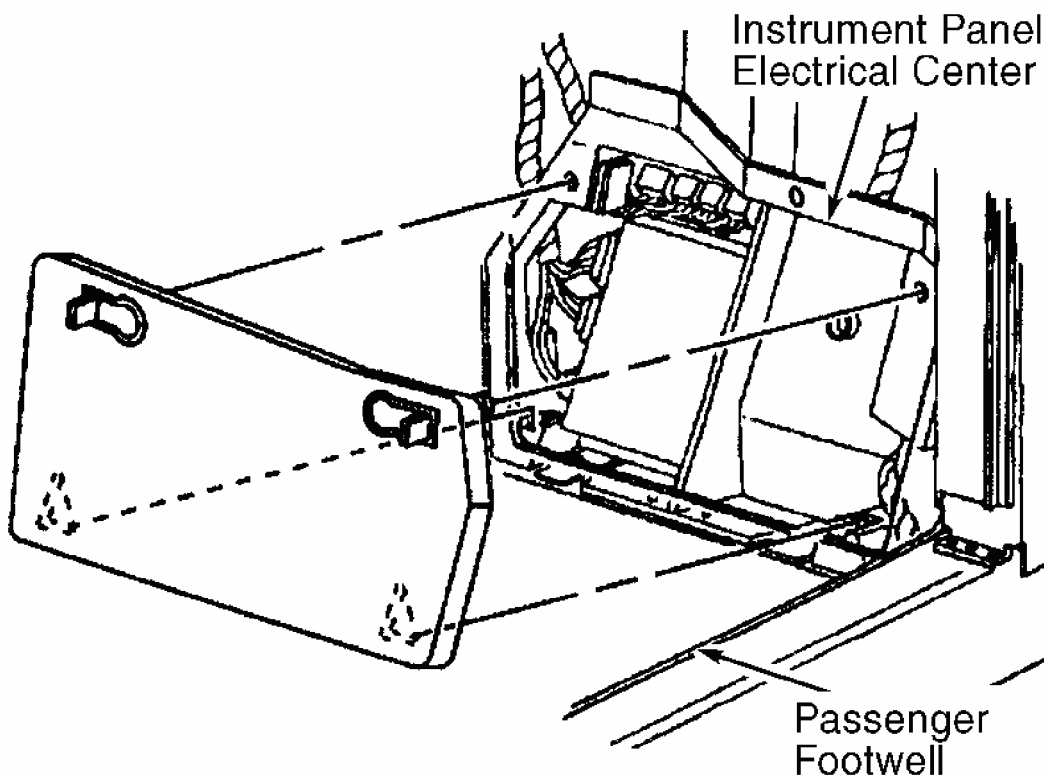


2002 ACCESSORIES & EQUIPMENT**Power Seats - Corvette****DESCRIPTION & OPERATION**

Power seats operate using toggle switches located on outboard side of seat. Each seat adjuster is powered by a 12-volt, reversible motor with an internal circuit breaker. Two 20-amp circuit breakers, located in instrument panel electrical center, protect power seat wiring. See **Fig. 1** . Optional features include memory and power lumbar.



G98G12225

Fig. 1: Locating Instrument Panel Electrical Center
Courtesy of GENERAL MOTORS CORP.

POWER SEATS

The power seat system consists of the following components:

- The driver seat adjuster switch.
- The passenger seat adjuster switch.
- The driver seat relay center.

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- The passenger seat relay center.
- The driver horizontal adjuster motor.
- The driver front vertical adjuster motor.
- The driver rear vertical adjuster motor.
- The passenger horizontal adjuster motor.
- The passenger front vertical adjuster motor.
- The passenger rear vertical adjuster motor.
- The SCM-L 10A fuse.
- The PWR ST/DRV 20A circuit breaker.
- The LUMBAR 15A fuse.
- The PWR ST/PAS 20A circuit breaker.

The seat adjuster motors are controlled by relays through the adjuster motor supply circuits. The adjuster motor relays are controlled by the seat adjuster switches. The relay coils are supplied fused battery positive voltage from the instrument panel electrical center. The relay coils use separate ground circuits or control circuits connected to the seat adjuster switch. When an adjuster switch is pressed the relay coil control circuit is closed to ground and the relay is energized. There is one relay for each supply circuit which provides power or ground used for adjuster motor operation. When the relays are de-energized the supply circuits are closed to ground. When one adjuster motor relay is energized voltage is supplied to the adjuster motor and ground is provided through the de-energized relay. The direction of the adjuster motor rotation is determined by which of the adjuster motor relays are energized and de-energized.

MEMORY SEATS

The memory seat system consists of the following components:

- The seat adjuster switch.
- The LH door switch.
- The memory seat module.
- The horizontal adjuster motor.
- The front vertical adjuster motor.
- The rear vertical adjuster motor.
- The SCM-L 10A fuse.
- The PWR ST/DRV 20A circuit breaker.

The memory seat system is controlled by the following components:

- The seat adjuster switch.

- The memory seat module.
- The body control module.
- The LH door control module.

The seat adjuster motors are controlled by the memory seat module through the adjuster motor supply circuits. In an inactive state the adjuster motor supply circuits are grounded through switch contacts within the memory seat module. Adjuster motor operation occurs when the memory seat module switches one of the adjuster motor supply circuits to battery positive voltage. The direction of the adjuster motor rotation is determined by which of the adjuster motor supply circuits is switched to battery positive voltage and which remains grounded.

The seat adjuster switch signal circuits are supplied with 12 volts through resistors within the memory seat module. When a seat adjuster switch is pressed the signal circuit is grounded. Closing the signal circuit to ground pulls the voltage low indicating to the memory seat module the switch status is active. The memory seat module also relies on messages received through the serial data circuit from other control modules to perform some memory seat functions.

The seat adjuster motors are equipped with position sensors. The position sensors are supplied with a 5-volt reference circuit and low reference circuit from the memory seat module. Whenever a memory seat module function is active the memory seat module receives a signal from each position sensor which varies from 0 to 5 volts depending on the seat position. The memory seat module uses the position sensor signal voltages to determine the seat position when storing or recalling seat position settings.

LUMBAR SUPPORTS

The lumbar support system consists of the following components:

- The driver seat adjuster switch.
- The passenger seat adjuster switch.
- The driver seat lumbar pump and module.
- The passenger seat pump and module.
- The driver seat lumbar and side bladders.
- The passenger seat lumbar and side bladders.
- The SCM-L 10A fuse.
- The LUMBAR 15A fuse.

Lumbar pump operation is controlled through relays in the lumbar module. Battery positive voltage from the instrument panel electrical center is supplied to the lumbar module and is used for pump operation. Battery positive voltage from the instrument panel electrical center

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is supplied to the lumbar control switches and is used to energize the relay coils. When a lumbar switch is pressed voltage is supplied to the control circuit which supplies the inflate or deflate relay coil and the pressure switch relay coil. Either the inflate or deflate relay along with the pressure switch relay must be energized in order for pump operation to occur. The lumbar control circuits are also used to control valves in the air lines from the lumbar pump to the seat lumbar and side bladders.

COMPONENT LOCATIONS

COMPONENT LOCATIONS

Component	Location
Driver Door Module (DDM) Or Passenger Door Module (PDM)	In Center Of Each Door, Behind Door Panel
Instrument Panel Electrical Center	Top Of Passenger's Footwell, Behind Carpet
Seat Motors	Under Respective Front Seat
Seat Control Module (SCM)	Under Driver's Seat
Seat Relay Center	Under Respective Front Seat

TROUBLE SHOOTING

PRELIMINARY CHECKS

1. If power accessory circuit breaker opens whenever power seat switch is operated, check circuits for a short to ground. Remove and inspect fuses. Check for good, clean ground connections. Check for proper installation of aftermarket electronic equipment.
2. Check for broken or partially broken wire inside of insulation, which could cause system malfunction but prove good in a continuity/voltage check with system disconnected. These circuits may be intermittent or resistive when loaded. Check by monitoring for voltage drop with system under load. If problem exists, repair as necessary. If problem is not found, perform self-diagnostics (memory seats only). See **SELF-DIAGNOSTIC SYSTEM** . On models without memory seats, attempt to diagnose by symptom. See **SYMPTOM INDEX** table.

SELF-DIAGNOSTIC SYSTEM

Instrument Panel Cluster (IPC) and scan tool can be used to retrieve and clear DTCs. For IPC procedure, see **ANALOG INSTRUMENT PANELS - CORVETTE** .

POWER SEATS DIAGNOSTIC SYSTEM CHECK

1. Connect scan tool to Data Link Connector (DLC) located under steering column. If scan tool powers up, go to next step. If scan tool does not power up, go to **SCAN TOOL DOES NOT POWER UP** .

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2. Turn ignition on. Attempt to establish communication with Driver Door Module (DDM), Seat Control Module (SCM), Body Control Module (BCM) and Powertrain Control Module (PCM). If scan tool communicates with all modules, go to next step. If scan tool does not communicate with all modules, go to **SCAN TOOL DOES NOT COMMUNICATE WITH CLASS 2 D**.
3. Using scan tool, select SCM module DTC function, DDM DTC function, BCM DTC function and PCM DTC function. If scan tool displays any DTCs, go to next step. If scan tool does not display any DTCs, diagnose problem by symptom. See **SYMPTOM INDEX** table.
4. If scan tool displays any DTCs which begin with "U", go to **SCAN TOOL DOES NOT COMMUNICATE WITH CLASS 2 DEVICE**. If scan tool does not display any DTCs that begin with "U", go to next step.
5. If DTC B0605 is not set, go to next step. If DTC B0605 is set, go to **DTC B0605**.
6. If DTC P0562 or P0563 are set, perform appropriate test. See **GENERATORS & REGULATORS - CORVETTE**. If DTC P0562 or P0563 are not set, perform test in accordance with DTC retrieved. See **DIAGNOSTIC TROUBLE CODE DEFINITIONS**.

DIAGNOSTIC TROUBLE CODE DEFINITIONS

DIAGNOSTIC TROUBLE CODE DEFINITIONS

DTC	Description
<u>B0846 & B0851</u>	Seat Control Module Battery Supply Circuit
<u>B0856</u>	Power Seat Position Sensor Voltage Reference Circuit
<u>B2172, B2177, B2182, B2187, B2192 & B2197</u>	Seat Switch Shorted To Ground
<u>B2242 & B2244</u>	Memory 1 Or 2 Signal Circuit Short To Ground
<u>B2600</u>	Seat Motor To Battery Voltage
<u>B2605-B2607</u>	Seat Position Sensor Failure

DIAGNOSTIC TESTS

DTC B0846 & B0851: SEAT CONTROL MODULE BATTERY SUPPLY CIRCUIT

Circuit Description

The Seat Control Module (SCM) has two battery voltage supply circuits. The battery 1 voltage supply circuit is used to provide power for the SCM logic and internal driver operation. The battery 2 voltage supply circuit is used to provide a high current supply for the SCM output devices.

