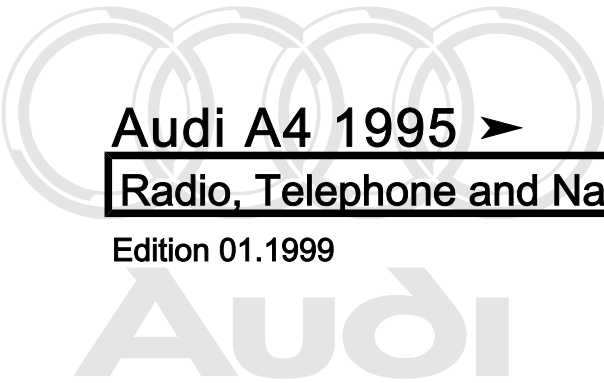


A large, faint watermark of the Audi logo is centered in the background of the page.

Audi A4 1995 ➤

Radio, Telephone and Navigation System

Edition 01.1999

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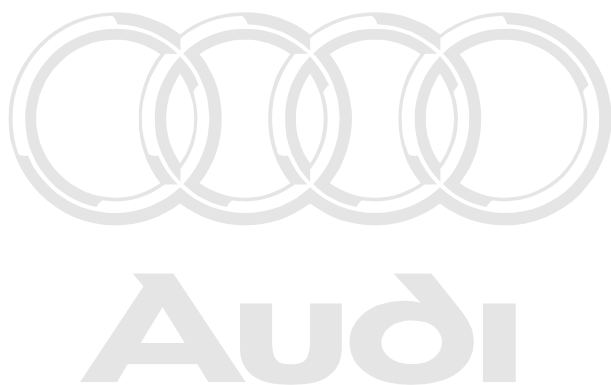
List of Workshop Manual Repair GroupsList of Workshop Manual
Repair GroupsList of Workshop Manual Repair Groups

Audi A4 1995 ➤

Radio, Telephone and Navigation System

Repair Group

91 - Radio, Telephone, Navigation



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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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91 - Radio, Telephone, Navigation

1 - Radio Systems

1.1 - Radio Systems

1.2 - General notes

Important:

Disconnect battery earth strap before working on electrical system.

Activate the service mode of telematics control unit before disconnecting battery. => Radio, Telephone and Navigation System Self-diagnosis; Repair group 01; Telematics Self-diagnosis; Adaption

Notes:

- ◆ On vehicles with coded radio, obtain anti-theft code before disconnecting battery.
- ◆ Activate the service mode of telematics control unit before disconnecting battery.
- ◆ If the battery is reconnected, please ensure that the vehicle equipment (radio, clock, electric window lifters, engine) is activated as described in operating instructions and the service mode of telematics control unit is deactivated.

Notes:

- ◆ A new generation of radios was introduced in model year 98. The "beta", "gamma" and "delta" radio units were replaced by the "chorus" and "concert" radio units with self-diagnosis capability.
- ◆ In model year '99, the radio units "chorus" and "concert" were supplemented by the "symphony" radio unit with self-diagnosis capability. The special feature of this radio unit is that the operating unit also includes a CD player in addition to the radio and cassette modes.
- ◆ In case of complaints, familiarity with the functions and operation of the relevant radio system is essential.
- ◆ Additional information

=> Operating instructions

- ◆ For retrofitting, repair work and troubleshooting

=> Current Flow Diagrams, Electrical Fault-finding and Fitting Locations

=> Installation instructions

- ◆ Comprehensive assembly instructions, e.g. removing and installing trims, are included in the General Body Assembly Workshop Manual.
- ◆ All radio systems are equipped with anti-theft codes.

Notes on radio retrofitting:

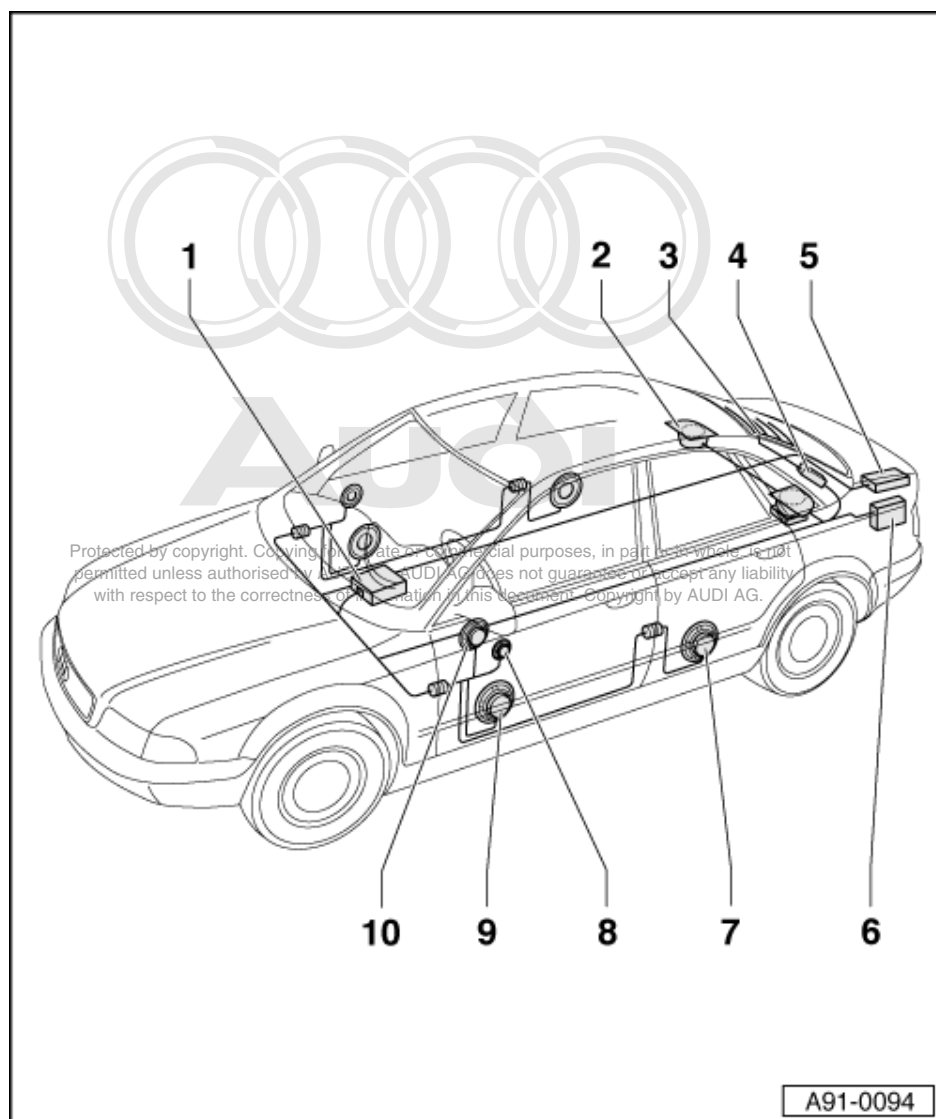
- ◆ The provided connectors for genuine Audi radio systems should be used for preparing the radio.
- ◆ Radio units with other plug connectors must be connected using adapter leads.
- ◆ When connecting the speed signal (radios with GALA function) care must be taken not to cause a short circuit, as otherwise, vehicle malfunctions may occur (e.g. engine timing).
- ◆ Connecting the speed signal to non-Audi makes of radio can also lead to problems with the vehicle.
- ◆ If other radio units are fitted (vehicles 1998 +), the aerial amplifier may be impaired, as original Audi radio units are fitted with a "remote powered aerial", i.e. the voltage supply for the aerial amplifier is provided via the centre conductor of the high-frequency cable.
The remote power adapter from the Volkswagen and Audi range (Votex) should therefore be used.



Notes on CD retrofitting:

The wiring harness for the CD changer is installed in the vehicle during preparation for CD installation. The connection cable can only be used for original Audi CD changers.

1.3 - General overview of "chorus and concert" radio systems -Saloon-



1 Radio

- ◆ Installed in centre console
- ◆ Removing and installing
=> Page 42

2 Loudspeaker installed in rear shelf

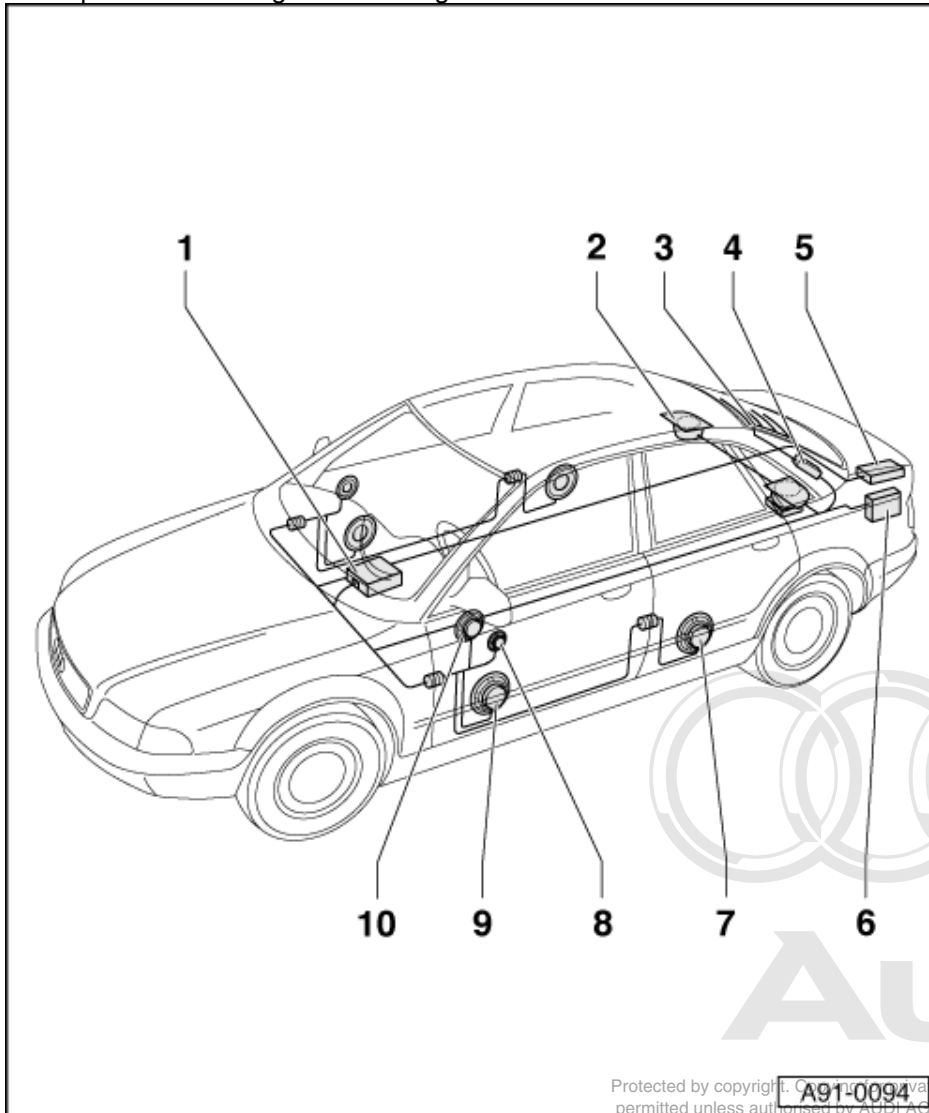
- ◆ Wide-band loudspeaker
- ◆ Removing and installing
=> Page 45
- ◆ Bass loudspeaker
(with BOSE sound system only)
- ◆ Removing and installing
=> Page 45

3 Rear window aerial

- ◆ Top 3 filaments not heated; as MW aerial only (AM).
- ◆ Remaining filaments heated and VHF aerial (FM).

- ♦ Removing and installing

=> General Body Assembly, Exterior; Repair group 64; Glass panels; Removing and installing rear window
Glass panels Removing and installing rear window



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4 Aerial amplifier

- ♦ Under left D-pillar trim
- ♦ Removing and installing
=> Page 54

5 BOSE power amplifier (with Bose sound system only)

- ♦ In rear left of luggage compartment under rear shelf
- ♦ Removing and installing
=> Page 52

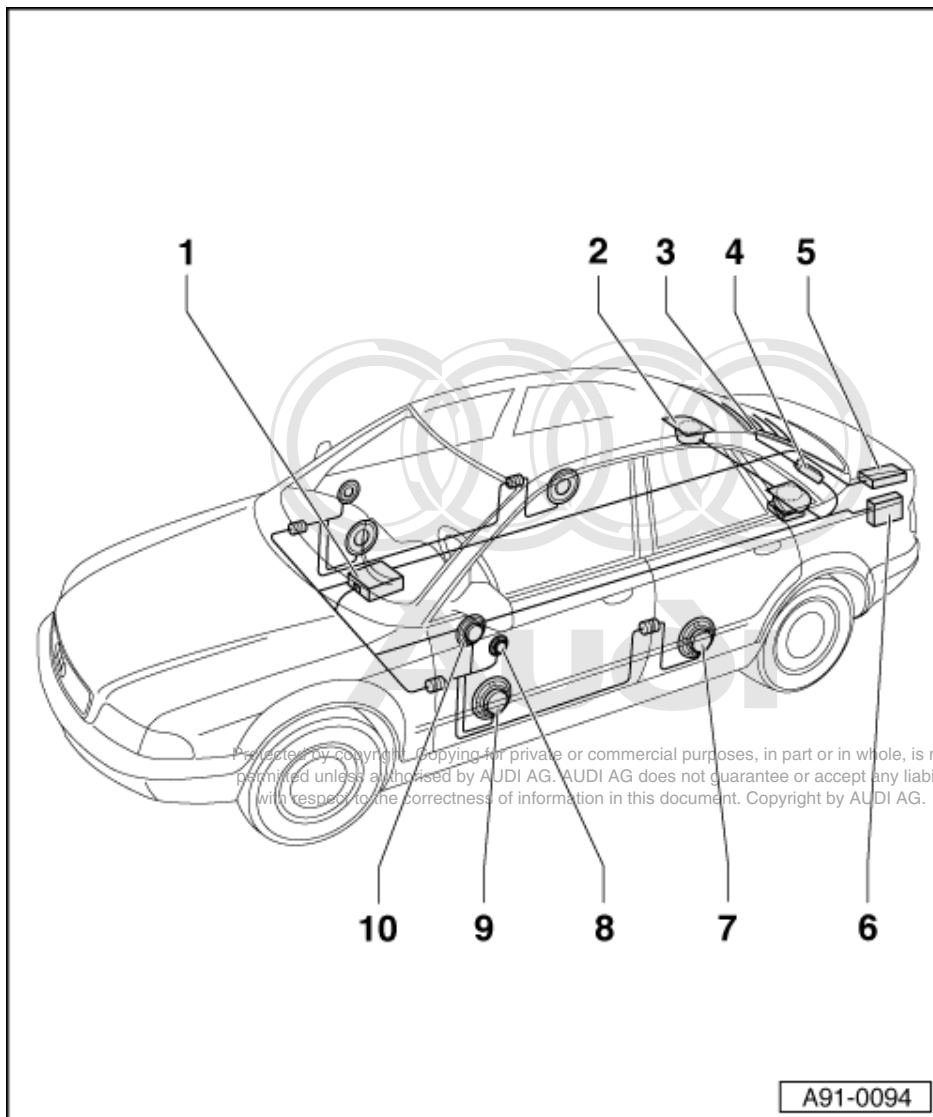
6 CD changer (with "concert" radio only)

- ♦ In rear left of luggage compartment
- ♦ Removing and installing
=> Page 46
- ♦ Check wiring
=> Page 51

7 Wide-band loudspeaker

- ♦ In rear door trim (with Bose sound system only)
- ♦ Removing and installing

=>Page 46



8 Hands-free loudspeaker

- ◆ In front driver's door.
- ◆ Removing and installing
=> Page 83
- ◆ Only for vehicles with BOSE sound system in conjunction with telephone
- ◆ For all other vehicles, the loudspeakers in the front door trims are used.

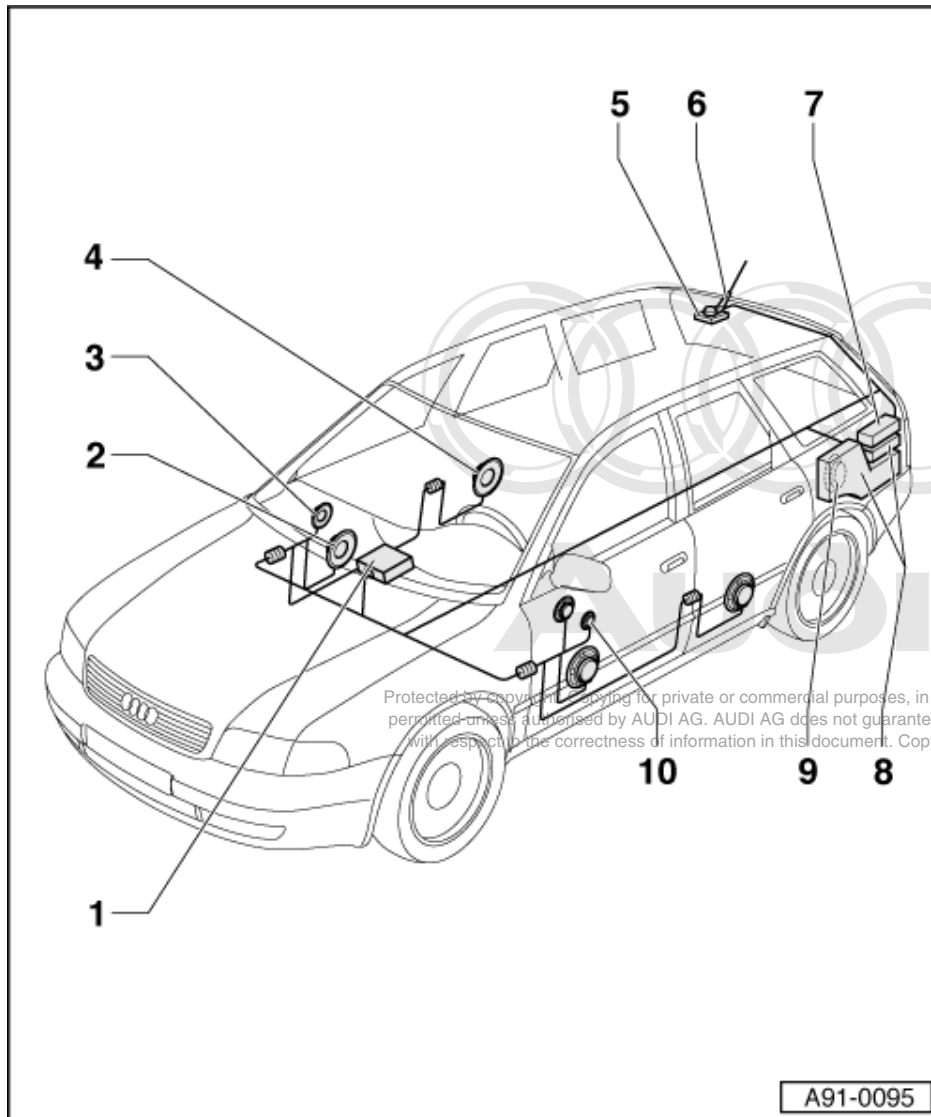
9 Bass loudspeaker

- ◆ In front lower door trim
- ◆ Removing and installing
=> Page 44

10 Mid-range/treble loudspeaker

- ◆ In front upper door trim
- ◆ Removing and installing
=> Page 45

1.4 - Overview of "chorus and concert" radio systems -Avant-



1 Radio

- ♦ Installed in centre console
- ♦ Removing and installing
=> Page 42

2 Bass loudspeaker

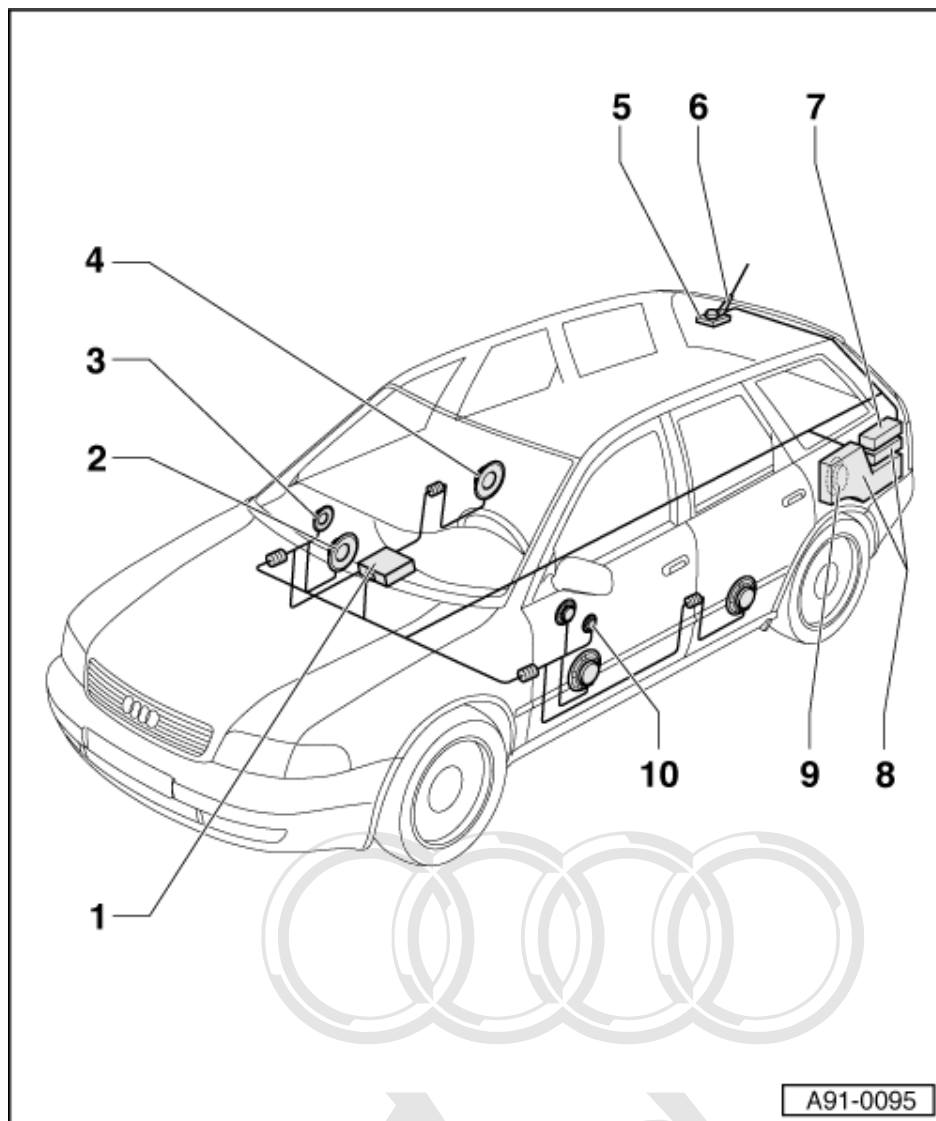
- ♦ In front lower door trim
- ♦ Removing and installing
=> Page 44

3 Mid-range/treble loudspeaker

- ♦ In front upper door trim
- ♦ Removing and installing
=> Page 45

4 Wide-band loudspeaker

- ♦ In the rear door trim
- ♦ Removing and installing
=> Page 46



5 Aerial base

- ◆ With integrated amplifier

6 Roof aerial

- ◆ For radio, telephone and navigation system, a combination aerial is used.
- ◆ Removing and installing
=> Page 62

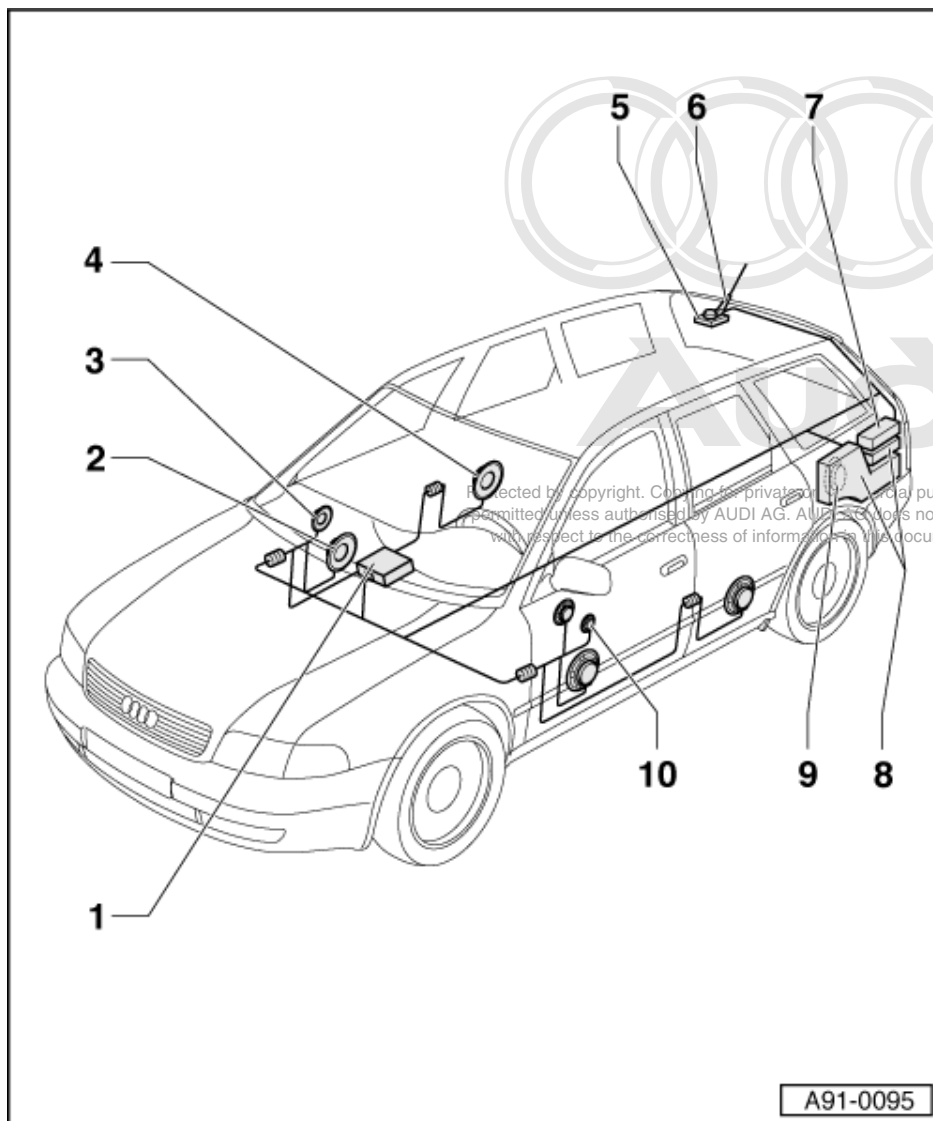
7 CD changer

(with "concert" radio only)

- ◆ In rear left of luggage compartment
- ◆ Removing and installing
=> Page 50
- ◆ Check wiring
=> Page 51

8 BOSE power amplifier, combined with bass loudspeaker (subwoofer) - with BOSE sound system only

- ◆ In rear left of luggage compartment behind side trim
- ◆ Removing and installing
=> Page 52



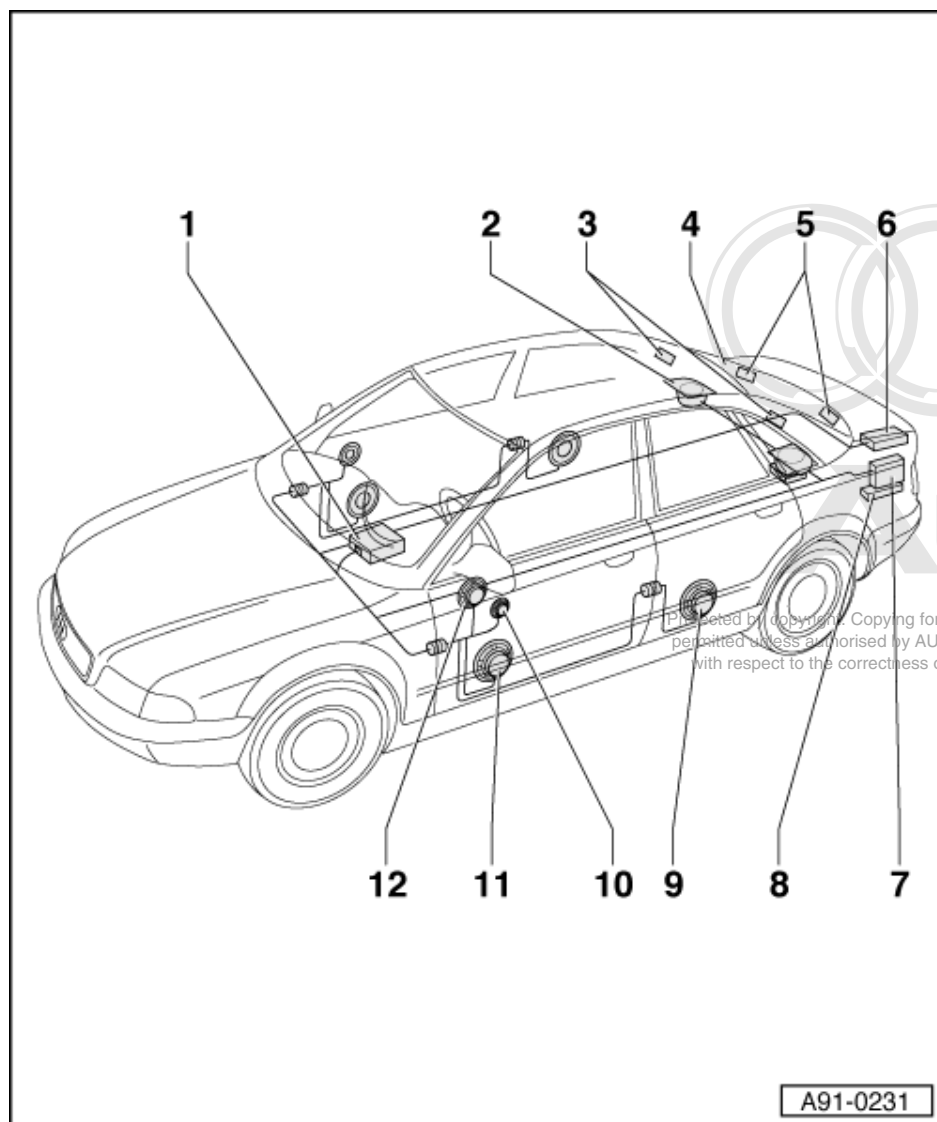
9 Bass loudspeaker (subwoofer)

- ◆ In rear left of luggage compartment under side trim
- ◆ Removing and installing
=> Page 52

10 Hands-free loudspeaker

- ◆ In front driver's door.
- ◆ Removing and installing
=> Page 83
- ◆ Only for vehicles with BOSE sound system in conjunction with telephone
- ◆ For all other vehicles, the loudspeakers in the front door trims are used.

