the instrument panel. Position the cluster by leading the bottom in first, connect the wire connector, and rotate upward.
(3) Install the screws to hold the instrument cluster to the instrument panel.

REMOVAL AND INSTALLATION (Continued)

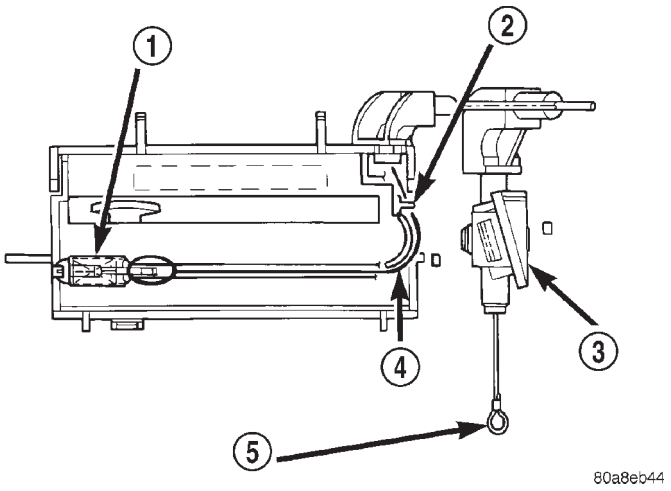

Fig. 25 Range Indicator

1 – INDICATOR SPRING
2 – CABLE RETENTION HOOK
3 – INDICATOR CLIP & ADJUSTER WHEEL
4 – CABLE PATH IN INDICATOR BASE
5 – LOOP ATTACHES OVER SHIFT LEVEL PIN

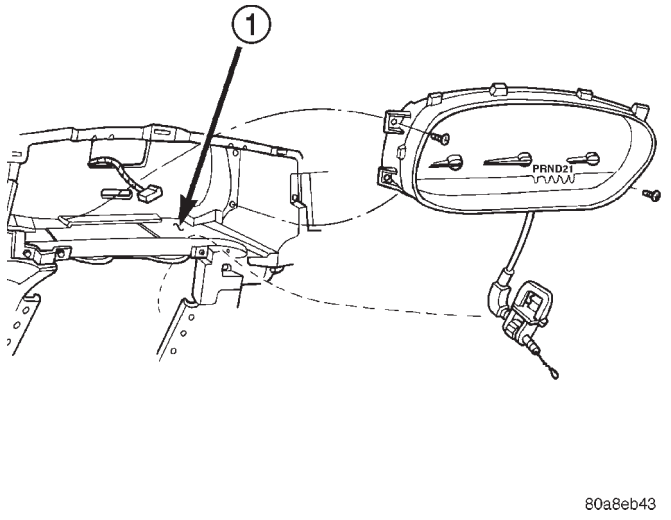

Fig. 26 Removing and Installing Cluster

1 – FEED GUIDE TUBE THRU HOLE IN I/P AS CLUSTER IS ROTATED INTO POSITION & SECURED

(4) Install the instrument cluster bezel.

(5) Connect the clip to hold the indicator cable to steering column/transmission shift cable bracket. The indicator cable and guide tube should BOW towards the passenger side of the vehicle (Fig. 27).

(6) Connect indicator cable loop end to shift lever by flexing the hoop on the transmission shift cable rearward, then slip the indicator cable loop over the shift lever pin and into the groove.

(7) Assuming the transmission shift system is properly adjusted, place the shift lever in neutral N position.

NOTE: The parking brake should have been engaged for safety purposes.

(8) Using the indicator adjuster thumbwheel on the indicator clip below the steering column. Rotate the indicator thumbwheel to position the indicator calibration arrow to the center of the N slot on the instrument cluster mask.

(9) After the indicator has been properly adjusted, move the shift lever through each gear position to verify the appropriate gear position has been selected and the slot is fully covered by the indicator. The left edge of the indicator will just peek at the left edge of the P slot in Park.

(10) If the indicator is not covering each of the selected gear positions when selected, place the shift lever back into neutral N and readjust the indicator. Repeat the process until each gear is covered when selected.

(11) Install the metal knee blocker panel.

(12) Install the lower steering column cover.

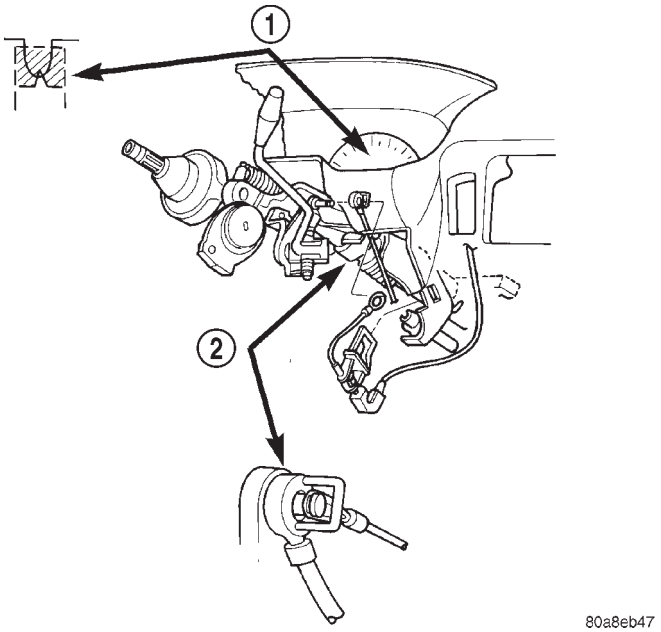

Fig. 27 Range Indicator Cable

1 – ADJUST CALIBRATION ARROW TO CENTER IN N SLOT
2 – INDICATOR CABLE BOWS TOWARDS PASSENGER SIDE OF VEHICLE

INSTRUMENT PANEL

The instrument panel is removed as a unit. The steering column and wiring harnesses are assembled into the panel before installation. Service procedures for interior trim not related to the instrument panel can be found in Group 23, Body.

REMOVAL AND INSTALLATION (Continued)

REMOVAL

(1) Disconnect and isolate the battery negative cable (Fig. 6).

(2) Remove the lower console. Refer to Lower Console Removal and Installation in this section.

(3) Remove the screw holding the lower heat duct to the instrument panel support (Fig. 28).

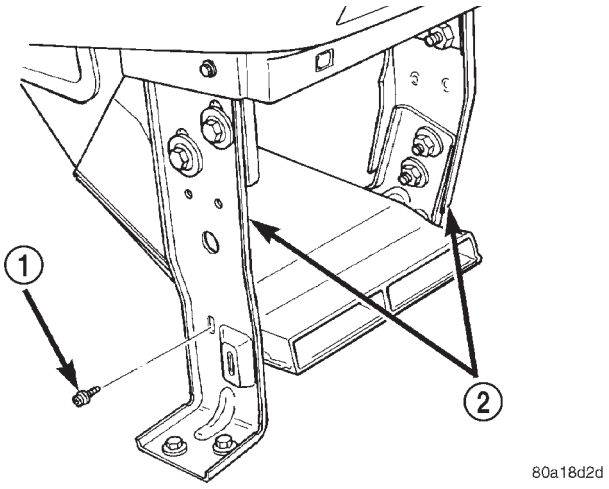

Fig. 28 Heat Duct

1 – SCREW
2 – INSTRUMENT PANEL SUPPORTS

(4) Disconnect the heat duct from the vehicle.

