

SEATS - POWER

1998 Pontiac Bonneville

1998 ACCESSORIES & EQUIPMENT
General Motors Corp. - Power Seats

Pontiac; Bonneville

DESCRIPTION

The 45/55 split bench seat and sport bucket seats use individually controlled seat adjusters. Some models are available with memory seats and mirrors.

Sport bucket seat is equipped with power reclining seatback, which can be reclined about 20 degrees. Sport bucket seats incorporate a power inflate/deflate pneumatic lumbar system. Pneumatic system consists of console seat switch, seat air pump assembly, pneumatic seat control module and seat solenoid valve assemblies.

NOTE: For power seats with memory function, see MEMORY SYSTEM article.

OPERATION

POWER SEATS

Power seat uses 4 reversible motors that operate seat functions: Front height, rear height, forward/back and recline. Power for seat operation is supplied by a 25-amp circuit breaker in instrument panel fuse block. Each seat motor contains an internal electronic circuit breaker (PTC), which trips at the end of travel and resets when voltage is removed.

PNEUMATIC SPORT SEATS

When seat select switch is set in driver's (L on switch) or passenger's (R on switch) position, battery voltage is supplied to 4 comfort feature switches and a ground path is created for associated seat solenoid/valve assemblies. Four comfort feature switches operate inflate and deflate relays. These relays supply voltage of proper polarity to seat air pump assembly. Seat air pump assembly will operate in either direction to inflate or deflate seat bladders.

When any bladder becomes fully inflated or deflated, increased pressure or vacuum operates pressure cut-out switch, which energizes pressure cut-out relay. When pressure cut-out relay is energized, air pump motor circuit and solenoid valve circuit are interrupted.

COMPONENT LOCATIONS

COMPONENT LOCATIONS TABLE

Component	Location
Forward/Back Motor	Under Respective Front Seat
Front & Rear Height Motors	Under Respective Front Seat
Instrument Panel Fuse Block	Under Driver's Side Of Instrument Panel
Pneumatic Seat Control	Under Left Front Seat
Module (1)	
Recliner Motor	Under Respective Front Seat

Seat Air Pump Assembly Under Respective Front Seat
Seat Control Module (1) Under Left Front Seat
Seat Solenoid Valve Under Respective Front Seat
Assemblies (1)
Service Parts Under Spare Tire Cover
Identification Label

(1) - With sport seats.

ADJUSTMENTS

SEAT ADJUSTER PHASING

When installing power seat adjusters (except at back recliner), ensure each pair of adjusters is in phase with each other. When adjusters are out of phase, one adjuster will reach its maximum travel limit before the other, resulting in improper seat travel.

Horizontal Travel

Operate seat until one adjuster reaches full forward position. Detach horizontal drive cable from adjuster which has reached its travel limit. Operate seat forward until other adjuster reaches its full forward position. Reconnect drive cable of first adjuster. Adjusters are now in phase.

Vertical Travel (Front Or Rear)

1) Operate seat until one adjuster has reached fully raised position at both front and rear vertical travel limits. Disconnect both front and rear vertical drive cables from adjuster which has reached its travel limit.

2) Operate seat until other adjuster reaches fully raised position. Reconnect previously disconnected front and rear vertical drive cables. Seat should be in phase. If not, repeat procedure.

TROUBLE SHOOTING

NOTE: If seat motor internal circuit breaker has tripped, it will not reset until power has been removed from motor.

PRELIMINARY CHECKS

1) If power accessory circuit breaker opens whenever power seat switch is operated, check circuits for a short to ground. If entire seat does not move up and down, replace front seat switch. Ensure ground connections are clean and tight. 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.

Jerky Horizontal Operation

Check for improper lubrication of adjuster shoes and channels.

One Adjuster Will Not Operate Horizontally

Check for disconnected or damaged horizontal drive cable. Check for inoperative horizontal actuator. Replace horizontal actuator assembly if necessary.

One Adjuster Will Not Operate Vertically

Check for disconnected or damaged vertical drive cable. Check for inoperative vertical gearnut. Replace vertical actuator assembly if necessary.

Power Recliner Motor Operates, But Seatback Does Not Move

Check for disconnected or damaged drive cable. Check for damaged, broken or inoperable reclining actuator gearnut.

Jerky Power Recliner Operation

Check for kinked or damaged drive cable. Check for bind in reclining hinge arms. Check for damaged actuator gearnut. Lubricate any component, as necessary.

POWER SEATS DIAGNOSTIC SYSTEM CHECK

1) On both seats, move rear height switch up and down. Rear of seat should go up and down. If seat operates as specified, go to next step. If seat does not operate as specified, go to procedures in REAR HEIGHT DOES NOT MOVE UP & DOWN under SYMPTOM TESTING.

2) On both seats, move front height switch up and down. Front of seat should go up and down. If seat operates as specified, go to next step. If seat does not operate as specified, go to procedures in FRONT HEIGHT DOES NOT MOVE UP & DOWN under SYMPTOM TESTING.

3) On both seats, move entire seat switch forward and backward. Entire seat should move forward and backward. If seat does not operate as specified, go to ENTIRE SEAT DOES NOT MOVE FORWARD & BACK under SYMPTOM TESTING.

LUMBAR SUPPORT DIAGNOSTIC SYSTEM CHECK

1) Sit in driver's seat. Briefly hold lumbar switch in INFLATE position. Seat air pump should be heard running and driver's seat lumbar section should inflate. If pump and seat operate as specified, go to next step. If pump or seat do not operate as specified, see procedures in LUMBAR SUPPORT SEAT AIR PUMP INOPERATIVE or procedures in LUMBAR SUPPORT SEAT AIR PUMP RUNS FOR MORE THAN 20 SECONDS WITHOUT INFLATING under SYMPTOM TESTING.

2) Briefly hold driver's lumbar switch in DEFLATE position. Driver's seat lumbar section should deflate. If seat operates as specified, go to next step. If seat does not operate as specified, go to LUMBAR SUPPORT SEAT BLADDER DOES NOT DEFLATE under SYMPTOM TESTING.

3) Sit in passenger's seat. Briefly hold lumbar switch in INFLATE position. Seat air pump should be heard running and passenger's seat lumbar section should inflate. If pump and seat operate as specified, go to next step. If pump or seat do not operate as specified, go to LUMBAR SUPPORT SEAT AIR PUMP INOPERATIVE or LUMBAR SUPPORT SEAT AIR PUMP RUNS FOR MORE THAN 20 SECONDS WITHOUT INFLATING under SYMPTOM TESTING.

4) Briefly hold passenger's lumbar switch in DEFLATE position. Passenger's seat lumbar section should deflate. If seat operates as specified, system is operating properly. If seat does not operate as specified, go to LUMBAR SUPPORT SEAT BLADDER DOES NOT DEFLATE under SYMPTOM TESTING.

PNEUMATIC SPORT SEATS SYSTEM CHECK

1) Sit in either front seat and place the seat select switch toward the seat you are in. Briefly depress each seat switch and note operation and direction of movement. Seat should move in all directions that correspond with function switch depressed. If seat responds as specified, go to next step. If seat does not respond as

specified, go to PNEUMATIC SPORT SEATS under SYMPTOM TESTING.

2) Briefly depress all lumbar control buttons on seat switch to inflate lumbar supports. Lumbar should inflate as selected. If seat responds as specified, go to next step. If seat does not respond as specified, go to PNEUMATIC SPORT SEATS under SYMPTOM TESTING.

3) Briefly depress all lumbar control buttons on seat switch to deflate lumbar supports. Lumbar should deflate as selected. If seat responds as specified, go to next step. If seat does not respond as specified, go to PNEUMATIC SPORT SEATS under SYMPTOM TESTING.

SYMPTOM TESTING

ALL POWER SEAT FUNCTIONS ARE INOPERATIVE

1) If diagnostic system check was performed, go to next step. If diagnostic system check was not performed, go to POWER SEATS DIAGNOSTIC SYSTEM CHECK under TROUBLE SHOOTING.

2) Using a test light connected to ground, backprobe seat switch connector terminal "F" (Orange wire). If test light comes on, go to next step. If test light does not come on, go to step 5).

3) Use test light and backprobe between seat switch connector terminals "F" and "C" (Orange and Black wires). If test light comes on, go to next step. If test light does not come on, go to step 6).

4) Replace suspect seat switch. See SEAT SWITCHES under REMOVAL & INSTALLATION. Perform POWER SEATS DIAGNOSTIC SYSTEM CHECK under TROUBLE SHOOTING.

5) Repair open in Orange wire between suspect seat switch and instrument panel fuse block. Perform POWER SEATS DIAGNOSTIC SYSTEM CHECK under TROUBLE SHOOTING.

6) Repair open in Black wire between suspect seat switch and ground. Ground connection is located behind respective front kick panel. Perform POWER SEATS DIAGNOSTIC SYSTEM CHECK under TROUBLE SHOOTING.

REAR HEIGHT DOES NOT MOVE UP & DOWN

1) If diagnostic system check was performed, go to next step. If diagnostic system check was not performed, go to POWER SEATS DIAGNOSTIC SYSTEM CHECK under TROUBLE SHOOTING.

2) Turn ignition switch to OFF position. Using a test light connected to ground, backprobe seat switch connector terminal "A" (driver's side) or terminal "G" (passenger's side) (Yellow wire) at inoperative seat. Move rear height switch to up position. If test light comes on, go to step 4). If test light does not come on, go to next step.

