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Troubleshooting

Backrest

- does not adjust 72.21

Driver's seat

- does not return to memorized position 72.23

Front passenger's seat

- will not adjust with switches 72.25

Power seat w/ memory

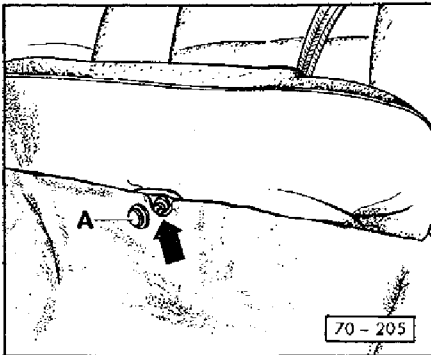
- troubleshooting 72.16

Seat belt warning

- does not function 72.27

Seat frame

- modification 72.28



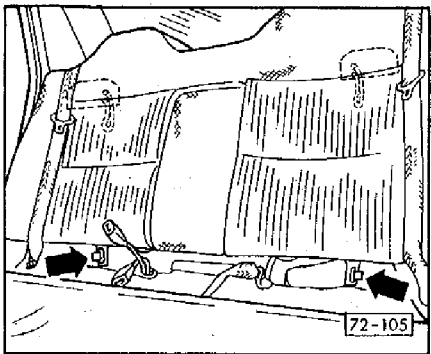
Rear seat bench, removing/installing

Removing

- pry off both cover caps **A**
- remove both Phillips screws
- raise seat bench slightly, pull out toward front

Installing

- install in reverse order of removal



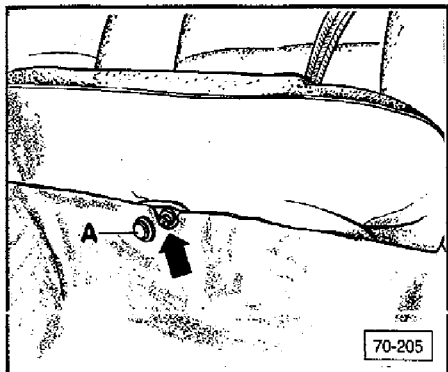
Rear seat back, removing/installing

Removing

- bend up both clips (**arrows**)
- lift seat back upwards and out

Installing

- install in reverse order of removal

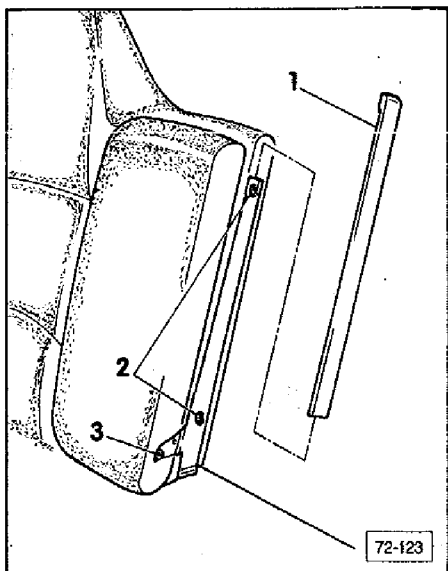


Rear seat bench, removing

- pry off both cover caps **A**
- remove both Phillips screws (arrow)
- raise seat bench slightly, pull out toward front

Rear seat bench, installing

Reinstall all components in reverse order of removal.

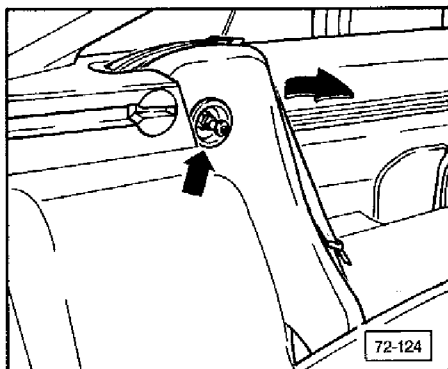


Folding rear seat back, removing

- pull cover **1** upwards
- unscrew bolts **2**
- fold over retainer, pull seat back from inside out of bearing

Folding rear seat back, installing

Reinstall all components in reverse order of removal.

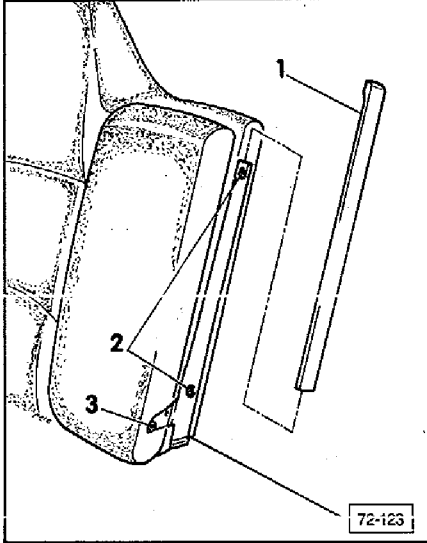


Side upholstery, rear seat back, removing

- fold seat back forwards
- bend side upholstery forward slightly, and pull out from below

Side upholstery, rear seat back, installing

Reinstall all components in reverse order of removal.

