

# Power Seat Controls

## 1970-72 GENERAL MOTORS

### GENERAL INFORMATION

Reference will be made, in the following information and service procedures, to certain body types to which the information and procedure pertains. The following table identifies body types by GM Division and Car Name.

Body Type	GM Division	Car Name
"A" Body	Buick	Skylark & Custom, GS
	Chevrolet	Chevelle Nomad & 300, Chevelle Malibu, Concours Estate, Monte Carlo, Oldsmobile..F-85, Cutlass & Supreme, 442, Vista Cruiser.
	Pontiac	All Tempest, Grand Prix.
"B" Body	Buick	LeSabre, Estate Wagon, Centurion.
	Chevrolet	Biscayne, Bel Air, Impala, Caprice.
	Oldsmobile	All Delta 88 Models.
	Pontiac	Catalina, Brougham, Bonneville, Grandville.
"C" Body	Buick	Electra.
	Cadillac	Fleetwood Brougham, Calais, DeVille.
	Oldsmobile	All 98 Models.
"D" Body	Cadillac	Fleetwood 75.
"E" Body	Buick	Riviera.
	Cadillac	Eldorado.
	Oldsmobile	Toronado.
"F" Body	Chevrolet	Camaro.
	Pontiac	Firebird.

### ELECTRICAL COMPONENT DATA

**Circuit Breaker** – Circuitry and wiring for power equipment is protected by a 40 amp. circuit breaker of the "plug-in" type mounted on the fuse panel for all GM Divisions except Chevrolet "A" styles. A "bolt-on" circuit breaker is used by Chevrolet "A" styles and is located in engine compartment on dash panel.

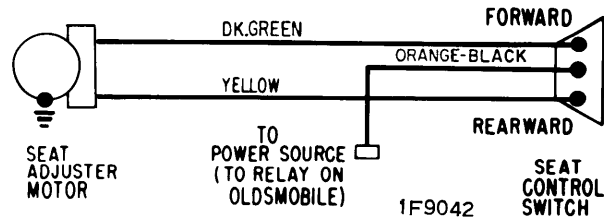
**Motor** – All systems use a single 12 volt reversible shunt-wound motor with built-in circuit breaker.

**Control Switch** – Toggle type, installed in the left seat side panel or left front door arm rest.

**Junction Block** – Located on reinforcement at left shroud on Buick "E" styles. Current to the junction block is supplied from the circuit breaker and power seat harness feed wire plugs into the junction block. On "A" styles, current is supplied from the circuit breaker.

### OPERATION

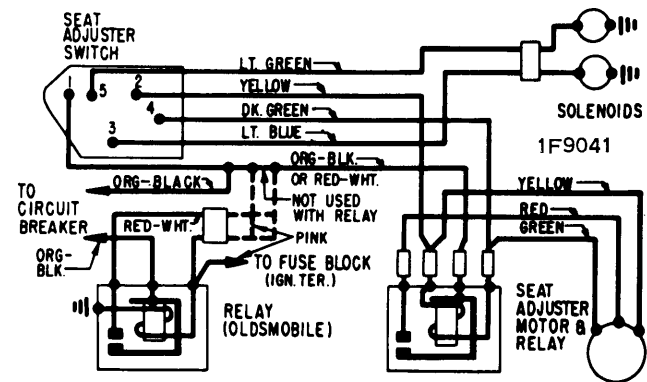
**2-Way Seats** – These seats operate in a horizontal plane in forward or rearward direction only. The seat adjusters are actuated when the control switch energizes the motor. Each end of the motor shaft is connected to a jack-screw which propels the seat adjusters in the desired direction through a horizontal gear nut attached to the seat adjuster.



2-WAY POWER SEAT DIAGRAM

**4 & 6-Way Seats** – Operating mechanism has a transmission assembly incorporating solenoids and drive cables to the seat adjusters. 4-Way seats use one solenoid to control the horizontal seat movement and another to control the vertical seat movement. On 6-Way seats, an additional solenoid is used to control vertical movement of the rear of the seat.