3) Replace power seat switch. See SEAT SWITCHES under REMOVAL & INSTALLATION. Perform POWER SEATS DIAGNOSTIC SYSTEM CHECK under TROUBLE SHOOTING.

4) Using a test light connected to ground, backprobe seat switch connector terminal "B" (driver's side) or terminal "H" (passenger's side) (Light Blue wire). Move rear height switch to down position. If test light comes on, go to next step. If test light does not come on, go to step 3).

5) Using a test light connected to ground, backprobe rear height motor connector terminal "A" (Yellow wire). Move rear height switch to up position. If test light comes on, go to next step. If test light does not come on, go to step 8).

6) Using a test light connected to ground, backprobe rear height motor connector terminal "B" (Light Blue wire). Move rear height switch to down position. If test light comes on, go to next step. If test light does not come on, go to step 9).

7) Replace rear height motor. See SEAT ADJUSTER MOTORS under

REMOVAL & INSTALLATION. Perform POWER SEATS DIAGNOSTIC SYSTEM CHECK under TROUBLE SHOOTING.

8) Repair open in Yellow wire between front seat switch and rear height motor. Perform POWER SEATS DIAGNOSTIC SYSTEM CHECK under TROUBLE SHOOTING.

9) Repair open in Light Blue wire between front seat switch and rear height motor. Perform POWER SEATS DIAGNOSTIC SYSTEM CHECK under TROUBLE SHOOTING.

FRONT HEIGHT DOES NOT MOVE UP & DOWN

1) If diagnostic system check was performed, go to next step. If diagnostic system check was not performed, go to POWER SEATS DIAGNOSTIC SYSTEM CHECK under TROUBLE SHOOTING.

2) Turn ignition switch to OFF position. Using a test light connected to ground, backprobe seat switch connector terminal "G" (driver's side) or terminal "A" (passenger's side) (Dark Green wire) at inoperative seat. Move front height switch to up position. If test light comes on, go to step 4). If test light does not come on, go to next step.

3) Replace power seat switch. See SEAT SWITCHES under REMOVAL & INSTALLATION. Perform POWER SEATS DIAGNOSTIC SYSTEM CHECK under TROUBLE SHOOTING.

4) Using a test light connected to ground, backprobe seat switch connector terminal "H" (driver's side) or terminal "B" (passenger's side) (Dark Blue wire). Move front height switch to down position. If test light comes on, go to next step. If test light does not come on, go to step 3).

5) Using a test light connected to ground, backprobe front height motor connector terminal "B" (Dark Green wire). Move front height switch to up position. If test light comes on, go to next step. If test light does not come on, go to step 8).

6) Using a test light connected to ground, backprobe rear height motor connector terminal "A" (Dark Blue wire). Move front height switch to down position. If test light comes on, go to next step. If test light does not come on, go to step 9).

7) Replace front height motor. See SEAT ADJUSTER MOTORS under REMOVAL & INSTALLATION. Perform POWER SEATS DIAGNOSTIC SYSTEM CHECK under TROUBLE SHOOTING.

8) Repair open in Dark Green wire between front seat switch and front height motor. Perform POWER SEATS DIAGNOSTIC SYSTEM CHECK under TROUBLE SHOOTING.

9) Repair open in Dark Blue wire between front seat switch and front height motor. Perform POWER SEATS DIAGNOSTIC SYSTEM CHECK under TROUBLE SHOOTING.

ENTIRE SEAT DOES NOT MOVE FORWARD & BACK

1) If diagnostic system check was performed, go to next step. If diagnostic system check was not performed, go to procedures in POWER SEATS DIAGNOSTIC SYSTEM CHECK under TROUBLE SHOOTING.

2) Turn ignition switch to OFF position. Using a test light connected to ground, backprobe seat switch connector terminal "E" (driver's side) or terminal "D" (passenger's side) (Tan wire) at inoperative seat. Move seat switch to forward position. If test light comes on, go to step 4). If test light does not come on, go to next step.

3) Replace power seat switch. See SEAT SWITCHES under REMOVAL & INSTALLATION. Perform POWER SEATS DIAGNOSTIC SYSTEM CHECK under TROUBLE SHOOTING.

4) Using a test light connected to ground, backprobe seat switch connector terminal "D" (driver's side) or terminal "E" (passenger's side) (Light Green wire). Move seat switch to back

position. If test light comes on, go to next step. If test light does not come on, go to step 3).

5) Using a test light connected to ground, backprobe forward/back motor connector terminal "A" (Tan wire). Move seat switch to forward position. If test light comes on, go to next step. If test light does not come on, go to step 8).

6) Using a test light connected to ground, backprobe forward/back motor connector terminal "B" (Light Green wire). Move seat switch to back position. If test light comes on, go to next step. If test light does not come on, go to step 9).

7) Replace forward/back motor. See SEAT ADJUSTER MOTORS under REMOVAL & INSTALLATION. Perform POWER SEATS DIAGNOSTIC SYSTEM CHECK under TROUBLE SHOOTING.

8) Repair open in Tan wire between front seat switch and forward/back motor. Perform POWER SEATS DIAGNOSTIC SYSTEM CHECK under TROUBLE SHOOTING.

9) Repair open in Light Green wire between front seat switch and forward/back motor. Perform POWER SEATS DIAGNOSTIC SYSTEM CHECK under TROUBLE SHOOTING.

LUMBAR SUPPORT SEAT AIR PUMP INOPERATIVE

NOTE: To test lumbar support on vehicle equipped with sport seat, go to PNEUMATIC SPORT SEATS SYSTEM CHECK.

1) If diagnostic system check was performed, go to next step. If diagnostic system check was not performed, go to procedures in POWER SEATS DIAGNOSTIC SYSTEM CHECK under TROUBLE SHOOTING.

2) Using a test light connected to ground, backprobe appropriate seat assembly 2-pin connector terminal "A" (Orange wire, 2-pin connector located under respective front seat). If test light comes on, go to next step. If test light does not come on, go to step 4).

3) Use test light and backprobe between appropriate seat assembly 2-pin connector terminal "A" (Orange wire) and "B" (Black wire). If test light comes on, go to step 6). If test light does not come on, go to step 5).

4) Repair open in Orange wire between seat assembly connector and instrument panel fuse block. Perform LUMBAR SUPPORT DIAGNOSTIC SYSTEM CHECK under TROUBLE SHOOTING.

5) Repair open in Black wire between seat assembly connector and ground. Perform LUMBAR SUPPORT DIAGNOSTIC SYSTEM CHECK under TROUBLE SHOOTING.

6) Press lumbar switch to INFLATE position. Use test light and backprobe between power terminal at seat air pump assembly (Red wire) and appropriate seat assembly 2-pin connector terminal "B" (Black wire). If test light comes on, go to next step. If test light does not come on, go to step 8).

7) Replace seat air pump assembly. Perform procedures in LUMBAR SUPPORT DIAGNOSTIC SYSTEM CHECK under TROUBLE SHOOTING.

8) Replace suspect lumbar switch. Perform procedures in LUMBAR SUPPORT DIAGNOSTIC SYSTEM CHECK under TROUBLE SHOOTING.

LUMBAR SUPPORT SEAT AIR PUMP RUNS FOR MORE THAN 20 SECONDS WITHOUT INFLATING

1) If diagnostic system check was performed, go to next step. If diagnostic system check was not performed, go to procedures in LUMBAR SUPPORT DIAGNOSTIC SYSTEM CHECK under TROUBLE SHOOTING.

2) Replace suspect lumbar switch. Perform procedures in LUMBAR SUPPORT DIAGNOSTIC SYSTEM CHECK under TROUBLE SHOOTING.

LUMBAR SUPPORT SEAT BLADDER DOES NOT DEFLATE

1) If diagnostic system check was performed, go to next step. If diagnostic system check was not performed, go to procedures in LUMBAR SUPPORT DIAGNOSTIC SYSTEM CHECK under TROUBLE SHOOTING.

2) Replace suspect lumbar switch. Perform procedures in LUMBAR SUPPORT DIAGNOSTIC SYSTEM CHECK under TROUBLE SHOOTING.

MEMORY SEATS

NOTE: To diagnose and test memory seats, see MEMORY SYSTEM article.

PNEUMATIC SPORT SEATS SEAT DOES NOT MOVE

NOTE: To identify connectors and wire colors, see WIRING DIAGRAMS.

1) If diagnostic system check was performed, go to next step. If diagnostic system check was not performed, go to procedures in PNEUMATIC SPORT SEATS SYSTEM CHECK under TROUBLE SHOOTING.

2) Disconnect seat control module 2-pin connector C1. Use DVOM and measure voltage between ground and seat control module harness connector C1 terminal "A" (Orange wire). If reading is 10-15 volts, go to next step. If reading is not 10-15 volts, go to step 4).

