

## Audi 100 1991 ➤

### Electrical system

Edition 03.1996



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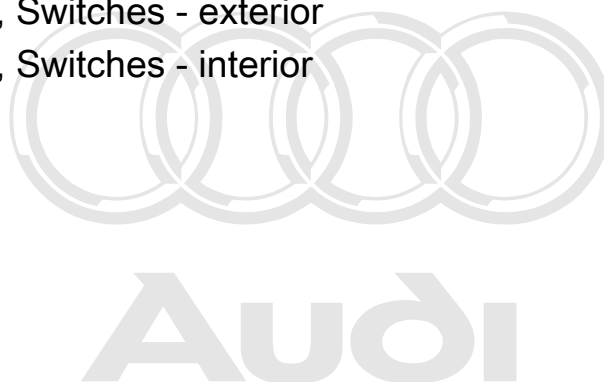
## List of Workshop Manual Repair GroupsList of Workshop Manual Repair Groups

### Audi 100 1991 ➤

#### Electrical system

#### Repair Group

- 01 - Self diagnosis
- 27 - Starter, Current supply
- 90 - Gauges, Instruments
- 91 - Radio, 2-way radio, Telephone
- 92 - Windscreen wipe and wash system
- 94 - Lights, Lamps, Switches - exterior
- 96 - Lights, Lamps, Switches - interior
- 97 - Wiring



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Technical information should always be available to the foremen and mechanics, because their careful and constant adherence to the instructions is essential to ensure vehicle road-worthiness and safety. In addition, the normal basic safety precautions for working on motor vehicles must, as a matter of course, be observed.

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## Contents

|                                                                      |           |
|----------------------------------------------------------------------|-----------|
| <b>01 - Self diagnosis</b>                                           | <b>1</b>  |
| <b>1 Self-diagnosis</b>                                              | <b>1</b>  |
| 1.1 Self-diagnosis                                                   | 1         |
| 1.2 Immobiliser self-diagnosis                                       | 1         |
| 1.3 Connecting V.A.G 1551 fault reader                               | 1         |
| 1.4 Starting immobiliser self-diagnosis                              | 2         |
| 1.5 Interrogate fault memory                                         | 2         |
| 1.6 Erase fault memory                                               | 3         |
| 1.7 Immobiliser fault table                                          | 3         |
| 1.8 Performing vehicle key adaptation                                | 4         |
| 1.9 Adaptation during engine control unit replacement                | 6         |
| 1.10 Testing system                                                  | 7         |
| 1.11 Lost key procedure                                              | 7         |
| 1.12 Establish code number                                           | 8         |
| <b>27 - Starter, Current supply</b>                                  | <b>9</b>  |
| <b>1 Checking and charging battery</b>                               | <b>9</b>  |
| 1.1 Checking and charging battery                                    | 9         |
| 1.2 Checking electrolyte level                                       | 9         |
| 1.3 Measuring voltage under load                                     | 9         |
| 1.4 Checking specific gravity of acid                                | 10        |
| 1.5 Notes on handling batteries                                      | 10        |
| 1.6 Charging battery                                                 | 10        |
| 1.7 Fast charging/starting assistance                                | 11        |
| <b>90 - Gauges, Instruments</b>                                      | <b>12</b> |
| <b>1 Servicing dash panel insert</b>                                 | <b>12</b> |
| 1.1 Servicing dash panel insert                                      | 12        |
| 1.2 Coding and adapting dash panel insert 06.94 ä                    | 12        |
| 1.3 Initiating coding of dash panel insert                           | 12        |
| 1.4 Coding of dash panel insert                                      | 13        |
| 1.5 Coding table                                                     | 14        |
| 1.6 Initiating adaptation of dash panel insert                       | 14        |
| 1.7 Adapting econometer                                              | 15        |
| 1.8 Adapting the lubrication service interval indicator (in km)      | 16        |
| 1.9 Adapting service interval indicator 1 (in km)                    | 16        |
| 1.10 Adapting of service interval indicator 1 (in days)              | 17        |
| 1.11 Adapting service interval indicator 2 (in days)                 | 18        |
| 1.12 Adapting of odometer                                            | 19        |
| <b>2 Dash panel insert</b>                                           | <b>21</b> |
| 2.1 Dash panel insert                                                | 21        |
| 2.2 Dash panel insert > 06.91 - Exploded view                        | 22        |
| 2.3 Dash panel insert > 07.91 - Exploded view                        | 29        |
| 2.4 Removing and installing dash panel insert                        | 33        |
| 2.5 Assignment of lamps in dash panel insert > 05.94                 | 34        |
| 2.6 Assignment of lamps in dash panel insert 06.94 ä                 | 38        |
| 2.7 Assignment of contacts at multi-pin dash panel insert connectors | 41        |
| 2.8 Removing and installing plug for multipin connectors             | 43        |
| 2.9 Servicing plug for multi-pin connector                           | 44        |
| <b>3 Checking dash panel insert components</b>                       | <b>45</b> |
| 3.1 Checking dash panel insert components                            | 45        |
| 3.2 Checking voltage stabiliser                                      | 45        |
| 3.3 Checking fuel gauge                                              | 45        |
| 3.4 Adjusting fuel gauge > 06.92                                     | 47        |



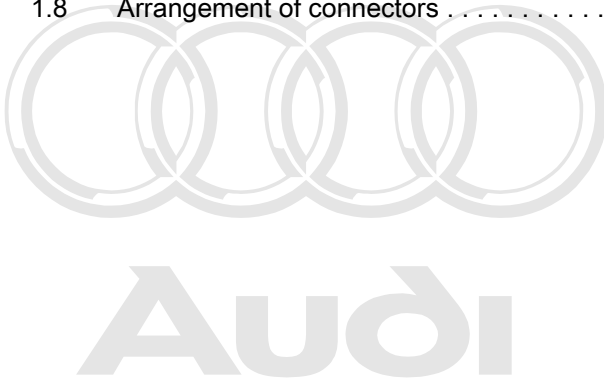
|           |                                                                                  |           |
|-----------|----------------------------------------------------------------------------------|-----------|
| 3.5       | Adjusting fuel gauge 07.92 > 05.94                                               | 47        |
| 3.6       | Checking oil pressure switch                                                     | 47        |
| 3.7       | Checking speedometer sensor                                                      | 48        |
| 3.8       | Checking coolant temperature gauge                                               | 48        |
| 3.9       | Checking oil temperature gauge                                                   | 52        |
| 3.10      | Checking oil pressure gauge                                                      | 53        |
| 3.11      | Removing and installing outside temperature gauge                                | 53        |
| 3.12      | 5-pin plug behind dash panel insert                                              | 54        |
| <b>4</b>  | <b>Removing and installing dash panel insert components</b>                      | <b>56</b> |
| 4.1       | Removing and installing dash panel insert components                             | 56        |
| 4.2       | Vehicles without auto-check system/on-board computer                             | 56        |
| 4.3       | Removing and installing cover panel                                              | 59        |
| 4.4       | Removing and installing instrument carrier                                       | 59        |
| 4.5       | Removing and installing front surround                                           | 59        |
| 4.6       | Removing and installing speedometer                                              | 60        |
| 4.7       | Removing and installing speedometer and large analogue clock                     | 60        |
| 4.8       | Removing and installing fuel gauge                                               | 61        |
| 4.9       | Removing and installing coolant temperature gauge                                | 61        |
| 4.10      | Removing and installing brightness control in dash panel insert                  | 62        |
| 4.11      | Removing and installing PCB                                                      | 62        |
| 4.12      | Removing and installing cap-type lamps                                           | 63        |
| 4.13      | Removing and installing digital clock                                            | 63        |
| 4.14      | Vehicles with Auto-check system/on-board computer and additional instruments     | 64        |
| 4.15      | Removing and installing cover panel                                              | 67        |
| 4.16      | Removing and installing instrument carrier and instrument carrier (side section) | 67        |
| 4.17      | Removing and installing front surround                                           | 68        |
| 4.18      | Removing and installing speedometer                                              | 68        |
| 4.19      | Removing and installing rev counter and large analogue clock                     | 68        |
| 4.20      | Removing and installing fuel gauge                                               | 69        |
| 4.21      | Removing and installing coolant temperature gauge                                | 69        |
| 4.22      | Removing and installing brightness control in dash panel insert                  | 70        |
| 4.23      | Removing and installing PCB                                                      | 70        |
| 4.24      | Removing and installing cap-type lamps                                           | 71        |
| 4.25      | Removing and installing on-board computer/auto-check system display unit         | 71        |
| 4.26      | Removing and installing digital clock                                            | 72        |
| 4.27      | Removing and installing cover panel (side section)                               | 73        |
| 4.28      | Removing and installing oil temperature / oil pressure gauge                     | 73        |
| 4.29      | Removing and installing small analogue clock                                     | 73        |
| 4.30      | Removing and installing side section PCB                                         | 74        |
| <b>91</b> | <b>Radio, 2-way radio, Telephone</b>                                             | <b>75</b> |
| <b>1</b>  | <b>Servicing radio</b>                                                           | <b>75</b> |
| 1.1       | Servicing radio                                                                  | 75        |
| 1.2       | Radio systems - general layout                                                   | 76        |
| 1.3       | "Gamma CC Bose" radio with CD changer- General layout                            | 80        |
| 1.4       | Removing and installing radio > 05.94                                            | 84        |
| 1.5       | Removing and installing radio 06.94 ä                                            | 84        |
| 1.6       | Removing and installing Bose rear amplifier                                      | 85        |
| 1.7       | Removing and installing CD changer                                               | 85        |
| 1.8       | Removing and installing CD changer, Avant 06.94 ä                                | 86        |
| <b>2</b>  | <b>Design of car radio systems</b>                                               | <b>87</b> |
| 2.1       | Design of car radio systems                                                      | 87        |
| 2.2       | "Alpha" radio > 05.94                                                            | 87        |
| 2.3       | "Beta CC" radio > 05.94                                                          | 88        |
| 2.4       | "Gamma CC" radio > 05.94                                                         | 89        |
| 2.5       | "Gamma CC Bose" radio > 05.94                                                    | 92        |
| 2.6       | "Gamma CD" radio > 05.94                                                         | 94        |

|           |                                                                                   |            |
|-----------|-----------------------------------------------------------------------------------|------------|
| 2.7       | "Gamma CC Bose" radio with CD changerä 05.94 . . . . .                            | 95         |
| 2.8       | "Beta" radio 06.94 ä . . . . .                                                    | 97         |
| 2.9       | "Gamma" radio 06.94 ä . . . . .                                                   | 98         |
| 2.10      | "Delta" radio 06.94 ä . . . . .                                                   | 99         |
| 2.11      | "Delta Bose" radio 06.94 ä . . . . .                                              | 101        |
| <b>3</b>  | <b>Loudspeaker systems - general layout . . . . .</b>                             | <b>104</b> |
| 3.1       | Loudspeaker systems - general layout . . . . .                                    | 104        |
| <b>4</b>  | <b>Aerial systems - general layout . . . . .</b>                                  | <b>109</b> |
| 4.1       | Aerial systems - general layout . . . . .                                         | 109        |
| 4.2       | Avant roof aerial > 05.94 . . . . .                                               | 113        |
| 4.3       | Roof aerial with amplifier, Avant 06.94 ä . . . . .                               | 115        |
| <b>5</b>  | <b>Servicing telephone system . . . . .</b>                                       | <b>117</b> |
| 5.1       | Servicing telephone system . . . . .                                              | 117        |
| 5.2       | Telephone system - general layout . . . . .                                       | 118        |
| 5.3       | Removing and installing transmit/receive unit . . . . .                           | 120        |
| 5.4       | Removing and installing transmit/receive unit, Avant 06.94 ä . . . . .            | 121        |
| 5.5       | Installing telephone aerial . . . . .                                             | 122        |
| 5.6       | Connecting frequency divider . . . . .                                            | 122        |
| 5.7       | Removing and installing handset . . . . .                                         | 123        |
| <b>92</b> | <b>Windscreen wipe and wash system . . . . .</b>                                  | <b>124</b> |
| <b>1</b>  | <b>Servicing wiper system . . . . .</b>                                           | <b>124</b> |
| 1.1       | Servicing wiper system . . . . .                                                  | 124        |
| <b>2</b>  | <b>Servicing windscreen and headlight washer system . . . . .</b>                 | <b>128</b> |
| 2.1       | Servicing windscreen and headlight washer system . . . . .                        | 128        |
| 2.2       | Removing and installing telescopic headlight washer arm . . . . .                 | 132        |
| <b>3</b>  | <b>Servicing rear window wiper system . . . . .</b>                               | <b>134</b> |
| 3.1       | Servicing rear window wiper system . . . . .                                      | 134        |
| 3.2       | Removing and installing rear window wiper arm . . . . .                           | 134        |
| 3.3       | Removing and installing rear window wiper motor . . . . .                         | 135        |
| <b>94</b> | <b>Lights, Lamps, Switches - exterior . . . . .</b>                               | <b>136</b> |
| <b>1</b>  | <b>Servicing headlights . . . . .</b>                                             | <b>136</b> |
| 1.1       | Servicing headlights . . . . .                                                    | 136        |
| 1.2       | Servicing headlights, Audi 100 > 05.94 . . . . .                                  | 136        |
| 1.3       | Servicing headlights Audi S4, 100 TDI 07.91 ä, Audi A6, S6 06.94 ä . . . . .      | 142        |
| 1.4       | Headlight adjustment . . . . .                                                    | 146        |
| 1.5       | Removing and installing front turn-signal indicator . . . . .                     | 147        |
| 1.6       | Removing and installing headlight . . . . .                                       | 147        |
| 1.7       | Servicing electrical headlight range adjustment . . . . .                         | 148        |
| 1.8       | Removing and installing control motor . . . . .                                   | 150        |
| <b>2</b>  | <b>Servicing tail light . . . . .</b>                                             | <b>151</b> |
| 2.1       | Servicing tail light . . . . .                                                    | 151        |
| 2.2       | Removing and installing high-level brake light . . . . .                          | 154        |
| <b>3</b>  | <b>Servicing steering column switch . . . . .</b>                                 | <b>155</b> |
| 3.1       | Servicing steering column switch . . . . .                                        | 155        |
| 3.2       | Removing and installing steering column switch . . . . .                          | 155        |
| <b>4</b>  | <b>Servicing ignition/starter switch . . . . .</b>                                | <b>159</b> |
| 4.1       | Servicing ignition/starter switch . . . . .                                       | 159        |
| 4.2       | Removing and installing ignition/starter switch > 05.94) . . . . .                | 159        |
| 4.3       | Removing and installing ignition/starter switch 06.94 ä . . . . .                 | 160        |
| <b>5</b>  | <b>Servicing steering column lock with lock cylinder . . . . .</b>                | <b>161</b> |
| 5.1       | Servicing steering column lock with lock cylinder . . . . .                       | 161        |
| 5.2       | Removing and installing steering column lock with lock cylinder > 05.94 . . . . . | 161        |
| 5.3       | Removing and installing steering column lock with lock cylinder 06.94 ä . . . . . | 163        |



|                                                                                                |            |
|------------------------------------------------------------------------------------------------|------------|
| <b>96 - Lights, Lamps, Switches - interior</b>                                                 | <b>166</b> |
| 1 Centre console switches                                                                      | 166        |
| 1.1 Centre console switches                                                                    | 166        |
| 1.2 Removing and installing pushbutton switches                                                | 166        |
| 1.3 Replacing bulbs in pushbutton switches                                                     | 167        |
| 1.4 Removing and installing switch for electrically operated mirrors                           | 167        |
| 1.5 Checking switch for electrically operated mirrors 07.92 ä                                  | 168        |
| 2 Electric window lifters                                                                      | 169        |
| 2.1 Electric window lifters                                                                    | 169        |
| 2.2 Front electric window lifter - exploded view                                               | 170        |
| 2.3 Removing and installing front window lifter motor                                          | 175        |
| 2.4 Rear electric window lifters - exploded view                                               | 176        |
| 2.5 Removing and installing rear window lifter switch                                          | 179        |
| 2.6 Removing and installing rear window lifter motor                                           | 180        |
| 2.7 Servicing electric window lifters with cushioned closing                                   | 181        |
| 3 Electrically adjustable seats                                                                | 184        |
| 3.1 Electrically adjustable seats                                                              | 184        |
| 3.2 Electrically adjustable driver's seat - exploded view                                      | 185        |
| 3.3 Electrically adjustable backrest - exploded view                                           | 192        |
| 3.4 Removing and installing electrically adjustable seat                                       | 194        |
| 3.5 Removing and installing switch unit on seat                                                | 194        |
| 3.6 Removing and installing backrest                                                           | 195        |
| 3.7 Removing and installing seat adjustment motors                                             | 196        |
| 3.8 Removing and installing backrest adjustment motor                                          | 199        |
| 3.9 Functional test of electrically adjustable seats                                           | 199        |
| 4 Servicing illuminated make-up mirror                                                         | 200        |
| 4.1 Servicing illuminated make-up mirror                                                       | 200        |
| 5 Servicing electric rear window blind                                                         | 201        |
| 5.1 Servicing electric rear window blind                                                       | 201        |
| 5.2 Removing and installing rear window blind motor                                            | 203        |
| 5.3 Removing and installing rear window blind control unit                                     | 204        |
| 6 Servicing ultrasonic passenger compartment monitoring system                                 | 204        |
| 6.1 Servicing ultrasonic passenger compartment monitoring system                               | 204        |
| 6.2 Functional test of interior monitoring system                                              | 205        |
| 6.3 System diagnosis                                                                           | 205        |
| 6.4 Diagnosis table                                                                            | 205        |
| 6.5 Fault remedy                                                                               | 206        |
| 6.6 Removing and installing sensors for passenger compartment monitoring system                | 207        |
| 6.7 Removing and installing passenger compartment monitoring system control unit               | 208        |
| 6.8 Checking momentary contact deactivation switch                                             | 210        |
| 7 Servicing immobiliser                                                                        | 211        |
| 7.1 Servicing immobiliser                                                                      | 211        |
| 7.2 Overview                                                                                   | 211        |
| 7.3 Removing and installing immobiliser control unit                                           | 212        |
| 7.4 Replacing reader coil -D2                                                                  | 213        |
| <b>97 - Wiring</b>                                                                             | <b>214</b> |
| 1 Fitting locations of control units and electrical components                                 | 214        |
| 1.1 Fitting locations of control units and electrical components                               | 214        |
| 1.2 Removing and installing central electrical system with relay carrier and connecting unit I | 216        |
| 1.3 Removing and installing auxiliary relay carrier I                                          | 218        |
| 1.4 Layout of auxiliary relay carrier II                                                       | 221        |
| 1.5 Layout of auxiliary relay carrier III                                                      | 222        |
| 1.6 Arrangement of fuses in fuse box                                                           | 222        |
| 1.7 Removing and installing electrics box                                                      | 223        |

1.8 Arrangement of connectors .....225



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# 01 - Self diagnosis

## 1 - Self-diagnosis

### 1.1 - Self-diagnosis

### 1.2 - Immobiliser self-diagnosis

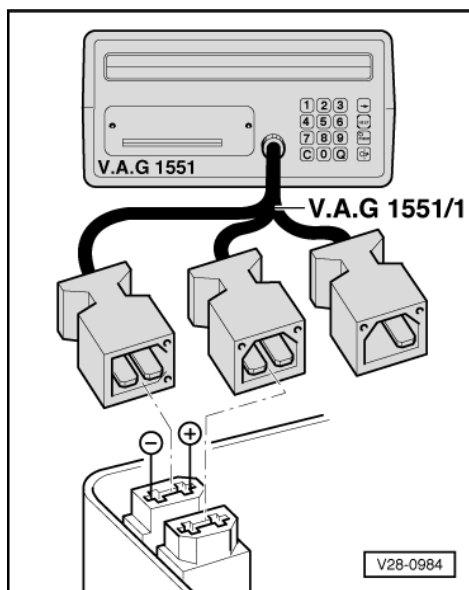
The electronic immobiliser is equipped with self-diagnosis capability. If faults occur in system components, fault codes are stored in the immobiliser control unit -J362 which can then be read out using the V.A.G 1551 or V.A.G 1552 fault reader.

The electronic immobiliser has the following self-diagnosis functions:

- ◆ Interrogate fault memory
- ◆ Erase fault memory
- ◆ Adapt vehicle keys
- ◆ Adapt immobiliser control unit

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### 1.3 - Connecting V.A.G 1551 fault reader



- Switch off ignition.
- Connect V.A.G 1551/1 diagnosis cable to the diagnosis connectors on the auxiliary relay carrier (I) in the plenum chamber as follows:
  - > Attach black connector of V.A.G 1551/1 diagnosis cable to black diagnosis cable and white connector to the white diagnosis connector.

**Note:**

*The V.A.G 1551/1 blue diagnosis connector is not required.*

- Switch ignition on.



-> Reading on display:

V.A.G self diagnosis      HELP  
1 - Rapid data transfer 1)  
2 -Flashing code output 1).

- 1)    Displayed alternately

**Notes:**

- ♦ Additional operating instructions can be obtained by pressing the V.A.G 1551 HELP key.
- ♦ The ➡ key switches to the next step in the program sequence.

## 1.4 - Starting immobiliser self-diagnosis

- Press key 1 for mode 1, "Rapid data transfer".

-> Reading on display:

Rapid data transfer      HELP  
Enter address word XX

- Press keys 2 and 5 for "Immobiliser" address word.

-> Reading on display:

Rapid data transfer      Q  
25 Immobiliser

- Confirm entry with Q key.

-> Reading on display:

Rapid data transfer  
Tester transmits address word 25

- Wait approx. 5 seconds.

-> Reading on display:

4A0953234      IMMO      AUZY0R1400042  
D66      □

- 4A0953234: Number of control unit
  - IMMO: System designation
  - AUZY0R1400042: 14-position ident-no.
  - D66: Software version
- Press ➡ key to continue.

-> Reading on display:

Rapid data transfer      HELP  
Select function XX

## 1.5 - Interrogate fault memory

- Press keys 0 and 2 for "Interrogate fault memory" function.

-> Reading on display:

Rapid data transfer      Q  
02 Interrogate fault memory

- Confirm entry with Q key.



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-> Reading on display:

No fault detected!

- Press => key.

or

-> Reading on display:

X faults detected!

If the printer is switched on, the stored faults will be displayed and printed out in sequence.

**Note:**

*If the printer is off, press the => key to display the next fault.*

- Press => after the last fault has been displayed and printed.

-> Reading on display:

Rapid data transfer      HELP  
Select function XX

- Remedy printed faults according to fault table => Page 3, then erase fault memory and interrogate it again as a check.

## 1.6 - Erase fault memory

**Prerequisite:**

- Fault memory interrogated => Page 2.
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-> Reading on display:

Rapid data transfer      HELP  
Select function XX

- Press keys 0 and 5 for "Erase fault memory".

-> Reading on display:

Rapid data transfer      Q  
05 - Erase fault memory

- Confirm entry with Q key.

-> Reading on display:

Rapid data transfer      HELP  
Select function XX

## 1.7 - Immobiliser fault table

**Note:**

- ♦ All static and sporadic faults are stored in the fault memory.
- ♦ A fault is recognised as being static if it is present for at least 2 seconds. If the fault does not occur again it is registered as a sporadic fault. "/SP" appears on right of display.
- ♦ When the ignition is switched on, all existing faults are set to sporadic and will only be stored as static faults if they still exist after checking.



- ♦ Sporadic faults which have not occurred again for 50 driving cycles (ignition on for at least 2 minutes) are erased.

| V.A.G 1551 print-out                                                                | Possible causes of fault                                                                         | Possible effect                                                                                                                          | Fault remedy                                                                                                                |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| 00750<br>Fault lamp<br>Short to earth/open circuit<br><br>Short circuit to positive | - Wiring damaged<br><br>- Open circuit<br>- Warning lamp -K117 defective<br><br>- Wiring damaged | ▪ Warning lamp comes on<br><br>▪ Warning lamp does not come on<br>▪ Warning lamp does not come on<br><br>▪ Warning lamp does not come on | - Eliminate wiring damage.<br>- Eliminate open circuit. Replace warning lamp => Page 40 .<br><br>- Eliminate wiring damage. |
| 01128<br>Immobiliser reader coil                                                    | - Immobiliser reader coil - D2 defective<br>- Open circuit                                       | ▪ Engine will not start and warning lamp is on                                                                                           | - Replace reader coil => Page 213 .<br>Eliminate open circuit.                                                              |

| V.A.G 1551 print-out                                     | Possible causes of fault                   | Possible effects                               | Fault remedy                                                                     |
|----------------------------------------------------------|--------------------------------------------|------------------------------------------------|----------------------------------------------------------------------------------|
| 01176<br>Key<br><br>Signal too low<br><br>Not authorised | - Transponder defective<br><br>- Wrong key | ▪ Engine will not start and warning lamp is on | - Make new key<br><br>- Perform vehicle key adaptation                           |
| 01177<br>Engine control unit not authorised              | - Engine control unit replacement          | ▪ Engine will not start and warning lamp is on | - Perform adaptation on engine control unit replacement                          |
| 01179<br>Incorrect key programming                       | - Incorrect key adaptation                 | ▪ Warning lamp flashes                         | - Read out fault memory<br>Erase fault memory.<br>Perform vehicle key adaptation |
| 65535<br>Control unit defective                          | - Immobiliser control unit -J362 defective | ▪ Engine will not start and warning lamp is on | - Replace immobiliser control unit -J362 => Page 212                             |

## 1.8 - Performing vehicle key adaptation

### Prerequisites:

- All vehicle keys available.
- Customer present to provide code number, otherwise code number has to be established => Page 8
- Connecting fault reader V.A.G 1551 => Page 1 .
- Switch ignition on.
- Starting immobiliser self-diagnosis => Page 2 .

-> Reading on display:

Rapid data transfer      HELP  
Select function XX

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- Press key 1 twice for "Login procedure" function.

-> Reading on display:

Rapid data transfer      Q  
11 - Login procedure

- Confirm entry with Q key.

-> Reading on display:

Login procedure Q  
Enter code number XXXXX

- Enter code number.

**Note:**

- ◆ When entering code number, precede the 4-digit number with a 0.
- ◆ The code number is marked beneath a rubber coating on the key ring issued to the customer when the vehicle was handed over. The rubber coating can be removed by rubbing.
- ◆ If the code number is incorrectly entered twice, the control unit is disabled for 30 minutes. The ignition must be set to "On" for 30 minutes before the next attempt.

- Confirm entry with Q key.

-> Reading on display:

Rapid data transfer HELP  
Select function XX

- Press keys 1 and 0 for "Adaptation" function.
- Confirm entry with Q key.

-> Reading on display:

Adaptation Q  
Enter channel number XX

- Press keys 0 and 1
- Confirm entry with Q key.

-> Reading on display:

Channel 1 Adaptation 2

- Press ⇒ key to continue.

-> Reading on display:

Channel 1 Adaptation 2  
Enter adaptation value XXXXX

- Press key 0 four times and enter number of keys to be adapted (0 to 8 keys).

**Note:**

*Entering "0 keys" results in electronic locking of the vehicle.*

- Confirm entry with Q key.

-> Reading on display:

Channel 1 Adaptation 3 Q

- Confirm entry with Q key.

or

-> Reading on display:

Channel 1 Adaptation 2

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- Press key 1 to decrease number of keys, or key 3 to increase, e.g. to 3.

-> Reading on display:

|           |            |   |   |
|-----------|------------|---|---|
| Channel 1 | Adaptation | 3 | Q |
|-----------|------------|---|---|

- Confirm entry with Q key.

-> Reading on display:

|                      |            |   |   |
|----------------------|------------|---|---|
| Channel 1            | Adaptation | 3 | Q |
| Store changed value? |            |   |   |

- Confirm entry with Q key.

-> Reading on display:

|                      |            |   |  |
|----------------------|------------|---|--|
| Channel 1            | Adaptation | 3 |  |
| Changed value stored |            |   |  |

Key in ignition lock has now been adapted.

- The ignition must be switched on using all the other keys for this vehicle until the warning lamp goes off.

**Note:**

*Adaptation is complete, when:*

- ♦ The number of keys to be adapted has been reached,
- ♦ A key that has already been adapted is adapted again:
- ♦ The total adaptation time of 30 seconds has been exceeded.

- Press ⇒ key to continue.

-> Reading on display:

|                     |      |
|---------------------|------|
| Rapid data transfer | HELP |
| Select function XX  |      |

## 1.9 - Adaptation during engine control unit replacement

**Prerequisite:**

- Authorised vehicle key available
- Connect fault reader V.A.G 1551 => Page 1.
- Switch ignition on.
- Starting immobiliser self diagnosis =>Page 2

-> Reading on display:

|                     |      |
|---------------------|------|
| Rapid data transfer | HELP |
| Select function XX  |      |

- Press 1 and 0 for "Adaptation" function.
- Confirm entry with Q key.

-> Reading on display:

|                         |   |
|-------------------------|---|
| Adaptation              | Q |
| Enter channel number XX |   |

- Press key 0 twice.

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- Confirm entry with Q key.

-> Reading on display:

|                                            |
|--------------------------------------------|
| Adaptation      Q<br>Erase learned values? |
|--------------------------------------------|

- Confirm entry with Q key.

-> Reading on display:

|                                              |
|----------------------------------------------|
| Adaptation<br>Learnt values have been erased |
|----------------------------------------------|

- Press ⇒ key to continue.

-> Reading on display:

|                                                     |
|-----------------------------------------------------|
| Rapid data transfer      HELP<br>Select function XX |
|-----------------------------------------------------|

**Note:**

*The next time the ignition is switched on, the engine control unit identifier is read into the immobiliser control unit.*

## 1.10 - Testing system

- Not for vehicles with engine code letters AAR (KE III 2.3 I)

**Prerequisite**

- The ignition must have been switched off for at least 30 seconds.
- Cover receiving coil with a slotted metal plate, e.g. place shim between ignition lock and ignition key.
- Attempt to start vehicle - the engine should not run and warning lamp should flash.
- Connecting fault reader V.A.G 1551 => Page 1 .
- Starting immobiliser self diagnosis =>Page 2
- Interrogate fault memory =>Page 2 . Error message: Signal too small
- Erasing fault memory => Page 3 .
- Only for vehicles with engine code letters AAR (KE III 2.3 I)
- Connecting fault reader V.A.G 1551 => Page 1 .
- Starting immobiliser self diagnosis =>Page 2
- Select final control element diagnosis function (03).
- Attempt to start three times in succession, engine should not start:

- |                                             |
|---------------------------------------------|
| 1. Path    Pin 5 12V (NC relay)             |
| 2. Path    Pin 4, high impedance (NO relay) |
| 3. Path    Open circuit in starting relay   |

- Erase fault memory in FEI control unit

=> KE III Jetronic/ignition system (5-cylinder); Repair group 01; Self-diagnosis with fault reader V.A.G 1551; Fault memory interrogation with V.A.G 1551 Self-diagnosis with fault reader V.A.G 1551 Fault memory interrogation with V.A.G 1551

## 1.11 - Lost key procedure

- Make replacement key using locking mechanism number.



- Perform vehicle key adaptation => Page 4 .

## 1.12 - Establish code number

- Connecting fault reader V.A.G 1551 => Page 1 .
- Starting immobiliser self diagnosis =>Page 2
- Read out 14-figure immobiliser control unit ident. no.
- Using the ident. no., obtain the code number from the appropriate Sales Centre or Importer.



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## 27 - Starter, Current supply

### 1 - Checking and charging battery

#### 1.1 - Checking and charging battery

##### Warning

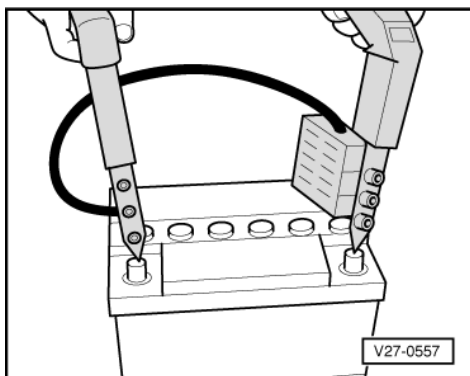
Always disconnect battery earthing strap when performing repair work on electrical system.

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#### 1.2 - Checking electrolyte level

- ♦ Only top up with distilled water if electrolyte level is below "min" mark.
- ♦ Highly charged batteries with an excessively high electrolyte level (lengthy journey using few connected loads) may "boil over". If the electrolyte level is too low, the service life of the battery may be shortened.

#### 1.3 - Measuring voltage under load



-> The voltage can be measured under load using a battery tester such as the V.A.G 1498.

- ♦ The load current and minimum voltage differ depending on the battery capacity and should be taken from the label on the tester or the following table.

| Capacity | Cold discharge test current | Load current | Minimum voltage |
|----------|-----------------------------|--------------|-----------------|
| 36 Ah    | 175 A                       | 100 A        | 10.0 V          |
| 40 Ah    | 220 A                       | 200 A        | 9.4 V           |
| 50 Ah    | 265 A                       | 200 A        | 9.6 V           |
| 63 Ah    | 300 A                       | 200 A        | 9.5 V           |
| 88 Ah    | 395 A                       | 300 A        | 9.5 V           |
| 92 Ah    | 450 A                       | 300 A        | 9.5 V           |

- ♦ If the minimum voltage is not attained for a loading period of 5 to 10 seconds, the battery is flat or defective. Check specific gravity of acid.

**Note:**

*To avoid the danger of explosion, never test a battery that is gassing.*

- ♦ Batteries with a capacity of more than 63 Ah are not to be checked using the VW 1266 battery tester and charger, since this testing facility is only designed for batteries up to max. 63 Ah.
- ♦ The battery tester V.A.G 1498 is suitable for batteries with capacities between 30 and 200 Ah.

## 1.4 - Checking specific gravity of acid

- ♦ In conjunction with the voltage measurement (under load), the specific gravity of the acid provides accurate information concerning the state of charge of a battery. Testing is performed using a hydrometer.
- ♦ The higher the specific gravity of the extracted acid the higher the float rides. The density can be read off the scale as specific gravity or degrees Baumé.

The following values must be attained:

| Charge condition in normal climatic zones | o Bé | Spec. gravity |
|-------------------------------------------|------|---------------|
| Discharged                                | 16   | 1.12          |
| Semi-charged                              | 24   | 1.20          |
| Well charged                              | 32   | 1.28          |
| Charge level in tropical countries        | o Bé | Spec. gravity |
| Discharged                                | 11   | 1.08          |
| Semi-charged                              | 18   | 1.14          |
| Well charged                              | 27   | 1.23          |

## 1.5 - Notes on handling batteries

Batteries that have not been used for lengthy periods (e.g. vehicles in storage) are subject to self-discharge and may also be sulphated. If fast charging is performed on these batteries using standard charging units they fail to absorb any charging current, or register as being "fully charged" before they actually are due to so-called surface charging. They appear to be defective.

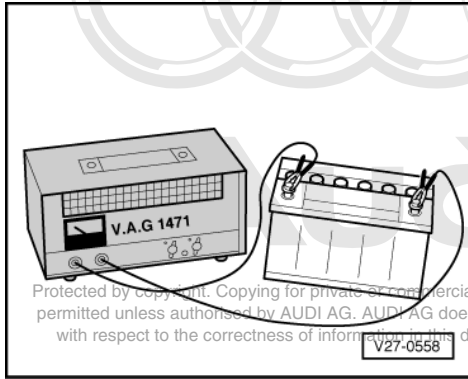
Before these batteries are considered to be defective, perform the following checks:

- ♦ If the specific gravity of the acid in all the cells does not differ by more than 0.02 kg/dm<sup>3</sup> (e.g. 1.13 to 1.11), the battery should be charged. When charging is complete the battery should be subjected to a load test. The battery is only defective if the test specifications are not complied with.
- ♦ If the specific gravity of the acid in one or two adjacent cells is appreciably lower (e.g. five cells indicate 1.16 and one cell indicates 1.08), the battery has a short circuit and is defective.

## 1.6 - Charging battery

**Note:**

- ♦ Frozen batteries must be thawed out before charging.
- ♦ Avoid naked flames and never smoke in rooms where batteries are being charged.
- ♦ Precision tools should also be kept away from such areas.



-> The V.A.G 1471 battery charger can be used for normal charging of up to four 12 V batteries as well as batteries with different capacities (Ah = ampere-hours) and rated voltage.

- Disconnect battery earthing strap and positive lead from battery.
- Connect positive terminal of battery to positive terminal of charger, and battery negative to charger negative.
- Switch on charging current. The charging current depends on the capacity of the battery. The current should be about 10% of the battery capacity. In other words, the charging current should be about 4 A for a 40 Ah battery.

## 1.7 - Fast charging/starting assistance

Fast charging can be carried out using the VW 1266 battery tester and charger. Additional starting assistance can be provided by the V.A.G 1572 battery starter/charger.



## 90 - Gauges, Instruments

### 1 - Servicing dash panel insert

#### 1.1 - Servicing dash panel insert

#### 1.2 - Coding and adapting dash panel insert 06.94 ä

The dash panel insert 06.94 ä can be coded in accordance with the engine and country-specific version. Various indicators on the dash panel insert can be adapted using the V.A.G 1551.

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#### **Note:**

- ♦ The system has no self-diagnosis capability
- ♦ After performing service work the relevant service interval indicators in the dash panel insert should be adjusted.
- ♦ After replacing the dash panel insert, all the service interval indicators, the econometer and the odometer should be adjusted. Make a note of the mileage prior to removal. The service intervals can be found in the service schedule.
- ♦ Pay attention to the airbag safety instructions in vehicles equipped with airbags.

=> General body repairs; Repair group 69; General safety instructions General safety instructions

- ♦ For contact assignments and checking multipin connectors, refer to

=> "Current Flow Diagrams, Electrical Fault Finding and Fitting Locations" binder

- ♦ Removing and installing dash panel insert => Page **33**.

#### **Prerequisites:**

- Fuses OK

=> "Current Flow Diagrams, Electrical Fault Finding and Fitting Locations" binder

- Always check the coding of the dash panel insert using the V.A.G 1551 fault reader.

#### 1.3 - Initiating coding of dash panel insert

- Connecting V.A.G 1551 fault reader => Page **1**.
- Press key 1 for mode 1, "Rapid data transfer".

-> Reading on display:

|                       |      |
|-----------------------|------|
| Rapid data transfer   | HELP |
| Enter address word XX |      |

- Press keys 1 and 7 for "Dash panel insert" address word.

Reading on display:

|                      |   |
|----------------------|---|
| Rapid data transfer  | Q |
| 17 Dash panel insert |   |

- Confirm entry with Q key.

Reading on display:

Rapid data transfer  
Tester transmits address word 17

- Wait approx. 5 seconds.

Reading on display:

4D0 919 033 C4-Instrument cluster D2  
00083 □  
Coding 00062 WSC 06812

- ◆ 4D0 919 033: Dash panel insert part no
- ◆ C4 instrument cluster: Component designation
- ◆ D2 00083: Dash panel insert software version
- ◆ Coding 00062: Coding of dash panel insert
- ◆ WSC 06812: Workshop Code

**Note:**

- ◆ Check coding of dash panel insert using coding table => Page 14 .
- Press ⇒ key to continue.

-> Reading on display:

Rapid data transfer HELP  
Select function XX

## 1.4 - Coding of dash panel insert

- Connecting V.A.G 1551 fault reader => Page 1 .
- Initiating coding of dash panel insert => Page 12 .
- Press buttons 0 and 7 for the "Code control unit" function.

-> Reading on display:

Rapid data transfer Q  
07 - Coding control unit

- Confirm entry with Q key.

-> Reading on display:

Coding control unit  
Enter code number XXXXX (0-32000)

- Enter the appropriate code number using the coding table => Page 14 .

Example:

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|    |   |                                   |
|----|---|-----------------------------------|
| 00 |   | Filler positions, no significance |
|    | 0 | Country version, Germany          |
|    | 6 | 6-cylinder                        |
|    | 2 | Petrol engine                     |

Reading on display:

Coding control unit Q  
Enter code number 00062 (0-32000)

- Confirm entry with Q key.

Reading on display:



|                                      |
|--------------------------------------|
| 4D0 919 033 C4 Instrument cluster D2 |
| 00083      □                         |
| Coding      00062      WSC 06812     |

- Press ⇒ key to continue.

Reading on display:

|                               |
|-------------------------------|
| Rapid data transfer      HELP |
| Select function XX            |

- Press buttons 0 and 6 to select "End of data transfer".

-> Reading on display:

|                            |
|----------------------------|
| Rapid data transfer      Q |
| 06 - End of output         |

- Confirm entry with Q key.

## 1.5 - Coding table

| Coding    Meaning |                                         |
|-------------------|-----------------------------------------|
| XX                | Filler locations, meaningless in the A6 |
| 00                | Enter two zeroes.                       |
| X                 | Country-specific versions:              |
|                   | 0    Germany (D)                        |
|                   | 1    Europe (EU)                        |
|                   | 2    USA (US)                           |
|                   | 3    Canada (CDN)                       |
|                   | 4    Great Britain (GB)                 |
|                   | 5    Japan (JP)                         |
|                   | 6    Saudi Arabia (SA)                  |
|                   | 7    Australia (AUS)                    |

| Coding    Meaning |                                         |
|-------------------|-----------------------------------------|
| X                 | Number of cylinders                     |
|                   | 4    4-cylinder                         |
|                   | 5    5-cylinder                         |
|                   | 6    6-cylinder                         |
|                   | 8    8-cylinder                         |
| X                 | Engine versions:                        |
|                   | 0    TDI engine                         |
|                   | 2    Petrol engine (4-, 5-, 6-cylinder) |
|                   | 3    Petrol engine (8-cylinder)         |
|                   | 4    Petrol engine (5-cylinder turbo)   |
|                   | 5    Swirl chamber diesel engine        |

## 1.6 - Initiating adaptation of dash panel insert

- Connecting V.A.G 1551 fault reader => Page **1** .
- Initiating coding of dash panel insert => Page **12** .
- Press keys 1 and 0 for "Adaptation" function.

-> Reading on display:

Rapid data transfer      Q  
10 - Adaptation

- Confirm entry with Q key.

-> Reading on display:

Adaptation  
Enter channel number XX

## 1.7 - Adapting econometer

- Initiating adaptation of dash panel insert => Page 14 .
- Press keys 0 and 3
- Confirm entry with Q key.

-> Reading on display:

Channel 3      Adaptation      100

- Press ⇒ key to continue.

-> Reading on display:

Channel 3      Adaptation      100      Q  
Enter adaptation value XXXXX

- Enter adaptation value between 85% (00085) and 115% (00115) Basic setting 100% (00100).
  - Example:  
95%, enter 00095 on the keypad.
- Confirm entry with Q key.

-> Reading on display:

Channel 3      Adaptation      95      Q

- Confirm entry with Q key.

-> Reading on display:

Channel 3      Adaptation      95      Q  
Store changed value?

- Confirm entry with Q key.

-> Reading on display:

Channel 3      Adaptation      95  
Changed value stored

- Press ⇒ key to continue.

-> Reading on display:

Rapid data transfer      HELP  
Select function XX

- Press buttons 0 and 6 to select "End of data transfer".

-> Reading on display:

Rapid data transfer      Q  
06 - End of output

- Confirm entry with Q key.

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## 1.8 - Adapting the lubrication service interval indicator (in km)

- Initiating adaptation of dash panel insert => Page 14 .
- Press keys 0 and 5
- Confirm entry with Q key.

-> Reading on display:

|           |            |    |
|-----------|------------|----|
| Channel 5 | Adaptation | 15 |
|-----------|------------|----|

- Press => key to continue.

-> Reading on display:

|         |                              |            |    |
|---------|------------------------------|------------|----|
| Channel | 5                            | Adaptation | 15 |
| Q       | Enter adaptation value XXXXX |            |    |

- Enter adaptation value of between 0 km (00000) and 15.000 km (00015). The value can be entered in increments of 1000 km.
  - Example:  
12.000 km, enter 00012 on the keypad.
- Confirm entry with Q key.

-> Reading on display:

|         |   |            |    |
|---------|---|------------|----|
| Channel | 5 | Adaptation | 12 |
| Q       |   |            |    |

- Confirm entry with Q key.

-> Reading on display:

|         |                      |            |    |
|---------|----------------------|------------|----|
| Channel | 5                    | Adaptation | 12 |
| Q       | Store changed value? |            |    |

- Confirm entry with Q key.

-> Reading on display:

|                      |            |    |
|----------------------|------------|----|
| Channel 5            | Adaptation | 12 |
| Changed value stored |            |    |

- Press => key to continue.

-> Reading on display:

|                     |      |
|---------------------|------|
| Rapid data transfer | HELP |
| Select function XX  |      |

- Press buttons 0 and 6 to select "End of data transfer".

-> Reading on display:

|                     |   |
|---------------------|---|
| Rapid data transfer | Q |
| 06 - End of output  |   |

- Confirm entry with Q key.

## 1.9 - Adapting service interval indicator 1 (in km)

- Initiating adaptation of dash panel insert => Page 14 .
- Press keys 0 and 6



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- Confirm entry with Q key.

-> Reading on display:

|           |            |    |
|-----------|------------|----|
| Channel 6 | Adaptation | 30 |
|-----------|------------|----|

- Press ⇒ key to continue.

-> Reading on display:

|                              |            |    |   |
|------------------------------|------------|----|---|
| Channel 6                    | Adaptation | 30 | Q |
| Enter adaptation value XXXXX |            |    |   |

- Enter adaptation value of between 0 km (00000) and 30.000 km (00030) The value can be entered in increments of 1000 km.
- Example:  
27.000 km, enter 00027 on the keypad.
- Confirm entry with Q key.

-> Reading on display:

|           |            |    |   |
|-----------|------------|----|---|
| Channel 6 | Adaptation | 27 | Q |
|-----------|------------|----|---|

- Confirm entry with Q key.

-> Reading on display:

|                      |            |    |   |
|----------------------|------------|----|---|
| Channel 6            | Adaptation | 27 | Q |
| Store changed value? |            |    |   |

- Confirm entry with Q key.
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-> Reading on display:

|                      |            |    |
|----------------------|------------|----|
| Channel 6            | Adaptation | 27 |
| Changed value stored |            |    |

- Press ⇒ key to continue.

-> Reading on display:

|                     |      |
|---------------------|------|
| Rapid data transfer | HELP |
| Select function XX  |      |

- Press buttons 0 and 6 to select "End of data transfer".

-> Reading on display:

|                     |   |
|---------------------|---|
| Rapid data transfer | Q |
| 06 - End of output  |   |

- Confirm entry with Q key.

## 1.10 - Adapting of service interval indicator 1 (in days)

- Initiating adaptation of dash panel insert => Page 14 .
- Press keys 0 and 7
- Confirm entry with Q key.

-> Reading on display:

|           |            |    |
|-----------|------------|----|
| Channel 7 | Adaptation | 36 |
|-----------|------------|----|

- Press ⇒ key to continue.



-> Reading on display:

|                              |            |    |   |
|------------------------------|------------|----|---|
| Channel 7                    | Adaptation | 36 | Q |
| Enter adaptation value XXXXX |            |    |   |

- Enter adaptation value between 0 days (00000) and 360 days (00036). The value can be entered in increments of 10 days.
  - Example:  
320 days, enter 00032 on the keypad.
- Confirm entry with Q key.

-> Reading on display:

|           |            |    |   |
|-----------|------------|----|---|
| Channel 7 | Adaptation | 32 | Q |
|-----------|------------|----|---|

- Confirm entry with Q key.

-> Reading on display:

|                      |            |    |   |
|----------------------|------------|----|---|
| Channel 7            | Adaptation | 32 | Q |
| Store changed value? |            |    |   |

- Confirm entry with Q key.

-> Reading on display:

|                      |            |    |  |
|----------------------|------------|----|--|
| Channel 7            | Adaptation | 32 |  |
| Changed value stored |            |    |  |

- Press ⇒ key to continue.

-> Reading on display:

|                     |      |
|---------------------|------|
| Rapid data transfer | HELP |
| Select function XX  |      |

- Press buttons 0 and 6 to select "End of data transfer".

-> Reading on display:

|                     |   |
|---------------------|---|
| Rapid data transfer | Q |
| 06 - End of output  |   |

- Confirm entry with Q key.

## 1.11 - Adapting service interval indicator 2 (in days)

- Initiating adaptation of dash panel insert => Page 14 .
- Press keys 0 and 8
- Confirm entry with Q key.

-> Reading on display:

|           |            |    |  |
|-----------|------------|----|--|
| Channel 8 | Adaptation | 72 |  |
|-----------|------------|----|--|

- Press ⇒ key to continue.

-> Reading on display:

|                              |            |    |   |
|------------------------------|------------|----|---|
| Channel 8                    | Adaptation | 72 | Q |
| Enter adaptation value XXXXX |            |    |   |

- Enter adaptation value between 0 days (00000) and 720 days (00072). The value can be entered in increments of 10 days.
  - Example:  
660 days, enter 00066 on the keypad.

- Confirm entry with Q key.

-> Reading on display:

|           |            |    |   |
|-----------|------------|----|---|
| Channel 8 | Adaptation | 66 | Q |
|-----------|------------|----|---|

- Confirm entry with Q key.

-> Reading on display:

|                      |            |    |   |
|----------------------|------------|----|---|
| Channel 8            | Adaptation | 66 | Q |
| Store changed value? |            |    |   |

- Confirm entry with Q key.

-> Reading on display:

|                      |            |    |  |
|----------------------|------------|----|--|
| Channel 8            | Adaptation | 66 |  |
| Changed value stored |            |    |  |

- Press ⇒ key to continue.

-> Reading on display:

|                     |      |
|---------------------|------|
| Rapid data transfer | HELP |
| Select function XX  |      |

- Press buttons 0 and 6 to select "End of data transfer".

-> Reading on display:

|                     |   |
|---------------------|---|
| Rapid data transfer | Q |
| 06 - End of output  |   |

- Confirm entry with Q key.

## 1.12 - Adapting of odometer

### *Note:*

- ◆ The adaptation function can only be performed on dash panel inserts with a mileage of max.100 km.
  - ◆ The adaptation procedure can only be performed once on any given dash panel insert.
  - ◆ The adaptation value entered must be higher than existing value.
  - ◆ If an incorrect value is entered and confirmed, it is not possible to change it. If this happens, the dash panel insert must be replaced.
- Connecting V.A.G 1551 fault reader => Page 1.
  - Initiating coding of dash panel insert => Page 12.
  - Press key 1 twice for "Login procedure" function.

-> Reading on display:

|                      |   |
|----------------------|---|
| Rapid data transfer  | Q |
| 11 - Login procedure |   |

- Confirm entry with Q key.

-> Reading on display:

|                         |
|-------------------------|
| Login- procedure        |
| Enter code number XXXXX |

- Enter code number 13861

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- Confirm entry with Q key.

-> Reading on display:

|                     |      |
|---------------------|------|
| Rapid data transfer | HELP |
| Select function XX  |      |

- Press 1 and 0 for "Adaptation" function.
- Confirm entry with Q key.

-> Reading on display:

|                     |   |
|---------------------|---|
| Rapid data transfer | Q |
| 10 - Adaptation     |   |

- Confirm entry with Q key.

-> Reading on display:

|                         |   |
|-------------------------|---|
| Adaptation              | Q |
| Enter channel number XX |   |

- Press keys 0 and 9
- Confirm entry with Q key.

-> Reading on display:

|           |            |   |
|-----------|------------|---|
| Channel 9 | Adaptation | 2 |
|-----------|------------|---|

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- Press ⇒ key to continue.

-> Reading on display:

|                              |            |   |   |
|------------------------------|------------|---|---|
| Channel 9                    | Adaptation | 2 | Q |
| Enter adaptation value XXXXX |            |   |   |

- Enter adaptation value.

**Example: Mileage = 89627**

|   |   |   |   |   |                                          |
|---|---|---|---|---|------------------------------------------|
| 0 | 8 | 9 | 6 | 3 |                                          |
| X |   |   |   |   | Hundred thousands: 100000 ... 900.000 km |
|   | X |   |   |   | Ten thousands: 10000 ... 90.000 km       |
|   |   | X |   |   | Thousands: 1000 ... 9.000 km             |
|   |   |   | X |   | Hundreds: 100 ... 900 km                 |
|   |   |   |   | X | Tens: 10 ... 90 km                       |
|   |   |   |   |   | Units: Round up to nearest 10 km         |

- Confirm entry with Q key.

-> Reading on display:

|           |            |   |   |
|-----------|------------|---|---|
| Channel 9 | Adaptation | 2 | Q |
|-----------|------------|---|---|

- Confirm entry with Q key.

-> Reading on display:

|                      |            |   |   |
|----------------------|------------|---|---|
| Channel 9            | Adaptation | 2 | Q |
| Store changed value? |            |   |   |

- Confirm entry with Q key.

-> Reading on display:

|                      |            |   |
|----------------------|------------|---|
| Channel 9            | Adaptation | 2 |
| Changed value stored |            |   |

- Press ⇒ key to continue.

-> Reading on display:

|                     |      |
|---------------------|------|
| Rapid data transfer | HELP |
| Select function XX  |      |

- Press buttons 0 and 6 to select "End of data transfer".

-> Reading on display:

|                     |   |
|---------------------|---|
| Rapid data transfer | Q |
| 06 - End of output  |   |

- Confirm entry with Q key.

## 2 - Dash panel insert

### 2.1 - Dash panel insert

Removing and installing dash panel insert => Page 33 .

Removal and installation of dash panel insert components:

- ♦ Model without Auto-check system/on-board computer => Page 56 .
- ♦ Model with Auto-check system/on-board computer => Page 64 .

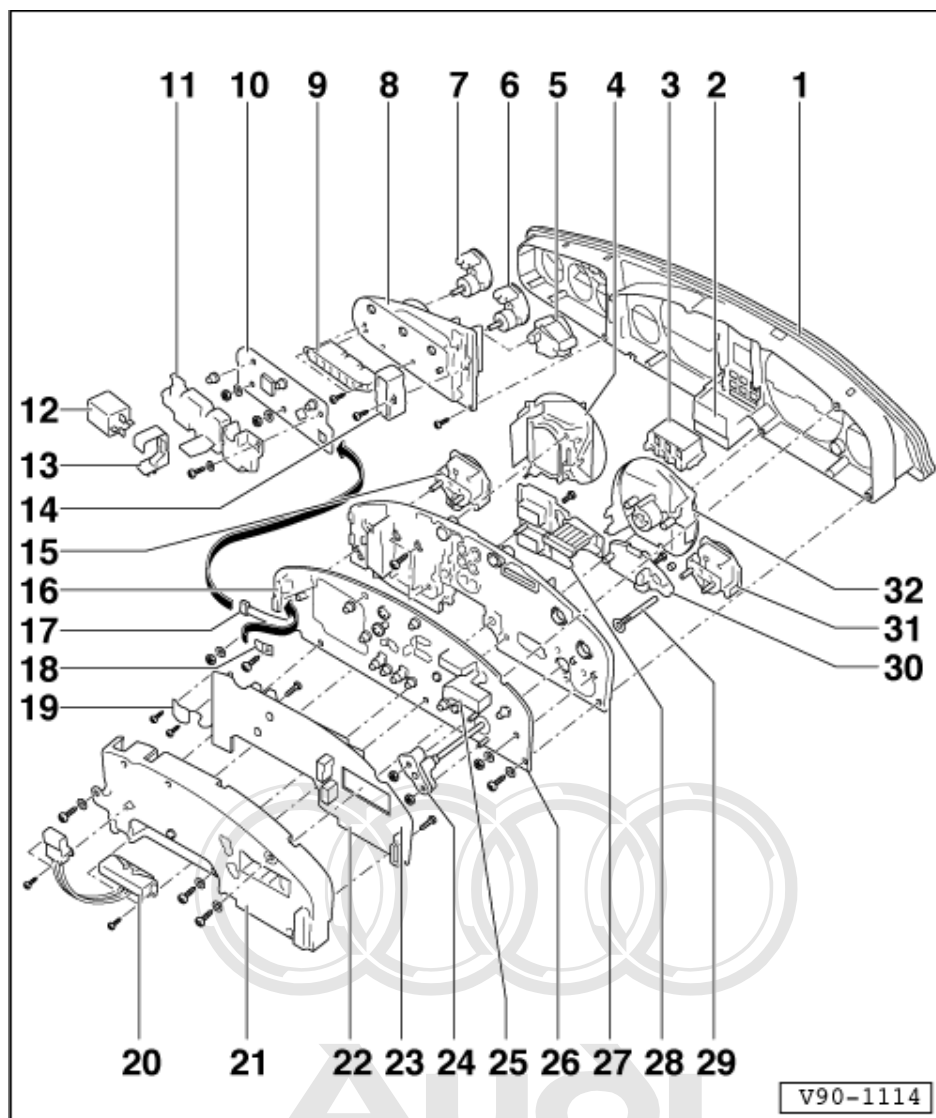
Emergency flasher relay location => Fig. 1

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#### **Note:**

*Use the V.A.G 1526 manual multimeter, the V.A.G 1301 tester, the V.A.G 1598 test box and the V.A.G auxiliary measuring kit for testing.*

## 2.2 - Dash panel insert > 06.91 - Exploded view



1 Front surround with glass

2 Symbol panel

3 Warning lamp holder

4 Speedometer

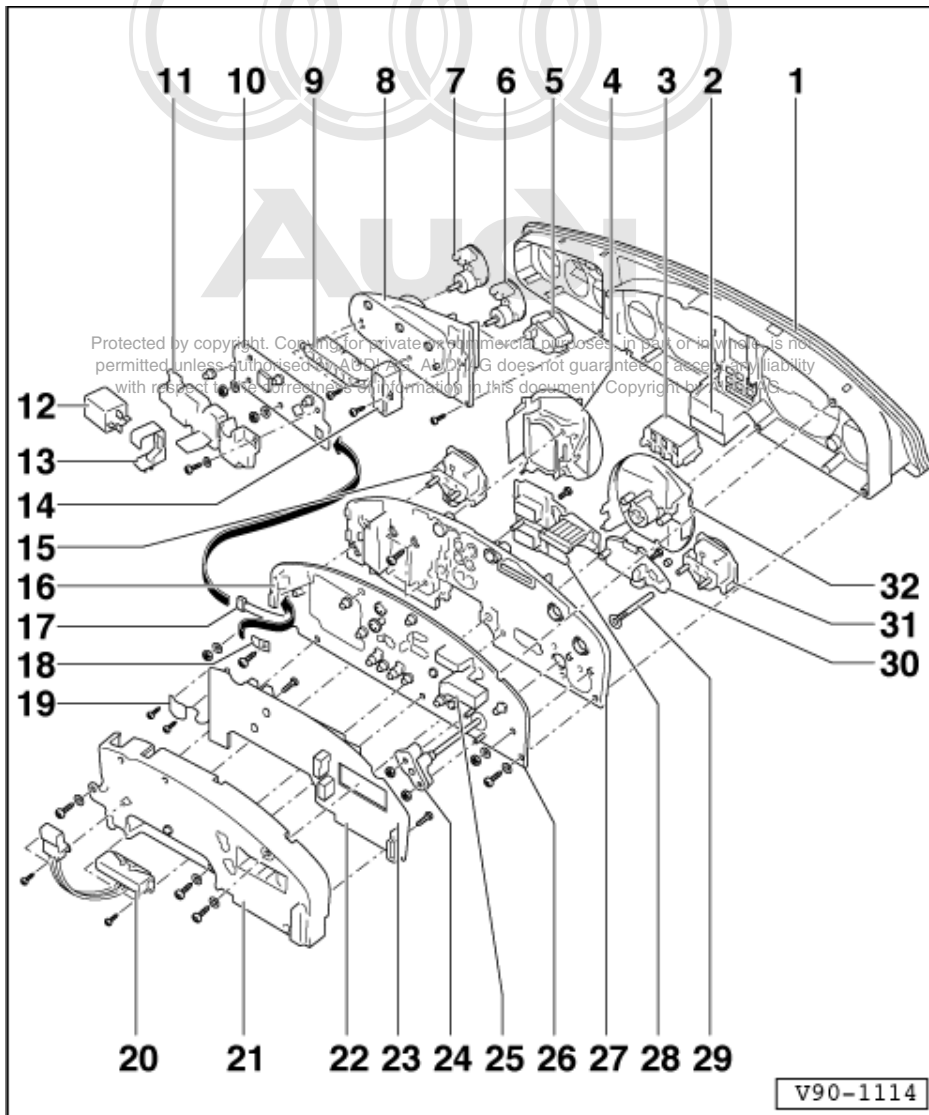
- ♦ Checking speedometer transducer => Page 48 .

5 Small analogue clock

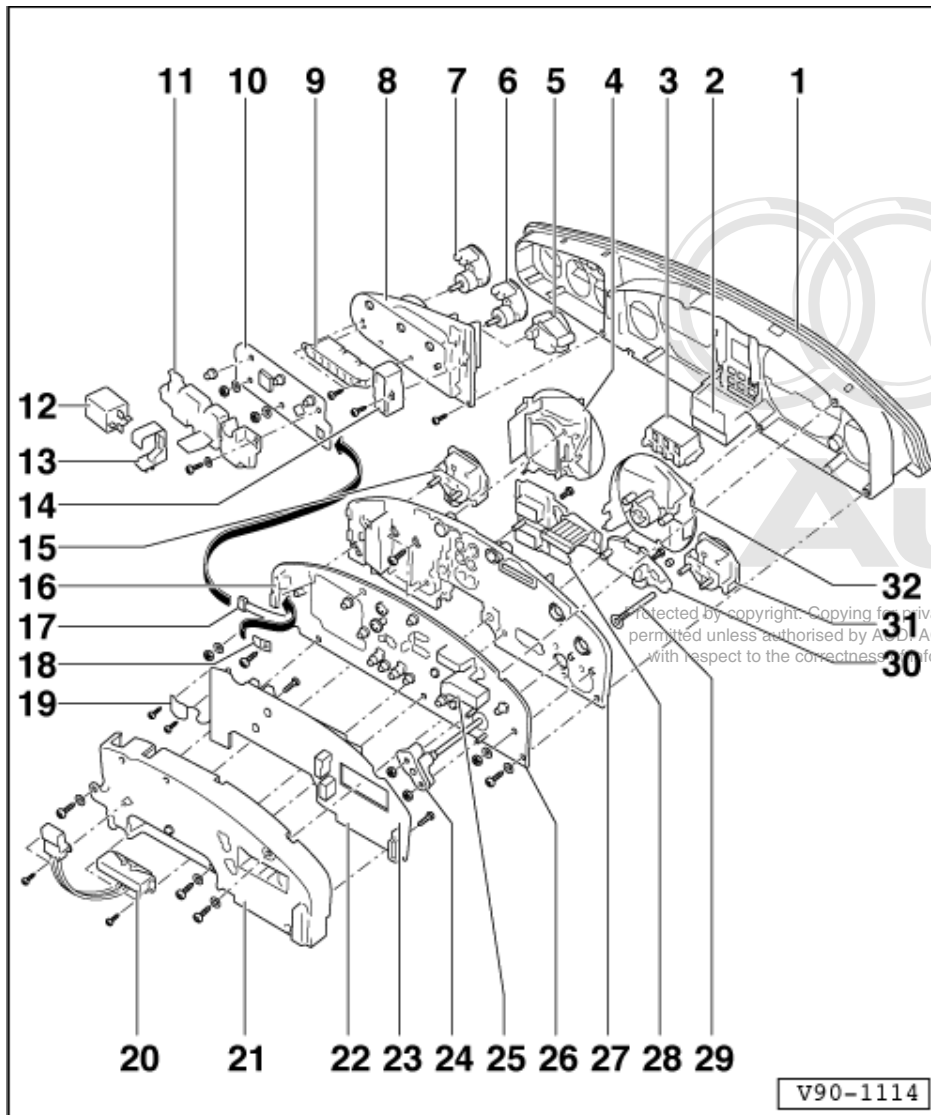
- ♦ Removing and installing => Page 73

6 Oil temperature gauge

- ♦ Checking => Page 52
- ♦ Removing and installing => Page 73



- 7 Oil pressure gauge**
  - ♦ Checking => Page **53**
  - ♦ Removing and installing => Page **73**
- 8 Instrument carrier (side section)**
  - ♦ Removing and installing => Page **67**
- 9 Warning lamp holder (side section)**
- 10 Printed circuit board (side section)**
  - ♦ Removing and installing => Page **74**
- 11 Cover panel (side section)**
  - ♦ Removing and installing => Page **73**



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#### 12 Warning buzzer for side lights and radio

- ◆ Location => Fig. 2

#### 13 Retaining bracket

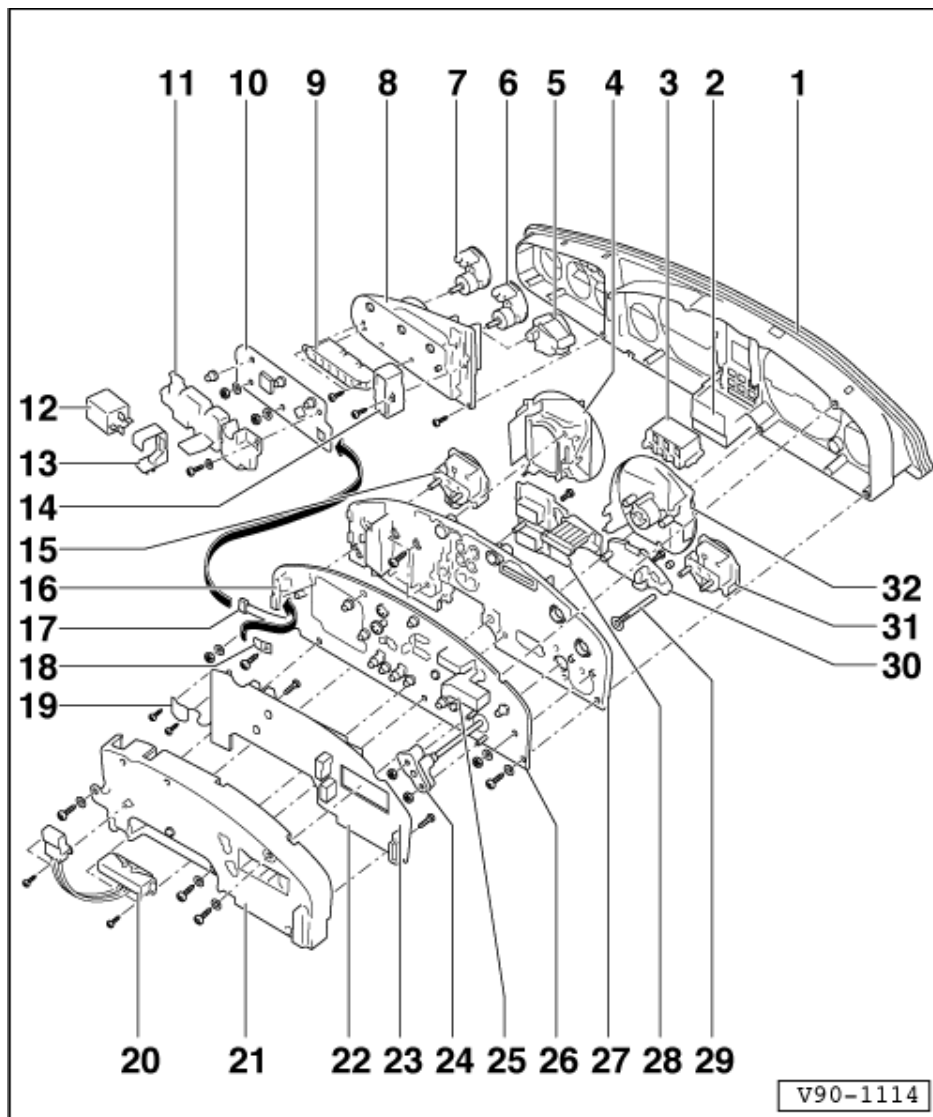
- ◆ For warning buzzer

#### 14 Gear indicator

- ◆ For automatic gearbox

#### 15 Fuel gauge

- ◆ Checking => Page 45
- ◆ Adjusting => Page 47



#### 16 Multipin connector

- ♦ Green, instrument panel wiring loom
- ♦ Assignment => Page 42
- ♦ Removing and attaching multipin connector => Page 43
- ♦ Repairing multipin connector => Page 44

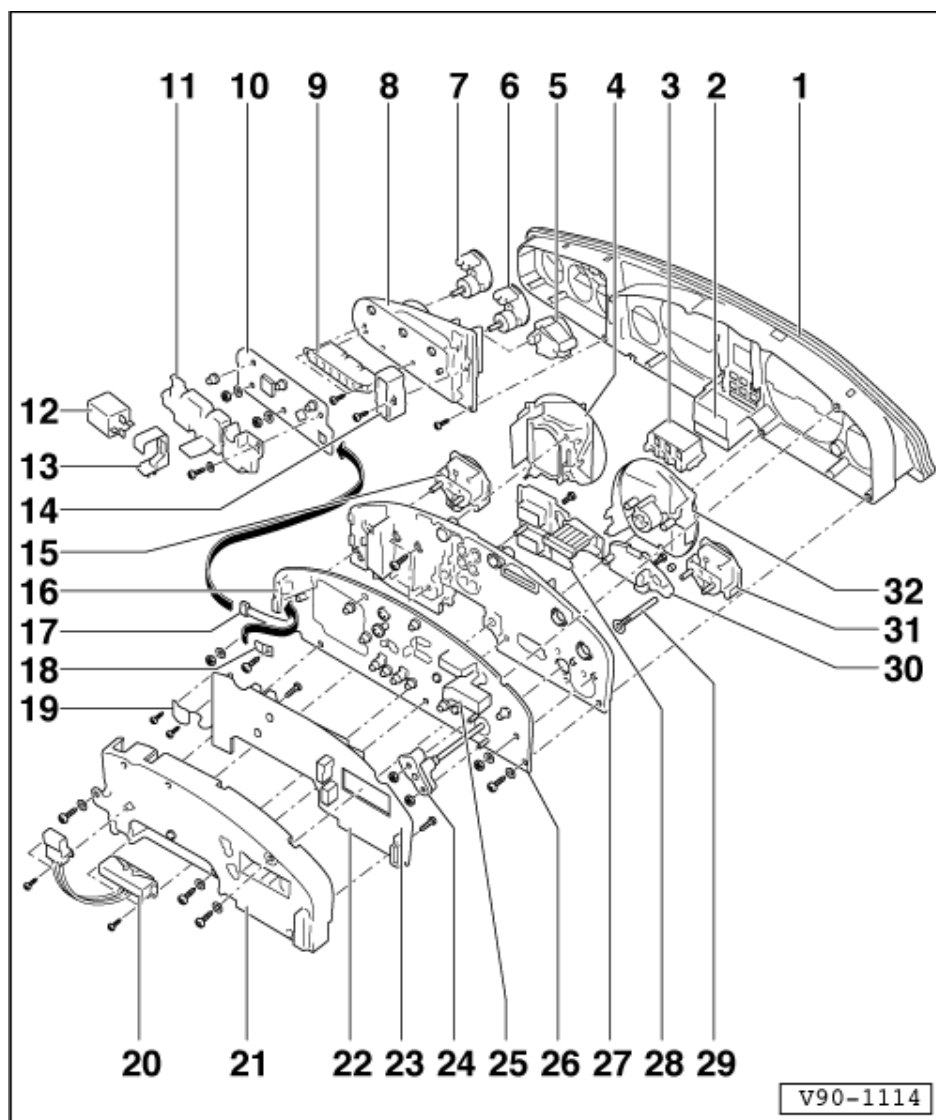
#### 17 6-pin connector

- ♦ For printed circuit board (side section)
- ♦ Assignment => Page 43

#### 18 Voltage stabiliser

- ♦ With heat sink
- ♦ Checking => Page 45

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**19 Potentiometer**

- ♦ For on-board computer (range)

**20 Outside temperature gauge**

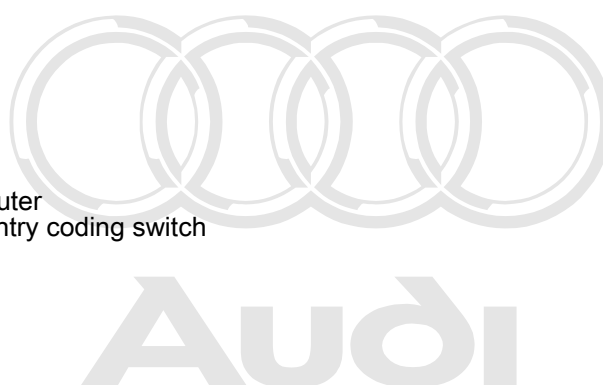
- ♦ with 5-pin coupling
- ♦ Removing and installing => Page 53

**21 Cover panel**
**22 Printed circuit board**

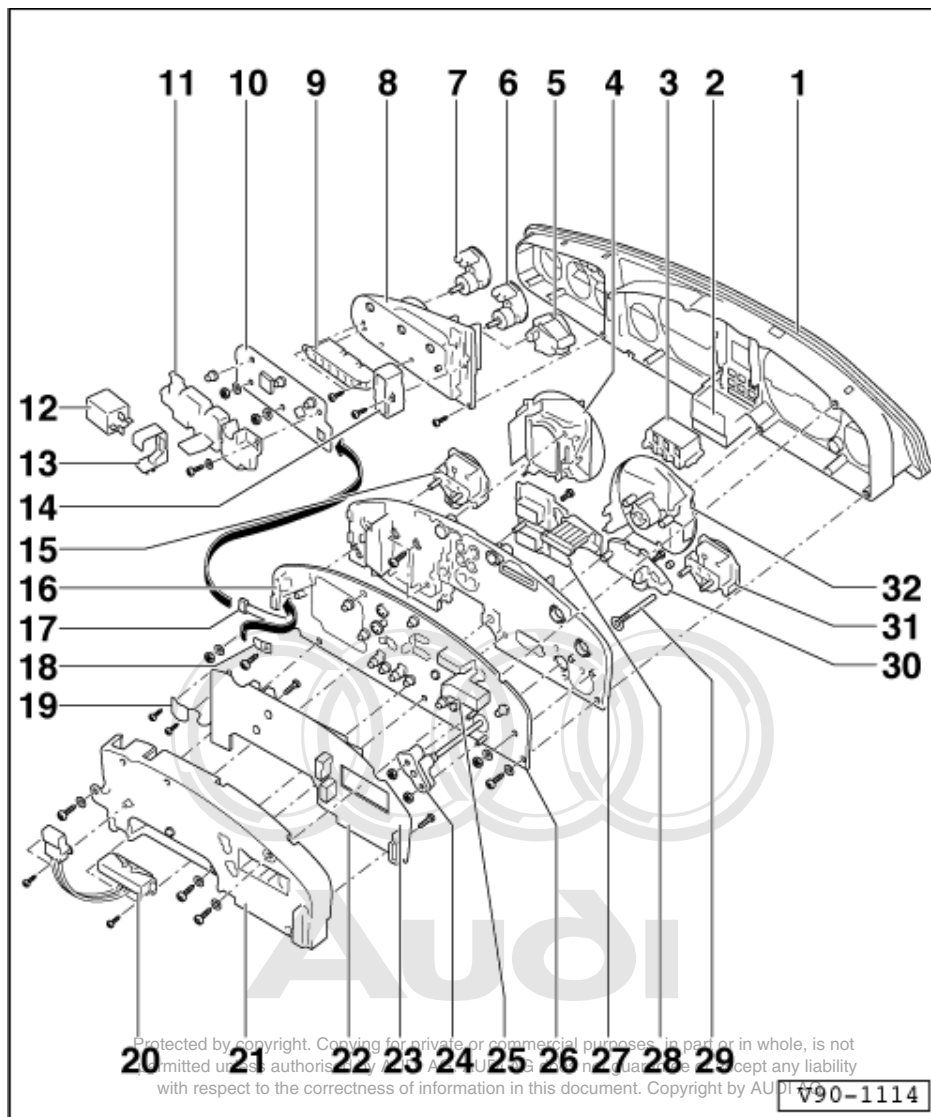
- ♦ For auto- check system and on-board computer
- ♦ with consumption correction switch and country coding switch

**23 Coding plug**

- ♦ For on-board computer



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#### 24 Brightness control

- ♦ For dash panel insert lighting

#### 25 Multipin connector

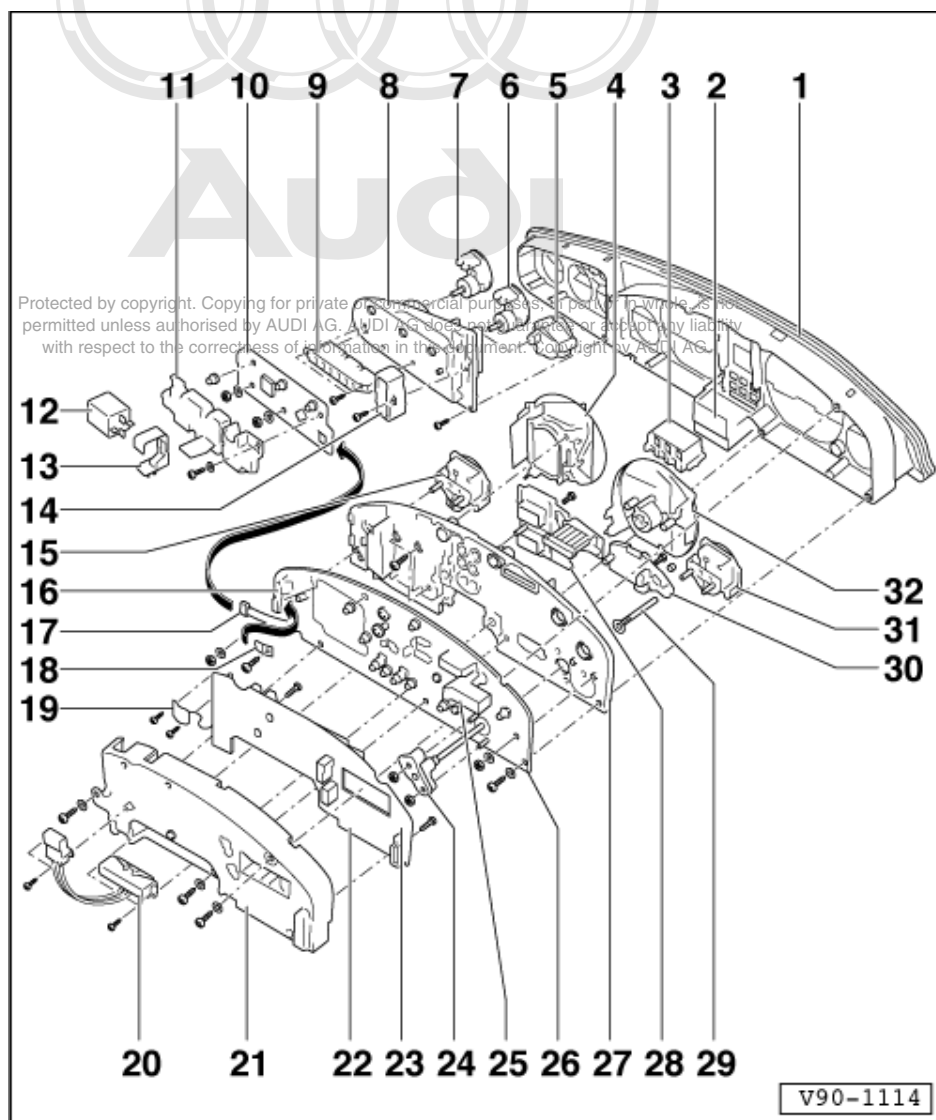
- ♦ Red, instrument panel wiring loom
- ♦ Assignment => Page 41
- ♦ Removing and installing multipin connector => Page 43
- ♦ Servicing plug for multipin connector => Page 44

#### 26 Printed circuit board

#### 27 Instrument carrier

#### 28 Display unit

- ♦ For mini-check/auto-check system/on-board computer



### 29 Rotary pin

- ♦ For dash panel insert brightness control/auto- check system key

### 30 Digital clock

- ♦ Only with rev counter and no additional instruments
- ♦ Removing and installing => Page 72

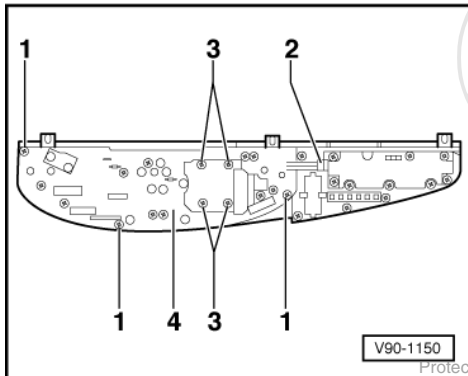
### 31 Coolant temperature gauge:

- ♦ Checking => Page 50

### 32 Rev counter or large analogue clock

- ♦ Removing and installing => Page 68

## 2.3 - Dash panel insert > 07.91 - Exploded view



### 1 Front surround with glass

### 2 Symbol panel

### 3 Warning lamp holder

### 4 Speedometer

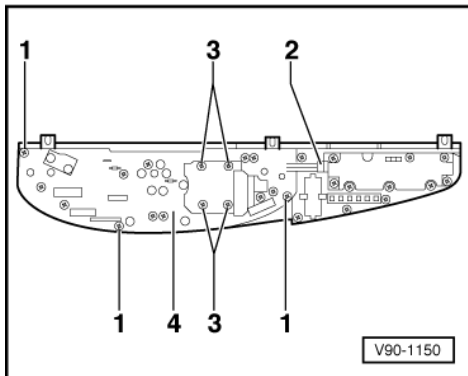
- ♦ Remove speedometer transducer => Page 48 .