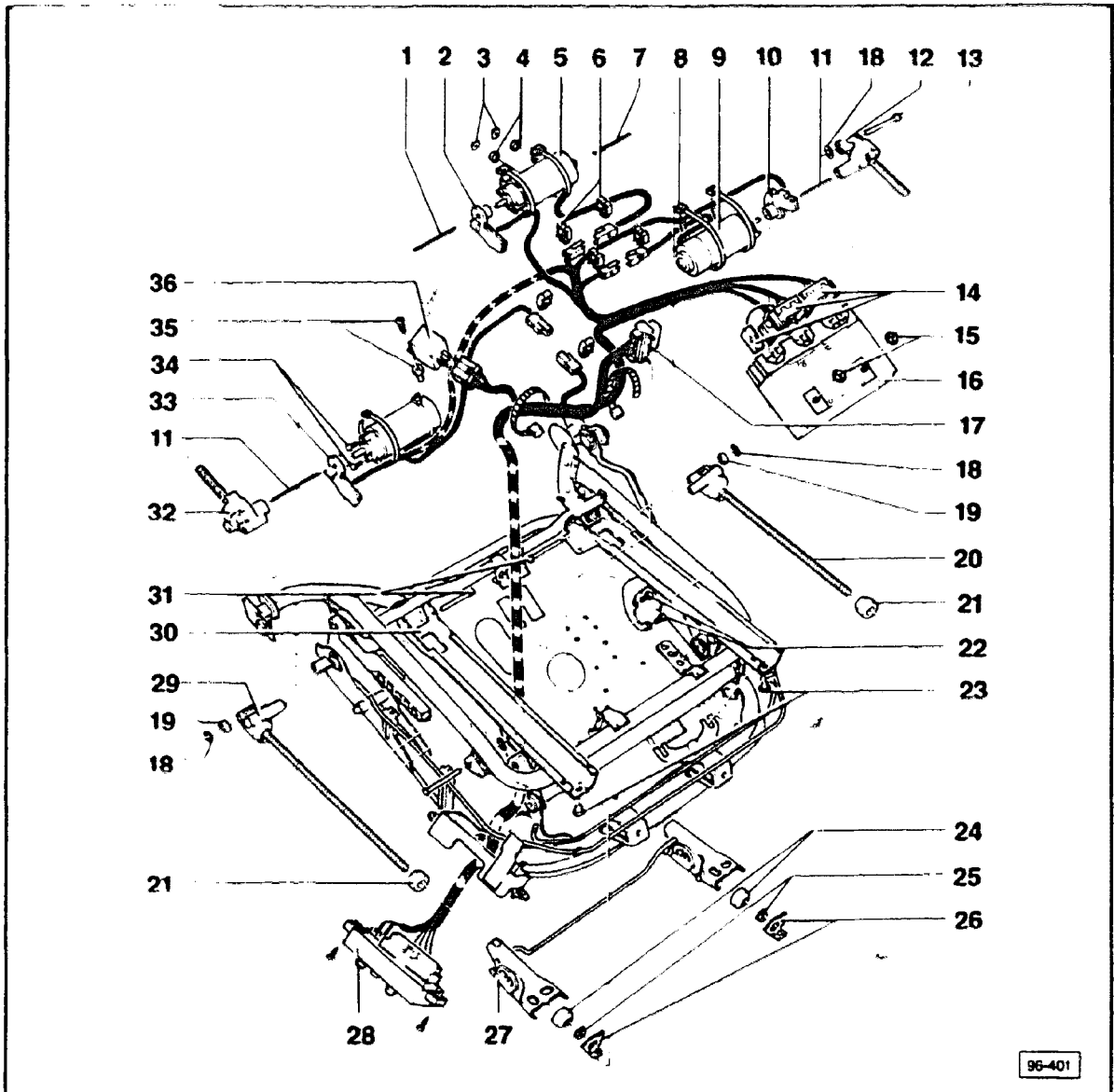


▶ Seatback armrest, removing

- fold drivers side seatback forward
- remove nuts 3
- remove armrest from bracket, then out of pivot

Seatback armrest, installing

Reinstall all components in reverse order of removal.



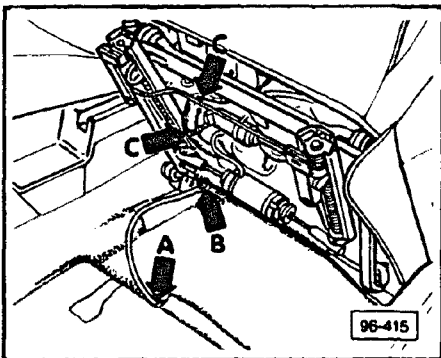
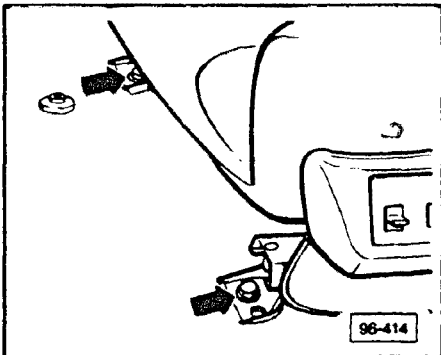
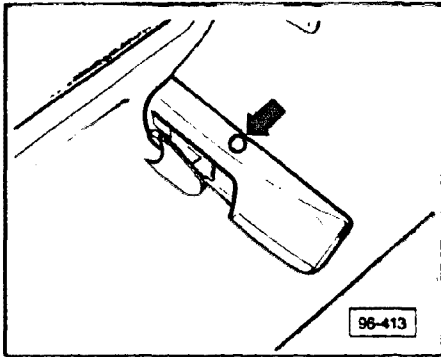
Note

Wiring harness and switch are supplied as one unit, and cannot be individually replaced.

- 1 — Drive shaft, left fore/aft adjustment
- 2 — Sender fore/aft adjustment drivers seat only
- 3 — Lock nut
- 4 — Grommet

- 5 — Servo motor fore/aft adjustment removing/installing, page 72 11
- 6 — Retaining clip
- 7 — Drive shaft, right fore/aft adjustment
- 8 — Tie-wrap
- 9 — Servo motor front height adjustment removing/installing, page 72 11
- 10 — Sender front height adjustment driver's seat only
- 11 — Servo motor front height adjustment removing/installing, page 72 11
- 12 — Servo motor fore/aft adjustment removing/installing, page 72 11
- 13 — Servo motor fore/aft adjustment removing/installing, page 72 11
- 14 — Servo motor front height adjustment removing/installing, page 72 11
- 15 — Servo motor front height adjustment removing/installing, page 72 11
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- 17 — Servo motor front height adjustment removing/installing, page 72 11
- 18 — Servo motor front height adjustment removing/installing, page 72 11
- 19 — Servo motor front height adjustment removing/installing, page 72 11
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- 25 — Servo motor front height adjustment removing/installing, page 72 11
- 26 — Servo motor front height adjustment removing/installing, page 72 11
- 27 — Servo motor front height adjustment removing/installing, page 72 11
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- 29 — Servo motor front height adjustment removing/installing, page 72 11
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- 31 — Servo motor front height adjustment removing/installing, page 72 11
- 32 — Servo motor front height adjustment removing/installing, page 72 11
- 33 — Servo motor front height adjustment removing/installing, page 72 11
- 34 — Servo motor front height adjustment removing/installing, page 72 11
- 35 — Servo motor front height adjustment removing/installing, page 72 11
- 36 — Servo motor front height adjustment removing/installing, page 72 11

- 11 — **Drive shaft, actuator**
front height adjustment
- 12 — **Actuator**
front height adjustment
removing/installing, page 72 12
- 13 — **Mounting bolt**
for actuator
- 14 — **Connector, control unit**
refer to appropriate wiring diagram for connector
cavity location
- 15 — **Lock nut**
- 16 — **Control unit**
removing/installing, page 72 9
- 17 — **Connector, wiring harness**
for power seat with memory
- 18 — **Lock ring**
- 19 — **Shim**
- 20 — **Adjusting rod, right**
fore/aft adjustment
- 21 — **Stop, rear**
- 22 — **Mounting bolts, servo motor**
- 23 — **Rivets**
attachment of spindle bracket
- 24 — **Stop, front**
- 25 — **Bushings**
- 26 — **Spindle bracket**
removing, grind and drive out rivets
installing, secure with pop-rivets or M-5 bolts
- 27 — **Guide rails**
removing/installing, page
- 28 — **Switch unit, with wiring harness**
removing/installing, page 72 10
- 29 — **Actuator, left**
fore/aft adjustment
removing/installing, page 72 12
- 30 — **Seat frame, with guide rails**
removing/installing seat, page 72 8
- 31 — **Mounting bolts, for actuators**
- 32 — **Actuator, rear**
height adjustment
removing/installing, page 72 12
- 33 — **Sender**
rear height adjustment
driver's seat only
removing/installing, page 72 13
adjusting, page 72.14
- 34 — **Mounting bolts**
height adjustment servo motor, rear
- 35 — **Fasteners, supply-voltage relay**
- 36 — **Supply-voltage relay**
removing/installing, page 72.9



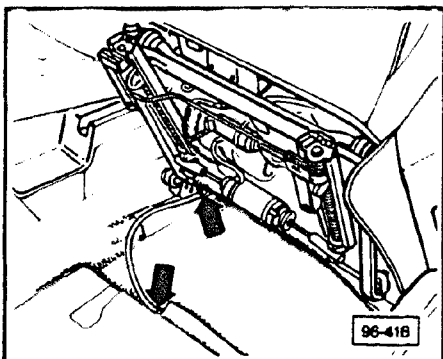
Note

Before removing seat from vehicle,

- move seat to rear stop
- raise front seat height to upper stop
- tilt backrest to forward stop

Power seat, removing

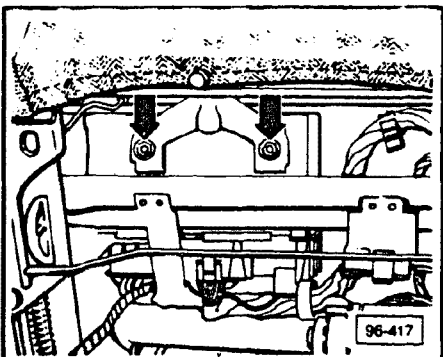
- pry out plastic clip (arrow)
- push seat rail covers forward and remove from under seat
- remove mounting bolts (arrows)
- raise seat slightly in front, and open tie-wrap A
- push seat toward rear
- lay seat back as far as possible
 - take care not to damage carpet
- loosen cable attachment B, both tie-wraps C on seat
- disconnect wiring harness at control unit on seat
 - disconnect heated seat element, if applicable
- disconnect seat belt warning system at wiring harness
- carefully withdraw wiring harness from seat frame
- lift and remove seat from vehicle