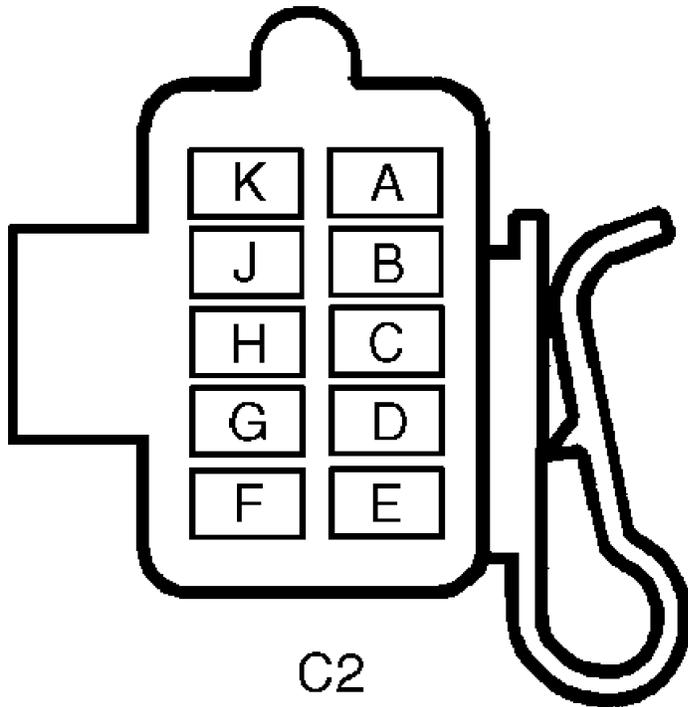
3) Measure voltage between seat control module harness connector C1 terminals "A" (Orange wire) and "B" (Black wire). If reading is 10-15 volts, go to step 6). If reading is not 10-15 volts, go to step 5).

4) Repair open in Orange wire between seat control module connector C1 and instrument panel fuse block. Recheck system operation. Perform PNEUMATIC SPORT SEATS SYSTEM CHECK under TROUBLE SHOOTING.

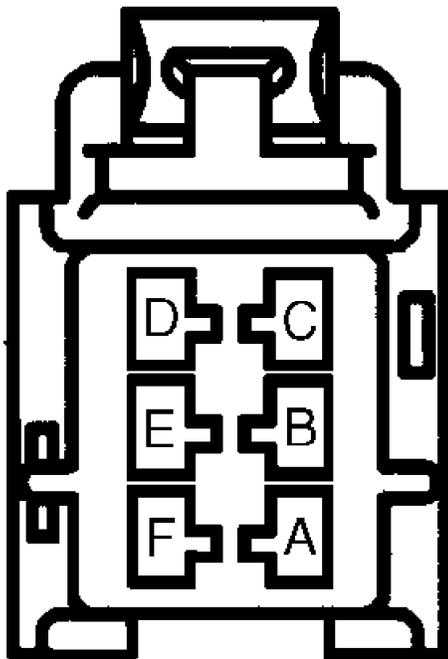
5) Repair open in appropriate Black wire between seat control module connector C1, console seat switch connector C1 and ground. Recheck system operation. Perform PNEUMATIC SPORT SEATS SYSTEM CHECK under TROUBLE SHOOTING.

6) Disconnect console seat switch connector C1. Use DVOM and measure resistance between ground and console seat switch harness connector C1 terminal "E" (Black wire). If resistance is less than 5 ohms, go to next step. If resistance is not less than 5 ohms, go to step 5).

7) Reconnect console seat switch. Disconnect seat control module connector C2. Using seat select switch, select inoperative seat. Use DVOM and measure for voltage between seat control module connector C1 terminal "A" (Orange wire) and each specified terminal of seat control module 6-pin connector C2 while operating appropriate switch. See Fig. 1. See SEAT CONTROL MODULE CONTINUITY TESTS table. If test light comes on in all positions, go to next step. If test light does not come on in all positions, go to step 10).



C2



C4

98D12362

Fig. 1: Identifying Seat Control Module Connector C2 & C4 Terminals
 Courtesy of General Motors Corp.

Application	Connector C2 Terminal (Wire Color)
Front Tilt Up	"A" (Dark Green)
Front Tilt Down	"B" (Dark Blue)
Rear Tilt Up	"C" (Yellow)
Rear Tilt Down	"D" (Light Blue)
Seat Forward	"E" (Tan)
Seat Back	"F" (Light Green)
Recline Up	"G" (Gray/Black)
Recline Down	"H" (Dark Green/White)

8) Reconnect seat control module connectors C1 and C2. On driver's seat, use test light to backprobe between ground and seat control module connector C3 terminal "D" (Dark Green wire). On passenger's seat, use test light to backprobe between ground and seat control module connector C4 terminal "D" (Dark Blue wire). See Fig. 1. Briefly operate all seat and lumbar positions. If test light comes on when any switch is pressed, go to step 11). If test light does not come on when any switch is pressed, go to next step.

9) Replace seat control module. Recheck system operation. Perform PNEUMATIC SPORT SEATS SYSTEM CHECK under TROUBLE SHOOTING.

10) Replace console seat switch. See SEAT SWITCHES under REMOVAL & INSTALLATION. Recheck system operation. Perform procedures in PNEUMATIC SPORT SEATS SYSTEM CHECK under TROUBLE SHOOTING.

11) Repair open in Dark Green or Dark Blue wire between appropriate seat control module connector and seat motors. Recheck system operation. Perform PNEUMATIC SPORT SEATS SYSTEM CHECK under TROUBLE SHOOTING.

PNEUMATIC SPORT SEATS REAR OF SEAT DOES NOT TILT UP OR DOWN

1) If diagnostic system check was performed, go to next step. If diagnostic system check was not performed, go to procedures in PNEUMATIC SPORT SEATS SYSTEM CHECK under TROUBLE SHOOTING.

2) Disconnect seat control module connector C2. Briefly connect fused jumper wire between ground and seat control module harness connector C2 terminal "C" (Yellow wire). See Fig. 1. If rear of seat tilts up, go to step 9). If rear of seat does not tilt up, go to next step.

3) Briefly connect fused jumper wire between seat control module harness connector C2 terminal "D" (Light Blue wire) and ground. If rear of seat tilts down, go to step 10). If rear of seat does not tilt down, go to next step.

4) Reconnect seat control module connector C2. Disconnect seat control module connector C3 (driver's side) or C4 (passenger's side). On driver's seat, use test light to backprobe between ground and seat control module Blue 10-pin connector C3 terminal "B" (Light Blue wire). On passenger's seat, use test light to backprobe between ground and seat control module connector C4 terminal "B" (Light Blue wire). See Fig. 1. Operate rear seat height up. If test light comes on, go to step 6). If test light does not come on, go to next step.

5) Replace seat control module. Recheck system operation. Perform PNEUMATIC SPORT SEATS SYSTEM CHECK under TROUBLE SHOOTING.

6) Check for open in Light Blue wire between appropriate seat control module connector and rear height motor. If circuit is okay, go to next step. If circuit is not okay, go to step 12).

7) Check for open in Dark Green wire between appropriate seat control module connector and rear height motor. If circuit is okay, go to next step. If circuit is not okay, go to step 12).

8) Replace rear height motor. See SEAT ADJUSTER MOTORS under REMOVAL & INSTALLATION. Recheck system operation. Perform procedures in PNEUMATIC SPORT SEATS SYSTEM CHECK under TROUBLE SHOOTING.

9) Check for open in Yellow wire between seat control module connector C2 and seat console switch Blue 10-pin connector C3. If circuit is okay, go to step 11). If circuit is not okay, go to step 12).

10) Check for open in Light Blue wire between seat control module connector C2 and seat console switch Blue 10-pin connector C3. If circuit is okay, go to next step. If circuit is not okay, go to step 12).

11) Replace console seat switch. See SEAT SWITCHES under REMOVAL & INSTALLATION. Recheck system operation. Perform procedures in PNEUMATIC SPORT SEATS SYSTEM CHECK under TROUBLE SHOOTING.

12) Repair suspect circuit. See WIRING DIAGRAMS. Recheck system operation. Perform PNEUMATIC SPORT SEATS SYSTEM CHECK under TROUBLE SHOOTING.

PNEUMATIC SPORT SEATS FRONT OF SEAT DOES NOT TILT UP OR DOWN

1) If diagnostic system check was performed, go to next step. If diagnostic system check was not performed, go to procedures in PNEUMATIC SPORT SEATS SYSTEM CHECK under TROUBLE SHOOTING.

2) Disconnect seat control module Blue 10-pin connector C2. Briefly connect fused jumper wire between ground and seat control module harness connector C2 terminal "A" (Dark Green wire). See Fig. 1 . If front of seat tilts up, go to step 9). If front of seat does not tilt up, go to next step.

3) Briefly connect fused jumper wire between ground and seat control module harness connector C2 terminal "B" (Dark Green wire). If front of seat tilts down, go to step 10). If front of seat does not tilt down, go to next step.

4) Reconnect seat control module connector C2. On driver's seat, use test light to backprobe between ground and seat control module Blue 10-pin connector C3 terminal "A" (Dark Blue wire). On passenger's seat, use test light to backprobe between ground and seat control module Black 6-pin connector C4 terminal "A" (Dark Blue wire). See Fig. 1. Operate front seat height up. If test light comes on, go to step 6). If test light does not come on, go to next step.

5) Replace seat control module. Recheck system operation. Perform PNEUMATIC SPORT SEATS SYSTEM CHECK under TROUBLE SHOOTING.

6) Check for open in Dark Blue wire between appropriate seat control module connector and front height motor. If circuit is okay, go to next step. If circuit is not okay, go to step 12).