### 5 Small analogue clock

- ♦ Removing and installing => Page 73

### 6 Oil temperature gauge

- ♦ Checking => Page 52
- ♦ Removing and installing => Page 73



### 7 Oil pressure gauge

- ♦ Checking => Page 53
- ♦ Removing and installing => Page 73

### 8 Instrument carrier (side section)

- ♦ Removing and installing => Page 67

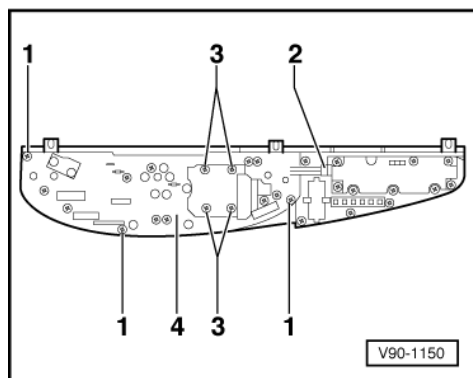
### 9 Warning lamp holder (side section)

### 10 Printed circuit board (side section)

- ♦ Removing and installing => Page 74

### 11 Cover panel (side section)

- ♦ Removing and installing => Page 73



## 12 Warning buzzer

- ♦ For side lights and radio
- ♦ Location => Fig. 2

## 13 Retaining bracket

- ♦ For warning buzzer

## 14 Gear indicator

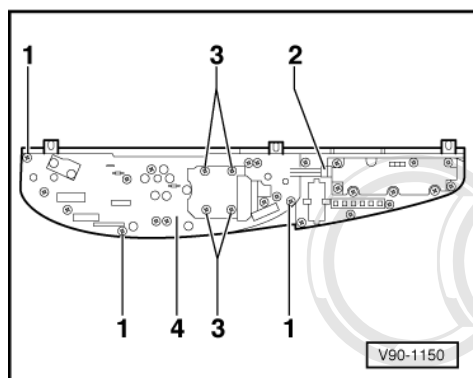
- ♦ For automatic gearbox

## 15 Fuel gauge

- ♦ Checking => Page 45
- ♦ Adjusting => Page 47

## 16 Multipin connector

- ♦ Red, instrument panel wiring loom
- ♦ Assignment => Page 41
- ♦ Removing and attaching plug for multipin connector => Page 43
- ♦ Servicing plug for multipin connector => Page 44



## 17 6-pin connector

- ♦ For printed circuit board (side section)
- ♦ Assignment => Page 43

## 18 Voltage stabiliser

- ♦ With heat sink
- ♦ Checking => Page 45

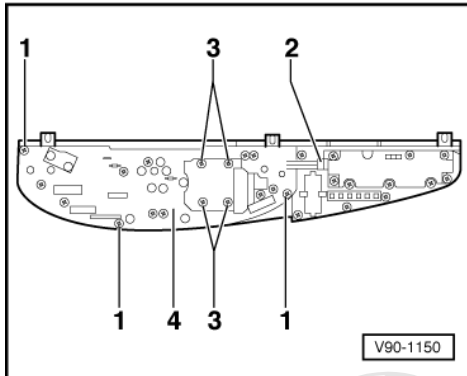
## 19 Outside temperature gauge

- ♦ with 5-pin coupling
- ♦ Removing and installing => Page 53

## 20 Cover panel

## 21 Opening

- ♦ For on-board computer adjustment potentiometer (range calibration)



## 22 Printed circuit board

- ♦ For auto check system and on-board computer
- ♦ With consumption correction switch and country coding switch

## 23 Coding plug

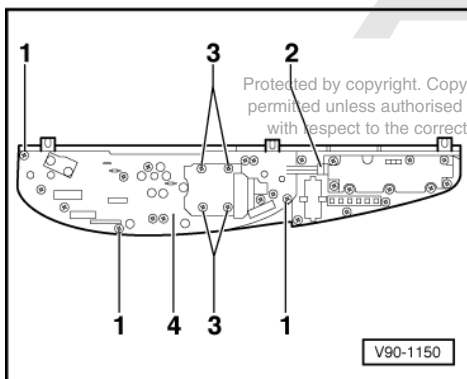
- ♦ For on-board computer

## 24 Potentiometer

- ♦ For on-board computer (range)

## 25 Controller

- ♦ For dash panel insert lighting



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## 26 Multipin connector

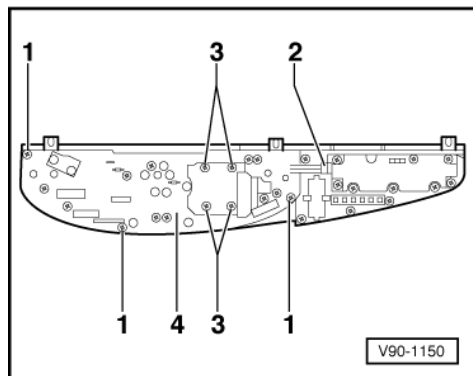
- ♦ Green, instrument panel wiring loom
- ♦ Assignment => Page 42
- ♦ Removing and attaching plug for multipin connector => Page 43
- ♦ Repairing plug for multipin connector => Page 44

## 27 Printed circuit board

## 28 Instrument carrier

## 29 Display unit

- ♦ For mini-check/auto-check system/on-board computer



### 30 Rotary pin

- ♦ For dash panel insert brightness control/auto- check system key

### 31 Digital clock

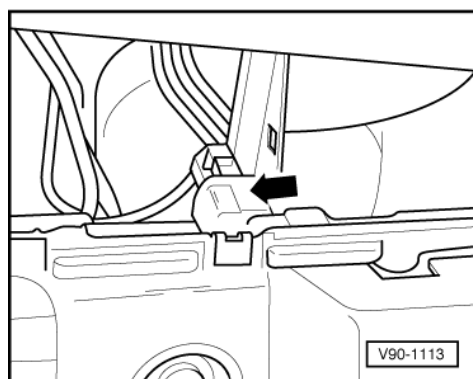
- ♦ Only with rev counter and no additional instruments
- ♦ Removing and installing => Page 72

### 32 Coolant temperature gauge:

- ♦ Checking => Page 50

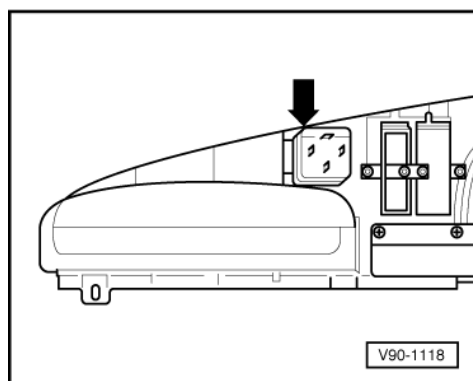
### 33 Speed counter or large analogue clock

- ♦ Removing and installing => Page 68



-> Fig.1 Emergency flasher relay location

The Emergency flasher relay is clipped to the instrument panel behind the dash panel insert.

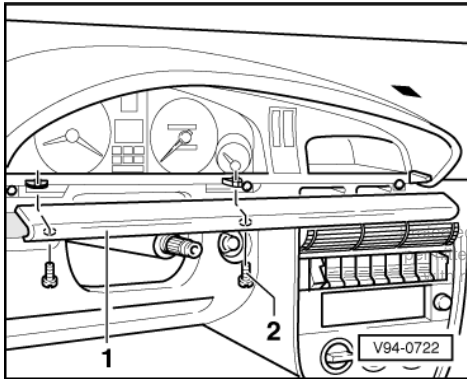


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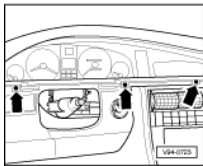
-> Fig.2 Location of warning buzzer for side lights and radio

The warning buzzer is clipped to the side section of the dash panel insert.

## 2.4 - Removing and installing dash panel insert

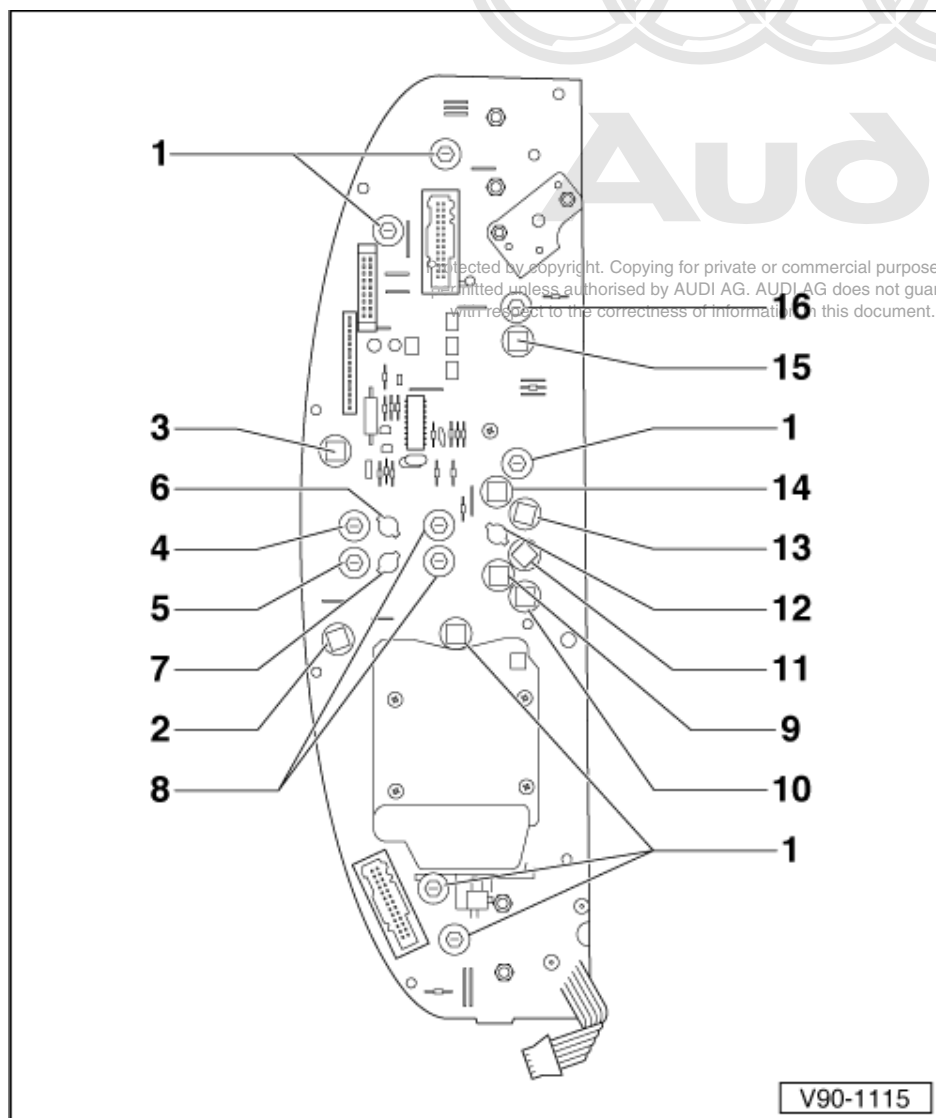


- Removing steering wheel and steering column switch => Page 155 .
- -> Loosen screws -2-, detach trim strip -1- to front.



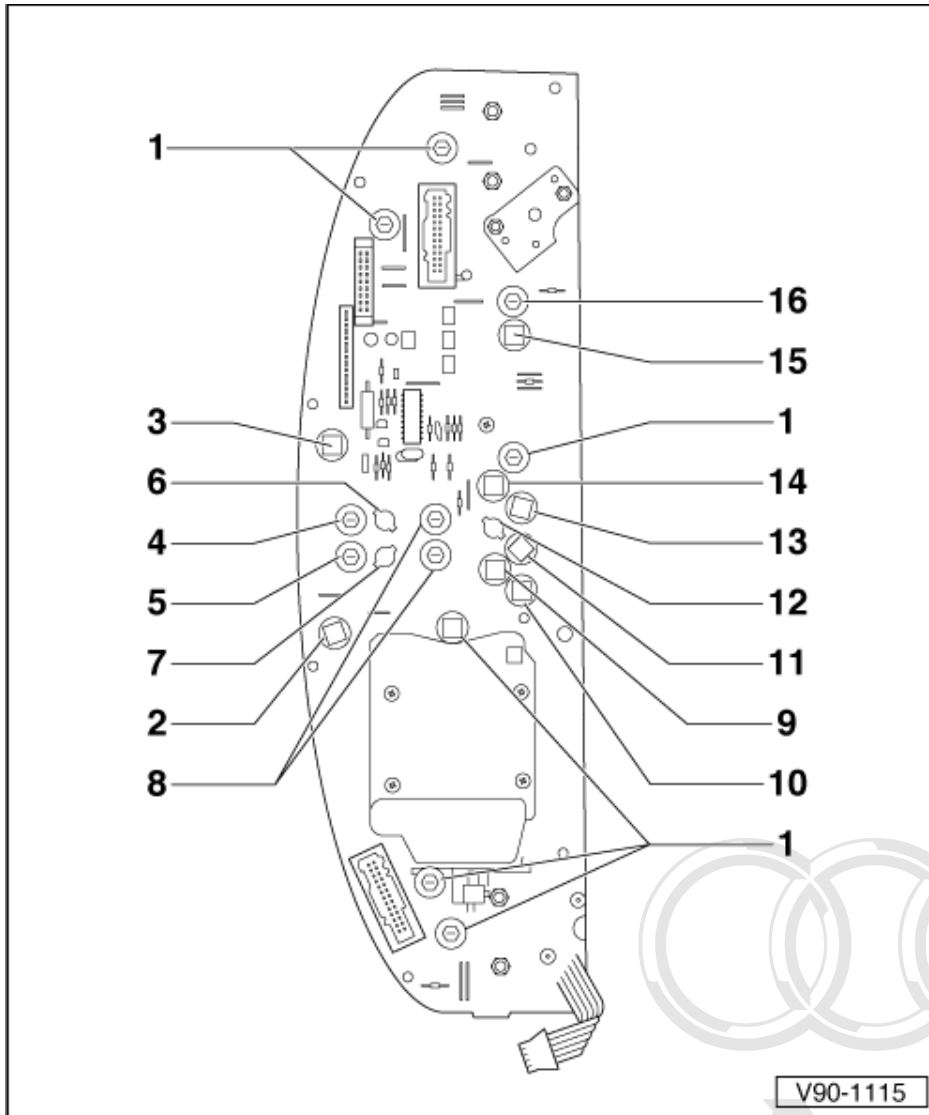
- -> Remove recessed-head screws-arrows-.
- Carefully extract the dash panel insert from the instrument panel.
- Disconnect all the connectors on the dash panel insert and the warning lamps that are connected to the wiring loom.
- Remove the dash panel insert.

## 2.5 - Assignment of lamps in dash panel insert > 05.94



### Lamps in dash panel insert

- 1 Dash panel insert lighting
  - ◆ 1.1 W (6x)
- 2 Right turn signal indicator warning lamp (K94)
  - ◆ 1.2 W
- 3 Left turn signal indicator warning lamp (K65)
  - ◆ 1.2 W
- 4 Coolant temperature warning lamp (overheating)
  - ◆ 1.2 W
- 5 Brake fluid warning lamp
  - ◆ 1.2 W



**6 Oil pressure warning lamp**

- ◆ 1.2 W

**7 Warning lamp for engine electronics malfunctions, idling speed adjustment lamp**

- ◆ Only in vehicles without auto-check system
- ◆ 1.2 W

**8 On-board computer lighting**

- ◆ 1.1 W (2x)

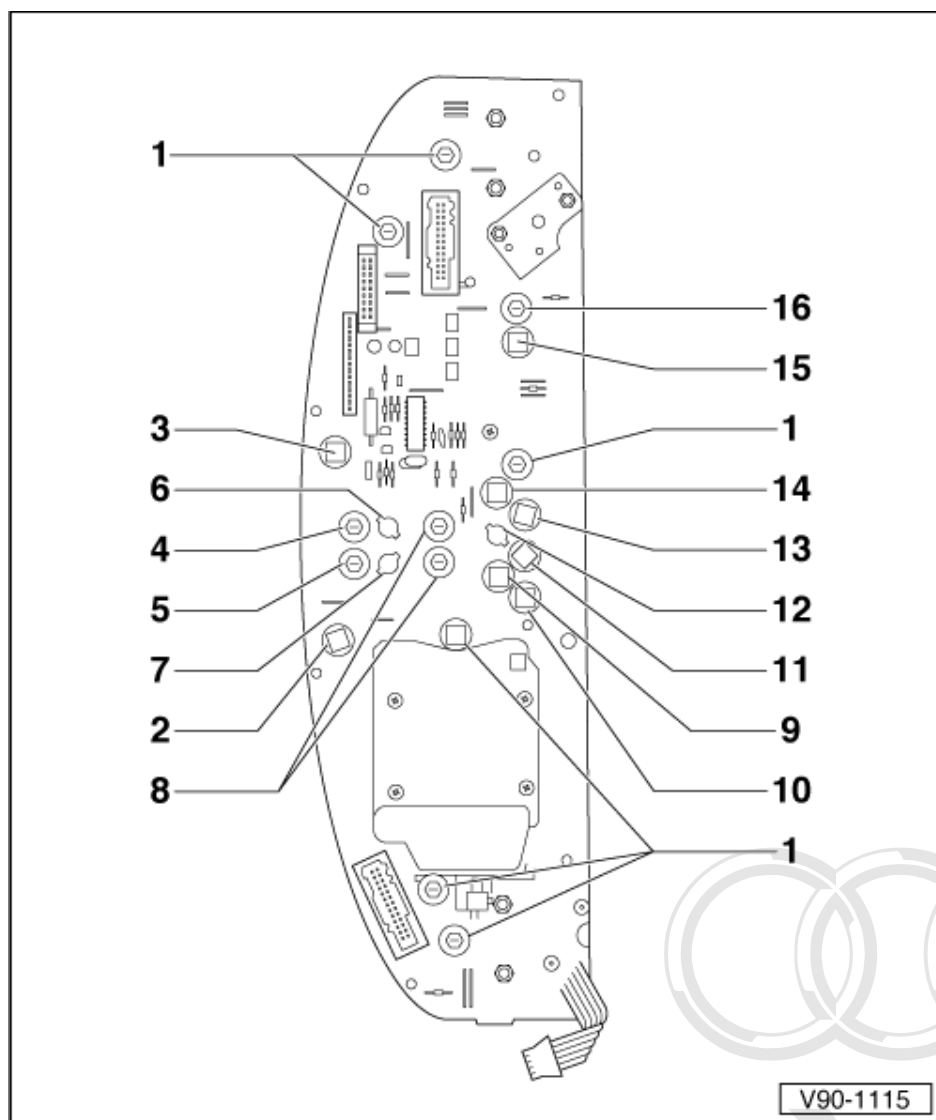
**9 ABS warning lamp**

- ◆ 1.2 W

**10 ETC warning lamp**

- ◆ 1.2 W

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V90-1115

**11 Handbrake/brake malfunction warning lamp**

- ◆ 1.2 W

**12 Diesel pre-heating /CAT indicator lamp**

- ◆ 1.2 W

**13 Main beam indicator lamp (K1)**

- ◆ 1.2 W

**14 Charge warning lamp**

- ◆ 1.2 W

**15 Digital clock lighting (night-time illumination)**

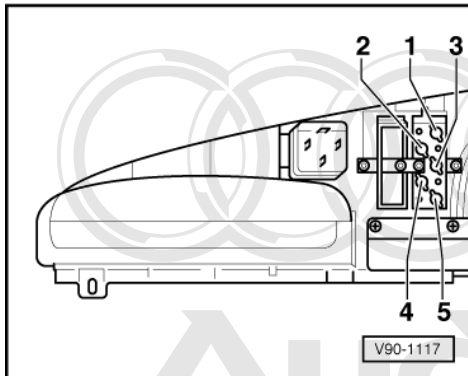
- ◆ 1.2 W

**16 Digital clock lighting**

- ◆ 2 W

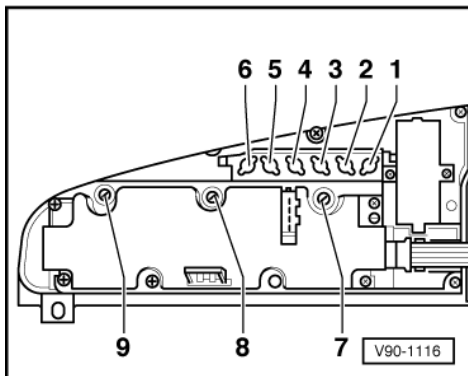
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## Lamps in dash panel insert (side section) without additional instruments ä 05.94



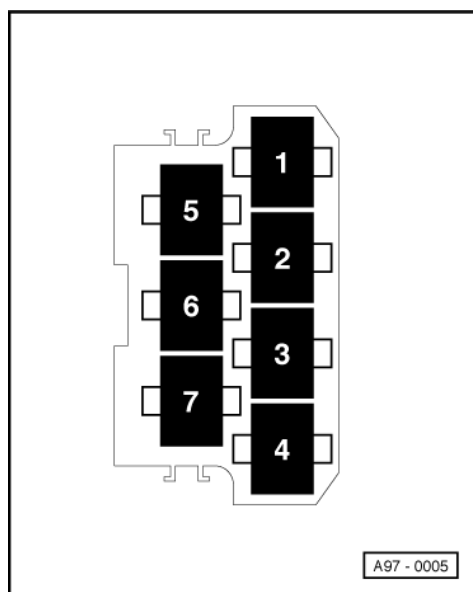
- > 1 - Trailer turn signal indicator lamp
- 1.2 W
- 2 - Airbag warning lamp
- 1.2 W
- 3 - Engine electrical system fault warning lamp
- 1.2 W
- 4 - Side marker warning lamp
- 1.2 W
- 5 - Servotronic warning lamp
- 1.2 W

## Lamps in dash panel insert (side section) with additional instruments ä 05.94

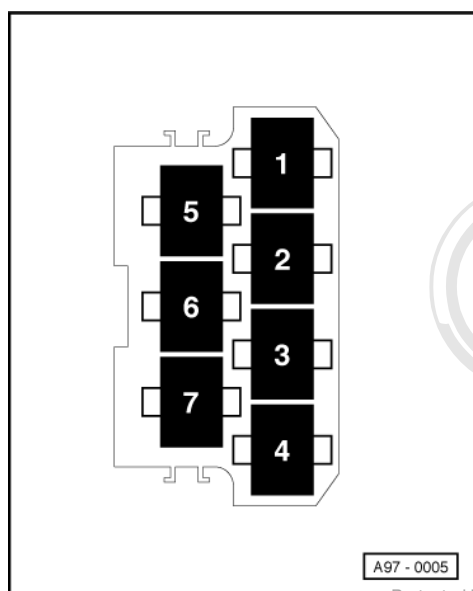


- > 1 - Trailer turn signal indicator lamp
- 1.2 W
- 2 - Airbag warning lamp
- 1.2 W
- 3 - Engine electrical system malfunction warning lamp
- 1.2 W
- 4 - Side marker warning lamp
- 1.2 W
- 5 - Servotronic warning lamp
- 1.2 W
- 6 - "ETC off" warning lamp
- 1.2 W
- 7 - Lighting for analogue clock
- 1.1 W
- 8 - Oil temperature gauge lighting
- 1.1 W
- 9 - Oil pressure gauge lighting
- 1.1 W

## 2.6 - Assignment of lamps in dash panel insert 06.94 ä



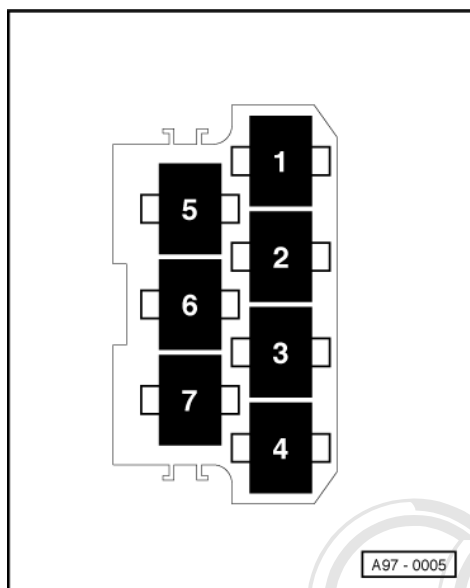
- 1 Dash panel insert lighting
  - ◆ 1.1 W (6x)
- 2 Right turn signal indicator lamp (K94)
  - ◆ 1.2 W
- 3 Left turn signal indicator lamp (K65)
  - ◆ 1.2 W
- 4 Coolant temperature warning lamp (overheating)
  - ◆ 1.2 W
  - ◆ Vehicles with auto- check system Auto-check system lighting, 1.1 W



- 5 Brake fluid warning lamp
  - ◆ 1.2 W
  - ◆ Vehicles with auto- check system Auto-check system lighting, 1.1 W
- 6 Oil pressure warning lamp
  - ◆ 1.2 W
  - ◆ Not required in vehicles with auto- check system
- 7 Reserve fuel tank warning lamp
  - ◆ 1.2 W
  - ◆ Not required in vehicles with auto- check system

## 8 On-board computer lighting

- ♦ 1.1 W



## 9 ABS warning lamp

- ♦ 1.2 W

## 10 ETC warning lamp

- ♦ 1.2 W

## 11 Handbrake/brake malfunction warning lamp

- ♦ 1.2 W

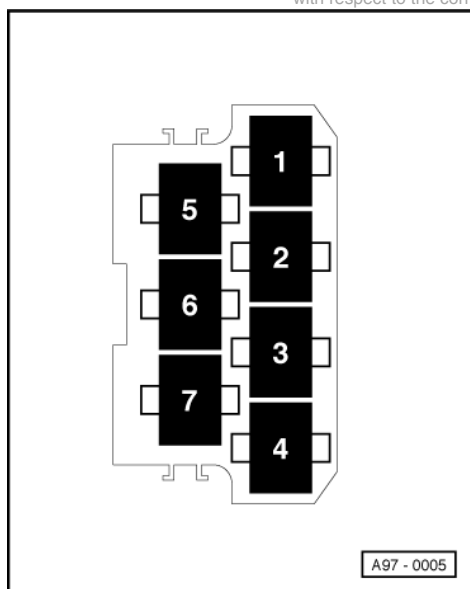
## 12 Diesel pre-heating/CAT indicator lamp

- ♦ 1.2 W

## 13 Main beam indicator lamp

- ♦ 1.2 W

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## 14 Charge warning lamp

- ♦ 1.2 W

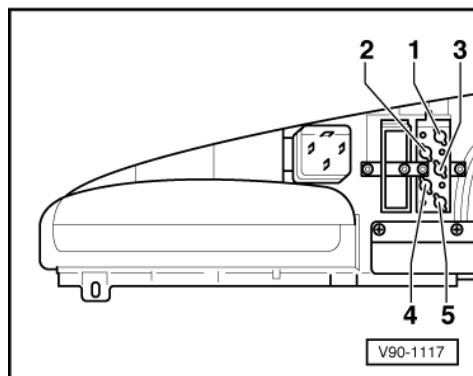
## 15 Route display lighting

- ♦ 1.1 W

## 16 Digital clock lighting

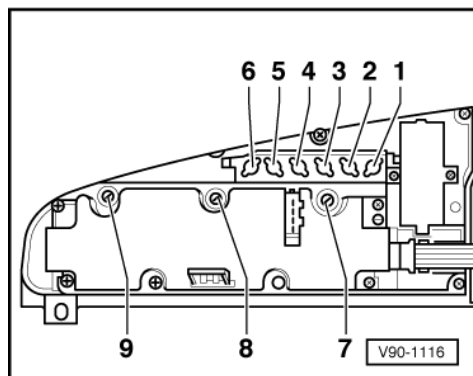
- ♦ 1.1 W

### Lamps in dash panel insert (side section) without additional instruments 06.94 ä



- > 1 - Trailer turn signal indicator lamp
- 1.2 W
- 2 - Airbag warning lamp
- 1.2 W
- 3 - Immobiliser warning lamp
- 1.2 W
- 4 - Side marker warning lamp
- 1.2 W
- 5 - Seat belt warning lamp
- 1.2 W

### Lamps in dash panel insert (side section) with additional instruments 06.94 ä



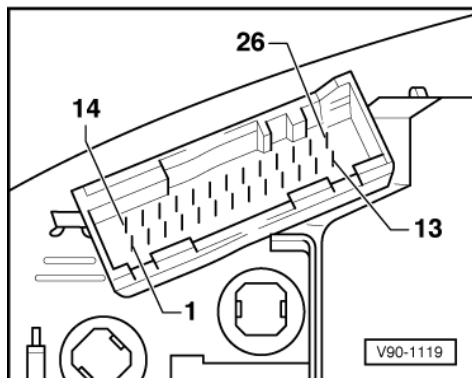
- > 1 - Trailer turn signal indicator lamp
- 1.2 W
- 2 - Airbag warning lamp
- 1.2 W
- 3 - Self-diagnosis warning lamp (USA only)
- 1.2 W
- 4 - Side marker light warning lamp
- 1.2 W
- 5 - Seat belt warning lamp
- 1.2 W
- 6 - Immobiliser warning lamp
- 1.2 W
- 7 - Analogue clock lighting
- 1.1 W
- 8 - Oil temperature gauge lighting
- 1.1 W
- 9 - Oil pressure gauge lighting
- 1.1 W

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## 2.7 - Assignment of contacts at multi-pin dash panel insert connectors

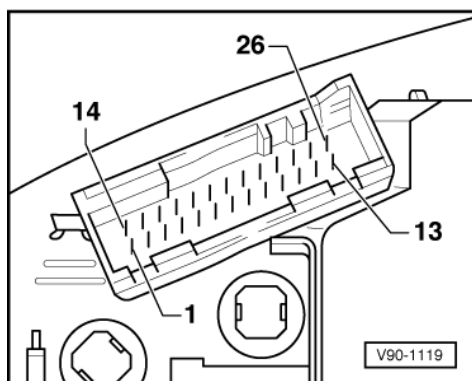
### Contacts on 26-pin, red multi-pin dash panel insert connector

- Consult appropriate current flow diagram.



- > 1 - Positive for indicator lamp no. 13 (main beam)
- 2 - Negative for indicator lamp no. 12 (diesel/CAT)
- 3 - Negative for fuel gauge
- 4 - Negative for warning lamp no. 11 (handbrake)
- 5 - Negative for warning lamp no. 10 (ETC)
- 6 - Not used
- 7 - Vehicle speed signal (output)
- 8 - Vehicle speed signal (input from travel sensor)
- Checking => Page 48
- 9 - Not used
- 10 - Terminal 31
- 11 - Terminal 15 (positive for electronic speedometer and voltage stabiliser)
- 12 - Plus for indicator lamp no. 2 (right turn-signal indicator)

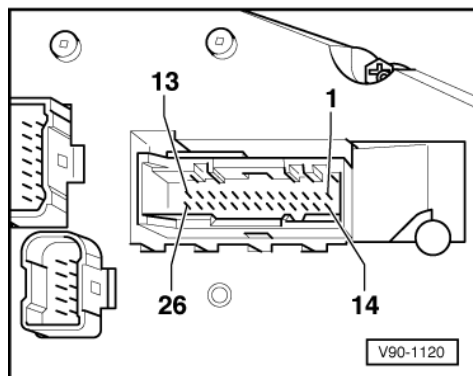
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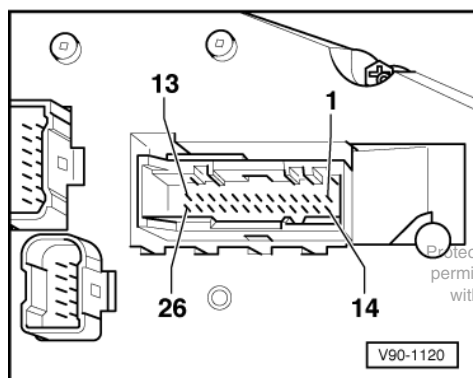
- > 13 - Negative for warning lamp no.9 (ABS)
- 14 - Terminal 30
- 15 - Not used
- 16 - Not used
- 17 - Input, terminal 58 (positive from light switch to instrument lighting brightness control)
- 18 - Output, terminal 58
- 19 - Not used
- 20 - Not used
- 21 - Not used
- 22 - Output terminal 58d
- 23 - Not used
- 24 - Not used
- 25 - Positive for indicator lamp no.3 (left turn-signal indicator)
- 26 - Not used

## Contacts on 26-pin, green multipin connector on dash panel insert

- Consult appropriate current flow diagram.



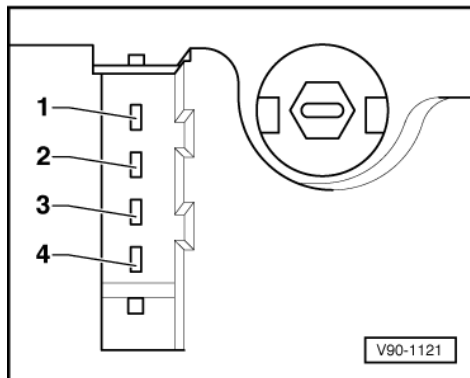
- > 1 - Negative from warning contact for brake fluid level
- 2 - Negative for engine electronics malfunction (only with mini-check system)
- 3 - Negative for coolant temperature too high
- Checking => Page 50
- 4 - Not used
- 5 - Negative from 0.3 bar oil pressure switch
- Checking => Page 47
- 6 - Negative from brake linings
- 7 - Terminal 15
- 8 - Not used
- 9 - Not used
- 10 - Negative for warning lamp no.14 (charge warning)
- 11 - Terminal 31
- 12 - Input from engine control unit for rev counter (rev counter signal)



- > 13 - Not used
- 14 - Negative from 0.9/1.8 bar oil pressure switch
- 4-/5-cylinder engine: 1.8 bar oil pressure switch
- 6-cylinder engine: 0.9 bar oil pressure switch
- Checking => Page 47
- 15 - Vehicle speed signal (output)
- 16 - Negative for coolant temperature gauge
- 17 - Negative for indicator lamp no.12 (Diesel/CAT)
- 18 - Not used
- 19 - Not used
- 20 - Not used
- 21 - Not used
- 22 - Not used
- 23 - Not used
- 24 - Terminal 31 (coding for 5 cylinders)
- 25 - Not used
- 26 - Not used

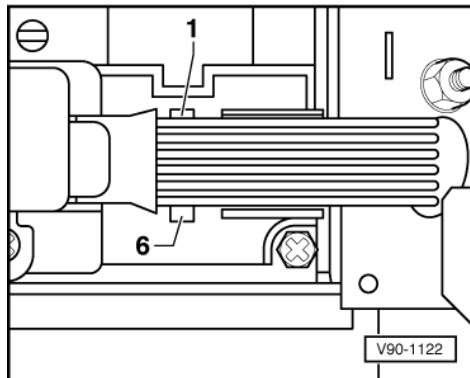
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### Contacts at 4-pin connector on dash panel insert (side section) with additional instruments



- > 1 - Oil pressure gauge signal
- Checking => Page 53
- 2 - Oil temperature gauge signal
- Checking => Page 52
- 3 - Not used
- 4 - Not used

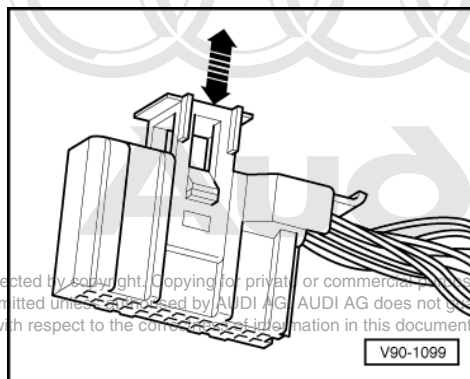
### Contacts at 6-pin connector on dash panel insert (side section) with additional instruments



- > 1 - Analogue clock adjustment
- 2 - Terminal 30
- 3 - Terminal 15
- 4 - Terminal 58
- 5 - Terminal 58d
- 6 - Terminal 31

## 2.8 - Removing and installing plug for multipin connectors

### Removing



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- -> Lift plug catch upwards (arrow) as far as it will go using a small screwdriver or plastic wedge.

**Note:**

*The plug can only be removed if the catch has been raised*

- Detach plug by hand.

**Installing**

- Push plug on by hand as far as it will go
- Slide in the catch

## 2.9 - Servicing plug for multi-pin connector

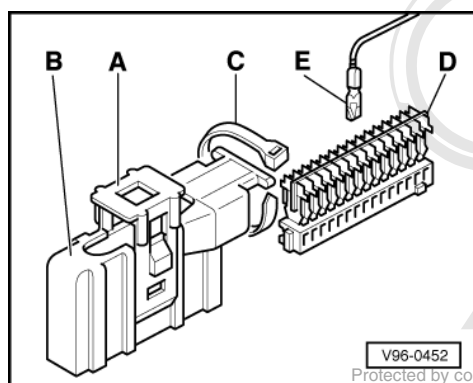
**Note:**

- ♦ A separate repair kit 893 998 315 must be used for servicing the connector (poor contact, loose contact, damage, open circuit or retrofitting).

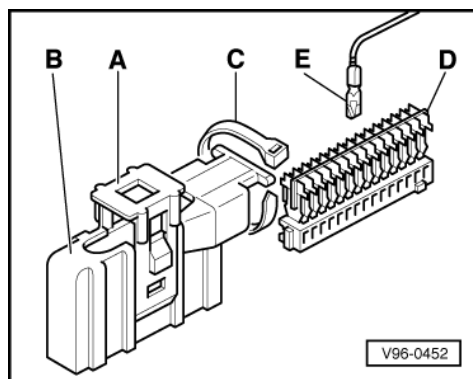
=> Parts list

- ♦ For appropriate cavity assignment, refer to

=> "Current Flow Diagrams, Electrical Fault Finding and Fitting Locations" binder



- -> Remove cable tie -C-.
- Pull inner section of plug -D- out of outer section -B-.
- Release damaged contact, pull out and detach from lead.
- Insert contact -E- of new lead (from repair kit) into relevant cavity



- -> Push home inner section of plug -D- until it engages and secure using cable tie -C-.
- Use provided housing to connect inserted lead to lead detached from wiring loom.

- Prevent serviced lead and plug housing from rattling using cable tie and insulating tape.

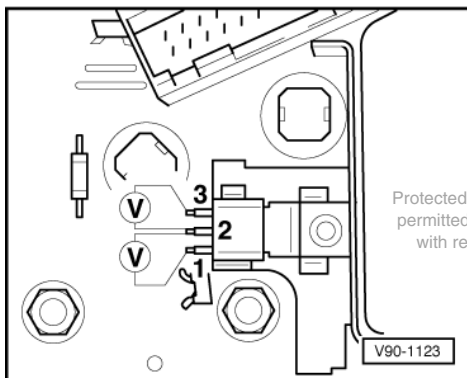
### 3 - Checking dash panel insert components

#### 3.1 - Checking dash panel insert components

#### 3.2 - Checking voltage stabiliser

**Note:**

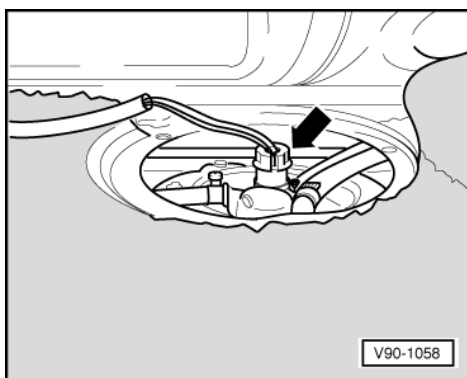
*Do not detach battery earthing strap; leave all plugs attached to dash panel insert.*



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- -> Check supply voltage by connecting a voltmeter between positive input -1- and earth -2-. Switch ignition on.
  - Specification: approx. battery voltage
- If specified value is not attained, locate open circuit using current flow diagram and rectify fault.
- Check output voltage by connecting a voltmeter between positive output -3- and earth -2-. Switch ignition on.
  - Specified value: 9.75 ... 10.25 V
- If specified value is not attained, replace circuit board.

#### 3.3 - Checking fuel gauge

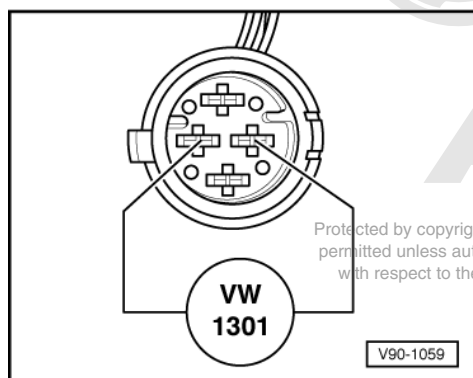


**Note:**

*Fuel gauge can only be adjusted after being replaced.*



- -> Pull connector -arrow- off fuel gauge sender.

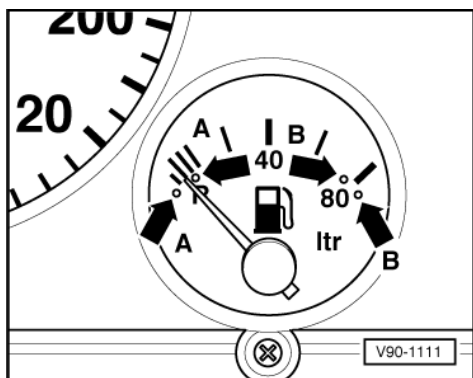


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- -> Connect tester V.A.G 1301 to tank sender lead plug connector in luggage compartment using auxiliary cable.
- Switch ignition on.
- Set V.A.G 1301 tester as follows:
  - Empty - 550
  - Full - 58

**Note:**

*When making connection, ensure that the receptacles in the connector are not pushed back.*



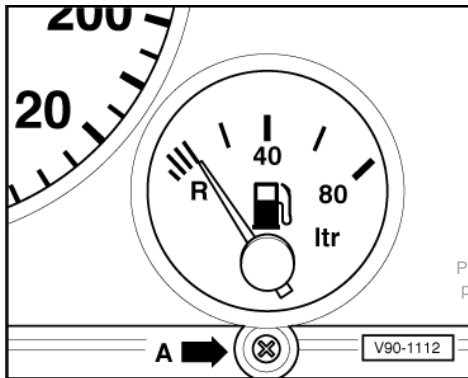
-> At a test setting of 550, the needle must be within the tolerance range of the two test positions -A- on the fuel gauge.  
At a test setting of 58, the needle must be within the tolerance range of the two test positions -B- on the fuel gauge.

**Note:**

*If the needle deviates from the test positions slightly, the fuel gauge must be adjusted.*

- If the specified values are still not attained, check the voltage supply to the fuel gauge, including the voltage stabiliser.
- If this is OK, replace the gauge.

### 3.4 - Adjusting fuel gauge > 06.92



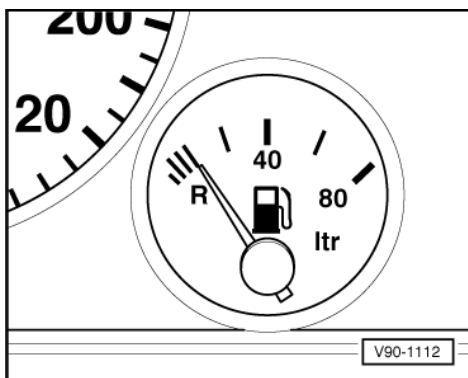
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- Connecting tester V.A.G 1301 => Page 45 .
- Set V.A.G 1301 tester as follows:
  - 265

-> At a test setting of 265, the needle must point to the third large mark in the red reserve zone on the fuel gauge.

- If the specified value is not achieved, remove the trim strip => Page 33 .
- Adjust needle by turning correction screw -A-.

### 3.5 - Adjusting fuel gauge 07.92 > 05.94



- Connecting tester V.A.G 1301 => Page 45 .
- Set V.A.G 1301 tester as follows:
  - 265

-> At a test setting of 265, the needle must point to the third large mark in the red reserve zone on the fuel gauge.

- If the specified value is not achieved, remove the trim strip => Page 33 .
- Insert extremely long, thin screwdriver into opening beneath fuel gauge and adjust needle by turning the toothed wheel at the back of the instrument.

### 3.6 - Checking oil pressure switch

#### Checking 0.3 bar oil pressure switch.

- Connect test adapter V.A.G 1598/4 to 26-pin plug (green) and multipin connector to dash panel insert.
- Connect hand-held multimeter V.A.G 1526 to socket 5 of test box V.A.G 1598 using auxiliary cable and earth.
  - Specified value 0  $\omega$
- Run engine.

- Specified value  $\infty \omega$
- If specified value is not attained, locate open circuit using current flow diagram and rectify fault or replace oil pressure switch.

#### Checking 0.9/1.8 bar oil pressure switch.

- ♦ 4-/5-cylinder engine: 1.8 bar oil pressure switch
- ♦ 6-cylinder engine: 0.9 bar oil pressure switch

#### Vehicles without auto-check system

- Connect test adapter V.A.G 1598/4 to 26-pin plug (green) and multipin connector to dash panel insert.
- Connect hand multimeter V.A.G 1526 to socket 14 of test box V.A.G 1598 using auxiliary cable and earth.
  - Specification:  $\infty \omega$

#### Vehicles with auto-check system

- Connect test adapter V.A.G 1598/4 to 14-pin plug (black) and multipin connector (black) to dash panel insert.
- Connect hand multimeter V.A.G 1526 to socket 12 of test box V.A.G 1598 using auxiliary cable and earth.
  - Specified value:  $\infty \omega$
- Run engine.
  - Specified value:  $0 \omega$
- If specified value is not attained, locate open circuit using current flow diagram and rectify fault or replace oil pressure switch.

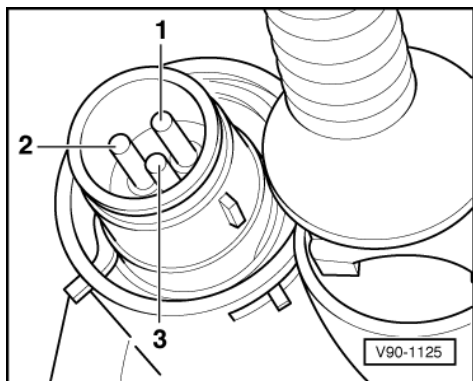
#### Checking engine speed signal

- Connect test adapter V.A.G 1598/4 to 26-pin plug (green) and multipin connector to dash panel insert.
- Connect hand multimeter V.A.G 1526 to sockets 12 and 7 of test box V.A.G 1598 using auxiliary cable. (measuring range: AC voltage).
- Run engine.
  - Specified value: approx. 7 volts, depending on engine speed.

### 3.7 - Checking speedometer sensor

#### Vehicles with manual gearbox:

- Connect test adapter V.A.G 1598/4 to 26-pin connector (red) and multipin connector (red) to dash panel insert.
- Connect hand multimeter V.A.G 1526 to sockets 8 and 14 of test box V.A.G 1598 using auxiliary cable. (measuring range: AC voltage).
- Jack up front left of vehicle, do not select a gear.
- Switch ignition on.
- Turn front left wheel by hand.
  - Specified value: approx. 4.5 V on V.A.G 1526
- If specified value is not attained, locate open circuit using current flow diagram and rectify fault or replace speedometer sensor.



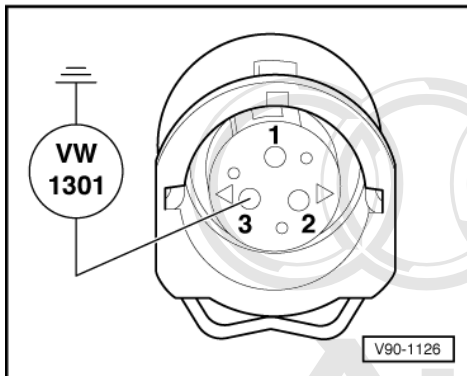
### 3.8 - Checking coolant temperature gauge

## Vehicles with coolant temperature warning switch (overheating) -F14 and coolant temperature gauge sensor - G2

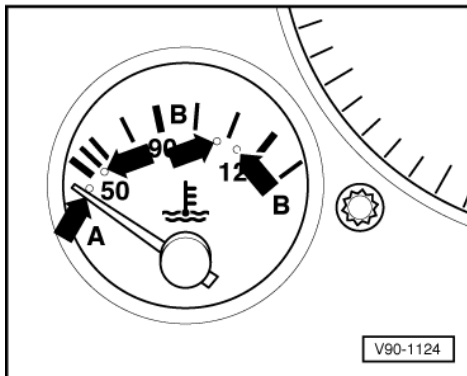
-> Switch/sensor connections:

- 1 - Actuation of coolant temperature warning lamp (overheating)
- 2 - Earth
- 3 - Actuation of coolant temperature gauge

Location: In water connection on cylinder head.



- Remove plug from switch/sensor.
- -> Connect tester V.A.G 1301 to connector contact -3- and earth.
- Set V.A.G 1301 tester as follows:
  - Cold - 560
  - Hot - 58
- Switch ignition on.



-> At a test setting of 560, the needle must be within the tolerance range of the two test positions -A- on the coolant temperature gauge.  
At a test setting of 58, the needle must be within the tolerance range of the two test positions -B- on the coolant temperature gauge.

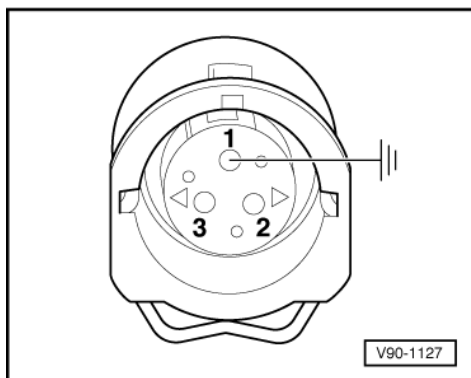
- If the specified values are still not attained, check voltage supply to coolant temperature gauge, including voltage stabiliser.
- If this are OK, replace the gauge.

### Checking coolant temperature warning lamp (overheating)

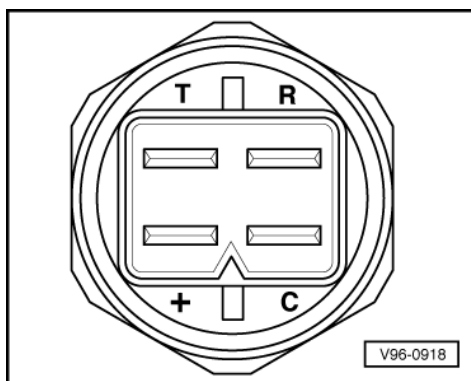
**Note:**

Connections at coolant temperature warning switch (overheating) and coolant temperature sensor => Page 49.

- Remove plug from coolant temperature warning switch (overheating).



- -> Connect contact -1- to earth using auxiliary cable.
- Run engine.
  - Warning lamp must flash after approx. 30 seconds
- If warning lamp does not flash, check bulb (1.2 W) or locate open circuit using current flow diagram and remedy.
- If this is OK, replace the PCB on the dash panel insert.

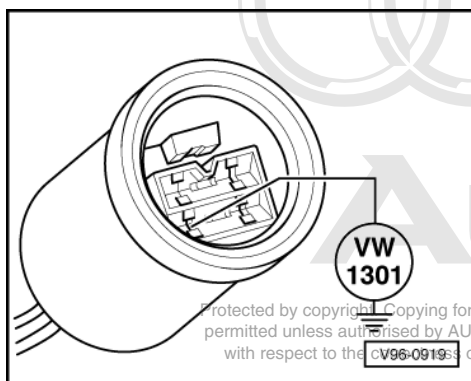


#### Vehicles with electronic thermo switch -F76

-> Connections at electronic thermo switch:

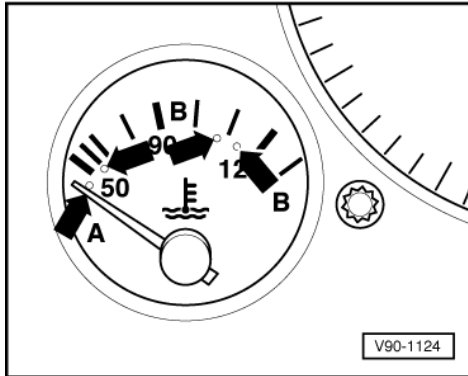
- + - Voltage supply
- 1 - Actuation of coolant temperature warning lamp (overheating)
- R - AC safety shutdown
- 3 - Actuation of coolant temperature gauge

Location: In water connection on cylinder head.



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- Disconnect plug from thermo switch.
- ➔ Connect tester V.A.G 1301 to connector contact -T- using auxiliary cable and earth.
- Set V.A.G 1301 tester as follows:
  - Cold - 560
  - Hot - 58
- Switch ignition on.



➔ At a test setting of 560, the needle must be within the tolerance range of the two test positions-A- on the coolant temperature gauge.  
At a test setting of 58, the needle must be within the tolerance range of the two test positions-B- on the coolant temperature gauge.

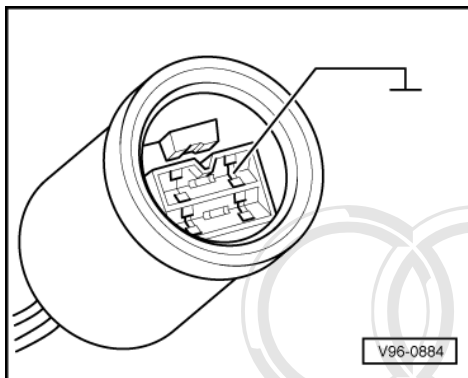
- If the specified values are not attained, locate open circuit using current flow diagram and rectify fault or replace voltage stabiliser.
- If these are OK, replace the gauge.

#### Checking coolant temperature warning lamp (overheating)

##### **Note:**

*Connections at electronic thermo switch: ➔ Page 50.*

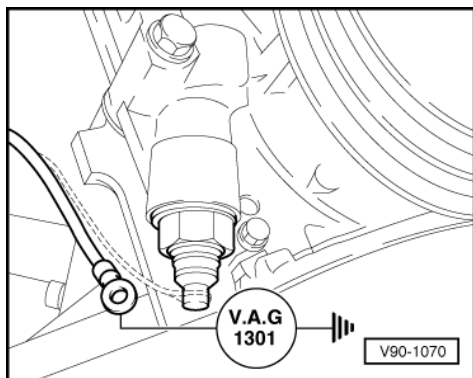
- Disconnect plug from thermo switch.



- ➔ Connect contact -C- to earth using auxiliary cable.
- Run engine.
  - Warning lamp must flash after approx. 30 seconds/
- If the warning lamp does not flash, check bulb (1.2 W) or locate open circuit using current flow diagram and rectify fault.
- If this is OK, replace the PCB on the dash panel insert.

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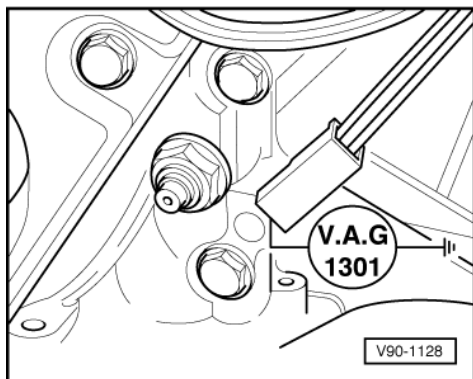
### 3.9 - Checking oil temperature gauge



#### Vehicles with 5-cylinder engine

- -> Unscrew plug from oil temperature sensor (on the oil pump).
- Connect tester V.A.G 1301 to plug and earth.

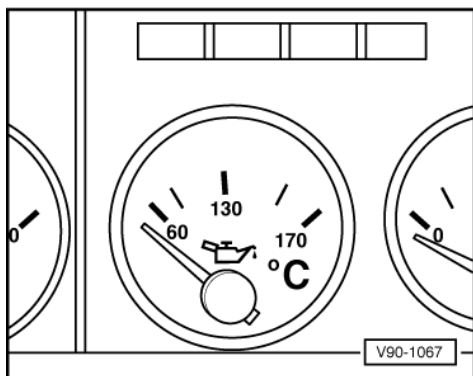
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#### Vehicles with 6-cylinder engine

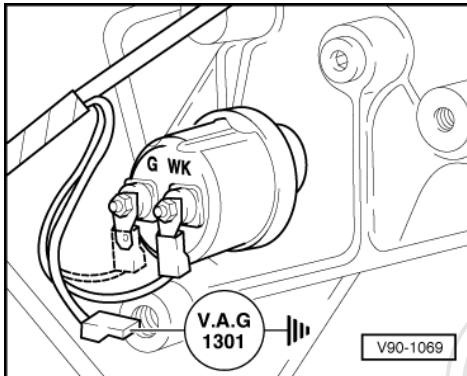
- -> Pull plug the oil temperature sensor (on the oil pump).
- Connect tester V.A.G 1301 to connector and earth.

#### All vehicles:



- -> Set tester V.A.G 1301 as follows:
  - 170 oC - 26
  - 130 oC - 110
  - 60 oC - 999

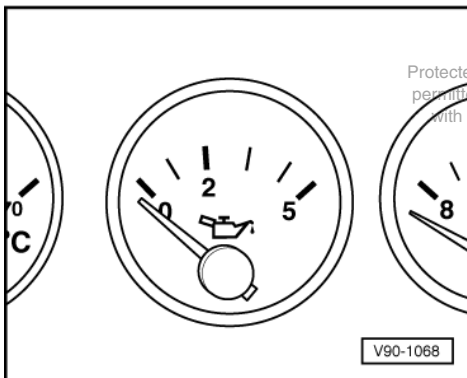
### 3.10 - Checking oil pressure gauge



- -> Pull plug off oil pressure sensor (left side of engine compartment), terminal -G-.
- Connect tester V.A.G 1301 to connector and earth using auxiliary cable.
- Switch ignition on.

**Note:**

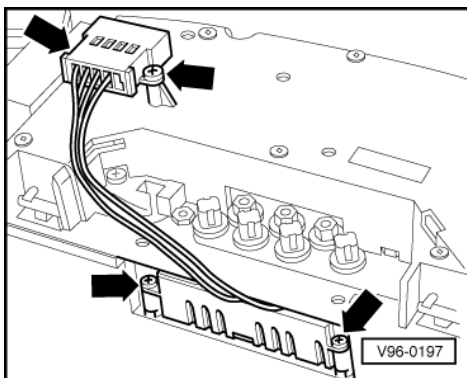
*The illustration shows the 5-cylinder engine. Installation is similar for 6-cylinder engine.*



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- Switch ignition on.
- -> Set V.A.G 1301 tester as follows:
  - 5 bar - 340
  - 2 bar - 140
  - 0 bar - 10

### 3.11 - Removing and installing outside temperature gauge



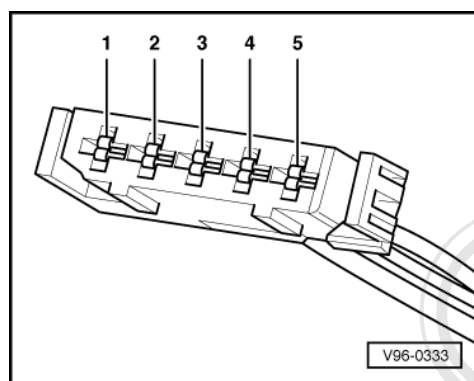
- Removing dash panel insert => Page 33
- Disconnect 5-pin outside temperature gauge connector.

- -> Unscrew attachment screws for plug-in coupling and outside temperature gauge-arrows- and dash panel insert and remove gauge.

#### Note:

When replacing the dash panel insert, break out the dummy cover on the indicator lamp symbol panel.

### 3.12 - 5-pin plug behind dash panel insert

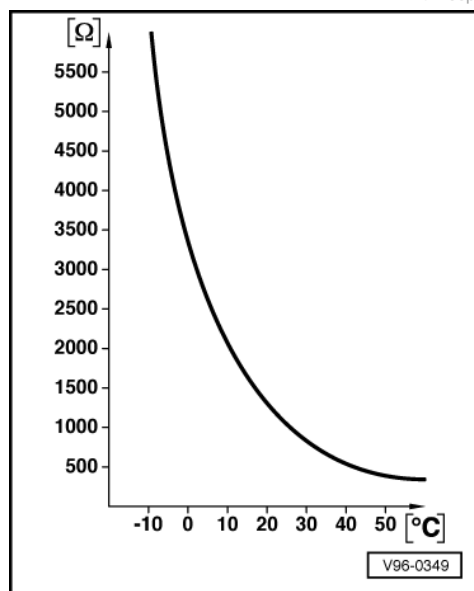


#### Signal assignment and checking

- Removing dash panel insert => Page 33
- Remove outside temperature gauge plug.

#### -> Cavity 1. Speed signal

- Using hand-held multimeter V.A.G 1526 (measuring range: AC voltage) measure to earth

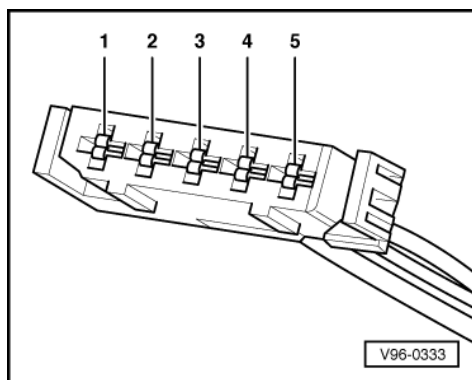


- Specified value: approx. 4 mV at walking speed

#### Cavity 2. Temperature sensor

- Using hand-held multimeter V.A.G 1526 (measuring range: resistance measurement) measure to earth
- -> Specified value:  $\omega$ -depending on outside temperature => Graph

### Cavity 3. Earth



#### -> Cavity 4. Lighting terminal 58d

- Switch side lights on
- Using hand-held multimeter V.A.G 1526 (measuring range: DC voltage) measure to earth
  - Specified value: approximately same as battery voltage, depending on dash panel lighting control setting

#### Cavity 5. Positive terminal 15a

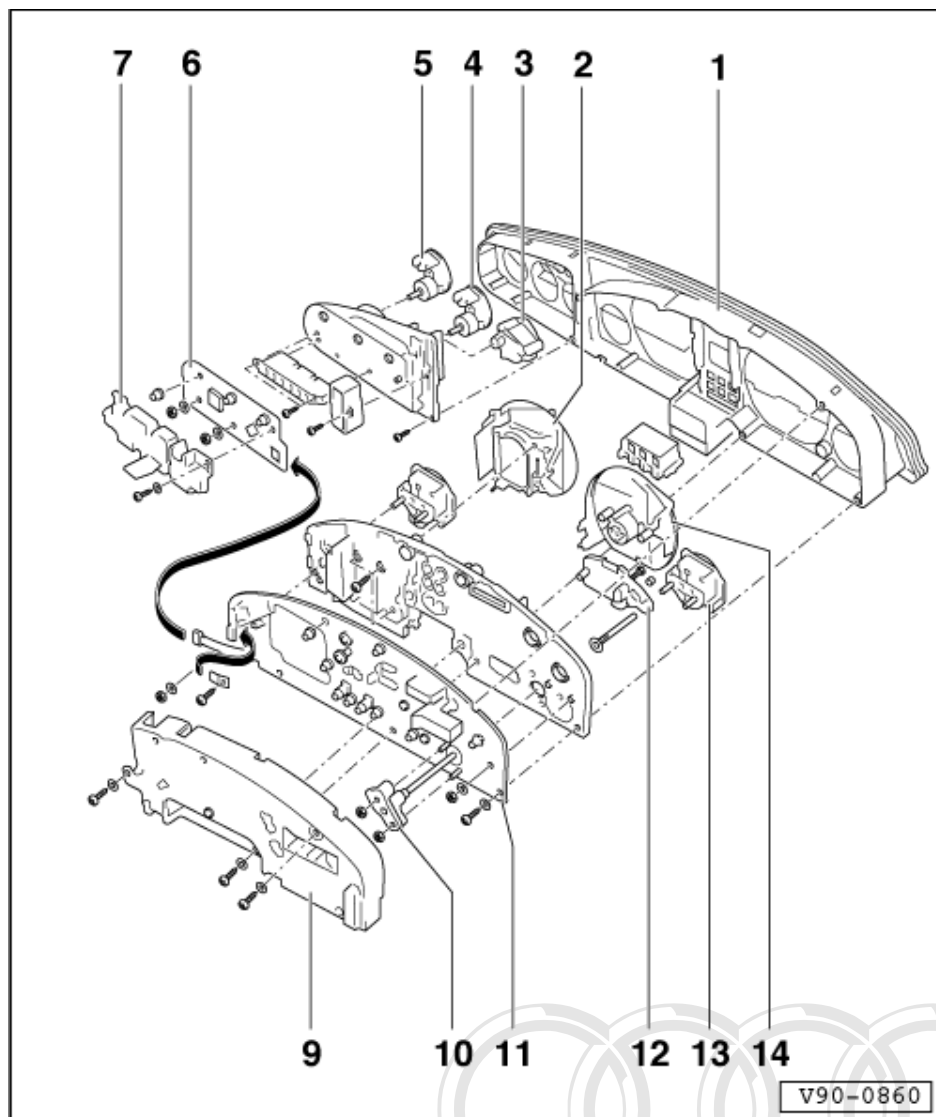
- Switch ignition on.
- Using hand-held multimeter V.A.G 1526 (measuring range: DC voltage) measure to earth
  - Specified value: Battery voltage



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## 4 - Removing and installing dash panel insert components

### 4.1 - Removing and installing dash panel insert components



### 4.2 - Vehicles without auto- check system/on-board computer

- Removing and installing dash panel insert => Page 33.
- Removing and installing additional instruments => Page 73 onwards.

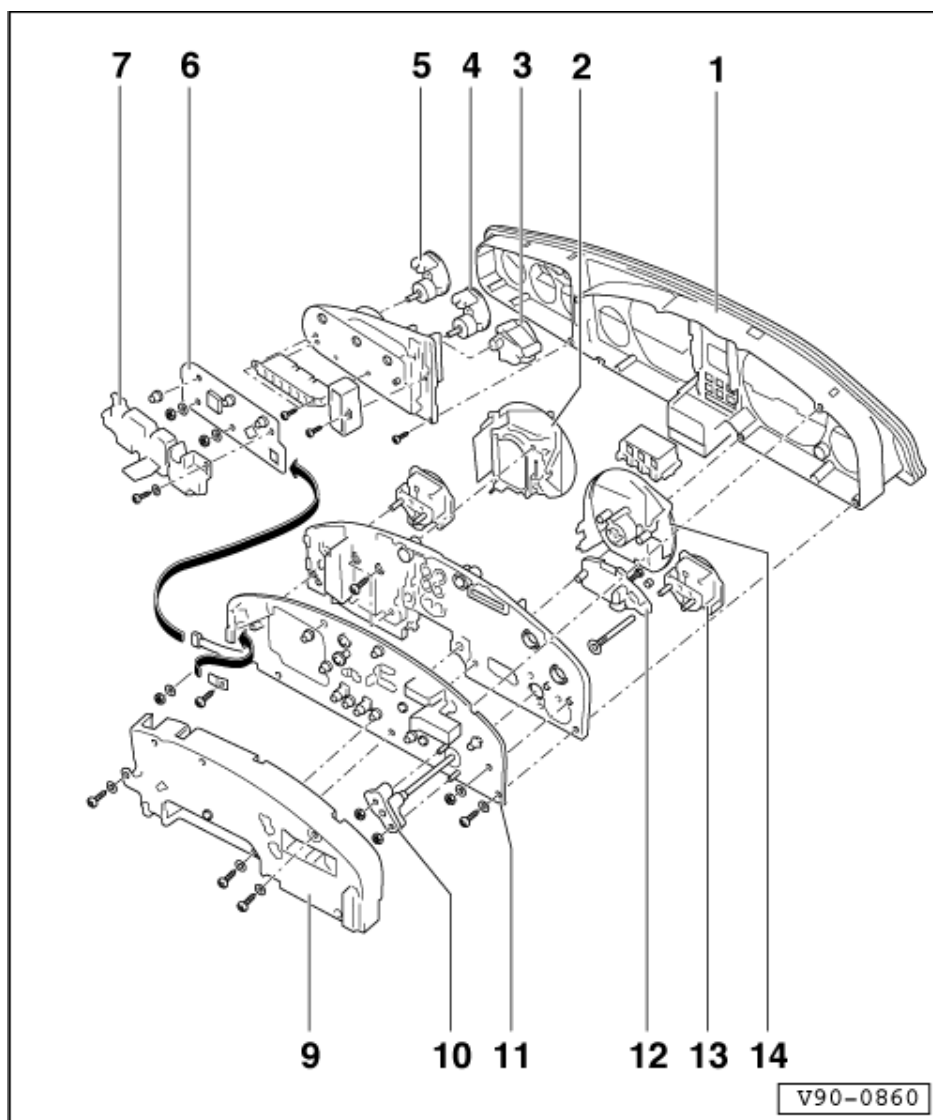
#### 1 Front surround with glass

- ♦ Removing and installing => Page 59

#### 2 Speedometer

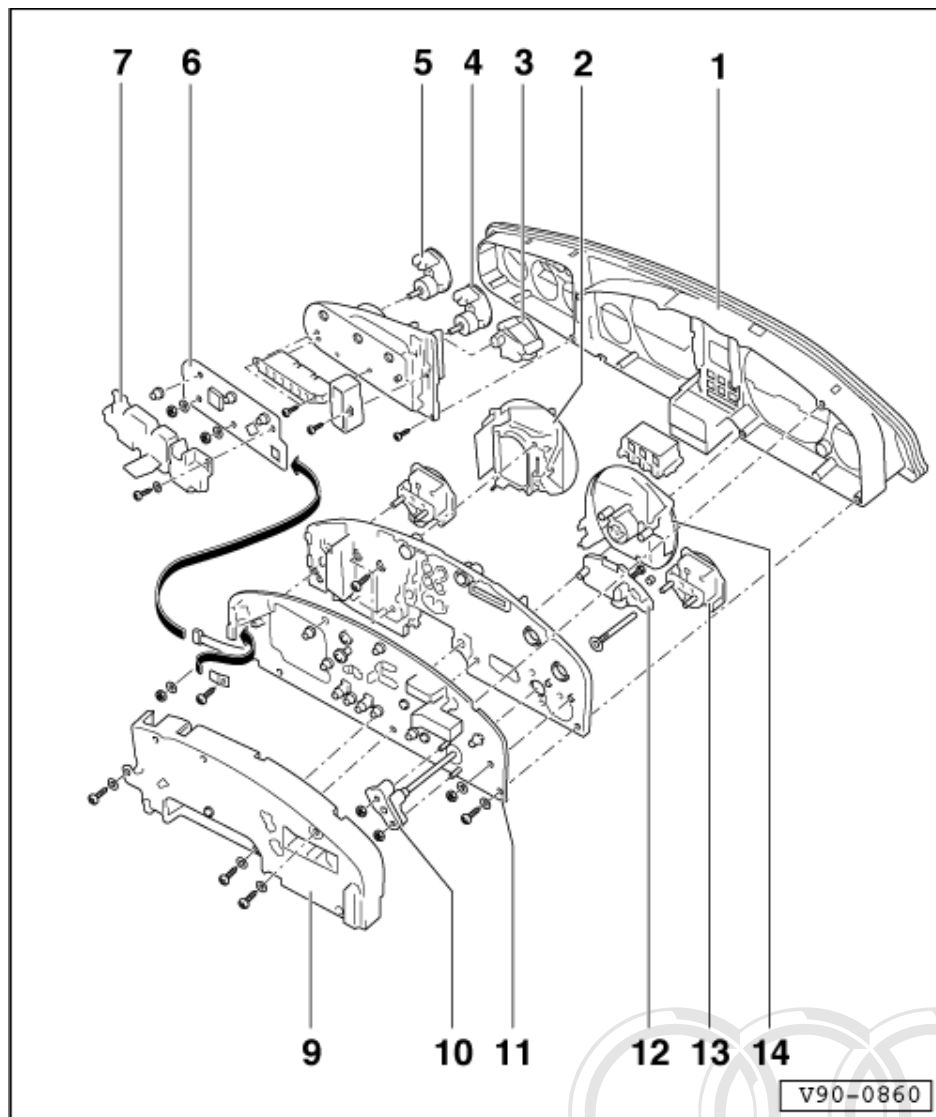
- ♦ Removing and installing => Page 60

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- 3 Small analogue clock
- 4 Oil temperature gauge
- 5 Oil pressure gauge
- 6 Printed circuit board (side section)
- 7 Cover panel (side section)
- 8 Fuel gauge
  - ♦ Removing and installing => Page 61
- 9 Cover panel
  - ♦ Removing and installing => Page 59

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#### 10 Brightness control

- ♦ For dash panel insert lighting
- ♦ Removing and installing => Page 62

#### 11 Printed circuit board

- ♦ Removing and installing => Page 62

#### 12 Digital clock

- ♦ Removing and installing => Page 63

#### 13 Coolant temperature gauge:

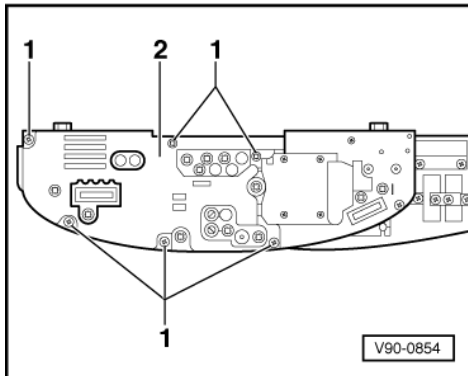
- ♦ Removing and installing => Page 61

#### 14 Rev counter or large analogue clock

- ♦ Removing and installing => Page 60

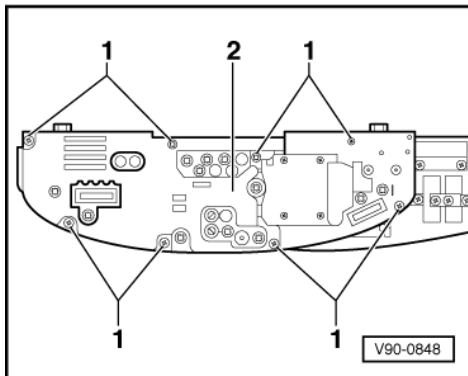
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#### 4.3 - Removing and installing cover panel

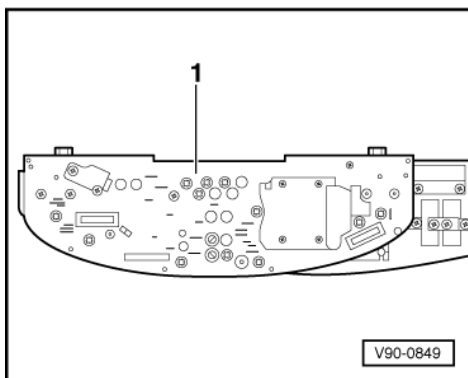


- -> Loosen attachment screws -1-.
- Remove cover panel -2-.

#### 4.4 - Removing and installing instrument carrier



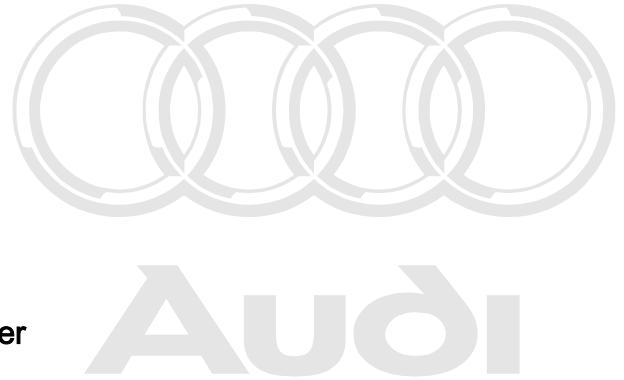
- -> Loosen instrument carrier attachment screws -1-.
- Remove cover panel -2-.



- -> Remove instrument carrier -1- from front surround.

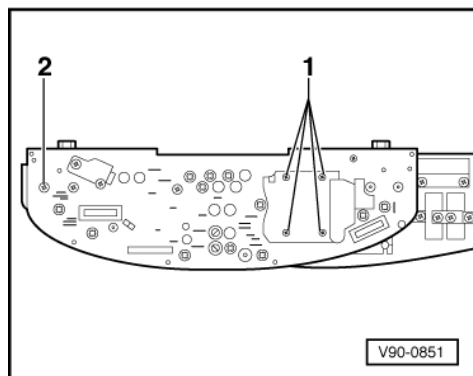
#### 4.5 - Removing and installing front surround

- Removing instrument carrier => Page 59 .