Code Enable Criteria

The battery 1 circuit voltage to the SCM is within 6.5-26.5 volts.

Conditions For Setting The DTC

- The SCM detects battery 1 or battery 2 voltage range less than 8.5 volts or more than 16.3 volts.
- The condition must be present for 2 seconds.

Action Taken When The DTC Sets

- A history DTC is stored in the SCM.
- Memory seat module DTCs can only be set as a history code even if the fault is current.
- No driver warning message will be displayed for these DTCs.

Conditions For Clearing The DTC

Memory seat module DTCs may be cleared only by using a scan tool or the IPC clearing DTCs feature.

Testing

1. If power seats diagnostic system check has been performed, go to next step. If power seats diagnostic system check has not been performed, go to **POWER SEATS DIAGNOSTIC SYSTEM CHECK** .
2. Install scan tool to Data Link Connector (DLC). Observe battery voltage supply circuit for Seat Control Module (SCM) in DATA LIST. If voltage is 8.5-16.3 volts, go to next step. If voltage is not 8.5-16.3 volts, go to step 4 .
3. Operate drivers seat adjuster motors and telescoping steering column in both directions. Using scan tool, observe battery voltage supply circuit for SCM in DATALIST. If voltage is 8.5-16.3 volts, problem is intermittent. Check for an intermittent short to ground in adjuster motor or circuit, or problem with charging system. If voltage is not 8.5-16.3 volts, go to next step.
4. Repair battery voltage supply circuit (Orange wires) for an open circuit. See **WIRING DIAGRAMS** . If an open circuit was found and corrected, go to step 7 . If an open circuit was not found, go to next step.
5. Repair SCM ground circuit (Black wire) for an open circuit. See **WIRING DIAGRAMS** . If an open circuit was found and corrected, go to step 7 . If an open circuit was not found, go to next step.
6. Replace SCM. See **SEAT CONTROL MODULE** . After replacement, go to next step.
7. Turn ignition off. Reconnect all disconnected components. Turn ignition on. Using scan tool, clear all DTCs. If DTC resets, go to step 2 .

Diagnostic Aids

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- A DTC B0846 can be the result of a short to ground in an adjuster motor or control circuit, first diagnose a DTC B2002, B2007, or B2012 if present.
- Inspect the battery and charging system for proper operation.
- If the fault is not current the problem may be intermittent.

DTC B0856: POWER SEAT POSITION SENSOR VOLTAGE REFERENCE CIRCUIT

Circuit Description

The telescoping steering column actuator and seat adjuster motors are equipped with position sensors. The position sensors are supplied with a common 5-volt reference circuit and low reference circuit from the Seat control Module (SCM). The SCM receives a signal voltage from each position sensor whenever a SCM output function is active.

Code Enable Criteria

The SCM detects a switch signal active or a memory function request.

Conditions For Setting The DTC

- The SCM detects the position sensor 5-volt reference circuit under 4.0 volts or over 5.2 volts.
- The condition must be present for 2 seconds.

Action Taken When The DTC Sets

- A history DTC is stored in the SCM.
- Memory seat module DTCs can only be set as history codes even if the malfunction is current.
- Memory functions will be disabled as long as the fault is current.

Conditions For Clearing The DTC

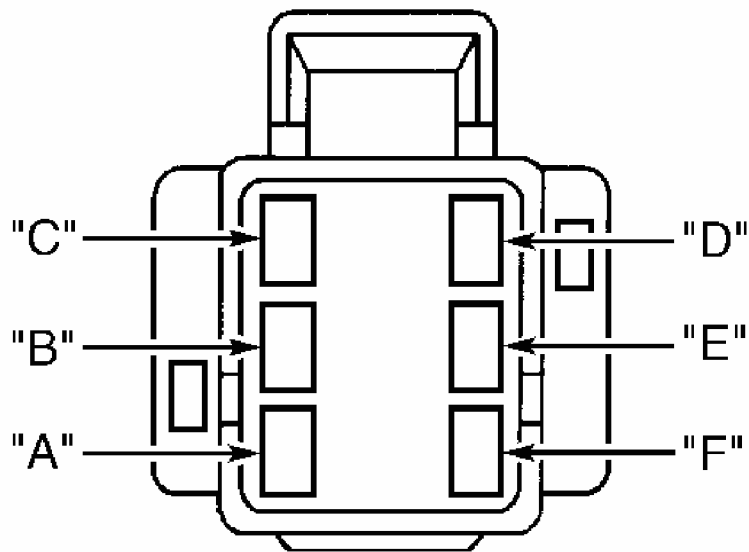
Memory seat module DTCs may be cleared only by using a scan tool or the IPC clearing DTCs feature.

Testing

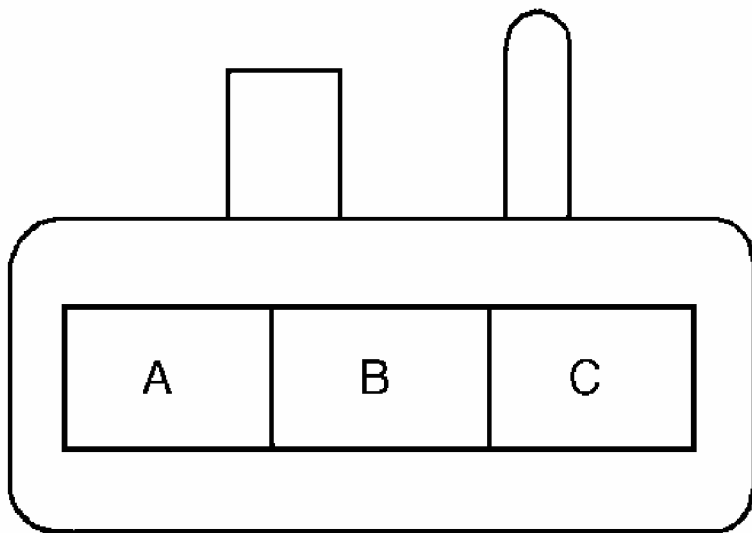
1. If power seats diagnostic system check has been performed, go to next step. If power seats diagnostic system check has not been performed, go to **POWER SEATS DIAGNOSTIC SYSTEM CHECK**.
2. Install scan tool to Data Link Connector (DLC). Observe position sensor reference parameter in Seat Control Module (SCM) DATALIST. Attempt to operate seat and steering column adjuster motor through full range of adjustment. If position sensor reference voltage remains within 4.0-5.2 volts, problem is intermittent. Check position

sensor/seat motor connectors and in-line connector to steering column. See **Fig. 2** . If position sensor reference voltage does not remain within 4.0-5.2 volts, go to next step.

3. Disconnect all position sensor/seat motor connectors. Using scan tool, observe position sensor reference parameter while activating an input to SCM. If position sensor reference voltage is within 4.0-5.2 volts, go to step [5](#) . If position sensor reference voltage is not within 4.0-5.2 volts, go to next step.
4. Check position sensor 5-volt reference circuit (Purple wire) for a short circuit to ground or voltage. If short circuit was found and corrected, go to step [8](#) . If short circuit was not found, go to step [7](#) .
5. Check position sensor low reference circuit (Black wire) for a short circuit to voltage. If short circuit was found and corrected, go to step [8](#) . If short circuit was not found, go to next step.
6. Check position sensor signal circuits (Dark Green, Brown/White and Tan wires) for a short circuit to voltage. See **IDENTIFYING POSITION SENSOR SIGNAL CIRCUITS** table. If a short circuit to voltage was found and corrected, go to step [8](#) . If a short circuit to voltage was not found, go to next step.
7. Replace SCM. See **SEAT CONTROL MODULE** .
8. Turn ignition off. Reconnect all disconnected components. Turn ignition on. Using scan tool, clear all DTCs. If DTCs reoccur, go to step [2](#) .



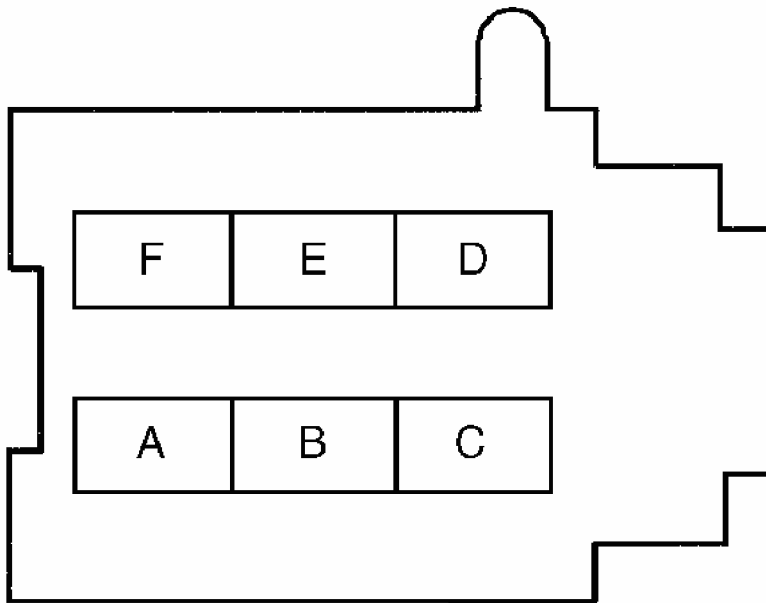
C1



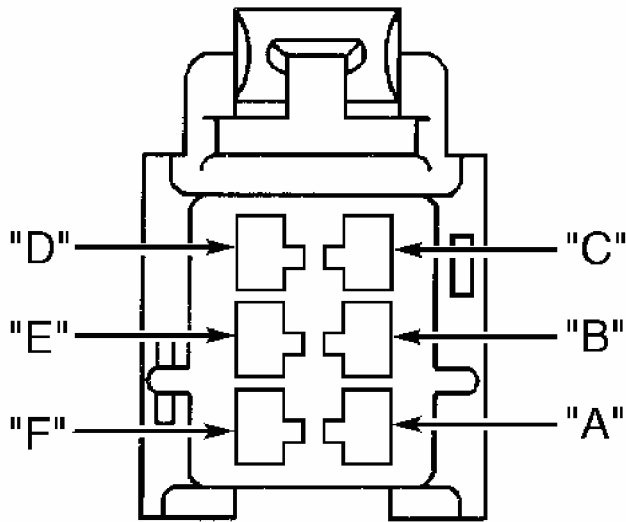
C2, C3 & C4

G98E12223

Fig. 2: Identifying Seat Adjuster Motor Connectors & Terminals
Courtesy of GENERAL MOTORS CORP.



C2



C3

G98D12222

Fig. 3: Identifying Seat Control Module & Driver's Seat Relay Center Connectors C2 & C3 Terminals

Courtesy of GENERAL MOTORS CORP.

