

GROUP 5

SEATS

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SECTION 5-A

CONVENTIONAL TYPE FRONT SEATS

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5-1 FRONT SEAT ASSEMBLY MANUALLY OPERATED

a. Description

Manually operated front seat adjusters provide fore and aft movement of the seat. When the knob at the left of the seat is pulled up, the seat adjusters unlock, permitting a horizontal travel of the seat. When the seat is in the desired position, the knob is released and the seat is locked.

b. Removal and Installation of Front Seat Assembly (With Attached Seat Adjusters)

1. Turn back floor covering and remove four seat adjuster-to-floor pan bolts from each adjuster.
2. With the aid of a helper, remove seat assembly from body.
3. To install, reverse removal procedure.

c. Removal and Installation of Front Seat Adjuster (Manual)

1. Remove seat assembly with attached seat adjusters from body and place upside down on a clean protected surface.

2. When removing left adjuster, it is necessary to remove the seat adjuster control knob.

3. Squeeze hooked end of seat adjuster locking wire together and slide retaining spring back over hump in locking wire, remove wire from retainer on seat bottom frame and disengage locking wire from seat adjuster.

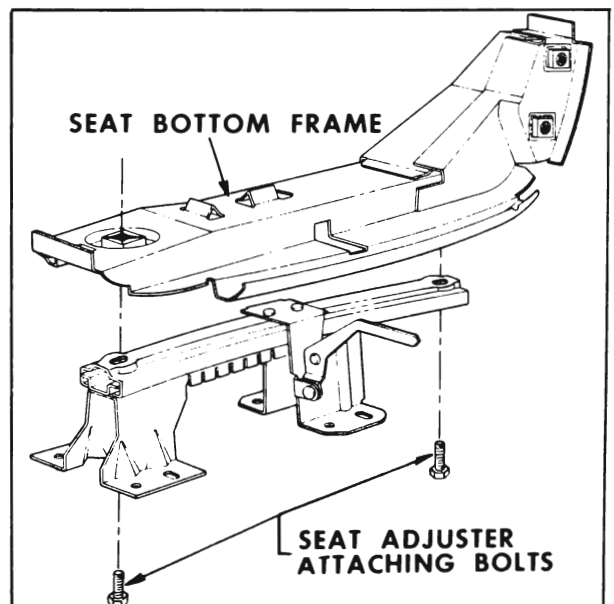


Figure 5-1—Manual Seat Adjuster

4. Remove adjuster-to-seat bottom frame front and rear attaching bolts and remove seat adjuster from seat assembly (Figure 5-1).

5. To install, reverse removal procedure.

6. Check operation of seat assembly. If right adjuster does not lock or unlock satisfactorily when control handle on left adjuster is operated, remove locking wire retainer from hole in seat bottom frame, and adjust retainer by selecting another hole to obtain proper tension in locking wire.

5-2 FRONT SEAT ASSEMBLY (TWO-WAY ELECTRIC)

a. Description

The electrically operated two-way front seat assembly can be moved forward or rearward by means of a manually operated seat control switch mounted in the left seat side panel.

b. Removal and Installation of Front Seat Assembly—Two-Way Electric (With Attached Adjusters)

1. Under front of seat disconnect seat control switch wire harness from feed wire harness and detach control switch harness from clip on floor pan.

2. Turn back floor covering and remove four seat adjuster-to-floor pan attaching bolts from each adjuster. This will also disconnect ground wire.

3. Remove seat assembly with attached adjusters from body.

4. To install, reverse removal procedure. Make sure ground wire is installed under seat adjuster attaching bolt.

IMPORTANT: When installing seat assembly in body, seat adjusters should be parallel and "in phase" with each other. In the event the adjusters are "out of phase" (that is one adjuster reaches its full forward or rearward travel before the other adjuster), proceed as follows: apply power source and actuate until left seat adjuster reaches full forward or rearward travel. Disconnect power drive cable at left side of actuator motor and actuate right adjuster until it reaches the corresponding full forward or full rearward position. Connect left adjuster power drive cable and check seat operation to full limits of fore and aft travel.

c. Removal and Installation of Front Seat Adjusters—Two-Way Electric

1. Remove front seat assembly with attached adjusters and place upside down on a clean protected surface. See Front Seat Assembly - Two-Way Electric (With Attached Adjusters) - Removal and Installation procedure.

2. Detach power drive cable from gear nut of adjuster to be removed (Figure 5-2).

3. Remove seat adjuster-to-seat bottom frame front and rear attaching bolts (Figure 5-2).

4. Remove adjuster from assembly.

5. To install, reverse removal procedure.

d. Removal and Installation of Front Seat Adjuster Gear Nut and Jackscrew Assembly— Two-Way Electric

1. Remove front seat assembly with attached adjusters and place upside down on a clean, protected surface. See Front Seat Assembly - Two-Way Electric (With Attached Adjusters) - Removal and Installation procedure.

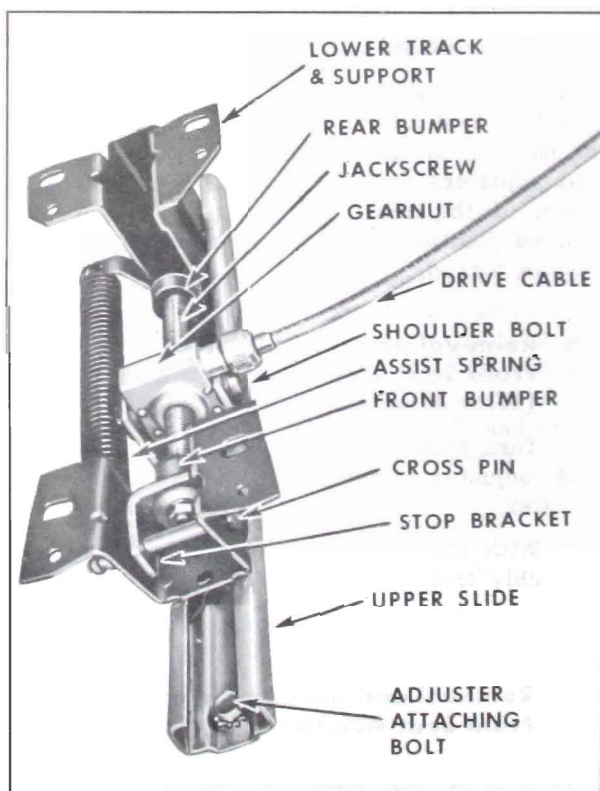


Figure 5-2—Seat Adjuster - Electric Horizontal

2. Detach power drive cable from gear nut and jackscrew assembly to be removed.

3. Using a suitable tool (preferably a "clutch" type screwdriver) remove two shoulder bolts securing gear nut to upper slide portion of seat adjuster assembly (Figure 5-2).