(5) Remove the bolts holding the lower supports to the instrument panel frame (Fig. 29).

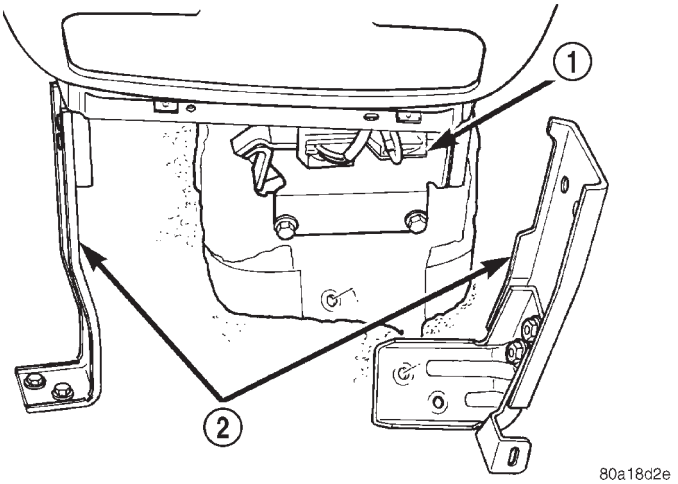

Fig. 29 Lower Supports

1 – AIRBAG MODULE
2 – INSTRUMENT PANEL SUPPORTS

(6) Remove the bolts holding the lower supports to the floor pan.

(7) Remove the right and left end covers. Refer to Instrument Panel Right and Left End Cover Removal and Installation in this section.

(8) Disconnect the wire connectors from the Passenger Airbag Module.

(9) Remove the right and left cowl trim covers. Refer to Group 23 Body, Cowl Trim Removal and Installation

(10) Remove the A-pillar trim covers.

(11) Remove the glove box. Refer to Glove Box Removal and Installation in this section.

(12) Disconnect the antenna lead connector from behind the glove box.

(13) Remove the lower steering column cover. Refer to Lower Steering Column Cover Removal and Installation in this section.

(14) Remove the knee blocker reinforcement. Refer to Knee Blocker Reinforcement Removal and Installation in this section.

(15) Disconnect the lower two, forty pin wire harness connectors, from the main Junction Block near left cowl side panel (Fig. 30).

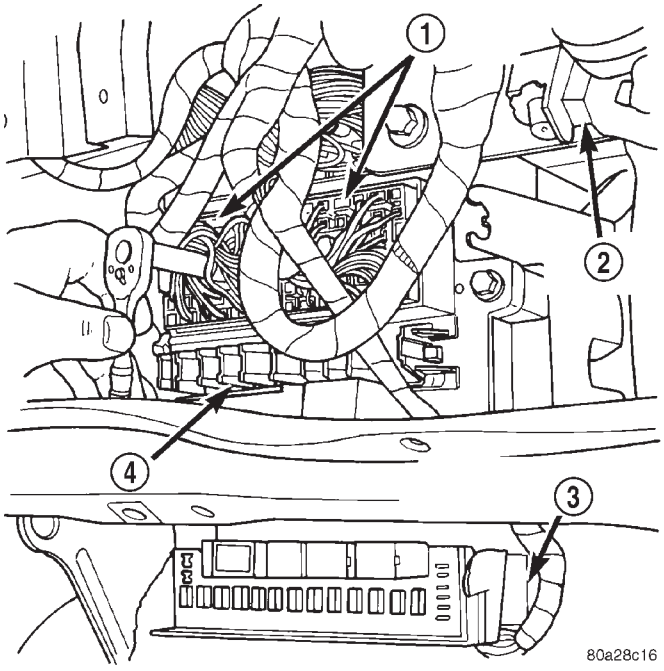

Fig. 30 Junction Block and Body Control Module Connectors

1 – 40–WAY CONNECTORS
2 – STEERING COLUMN
3 – BODY CONTROL MODULE CONNECTOR
4 – JUNCTION BLOCK

REMOVAL AND INSTALLATION (Continued)

(16) Disconnect the instrument panel wire harness connector from the bottom of Body Control Module.

(17) Disconnect the two forty pin connectors from the right of the steering column (Fig. 31).

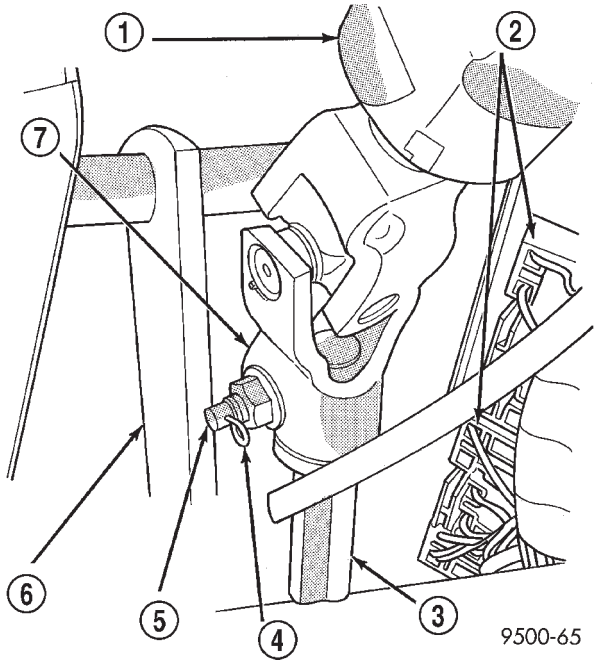

Fig. 31 40 Way Connectors Location

1 – STEERING COLUMN
2 – 40–WAY CONNECTORS
3 – STEERING GEAR
4 – KEY
5 – CLINCH BOLT
6 – BRAKE PEDAL
7 – COUPLING

(18) Remove the clinch bolt holding upper the steering shaft to the lower steering shaft (Fig. 31).

(19) Separate the upper steering shaft from the lower steering shaft.

(20) Remove the nuts holding the instrument panel frame to the die-cast brake pedal support on each side of the steering column.

(21) With mechanical transmission range indicator:

(a) Remove the indicator cable loop.

(b) Remove the clip holding gear shift cable end to the gear selector adapter.

(c) Pull the cable end from gear selector.

(d) Disconnect the clip for the indicator cable and guide tube from the shift cable bracket and move out of the way.

(22) Remove the nut holding gear shift cable bracket to the instrument panel frame.

(23) Remove the bracket from the instrument panel.

(24) Remove the screw holding hood release handle to the instrument panel.

(25) Remove the bolt holding the hood release handle to the instrument panel.

(26) Position the hood release handle out of the way.

(27) Remove the instrument panel top cover. Refer to Instrument Panel Top Cover Removal and Installation in this section.

(28) Disconnect the wire connector from the HVAC wire harness behind the glove box area.

(29) Remove the bolts holding the instrument panel frame to the brackets on cowl side panels (Fig. 32) and (Fig. 33).