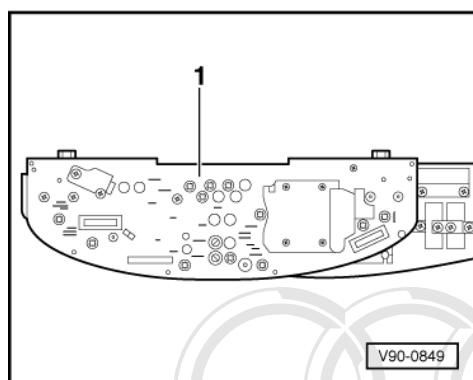
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## 4.6 - Removing and installing speedometer



- Removing instrument carrier => Page 59 .
- -> Loosen attachment screws -1-.
- Remove instrument carrier from front surround.
- Pull out the speedometer.

## 4.7 - Removing and installing speedometer and large analogue clock



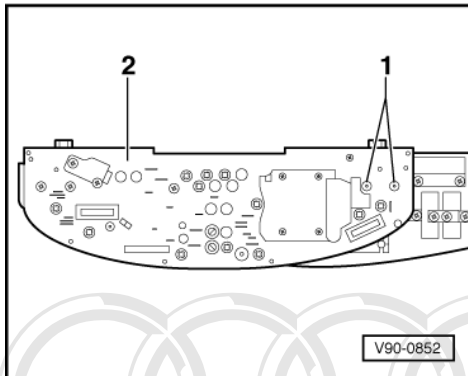
- Removing instrument carrier => Page 59 .
- -> Remove instrument carrier -1- from front surround.
- Detach rev counter or large analogue clock

### **Note:**

*Rubber caps must be fitted to rev counter pins.*

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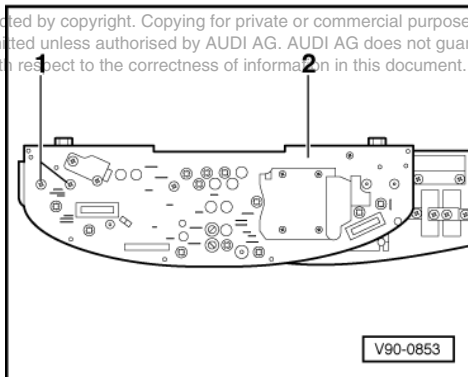
## 4.8 - Removing and installing fuel gauge



- Removing instrument carrier => Page 59 .
- -> Loosen securing nuts -1-.
- Remove instrument carrier from front surround.
- Bend open the retaining hook.
- Remove fuel gauge.

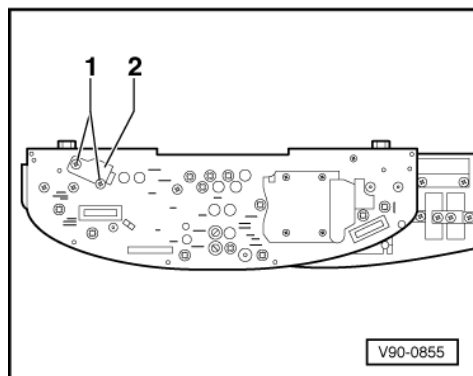
## 4.9 - Removing and installing coolant temperature gauge

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- Removing instrument carrier => Page 59 .
- -> Loosen securing nuts -1-.
- Remove instrument carrier from front surround.
- Bend open retaining hook.
- Remove coolant temperature gauge.

## 4.10 - Removing and installing brightness control in dash panel insert

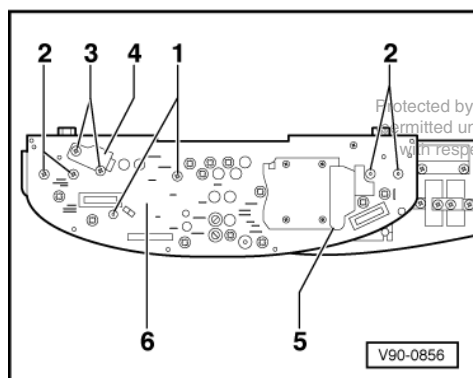


- Removing cover panel => Page 59
- -> Loosen securing nuts -1- (with washer)
- Remove brightness control -2-.

### Note:

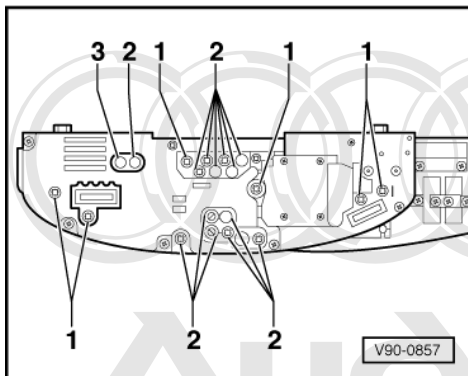
When replacing the dash panel insert brightness control, ensure that the flattened part of the adjusting stem fits exactly into the adjusting pin. If necessary, remove adjusting pin and assemble together brightness control.

## 4.11 - Removing and installing PCB



- Removing instrument carrier => Page 59 .
- -> Loosen screws -1-.
- Remove securing nuts -2- and -3-.
- Remove lighting control unit -4-
- Release retaining hook -5-, counterhold base plate
- Remove PCB -6-.

## 4.12 - Removing and installing cap-type lamps



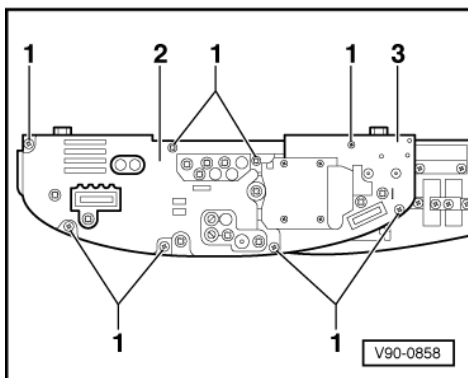
Lamp assignments => Page 34 onwards.

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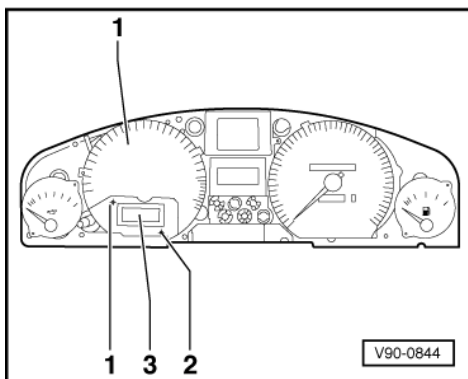
### Unscrew cap-type lamps

- > 1 - 1.1 W
- 2 - 1.2 W
- 3 - 2.0 W

## 4.13 - Removing and installing digital clock



- -> Loosen screws -1-.
- Remove cover panel -2-.
- Remove instrument carrier -3- from front surround.



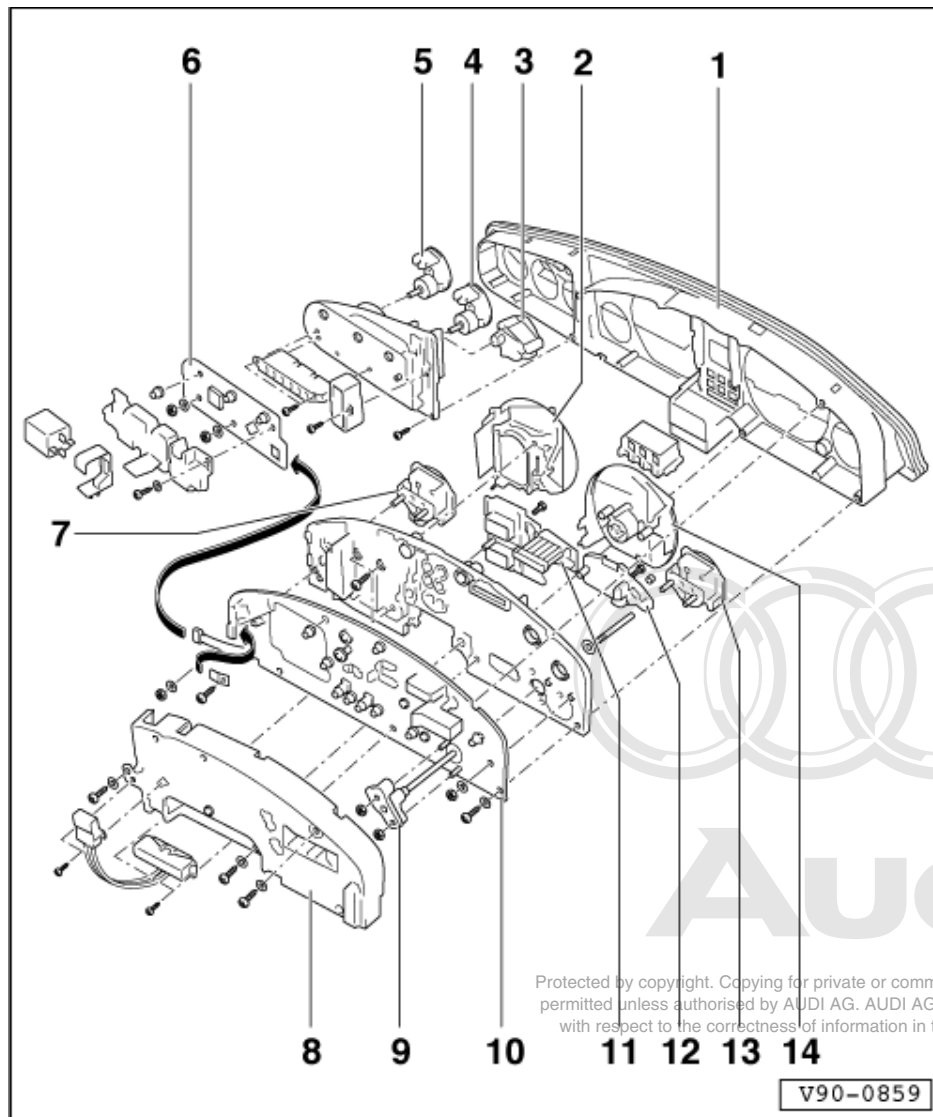
- -> Remove rev counter -1-.

**Note:**

*Rubber caps must be fitted to rev counter pins.*

- Loosen screws -2-.
- Remove digital clock -3-.

#### 4.14 - Vehicles with Auto-check system/on-board computer and additional instruments.



- Removing and installing dash panel insert => Page 33 .
- Removing and installing additional instruments => Page 73 onwards

#### 1 Front surround with glass

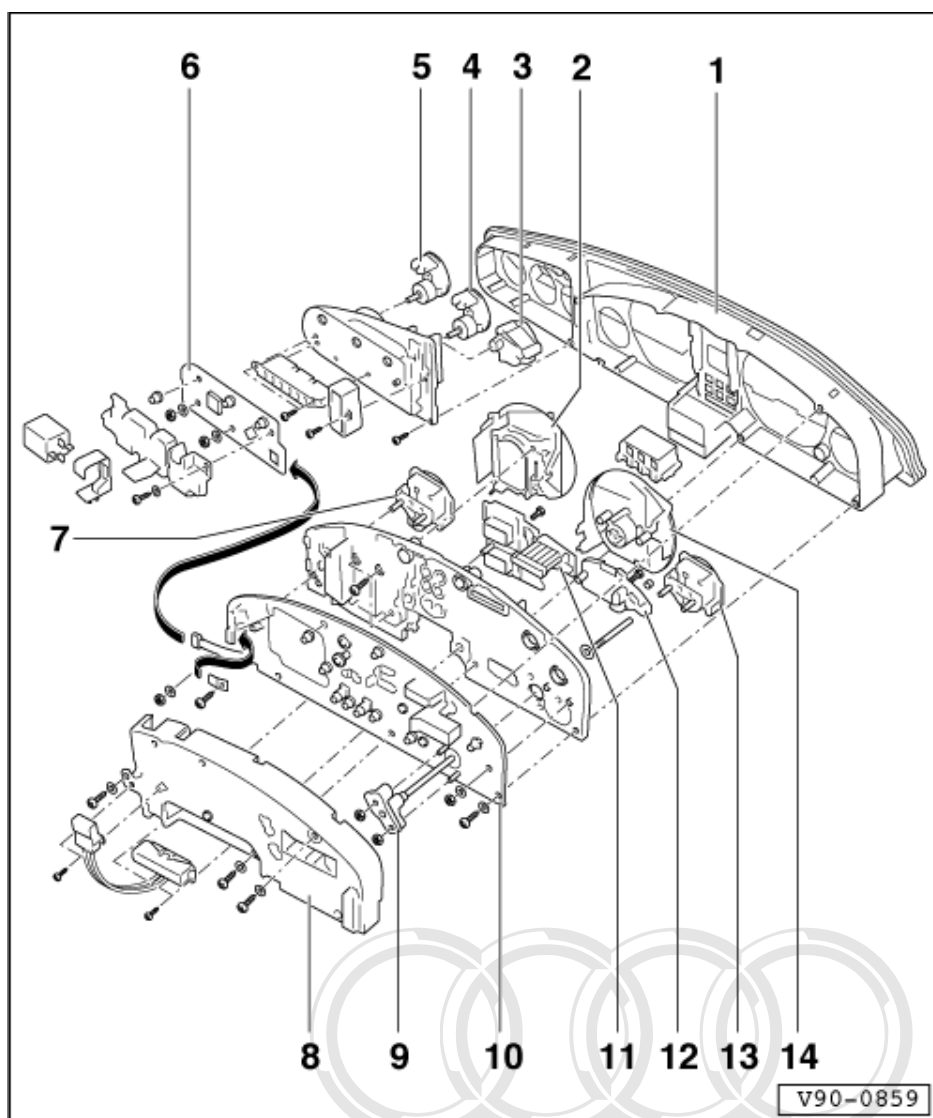
- ♦ Removing and installing => Page 68

#### 2 Speedometer

- ♦ Removing and installing => Page 68

#### 3 Small analogue clock

- ♦ Removing and installing => Page 73



#### 4 Oil temperature gauge

- ♦ Removing and installing => Page 73

#### 5 Oil pressure gauge

- ♦ Removing and installing => Page 73

#### 6 Printed circuit board (side section)

- ♦ Removing and installing => Page 74

#### 7 Fuel gauge

- ♦ Removing and installing => Page 69

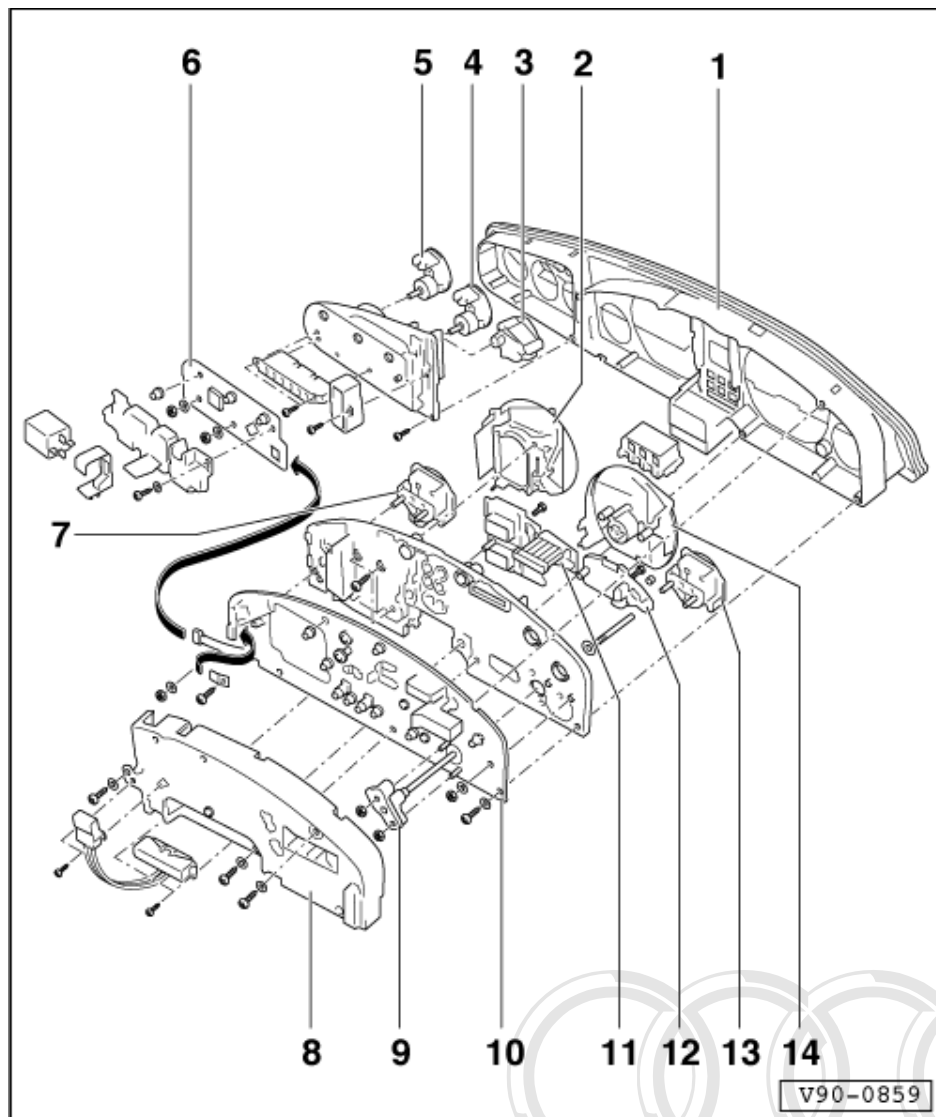
#### 8 Cover panel

- ♦ Removing and installing => Page 67

#### 9 Brightness control

- ♦ For dash panel insert lighting
- ♦ Removing and installing => Page 70

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#### 10 Printed circuit board

- ♦ Removing and installing => Page 70

#### 11 Display unit

- ♦ For on-board computer/auto- check system
- ♦ Removing and installing => Page 71

#### 12 Digital clock

- ♦ Removing and installing => Page 72

#### 13 Coolant temperature gauge:

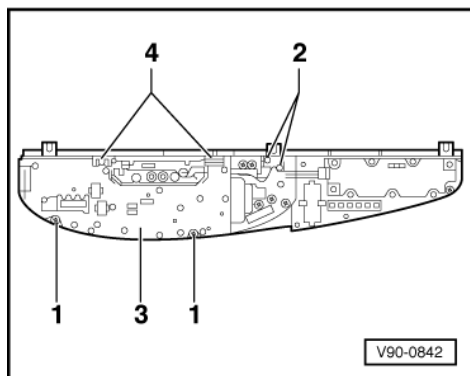
- ♦ Removing and installing => Page 69

#### 14 Speed counter or large analogue clock

- ♦ Removing and installing => Page 68

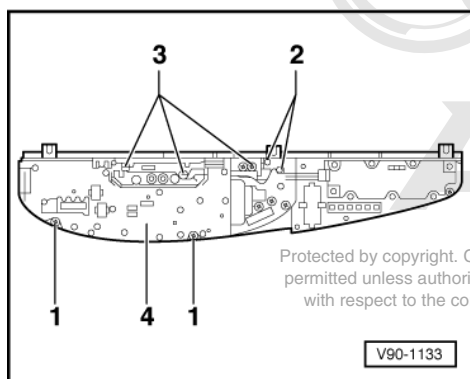
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#### 4.15 - Removing and installing cover panel



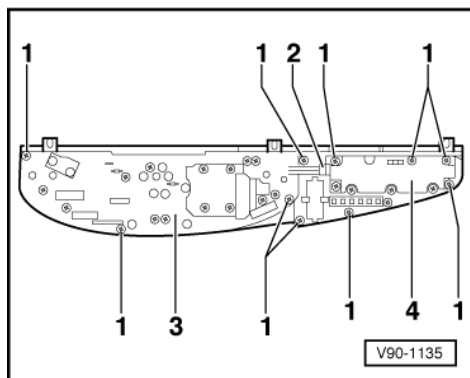
- -> Loosen screws -1- and -2-.
- Unclip cover panel -3- at hinges -4-.

#### 4.16 - Removing and installing instrument carrier and instrument carrier (side section)



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- -> Loosen screws -1 ... 3.
- Remove cover panel -4-.

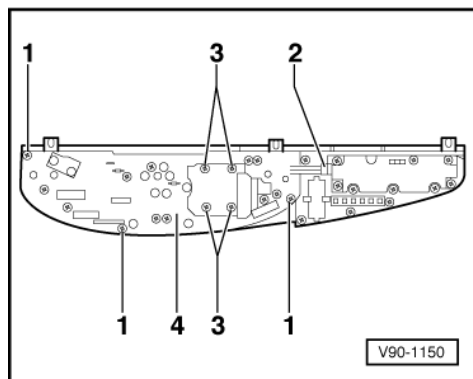


- -> Loosen instrument carrier screws -1-.
- Remove plug -2- to side section.
- Remove instrument carrier -3- and instrument carrier (side section) -4- from front surround.

#### 4.17 - Removing and installing front surround

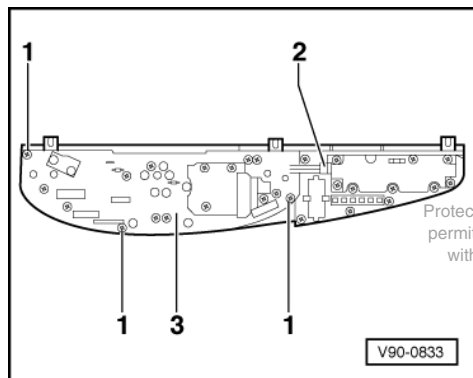
- Removing and installing instrument carrier and instrument carrier (side section) => Page 67 .

#### 4.18 - Removing and installing speedometer



- Removing and installing instrument carrier and instrument carrier (side section) => Page 67 .
- -> Loosen screws -1- and -3-.
- Remove plug -2- to side section.
- Remove instrument panel-4- from front surround.
- Pull out the speedometer.

#### 4.19 - Removing and installing rev counter and large analogue clock



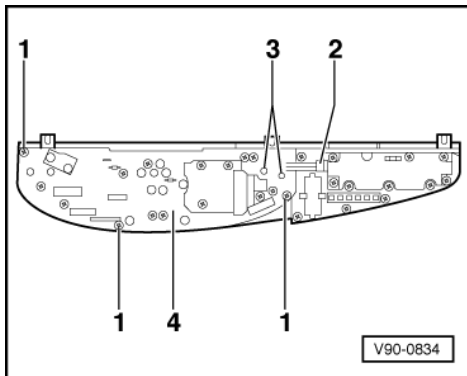
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- Removing and installing instrument carrier and instrument carrier (side section) => Page 67 .
- -> Loosen screws -1-.
- Remove plug -2- to side section.
- Remove instrument carrier -3- from front surround.
- Detach rev counter or large analogue clock

**Note:**

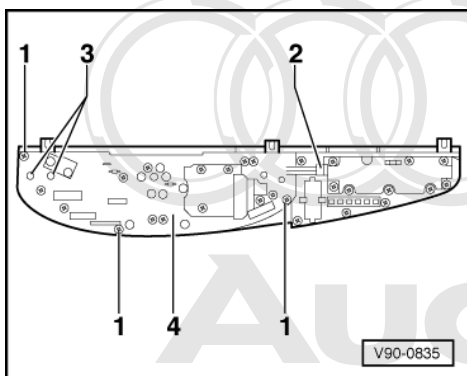
*Rubber caps must be fitted to rev counter pins.*

## 4.20 - Removing and installing fuel gauge



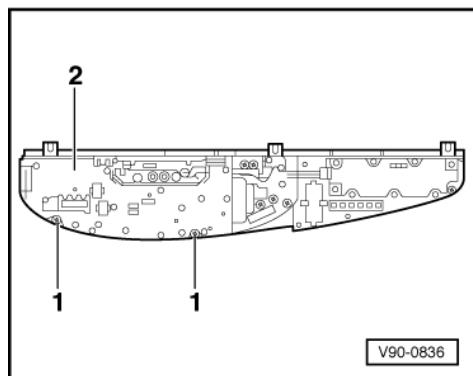
- Removing and installing instrument carrier and instrument carrier (side section) => Page 67 .
- -> Loosen screws -1-.
- Remove plug -2- to side section.
- Unscrew securing nuts -3-.
- Remove instrument carrier -4- from front surround.
- Bend open retaining hook.
- Remove fuel gauge.

## 4.21 - Removing and installing coolant temperature gauge

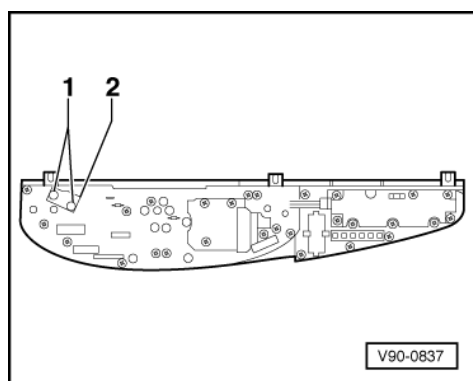


- Removing and installing instrument carrier and instrument carrier (side section) => Page 67 .
- -> Loosen screws -1-.
- Remove plug -2- to side section.
- Unscrew securing nuts -3-.
- Remove instrument carrier -4- from front surround.
- Bend open retaining hook.
- Remove coolant temperature gauge.

## 4.22 - Removing and installing brightness control in dash panel insert



- -> Loosen screws -1-.
- Open cover panel -2-.

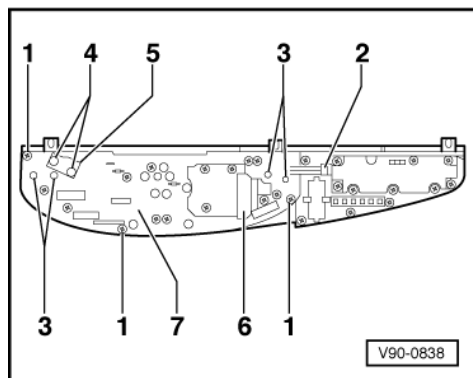


- -> Loosen securing nuts -1-(with washer)
- Remove brightness control -2-.

### Note:

When replacing dash panel insert brightness control, ensure that flattened part of the adjusting stem fits exactly into the adjusting pin. If necessary, remove adjusting pin and assemble together with brightness control.

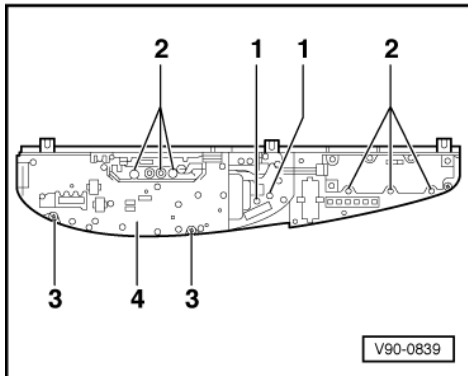
## 4.23 - Removing and installing PCB



- Removing and installing instrument carrier and instrument carrier (side section) => Page 67 .
- -> Loosen screws -1-.
- Remove plug -2- to side section.
- Unscrew securing nuts -3-.
- Loosen securing nuts -4- (with washer)
- Remove brightness control -5-
- Release retaining hook -6-, counterhold cover panel

- Remove PCB -7-.

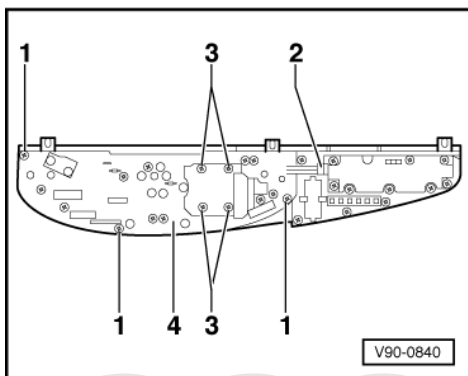
#### 4.24 - Removing and installing cap-type lamps



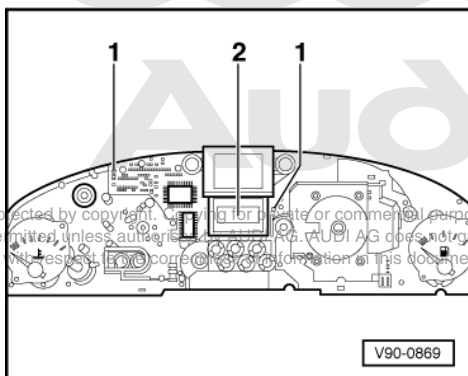
Lamp assignments => Page 34 onwards.

- -> Unscrew cap-type lamps -1- and -2-.
- To replace another lamp, loosen screws -3- and open cover panel -4-.

#### 4.25 - Removing and installing on-board computer/auto-check system display unit



- Removing and installing instrument carrier and instrument carrier (side section) => Page 67 .
- -> Loosen screws -1-.
- Remove plug -2- to side section.
- Loosen screws -3-.
- Remove instrument carrier -4- from front surround and set aside.
- Detach speedometer and rev counter/large analogue clock



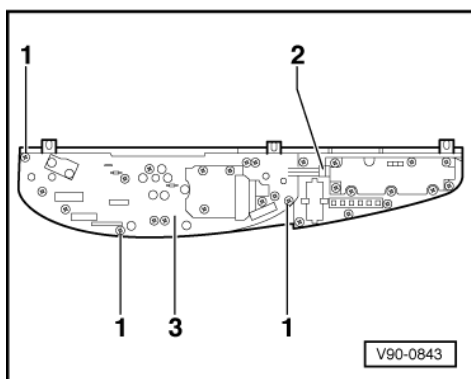
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### Note:

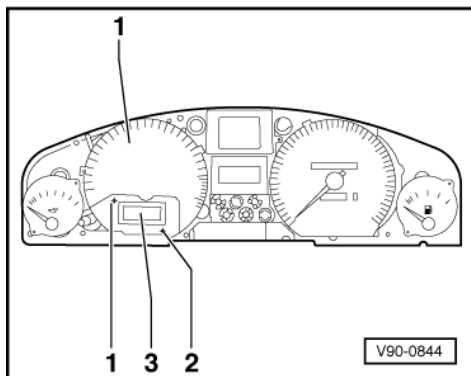
Rubber caps must be fitted to rev counter pins.

- -> Loosen screws -1-.
- Remove display unit -2-.

## 4.26 - Removing and installing digital clock



- Removing and installing instrument carrier and instrument carrier (side section) => Page 67 .
- -> Loosen screws -1-.
- Remove plug -2- to side section.
- Remove instrument carrier -3- from front surround.



- -> Remove rev counter -1-.

### Note:

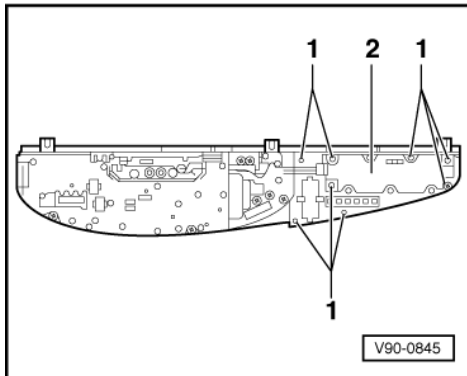
Rubber caps must be fitted to rev counter pins.

- Loosen screws -2-.
- Remove digital clock -3-.



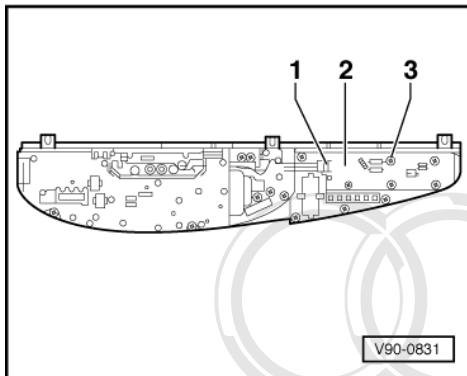
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#### 4.27 - Removing and installing cover panel (side section)



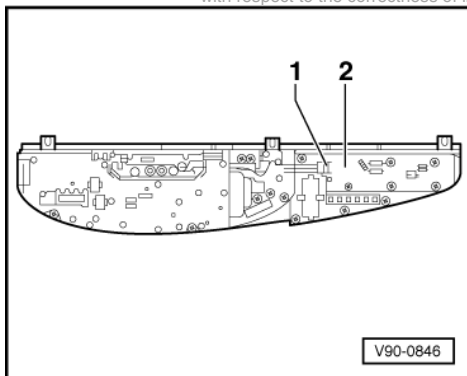
- -> Loosen screws -1-.
- Remove cover panel (side section) -2-.

#### 4.28 - Removing and installing oil temperature / oil pressure gauge



- Removing cover panel (side section).
- -> Remove plug -1- to side section.
- Loosen screw -3- (oil temperature gauge shown here)
- Remove instrument carrier (side section) -2- from front surround.
- Remove oil temperature/ oil pressure gauge.

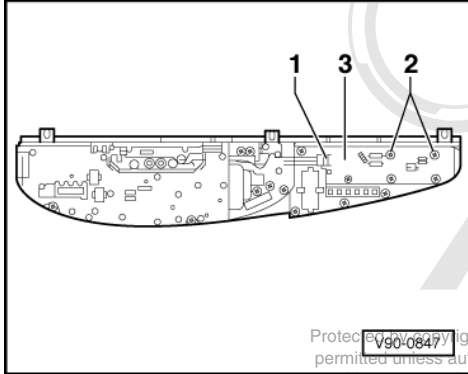
#### 4.29 - Removing and installing small analogue clock



- Remove cover panel (side section) => Page 73 .
- -> Remove plug -1- to side section.
- Remove instrument carrier (side section) -2- from front surround.

- Remove analogue clock.

#### 4.30 - Removing and installing side section PCB



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- Remove cover panel (side section) => Page 73 .
- -> Remove plug -1- to side section.
- Unscrew securing nuts -2-.
- Remove instrument carrier (side section) -3- from front surround.
- Remove oil temperature gauge, oil pressure gauge and analogue clock.
- Remove PCB.

## 91 - Radio, 2-way radio, Telephone

### 1 - Servicing radio

#### 1.1 - Servicing radio

**Note:**

- ♦ Disconnect battery earthing strap before working on electrical system.
- ♦ If complaints are received, it is vital to be familiar with the functions and operation of the relevant radio system. For additional information, refer to:

=> Operating instructions for the radio concerned.

- ♦ For retrofitting, service work and troubleshooting

=> "Current Flow Diagrams, Electrical Fault Finding and Fitting Locations" binder

=> Installation instructions

- ♦ For detailed instructions on trim removal and installation:

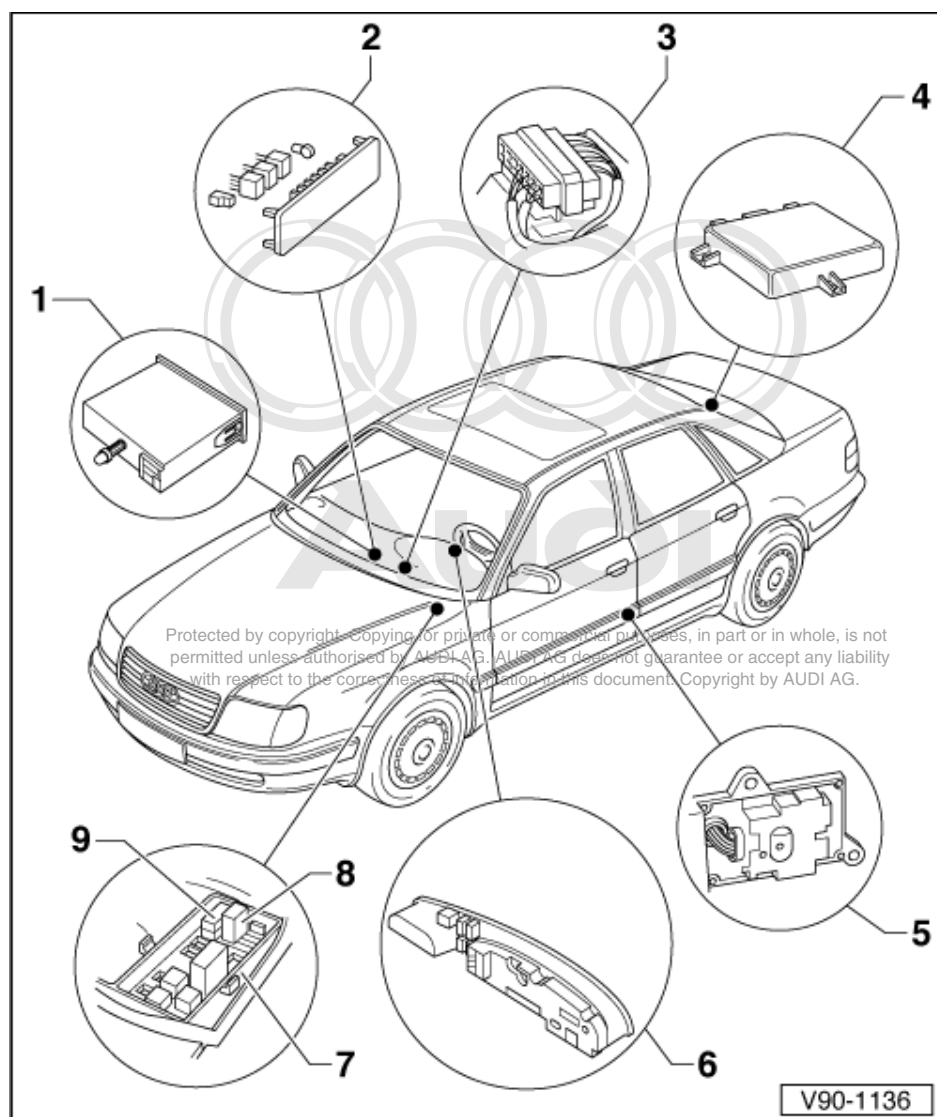
=> General Body Repairs

- ♦ Only radios and parts from the V.A.G range or original replacement parts should be used, since this is the only way to guarantee problem-free installation and good reception.
- ♦ The power supply to radio systems ▶ 05.94 is supplied via a thermal fuse in auxiliary relay plate I, which opens in the event of an overload and closes automatically after cooling.
- ♦ The power supply to radio systems 06.94 ▶ is supplied via a fuse in auxiliary relay I.

**Notes on radio retrofitting**

- ♦ The provided connectors for genuine Audi radio systems should be used for preparing the radio.
- ♦ Radios with other plug connectors must be connected using adapter leads.
- ♦ When connecting the speed signal (radios with GALA function) care must be taken not to cause a short circuit, since otherwise vehicle malfunctions may occur (e.g. in engine control unit).
- ♦ Connecting the speed signal to non-Audi makes of radio can also lead to problems with the vehicle.

## 1.2 - Radio systems - general layout



### 1 Radio -R

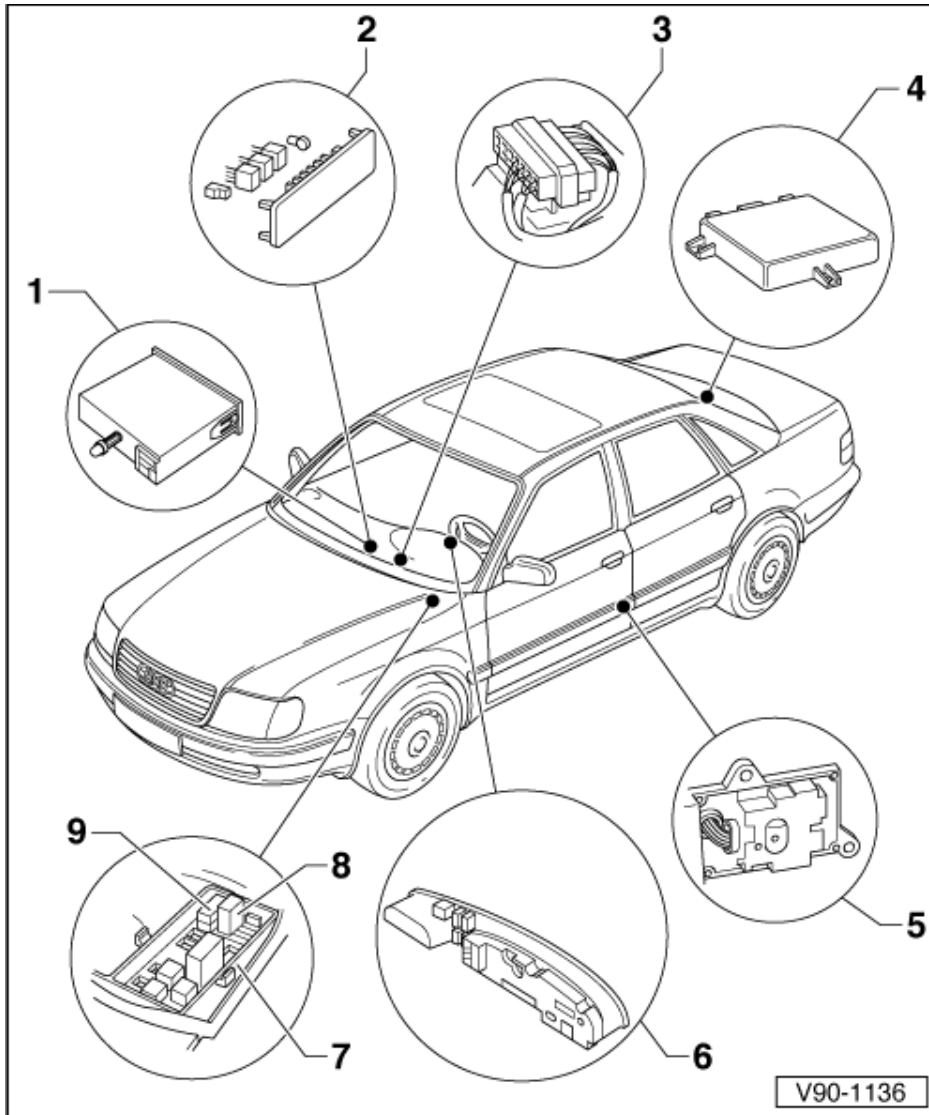
- ♦ installed in centre console

### 2 Radio preparation

- ♦ Only passive loudspeakers in rear
- ♦ Not available in Germany
- ♦ Use screwdriver to prise off trim
- ♦ Unclip plug from trim
- ♦ Adapter leads for radio connection (old generation) are in the glove compartment

### 3 Connection unit III

- ♦ Location and layout of connection points => Page [228](#)



#### 4 Bose rear amplifier R12

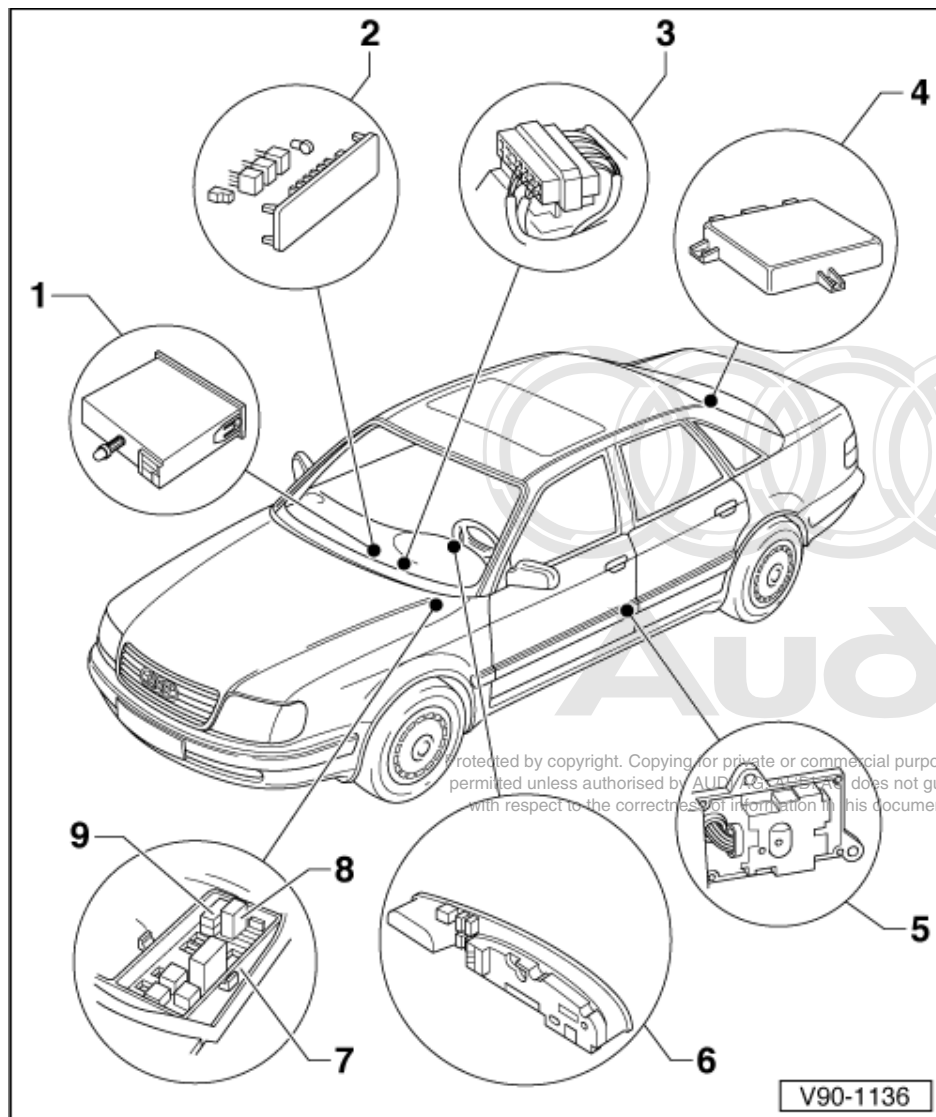
- ◆ "gamma CC Bose" and "gamma CD" radios only
- ◆ Location: In luggage compartment beneath rear shelf
- ◆ Removing and installing => Page 85

#### 5 Bose front amplifier

- ◆ "gamma CC Bose" and "gamma CD" radios only
- ◆ Installed at bottom of driver and passenger side doors in bass reflex box
- ◆ Only to be replaced in conjunction with front loudspeaker and bass reflex box

**Audi**

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## 6 Dash panel insert

- ◆ Obtaining speed signal for radios with GALA
- ◆ Removing, installing and contact assignment at dash panel insert multipin connectors => Page 41 onwards

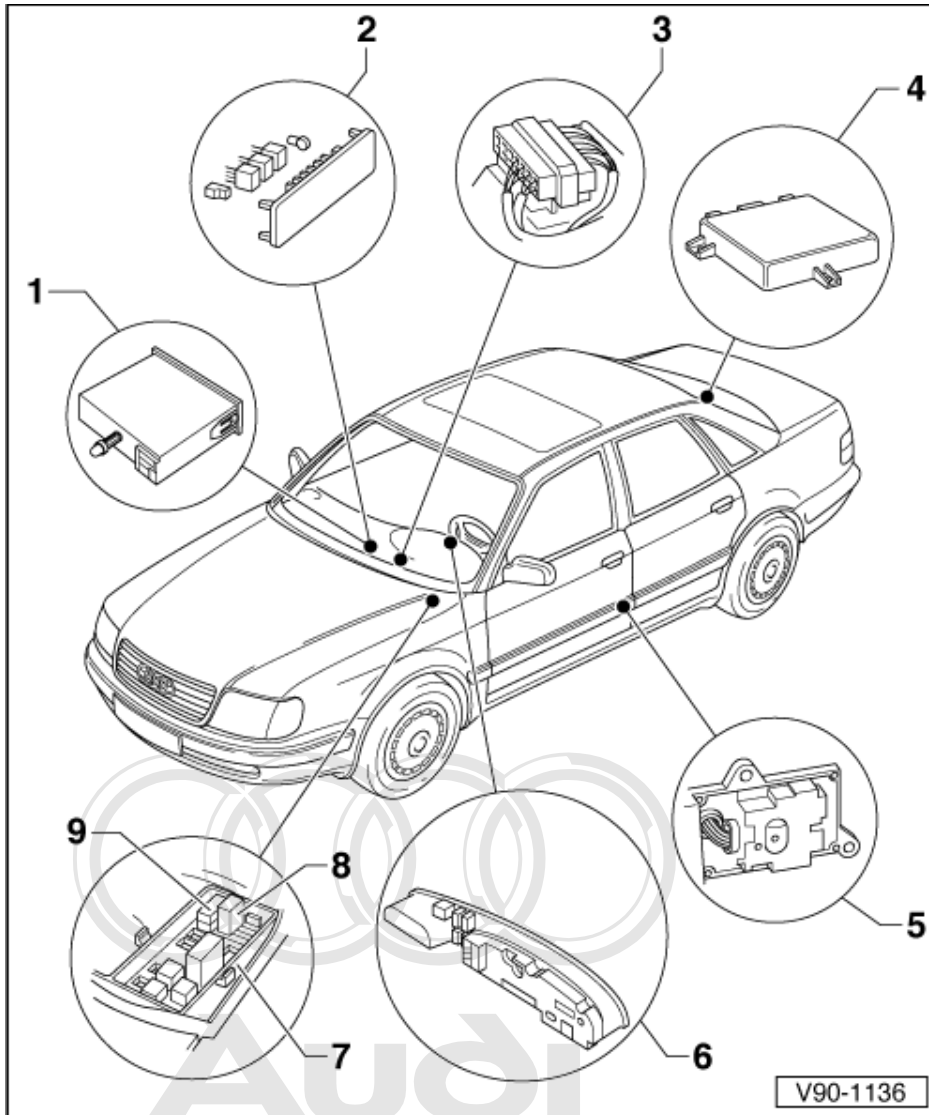
## 7 Auxiliary relay plate I

- ◆ Location => Page 214

## 8 Loudspeaker current supply relay -J225

- ◆ "gamma CC Bose" and "gamma CD" radios only
- ◆ Installed in auxiliary relay carrier I
- ◆ Assignment

=> "Current Flow Diagrams, Electrical Fault Finding and Fitting Locations" binder



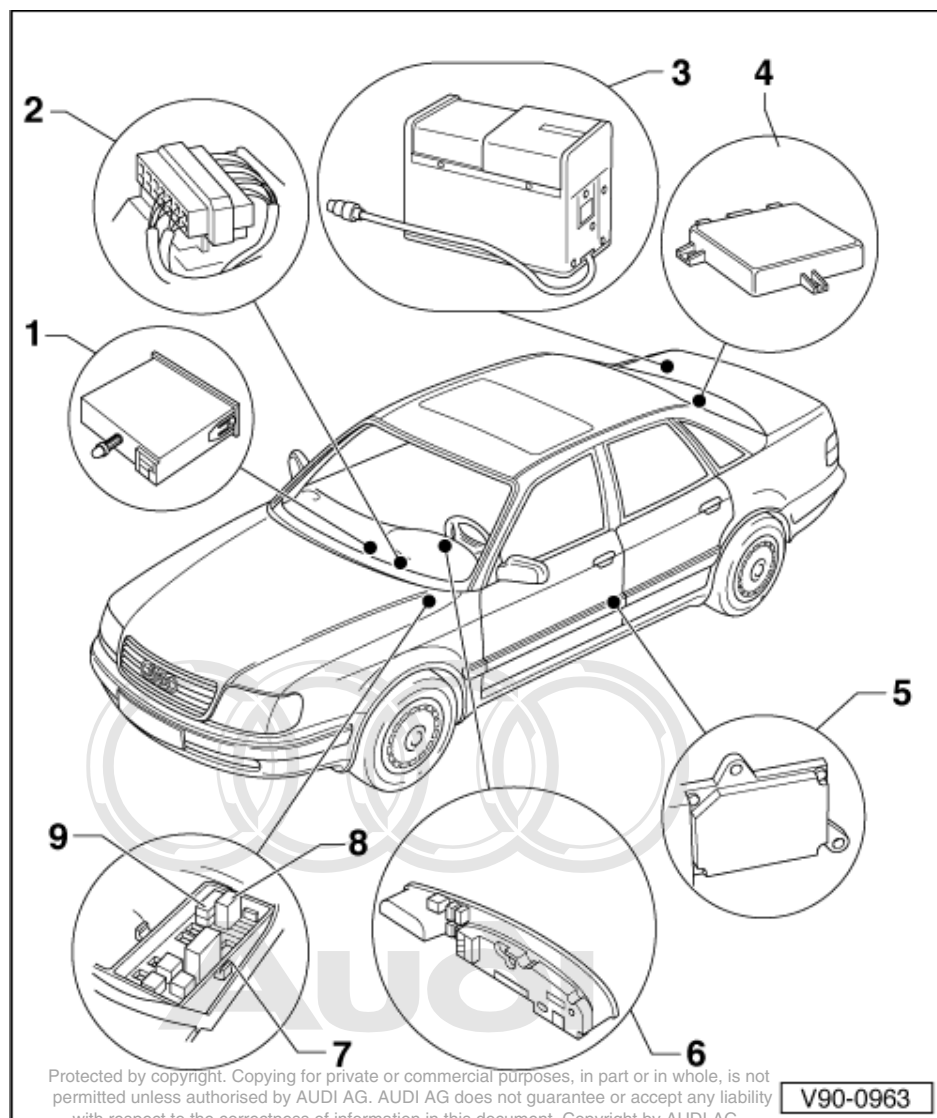
#### 9 Thermo fuse -S84 in fuse adapter -A4

- ◆ In auxiliary relay carrier I
  - ◆ Assignment
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=> "Current Flow Diagrams, Electrical Fault Finding and Fitting Locations" binder

- ◆ Opens in the event of overload and closes automatically after cooling
- ◆ Must be inserted as part of delivery inspection

### 1.3 - "Gamma CC Bose" radio with CD changer- General layout



#### 1 Radio -R

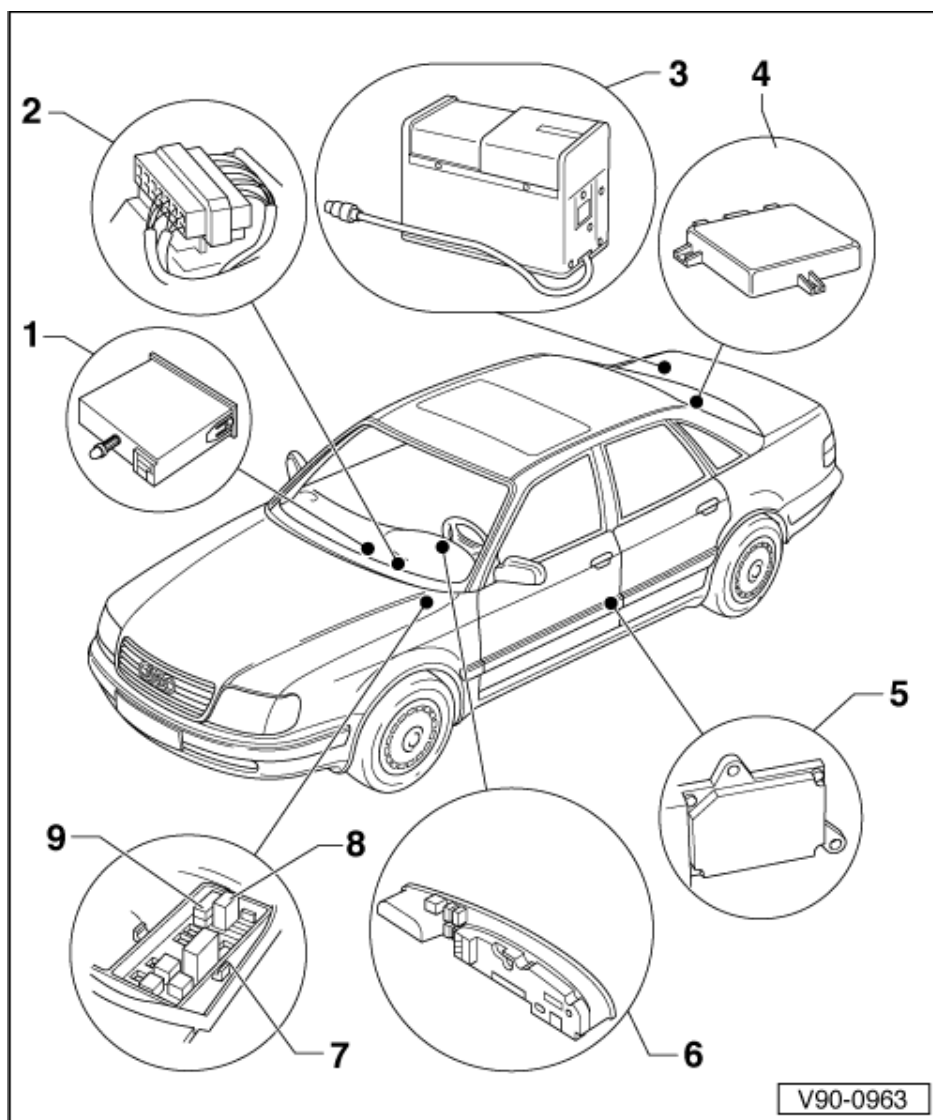
- ♦ Installed in centre console

#### 2 Connection unit III

- ♦ Location and layout of connection points => Page 228

#### 3 CD changer

- ♦ Location: Rear right-of luggage compartment
- ♦ Removing and installing => Page 85 onwards



- ♦ Only the CD changer wiring loom and the threaded bolts for attaching the mounting are available for CD changer preparation. The mounting, the converter (interface) and the CD changer should be installed as per the instructions

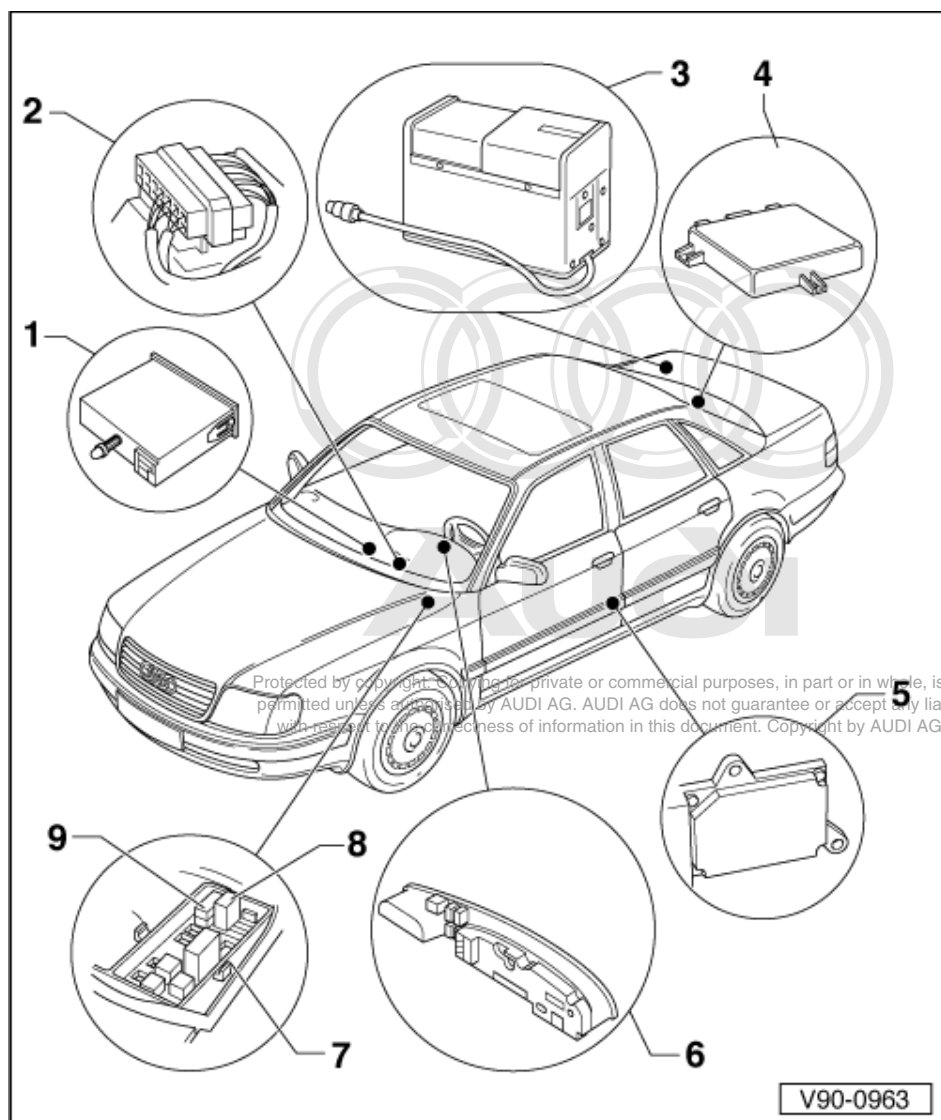
#### 4 Bose rear amplifier R12

- ♦ Location: In luggage compartment beneath rear shelf
- ♦ Removing and installing => Page 85

#### 5 Bose front amplifier

- ♦ Installed at bottom of driver and passenger side doors in bass reflex speaker
- ♦ Only to be replaced in conjunction with front loudspeaker and bass reflex box

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#### 6 Dash panel insert

- ◆ Obtaining speed signal for radios with GALA
- ◆ Removing and installation/assignment of contacts at dash panel insert multipin connectors =>Page 41 on wards

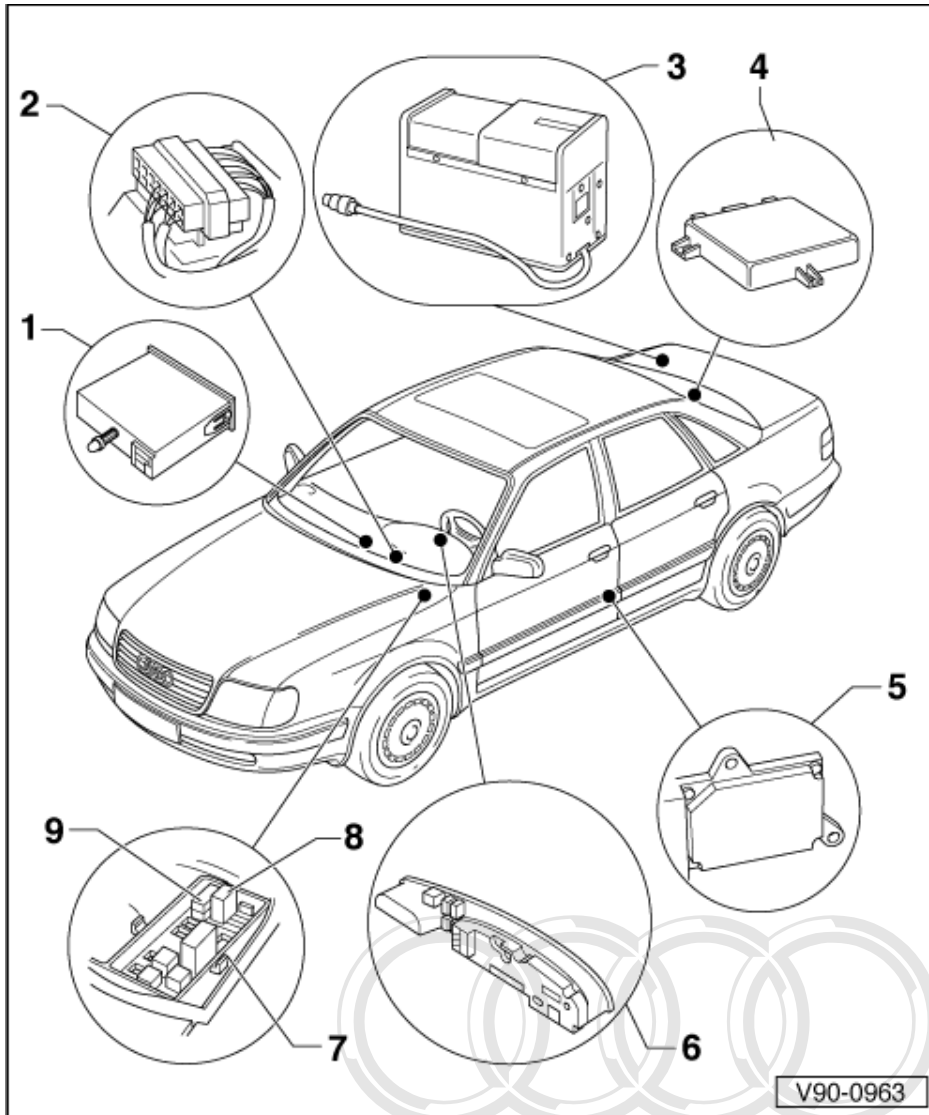
#### 7 Auxiliary relay carrier I

- ◆ Location: => Fig. 214

#### 8 Loudspeaker current supply relay -J225

- ◆ Installed in auxiliary relay carrier
- ◆ Assignment

=> "Current Flow Diagrams, Electrical Fault Finding and Fitting Locations" binder



#### 9 Thermo fuse -S84 in fuse adapter -A4

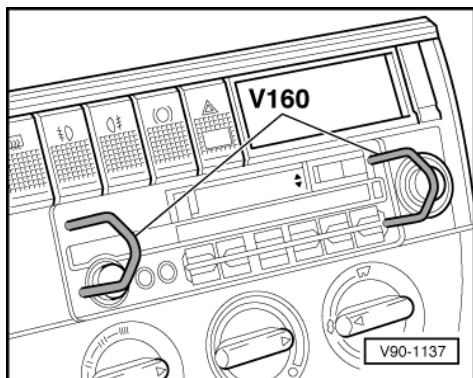
- ◆ In auxiliary relay carrier I
- ◆ Assignment

=> "Current Flow Diagrams, Electrical Fault Finding and Fitting Locations" binder

- ◆ Opens in event of overload and closes automatically after cooling
- ◆ Must be inserted when delivery inspection takes place

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## 1.4 - Removing and installing radio > 05.94



### Note:

Check that the code is present in radios with anti-theft coding.

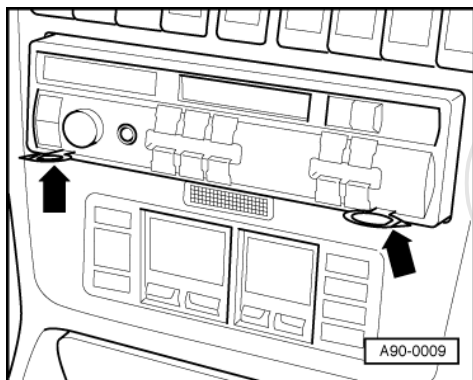
### Removal

- -> Insert the two V160 release clips into front of radio, as shown in the illustration.
- Pull radio out of centre console by pushing the release clips outwards,
- Remove the connector.

### Installing

- Pull the two release clips out of the radio.
- Plug in the connector.
- Carefully slide radio into centre console until rubber buffer makes contact with mounting at rear.

## 1.5 - Removing and installing radio 06.94 ä



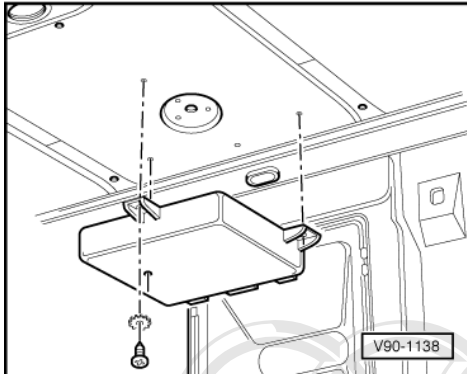
### Note:

Check for presence of anti-theft code.

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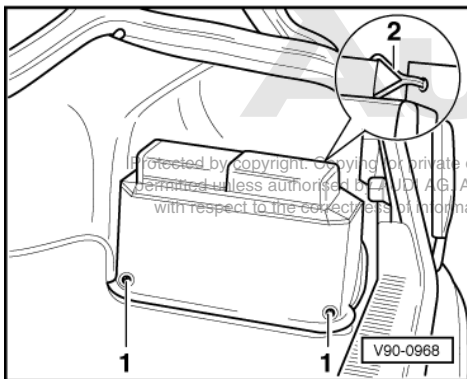
- -> Insert release tool 3344 into front of radio, as shown in the illustration.
  - Top L - top left
  - Top R - top right
- Extract radio together with release tool

## 1.6 - Removing and installing Bose rear amplifier

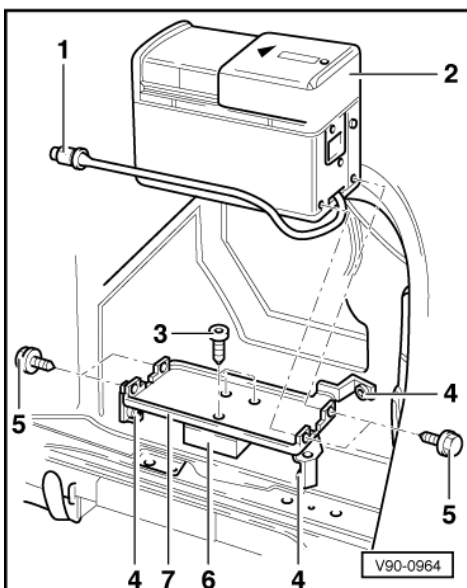


- -> Remove self-tapping screws from luggage compartment.
- Remove the connector.

## 1.7 - Removing and installing CD changer



- -> Unscrew screws -1- from cover.
- Detach fastening strap -2- hook
- Push apart the cover behind the CD changer and detach towards the front.

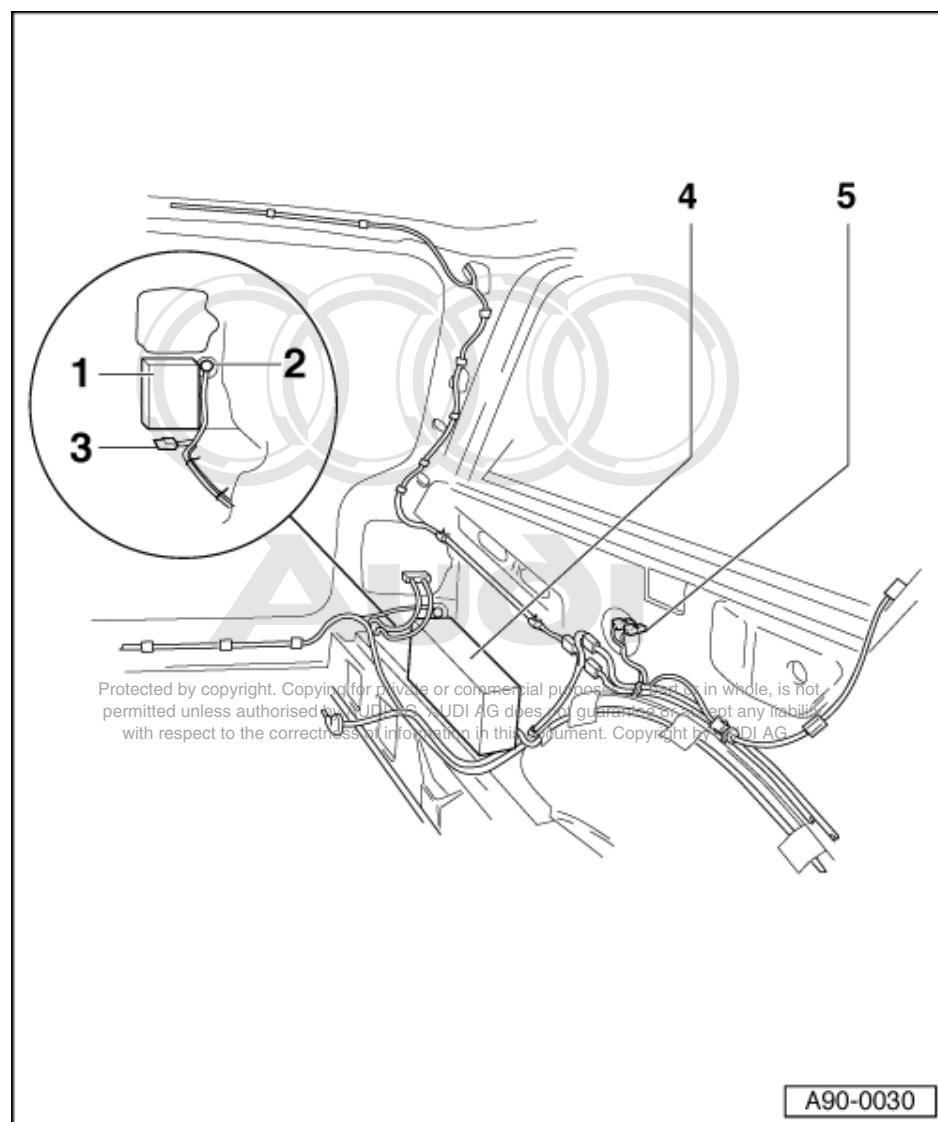


- -> Remove securing nuts -4-, pull mounting -7- and CD changer -2- from threaded bolt and turn it round.
- Pull connector from wiring loom and connector -1- from converter (interface) -6-
- Remove screws -5- and remove CD changer from carrier -7-.

- Remove screws -3- and remove changer -7- from mounting.

**Note:**

*Ensure that the converter housing is not connected to the vehicle earth.*

**1.8 - Removing and installing CD changer, Avant 06.94 ä****Note:**

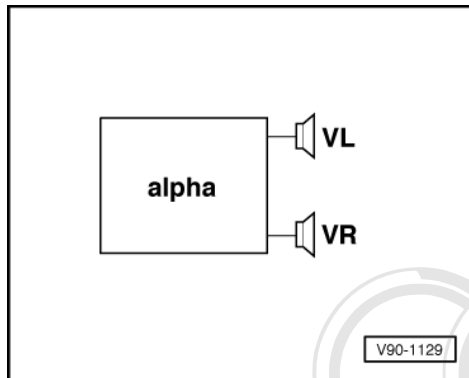
*The CD changer is in rear left of the luggage compartment.*

- 1 Telephone transmit/receive unit.
- 2 Earth connection
- 3 Fastener
- 4 CD changer for Bose sound system
- 5 Connector for anti-theft alarm horn

## 2 - Design of car radio systems

### 2.1 - Design of car radio systems

#### 2.2 - "Alpha" radio > 05.94

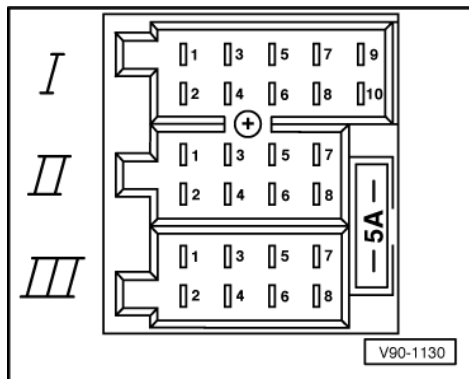


- Front loudspeaker systems - passive

-> Wide-band loudspeakers, front right and left

- ♦ Installed in bottom of front doors.

| Technical data                 |               |
|--------------------------------|---------------|
| Nominal power PN               | 15 Watts      |
| Music power PM                 | 25 Watts      |
| Nominal impedance ZN           | 4 Ω           |
| Frequency (transmission range) | 60 - 17000 Hz |



#### Assignment of multipin connectors I, II and III on back of radio

- ♦ -> Multipin connector I, 10-pin, red

Not connected/used

- ♦ Multipin connector II, 8-pin, brown

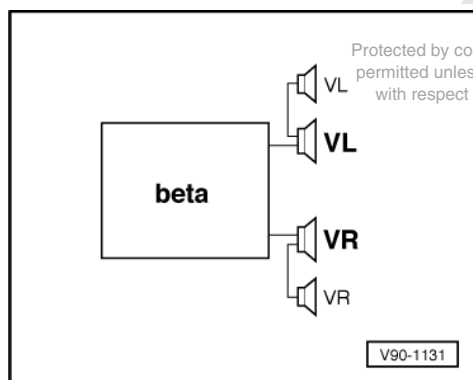
|       |                            |
|-------|----------------------------|
| Pin 3 | Loudspeaker +, front right |
| Pin 4 | Loudspeaker -, front right |
| Pin 5 | Loudspeaker +, front left  |

|       |                           |
|-------|---------------------------|
| Pin 6 | Loudspeaker -, front left |
|-------|---------------------------|

- ♦ Multipin connector III, 8-pin, black

|       |                                                                                                                    |
|-------|--------------------------------------------------------------------------------------------------------------------|
| Pin 5 | Switched positive for aerial with electronic amplifier/electronic power aerial/window aerial with aerial amplifier |
| Pin 6 | Lighting (term.58d)                                                                                                |
| Pin 7 | Battery + (term.30)                                                                                                |
| Pin 8 | Battery - (term.31)                                                                                                |

## 2.3 - "Beta CC" radio > 05.94



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- Front loudspeaker systems - passive

-> Bass loudspeaker, front right and left

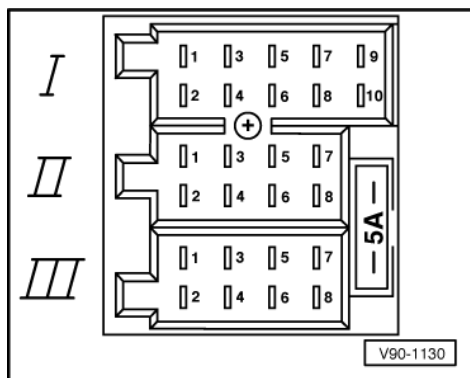
- ♦ Installed in bass reflex box in bottom of door

| Technical data                 |                |
|--------------------------------|----------------|
| Nominal power PN               | 20 Watts       |
| Music power PM                 | 25 Watts       |
| Nominal impedance ZN           | 4 $\omega$     |
| Frequency (transmission range) | 50 ... 8000 Hz |

### Front right and left mid-range/treble loudspeakers

- ♦ Installed in upper door trim, connected to bass loudspeaker in bass reflex box.

| Technical data                 |                   |
|--------------------------------|-------------------|
| Nominal power PN               | 25 Watts          |
| Nominal impedance ZN           | 4 $\omega$        |
| Frequency (transmission range) | 2000 ... 16000 Hz |



#### Assignment of multipin connectors I, II and III on the rear of the radio

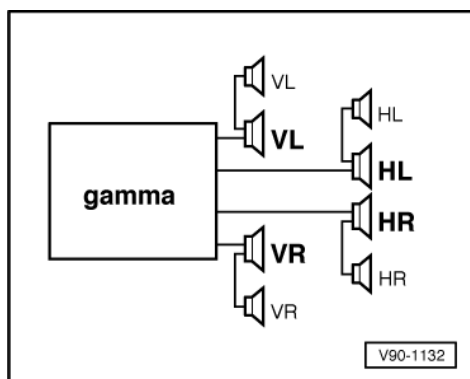
- ♦ -> Multipin connector I, 10-pin, red  
Not connected/used
- ♦ Multipin connector II, 8-pin, brown

|       |                            |
|-------|----------------------------|
| Pin 3 | Loudspeaker +, front right |
| Pin 4 | Loudspeaker -, front right |
| Pin 5 | Loudspeaker +, front left  |
| Pin 6 | Loudspeaker -, front left  |

- ♦ Multipin connector III, 8-pin, black

|       |                                                                                                                    |
|-------|--------------------------------------------------------------------------------------------------------------------|
| Pin 5 | Switched positive for aerial with electronic amplifier/electronic power aerial/window aerial with aerial amplifier |
| Pin 6 | Lighting (term.58d)                                                                                                |
| Pin 7 | Battery + (term.30)                                                                                                |
| Pin 8 | Battery - (term.31)                                                                                                |

#### 2.4 - "Gamma CC" radio > 05.94



- Front loudspeaker systems - passive
- Rear loudspeaker systems - active

-> Bass loudspeaker, front right and left

- ♦ Installed in bass reflex box in bottom of door



| Technical data                 |                |
|--------------------------------|----------------|
| Nominal power PN               | 20 Watts       |
| Music power PM                 | 25 Watts       |
| Nominal impedance ZN           | 4 $\omega$     |
| Frequency (transmission range) | 50 ... 8000 Hz |

#### Mid-range/treble loudspeakers, front left and right

- ♦ Installed in upper door trim, connected to bass loudspeaker in bass reflex box.

| Technical data                 |                   |
|--------------------------------|-------------------|
| Nominal power PN               | 25 Watts          |
| Nominal impedance ZN           | 4 $\omega$        |
| Frequency (transmission range) | 2000 ... 16000 Hz |

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#### Mid-range/bass and mid-range/treble loudspeakers, rear right and left

##### *Note:*

- ♦ Active loudspeakers are supplied with integrated amplifier.
- ♦ Amplifier, mid-range/bass and mid-range/treble loudspeakers form a single unit and can only be replaced as an entire assembly. These loudspeakers can only be used with the "gamma CC" radio.