4. Remove retainer that secures stop bracket crosspin to adjuster front pedestal and remove crosspin (Figure 5-2).

5. Remove gear nut and jackscrew assembly from seat adjuster assembly.

6. When installing new gear nut only, remove cotter pin, washers and rubber bumper from rear end of jackscrew and remove gear nut from jackscrew.

7. When installing new jackscrew only, remove nut, washers, rubber bumper and stop bracket with inserted rubber grommet from front end of jackscrew, as well as gear nut and washers, rubber bumper and cotter pin from rear end of jackscrew.

8. To install, reverse removal procedure.

e. Removal and Installation of Front Seat Adjuster Plastic Shoes—Two-Way Electric

1. Remove front seat adjuster to be serviced from front seat assembly. (See Front Seat Adjuster - Two-Way Electric - Removal and Installation procedure).

2. Using a suitable tool (preferably a "clutch" type screwdriver), remove two shoulder bolts securing gear nut to upper slide portion of seat adjuster assembly (Figure 5-2).

3. Slide lower track and support base portion of seat adjuster, with attached jackscrew and gear nut, forward until it disengages from upper slide assembly. The four plastic shoes may now be disengaged from the positioning slots on the lower track.

4. To install, reverse removal procedure making sure that groove in plastic shoe slips onto the lower track with the thinner section of the shoe protruding above the surface of the track.

f. Removal and Installation of Front Seat Adjuster Actuator Motor—Two-Way Electric

1. Remove front seat assembly as previously described.

2. Disconnect both power drive cables from actuator motor.

3. Remove two bolts that secure actuator motor support bracket to weld nuts at front of seat bottom frame and remove actuator motor with attached support bracket from seat assembly.

4. When installing new motor, disconnect motor-to-support bracket jumper ground wire from motor and transfer support bracket with inserted rubber grommets and attached jumper ground wire from old motor to new actuator motor.

5. To install, reverse removal procedure and check seat operation to extreme limit of fore and aft travel.

5-3 FRONT SEAT ASSEMBLY—FOUR-WAY ELECTRIC

a. Description

The seat adjuster motor, which is energized by a single button control switch, operates both the horizontal and vertical movement of the seat adjusters through a solenoid actuated transmission assembly. The transmission assembly incorporates one solenoid which controls the horizontal movement of the seat and a second solenoid which controls the vertical movement of the seat. When either solenoid is energized, the solenoid plunger engages the clutch shaft dog with the driving gear dog; the driving gear dog turns the clutch shaft which in turn operates both seat adjusters by means of the flexible cables.

b. Removal and Installation of Front Seat Assembly—Four-Way Electric

1. Under front of seat, disconnect seat control switch wire harness from feed wire harness and detach control switch harness from clip on floor pan.

2. Turn back floor carpeting, remove both seat adjuster track covers and remove four seat adjuster-to-floor pan attaching bolts from each adjuster. Remove carpet retainers at front of seat adjusters.

3. With aid of a helper, remove seat assembly with attached adjusters and actuator assembly from body.

4. To install seat assembly, reverse removal procedure. Make sure ground wire is

securely attached at right seat adjuster and under seat adjuster-to-floor pan attaching bolt.

IMPORTANT: When installing seat assembly in body, seat adjusters should be parallel and "in phase" with each other. In the event the adjusters are "out of phase" (that is, one adjuster reaches its maximum horizontal or vertical travel in a given direction before the other adjuster), proceed as follows:

a. Horizontal Travel - operate seat control switch until one adjuster reaches full forward position. Detach horizontal drive cable from adjuster which has reached full forward position. Operate seat forward until other adjuster reaches full forward position; then, connect horizontal drive cable and check horizontal travel of seat.

b. Vertical Travel - operate seat control switch until one adjuster reaches the fully raised position. Disconnect vertical drive cable from adjuster which has reached the fully raised position. Operate seat upward until other adjuster has reached the fully raised position; then, connect the vertical drive cable and check vertical travel of seat.

c. Removal and Installation of Front Seat Adjuster Assembly—Four-Way Electric

1. Operate seat assembly to fully raised and forward position.

2. Remove front seat assembly from body with attached adjusters, motor and transmission and place upside down on a clean protected surface.

3. Detach the two power drive cables from adjuster to be removed.

4. Remove adjuster-to-seat bottom frame front and rear attaching bolts and remove adjuster from seat assembly.

5. To install seat adjuster assembly, reverse removal procedure. Black cable attaches to horizontal actuator and yellow cable attaches to vertical gear nut.

NOTE: Check operation of seat adjusters and make sure adjusters are "in phase". See step 4 under "Removal and Installation of Front Seat Assembly".

d. Removal and Installation of Front Seat Adjuster Vertical Jackscrew, Gear Nut and Spring—Four-Way Electric

1. Operate seat assembly to fully raised position and remove seat assembly from body.

2. Remove seat adjuster from side on which jackscrew is to be removed.

3. Using a clutch type screwdriver or other suitable tool, remove shoulder screws securing linkages to vertical gear nut (Figure 5-3).

4. Using a drift punch, carefully drive out jackscrew pin (Figure 5-3).

5. Move jackscrew, gear nut and spring assembly sufficiently rearward to disengage front of jackscrew from adjuster frame; then, raise front of jackscrew and move assembly forward sufficiently to remove assembly from seat adjuster.

