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## **Troubleshooting**

### **Backrest**

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### **Driver's seat**

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### **Power seat w/ memory**

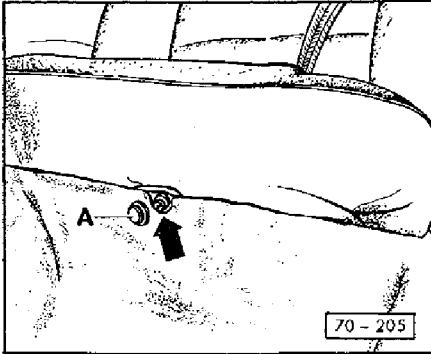
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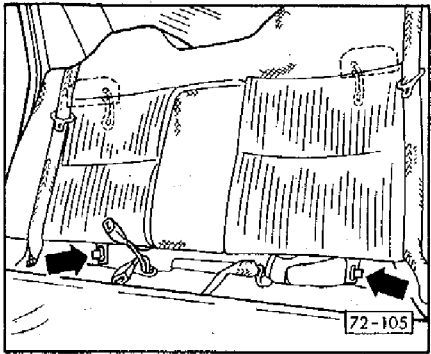
### Rear seat bench, removing/installing

#### 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



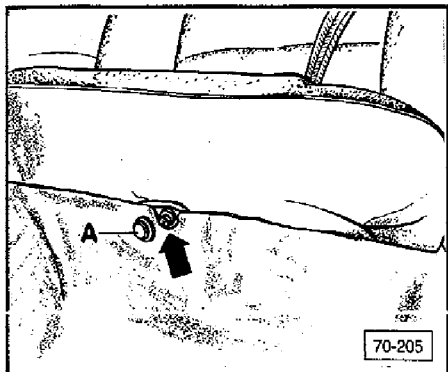
### Rear seat back, removing/installing

#### Removing

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

#### Installing

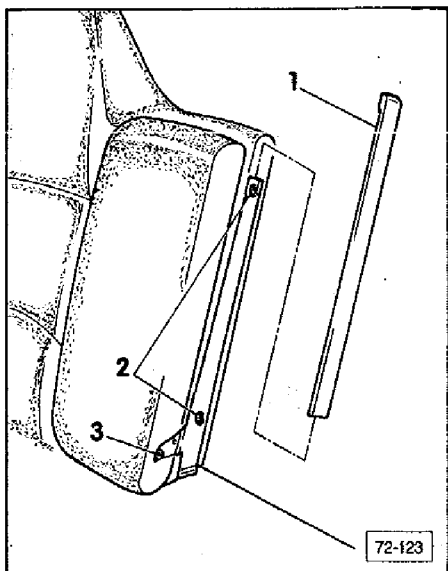
- install in reverse order of removal

**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**

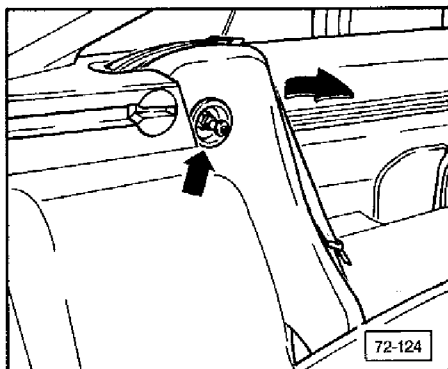
Reinstall all components in reverse order of removal.

**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**

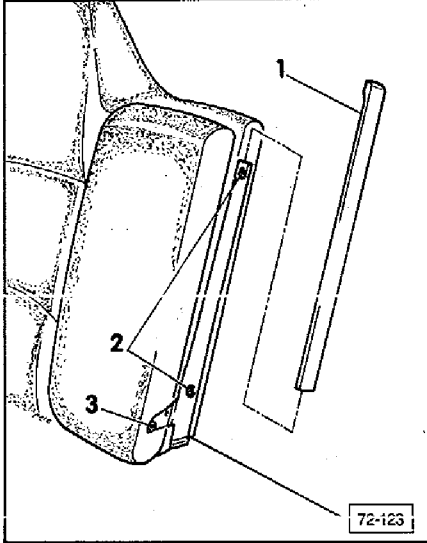
Reinstall all components in reverse order of removal.