Power seat, installing

Reinstall all components in reverse order, noting the following:

- attach wiring harness to locating points (arrow)

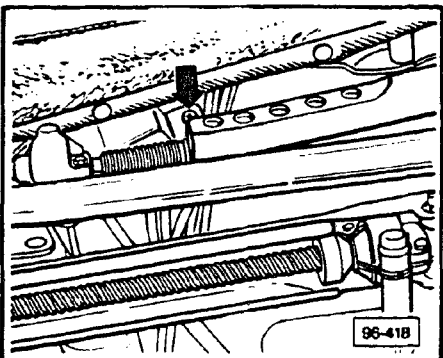


Control unit, removing

- remove driver's seat
- remove control unit mounting bolts (arrows) at retaining bracket
- pull off electrical connector on control unit
- remove control unit from seat

Control unit, installing

Reinstall all components in reverse order of removal.



Supply-voltage relay, removing

- remove driver's seat
- remove mounting screw for supply-voltage relay (arrow)
- pull off electrical connector on relay
- remove supply-voltage relay

Supply-voltage relay, installing

Reinstall all components in reverse order of removal.

Switch unit on seat, removing

- remove mounting screw from stop pin for seatback
- remove side trim panel from switch trim on seat frame
- remove switch unit mounting screws
- remove switch unit

Switch unit on seat, installing

Reinstall all components in reverse order of removal, noting the following:

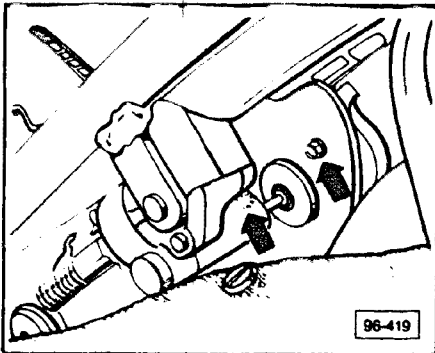
- switch unit and wiring harness can **only** be replaced as a complete set.

Backrest, removing

- remove seat from vehicle
- remove side trim panel mounting screw from stop pin
- pry out clip
- remove side trim panel from switch trim on seat frame
- press pins (for cover cap) through on opposite side of seat and remove cap
- remove screw from stop pin for seatback
- remove lock washers on left and right side
- remove six-pin connector (driver's seat) from control unit
 - only disconnect two-pin connector on passenger seat
- remove backrest from retaining bolts.
remove from vehicle

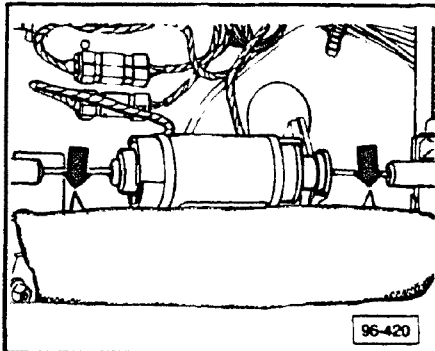
Backrest, installing

Reinstall all components in reverse order of removal.



Height adjustment servo motor, removing

- remove seat
- remove servo motor mounting bolts (arrows)
- remove drive shaft from servo motor
- pry sensor from servo motor
- pull off electrical connector from servo motor
- remove servo motor from seat

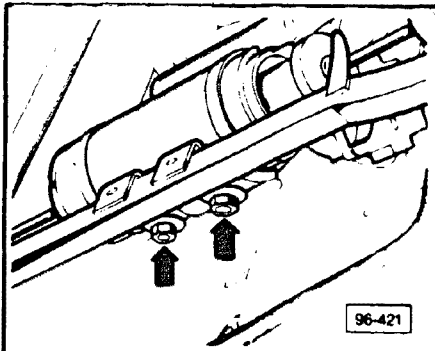


Height adjustment servo motor, installing

Reinstall all components in reverse order of removal.

Fore/aft adjustment servo motor, removing

- remove seat
- bend up tabs securing seat cover (arrows)
- loosen seat cover on rear cross member as necessary
- remove servo motor from cross member
- remove drive shaft on both sides
- pry sensor from servo motor
- pull off electrical connector from servo motor
- remove servo motor from seat



Fore/aft adjustment servo motor, installing

Reinstall all components in reverse order of removal.

Backrest adjustment servo motor, removing

- remove seat
- remove backrest
- let seat cover hang below backrest, pull cover off as far as necessary
- remove hex head bolts from motor bracket at seatback hinge
- remove bracket from motor
- carefully pry backrest sensor from motor
- remove or unsolder lead from motor

Backrest adjustment servo motor, installing

Reinstall all components in reverse order of removal.

Height adjustment actuators, removing

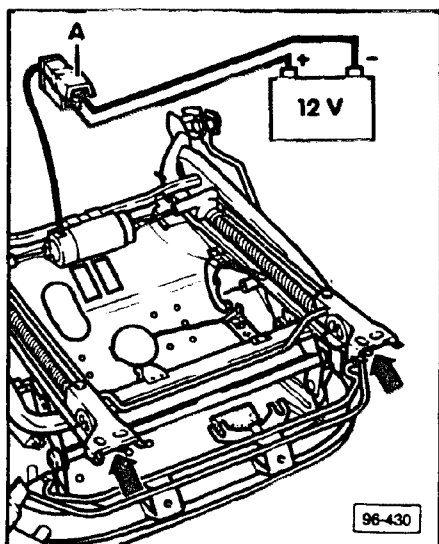
- remove seat
- pry lock ring out of mounting bolt
- remove bolt
- remove drive shaft from actuator
- unscrew actuator from bracket with spindle

Height adjustment actuators, installing

Reinstall all components in reverse order of removal.

Fore/aft adjustment actuators, removing

- remove seat
- grind or drill out both rivets for spindle guide rail
- remove spindle brackets and stop
- connect a fused (30A) external voltage supply to fore/aft adjustment motor
- move guide rails toward front and remove
- remove lock ring from mounting bolt of corresponding actuator and remove bolt
- remove actuator with spindle



Fore/aft adjustment actuators, installing

Reinstall all components in reverse order of removing, noting the following:

- install guide rails on spindles in direction of arrows
- connect a fused (30A) external voltage at connector A
 - a second technician may be necessary
- move guide rails into place
- reinstall spindle brackets with pop-rivets or M-5 bolts

Driver's seat sender units, removing

- remove appropriate servo motor
- carefully pry sender off servo motor

Note

Sender units with short wire leads will be supplied for repairs. Disconnect senders to be replaced on a wiring harness. Install new senders with connectors. Make note of wiring color codes.

Driver's seat sender units, installing

Reinstall all components in reverse order of removal.