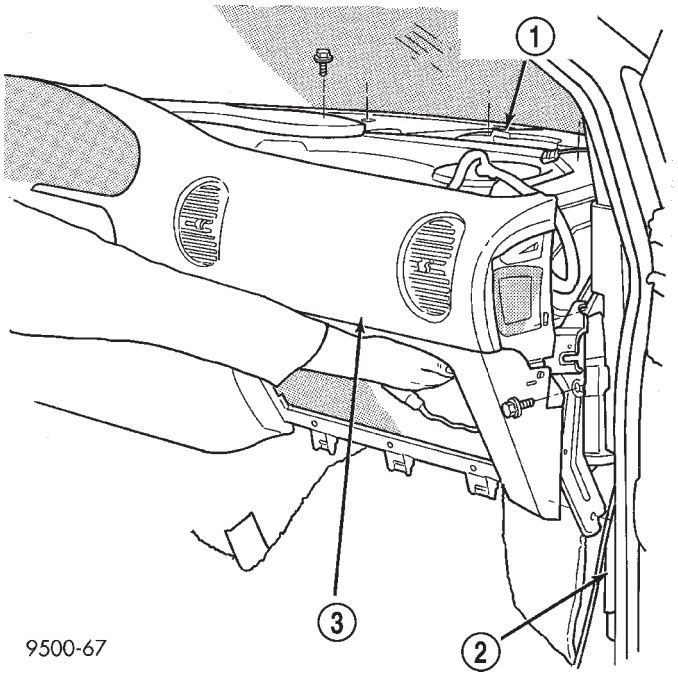

Fig. 32 Passenger Side Instrument Panel

1 – WINDSHIELD FENCE
2 – COWL PANEL
3 – INSTRUMENT PANEL

(30) Loosen, but do not remove, the pivot bolts holding the instrument panel to the cowl panels.

(31) Remove the bolts holding the instrument panel frame to the dash panel below windshield opening.

(32) With the help of an assistant remove the instrument panel from vehicle.

INSTALLATION

For installation, reverse the above procedures.

REMOVAL AND INSTALLATION (Continued)

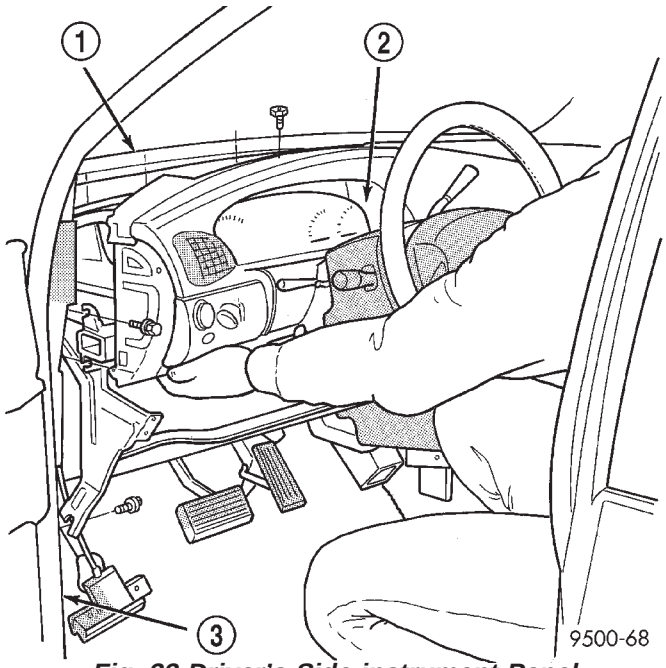

Fig. 33 Driver's Side instrument Panel

1 – WINDSHIELD FENCE
2 – INSTRUMENT PANEL
3 – COWL PANEL

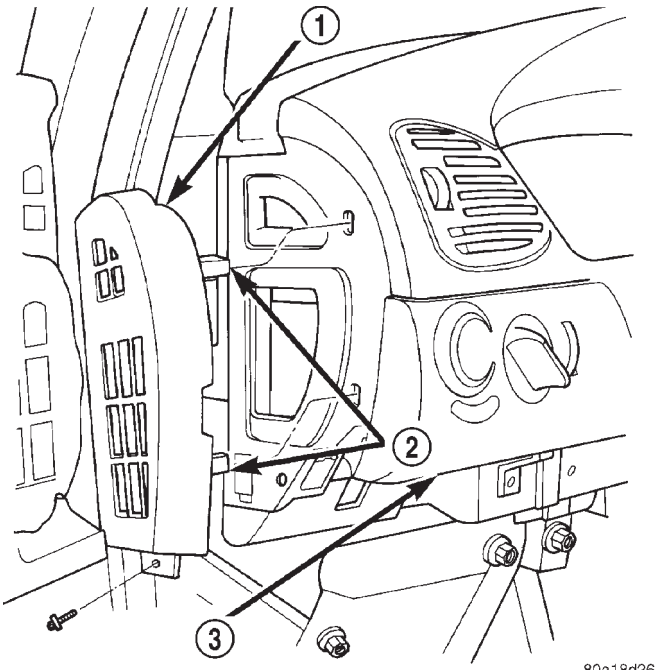

Fig. 34 Instrument Panel Left End Cover

1 – END COVER
2 – CLIPS
3 – INSTRUMENT PANEL

INSTRUMENT PANEL LEFT END COVER

REMOVAL

(1) Open driver side front door.

(2) Remove lower steering column cover. Refer to Lower Steering Column Cover Removal and Installation in this section.

(3) Remove lower attaching screw to end cover.

(4) Disengage clips holding end cover to instrument panel (Fig. 34).

(5) Remove instrument panel end cover and foam pad covering the A/C inlet projection of the end cover if equipped.

INSTALLATION

For installation, reverse the above procedures.

INSTRUMENT PANEL LOUVERS

AIR OUTLET LOUVERS

All the air outlet louvers are of the barrel type and should be removed the same as the Passenger Louvers **keeping in mind that the flat blade is being installed at the louver pivot**.

REMOVAL

(1) Using a medium flat blade tool, position it in between the right side of louver and the housing (Fig. 35).

(2) Twist the tool to release the pivot pin from the louver and pull outward till released from pin.

(3) Place the flat blade tool on the other side of louver and release the other pivot pin and pull louver free from the instrument panel. Use the same procedure for any of the instrument panel air outlet louvers.

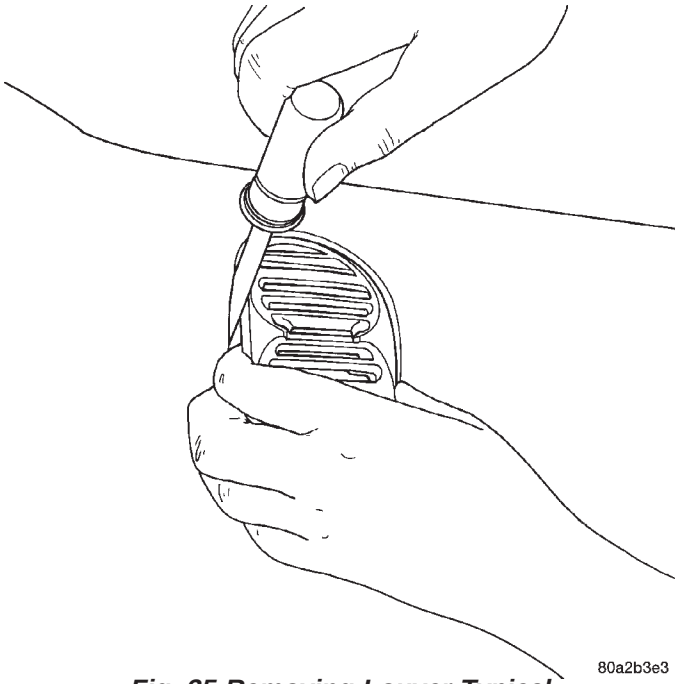

Fig. 35 Removing Louver-Typical

INSTALLATION

For installation, reverse the above procedures.