**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.

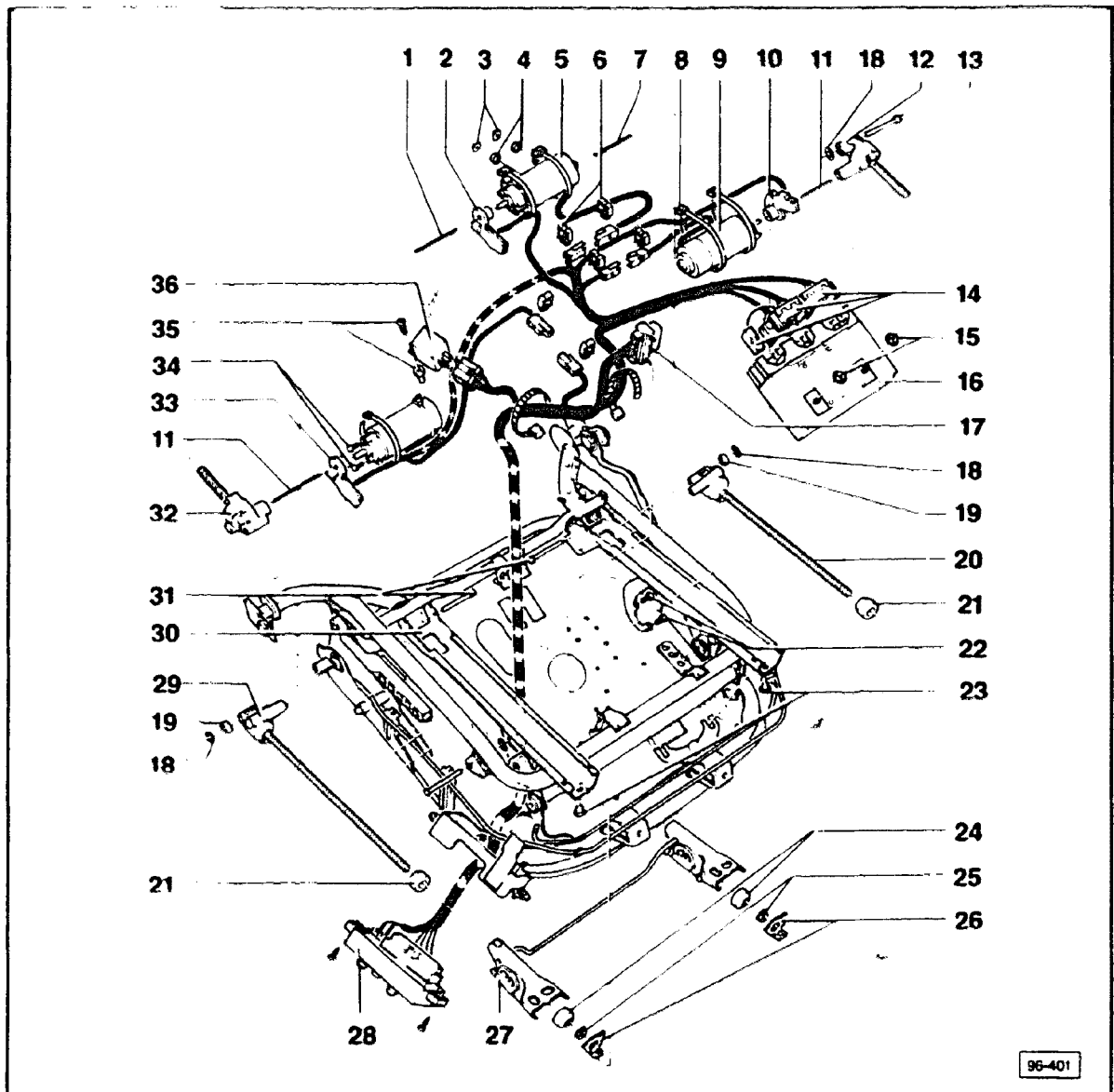


### ▶ Seatback armrest, removing

- 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.



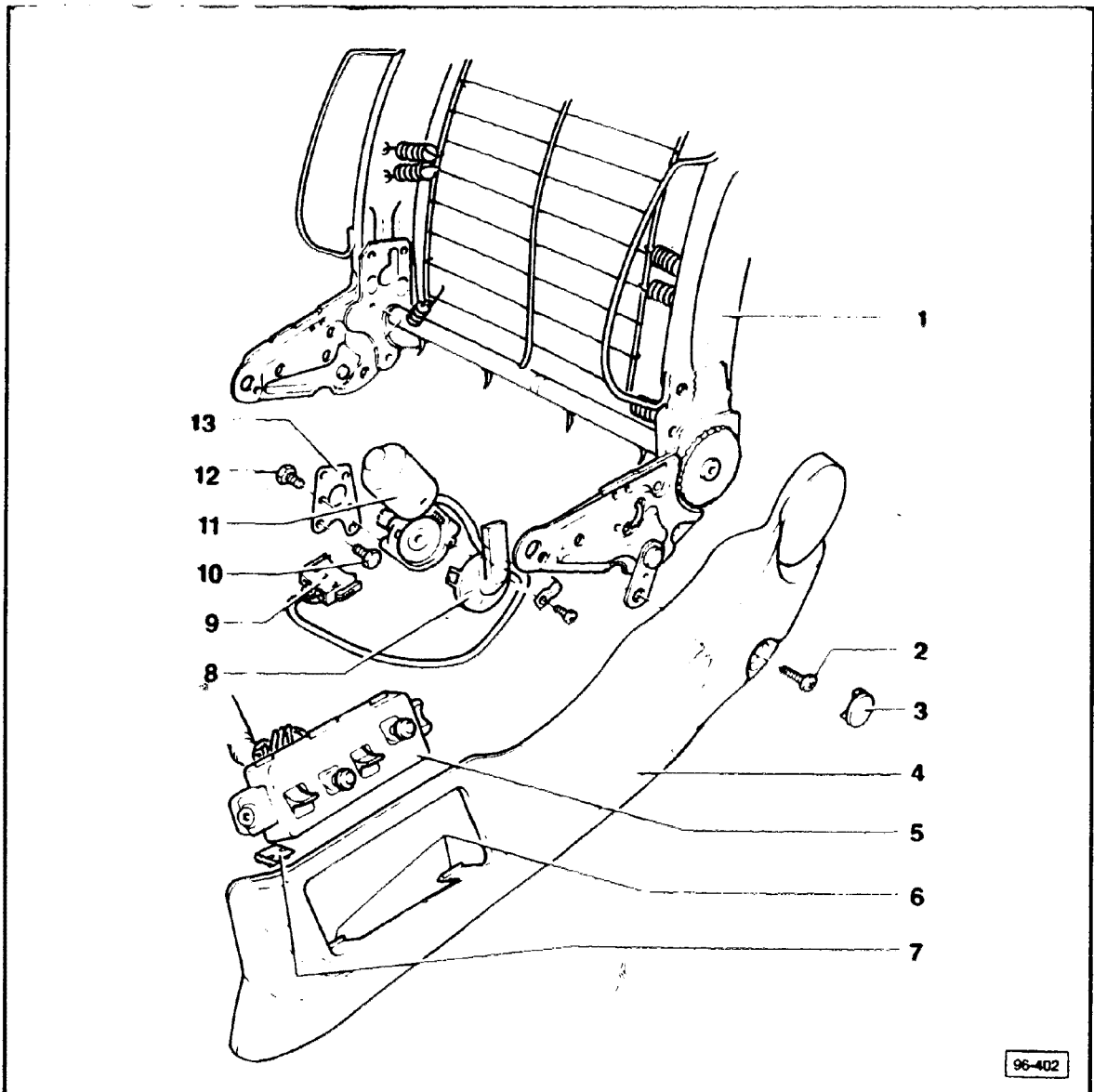
## Note

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

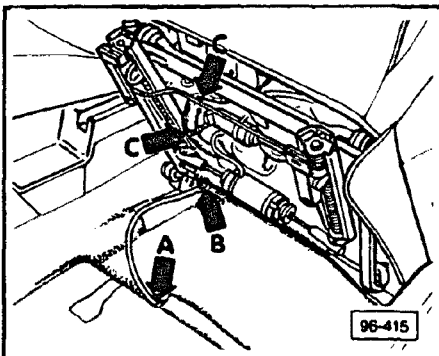
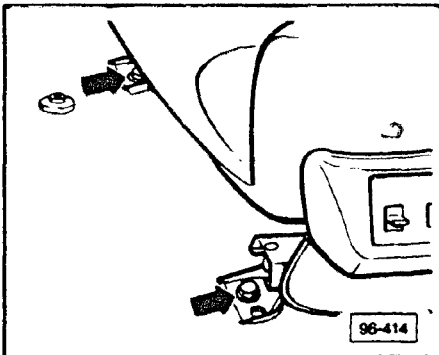
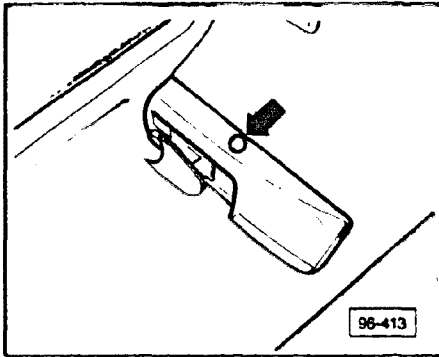
- 1 — Drive shaft, left fore/aft adjustment
- 2 — Sender fore/aft adjustment drivers seat only
- 3 — Lock nut
- 4 — Grommet