7) Check for open in Dark Green wire between appropriate seat control module connector and front height motor. If circuit is okay, go to next step. If circuit is not okay, go to step 12).

8) Replace front height motor. See SEAT ADJUSTER MOTORS under REMOVAL & INSTALLATION. Recheck system operation. Perform procedures in PNEUMATIC SPORT SEATS SYSTEM CHECK under TROUBLE SHOOTING.

9) Check for open in Dark Green wire between seat control module connector C2 and seat console switch Blue 10-pin connector C3. If circuit is okay, go to step 11). If circuit is not okay, go to step 12).

10) Check for open in Dark Blue wire between seat control module connector C2 and seat console switch Blue 10-pin connector C3. If circuit is okay, go to next step. If circuit is not okay, go to step 12).

11) Replace console seat switch. See SEAT SWITCHES under REMOVAL & INSTALLATION. Recheck system operation. Perform procedures in PNEUMATIC SPORT SEATS SYSTEM CHECK under TROUBLE SHOOTING.

12) Repair suspect circuit. See WIRING DIAGRAMS. Recheck system operation. Perform PNEUMATIC SPORT SEATS SYSTEM CHECK under TROUBLE SHOOTING.

PNEUMATIC SPORT SEATS ENTIRE SEAT DOES NOT MOVE FORWARD OR

BACK

1) If diagnostic system check was performed, go to next step. If diagnostic system check was not performed, go to procedures in PNEUMATIC SPORT SEATS SYSTEM CHECK under TROUBLE SHOOTING.

2) Disconnect seat control module Blue 10-pin connector C2. Briefly connect fused jumper wire between ground and seat control module harness connector C2 terminal "E" (Tan wire). See Fig. 1. If seat moves forward, go to step 9). If seat does not move forward, go to next step.

3) Briefly connect fused jumper wire between ground and seat control module harness connector C2 terminal "F" (Light Green wire). If seat moves back, go to step 10). If seat does not move back, go to next step.

4) Reconnect seat control module connector C2. On driver's seat, use test light to backprobe between ground and seat control module connector C3 terminal "C" (Light Green wire). On passenger's seat, use test light to backprobe between ground and seat control module Black 6-pin connector C4 terminal "C" (Light Green wire). See Fig. 1. Operate forward/back switch forward. If test light comes on, go to step 6). If test light does not come on, go to next step.

5) Replace seat control module. Recheck system operation. Perform PNEUMATIC SPORT SEATS SYSTEM CHECK under TROUBLE SHOOTING.

6) Check for open in Light Green wire between appropriate seat control module connector and forward/back motor. If circuit is okay, go to next step. If circuit is not okay, go to step 12).

7) Check for open in Dark Green wire between appropriate seat control module connector and forward/back motor. If circuit is okay, go to next step. If circuit is not okay, go to step 12).

8) Replace forward/back motor. See SEAT ADJUSTER MOTORS under REMOVAL & INSTALLATION. Recheck system operation. Perform procedures in PNEUMATIC SPORT SEATS SYSTEM CHECK under TROUBLE SHOOTING.

9) Check for open in Tan wire between seat control module connector C2 and seat console switch Blue 10-pin connector C3. If circuit is okay, go to step 11). If circuit is not okay, go to step 12).

10) Check for open in Light Green wire between seat control module connector C2 and seat console switch Blue 10-pin connector C3. If circuit is okay, go to next step. If circuit is not okay, go to step 12).

11) Replace console seat switch. See SEAT SWITCHES under REMOVAL & INSTALLATION. Recheck system operation. Perform procedures in PNEUMATIC SPORT SEATS SYSTEM CHECK under TROUBLE SHOOTING.

12) Repair suspect circuit. See WIRING DIAGRAMS. Recheck system operation. Perform PNEUMATIC SPORT SEATS SYSTEM CHECK under TROUBLE SHOOTING.

PNEUMATIC SPORT SEATS SEATBACK DOES NOT RECLINE UP OR DOWN

1) If diagnostic system check was performed, go to next step. If diagnostic system check was not performed, go to procedures in PNEUMATIC SPORT SEATS SYSTEM CHECK under TROUBLE SHOOTING.

2) Disconnect seat control module Blue 10-pin connector C2. Briefly connect fused jumper wire between ground and seat control module connector C2 terminal "G" (Gray/Black wire). See Fig. 1. If seatback reclines up, go to step 9). If seatback does not recline up, go to next step.

3) Briefly connect fused jumper wire between ground and seat control module connector C2 terminal "H" (Dark Green/White wire). If seatback reclines down, go to step 10). If seatback does not recline down, go to next step.

4) Reconnect seat control module connector C2. On driver's seat, use test light to backprobe between seat control module

connector C3 terminal "E" (Light Blue wire) and ground. On passenger's seat, use test light to backprobe between seat control module Black 6-pin connector C4 terminal "E" (Dark Blue wire) and ground. See Fig. 1. Operate recliner switch up. If test light comes on, go to step 5). If test light does not come on, go to next step.

5) Replace seat control module. Recheck system operation. Perform PNEUMATIC SPORT SEATS SYSTEM CHECK under TROUBLE SHOOTING.

6) Check for open in Light Blue or Dark Blue wire between appropriate seat control module connector and recliner motor. If circuit is okay, go to next step. If circuit is not okay, go to step 12).

7) Check for open in Dark Green wire between appropriate seat control module connector and recliner motor. If circuit is okay, go to next step. If circuit is not okay, go to step 12).

8) Replace recliner motor. See POWER RECLINER under REMOVAL & INSTALLATION. Recheck system operation. Perform PNEUMATIC SPORT SEATS SYSTEM CHECK under TROUBLE SHOOTING.

9) Check for open in Gray/Black wire between seat control module connector C2 and seat console switch Blue 10-pin connector C3. If circuit is okay, go to step 11). If circuit is not okay, go to step 12).

10) Check for open in Dark Green/White wire between seat control module connector C2 and seat console switch Blue 10-pin connector C3. If circuit is okay, go to next step. If circuit is not okay, go to step 12).

11) Replace console seat switch. See SEAT SWITCHES under REMOVAL & INSTALLATION. Recheck system operation. Perform procedures in PNEUMATIC SPORT SEATS SYSTEM CHECK under TROUBLE SHOOTING.

12) Repair open in appropriate wire. See WIRING DIAGRAMS. Recheck system operation. Perform PNEUMATIC SPORT SEATS SYSTEM CHECK under TROUBLE SHOOTING.

PNEUMATIC SPORT SEATS RIGHT SEAT MOVES WITH SEAT SELECT SWITCH IN LEFT

1) If diagnostic system check was performed, go to next step. If diagnostic system check was not performed, go to procedures in PNEUMATIC SPORT SEATS SYSTEM CHECK under TROUBLE SHOOTING.

2) Using seat select switch, select driver's seat. Use test light and backprobe between seat control module connector C1 terminal "A" (Orange wire) and Blue 10-pin connector C2 terminal "K" (Brown wire). See Fig. 1. If test light comes on, go to next step. If test light does not come on, go to step 5).

3) Use test light and backprobe between battery voltage and console seat switch Blue 10-pin connector C3 terminal "K" (Brown wire). If test light comes on, go to step 6). If test light does not come on, go to next step.

4) Repair short to ground in Brown wire between seat control module connector C1 and seat console switch connector C3. Recheck system operation. Perform PNEUMATIC SPORT SEATS SYSTEM CHECK under TROUBLE SHOOTING.

5) Replace seat control module. Recheck system operation. Perform PNEUMATIC SPORT SEATS SYSTEM CHECK under TROUBLE SHOOTING.

6) Replace console seat switch. See SEAT SWITCHES under REMOVAL & INSTALLATION. Recheck system operation. Perform procedures in PNEUMATIC SPORT SEATS SYSTEM CHECK under TROUBLE SHOOTING.

PNEUMATIC SPORT SEATS LEFT SEAT MOVES WITH SEAT SELECT SWITCH IN RIGHT

1) If diagnostic system check was performed, go to next step. If diagnostic system check was not performed, go to procedures in PNEUMATIC SPORT SEATS SYSTEM CHECK under TROUBLE SHOOTING.

2) Using seat select switch, select passenger's seat. Use test light and backprobe between seat control module connector C1 terminal "A" (Orange wire) and Blue 10-pin connector C2 terminal "K" (Brown wire). See Fig. 1. If test light comes on, go to next step. If test light does not come on, go to step 5).

3) Use test light and backprobe between battery voltage and console seat Blue 10-pin connector C3 terminal "K" (Brown wire). If test light comes on, go to step 6). If test light does not come on, go to next step.

4) Repair short to ground in Brown wire between seat control module connector C1 and seat console switch connector C3. Recheck system operation. Perform PNEUMATIC SPORT SEATS SYSTEM CHECK under TROUBLE SHOOTING.

5) Replace seat control module. Recheck system operation. Perform PNEUMATIC SPORT SEATS SYSTEM CHECK under TROUBLE SHOOTING.

6) Replace console seat switch. See SEAT SWITCHES under REMOVAL & INSTALLATION. Recheck system operation. Perform procedures in PNEUMATIC SPORT SEATS SYSTEM CHECK under TROUBLE SHOOTING.

PNEUMATIC SPORT SEATS SEAT AIR PUMP INOPERATIVE

1) If diagnostic system check was performed, go to next step. If diagnostic system check was not performed, go to procedures in PNEUMATIC SPORT SEATS SYSTEM CHECK under TROUBLE SHOOTING.