REMOVAL AND INSTALLATION (Continued)

PASSENGER SIDE LOUVER OUTER HOUSINGS

REMOVAL

(1) Using a trim stick (special tool #C-4755), insert between the outer edge of the housing and the pad/panel vinyl covering (Fig. 36).

(2) Lightly pry housing inward and by hand pull the housing free from panel (Fig. 37).

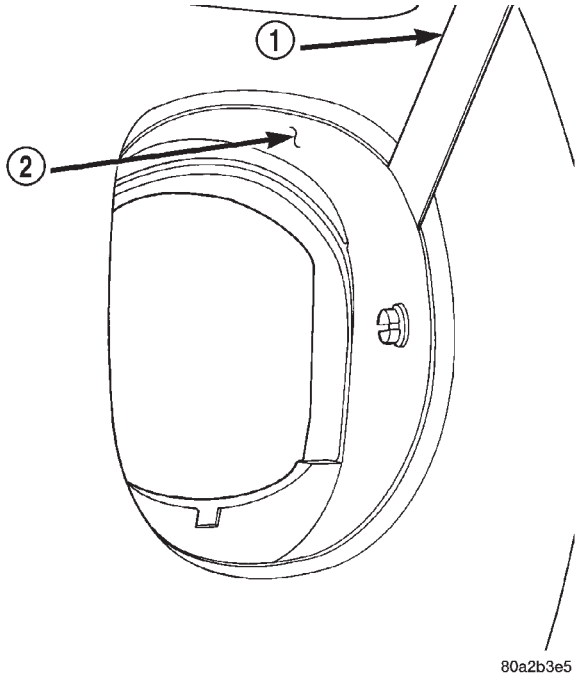

Fig. 36 Remove Housing

1 – TRIM STICK
2 – OUTER HOUSING

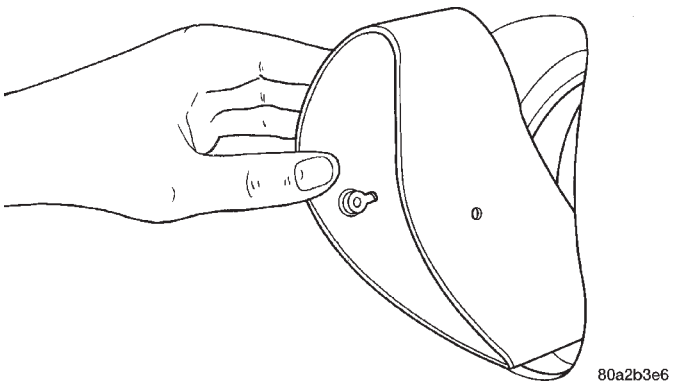

Fig. 37 Housing Being Removed

INSTALLATION

(1) Place the slotted pin on the right side of the opening.

(2) Set housing in to position and push into place. The housing may need to be rocked to get the best fit within the opening.

INSTRUMENT PANEL TOP COVER

REMOVAL

(1) Remove A-pillar trim. Refer to Group 23 Body, for A-Pillar Trim Panel Removal and Installation.

(2) Using a trim stick, disengage clips holding rear edge of top cover to instrument panel (Fig. 38).

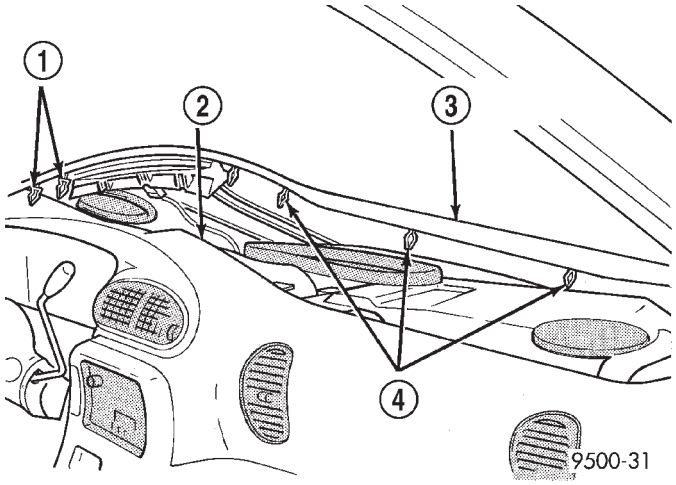

Fig. 38 Instrument Panel Top Cover

1 – CLIPS
2 – INSTRUMENT PANEL
3 – INSTRUMENT PANEL TOP COVER
4 – CLIPS

NOTE: The Instrument Panel Top Cover may be hard to unsnap from the instrument panel. Be sure not to mar, scuff, or damage the instrument panel pad.

(3) Disconnect wire harness from message center.

(4) Pull top cover rearward to disengage hooks holding front of top cover to instrument panel.

(5) Remove top cover.

INSTALLATION

(1) Place instrument panel top cover in position on vehicle.

(2) Push top cover forward to engage hooks to hold front of top cover to instrument panel.

(3) Connect wire harness to message center.

(4) Engage clips to hold rear edge of top cover to instrument panel.

(5) Pull top cover rearward.

(6) Install A-pillar trim.

REMOVAL AND INSTALLATION (Continued)

INSTRUMENT PANEL RIGHT END COVER

REMOVAL

(1) Open passenger side front door.
(2) Disengage clips holding right end cover to instrument panel (Fig. 39).

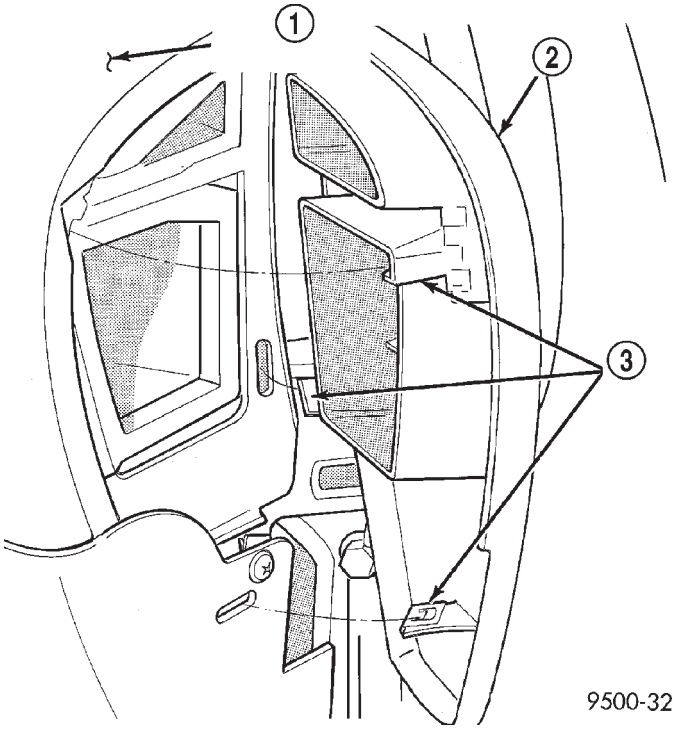

Fig. 39 Instrument Panel Right End Cover

1 – INSTRUMENT PANEL
2 – END COVER
3 – CLIPS

(3) Remove instrument panel end cover and foam pad covering the A/C inlet projection of the end cover if equipped.