1.5 - General overview of "symphony" radio systems -Saloon-



1 Radio with CD player

- ◆ Installed in centre console
- ◆ Removing and installing

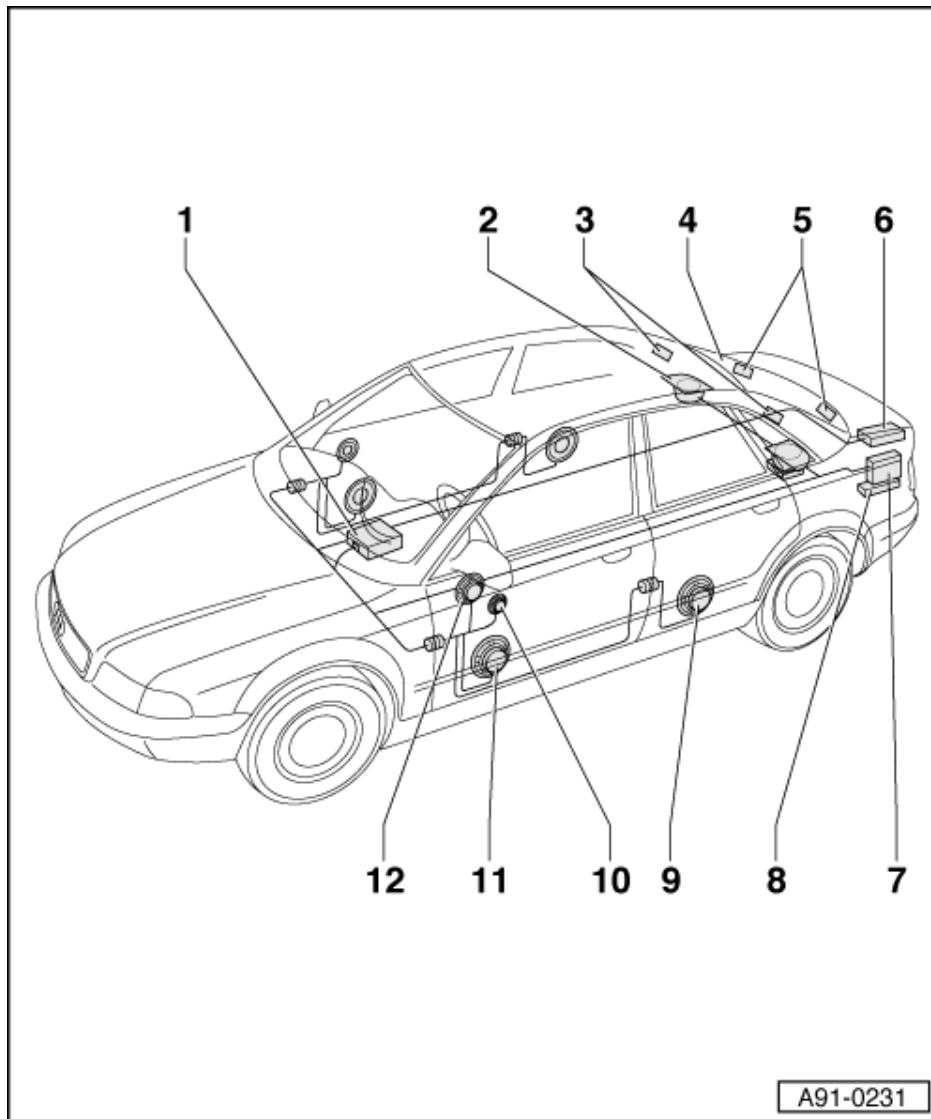
=> Page 42

2 Loudspeaker installed in rear shelf

- ◆ Wide-band loudspeaker
 - ◆ Removing and installing
- => Page 45
- ◆ Bass loudspeaker (with BOSE sound system only)
 - ◆ Removing and installing
- => Page 45

3 Aerial amplifier

- ◆ Under left and right D-pillar trim
 - ◆ Removing and installing
- => Page 54



4 Rear window aerial

- ♦ FM1, AM, FM2, FM3, FM4 aerials
- ♦ Removing and installing

=> General Body Assembly, Exterior; Repair group 64; Glass panels; Removing and installing rear window Glass panels Removing and installing rear window

5 Aerial amplifier

- ♦ Under left and right rear shelf
 - ♦ Removing and installing
- => Page 55

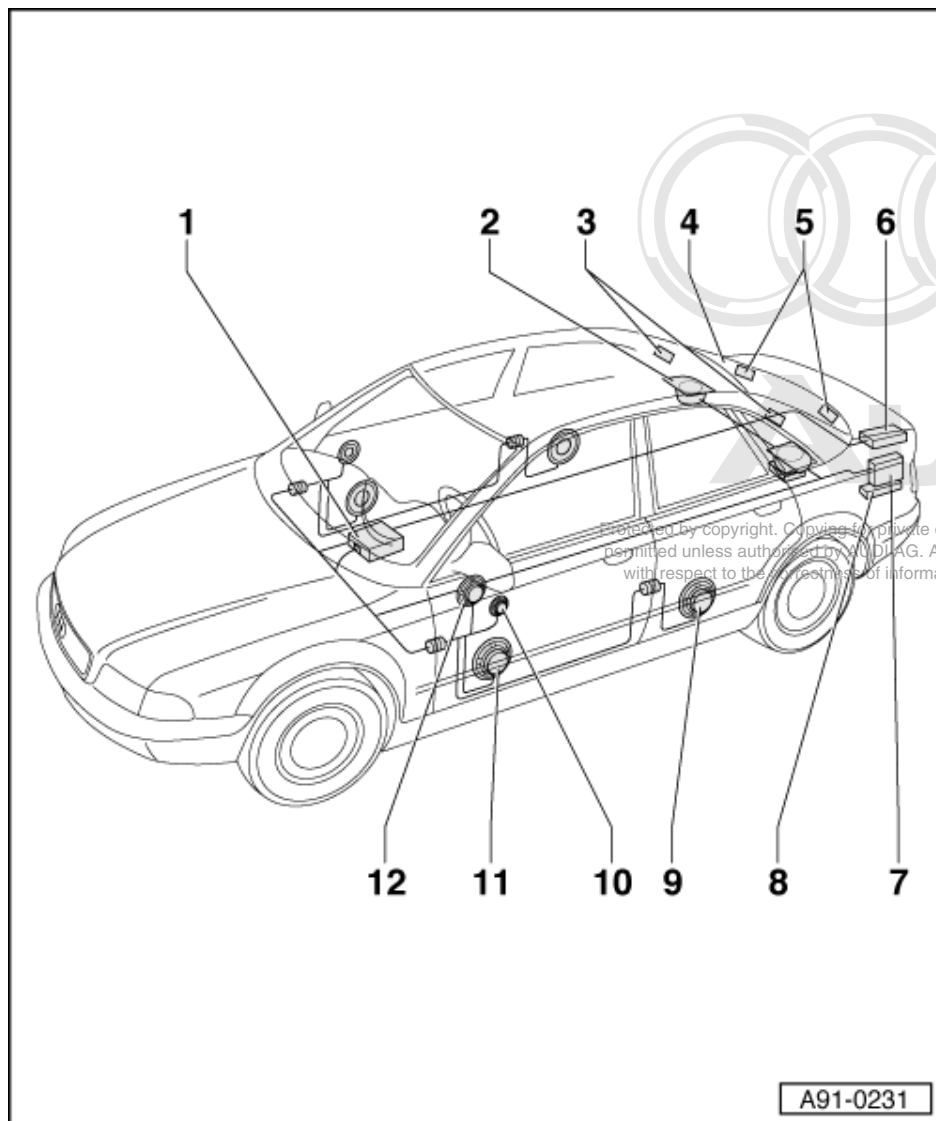
6 BOSE power amplifier (with Bose sound system only)

- ♦ In rear left of luggage compartment under rear shelf
 - ♦ Removing and installing
- => Page 52

7 CD changer (optional)

- ♦ In rear left of luggage compartment
 - ♦ Removing and installing
- => Page 46

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8 Control unit for aerial selection

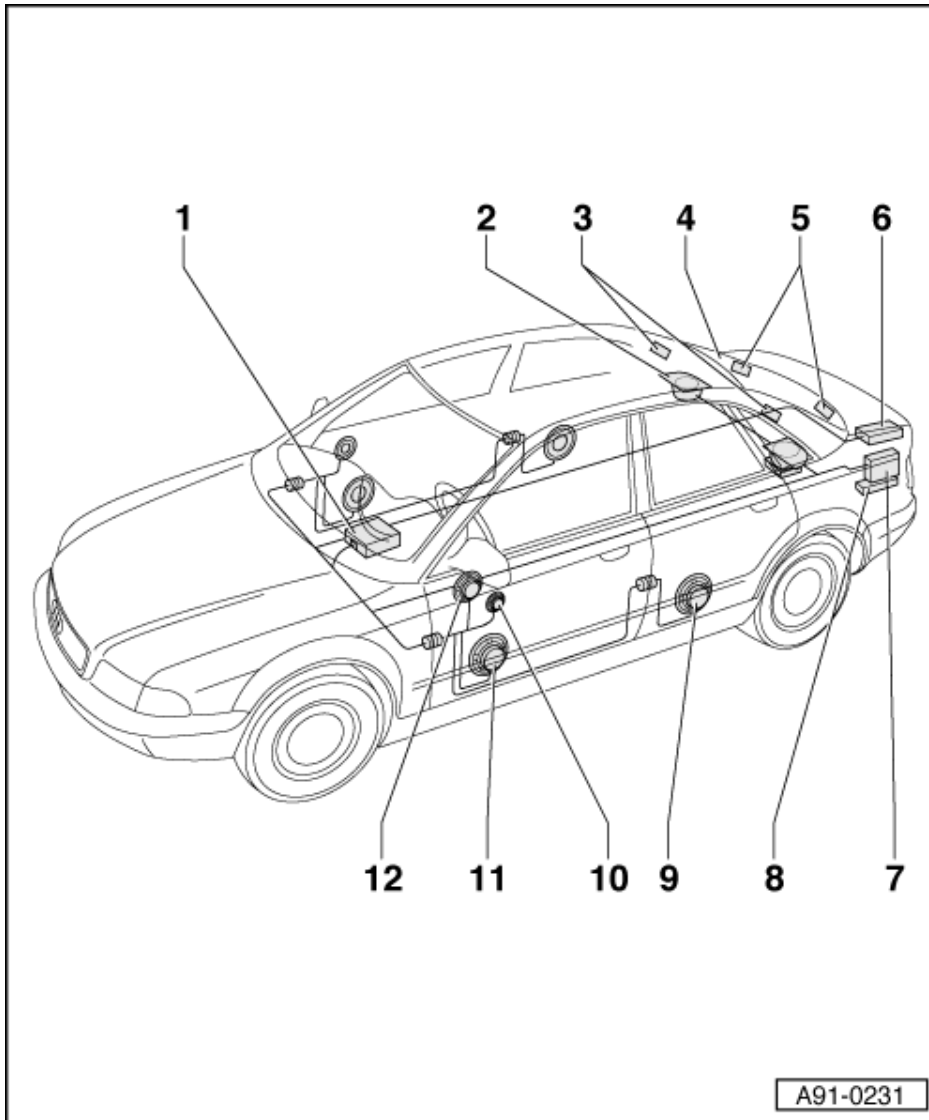
- ◆ In rear left of luggage compartment
- ◆ Removing and installing
=> Page 57

9 Wide-band loudspeaker

- ◆ In rear door trim (with Bose sound system only)
- ◆ Removing and installing
=>Page 46

10 Hands-free loudspeaker

- ◆ In front driver's door.
- ◆ Removing and installing
=> Page 83
- ◆ Only for vehicles with BOSE sound system in conjunction with telephone
- ◆ For all other vehicles, the loudspeakers in the front door trims are used.



11 Bass loudspeaker

- ◆ In front lower door trim
- ◆ Removing and installing
=> Page 44

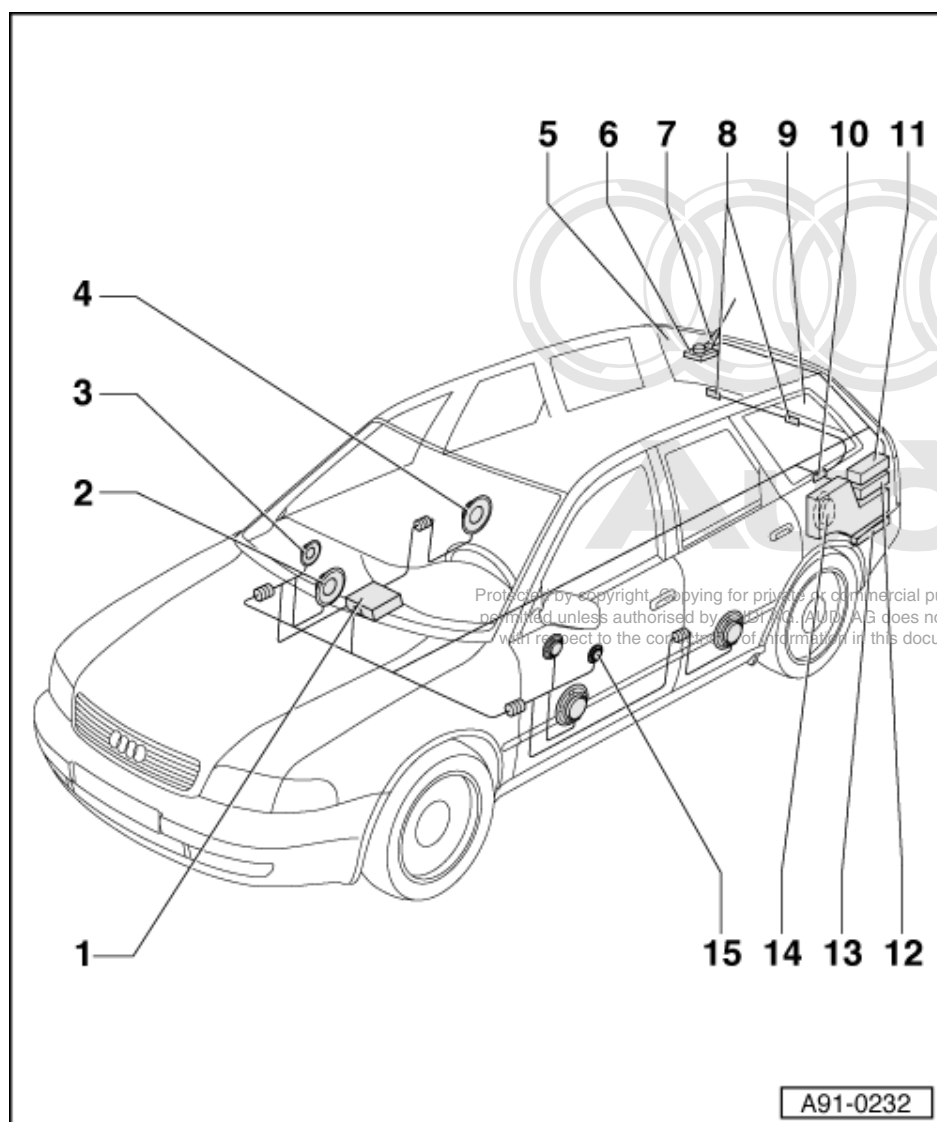
12 Mid-range/treble loudspeaker

- ◆ In front upper door trim
- ◆ Removing and installing
=> Page 45



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1.6 - General overview of "symphony" radio systems -Avant-



1 Radio with CD player

- ◆ Installed in centre console
- ◆ Removing and installing
=> Page 42

2 Bass loudspeaker

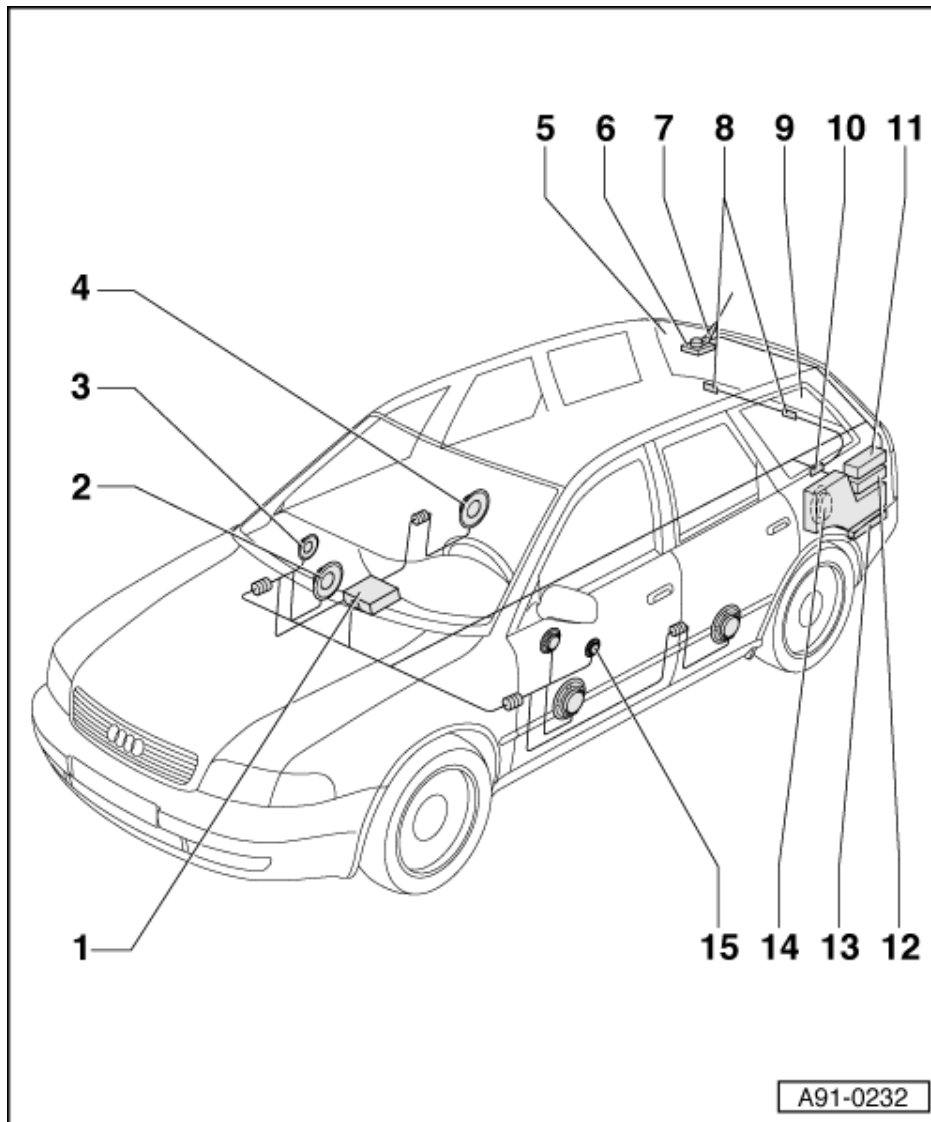
- ◆ In front lower door trim
- ◆ Removing and installing
=> Page 44

3 Mid-range/treble loudspeaker

- ◆ In front upper door trim
- ◆ Removing and installing
=> Page 45

4 Wide-band loudspeaker

- ◆ In the rear door trim
- ◆ Removing and installing
=> Page 46



5 Rear window aerial

- ♦ FM3, FM4 aerials
- ♦ Removing and installing

=> General Body Assembly, Exterior; Repair group 64; Glass panels; Removing and installing Avant rear window Glass panels Removing and installing Avant rear window

6 Aerial base

- ♦ With integrated amplifier

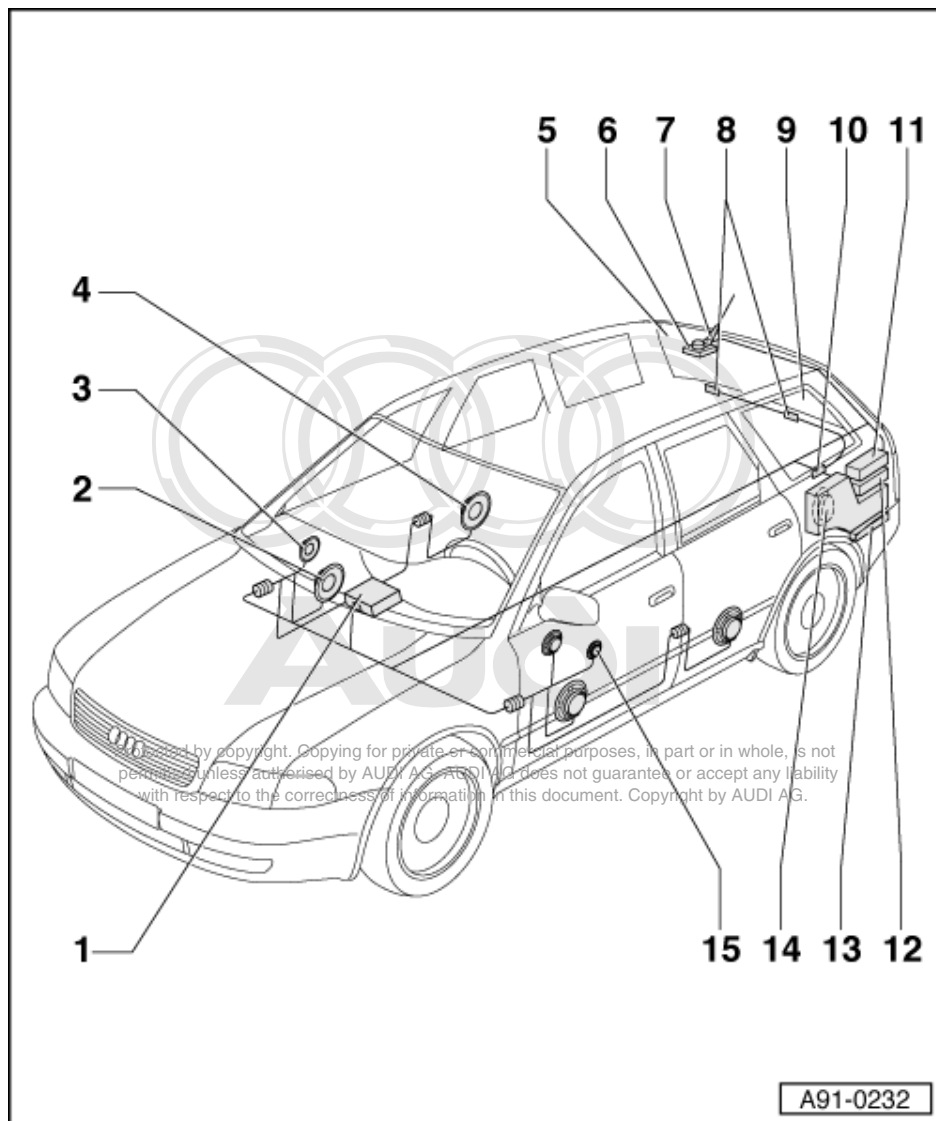
7 Roof aerial

- ♦ FM1, AM aerials
- ♦ For radio, telephone and navigation system, a combination aerial is used.
- ♦ Removing and installing
=> Page 62

8 Aerial amplifier

- ♦ Under lower tailgate trim
- ♦ Removing and installing
=> Page 55

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9 Side window aerial left with

- ◆ FM2 aerial
- ◆ Removing and installing

=> General Body Assembly, Exterior; Repair group 64; Glass panels; Removing and installing Avant side window Glass panels Removing and installing Avant side window

10 Aerial amplifier

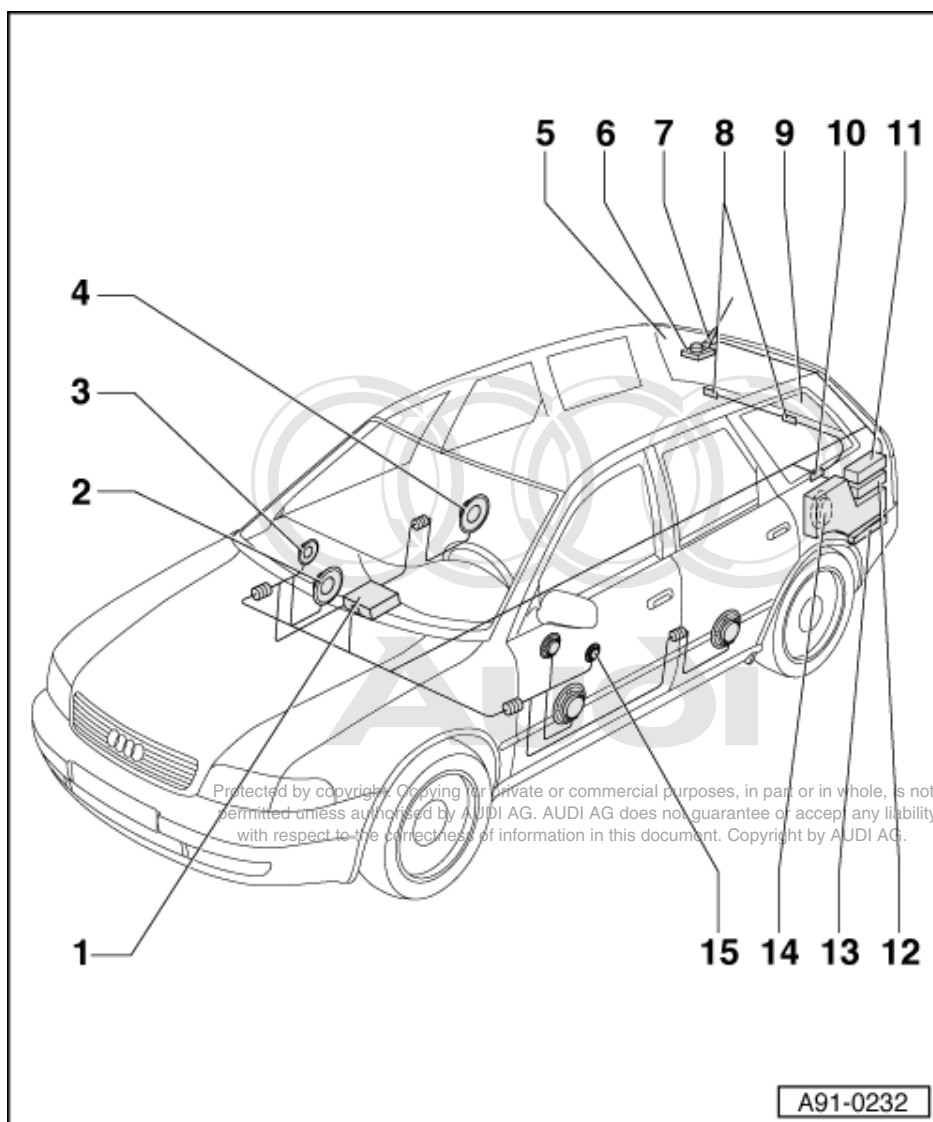
- ◆ Under left side trim
- ◆ Removing and installing

=> Page 56

11 CD changer (optional)

- ◆ In rear left of luggage compartment
- ◆ Removing and installing

=> Page 50



12 BOSE power amplifier, combined with bass loudspeaker (subwoofer) - with BOSE sound system only

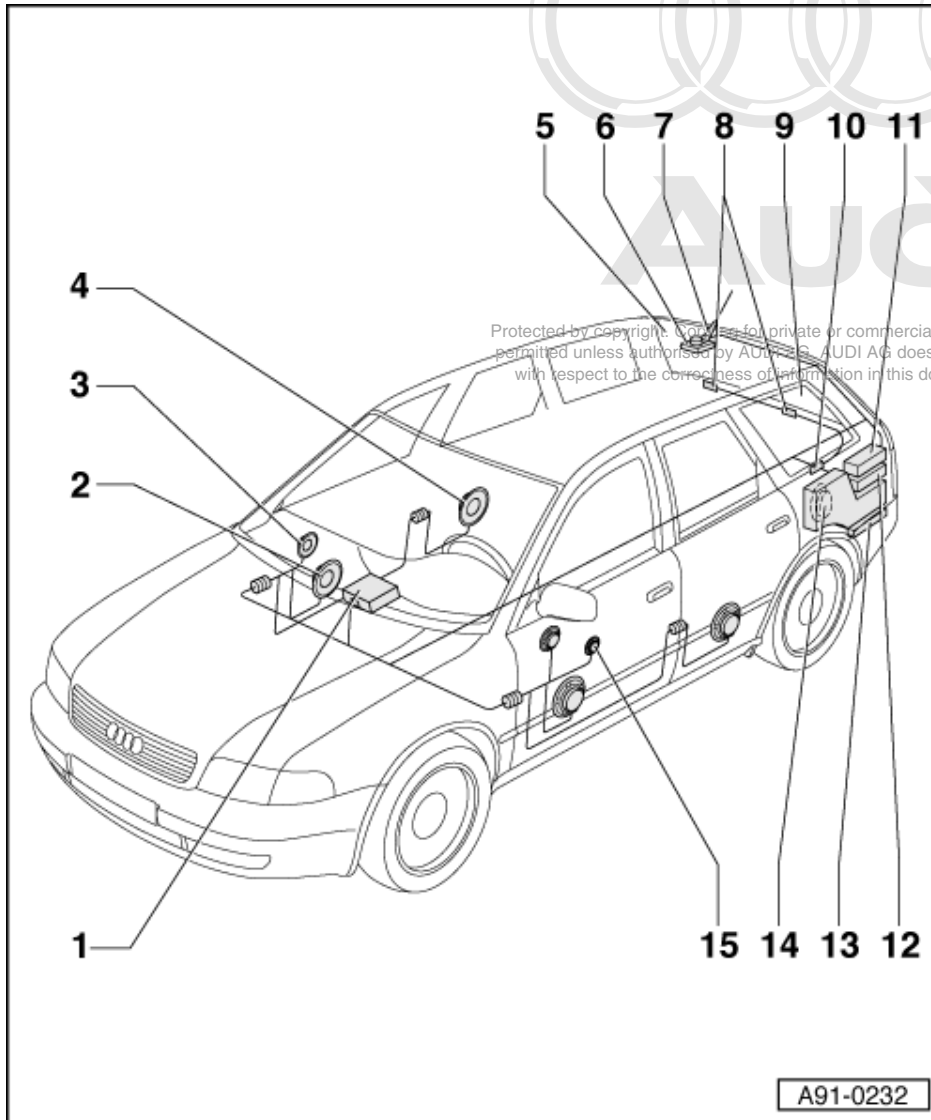
- ◆ In rear left of luggage compartment behind side trim
- ◆ Removing and installing
=> Page 52

13 Control unit for aerial selection

- ◆ In rear left of luggage compartment
- ◆ Removing and installing
=> Page 57

14 Bass loudspeaker (subwoofer)

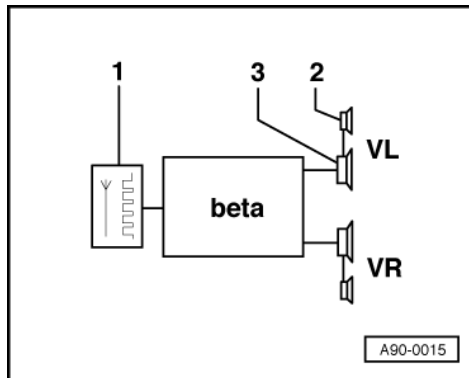
- ◆ In rear left of luggage compartment under side trim
- ◆ Removing and installing
=> Page 52



15 Hands-free loudspeaker

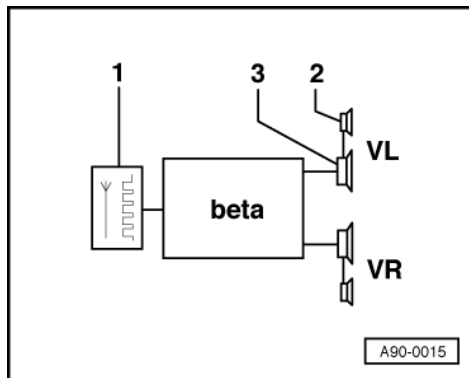
- ◆ In front driver's door.
- ◆ Removing and installing
=> Page 83
- ◆ Only for vehicles with BOSE sound system in conjunction with telephone
- ◆ For all other vehicles, the loudspeakers in the front door trims are used.

1.7 - Structure of radio systems (vehicles up to model year 1997)



"Beta" radio system (Saloon)

- 1 - -> Rear window aerial with aerial amplifier
- 2 - Mid-range/treble loudspeaker (installed in front upper door trim)
- 3 - Bass loudspeaker installed in front lower door trim



"Beta" radio system (Avant)

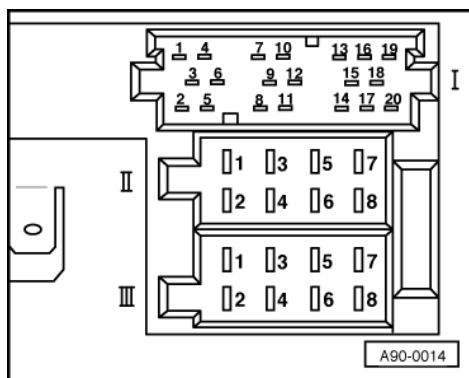
- 1 - -> Roof aerial with amplifier
- 2 - Mid-range/treble loudspeaker (installed in front upper door trim)
- 3 - Bass loudspeaker installed in front lower door trim

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

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Note:

Connector contacts not listed have not been assigned.



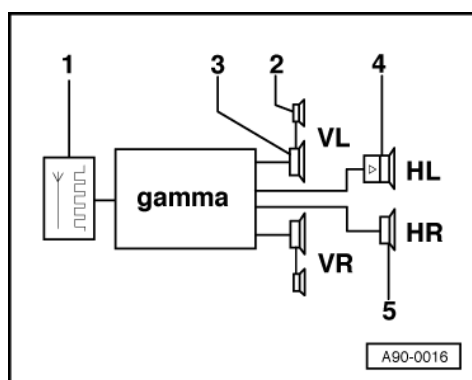
➔ Multi-pin connector II, 8-pin, brown

- 3 - Loudspeaker (+), front right
- 4 - Loudspeaker (-), front right
- 5 - Loudspeaker (+), front left
- 6 - Loudspeaker (-), front left

Multi-pin connector III, 8-pin, black

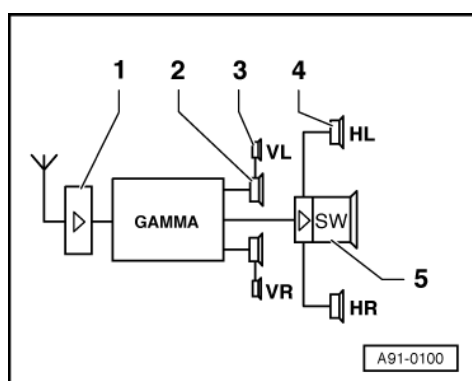
- 2 - AF mute (telephone system)
- 3 - Battery + (terminal 30)
- 4 - Terminal 86s - connection for switching on and off via ignition key (S contact)
- 5 - Control positive for aerial amplifier
- 6 - Illumination (terminal 58d)
- 7 - Battery + (terminal 30)
- 8 - Earth (terminal 31)

"Gamma" radio system (Saloon)



- 1 - ➔ Rear window aerial with aerial amplifier
- 2 - Mid-range/treble loudspeaker (installed in front upper door trim)
- 3 - Bass loudspeaker installed in front lower door trim
- 4 - Wide-band loudspeaker (active, with twin amplifier), at rear left in rear shelf
- 5 - Wide-band loudspeaker (passive), at rear right in rear shelf

"Gamma" radio system (Avant)

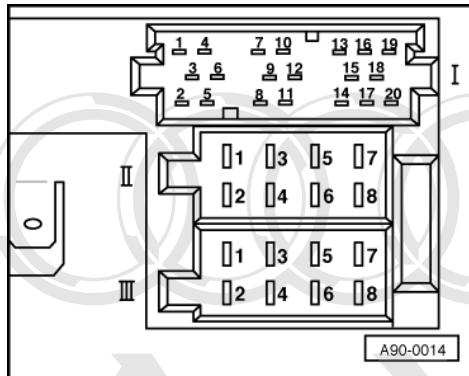


- 1 - ➔ Roof aerial with amplifier
- 2 - Mid-range/treble loudspeaker (installed in front upper door trim)
- 3 - Bass loudspeaker installed in front lower door trim
- 4 - Wide-band loudspeaker installed in rear door trim
- 5 - Bass loudspeaker (subwoofer) installed in rear left of luggage compartment under side trim

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

Note:

Connector contacts not listed have not been assigned.

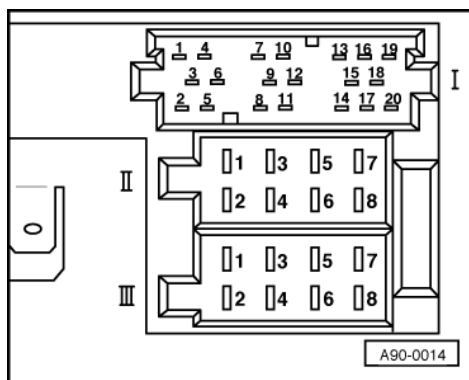


-> Multi-pin connector I, 20-pin

- 1 - Line out, rear left
- 2 - Line out, rear right
- 3 - AF earth
- 4 - Line out, front left
- 5 - Line out, front right
- 6 - Positive switched (active loudspeaker)
- 7 - BOSE identification
- 8 - Clock signal
- 9 - Data signal
- 10 - Enable signal
- 11 - Steering wheel remote control
- 12 - Air conditioner (planned)

Multi-pin connector II, 8-pin, brown

- 3 - Loudspeaker (+), front right
- 4 - Loudspeaker (-), front right
- 5 - Loudspeaker (+), front left
- 6 - Loudspeaker (-), front left



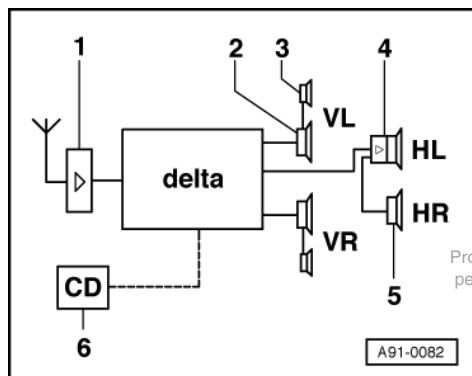
-> Multi-pin connector III, 8-pin, black

- 1 - Gala (speed signal)
- 2 - AF mute (telephone system)
- 3 - Battery + (terminal 30)
- 4 - Terminal 86s - connection for switching on and off via ignition key (S contact)
- 5 - Control positive for aerial amplifier
- 6 - Illumination (terminal 58d)
- 7 - Battery + (terminal 30)



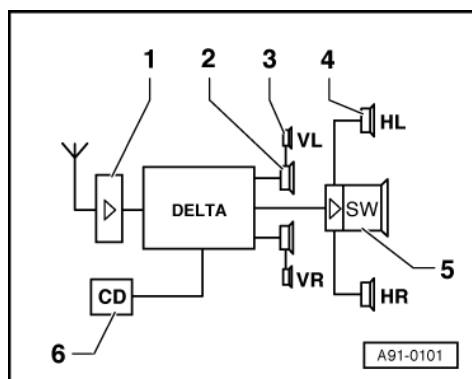
8 - Earth (terminal 31)

"Delta" radio system (Saloon)



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

"Delta" radio system (Avant)

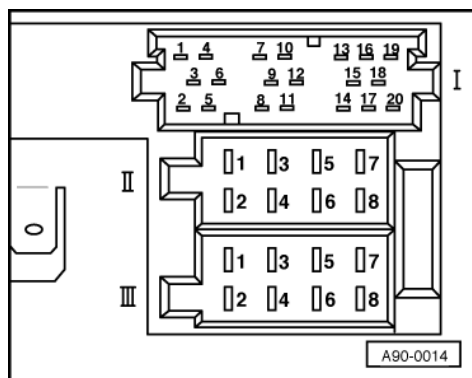


- 1 - -> Roof aerial with amplifier
- 2 - Bass loudspeaker installed in front lower door trim
- 3 - Mid-range/treble loudspeaker (installed in front upper door trim)
- 4 - Wide-band loudspeaker installed in rear door trim
- 5 - Bass loudspeaker (subwoofer) installed in rear left of luggage compartment under side trim
- 6 - CD changer (optional) installed in rear left of luggage compartment

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

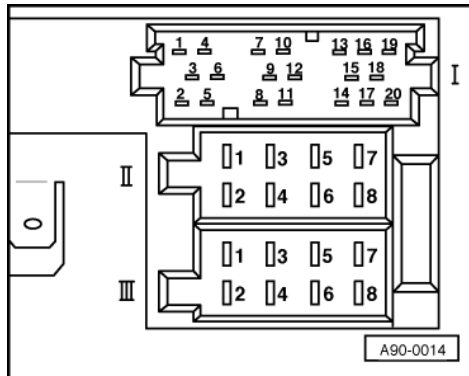
Note:

Connector contacts not listed have not been assigned.