NOTE: It may be necessary to manually raise or lower the upper portion of adjuster to gain clearance for removal of jackscrew, gear nut and spring assembly.

6. To remove gear nut and spring from jackscrew, actuate or turn gear nut off jackscrew.

7. To install, reverse removal procedure.

e. Removal and Installation of Front Seat Adjuster Horizontal Actuator or Upper and Lower Channels—Four-Way Electric

1. Remove front seat adjuster.

2. Remove screws securing horizontal actuator and remove actuator from seat adjuster (Figure 5-3).

3. Slide seat adjuster lower channel from upper channel and, if required, remove plastic shoes from lower channel track.

4. To install, reverse removal procedure. If lower channel has been removed from upper channel, make sure all four plastic shoes are

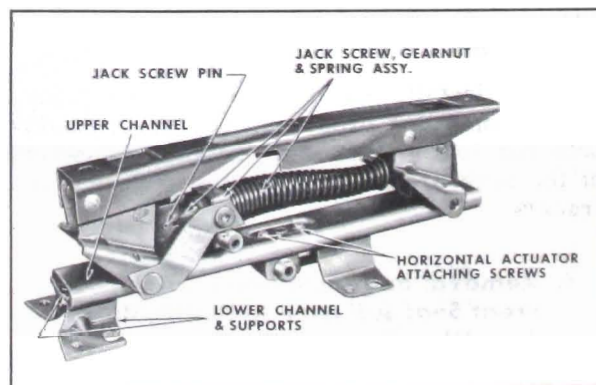


Figure 5-3—Seat Adjuster - Four-Way

installed on lower track. Apply Lubriplate to track portion of upper channel and to teeth on lower channel. When installing horizontal actuator, adjust actuator so that drive gear is fully engaged with teeth on lower channel. When horizontal actuator attaching screws are tightened, there should be no free motion between upper and lower channels.

f. Removal and Installation of Front Seat Adjuster Electric Motor or Drive Cable—Four-Way Electric

1. Remove front seat assembly as previously described.

2. Remove motor support-to-seat frame attaching bolts.

3. Move motor assembly towards left side of seat sufficiently to disengage motor drive cable; then, remove motor from support assembly. Motor drive cable may be removed, if required.

4. To install, reverse removal procedure, making sure motor drive cable is properly engaged at both motor and transmission.

g. Removal and Installation of Front Seat Adjuster Horizontal and Vertical Cables—Four-Way Electric

1. Remove front seat assembly from body with attached adjusters, motor and transmission and place upside down on a clean protected surface.

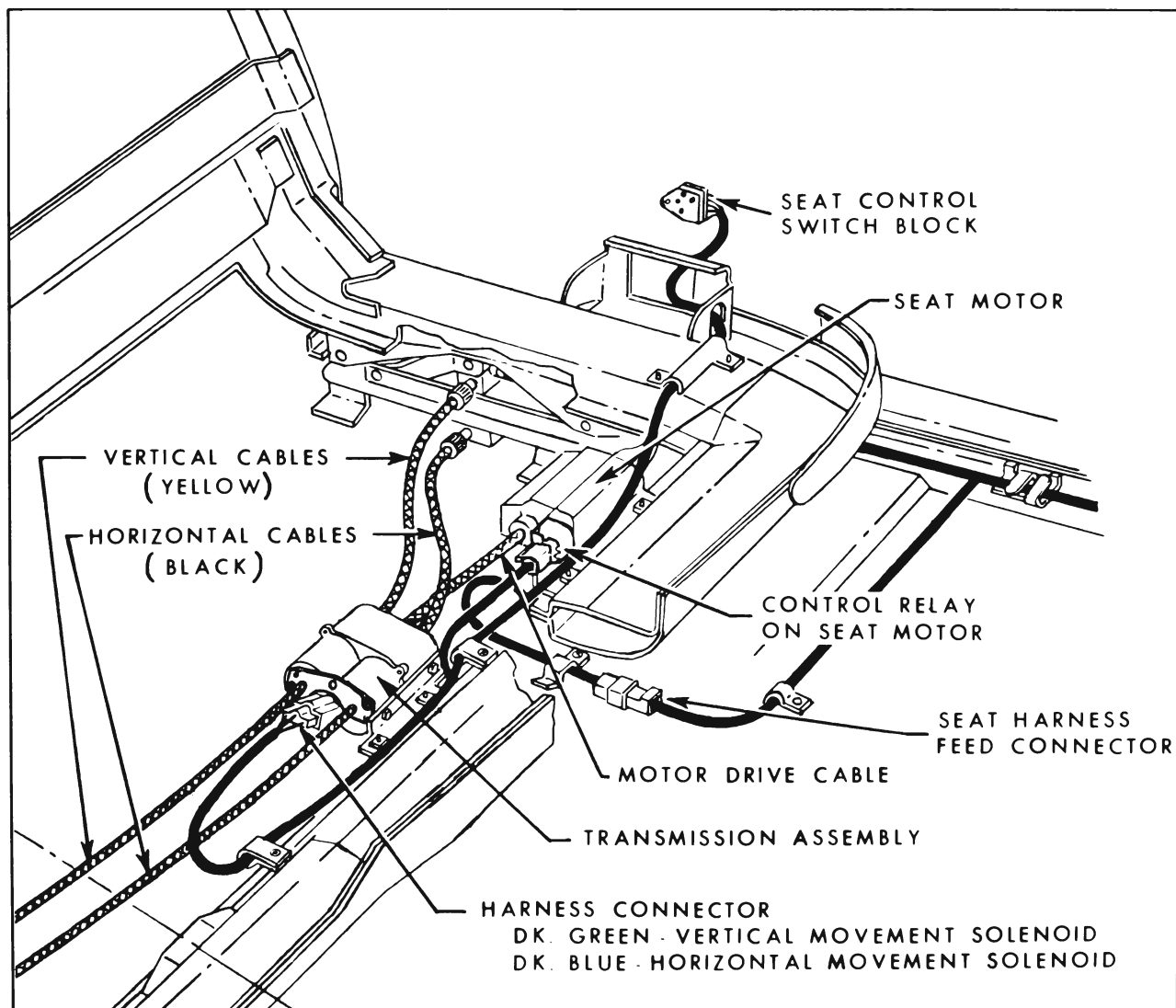


Figure 5-4—Four-Way Seat Assembly

2. Detach both horizontal and vertical cables from seat adjuster.

3. Remove screws securing horizontal and vertical cable and plate on side of transmission from which cables are being removed and remove cables from seat assembly (Figure 5-4).