#### Mid-range/bass loudspeaker

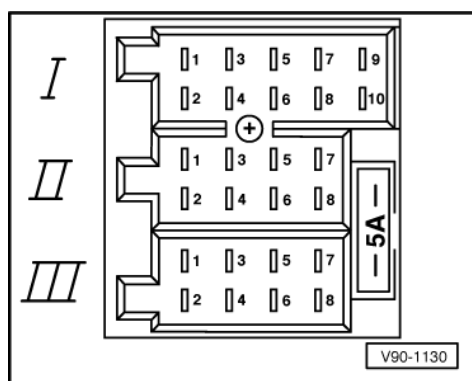
- ♦ Installed in rear shelf

| Technical data                 |                 |
|--------------------------------|-----------------|
| Nominal power PN               | 20 Watts        |
| Music power PM                 | 25 Watts        |
| Nominal impedance ZN           | 3 $\omega$      |
| Frequency (transmission range) | 60 ... 16000 Hz |

#### Mid-range/treble loudspeaker

- ♦ Connected to the mid-range/bass loudspeaker in the rear shelf

| Technical data                 |                   |
|--------------------------------|-------------------|
| Music power PM                 | 25 Watts          |
| Nominal impedance ZN           | 4 $\omega$        |
| Frequency (transmission range) | 2000 ... 16000 Hz |



### Assignment of multipin connectors I, II and III on back of radio

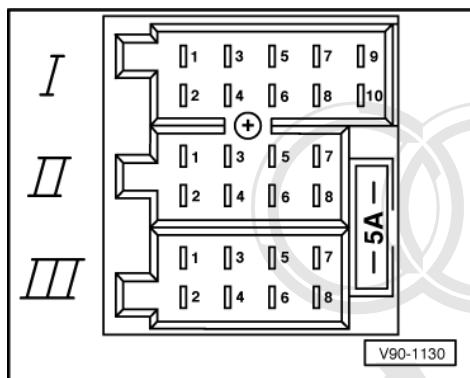
- ◆ -> Multipin connector I, 10-pin, red

|        |                              |
|--------|------------------------------|
| Pin 1  | Data 1)                      |
| Pin 2  | Clock 1)                     |
| Pin 3  | Enable 1)                    |
| Pin 5  | Earth                        |
| Pin 8  | Low frequency, rear right 2) |
| Pin 10 | Low frequency, rear left 2)  |

- 1) Only for 2nd display with auto-check system
- 2) Only for rear active loudspeaker

- ◆ Multipin connector II, 8-pin, brown

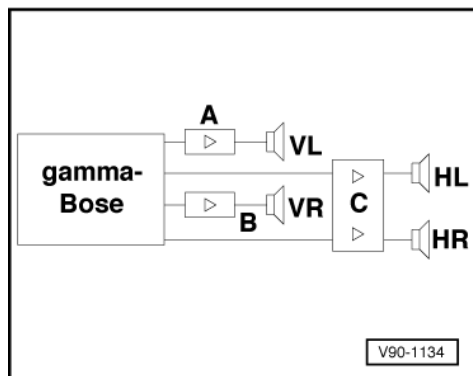
|       |                                  |
|-------|----------------------------------|
| Pin 3 | Front right loudspeaker, passive |
| Pin 4 | Front right loudspeaker, passive |
| Pin 5 | Front left loudspeaker, passive  |
| Pin 6 | Front left loudspeaker, passive  |



- ◆ -> Multipin connector III, 8-pin, black

|       |                                                                                                                    |
|-------|--------------------------------------------------------------------------------------------------------------------|
| Pin 1 | GALA (speed signal)                                                                                                |
| Pin 5 | Switched positive for aerial with electronic amplifier/electronic power aerial/window aerial with aerial amplifier |
| Pin 6 | Lighting (term.58d)                                                                                                |
| Pin 7 | Battery + (term.30)                                                                                                |
| Pin 8 | Battery - (term.31)                                                                                                |

## 2.5 - "Gamma CC Bose" radio > 05.94



- Active front and rear loudspeaker systems

A - -> Front left amplifier (installed in bass reflex box in front door).  
A - Front right amplifier (installed in bass reflex box in front door).  
C - Rear amplifier (installed in luggage compartment, below rear shelf)

### **Note:**

*Bass reflex box, amplifier and front loudspeaker form a single unit and can only be replaced as an entire assembly*

### **Bose loudspeakers, front right and left**

- ♦ Installed in bottom of door.

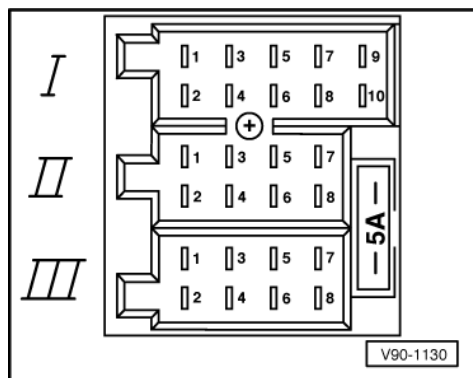
| Technical data                 |                 |
|--------------------------------|-----------------|
| Music power PM                 | 50 Watts        |
| Nominal impedance ZN           | 1 $\omega$      |
| Frequency (transmission range) | 60 ... 15000 Hz |

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### **Bose loudspeakers, rear right and left**

- ♦ Installed in upper door trim. Connected to bass loudspeaker in bass reflex box.

| Technical data                 |                 |
|--------------------------------|-----------------|
| Music power PM                 | 25 Watts        |
| Nominal impedance ZN           | 1 $\omega$      |
| Frequency (transmission range) | 40 ... 10000 Hz |



## Assignment of multipin connectors I, II and III on back of radio

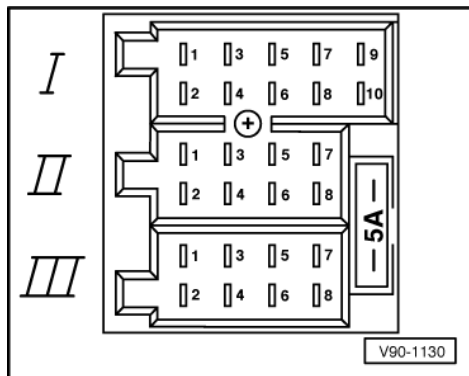
### Note:

*The entire connection block on the rear of the radio is red.*

- ◆ -> Multipin connector I, 10-pin, red

|        |                               |
|--------|-------------------------------|
| Pin 1  | Data 1)                       |
| Pin 2  | Clock 1)                      |
| Pin 3  | Enable 1)                     |
| Pin 5  | Earth                         |
| Pin 7  | Low frequency, front right 2) |
| Pin 8  | Low frequency, rear right 2)  |
| Pin 9  | Low frequency, front left 2)  |
| Pin 10 | Low frequency, rear left 2)   |

- 1) Only for 2nd display with auto-check system
- 2) Only for Bose loudspeakers, front and rear (active)



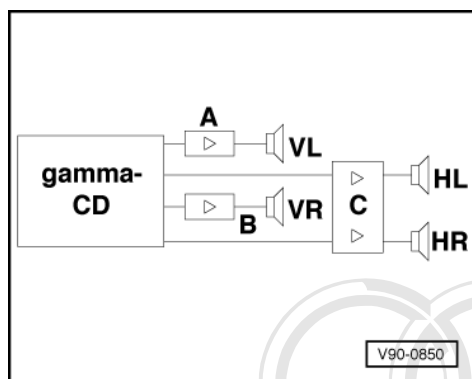
- ◆ -> Multipin connector II, 8-pin, brown

Not connected/used  
Required for operating a CD changer

- ◆ Multipin connector III, 8-pin, black

|       |                                                                                                                    |
|-------|--------------------------------------------------------------------------------------------------------------------|
| Pin 1 | GALA (speed signal)                                                                                                |
| Pin 5 | Switched positive for aerial with electronic amplifier/electronic power aerial/window aerial with aerial amplifier |
| Pin 6 | Lighting (term.58d)                                                                                                |
| Pin 7 | Battery + (term.30)                                                                                                |
| Pin 8 | Battery - (term.31)                                                                                                |

## 2.6 - "Gamma CD" radio ➤ 05.94



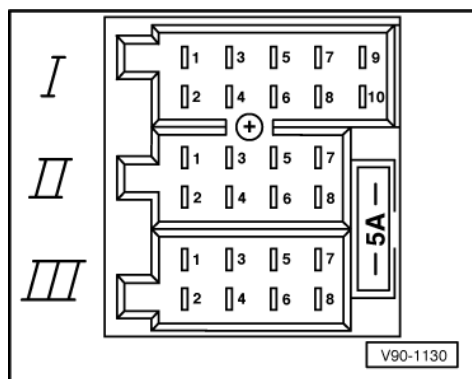
- Front and rear loudspeaker systems, active

- A - -> Front left amplifier (installed in bass reflex box in front door).
- A - Front right amplifier (installed in bass reflex box I front door).
- C - Rear amplifier (installed in luggage compartment, below rear shelf)

### Note:

- ♦ The system may only be used with the Bose loudspeaker system (front and rear).
- ♦ Bass reflex box, amplifier and front loudspeaker form a single unit and can only be replaced as an entire assembly
- ♦ Technical data => "gamma CC Bose" radio, Page 92

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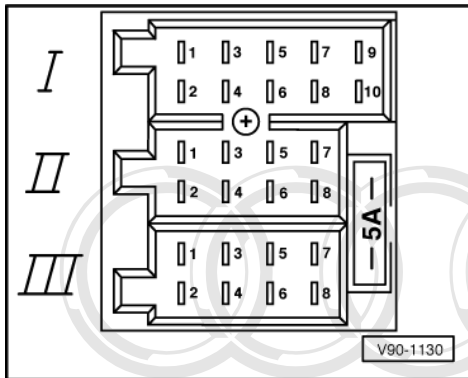


### Assignment of multipin connectors I, II and III on the rear of the radio

- ♦ -> Multipin connector I, 10-pin, red

|        |                               |
|--------|-------------------------------|
| Pin 1  | Data 1)                       |
| Pin 2  | Clock 1)                      |
| Pin 3  | Enable 1)                     |
| Pin 5  | earth                         |
| Pin 7  | Low frequency, front right 2) |
| Pin 8  | Low frequency, rear right 2)  |
| Pin 9  | Low frequency, front left 2)  |
| Pin 10 | Low frequency, rear left 2)   |

- 1) Only for 2nd display with auto-check system
- 2) Only for Bose loudspeakers, front and rear (active)



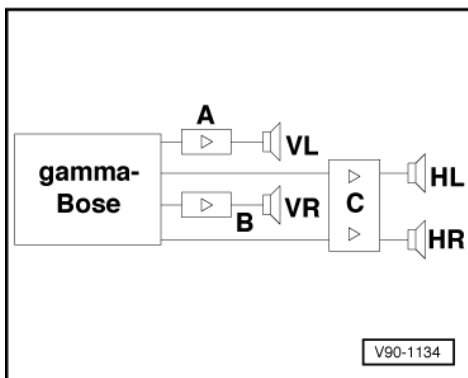
- ♦ -> Multipin connector II, 8-pin, brown

Not connected/used

- ♦ Multipin connector III, 8-pin, black

|       |                                                                                                                    |
|-------|--------------------------------------------------------------------------------------------------------------------|
| Pin 1 | GALA (speed signal)                                                                                                |
| Pin 5 | Switched positive for aerial with electronic amplifier/electronic power aerial/window aerial with aerial amplifier |
| Pin 6 | Lighting (term.58d)                                                                                                |
| Pin 7 | Battery + (term.30)                                                                                                |
| Pin 8 | Battery - (term.31)                                                                                                |

## 2.7 - "Gamma CC Bose" radio with CD changerä 05.94

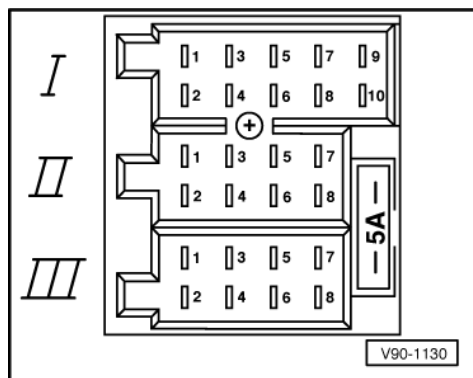


- Front and rear loudspeaker system, active

- A - -> Front left amplifier (installed in bass reflex box in front door).
- A - Front right amplifier (installed in bass reflex box in front door).
- C - Rear amplifier (installed in luggage compartment, below rear shelf)

### **Note:**

- ♦ Bass reflex box, amplifier and front loudspeaker form a single unit and can only be replaced as an entire assembly
- ♦ Technical data => "gamma CC Bose" radio, Page 92 .



### Assignment of multipin connectors I, II and III on back of radio

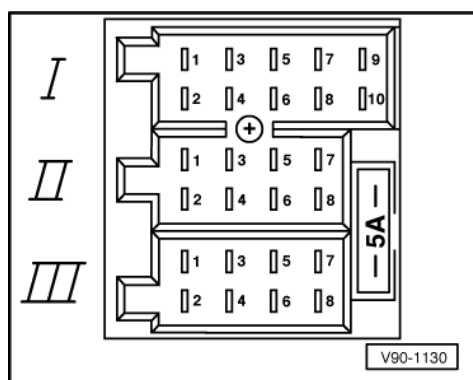
#### Note:

The entire connection block on the back of the radio is red.

- -> Multipin connector I, 10-pin, red

|        |                               |
|--------|-------------------------------|
| Pin 1  | Data 1)                       |
| Pin 2  | Clock 1)                      |
| Pin 3  | Enable 1)                     |
| Pin 5  | Earth                         |
| Pin 6  | LF mute for telephone system  |
| Pin 7  | Low frequency, front right 2) |
| Pin 8  | Low frequency, rear right 2)  |
| Pin 9  | Low frequency, front left 2)  |
| Pin 10 | Low frequency, rear left 2)   |

- 1) Only for 2nd display with auto-check system
- 2) Only for Bose loudspeakers, front and rear (active)



- -> Multipin connector II, 8-pin, brown

|       |                      |
|-------|----------------------|
| Pin 1 | Low frequency, right |
| Pin 2 | Low frequency, left  |
| Pin 3 | Low frequency, earth |
| Pin 4 | Earth                |
| Pin 5 | Switched positive    |
| Pin 6 | Battery + (term.30)  |
| Pin 7 | Data lead            |



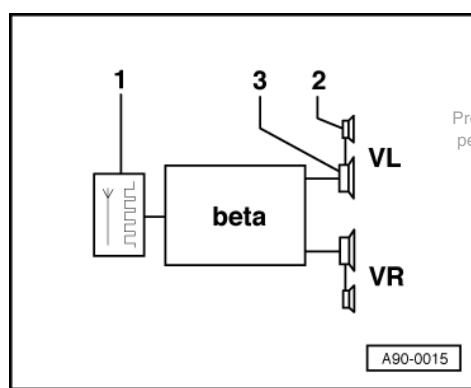
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|       |           |
|-------|-----------|
| Pin 8 | Data lead |
|-------|-----------|

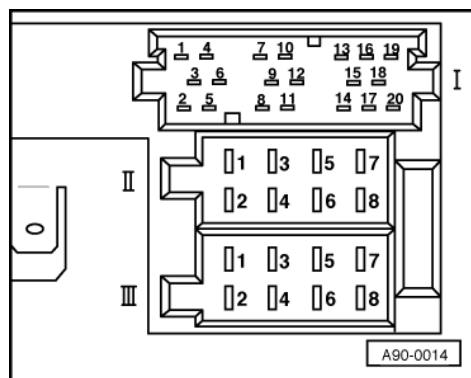
- ◆ Multipin connector III, 8-pin, black

|       |                                                                                                                    |
|-------|--------------------------------------------------------------------------------------------------------------------|
| Pin 1 | GALA (speed signal)                                                                                                |
| Pin 2 | Battery - (term.31)                                                                                                |
| Pin 5 | Switched positive for aerial with electronic amplifier/electronic power aerial/window aerial with aerial amplifier |
| Pin 6 | Lighting (term.58d)                                                                                                |
| Pin 7 | Battery + (term.30)                                                                                                |
| Pin 8 | Battery - (term.31)                                                                                                |

## 2.8 - "Beta" radio 06.94 ä



- 1 - -> Rear window aerial
- 2 - Mid-range/treble loudspeaker (installed at front in top of door trim)
- 3 - Bass loudspeakers (installed in front in bottom of door trim)



### Assignment of multipin connectors I, II and III on back of radio

- ◆ -> Multipin connector I, 20-pin

Not used

- ◆ Multipin connector II, 8-pin, brown

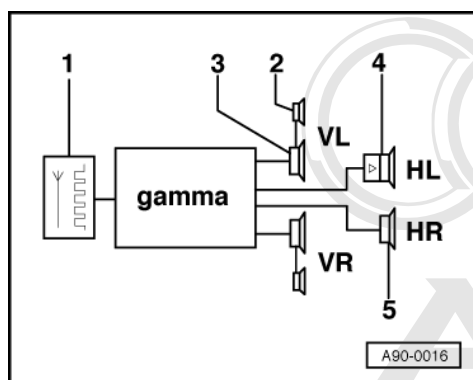
|       |                            |
|-------|----------------------------|
| Pin 3 | Loudspeaker +, front right |
| Pin 4 | Loudspeaker -, front right |
| Pin 5 | Loudspeaker +, front left  |

|       |                           |
|-------|---------------------------|
| Pin 6 | Loudspeaker -, front left |
|-------|---------------------------|

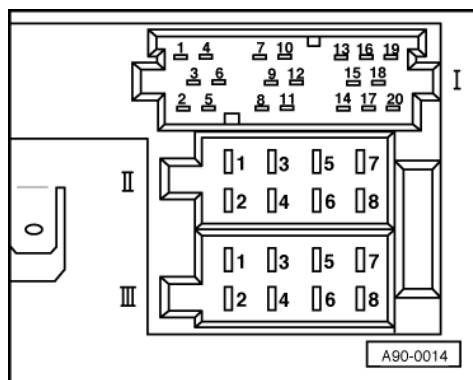
- ♦ Multipin connector III, 8-pin, black

|       |                             |
|-------|-----------------------------|
| Pin 2 | NF mute circuit             |
| Pin 4 | Terminal 86s                |
| Pin 5 | Control positive for aerial |
| Pin 6 | Lighting                    |
| Pin 7 | Terminal 30                 |
| Pin 8 | Terminal 31                 |

## 2.9 - "Gamma" radio 06.94 ä



- 1 -> Rear window aerial
- 2 - Mid-range/treble loudspeakers (installed at front in top of door trim)
- 3 - Bass loudspeaker (installed at front in bottom of door trim)
- 4 - Active wide-band loudspeaker with twin amplifier (installed at rear left, in rear shelf)
- 5 - Passive wide-band loudspeaker (installed at rear right in rear shelf)

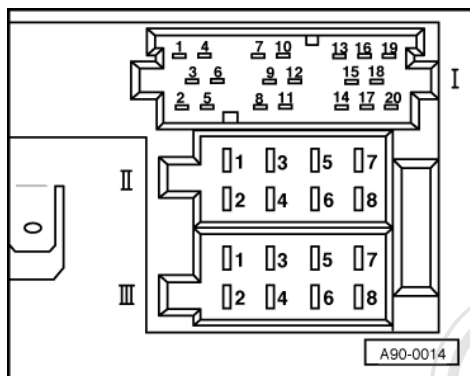


### Assignment of multipin connectors I, II and III on the rear of the radio

- ♦ -> Multipin connector I, 20-pin

|       |                          |
|-------|--------------------------|
| Pin 1 | Rear left line           |
| Pin 2 | Rear right line          |
| Pin 3 | Earth line               |
| Pin 6 | Loudspeaker control plus |
| Pin 8 | Clock                    |
| Pin 9 | Data                     |

|        |        |
|--------|--------|
| Pin 10 | Enable |
|--------|--------|



- ♦ -> Multipin connector II, 8-pin, brown

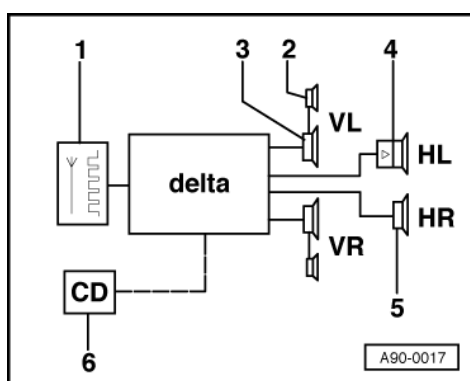
|       |                            |
|-------|----------------------------|
| Pin 3 | Loudspeaker +, front right |
| Pin 4 | Loudspeaker -, front right |
| Pin 5 | Loudspeaker +, front left  |
| Pin 6 | Loudspeaker -, front left  |

- ♦ Multipin connector III, 8-pin, black

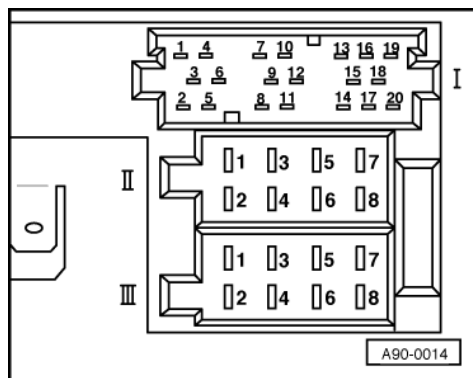
|       |                             |
|-------|-----------------------------|
| Pin 1 | Speed transducer            |
| Pin 2 | NF mute circuit             |
| Pin 3 | Terminal 30                 |
| Pin 4 | Terminal 86s                |
| Pin 5 | Control positive for aerial |
| Pin 6 | Lighting                    |
| Pin 7 | Terminal 30                 |
| Pin 8 | Terminal 31                 |

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## 2.10 - "Delta" radio 06.94 ä



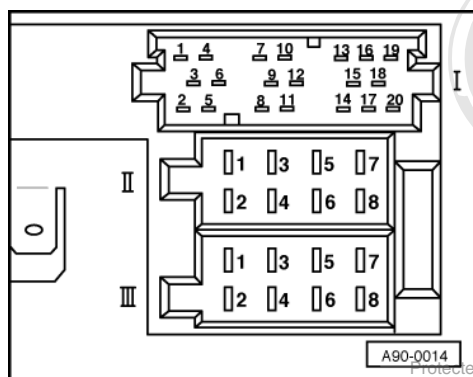
- 1 - -> Rear window aerial
- 2 - Mid-range/treble loudspeaker (installed at front in top of door trim)
- 3 - Bass loudspeaker (installed at front in bottom of door trim)
- 4 - Active wide-band loudspeaker, with twin amplifier (installed at rear left in rear shelf)
- 5 - Passive wide-band loudspeaker (installed at rear right in rear shelf)
- 6 - CD changer (optional) in luggage compartment



### Assignment of multipin connectors I, II and III on back of radio

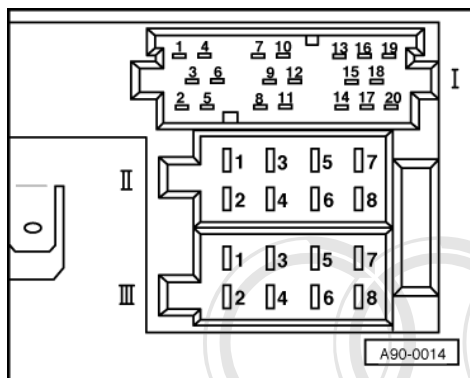
- -> Multipin connector I, 20-pin

|       |                            |
|-------|----------------------------|
| Pin 1 | Rear left line             |
| Pin 2 | Rear right line            |
| Pin 3 | Earth line                 |
| Pin 4 | Front left line, not used  |
| Pin 5 | Front right line, not used |
| Pin 6 | Loudspeaker control plus   |
| Pin 7 | Bose coding, not used      |



- -> Multipin connector I, 20-pin (continued)

|        |                               |
|--------|-------------------------------|
| Pin 8  | Clock                         |
| Pin 9  | Data                          |
| Pin 10 | Enable                        |
| Pin 11 | Steering wheel remote control |
| Pin 12 | USA coding                    |
| Pin 13 | SDA (CD changer)              |
| Pin 14 | SCL (CD changer)              |
| Pin 15 | Earth (CD changer)            |
| Pin 16 | Power supply (CD changer)     |
| Pin 17 | Control positive (CD changer) |
| Pin 18 | LF earth (CD changer)         |
| Pin 19 | LF left                       |
| Pin 20 | LF right                      |



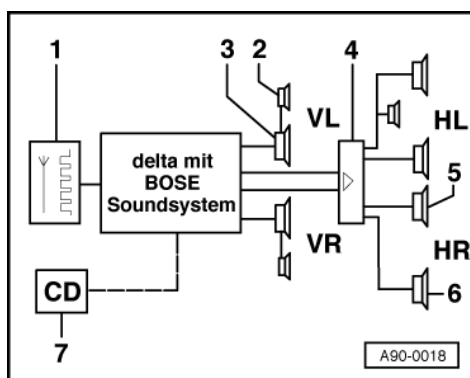
♦ -> Multipin connector II, 8-pin, brown

|       |                            |
|-------|----------------------------|
| Pin 3 | Loudspeaker +, front right |
| Pin 4 | Loudspeaker -, front right |
| Pin 5 | Loudspeaker +, front left  |
| Pin 6 | Loudspeaker -, front left  |

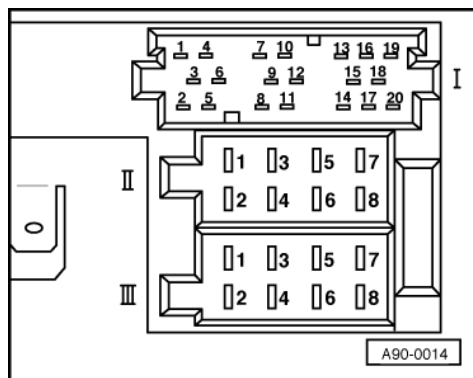
♦ Multipin connector III, 8-pin, black

|       |                             |
|-------|-----------------------------|
| Pin 1 | Speed transducer            |
| Pin 2 | LF mute                     |
| Pin 3 | Terminal 30                 |
| Pin 4 | Terminal 86s                |
| Pin 5 | Control positive for aerial |
| Pin 6 | Lighting                    |
| Pin 7 | Terminal 30                 |
| Pin 8 | Terminal 31                 |

## 2.11 - "Delta Bose" radio 06.94 ä



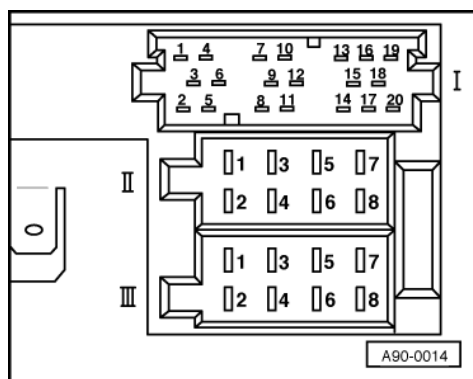
- 1 - -> Rear window aerial
- 2 - Mid-range/treble loudspeaker (installed at front in top of door trim)
- 3 - Bass loudspeaker (installed at front in bottom of door trim)
- 4 - Bose sound amplifier in luggage compartment
- 5 - Bass loudspeaker (installed in rear shelf)
- 6 - Mid-range/treble loudspeaker (installed at rear in bottom of door trim)
- 7 - CD changer (optional) in luggage compartment



### Assignment of multipin connectors I, II and III on the rear of the radio

- -> Multipin connector I, 20-pin

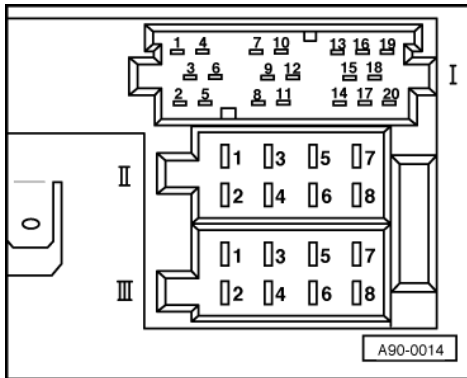
|       |                          |
|-------|--------------------------|
| Pin 1 | Rear left line           |
| Pin 2 | Rear right line          |
| Pin 3 | Earth line               |
| Pin 4 | Line out, front left     |
| Pin 5 | Line out, front right    |
| Pin 6 | Loudspeaker control plus |
| Pin 7 | Bose identification      |



- -> Multipin connector I, 20-pin (continued)

|        |                               |
|--------|-------------------------------|
| Pin 8  | Clock                         |
| Pin 9  | Data                          |
| Pin 10 | Enable                        |
| Pin 11 | Steering wheel remote control |
| Pin 12 | USA coding                    |
| Pin 13 | SDA (CD changer)              |
| Pin 14 | SCL (CD changer)              |
| Pin 15 | Earth (CD changer)            |
| Pin 16 | Power supply (CD changer)     |
| Pin 17 | Control positive (CD changer) |
| Pin 18 | LF earth (CD changer)         |
| Pin 19 | LF left                       |
| Pin 20 | LF right                      |

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- ◆ -> Multipin connector II, 8-pin, brown

Unallocated

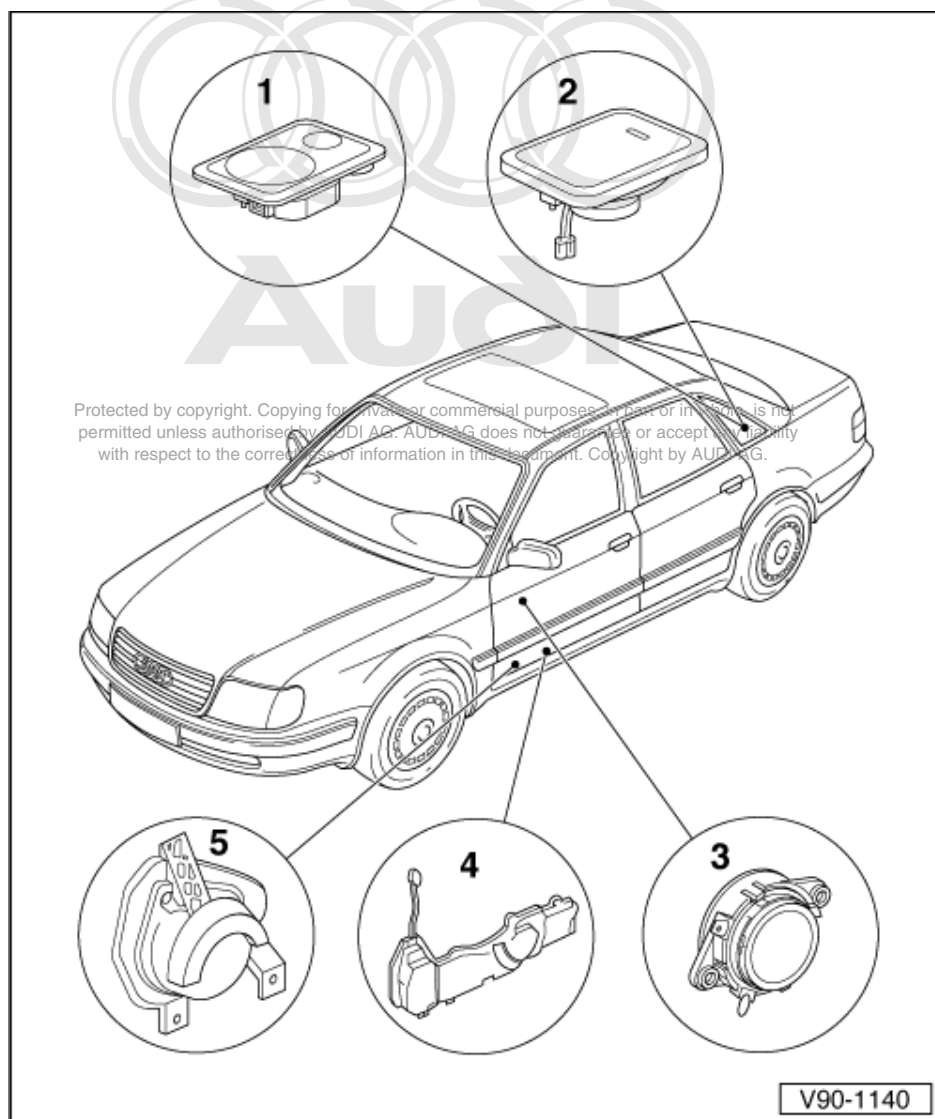
- ◆ Multipin connector III, 8-pin, black

|       |                             |
|-------|-----------------------------|
| Pin 1 | Speed transducer            |
| Pin 2 | LF mute                     |
| Pin 3 | Terminal 30                 |
| Pin 4 | Terminal 86s                |
| Pin 5 | Control positive for aerial |
| Pin 6 | Lighting                    |
| Pin 7 | Terminal 30                 |
| Pin 8 | Terminal 31                 |

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### 3 - Loudspeaker systems - general layout

#### 3.1 - Loudspeaker systems - general layout

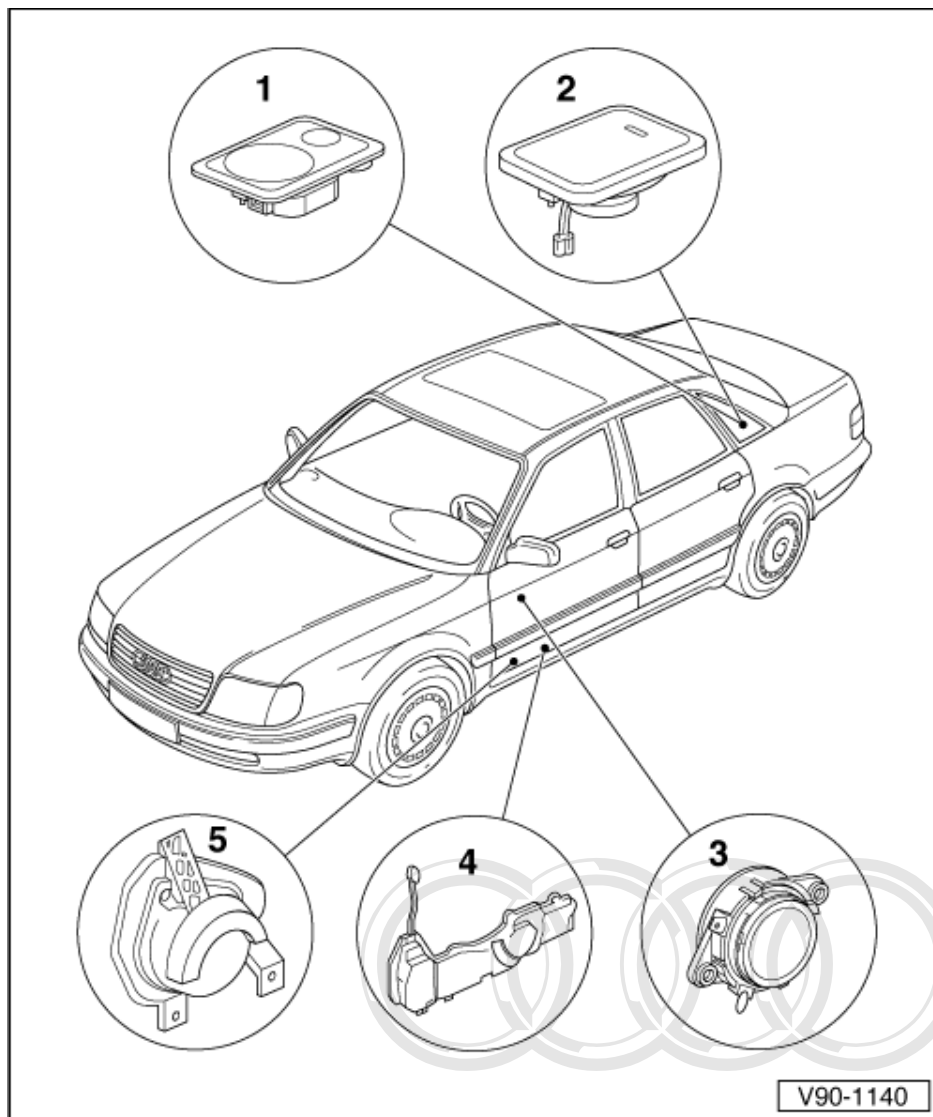


**Note:**

Technical data for the individual loudspeakers =>Page 87 onwards.

#### 1 Rear loudspeaker, passive or active

- ◆ Mid-range/bass loudspeaker with mid-range/treble loudspeaker (both passive) for export and radio preparation only.
- ◆ Mid-range/bass loudspeaker with mid-range/treble loudspeaker (both active) for "Gamma CC" radio only (Germany)
- ◆ Removing and installing =>Fig. 1
- ◆ The two loudspeakers, housing and amplifier can only be replaced as a complete unit



## 2 Bose rear loudspeaker (active)

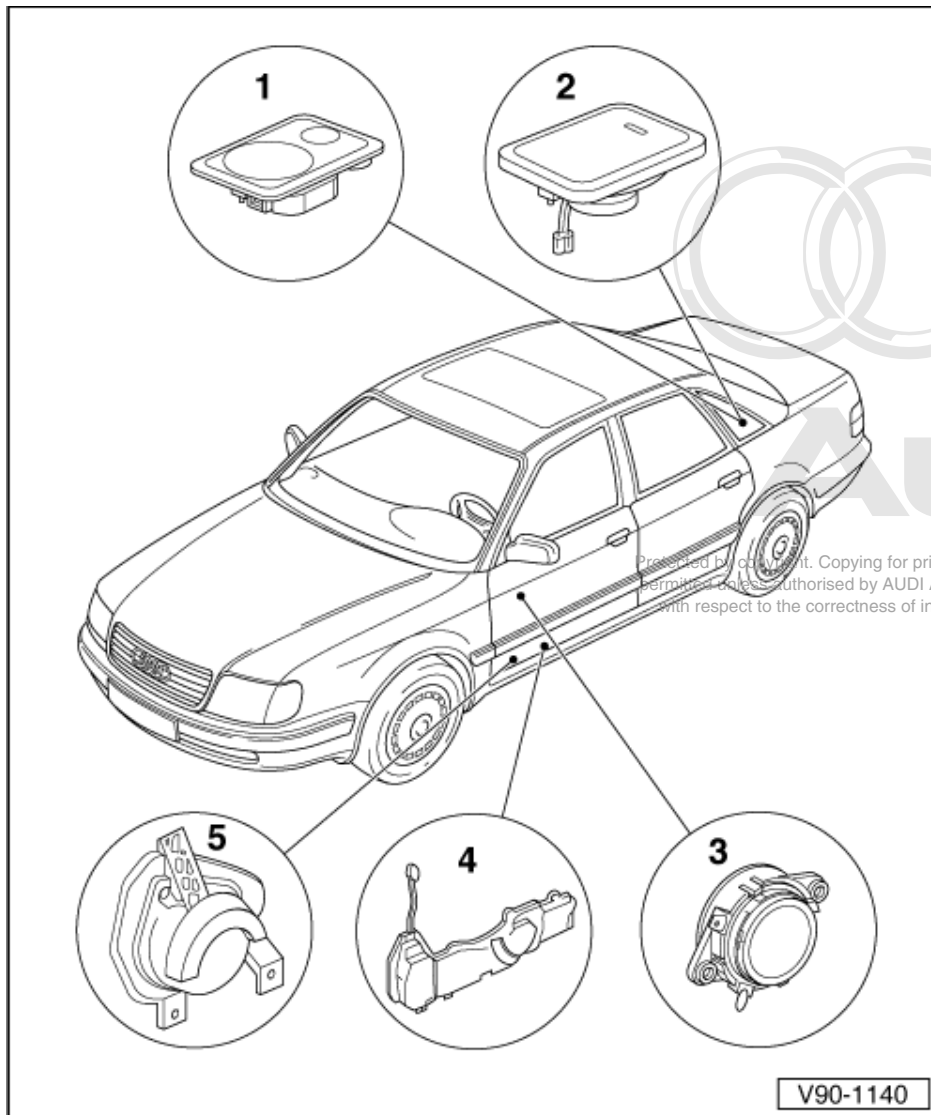
- ♦ For "gamma CC Bose" and "gamma CD" radios
- ♦ Removing and installing =>Fig. 1

## 3 Front mid-range/treble loudspeaker

- ♦ Connected to front bass loudspeaker
- ♦ For "beta CC" and "gamma CC" radios only
- ♦ Removing and installing =>Fig. 2

## 4 Bass reflex box (active or passive)

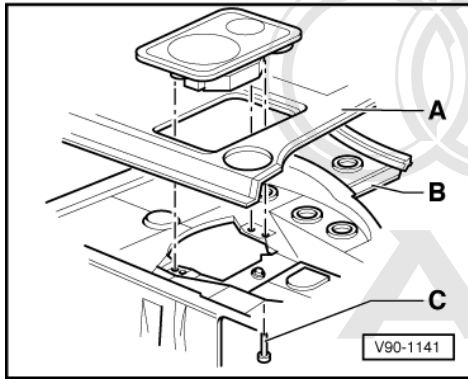
- ♦ Not for "alpha" radio
- ♦ Screwed to inside of door trim
- ♦ Removing and installing =>Fig. 2



- ◆ Used to house bass loudspeaker for the "beta CC" and "gamma CC" radios
- ◆ Used to house Bose loudspeaker including the separate amplifier for "gamma CC Bose" and "gamma CD" radios
- ◆ Removing and installing front loudspeaker trim => Fig. 3

##### 5 Loudspeaker adapter with wide-band loudspeaker

- ◆ For "alpha" radio only
- ◆ Removing and installing => Fig. 4
- ◆ Removing and installing front loudspeaker trim => Fig. 3

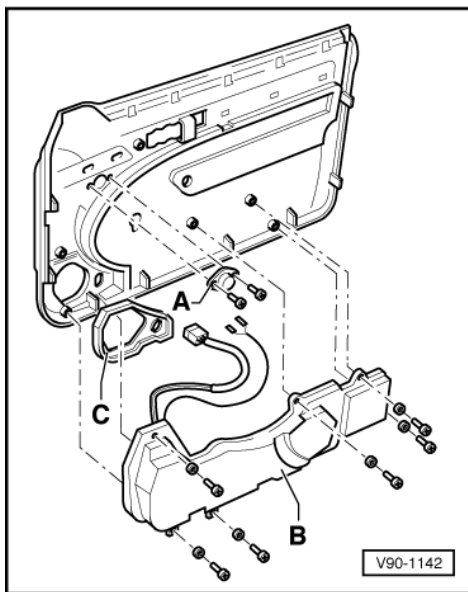


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-> Fig.1 Removing and installing rear loudspeaker

- Including Bose system
- Remove 3 self-tapping screws -C- in luggage compartment.
- Remove loudspeaker from rear shelf -A-
- Remove the connector.

B - Back wall of bodywork



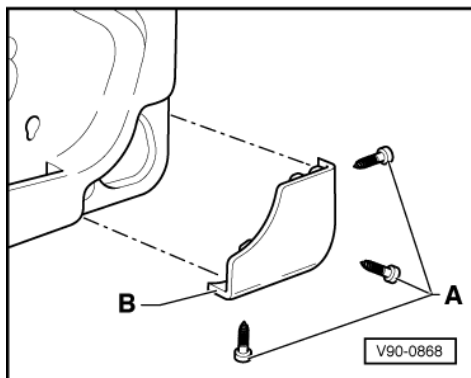
-> Fig.2 Removing and installing mid-range/treble loudspeaker or bass reflex box

- Not for "alpha" radio

**Note:**

*Bass reflex box must not be opened.*

- Remove door trim
- Remove the connector.
- Unscrew mid-range/treble loudspeaker -A- from door trim.
- Unscrew bass reflex box -B- from door trim.
- Remove seal -C-.

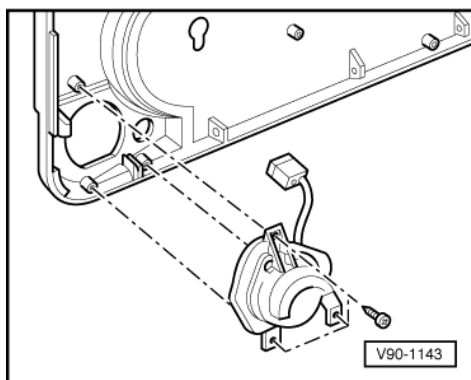


-> Fig.3 Removing and installing front loudspeaker trim

**Note:**

*Door trim does not have to be removed.*

- Remove loudspeaker trim screws -A-.
- Carefully prise off cover -B-.



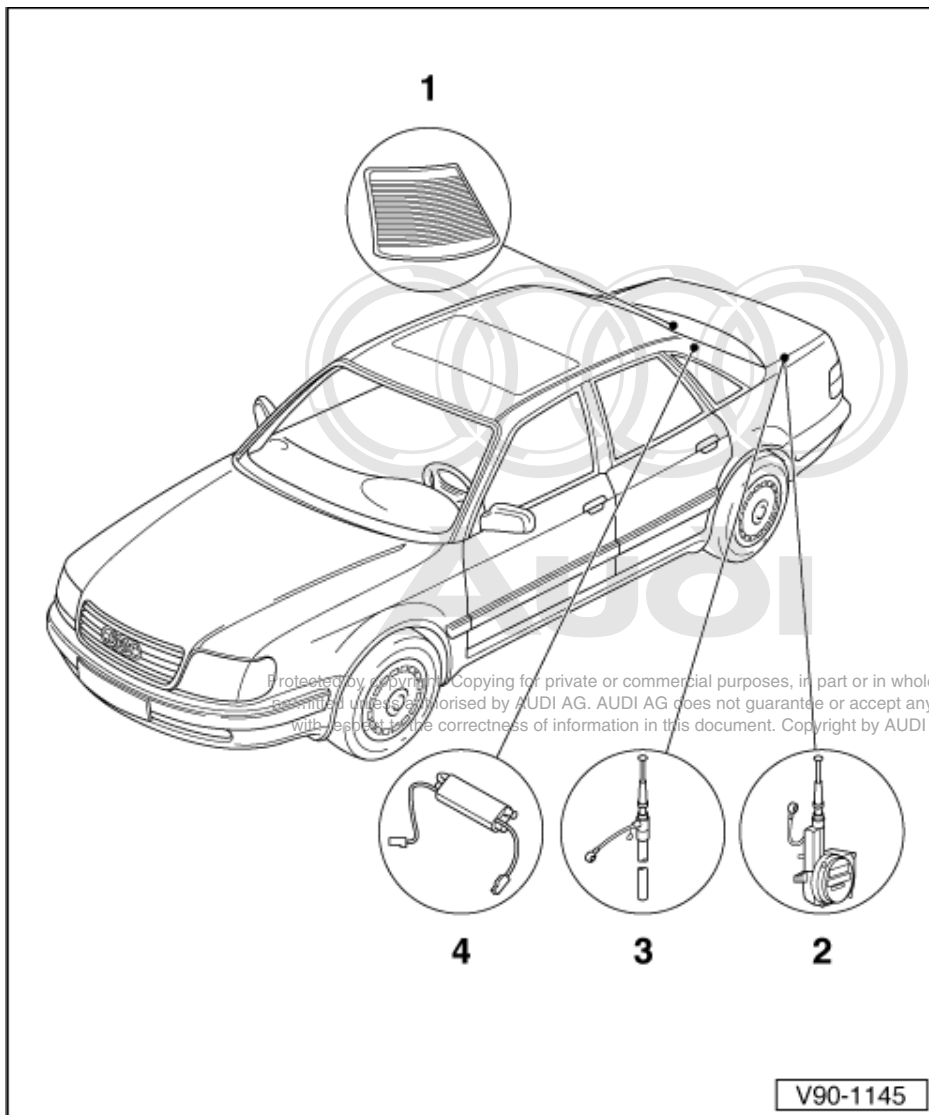
-> Fig.4 Installing and removing loudspeaker adapter with broadband loudspeaker

- For "alpha" radio only
- Remove door trim
- Remove loudspeaker adapter screws.
- Remove loudspeaker adapter with broadband loudspeaker
- Remove connector.

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## 4 - Aerial systems - general layout

### 4.1 - Aerial systems - general layout



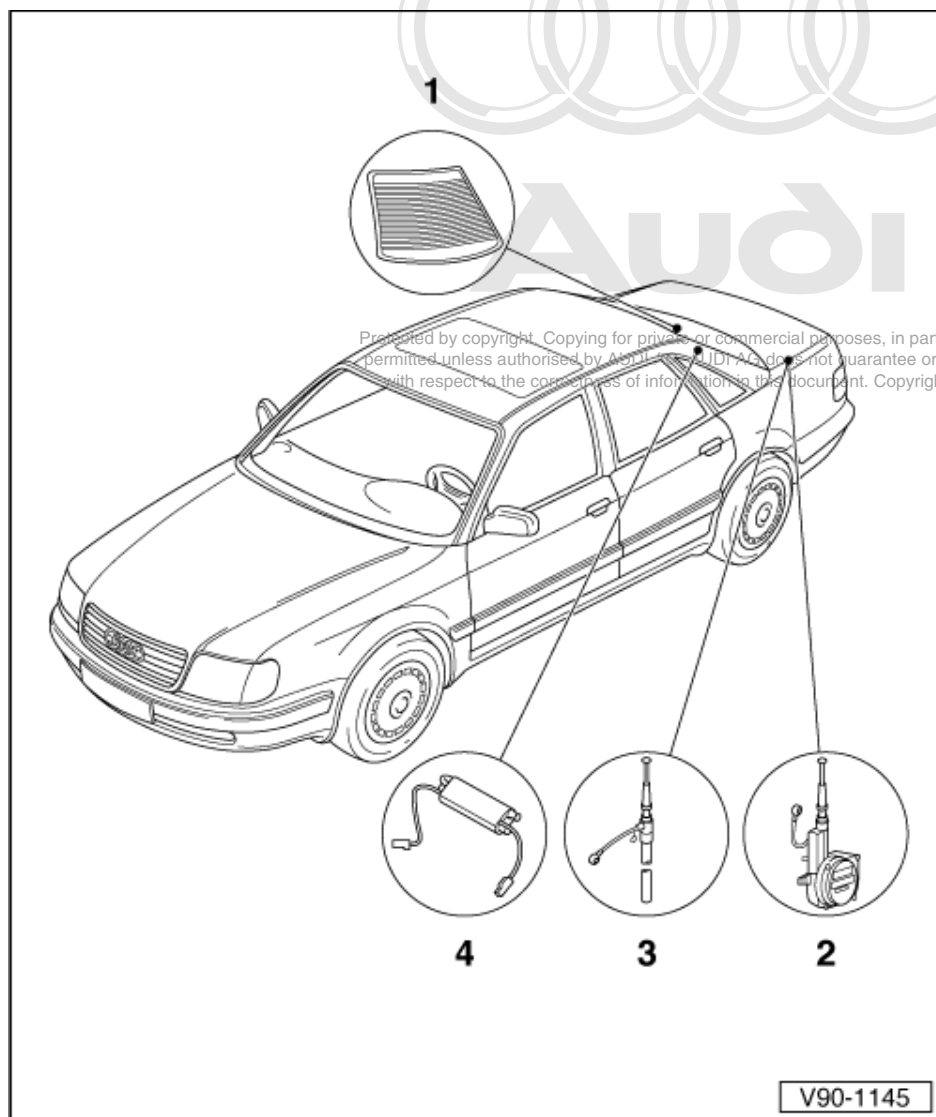
#### Notes:

- ◆ It is advisable to use a telescopic or power aerial when retrofitting. Dimensions for retrofitting => Fig. 4.
- ◆ Servicing roof aerial  
Avant ➤ 05.94 => Page 115.

#### 1 Heated rear window with window aerial -Z24

- ◆ Top 3 filaments not heated; MW aerial only (AM)
- ◆ Remaining filaments: Heater and VHF aerial (FM)
- ◆ Removing and installing

=> General body repairs; Repair group 64; Windows bonded flush with bodywork; Removing and installing rear saloon window  
Windows bonded flush with bodywork  
Removing and installing rear saloon window



## 2 Power aerial

- ◆ With special thermal insulation glass only
- ◆ Removing and installing => Page 1
- ◆ Retrofitting => Fig. 4.

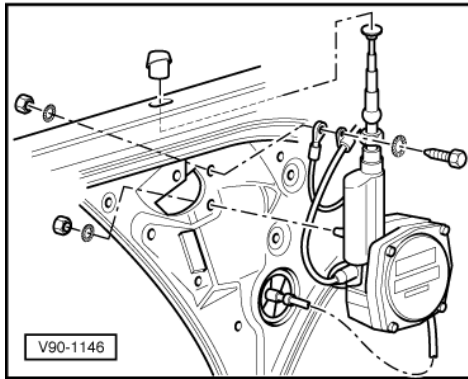
## 3 Telescopic aerial

- ◆ Removing and installing => Page 2
- ◆ Retrofitting => Fig. 4.

## 4 Aerial amplifier - R24

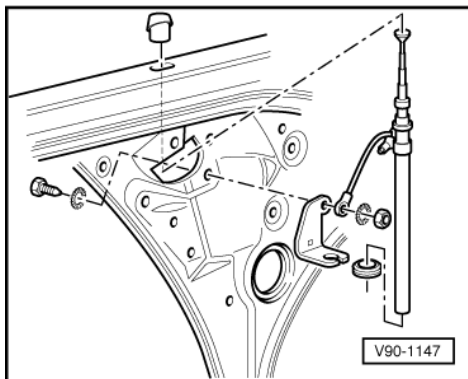
- ◆ Only in conjunction with window aerial
- ◆ Location: Inside of left D pillar
- ◆ Removing and installing => Page 3
- ◆ Troubleshooting

=> "Current Flow Diagrams, Electrical Fault Finding and Fitting Locations" binder



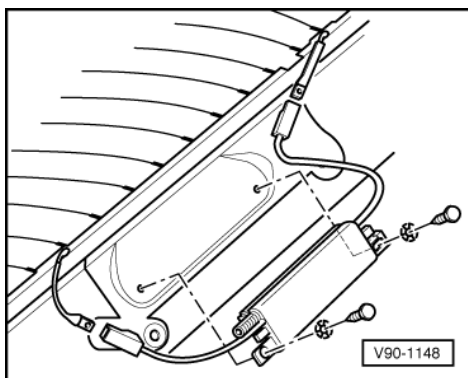
-> Fig.1 Removing and installing power aerial

- Remove the two securing bolts/nuts for aerial and earth connection (M5/2.5 Nm)
- Remove aerial cable, connector and water drain tube
- Pull out power aerial downwards by pulling firmly and pushing on the telescopic head.
- Ensure that there is a good earth connection when installing.
- Coat connections with special grease.



-> Fig.2 Removing and installing telescopic aerial

- Remove hexagon screw (M5/2.5 Nm) for earth cable and bracket
- Unscrew the aerial cable and pull the telescopic aerial and bracket out from below by pulling firmly and pushing on the telescopic head.

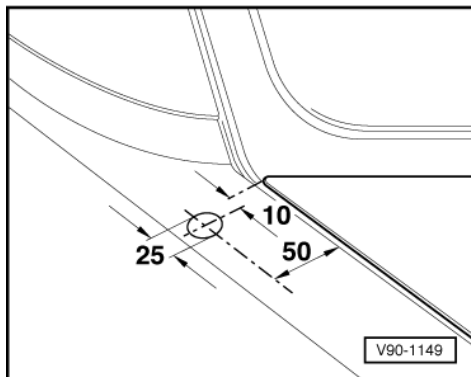


-> Fig.3 Removing and installing aerial amplifier

- Remove inner D pillar trim
- Unscrew aerial cable and detach all connectors.
- Remove self-tapping hexagon bolts and remove aerial amplifier.

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- Ensure that there is a good earth connection when installing.



-> Fig.4 Retrofitting aerial.

- Power and telescopic aerals

**Note:**

*Always use genuine spare parts (Votex) when retrofitting an aerial. Other commercially available aerals may not fit correctly and cause wind noise at high speed.*

- Mark dimensions for aerial hole on rear left side panel using felt or fibre-tipped pen.
- Drill  $\varnothing$  25 mm hole and carefully deburr
- Carefully extract/remove all drillings and filings (avoid scratches).
- Repair paintwork around hole as specified

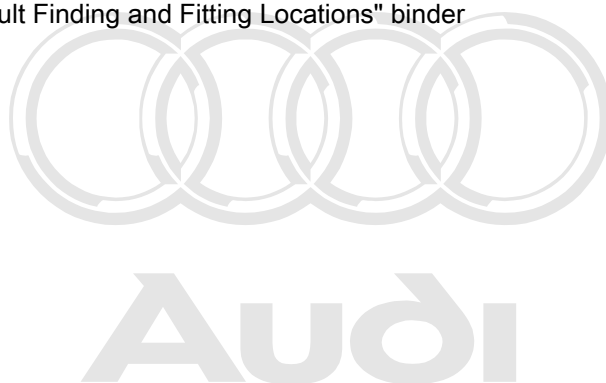
=> Vehicle paintwork

- Take anti-corrosion measures if necessary

=> "Surface treatment/chemical materials" binder

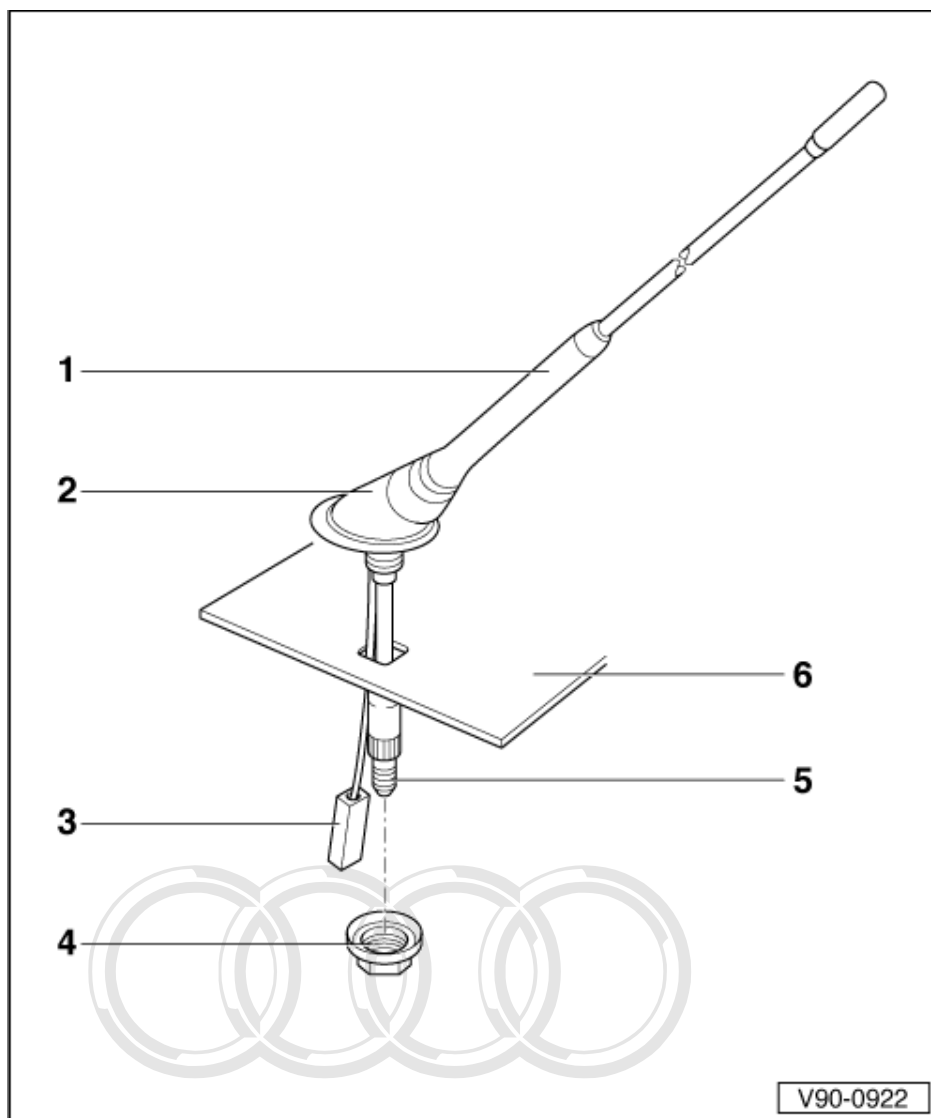
- Installing telescopic or power aerals.
- Fit and connect leads

=> "Current Flow Diagrams, Electrical Fault Finding and Fitting Locations" binder



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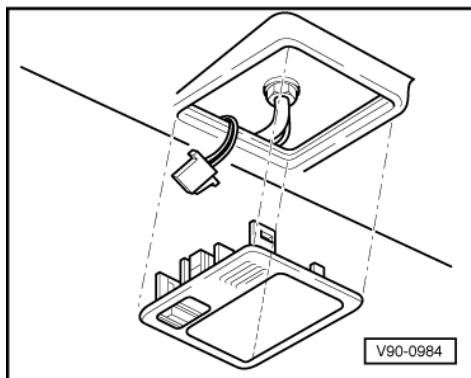
## 4.2 - Avant roof aerial > 05.94



### Notes:

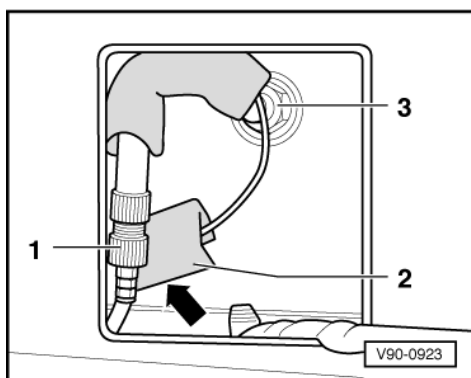
Removing and installing roof aerial => Page 114 .

- 1 Rod
- 2 Base
- 3 Connector
- 4 Securing nut - 3.5 Nm
- 5 Aerial cable connection
- 6 Roof skin



### Removing and installing roof aerial

- Switch off radio.
- -> Carefully prise out luggage compartment light using flat screwdriver.
- Unplug connector.

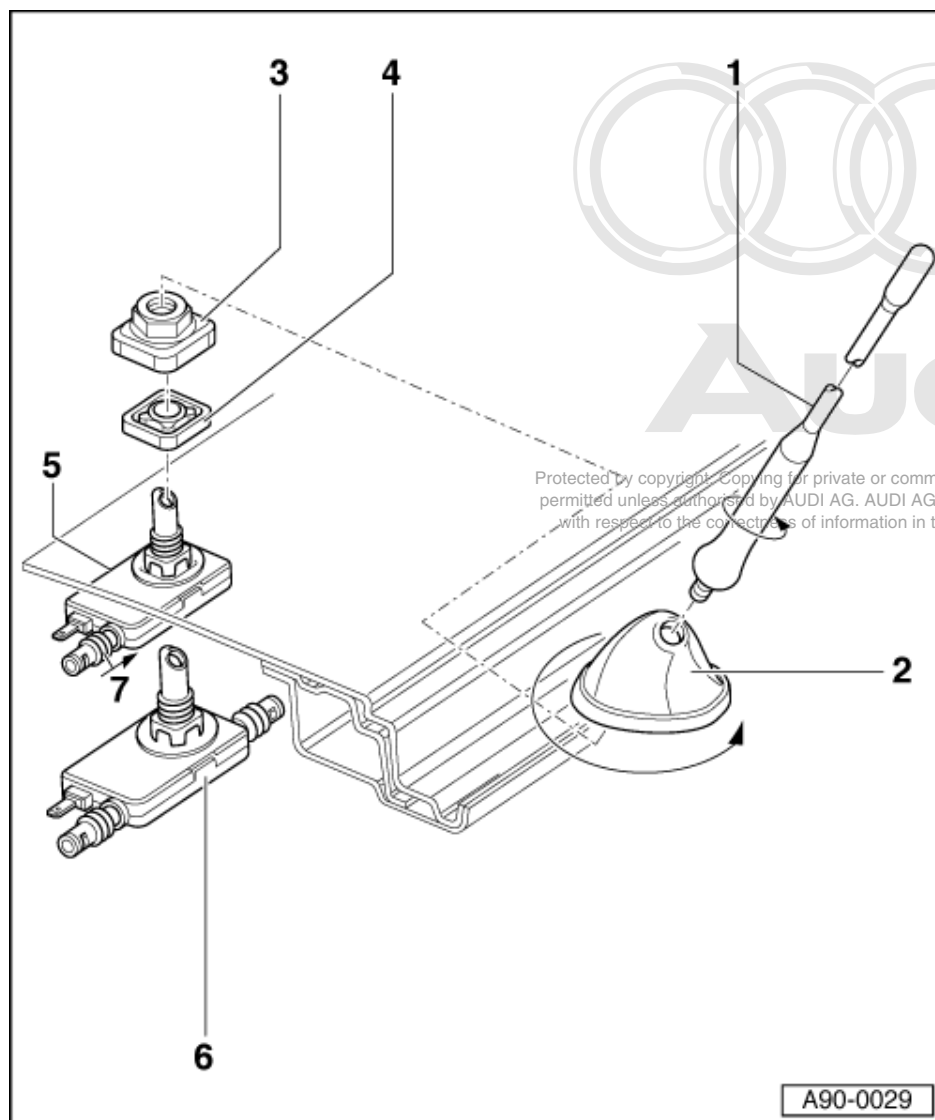


- -> Push back foam tubes -Arrows-.
- Loosen screw connection -1- and plug-in connector -2-.
- Unscrew securing nut -3- (3.5 Nm).
- Remove roof aerial from above.



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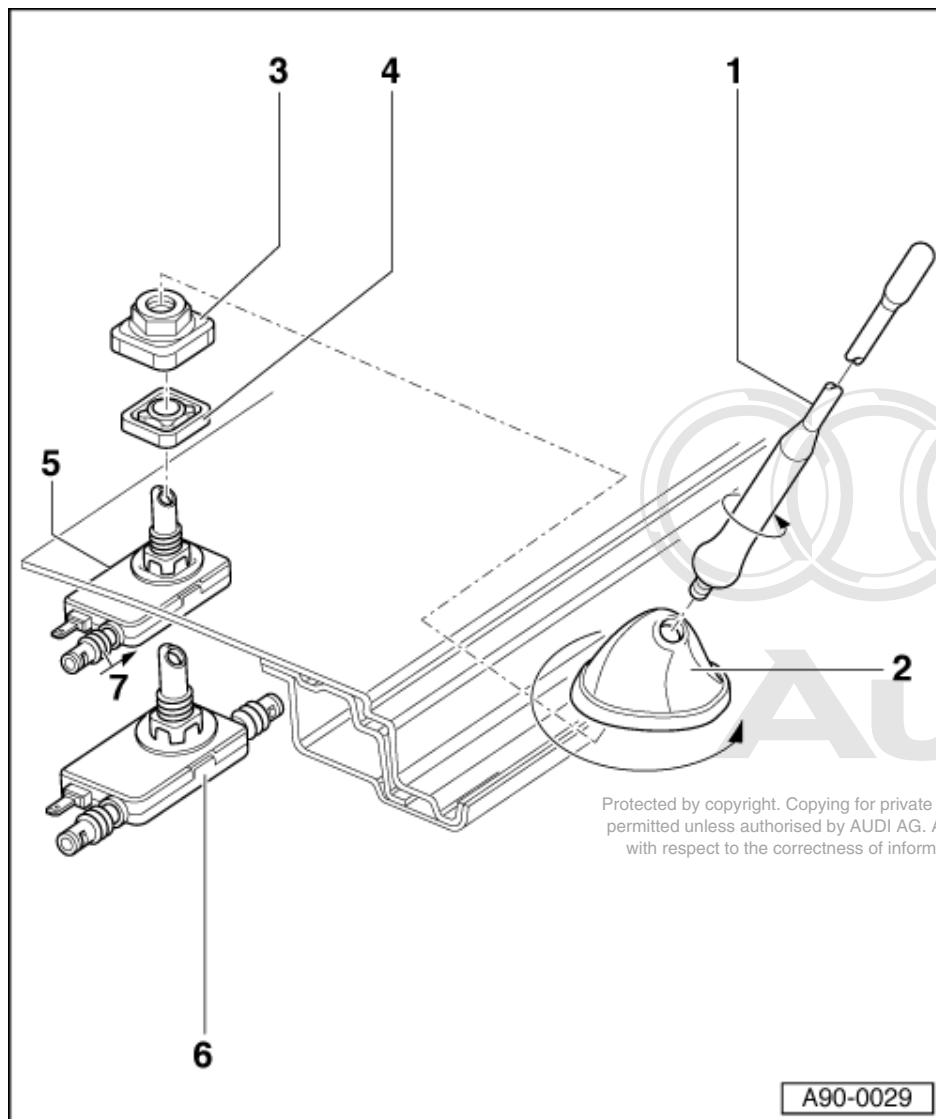
### 4.3 - Roof aerial with amplifier, Avant 06.94 ä



**Note:**

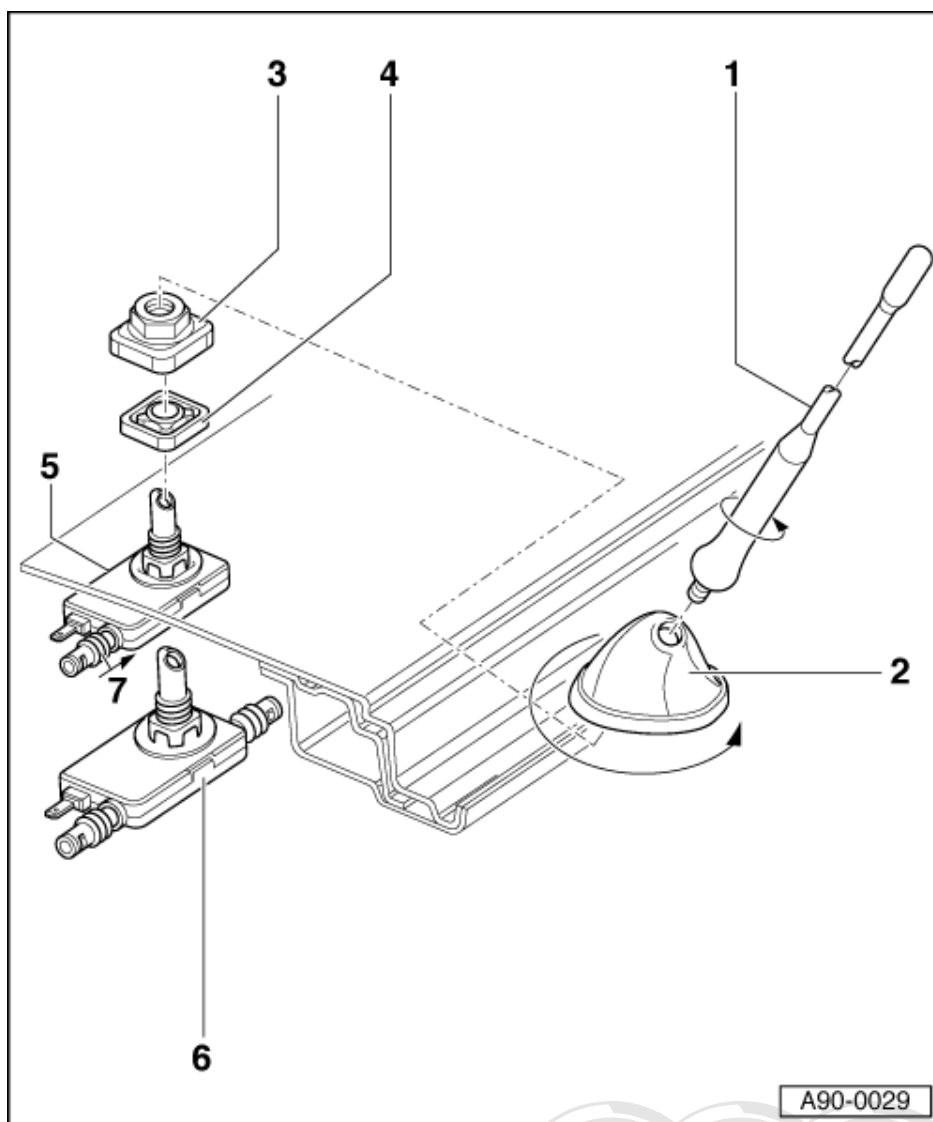
Removing and installing roof aerial with amplifier => Page 116.

- 1 Aerial rod
- 2 Cover cap
- 3 Securing nut - 3.5 Nm
- 4 Seal
- 5 Base with amplifier
  - ♦ For radio operation
- 6 Base with amplifier
  - ♦ For radio and telephone operation (if telephone installed)
- 7 Aerial cable locking mechanism



### Removing and installing roof aerial with amplifier.

- Switch off radio.
- Carefully prise out luggage compartment light using flat screwdriver.
- Unscrew aerial rod -1-
- Turn cover -2- 1/4 turn anticlockwise detach upwards.
- Loosen securing nut -3-.
- Remove seal -4-.



- Release aerial cable locking mechanism -7- in direction of arrow.
- Remove power supply connector.
- Detach aerial base -5- or -6- downwards.

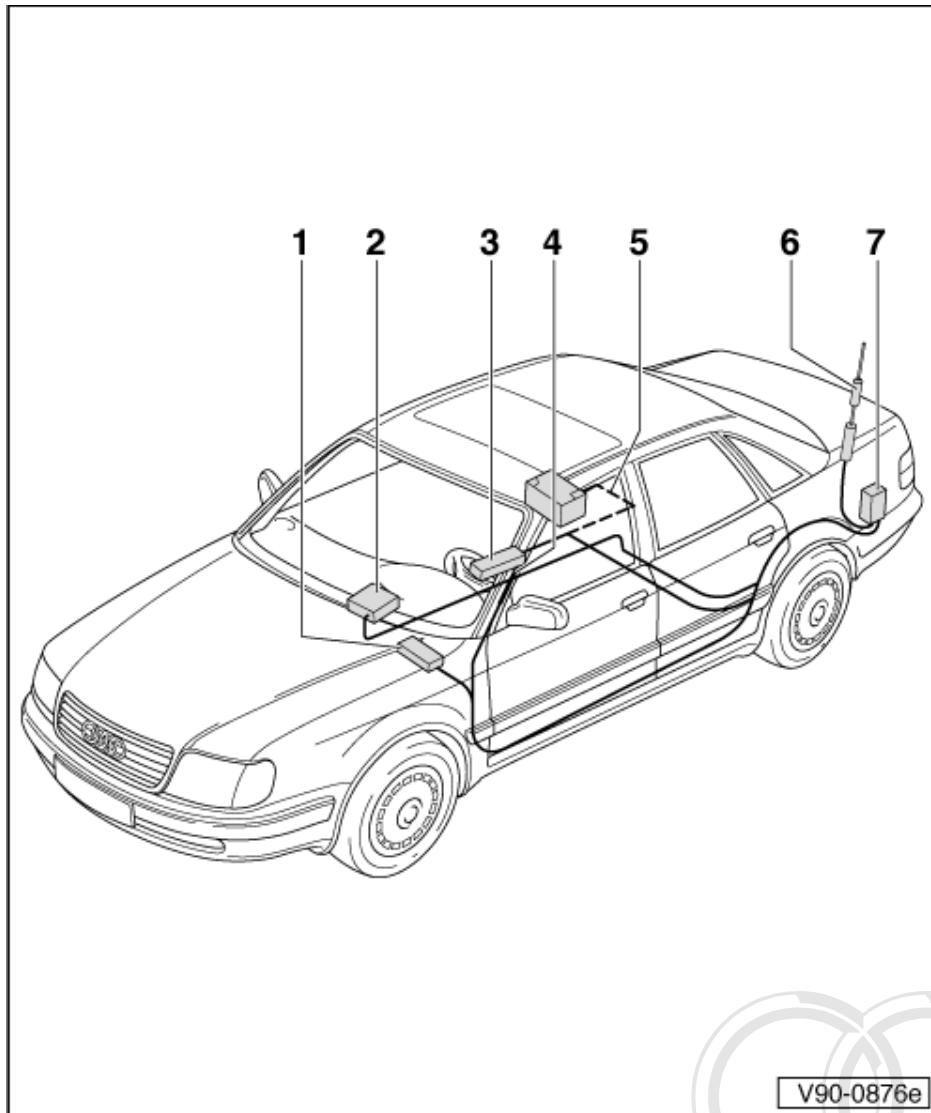
## 5 - Servicing telephone system

### 5.1 - Servicing telephone system

#### Notes

- ◆ In vehicles with telephone preparation in arm rest, telephone system is ready for operation after installing transmit/receive unit, handset, aerial with frequency divider and microphone.
- ◆ In vehicles with telephone preparation in centre console, loudspeaker for hands-free system must also be installed.
- ◆ In vehicles without telephone preparation the locations and cable routing recommended in the exploded view must be used.