2) Using a test light connected to ground, backprobe console seat switch connector C1 terminal "C" (Orange wire). If test light comes on, go to next step. If test light does not come on, go to step 11).

3) Disconnect pneumatic seat module connector. Using a test light connected to ground, backprobe pneumatic seat module connector terminal "F" (Orange wire). If test light comes on, go to next step. If test light does not come on, go to step 12).

4) Use test light and backprobe between pneumatic seat module connector terminals "F" (Orange wire) and "B" (Black wire). Backprobe between terminals "F" (Orange wire) and "E" (Black wire). If test light comes on, go to next step. If test light does not come on, go to step 13).

5) Use test light and backprobe between battery voltage and pneumatic seat module connector terminal "A" (Black wire). Using seat select switch, select inoperative seat. If test light comes on, comes on, go to next step. If test light does not come on, go to step 14).

6) Use test light and backprobe between battery voltage and pneumatic seat module connector terminal "D" (White wire). Operate any inflate switch. If test light comes on, go to next step. If test light does not come on, go to step 15).

7) Use test light and backprobe between battery voltage and pneumatic seat module connector terminal "H" (Gray wire). Operate any deflate switch. If test light comes on, go to next step. If test light does not come on, go to step 16).

8) Using a test light connected to ground, backprobe seat air pump assembly connector terminal "A" (Pink wire). Operate any inflate switch. If test light comes on, go to next step. If test light does not come on, go to step 18).

9) Using a test light connected to ground, backprobe seat air pump assembly connector terminal "B" (Orange wire). Operate any deflate switch. If test light comes on, go to next step. If test light does not come on, go to step 19).

10) Replace seat air pump assembly. Recheck system operation. Perform PNEUMATIC SPORT SEATS SYSTEM CHECK under TROUBLE SHOOTING.

11) Repair open in Orange wire between console seat switch connector C1 and instrument panel fuse block. Recheck system operation. Perform PNEUMATIC SPORT SEATS SYSTEM CHECK under TROUBLE SHOOTING.

12) Repair open in Orange wire between pneumatic seat module and instrument panel fuse block. Recheck system operation. Perform PNEUMATIC SPORT SEATS SYSTEM CHECK under TROUBLE SHOOTING.

13) Repair open in Black wire(s) between pneumatic seat module and ground. Recheck system operation. Perform procedures in PNEUMATIC SPORT SEATS SYSTEM CHECK under TROUBLE SHOOTING.

14) Check for open in Black wire between console seat switch connector C1 and pneumatic seat module. If circuit is okay, go to step 17). If circuit is not okay, go to step 21).

15) Check for open or short to ground in White wire between console seat switch connector C1 and pneumatic seat module. If circuit is okay, go to step 17). If circuit is not okay, go to step 21).

16) Check for open or short to ground in Gray wire between console seat switch connector C1 and pneumatic seat module. If circuit is okay, go to step 17). If circuit is not okay, go to step 21).

17) Replace console seat switch. See SEAT SWITCHES under REMOVAL & INSTALLATION. Recheck system operation. Perform procedures in PNEUMATIC SPORT SEATS SYSTEM CHECK under TROUBLE SHOOTING.

18) Check for open or short to ground in Pink wire between pneumatic seat module and seat air pump assembly. If circuit is okay, go to next step. If circuit is not okay, go to step 21).

19) Check for open or short to ground in Orange wire between pneumatic seat module and seat air pump assembly. If circuit is okay, go to next step. If circuit is not okay, go to step 21).

20) Replace pneumatic seat module. Recheck system operation. Perform PNEUMATIC SPORT SEATS SYSTEM CHECK under TROUBLE SHOOTING.

21) Repair open or short to ground in suspect circuit. See WIRING DIAGRAMS. Recheck system operation. Perform procedures in PNEUMATIC SPORT SEATS SYSTEM CHECK under TROUBLE SHOOTING.

PNEUMATIC SPORT SEATS SEAT AIR PUMP DOES NOT INFLATE

1) If diagnostic system check was performed, go to next step. If diagnostic system check was not performed, go to procedures in PNEUMATIC SPORT SEATS SYSTEM CHECK under TROUBLE SHOOTING.

2) Disconnect pneumatic seat module connector. Use test light between ground and pneumatic seat module connector terminal "D" (White wire). Operate any inflate switch. If test light comes on, go to step 5). If test light does not come on, go to next step.

3) Check for open or short to ground in White wire between pneumatic seat module and console seat switch Natural 10-pin connector C1. If circuit is okay, go to next step. If circuit is not okay, go to step 6).

4) Replace console seat switch. See SEAT SWITCHES under REMOVAL & INSTALLATION. Recheck system operation. Perform procedures in PNEUMATIC SPORT SEATS SYSTEM CHECK under TROUBLE SHOOTING.

5) Replace pneumatic seat module. Recheck system operation. Perform PNEUMATIC SPORT SEATS SYSTEM CHECK under TROUBLE SHOOTING.

6) Repair open or short to ground in White wire between pneumatic seat module and console seat switch connector C1. Recheck system operation. Perform PNEUMATIC SPORT SEATS SYSTEM CHECK under TROUBLE SHOOTING.

PNEUMATIC SPORT SEATS SEAT AIR PUMP DOES NOT DEFLATE

1) If diagnostic system check was performed, go to next step. If diagnostic system check was not performed, go to procedures in PNEUMATIC SPORT SEATS SYSTEM CHECK under TROUBLE SHOOTING.

2) Disconnect pneumatic seat module connector. Use test light between ground and pneumatic seat module connector terminal "H" (Gray wire). Operate any deflate switch. If test light comes on, go to step 5). If test light does not come on, go to next step.

3) Check for open or short to ground in Gray wire between

pneumatic seat module and console seat switch Natural 10-pin connector C1. If circuit is okay, go to next step. If circuit is not okay, go to step 6).

4) Replace console seat switch. See SEAT SWITCHES under REMOVAL & INSTALLATION. Recheck system operation. Perform procedures in PNEUMATIC SPORT SEATS SYSTEM CHECK under TROUBLE SHOOTING.

5) Replace pneumatic seat module. Recheck system operation. Perform PNEUMATIC SPORT SEATS SYSTEM CHECK under TROUBLE SHOOTING.

6) Repair open or short to ground in White wire between pneumatic seat module and console seat switch connector C1. Recheck system operation. Perform PNEUMATIC SPORT SEATS SYSTEM CHECK under TROUBLE SHOOTING.

PNEUMATIC SPORT SEATS SEAT AIR PUMP RUNS FOR MORE THAN 20

SECONDS WITHOUT INFLATING OR DEFLATING

1) If diagnostic system check was performed, go to next step. If diagnostic system check was not performed, go to procedures in PNEUMATIC SPORT SEATS SYSTEM CHECK under TROUBLE SHOOTING.

2) If symptom exists for all seat lumbar switches, go to next step. If symptom does not exist for all seat lumbar switches, go to step 8).

3) Check for broken or disconnected air line at pump, solenoid valves, or in tubing between pump and solenoid valves. If air lines are okay, go to step 5). If air lines are not okay, go to next step.

4) Repair air hoses as necessary. Recheck system operation. Perform PNEUMATIC SPORT SEATS SYSTEM CHECK under TROUBLE SHOOTING.

5) Check solenoid valve assemblies for leakage. If solenoid valve assemblies are okay, go to next step. If solenoid valve assemblies are not okay, go to step 7).

6) Replace seat air pump assembly. Recheck system operation. Perform PNEUMATIC SPORT SEATS SYSTEM CHECK under TROUBLE SHOOTING.

7) Replace inoperative solenoid valve assembly. Recheck system operation. Perform PNEUMATIC SPORT SEATS SYSTEM CHECK under TROUBLE SHOOTING.

8) Check air hose for leaks between solenoid valve and bladder. If air hoses are okay, go to next step. If air hoses are not okay, go to step 4).

9) Check lumbar bladder for leaks. If lumbar bladder is okay, go to step 5). If lumbar bladder is not okay, go to next step.

10) Replace lumbar bladder. See procedures in SEAT CUSHION or SEATBACK R & I under REMOVAL & INSTALLATION. Recheck system operation. Perform PNEUMATIC SPORT SEATS SYSTEM CHECK under TROUBLE SHOOTING.

REMOVAL & INSTALLATION

*** PLEASE READ THIS FIRST ***

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 article in GENERAL INFORMATION before disconnecting battery.

POWER SEAT

Removal & Installation

1) Remove floor support covers. Remove load bar cover. Move seat to full back position. Remove front adjuster-to-floorpan nuts. Move seat to full forward position. Remove rear adjuster-to-floorpan

nuts.

2) Remove load bar bolt. Tilt seat back and disconnect electrical connectors, air hose and A/C-heater duct at armrest (if necessary). Remove power seat. To install, reverse removal procedure. Tighten load bar bolt to 31 ft. lbs. (42 N.m). Tighten adjuster-to-floorpan nuts to 25 ft. lbs. (34 N.m).

POWER SEAT ADJUSTER

NOTE: A production support bracket may be attached to adjusters. Support bracket is only used for production purposes, and does not need to be reinstalled.