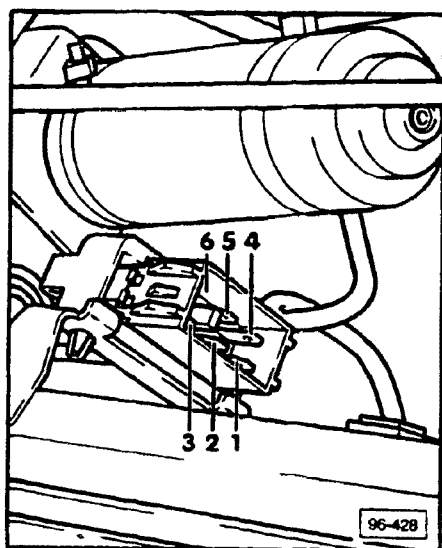
Driver's seat sender units, adjusting

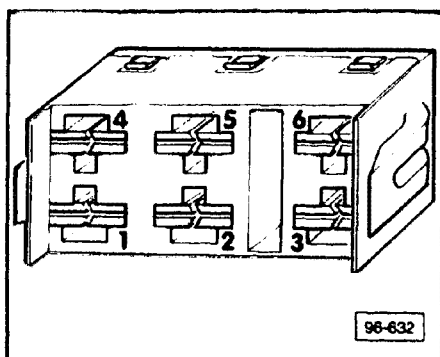
Note

- Only adjust senders with seat removed.
- Only adjust senders if servo motor or sender was replaced.
- Backrest sender must be readjusted if backrest was put into rearmost position when seat was out of vehicle.

Position seat as follows:

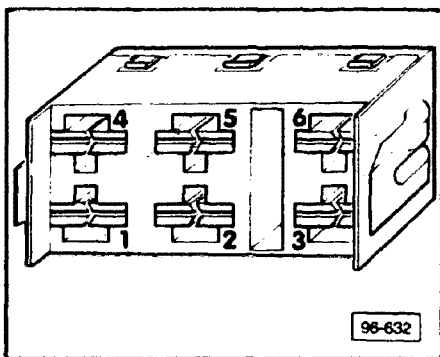
- connect a fused (30 A) external voltage supply to 6-pin (brown) connector on driver's seat, terminals 1 and 4
- move seat into desired position with appropriate adjustment switch





Fore/aft adjustment sender unit, adjusting

- using fore/aft servo motor, move seat to forward stop
- remove fore/aft servo motor
- pry off sender unit from servo motor
- pull off black connector **E** from control unit
- connect tester **US 1119**, set to 20k Ohm scale, between terminals 2 and 5
- turn sender unit until tester reads approximately 3.78k Ohm
- remount sender unit on servo motor

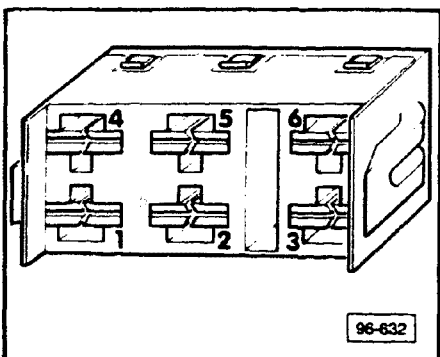


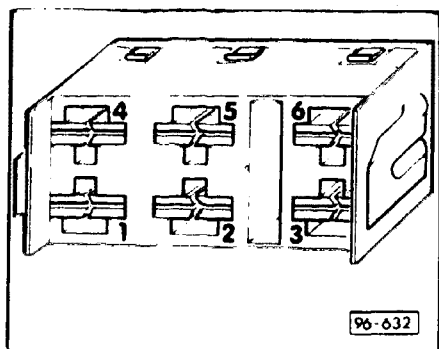
Rear height adjustment sender unit, adjusting

- using seat adjustment switch, raise rear of seat to upper stop
- remove servo motor mounting bolts
- remove servo motor from drive shaft
- pry off sender unit from servo motor
- pull off black connector **E** from control unit
- connect tester **US 1119**, set to 20k Ohm scale, between terminals 2 and 6
- turn sender unit until tester reads approximately 0.78k Ohm
- remount sender unit on servo motor

Front height adjustment sender unit, adjusting

- using seat adjustment switch, raise front of seat to upper stop
- remove servo motor mounting bolts
- remove servo motor from drive shaft
- pry off sender unit from servo motor
- pull off black connector **E** from control unit
- connect tester **US 1119**, set to 20k Ohm scale, between terminals 2 and 3
- turn sender unit until tester reads approximately 1.78k Ohm
- remount sender unit on motor





Backrest adjustment sender unit, adjusting

- using backrest adjustment switch, tilt backrest to forward stop
- remove backrest
- let backrest cover hang below seat, pull up as far as necessary
- pry backrest sender from servo motor
- connect tester **US 1119**, set to 20k Ohm scale, between terminals 3 and 6 of green connector **C**
- turn sender until tester reads approximately 9.0k Ohm
- remount sender on servo motor
- reinstall motor with sensor

Note

Install sender so drive pin and retaining clip engage corresponding slots on adjustment servo motor.

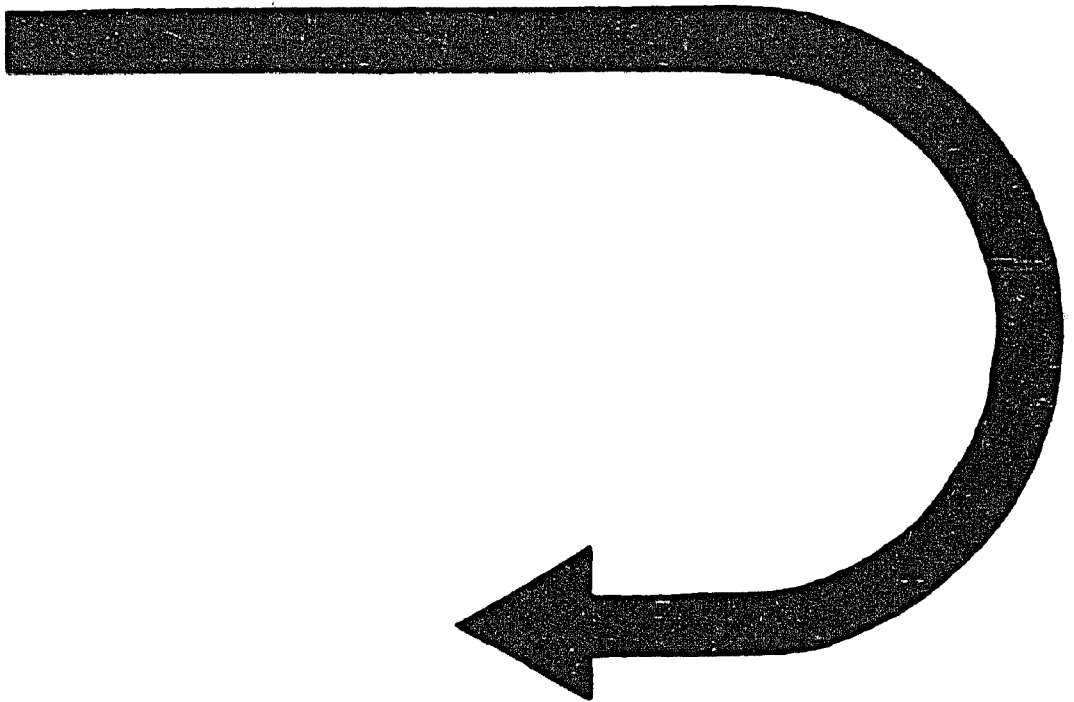
Power driver's seat, testing

- reinstall driver's seat into vehicle
- using seat adjustment switches, adjust seat to all positions
- refer to seat troubleshooting if seat cannot be adjusted to all positions

Note

Seat memory button on seat switch **must not** be pressed before ending the testing.

CONTINUED IN THE
BEGINNING OF NEXT ROW



CAUTION

DO NOT damage, enlarge or bend connector terminals or cavities by forcing probes into them when performing electrical checks. Use Connector Test Kit **VW 1594** to make the necessary electrical connections.