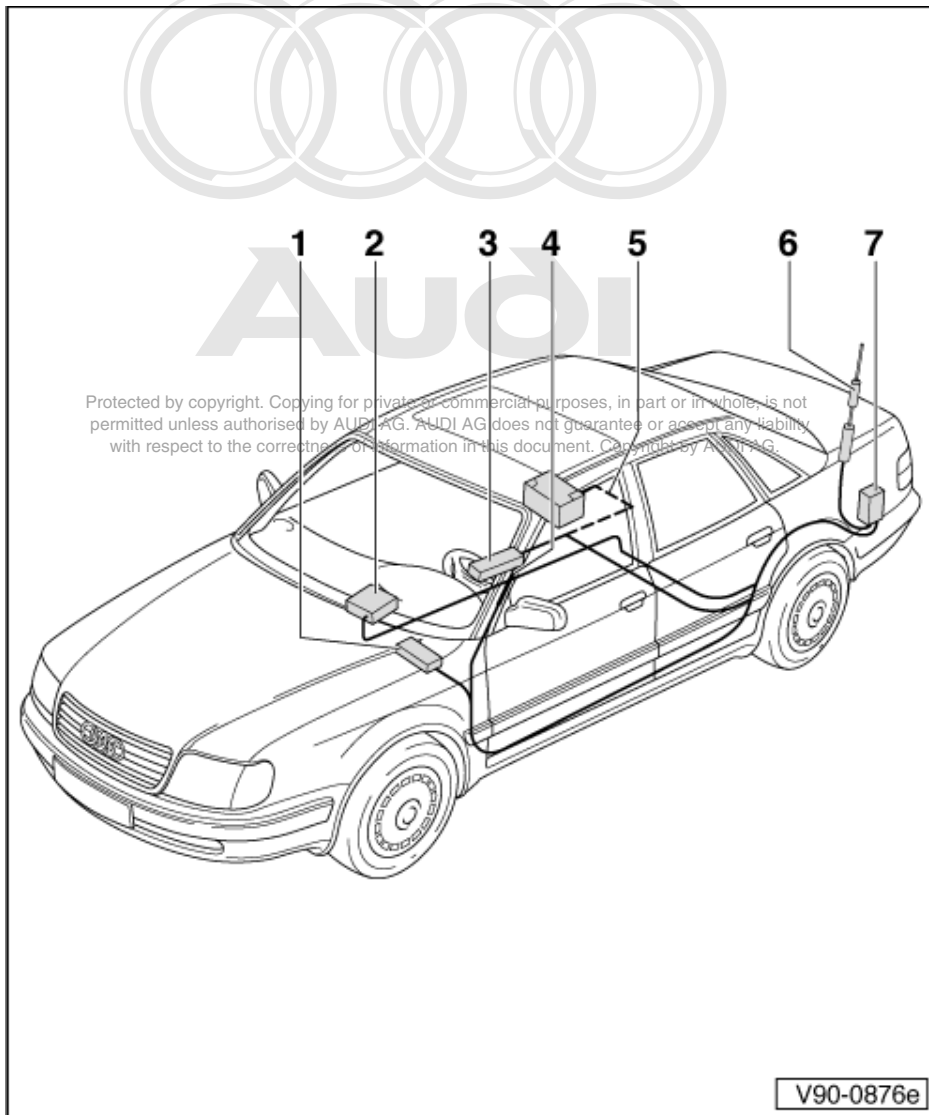
## 5.2 - Telephone system - general layout



- 1 Power supply**
  - ◆ From central electrical system, term. 30
- 2 Radio**
  - ◆ Connect to cavity 6 of 10-pin multipin connector
- 3 Handset and hands-free loudspeaker**
- 4 Hands-free microphone**
  - ◆ The trim on pillar A must be replaced with trim containing a microphone hole.
  - ◆ Removing and installing

=> General body repairs; Repair group 70; Trim panels; Removing and installing A-pillar trim Trim panels Re-  
moving and installing A-pillar trim

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**5 Power supply**

- ♦ From battery
- ♦ Vehicles with air conditioner only:

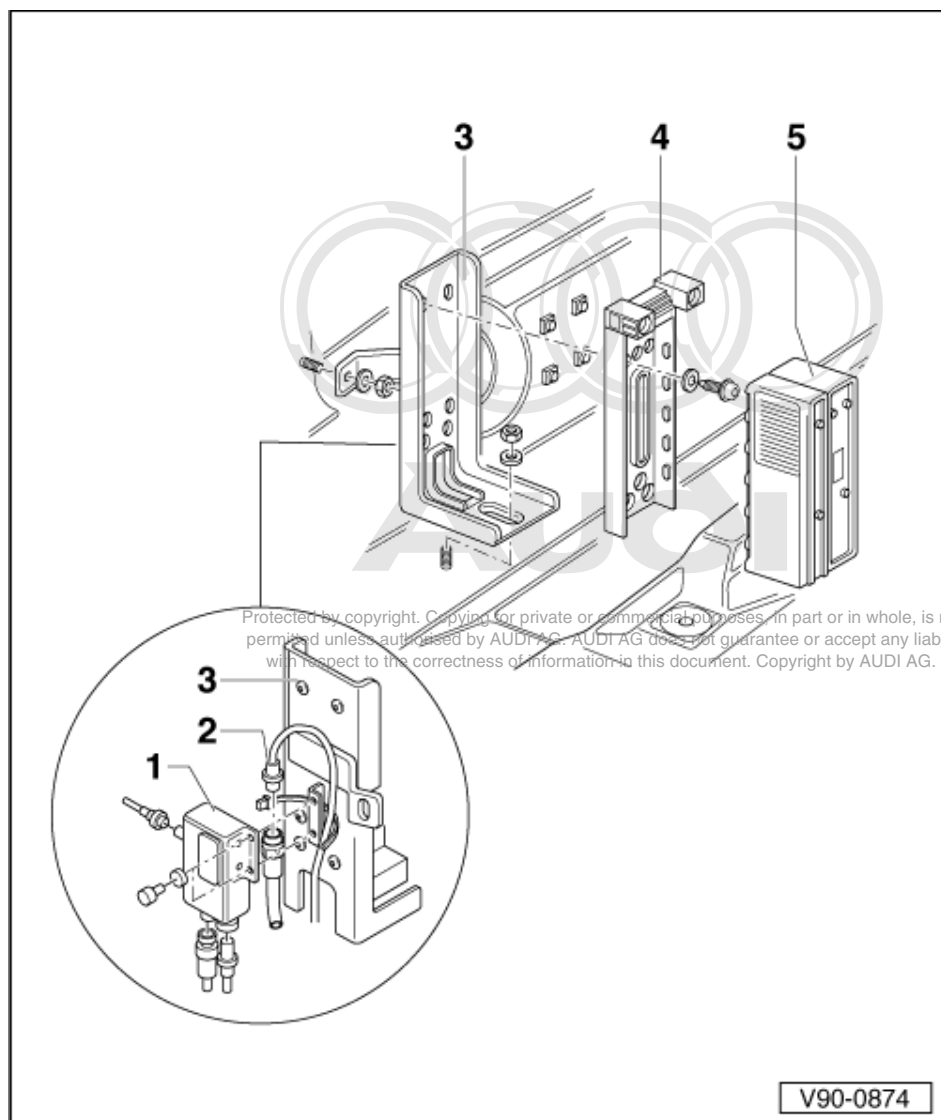
**6 Telephone aerial**

- ♦ Installing => Page 122

**7 Transmit/receive unit and frequency divider**

- ♦ Connect frequency divider => Page 122

### 5.3 - Removing and installing transmit/receive unit



**Note:**

*Location: left of luggage compartment*

**1 Frequency divider**

- ♦ With combined radio/telephone aerial only
- ♦ Connecting frequency divider => Page 122

**2 Aerial coupling**

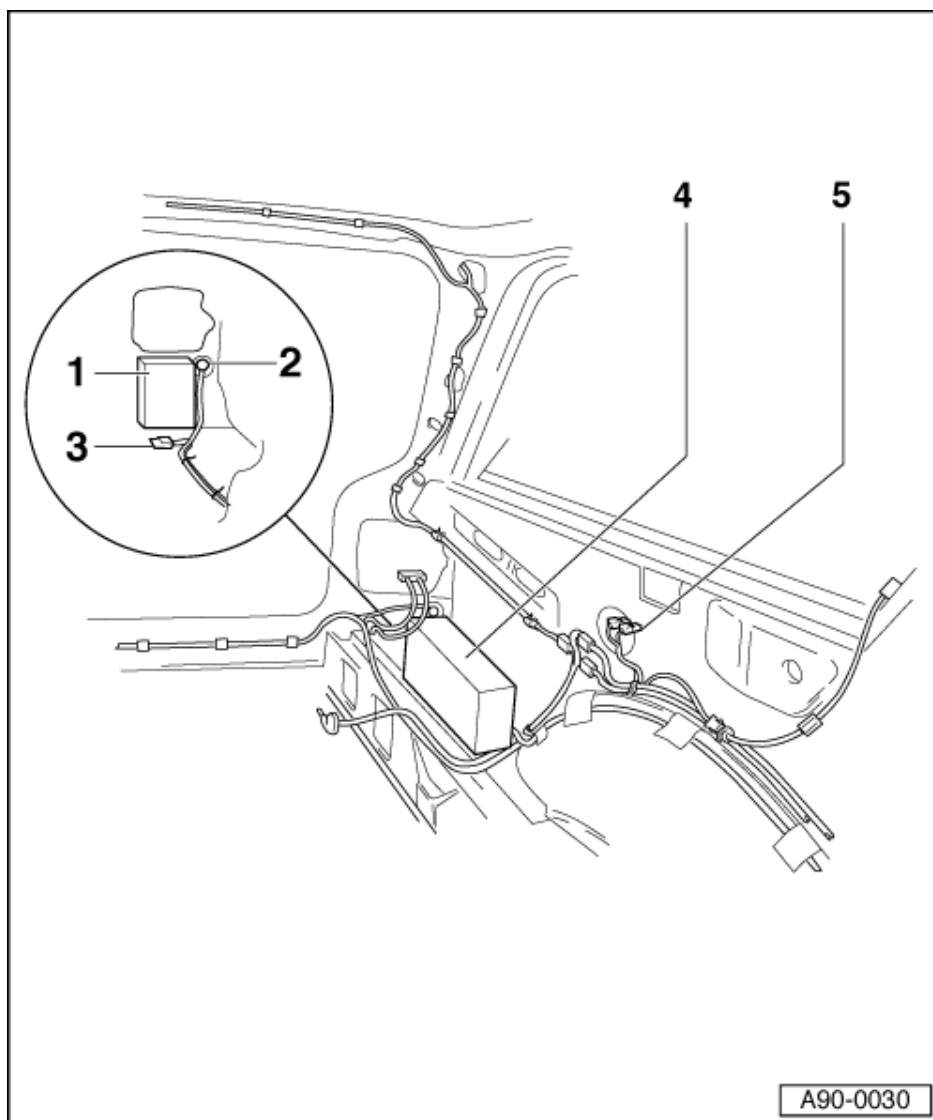
- ♦ For separate telephone aerial only

**3 Bracket**

**4 Mounting plate with keylock**

**5 Transmit/receive unit**

## 5.4 - Removing and installing transmit/receive unit, Avant 06.94 ä



**Note:**

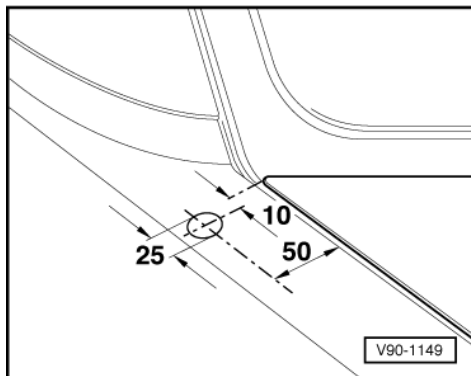
*Location: left of luggage compartment*

- 1 Transmit/receive unit
- 2 Earth connection
- 3 Fastener
- 4 CD changer for Bose sound system
- 5 Connector for anti-theft warning system horn

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## 5.5 - Installing telephone aerial

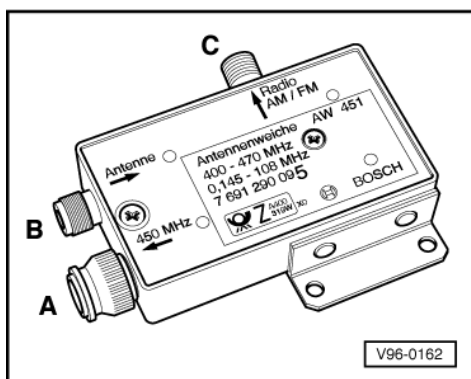


- In vehicles with a telescopic radio aerial, remove the aerial and install the combined radio/telephone aerial in the existing hole.
- -> Retrofitting telephone aerial in the rear side panel => Fig 112 .



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## 5.6 - Connecting frequency divider



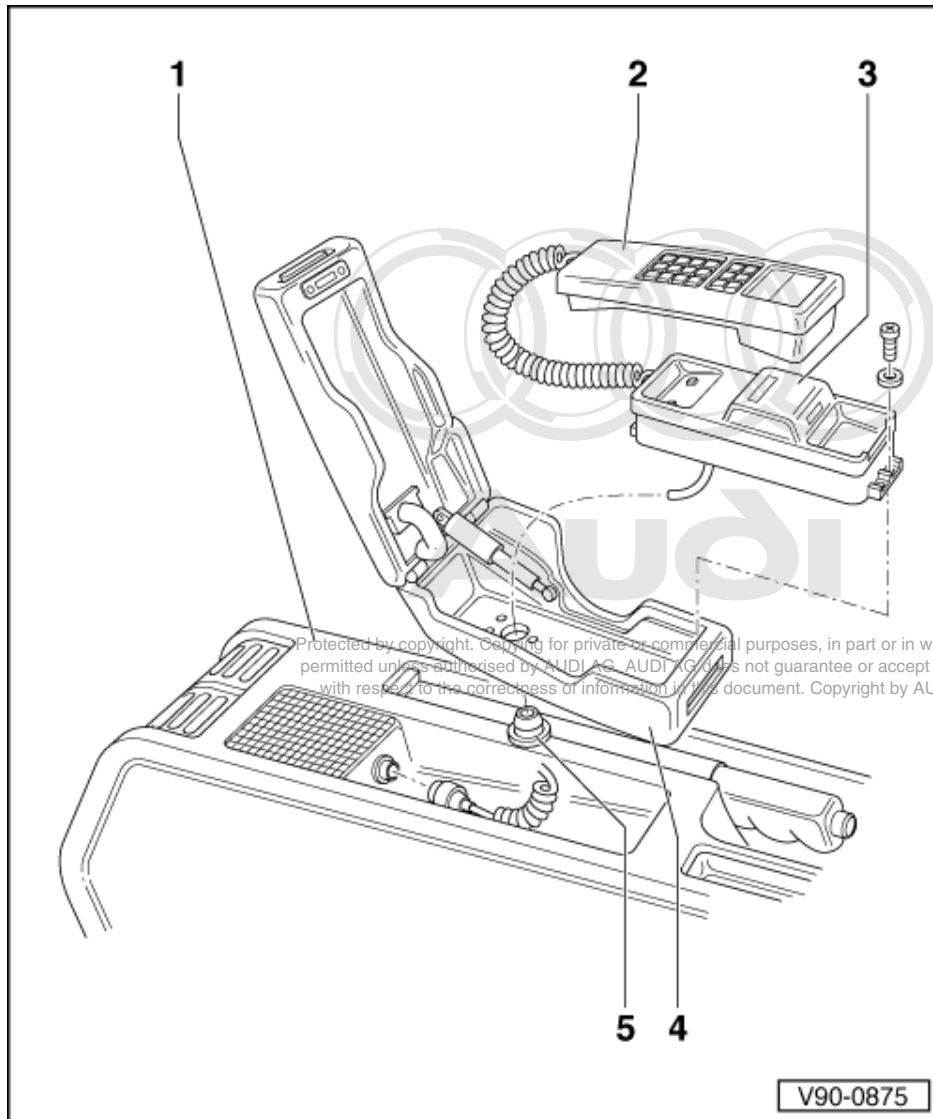
### **Note:**

*The frequency divider is only required if a combined radio/telephone aerial has been installed.*

- -> Connect frequency divider as shown in illustration.

- A - To transmit/receive unit
- B - To roof aerial
- C - To radio

## 5.7 - Removing and installing handset



### **Note:**

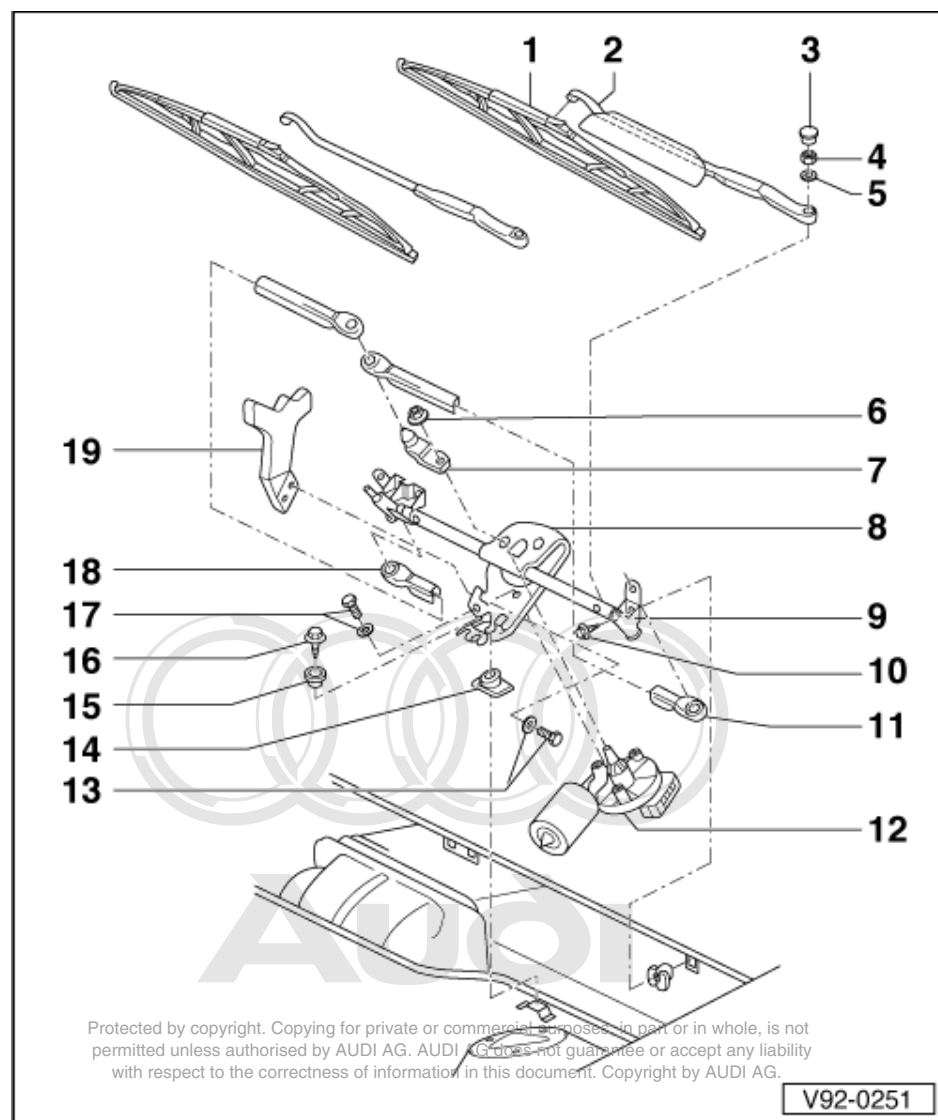
*When retrofitting without special armrest, handset cradle is mounted on the centre console.*

- 1 Hands-free loudspeaker
- 2 Handset
  - ♦ With function selection keys
- 3 Handset cradle
- 4 Arm rest
- 5 Sleeve

## 92 - Windscreen wiper and wash system

### 1 - Servicing wiper system

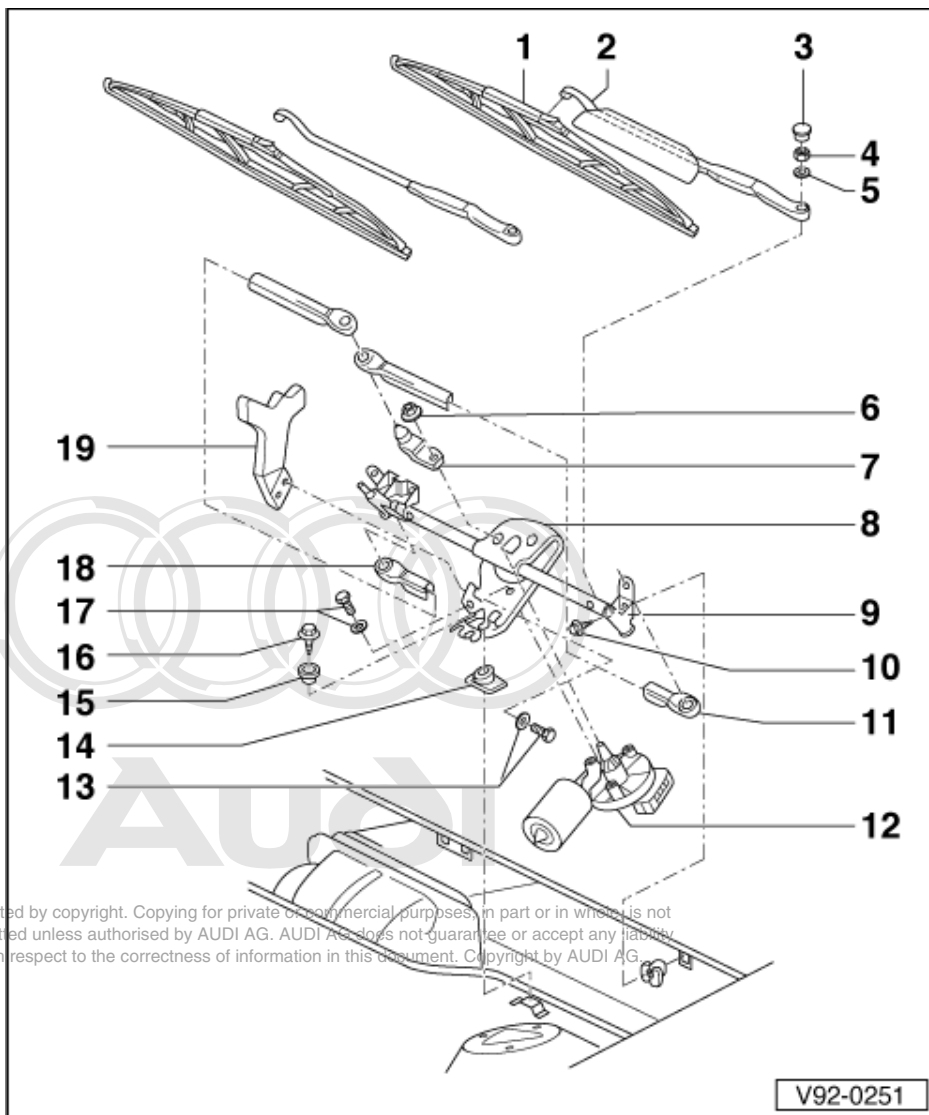
#### 1.1 - Servicing wiper system



#### Note:

Wiper motor can only be removed complete with frame. To do this, remove cowl, fastening strip and water deflector.

- 1 Wiper blade
- 2 Wiper arm
  - ♦ Adjusting => Fig. 1
- 3 Cover cap
- 4 M8 nut - 16 Nm
- 5 Washer
- 6 Nut - 26 Nm



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#### 7 Crank

- ◆ Location => Fig. 2

#### 8 Wiper frame

- ◆ With press-fit pivot shaft assembly
- ◆ When repairing, replace entire wiper frame, including both pivot-shaft assemblies.

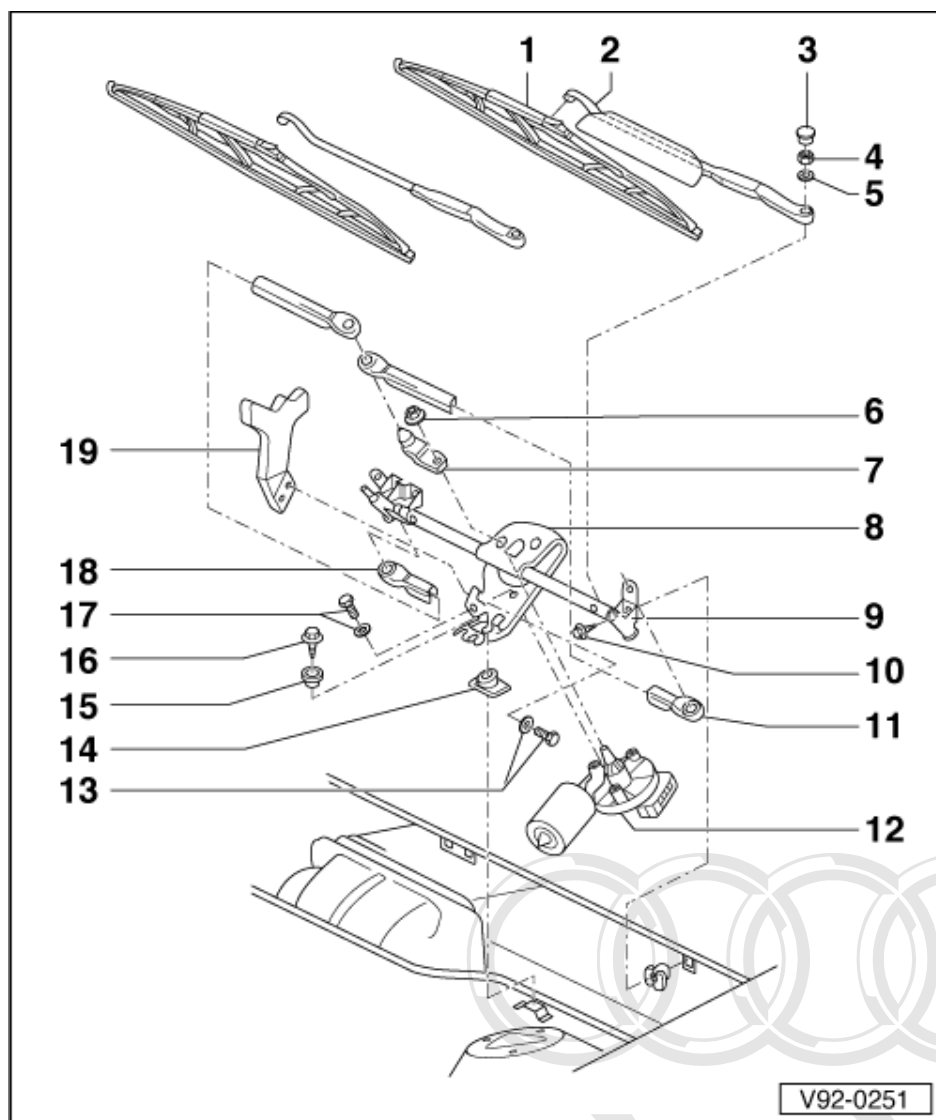
#### 9 Pivot-shaft assembly

- ◆ Press-fit in wiper frame

#### 10 Bolt with washer - 6 Nm

#### 11 Prise off left operating arm

- ◆ and coat ball sockets MoS2-grease.



### 12 Wiper motor

- ◆ Removal:
  - Prise off operating arms.
  - Remove 3 securing bolts.
  - Remove motor.

### 13 Fastening components

- ◆ For bracket

### 14 Rubber plate

### 15 Bushing

### 16 Bolt with washer - 6 Nm

### 17 Securing bolt

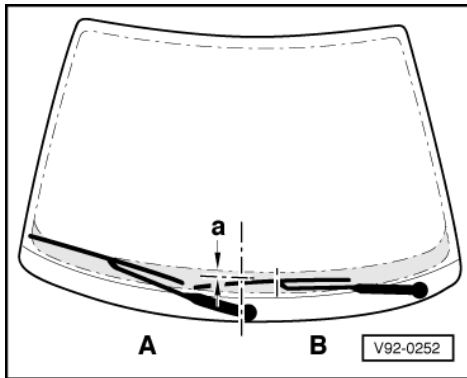
- ◆ For wiper motor

### 18 Right operating arm

- ◆ Prise off and coat ball sockets with MoS2-grease.

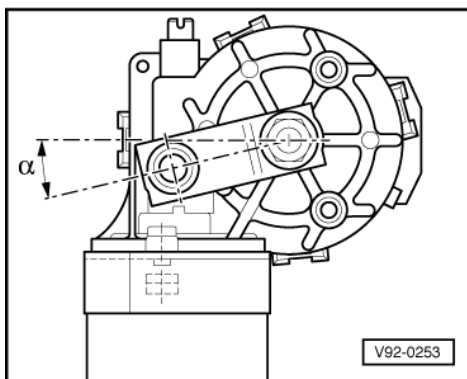
### 19 Bracket

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-> Fig.1 Wiper arm adjustment

- Run wiper motor to park position and install.
- Position wiper arm -A- (passenger side) at top edge of dotted pattern and tighten.
- Position wiper arm -B- (driver's side) -a- 10 mm from top edge of dotted pattern and tighten.



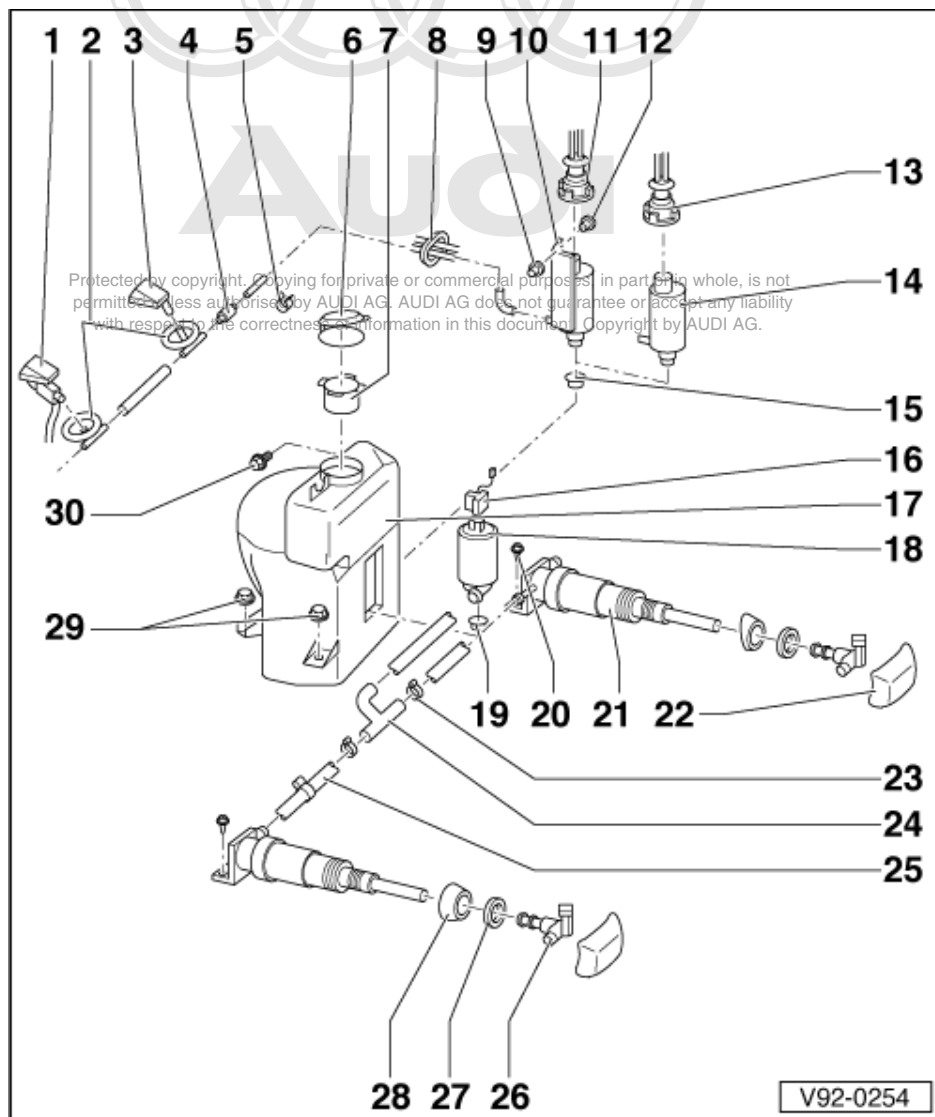
-> Fig.2 Crank location

- Run wiper motor to park position and install.
- Fit and align crank.
  - $\alpha$  = approx. 130°

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## 2 - Servicing windscreen and headlight washer system

### 2.1 - Servicing windscreen and headlight washer system



#### 1 Heated jet

- ◆ For washer system
- ◆ Adjusting => Fig. 1
- ◆ Removing and installing => Page 2

#### 2 Rubber grommets

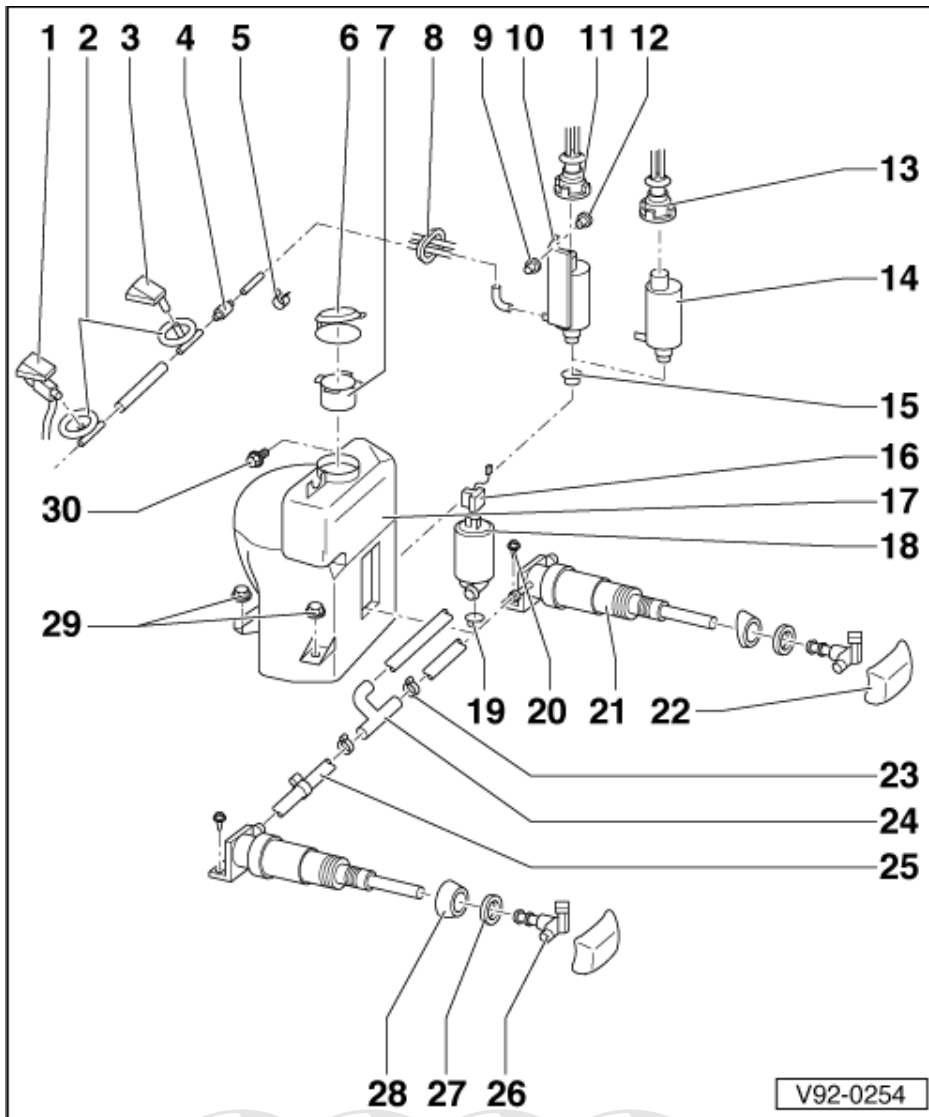
#### 3 Jet

- ◆ For washer system
- ◆ Adjusting => Fig. 1
- ◆ Removing and installing => Page 2

#### 4 Non return valve

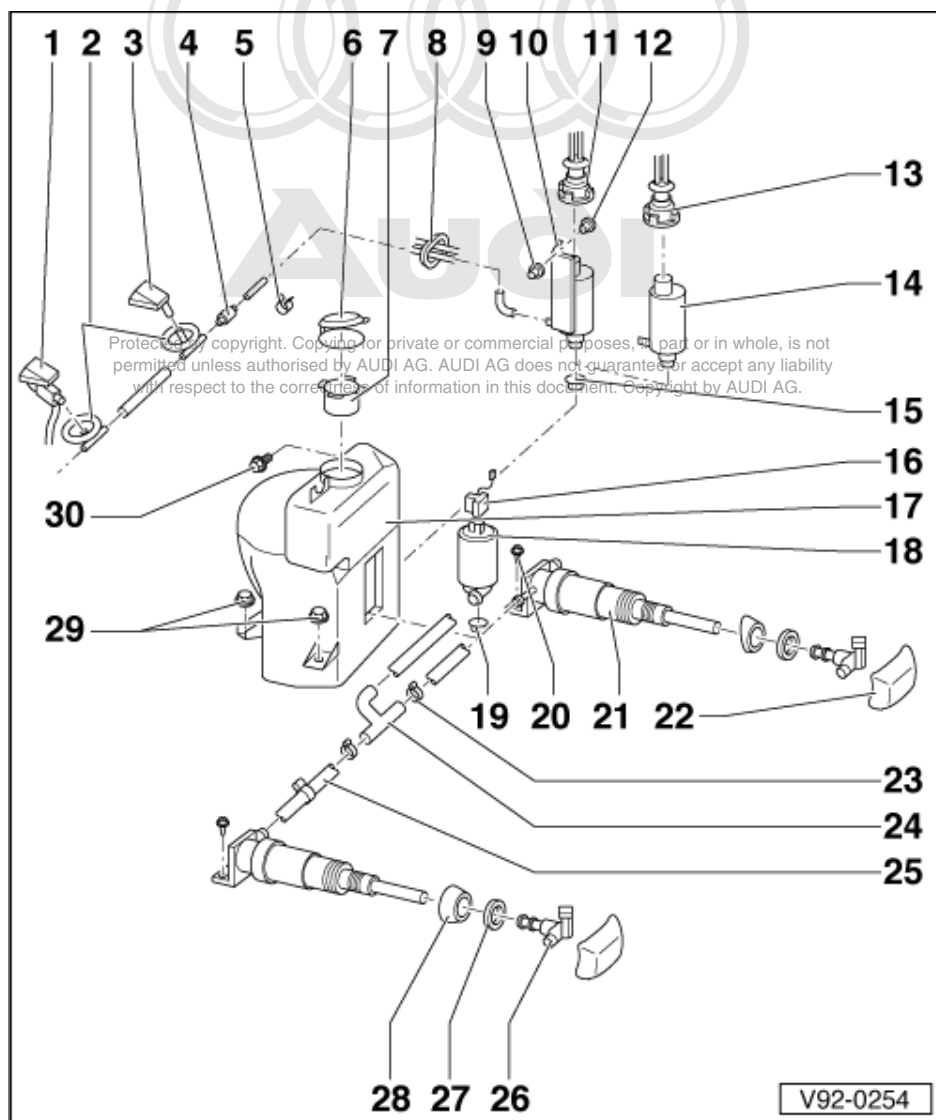
- ◆ For washer system
- ◆ Note location

#### 5 Bracket



- 6 Seal
- 7 Strainer
- 8 Rubber grommet
- 9 Seal
  - ♦ Vehicles with auto- check system only
- 10 Pump
  - ♦ For windscreen washer system with auto- check system
- 11 Connector
  - ♦ For pump for windscreen washer system with auto- check system
- 12 Plug
- 13 Connector
  - ♦ For washer system pump

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**14 Pump**

- ♦ For washer system

**15 Seal**

**16 Connector**

- ♦ For pump for headlight washer system

**17 Washer water reservoir**

**18 Pump**

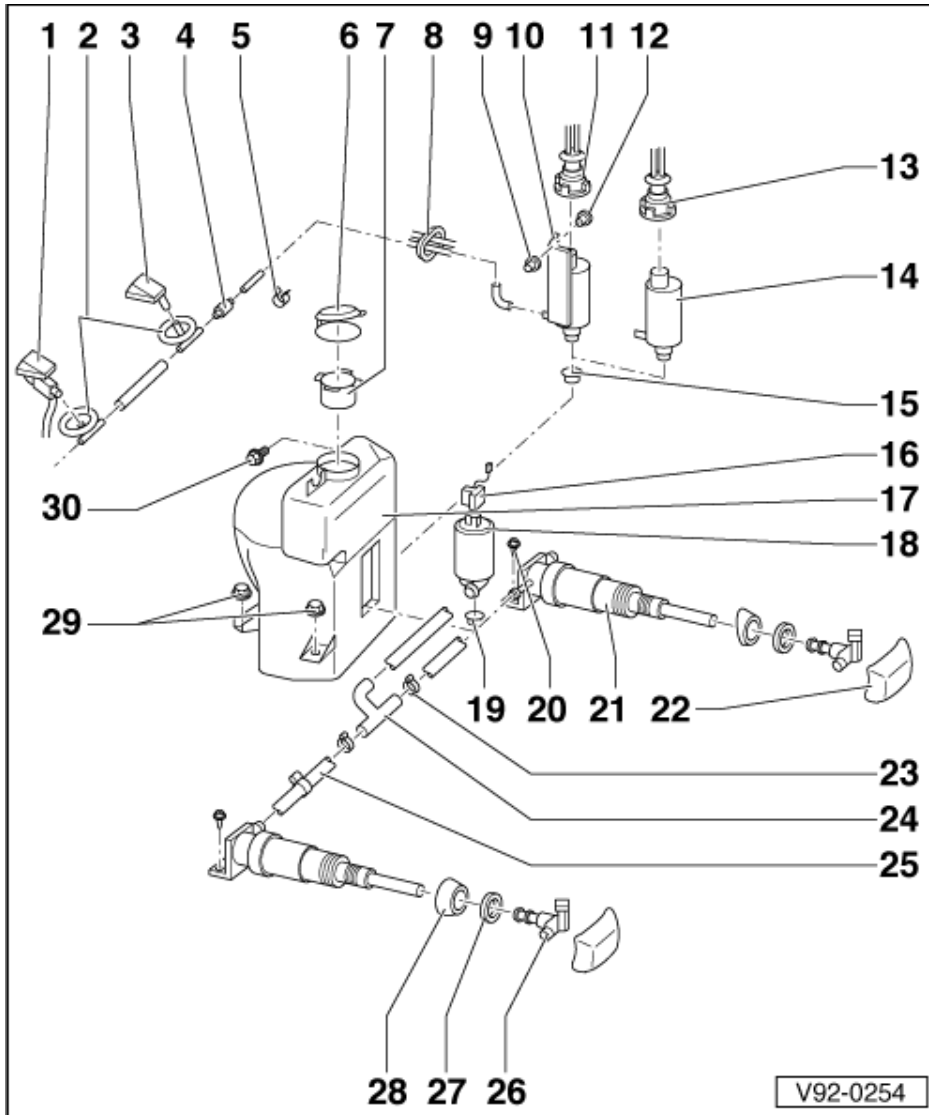
- ♦ For headlight washer system

**19 Seal**

**20 Securing bolt**

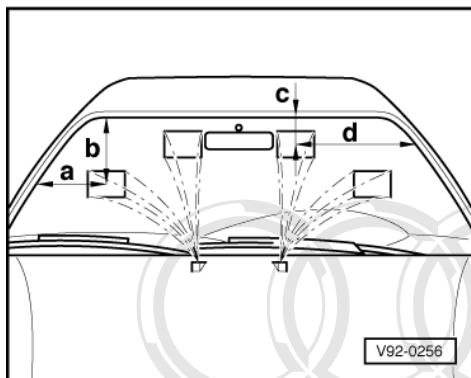
**21 Telescopic headlight washer system arm**

- ♦ Removing and installing => Page **132**



- 22 Cover cap
- 23 Hose clamp
- 24 Distributor
- 25 Bracket
- 26 Jet
  - ♦ For headlight washer system
  - ♦ Already adjusted by manufacturer no adjustment required
- 27 Hexagon nut - 10 Nm
- 28 Spacer
- 29 Securing nuts - 5 Nm
- 30 Securing bolt - 5 Nm

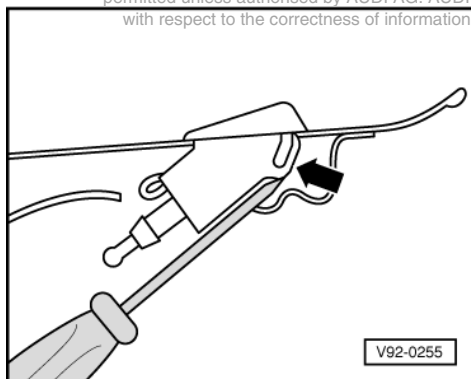
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-> Fig.1 Adjusting jets

- ♦ a = 230 mm
- ♦ b = 280 mm
- ♦ c = 160 mm
- ♦ d = 480 mm

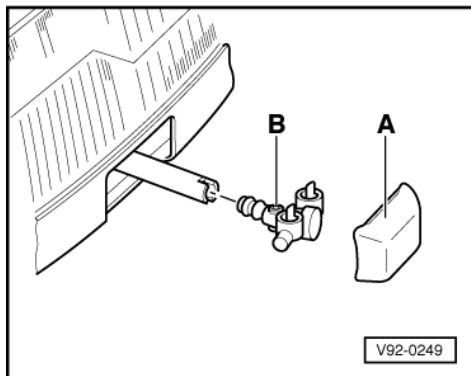
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-> Fig.2 Removing and installing jets

- Disconnect jet heating connector if necessary.
- Push jet retaining lug in direction of arrow using thin screwdriver and push the jet out upwards.
- To install, insert the jet from above and push in until the retaining lug engages.

## 2.2 - Removing and installing telescopic headlight washer arm



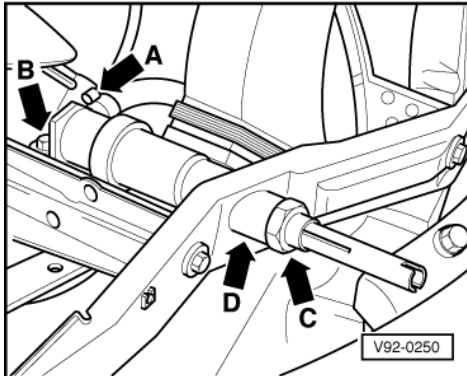
- -> Unclip cover cap -A- by hand.
- Pull telescopic headlight washer arm out as far as it will go.

- Remove jet -B- by hand by gently turning and pulling.

**Note:**

*Clamp water pipe using vice-grip wrench before removing jet.*

- Remove headlight => Page 147 .



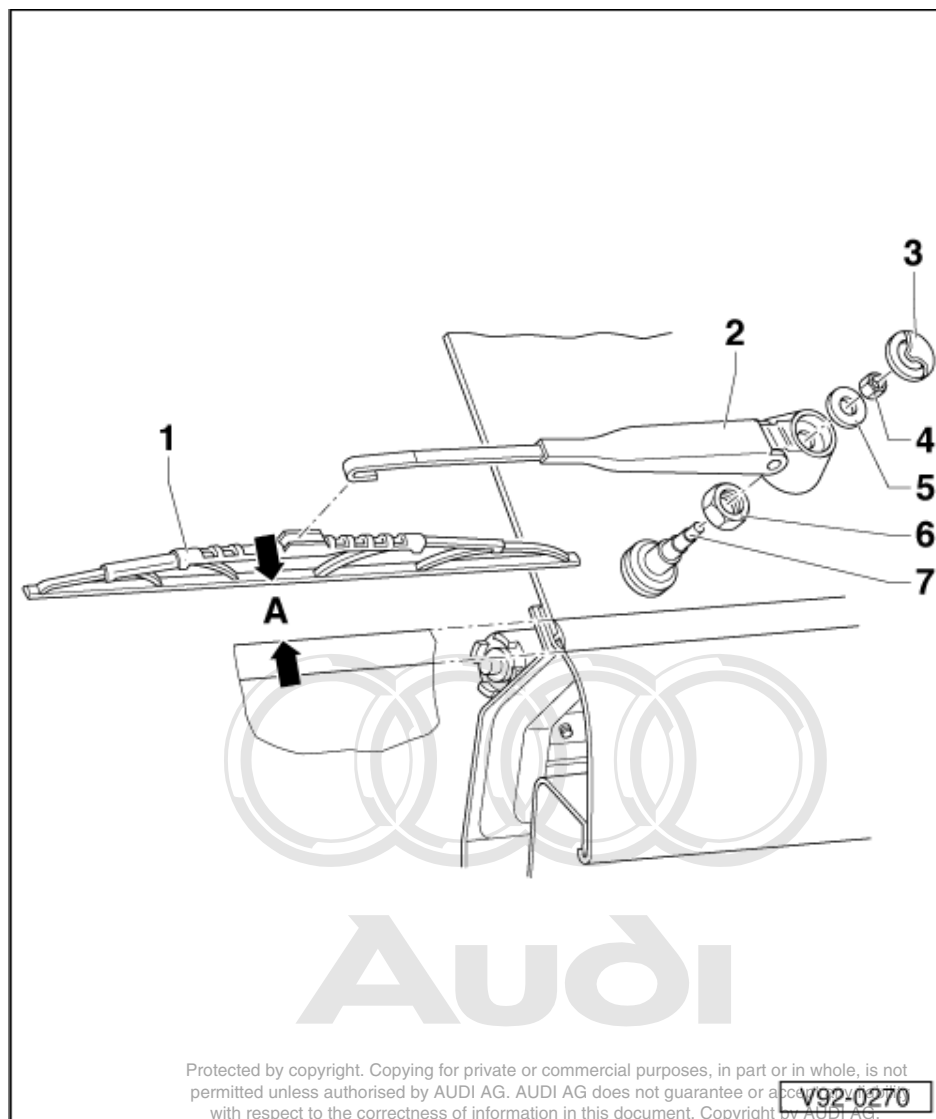
- -> Remove hose clamp -A- and water pipe.
- Unscrew securing bolt -B- and hexagon nut -C-. Remove spacer -D- to front.
- Push telescopic headlight washer arm to rear.
- When installing, tighten securing bolts -B- to 3.5 Nm, and hexagon nut -C- to 10 Nm



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### 3 - Servicing rear window wiper system

#### 3.1 - Servicing rear window wiper system



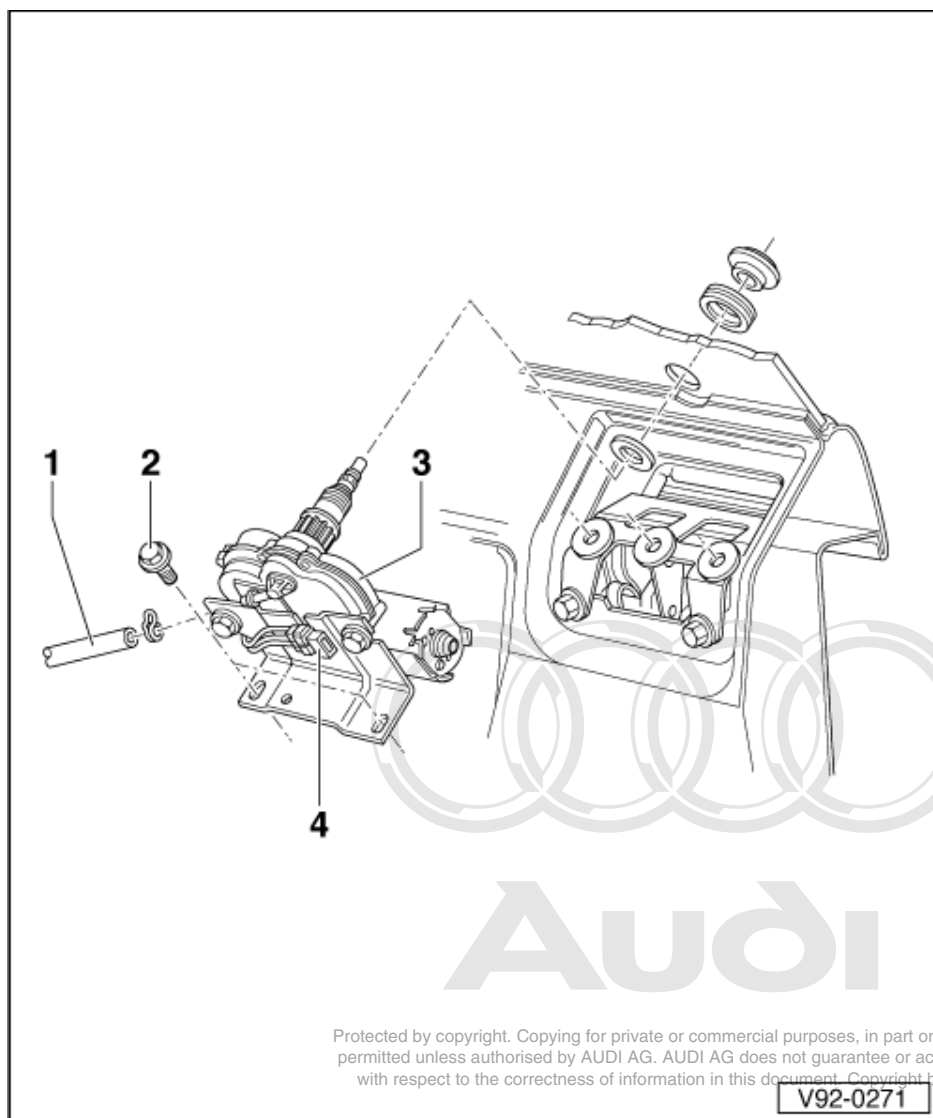
#### 3.2 - Removing and installing rear window wiper arm

- 1 Rear wiper blade
- 2 Rear wiper arm
- 3 Cap
- 4 Securing nut - 16 Nm
- 5 Spring lock washer
- 6 Securing nut - 8 Nm
- 7 Jet for rear window washer system

**Note:**

Setting for rear wiper blade A = 40 mm from top edge of dotted pattern.

### 3.3 - Removing and installing rear window wiper motor



- Remove luggage compartment lid trim.

=> General Body Repairs, Interior; Repair Group 70; Trim Panels; Removing and installing luggage compartment trim (Avant) Trim Panels Removing and installing luggage compartment trim (Avant)

- 1 Water hose
- 2 Securing bolt - 8 Nm
- 3 Rear window wiper motor
- 4 Electrical connection

## 94 - Lights, Lamps, Switches - exterior

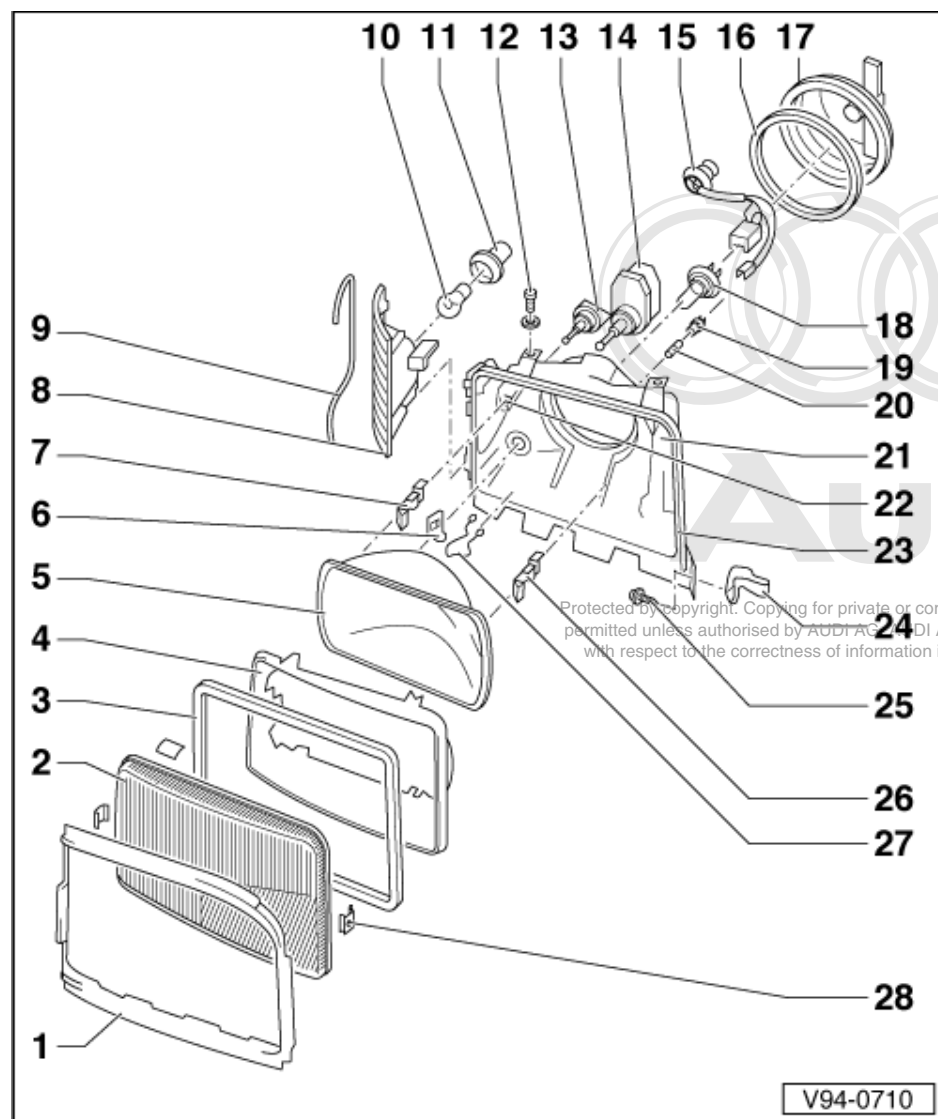
### 1 - Servicing headlights

#### 1.1 - Servicing headlights

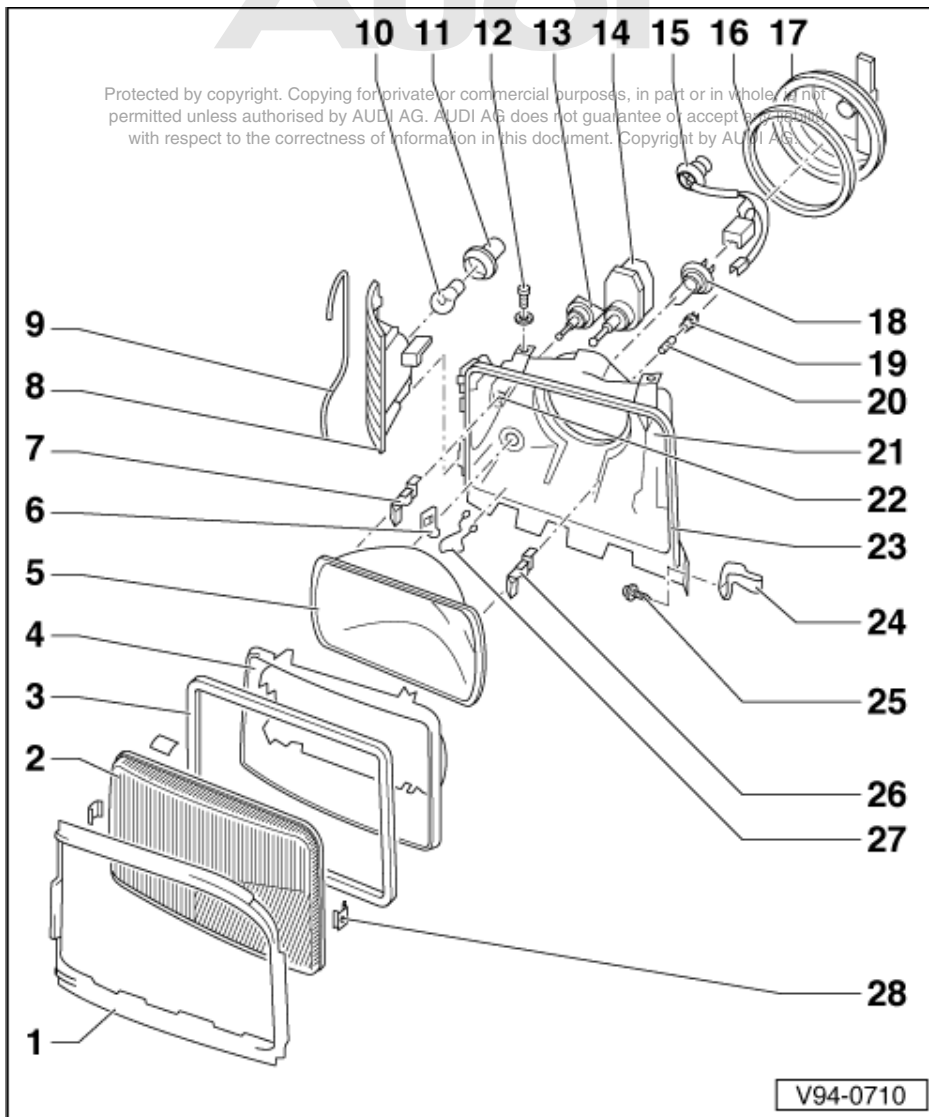
#### 1.2 - Servicing headlights, Audi 100 ► 05.94

##### Notes:

- ♦ Headlights, Audi S4, 100 TDI 07.91 ►, Audi A6, S6 06.94 ► => Page 142 .
- ♦ Adjusting fog lamps => Fig. 1
- ♦ Removing and installing fog lamps => Fig. 2
- ♦ Bulbs for engine compartment lighting  
12 V/10 W.
- ♦ Adjusting headlights => Page 146 .

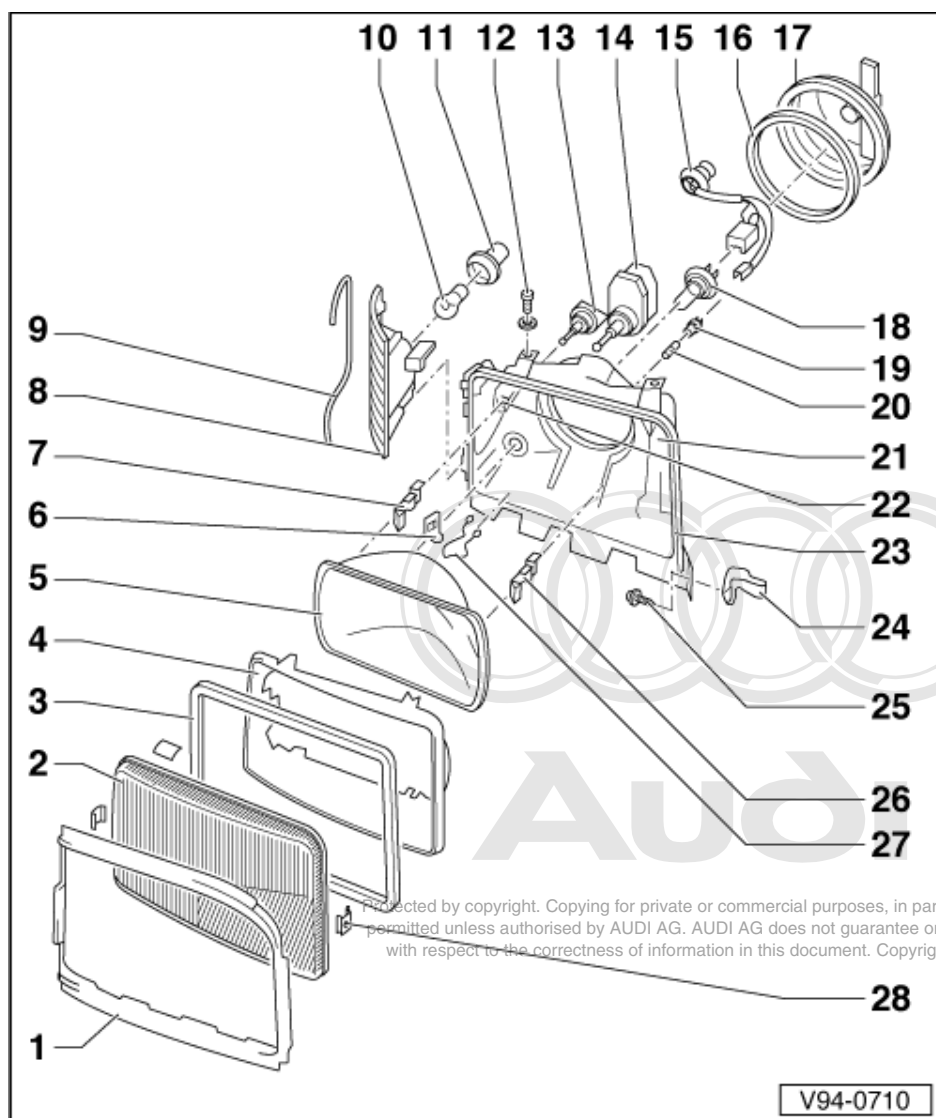


- 1 Trim (rubber)
  - ♦ Bonded to lens
- 2 Lens
- 3 Seal
- 4 Reflector frame
- 5 Reflector
- 6 Locating piece for control motor
  - ♦ Clipped into reflector
- 7 Locating piece
  - ♦ Clipped into reflector
- 8 Turn-signal indicator
  - ♦ Removing and installing => Page 147



- 9 Rubber seal
- 10 Bulb for turn signal indicator
  - ♦ 12 V/21 W
- 11 Socket for turn signal indicator bulb
- 12 Securing bolt with washer
- 13 Locating piece for reflector
  - ♦ Only for vehicles without headlight range adjustment system
- 14 Control motor for headlight range adjustment

- ◆ For vehicles with headlight range adjustment system


**15 Wiring loom**

- ◆ With plug housing and connector

**16 Seal**
**17 Cap**

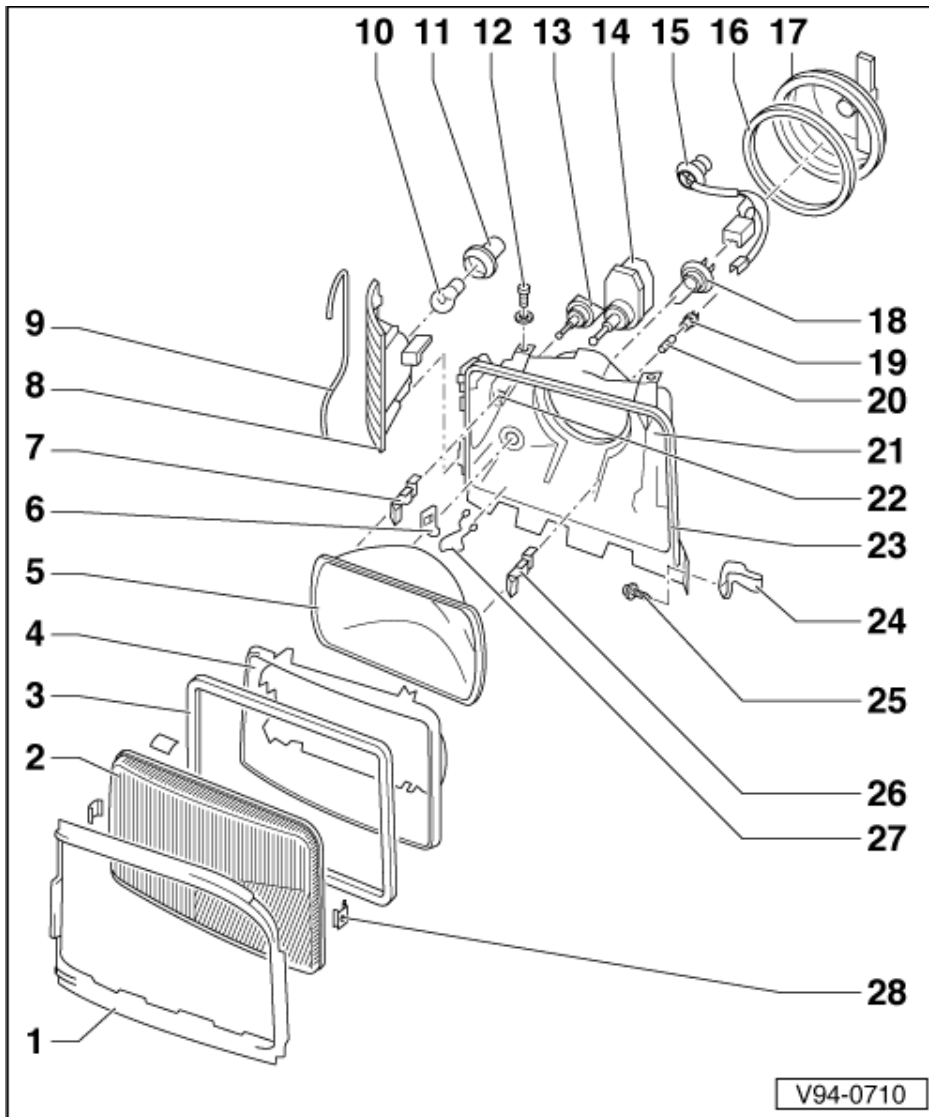
- ◆ Marking: Note bayonet fitting

**18 Dipped/main beam bulb**

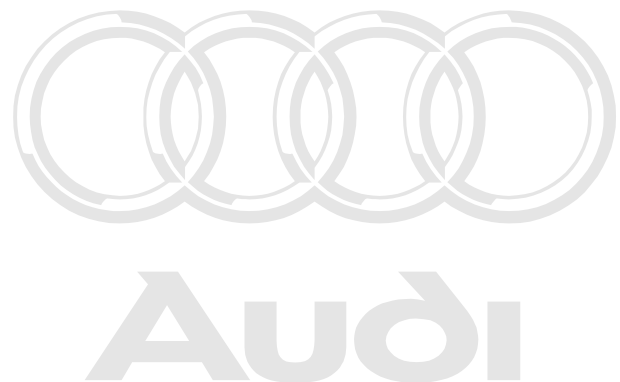
- ◆ 12 V/60/55 W (H4)

**19 Side light bulb socket**
**20 Side light bulb**

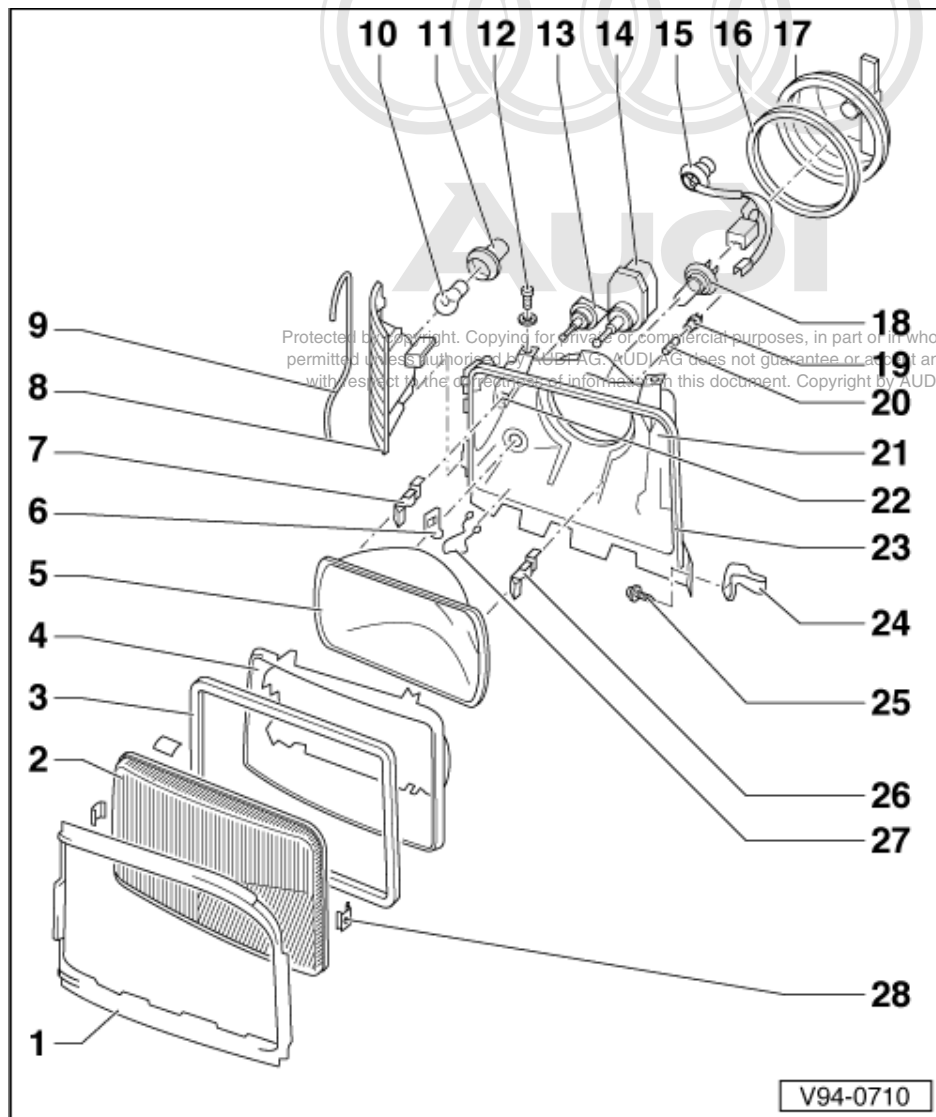
- ◆ 12 V/5 W



- 21 Lateral adjustment screw**
  - ♦ Flexibly mounted in housing
- 22 Height adjustment screw**
  - ♦ Flexibly mounted in housing
- 23 Headlight housing**
  - ♦ Removing and installing => Page **147**
- 24 Clip**
- 25 Securing bolt**
  - ♦ For clip



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#### 26 Locating piece

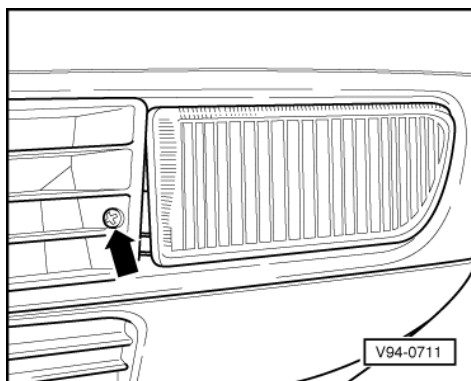
- ♦ Clipped into reflector

#### 27 Wire clip

- ♦ For bulb H4

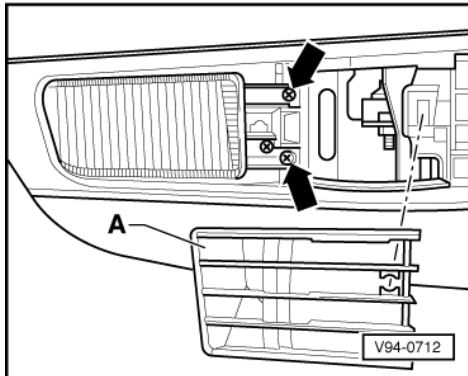
#### 28 Retaining clip

- ♦ Prise out using screwdriver to remove
- ♦ Press in by hand to install



-> Fig.1 Adjusting fog lamp

- Pull decorative grille from right fog lamp => Fig. 2.
- Use adjusting screw -arrow- to set fog lamp illumination direction to mark on headlight adjusting device.



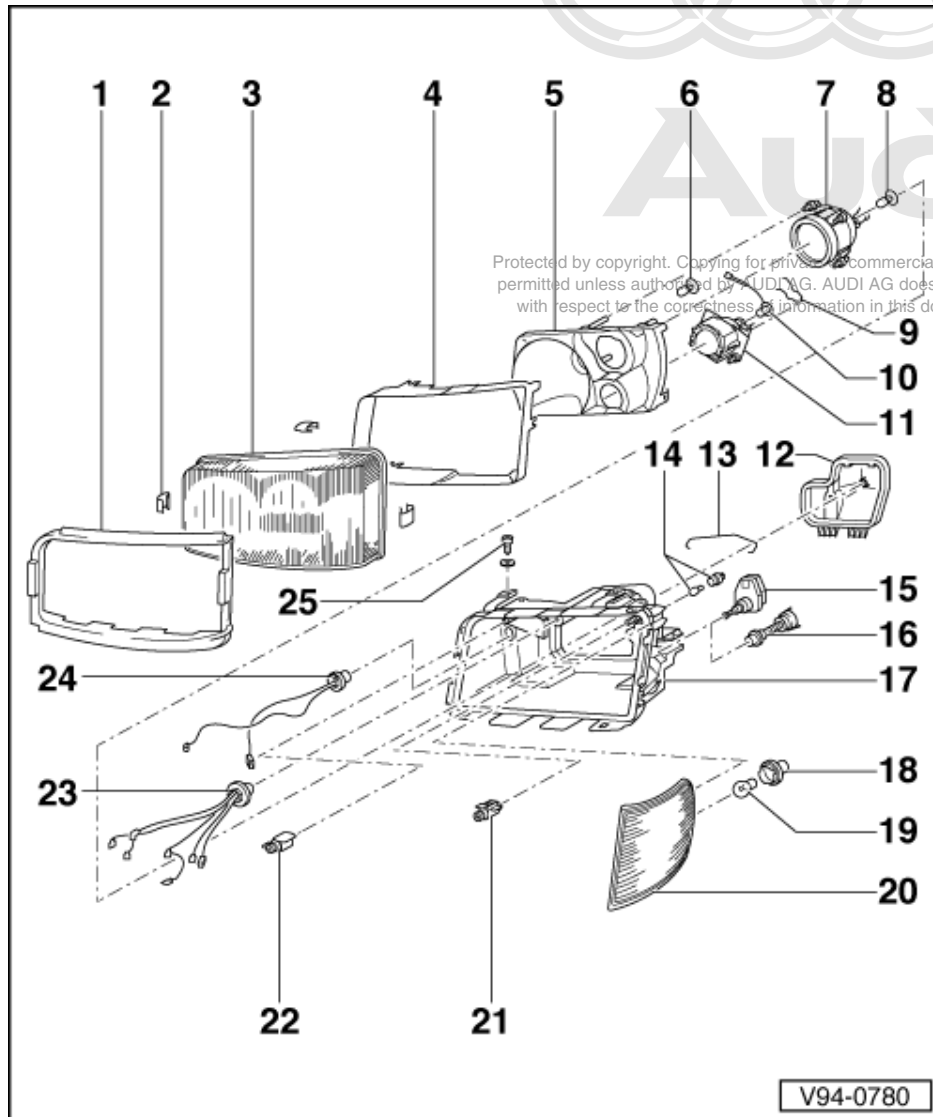
-> Fig.2 Removing and installing fog lamp

- Pull of decorative grille by hand.
- Remove three screws -arrows-.
- Remove fog lamp.