-> Multi-pin connector I, 20-pin

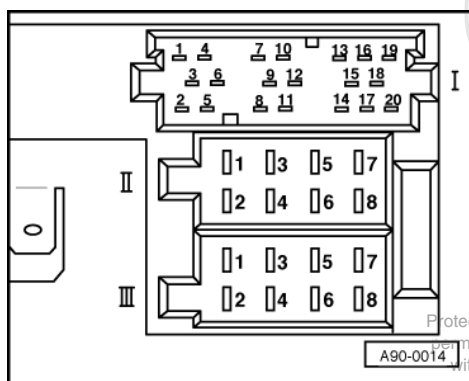
- 1 - Line out, rear left
- 2 - Line out, rear right
- 3 - AF earth
- 4 - Line out, front left
- 5 - Line out, front right
- 6 - Positive switched (active loudspeaker)
- 7 - BOSE identification
- 8 - Clock signal
- 9 - Data signal
- 10 - Enable signal



- 11 - -> Steering wheel remote control
- 12 - USA codes
- 13 - CD bus data (CD changer)
- 14 - CD bus clock (CD changer)
- 15 - Earth (CD changer)
- 16 - Permanent positive (CD changer)
- 17 - CD switched positive (CD changer)
- 18 - CD AF earth (CD changer)
- 19 - Signal wire for left channel (CD AF L)
- 20 - Signal wire for right channel (CD AF R)

Multi-pin connector II, 8-pin, brown

- 3 - Loudspeaker (+), front right
- 4 - Loudspeaker (-), front right
- 5 - Loudspeaker (+), front left
- 6 - Loudspeaker (-), front left



-> Multi-pin connector III, 8-pin, black

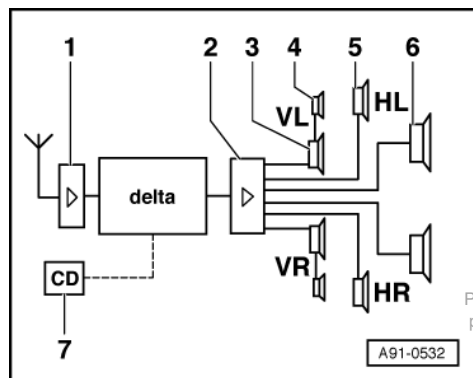
- 1 - Gala (speed signal)
- 2 - AF mute (telephone system)
- 3 - Battery + (terminal 30)
- 4 - Terminal 86s - connection for switching on and off via ignition key (S contact)
- 5 - Control positive for aerial amplifier



- 6 - Illumination (terminal 58d)
- 7 - Battery + (terminal 30)
- 8 - Earth (terminal 31)

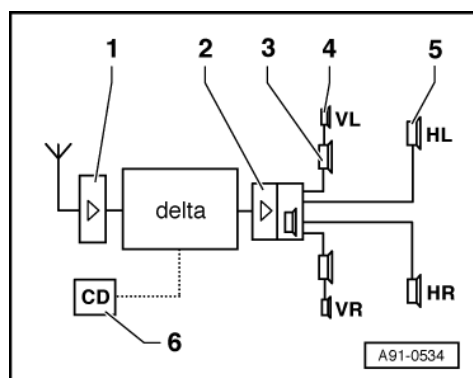
"Delta radio system with BOSE sound system"

(Saloon)



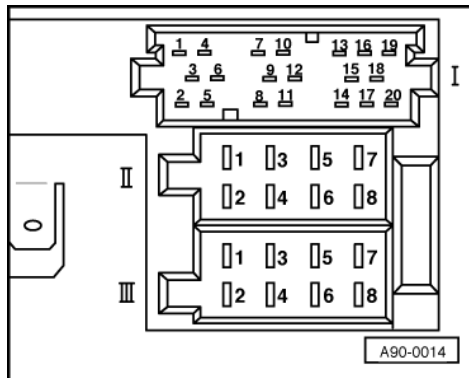
- 1 - -> Rear window aerial with aerial amplifier
- 2 - BOSE power amplifier installed in rear left of luggage compartment
- 3 - Bass loudspeaker installed in front lower door trim
- 4 - Mid-range/treble loudspeaker (installed in front upper door trim)
- 5 - Wide-band loudspeaker installed in rear door trim
- 6 - Bass loudspeaker installed in rear shelf
- 7 - CD changer (optional) installed in rear left of luggage compartment

"Delta radio system with BOSE sound system" (Avant)



- 1 - -> Roof aerial with amplifier
- 2 - BOSE power amplifier, combined with bass loudspeaker (subwoofer), installed in rear left of luggage compartment under side trim.
- 3 - Bass loudspeaker installed in front lower door trim
- 4 - Mid-range/treble loudspeaker (installed in front upper door trim)
- 5 - Wide-band loudspeaker (2-way) installed in rear door trim
- 6 - CD changer (optional) installed in rear left of luggage compartment

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

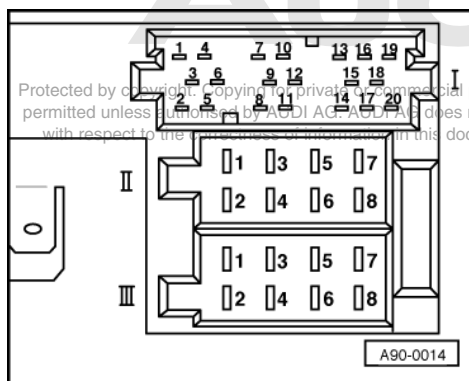


Note:

Connector contacts not listed have not been assigned.

-> Multi-pin connector I, 20-pin

- 1 - Line out, rear left
- 2 - Line out, rear right
- 3 - AF earth
- 4 - Line out, front left
- 5 - Line out, front right
- 6 - Positive switched (BOSE power amplifier)
- 7 - BOSE identification
- 8 - Clock signal
- 9 - Data signal
- 10 - Enable signal



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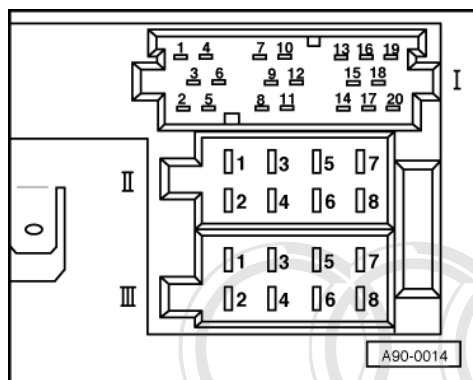
- 11 - -> Steering wheel remote control
- 12 - USA codes
- 13 - CD bus data (CD changer)
- 14 - CD bus clock (CD changer)
- 15 - Earth (CD changer)
- 16 - Permanent positive (CD changer)
- 17 - CD switched positive (CD changer)
- 18 - CD AF earth (CD changer)
- 19 - Signal wire for left channel (CD AF L)
- 20 - Signal wire for right channel (CD AF R)

Multi-pin connector II, 8-pin, brown

- 3 - Loudspeaker (+), front right
- 4 - Loudspeaker (-), front right
- 5 - Loudspeaker (+), front left



6 - Loudspeaker (-), front left

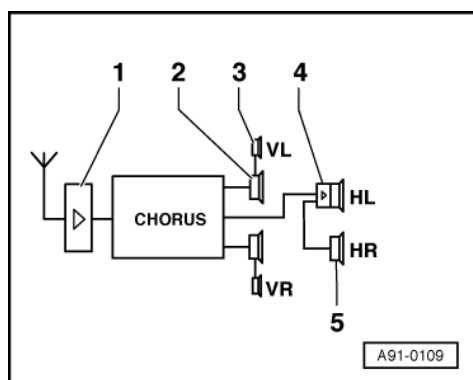


-> Multi-pin connector III, 8-pin, black

- 1 - Gala (speed signal)
- 2 - AF mute (telephone system)
- 3 - Battery + (terminal 30)
- 4 - Terminal 86s - connection for switching on and off via ignition key (S contact)
- 5 - Control positive for aerial amplifier
- 6 - Illumination (terminal 58d)
- 7 - Battery + (terminal 30)
- 8 - Earth (terminal 31)

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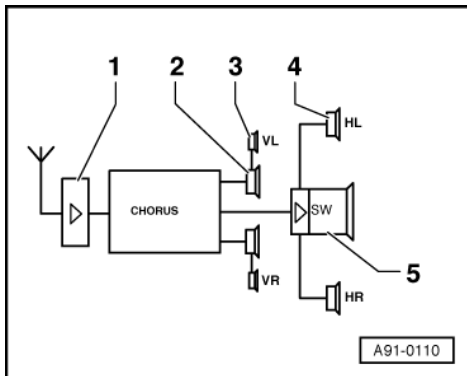
1.8 - Structure of radio systems (vehicles from model year 1998)



"Chorus" radio system (Saloon)

- 1 - -> Rear window aerial with aerial amplifier
- 2 - Bass loudspeaker installed in front lower door trim
- 3 - Mid-range/treble loudspeaker (installed in front upper door trim)
- 4 - Wide-band loudspeaker (active, with twin amplifier), installed at rear left in rear shelf
- 5 - Wide-band loudspeaker (passive) installed at rear right in rear shelf

"Chorus" radio system (Avant)

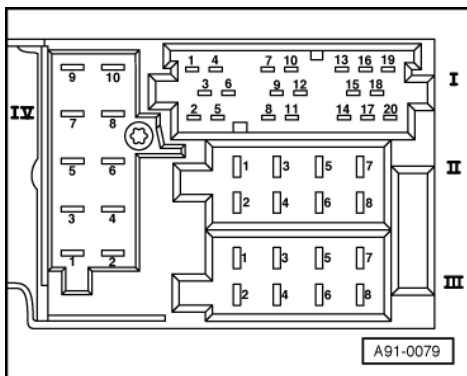


- 1 - -> Roof aerial with amplifier
- 2 - Bass loudspeaker installed in front lower door trim
- 3 - Mid-range/treble loudspeaker (installed in front upper door trim)
- 4 - Wide-band loudspeaker installed in rear door trim
- 5 - Bass loudspeaker (subwoofer) installed in rear left of luggage compartment under side trim

Assignment of contacts for multi-pin connectors I, II, III and IV on the rear of the radio

Note:

Connector contacts not listed have not been assigned.



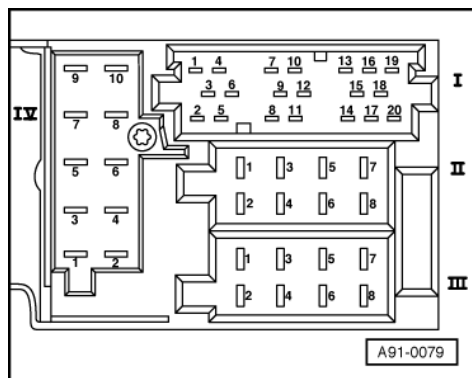
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-> Multi-pin connector I, 20-pin

- 1 - Line out, rear left
- 2 - Line out, rear right
- 3 - AF earth
- 4 - Line out, front left
- 5 - Line out, front right
- 6 - Positive switched (active loudspeaker)
- 8 - Clock signal
- 9 - Data signal
- 10 - Enable signal
- 11 - Steering wheel remote control

Multi-pin connector II, 8-pin, brown

- 3 - Loudspeaker (+), front right
- 4 - Loudspeaker (-), front right
- 5 - Loudspeaker (+), front left
- 6 - Loudspeaker (-), front left



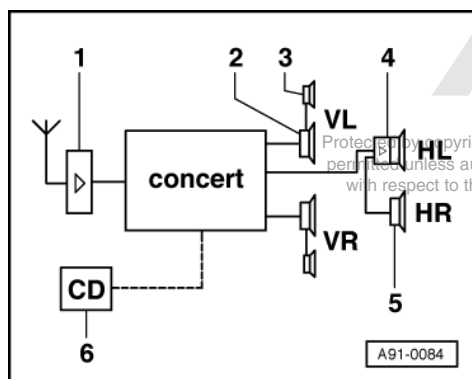
-> Multi-pin connector III, 8-pin, black

- 1 - Gala (speed signal)
- 2 - AF mute (telephone system)
- 3 - K diagnosis
- 4 - Terminal 86s - connection for switching on and off via ignition key (S contact)
- 5 - Control positive for aerial amplifier
- 6 - Illumination (terminal 58d)
- 7 - Battery + (terminal 30)
- 8 - Earth (terminal 31)

Multi-pin connector IV, 10-pin, red

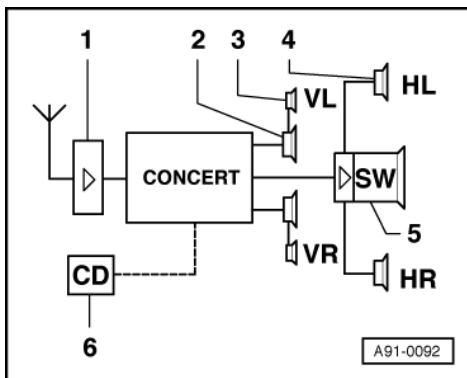
- 1 - Telephone mute
- 2 - Terminal 15 (only on vehicles with navigation system)
- 3 - Telephone (AF+) (not on vehicles with navigation system)
- 4 - Telephone (AF-) (not on vehicles with navigation system)
- 5 - Navigation system (AF+)
- 6 - Navigation system (AF-)
- 7 - Navigation system control wire
- 9 - Display illumination (terminal 58d)
- 10 - CD earth (GND)

"Concert" radio system (Saloon)

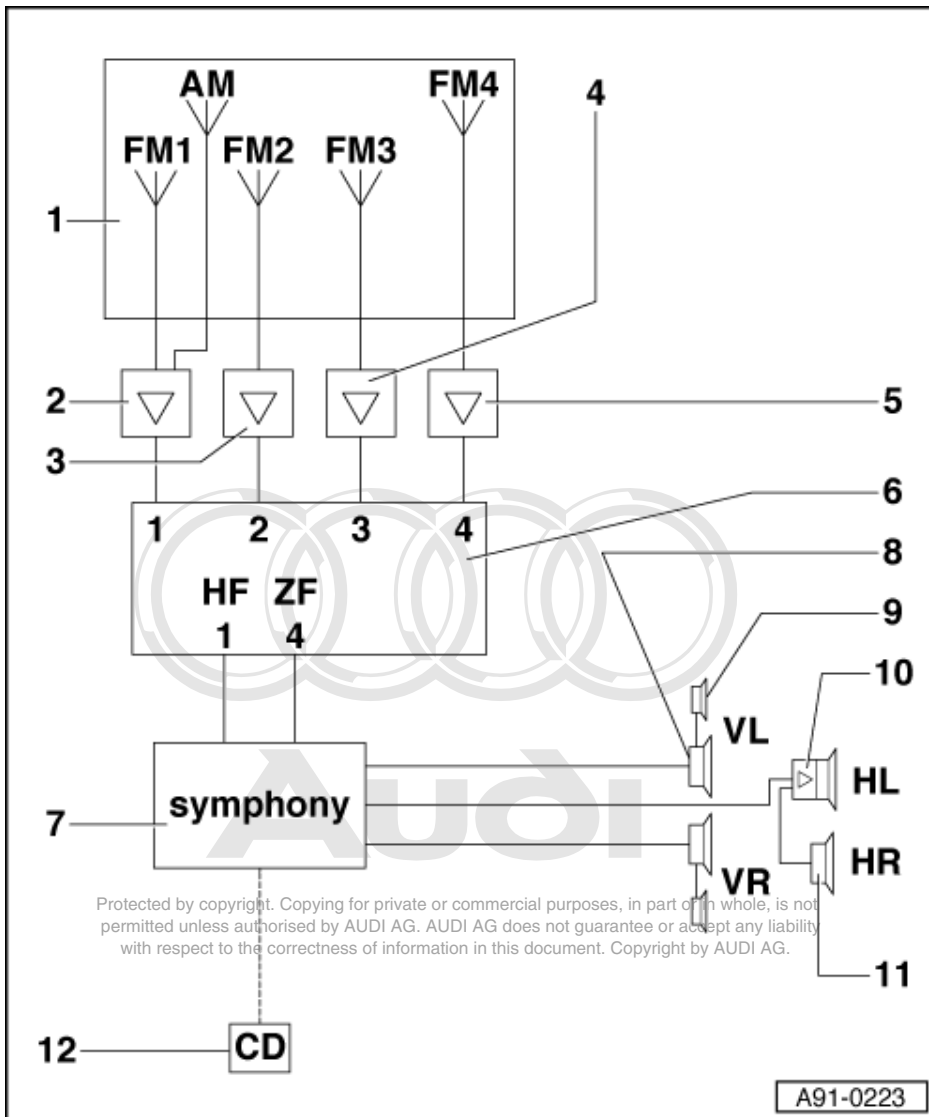


- 1 - -> Rear window aerial with aerial amplifier
- 2 - Bass loudspeaker installed in front lower door trim
- 3 - Mid-range/treble loudspeaker (installed in front upper door trim)
- 4 - Wide-band loudspeaker (active, with twin amplifier), installed at rear left in rear shelf
- 5 - Wide-band loudspeaker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

"Concert" radio system (Avant)



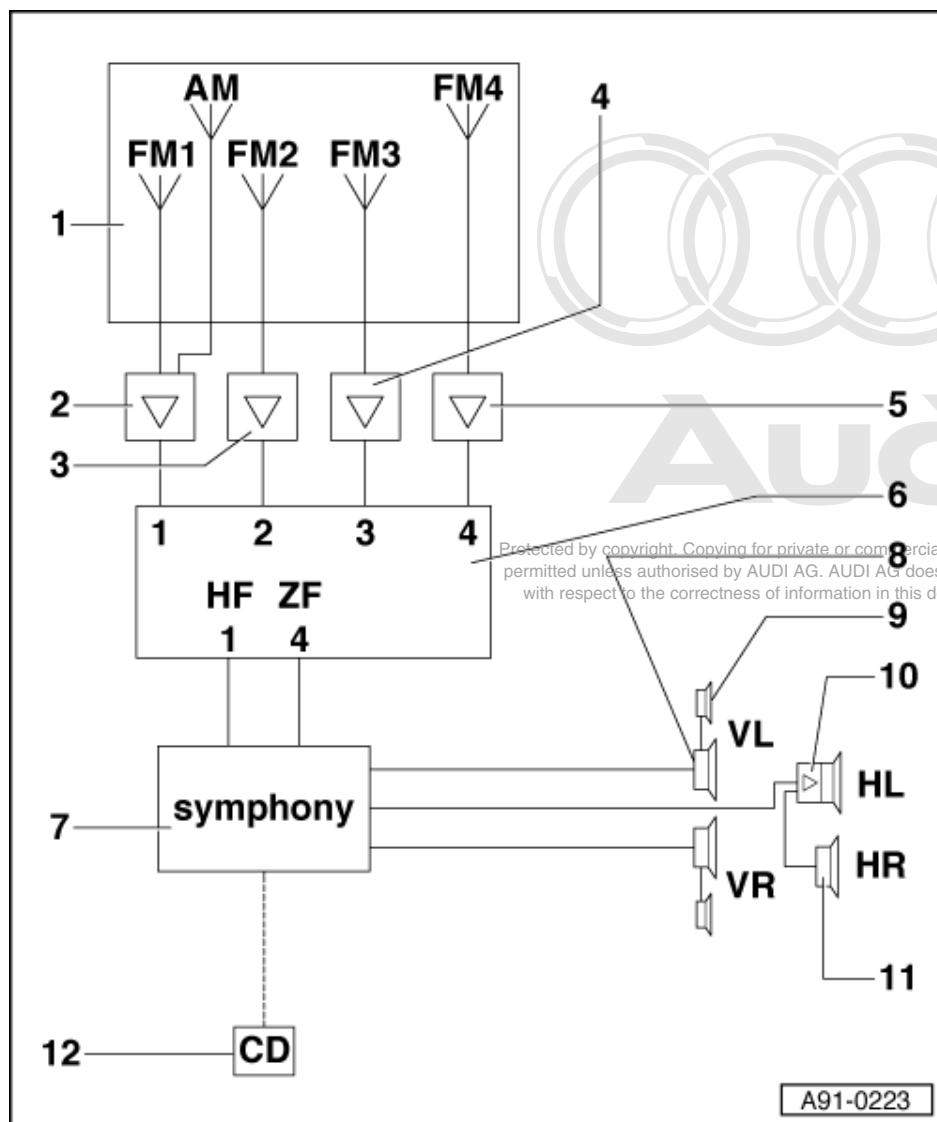
- 1 - -> Roof aerial with amplifier
- 2 - Bass loudspeaker installed in front lower door trim
- 3 - Mid-range/treble loudspeaker (installed in front upper door trim)
- 4 - Wide-band loudspeaker installed in rear door trim
- 5 - Bass loudspeaker (subwoofer) installed in rear left of luggage compartment under side trim
- 6 - CD changer (optional) installed in rear left of luggage compartment



"Symphony" radio system

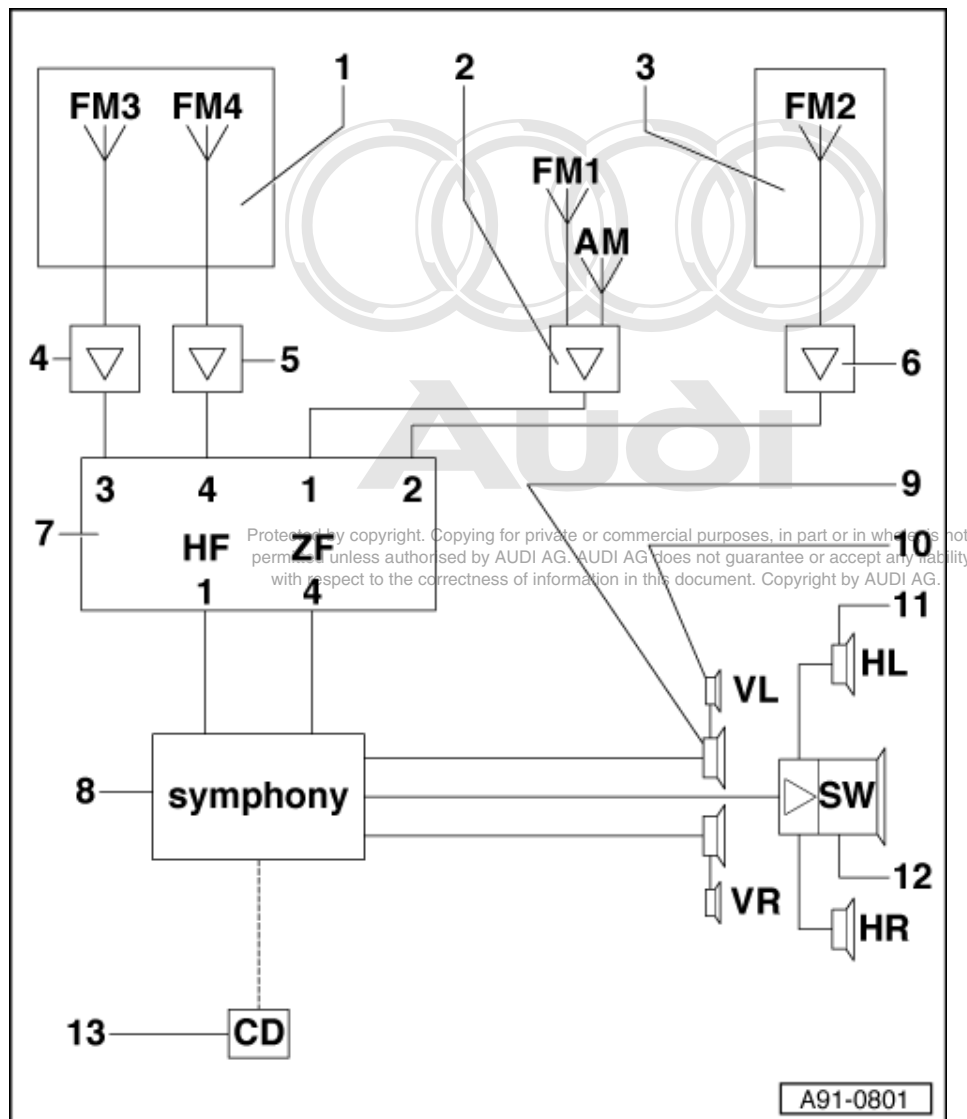
(Saloon)

- 1 Rear window aerials
- 2 Aerial amplifier under D-pillar trim left
- 3 Aerial amplifier under rear shelf on left
- 4 Aerial amplifier under rear shelf on right
- 5 Aerial amplifier under D-pillar trim right
- 6 Control unit for aerial selection in rear left of luggage compartment
- 7 "Symphony" radio



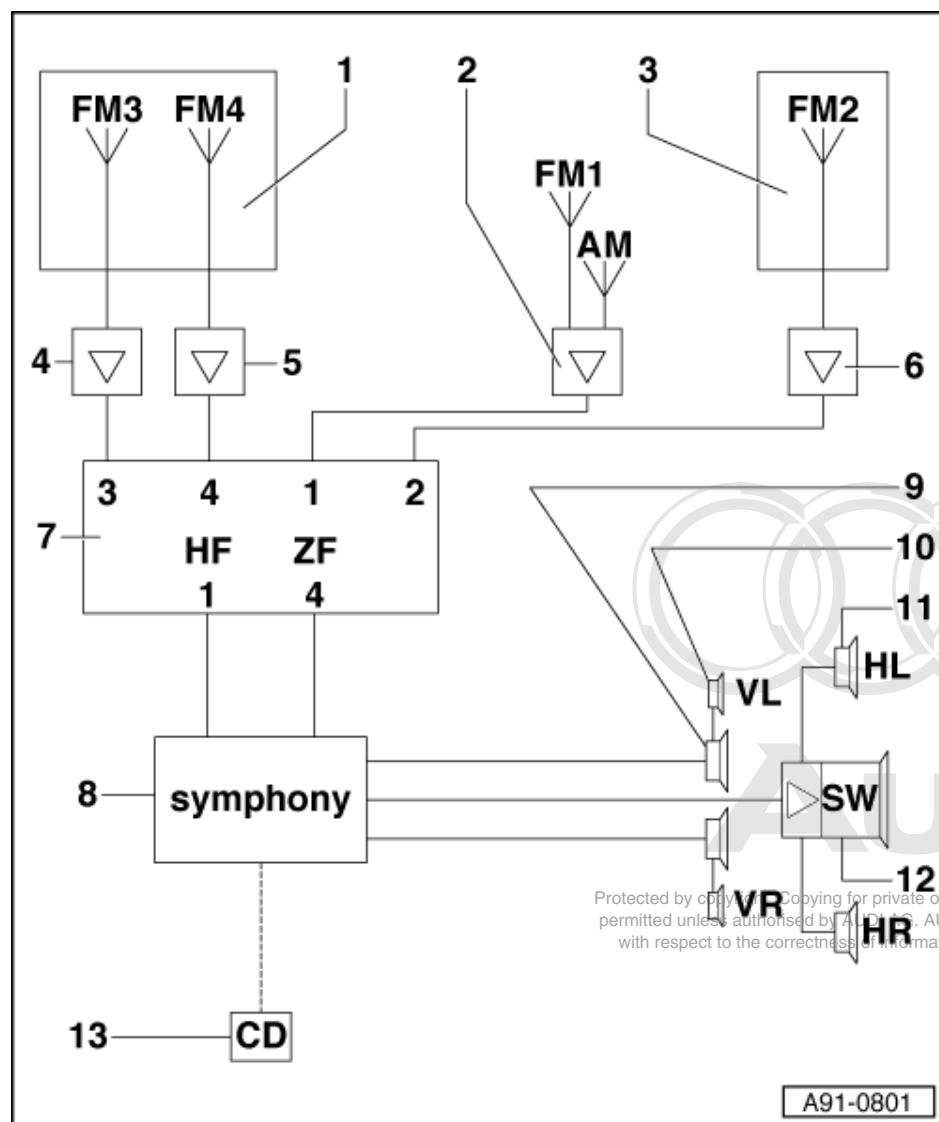
- 8 Bass loudspeaker installed at front in bottom of door trim
- 9 Mid-range/treble loudspeaker installed at front in top of door trim
- 10 Wide-band loudspeaker (active, with twin amplifier) installed at rear left in rear shelf
- 11 Wide-band loudspeaker

- (passive)
installed at rear right in rear shelf
- 12 CD changer (optional)
installed in rear left of luggage compartment



"Symphony" radio system
(Avant)

- 1 Rear window aerials
- 2 Roof aerial with amplifier
- 3 Left side window aerial
- 4 Aerial amplifier
under lower left tailgate trim
- 5 Aerial amplifier
under lower right tailgate trim
- 6 Aerial amplifier
under left side trim
- 7 Control unit for aerial selection
in rear left of luggage compartment



8 "Symphony" radio

9 Bass loudspeaker
installed at front in bottom of door trim

10 Mid-range/treble loudspeaker installed at front in top of door trim

11 Wide-band loudspeaker
installed in rear door trim

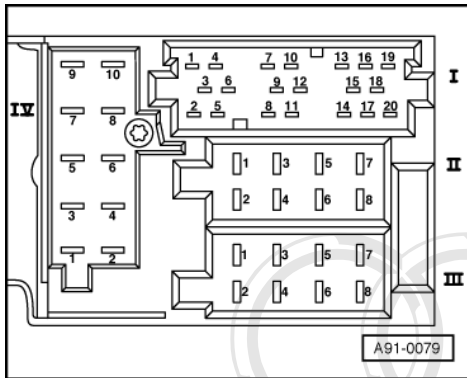
12 Bass loudspeaker (subwoofer) installed in rear left of luggage compartment under side trim

13 CD changer (optional)
installed in rear left of luggage compartment

Assignment of contacts for multi-pin connectors I, II, III and IV on the rear of the radio

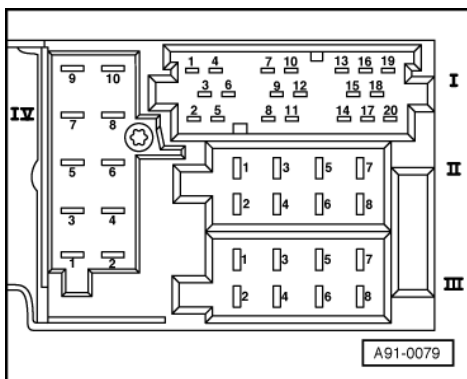
Note:

Connector contacts not listed have not been assigned.