Diagnostic Aids

- Monitor the position sensor reference parameter in the SCM data list, if the fault is

current disconnecting position sensor connectors or the in line connector to the steering column may help to determine where the fault is occurring.

- If the fault is not current and all the adjuster motors operate through the full range of adjustment the problem may be intermittent.

DTC B2172, B2177, B2182, B2187, B2192 & B2197: SEAT SWITCH SHORTED TO GROUND

Circuit Description

The seat adjuster switch signal circuits are supplied 12 volts through resistors within the Seat Control Module (SCM). When a seat adjuster switch is pressed the signal circuit is grounded. Closing the signal circuit to ground pulls the signal circuit voltage low indicating to the SCM the switch status is active.

Conditions For Setting The DTC

A seat adjuster switch input to the SCM is active for more than 20 seconds.

Action Taken When The DTC Sets

- A history DTC will be stored in the SCM.
- Memory seat module DTCs can only be set as history codes even if the fault is current.
- No driver warning message will be displayed for these DTCs.
- The seat adjuster function for which the DTC has set will be disabled for as long as the condition is current.

Conditions For Clearing The DTC

Memory seat module DTCs can only be cleared by using a scan tool or the IPC clearing DTCs feature.

Testing

1. If power seats diagnostic system check has been performed, go to next step. If power seats diagnostic system check has not been performed, go to **POWER SEATS DIAGNOSTIC SYSTEM CHECK**.
2. Connect scan tool to Data Link Connector (DLC). Select Seat Control Module (SCM) input display. Monitor power seat switch parameter which set DTC. If scan tool indicates status as ACTIVE, go to next step. If scan tool does not indicate status as ACTIVE, problem is intermittent. Check for poor connector terminal contact or stuck switch contacts.
3. Disconnect power seat switch connector. See **Fig. 4**. Monitor power seat switch parameter on scan tool. If scan tool indicates status as ACTIVE, go to next step. If scan tool does not indicate status as ACTIVE, go to step 5.
4. Check seat switch signal circuit which set DTC for short to ground in wire between

SCM and power seat switch. See **WIRING DIAGRAMS** . If problem is found, repair as necessary and go to step 7 . If circuit is okay, go to step 6 .

5. Replace power seat switch. See **POWER SEAT SWITCH** . After repairs, go to step 7 .
6. Replace SCM. See **SEAT CONTROL MODULE** . After repairs, go to next step.
7. Turn ignition off. Reconnect all disconnected components. Turn ignition on. Using scan tool, clear all DTCs. Go to **POWER SEATS DIAGNOSTIC SYSTEM CHECK** .

Diagnostic Aids

- If the switch status on the scan tool goes from active when connected to inactive when switch is disconnected, the switch contacts may be stuck.
- If the fault is not current, the problem may be intermittent.

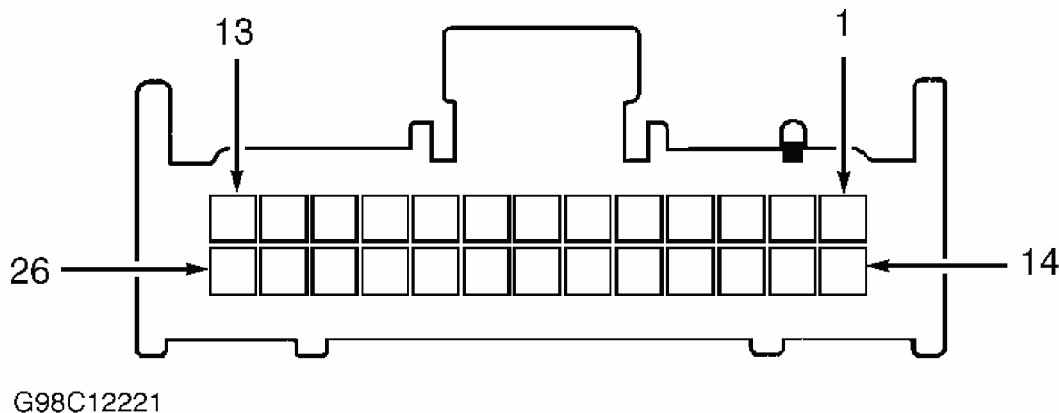


Fig. 4: Identifying Power Seat Switch Connector & Seat Control Module/Seat Relay Center Connector C1 Terminals

Courtesy of GENERAL MOTORS CORP.

DTC B2242 & 2244: MEMORY 1 OR 2 SIGNAL CIRCUIT SHORT TO GROUND

NOTE: See **POWER MIRRORS** or **POWER WINDOWS** .

Circuit Description

The driver door switch signal circuits provide input to the Driver Door Module (DDM) when the memory 1 or memory 2 select switch is activated. These inputs allow the DDM to detect a memory function recall request. The DDM provides power and ground to the memory switches. When a memory select switch is activated, ground is supplied through the memory

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select switch to the signal circuit, which is pulled low. When the DDM detects low voltage on the signal circuit, it will activate the memory functions and also send a message on the serial data line to other modules responsible for memory recall functions. The DDM monitors the signal circuits to determine how long the ground has been applied. If the DDM detects that a ground is applied for greater than 20 seconds, a DTC is set.

Conditions For Setting The DTC

- The DDM detects a short to ground on a memory 1 or memory 2 select switch signal circuit.
- Condition must be present for greater than 20 seconds.

Action Taken When The DTC Sets

- Stores a history DTC B2242 or B2244 in the DDM memory.
- These DTCs can only be set as a history code even if the malfunction is current.
- No driver warning message will be displayed for this DTC.

Conditions For Clearing The DTC

The DDM no longer detects a short to ground on a memory 1 or memory 2 select switch signal circuit for greater than 20 seconds, and:

- The DTC is cleared using the IPC clearing feature, or
- The DTC is cleared using a scan tool.

Testing

1. If door systems diagnostic system check has been performed, go to next step. If door systems diagnostic system check has not been performed, see **DIAGNOSTIC SYSTEM CHECK - DOOR SYSTEMS** .
2. Install scan tool. Turn ignition on, engine off. Using scan tool, check appropriate memory select switch parameter in Driver Door Module (DDM). If scan tool displays INACTIVE, go to next step. If scan tool does not display INACTIVE, go to step 4 .
3. Activate appropriate memory select switch. Using scan tool, observe appropriate memory select switch parameter in DDM inputs data list. If memory select switch parameter changes state, problem is intermittent. Check wiring and connectors for poor terminal contact. If memory select switch parameter does not change state, go to next step.
4. Turn ignition off. Disconnect driver door switch. Turn ignition on, engine off. Using scan tool, check appropriate memory select switch parameter in DDM inputs data list. If scan tool displays INACTIVE, go to step 7 . If scan tool does not display INACTIVE, go to next step.
5. Check appropriate signal circuit for a short circuit to ground. See **WIRING**

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DIAGRAMS . After repair, go to step 10 . If signal circuit is okay, go to next step.

6. Check for poor connection at DDM connector. Repair as necessary, then go to step 10 . If connection is okay, go to step 8 .
7. Check for poor connection at driver door switch connector. Repair as necessary, then go to step 10 . If connection is okay, go to next step.
8. Replace DDM and programming replacement DDM. See **DOOR CONTROL MODULE REPLACEMENT** . After replacement and programming, go to step 10 .
9. Replace driver door switch. See **FRONT DOOR SWITCH REPLACEMENT** . After replacement, go to next step.
10. Turn ignition off. Reconnect all disconnected components. Turn ignition on. Using scan tool, clear all DTCs. If DTCs reoccur, go to step 2 .

Diagnostic Aids

The following conditions may cause an intermittent malfunction:

- There is an intermittent short to ground in the memory 1 or the memory 2 select switch signal circuit.
- The memory 1 or the memory 2 select switch is shorted to ground internally or is sticking.
- The memory 1 or the memory 2 select switch was pressed for longer than 20 seconds.

If the DTC does not reset after the code is cleared, the problem may be intermittent.

DTC B2600: SEAT MOTOR SHORTED TO BATTERY VOLTAGE

Circuit Description

The seat adjuster motors are controlled by the Seat Control Module (SCM) through the adjuster motor control circuits. In an inactive state the adjuster motor control circuits are grounded through switch contacts within the SCM. Adjuster motor operation occurs when the SCM switches one of the adjuster motor control circuits to battery voltage. The direction of the adjuster motor rotation is determined by which of the control circuits is switched to battery positive and which remains grounded.

Conditions For Setting The DTC

- The SCM detects voltage on an adjuster motor control circuit while no output function is active.
- The condition must be present for 2 seconds.

Action Taken When The DTC Sets

- A history DTC will be stored in the SCM.

- Memory seat module DTCs can only be set as history codes even if the fault is current.
- No driver warning message will be displayed for this DTC.
- The seat adjuster motor for which the DTC has set will be disabled for as long as the fault is current.

Conditions For Clearing The DTC

Memory seat module DTCs can only be cleared by using a scan tool or the IPC clearing DTCs feature.

Testing

1. If power seats diagnostic system check has been performed, go to next step. If power seats diagnostic system check has not been performed, go to **POWER SEATS DIAGNOSTIC SYSTEM CHECK** .
2. Attempt to operate telescoping steering column and all seat adjuster motors through full range of adjustment. If all SCM functions operate correctly, problem is intermittent. Check electrical connectors for poor terminal contact. If all SCM functions do not operate correctly, go to next step.
3. Disconnect SCM connector that corresponds with inoperative adjuster motor. See **Fig. 3** and **Fig. 4** . See **WIRING DIAGRAMS** . Check inoperative adjuster motor control circuits for a short circuit to voltage. If a short circuit is found and corrected, go to step 5 . If a short circuit is not found, go to next step.
4. Replace SCM. See **SEAT CONTROL MODULE** .
5. Using scan tool, clear DTCs. If DTCs reoccur, go to step 2 .

Diagnostic Aids

If the fault is not current and the telescoping steering column motor and all the seat adjuster motors operate properly, the fault may be intermittent.

DTC B2605, B2606 & B2607: SEAT POSITION SENSOR FAILURE**Circuit Description**

The seat adjuster motors are equipped with position sensors. The position sensors are supplied with a common 5-volt reference circuit and low reference circuit from the Seat Control Module (SCM). The SCM receives a signal voltage from each position sensor whenever a SCM output function is active.

Code Enable Criteria

The SCM detects a switch signal active or a memory function request.

Conditions For Setting The DTC

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- The SCM detects the position sensor signal circuit less than 0.1 volt or more than 4.78 volts.
- The condition must be present for 2 seconds.

Action Taken When The DTC Sets

- A history DTC is stored in the SCM.
- Memory seat module DTCs can only be set as history codes even if the malfunction is current.
- The memory functions of the adjuster motor for which the DTC has set will be disabled for as long as the fault is current.

Conditions For Clearing The DTC

Memory seat module DTCs may be cleared only by using a scan tool or the IPC clearing DTCs feature.