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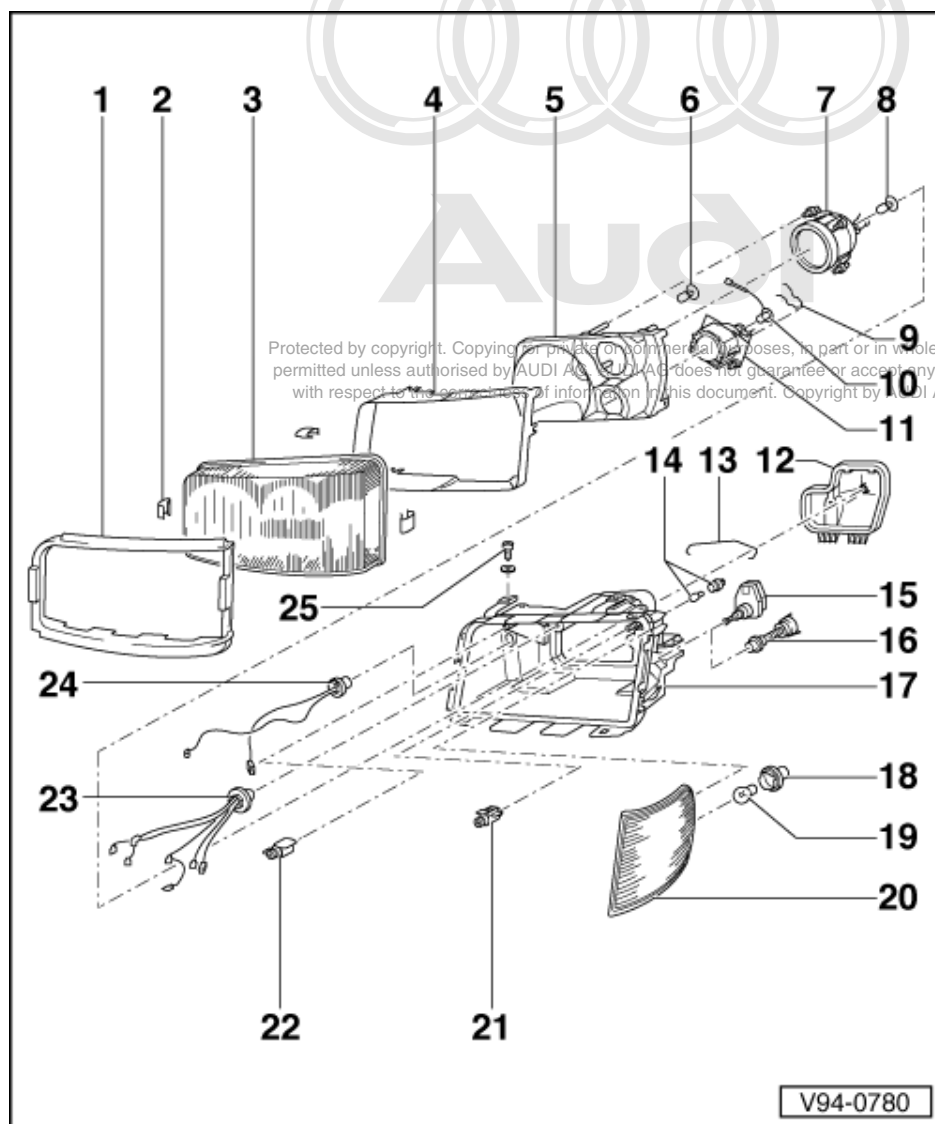
### 1.3 - Servicing headlights Audi S4, 100 TDI 07.91 ä, Audi A6, S6 06.94 ä



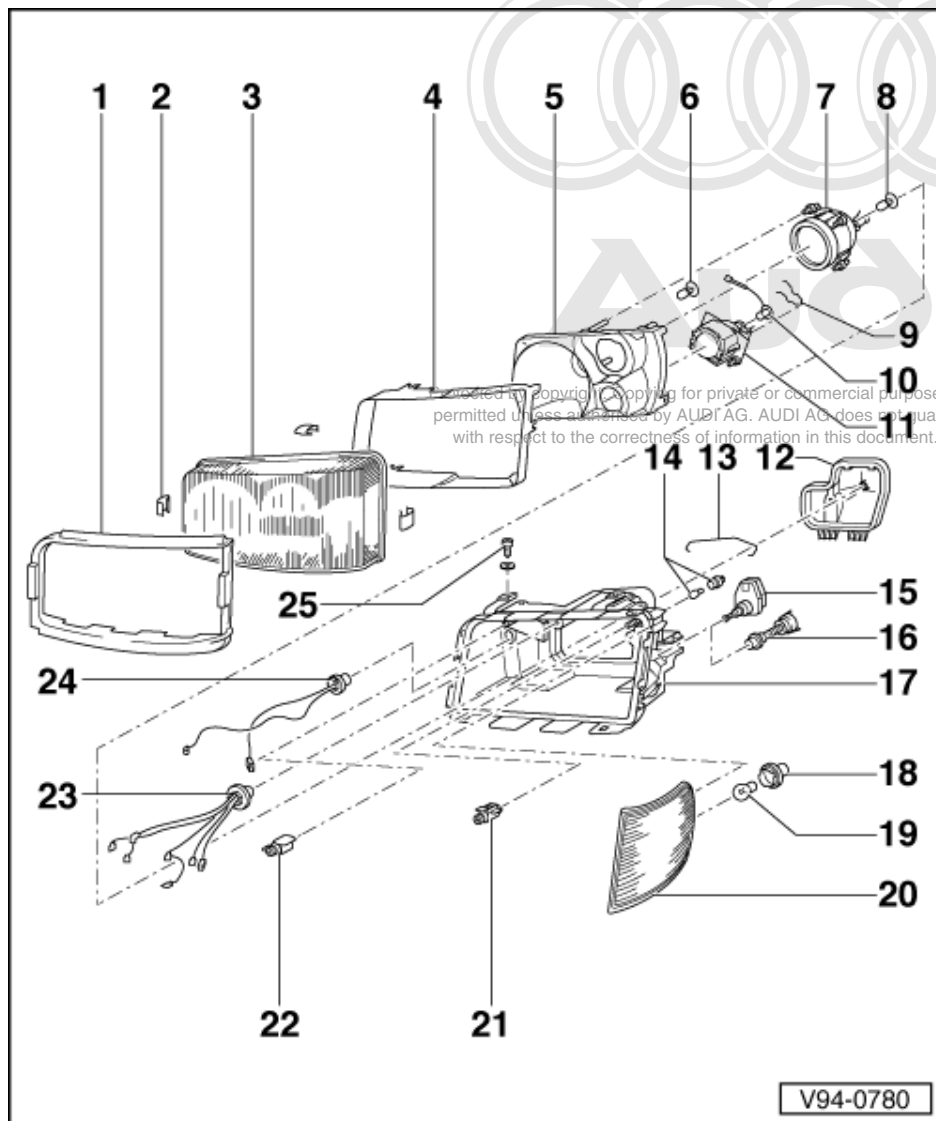
#### Note:

Headlight adjustment => Page 146 .

- 1 Trim (rubber)
- 2 Retaining clip
  - ♦ Prise out using screwdriver to remove
  - ♦ Press in by hand to install
- 3 Lens
- 4 Reflector frame



- 5 Reflector
- 6 Bulb for main beam
  - ◆ 12 V/55 W (H1)
- 7 Headlight unit for dipped beam
- 8 Bulb for dipped beam
  - ◆ 12 V/55 W (H1)
- 9 Wire clip
  - ◆ For bulb
- 10 Bulb for fog lamp
  - ◆ 12 V/55 W (H3)
- 11 Headlight unit for fog lamp



12 Cap

13 Wire clip

14 Socket for side light bulb

- ♦ With side light bulb 12 V/5 W

15 Control motor for headlight range adjustment system

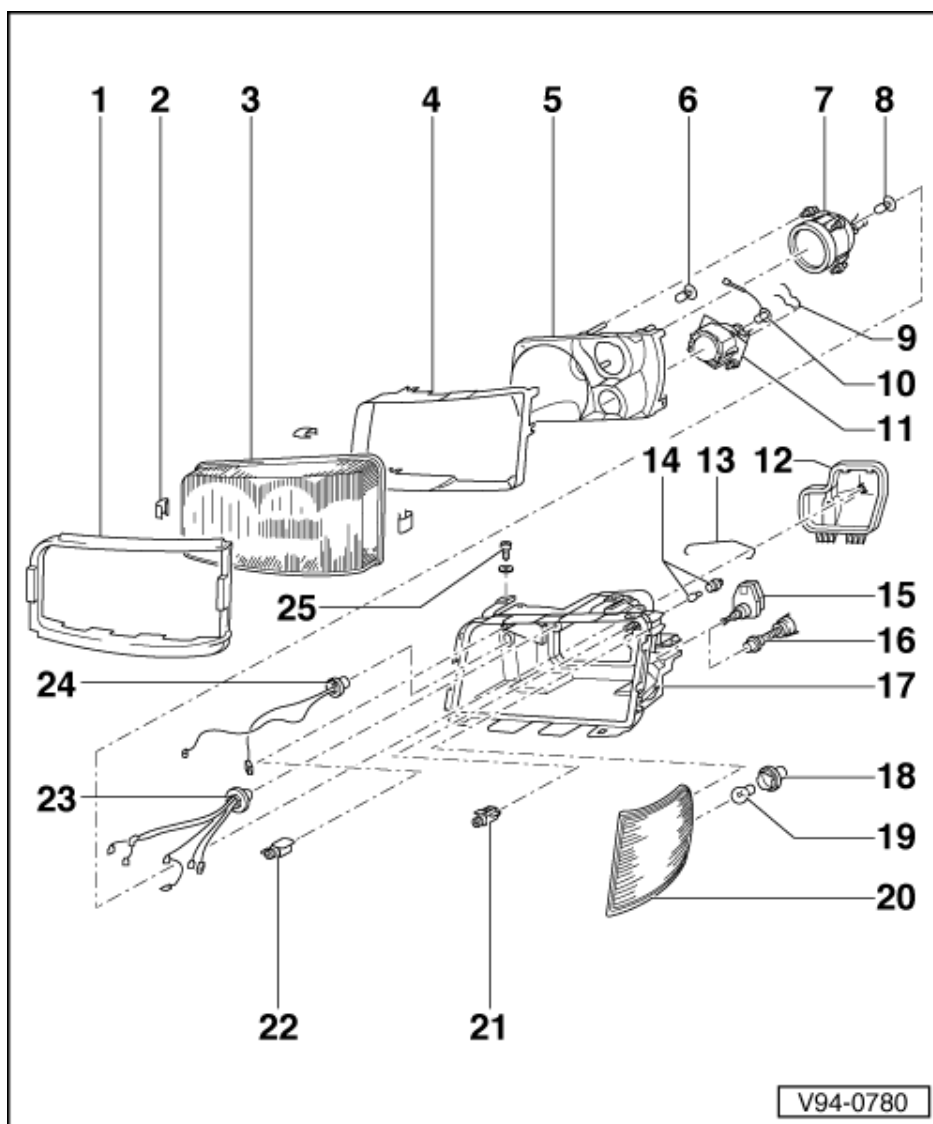
- ♦ For vehicles with headlight range adjustment system

16 Locating piece for reflector

- ♦ Only for vehicles without headlight range adjustment

17 Headlight housing

- ♦ Removing and installing => Page 147



**18 Socket for turn signal indicator bulb**

**19 Bulb for turn signal indicator**

- ♦ 12 V/21 W

**20 Turn-signal indicator**

- ♦ Removing and installing => Page 147

**21 Locating piece**

- ♦ Clipped into reflector

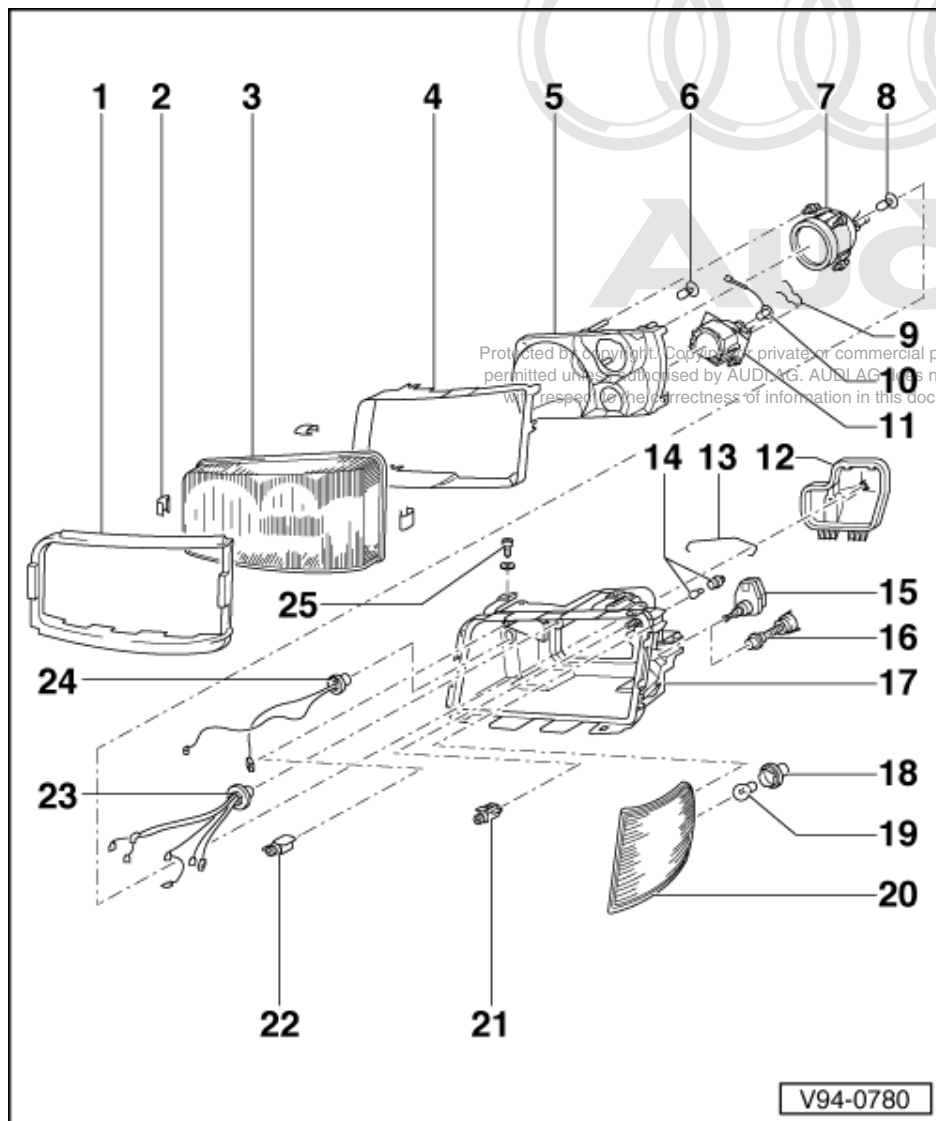
**22 Locating piece**

- ♦ Clipped into reflector

**23 Wiring loom**

- ♦ With plug housing and connector for lights

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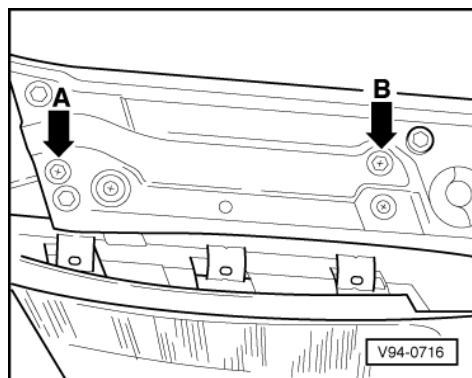
#### 24 Wiring loom

- ♦ With plug housing and connector for fog lamps

#### 25 Securing bolt

- ♦ With washer

### 1.4 - Headlight adjustment



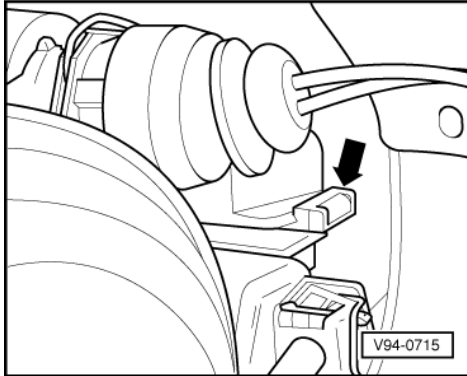
- -> Alter headlight setting by turning adjusting screws using slotted-head screwdriver or Allen key.
- A - Height adjusting screw (towards outside of vehicle)

- B - Lateral adjusting screw (towards inside of vehicle)

**Note:**

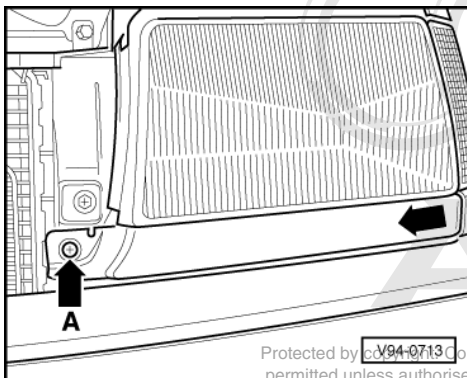
Make the adjustment using a headlight-adjusting device.

## 1.5 - Removing and installing front turn-signal indicator



- -> Audi 100 ä 05.94: Press down catch -arrow- and push out indicator to front.
- Audi S4, 100 TDI 07.91 ä, Audi A6, S6 06.94 ä: Turn locking pin at catch through 90° (1/4 turn) using screwdriver, press down catch and push out indicator to front.
- After installing, secure catch again by 1/4 turn.

## 1.6 - Removing and installing headlight

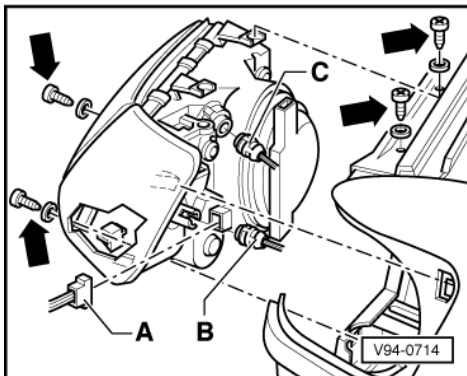


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**Note:**

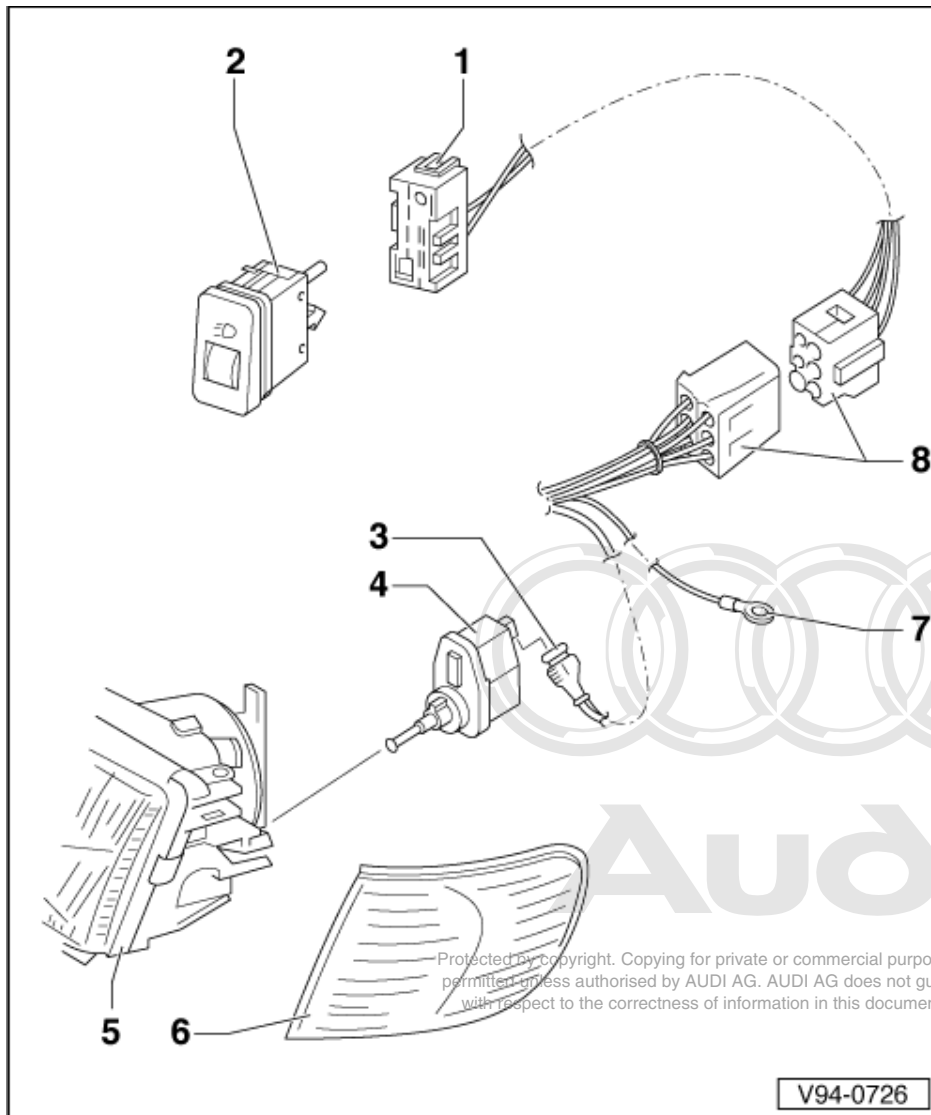
Check headlight setting after installation and correct if necessary.

- -> Remove fastening screw -arrow A- and pull out headlight trim in direction of arrow.



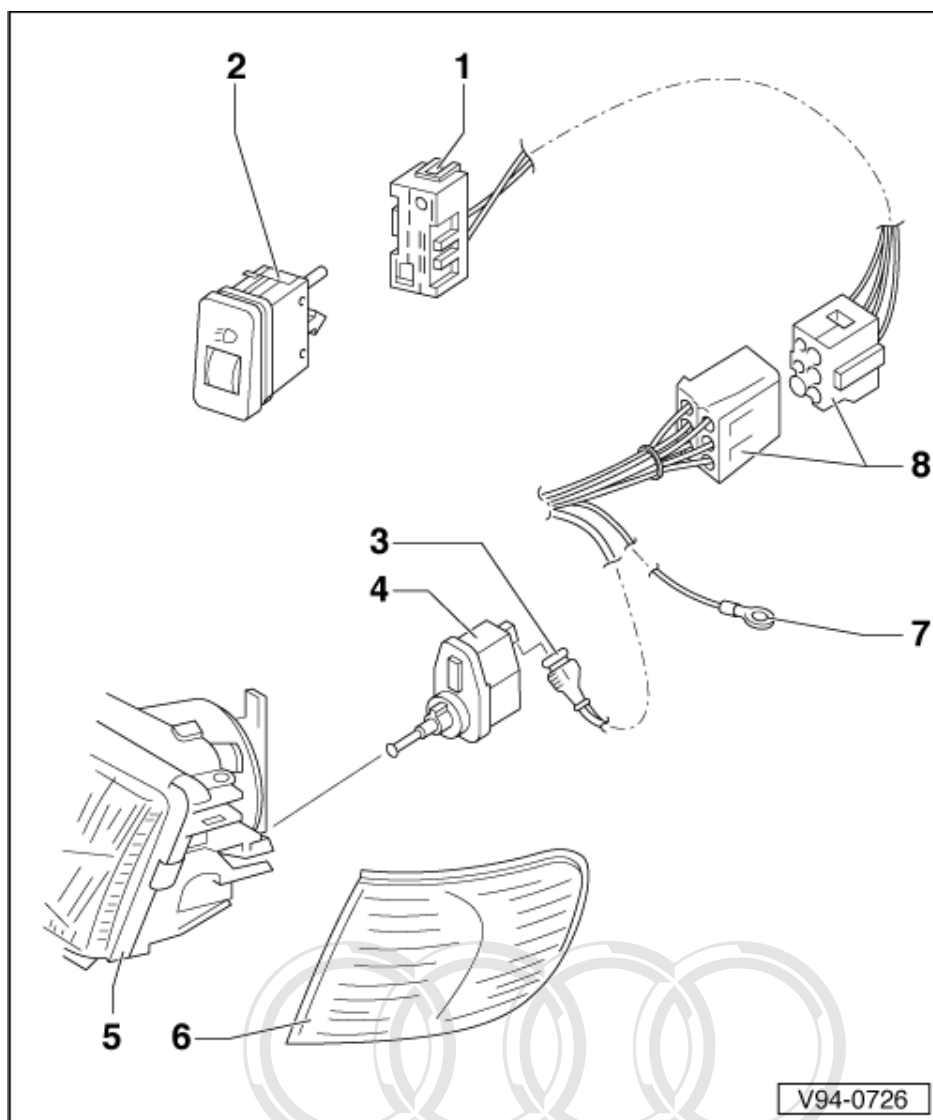
- -> Remove headlight screws - arrows -.
- Push out headlight and turn signal indicator towards the front.
- Unplug connectors:
  - A - Headlight range adjustment
  - B - Turn-signal indicator
  - C - Headlight
- Removing turn signal indicator => Page 147

## 1.7 - Servicing electrical headlight range adjustment



- 1 Connector**
  - ◆ For headlight range control adjuster
  - ◆ At instrument panel wiring loom
- 2 Headlight range control adjuster (potentiometer) -E102**
  - ◆ Installed in centre console
  - ◆ Carefully prise off using screwdriver
- 3 Connector for control motor**
  - ◆ Cavity assignment

=> "Current Flow Diagrams, Electrical Fault Finding and Fitting Locations" binder



**4 Control motor -V48, -V49**

- ♦ Removing and installing => Page **150**

**5 Headlight housing**

- ♦ Remove to remove control motor

**6 Turn-signal indicator**

- ♦ Remove from headlight housing to remove control motor => Page **147**

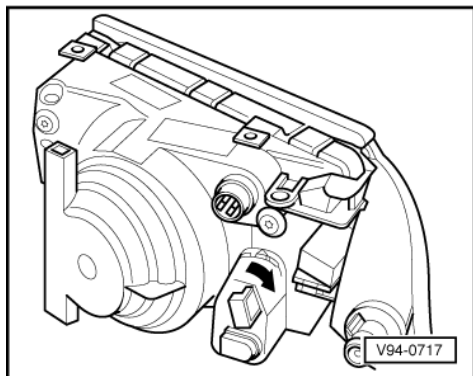
**7 Earthing point**

**8 Connector**

- ♦ Instrument panel/headlight range adjustment wiring loom

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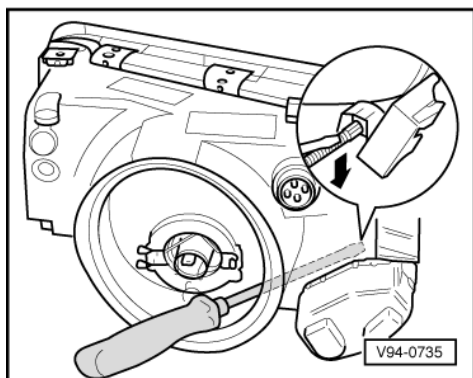
## 1.8 - Removing and installing control motor



### Removal

- Headlight removal => Page 147 .
- -> Release control motor from support frame:
  - Turn control motor anticlockwise for left headlight.
  - Turn control motor clockwise for right headlight
- Release and remove cap on back of headlight housing.

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- -> Lift up control motor and insert narrow screwdriver through rear headlight opening.
- Use narrow screwdriver to press operating arm downwards out of catch.
- Pull out control motor to rear.

### **Note:**

*Illustration shows headlight in Audi 100 ▶ 05.94.*

### Installation

- Use narrow screwdriver to push operating arm into catch until it is fully engaged.

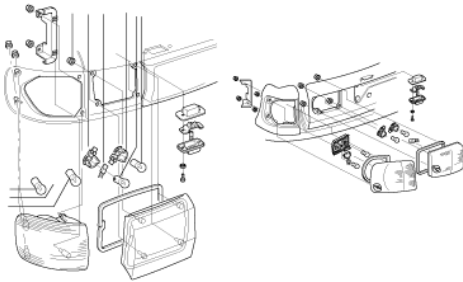
### **Note:**

*Counterhold reflector over hole for headlight bulb. Avoid contact with inside of reflector.*

- Lock control motor in position.
- Headlight installation => Page 147 .

## 2 - Servicing tail light

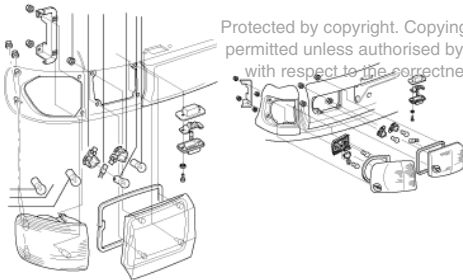
### 2.1 - Servicing tail light



#### Notes:

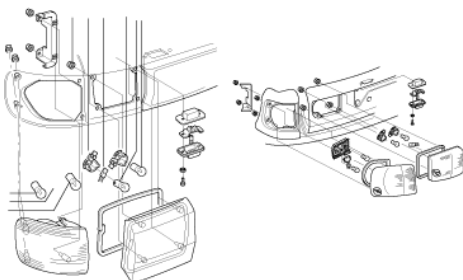
- ♦ Bulbs for luggage compartment lighting 12 V/5, tubular.
- ♦ Switch for luggage compartment lighting in lid lock.

- 1 Nut M5
- 2 Securing clamp
- 3 Bulb holder for rear fog lamp
  - ♦ Removing and installing => Page 3
- 4 Bulb for rear fog lamp
  - ♦ 12 V/21 W



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- 5 Bulb holder for reversing light
  - ♦ Removing and installing => Page 3
- 6 Bulb for reversing light
  - ♦ 12 V/21 W
- 7 Rubber seal
- 8 Bulb holder for number plate light
- 9 Bulb for number plate light
  - ♦ 12 V/4 W
- 10 Clear cover for number plate light



# 11 Seal

# 12 Self-tapping screw

# 13 Connector with wiring loom

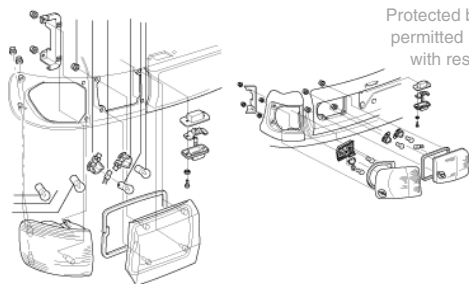
# 14 Seal

# 15 Clear cover for reversing light and rear fog lamp

- ♦ On right side, first remove lock from luggage compartment lid
- ♦ Removing and installing => Page 4

# 16 Clear cover for brake light, reversing light and turn-signal indicator

- ♦ Removing and installing => Page 2



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# 17 Gasket

# 18 Bulb for brake light and reversing light

- ♦ 12 V/21/5 W

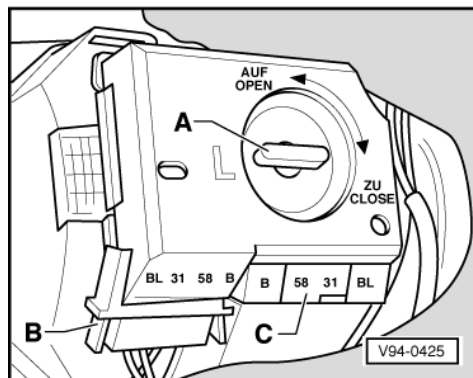
# 19 Bulb for turn signal indicator

- ♦ 12 V/21 W

# 20 Connector with wiring loom

# 21 Bulb holder for brake light, reversing light and turn-signal indicator

- ♦ Removing and installing => Page 1

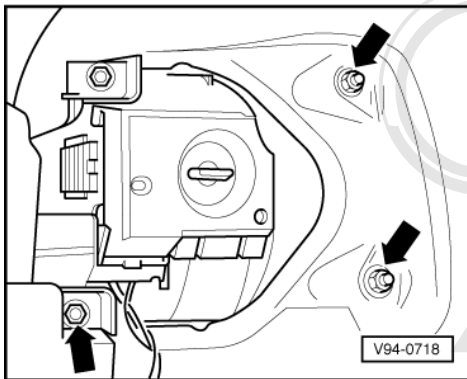


-> Fig.1 Removing and installing bulb holder for brake light, reversing light and turn-signal indicator

- Turn catch -A- in direction of arrow.
- Detach connector -B- and remove bulb holder.

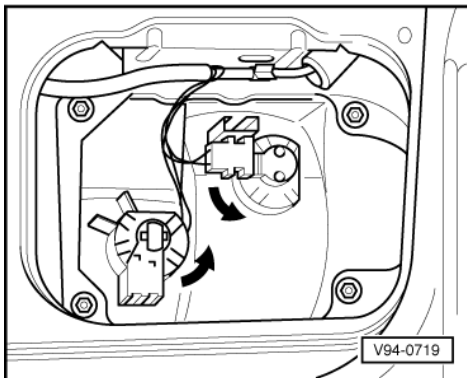
## Note:

Use connections -C- when retrofitting towing hitch.



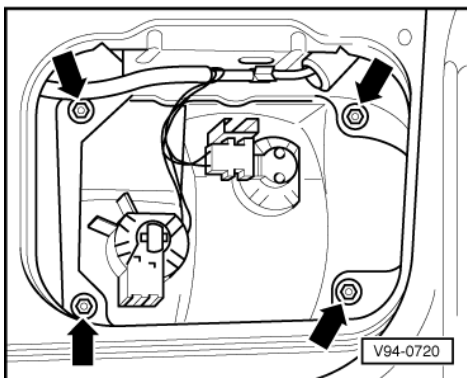
-> Fig.2 Removing and installing clear cover for brake light, reversing light and turn-signal indicator

- Loosen nuts -arrows-.



-> Fig.3 Removing and installing bulb holder for reversing light and rear fog lamp

- Turn bulb holder in direction of arrow and pull out.

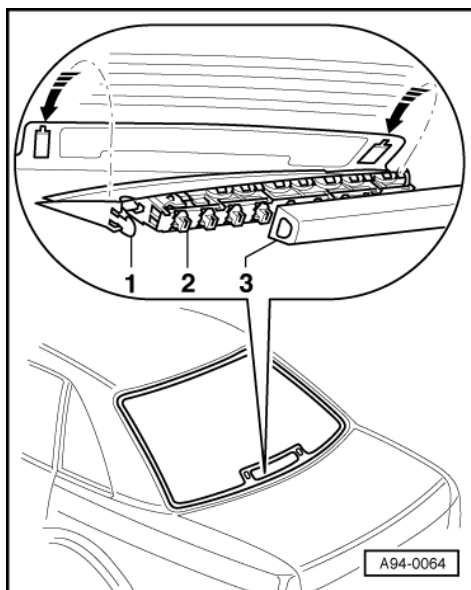


-> Fig.4 Removing and installing clear cover for reversing light and rear fog lamp

- Loosen nuts -arrows-.

## 2.2 - Removing and installing high-level brake light

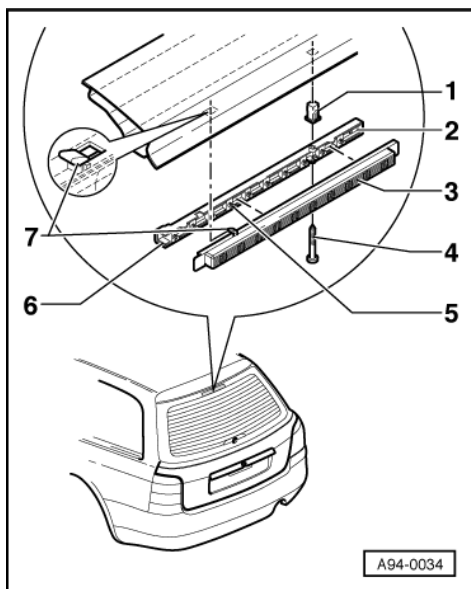
### Saloon



- Pull high-level brake light upwards in opposite direction to arrow out of guides on rear window.
- -> Press down button -1-, remove cover -3-.
- Turn bulb socket -2- in an anticlockwise direction and detach.
- Pull bulb (10 x 12 V/2.1 W) out of socket.

### Avant

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- Remove upper tailgate trim.

=> General Body Repairs, Interior; Repair Group 70; Trim Panels; Removing and installing luggage compartment trim (Avant) Trim Panels Removing and installing luggage compartment trim (Avant)

- -> Detach connector -6-.
- Screw recessed-head screw -4- out of split rivet -1-.
- Detach locating hook -7- from metal cut-out; remove brake light.
- To replace bulb, prise lens -3- off bulb holder -2-.

- Pull bulb -5- (10 x 12 V/2.1 W) out of bulb holder.

## 3 - Servicing steering column switch

### 3.1 - Servicing steering column switch

### 3.2 - Removing and installing steering column switch

**Note:**

*Establish radio anti-theft code before disconnecting the battery.*

**Vehicles without airbag:**

- Detach battery earthing strap.
- Detach steering wheel cover by hand:
  - Pull firmly on top half of cover to carefully detach it from mounting points; then remove bottom half using same procedure.
  - Push cover to one side and remove.
- Detach connector.

**Note:**

*Prior to removal, it may be advisable to put a mark on the steering wheel and steering column using a felt-tipped pen so that the correct steering wheel position can be quickly and easily found during installation.*

- Loosen securing nut on steering column and remove steering wheel (40 Nm).

**Vehicles with airbag:**

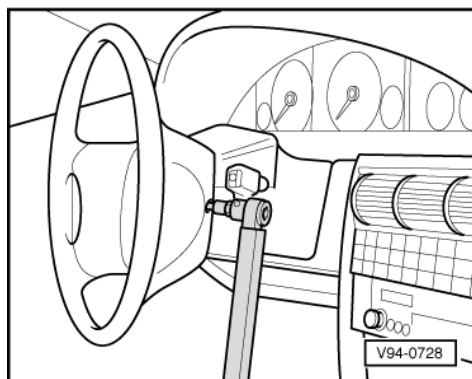
**Attention!**  
Pay attention to safety instructions

General airbag safety instructions:

=> Chassis assembly work; Repair group 69; General safety instructions General safety instructions

- Vehicles ä 06.95: Detach battery earthing strap.
- Detach 1-pin connector for airbag power supply. Location of connector:

=> General body repairs; Repair group 69; Airbag; Servicing airbag ä 06.92 or Servicing driver and front passenger airbag 07.92 ä (airbag II) or Servicing driver and front passenger airbag 07.93 ä (airbag IV and V) Airbag Servicing airbag ä 06.92 or Servicing driver and front passenger airbag 07.92 ä (airbag II) or Servicing driver and front passenger airbag 07.93 ä (airbag IV and V)

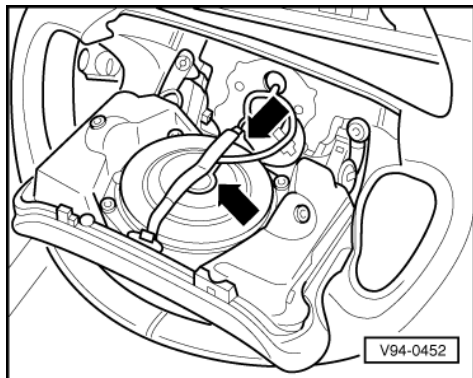


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**Note:**

The 1-pin connector for the airbag power supply was discontinued as of model year 1996.

- Vehicles 07.95 ä: Disconnect battery and cover negative terminal.
- Unscrew airbag unit on left and right of steering wheel from back of steering wheel using TORX insert T30.
- Carefully fold back airbag unit.

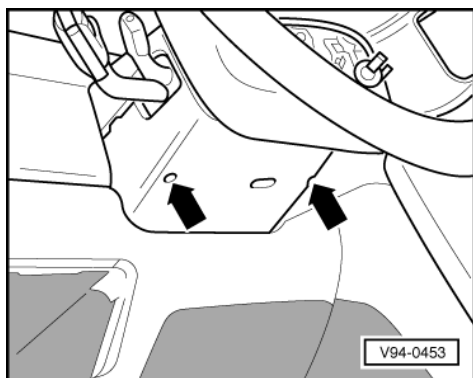


- -> Detach airbag unit plug securing clip.
- Disconnect plug from airbag unit and remove airbag unit.

**Note:**

Set down airbag unit with impact cushion facing upwards.

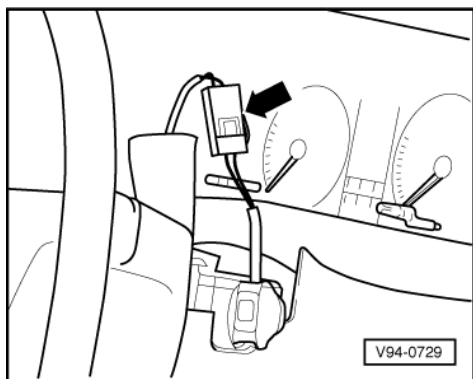
- Move wheels to straightahead position to avoid damaging volute spring in steering wheel.



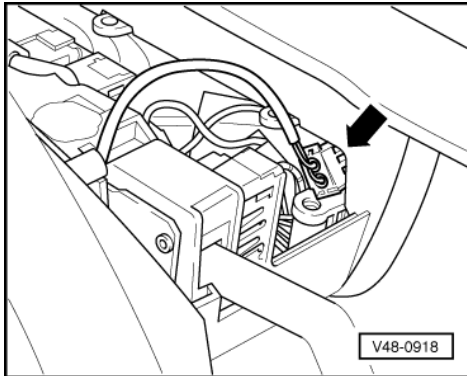
- Vehicles 06.94 ä: Remove tray at driver's side at bottom

=> General Body Repairs; Repair Group 70; Instrument Panel; Removing and installing tray and glove compartment Instrument Panel Removing and installing tray and glove compartment

- -> Remove upper part of steering column switch trim; to do so, loosen the two recessed-head screws - arrows- and remove the trim upwards.



- -> Vehicles ä 05.94: Detach connector of lead for airbag unit.

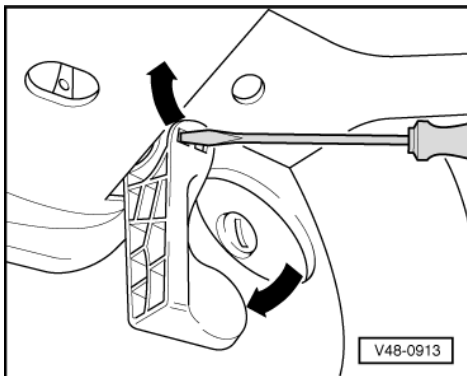


- -> Vehicles 06.94 ä: Detach airbag coupling -arrow- and detach horn earthing strap connector.

**Notes:**

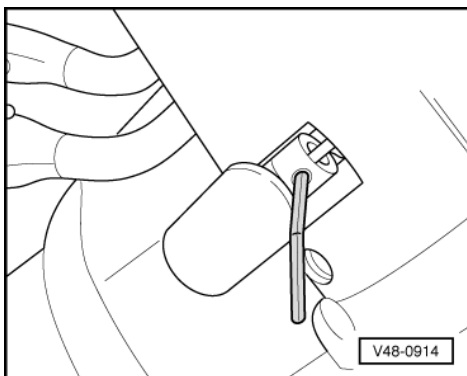
- ◆ Ensure that wheels are in a straightahead position before removing steering wheel.
- ◆ Prior to removal, it may be advisable to put a mark on the steering wheel and steering column using a felt-tipped pen so that the correct steering wheel position can be quickly and easily found during installation.
- Loosen securing nut on steering column and remove steering wheel (40 Nm).

**All vehicles:**



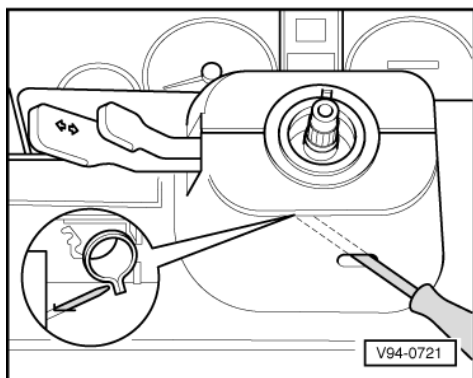
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- The following additional operations are required on vehicles with mechanically adjustable steering wheel:
  - -> Swivel down lever for steering column longitudinal adjustment and use small screwdriver to prise off locking spring -arrows-.
  - Detach longitudinal adjustment lever.



- Use Allen key (2 mm) to loosen bolt and detach angle adjusting lever.

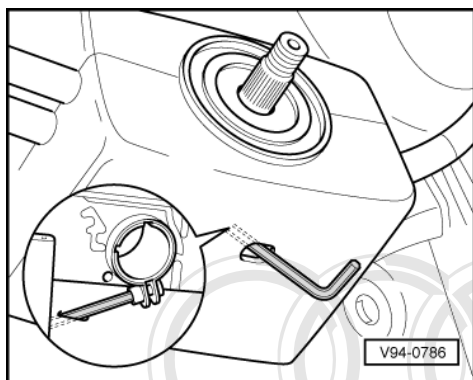
- Remove bottom part of steering column trim.



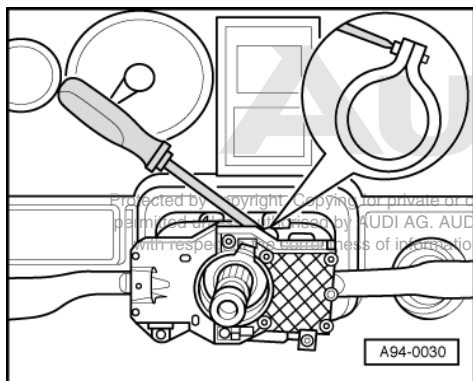
- -> Vehicles ä 08.91: Loosen recessed-head screw for steering column switch clamp on underside.

**Note:**

*The steering column switch clamp fastening screw was changed from a recessed-head screw to a hexagon socket-head bolt as of 08.91 (gradual introduction).*



- -> Vehicles 08.91 ä 05.94: Loosen fastening bolt for steering column switch clamp on underside using 4 mm Allen key (2.5 Nm).



- -> Vehicles 06.94 ä: Loosen fastening bolt for steering column switch clamp on top using 5 mm Allen key.

- Remove all connectors from steering column switch.
- Carefully remove steering column switch.

**Vehicles with airbag:**

- On installation, first screw in airbag unit securing bolts by hand.
- Tighten right-hand bolt to 6 Nm, then tighten left-hand bolt to 6 Nm.

- Connect battery.

**Warning**

There must be no one in the vehicle when the battery is being connected.

## 4 - Servicing ignition/starter switch

### 4.1 - Servicing ignition/starter switch

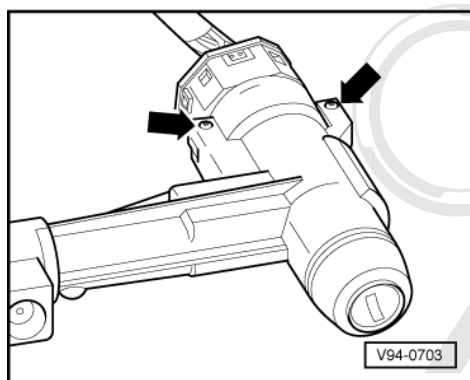
### 4.2 - Removing and installing ignition/starter switch > 05.94)

- Removing steering column switch =>Page 155
- Removing dash insert => Page 33

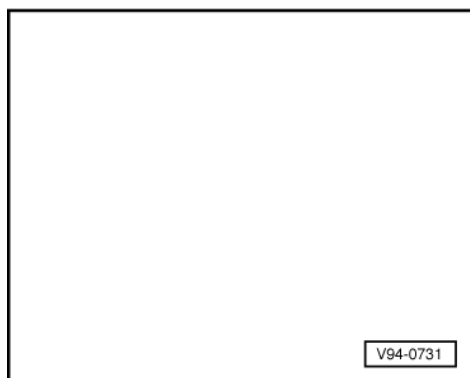
#### Removal

**Note:**

*For the sake of clarity, the illustration shows the steering column lock housing removed.*



- Detach connector at ignition/starter switch.
- -> Remove sealing compound from screws -arrows-
- Loosen screws.



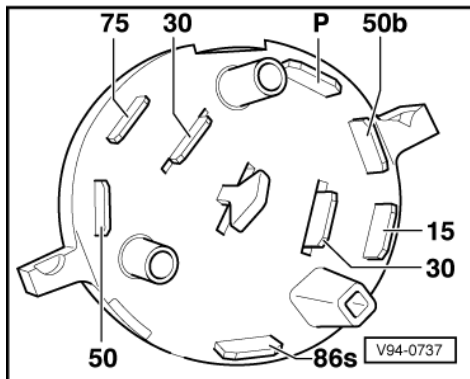
- -> Pull out ignition/starter switch in direction of arrow.

#### Installing

- Turn ignition key in ignition lock as far left as possible to "Ignition off" position.
- Push in ignition/starter switch as far as it will go.



- Tighten both screws and seal with sealing compound.



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-> Connections on ignition/starter switch

### 4.3 - Removing and installing ignition/starter switch 06.94 ä

#### *Note:*

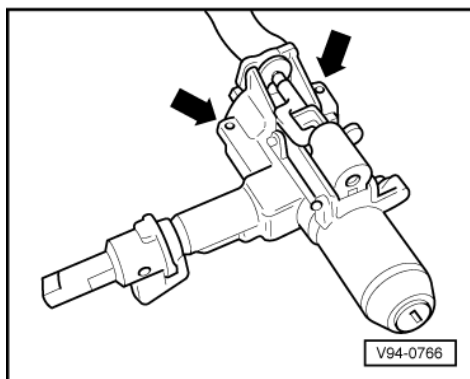
*Steering lock/steering lock housing does not have to be removed.*

- Removing steering column switch =>Page 155
- Removing dash insert => Page 33

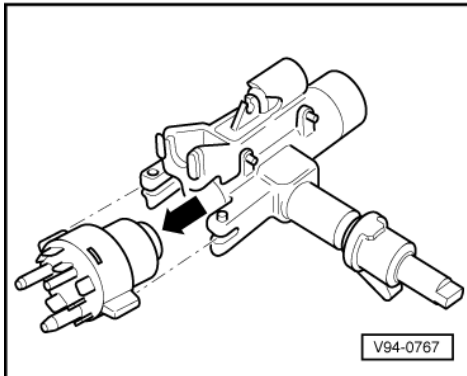
#### Removal

#### *Notes:*

- ♦ For the sake of clarity, the illustration shows the steering column lock housing removed. The transponder coil with wiring is not shown.



- ♦ The illustrations show the steering-column lock housing with shift-lock device for vehicles with automatic gearbox. This is not present in vehicles with manual gearbox.
- Detach connector at ignition/starter switch.
- -> Remove sealing compound from screws -arrows-.
- Loosen screws.



- -> Pull out ignition/starter switch in direction of arrow.

**Note:**

Connections at ignition/starter switch => Page **160**.

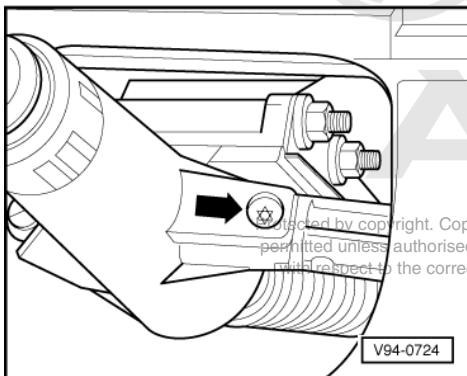
**Installing**

- Turn ignition key in ignition lock as far left as possible to "Ignition off" position.
- Push in ignition/starter switch as far as it will go.
- Tighten both screws and seal with sealing compound.

## 5 - Servicing steering column lock with lock cylinder

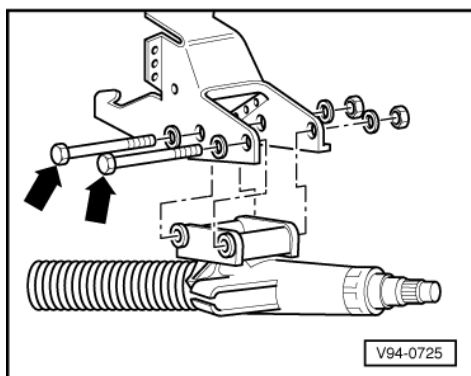
### 5.1 - Servicing steering column lock with lock cylinder

### 5.2 - Removing and installing steering column lock with lock cylinder > 05.94

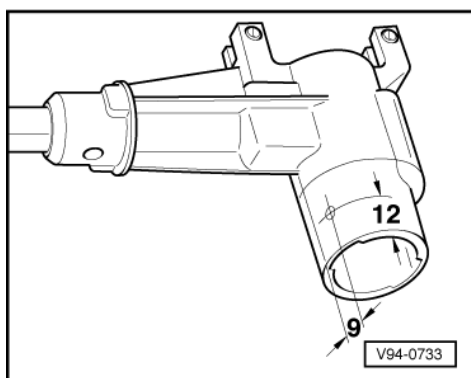


**Removal**

- Removing steering column switch =>Page **155**
- Removing dash panel insert => Page **33**
- Detach connector at ignition/starter switch.
- Remove securing bolt -arrow- (7 Nm) using TORX insert with end-face hole T 30 H.



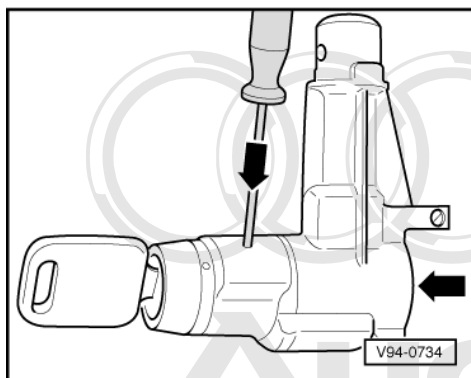
- -> Loosen both nuts at steering column mount and unscrew the through-bolts -arrows- (35 Nm).
- Push down column tube until steering column lock housing can be removed.



- -> Use 3 mm diameter drill to spot drill steering column lock housing as per the dimensions shown.

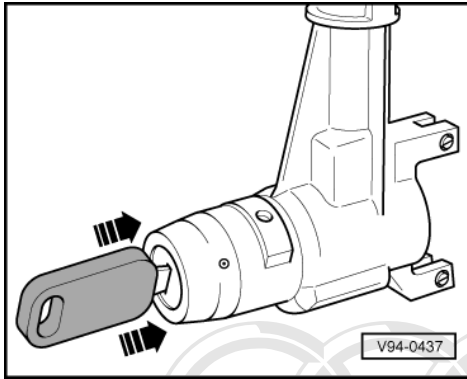
#### Warning

Proceed with caution when doing so in order to avoid damaging the lock cylinder. Drilling depth approx. 1.5 mm.



- Remove ignition/starter switch => Page 159 , so that it is possible to push on the pin end of the lock cylinder.
- -> Push out the lock cylinder -right arrow-; to do so, use makeshift mandrel to push rotating spring inwards -top arrow-.

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#### Installing

- -> Set lock cylinder to "ignition off" position and insert in direction of arrow until retaining spring engages.

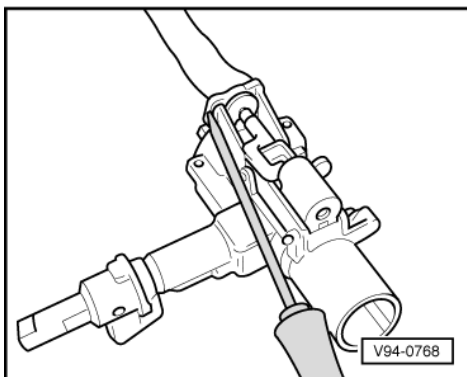
### 5.3 - Removing and installing steering column lock with lock cylinder 06.94 ä

#### Removal

- Removing steering column switch => Page 155
- Removing dash panel insert => Page 33
- Detach connector at ignition/starter switch.

#### Notes:

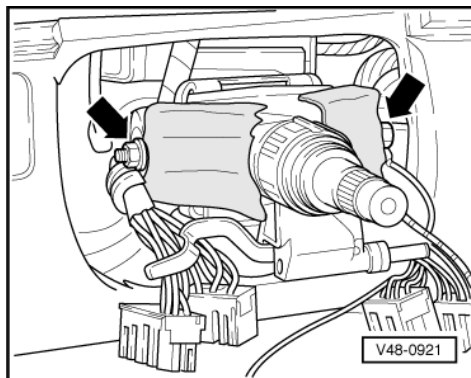
- ♦ For the sake of clarity, the illustration shows the steering column lock housing removed. The transponder coil with wiring is not shown.



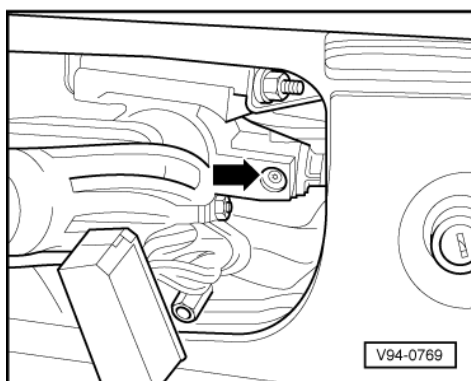
- ♦ The illustrations show the steering-column lock housing with shift-lock device for vehicles with automatic gearbox. This is not present in vehicles with manual gearbox.
- Vehicles with automatic gearbox: Detach cable for shift lock:
  - Use small screwdriver to carefully prise off the shift lock cover.
  - -> Detach cable.

#### Note:

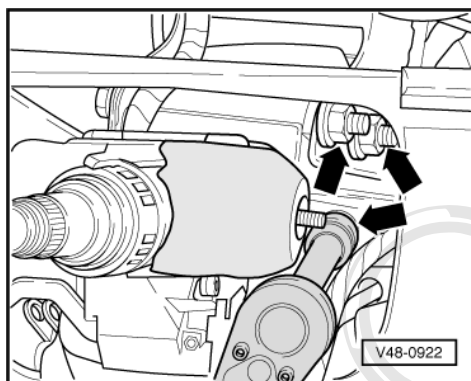
*Do not kink cable when detaching!*



- -> Loosen securing nuts -arrows- of both wiring looms and detach wiring looms from steering column.

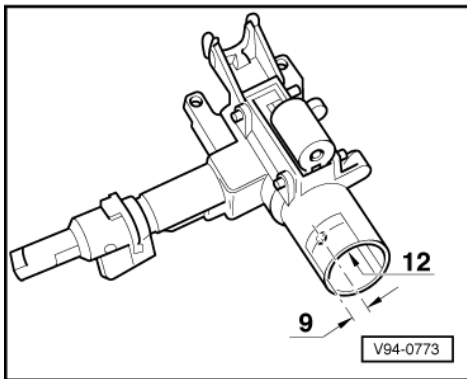


- -> Remove securing bolt -arrow- (7 Nm) using TORX insert with end-face hole T 30 H.
- Remove emergency flasher relay with fastener.



- -> Remove both nuts at steering column mount -top arrows- and unscrew the through-bolts (35 Nm).
- Pull ignition key out of ignition lock.
- Remove column tube downwards out of steering column mount and pull to the left.
- Disconnect transponder coil wiring.
- Pull steering column lock housing to the right out of the steering column.
- Remove steering column lock housing from instrument panel.

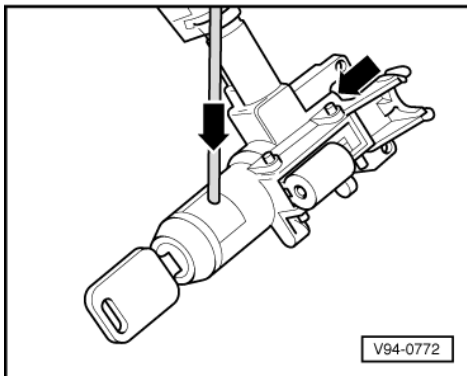
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- -> Use 3 mm diameter drill to spot drill steering column lock housing as per the dimensions shown.

#### Warning

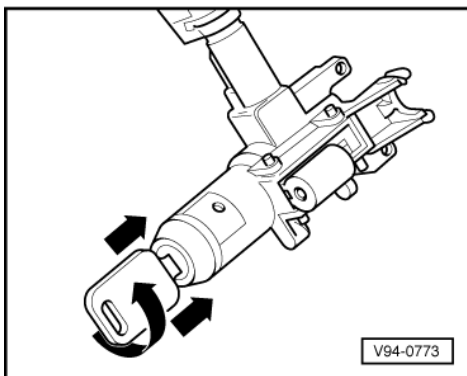
Proceed with caution when doing so in order to avoid damaging the lock cylinder. Drilling depth approx. 1.5 mm.



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- Remove ignition/starter switch => Page 160, so that it is possible to push on the pin end of the lock cylinder.
- -> Push out the lock cylinder -right arrow-; to do so, use makeshift mandrel to push rotating spring inwards -top arrow-.

#### Installing



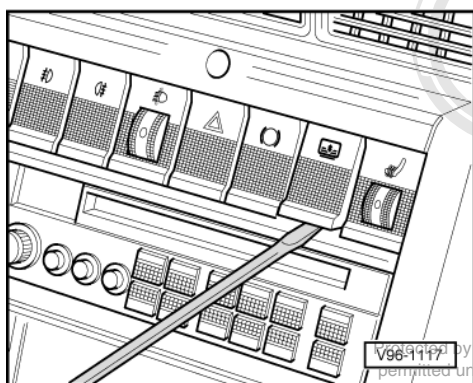
- -> Set lock cylinder to "ignition off" position and insert in direction of arrow until retaining spring engages.
- When installing the steering column, the key must be in the ignition lock so that the steering column will engage in the mount.

## 96 - Lights, Lamps, Switches - interior

### 1 - Centre console switches

#### 1.1 - Centre console switches

#### 1.2 - Removing and installing pushbutton switches



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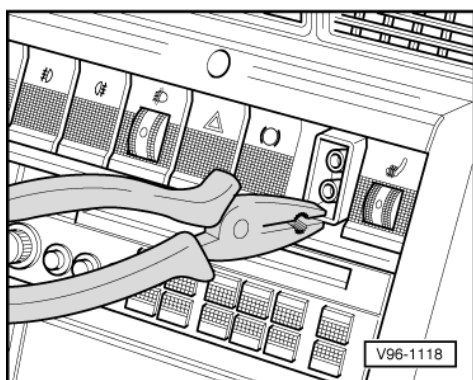
#### **Note:**

*Radio does not have to be removed.*

- Mask area above switches and front of radio using masking tape.

#### **Removal**

- -> Use small screwdriver or flat plastic wedge to prise off switch cover as shown.



- -> Pull switch forwards using universal or flat-nosed pliers.
- Prise or detach connector.

#### **Installing**

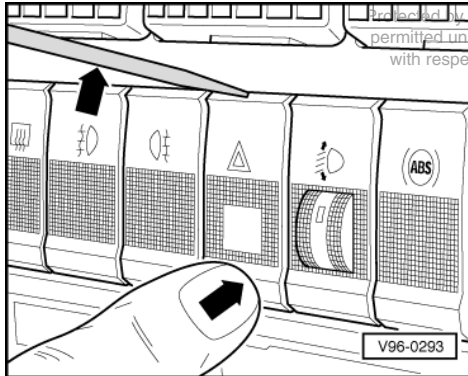
- Press button onto removed switch until it can be heard to engage.

**Note:**

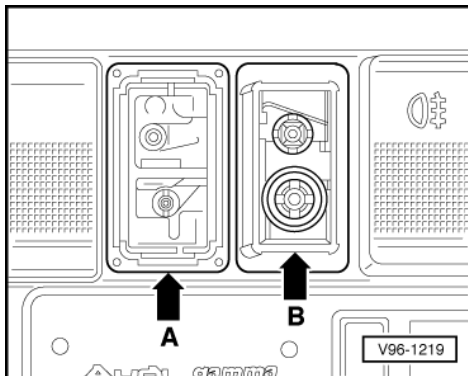
Considerable force is required to press the button onto the rear window blind switch, for example.

- Push on the connector and push switch back in again by hand.

### 1.3 - Replacing bulbs in pushbutton switches



- Mask area above switches and front of radio using masking tape.
- -> Use small screwdriver to carefully prise off switch button from above whilst pressing against opposite side.



- > A - Bulb replacement not possible
- B - Bulb replacement possible

- Extract bulb using pointed pliers or strong tweezers.
- Insert new bulb.
  - Use 2 W bulb for hazard warning switch.
  - Use 0.8 W bulbs for all other switches.

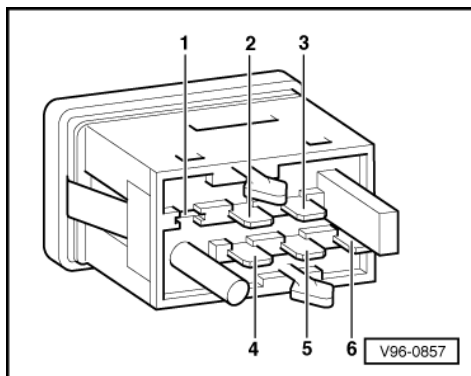
### 1.4 - Removing and installing switch for electrically operated mirrors

- Remove trim for heater controls

=> Heating, AC; Repair group 80; Servicing heating; Heating, heating controls and air ducts Servicing heating Heating, heating controls and air ducts

- Remove fastening screw at bottom left of switch for electrically operated mirrors.
- Pull switch downwards out of retainer.

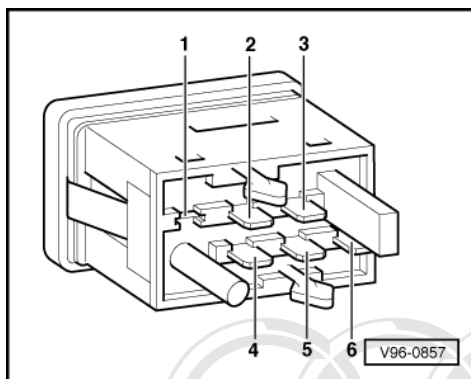
## 1.5 - Checking switch for electrically operated mirrors 07.92 ä



- Remove switch.
- Actuate switch.

### Checking switching contact for mirror heating

- -> Measure from pin 5 to pin 3 using hand-held multimeter V.A.G 1526.
- Specified value: approx. 0.5  $\omega$
- Integrated fuse or switching contact is defective if specified value not attained.
- Replace switch



### Checking switching contact for rear window heating

- -> Measure from pin 5 to pin 6 using hand-held multimeter V.A.G 1526.
- Specified value: approx. 0.5  $\omega$
- Switch is defective if specified value not attained.
- Replace switch

### Vehicles with air conditioner:

#### Note:

*In vehicles with AC, the rear window heating and the mirror heating are actuated electronically. These electronics are activated by pushbutton and heat the rear window and the mirrors for 10 minutes via pin 6 and pin 3 respectively.*

- Measure from pin 6 to pin 3 using hand-held multimeter V.A.G 1526.
- Specified value: approx. 0.5  $\omega$
- Integrated fuse is defective if specified value not attained.
- Replace switch

## 2 - Electric window lifters

### 2.1 - Electric window lifters

#### *General notes:*

- ◆ Consult appropriate current flow diagram and troubleshooting instructions during troubleshooting.

=> "Current Flow Diagrams, Electrical Fault Finding and Fitting Locations" binder

- ◆ The mechanical section (linkage/cable) and the motor/gear unit are available as separate replacement parts. When performing repairs, only replace component concerned/defective and not the entire window lifter.
- ◆ Before removing the electric window lifter, always determine exactly whether the fault/damage is in the wiring, mechanical components or motor/gear unit.
- ◆ The front and rear window lifter motors are not identical.
- ◆ Removing and installing window lifter from/to door component carrier

=> General Body Repairs; Repair group 57; Front door; Removing window lifter and window from and installation on door component carrier Front door Removing window lifter and window from and installation on door component carrier

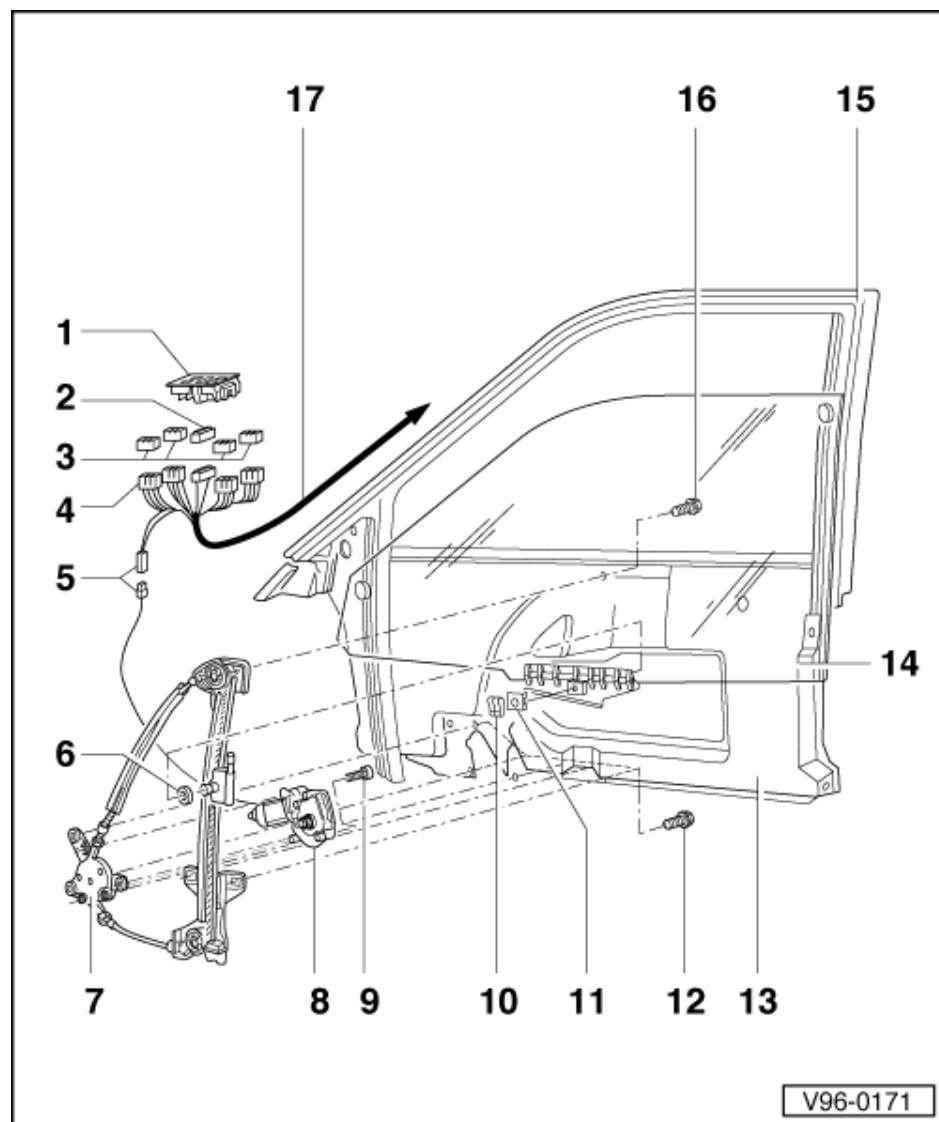
=> General Body Repairs; Repair group 58; Rear door; Removing window lifter and window from and installation on door component carrier Rear door Removing window lifter and window from and installation on door component carrier

- ◆ Adjust top end stop after installing window lifter (mechanism) or entire door component carrier



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## 2.2 - Front electric window lifter - exploded view



### 1 Console with switch unit

- ♦ Removing and installing => Fig. 1

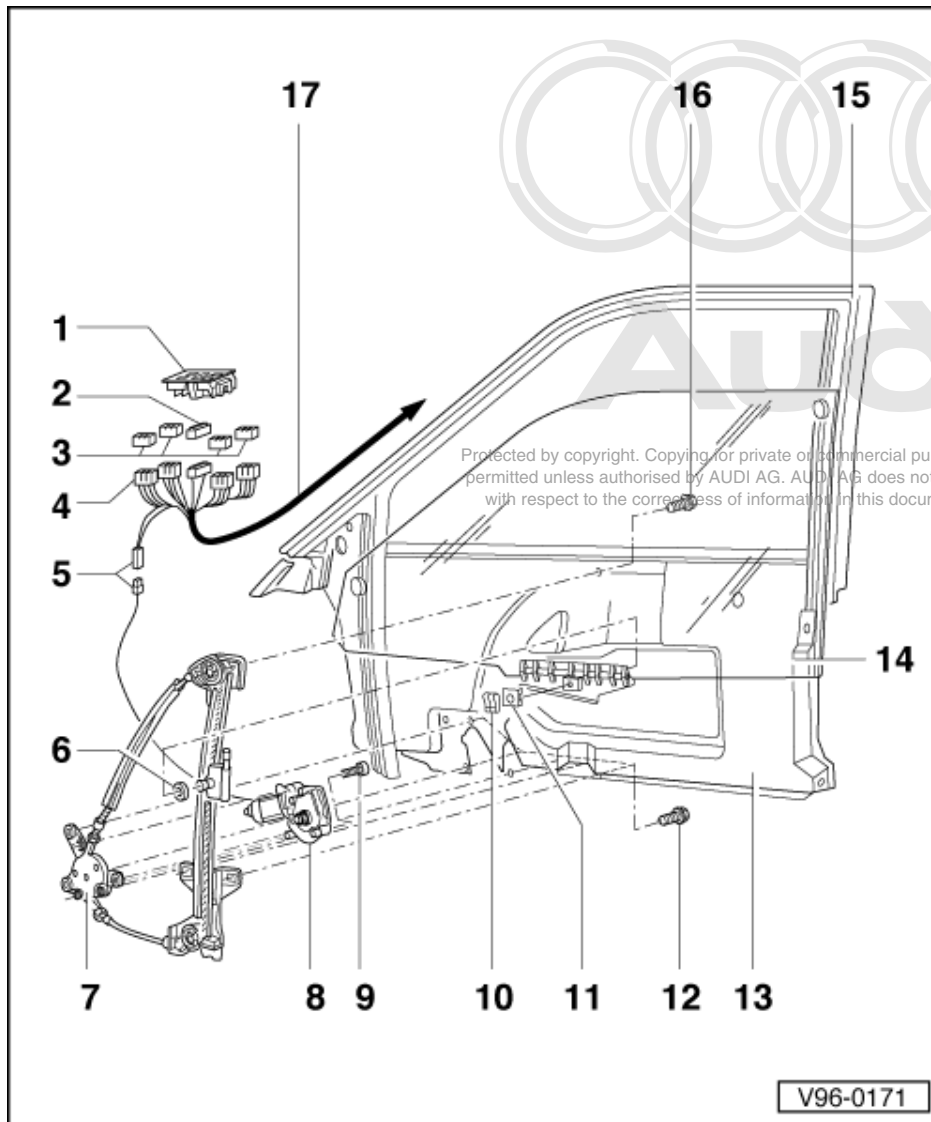
### 2 Locking switch for rear window lifter

- ♦ Only fitted with rear electric window lifters
- ♦ Removing and installing => Fig. 3

### 3 Window lifter switches -E40, -E53, -E35, -E41

- ♦ Removing and installing console with switch unit => Fig. 1
- ♦ Removal from and installation in console => Fig. 2

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**4 Connector for front left switch unit**

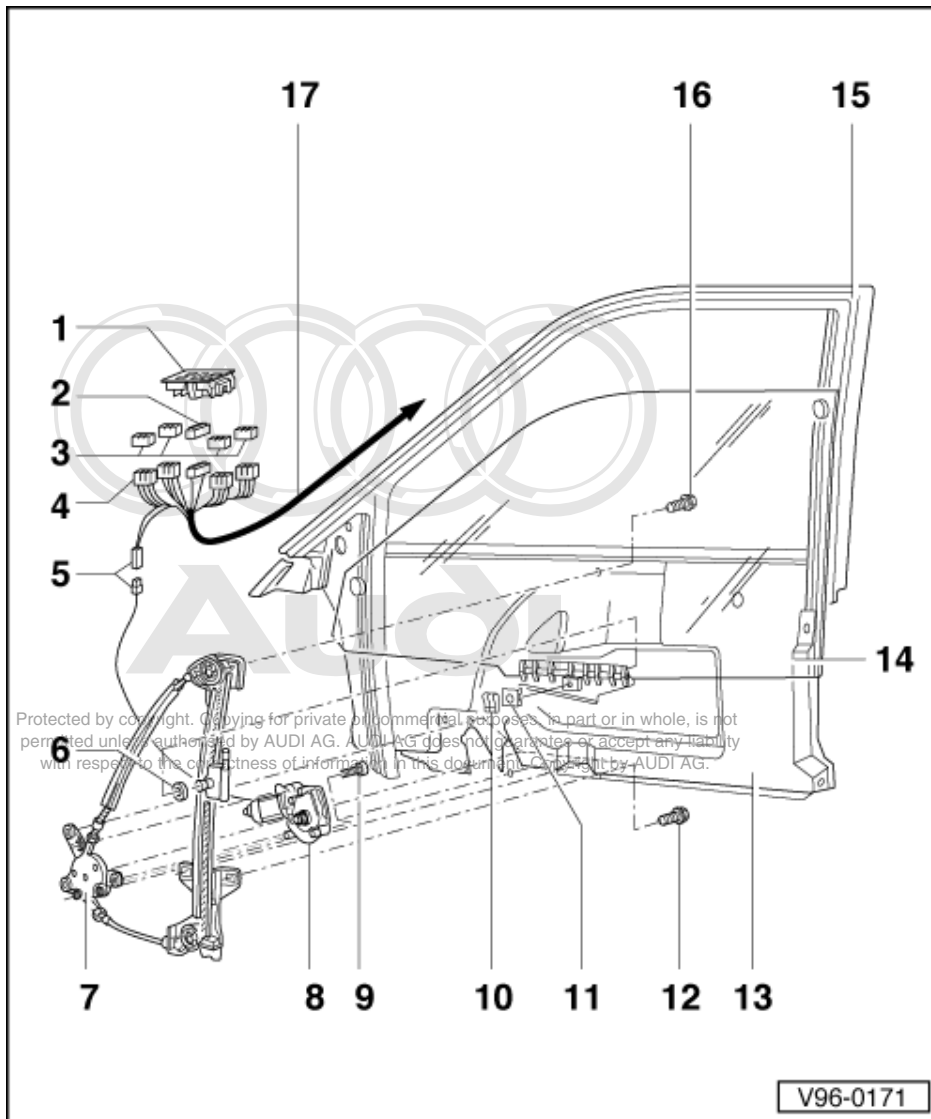
- ♦ Dismantling and assembling connector for right switch => Fig. 4

**5 Connector for front left switch unit**

- ♦ Not directly attached to switch; connected to 2-pin plug housing of window lifter wiring loom.