- 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 front height adjustment removing/installing, page 72 11
- 14 — Control switch
- 15 — Control switch
- 16 — Control switch
- 17 — Control switch
- 18 — Servo motor front height adjustment removing/installing, page 72 11
- 19 — Servo motor fore/aft adjustment removing/installing, page 72 11
- 20 — Servo motor front height adjustment removing/installing, page 72 11
- 21 — Servo motor fore/aft adjustment removing/installing, page 72 11
- 22 — Servo motor front height adjustment removing/installing, page 72 11
- 23 — Servo motor fore/aft adjustment removing/installing, page 72 11
- 24 — Servo motor front height adjustment removing/installing, page 72 11
- 25 — Servo motor fore/aft adjustment removing/installing, page 72 11
- 26 — Servo motor front height adjustment removing/installing, page 72 11
- 27 — Servo motor fore/aft adjustment removing/installing, page 72 11
- 28 — Servo motor front height adjustment removing/installing, page 72 11
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- 30 — Servo motor front height adjustment removing/installing, page 72 11
- 31 — Servo motor fore/aft adjustment removing/installing, page 72 11
- 32 — Servo motor front height adjustment removing/installing, page 72 11
- 33 — Servo motor fore/aft adjustment removing/installing, page 72 11
- 34 — Servo motor front height adjustment removing/installing, page 72 11
- 35 — Servo motor fore/aft adjustment removing/installing, page 72 11
- 36 — Servo motor front height adjustment removing/installing, page 72 11

- 11 — **Drive shaft, actuator**  
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- 12 — **Actuator**  
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- 13 — **Mounting bolt**  
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- 19 — **Shim**
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- 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**  
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- 34 — **Mounting bolts**  
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- 35 — **Fasteners, supply-voltage relay**
- 36 — **Supply-voltage relay**  
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- 1 — **Frame, backrest**  
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- 2 — **Mounting bolt, side trim panel**  
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- 3 — **Cover cap**  
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- 4 — **Side trim panel**
- 5 — **Switch unit**  
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- 6 — **Switch unit, detents**  
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pry out with screwdriver
- 7 — **Clip**  
pry out clip **before** removing side  
trim panel
- 8 — **Sender**  
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- 9 — **Connector**  
see appropriate wiring diagram  
for location of connector cavities
- 10 — **Mounting bolt**
- 11 — **Servo motor**  
backrest adjustment  
removing/installing, page 72.12
- 12 — **Mounting bolt**
- 13 — **Retaining bracket**  
secures backrest adjustment  
servo motor



## Note

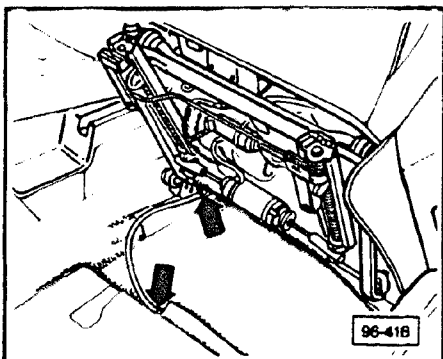
Before removing seat from vehicle,

- 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

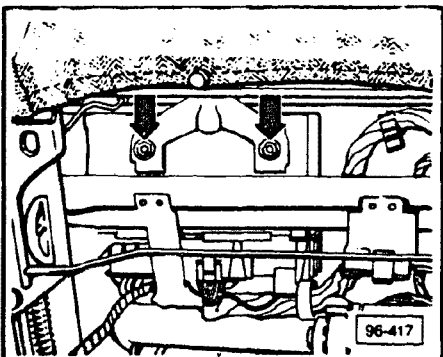




## Power seat, installing

Reinstall all components in reverse order, noting the following:

- attach wiring harness to locating points (arrow)

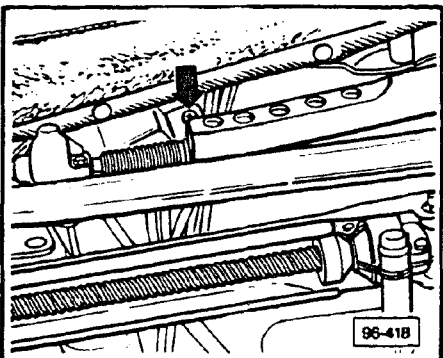


## Control unit, removing

- 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:

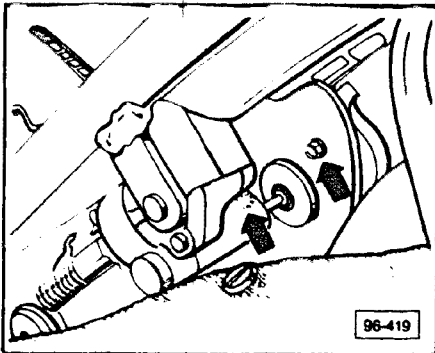
- switch unit and wiring harness can **only** be replaced as a complete set.