Testing

1. If power seats diagnostic system check has been performed, go to next step. If power seats diagnostic system check has not been performed, go to **POWER SEATS DIAGNOSTIC SYSTEM CHECK** .
2. Connect scan tool to Data Link Connector (DLC). Select Seat Control Module (SCM) input display. Monitor position sensor parameter which set DTC. If scan tool indicates position sensor parameter is within .1-4.78 volts, problem is intermittent. Check wiring and connectors for poor terminal contact. If parameter is not within .1-4.78 volts, go to next step.
3. Disconnect appropriate position sensor/seat motor. Using scan tool, check position sensor parameter. If voltage parameter is 4.5 volts or more, go to next step. If voltage parameter is less than 4.5 volts, go to step 8 .
4. Connect 3-amp fused jumper wire between position sensor signal circuit and low reference voltage circuit (Black wire). See **IDENTIFYING POSITION SENSOR SIGNAL CIRCUITS** table. If scan tool indicates position sensor parameter is .5-volt or less, go to next step. If parameter is greater than .5-volt, go to step 9 .
5. Remove jumper wire. Connect 3-amp fused jumper wire between 5-volt reference circuit (Purple wire) and signal circuit of appropriate position sensor. See **WIRING DIAGRAMS** . If scan tool indicates position sensor parameter is 4.5 volts or more, go to step 7 . If parameter is less than 4.5 volts, go to next step.
6. Check 5-volt reference circuit (Purple wire) for a short circuit to ground. Repair as necessary, then go to step 15 . If Purple wire was okay, go to step 12 .
7. Check 5-volt reference circuit (Purple wire) for a short circuit to voltage. Repair as necessary, then go to step 15 . If Purple wire was okay, go to step 11 .
8. Check appropriate signal circuit for a short circuit to ground. See **IDENTIFYING**

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POSITION SENSOR SIGNAL CIRCUITS table. Repair as necessary, then go to step 15 . If signal circuit is okay, go to step 12 .

9. Check appropriate signal circuit for a short circuit to voltage, high resistance or an open circuit. Repair as necessary, then go to step 15 . If signal circuit is okay, go to next step.
10. Check low reference circuit (Black wire) for high resistance or an open circuit. Repair as necessary, then go to step 15 . If Black wire was okay, go to step 12 .
11. Check for poor connection at position sensor harness connector. Repair as necessary, then go to step 15 . If harness connector was okay, go to step 13 .
12. Check for poor connection at SCM harness connector. Repair as necessary, then go to step 15 . If harness connector was okay, go to step 14 .
13. Replace appropriate position sensor/seat motor. See **SEAT ADJUSTER MOTORS** . After replacement, go to step 15 .
14. Replace SCM. See **SEAT CONTROL MODULE** . After replacement, go to step 15 .
15. Using scan tool, clear DTCs. If DTCs reoccur, go to step 2 .

IDENTIFYING POSITION SENSOR SIGNAL CIRCUITS

Position Sensor	Wire Color
Horizontal	Dark Green
Front Vertical	Brown/White
Rear Vertical	Tan

Diagnostic Aids

Operate the adjuster motor through the full range of adjustment while monitoring the position sensor parameter on the scan tool.

SYSTEM TESTS

NOTE: For appropriate test, see **SYMPTOM INDEX** table.

SYMPTOM INDEX

Symptom	Perform Test
Power Seat Inoperative (With Memory)	<u>A</u>
Power Seat Inoperative (Without Memory)	<u>B</u>
Memory Seat Switch Indicator Malfunction	<u>C</u>
Memory Seat Feature Inoperative	<u>D</u>
Lumbar Inoperative	<u>E</u>

TEST A: POWER SEAT INOPERATIVE (WITH MEMORY)

NOTE: **DEFINITION: One or more of the memory seat adjustments are inoperative and no DTCs are set.**

1. Did you perform the Power Seat Systems Diagnostic System Check? If so, go to next step. If not, see **POWER SEATS DIAGNOSTIC SYSTEM CHECK** .
2. Attempt to operate all of the memory seat adjustments through the full range. Do all of the memory seat functions operate normal? If so, condition is intermittent. Check for loose or poor connections. If not, go to next step.
3. Install a scan tool. Observe the status of the inoperative seat adjuster switch. Press the inoperative seat adjuster switch. Does the scan tool indicate the switch status is active? If so, go to step 6 . If not, go to next step.
4. Disconnect the seat adjuster switch connector. Connect a fused jumper wire from the adjuster switch low reference circuit terminal to the inoperative switch signal circuit terminal in the harness connector. Does the scan tool indicate the switch status is active? If so, go to step 8 . If not, go to next step.
5. Test and repair the adjuster switch low reference circuit and the inoperative switch signal circuit for an open or high resistance. Did you find and correct the condition? If so, go to step 11 . If not, go to step 10 .
6. Disconnect the seat adjuster motor assembly connector. Connect a test light across the inoperative adjuster motor control circuit terminals in the harness connector. Press the inoperative seat adjuster switch. Does the test light illuminate? If so, go to step 9 . If not, go to next step.
7. Test and repair the inoperative seat adjuster motor control circuits for an open, high resistance, or short to ground. Did you find and correct the condition? If so, go to step 11 . If not, go to step 10 .
8. Replace the seat adjuster switch. See **POWER SEAT SWITCH** . After repairs are complete, go to step 11 .
9. Replace the inoperative seat adjuster motor. See **SEAT ADJUSTER MOTORS** . After repairs are complete, go to step 11 .
10. Replace the memory seat module located under power seat. See **POWER SEAT** . After repairs are complete, go to step 11 .
11. Operate the system in order to verify the repair. Did you correct the condition? If so, system is okay. If not, go to step 3 .

TEST B: POWER SEAT INOPERATIVE (WITHOUT MEMORY)

NOTE: **DEFINITION: One or more of the driver or passenger power seat functions are inoperative.**

1. Did you review the Power Seat System Description and Operation and perform the necessary inspections? If so, go to next step. If not, see **DESCRIPTION & OPERATION** .

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2. Attempt to operate all of the power seat adjustments through their full range. Do all of the power seat functions operate properly? If so, condition is intermittent. Check for loose or poor connections. If not, go to next step.
3. Are all the power seat inoperative in all direction? If so, go to next step. If not, go to step 10 .
4. Disconnect the seat relay center. Connect a test light between the battery positive voltage supply circuit at the harness connector pin C1-3 and a good ground. Does the test light illuminate when the battery positive supply circuit contacted to ground? If so, go to next step. If not, go to step 19 .
5. Connect a test light between the battery positive voltage supply circuit at the harness connector pin C3-A and a good ground. Does the test light illuminate when the battery positive supply circuit contacted to ground? If so, go to next step. If not, go to step 20 .
6. Connect the test light between the battery positive voltage and the ground circuit of the seat relay center. Does the test light illuminate? If so, go to next step. If not, go to step 21 .
7. Connect the seat relay center harness connector Connect a test light to a battery positive voltage terminal, and back probe the ground circuit at the seat adjuster switch harness connector. Does the test light illuminate? If so, go to next step. If not, go to step 12 .
8. Disconnect the seat adjuster switch harness connector. The test light connected to ground, back probe each seat adjuster switch signal circuit at the harness connector of the seat relay center. Does the test light illuminate for the appropriate seat adjuster switch signal circuit probed? If so, go to step 17 . If not, go to step 16 .
9. Disconnect the seat adjuster switch harness connector. Connect a test light to ground, and probe both the inoperative power seat adjuster switch signal circuits one a time. Observe the test light. Does the test light illuminate for the appropriate power seat switch signal circuit probed? If so, go to next step. If not, go to step 13 .
10. Connect a fused jumper wire from the inoperative power seat switch signal circuit to ground. Does the seat adjuster motor operate when the switch signal circuit contacted to ground? If so, go to step 14 . If not, go to next step.
11. Connect the seat adjuster switch harness connector. Disconnect the inoperative seat adjuster motor harness connector. Connect a test light across the inoperative adjuster motor control circuit terminals. Press the inoperative seat adjuster switch in both directions. Does the test light illuminate when the switch is pressed in both directions? If so, go to step 18 . If not, go to step 15 .
12. Test the ground circuit of the seat adjuster switch for an open or high resistance. Did you find and correct the condition? If so, go to step 25 . If not, go to step 16 .
13. Test the inoperative power seat switch signal circuit between the seat relay center harness connector and the seat relay center for open or high resistance, or short to ground. Did you find and correct the condition? If so, go to step 25 . If not, go to step 16 .
14. Test the inoperative power seat adjuster switch signal circuit for an open or high

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- resistance or short to ground. Did you find and correct the condition? If so, go to step 25 . If not, go to step 17 .
15. Test the seat motor control circuit for open or high resistance. Did you find and correct the condition? If so, go to step 25 . If not, go to step 16 .
 16. Inspect for poor connection at the harness connector of the seat relay center. Did you find and correct the condition? If so, go to step 25 . If not, go to step 24 .
 17. Inspect for poor connection at the harness connector of the seat adjuster switch. Did you find and correct the condition? If so, go to step 25 . If not, go to step 22 .
 18. Inspect for poor connection at the harness connector of the seat adjuster motor. Did you find and correct the condition? If so, go to step 25 . If not, go to step 23 .
 19. Repair the battery positive voltage supply circuit at the harness connector pin C1-3 for open or high resistance, or short to ground. After repairs are complete, go to step 25 .
 20. Repair the battery positive voltage supply circuit at the harness connector pin C3-A for open or high resistance, or short to ground. After repairs are complete, go to step 25 .
 21. Repair the ground circuit of the seat relay center for open or high resistance. After repairs are complete, go to step 25 .
 22. Replace the seat adjuster switch. See **POWER SEAT SWITCH** . After repairs are complete, go to step 25 .
 23. Replace the inoperative seat adjuster motor. See **SEAT ADJUSTER MOTORS** . After repairs are complete, go to step 25 .
 24. Replace the seat relay center. After repairs are complete, go to step 25 .
 25. Operate the system in order to verify the repair. Did you correct the condition? If so, repairs are complete. If not, return to step 2 .

TEST C: MEMORY SEAT SWITCH INDICATOR MALFUNCTION

NOTE: **DEFINITION:** The memory 1 or 2 select indicators are inoperative or always on.