4. To remove one cable from end plate for service replacement, place end plate in a vise and with a suitable tool, remove knock-out plug located adjacent to cable hole. This will allow cable to be removed from end plate and a new service replacement cable installed.

5. To install horizontal and vertical cables, reverse removal procedure.

h. Removal and Installation of Front Seat Adjuster Transmission—Four-Way Electric

1. Remove front seat assembly from body with attached adjusters, motor and transmission and place upside down on a clean protected surface.

2. Disconnect wire harness connector from transmission (Figure 5-4).

3. Remove screws securing horizontal and vertical cable end plate on both sides of transmission and detach cables from transmission.

4. Remove transmission to support attaching bolts; then, disengage transmission from motor drive cable and remove transmission from seat assembly (Figure 5-4).

5. To install, reverse removal procedure.

i. Disassembly and Assembly of Front Seat Adjuster Transmission—Four-Way

1. Remove front seat adjuster transmission from seat assembly.

2. Remove screw securing ground strap to solenoid housing and screws securing transmission support to gear and solenoid housing (Figure 5-5).

3. Remove screws securing gear and solenoid housings together; then, carefully separate housings and remove component parts of transmission assembly (Figure 5-5).

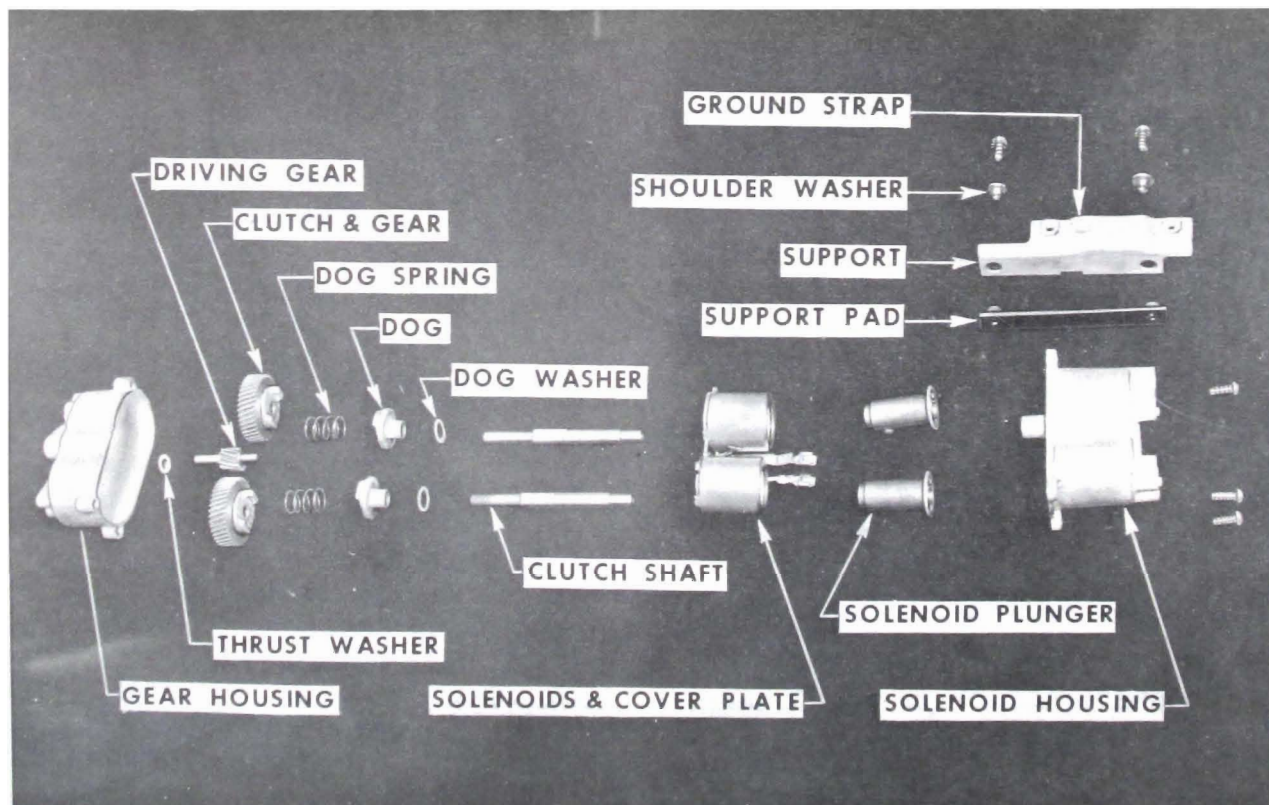


Figure 5-5—Four-Way Transmission - Disassembled

4. To assemble transmission assembly, reverse removal procedure.

IMPORTANT: Prior to or during installation, lubricate frictional surfaces of driving gear thrust washer, clutch and gears, dog washers, clutch shaft and solenoid plungers with Lubriplate.