## 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

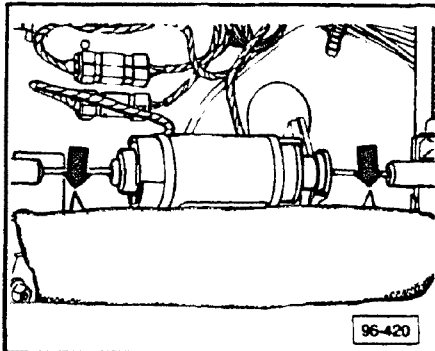
## Backrest, installing

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

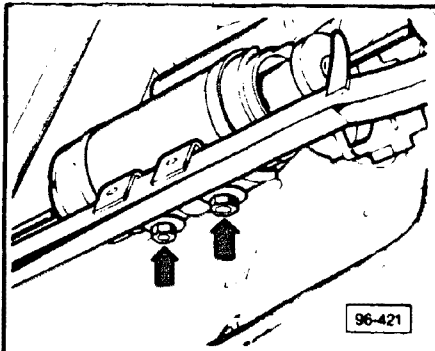


## Height adjustment servo motor, installing

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

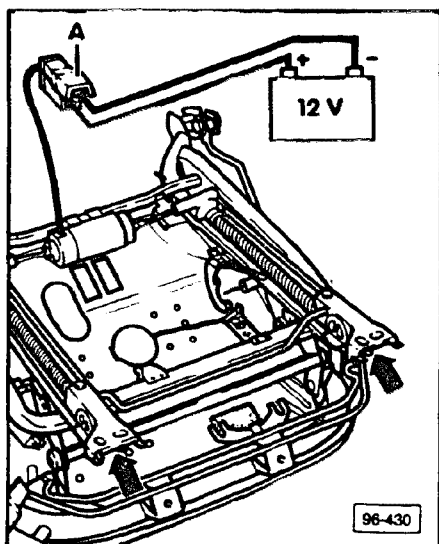
- remove seat
- pry lock ring out of mounting bolt
- remove bolt
- remove drive shaft from actuator
- unscrew actuator from bracket with spindle

## 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.

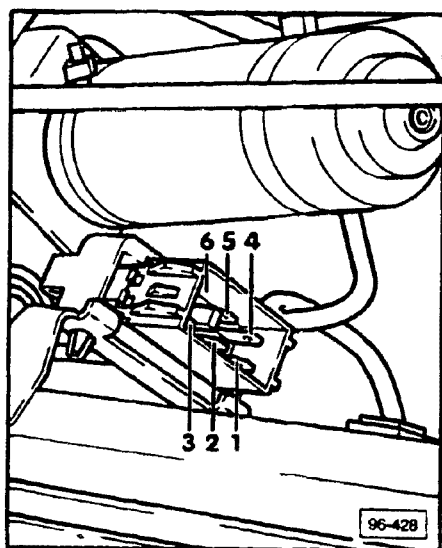
## Driver's seat sender units, adjusting

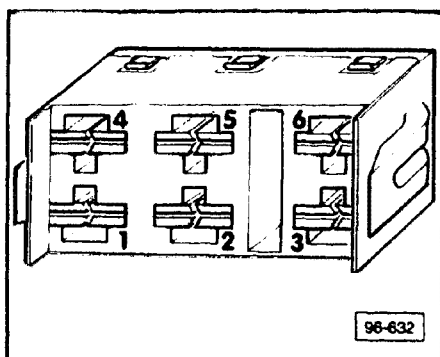
### Note

- 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:

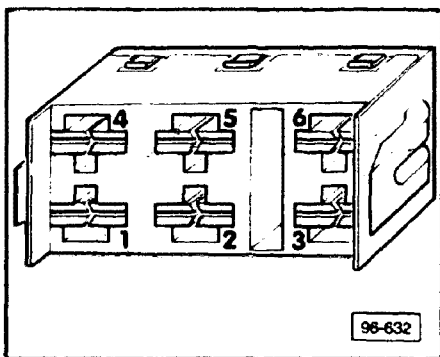
- connect a fused (30 A) external voltage supply to 6-pin (brown) connector on driver's seat, terminals 1 and 4
- move seat into desired position with appropriate adjustment switch





## 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

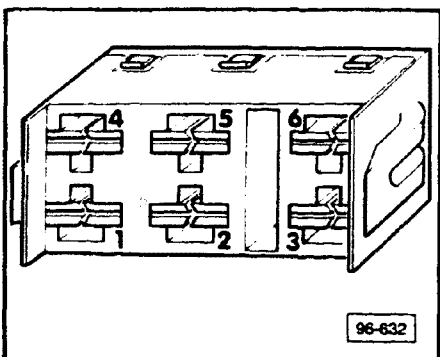


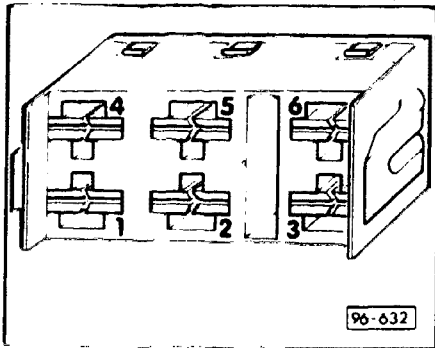
## Rear height adjustment sender unit, adjusting

- 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.