1. If power seats diagnostic system check has been performed, go to next step. If power seats diagnostic system check has not been performed, go to **POWER SEATS DIAGNOSTIC SYSTEM CHECK** .
2. Verify fault is present. If fault is not present, problem is intermittent. Check wiring and connectors for poor terminal contact. If fault is still present, go to next step.
3. If malfunctioning indicator is always on, go to next step. If indicator is never on, go to step 5 .
4. Check appropriate memory select indicator control circuit for a short circuit to ground. See **WIRING DIAGRAMS** . Repair wiring as necessary, then go to step 11 . If wiring is okay, go to step 9 .
5. Disconnect left door switch connector. Connect test light between battery voltage and appropriate memory select indicator control circuit terminal in door switch harness

- connector. See **WIRING DIAGRAMS** . Install scan tool. Display Driver Door Module (DDM) special functions mirror test. Command appropriate memory indicator on. If test light comes on, go to step 7 . If test light does not come on, go to next step.
6. Check appropriate memory select indicator control circuit for an open circuit or high resistance. See **WIRING DIAGRAMS** . Repair wiring as necessary, then go to step 11 . If wiring is okay, go to step 9 .
 7. Repair poor connection at left door switch, then go to step 11 . If connection is okay, go to step 8 .
 8. Replace left door switch. See **FRONT DOOR SWITCH REPLACEMENT** . After repair, go to step 11 .
 9. Repair poor connection at DDM, then go to step 11 . If connection is okay, go to next step.
 10. Replace DDM. See **DOOR CONTROL MODULE REPLACEMENT** . After repair, go to next step.
 11. Operate seat and verify repair. If a malfunction is still present, go to step 3 .

TEST D: MEMORY SEAT FEATURE INOPERATIVE

1. If power seats diagnostic system check has been performed, go to next step. If power seats diagnostic system check has not been performed, go to **POWER SEATS DIAGNOSTIC SYSTEM CHECK** .
2. If memory seat recall functions operate correctly, problem is intermittent. Check wiring and connectors for poor terminal contact. If functions do not operate correctly, go to next step.
3. Install scan tool and display Driver Door Module (DDM) data list. Press appropriate memory select switch. If scan tool indicates switch status is active, go to step 6 . If scan tool does not indicate switch status is active, go to next step.
4. Disconnect left door switch. Connect fused jumper wire between appropriate memory select switch signal circuit terminal and ground circuit terminal (Black wire) in door switch harness connector. If scan tool indicates switch status is ACTIVE, go to step 8 . If scan tool does not indicate switch status is ACTIVE, go to next step.
5. Check appropriate memory select switch signal circuit for an open circuit or high resistance. See **WIRING DIAGRAMS** . Repair as necessary, then go to step 14 . If circuit is okay, go to step 10 .
6. Check position sensor/seat motor 5-volt reference circuit (Purple wire) for open circuit or high resistance. Repair as necessary, then go to step 14 . If circuit is okay, go to next step.
7. Check position sensor/seat motor low reference voltage circuit (Black wire) for an open circuit or high resistance. Repair as necessary, then go to step 14 . If circuit is okay, go to step 12 .
8. Repair poor connection at left door switch, then go to step 14 . If connection is okay, go

to next step.

9. Replace left door switch. See **FRONT DOOR SWITCH REPLACEMENT** . After repair, go to step 14 .
10. Repair poor connection at DDM, then go to step 14 . If circuit is okay, go to next step.
11. Replace DDM. See **DOOR CONTROL MODULE REPLACEMENT** . After repair, go to step 14 .
12. Repair poor connection at SCM, then go to step 14 . If connection is okay, go to next step.
13. Replace SCM, then go to next step. See **SEAT CONTROL MODULE** .
14. Operate seat and verify repair. If a malfunction is still present, go to step 3 .

TEST E: LUMBAR SUPPORT INOPERATIVE

1. Did you review the Description and Operation and perform the necessary inspections? If so, go to next step. If not, see **DESCRIPTION & OPERATION** .
2. Operate lumbar support. If lumbar support operates correctly, problem is intermittent. Check wiring and connector for poor terminal contact. If lumbar support does not operate correctly, go to next step.
3. If all driver and passenger lumbar features are inoperative, go to next step. If all features are not inoperative, go to step 6 .
4. Check voltage supply circuits between power seat switch and lumbar pump for open circuit or high resistance, or short circuit to ground. See **WIRING DIAGRAMS** . Repair wiring as necessary, then go to step 11 . If wiring is okay, go to next step.
5. Repair lumbar pump ground circuit (Black wire) for an open circuit or high resistance, then go to step 11 . If wiring is okay, go to next step.
6. Disconnect power seat switch. Connect fused jumper wire between battery voltage and inoperative lumbar relay control circuit. See **WIRING DIAGRAMS** . If lumbar operates, go to step 8 . If lumbar does not operate, go to next step.
7. Repair inoperative lumbar relay control circuit (Orange wire) for an open circuit or high resistance. See **WIRING DIAGRAMS** . After repair, go to step 11 . If wiring is okay, go to step 9 .
8. Replace power seat switch, then go to step 11 . See **POWER SEAT SWITCH** .
9. Repair air lines and bladders for leaks or restrictions, then go to step 11 . If air lines and bladders are okay, go to next step.
10. Replace lumbar pump, then go to next step. See **SEAT CONTROL MODULE** .
11. Operate seat and verify repair. If a malfunction is still present, go to step 3 .

REMOVAL & INSTALLATION

CAUTION: When battery is disconnected, vehicle computer and

memory systems may lose memory data. Driveability problems may exist until computer systems have completed a relearn cycle. See COMPUTER RELEARN PROCEDURES before disconnecting battery.

LUMBAR BLADDER

Removal

The lumbar bladders and bolster bladders are serviced as 1 lumbar/lateral bladder system. The bladder system is serviced separate from the module assembly. The bladder service part is supplied with the necessary connector fittings. The bladder to module hoses are labeled by number to aid in assembly.

1. Raise the seat to the full up position.
2. Remove the seat. See **POWER SEAT** .
3. Remove the seat cushion cover and pad. See **SEAT CUSHION COVER** .
4. Unhook the J strip attaching the bottom of the seat back insert pillow.
5. Remove the 2 fir tree fasteners attaching the upper sides of the insert pillow.
6. Unzip the upper insert pillow zipper.
7. Remove the seat back insert pillow.
8. Remove the 4 lower fir tree fasteners attaching the seat back cover.
9. Peel the trim cover from the bolsters and reposition the trim up over the top of the seat back. (trim will be inside out).
10. Peel the foam pad from the bolsters and reposition to expose the lumbar system.
11. Remove the lumbar/lateral bladder system from the seat back.
12. Remove the control module "J" clips from the seat support wires.
13. Reposition the control module to the top of the seat support wires. (It is not necessary to remove the lumbar pump).
14. Cut the 3 hoses connecting the control module to the lumbar/lateral bladders 3" (75 mm) from the control module.
15. Remove the tie strap attaching the hoses to the seat frame.
16. Remove the lumbar/lateral bladder assembly. See **Fig. 5** .

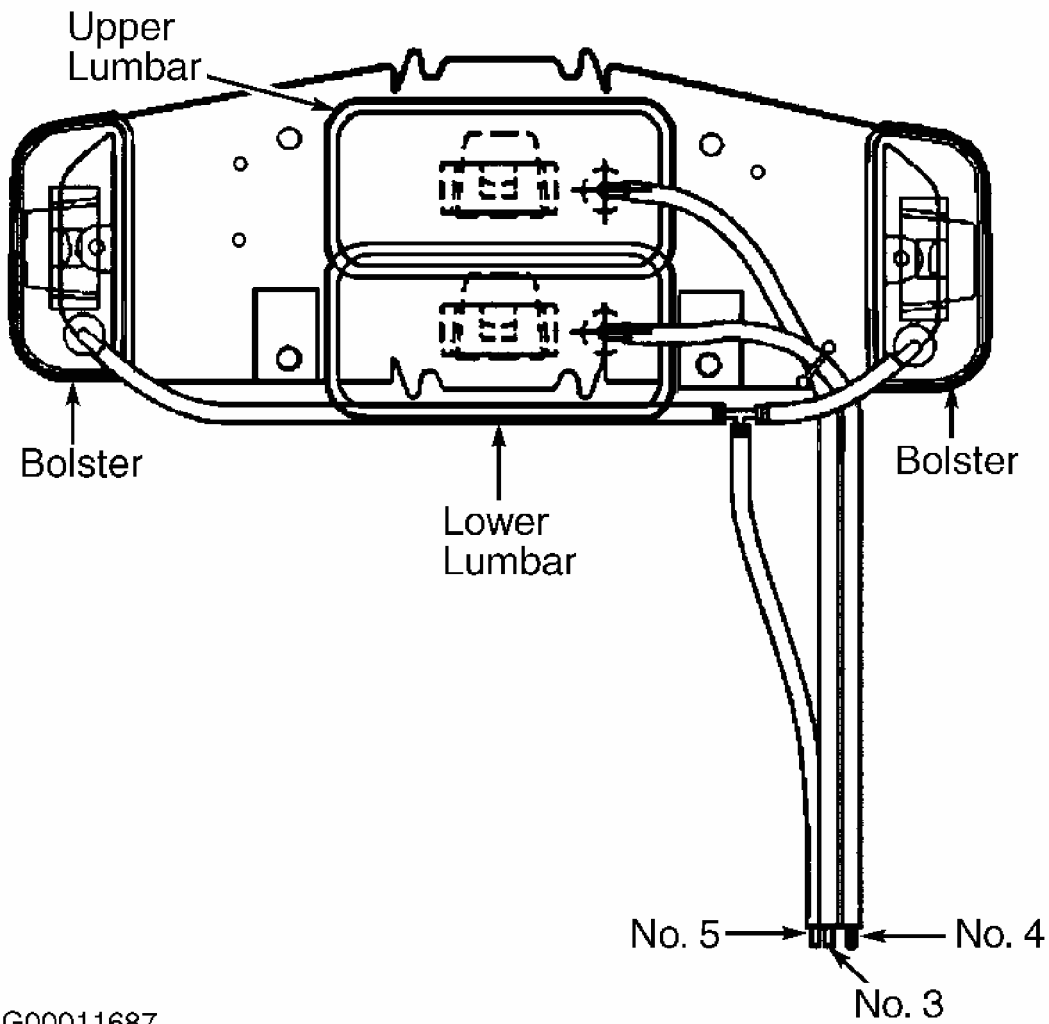
Installation

1. Position the lumbar/lateral support bladders to the seat back inserting the tabs into the seat back.
2. Route the hoses through the pivot area and tie strap them to the seat frame under the seat back adjuster.
3. Connect the seat switch to the harness.