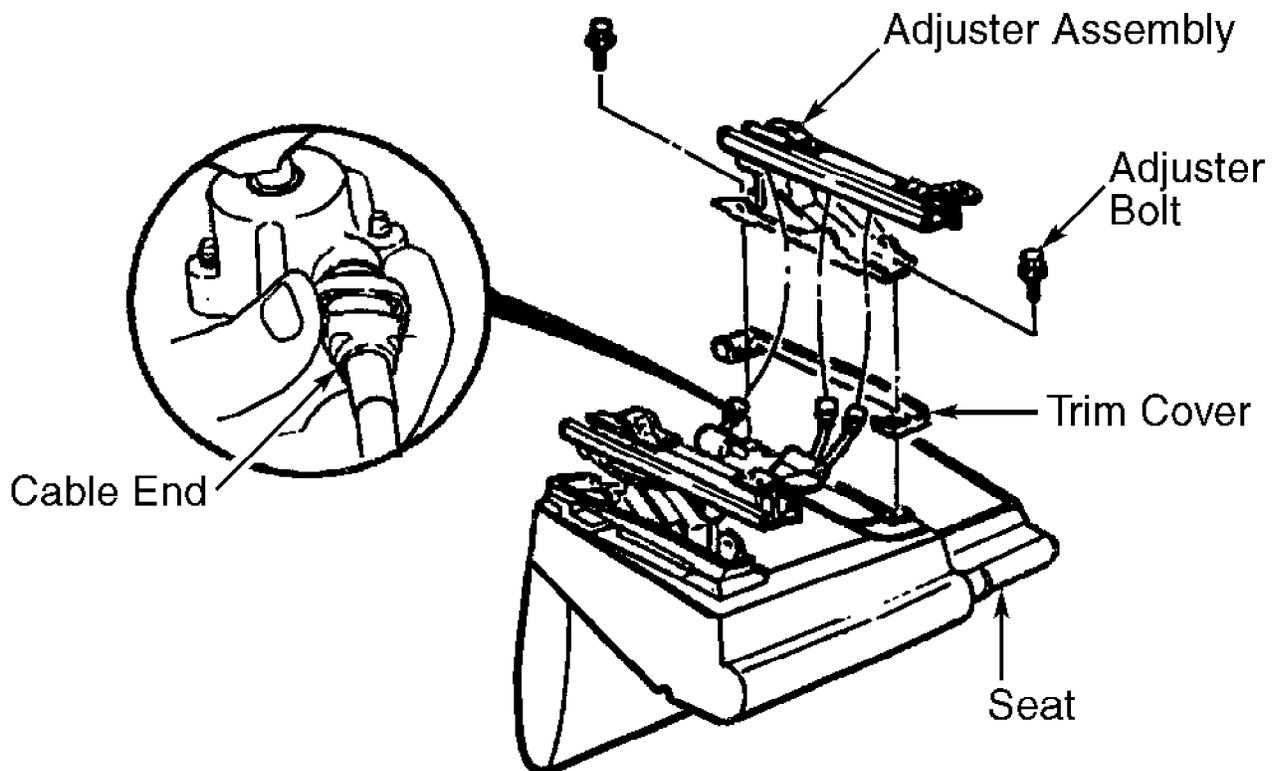
Removal & Installation

1) Remove front seat. See POWER SEAT. Remove inner adjuster bolts. Note location and routing of drive cables, then disconnect cable ends. See Fig. 2.

2) Disconnect load bar assembly from tunnel and anchor nuts retaining seat adjusters to floor. On driver's seat, disconnect electrical connector at buckle. On both seats, use 3/16" bit to drill out rivet. Remove load bar assembly.

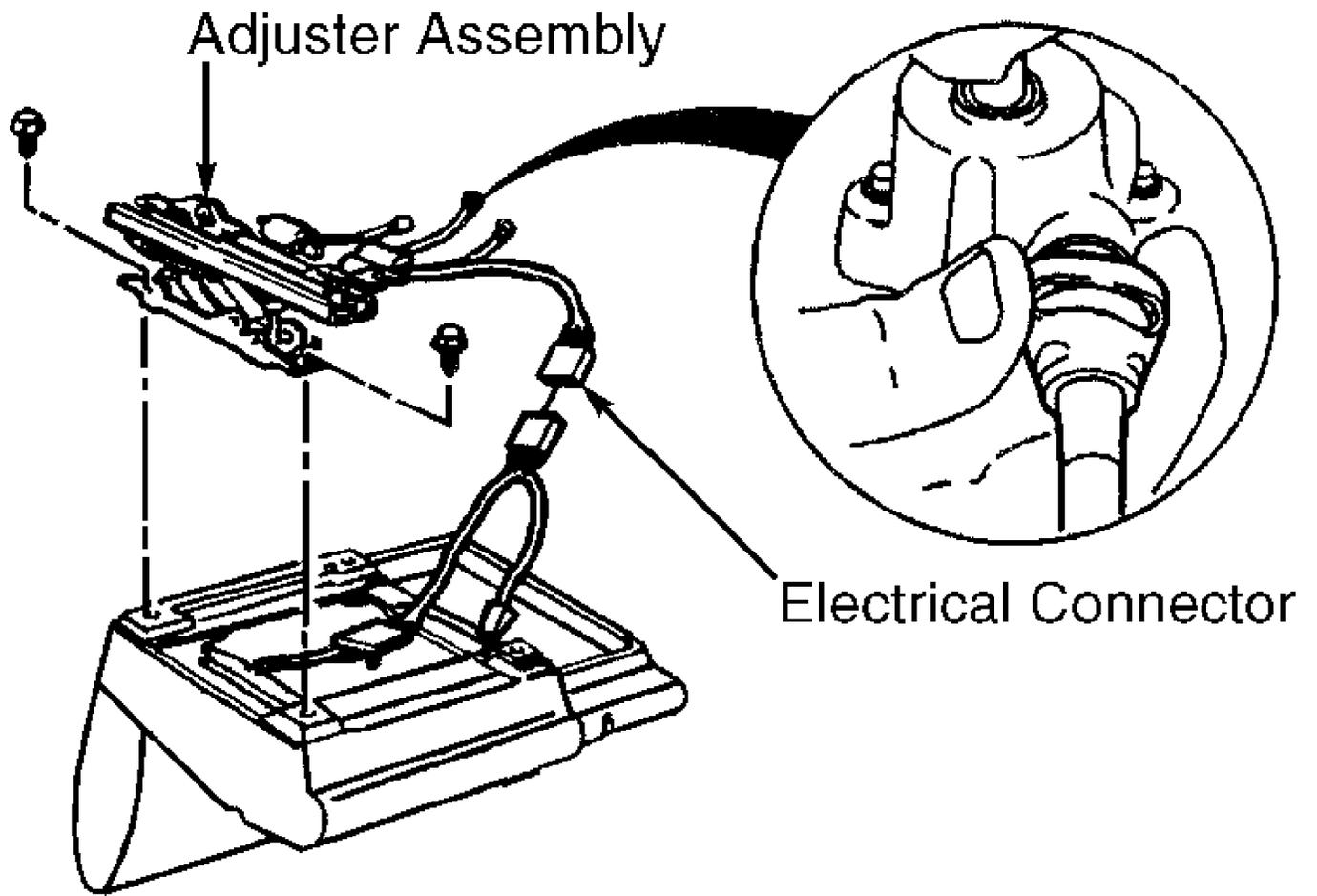
3) Disconnect switch harness from outer adjuster. Remove outer adjuster bolts. Note location and routing of drive cables, then disconnect cable ends. See Fig. 3. Remove motor assembly. See Fig. 4. Remove covers from adjusters.

4) To install, reverse removal procedure. Tighten seat adjuster-to-seat cushion frame bolts to 17 ft. lbs. (24 N.m).



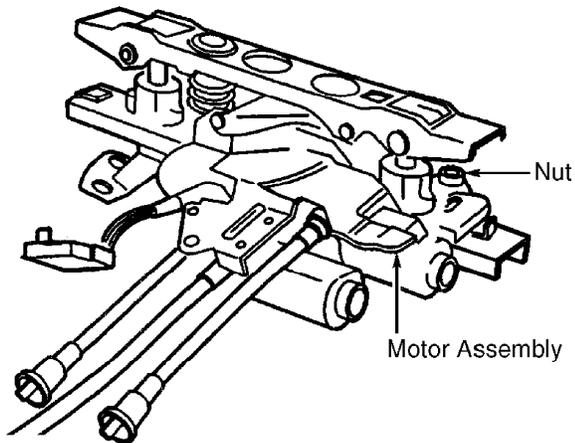
97J28570

Fig. 2: Removing & Installing Inner Adjuster
Courtesy of General Motors Corp.



97A28571

Fig. 3: Removing & Installing Outer Adjuster
 Courtesy of General Motors Corp.



97B28572

Fig. 4: Removing & Installing Power Adjuster Motor Assembly
 Courtesy of General Motors Corp.

SEAT ADJUSTER MOTORS

Removal & Installation

1) Remove power seat. See POWER SEAT. Place seat upside-down on a clean surface. Disconnect motor connectors from motors. Remove nut securing front of motor support bracket to inboard adjuster, and partially withdraw assembly from adjuster and gearnut drives.