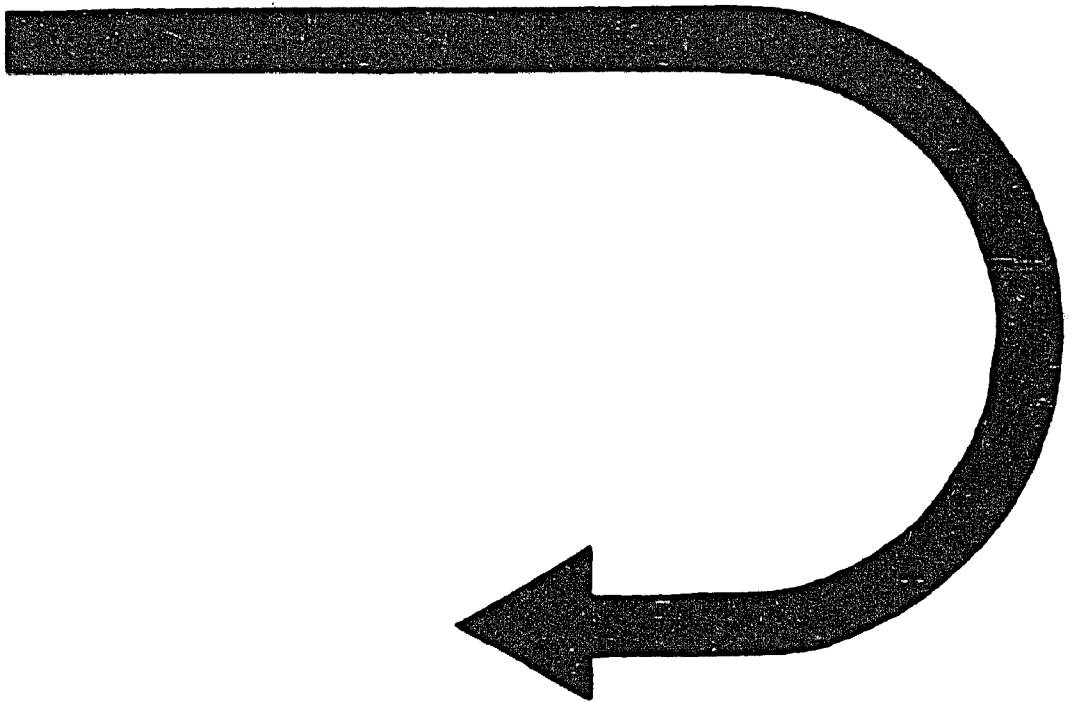
### Power driver's seat, testing

- 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

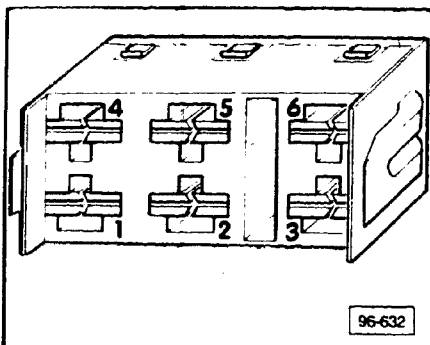
- remove circuit breaker 20 A from auxiliary relay panel
- alternately measure voltage supply between each circuit breaker terminal in the auxiliary relay panel and ground
  - must alternate between approximately 12.0 V and 0.0 V
- measured resistance of circuit breaker
  - must be 0.0 ohm

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

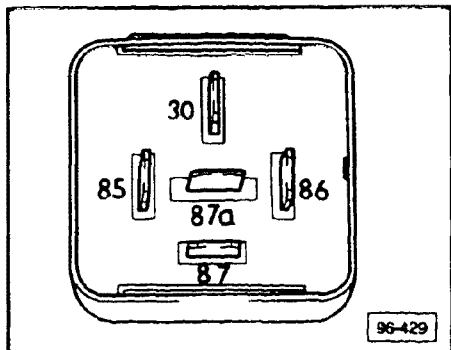
- repair open circuit in wiring

End

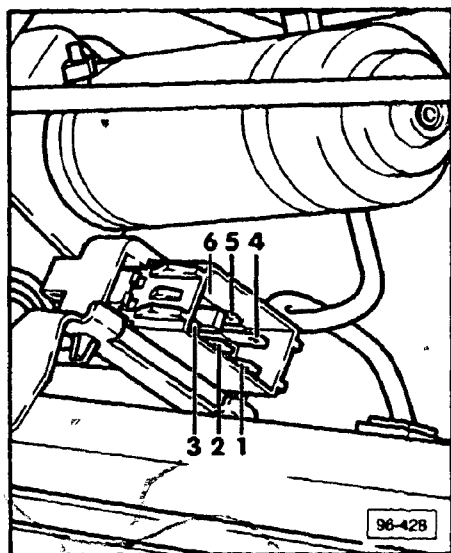
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## CAUTION

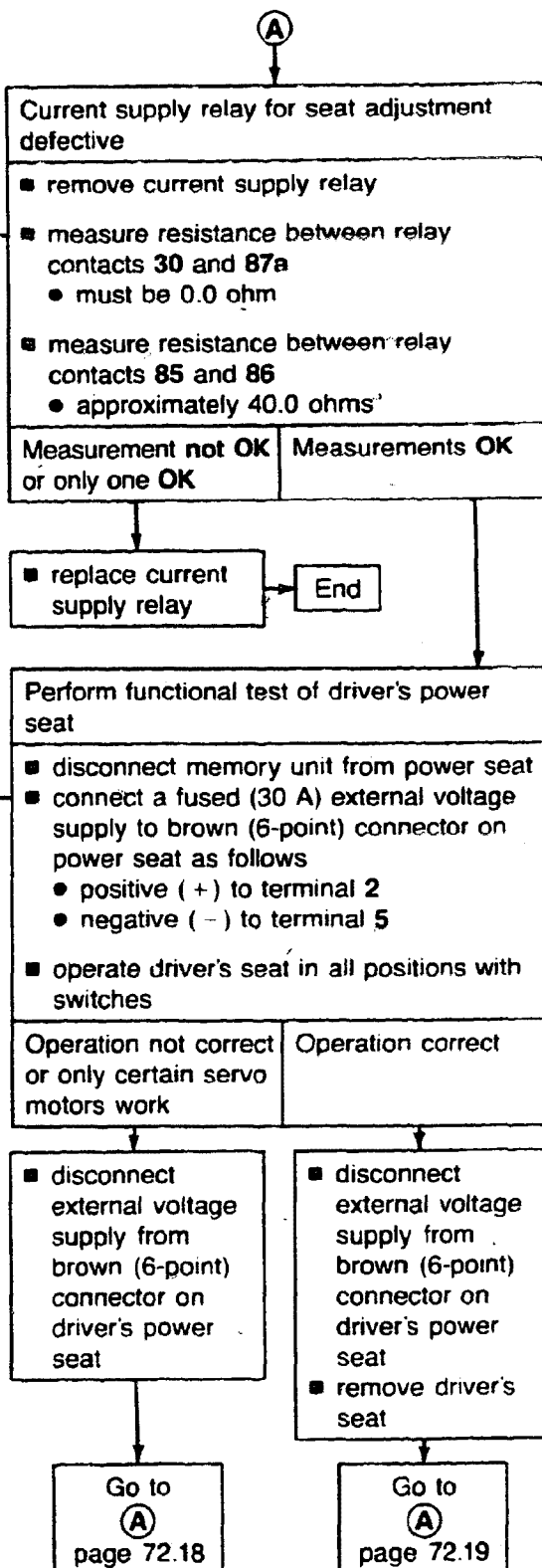
**DO NOT** damage, enlarge or bend connector terminals or cavities by forcing probes into them when performing electrical checks. Use Connector Test Kit **VW 1594** to make the necessary electrical connections.