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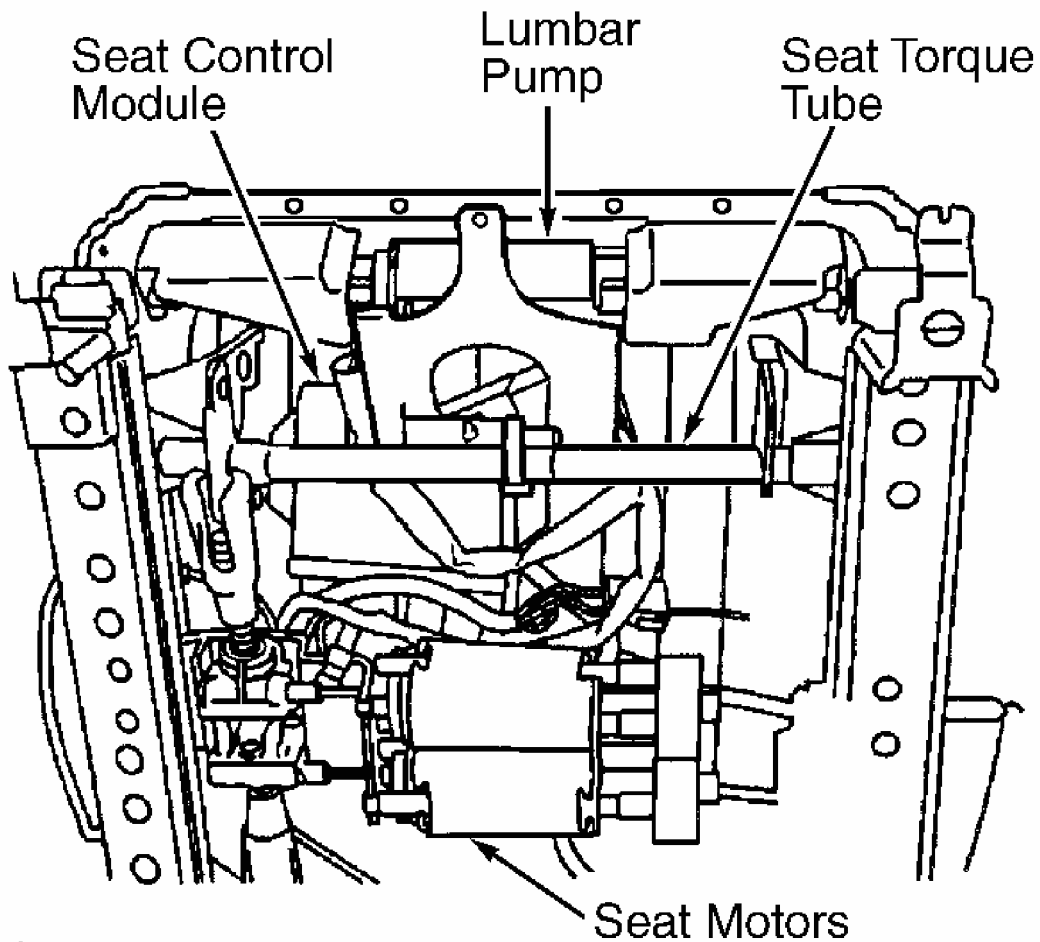
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4. Connect power to the seat. It may be necessary to position the seat in the vehicle.
5. Operate the upper lumbar control and use the procedure in step eight to connect the hose that pressurized to the bladder hose labeled #3.
6. Operate the lower lumbar control and use the procedure in step eight to connect the hose that pressurized to the bladder hose labeled #4.
7. Operate the bolster control and use the procedure in step eight to connect the hose that pressurized to the bladder hose labeled #5.
8. Using Loctite(tm) 406, or equivalent, glue the module hoses to the fittings on the bladder hoses.
 - A. Position the hose so it is just over the edge of the barb on the attaching fitting.
 - B. Apply the adhesive completely around the fitting.
 - C. Quickly push the hose the rest of the way onto the fitting.
9. Install the control module to the seat support wires with the "J" clips.
10. Disconnect the seat electrical connector and remove the seat from the vehicle.
11. Install the seat cushion cover.
12. Install the seat back foam pad over the bolsters.
13. Install the seat back cover over the bolsters.
14. Attach the cover and the bladder assembly with the 4 lower fir tree fasteners.
15. Zip the upper seat back zipper closed.
16. Tuck the cover over the corners of the hinges.
17. Install the insert pillow.
18. Install the seat.



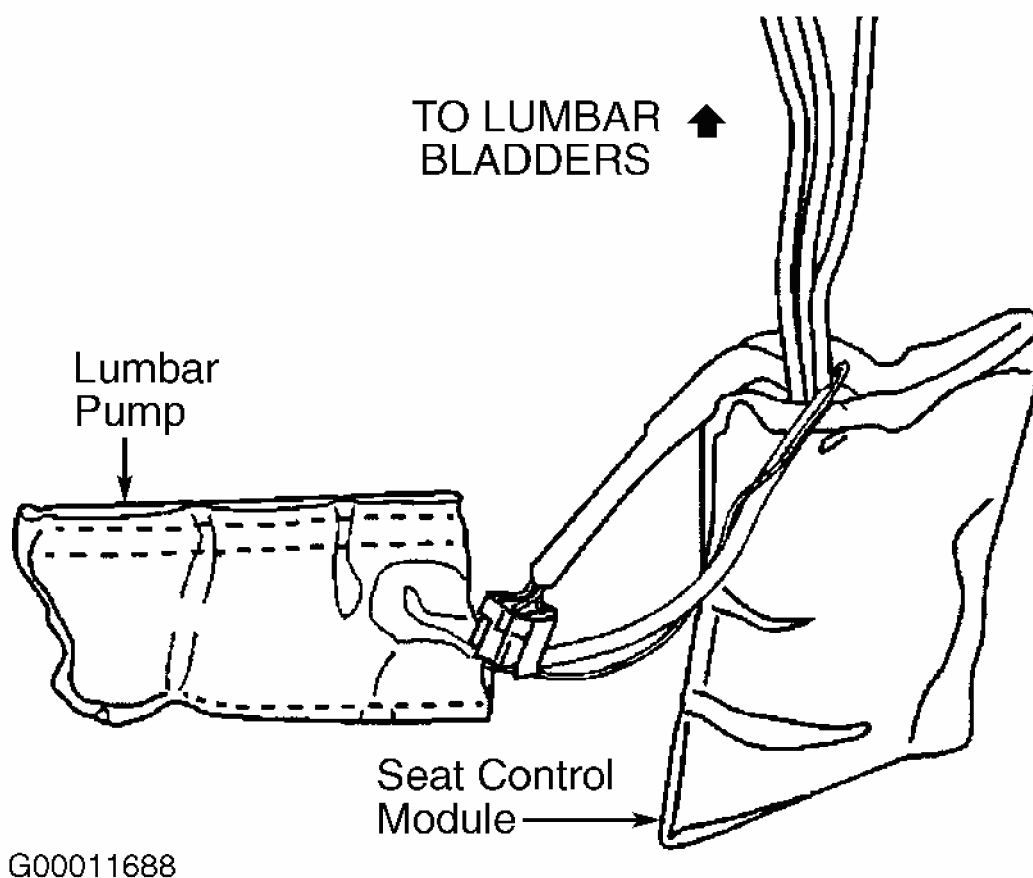
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Fig. 5: Identifying Lumbar Bladder Assembly
Courtesy of GENERAL MOTORS CORP.



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Fig. 6: Locating Lumbar Pump/Seat Control Module (Installed)
Courtesy of GENERAL MOTORS CORP.



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Fig. 7: Identifying Lumbar Pump/Seat Control Module (Removed)
 Courtesy of GENERAL MOTORS CORP.

SEAT CONTROL MODULE

NOTE: Lumbar pump and SCM are connected together by a common wiring harness and hose assembly. After SCM replacement, reprogram steering column soft stops. See TELESCOPING STEERING COLUMN CALIBRATION .

Removal & Installation

1. Remove front seat. See POWER SEAT . Remove seat cushion cover. See SEAT CUSHION COVER . Remove tie straps attaching pump to seat torque tube. See Fig. 6 . Remove SCM by unhooking "J" clips from seat cushion springs. Disconnect harness connectors. Cut control module-to-air bladder hoses approximately 3" (76.2 mm) from control module. Remove lumbar pump/SCM. See Fig. 7 .
2. To identify hoses for lumbar bladders, see Fig. 5 . Use Loctite 406 or equivalent to attach lumbar hoses to new SCM.

CAUTION: Use care not to use excessive air pressure to inflate air bladders or damage to bladders and/or seat may occur.

3. Use a very small amount of air from air hose and blow into air bladder lines to locate upper lumbar bladder. Connect upper lumbar bladder to hose on new module labeled #3.
4. Use a very small amount of air from air hose and blow into air bladder lines to locate lower lumbar bladder. Connect lower lumbar bladder to hose on new module labeled #4.
5. Use a very small amount of air from air hose and blow into air bladder lines to locate side bolster bladders. Connect side bolster bladder to hose on new module labeled #5.
6. To complete installation, reverse removal procedure.

POWER SEAT

Removal

1. Place a protective cover over the sill plate and door trim panel and/or remove the roof lift off panel (coupe), or lower the folding top (convertible), to provide additional space for seat removal.
2. Tilt the steering wheel full up.
3. Position the seat rearward.
4. Remove the push pins and covers from the front of the adjuster legs.
5. Remove the nuts from the front of the adjuster legs.
6. Position the seat forward. If the rear adjuster nuts are accessible skip to step 9 . If the seat will not move and the rear adjuster nuts are not accessible determine if the motor or the adjuster is the cause and perform step 7 or 8 .
7. If the power seat motor is inoperative and the rear adjuster nuts are not accessible perform the following steps:
 - A. Power up and raise the front of the power seat to gain access to the forward motor bracket.
 - B. Reach under the seat and cut the tie strap attaching the front motor bracket to the torque tube.
 - C. Bend the bracket ends inward and slide the bracket off the adjuster transmissions.
 - D. Pull the forward motor cables from the adjusters.
 - E. Insert one end of a removed cable into a low speed drill and insert the other end into the adjuster.
 - F. With the low speed drill move the adjuster forward, alternating sides, until the rear adjuster nuts are exposed.
8. If the seat adjuster is inoperative and the rear adjuster nuts are not accessible perform the following steps:

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- A. Remove the recliner handle.
- B. Remove the seat side trim panel.
- C. Reach under the seat cushion and cut the seat cover tie string at the front center of the seat cushion.
- D. Lift the seat cushion cover and foam to access the 4 seat cushion to frame attaching bolts.
- E. Remove the seat cushion to frame attaching bolts.
- F. Cut the tie straps mounting the lumbar pump pouch and reposition the pump and pouch up through the seat support wires.
- G. Remove the memory seat control module from the seat.
- H. Disconnect the seat belt harness rosebud clip (drivers seat).
 - I. Disconnect the electrical connectors.
 - J. Remove the seat.
9. Remove the nuts attaching the rear adjuster legs.
10. Disconnect the seat electrical connector.
11. Remove the seat and/or the adjuster.
12. Transfer parts as necessary.