Troubleshooting, power seat with memory

Test conditions

- battery is fully charged
- fuse **S12** 15 A OK
- fuse **S23** 30 A in auxiliary relay panel OK
- circuit breaker 20 A in auxiliary relay panel OK
- use **US 1119** for electrical checks

Driver's seat will not adjust

Circuit breaker for seat memory defective or voltage supply for driver's seat interrupted

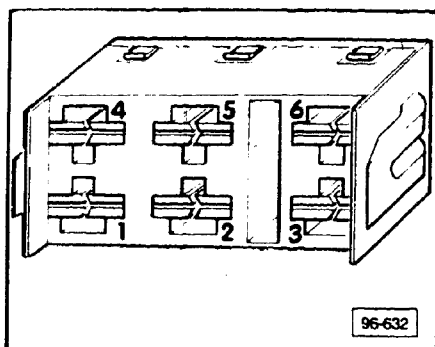
- remove circuit breaker 20 A from auxiliary relay panel
- alternately measure voltage supply between each circuit breaker terminal in the auxiliary relay panel and ground
 - must alternate between approximately 12.0 V and 0.0 V
- measured resistance of circuit breaker
 - must be 0.0 ohm

Measurements OK

Measurements not OK

End

- replace circuit breaker or
- repair open circuit in wiring



Brown connector (6-point)

Driver's seat voltage supply interrupted

- disconnect 6 point connector (brown) from driver's seat
- measure voltage between terminals 1 and 4 then 2 and 5
 - approximately 12.0 V

One or both voltages not OK

Voltages OK

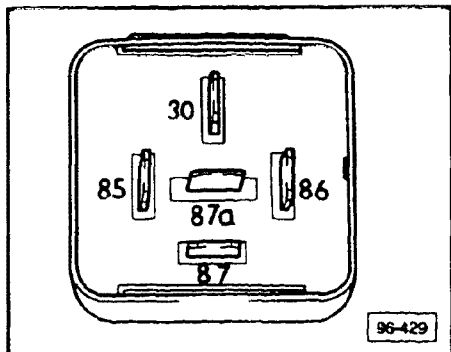
- repair open circuit in wiring

End

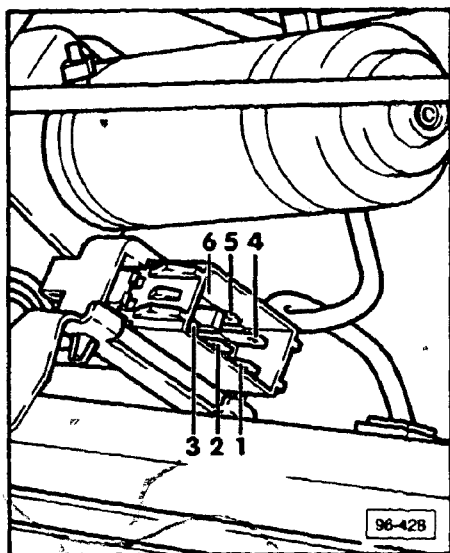
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CAUTION

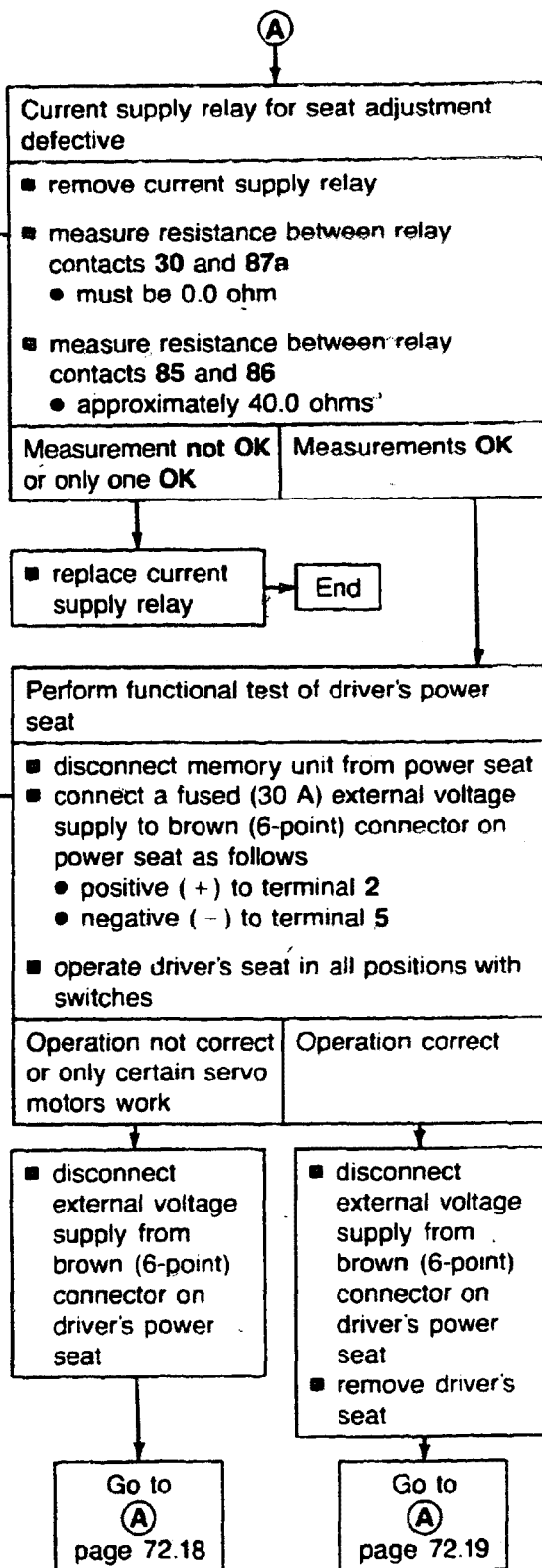
DO NOT damage, enlarge or bend connector terminals or cavities by forcing probes into them when performing electrical checks. Use Connector Test Kit **VW 1594** to make the necessary electrical connections.

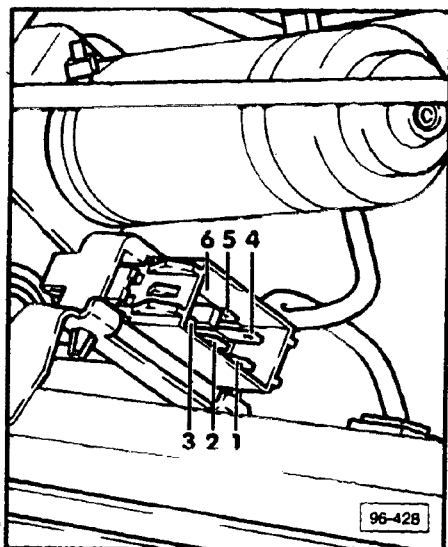


Power seat relay

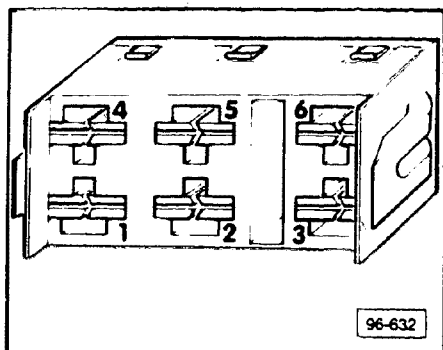


Brown connector on driver's seat (6-point)

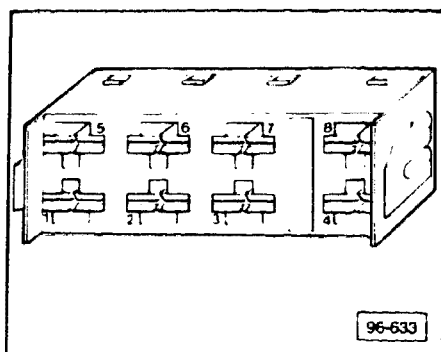




Brown connector on driver's seat (6-point)



Red connector B (6-point)



Yellow connector A (8-point)