5-4 FRONT SEAT ASSEMBLY— SIX-WAY ELECTRIC

a. Description

The electrically-operated six-way front seat assembly can be moved forward, rearward, upward, downward or tilted by means of a

manually-operated seat control switch. The large center control knob controls movement of the entire seat assembly horizontally or vertically. The smaller forward control knob controls the vertical movements of the front of the seat assembly causing the seat assembly to tilt. In the same manner, the rear control knob controls vertical movement of the rear of the seat assembly. This seat adjuster operating mechanism incorporates a transmission assembly which includes three solenoids and six drive cables leading to the seat adjusters. Solenoid #1 (Figure 5-6) controls the vertical movement of the rear edge of the seat. Solenoid #2 controls the horizontal movement of the seat. Solenoid #3 controls the vertical movement of the front edge of the seat. In addition to the six seat adjuster drive cables

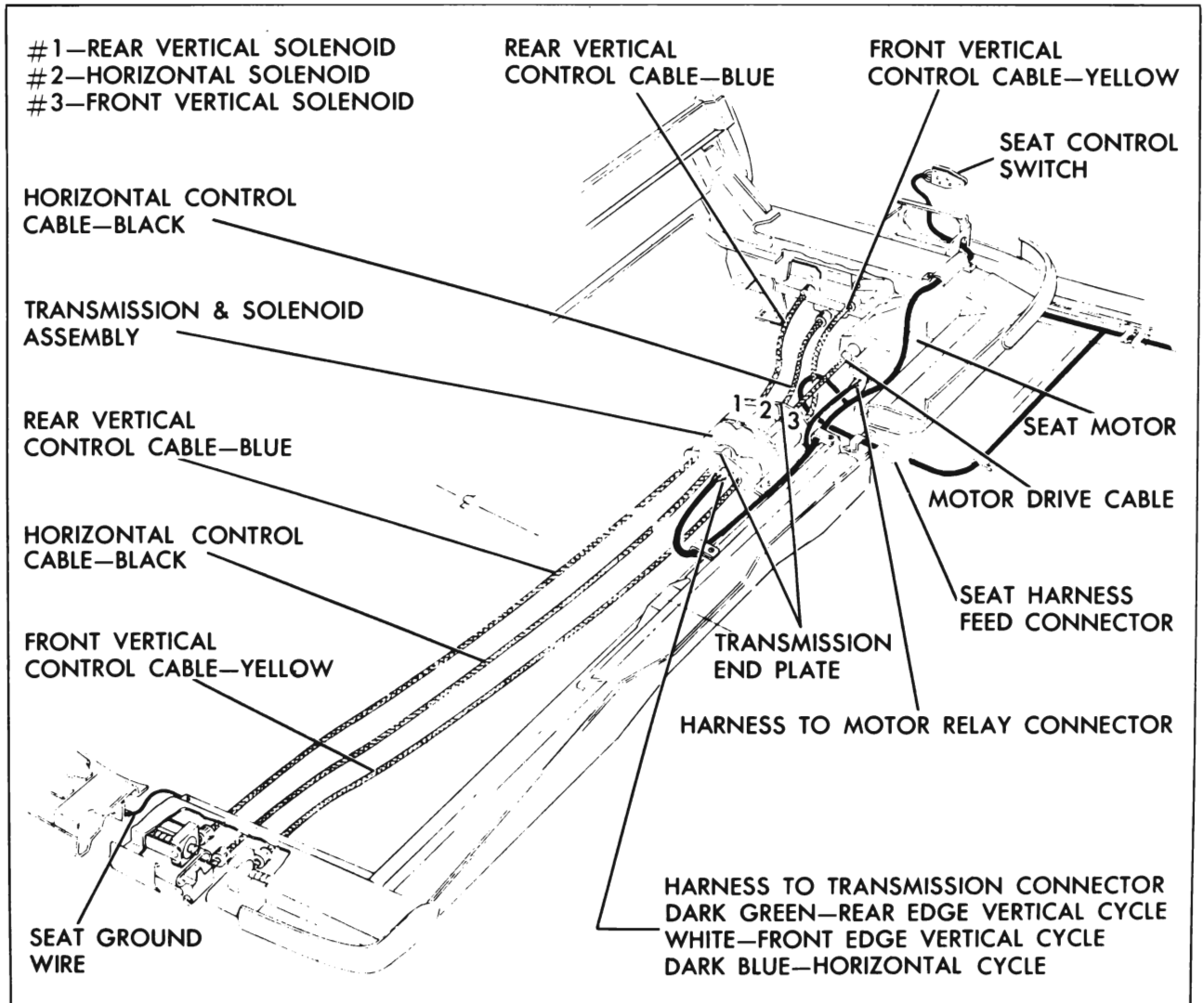


Figure 5-6—Six-Way Seat Installation

at the transmission assembly, a motor drive cable is installed from the motor to the transmission assembly (Figure 5-6). When one of the control switch buttons is actuated, the motor and one of the solenoids are energized simultaneously. The solenoid plunger engages the large gears with a driving gear. The driving gear rotates the large gears which rotates the drive cables and operates both adjusters. When the switch contacts are opened a spring returns the solenoid plunger to its original position, disengaging the large gears from the driving gear.

b. Removal and Installation of Front Seat Assembly

1. Under front of seat, disconnect seat wire harness from feed wire harness and detach control switch harness from clip on floor pan.

2. Turn back floor carpeting, remove both seat adjuster track covers and remove four seat adjuster-to-floor pan attaching bolts from each adjuster. Remove carpet retainers at front of seat adjusters.

3. With aid of a helper, remove seat assembly with attached adjusters, motor and transmission assembly from body.

4. To install seat assembly, reverse removal procedure. Make sure ground wire is securely attached at right seat adjuster and under seat adjuster-to-floor pan attaching bolt.

c. Removal and Installation of Front Seat Adjuster Assembly

1. Remove front seat assembly from body with attached adjusters, motor and transmission, and place upside down on a clean protected surface.

2. Detach the three power drive cables from adjuster to be removed (Figure 5-6).

3. Remove adjuster-to-seat bottom frame front and rear attaching bolts and remove adjuster from seat assembly.

4. To install seat adjuster assembly, reverse removal procedure. Black cable attaches to horizontal actuator; yellow cable to front vertical gear nut and blue cable to rear vertical gear nut.