INSTALLATION

For installation, reverse the above procedures.

KNEE BLOCKER REINFORCEMENT

REMOVAL

(1) Remove lower steering column cover.
(2) Remove screws holding knee blocker reinforcement to instrument panel (Fig. 40).
(3) Remove knee blocker reinforcement from vehicle.

INSTALLATION

(1) Place reinforcement in position.
(2) Install screws to hold knee blocker reinforcement to instrument panel.
(3) Install lower steering column cover.

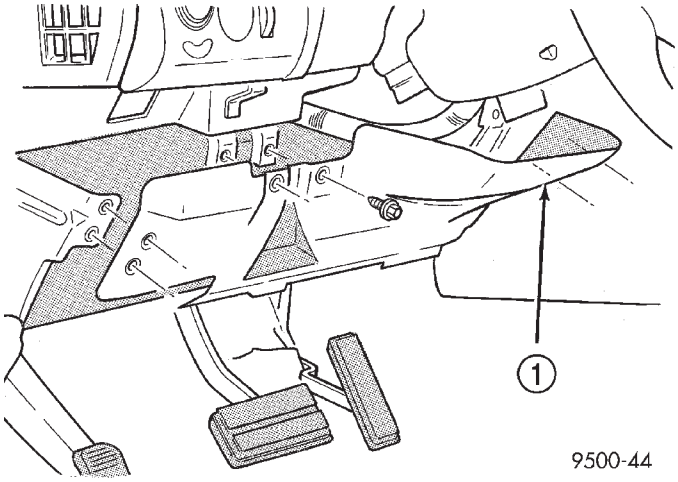

Fig. 40 Knee Blocker Reinforcement

1 – KNEE BLOCKER REINFORCEMENT

LOWER CONSOLE

REMOVAL

(1) Remove screws holding lower console to floor bracket and instrument panel (Fig. 41).

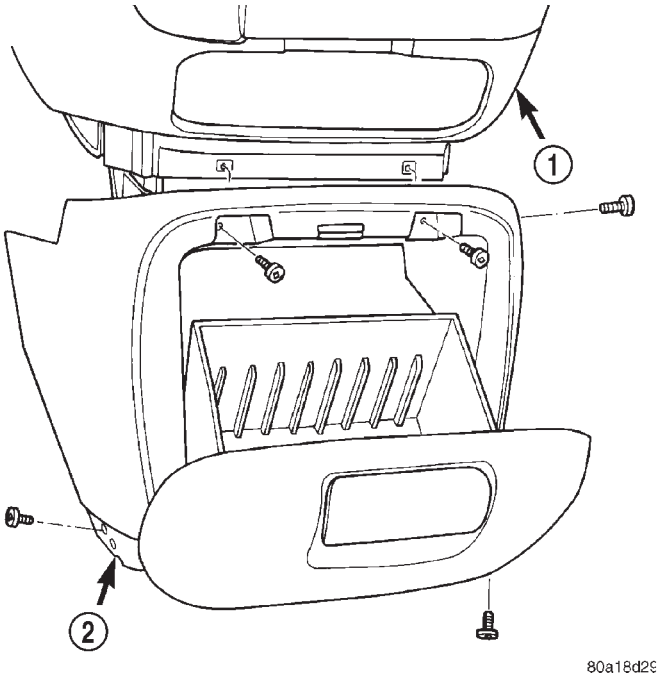

Fig. 41 Lower Console

1 – INSTRUMENT PANEL
2 – LOWER CONSOLE

(2) Slide console rearward from around instrument panel supports.
(3) Remove lower console.

REMOVAL AND INSTALLATION (Continued)

INSTALLATION

(1) Place lower console in position.
(2) Slide console forward around instrument panel supports.
(3) Install screws to hold lower console to floor bracket and instrument panel.

LOWER INSTRUMENT PANEL

When servicing the lower instrument panel Refer to the appropriate Removal and Installation procedures within this section.

REMOVAL

(1) Remove the instrument cluster. Refer to Instrument Cluster with Mechanical Transmission Range Indicator Removal and Installation in this section.
(2) Remove the right end cover.
(3) Remove the steering column bezel.
(4) Remove the radio bezel and the HVAC control.
(5) Remove the lower console.
(6) Remove the convenience cup holder and track.
(7) Remove the glove box.
(8) Remove the glove box latch striker.
(9) Remove the glove box lamp.
(10) Disconnect the wire connector from glove box lamp.
(11) Remove the screws holding the lower instrument panel to the reinforcement frame around the glove box opening (Fig. 42).

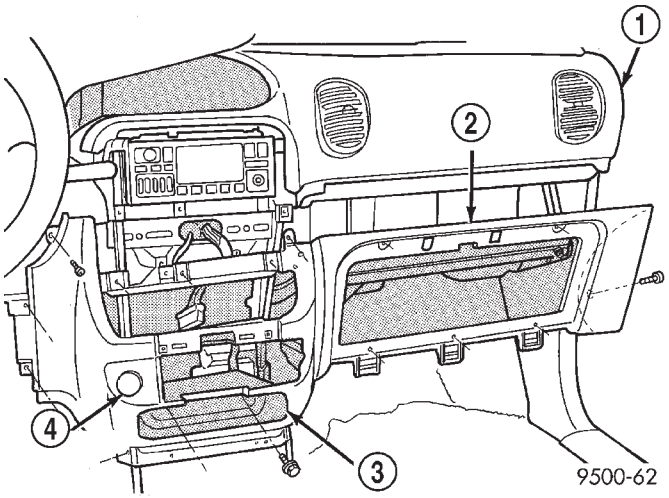

Fig. 42 Lower Instrument Panel

1 – INSTRUMENT PANEL
2 – LOWER INSTRUMENT PANEL
3 – STORAGE POCKET
4 – ACCESSORY PLUG

(12) Remove the screw holding the lower instrument panel to the right side of instrument panel.
(13) Remove the screw holding the lower instrument panel to the upper instrument panel at the left side panel above the accelerator pedal.
(14) Remove the instrument cluster bezel as necessary to gain access to the lower instrument panel screws.
(15) Remove the screw holding instrument panel to the upper panel below the instrument cluster.
(16) Remove the screws holding rear of storage pocket to the panel support frame.
(17) Remove the screws holding the lower instrument panel to the upper instrument panel from below radio.
(18) Remove the screws holding lower instrument panel to the support frame in floor console area.
(19) Separate the lower instrument from the upper instrument panel.
(20) Disconnect the wire connectors from back of the 12 volt outlet base.
(21) Remove the lower instrument from vehicle.

INSTALLATION

For installation, reverse the above procedures.

LOWER STEERING COLUMN COVER

REMOVAL

(1) Remove screws holding parking brake release handle to instrument panel (Fig. 43).