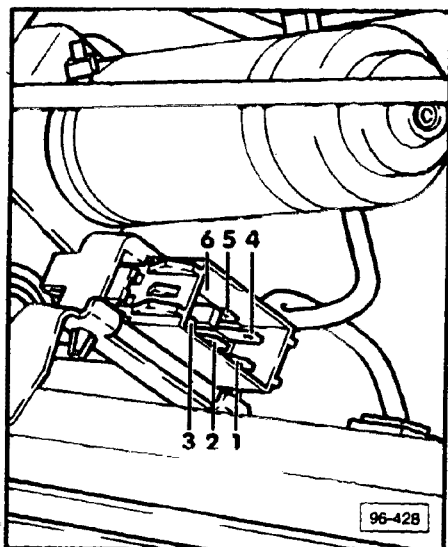


Power seat relay

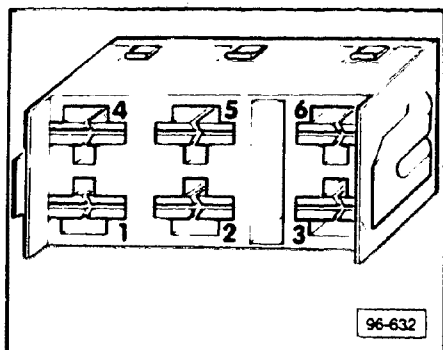


Brown connector on driver's seat (6-point)

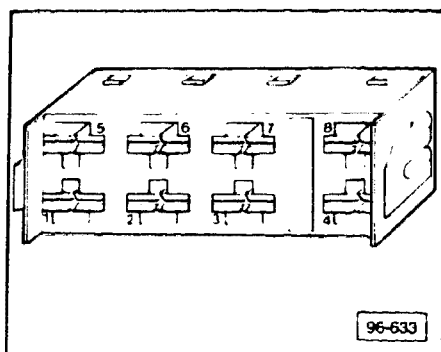




**Brown connector on driver's seat (6-point)**



**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**

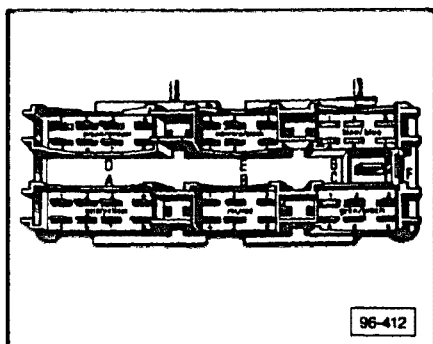
- replace defective switch(es)
- or
- repair open circuit in wiring

Go to **A**  
page 72.22

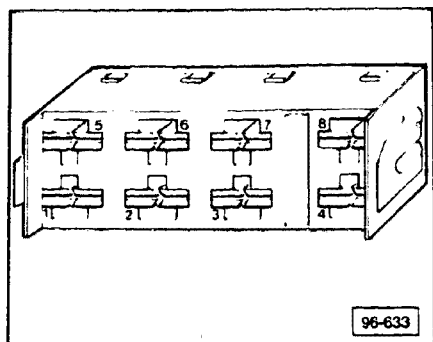
**End**

## 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  $\infty$  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

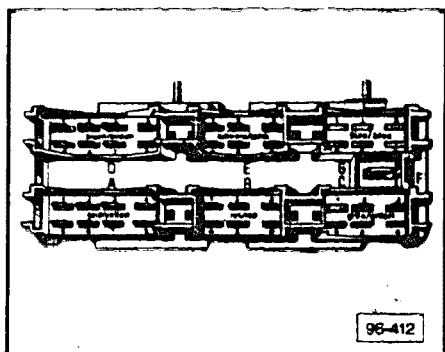
Voltage measurements not OK

Voltage measurements OK

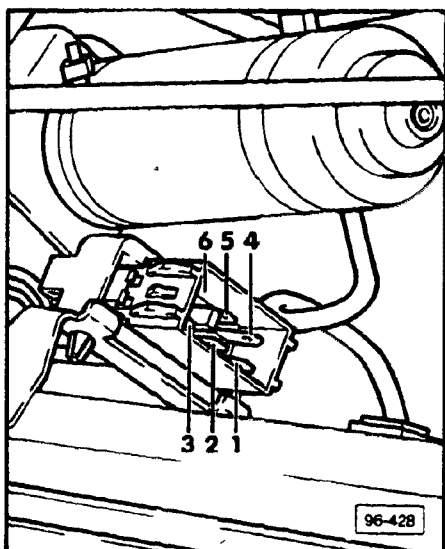
- repair open circuit in wiring or
- replace defective memory control buttons (panel)

End

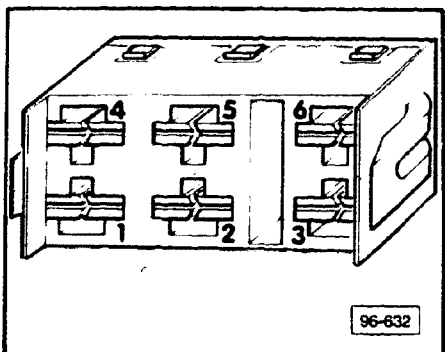
Go to  
Ⓐ  
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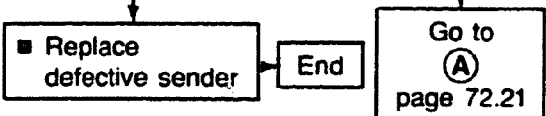
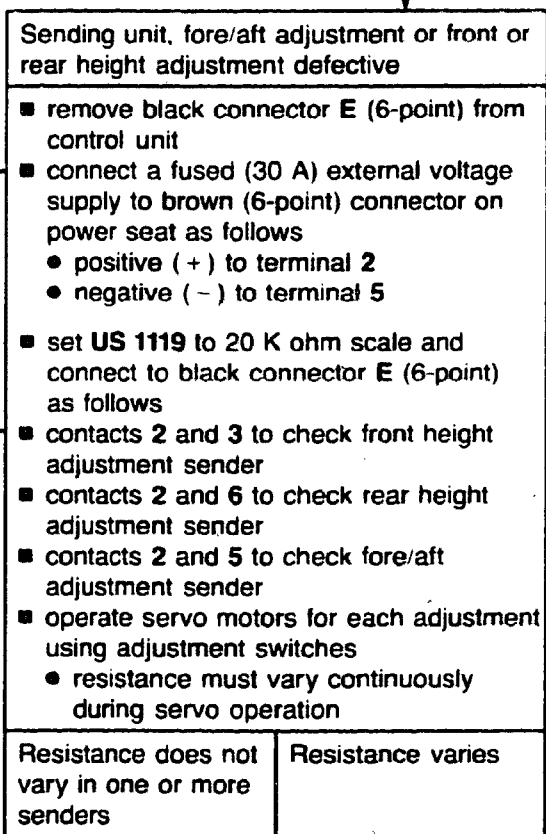
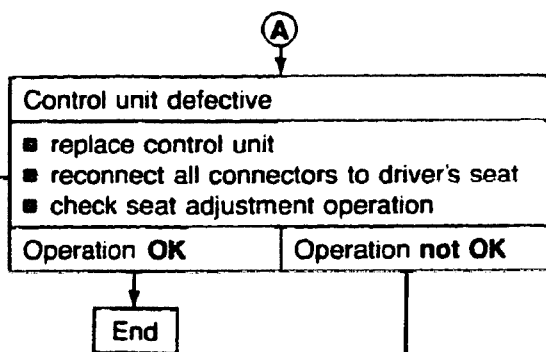
Control unit connectors