IMPORTANT: When installing seat assembly in body, seat adjusters should be parallel and "in phase" with each other. In the event the

adjusters are "out of phase" (that is, one adjuster reaches its maximum horizontal or vertical travel in a given direction before the other adjuster), proceed as follows:

a. Horizontal Travel - operate seat control switch until one adjuster reaches full forward position. Detach horizontal drive cable from adjuster which has reached full forward position. Operate seat forward until other adjuster reaches full forward position; then, connect horizontal drive cable and check horizontal travel of seat.

b. Front and Rear Vertical Travel - operate seat control switch until one adjuster reaches fully raised position. Disconnect vertical drive cable from adjuster which has reached the full up position. Operate seat upward until other adjuster has reached the full up position; then, connect the vertical drive cable and check vertical travel of seat.

d. Removal and Installation of Front Seat Adjuster Vertical Jackscrew, Gear Nuts and Spring

1. Remove seat assembly from body.

2. Remove seat adjuster from side on which jackscrew is to be removed.

3. Using a clutch-type screwdriver or other suitable tool, remove shoulder screws securing linkages to vertical gear nuts (Figure 5-7).

4. Insert a No. 1 crosshead screwdriver or other suitable tool into drive cable slot in rear vertical gear nut and actuate rear vertical gear nut forward sufficiently to release compression of counter-balance spring.

NOTE: In some cases it may be necessary to actuate the front vertical gear nut forward to provide sufficient room for the rear vertical gear nut forward adjustment to release spring tension.

5. Remove jackscrew front and rear attaching nuts (Figure 5-8). Lift front end of jackscrew sufficiently to disengage from support; then disengage rear end of jackscrew from support and remove jackscrew, gear nuts and spring assembly from adjuster. Spring and spring silencer may now be removed from jackscrew (Figure 5-8).

6. To remove vertical gear nuts, turn or actuate gear nuts off jackscrew.

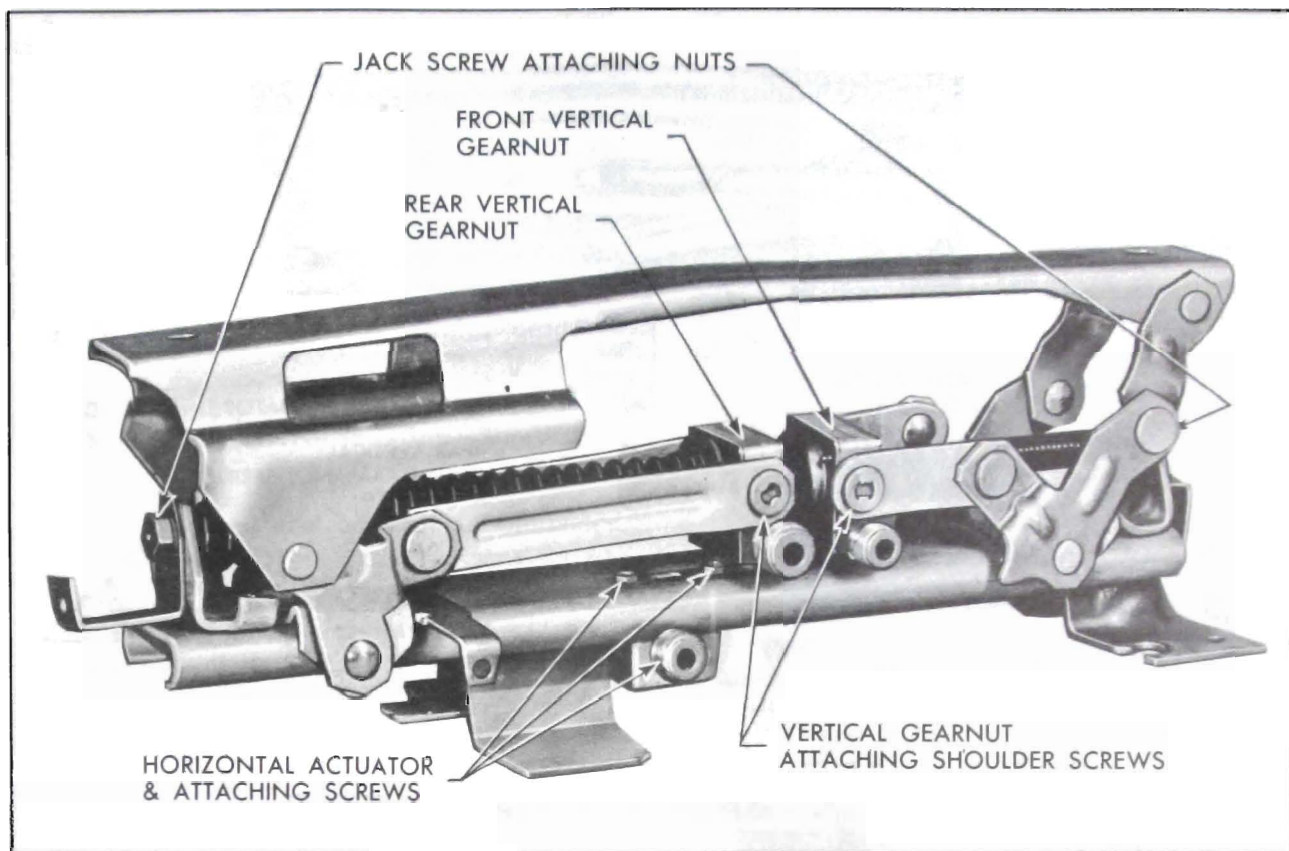


Figure 5-7—Six Way Seat Adjuster

7. To install, reverse removal procedure, making sure jackscrew is installed with unthreaded shoulder at rear of adjuster and gear nuts installed as shown in Figure 5-7. Rear vertical gear nut, which has the larger diameter cable attachment, should be installed to the rear; front vertical gear nut, which has the smaller diameter cable attachment, should be installed at the front. Both vertical gear nuts should have cable attachment at bottom and facing inside of adjuster (Figure 5-7).

e. Removal and Installation of Front Seat Adjuster Horizontal Actuator or Upper and Lower Channels

1. Remove front seat adjuster.
2. Remove screws securing horizontal actuator (Figure 5-7), and remove actuator from seat adjuster.
3. Slide seat adjuster lower channel from upper channel and, if required, remove plastic shoes from lower channel track (see Figure 5-8).