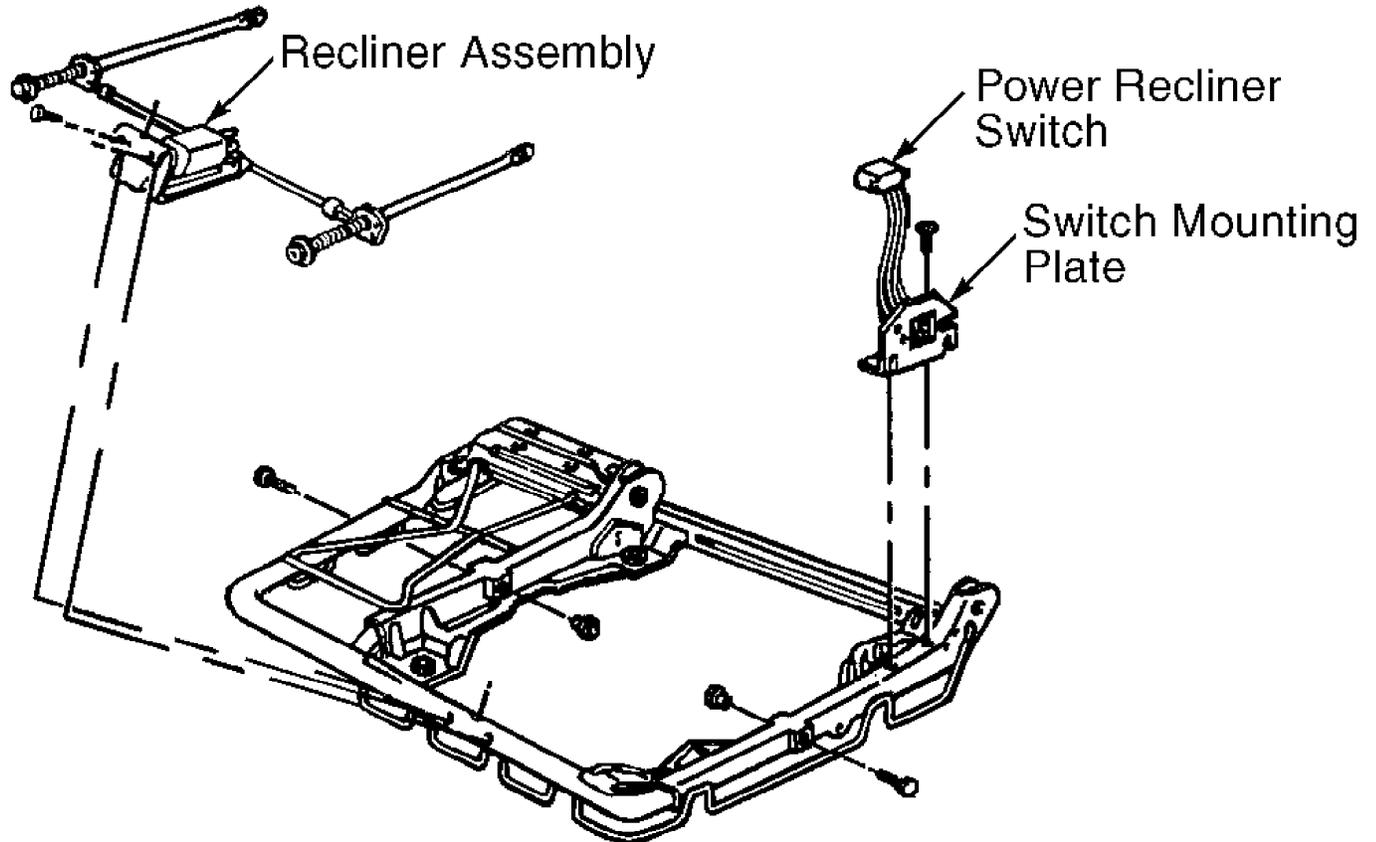
2) Disconnect drive cables from motors. Disassemble support bracket, leaving motors attached. Grind off peened over end(s) of grommet assembly that secures motor to support, and separate motor from support.

3) To install, use a 3/16" drill bit to drill out top end of grommet assembly. Using 3/16" rivet, secure motor to grommet assembly. To complete installation, reverse removal procedure.

POWER RECLINER

Removal & Installation

Remove front seat. See POWER SEAT. Pull back trim flap, and remove enough hog rings from seat bottom to expose 2 bottom lock bracket bolts. Remove lock bracket cover. Remove recliner switch and harness. Remove power recliner. See Fig. 5. To install, reverse removal procedure.



97C28573

Fig. 5: Removing Power Recliner
Courtesy of General Motors Corp.

SEAT CUSHION

Removal & Installation (Pneumatic Sport Seats)

1) Raise seatback to full up position. Remove power seat. See POWER SEAT. Place seat upside-down on a clean surface. Remove seat

adjuster. See POWER SEAT ADJUSTER. Remove screws from front and side trim panels. Disconnect recliner switch electrical connectors.

2) Remove trim panels. Remove inboard pivot bolt. Remove 2 recliner bolts. Remove hog rings from lower trim flap on thigh support pivot plate. Remove 4 screws and bladder pivot plate. Disconnect air hoses, as necessary. Unsnap lumbar thigh bladders, as necessary. Remove seat cushion. To install, reverse removal procedure.

SEATBACK R & I

Removal & Installation (Pneumatic Sport Seats)

1) Remove seat cushion. See SEAT CUSHION (PNEUMATIC SEATS). Remove zipper or "J" retainer at bottom of seatback. Remove hook and loop strip from each side of plate assembly. Peel back seatback cover to expose center tie-down wire, and remove hog rings.

2) Remove back insert pads. Peel back seatback cover, and remove hog rings from each upper bolster tie-down wire. Remove hog rings from seatback rear bottom tie-down and from each excess welt cord.

3) Raise head restraint to full up position. Insert a piece of wire or paper clip into hole in front of headrest guide, and depress lock. Remove head restraint. Remove seatback cover. Disconnect Blue air hose, and remove lumbar bladder.

4) Disconnect Orange and Green air hoses from contour bladders. Unsnap bolster bladder assembly from mounting hinges on each side of seatback. Unsnap lumbar bladders from each upper contour plate. Remove pad from seatback frame. Remove 2 recliner bolts, and remove seatback. To install, reverse removal procedure.

SEAT SWITCHES

Removal & Installation (Power Seat Switch With Pneumatic Sport Seats)

Use small, flat-bladed screwdriver and gently pry upward from center console. Disconnect electrical connector and remove switch. To install, reverse removal procedure.

Removal & Installation (Power Seat Switch Without Pneumatic Sport Seats)

Remove screws retaining switch to seat bottom cushion. Remove trim plate if applicable. Disconnect electrical connector. Remove switch. To install, reverse removal procedure.

Removal & Installation (Power Recliner Switch Seat Mounted Switch)

Remove screws retaining switch to seat bottom cushion. Remove trim plate if applicable. Disconnect electrical connector. Remove switch. To install, reverse removal procedure.

WIRING DIAGRAMS

NOTE: For memory seat wiring diagrams, see MEMORY SYSTEM article.