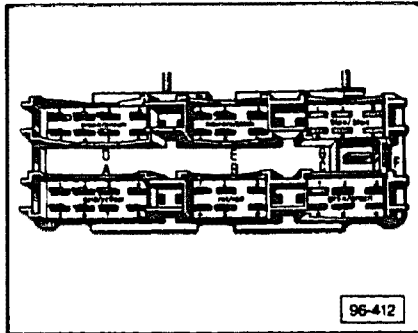
Brown connector on driver's seat (6-point)



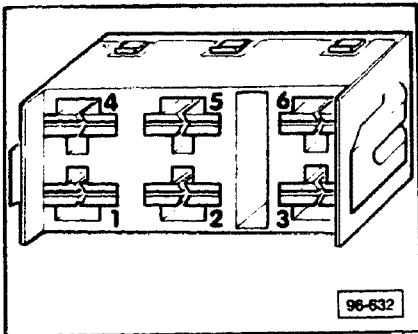
Black connector E (6-point)



**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.



Control unit connectors



Green connector C (6-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.

**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

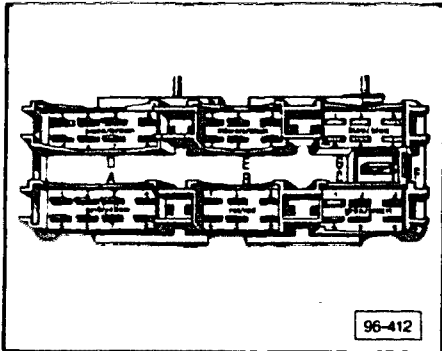
Resistance **does not** vary

Resistance varies

■ replace sender unit for backrest adjustment

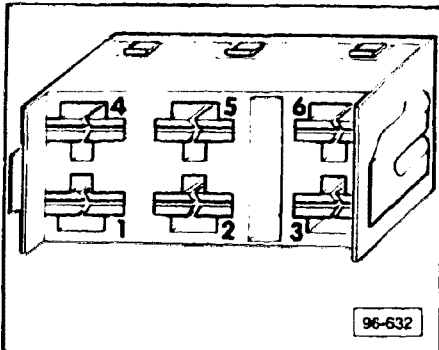
End

End



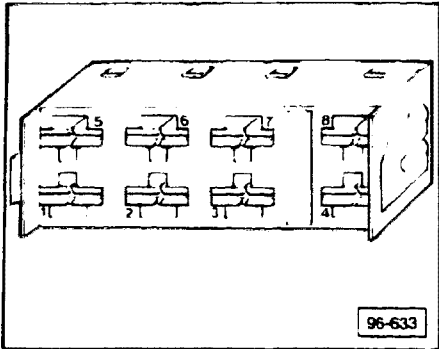
96-412

Control unit connectors



96-632

Red connector (6-point)

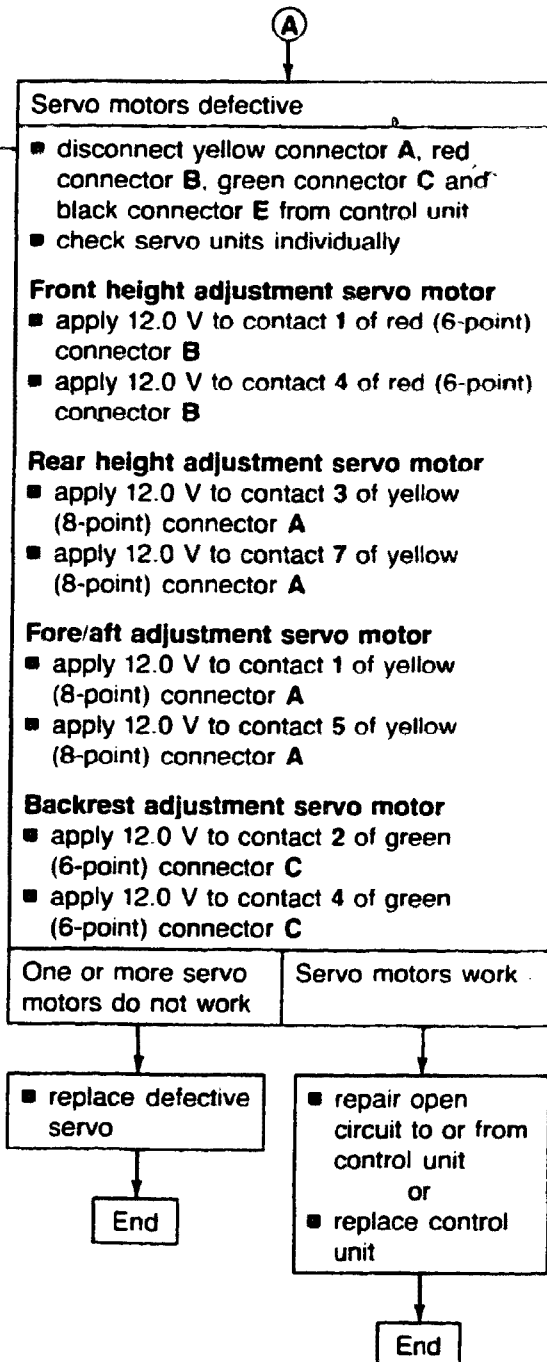


96-633

Yellow connector (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.