When the control switch is actuated for a desired direction of movement the motor and one of the solenoids are energized simultaneously, and the solenoid plunger engages with the driving gear dog. The driving gear rotates the drive cables and operates both adjusters. When the control switch is released, a return spring disengages the solenoid plunger from the driving gear dog.



4-WAY POWER SEAT WIRING DIAGRAM

### COMPONENT REPLACEMENT

#### Seat Assembly

**2, 4 & 6-Way Seats (All Body Styles)** – Seat assemblies may be removed from vehicle as follows:

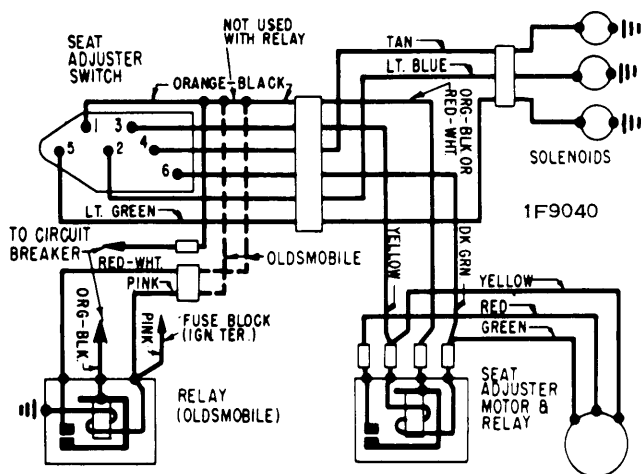
- 1) Operate seat to full forward position. Operate 4-Way or 6-Way seats to full up position. If inner seat belts go through the seat assembly, remove floor pan anchor plate bolt.
- 2) Where necessary, remove sill plates and turn back floor mat to expose seat adjuster attaching nuts or bolts. Remove adjuster bolts at rear.

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3) Operate seat to full rearward and remove front adjuster attaching bolts. Tilt assembly rearward enough to disconnect harness feed connector, and detach harness from clip on floor pan.

4) On two-door styles with electric seat back locks, disconnect both right and left lock actuator feed wires at connectors under seat. Also disconnect feed wires from all other accessories and equipment contained in assembly. Remove seat from vehicle.

5) To install, reverse removal procedure.



6-WAY POWER SEAT WIRING DIAGRAM

### Seat Adjuster Assembly

#### 2 4 & 6-Way Full Width Seat & 60/40 Drivers Seat

1) Remove seat assembly with adjusters attached, as previously described. Detach drive cables from gear nuts of adjuster to be removed.

2) Remove front and rear attaching bolts and remove adjuster from seat assembly. Install by reversing procedure.

#### 4-Way Bucket Seat

1) Remove seat assembly with adjuster attached, as previously described. If outboard adjuster is being removed, disconnect both horizontal and vertical drive cables from vertical gearnut and horizontal actuator.

2) Remove nuts attaching motor and transmission support to adjuster. Remove adjuster front and rear attaching bolts.

3) Carefully disengage adjuster from support and disengage from torque tube. Remove adjuster from seat assembly.

4) To install, reverse removal procedure.

**ADJUSTER ATTACHING BOLTS CAUTION** - Adjuster to seat frame attaching bolts are important to seat performance and to occupants safety. If replacement of bolts is necessary, replace with same part number or with an equivalent

part. **DO NOT USE A REPLACEMENT PART OF LESSER QUALITY OR SUBSTITUTE DESIGN.**

### Seat Adjuster "Phasing"

When installing seat assemblies in vehicle, adjusters must be parallel and "in phase" with each other. If one adjuster reaches its maximum travel in a given direction before the other adjuster, proceed as follows:

#### Horizontal Travel

1) Operate control switch until one adjuster reaches full forward position. Detach horizontal drive cable from this adjuster.

2) Operate seat forward until other adjuster reaches full forward position.

3) Connect drive cable that was detached and check horizontal travel of seat assembly.

#### Vertical Travel (Front Or Rear)

1) Operate control switch until one adjuster has reached full up position at both front and rear. Disconnect both front and rear vertical drive cables from this adjuster.