4. To install, reverse removal procedure. If lower channel has been removed from upper channel, make sure all four plastic shoes are installed on lower track. Apply Lubriplate or equivalent to track portion of upper channel and to teeth on lower channel. When installing horizontal actuator, adjust actuator so that drive gear is fully engaged with teeth on lower channel. When horizontal actuator screws are tightened, there should be no free motion between upper and lower channels.

f. Removal and Installation of Front Seat Adjuster Electric Motor or Drive Cable

1. Remove front seat assembly as previously described.
2. Remove motor support-to-seat frame attaching bolts.
3. Move motor assembly towards left side of seat sufficiently to disengage motor drive cable; then, remove motor from support assembly. Motor drive cable may be removed,

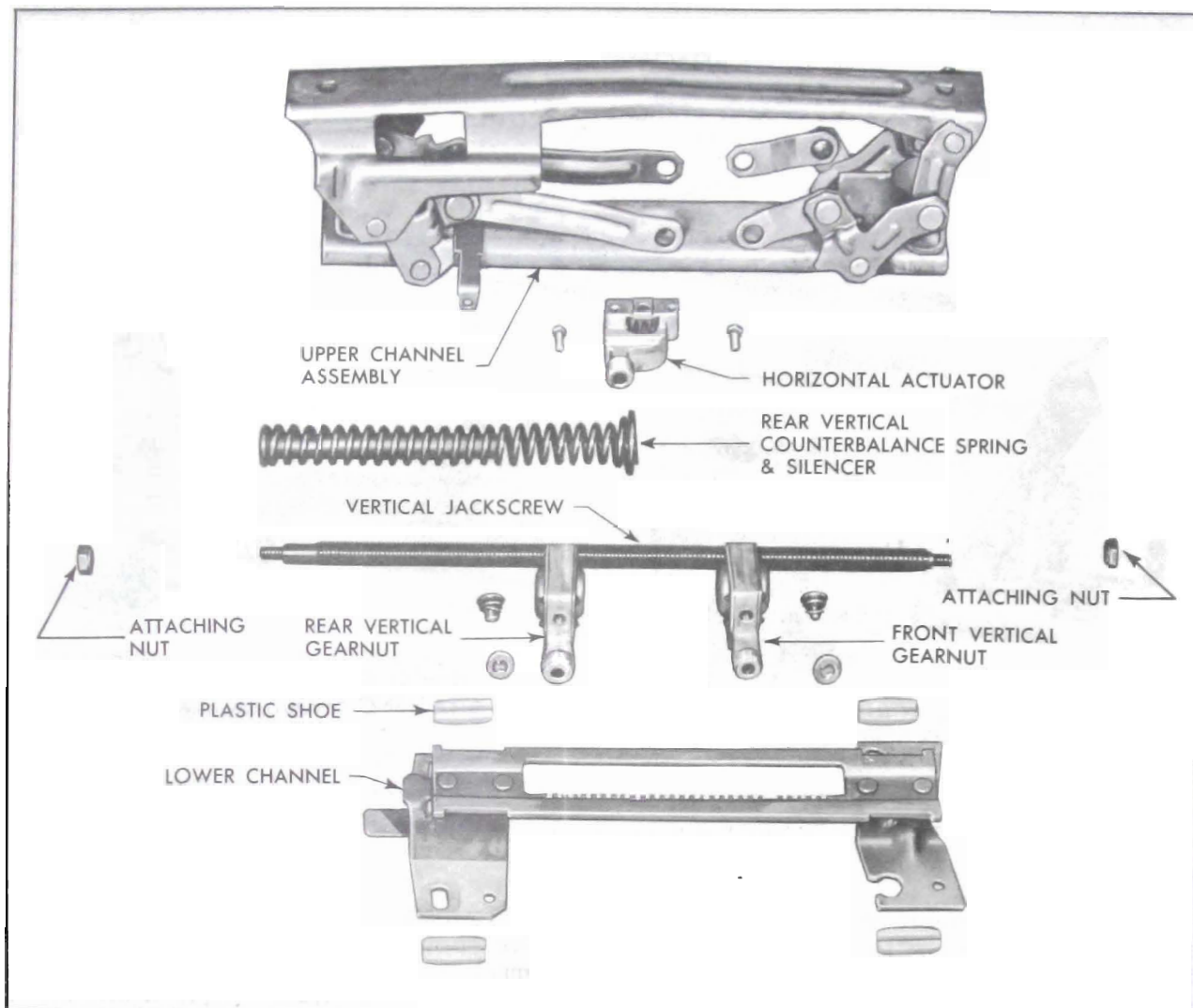


Figure 5-8—Six Way Seat Adjuster Assembly

if required, by removing cable end plate from transmission.

4. To install, reverse removal procedure, making sure motor drive cable is properly engaged at both motor and transmission.

g. Removal and Installation of Front Seat Adjuster Horizontal and Vertical Drive Cables

1. Remove front seat assembly from body with attached adjusters, motor and transmission and place upside down on a clean protected surface.

2. Detach both horizontal and vertical cables from seat adjuster.

3. Remove screws securing horizontal and vertical cable end plate on side of transmission from which cables are being removed and remove cables from seat assembly; then disengage cables from end plate.

4. To install horizontal and vertical cables, reverse removal procedure. Make sure cables are installed to correct gear nuts (Figure 5-6).

h. Removal and Installation of Front Seat Adjuster Transmission

1. Remove front seat assembly from body with attached adjusters, motor and transmission and place upside down on a clean protected surface.

2. Disconnect wire harness connector from transmission (see Figure 5-6).

3. Remove screws securing horizontal and vertical cable end plate on both sides of transmission and detach cables from transmission.

4. Remove transmission to support attaching bolts; then disengage transmission from motor drive cable and remove transmission from seat assembly.