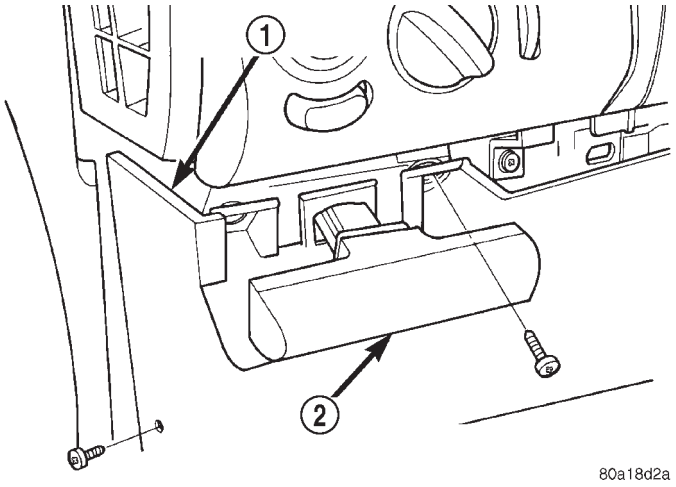

Fig. 43 Park Brake Release Handle

1 – LOWER STEERING COLUMN COVER
2 – PARK BRAKE RELEASE HANDLE

(2) Remove screws holding bottom of lower steering column cover to instrument panel (Fig. 44).
(3) Remove screw holding right side of lower steering column cover to instrument panel.
(4) Disengage park brake release cable case from groove on end of release handle (Fig. 45).

REMOVAL AND INSTALLATION (Continued)

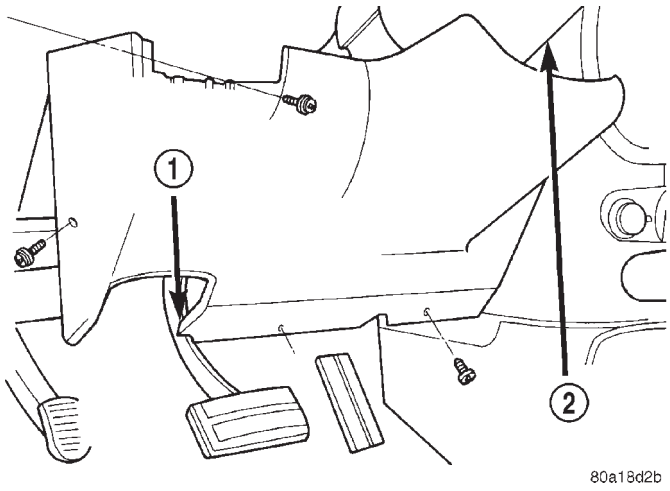

Fig. 44 Lower Steering Column Cover

1 – LOWER STEERING COLUMN COVER
2 – STEERING COLUMN

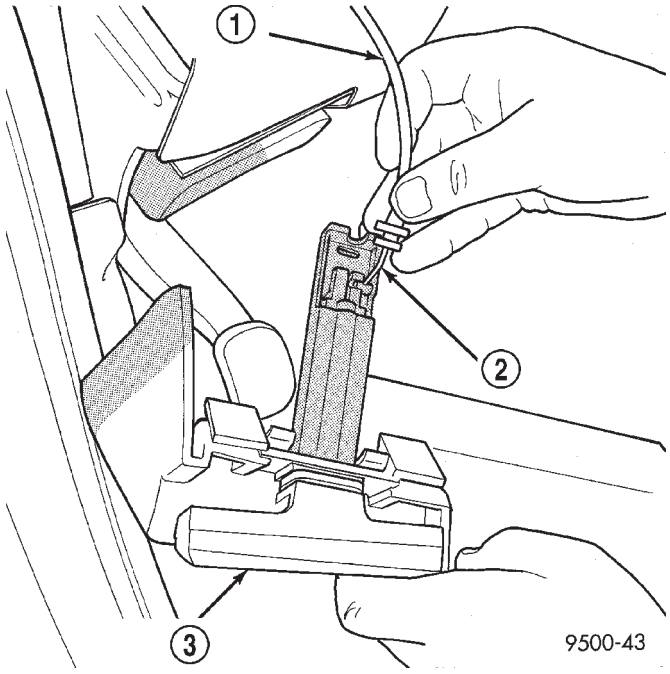

Fig. 45 Park Brake Release Handle

1 – CABLE CASE
2 – CABLE
3 – PARK BRAKE RELEASE HANDLE

(5) Disengage cable end pivot from slot on release handle (Fig. 45).

INSTALLATION

For installation, reverse the above procedures,

MECHANICAL TRANSMISSION RANGE INDICATOR

REMOVAL

(1) Remove instrument cluster. Refer to Instrument Cluster with Mechanical Transmission Range Indicator Removal and Installation in this section.

(2) Remove cluster lens. Refer to Instrument Cluster Lens Removal and Installation in this section.

(3) Remove screws holding mechanical transmission range indicator to back of cluster lens.

(4) Remove mechanical transmission range indicator from cluster lens.

INSTALLATION

(1) Position transmission range indicator on cluster lens.

(2) Install mechanical range indicator and attaching screws to back of cluster lens.

(3) Install cluster lens.

(4) Install instrument cluster.

MESSAGE CENTER

REMOVAL

(1) Disconnect and isolate the battery negative cable (Fig. 6).

(2) Remove A-pillar trim panel. Refer to Group 23 Body, for A-Pillar Trim Panel Removal and Installation.

(3) Remove instrument panel top cover. Refer to Instrument Panel Top Cover Removal and Installation in this section.

(4) Disconnect the wire connector from back of message center.

(5) Remove screws holding message center to instrument panel top cover.

(6) Remove message center from instrument panel top cover.

INSTALLATION

(1) Place message center in position on top cover.

(2) Install screws to hold message center to instrument panel top cover.

(3) Connect wire connector into back of message center.

(4) Install instrument panel top cover.

(5) Install A-pillar trim.

REMOVAL AND INSTALLATION (Continued)

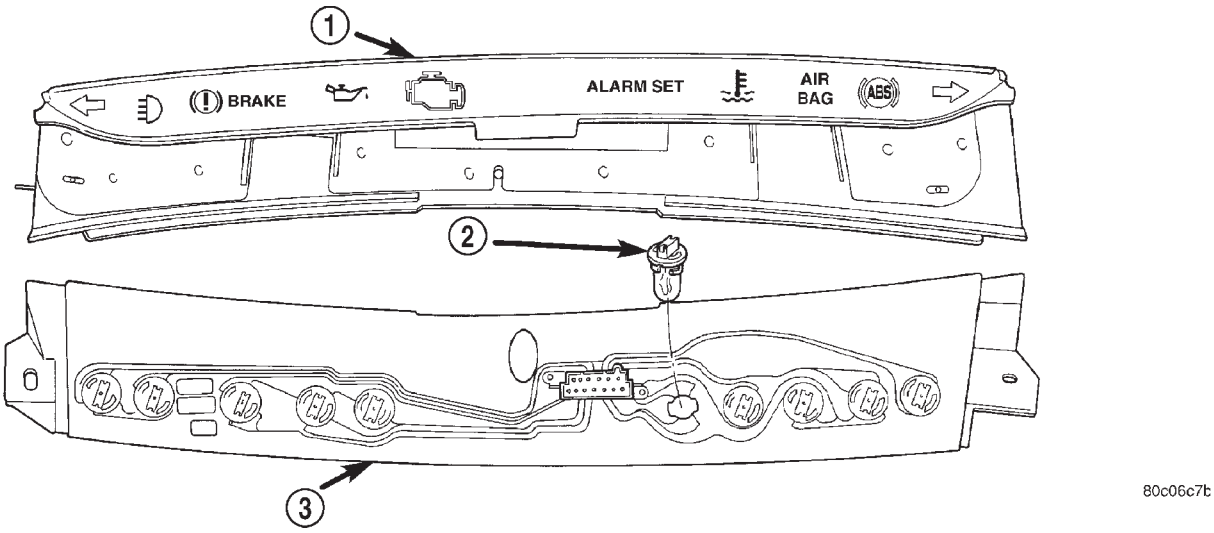

Fig. 46 Message Center Lamp Location

1 – FRONT TOP
2 – LAMP/SOCKET
3 – REAR TOP

MESSAGE CENTER LAMP

REMOVAL

(1) Disconnect and isolate the battery negative cable (Fig. 6).