**6 Damper**

**7 Window lifter (mechanism)**



# 8 Window lifter motor, left -V17

- ♦ Can be replaced without removing window lifter (mechanism)
- ♦ Removing and installing => Page **175**

# 9 Torx bolt - 4.5 Nm

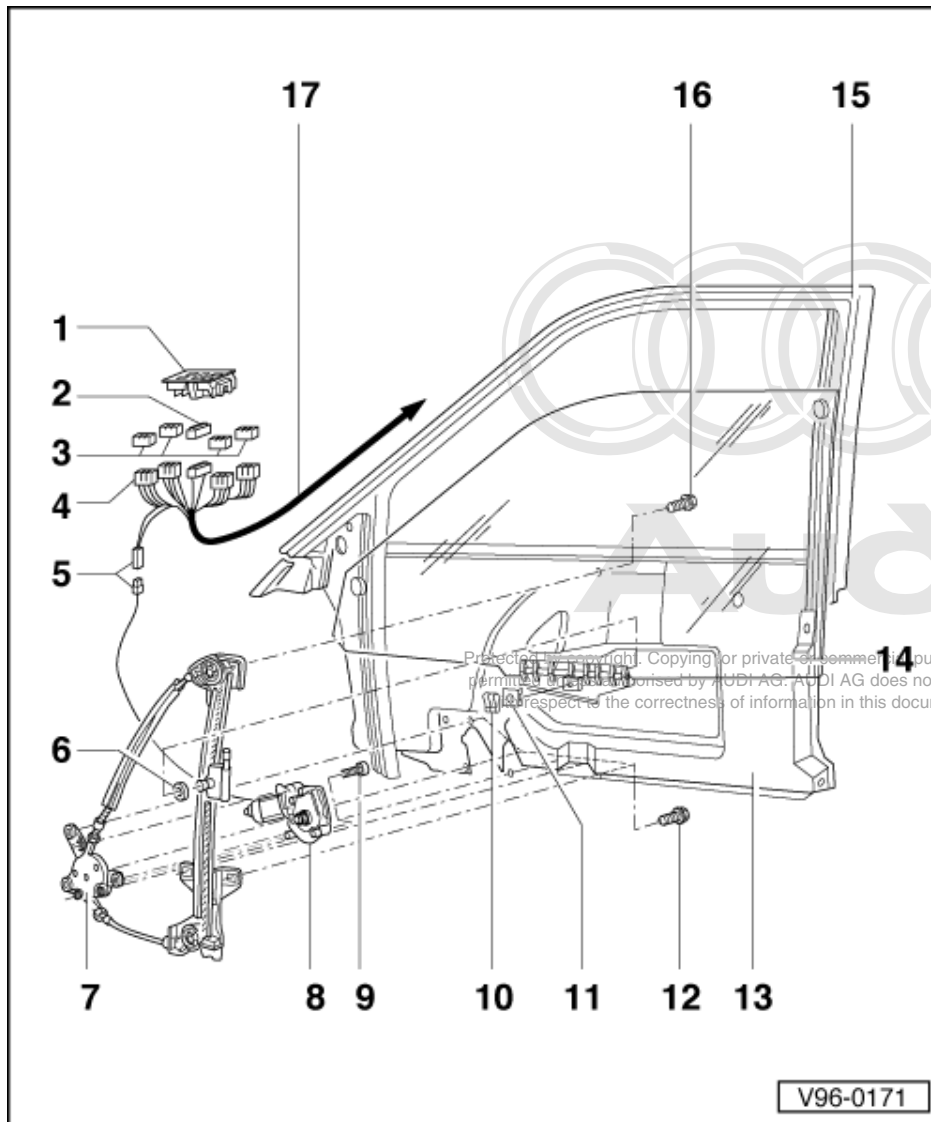
- ♦ Qty. 3

# 10 Window securing element

# 11 Washer

# 12 Bolt - 10 Nm

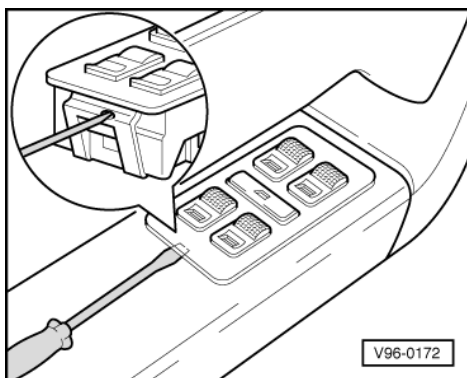
# 13 Door component carrier



- 14 Front left window
- 15 Window channel (window seal)
- 16 Bolt, 10 Nm
- 17 Wiring loom

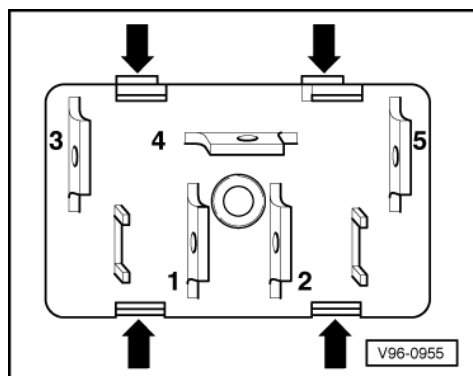
♦ Wiring and contact assignment

=> "Current Flow Diagrams, Electrical Fault Finding and Fitting Locations" binder



### -> Fig.1 Removing and installing console with switch unit

- carefully position small screwdriver between door trim and console and prise out.
- To install, carefully push home the console.



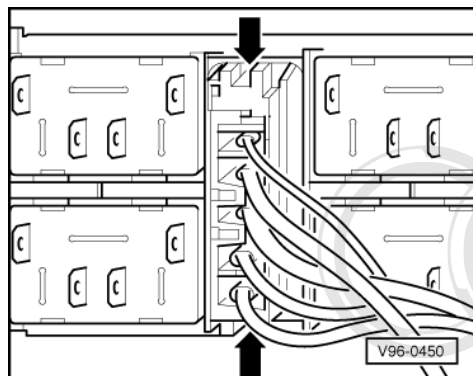
### -> Fig.2 Removing switch from and installing in console

- Remove plug.
- Use small screwdriver to prise long sides of switch -arrows- out of catch and push out switch in doing so.
- To install, push in switch until all retaining lugs engage.

#### **Note:**

Switch functional test => troubleshooting instructions

=> "Current Flow Diagrams, Electrical Fault Finding and Fitting Locations" binder



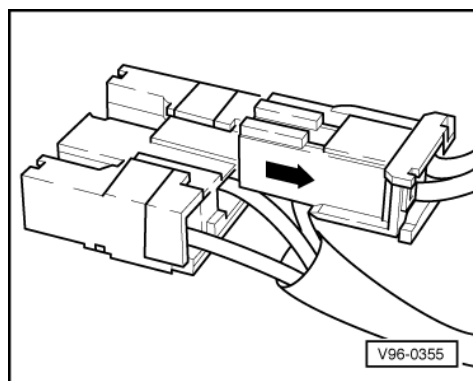
### -> Fig.3 Removing locking switch for rear window lifter from and installing in console

- Position small screwdriver in recesses (arrows), press towards centre of switch and carefully push out the switch in doing so.

#### **Note:**

Switch functional test => troubleshooting instructions

=> "Current Flow Diagrams, Electrical Fault Finding and Fitting Locations" binder

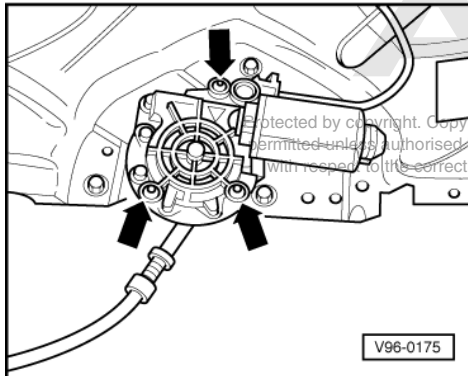


-> Fig.4 Dismantling and assembling connector

- Front right door only
- Unclip 2-pin connector from 3-pin housing to the rear by tilting it sideways-arrow-.

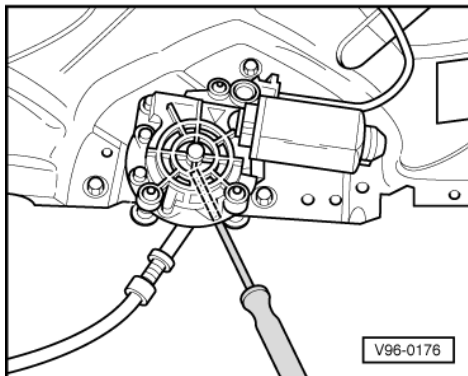
## 2.3 - Removing and installing front window lifter motor

**Note:**



*Motor without window lifter (mechanism) can be removed or installed with door component carrier either installed or removed.*

- Remove door trim
- -> Unscrew Torx bolts -arrows-.
- Remove 2-pin connector



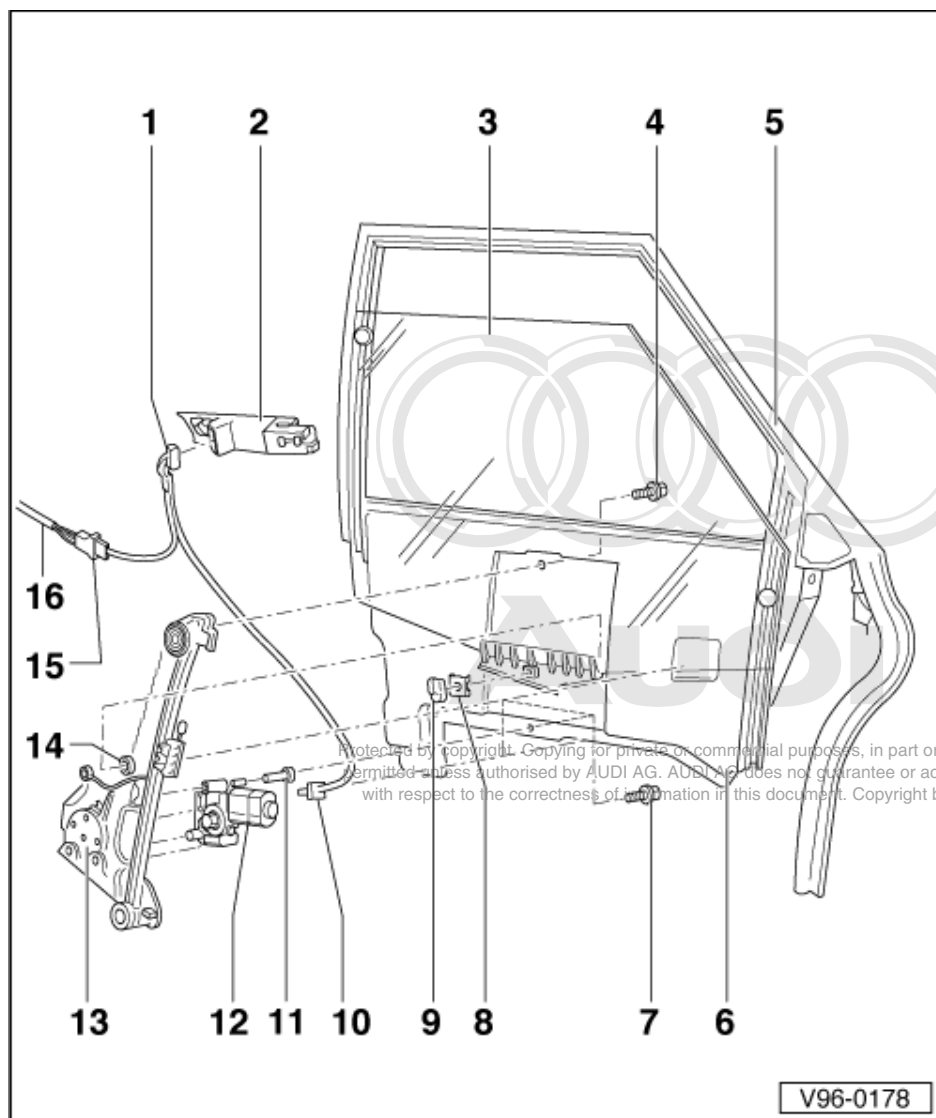
- -> Prise motor off carefully using a screwdriver.

**Note:**

*Functional check: Connect removed motor to battery using auxiliary cable and check direction of rotation. Provide 30 A fuse for power supply when doing so.*

- To install, position motor exactly on window lifter (mechanism) and diagonally tighten (4.5 Nm) Torx bolts.

## 2.4 - Rear electric window lifters - exploded view



### 1 Rear left window lifter switch -E52

- ♦ Removing => Page 179

### 2 Inside door mechanism

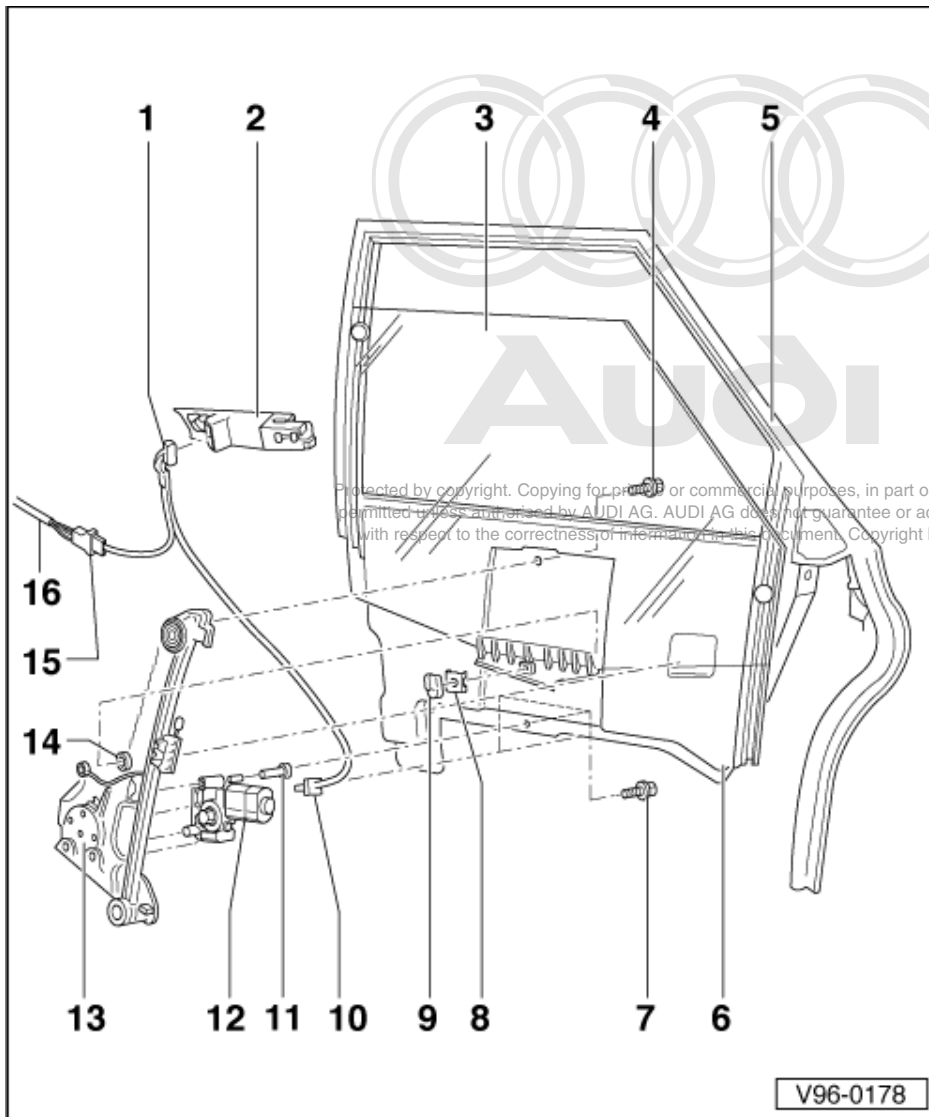
- ♦ Removing and installing => Page 179

### 3 Rear left window

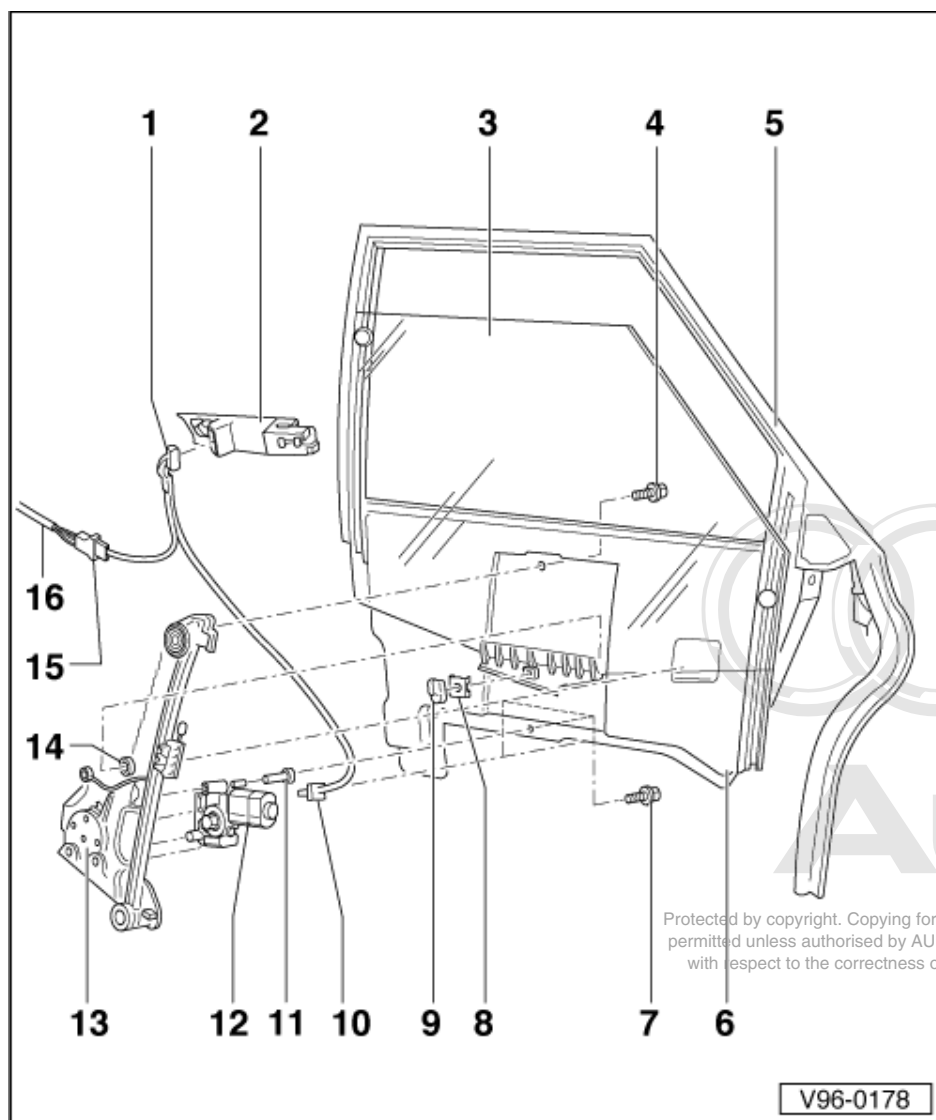
### 4 Bolt, 10 Nm

### 5 Window channel (window seal)

### 6 Door component carrier



- 7 Bolt, 10 Nm
- 8 Washer
- 9 Window securing element
- 10 2-pin connector for rear left window lifter
- 11 Torx bolt - 4.5 Nm
- 12 Rear left window lifter motor -V26
  - ♦ Can be replaced without removing window lifter (mechanism)
  - ♦ Removing and installing => Page 180



**13 Window lifter (mechanism)**

**14 Damper**

**15 3-pin connector for rear left switch**

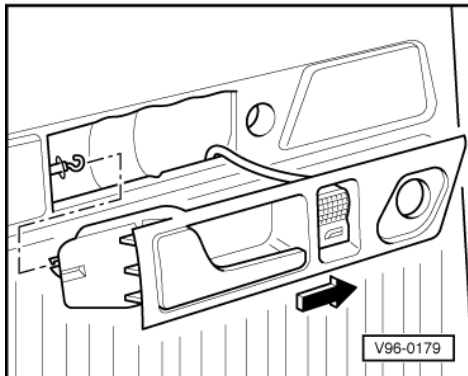
- ♦ Remove and install door trim when removing and installing switch

**16 Window lifter wiring loom**

- ♦ Wiring and contact assignment

=> "Current Flow Diagrams, Electrical Fault Finding and Fitting Locations" binder

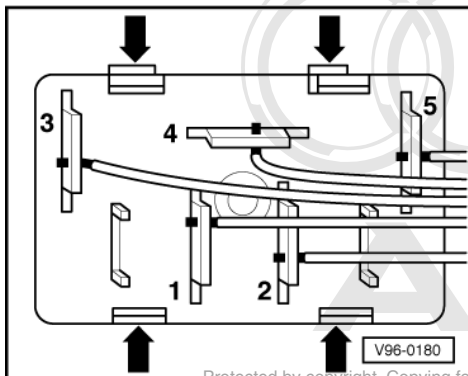
## 2.5 - Removing and installing rear window lifter switch



### **Note:**

*Wiring loom is soldered to switch*

- Prise off cover for handle
- Unscrew handle
- -> Press/slide inside door mechanism in direction of arrow and remove.
- Detach cable for inside door mechanism.



- Use small screwdriver to prise long sides of switch - arrows - out of catch and push out switch in doing so.
- Remove door trim

=> General body repairs; Repair group 70; Door trims; Removing and installing rear door trim Door trims Removing and installing rear door trim

- Detach both connectors

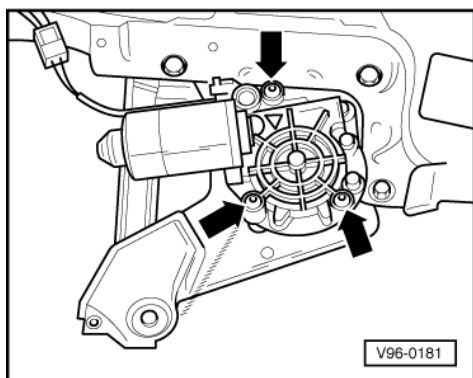
### **Note:**

*Switch functional test => troubleshooting instructions*

=> "Current Flow Diagrams, Electrical Fault Finding and Fitting Locations" binder

## 2.6 - Removing and installing rear window lifter motor

### Note:

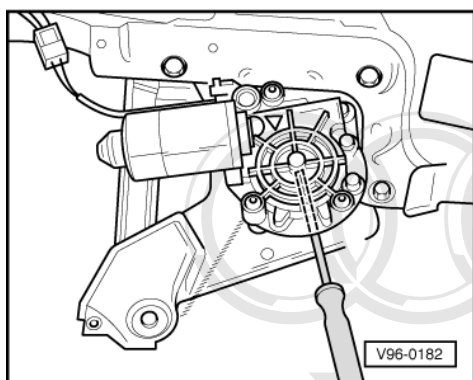


Motor without window lifter (mechanism) can be removed or installed with door component carrier either installed or removed.

- Remove door trim

=> General body repairs; Repair group 70; Door trims; Removing and installing rear door trim Door trims Removing and installing rear door trim

- -> Unscrew Torx bolts -arrows-.



- -> Prise motor off carefully using a screwdriver.

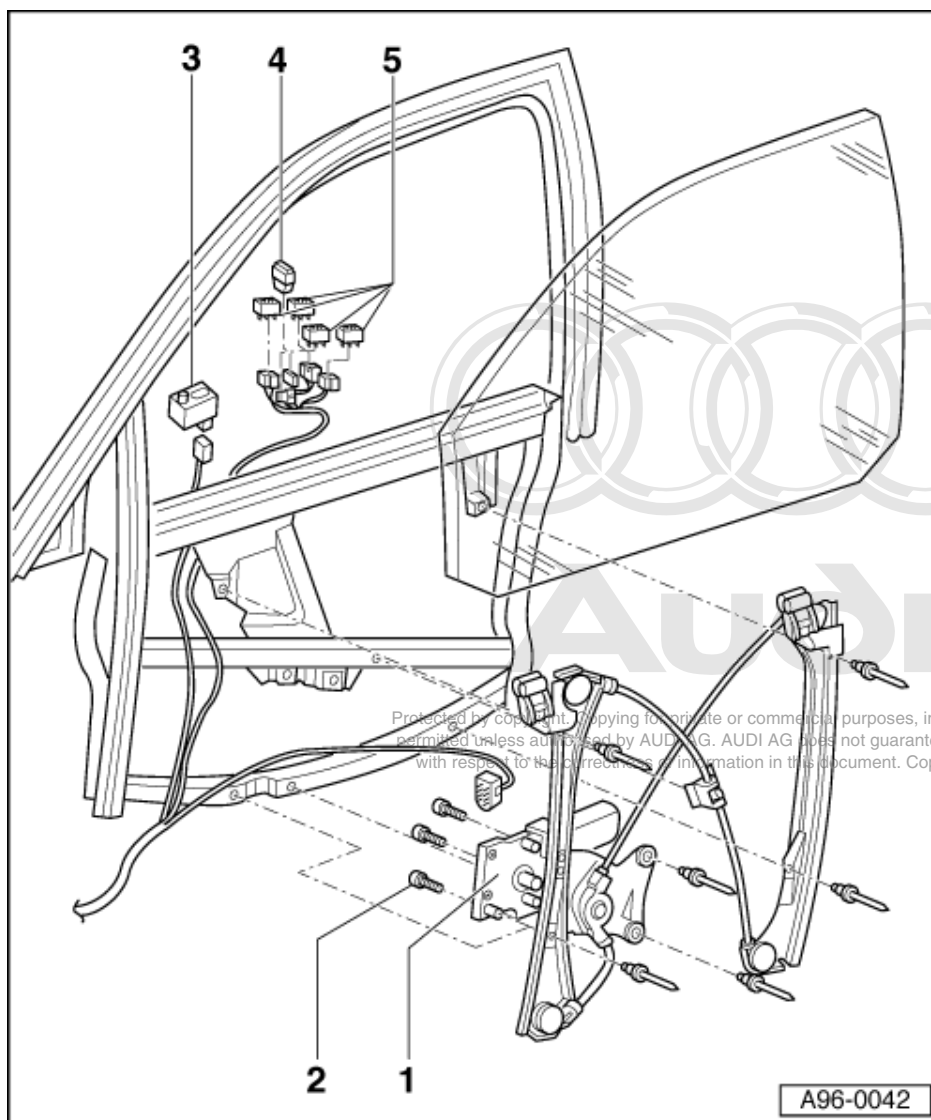
### Note:

**Functional check:** Connect removed motor to battery using auxiliary cable and check direction of rotation. Provide 30 A fuse for power supply when doing so.

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- To install, position motor exactly on window lifter (mechanism) and diagonally tighten (4.5 Nm) Torx bolts.

## 2.7 - Servicing electric window lifters with cushioned closing

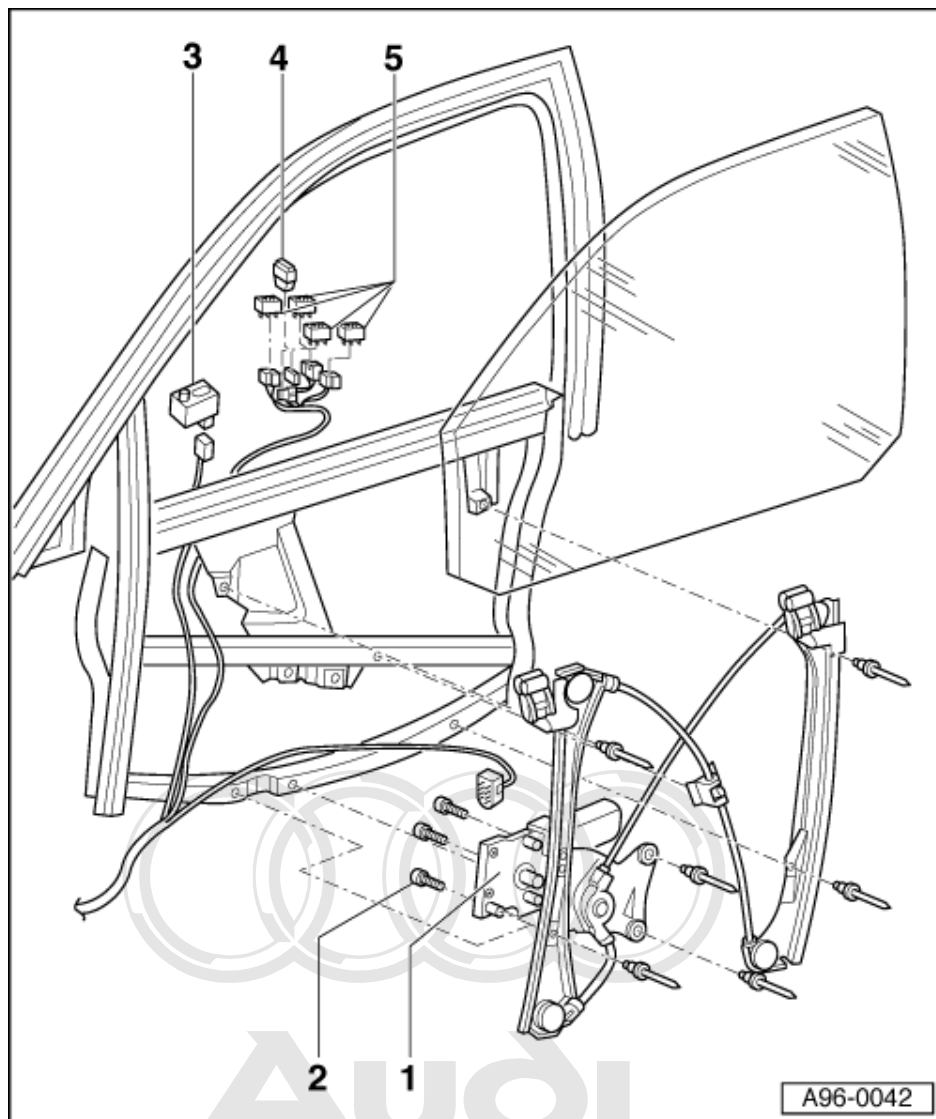


### **Note:**

*Removal and installation of window lifter switches and motors is same for all doors.*

### **1 Window lifter motor**

- ♦ Can be removed and installed with motor or side window in any position.
- ♦ After installing the motor:
  - Switch ignition on and off once and then raise windows as far as they will go
  - Actuate switch again for 1 second in "close" position.



- Then actuate switch in "open" position. The side window should automatically be lowered as far as it will go.

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## 2 Torx bolts T30, 4.5 Nm

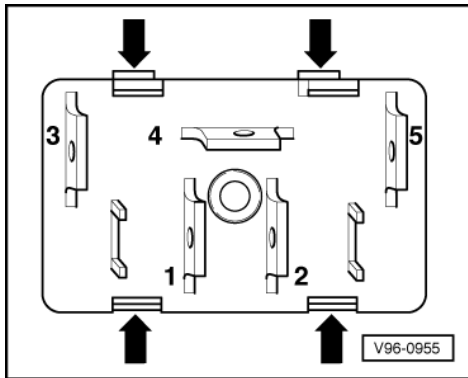
## 3 Mirror adjustment switch

## 4 Locking switch for rear window lifter

- ◆ Removing and installing => Fig. 2
- ◆ Functional test => Fig. 4

## 5 Window lifter switch

- ◆ Removing and installing => Fig. 1
- ◆ Functional test => Fig. 3

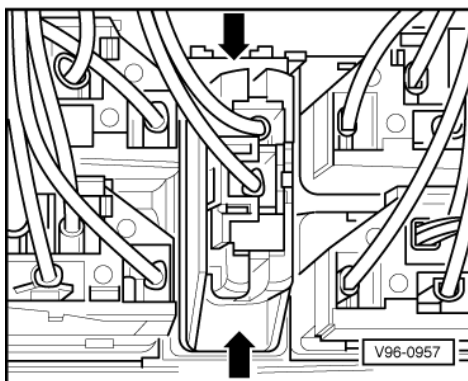


-> Fig.1 Removing and installing switch

- The door trim must be removed in order to remove the switches in the doors

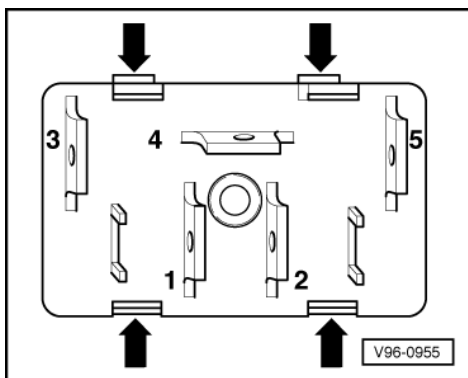
=> General body repairs; Repair group 70; Door trim; Removing and installing front door trim/removing and installing rear door trim Door trim Removing and installing front door trim/removing and installing rear door trim

- Remove plug.
- Use small screwdriver to prise long sides of switch -arrows- out of catch and push out switch in doing so.
- To install, push in switch from underneath until retaining lugs can be heard to engage.



-> Fig.2 Removing and installing locking switch for rear window lifter

- Position small screwdriver in recesses (arrows), press towards centre of switch and carefully push out the switch in doing so.
- To install, push in switch from underneath until retaining lugs can be heard to engage.



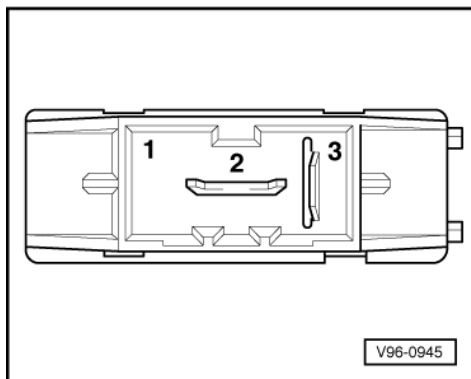
-> Fig.3 Functional test of switch

- Remove switch.

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- Connect ohmmeter:

| Contact | Test condition         | Specified value   |
|---------|------------------------|-------------------|
| 5 + 2   | -                      | 0 $\omega$        |
| 3 + 1   | -                      | 0 $\omega$        |
| 4 + 2   | -                      | $\infty$ $\omega$ |
| 4 + 2   | Actuate switch "open"  | 0 $\omega$        |
| 4 + 1   | -                      | $\infty$ $\omega$ |
| 4 + 2   | Actuate switch "close" | 0 $\omega$        |



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-> Fig.4 Function test of locking switch for rear window lifter

- Remove switch.
- Connect ohmmeter:

| Contact | Test condition     | Specified value   |
|---------|--------------------|-------------------|
| 2 + 3   | Button not pressed | $\infty$ $\omega$ |
| 2 + 3   | Button pressed     | 0 $\omega$        |

- Replace switch if the specified values not attained.

## 3 - Electrically adjustable seats

### 3.1 - Electrically adjustable seats

#### Notes:

- ♦ Removing and installing seat => Page 194 .
- ♦ Troubleshooting instructions

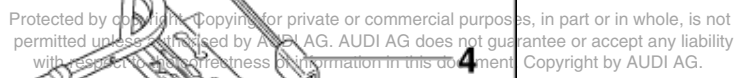
=> "Current Flow Diagrams, Electrical Fault Finding and Fitting Locations" binder

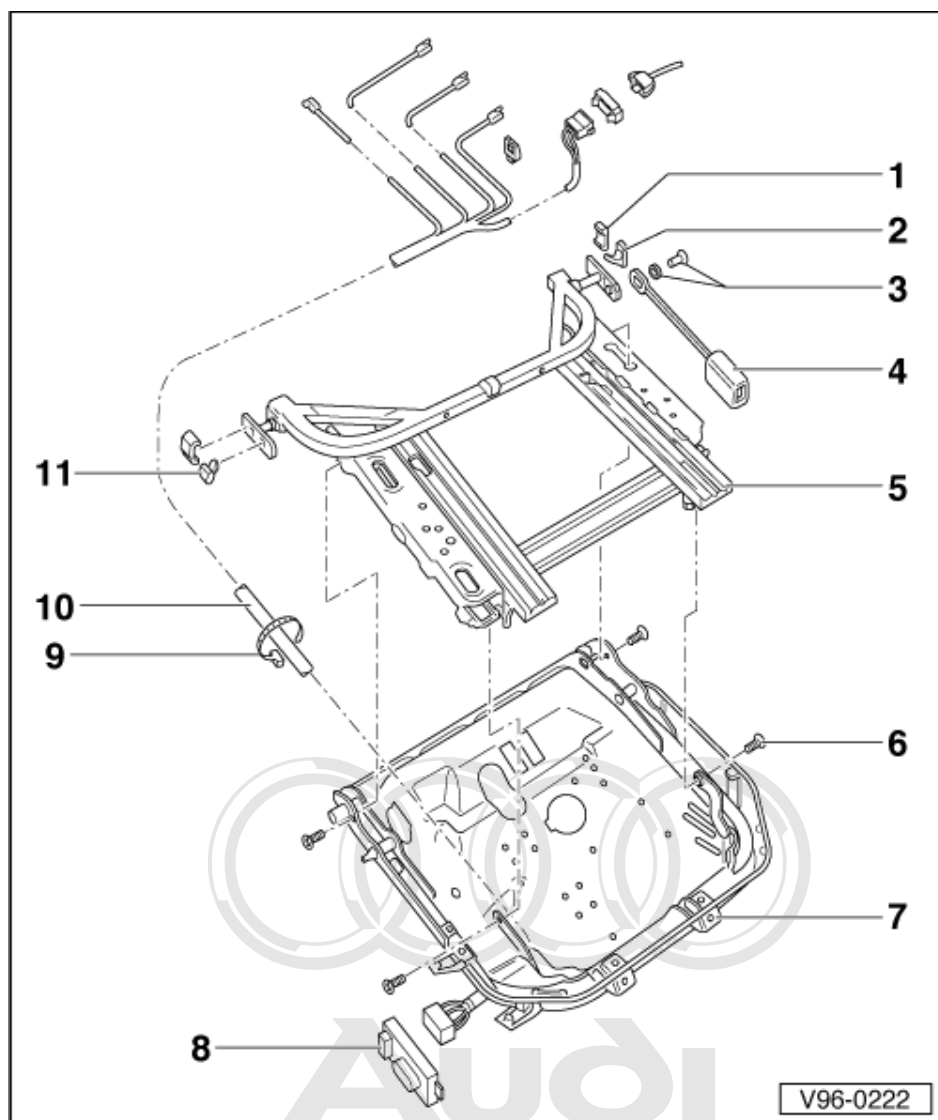
- ♦ Assignment of pins in connectors

=> "Current Flow Diagrams, Electrical Fault Finding and Fitting Locations" binder

- ♦ Function test => Page 199

r's seat - exploded view





7 Seat pan

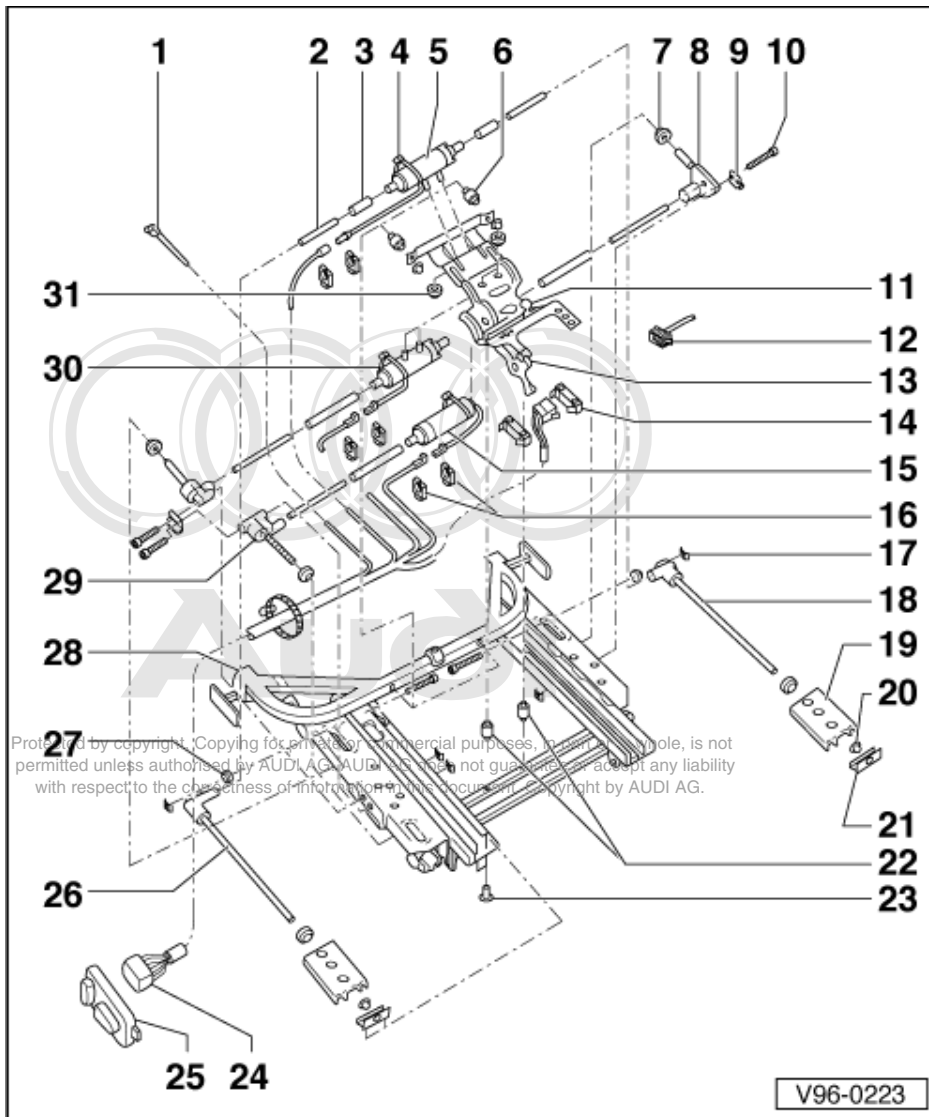
8 Switch unit

9 Cable tie

10 Wiring loom

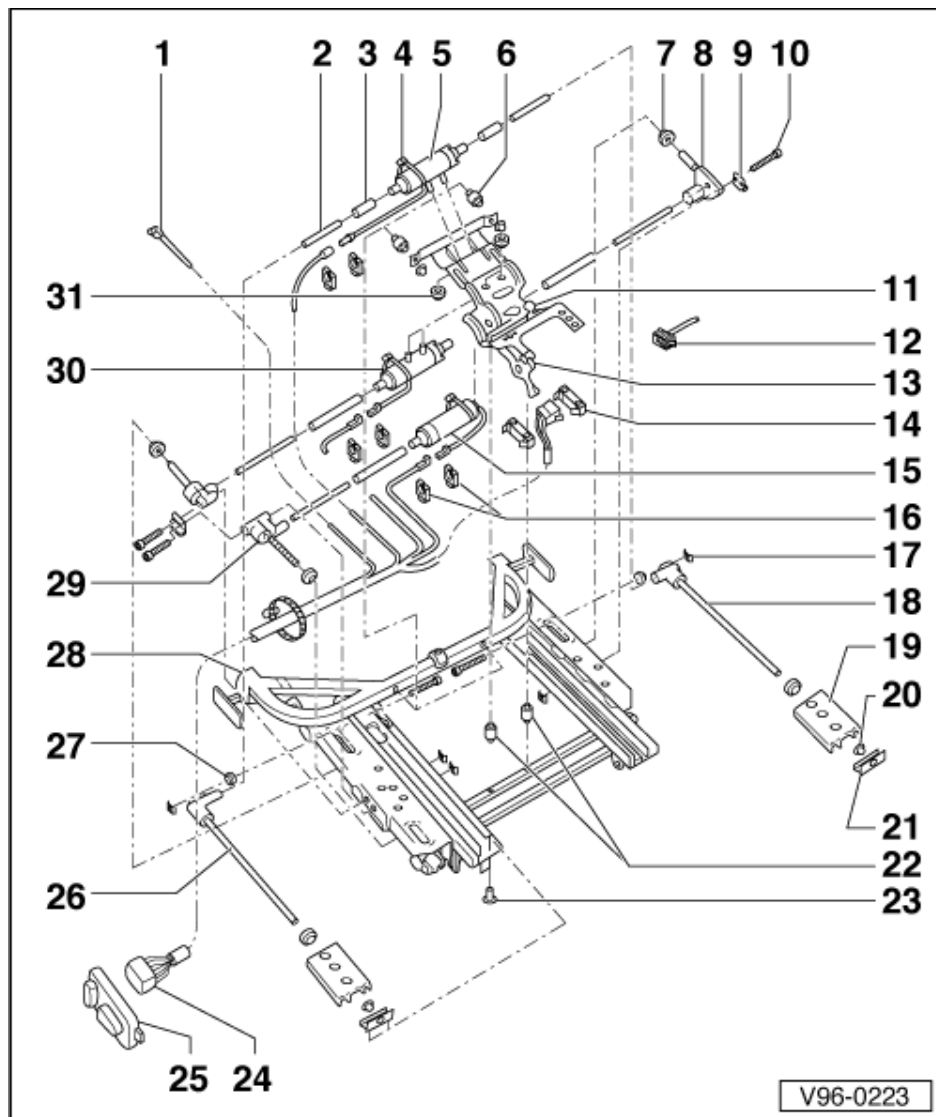
11 Thrust piece

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#### Electrical section

- 1 2-pin connector
  - ♦ For backrest adjustment
- 2 Drive shaft
  - ♦ For adjuster
- 3 Drive shaft protection sleeve
- 4 Cable tie
- 5 Fore-and-aft adjustment motor
  - ♦ Removing and installing =>Page 196
- 6 Rubber buffer
  - ♦ For motor bracket
- 7 Stop buffer



### 8 Adjuster

- ♦ For rear height adjustment
- ♦ Removing and installing =>Page 197

### 9 Spacer

### 10 Fastening pin

- ♦ For adjuster

### 11 Securing nut

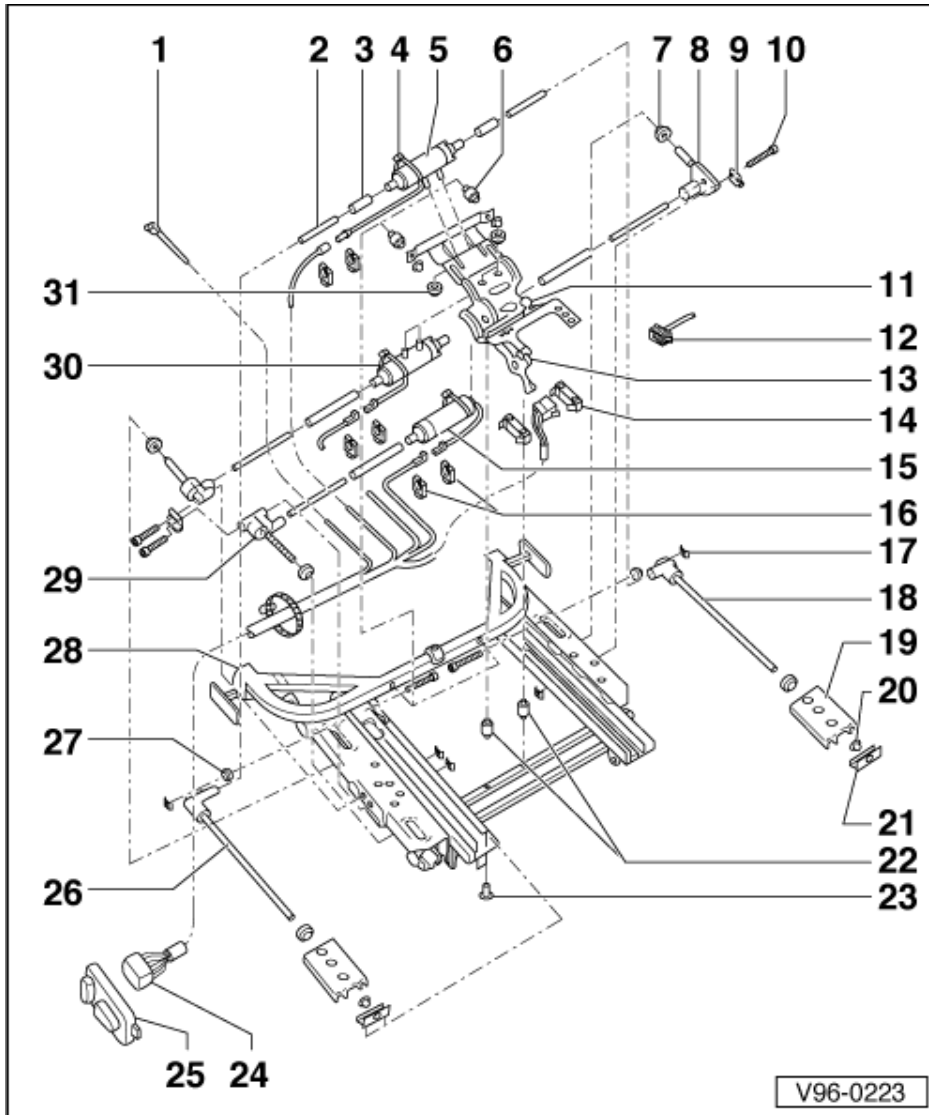
- ♦ For rubber buffer

### 12 Connector

### 13 Motor bracket

### 14 Holder for connector

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#### 15 Engine

- ♦ For front height adjustment
- ♦ Removing and installing => Page 196

#### 16 Retaining clips for connector

#### 17 Circlip

#### 18 Right adjuster

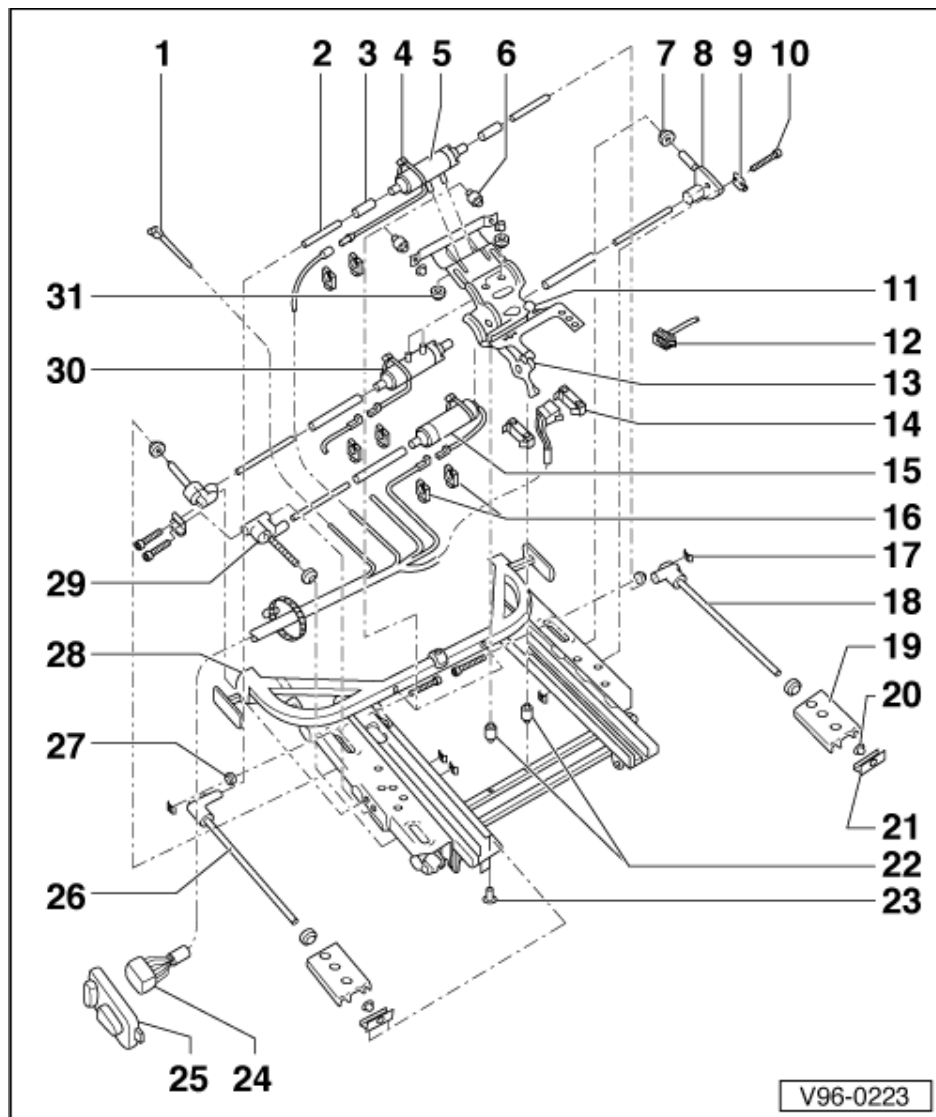
- ♦ For fore-and-aft adjustment
- ♦ Removing and installing => Page 197

#### 19 Runners

- ♦ Removing and installing adjuster with runners => Page 197

#### 20 Bush

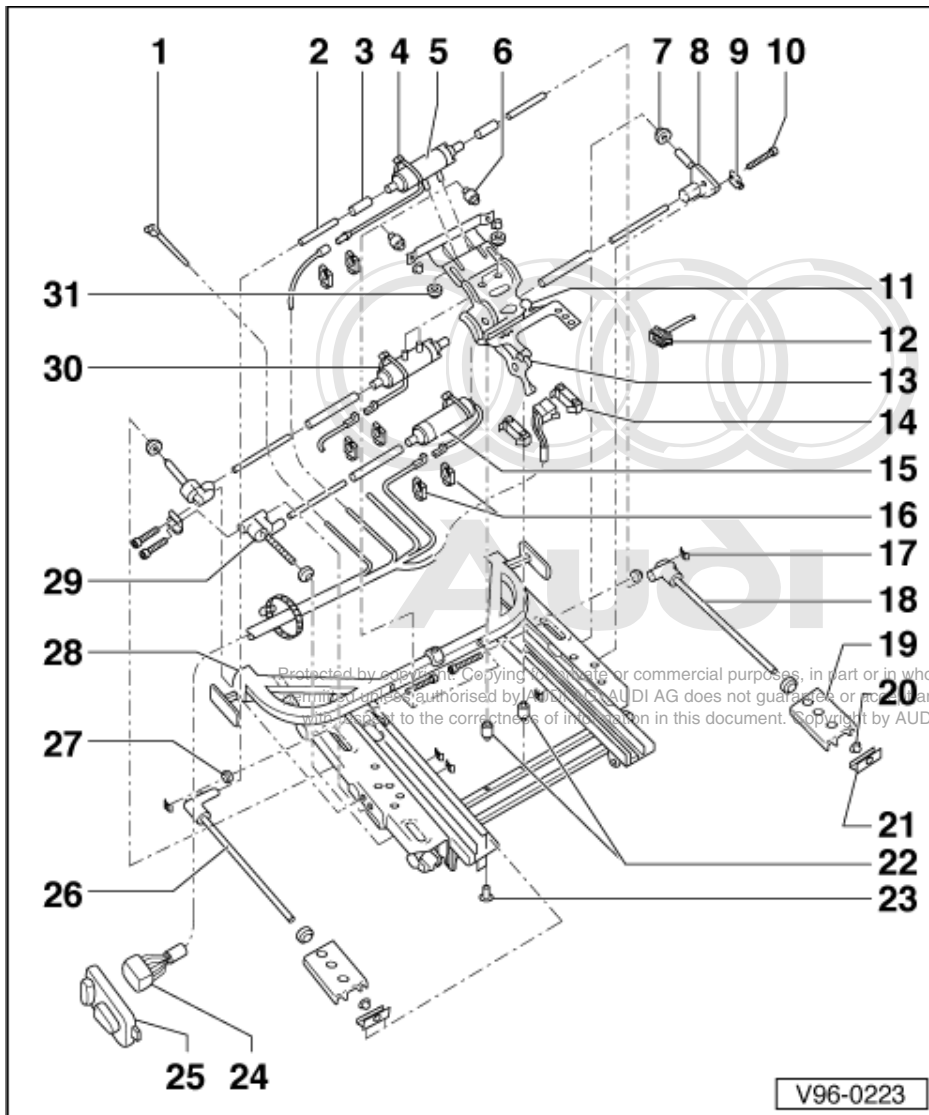
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- 21 Spindle holder**
- 22 Rubber buffer**
  - ♦ For motor bracket
- 23 Rivet**
  - ♦ For fastening spindle holder
- 24 Connector**
  - ♦ For switch unit
- 25 Switch unit**
- 26 Left adjuster**
  - ♦ For fore-and-aft adjustment
  - ♦ Removing and installing => Page **197**
- 27 Shim**



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#### 28 Seat base frame

- ♦ With runner guides

#### 29 Adjuster

- ♦ For front height adjustment
- ♦ Removing and installing => Page 197

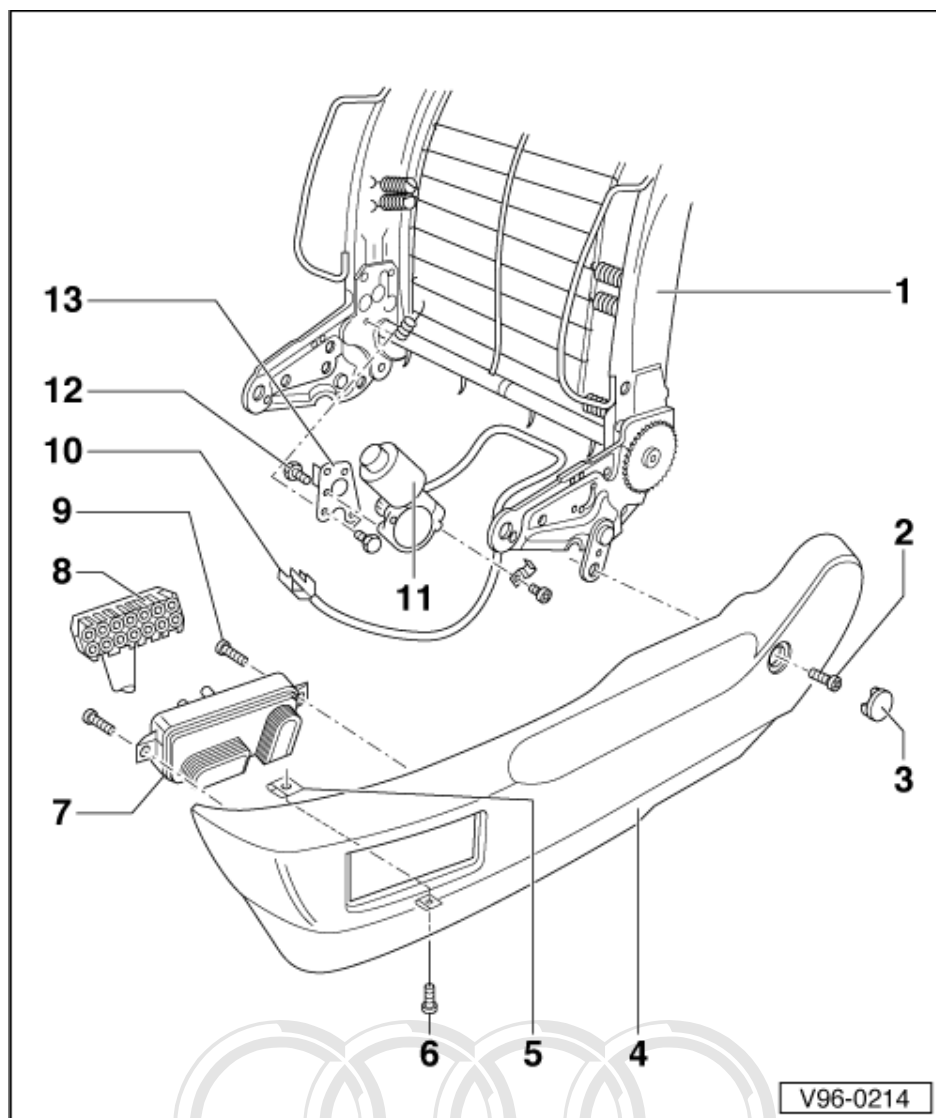
#### 30 Motor

- ♦ For rear height adjustment
- ♦ Removing and installing => Page 196

#### 31 Securing nut

- ♦ For motor

### 3.3 - Electrically adjustable backrest - exploded view



#### 1 Backrest

- ♦ Removing and installing => Page 195

#### 2 Securing bolt

- ♦ For side trim
- ♦ Screwed into stop pin for backrest

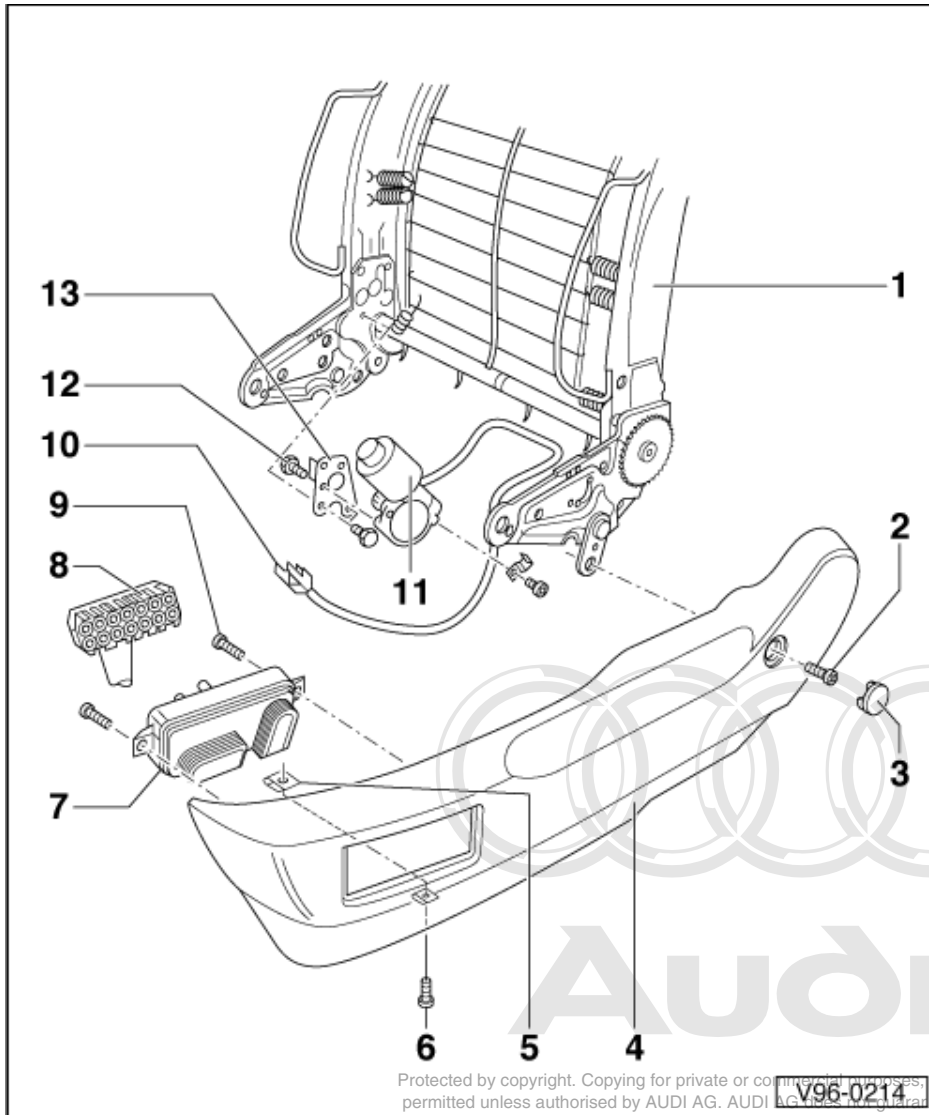
#### 3 Trim cap

- ♦ Prise out

#### 4 Side trim

#### 5 Retaining clip

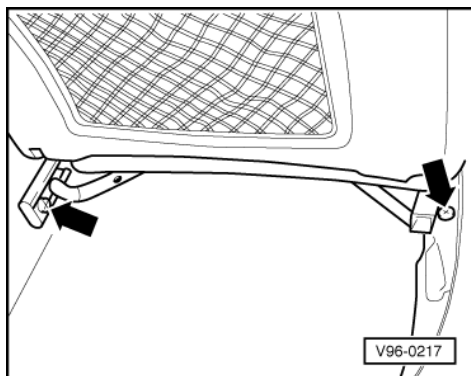
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- 6 Securing bolt**
  - ♦ For side trim
- 7 Seat switch unit**
  - ♦ Removing and installing => **194**
- 8 Connector**
  - ♦ For switch unit
- 9 Securing bolt**
  - ♦ For switch unit
- 10 2-pin connector**
- 11 Backrest adjustment motor**
  - ♦ Removing and installing => Page **199**
- 12 Securing bolt**
- 13 Retainer**
  - ♦ For backrest adjustment

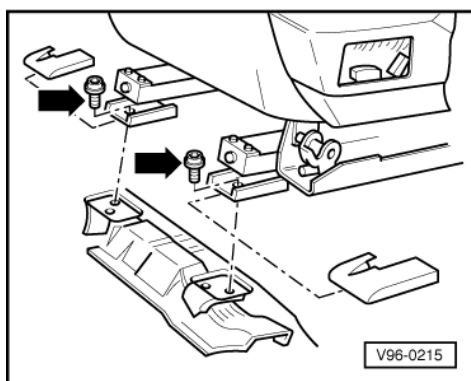
### 3.4 - Removing and installing electrically adjustable seat



**Note:**

Before removing seat, move it as far back and up as it will go.

- -> Remove caps -arrows- for rear right and left guide rails.



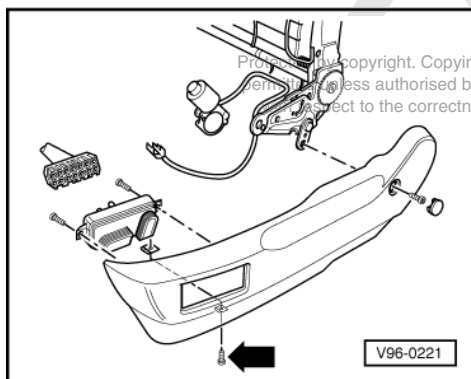
- -> Remove covers under front of seat and remove screws -arrows-.
- Push seat from the guide rails towards the rear.
- Detach 6-pin connector for electric seat adjustment; on version with seat heating, also detach the 6-pin plug and remove the seat from the vehicle.

**Note:**

Place sheets over floor covering to protect against damage/dirt.

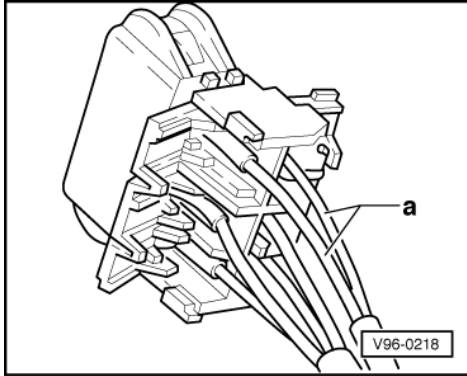
### 3.5 - Removing and installing switch unit on seat

- Use small screwdriver to lever off fastening screw cap.

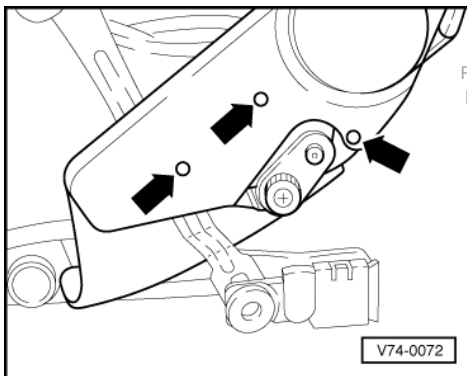


- Screw fastening screw out of backrest stop bolt.
- -> Remove self-tapping screw -arrow-.
- Lift side seat trim from seat.
- Unplug connector from switch unit.
- Remove the two screws and remove switch unit.

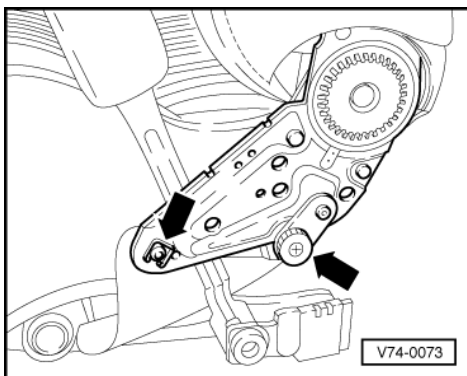
### 3.6 - Removing and installing backrest



- Removing seat => 194
- Unplug 2-pin connector for backrest adjustment.
- -> Open flap, pull connecting leads -a- for backrest heating element out of plug housing.



- -> Push out cap clamping pins -arrows- from outside and remove cap (note different lengths of clamping pins).



- -> Remove screws -right arrow- from both sides of backrest stop bolt.

### Note:

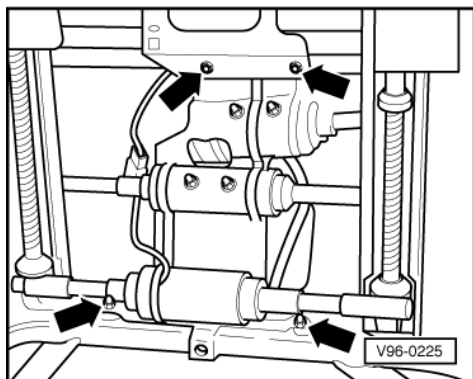
If screw cannot be loosened, eccentric may need to be turned a little using pliers.

- Push out locking elements -left arrow- on either side.
- Push backrest fittings apart and remove backrest from seat frame.

## 3.7 - Removing and installing seat adjustment motors

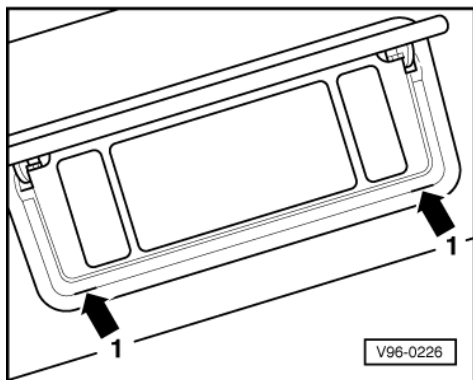
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If removal or installation work involves removing individual adjusters or detaching them from the drive shaft, ensure that the individual adjusters do not become bent.



- Removing seat => 194
- -> Remove motor mounting securing nut -arrows-.
- Remove motor mounting and motors from seat subframe, also pulling the drive shaft protective sleeves and drive shafts from the adjusting motors.
- Detach 2-pin connectors from the individual adjusting motors.
- Remove securing nuts from adjusting motors and remove motors from motor mounting.

### Removing and installing seat adjusters

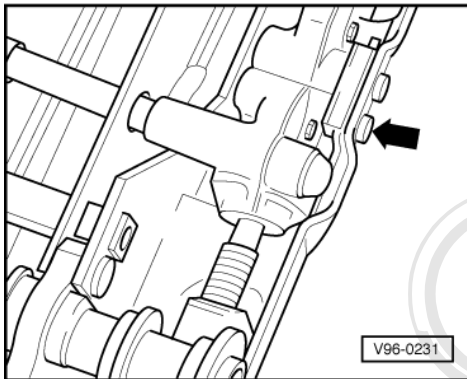


### Note:

When performing removal and servicing work, take care not to bend the adjusters. Before installing adjusters, ensure that they are fully extended.

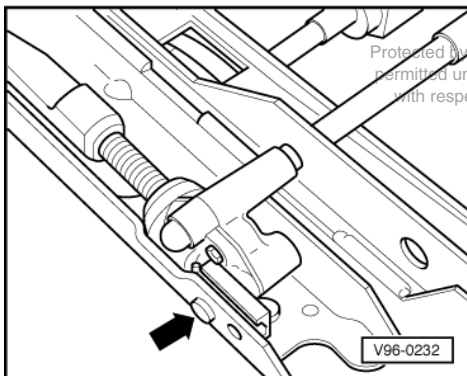
- Removing seat => 194 .
- -> Detach pan seat from seat subframe by undoing TORX screws -arrows-.
- Removing backrest => Page 195

### Removing and installing front height adjuster



- -> Prise retaining ring from securing pin and pull out the pin -arrow-.
- Pull drive shaft and protective sleeve out of adjuster.
- Lift spindle mount slightly using screwdriver and screw out adjuster by hand.

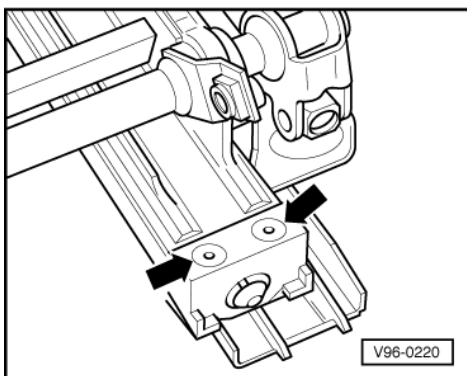
### Removing and installing rear height adjuster



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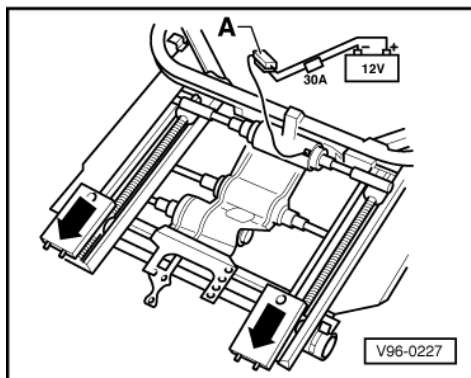
- -> Prise retaining ring from securing pin and pull out the pin -arrow-.
- Pull drive shaft and protective sleeve out of adjuster.
- Lift spindle mount slightly using screwdriver and screw out adjuster by hand.

### Removing and installing longitudinal adjuster



#### Removal:

- -> Grind off or drill out rivets -arrows- for spindle holders to right and left of runner guide and remove spindle holder.

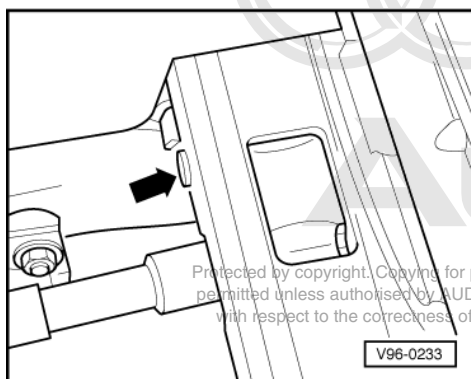


- -> Connect external power supply to plug -A- for motor and fore-and-aft adjustment motor.

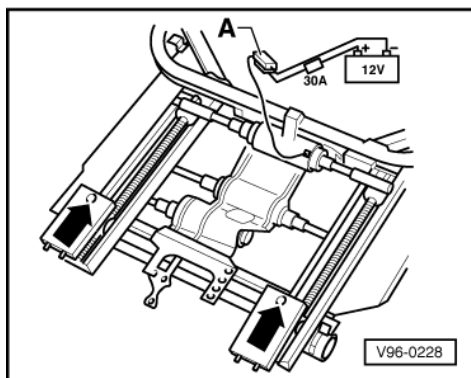
#### Note:

Provide 30 A fuse for positive lead of external power supply.

- Extend runners to front -arrows- and remove



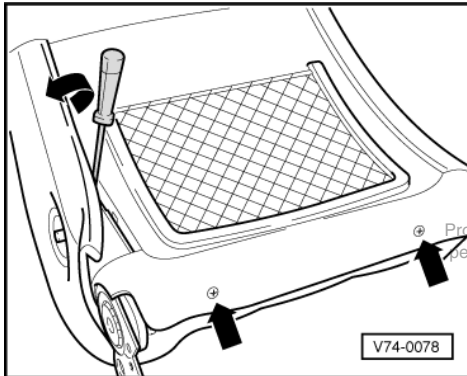
- -> Remove retaining ring from securing pin of appropriate adjuster; pull out pin -arrow-.
- Remove adjuster and spindle.



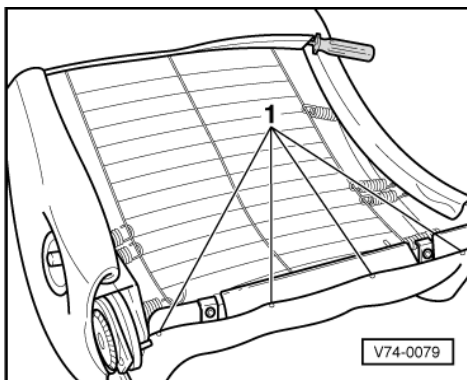
#### Installing

- -> Position runners evenly on spindle ends and retract runners -arrows- by connecting external power supply to plug -A- (use 2 people if necessary).
- River or screw spindle holder on again (use blind rivets or M5 screws).

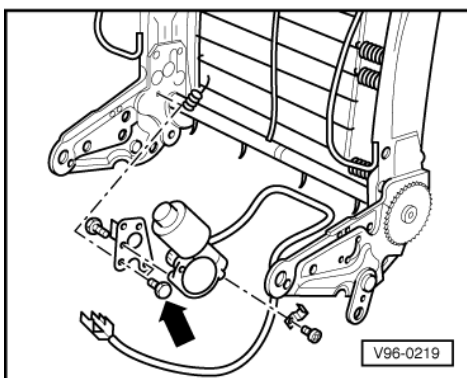
### 3.8 - Removing and installing backrest adjustment motor



- Removing seat => 194
- Removing backrest => Page 195
- -> Remove trim screws -arrows-.
- Use screwdriver to carefully prise backrest fabric out of trim on left and right.
- Detach trim downwards.



- -> Bend open upholstery clips -1- detach fabric and carefully pull forwards to the required extent.



- -> Unscrew adjusting motor bracket hexagon bolts -arrow- from backrest hinge.
- Remove all cable ties and extract motor and bracket.

### 3.9 - Functional test of electrically adjustable seats

- After repair work



- Installing seat => 194
- Use seat switches to move seat to all possible positions

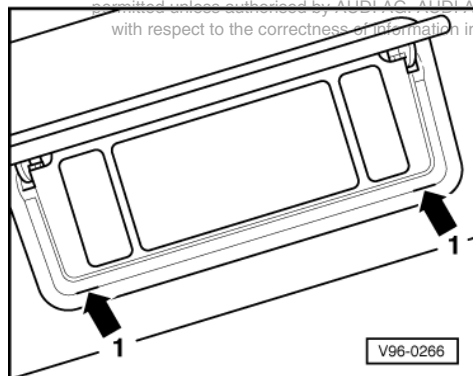
=> Owner's manual

It must be possible to move the seat to all possible positions in accordance with switch setting.

## 4 - Servicing illuminated make-up mirror

### 4.1 - Servicing illuminated make-up mirror

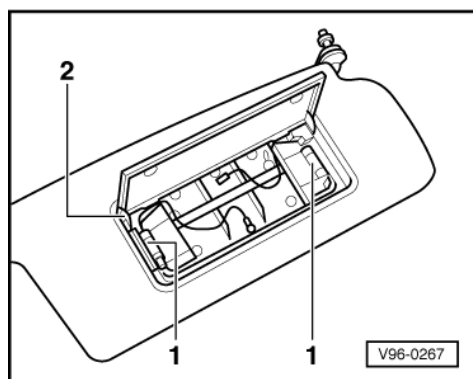
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- Remove sun visor

=> General body repairs; Repair Group 70; Roof trim; Removing and installing moulded headlining Roof trim  
Removing and installing moulded headlining

- -> Insert flat plastic wedge into slots -1- and prise out the make-up mirror.