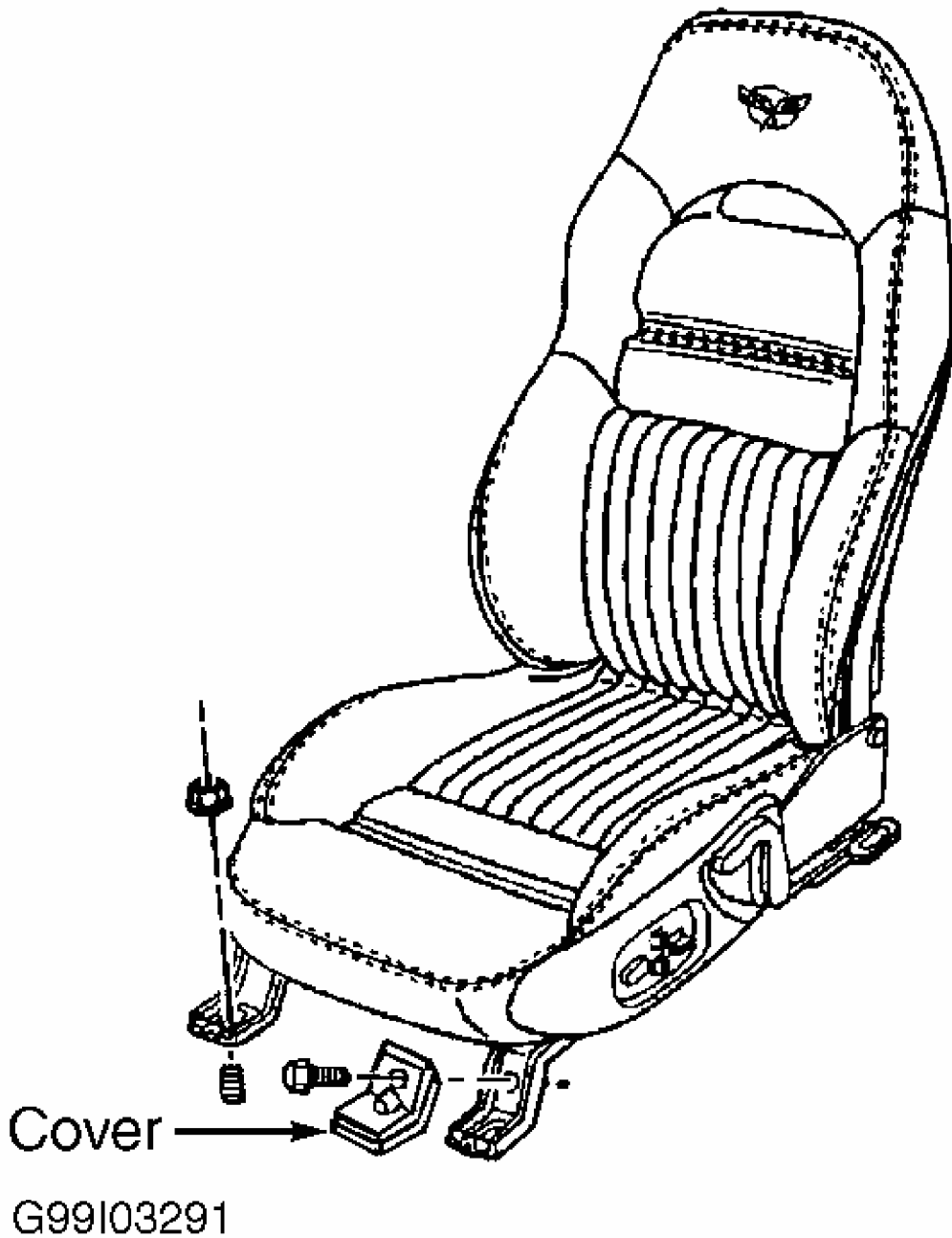


Fig. 8: Removing Power Seat Front Covers & Nuts
Courtesy of GENERAL MOTORS CORP.

Installation

1. Install the adjuster(s) to the seat if removed.

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2. Install the seat cushion cover, if removed.
3. Install the buckle side of the seat belt, if removed. Tighten the seat belt buckle side mounting nut to 37 ft. lbs. (50 N.m).
4. Install the front motor bracket, if removed.
5. Install the lumbar pump, if removed.
6. Position the seat forward on the adjuster(s).
7. Position the seat with the adjuster on the rear studs.
8. Lift the front of the seat and connect the electrical connector.
9. Install the nut to the rear inboard stud (net locating stud).
10. Install the nut to the rear outboard stud. Tighten the adjuster mounting nuts to 37 ft. lbs. (50 N.m).
11. Move the seat rearward.
12. Install the nuts to the front adjuster legs. Tighten the adjuster mounting nuts to 37 ft. lbs. (50 N.m).
13. Install the adjuster leg covers.
14. Secure the covers with push pins.
15. Remove the protective cover and/or install the roof lift off panel, or raise the convertible top.

POWER SEAT ADJUSTER

Removal & Installation

1. Remove front seat. See **POWER SEAT** . Remove seat cushion cover. See **SEAT CUSHION COVER** . Remove seat cushion foam. Remove lumbar pump/SCM from seat frame and reposition on seat frame (if equipped).
2. Remove seat belt harness from seat frame (driver's seat). Remove SCM (if equipped). See **SEAT CONTROL MODULE** . Remove buckle side of seat belt. Remove bolts (design No. 1) or nuts (design No. 2) mounting seat to adjuster. Remove power seat adjuster.
3. Transfer parts over to new adjuster as necessary. To install, reverse removal procedure. Tighten seat frame to adjuster mounting bolts/nuts to 18 ft. lbs. (24 N.m). Tighten seat belt buckle side mounting nut to 37 ft. lbs. (50 N.m).

POWER SEAT SWITCH

Removal & Installation

Remove recliner handle. See **SEATBACK RECLINER HANDLE** . Remove screws attaching seat side trim panel. Rock panel side to side working the barrel post clip out of seat frame. Reposition seat side trim panel away from seat. Disconnect harness connector. Remove power seat switch. To install, reverse removal procedure. If necessary, remove front

seat to install front trim panel screw. See **POWER SEAT** .

SEAT ADJUSTER MOTORS

Removal

1. Remove front seat. See **POWER SEAT** . Remove lumbar pump (if equipped). See **SEAT CONTROL MODULE** . Slide front motor bracket to one side, and disconnect drive cable from adjuster. Slide bracket from adjuster motor. Slide bracket in opposite direction. Disconnect drive cable and remove bracket from that adjuster motor.
2. Position bracket outward. Disconnect harness connectors. Remove front adjuster motor. Mark location and position of rear adjuster motors for installation reference. Remove rear motors with wiring harness.

Installation

1. Position adjuster motor and wiring harness to seat frame. Reconnect drive cables to 2 rear motors and adjuster. Install rear motor mounting screws. Install front motor to bracket. Reconnect harness connectors.
2. Position bracket onto one adjuster motor. Insert drive cable into motor, and then into transmission (turn cable as necessary to allow cable to slide into transmission).
3. Repeat previous step to install other adjuster motor. Bend bracket ends outward enough to prevent bracket from sliding off transmissions. To complete installation, reverse removal procedure.

SEATBACK COVER

Removal & Installation (Base Seat)

Remove front seat. See **POWER SEAT** . Move seat to full forward position. Tilt seat back forward. Unzip seat back cover. Unhook seat back cover lower "J" strips by sliding cover sideways. Carefully slide and pull cover material out from under seat back release lever bezel. Carefully remove cover by unhooking hook and loop fasteners from foam pad. Remove the upper fasteners attaching foam pad (if removing the pad). Remove the foam pad (if necessary). To install, reverse removal procedure.

Removal & Installation (Sport Seat)

NOTE: There are 2 sizes of fir tree fasteners used. If head of fastener is 0.75" (19 mm) it is possible to remove the trim by slightly raising fir tree fasteners and then sliding seat back cover tab over head of fastener. If head of fir tree fastener is 1" (25 mm) it is necessary to remove fastener.

1. Remove front seat. See **POWER SEAT** . Unzip zipper at top of insert pillow. Tilt seat

back forward. Undo "J" strip at bottom of insert pillow. Move insert pillow upward to expose 2 upper fir tree fasteners that attach insert pillow to seat frame. Check size of fir tree fastener heads. Raise or remove upper fir tree (push-in) fasteners and detach seat back cover and insert pillow from seat frame. Remove insert pillow.

2. Unzip seat back cover upper zipper. Carefully slide and pull cover material out from under seat back release lever bezel. Pull seat back cover from bolsters. Remove fir tree fasteners from foam pad upper retaining straps (if replacing seat back pad). Remove foam pad (if replacing pad). To install, reverse removal procedure. Ensure fir tree fasteners are pushed in tight.

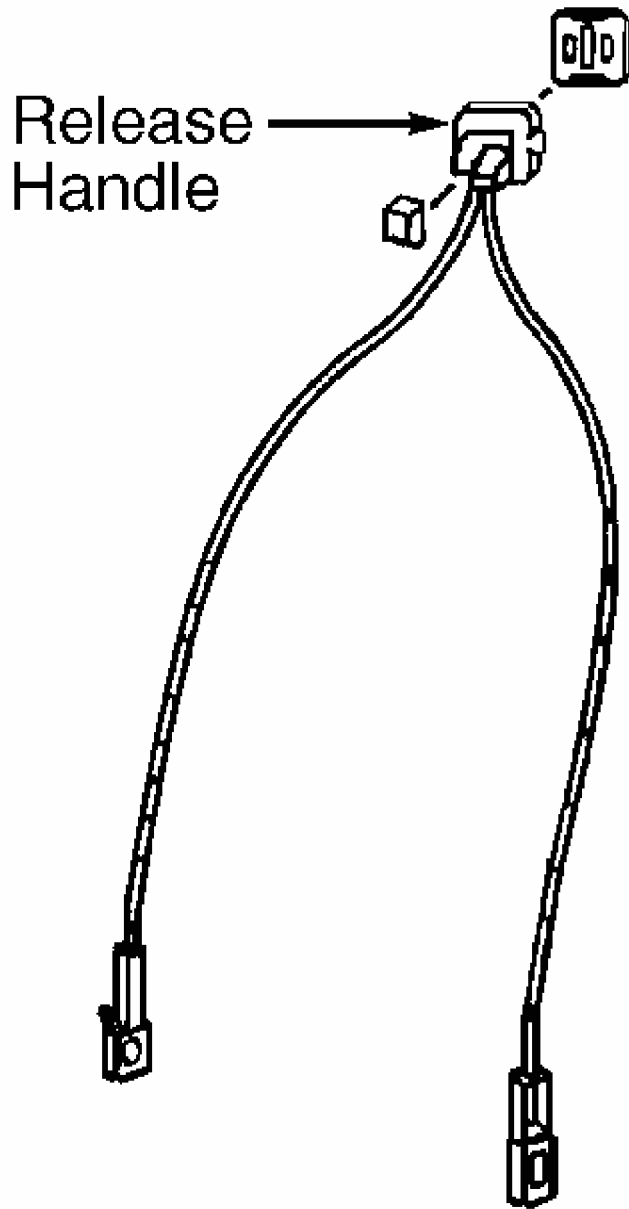
SEATBACK RELEASE MECHANISM

Removal & Installation

1. Remove the seat back trim cover. See **SEATBACK COVER** .
2. Remove the seat back free play retention cable from the rear of the seat back (passenger seat only). See **Fig. 9** .
3. Push down on the seat cushion to expose the hinge bolt nuts.
4. Remove the right and left hinge bolt nuts.
5. Remove the release cables from the hinge bolts.
6. Remove the release cable mechanism from the upper seat back by depressing the taps and pushing the release lever out of the seat back frame. See **Fig. 10** .
7. Remove the bezel from the release lever by spreading the bezel locking tabs.