(2) Remove instrument panel top cover. Refer to Instrument Panel Top Cover Removal and Installation in this section.

(3) Locate the lamp in question (Fig. 46).

(4) Remove lamp and check lamp. If lamp is good test the power supply to the lamp.

INSTALLATION

For installation, reverse the above procedures.

OVER STEERING COLUMN BEZEL

REMOVAL

(1) Remove the lower steering column cover. Refer to Lower Steering Column Cover Removal and Installation in this section.

(2) Remove the screws holding over steering column bezel to the cluster bezel (Fig. 47).

(3) Disconnect the clips holding over column bezel to the cluster bezel.

(4) If equipped with traction control switch, disconnect the wire pigtail connector from the traction control switch.

(5) Remove the over steering column bezel from vehicle..

INSTALLATION

If replacing the Over Column Bezel, the Traction Control Switch (if equipped) must be transferred. Refer to Traction Control Switch Removal and Installation in this section.

(1) Place the over steering column bezel in position and engage clips to the cluster bezel. If equipped with traction control switch connect the wire pigtail before engaging clips.

(2) Install the screws to hold the over steering column bezel to the cluster bezel.

(3) Install the lower column cover.

POWER MIRROR SWITCH

REMOVAL

(1) Disconnect and isolate the battery negative cable (Fig. 6).

(2) Remove instrument cluster bezel. Refer to Instrument Cluster Bezel Removal and Installation in this section.

(3) Disconnect wire connector from back of power mirror switch (Fig. 48).

(4) Disengage lock tabs above and below the mirror switch.

(5) Pull power mirror switch from headlamp switch bezel. The power mirror switch bezel is mounted to the bottom of the instrument cluster bezel.

(6) Remove power mirror switch.

INSTALLATION

For installation, reverse the above procedures.

REMOVAL AND INSTALLATION (Continued)

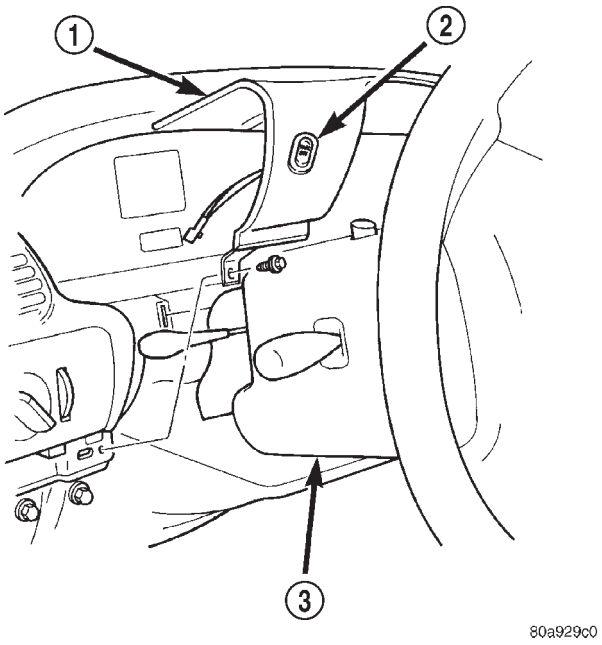

Fig. 47 Over Steering Column Bezel

1 – OVER STEERING COLUMN BEZEL
2 – TRACTION CONTROL SWITCH
3 – STEERING COLUMN

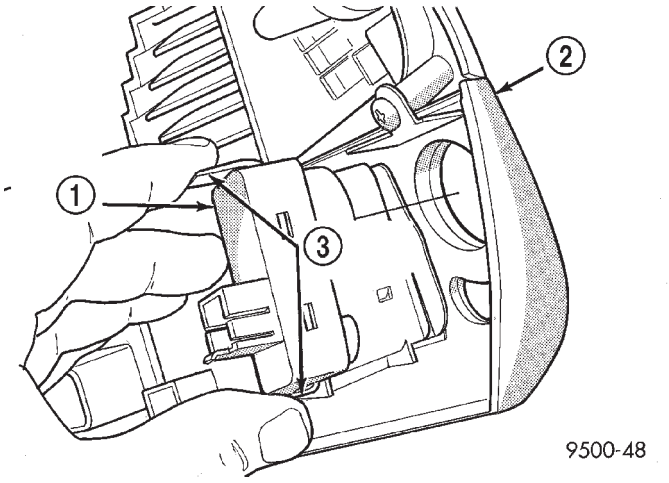

Fig. 48 Power Mirror Switch

1 – POWER MIRROR SWITCH
2 – HEADLAMP SWITCH BEZEL
3 – LOCK TABS

POWER MIRROR SWITCH LAMP

REMOVAL

(1) Disconnect and isolate the battery negative cable (Fig. 6).

(2) Remove instrument cluster bezel. Refer to Instrument Cluster Bezel Removal and Installation in this section.

(3) Remove instrument cluster bezel.

(4) Rotate bulb socket counterclockwise one quarter turn (Fig. 49).

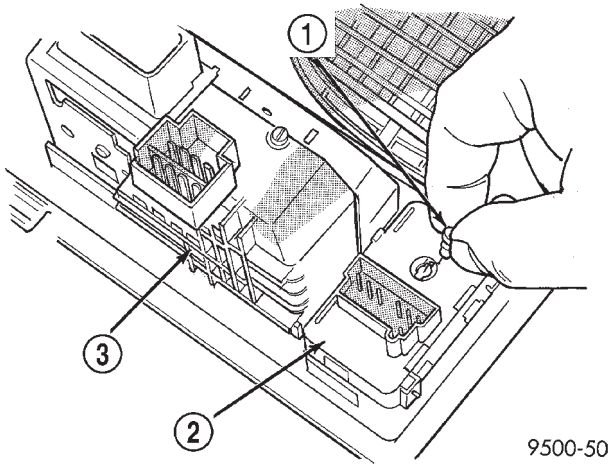

Fig. 49 Power Mirror Switch Lamp

1 – LAMP BULB
2 – POWER MIRROR SWITCH
3 – HEADLAMP SWITCH

(5) Pull bulb socket from back of power mirror switch.

INSTALLATION

For installation, reverse the above procedures.

RADIO BEZEL AND HVAC CONTROL

REMOVAL

(1) Remove convenience bin - cup holder. Refer to Convenience Bin - Cup Holder Removal and Installation procedure in this section.

(2) Insert the trim stick (special tool #C-4755) between access cover and radio bezel, above convenience bin - cup holder.

(3) Carefully pry the access cover from the instrument panel (Fig. 50).

(4) Separate the access cover from the vehicle.

(5) Remove convenience bin - cup holder track. Refer to Convenience Bin - Cup Holder Track Removal and Installation procedures in this section.