A

Switches on driver's seat frame defective

- remove driver's seat
- disconnect yellow connector **A** (8-point) and red connector **B** (6-point) from control unit
- operate seat switch in appropriate direction while performing following resistance checks
- measure resistance between contact 5 of brown connector (6-point) on driver's seat and contacts 2, 3, 5, and 6 of red connector **B** (6-point) one after the other
 - must be 0.0 ohm
- measure resistance between contact 5 of brown connector (6-point) on driver's seat and contacts 2, 4, 6 and 8 of yellow connector **A** (8-point) one after the other
 - must be 0.0 ohm

Resistance measurements **not** OK

All resistance measurements **OK**

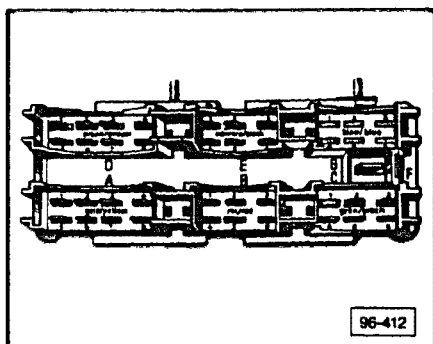
- replace defective switch(es)
- or
- repair open circuit in wiring

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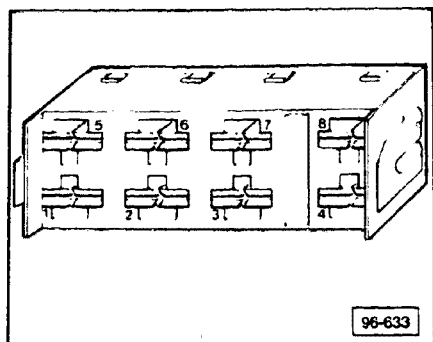
End

CAUTION

DO NOT damage, enlarge or bend connector terminals or cavities by forcing probes into them when performing electrical checks. Use Connector Test Kit **VW 1594** to make the necessary electrical connections.



Control unit connectors



Brown connector D (8-point)

CAUTION

DO NOT damage, enlarge or bend connector terminals or cavities by forcing probes into them when performing electrical checks. Use Connector Test Kit VW 1594 to make the necessary electrical connections.

Contact switch in driver's door defective

- remove brown connector D (8-point) from control unit
- measure resistance between contact 4 and ground
 - must be 0.0 ohm with door open
 - must be ∞ ohm with door closed

Resistance not OK

Resistance OK

- replace door contact switch or repair open circuit in wiring

End

Control button for memory function defective

- check voltage between contacts 1 and 8 of brown connector D (8-point)
 - must be approximately 12.0 V
- switch control ON
- check voltage between brown connector D contact 1 (ground) and contact 5
- push memory control buttons 1, 2, 3, 4 in order
- read voltage after pushing each button
 - must be approximately 12.0 V
- repeat sequence by checking voltage between brown connector D contact 1 (ground) and contacts 2, 6, 7 and 3 in order
 - must be approximately 12.0 V

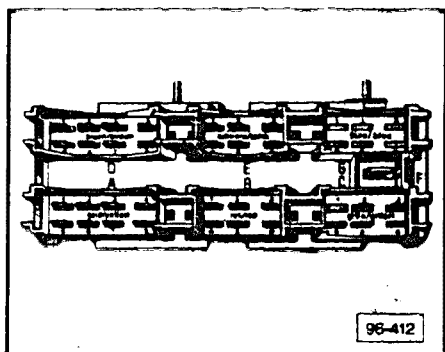
Voltage measurements not OK

Voltage measurements OK

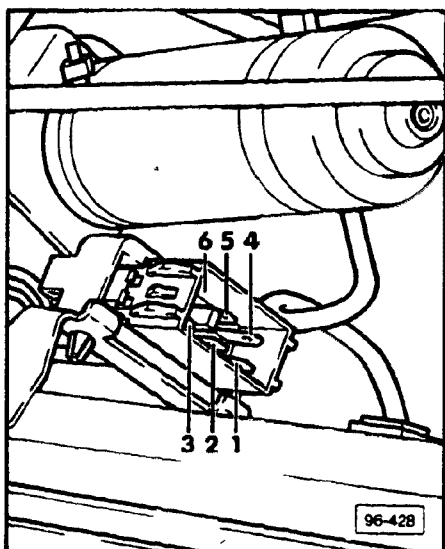
- repair open circuit in wiring or
- replace defective memory control buttons (panel)

End

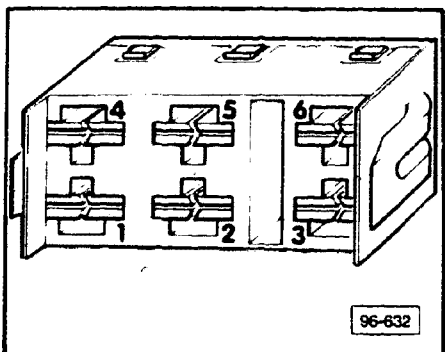
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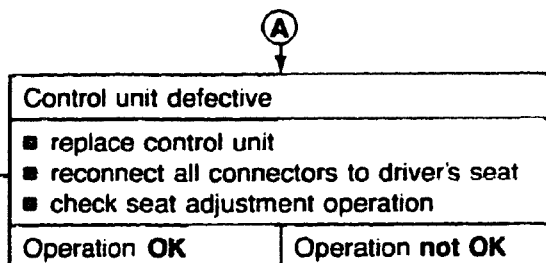
Control unit connectors



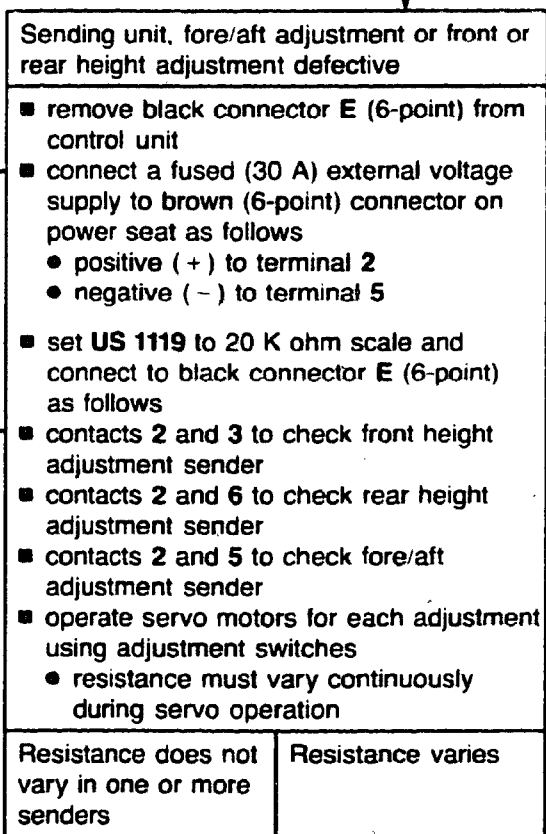
Brown connector on driver's seat (6-point)



Black connector E (6-point)



End



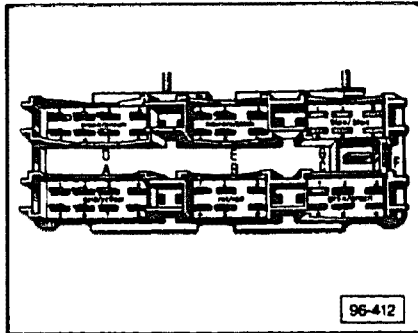
■ Replace defective sender

End

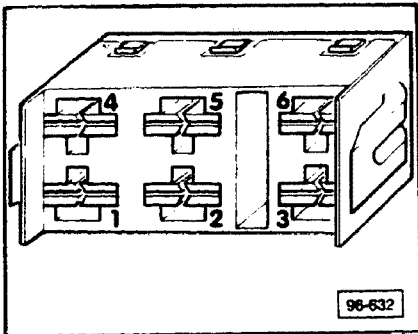
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CAUTION

DO NOT damage, enlarge or bend connector terminals or cavities by forcing probes into them when performing electrical checks. Use Connector Test Kit **VW 1594** to make the necessary electrical connections.