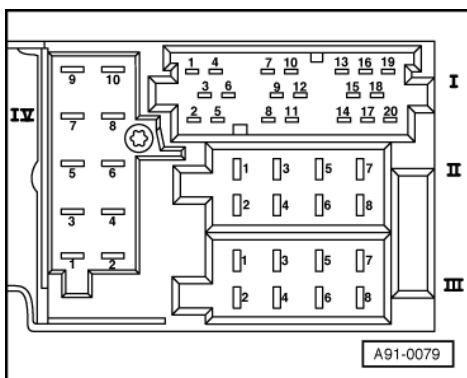


➔ Multi-pin connector I, 20-pin

- 1 - Line out, rear left
- 2 - Line out, rear right
- 3 - AF earth
- 4 - Line out, front left
- 5 - Line out, front right
- 6 - Positive switched (active loudspeaker)
- 7 - CAN high frequency ("symphony" radio only)
- 8 - Clock signal (omitted in case of CAN connection)
- 9 - Data signal (omitted in case of CAN connection)
- 10 - Enable signal (omitted in case of CAN connection)



- 11 - ➔ Steering wheel remote control
- 12 - CAN low frequency ("symphony" radio only)
- 13 - CD bus data input (CD changer)
- 14 - CD bus data output (CD changer)
- 15 - CD clock (CD changer)
- 16 - Permanent positive (CD changer)
- 17 - CD switched positive (CD changer)
- 18 - CD AF earth (CD changer)
- 19 - Signal wire for left channel (CD AF L)
- 20 - Signal wire for right channel (CD AF R)



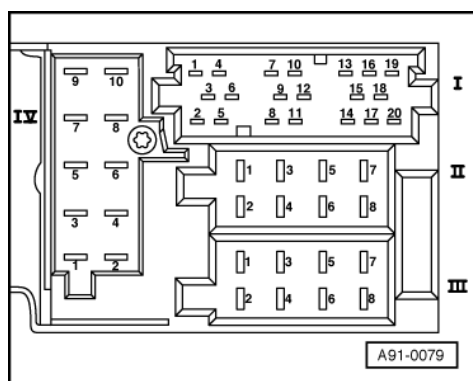


-> Multi-pin connector II, 8-pin, brown

- 3 - Loudspeaker (+), front right
- 4 - Loudspeaker (-), front right
- 5 - Loudspeaker (+), front left
- 6 - Loudspeaker (-), front left

Multi-pin connector III, 8-pin, black

- 1 - Gala (speed signal)
- 2 - AF mute (telephone system)
- 3 - K diagnosis
- 4 - Terminal 86s - connection for switching on and off via ignition key (S contact)
- 5 - Control positive for aerial amplifier
- 6 - Illumination (terminal 58d)
- 7 - Battery + (terminal 30)
- 8 - Earth (terminal 31)

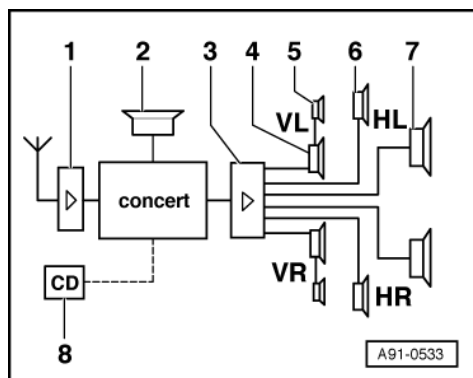


-> Multi-pin connector IV, 10-pin, red

- 1 - Telephone mute
- 2 - Terminal 15 (only on vehicles with navigation system)
- 3 - Telephone (AF+) (not on vehicles with navigation system)
- 4 - Telephone (AF-) (not on vehicles with navigation system)
- 5 - Navigation system (AF+)
- 6 - Navigation system (AF-)
- 7 - Navigation system control wire
- 9 - Display illumination (terminal 58d)
- 10 - CD earth (GND)

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"Concert radio system with BOSE sound system" (Saloon)

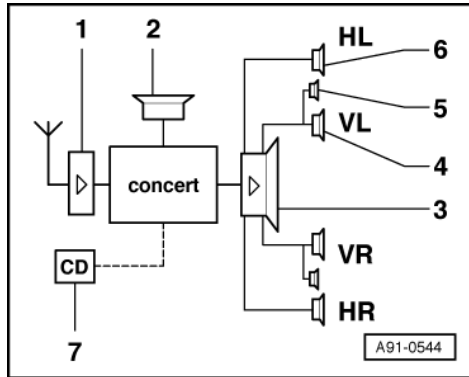


- 1 - -> Rear window aerial with aerial amplifier
- 2 - Telephone loudspeaker (installed in door trim)
- 3 - BOSE power amplifier installed in rear left of luggage compartment
- 4 - Bass loudspeaker installed in front lower door trim
- 5 - Mid-range/treble loudspeaker (installed in front upper door trim)
- 6 - Wide-band loudspeaker installed in rear door trim

- 7 - Bass loudspeaker installed in rear shelf
- 8 - CD changer (optional) installed in rear left of luggage compartment

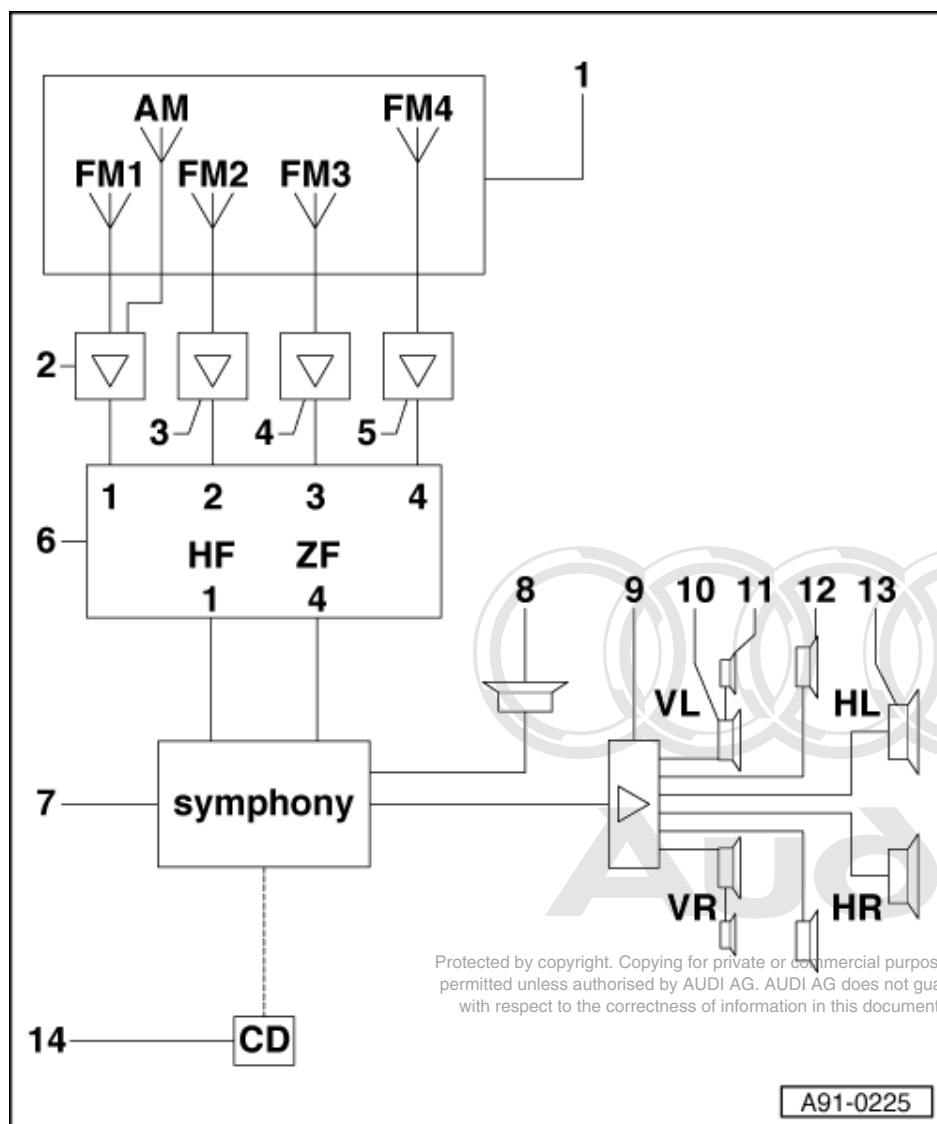
"Concert radio system with BOSE sound system"

(Avant)



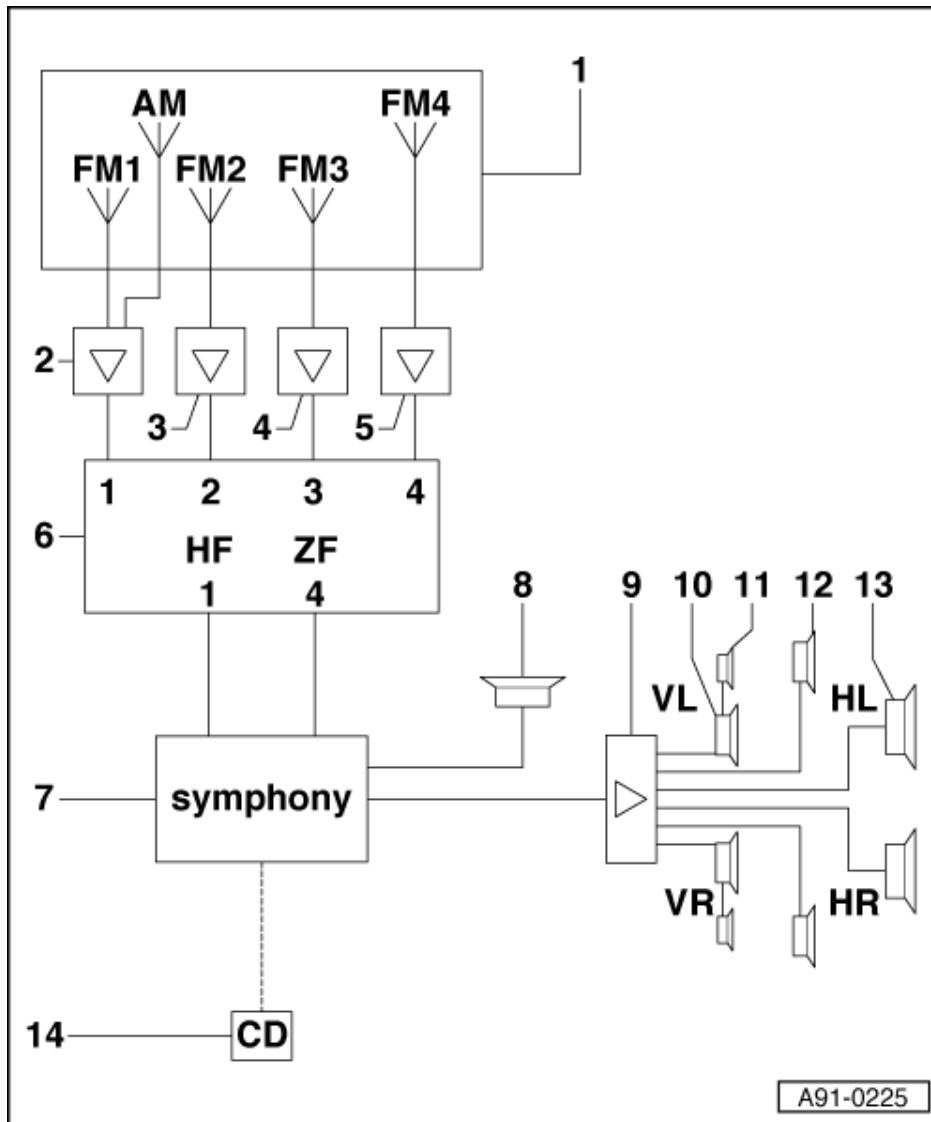
- 1 - -> Roof aerial with amplifier
- 2 - Telephone loudspeaker (installed in door trim)
- 3 - BOSE power amplifier, combined with bass loudspeaker (subwoofer), installed in rear left of luggage compartment under side trim
- 4 - Bass loudspeaker installed in front lower door trim
- 5 - Mid-range/treble loudspeaker (installed in front upper door trim)
- 6 - Wide-band loudspeaker installed in rear door trim
- 7 - CD changer (optional) installed in rear left of luggage compartment

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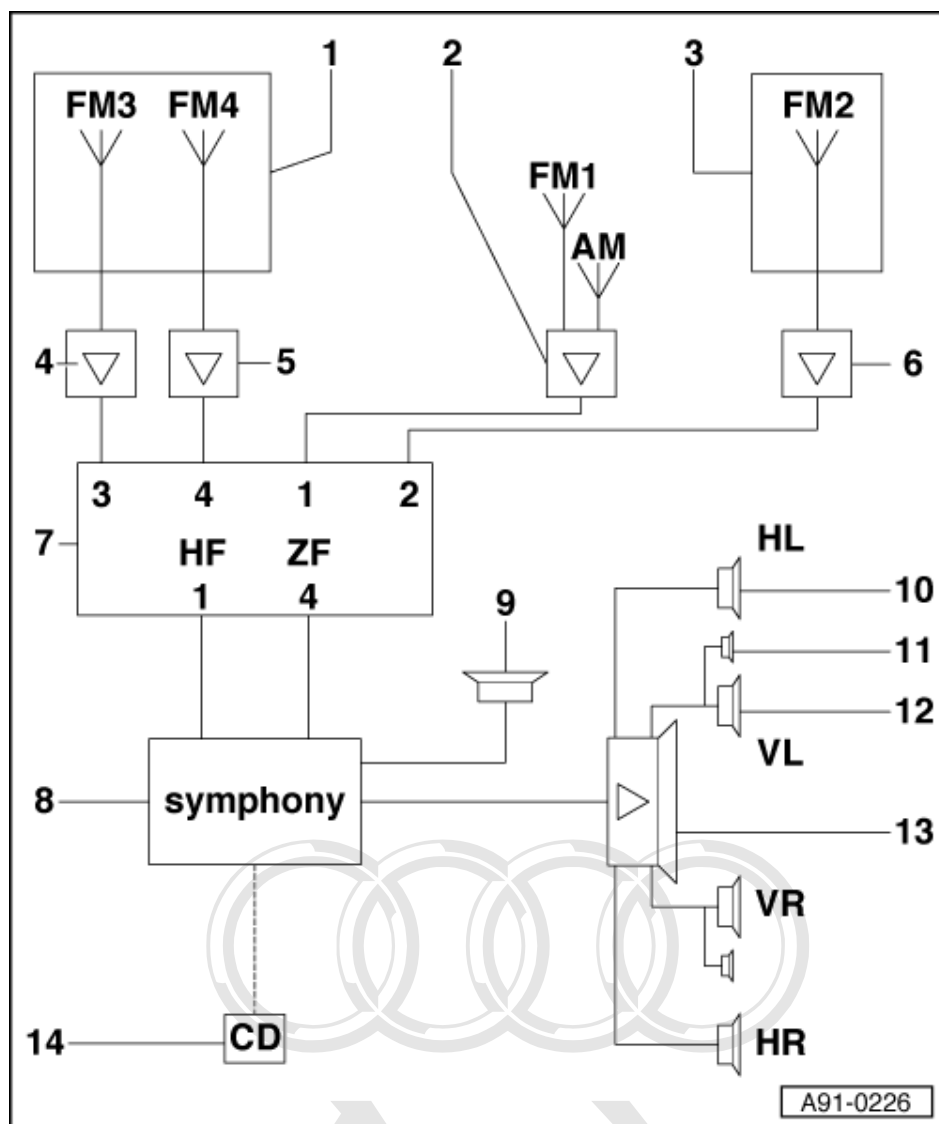
"Symphony" radio system with BOSE sound system only (Saloon)

- 1 Rear window aerials
- 2 Aerial amplifier
under D-pillar trim
left
- 3 Aerial amplifier
under rear shelf on left
- 4 Aerial amplifier
under rear shelf on right
- 5 Aerial amplifier
under D-pillar trim
right
- 6 Control unit for aerial selection
in rear left of luggage compartment
- 7 "Symphony" radio



- 8 Hands-free loudspeaker installed in door trim (telephone only)
- 9 BOSE power amplifier installed in rear left of luggage compartment
- 10 Bass loudspeaker installed at front in bottom of door trim
- 11 Mid-range/treble loudspeaker installed at front in top of door trim
- 12 Wide-band loudspeaker installed in rear door trim
- 13 Bass loudspeaker installed in rear shelf
- 14 CD changer (optional) installed in rear left of luggage compartment

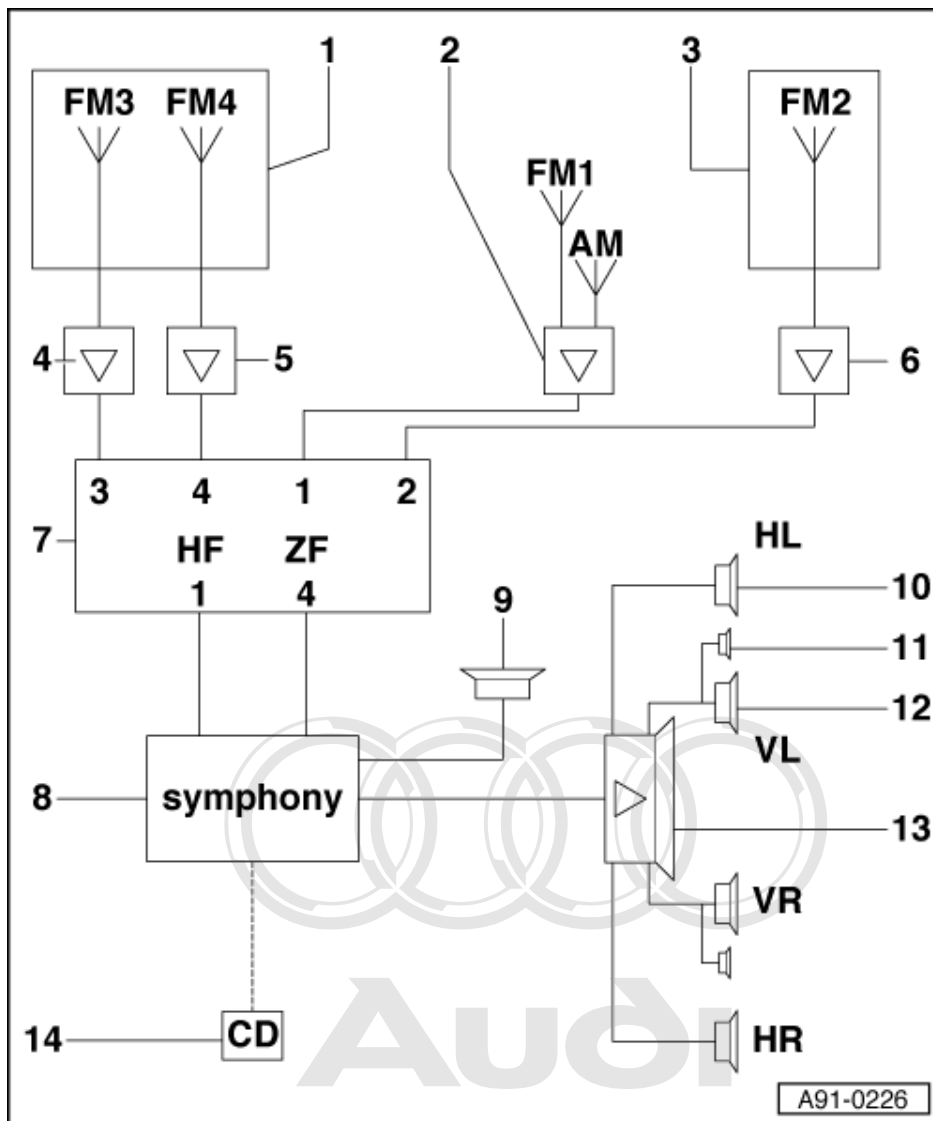
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"Symphony" radio system with BOSE sound system only (Avant)

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- 1 **Rear window aerais**
- 2 **Roof aerial with amplifier**
- 3 **Left side window aerial**
- 4 **Aerial amplifier**
under lower left tailgate trim
- 5 **Aerial amplifier**
under lower right tailgate trim
- 6 **Aerial amplifier**
under left side trim
- 7 **Control unit for aerial selection**
in rear left of luggage compartment



8 "Symphony" radio

9 Hands-free loudspeaker installed in door trim (telephone only)

10 Wide-band loudspeaker installed in rear door trim

11 Mid-range/treble loudspeaker installed at front in top of door trim

12 Bass loudspeaker installed at front in bottom of door trim

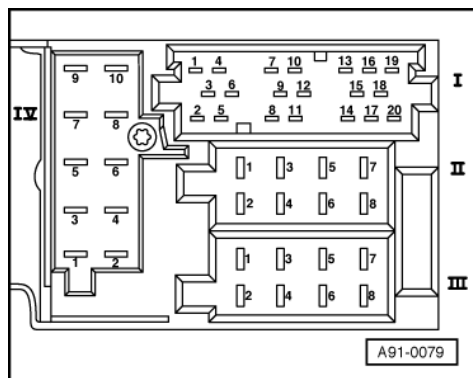
13 BOSE power amplifier, combined with bass loudspeaker (subwoofer), installed in rear left of luggage compartment under side trim

14 CD changer (optional)
installed in rear left of luggage compartment

Assignment of contacts for multi-pin connectors I, II, III and IV on the rear of the radio

Note:

Connector contacts not listed have not been assigned.

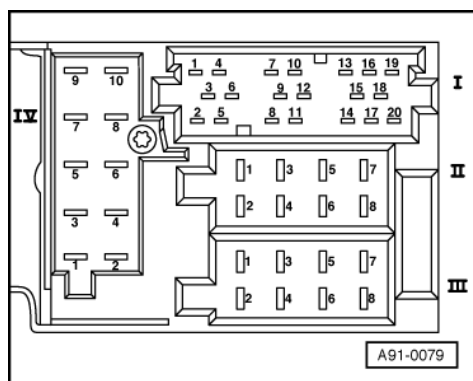


-> Multi-pin connector I, 20-pin

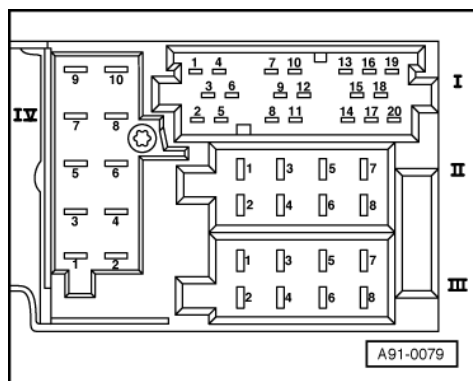
- 1 - Line out, rear left
- 2 - Line out, rear right
- 3 - AF earth
- 4 - Line out, front left
- 5 - Line out, front right
- 6 - Positive switched (BOSE power amplifier)
- 7 - CAN high frequency ("symphony" radio only)
- 8 - Clock signal (omitted in case of CAN connection)
- 9 - Data signal (omitted in case of CAN connection)
- 10 - Enable signal (omitted in case of CAN connection)



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- 11 - -> Steering wheel remote control
- 12 - CAN low frequency ("symphony" radio only)
- 13 - CD bus data input (CD changer)
- 14 - CD bus data output (CD changer)
- 15 - CD clock (CD changer)
- 16 - Permanent positive (CD changer)
- 17 - CD switched positive (CD changer)
- 18 - CD AF earth (CD changer)
- 19 - Signal wire for left channel (CD AF L)
- 20 - Signal wire for right channel (CD AF R)

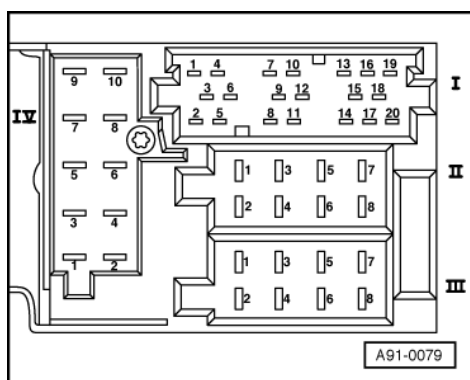


-> Multi-pin connector II, 8-pin, brown

- 3 - Loudspeaker (+), front right
- 4 - Loudspeaker (-), front right
- 5 - Loudspeaker (+), front left
- or
- hands-free loudspeaker (+) (for BOSE sound system)
- 6 - Loudspeaker (-), front left
- or
- hands-free loudspeaker (+) (for BOSE sound system)

Multi-pin connector III, 8-pin, black

- 1 - Gala (speed signal)
- 2 - AF mute (telephone system)
- 3 - K diagnosis
- 4 - Terminal 86s - connection for switching on and off via ignition key (S contact)
- 5 - Control positive for aerial amplifier
- 6 - Illumination (terminal 58d)
- 7 - Battery + (terminal 30)
- 8 - Earth (terminal 31)

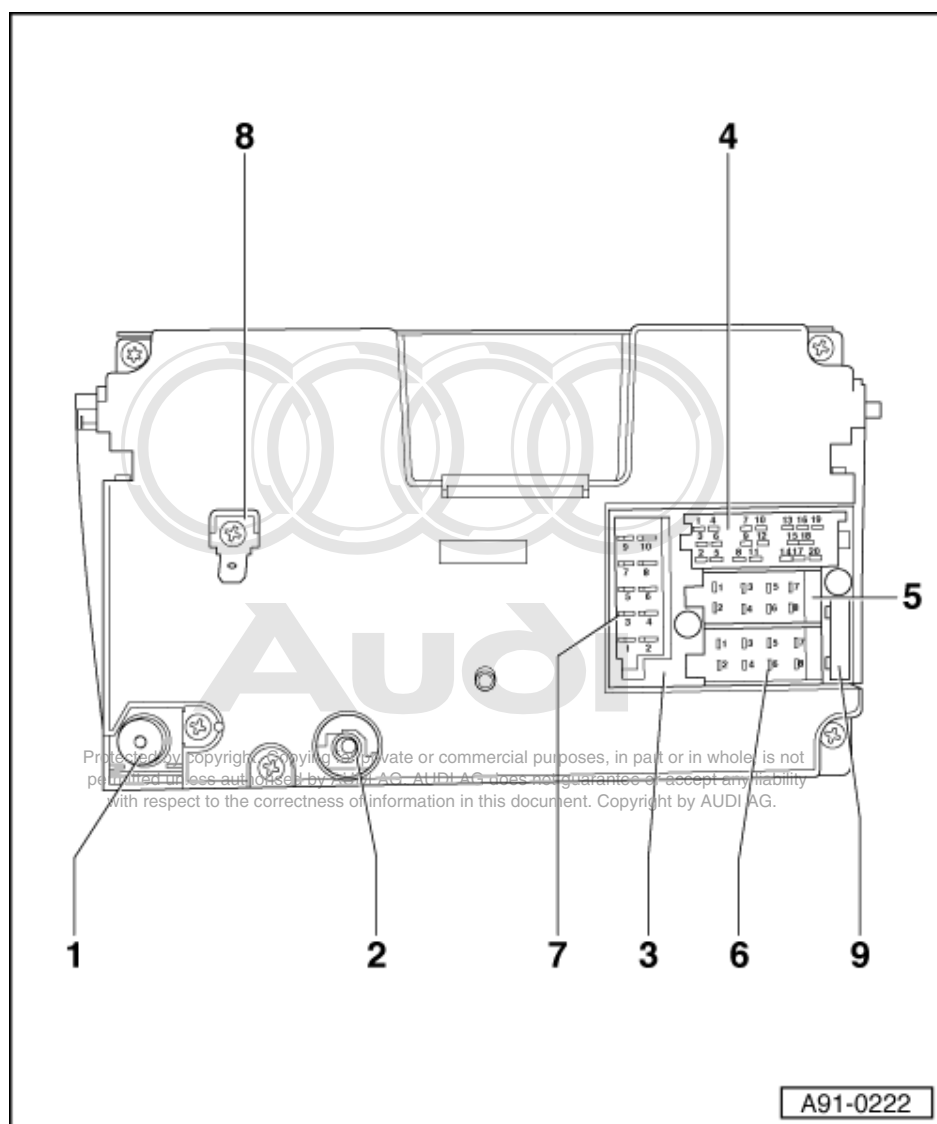


-> Multi-pin connector IV, 10-pin, red

- 1 - Telephone mute
- 2 - Terminal 15 (only on vehicles with navigation system)
- 3 - Telephone (AF+) (not on vehicles with navigation system)
- 4 - Telephone (AF-) (not on vehicles with navigation system)
- 5 - Navigation system (AF+)
- 6 - Navigation system (AF-)
- 7 - Navigation system control wire
- 9 - Display illumination (terminal 58d)
- 10 - CD earth (GND)

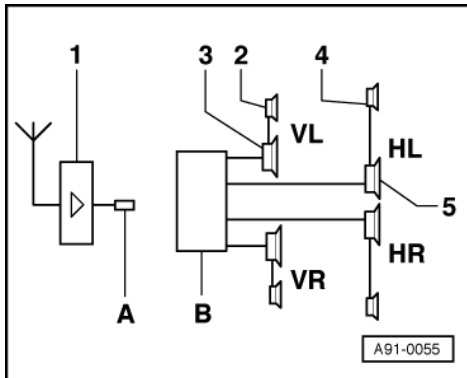
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1.9 - Connectors on rear of "symphony" radio



- 1 Aerial connection sockets for radio (high frequency wire)
- 2 Fan for cooling system
- 3 Radio connector block
- 4 Multipin connector I, 20-pin, consists of
 - ♦ Partial connector, 6-pin, yellow
 - ♦ Partial connector, 6-pin, green
 - ♦ Partial connector, 8-pin, blue
- 5 Multi-pin connector II, 8-pin, brown
- 6 Multi-pin connector III, 8-pin, black
- 7 Multi-pin connector IV, 10-pin, red
- 8 ATW earth
- 9 Radio fuse in radio

Radio preparation

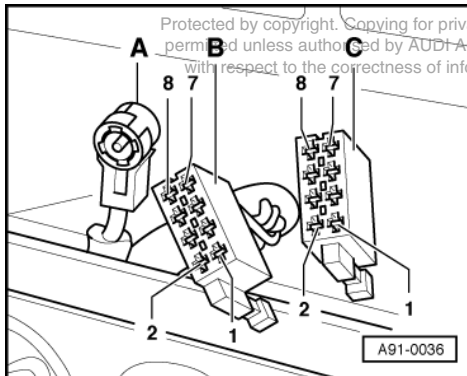


- A - -> Aerial cable
- B - Connector II (8-pin) and connector III (8-pin)
- 1 - Rear window aerial with aerial amplifier -Saloon-
- Roof aerial with amplifier -Avant-
- 2 - Mid-range/treble loudspeaker (installed in front upper door trim)
- 3 - Bass loudspeaker installed in front lower door trim
- 4 - Mid-range/treble loudspeaker installed in rear upper door trim
- 5 - Bass loudspeaker installed in rear lower door trim

Contact assignment for multi-pin connectors II and III

Note:

Pin assignments which are not listed are vacant or not assigned.



-> Multi-pin connector II, 8-pin, brown -C-

- 1 - Loudspeaker (+), rear right
- 2 - Loudspeaker (-), rear right
- 3 - Loudspeaker (+), front right
- 4 - Loudspeaker (-), front right
- 5 - Loudspeaker (+), front left
- 6 - Loudspeaker (-), front left
- 7 - Loudspeaker (+), rear left
- 8 - Loudspeaker (-), rear left

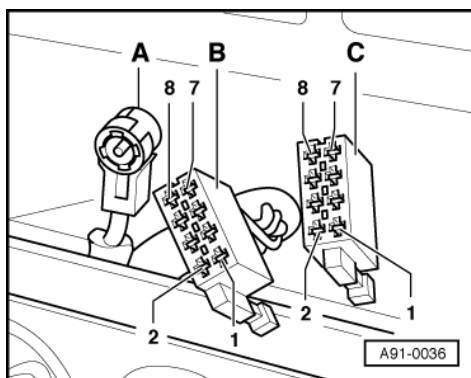
Multi-pin connector III, 8-pin, black -B-

- 1 - Gala (speed signal)
- 2 - AF mute (telephone system)
- 3 - Battery + (terminal 30)
- 4 - Terminal 86s - connection for switching on and off via ignition key (S contact)
- 5 - Control positive for aerial amplifier
- 6 - Illumination (terminal 58d)
- 7 - Battery + (terminal 30)

8 - Earth (terminal 31)

Connecting radio during preparation for radio installation

- Carefully lever cover out of centre console and remove.

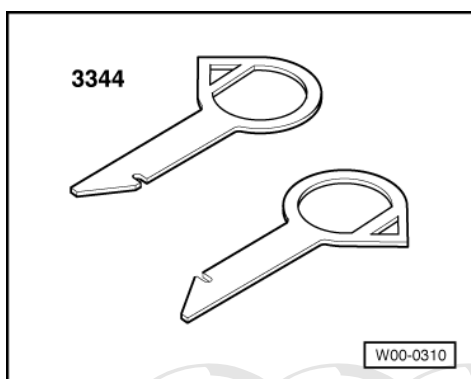


- -> Connect aerial cable -A-.
- Connect the black connector -B- and the brown connector -C- to the radio.
- Carefully insert radio in dash panel and engage in mounting frame.
- If applicable, activate anti-theft coding according to the radio operating instructions.

1.10 - Removing and installing "chorus and concert" radio unit

Note:

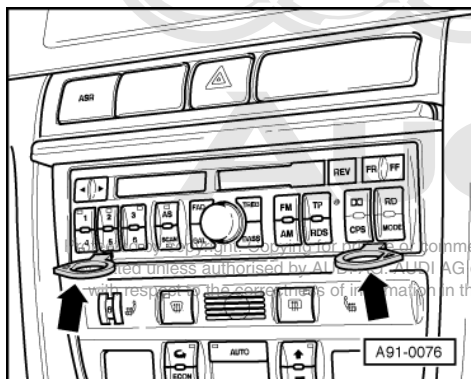
Obtain radio set code number before removing.



-> Special tools, testers and auxiliary equipment required

- ♦ Release tools for radio 3344

Removing



- -> Insert release tools for radio 3344 into front of radio, as shown in the illustration.

Top L - top left
Top R - top right

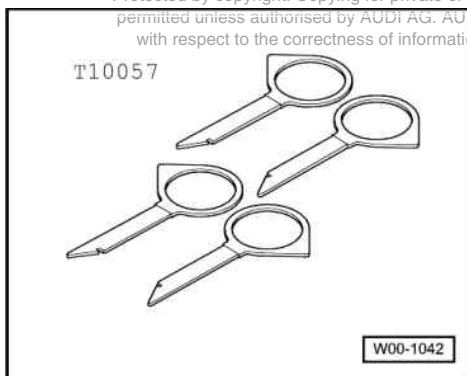
- Pull radio out of dash panel.
- Detach connectors and detach aerial cable.

Installing:

- Remove release tools from radio.
- Re-attach connectors.
- Carefully insert radio in dash panel and engage in mounting frame.
- Activate anti-theft coding according to the Radio Operating Instructions.

1.11 - Removing and installing "symphony" radio unit

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Note:

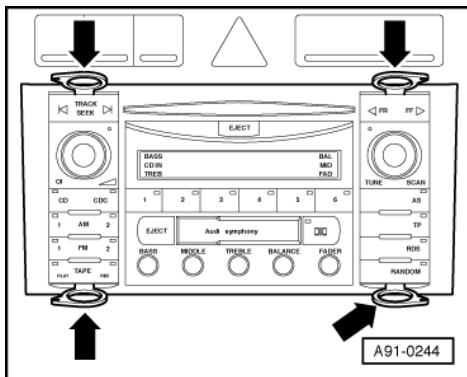
Obtain radio set code number before removing.

-> Special tools, test equipment and auxiliary items required

- ♦ T10057 Unlocking tool

Removing

Carry out procedure as follows:

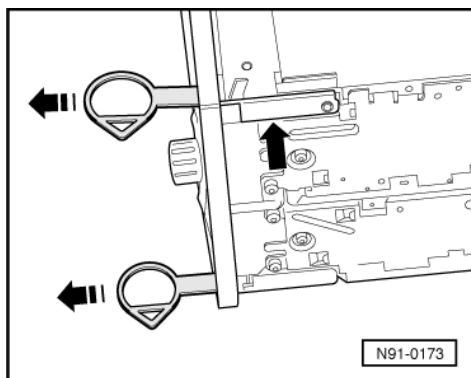


- -> Insert release tool for radio T10057 in release slot as shown -arrows- until the two engage.

Top L - top and bottom left

Top R - top and bottom right

- Remove radio from dash panel using gripping lugs on release tools.
- Release and detach connectors.



Remove release tools:

- -> Press locking tab -arrow- and remove release tool by pulling forwards.

Installing:

- Attach connectors to radio.
- Straighten radio and insert in dash panel until it engages in mounting frame.

1.12 - Removing and installing loudspeakers

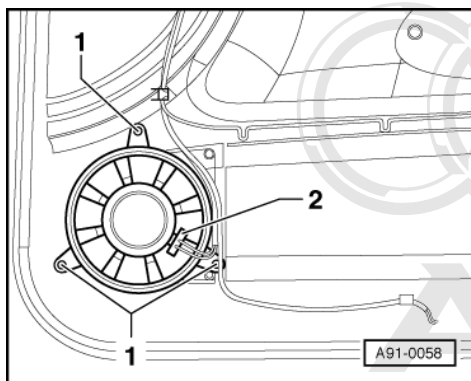
Removing and installing bass loudspeaker

Removing

- Remove front door trim.

=> General Body Assembly, Interior; Repair group 70; Front door trims; Removing and installing front door trim
Front door trims Removing and installing front door trim

- Carefully detach insulation material in the vicinity of the bass loudspeaker from the back of the door trim.