5. To install, reverse removal procedure.

i. Disassembly and Assembly of Front Seat Adjuster Transmission—Six-Way

1. Remove front seat adjuster transmission from seat assembly.

2. Remove screw securing ground strap to solenoid housing and screws securing transmission support to gear and solenoid housings.

3. Remove screws securing gear housing to the solenoid housing; then, carefully separate

housings and remove component parts of transmission assembly (Figure 5-9).

4. To assemble transmission, reverse removal procedure. Figure 5-9 is an exploded view of disassembled transmission showing parts in proper relationship for installation.

IMPORTANT: Prior to or during installation, lubricate frictional surfaces of driving gear, thrust washer, large gears, dog washers, gear shaft and solenoid plungers with Lubriplate or equivalent.

5-5 FRONT SEAT ASSEMBLY REPOSITIONING

a. Repositioning Front Seat Assembly One Inch Forward

1. Remove front seat adjuster-to-floor pan attaching bolts as described in "Front Seat Assembly (With Attached Seat Adjusters) - Removal and Installation" procedure.

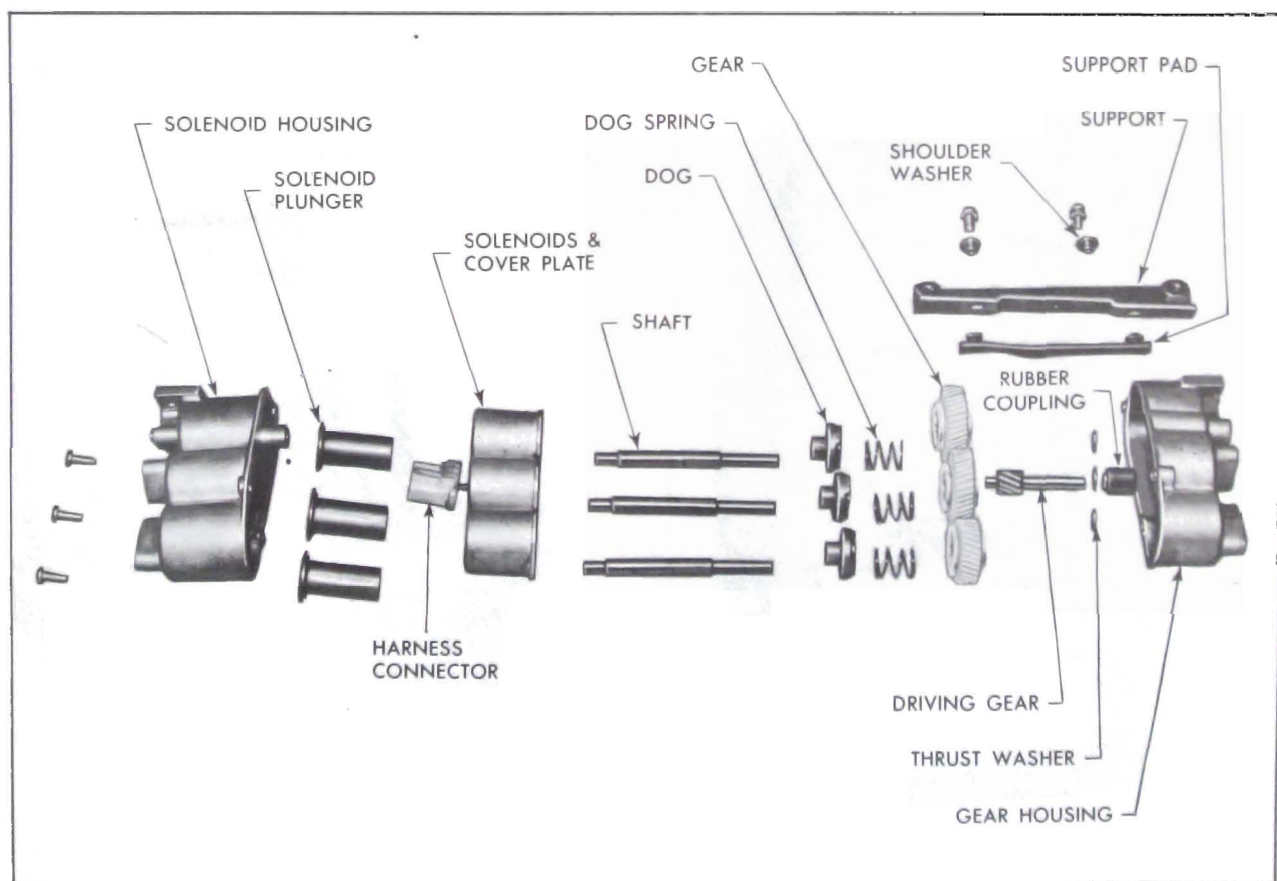


Figure 5-9—Six-Way Seat Transmission Assembly

2. Move seat assembly to one side to gain access to floor pan area below one adjuster.

3. Drill a 3/8 inch diameter hole through the floor pan at guide dimple located one inch forward of each original adjuster attaching hole.

4. Repeat steps 2 and 3 at other end of seat assembly.

5. Seal original seat adjuster attaching bolt holes with body caulking compound.

6. Position seat assembly over drilled holes, install original adjuster attaching bolts and secure in position with 5/16 inch lock washers and 5/16 x 24 hexagon nuts from underneath floor pan.

7. Check seat operation and install previously removed parts.

b. Repositioning Front Seat Assembly One Inch Rearward

1. Remove front seat adjuster-to-floor pan attaching bolts as described in "Removal and Installation of Front Seat Assembly (With Attached Seat Adjusters)" procedure.

2. Prop up each adjuster pedestal and drill out pilot hole to 3/8 inch diameter. (Pilot holes are located in upper surface of pedestal base plate and are one inch forward of original attaching bolt holes.)

3. Reposition seat assembly one inch rearward so that new drilled holes are above weld nuts in floor pan.

4. Install original seat adjuster-to-floor pan attaching bolts.

5. Check seat operation and install previously removed parts.