Control unit connectors



Green connector C (6-point)

CAUTION

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Backrest does not adjust

Sender unit for backrest adjustment defective

- remove backrest cover
- disconnect green connector C (6-point) from control unit
- connect **US 1119** set to ohm scale between contacts 5 and 3 of green connector C
- connect a fused (30 A) external voltage supply alternately between contacts 2 and 4 of green connector C — do not recline seat more than 35° rearward
 - resistance must vary continuously during backrest operation

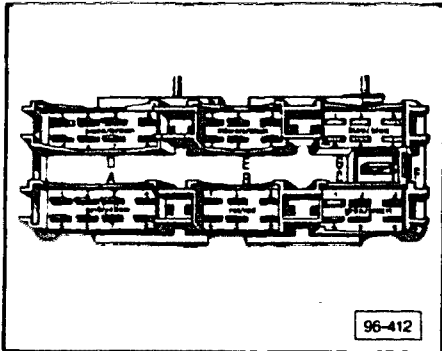
Resistance **does not** vary

Resistance varies

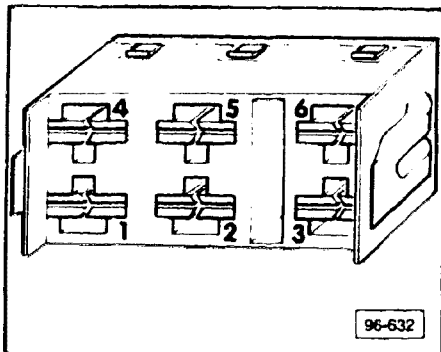
■ replace sender unit for backrest adjustment

End

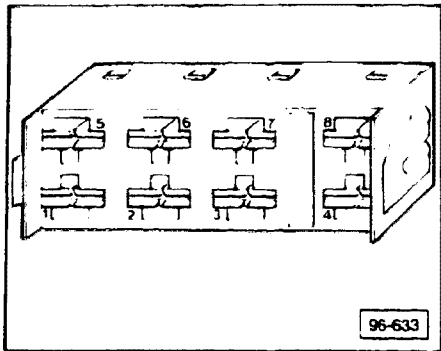
End



Control unit connectors



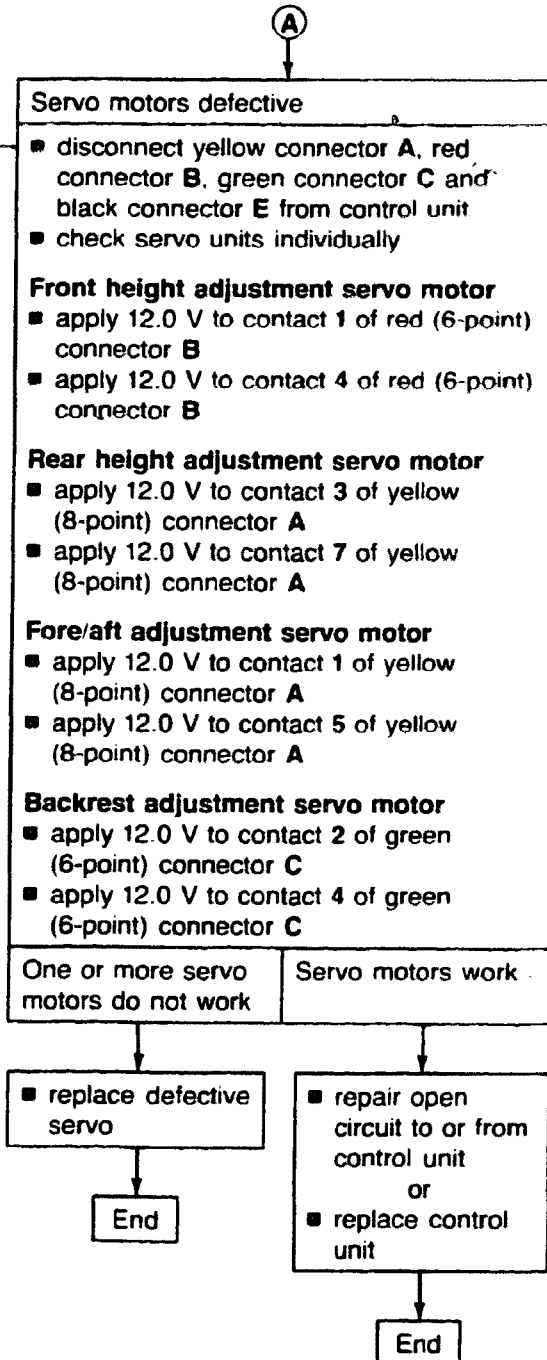
Red connector (6-point)



Yellow connector (8-point)

CAUTION

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CAUTION

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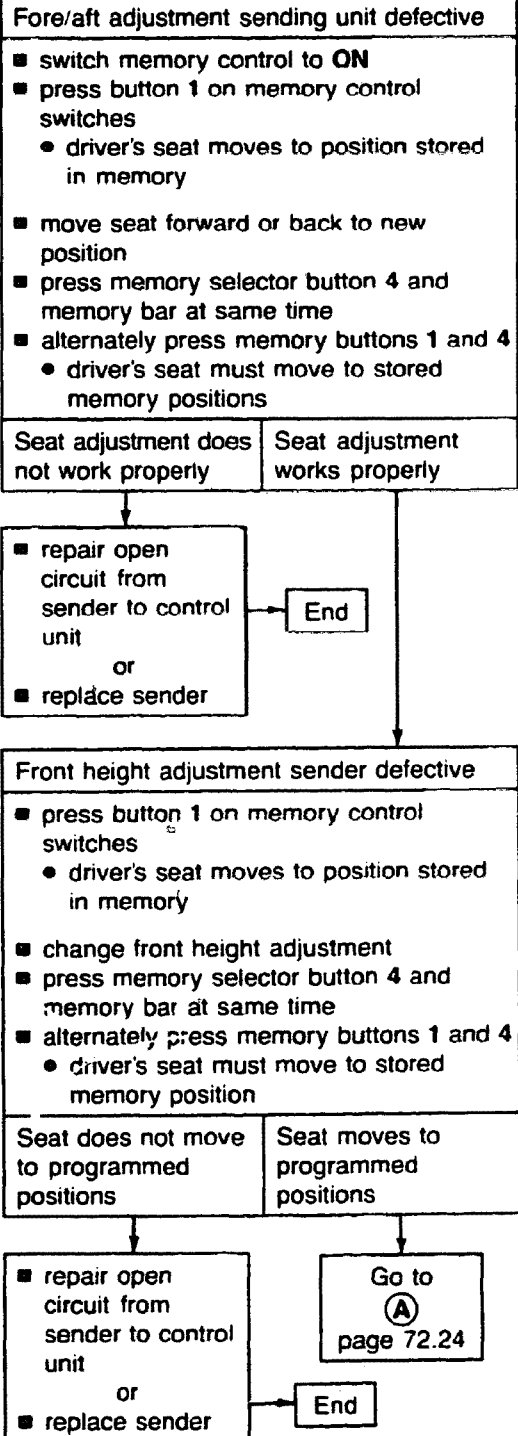
Note