- -> Detach electrical connector -2- from loudspeaker.
- Remove screws -1- (1.5 Nm) from bass loudspeaker and remove loudspeaker from trim.

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Installing:

- Install in reverse sequence to removal.

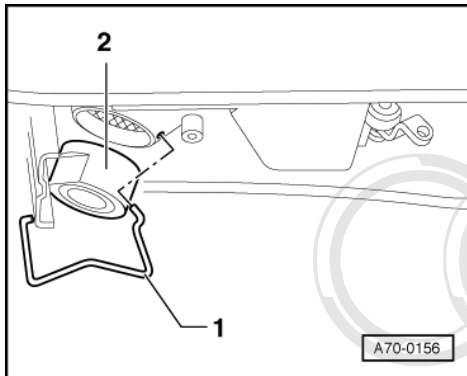
Removing and installing mid-range/treble loudspeaker

Removing

- Remove front door trim.

=> General Body Assembly, Interior; Repair group 70; Front door trims; Removing and installing front door trim
 Front door trims Removing and installing front door trim

- Carefully detach insulation material in the vicinity of the treble loudspeaker from the back of the door trim.



- -> Detach bracket -1- using a screwdriver.
- Remove the loudspeaker -2- from the trim.

Installing:

- Install in reverse sequence to removal.

Removing and installing loudspeakers in rear shelf

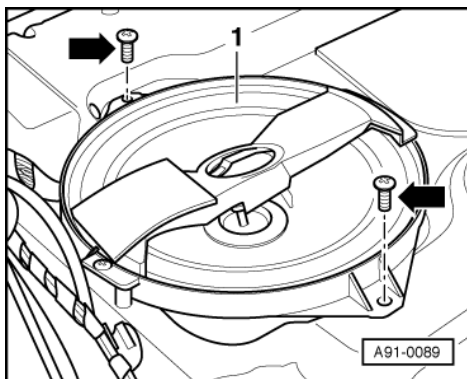
Notes:

- ♦ For vehicles ▶ 1997 with "delta" radio, vehicles 1998 ▶ with "concert" radio or vehicles 1999 ▶ with "symphony" radio, the loudspeakers are installed in the rear shelf as wide-band loudspeakers.
- ♦ For vehicles ▶ 1997 with "delta radio with BOSE sound system", vehicles 1998 ▶ with "concert radio with BOSE sound system" or vehicles 1999 ▶ with "symphony radio with BOSE sound system", the loudspeakers are installed in the rear shelf as treble loudspeakers.

Removing

- Remove rear shelf.

=> General Body Assembly, Interior; Repair group 70; Trims; Removing and installing rear shelf Trims Re-
 moving and installing rear shelf





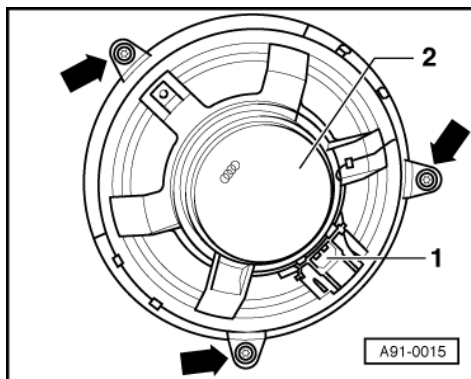
- -> Remove both fastening screws-arrows- from wide-band loudspeaker or treble loudspeaker -1- and remove loudspeaker from sheet metal cut-out under rear shelf by pulling upwards.
- Detach electrical connector.

Installing:

- Install in reverse sequence to removal.

Removing and installing wide-band loudspeaker in rear door trim

Removing



- Remove rear door trim.

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=> General Body Assembly, Interior; Repair group 70; Rear Door Trims; Removing and installing rear door trim
Rear Door Trims Removing and installing rear door trim

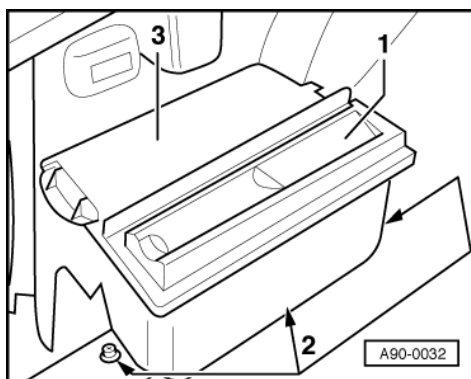
- -> Carefully detach insulation material in vicinity of the wide-band loudspeaker from the back of door trim.
- Detach electrical connector -1-.
- Remove securing screws -arrows- (1.5 Nm) from wide-band loudspeaker -2- and remove loudspeaker from trim.

Installing:

- Install in reverse sequence to removal.

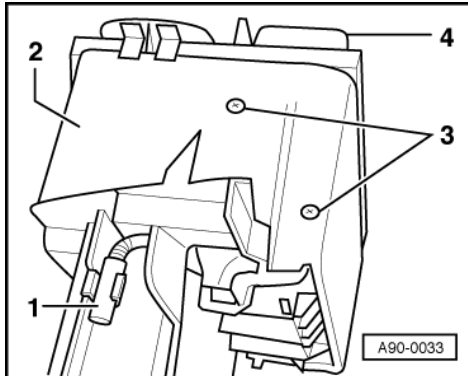
1.13 - Removing and installing CD changer -Saloon- (up to week 44/98)

Removing

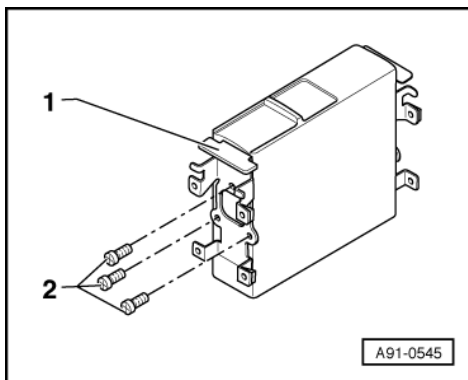


The CD changer is located in a retaining box on the left side panel of the luggage compartment. This box also contains a vehicle tool kit compartment.

- -> The CD changer -1- is located in the retaining box -3- on the left of the luggage compartment behind the wheel housing.
- Remove retaining box -3- by removing securing screws -2- (3.5 Nm).



- -> Detach connector -1- underneath retaining box -2- and remove retaining box from luggage compartment.
- Remove screws -3- (2 Nm) on both sides of retaining box -2- and remove CD changer with bracket from retaining box.



- -> Remove both brackets -1- on left and right of CD changer by removing screws -2- (2 Nm).

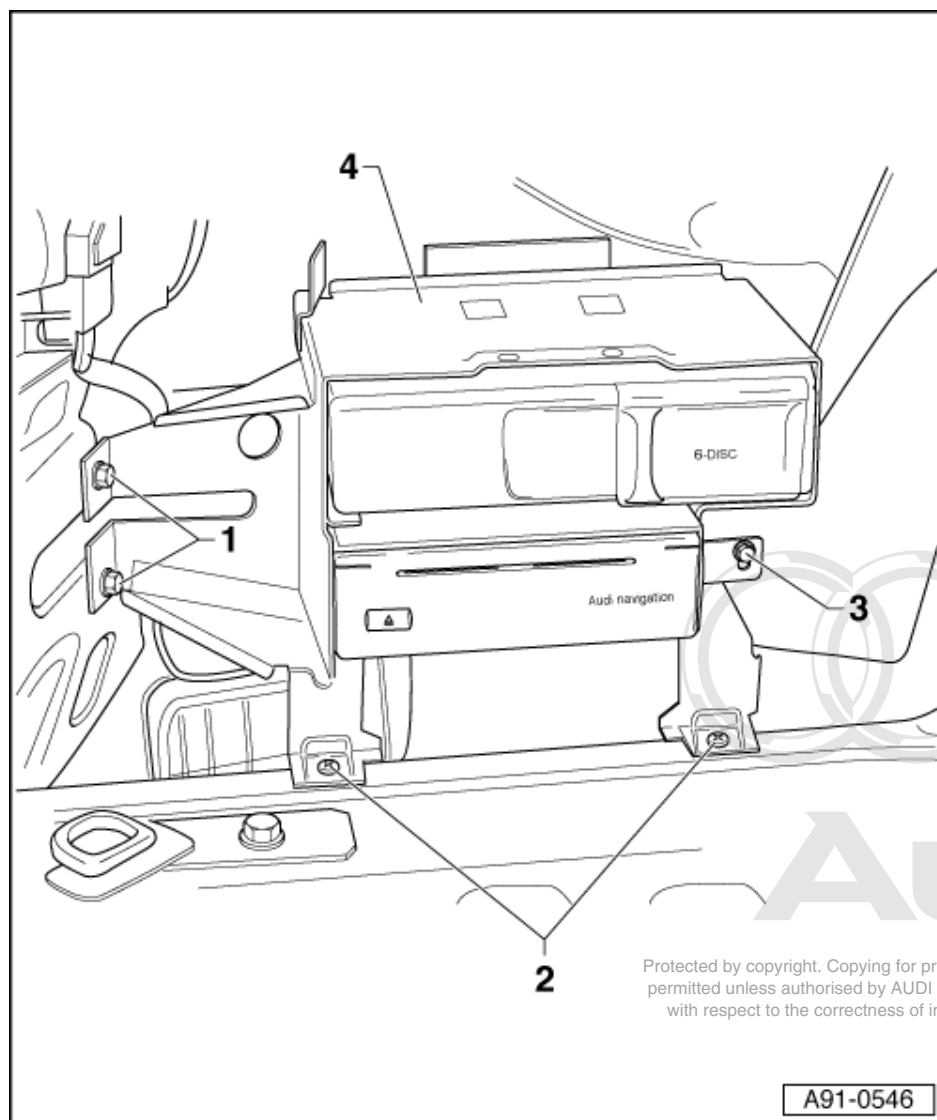
Installing:

- Install in reverse sequence to removal.
- After installation, it is essential that the wiring is checked => Page 51 .



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1.14 - Removing and installing CD changer -Saloon- (from week 45/98)



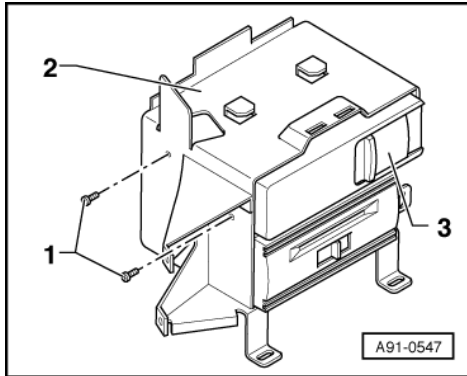
The CD changer is in rear left of the luggage compartment.

Removing

- Open left storage compartment in luggage compartment.
- Remove luggage compartment left trim.

=> General Body Assembly, Interior; Repair group 70; Trims; Removing and installing left/right luggage compartment trims Trims Removing and installing left/right luggage compartment trims

- Remove securing bolts -1-, -2- and -3- (2 Nm) for package holder (mounting frame) and remove package holder -4-.
- Disconnect the control unit connectors and remove the complete mounting frame -4-.



- -> Remove 2 securing screws -1- (2 Nm) on left and right of CD changer -3- and remove CD changer from mounting frame -2-.

Installing

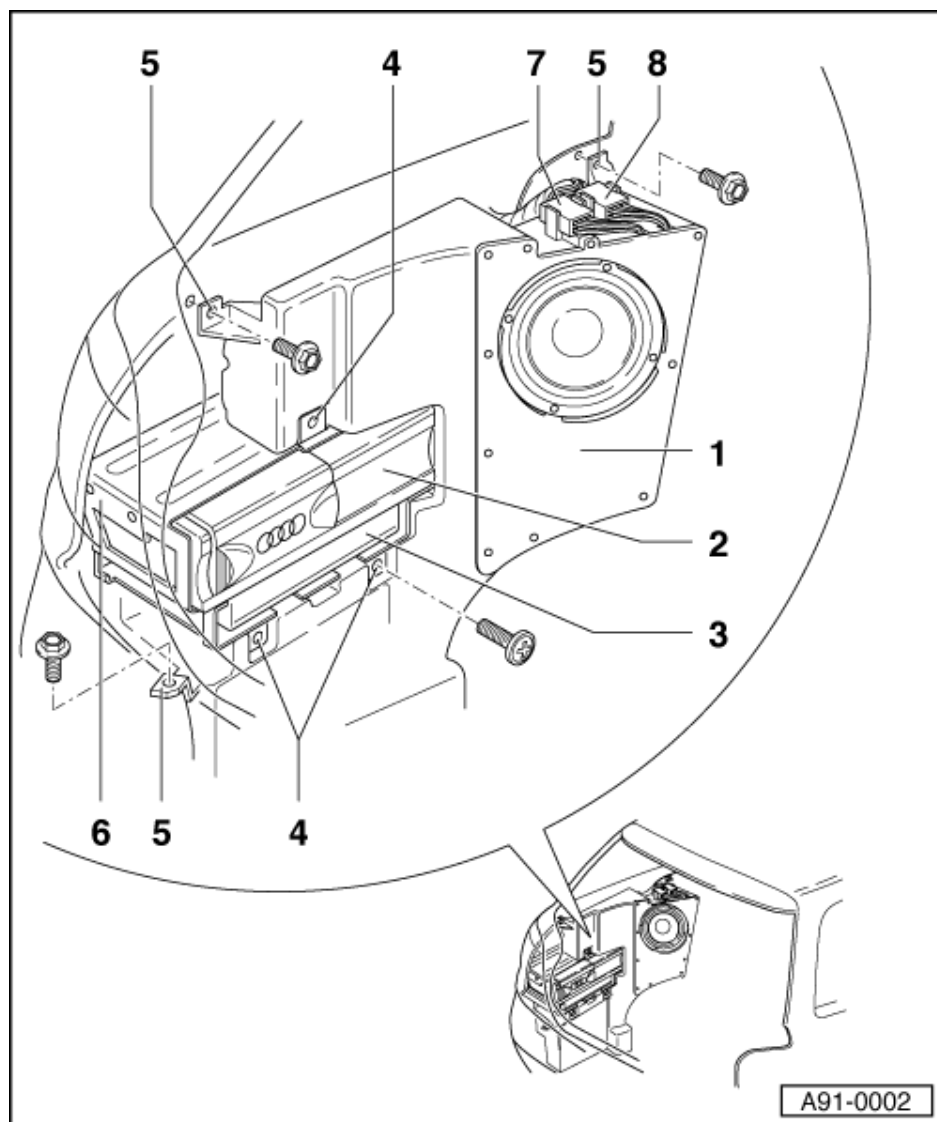
- Installation is performed in the reverse sequence to removal.



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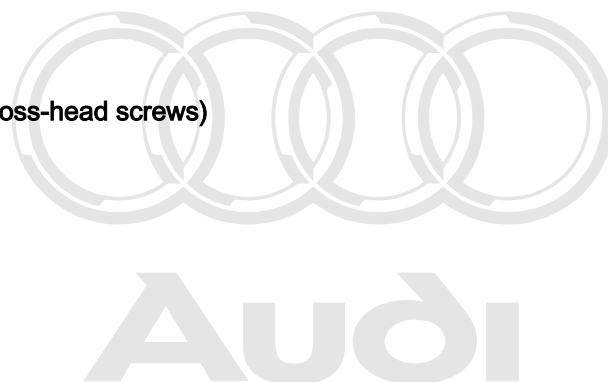


1.15 - Removing and installing CD changer -Avant-



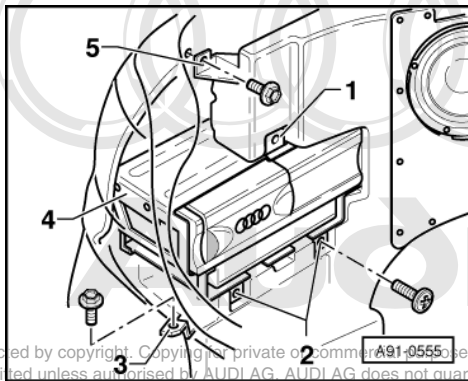
Overview:

- 1 Bass loudspeaker (subwoofer)
- 2 CD changer
- 3 Telephone transmitter/receiver unit
- 4 Securing screws for CD/telephone mounting frame (3x cross-head screws)
- 5 Securing bolts for bass loudspeaker (subwoofer)
- 6 Mounting frame for CD/telephone/navigation
- 7 Electrical connector for BOSE power amplifier
- 8 Electrical connector for bass loudspeaker (subwoofer)



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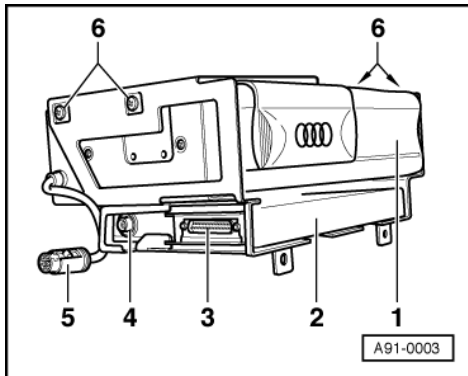
Removing



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The CD changer is located in the luggage compartment behind the left storage compartment.

- Open left storage compartment in luggage compartment.
- -> Remove securing screws -1- and -2- (2 Nm) and remove mounting frame -4- from storage compartment.



- -> Remove securing bolts -4- and remove mounting frame -6- from storage compartment.
- Detach electrical connector -3-.
- To remove the CD changer, remove securing screws -6- (2 Nm) at the sides and remove CD changer from mounting frame.

Installing:

- Install in reverse sequence to removal.
- After installation, it is essential that the wiring is checked => Page 51 .

Checking wiring between radio and CD changer

- Switch off radio.
- Press MODE button ("delta and concert" radio) or button no. 4 ("symphony" radio) while simultaneously switching on radio.
- Do not press MODE button or button no. 4 again.

1. Wiring OK

Indicated on radio display:

"CONNECT" and "CD"

2. Wiring not OK

Indicated on radio display:

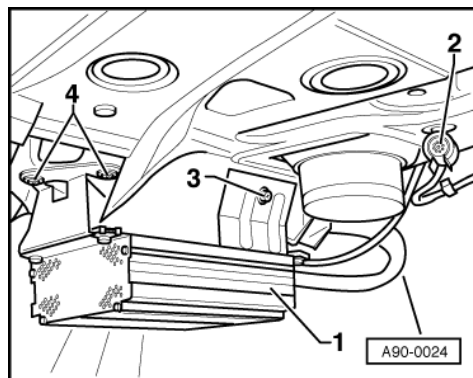
"NO CDC"

- Check electrical connector on CD changer.
- Check wiring again and, if not OK, rectify according to current flow diagram.

=> Current Flow Diagrams, Electrical Fault-finding and Fitting Locations

1.16 - Removing and installing BOSE power amplifier -Saloon-

Removing



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The BOSE power amplifier is located on the left side of the luggage compartment above the wheel housing.

- -> Detach mounting frame for BOSE sound amplifier -1- by removing bolt -3- and both bolts -4-.
- Detach connector on rear of amplifier.

Installing:

- Install in reverse sequence to removal.

1.17 - Removing and installing BOSE power amplifier combined with base loudspeaker (subwoofer) -Avant-

The BOSE power amplifier is located in the luggage compartment behind the left side trim.

Note:

If a CD changer is present, this must be removed => Page 50 .

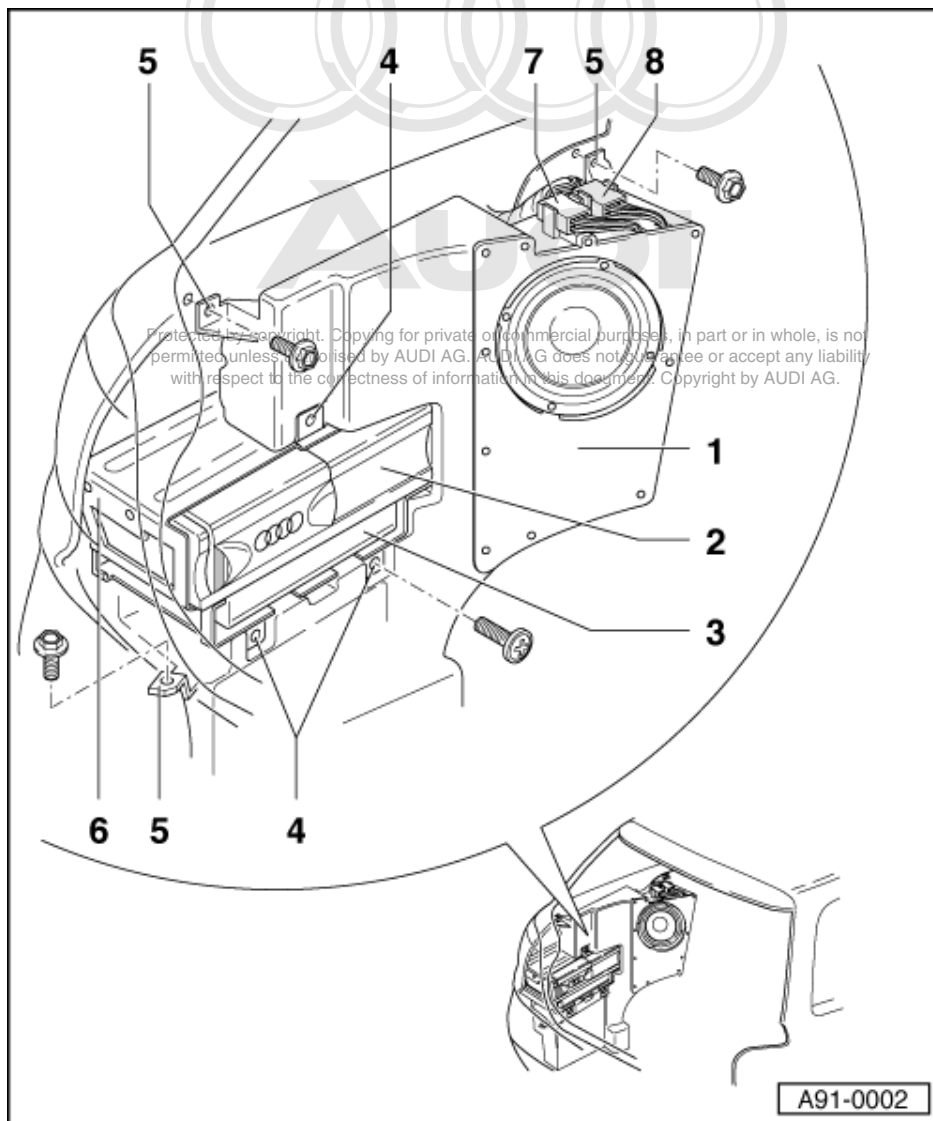
Removing and installing => Page 52 :

1.18 - Removing and installing bass loudspeaker (subwoofer) -Avant-

Note:

If a CD changer is present, this must be removed => Page 50 .

The base loudspeaker (subwoofer) is located in the luggage compartment behind the left side trim.



Removing

- Open left storage compartment in luggage compartment.
- Remove left side trim.

=> General Body Assembly; Repair group 70; Avant trims; Removing and installing left and right side trims
Avant trims Removing and installing left and right side trims

- Disconnect electrical connector for bass loudspeaker -8- plus connector -7- for BOSE sound system.
- Release screw connection -5- (3.5 Nm).
- Remove bass loudspeaker (subwoofer) -1- from side panel.

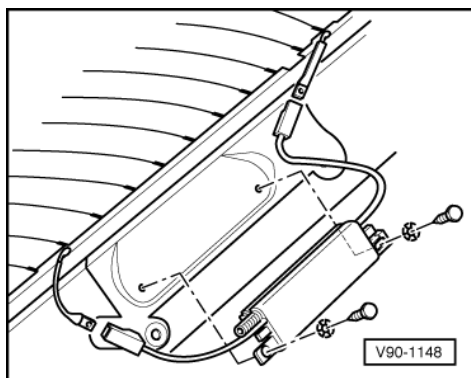
Installing:

- Install in reverse sequence to removal.



1.19 - Removing and installing aerial amplifier ("chorus and concert" radios) -Saloon-

Removing



- -> Remove left D-pillar trim.

=> General Body Assembly, Interior; Repair group 70; Trims; Removing and installing C/D-pillar trim Trims
Removing and installing C/D-pillar trim

- Unscrew aerial wire and detach all connectors
- Remove hexagon self-tapping screws (2.5 Nm) and remove aerial amplifier.

Installing:

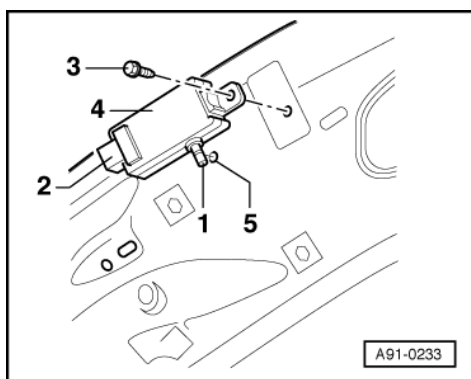
- Installation is performed in the reverse sequence to removal.

1.20 - Removing and installing aerial amplifier under D-pillartrim ("symphony" radio) -Saloon-

Removing

- Remove left D-pillar trim.

=> General Body Assembly, Interior; Repair group 70; Trims; Removing and installing C/D-pillar trim Trims
Removing and installing C/D-pillar trim



- -> Release aerial wire -1- and detach connector -2-.
- Remove securing screw -3- (2.5 Nm) and detach aerial amplifier -4-.

Installing:

- When installing, ensure that the anti-twist element on the aerial amplifier is inserted in the mounting hole -5-, then perform installation in reverse order.

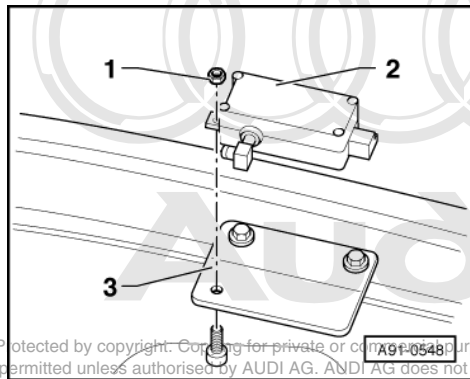
Note:

The installation procedure for the aerial amplifier under the right D-pillar trim is a mirror image of that for the amplifier under the left D-pillar trim.

1.21 - Removing and installing aerial amplifier under rear shelf ("symphony" radio) -Saloon-

Both aerial amplifiers are located on the left and right near the rear window, under the rear shelf.

Removing



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- Detach aerial wire -1- and detach connector -2-.

=> General Body Assembly, Interior; Repair group 70; Trims; Removing and installing rear shelf Trims Removing and installing rear shelf

- Release aerial wire and detach connector.
- -> Detach securing nut -1- (2.5 Nm) and remove aerial amplifier -2-. Bracket -3- need not be removed.

Installing:

- When installing, ensure that the anti-twist element in the aerial amplifier is inserted in the mounting hole, then perform installation in reverse order.

Note:

The installation procedure for the aerial amplifier on the right under the rear shelf is a mirror image of that for the amplifier on the left.

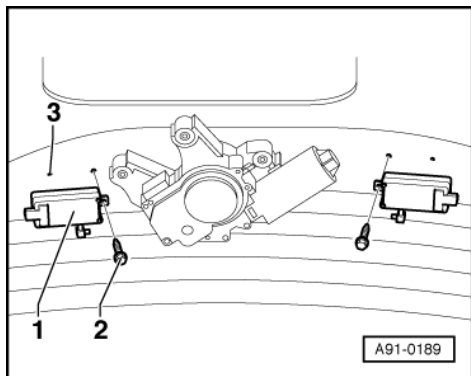
1.22 - Removing and installing aerial amplifier under tailgate lower trim ("symphony" radio) -Avant-

Removing

- Remove tailgate lower trim.

=> General Body Assembly, Interior; Repair group 70; Avant trims; Removing and installing tailgate trim Avant trims Removing and installing tailgate trim

- Release aerial wire and detach connector.



- -> Detach securing screw -2- (2.5 Nm) and remove aerial amplifier -1-.

Installing:

- When installing, ensure that the anti-twist element on the aerial amplifier is inserted in the mounting hole -3-, then perform installation in reverse order.

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Note:

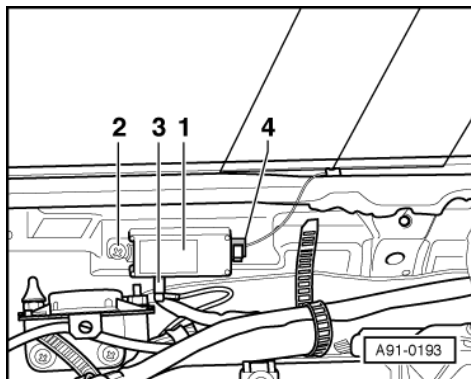
The installation procedure for the second aerial amplifier is a mirror image of that for the first amplifier.

1.23 - Removing and installing aerial amplifier under left side trim ("symphony" radio) -Avant-

Removing

- Remove left side trim.

=> General Body Assembly; Repair group 70; Avant trims; Removing and installing left and right side trims
Avant trims Removing and installing left and right side trims

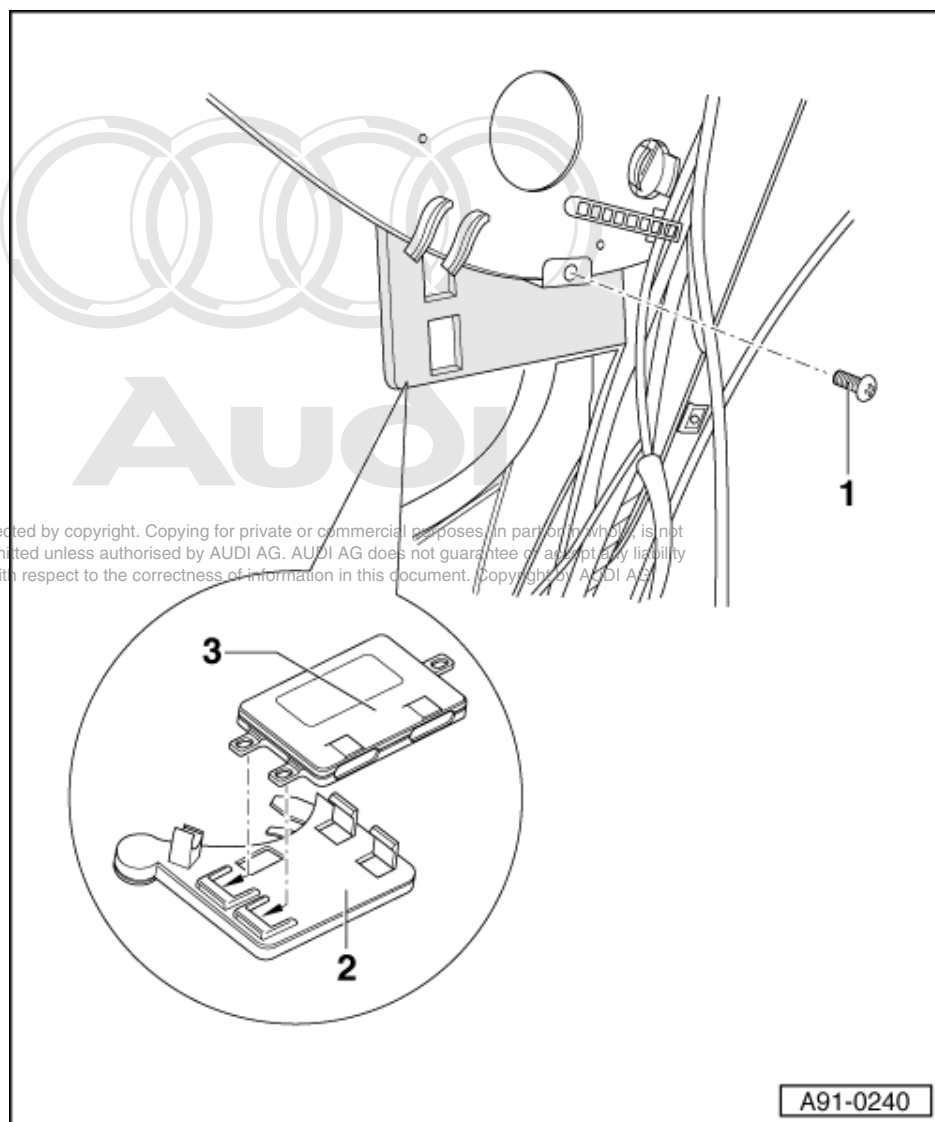


- -> Release aerial wire -3- and detach connector -4-.
- Remove securing bolt -4- (2.5 Nm) and detach aerial amplifier -2-.

Installing:

- When installing, ensure that the anti-twist element in the aerial amplifier is inserted in the mounting hole, then perform installation in reverse order.

1.24 - Removing and installing control unit for aerial selection -J415 -Saloon-



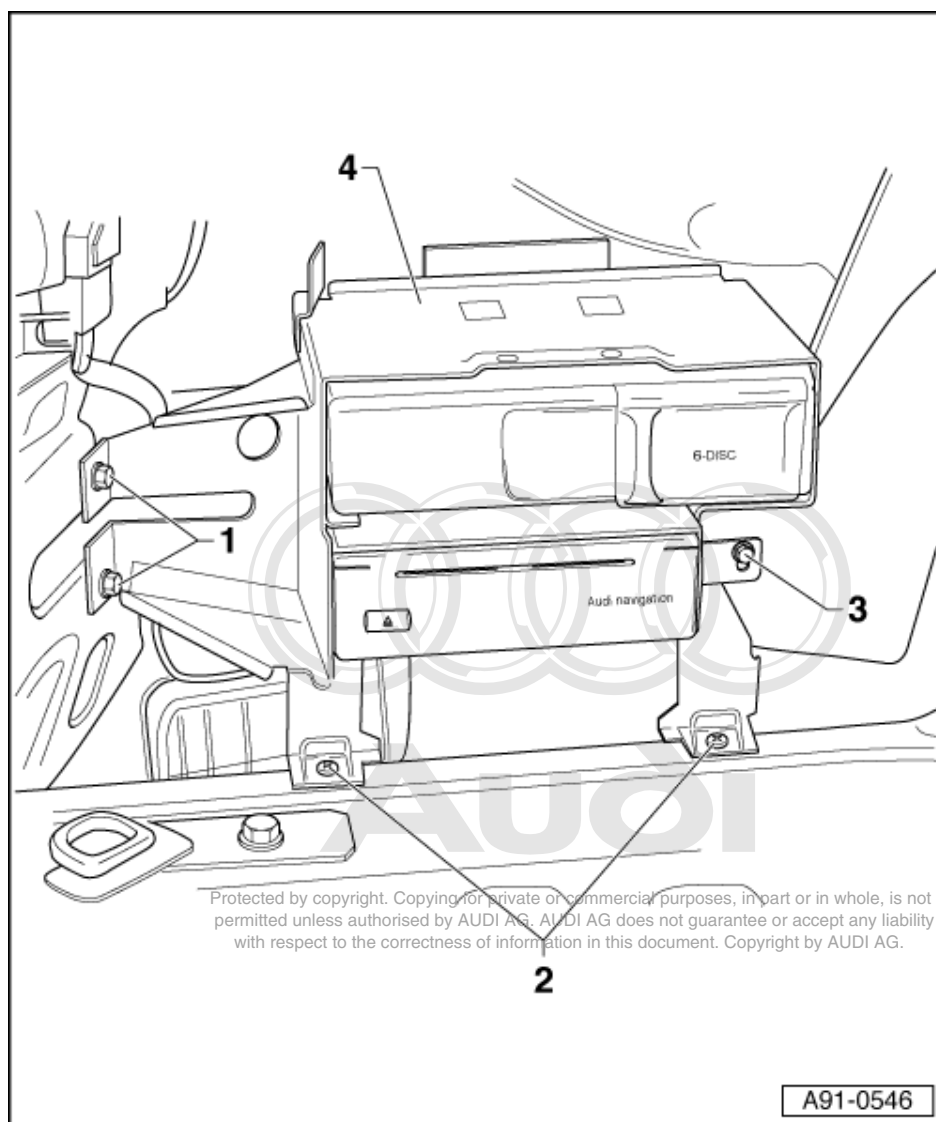
Removing without package holder (for Saloon only):

The control unit is in the left storage compartment in the luggage compartment.