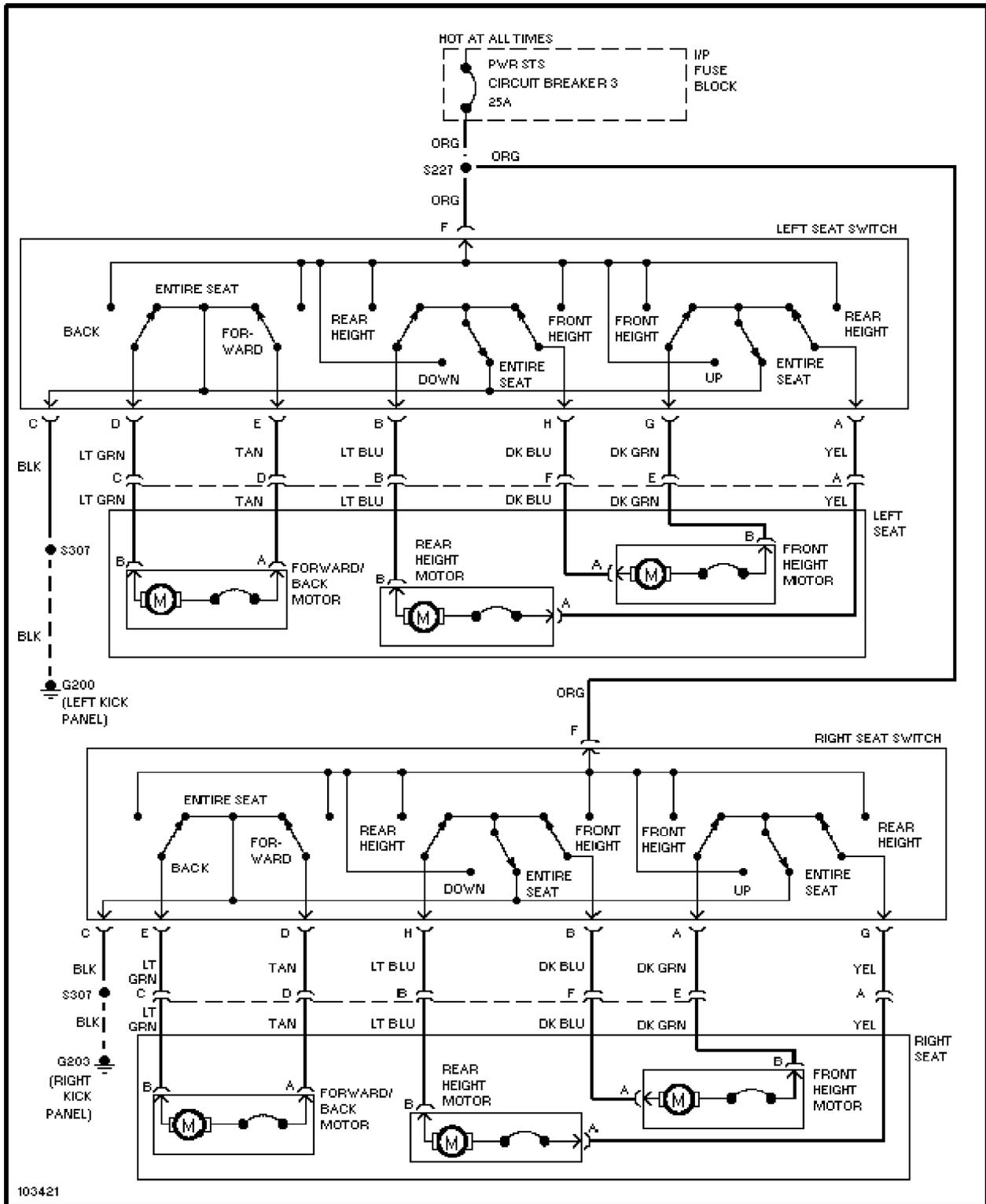


Fig. 6: Power Seats Wiring Diagram

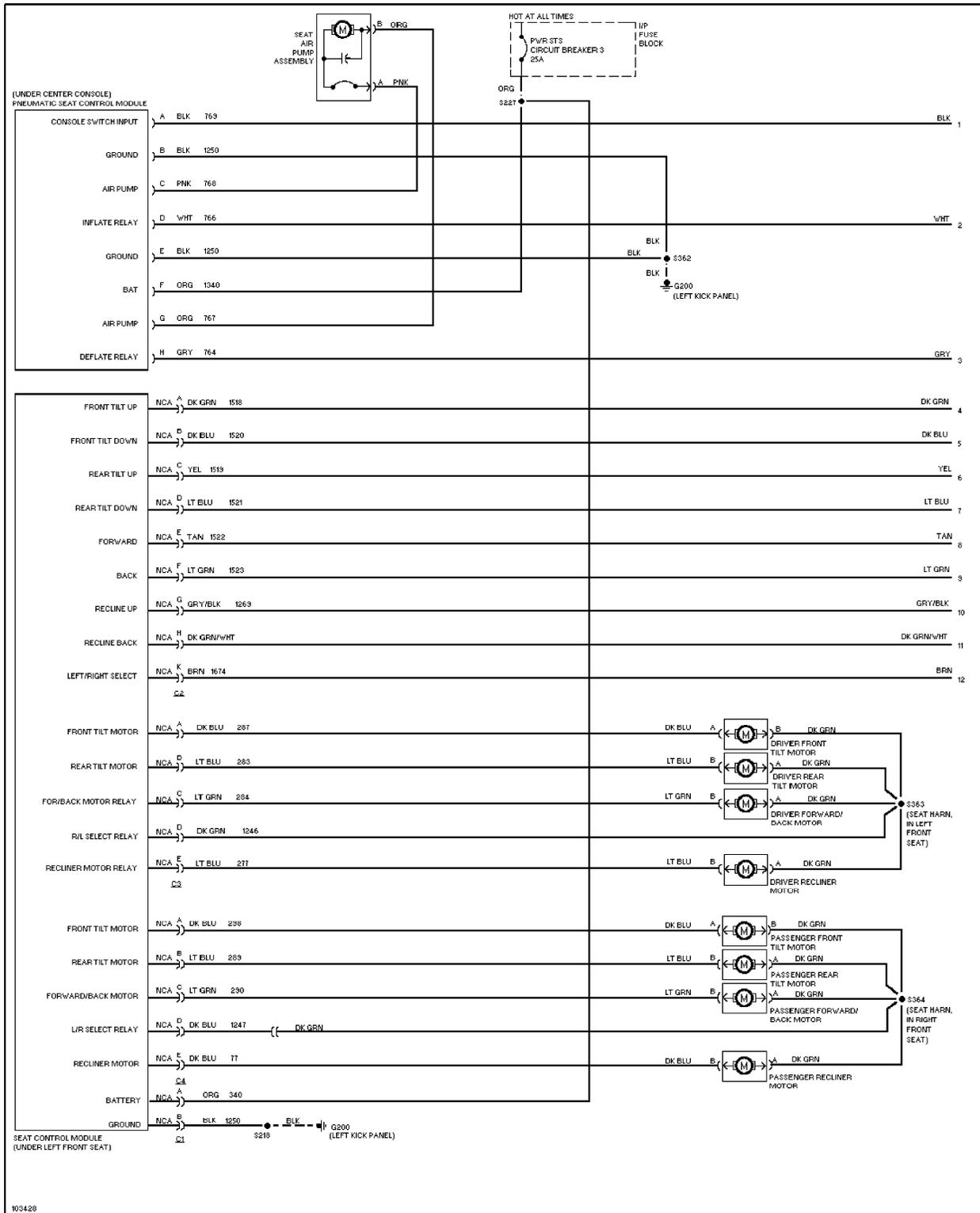


Fig. 7: Pneumatic Sport Seats Wiring Diagram (1 Of 2)

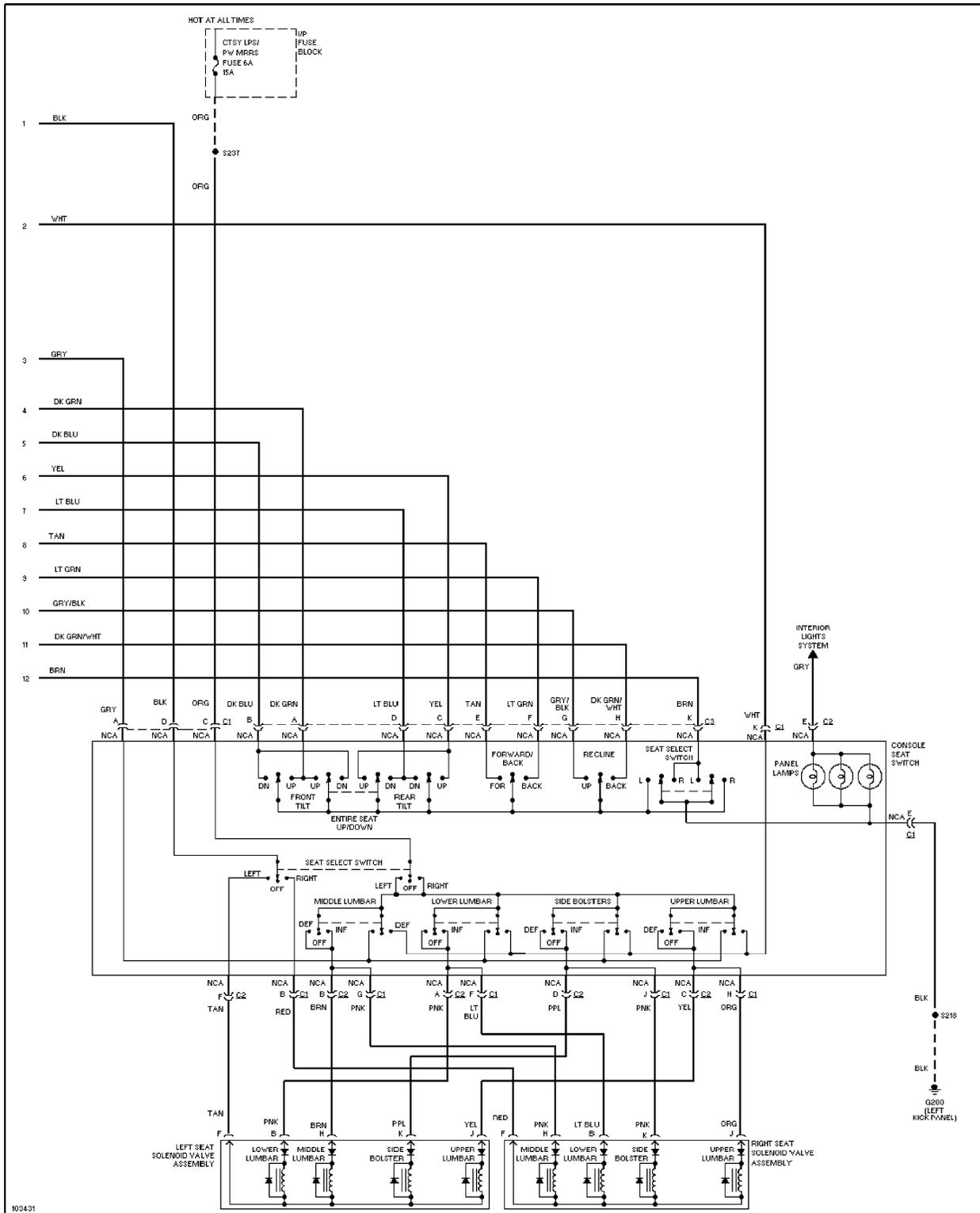


Fig. 8: Pneumatic Sport Seats Wiring Diagram (2 Of 2)