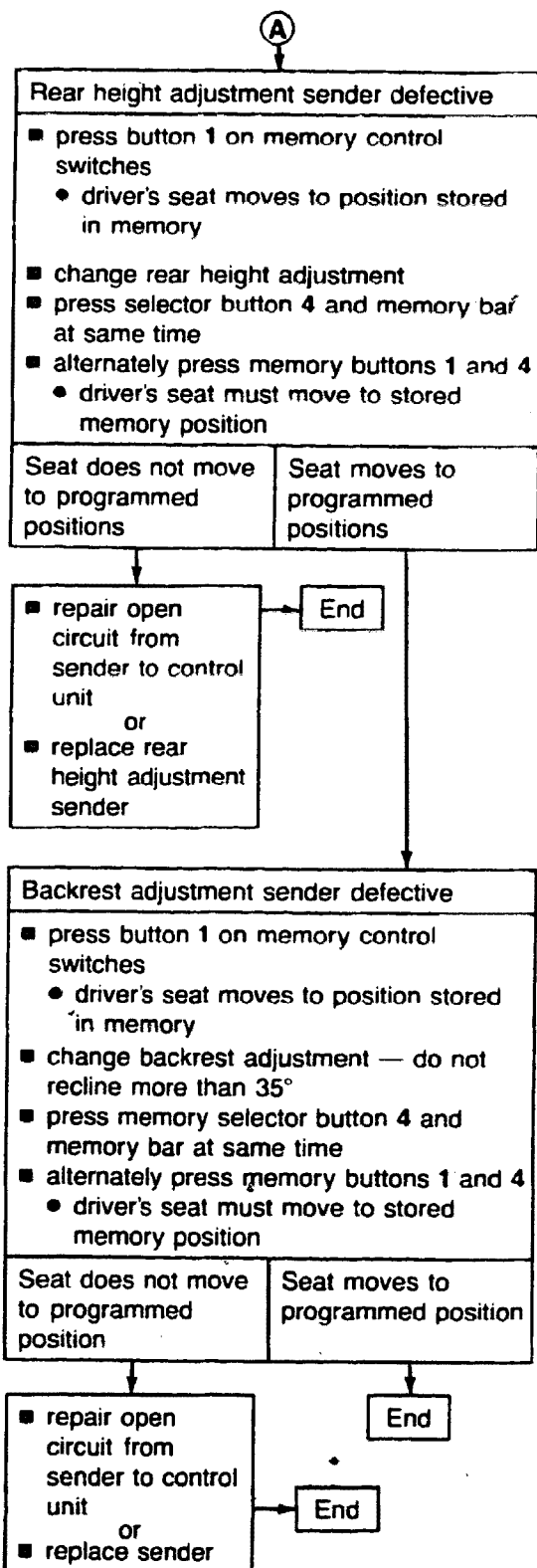
Test all sender units before replacing a defective sender unit.

Backrest must not be reclined more than 35° to rear when checking sender unit for backrest adjustment.

The driver's door must be open when testing the memory function of the power driver's seat.

Driver's seat does not return exactly to memorized position





CAUTION

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Front passenger's seat will not adjust with switches

Troubleshooting preparations

- fuse **S23 30 A** in auxiliary relay panel **OK**

Note

When supplying 12.0 V for tests, use jumper wire with 30 amp fuse.

Passenger seat power supply interrupted

- disconnect 6-point connector (brown) on passenger seat
- measure voltage between connector contacts 2 (positive +) and 5 (negative -)
 - must be approximately 12.0V

Voltage not OK

Voltage OK

- check wiring according to wiring diagram, repair open circuit

- remove passenger seat

End

Servo motors defective

- disconnect connectors from all servo motors
- using jumper wire, apply voltage briefly to each servo motor

Servo motors do not work

Servo motors work

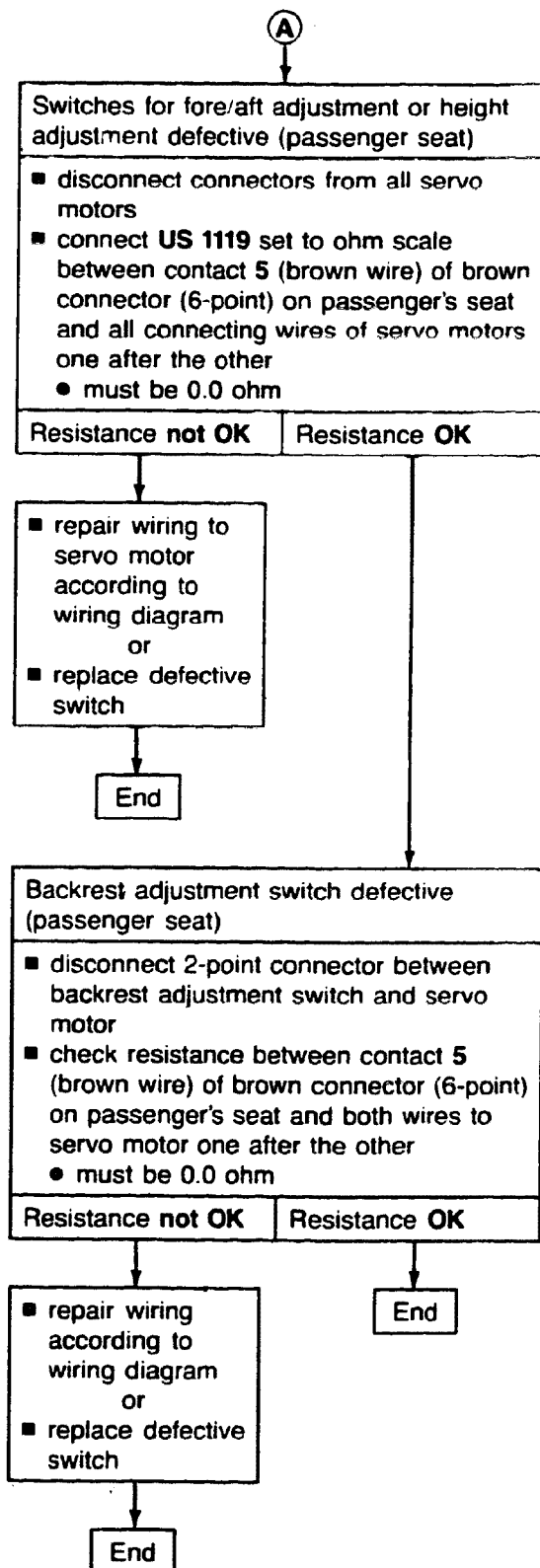
- replace defective servo motor

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page 72.26

End

CAUTION

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CAUTION

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Note

Perform this check with the driver's seat installed.

Seat belt warning does not function

Seat belt lock defective

- disconnect 2-point connector from seat belt lock (under driver's seat)
- measure resistance between contacts 1 and 2 of seat belt lock connector
 - must be 0.0 ohm
- insert belt buckle into seat belt lock
 - must be ∞ ohm

Resistance **NOT OK**

Resistance **OK**

- replace seat belt lock

End

- check wiring according to wiring diagram, repair open circuit
- or
- replace seat belt warning control unit

End

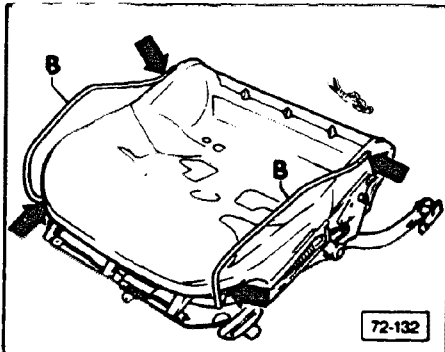
Modification of replacement seat frame

Note

When replacing a front seat, only sport seat version frames will be available as replacement parts.

For cars without sport seats make the following modifications:

- hacksaw off side supports **B** at arrows as close to weld points as possible
- grind down and remove all burrs
 - do not grind into seat frame



CAUTION

Part numbers are for reference only.
Always check with your Parts
Department for latest information.

- prime deburred points with anti-corrosion primer ALN 002 003 10 or equivalent