- Open left storage compartment in luggage compartment.
- Remove securing screw -1- (3 Nm) for retaining plate -2- for aerial selection control unit -3-.
- Release the six connection lines on the aerial selection control unit.
- Turn control unit slightly to remove.

Installing:

- Install in reverse sequence to removal.



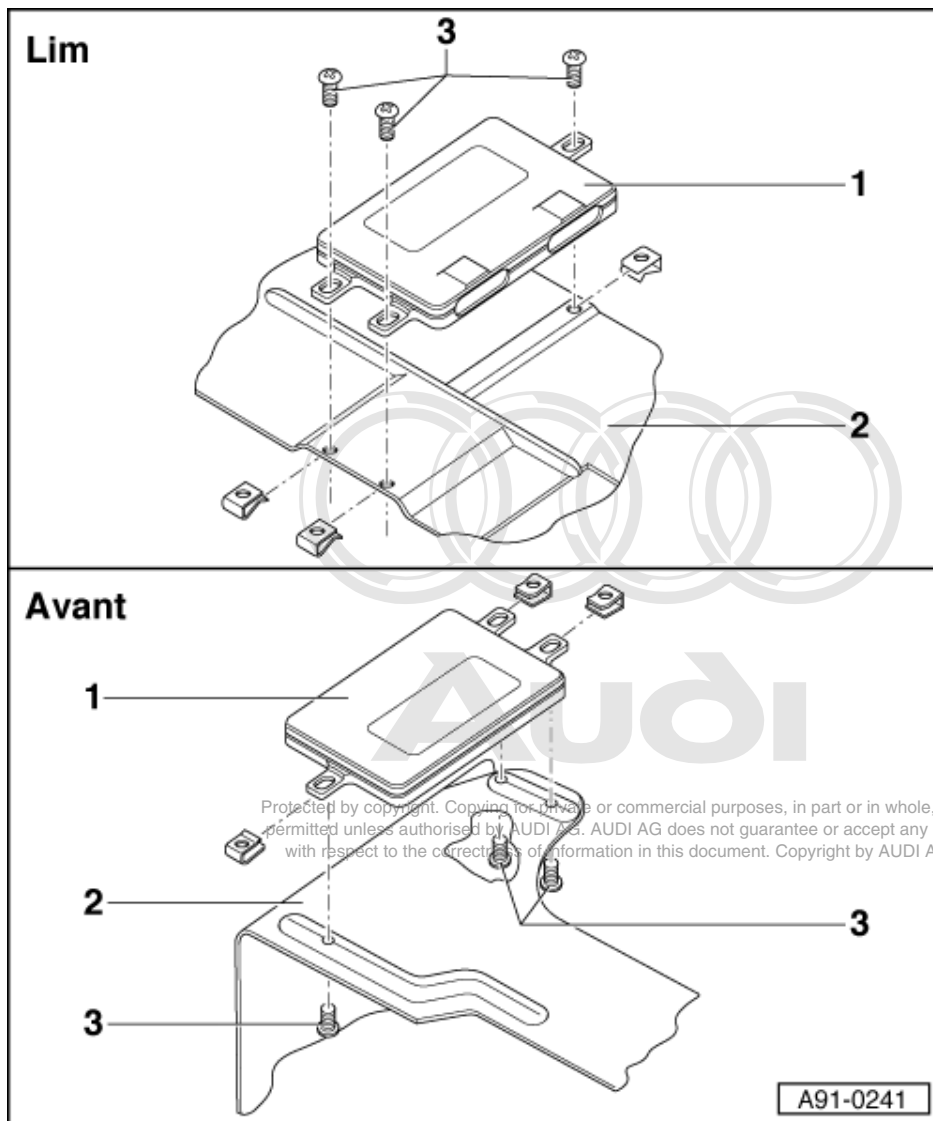
Removing with package holder:

The control unit is attached to the bottom of the package holder.

- Open left storage compartment in luggage compartment.
- Remove luggage compartment left trim.

=> General Body Assembly, Interior; Repair group 70; Trims; Removing and installing left/right luggage compartment trims Trims Removing and installing left/right luggage compartment trims

- Remove securing bolts -1-, -2- and -3- (2 Nm) for package holder (mounting frame) and remove package holder -4-.
- Disconnect the control unit connectors and remove the complete mounting frame.

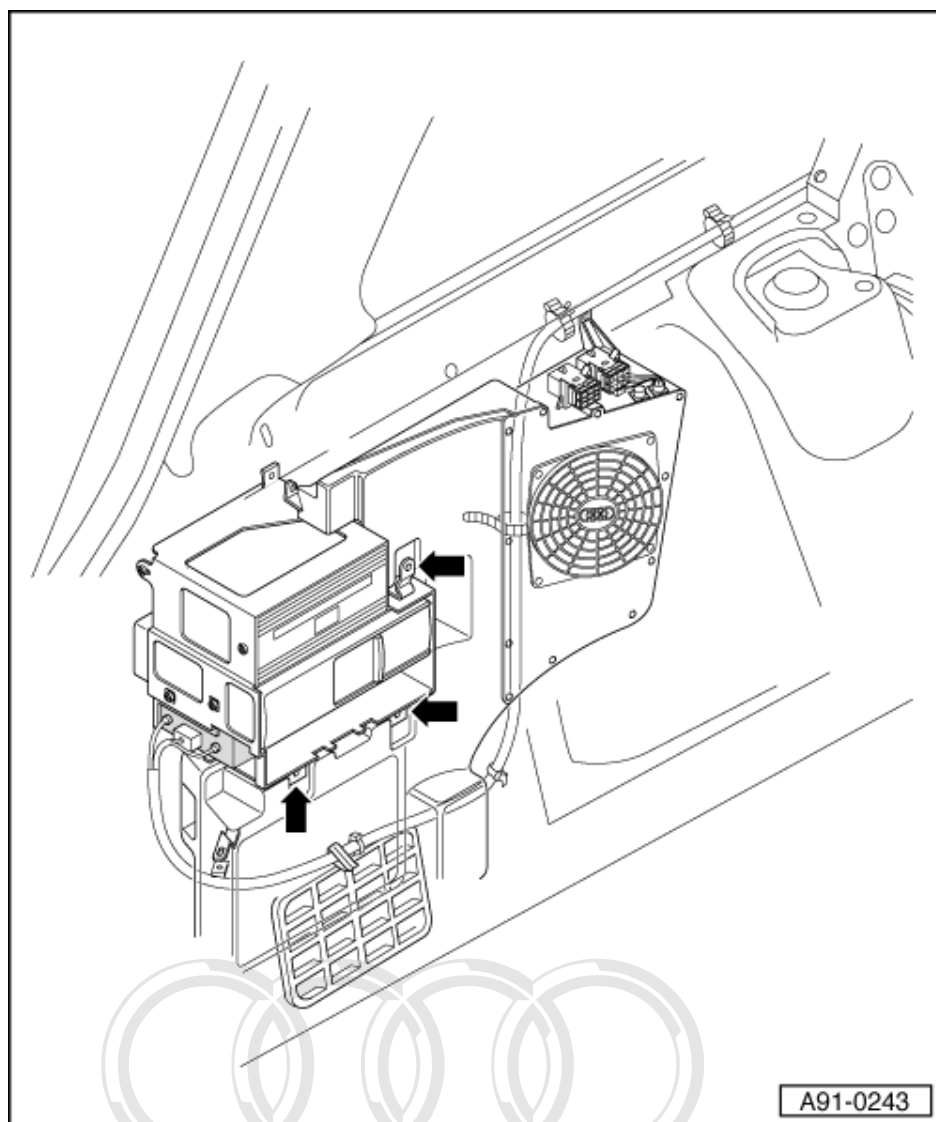


- Remove the six connection lines on the aerial selection control unit -1- which is secured on the package holder base plate -2-.
- Remove the securing screws -3- (2 Nm) for the aerial selection control unit so that the control unit can be detached from the package holder.

Installing:

- Install in reverse sequence to removal.

1.25 - Removing and installing control unit for aerial selection -J415 -Saloon-



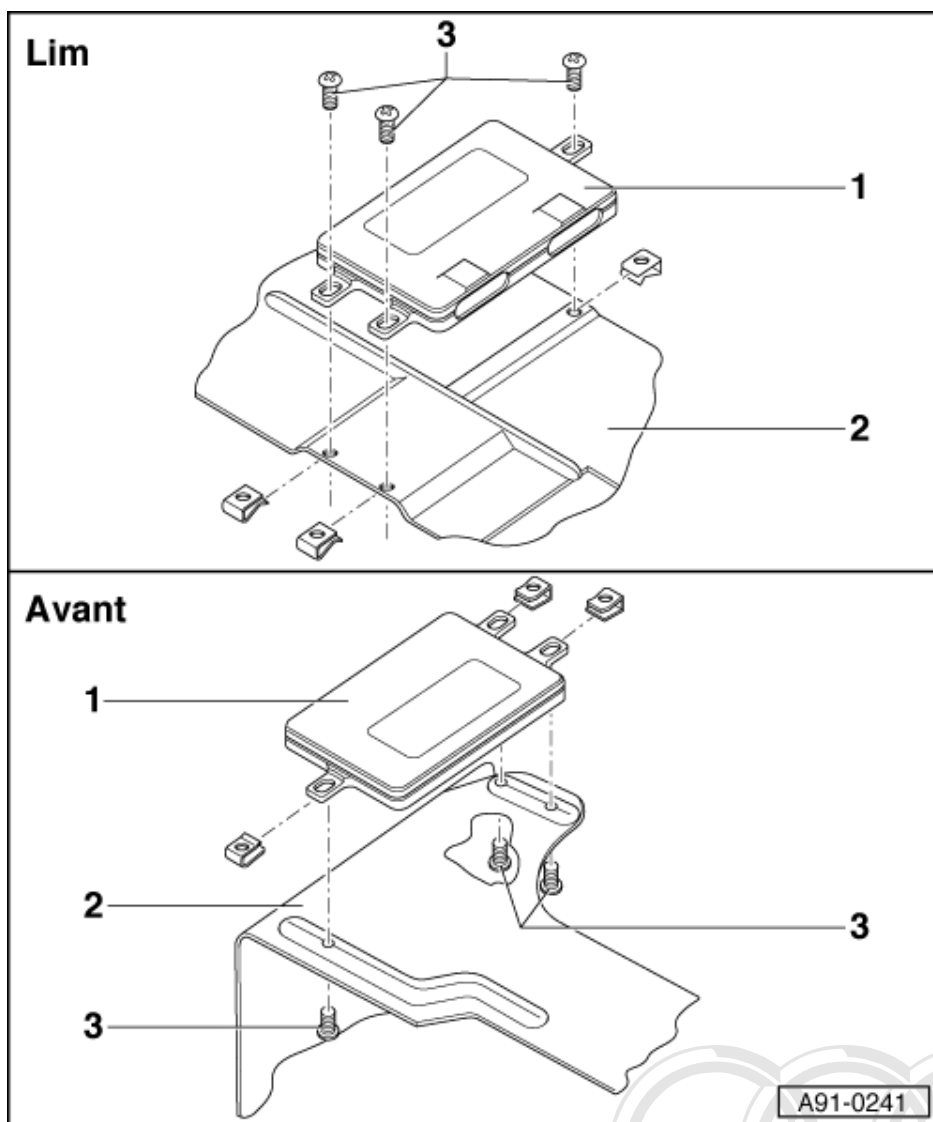
- Open left storage compartment in luggage compartment.

Note:

A package holder is generally installed in Avant vehicles due to the base loudspeaker box (subwoofer).

- Remove the securing bolts from the package holder (mounting frame) -arrows- (3.5 Nm).

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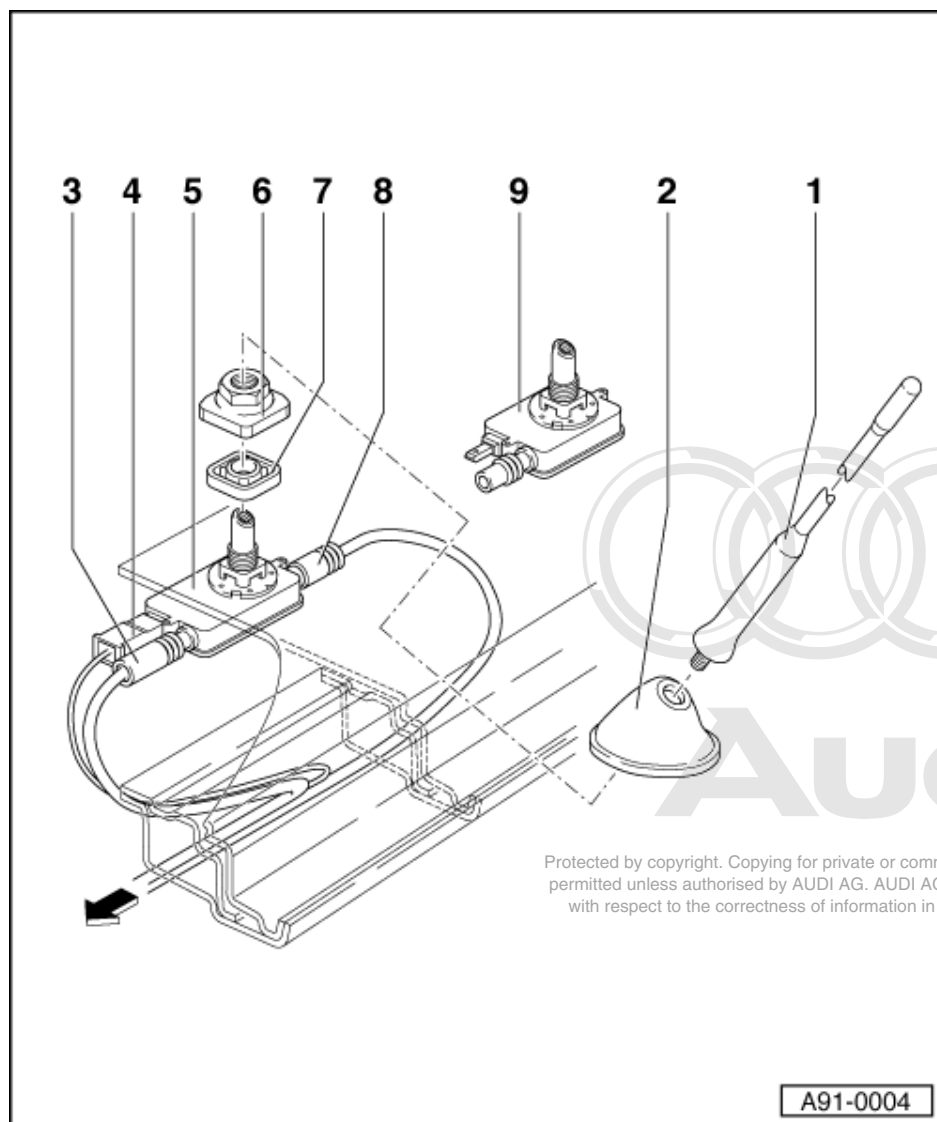
- Remove the six connection lines on the aerial selection control unit -1- which is secured on the package holder base plate -2-.
- Remove the securing screws -3- (2 Nm) for the aerial selection control unit so that the control unit can be detached from the package holder.

Installing:

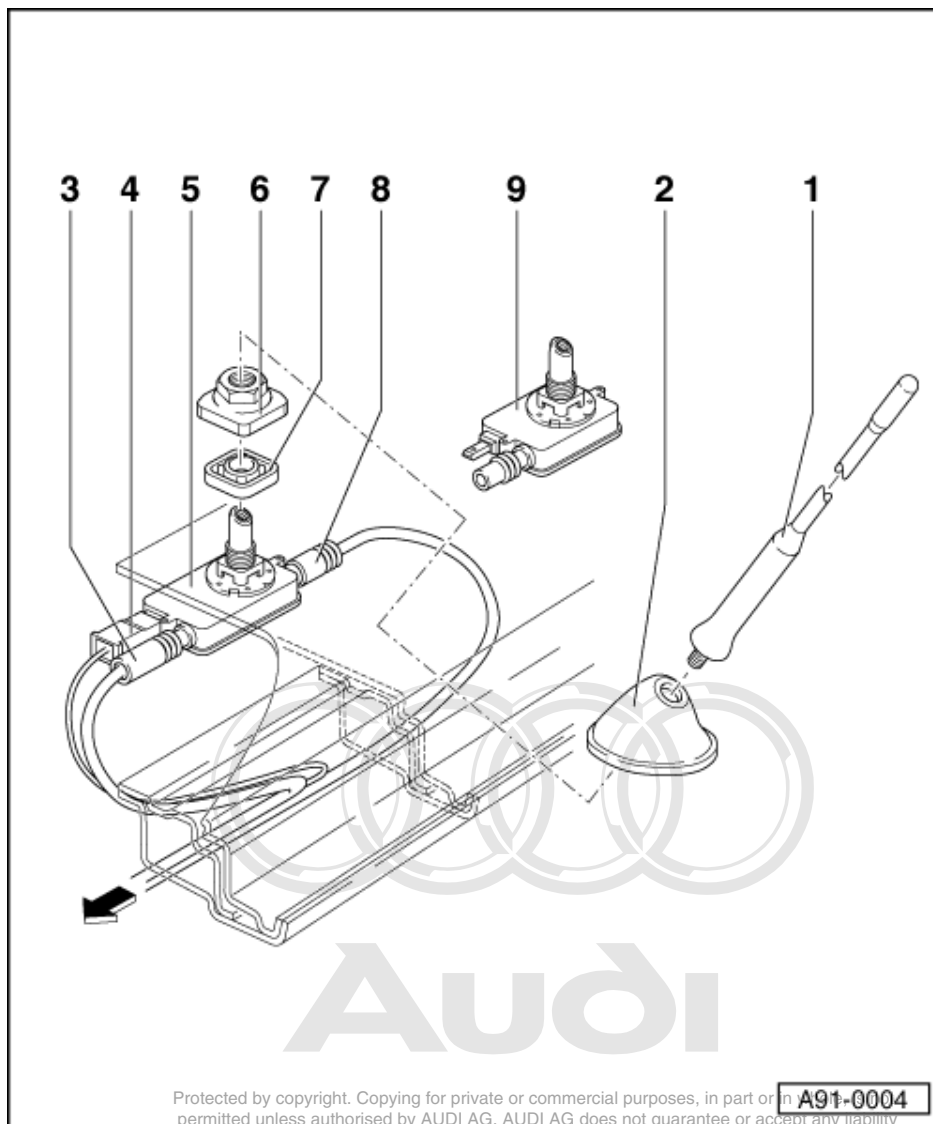
- Install in reverse sequence to removal.

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1.26 - Removing and installing roof aerial -Avant-



- 1 Aerial
- 2 Aerial base cover
- 3 Connector for radio aerial wire
- 4 Connector for switched positive (only for vehicles ä 1997)
- 5 Aerial base for combined radio/telephone aerial
- 6 Securing nut
- 7 Seal for aerial base
- 8 Connector for telephone aerial wire
- 9 Base for radio aerial



Removing

- Carefully lever rear luggage compartment light out of vehicle headliner using a screwdriver.
- Unscrew aerial -1-.
- Detach cover -2- upwards.
- Release securing nut -6- (3.5 Nm) and remove.
- Remove aerial base -5- or -9- inwards, through vehicle headliner aperture.
- Disconnect all connectors -3-, -4- and, if applicable, -8-. Push back locking collars -3- and -8- when dismantling.

Installing:

- Install in reverse sequence to removal.

2 - Servicing telephone system

2.1 - Servicing telephone system

Important:

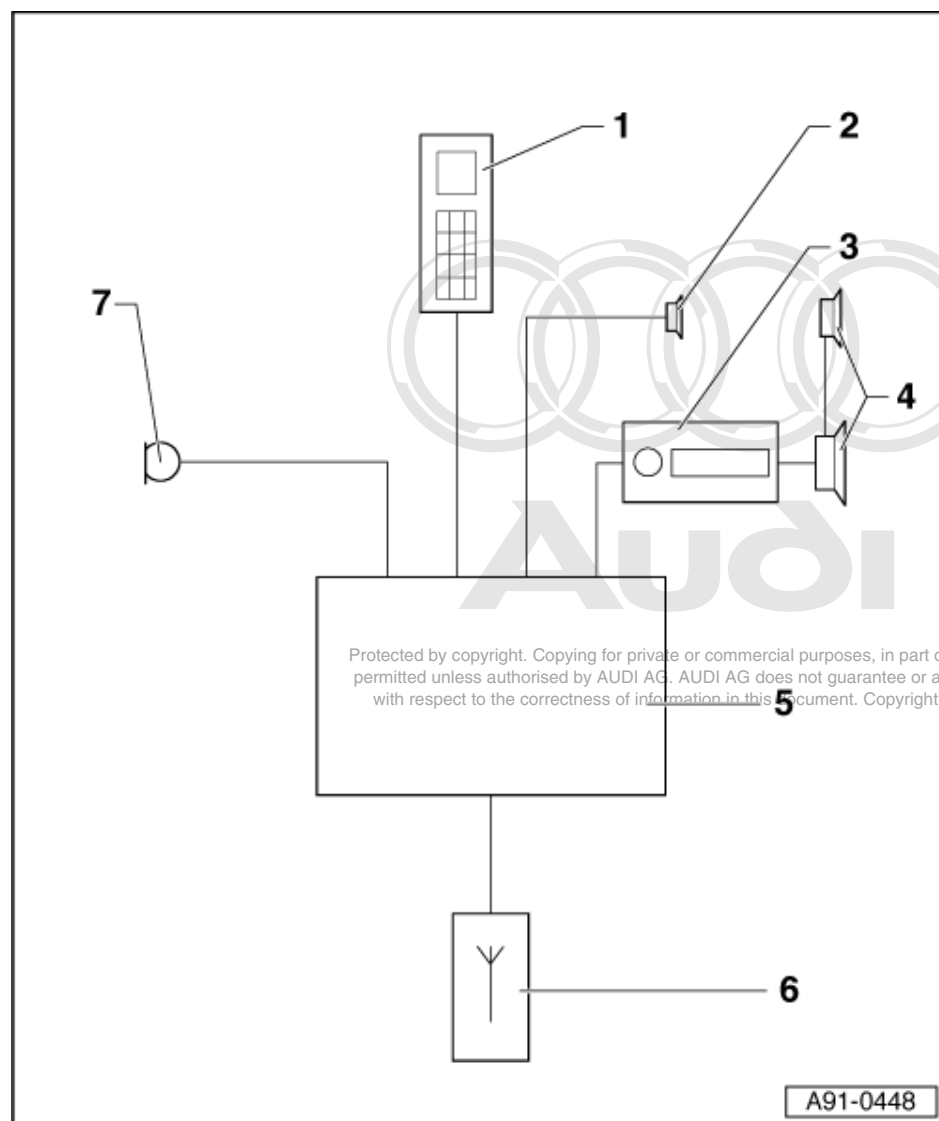
Disconnect battery earth strap before working on electrical system.

Activate the service mode of telematics control unit before disconnecting battery. => Radio, Telephone and Navigation System Self-diagnosis; Repair group 01; Telematics Self-diagnosis; Adaption

Notes:

- ♦ On vehicles with coded radio, obtain anti-theft code before disconnecting battery.
- ♦ Activate the service mode of telematics control unit before disconnecting battery.
- ♦ If the battery is reconnected, please ensure that the vehicle equipment (radio, clock, electric window lifters, engine) is activated as described in operating instructions and the service mode of telematics control unit is deactivated.

2.2 - Permanent installation of telephone



1 Handset

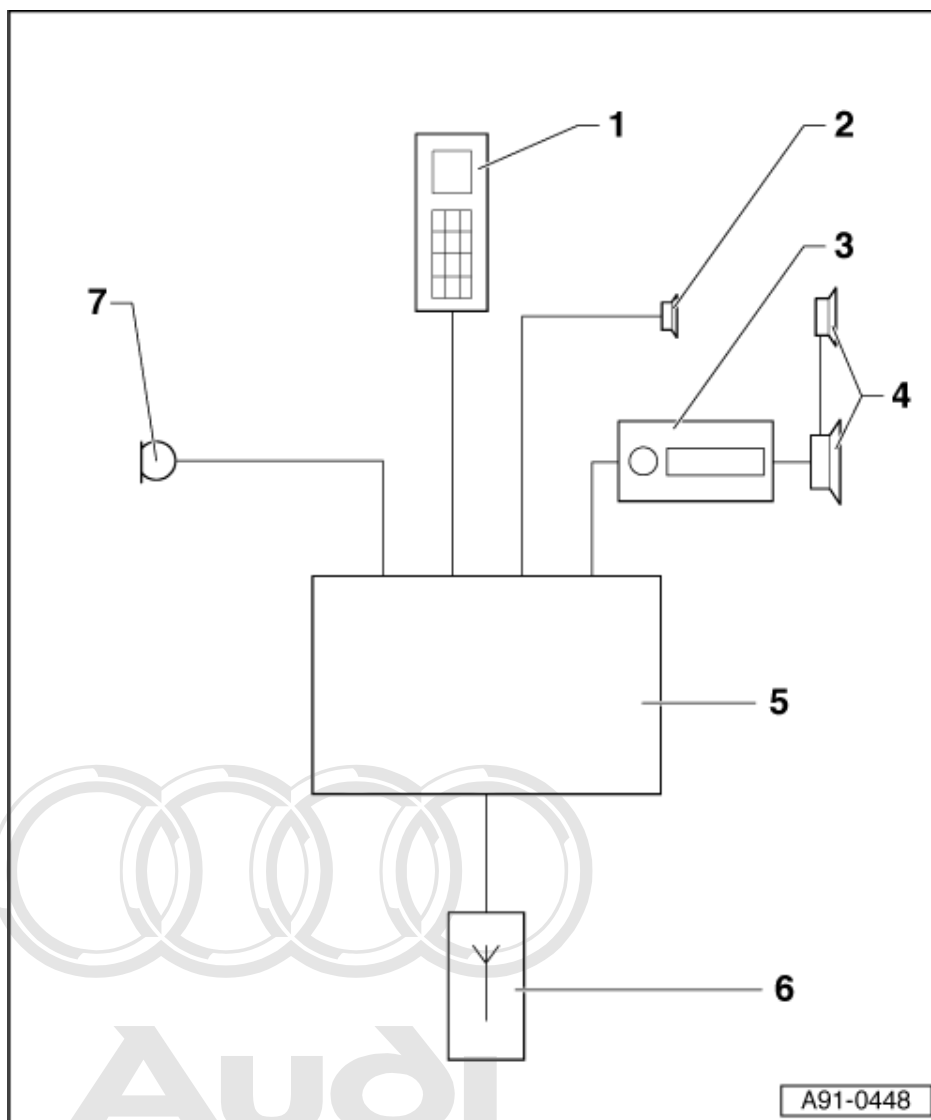
- ◆ In centre console
- ◆ Removing and installing
=> Page 73
- ◆ In centre armrest
- ◆ Removing and installing
=> Page 73

2 Hands-free loudspeaker

- ◆ In front driver's door.
- ◆ Removing and installing
=> Page 83
- ◆ Only for vehicles with BOSE sound system in conjunction with telephone
- ◆ For all other vehicles, the loudspeakers in the front door trims are used.

3 Radio

- ◆ Installed in centre console
- ◆ Removing and installing
=> Page 42



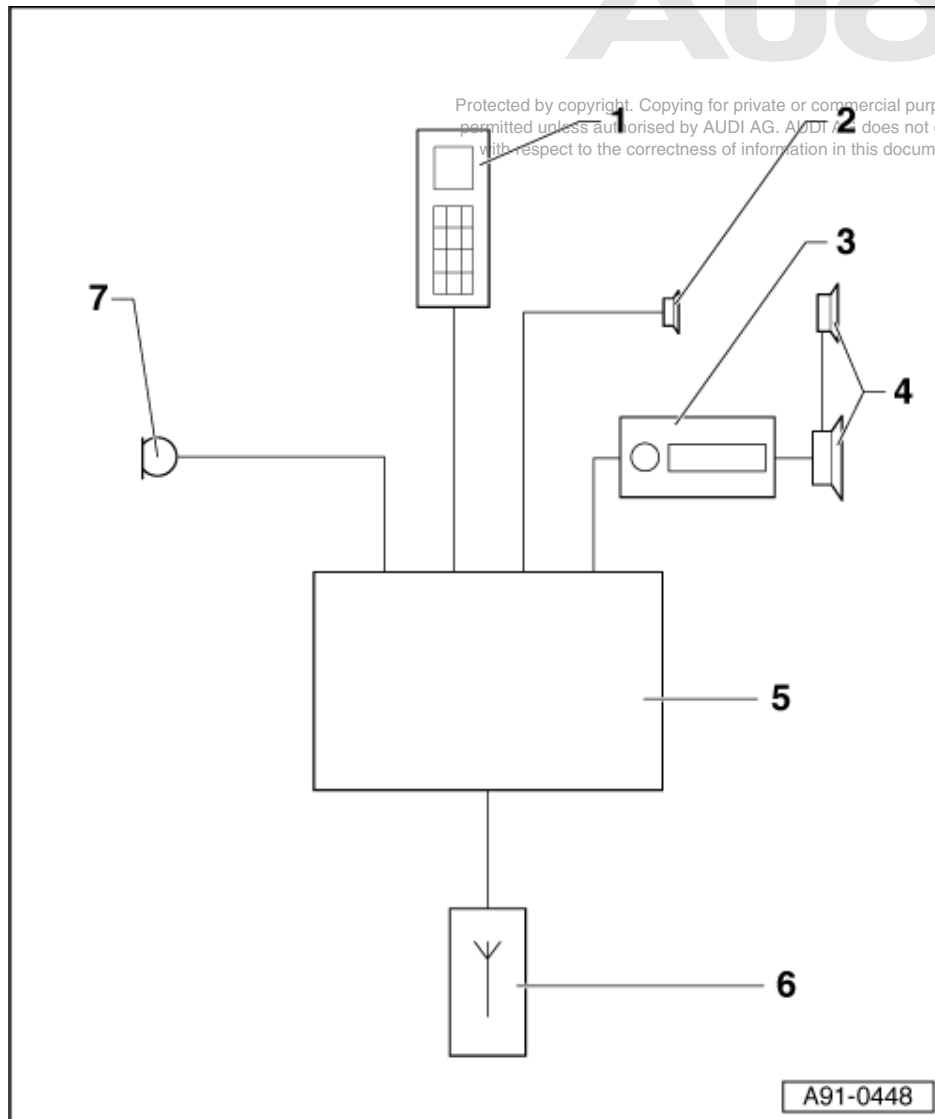
4 The mid-range/treble loudspeaker and bass loudspeaker

- ◆ In front left door trim
- ◆ Removing and installing
=> Page 44

5 Transmitter/receiver unit

- Saloon:
- ◆ Below rear shelf

- ◆ Removing and installing
=> Page 76
- Avant:
- ◆ Behind left storage compartment in luggage compartment
- ◆ Removing and installing
=> Page 77
- Nokia from model year 00:
- ◆ Under driver's seat
- ◆ Removing and installing
=> Page 232



6 Aerial

Saloon:

- ◆ Rod aerial in rear left wing
- ◆ Removing and installing
=> Page 84

Avant:

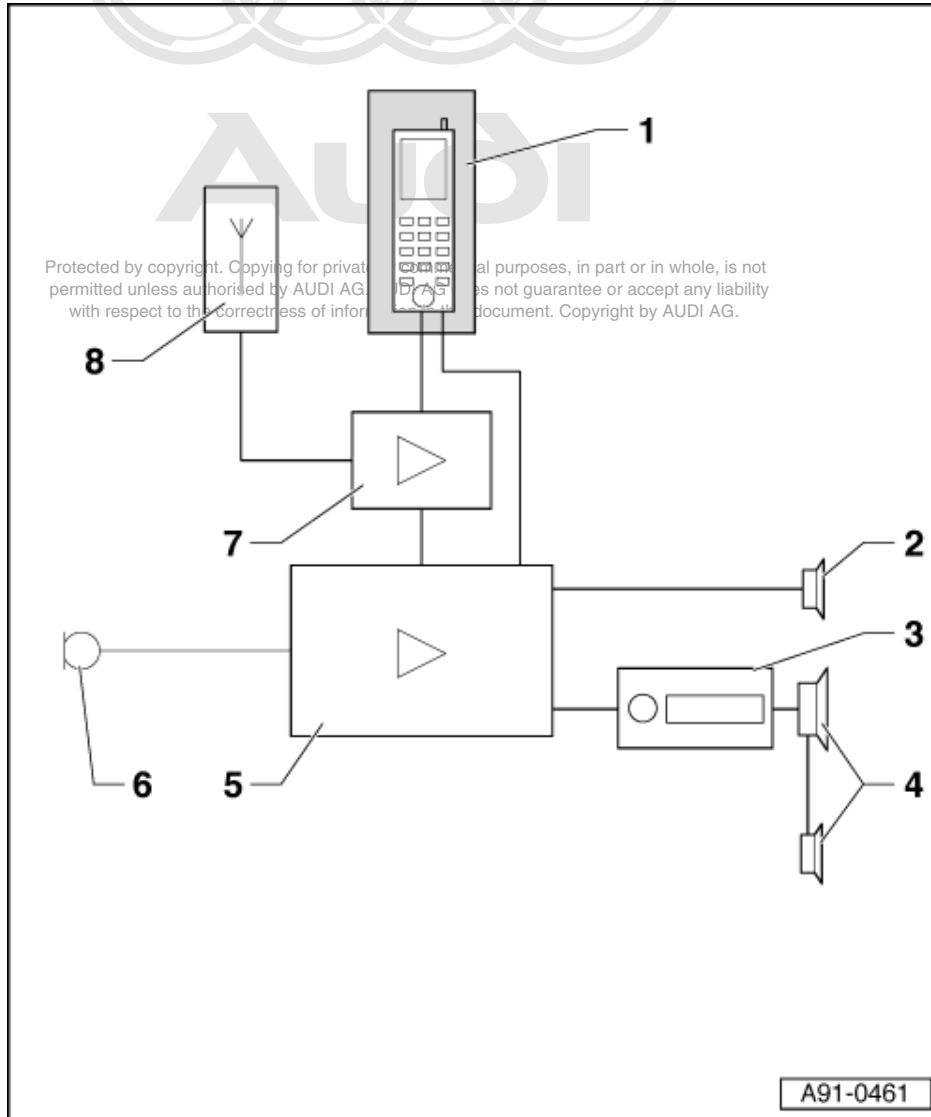
- ◆ Roof aerial on roof
- ◆ Removing and installing
=> Page 62

7 Hands-free microphone

- ◆ In A-pillar on driver's side (up to vehicle no. 8DZYA200000)
- ◆ Removing and installing
=> Page 81
- ◆ In cover for interior light operating unit
(from vehicle identification no. 8DZYA200001)

- ♦ Removing and installing
=> Page 82

2.3 - Mobile phone



1 Mobile phone in handset cradle

- ♦ In centre console
- ♦ Removing and installing
=> Page 75
- ♦ In centre armrest
- ♦ Removing and installing
=> Page 75

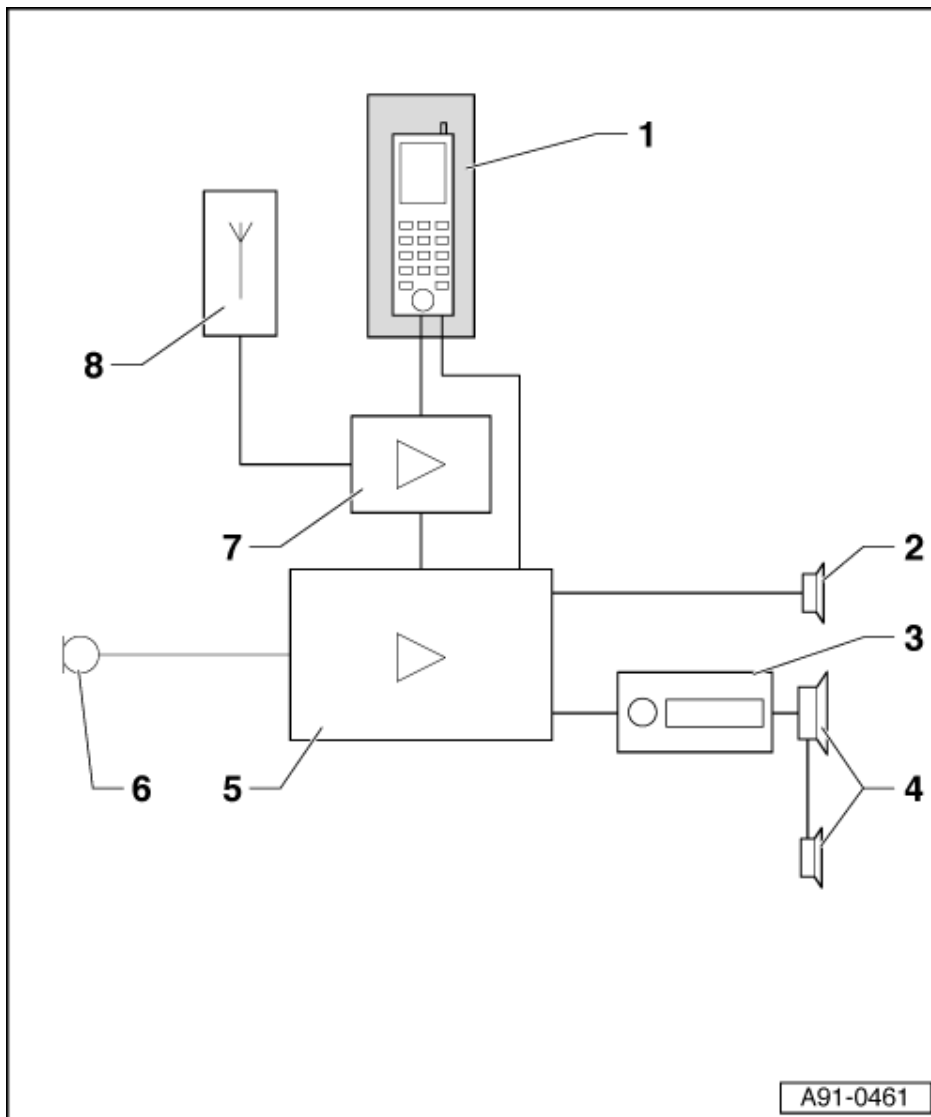
2 Hands-free loudspeaker

- ♦ In front driver's door.
- ♦ Removing and installing
=> Page 83
- ♦ Only for vehicles with BOSE sound system in conjunction with telephone
- ♦ For all other vehicles, the loudspeakers in the front door trims are used.