2) Operate switch until other adjuster reaches full up position at both front and rear.

3) Connect previously removed vertical drive cables. Check vertical travel by operating adjusters through one or two complete cycles.

4) Above operation may be repeated on an "as required" basis if adjusters not in phase after test cycling.

### Drive Motor

#### 2-Way Full Width Seat and 60/40 Drivers Seat ("C" Body)

1) Remove seat assembly from vehicle. On 60/40 seat remove one adjuster assembly.

2) Disconnect both power drive cables from motor. Disconnect feed wire harness from motor.

3) Remove screws holding motor support bracket to seat bottom frame and remove motor and bracket from seat. Remove motor attaching screws and remove motor from support bracket.

4) To install, reverse removal procedure.

#### 4-Way Full Width Seat ("A" Body)

1) With seat assembly removed from vehicle, disconnect wire harness from motor relay assembly.

2) Remove screws attaching motor and transmission support to seat bottom. Remove motor attaching screws and remove motor assembly from support.

3) To install, reverse removal procedure, making sure rubber couplet is properly engaged at both motor and transmission ends.

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### 6-Way Full Width Seats ("B", "C", & "E" Body)

- 1) Removal procedure is same as 4-Way (above).
- 2) To install, reverse removal procedure. Be sure that rubber coupling is engaged at both motor and transmission. Check that seat harness is secured to seat.

### 6-Way - Pontiac, Buick, Oldsmobile & Cadillac 60/40 Seat

- 1) If seat is operable, raise seat to full up position. Detach wire harness connectors from motor relay.
- 2) Remove motor attaching screws from underside of motor and transmission support. Disengage motor from drive coupling and remove motor.
- 3) If seat is inoperative in "down" position, remove motor from under rear of seat.
- 4) To install, reverse removal procedure.

### 4-Way Bucket Seat

- 1) If motor can be operated, raise seat to full up position. Disconnect wire harness connector from motor relay.
- 2) At front of seat remove motor and transmission drive belt cover. Remove drive belt from motor and transmission drive pulleys (pulleys may be removed from either motor or transmission by pulling them off shaft).
- 3) Remove screws under motor and transmission support attaching motor to support and remove motor from under seat.
- 4) To install, reverse removal procedure.

## TROUBLE SHOOTING

### 2-Way Seat

**Seat Will Not Move In Either Direction** - Make checks and tests as follows:

- 1) Test for current supply at control switch. With voltmeter or test lamp, test control switch operation.
- 2) Check circuit from control switch to motor for short or open circuit. Check ground wire attachment of adjuster.
- 3) Check operation of motor by connecting one end of a jumper wire to a power source and the other to one of the motor terminals. Then connect the jumper lead to the other motor terminal. If motor does not operate, repair or replace motor.

### Seat Operates In Only One Direction

- 1) With voltmeter or test lamp, test control switch operation. Check circuit from switch to motor for short or open circuit.
- 2) Check motor operation using external power source. If motor does not operate in both directions, repair or replace.

### 4-Way Seat

#### Motor Does Not Operate

- 1) Check circuits from power source to switch and from switch to motor. Check for defective switch.
- 2) Test for proper operation of motor relay. Test motor using external power supply, first at one motor terminal and then the other. If motor defective, repair or replace.

#### Motor Operates Properly But Adjusters Not Actuated

- 1) Check control switch and test circuit from switch to solenoid.
- 2) Test solenoid for operation. If defective, repair or replace.

#### Motor Operates In One Direction Only

- 1) Test circuits from control switch to motor terminals.
- 2) If circuits OK, test control switch for intermittent or no contact in each position.
- 3) Apply current to each of the motor field coil terminals from an external source. If motor does not run in both directions, repair or replace motor.

### 6-Way Seat

#### Tilt Of Seat Does Not Adjust Properly

- 1) Check for short or open circuit between control switch and solenoids. Check for defective solenoid.

#### Trouble Shooting Other Malfunctions

- 1) All checks and tests listed for 2-Way and 4-Way seats apply to 6-Way seats.