Installation

1. Insert the release cables through the opening in the upper seat back frame.
2. Snap the release lever mechanism to the seat back frame.
3. Route the cables.
4. Install the release cables to the right and left hinges inserting the locking pins in the notches.
5. Apply Loctite(tm) 271 to the hinge bolts.
6. Install the nuts to the right and left hinge bolts. Tighten the hinge bolt nuts to 18 ft lbs (24 N.m).
7. Install the seat back free play retention cable (passenger seat only).
8. Install the seat back trim cover.
9. Install the release lever bezel.



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Fig. 9: Removing Seatback Release Mechanism Cable
Courtesy of GENERAL MOTORS CORP.

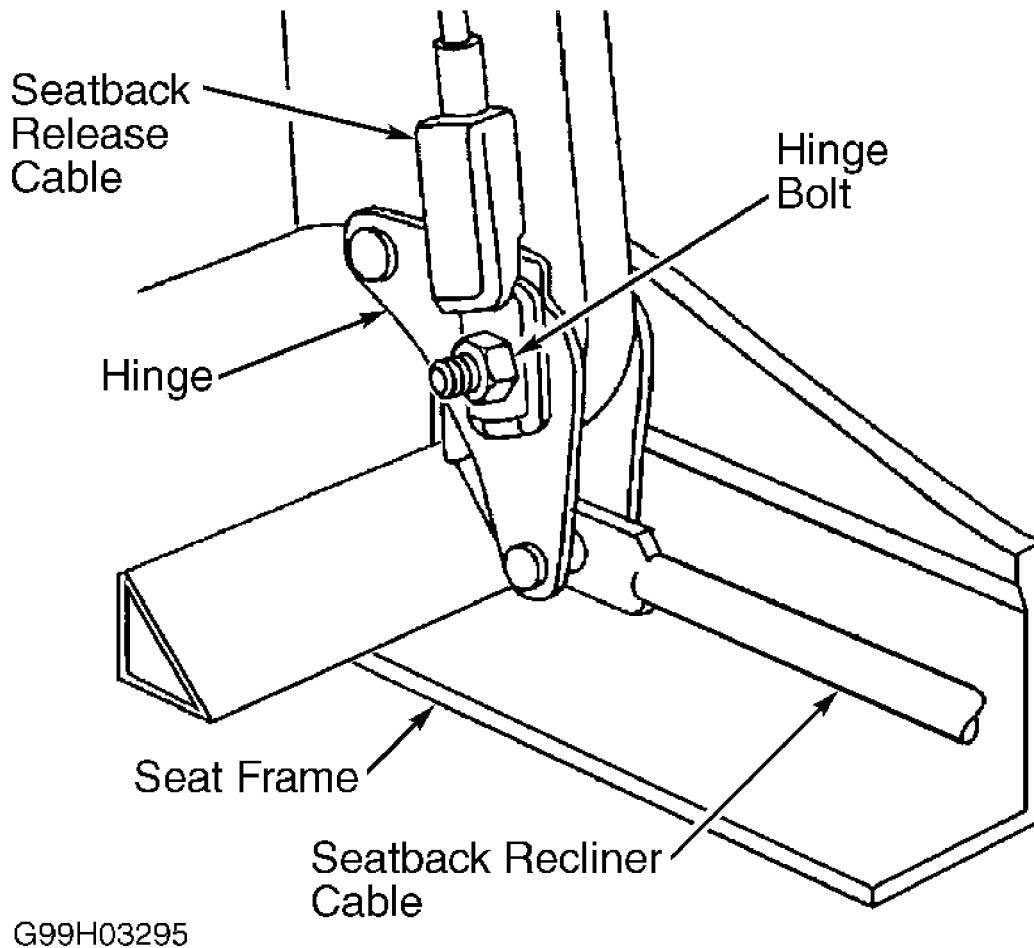


Fig. 10: Locating Seatback Release & Recliner Release Lever Cables
Courtesy of GENERAL MOTORS CORP.

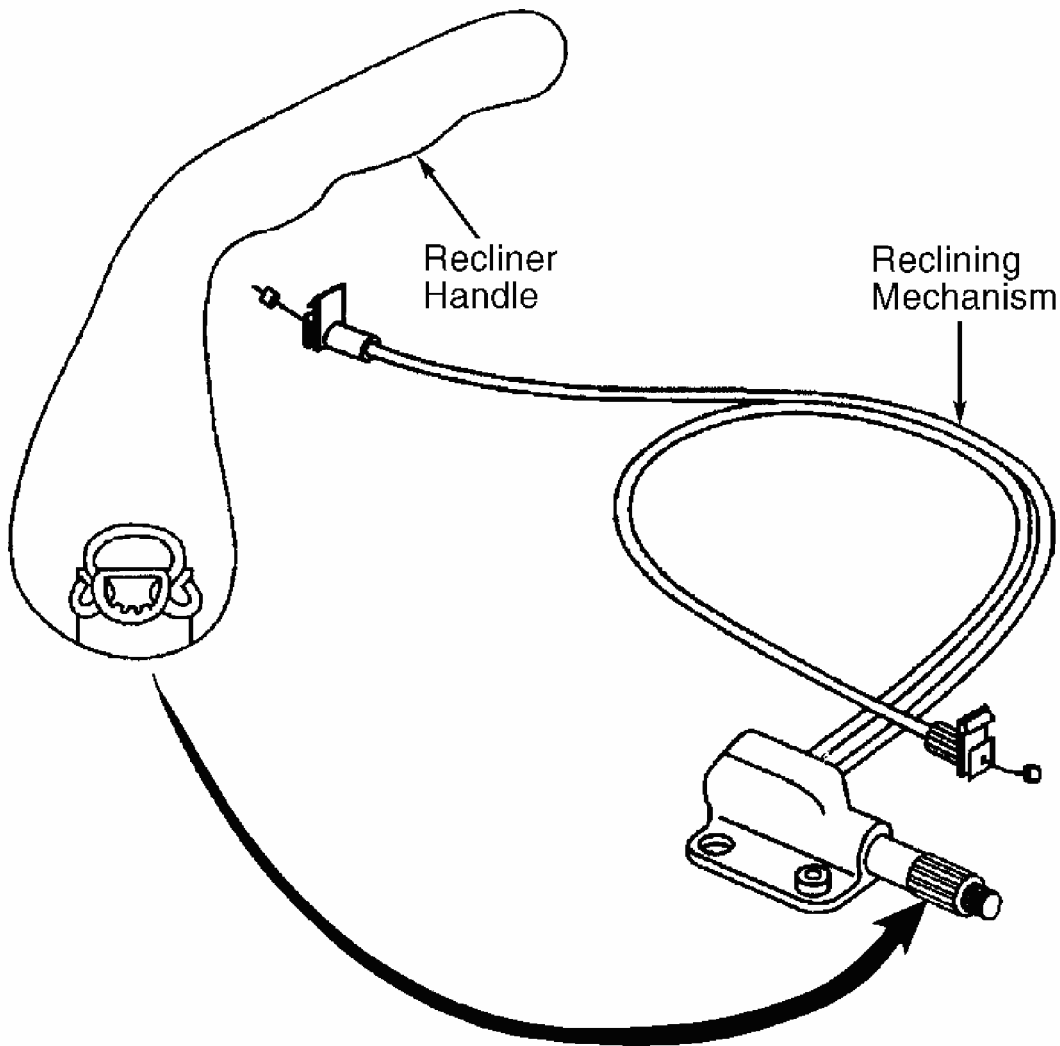
SEATBACK RECLINER HANDLE

Removal

1. With a suitable blunt ended tool inserted between the cushion and the handle push the handle retaining spring clip down. See **Fig. 11** .
2. Pull the handle from the shaft.

Installation

1. Position the handle retaining spring clip into the lock position.
2. Snap the handle onto the reclining mechanism shaft.



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Fig. 11: Identifying Recliner Mechanism Components
 Courtesy of GENERAL MOTORS CORP.

SEATBACK RECLINER ACTUATOR

NOTE: This is a manual recliner mechanism. Do not lubricate seatback recliner mechanism.

Removal

Remove power seat adjuster. See **POWER SEAT ADJUSTER** . Remove nuts and release cables from hinge bolts. See **Fig. 10** . Remove hinge bolts. Lay seatback down. Remove front actuator "E" clip and pin. Disconnect recliner cable from actuator. Remove "E" clip from rear pin. Raise seatback, and remove rear pin. Remove seatback recliner actuator. See **Fig. 11** .

Installation

Position hinge on actuator with arrow on hinge pointed forward. Install rear pin and "E" clip. Connect recliner cable with tab up. To complete installation, reverse removal procedure.

SEAT CUSHION COVER**Removal**

1. Remove front seat. See **POWER SEAT** . Remove seatback recliner handle. See **SEATBACK RECLINER HANDLE** . Remove power seat switch. See **POWER SEAT SWITCH** .
2. Remove hog rings from rear flap. Unfasten draw string, and remove hog rings attaching rear corners of seat cushion cover. Remove seat cushion cover.

Installation

1. Ensure recliner mechanism cable retention clips are securely snapped into actuators. If draw string was not cut in removal of seat cushion cover go to next step. If draw string was cut to assist in removing a non movable seat, go to step 3 .
2. With seat cushion cover properly positioned over foam and seat frame, tighten draw string at rear of seat and tie securely. Install hog rings attaching rear side corners of seat cushion cover. Install hog rings attaching rear center flap. To complete installation, reverse removal procedure.
3. Remove hog rings attaching seat cushion cover rear flap. Untie draw string. Make a very small 2 in (100 mm) cut on each side of cushion cover just in front of where draw string receded when it was cut. Pull draw string out enough to securely tie ends together. With seat cushion cover properly positioned over foam and seat frame, tighten draw string at rear of seat and tie securely. Install hog rings attaching rear side corners of seat cushion cover. Wrap front seat material around draw string and hog ring material to string. Ensure no sharp points of hog rings are pointed down. Install hog rings attaching rear center flap. To complete installation, reverse removal procedure.

WIRING DIAGRAMS

For power lumbar seats wiring, see **POWER SEATS** .

For power seat wiring, see **POWER SEATS** .

For power memory seats wiring, see **POWER SEATS** .