3 Radio

- ♦ Installed in centre console
- ♦ Removing and installing

=> Page 42



4 The mid-range/treble loudspeaker and bass loudspeaker

- ◆ In front left door trim
- ◆ Removing and installing

=> Page 44

5 Control unit for operating electronics, telephone (interface)

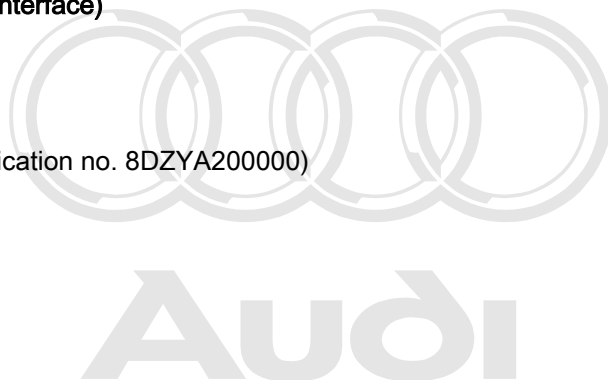
- ◆ Under left rear seat bench
- ◆ Removing and installing

=> Page 80

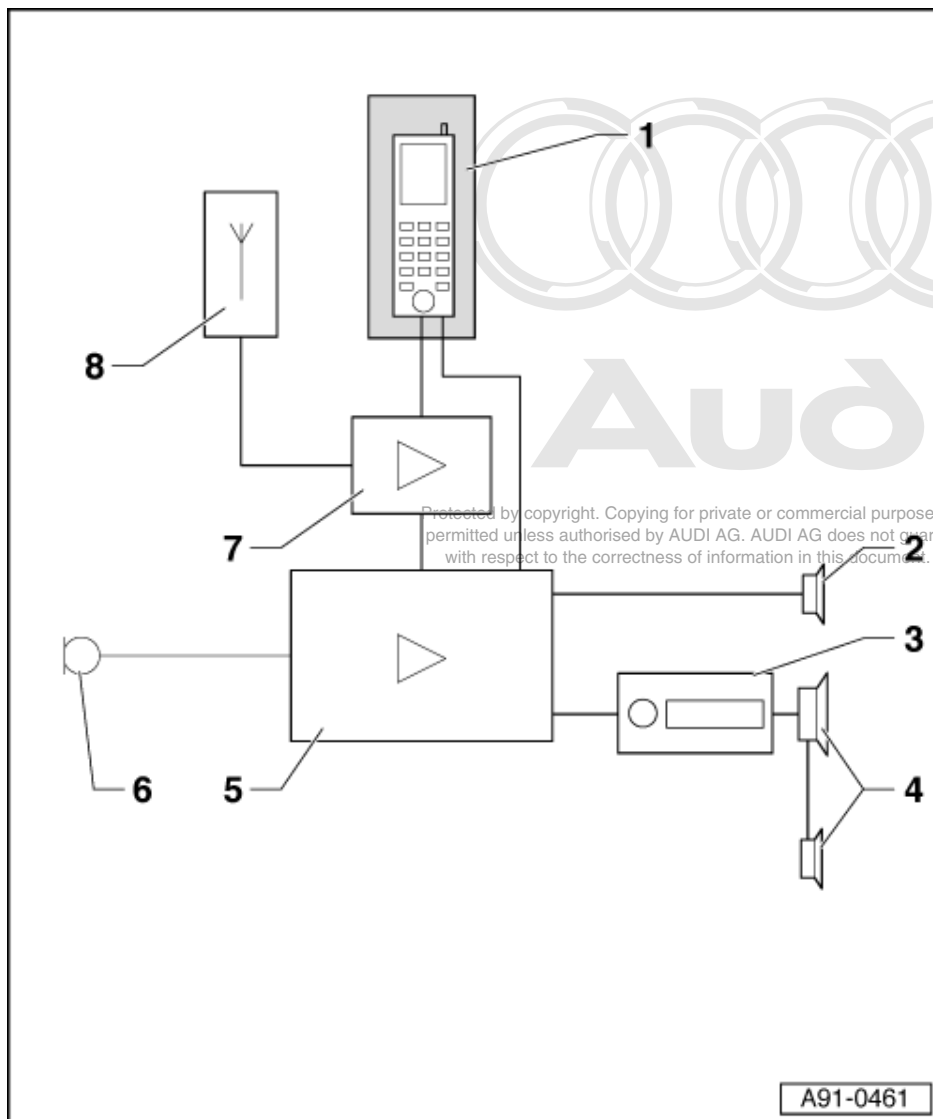
6 Hands-free microphone

- ◆ In A-pillar on driver's side (up to vehicle identification no. 8DZYA200000)
- ◆ Removing and installing
- ◆ In cover for interior light operating unit (from vehicle identification no. 8DZYA200001)
- ◆ Removing and installing

=> Page 82



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7 Amplifier for mobile phone (compensator)

Saloon:

- ♦ Below rear shelf
- ♦ Removing and installing
=> Page 78

Avant:

- ♦ Behind left storage compartment in luggage compartment
- ♦ Removing and installing
=> Page 79

8 Aerial

Saloon:

- ♦ Rod aerial in rear left wing
- ♦ Removing and installing
=> Page 84

Avant:

- ♦ Roof aerial on roof
- ♦ Removing and installing
=> Page 62

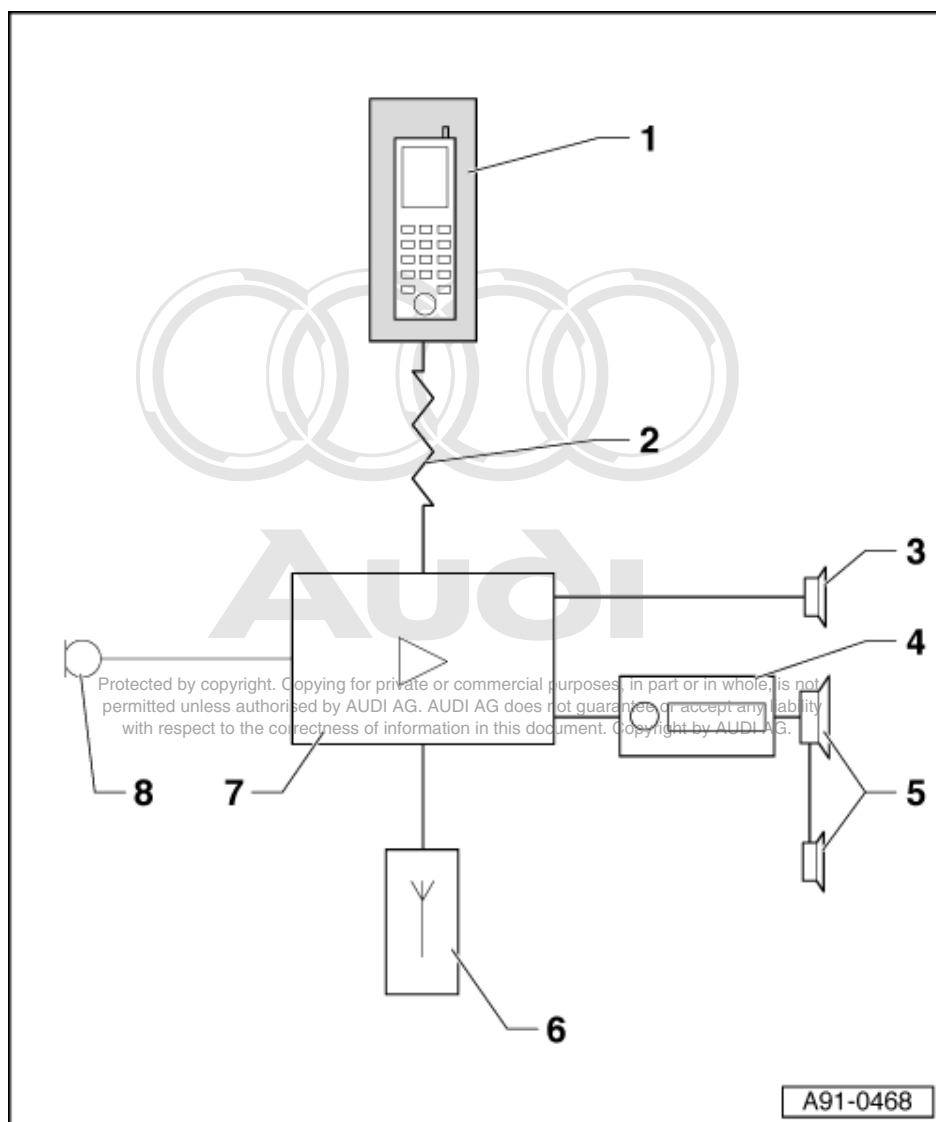
2.4 - Preparing installation of mobile phone (as of 7/97)

- ♦ Rod aerial (Saloon) or roof aerial (Avant)
- ♦ Wiring harness for telephone system
- ♦ In the standard radio equipment, the loudspeakers in the driver's door trim are used as telephone loudspeakers.
- ♦ In the case of telephone without radio or radio with BOSE sound system, a separate hands-free loudspeaker is installed in the driver's door.

Note:

The hands-free microphone must be retrofitted.

2.5 - Preparing installation of mobile phone (as of 4/98)



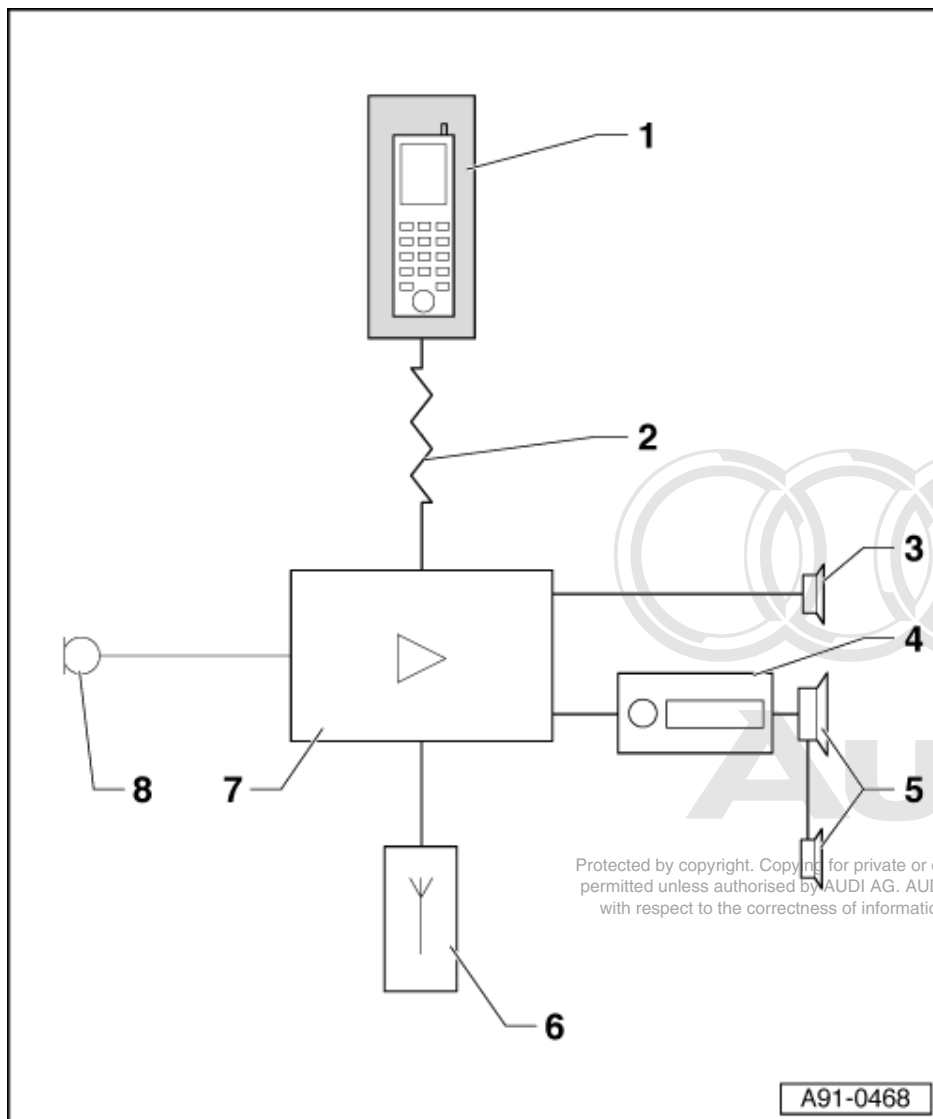
- 1 Safety bracket specifically for mobile phone
- 2 System cable (spiral cable)

Note:

System cable and safety bracket are retrofit parts.

3 Hands-free loudspeaker

- ♦ In front driver's door.
- ♦ Removing and installing
=> Page 83
- ♦ Only for vehicles with BOSE sound system in conjunction with telephone
- ♦ For all other vehicles, the loudspeakers in the front door trims are used.



4 Radio

- ♦ Installed in centre console
- ♦ Removing and installing
=> Page 42

5 The mid-range/treble loudspeaker and bass loudspeaker

- ♦ In front left door trim
- ♦ Removing and installing
=> Page 44

6 Aerial

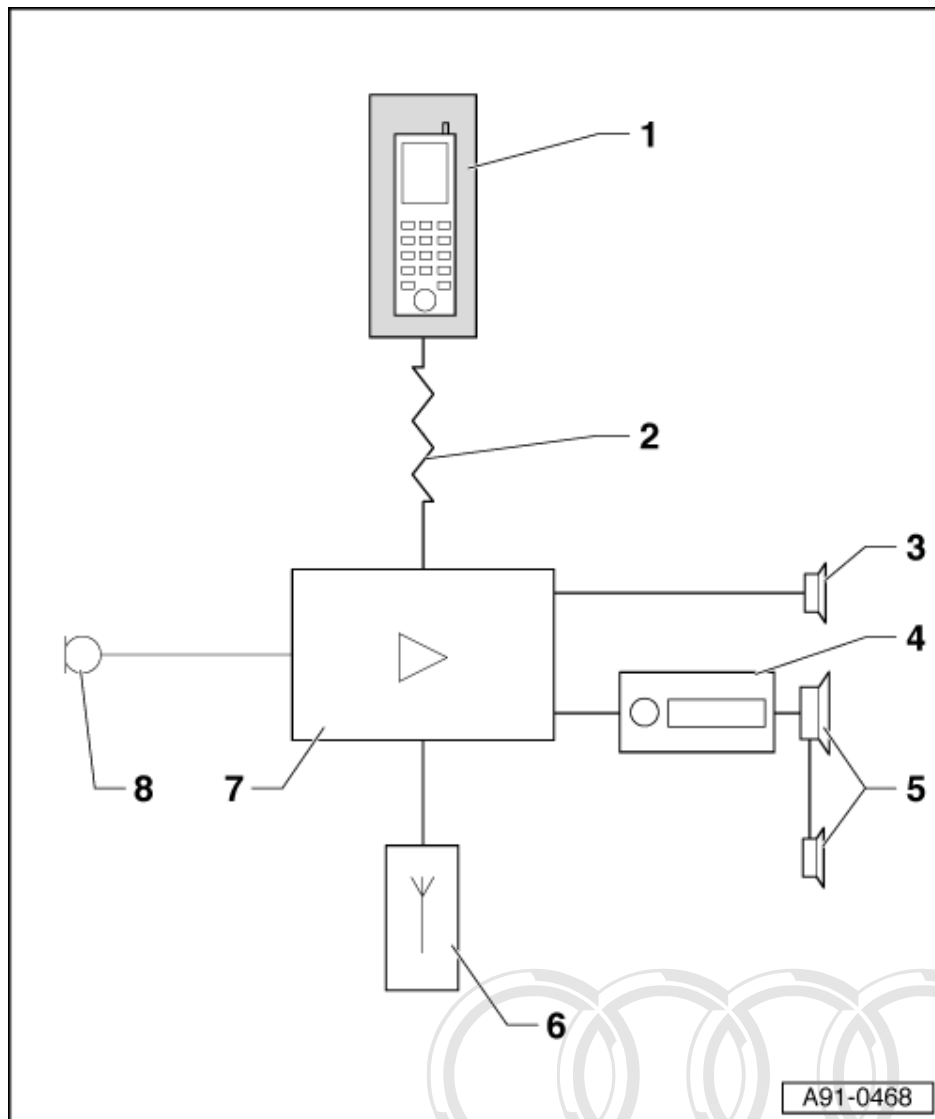
- Saloon:
 - ♦ Rod aerial in rear left wing
 - ♦ Removing and installing
=> Page 84
- Avant:
 - ♦ Roof aerial on roof
 - ♦ Removing and installing

=> Page 62

7 Control unit for operating electronics, telephone (interface)

- ◆ Under left rear seat bench
- ◆ Removing and installing

=> Page 80



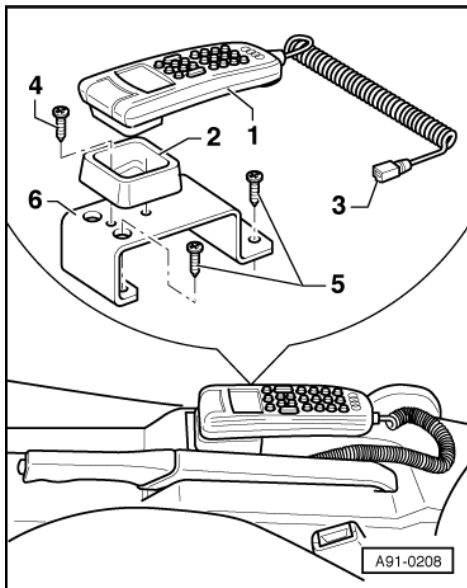
8 Hands-free microphone

- ◆ In A-pillar on driver's side (up to vehicle identification no. 8DZYA200000)
- ◆ Removing and installing
=> Page 81
- ◆ In cover for interior light operating unit (from vehicle identification no. 8DZYA200001)
- ◆ Removing and installing
=> Page 82

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2.6 - Removing and installing handset with bracket in centre console

Removing



- -> Remove handset -1- from holder -2- and detach connector from handset -3-.
- Remove cross-head screws -4- (2 Nm) and detach handset holder -2-.
- Remove cross-head screws -5- (4 Nm), detach bracket -6- and unclip telephone wiring harness connector.

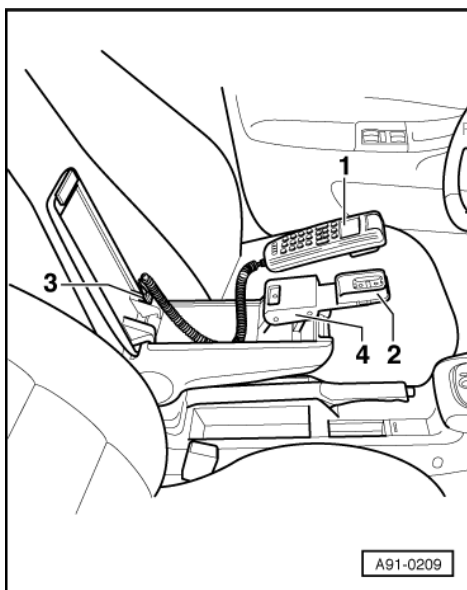
Installing:

- Installation is performed in the reverse sequence to removal.

Note:

Ensure correct seating of connector.

2.7 - Removing and installing handset with bracket in centre armrest



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- Open centre armrest panel.
- -> Remove handset -1- from cradle -2- and detach connector from handset -3- on hinge of centre armrest panel (for permanent installation only).
- Remove the bracket together with the handset cradle -4- in the centre armrest and disconnect the telephone wiring harness connector.

=> General Body Assembly, Interior; Repair group 68; Storage compartments/covers; Removing and installing centre console lift for telephone/mobile phone Storage compartments/covers Removing and installing centre console lift for telephone/mobile phone

Installing:

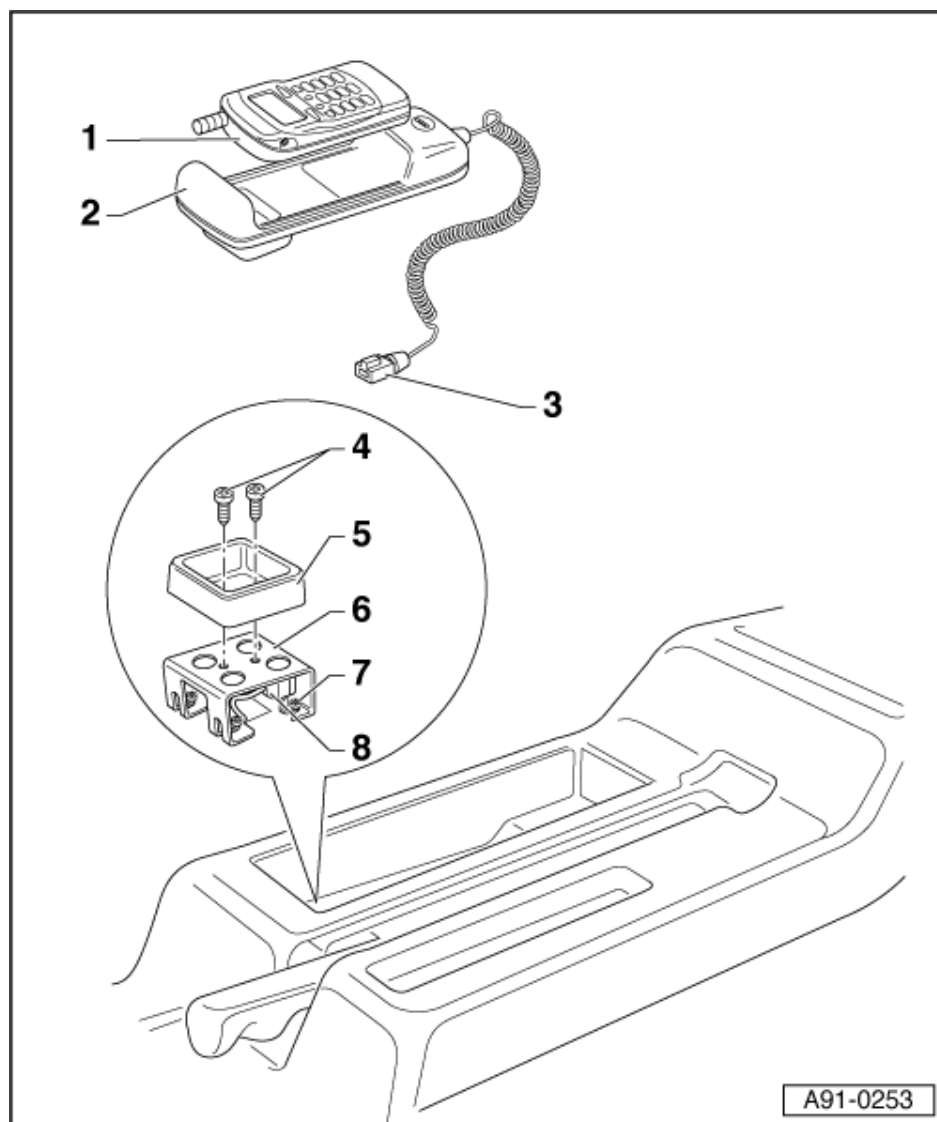
- Installation is performed in the reverse sequence to removal.

Note:

Ensure correct seating of connector.

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2.8 - Removing and installing mobile phone with bracket in centre console



Removing

- Remove mobile phone -1- from handset cradle -2- and disconnect the mobile phone connector -3- from the handset cradle -6-.
- Remove cross-head screws -4- (2 Nm) and detach handset holder -5-.
- Remove cross-head screws -7- (2.5 Nm), detach bracket -6- and unclip telephone wiring harness connector-8-.

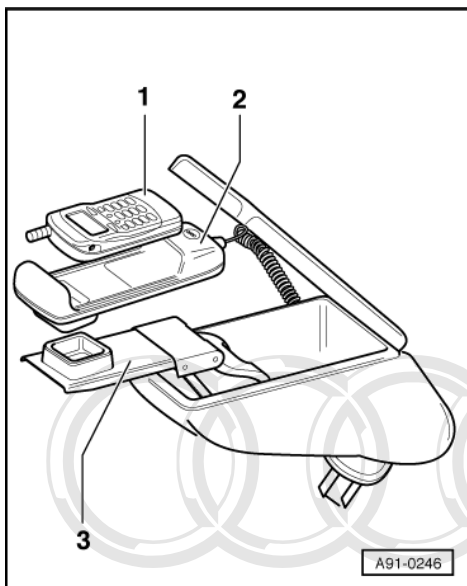
Installing:

- Installation is performed in the reverse sequence to removal.

Note:

Ensure correct seating of connector.

2.9 - Removing and installing mobile phone with bracket in centre armrest



- Open centre armrest panel.
- -> Remove mobile phone -1- from handset cradle (handy phone) -2- and detach connector from mobile phone.
- Remove the bracket together with the handset cradle -3- in the centre armrest and disconnect the telephone wiring harness connector.

=> General Body Assembly, Interior; Repair group 68; Storage compartments/covers; Removing and installing centre console lift for telephone/mobile phone; Storage compartments/covers Removing and installing centre console lift for telephone/mobile phone

Installing:

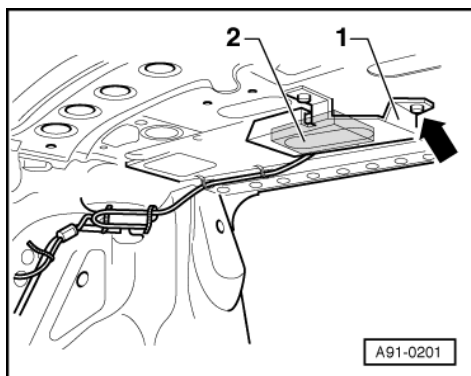
- Installation is performed in the reverse sequence to removal.

Note:

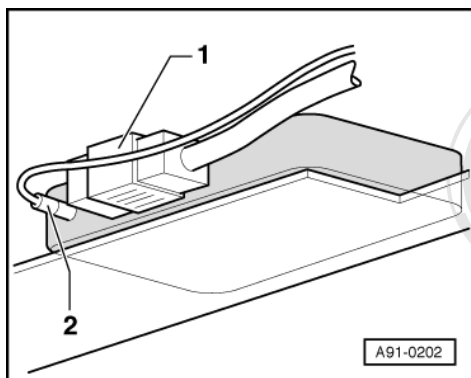
Ensure correct seating of connector.

2.10 - Removing and installing transmitter/receiver unit -Saloon-

Removing



- -> From the luggage compartment, remove securing bolt -arrow- (2 Nm) from bracket -1-; the two other bolts are only loosened.
- Then remove the transmitter/receiver unit -2- together with the bracket.



- -> Disconnect electrical connector -1- and aerial connection -2-.
- Loosen securing bolts (2 Nm) at bracket in order to detach transmitter/receiver unit from bracket.

Installing:

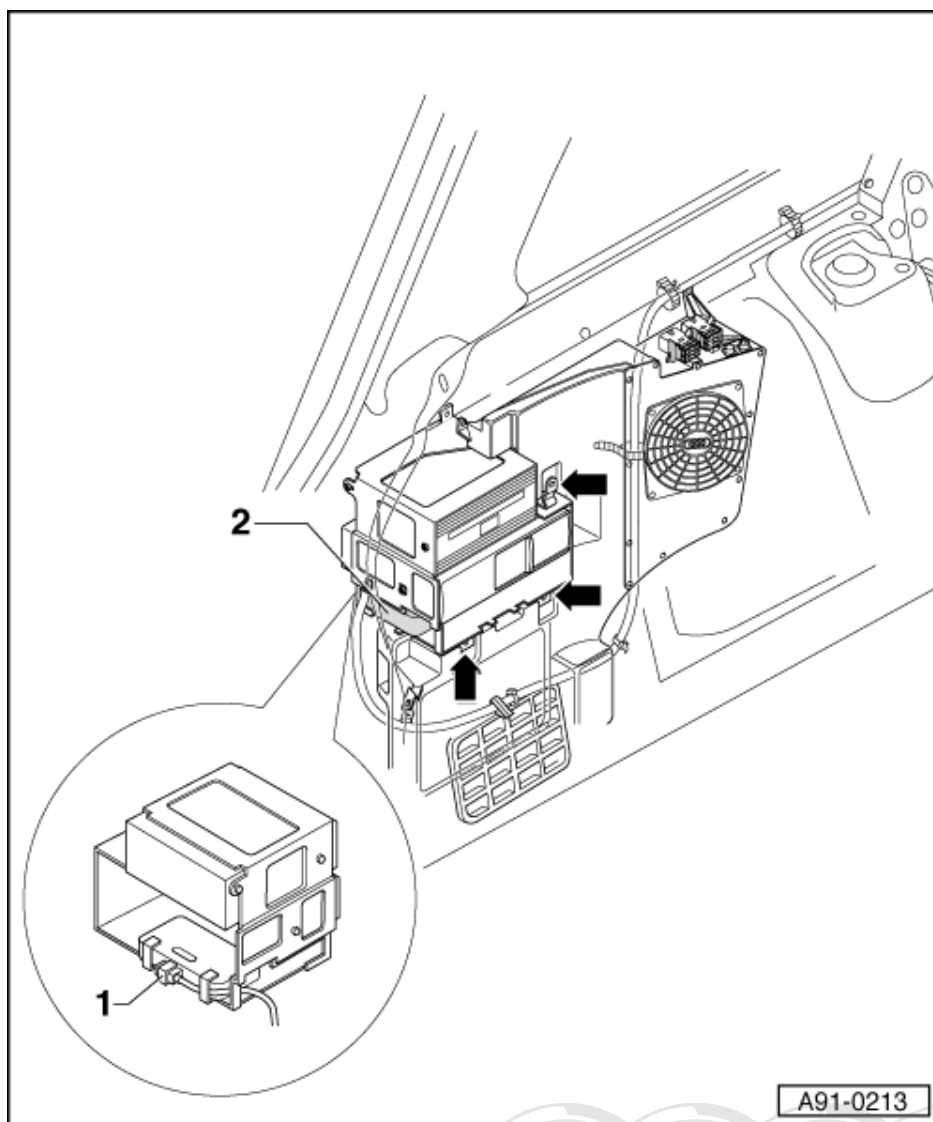
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- Installation is performed in the reverse sequence to removal.

Notes:

- ♦ Ensure correct seating of connector.
- ♦ Tighten aerial connection firmly in order to prevent interference (damping effect).