(6) Remove the attaching screws holding bottom of the bezel to instrument panel (Fig. 51).

REMOVAL AND INSTALLATION (Continued)

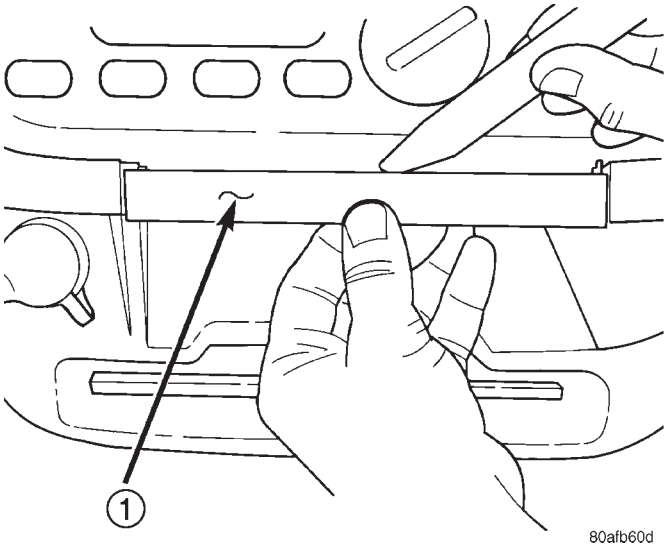

Fig. 50 Convenience Bin Access Cover

1 – ACCESS COVER

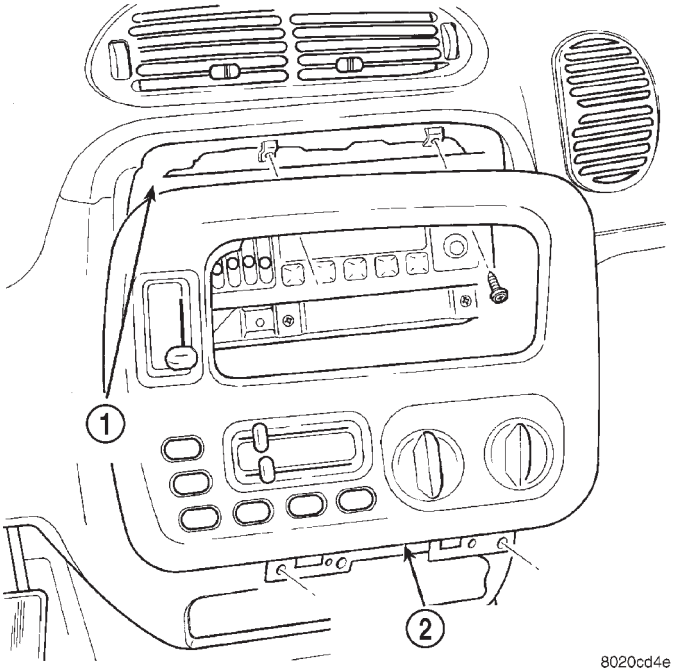

Fig. 51 Radio Bezel and HVAC Control

1 – INSTRUMENT PANEL
2 – RADIO BEZEL HVAC CONTROL

(7) Remove the attaching screws holding top of the bezel to the instrument panel.

(8) Remove the bezel from the instrument panel.

(9) Disconnect the wire connector from back of the rear blower switch, if equipped.

(10) Disconnect the wire connector from the back of the HVAC Control.

(11) Remove the bezel.

INSTALLATION

(1) Hold the radio bezel up and connect the wire connector into the back of the HVAC control.

(2) Connect the wire connector into back of the rear blower switch, if equipped.

(3) Place the radio bezel in position on the instrument panel.

(4) Install screws to hold the top of radio bezel to instrument panel.

(5) Install screws to the hold bottom of the radio bezel to the instrument panel.

(6) Install the access cover.

REAR HEATER-A/C SWITCH

REMOVAL

(1) Disconnect and isolate the battery negative cable (Fig. 6).

(2) Remove radio bezel and HVAC Control.

(3) Remove screw holding rear heater-A/C switch to radio bezel HVAC Control (Fig. 52).

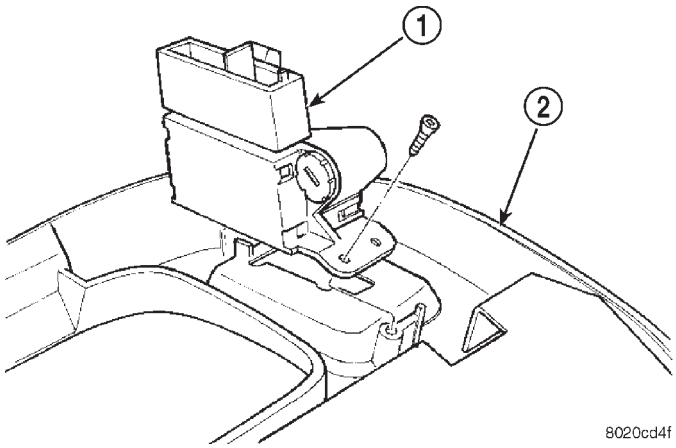

Fig. 52 Rear Heater - A/C Switch

1 – REAR HEATER-A/C SWITCH
2 – RADIO BEZEL HVAC CONTROL

(4) Disengage hook holding bottom of switch to radio bezel HVAC Control.

(5) Remove switch from radio bezel HVAC Control.

INSTALLATION

For instrument, reverse the above procedures.

REAR HEATER-A/C SWITCH LAMP

REMOVAL

(1) Disconnect and isolate the battery negative cable (Fig. 6).

(2) Remove radio bezel Hvac Control. Refer to Radio Bezel and Hvac Control Removal and Installation in this section.

REMOVAL AND INSTALLATION (Continued)

(3) Rotate bulb socket counterclockwise one quarter (Fig. 53).

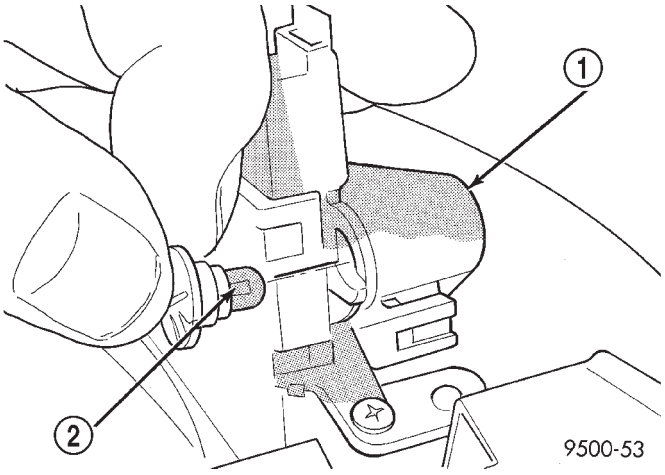

Fig. 53 Rear Heater-A/C Switch Lamp Bulb

1 – REAR HEATER-A/C SWITCH
2 – LAMP BULB

(4) Pull bulb socket from switch.

INSTALLATION

For installation, reverse the above procedures.

TRACTION CONTROL SWITCH

REMOVAL

(1) Disconnect and isolate the battery negative cable (Fig. 6).

(2) Remove the over steering column bezel. Refer to Over Steering Column Bezel Removal and Installation in this section.

(3) Remove the two screws attaching traction control switch to the bezel.

INSTALLATION

For installation, reverse the above procedure.