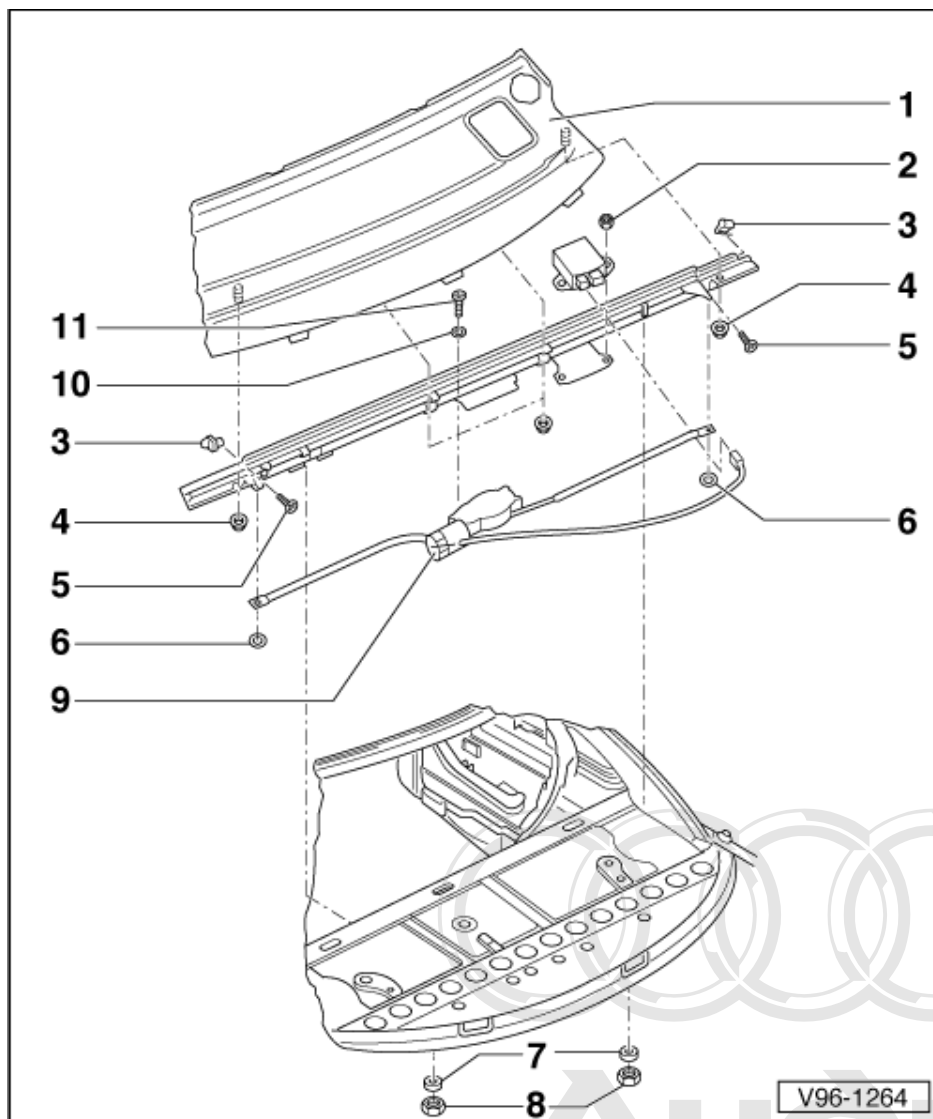
- -> Remove bulbs -1- from holder.

#### **Note:**

*Ensure that switching contacts -2- are sufficiently pre-tensioned.*

## 5 - Servicing electric rear window blind

### 5.1 - Servicing electric rear window blind



**Note:**

Removing and installing rear window blind switch, Page 166

#### 1 Rear shelf

- ♦ Removing and installing

=> General Body Repairs; Repair Group 70; Trim Panels; Removing and installing rear shelf Trim Panels  
Removing and installing rear shelf

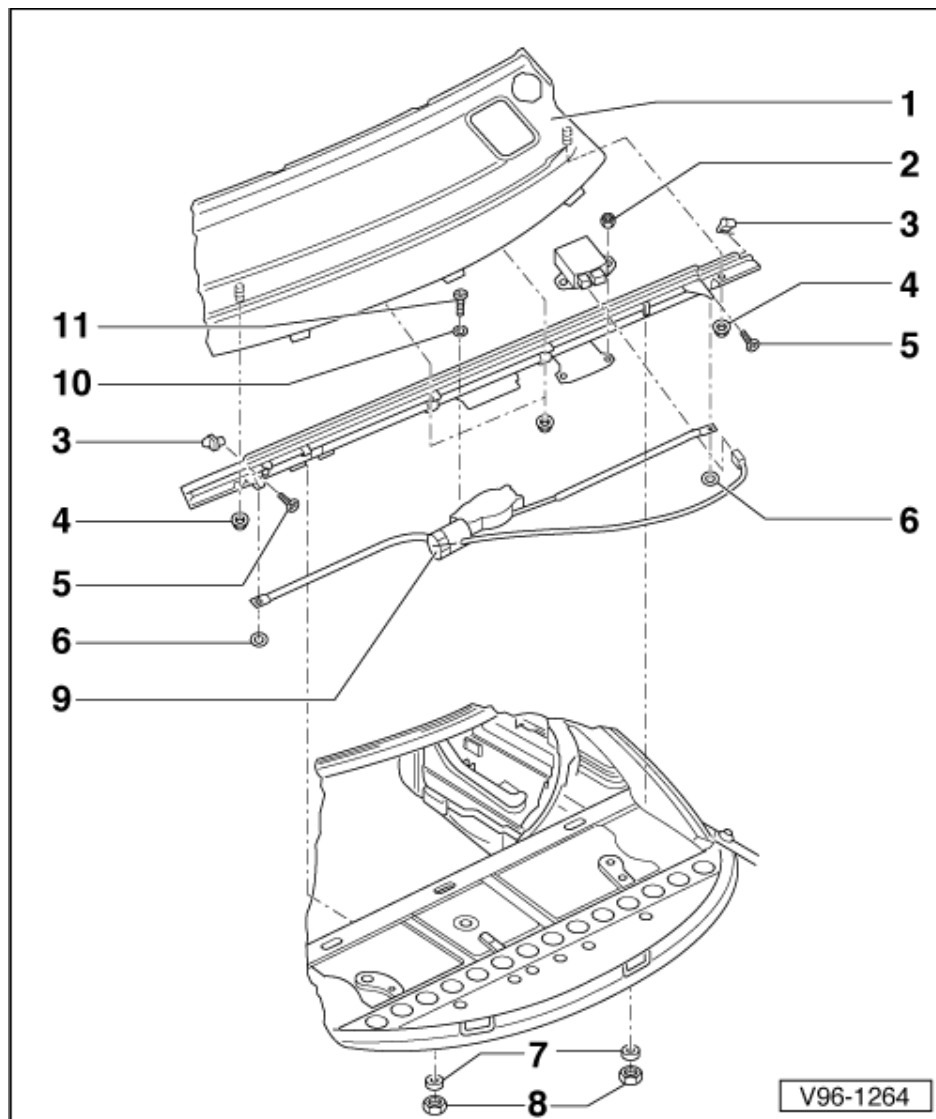
#### 2 Securing nut

- ♦ Removing and installing rear window blind control unit => Page 204

#### 3 Guide piece

#### 4 Securing nut

- ♦ For rear window blind mount

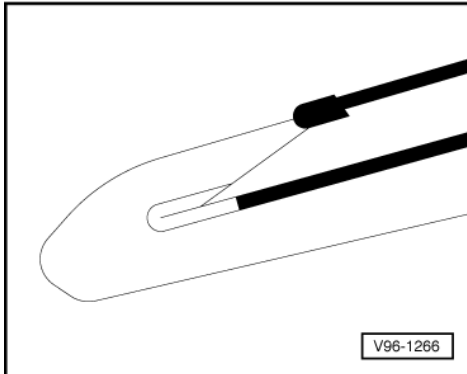


- 5 Fastening screw
- 6 Clamping washer
- 7 Washer
- 8 Securing nuts
- 9 Rear window blind motor
  - ♦ Removing and installing => Page 203
- 10 Toothed lock washer
- 11 Securing bolt
  - ♦ For rear window blind motor



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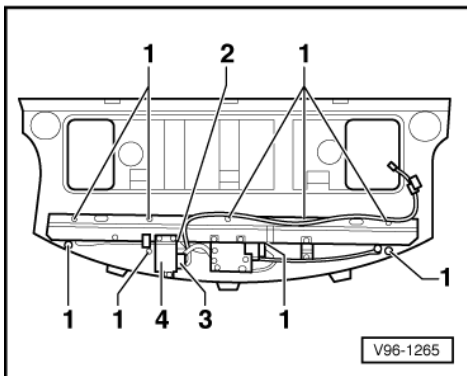
## 5.2 - Removing and installing rear window blind motor



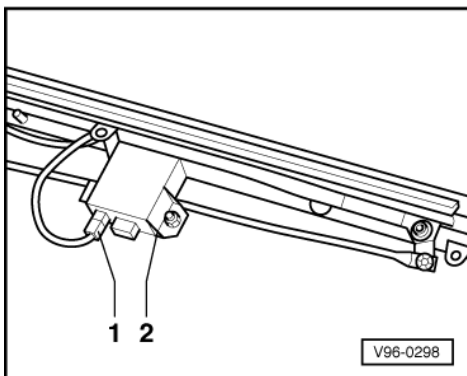
- Remove rear shelf:

=> General Body Repairs; Repair Group 70; Trim Panels; Removing and installing rear shelf Trim Panels  
Removing and installing rear shelf

- -> Pull rear window blind upwards slightly out of rear shelf, push edge strip of blind to one side and guide through rear shelf.
- Turn rear shelf and blind over.

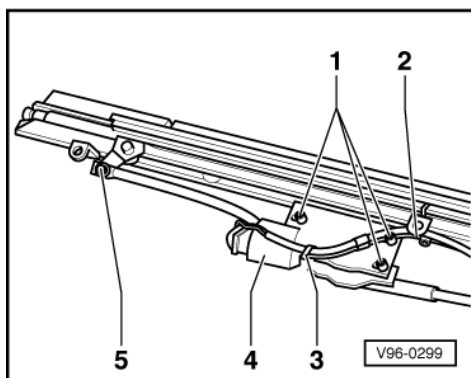


- -> Remove connector -3- from control unit -4-.
- Unscrew nuts -1- and remove blind mount.
- Turn over blind mount.



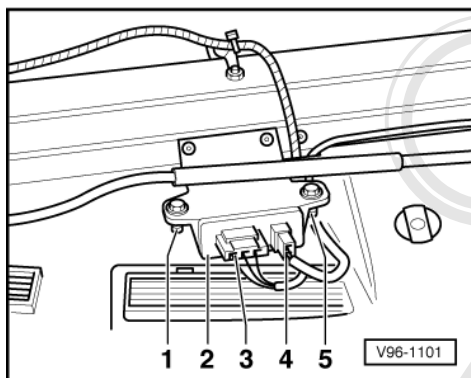
- -> Remove connector -1- from control unit -2-.

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- ➔ Prise off left and right clamping washers -5- and remove screws -1- and toothed-lock washers.
- Remove motor -4- and linkage.

### 5.3 - Removing and installing rear window blind control unit



- Remove rear shelf:

=> General Body Repairs; Repair Group 70: Trim Panels: Removing and installing rear shelf Trim Panels  
 Removing and installing rear shelf

- Turn rear shelf and blind over.
- Disconnect connectors -3- and -4-.
- ➔ Remove nuts -1- and -5-.
- Remove rear window blind control unit -2-.

## 6 - Servicing ultrasonic passenger compartment monitoring system

### 6.1 - Servicing ultrasonic passenger compartment monitoring system

#### General notes

- ♦ The ultrasonic interior scanning system supplements the anti-theft alarm and detects unauthorised entry into the vehicle by way of the side windows and causes the anti-theft alarm to be triggered.
- ♦ The vehicle doors are still scanned by way of door contact switches.
- ♦ In Avant models the two rear side windows and the rear window are also monitored for breakage. Extra conductor loops are provided for this purpose in the side windows. In the rear window the rear window heating wires are used.
- ♦ The control unit for the passenger compartment monitoring system has no fault memory. It is not possible to perform self-diagnosis using the V.A.G 1551 fault reader. Limited diagnosis is provided by way of different actuation of the LED in the rear fog lamp switch.

- ♦ If required, e.g. if children or animals are left in the locked vehicle, the passenger compartment monitoring system can be deactivated using a momentary-contact switch => Owner's manual. Deactivation is cancelled automatically on next locking operation.

## 6.2 - Functional test of interior monitoring system

- Open side window approx. 10 cm.
- Lock vehicle thus activating anti-theft alarm and interior scanning system.
- Wait 30 seconds until LED in the rear fog lamp switch starts to flash slowly every 2 seconds ( $f = 0.5 \text{ Hz}$ ).
- Reach through window opening directly at sensor cover.
- Alarm is triggered if interior monitoring system is working properly.

## 6.3 - System diagnosis

### Notes:

- ♦ LED illuminates for approximately 3 seconds after the passenger compartment monitoring system has been deactivated using the momentary contact switch in the B-pillar trim.
- ♦ The system performs a self-test and passenger compartment adaptation during the first 30 seconds after locking and closing all doors and bonnet/tailgate/luggage compartment lid.
- ♦ Passenger compartment monitoring system diagnosis can be performed by actuating the LED in the rear fog lamp switch.
- Close all vehicle doors and tailgate/luggage compartment.
- Lock vehicle thus activating anti-theft alarm and interior scanning system.
- Check indication given by LED in rear fog lamp switch.
- Assess LED indication using the diagnosis table => Page 205 .

## 6.4 - Diagnosis table

| LED indication                                                                                                                                                                                                                                                                                                                 | Effect/diagnosis                                                                                               | Possible causes of fault                                                                             | Fault remedy                                                                        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>- LED flashes quickly for approx. 2 seconds</li> <li>- (<math>f = 3.33 \text{ Hz}</math>)</li> <li>- LED flashes quickly for approx. 28 seconds</li> <li>- (<math>f = 2.0 \text{ Hz}</math>)</li> <li>- LED then continues to flash slowly (<math>f = 0.5 \text{ Hz}</math>)</li> </ul> | <ul style="list-style-type: none"> <li>▪ Self-test OK</li> </ul>                                               |                                                                                                      |                                                                                     |
| <ul style="list-style-type: none"> <li>- LED lights for approx. 3 seconds</li> </ul>                                                                                                                                                                                                                                           | <ul style="list-style-type: none"> <li>▪ Confirmation of deactivation with momentary contact switch</li> </ul> |                                                                                                      |                                                                                     |
| <ul style="list-style-type: none"> <li>- LED flashes quickly for approx. 2 seconds</li> <li>- (<math>f = 3.33 \text{ Hz}</math>)</li> <li>- LED lights for approx. 28 seconds</li> <li>- LED then continues to flash slowly (<math>f = 0.5 \text{ Hz}</math>)</li> </ul>                                                       | <ul style="list-style-type: none"> <li>▪ Self-test not OK</li> </ul>                                           | <ul style="list-style-type: none"> <li>▪ Sensors defective</li> <li>▪ Control unit faulty</li> </ul> | <ul style="list-style-type: none"> <li>- Replace sensor =&gt; Page 208 .</li> </ul> |



| LED indication                                                                                                                                            | Effect/diagnosis                                | Possible causes of fault                     | Fault remedy                         |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|----------------------------------------------|--------------------------------------|
| - LED lights for approx. 2 seconds<br>- LED flashes quickly for approx. 28 seconds<br>- (f = 2.0 Hz)<br>- LED then continues to flash slowly (f = 0.5 Hz) | ▪ All faults rectified                          |                                              |                                      |
| - LED lights for approx. 30 seconds<br>- LED then continues to flash slowly (f = 0.5 Hz)                                                                  | ▪ Fault already displayed but not yet rectified | ▪ Sensors defective<br>▪ Control unit faulty | - Replace sensor => Page 208 .       |
| - LED flashes quickly for approx. 2 seconds<br>- (f = 3.33 Hz)<br>- LED then continues to flash slowly (f = 0.5 Hz)                                       | ▪ Control unit not activated                    | ▪ Control unit faulty                        | - Replace control unit => Page 208 . |

| LED indication                                                                                                                                                                                                                             | Effect/diagnosis                                               | Possible causes of fault                                 | Fault remedy                                                                 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|----------------------------------------------------------|------------------------------------------------------------------------------|
| - LED flashes quickly for approx. 2 seconds<br>- (f = 3.33 Hz)<br>- LED then continues to flash slowly (f = 0.5 Hz)<br>- LED flashes quickly for approx. 28 seconds<br>- (f = 2.0 Hz)<br>- LED then continues to flash slowly (f = 0.5 Hz) | ▪ Delayed control unit activation<br>▪ System fully functional | ▪ Door or bonnet/tailgate not closed until after locking | - Close all doors or bonnet/tailgate/luggage compartment lid before locking. |
| - LED flashes quickly for approx. 2 seconds<br>- (f = 3.33 Hz)<br>- LED does not flash/come on<br>- LED then continues to flash slowly (f = 0.5 Hz)                                                                                        | ▪ Interior scanning system deactivated                         | ▪ Once-only system deactivation                          | - Lock vehicle again.                                                        |

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## 6.5 - Fault remedy

### Note:

*Deactivation with the momentary contact switch is not an integral part of the self-test. In the event of deactivation problems/errors, check momentary contact switch and wiring => Page 210 .*

- Perform servicing work in the stated sequence if faults occur in the ultrasonic interior scanning system:

### Checking conductor loops and connector (Avant only)

- Check conductor loops at the two rear side windows and the rear window heater wires.
- Check connectors to conductor loops/rear window heating.
- Perform passenger compartment monitoring diagnosis => Page 205 .
- Assess diagnosis using the diagnosis table => Page 205 onwards and remedy the fault.

### Check sensors

- Removing sensors => Page 207 .
- Check sensors for visible defects (e.g. connections).
- Try replacing sensors with new ones, but do not fit B-pillar trim.

- Carry out diagnosis => Page 205 .

Diagnosis and functional test OK:

- Check sensors removed.
  - Re-install first old sensor.
  - Carry out diagnosis => Page 205 .
  - Re-install second old sensor.
  - Carry out diagnosis => Page 205 .
- Replace defective sensor(s) as indicated by checks.
- Removing and installing lower B-pillar trim

Diagnosis and functional test not OK:

#### Replace control unit

- Replace control unit => Page 208 .
- Carry out diagnosis => Page 205 .

Diagnosis and functional test not OK:

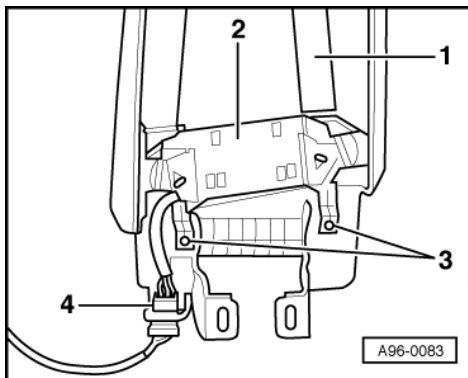
#### Checking wiring

- Checking wiring

=> "Current Flow Diagrams, Electrical Fault Finding and Fitting Locations" binder

- Assignment of connector at control unit => Page 208 .
- Assignment of connector at sensor => Page 209 .

### 6.6 - Removing and installing sensors for passenger compartment monitoring system



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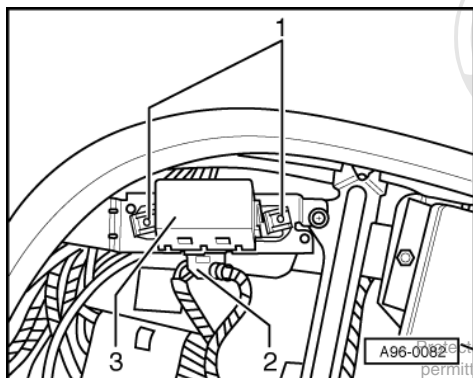
-> The two sensor units can be found in the top of the left and right B-pillar trim, at shoulder height.

- Removing B-pillar trim.

=> General body repairs; Repair group 70; Trim panels; Removing and installing B-pillar trim Trim panels Removing and installing B-pillar trim

- Loosen recessed head screws -3- at side.
- Remove sensor unit -2- from holder -1-.
- Detach connector -4- at sensor unit.

## 6.7 - Removing and installing passenger compartment monitoring system control unit



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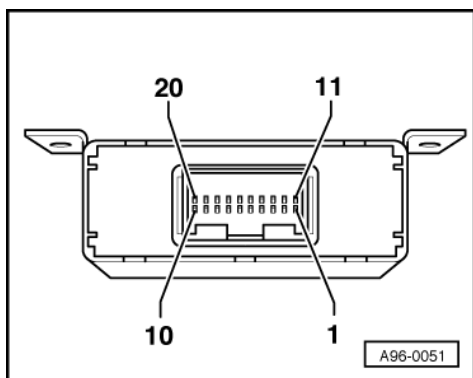
-> The passenger compartment monitoring system control unit -3- can be found beneath the rear bench seat on the left, on a metal holder.

- Removing rear seat bench

=> General Body Repairs; Repair Group 72; Rear Seat; Removing and installing rear bench seat Rear Seat Removing and installing rear bench seat

- Loosen recessed head screws -1- from below.
- Detach connector -2- from control unit.

### Assignment of connector at control unit



- Control unit removed

1 - -> Power supply terminal 30

2 - Saloon: earth

Avant: Side and rear window monitoring

3 - Activation/Deactivation of CL pump

4 - Fan low

5 - Power supply left sensor

6 - Earth left sensor

7 - Analogue signal, left sensor

8 - 40 kHz-Clock pulse, left sensor

9 - Deactivation switch

10 - Output LED

11 - Earth, terminal 31

12 - not used

13 - Input, door contacts

14 - Fan high

15 - Power supply right sensor

16 - Earth right sensor

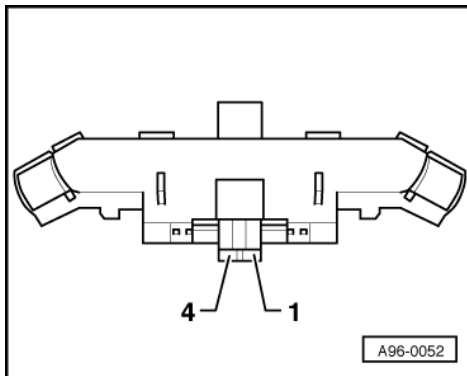
17 - Analogue signal, right sensor

18 - 40 kHz-Clock pulse, right sensor

19 - not used

20 - Alarm output to CL pump

**Assignment of connector at sensor**

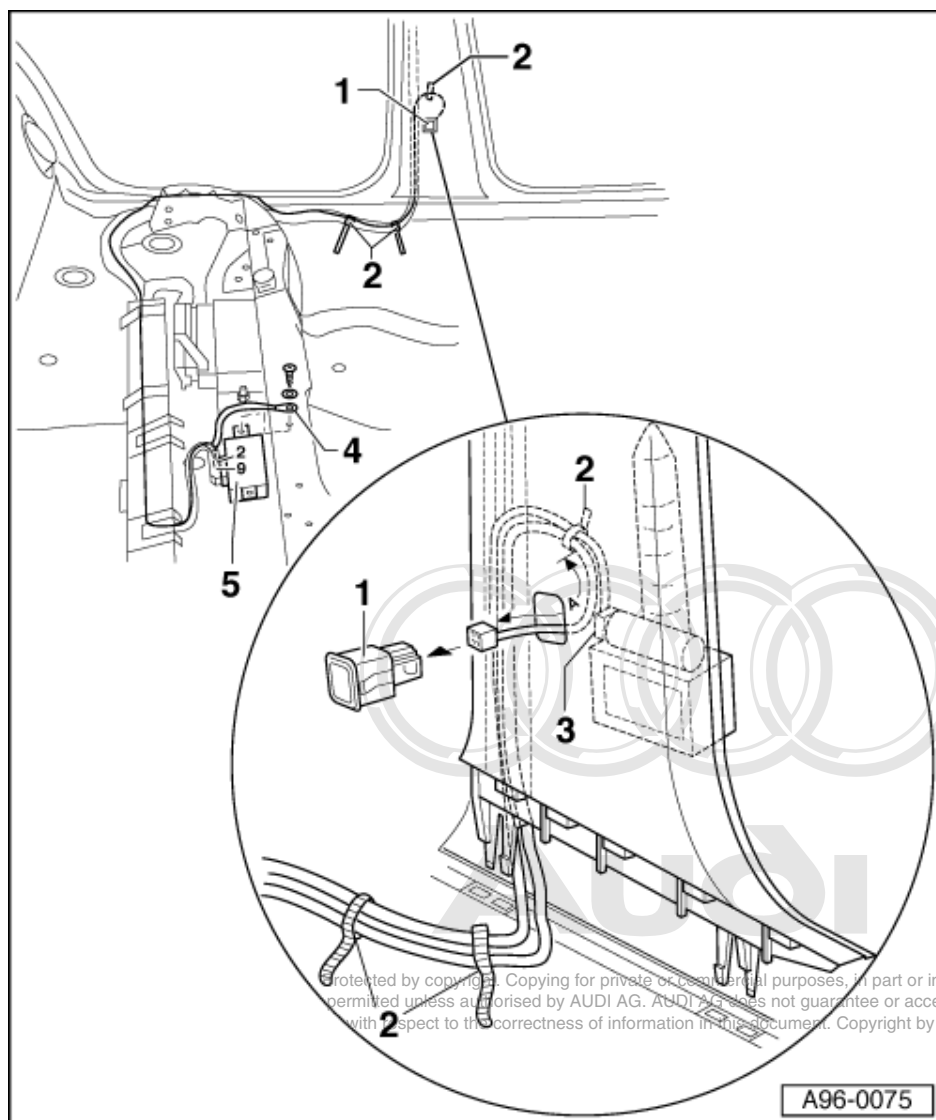


- Sensor unit removed
- 1 - -> 40 kHz-Clock pulse
  - 2 - Supply voltage
  - 3 - Earth
  - 4 - Analogue signal



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## 6.8 - Checking momentary contact deactivation switch



- Illustration shows different vehicle

- Removing driver's B-pillar trim

=> General body repairs; Repair group 70; Trim panels; Removing and installing B-pillar trim Trim panels Removing and installing B-pillar trim

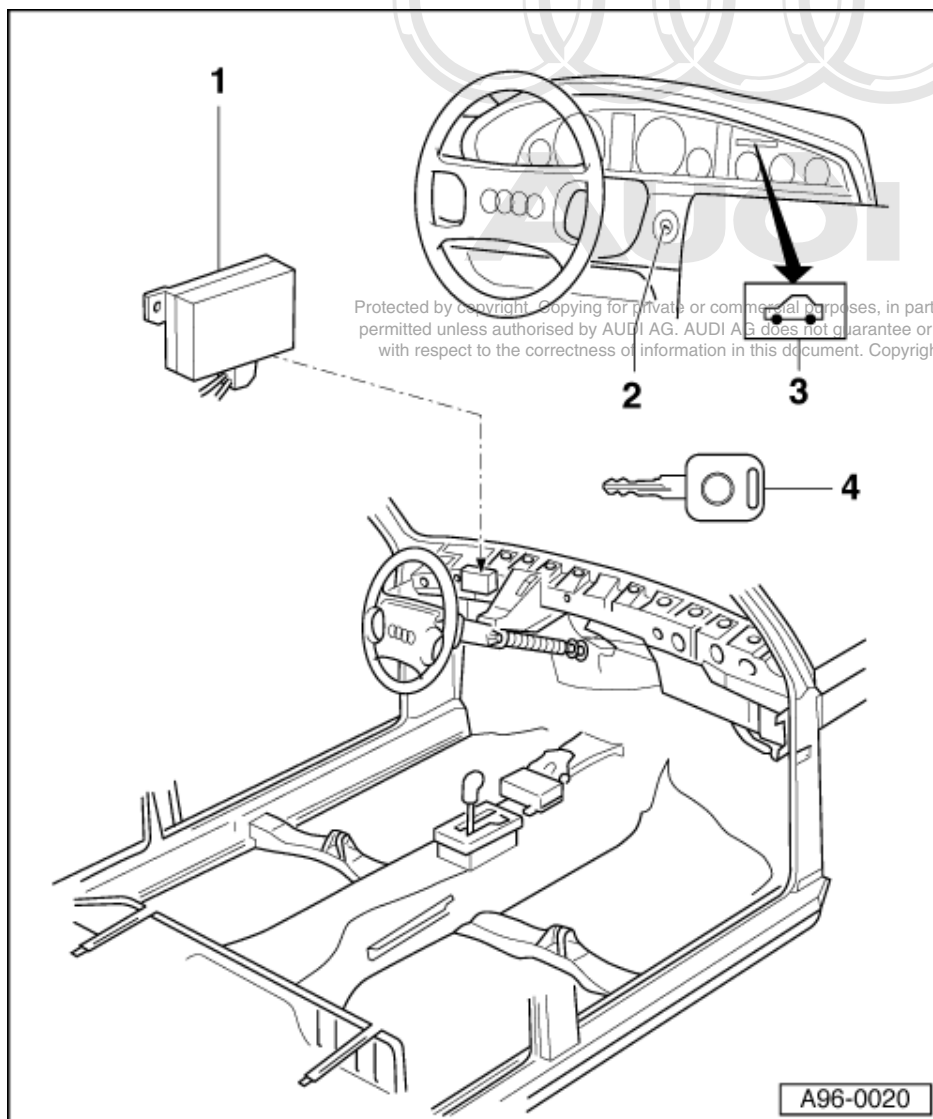
- Press momentary contact switch -1- out of B-pillar trim and check in line with current flow diagram.

=> "Current Flow Diagrams, Electrical Fault Finding and Fitting Locations" binder

- Check wiring to control unit => Fig. A96-0082, Page 208 .

## 7 - Servicing immobiliser

### 7.1 - Servicing immobiliser



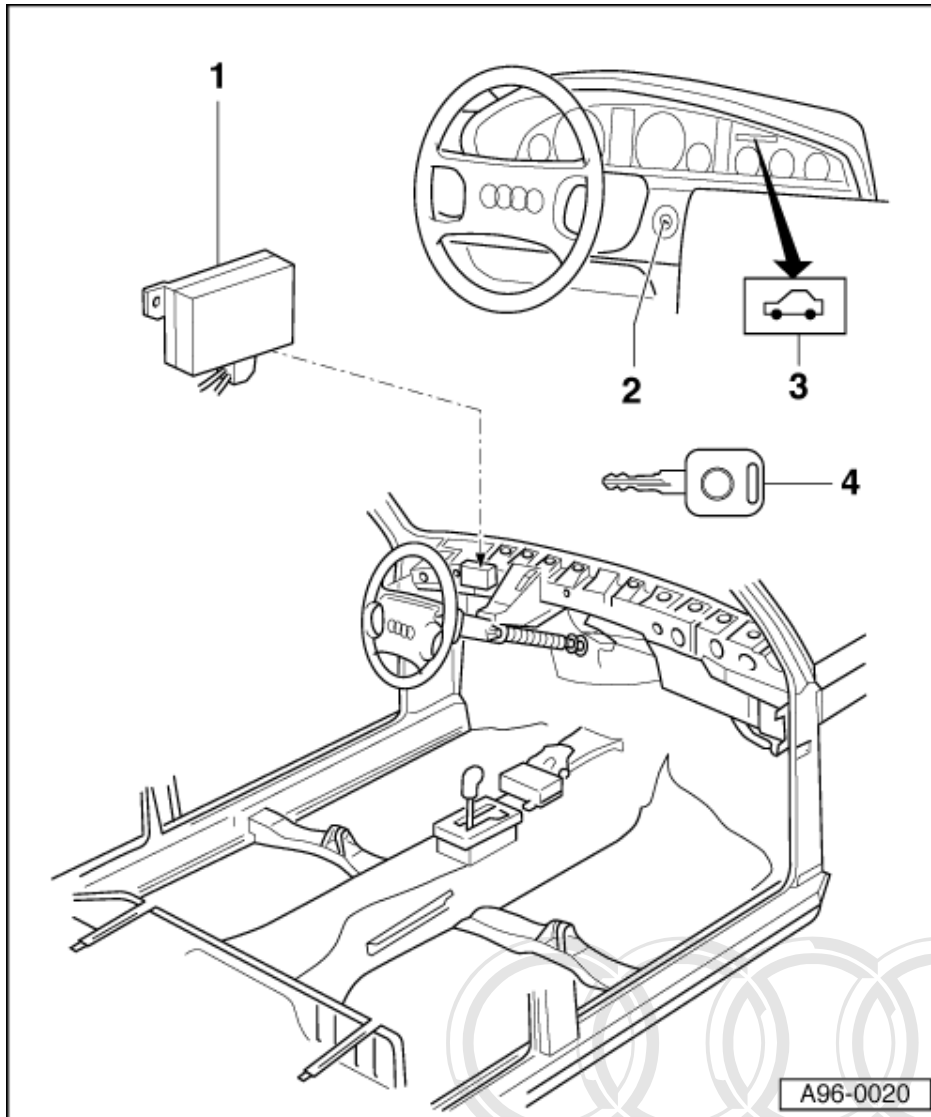
### 7.2 - Overview

#### 1 Immobiliser control unit -J362

- ♦ Removing and installing => Page 212

#### 2 Immobiliser reader coil -D2

- ♦ Integrated into steering column lock
- ♦ -D2 reads response code of transponder each time ignition is switched on
- ♦ Removing and installing => Page 213



### 3 Immobiliser warning lamp -K117

- ◆ -K117 comes on briefly when an authorised ignition key is used.
- ◆ -K117 flashes continuously if an unauthorised ignition key is used, or if a system fault occurs.
- ◆ Removing and installing => Page 40

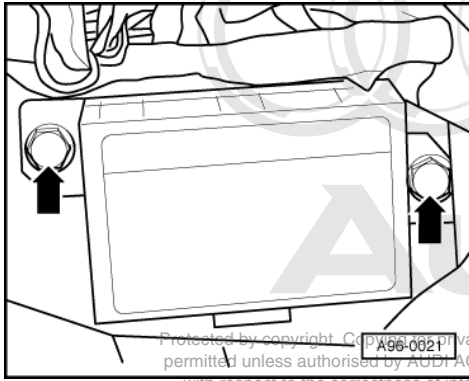
### 4 Transponder (reply transmission memory)

- ◆ Integrated into ignition key

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## 7.3 - Removing and installing immobiliser control unit

- Removing steering column switch =>Page 155



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- Removing dash insert => Page 33
- -> Remove bolts -arrows- remove control unit.
- Detach multipin connector.

**Notes:**

- ◆ When installing an immobiliser control unit -J362 from another vehicle, engine control unit replacement adaptation must be carried out => Page 6 .
- ◆ Vehicle key adaptation => Page 4 is then to be carried out.

## 7.4 - Replacing reader coil -D2

**Note:**

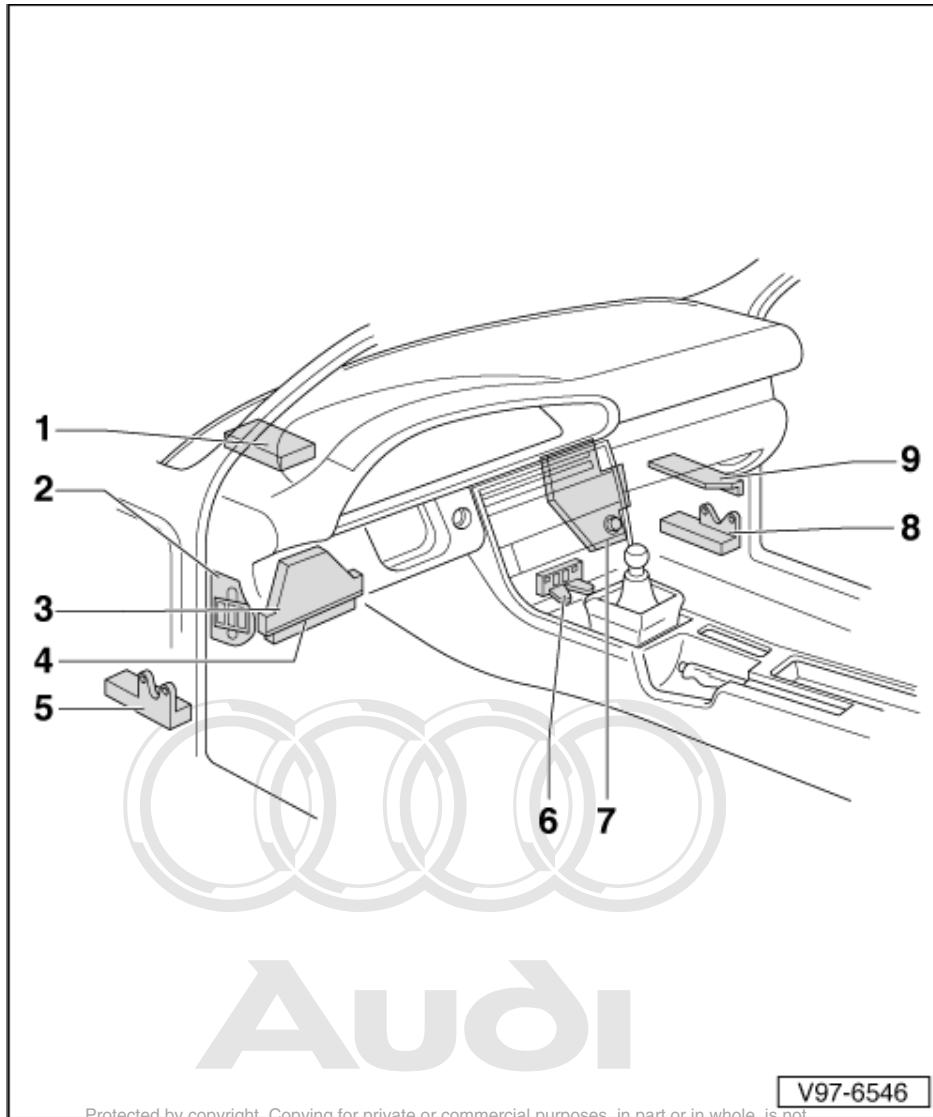
*The reader coil can only be replaced in conjunction with the steering column lock.*

- Removing steering column lock and lock cylinder =>Page 163 .
- Fit new steering column lock with new lock number. Do not perform door lock adaptation.
- Order new steering column lock with vehicle-specific lock number from Sales Centre/Importer.
- After delivery, replace steering column lock with the one with the vehicle-specific lock number.

## 97 - Wiring

### 1 - Fitting locations of control units and electrical components

#### 1.1 - Fitting locations of control units and electrical components

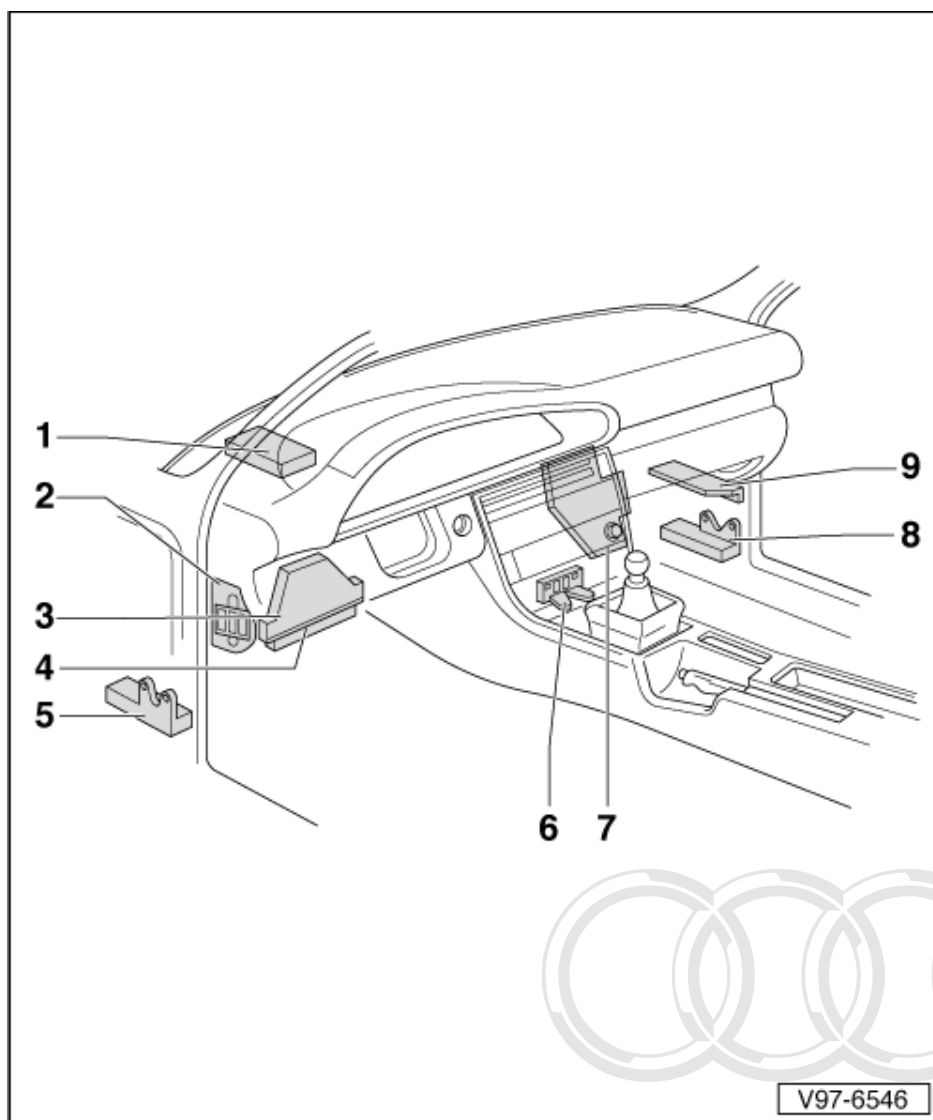


1 **Auxiliary relay carrier**  
♦ Removing and installing => Page 219

2 **Fuse carrier**  
♦ => Page 222

3 **Connection unit I**  
♦ => Page 225  
♦ Removing and installing => Page 216

4 **Central electrical system with relay carrier**  
♦ Removing and installing => Page 216



**5 Auxiliary relay carrier II**

- ♦ Layout => Page 222

**6 Connection unit III**

- ♦ => Page 228

**7 Electronics box**

- ♦ Removing and installing => Page 223

**8 Auxiliary relay carrier III**

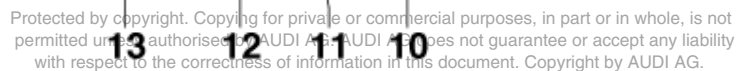
- ♦ Layout => Page 222

**9 Connecting station II**

- ♦ => Page 227

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## 1

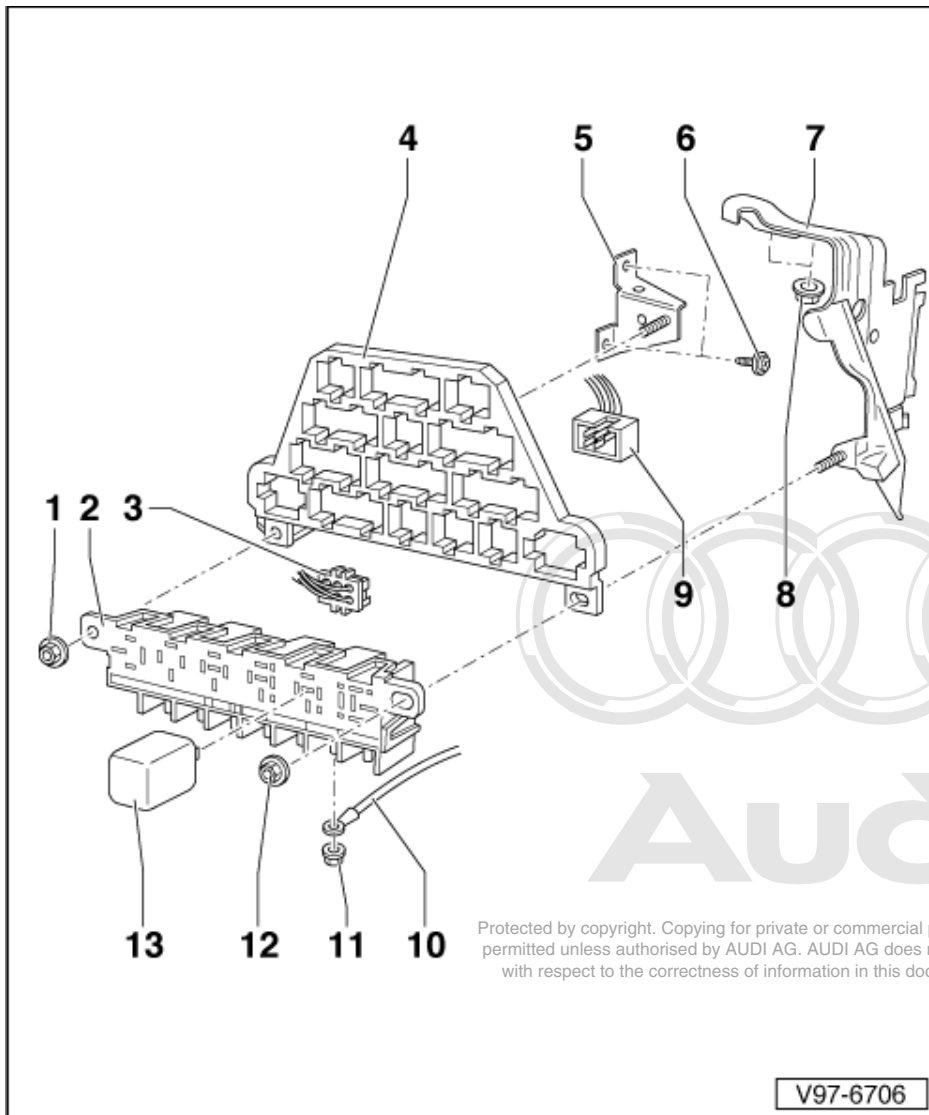


V97-6706

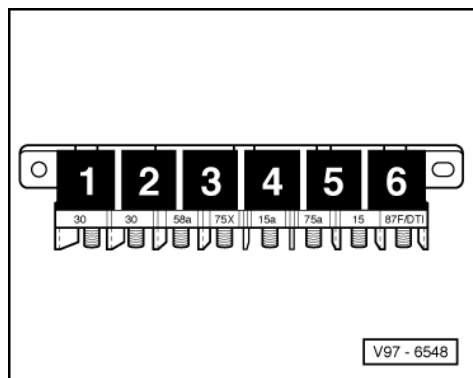
**Note:**

*Fitting location =>Page 214.*

- 1 Hexagon nut - 2,5 Nm
- 2 Central electrical system with relay carrier
  - ♦ Arrangement of relay positions and screw connections => Fig. 1
- 3 Connector
- 4 Connection unit I
- 5 Mounting
  - ♦ For central electrical system



- 6 Screw**
  - ♦ For mount
- 7 Mounting**
  - ♦ For central electrical system
- 8 Hexagon nut - 4,5 Nm**
  - ♦ For mount
- 9 Connector**
- 10 Lead**
- 11 Hexagon nut - 10 Nm**
- 12 Hexagon nut - 2,5 Nm**
- 13 Relay**
  - ♦ Arrangement of relay positions => Fig. 1



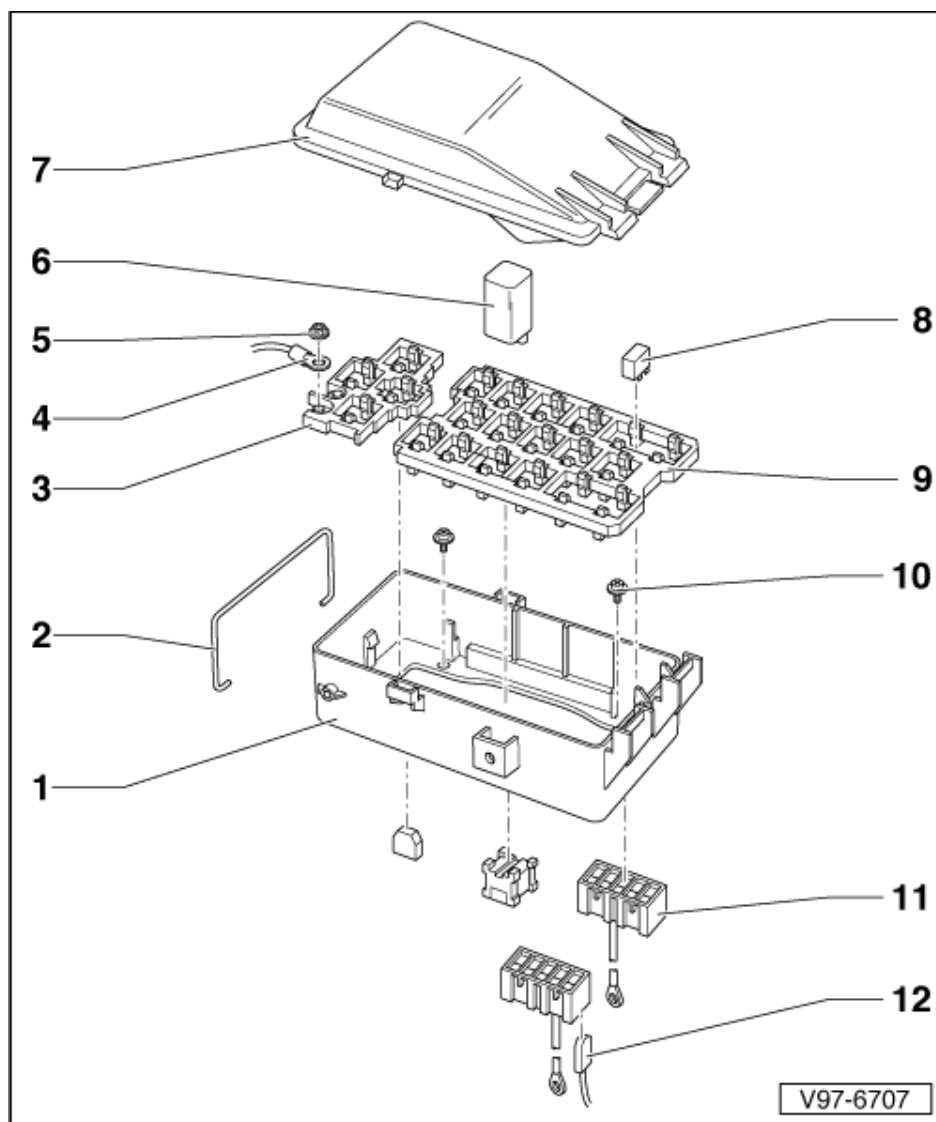
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-> Fig.1 Arrangement of relay positions and screw connections

Assignment

=> "Current Flow Diagrams, Electrical Fault Finding and Fitting Locations" binder

### 1.3 - Removing and installing auxiliary relay carrier I

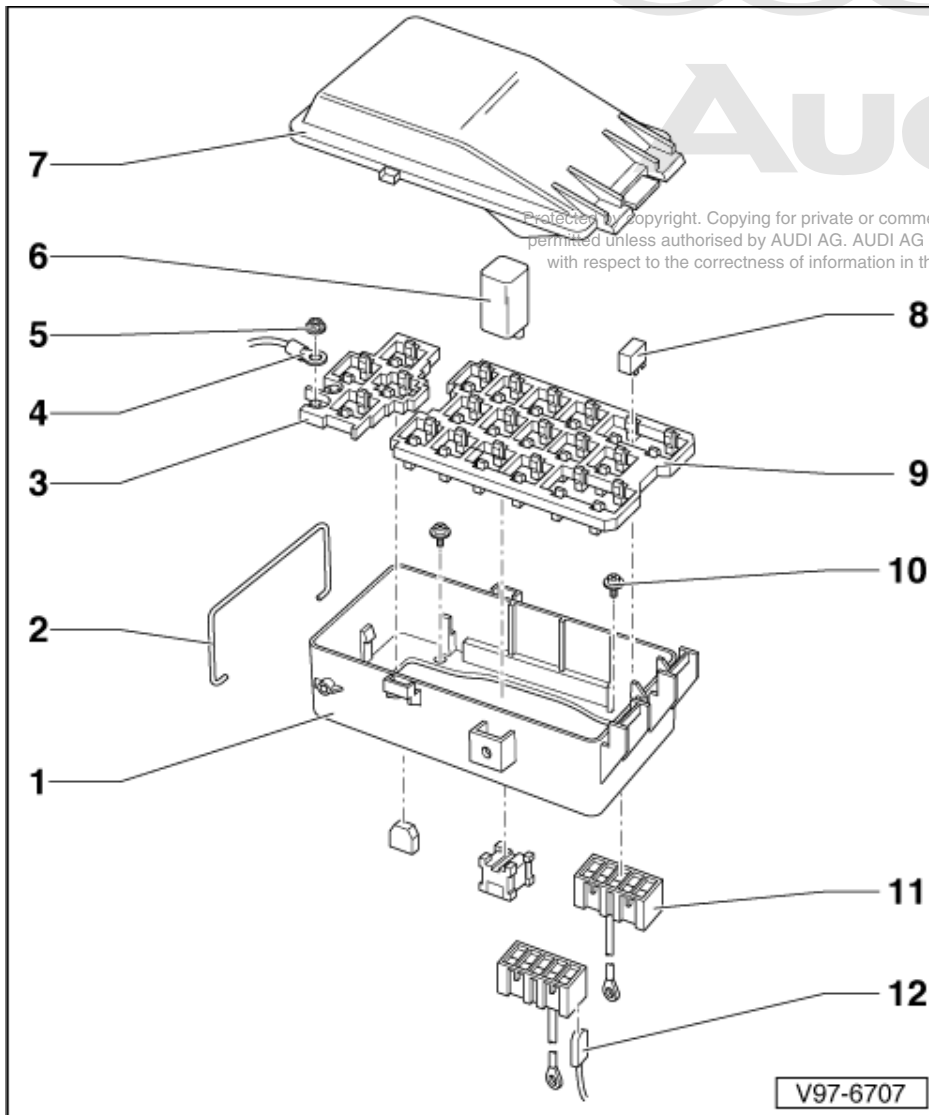


**Notes:**

- ♦ Fitting location =>Page 214 .
- ♦ Assignment

=> "Current Flow Diagrams, Electrical Fault Finding and Fitting Locations" binder

- 1 Housing
- 2 Bracket
- 3 4-section relay carrier
  - ♦ Arrangement of relay positions => Fig. 1
- 4 Lead
- 5 Hexagon nut



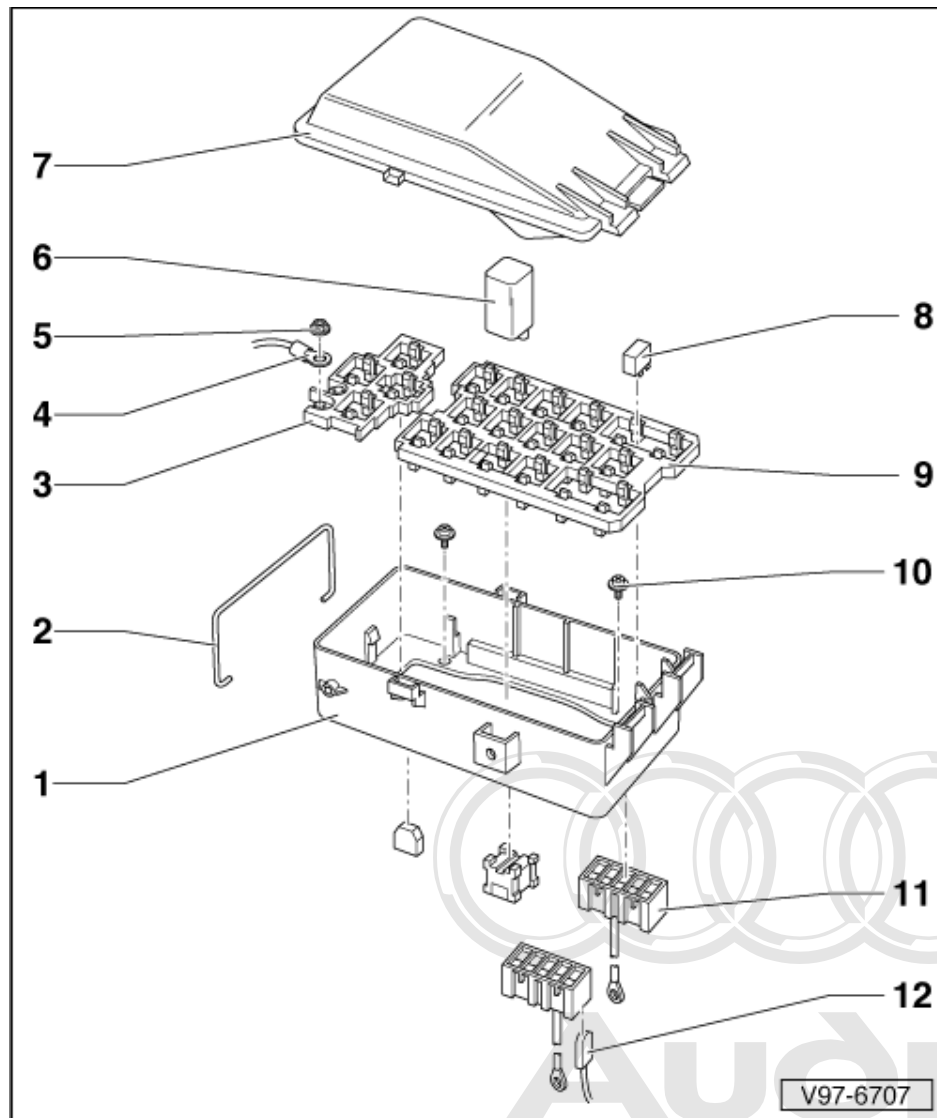
- 6 Relay
  - ♦ Arrangement of relay positions => Fig. 1
- 7 Cap
- 8 Thermo fuse
  - ♦ Arrangement of thermo fuses => Fig. 1
- 9 13-section relay carrier
  - ♦ Arrangement of relay positions => Fig. 1

**10 Bolt**

- ◆ For housing

**11 Mount**

- ◆ For thermo fuses (black)
- ◆ Arrangement of thermo fuses => Fig. 1


**12 Connector**

- ◆ For thermo fuses

**13 Mount**

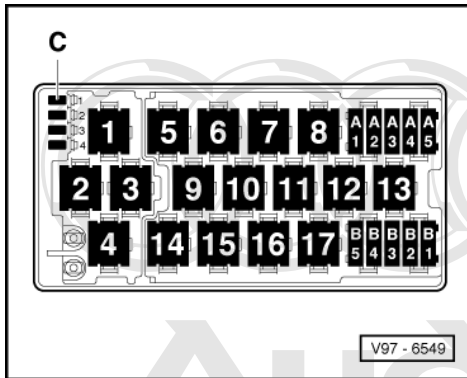
- ◆ For thermo fuses (brown)
- ◆ Arrangement of thermo fuses => Fig. 1

**14 Relay frame**

- ◆ Removing => Fig. 2

**15 Diagnosis socket**

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→ Fig.1 Arrangement of relay positions and thermo fuses and diagnosis connections

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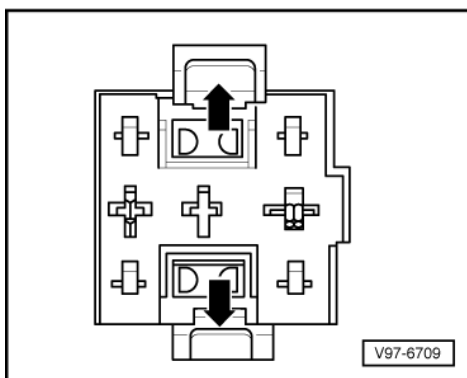
⇒ "Current Flow Diagrams, Electrical Fault Finding and Fitting Locations" binder

1 ... 17 - Relay positions

A1 ... A5 - Thermo fuses

B1 ... B5 - Thermo fuses

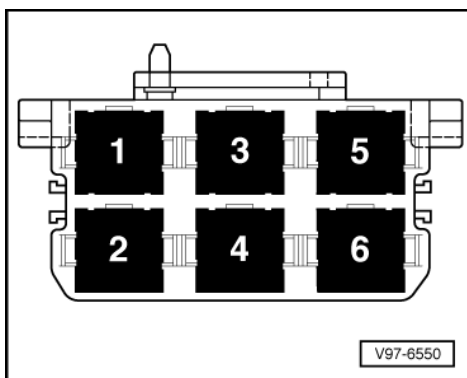
C1 ... C4 - Diagnosis connectors



→ Fig.2 Removing relay frame

- Push clips -arrows- outwards.

## 1.4 - Layout of auxiliary relay carrier II

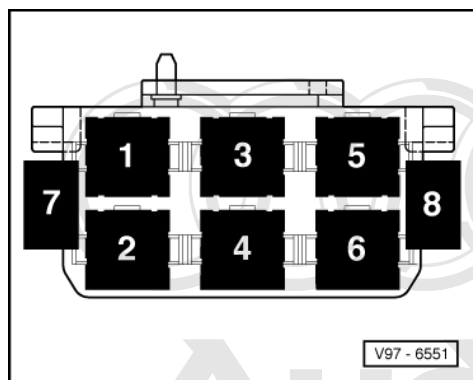


- ♦ Fitting location =>Page 214 .
- ♦ Assignment

=> "Current Flow Diagrams, Electrical Fault Finding and Fitting Locations" binder

- ♦ Recessed head screw - 2.5 Nm

## 1.5 - Layout of auxiliary relay carrier III



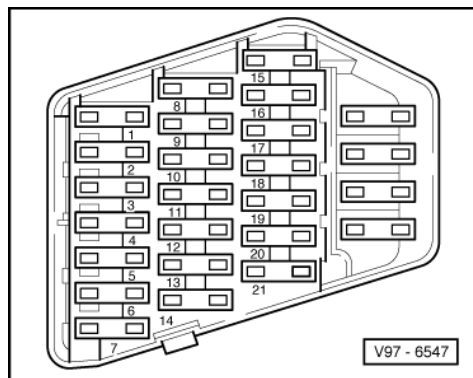
- ♦ Fitting location =>Page 214 .
- ♦ Assignment

=> "Current Flow Diagrams, Electrical Fault Finding and Fitting Locations" binder

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- ♦ Recessed head screw - 2.5 Nm

## 1.6 - Arrangement of fuses in fuse box



- ♦ Fitting location =>Page 214 .
- ♦ Assignment

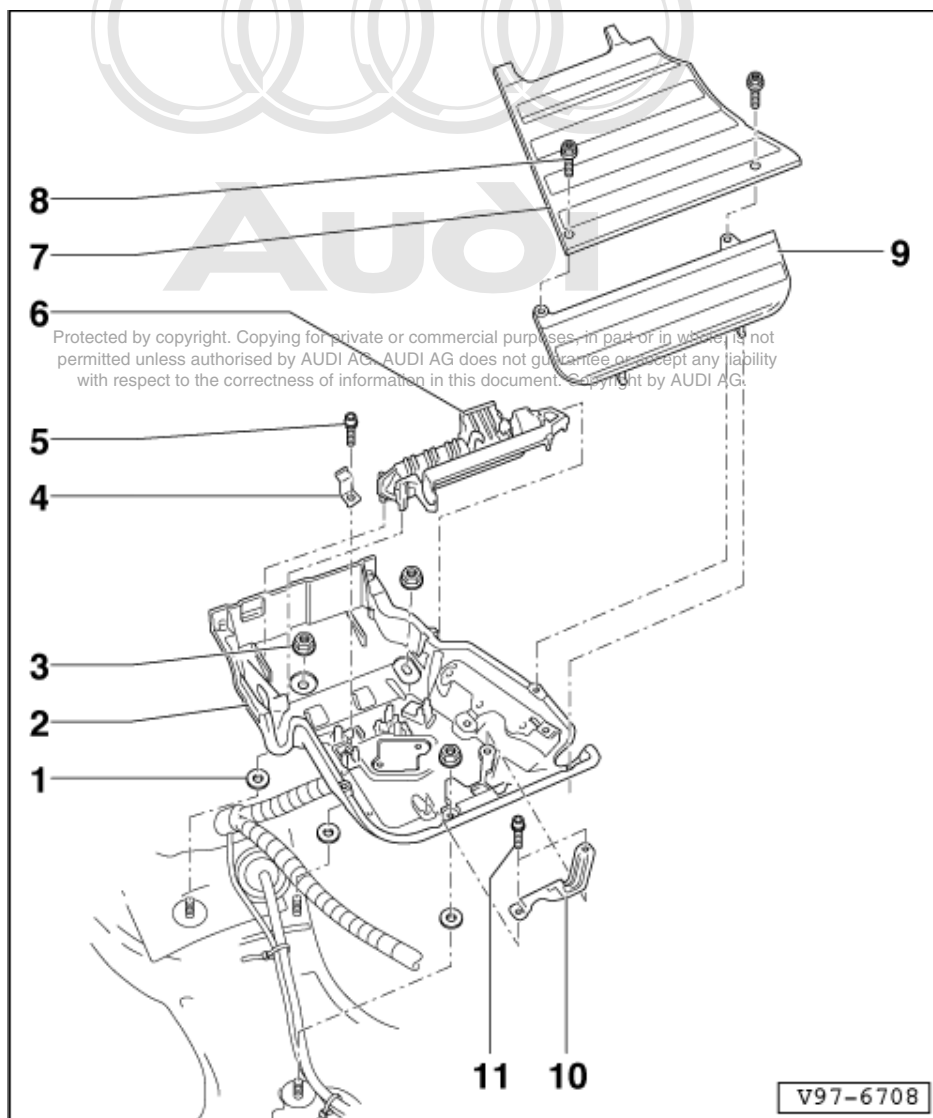
=> "Current Flow Diagrams, Electrical Fault Finding and Fitting Locations" binder

- ♦ Recessed head screw - 2 Nm

### **Note:**

*Assembly tool for fuses provided in cover.*

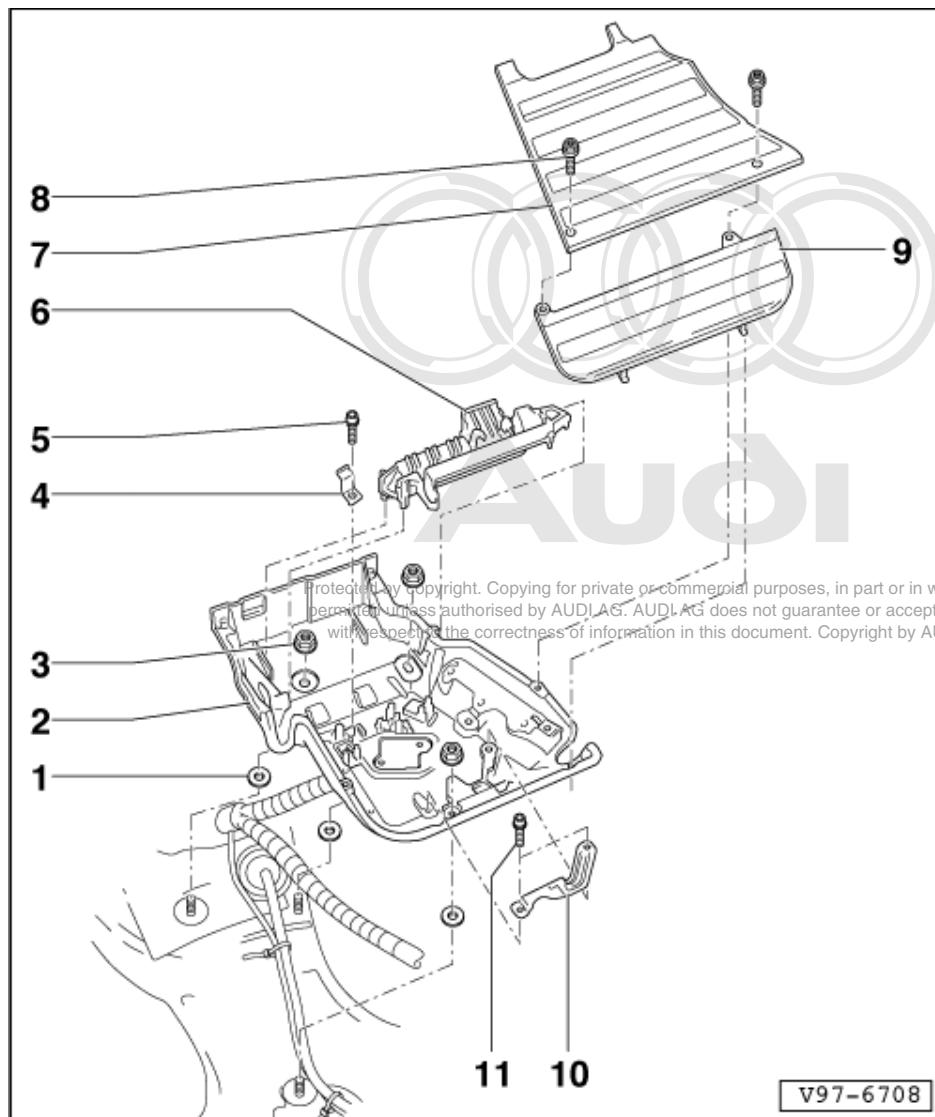
## 1.7 - Removing and installing electrics box



### **Note:**

Fitting location =>Page **214**.

- 1 Rubber buffer
- 2 Housing
- 3 Hexagon nut - 2,2 Nm
- 4 Retaining clip
  - ♦ Only with control unit for automatic gearbox
- 5 Bolt
  - ♦ For clip



**6 Mount**

- ◆ Assignment

=> "Current Flow Diagrams, Electrical Fault Finding and Fitting Locations" binder

**7 Top cover**

- ◆ Removing => Fig. 1

**8 Securing bolt**

**9 Bottom cover**

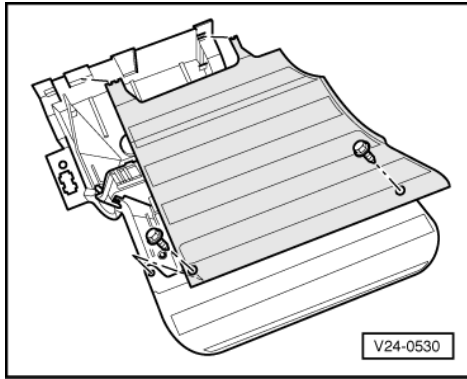
- ◆ Removing => Fig. 2

**10 Retaining clip**

- ◆ Only for CU III, Motronic CU and Monomotronic

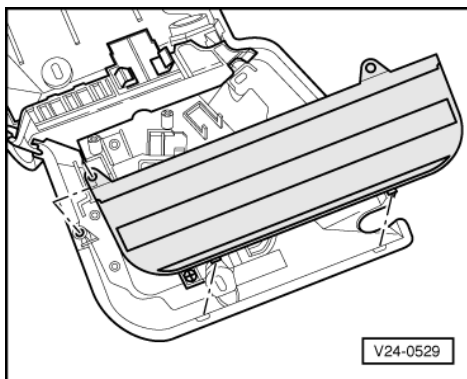
**11 Bolt**

- ◆ For clip



-> Fig.1 Removing top cover

- Remove screws.
- Carefully disengage cover



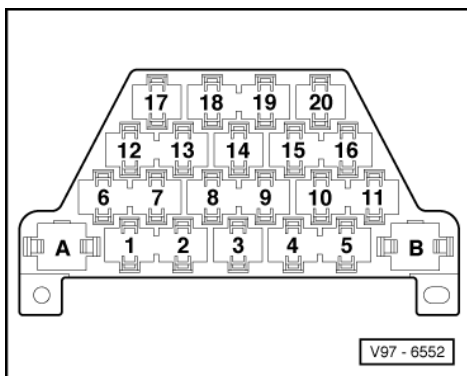
-> Fig.2 Removing bottom cover

- Remove top cover.
- Carefully disengage bottom cover



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## 1.8 - Arrangement of connectors



-> Connection unit I

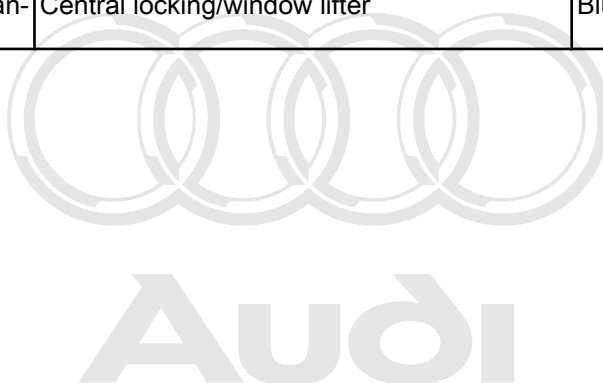
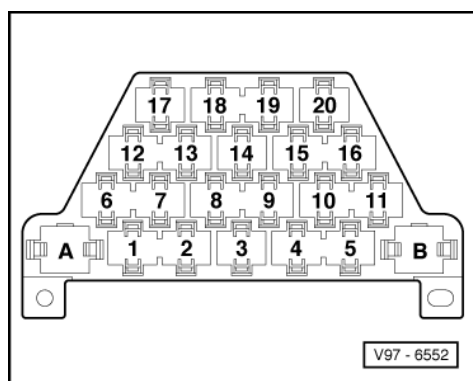
- ♦ Fitting location =>Page 214 .
- ♦ Hexagon nut - 2.5 Nm



- ♦ A, B - Relay position; assignment

=> "Current Flow Diagrams, Electrical Fault Finding and Fitting Locations" binder

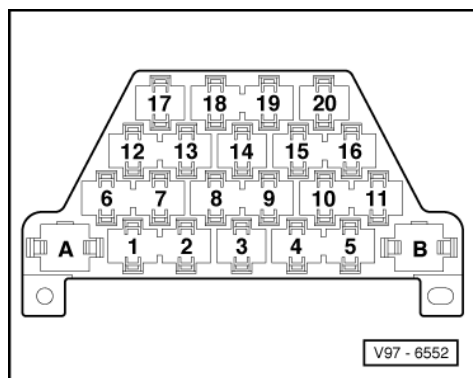
| Number | From wiring loom                                               | To wiring loom                                          | Colour |
|--------|----------------------------------------------------------------|---------------------------------------------------------|--------|
| 1      | Central locking/window lifter/door contact/sliding roof        | Courtesy light, sliding roof (without pre-selection)    | Black  |
| 2      | Instrument panel                                               | Central locking/window lifter/door contact/sliding roof | Brown  |
| 3      | Left headlight                                                 | Instrument panel                                        | Red    |
| 4      | Right headlight                                                | Instrument panel                                        | Yellow |
| 5      | Instrument panel (anti-theft alarm), bonnet (anti-theft alarm) | Central locking/window lifter                           | Blue   |



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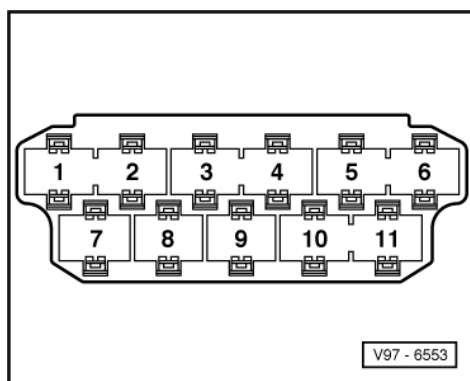
-> Connection unit I

| Number | From wiring loom                              | To wiring loom                  | Colour     |
|--------|-----------------------------------------------|---------------------------------|------------|
| 6      | Fan/compressor/CAT                            | Engine compartment, right       | White      |
| 7      | Tail light                                    | Instrument panel                | Green      |
| 8      | Tail light/trailer coupling/auto-check system | Instrument panel                | Grey       |
| 9      | Instrument panel                              | Outside temperature/Servotronic | Orange     |
| 10     | Seat adjustment/exterior rear-view mirror     | Instrument panel                | Dark brown |
| 11     | Cruise control system (engine compartment)    | Instrument panel                | Violet     |
| 12     | Trailer coupling                              | Instrument panel                | Black      |



→ Connection unit I

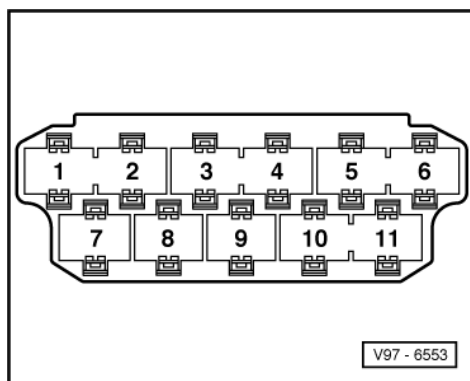
| Number | From wiring loom  | To wiring loom         | Colour |
|--------|-------------------|------------------------|--------|
| 13     | Tail light        | Instrument panel       | Brown  |
| 14     | Automatic gearbox | Instrument panel       | Red    |
| 15     | Automatic gearbox | Instrument panel       | Yellow |
| 16     | ABS               | Instrument panel       | Blue   |
| 17     | Compressor        | Air conditioner        | White  |
| 18     | Instrument panel  | Taxi/Police            | Green  |
| 19     | Auxiliary heater  | Air conditioner        | Grey   |
| 20     | ABS               | Automatic gearbox, 4WD | Orange |



→ Connecting station II

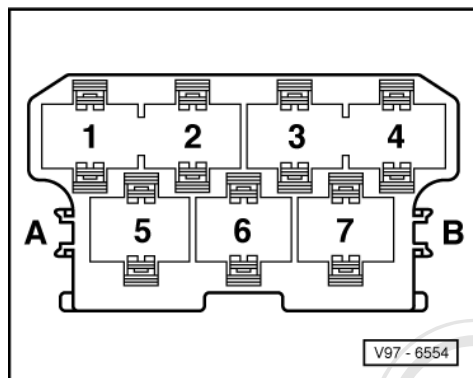
- ♦ Fitting location =>Page 214 .
- ♦ Recessed head screw - 2.5 Nm

| Number | From wiring loom                             | To wiring loom                                          | Colour |
|--------|----------------------------------------------|---------------------------------------------------------|--------|
| 1      | Instrument panel                             | Right headlight                                         | Black  |
| 2      | Instrument panel                             | Right headlight                                         | Brown  |
| 3      | Instrument panel                             | Engine compartment, right                               | Red    |
| 4      | Air conditioner                              | Passenger compartment temperature sensor                | Yellow |
| 5      | Air conditioner                              | Engine compartment, right                               | Blue   |
| 6      | Anti-theft alarm/electronic traction control | Window lifter/central locking/engine compartment, right | White  |



-> Connecting station II

| Number | From wiring loom            | To wiring loom            | Colour     |
|--------|-----------------------------|---------------------------|------------|
| 7      | Instrument panel            | Engine compartment, right | Green      |
| 8      | Instrument panel            | Engine compartment, right | Grey       |
| 9      | Air conditioner             | Automatic gearbox, 4WD    | Orange     |
| 10     | Electronic traction control | Engine compartment, right | Dark brown |
| 11     | Electronic traction control | Engine compartment, right | Violet     |



-> Connection unit III

- ♦ Fitting location =>Page 214 .
- ♦ Recessed head screw - 2.5 Nm

| Number | From wiring loom         | To wiring loom           | Colour |
|--------|--------------------------|--------------------------|--------|
| 1      | Instrument panel         | Console                  | Black  |
| 2      | Instrument panel         | Auxiliary heater console | Brown  |
| 3      | Instrument panel         | Heater/AC                | Red    |
| 4      | Console                  | Loudspeaker              | Yellow |
| 5      | Console                  | Differential lock        | Blue   |
| 6      | Instrument panel, aerial | Loudspeaker              | White  |
| 7      | Unallocated              |                          | Green  |