## 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.

## 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

### Fore/aft adjustment sending unit defective

- switch memory control to **ON**
- press button 1 on memory control switches
  - driver's seat moves to position stored in memory
- move seat forward or back to new position
- press memory selector button 4 and memory bar at same time
- alternately press memory buttons 1 and 4
  - driver's seat must move to stored memory positions

Seat adjustment does not work properly

Seat adjustment works properly

- repair open circuit from sender to control unit
- or
- replace sender

End

### Front height adjustment sender defective

- press button 1 on memory control switches
  - driver's seat moves to position stored in memory
- change front height adjustment
- press memory selector button 4 and memory bar at same time
- alternately press memory buttons 1 and 4
  - driver's seat must move to stored memory position

Seat does not move to programmed positions

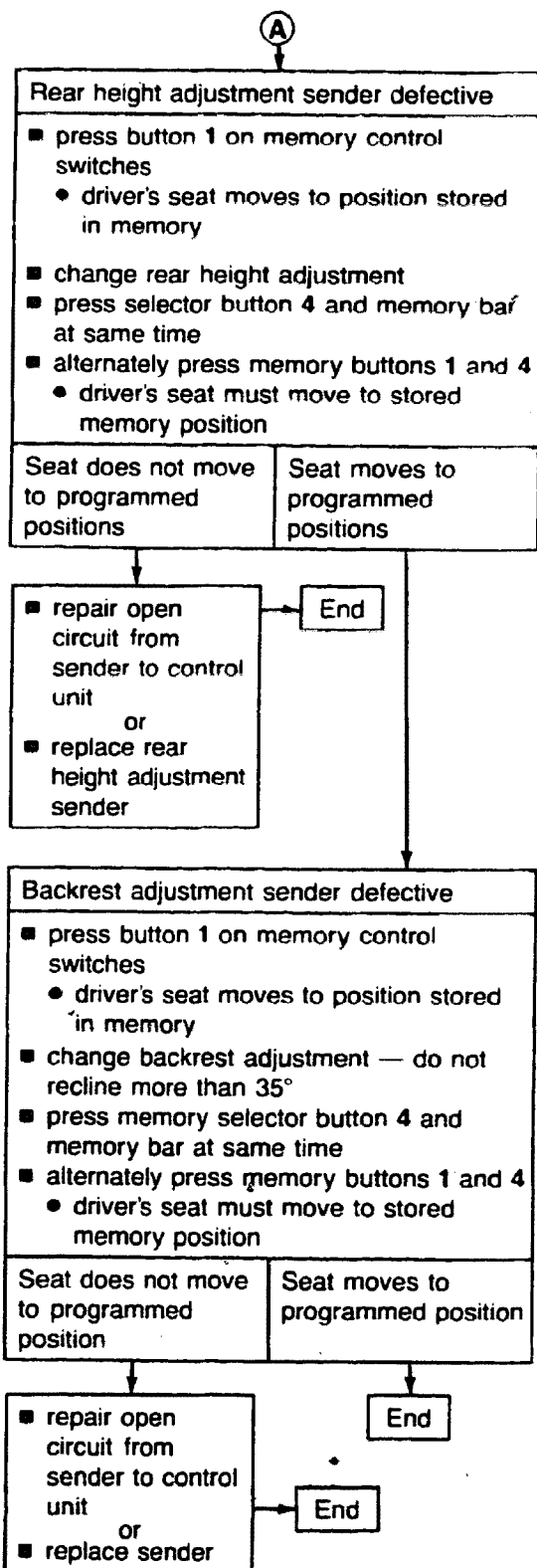
Seat moves to programmed positions

- repair open circuit from sender to control unit
- or
- replace sender

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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.

## 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

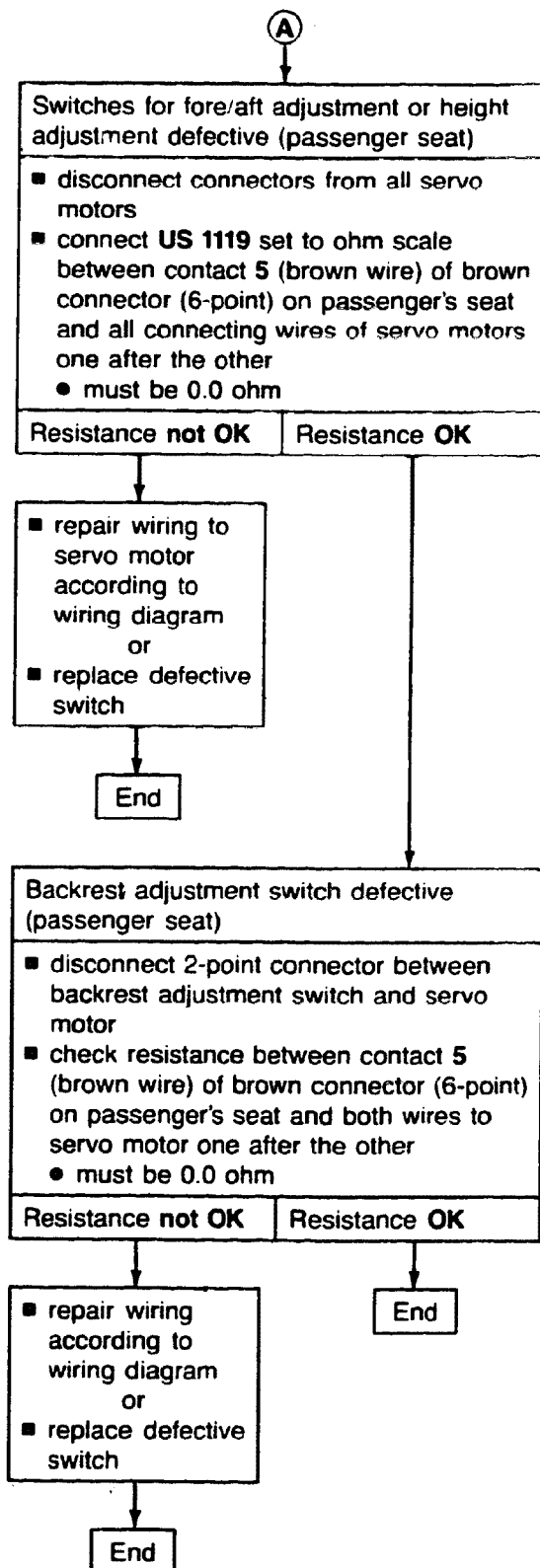
- replace defective servo motor

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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.



## 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.

## 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  $\infty$  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

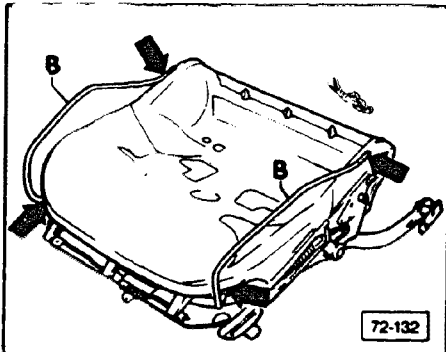
## Modification of replacement seat frame

### 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