2.11 - Removing and installing transmitter/receiver unit -Avant-



Removing

- Open left storage compartment in luggage compartment.
- Remove the three securing bolts -arrows- (2 Nm) from the package holder (mounting frame).
- Disconnect electrical connector -1- and the aerial connection.
- Remove securing bolts (2 Nm) for transmitter/receiver unit -2- at bracket.

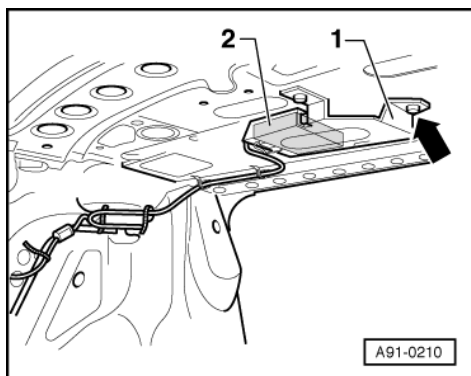
Installing:

- Installation is performed in the reverse sequence to removal.

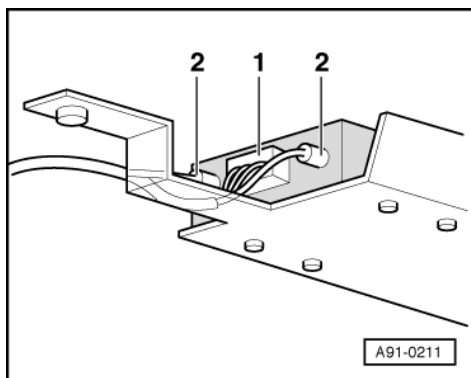
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2.12 - Removing and installing amplifier for mobile phone (compensator) -Saloon-

Removing



- -> From the luggage compartment, remove securing bolt -arrow- (2 Nm) from bracket -1-; the two other bolts are only loosened.
- Then remove the compensator -2- together with the bracket.



- -> Disconnect electrical connector -1- and aerial connections -2-.
- Remove securing bolts (2 Nm) at bracket in order to detach compensator from bracket.

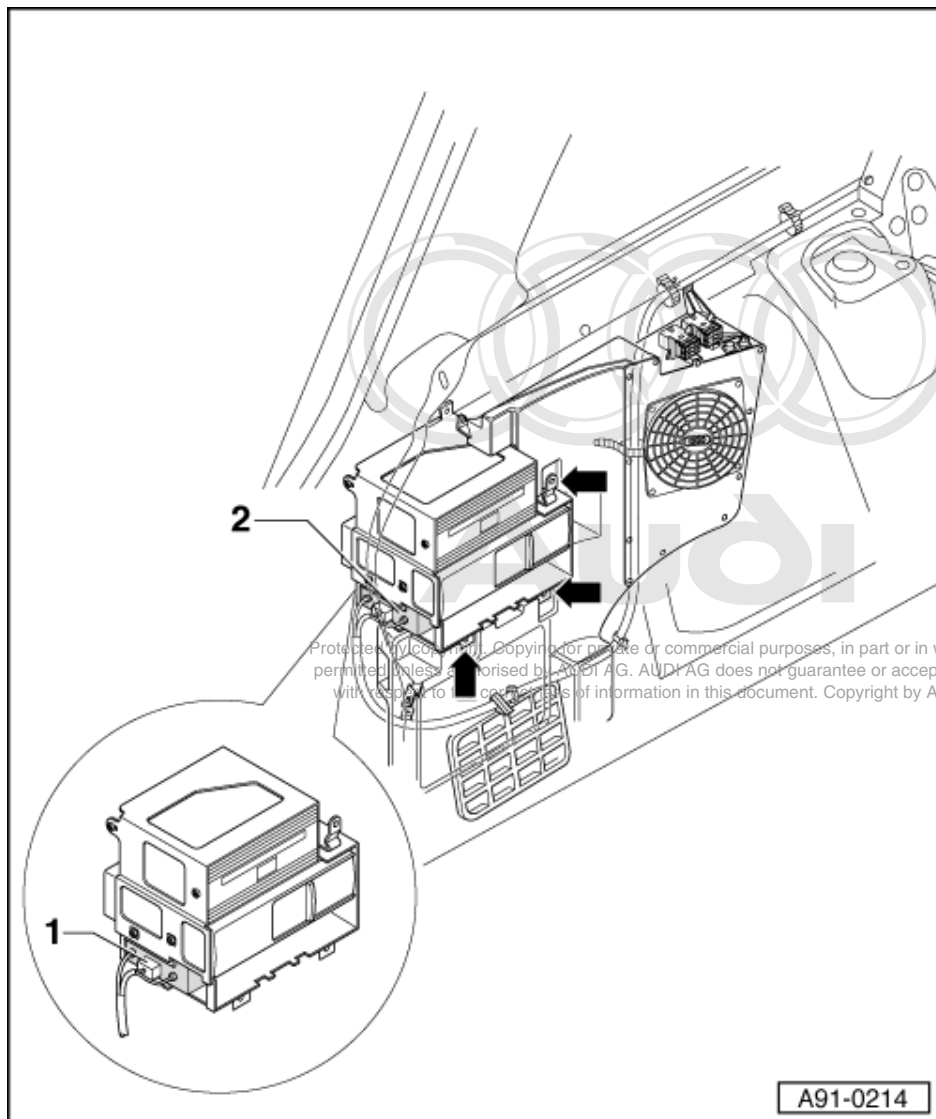
Installing:

- Installation is performed in the reverse sequence to removal.

Notes:

- ♦ Ensure correct seating of connector.
- ♦ Tighten aerial connection firmly in order to prevent interference (damping effect).

2.13 - Removing and installing amplifier for mobile phone (compensator) -Avant-



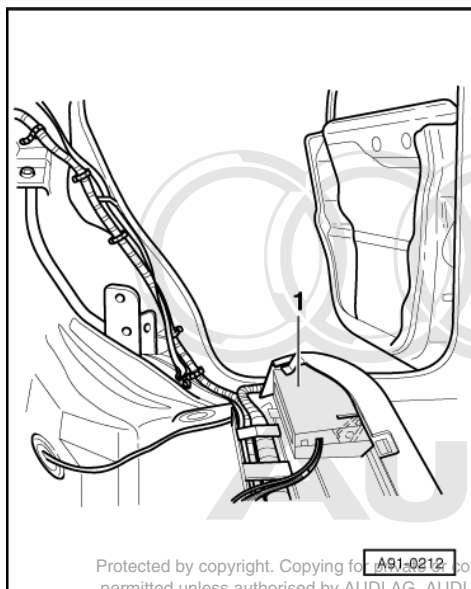
Removing

- Open left storage compartment in luggage compartment.
- Remove the three securing bolts -arrows- (2 Nm) from the package holder (mounting frame).
- Disconnect electrical connector -1- and the aerial connection.
- Detach mounting (2 Nm) for compensator -2- at bracket.

Installing:

- Installation is performed in the reverse sequence to removal.

2.14 - Removing and installing control unit for operating electronics and telephone (interface)



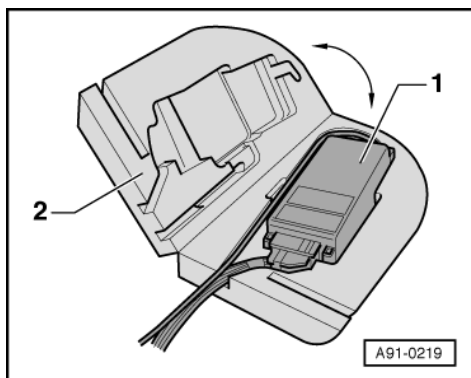
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- -> The control unit for the operating electronics -1- is installed on the left side underneath the rear seat bench.

Removing

- Remove rear bench seat.

=> General Body Assembly, Interior; Repair group 72; Rear seats; Removing and installing rear seat bench
Rear seats Removing and installing rear seat bench



- -> Open the assembly box -2- above the operating electronics control unit -1-.
- Detach connectors from control unit.

Installing:

- Installation is performed in the reverse sequence to removal.

2.15 - Removing and installing interface for multi-function steering wheel up to model year 99

Note:

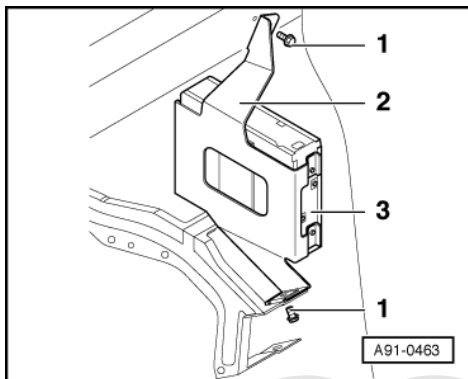
The interface is only installed in vehicles fitted with a multi-function steering wheel, radio navigation system (screen navigation) and mobile phone or telephone (permanent installation).

The interface is located behind the driver's storage compartment.

Removing

- Remove storage compartment on driver's side

=> General Body Assembly, Interior; Repair group 68; Storage compartments, covers; Removing driver's storage compartment Storage compartments, covers Removing driver's storage compartment



- -> Detach connector from control unit -2-
- Unscrew both securing bolts -1- and detach control unit -2- together with bracket -4- from dash panel cross-member -3-.

Installing:

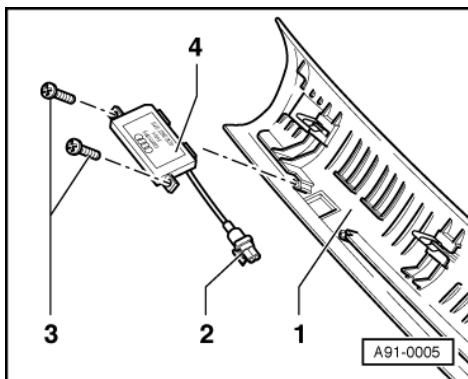
- Installation is carried out in reverse sequence to removal.

2.16 - Removing and installing hands-free microphone (up to vehicle identification no. 8DZYA200000)

Removing

- Remove A-pillar trim on driver's side.

=> General Body Assembly, Interior; Repair group 70; Trims; Removing and installing upper A- pillar trim Trims Removing and installing upper A- pillar trim





- -> Detach electrical connector -2- and remove trim -1- from vehicle together with the hands-free microphone -4-.
- Remove securing screws -3- and remove the microphone -4- from the trim -1-.

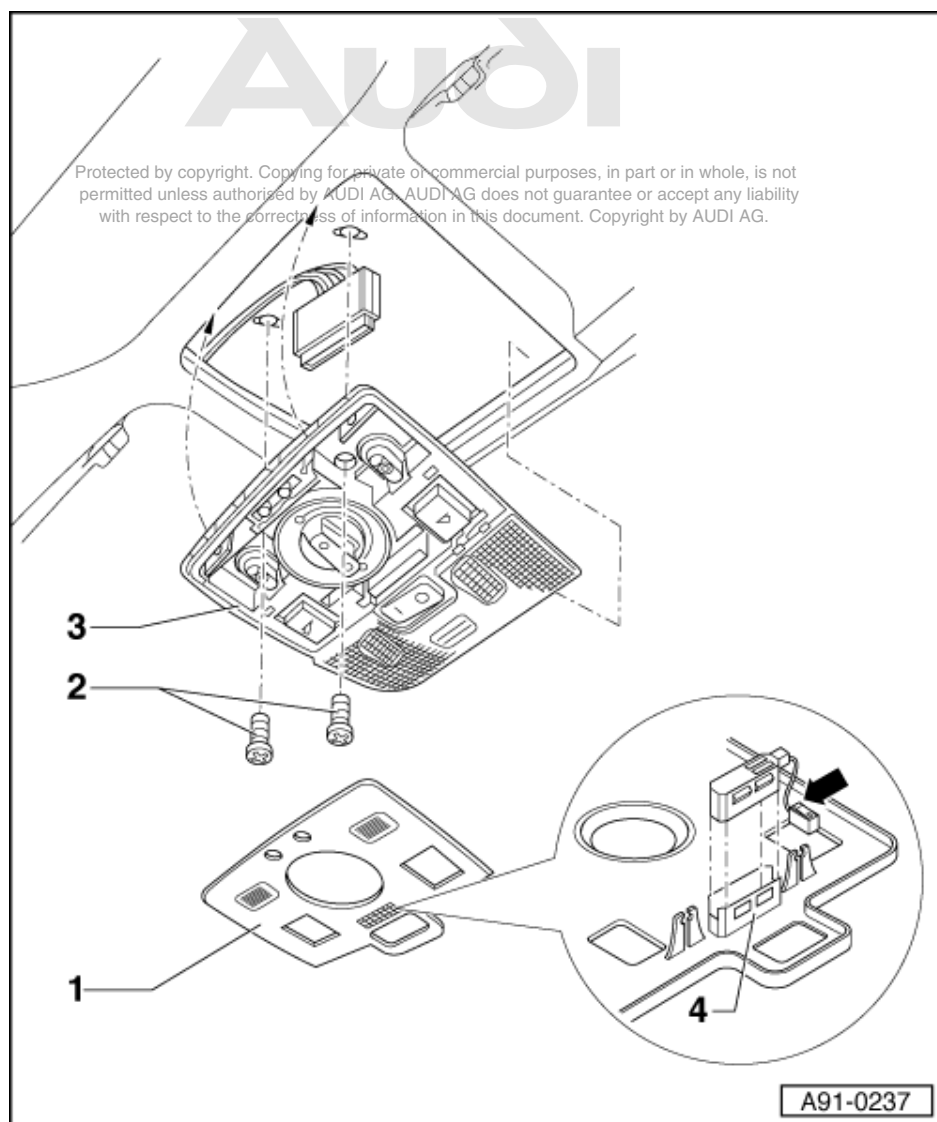
Installing:

- Installation is performed in the reverse sequence to removal.

Note:

When installing the trim, ensure that none of the wires are trapped.

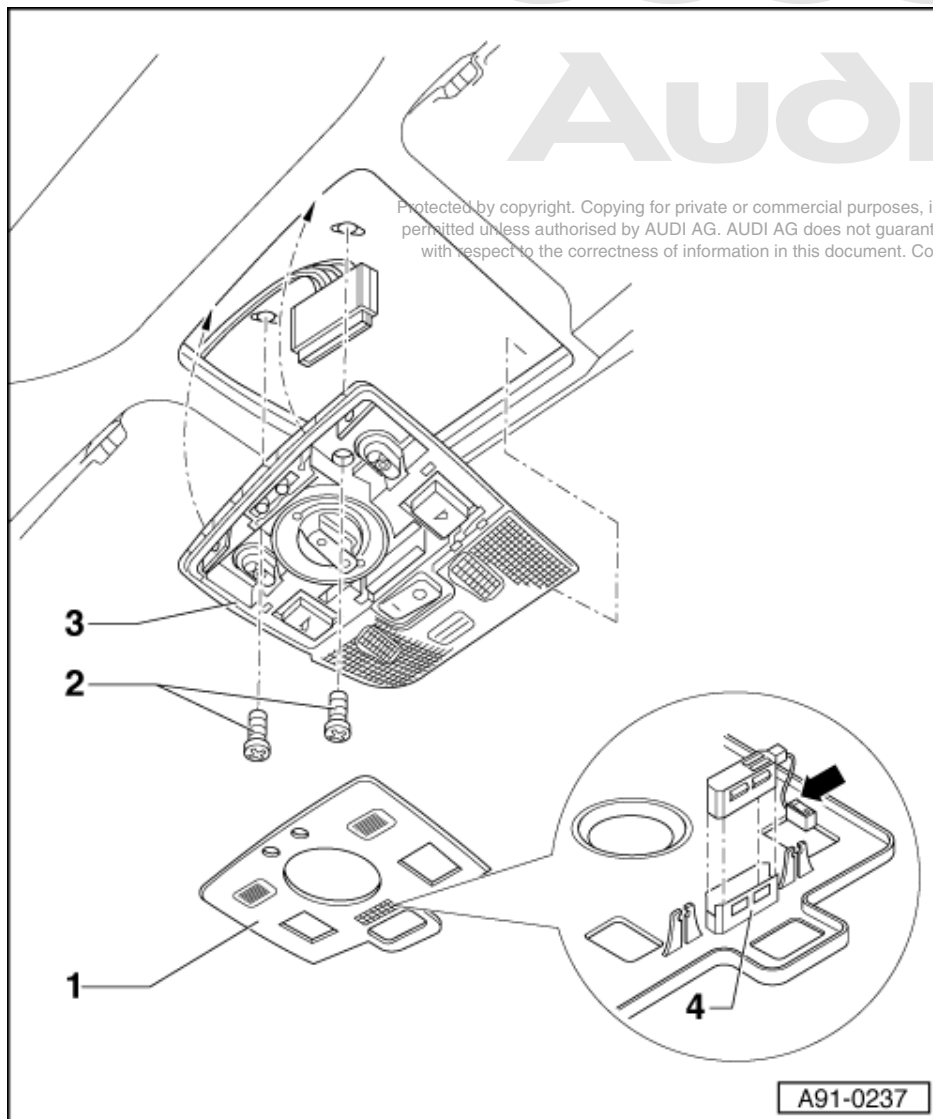
2.17 - Removing and installing hands-free microphone (from vehicle identification no. 8DZYA200001)



Removing

- Carefully lever off cover of interior light operating unit -1-.
- Unscrew both cross-head screws -2- from operating unit -3-.
- From the windscreen, you can carefully remove the operating unit by tipping it downwards in order to detach connector (arrow) for hands-free microphone from moulding headliner.

- The four retainer tabs on the cover of the interior light operating unit must be pressed into the microphone mounting -4- in order to be able to remove the microphone.



Note:

Ensure that the hands-free microphone is correctly inserted. The section of the hands-free microphone with the connection cable must be on the right in LHD vehicles (arrow) and on the left in RHD vehicles.

Installing:

- Installation is performed in the reverse sequence to removal.

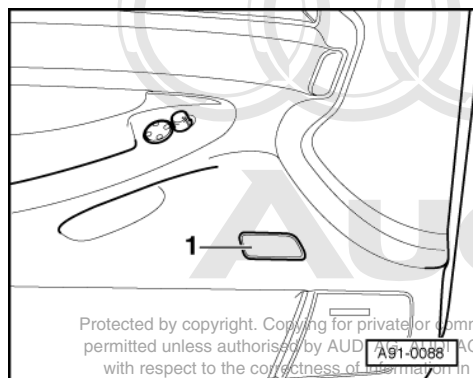
2.18 - Removing and installing hands-free loudspeaker

Removing

- Remove front door trim.

=> General Body Assembly; Repair group 70; Front door trims; Removing and installing front door trim Front door trims Removing and installing front door trim

- Detach connectors from electric window lifers and exterior rear-view mirror and remove door opener.



- -> Carefully lift soundproofing mat and disconnect electrical connector from hands-free loudspeaker -1-.
- Detach door trim, remove securing bolts and remove loudspeaker from trim.

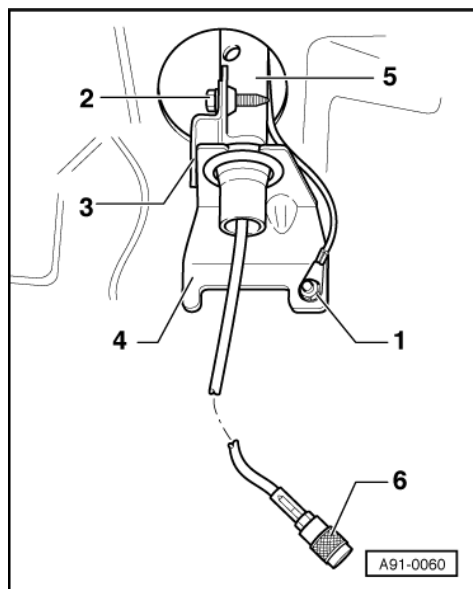
Installing:

- Installation is performed in the reverse sequence to removal.

2.19 - Removing and installing rod aerial -Saloon-

Removing

- Open left storage compartment in luggage compartment.



- -> Remove securing screw (earth point) -1-.
- Release screw -2- at anti-twist element -3-.
- Detach electrical connector -6- from aerial lead.
- Detach aerial bracket -4- and anti-twist element -3-.
- Remove rod aerial -5- from outside.

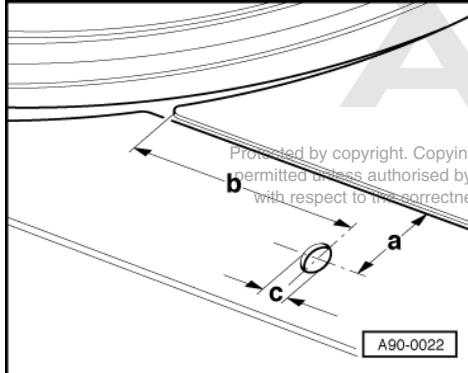
Installing:

- Install in reverse sequence to removal.

2.20 - Retrofitting rod aerial

Note:

If an aerial is retrofitted, only original replacement parts from the V.A.G range should be used, since this is the only way to achieve problem-free installation and optimum reception.



- -> Mark the dimensions for the aerial bore on the rear left side panel with a felt-tip or fibre-tipped pen as shown.
a = 65 mm
b = 165 mm
c = 26.5 mm
- Carefully drill aerial hole and deburr.
- Extract drillings and filings and carefully remove residue.
- Repair paintwork around hole and restore corrosion protection if necessary.

=> Workshop Manual for vehicle paintwork

=> Binder: Surface treatment/chemical materials

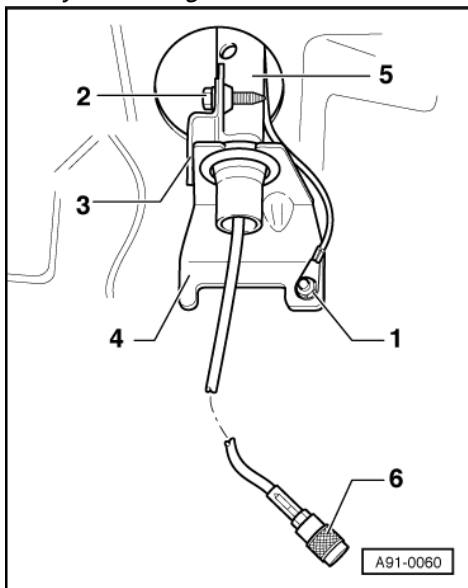
- Install aerial.

- Install connection lines and then connect.

=> Current Flow Diagrams, Electrical Fault-finding and Fitting Locations

Note:

Always ensure good aerial earth connection to avoid interference.





- -> Support the earth connection -1- with a toothed washer.
- Protect rod aerial against twisting with anti-twist element -2-.

3 - Navigation system I (route navigation) (up to CW 28/99)

3.1 - Navigation system I (route navigation) (up to CW 28/99)

Important:

Disconnect battery earth strap before working on electrical system.

Activate the service mode of telematics control unit before disconnecting battery. => Radio, Telephone and Navigation System Self-diagnosis; Repair group 01; Telematics Self-diagnosis; Adaption

Notes:

- ♦ On vehicles with coded radio, obtain anti-theft code before disconnecting battery.
- ♦ Activate the service mode of telematics control unit before disconnecting battery.
- ♦ If the battery is reconnected, please ensure that the vehicle equipment (radio, clock, electric window lifters, engine) is activated as described in operating instructions and the service mode of telematics control unit is deactivated.

3.2 - General information on Navigation System I

Equipment features:

- ♦ Coupling navigation system and use of satellite navigation system data.
- ♦ User guidance when entering destination and selecting function via display in the dash panel insert.
- ♦ Active destination guidance by driving recommendations via arrow symbols on dash panel insert display.
- ♦ Acoustic driving recommendations.
- ♦ Display of current road name.
- ♦ Display of distance from current location to destination.

Function description

Under certain conditions, the Audi navigation system processes the signals from the world-wide satellite navigation system GPS (Global Positioning System).

After initial commissioning or when transporting the vehicle by rail, ferry or other forms of transport, the vehicle location is determined by means of signals from the satellite navigation system GPS or by manual entry of the new location.

From this point in time, the navigation system is operational and functions according to the principle of coupling navigation.

The location of the vehicle is continuously updated by means of a magnetic field sender (electronic compass) and the rear axle wheel sensor data from the ABS control unit.

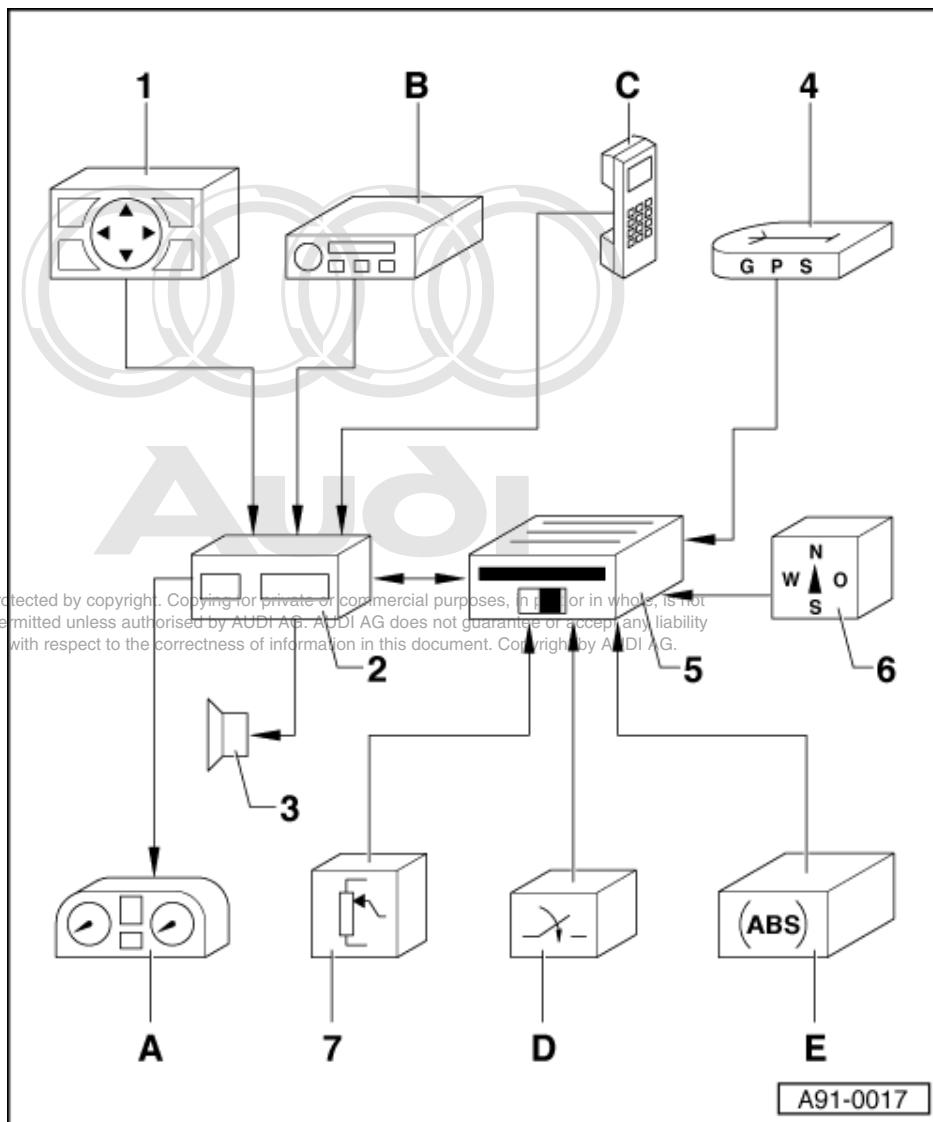
The system uses these measured values to determine the direction of travel and the distance travelled by the vehicle. These values are compared with the road maps stored on the navigation CD, i.e. the vehicle location is determined by the comparison of measured values and stored data.

Corrections are made in the navigation system control unit for discrepancies between the measured position (magnetic field sender values and the ABS data) and the theoretical position (location on the stored road maps).

If the vehicle is not in one of the areas covered by the navigation CD (country, town or road), the display "OFF-ROAD" or "OFF MAP" appears on the dash panel insert display. Only the distance as the crow flies and the

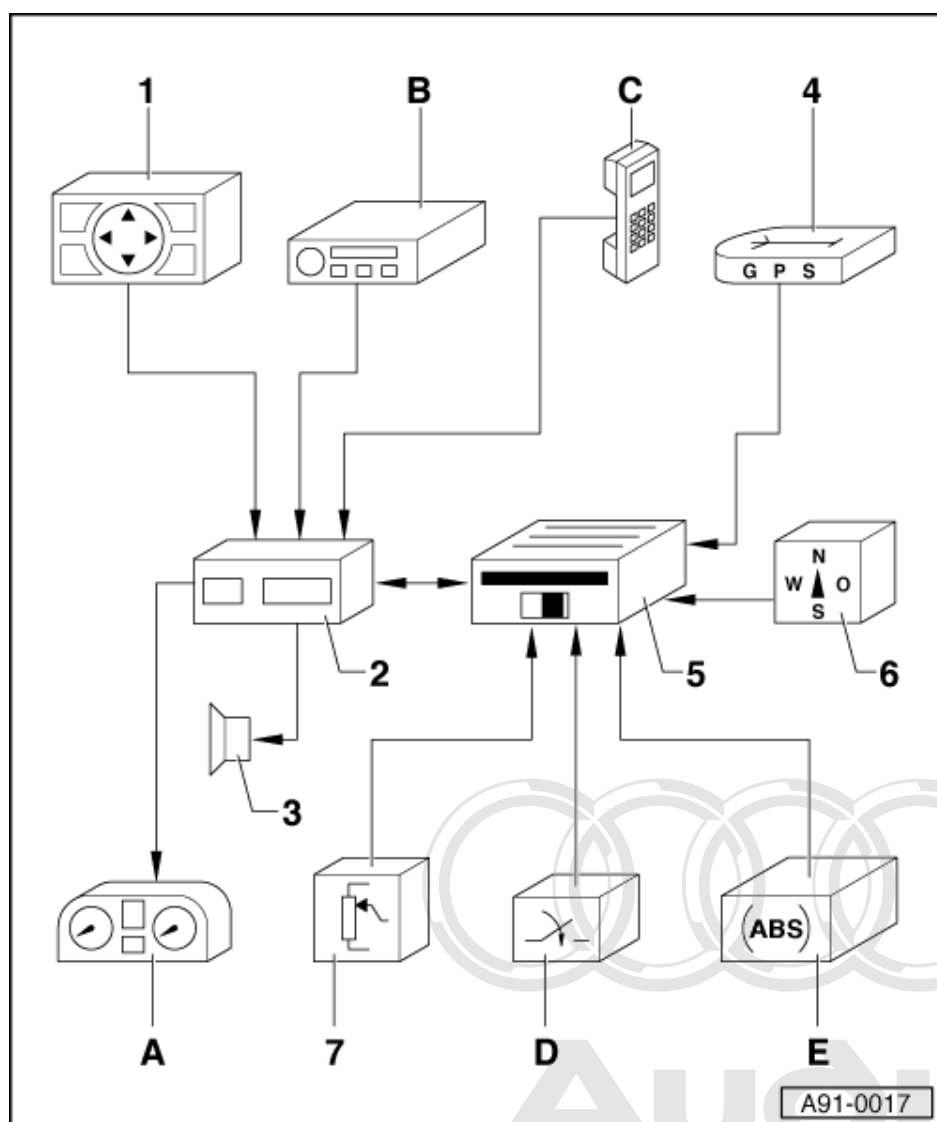
direction of the destination are displayed as, in this case, the navigation system is not able to compare the GPS signals and vehicle measured values with stored data.

3.3 - Overview of functions



Basic components

- 1 Operating unit for Navigation System -E199
- 2 Control unit for navigation system operating controls -J402
- 3 Hands-free loudspeaker
- 4 GPS navigation system aerial -R50
(Saloon only)
Aerial for
radio/telephone/navigation operation (GPS) -R52-
(Avant only)
- 5 Control unit for navigation system with CD drive -J401
- 6 Magnetic field sender (compass) -G197
- 7 Shunt resistor for rear window heating -N219
(Saloon only)



Auxiliary components

A - Dash panel insert display

For display of driving recommendations and/or radio frequency

B - Radio system

Supplies radio frequency data for display

C - Telephone system

Hands-free operation possible via communal loudspeaker

D - Reversing light switch -F4

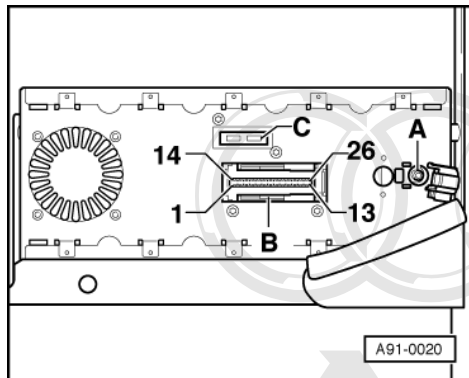
Triggers reversing signal

E - ABS control unit -J104

Triggers rear axle wheel sensor signals

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3.4 - Connectors on rear of the control unit for navigation system with CD drive -J401-



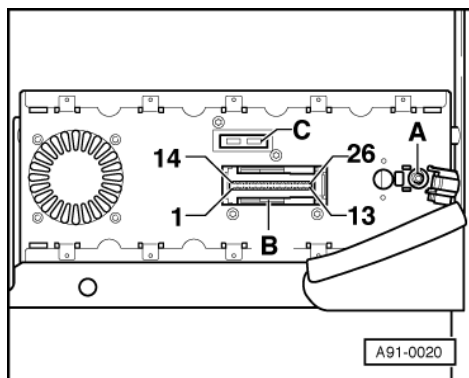
-> Connection for aerial wire -A-

Connection for 26-pin connector -B-

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Pin assignment

- 1 - Terminal 31
- 2 - Screen
- 3 - Screen
- 4 - Signal voltage to shunt resistor (Saloon)
- 5 - Sine signal from magnetic field pickup
- 6 - Signal earth from magnetic field pickup
- 7 - Speed signal from left speed sensor
- 8 - Signal from reversing light switch
- 9 - Data signal (RxD)
- 10 - Control signal (RTS)
- 11 - not used
- 12 - Mute signal

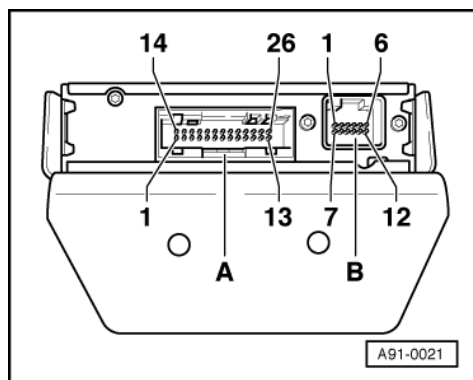


- 13 - AF language output signal (AF+)
- 14 - Terminal 30
- 15 - Terminal 15
- 16 - Screen (Saloon), rear window heating (Avant)
- 17 - Signal voltage to shunt resistor (Saloon)
- 18 - Cosine signal from magnetic field pickup
- 19 - Power supply to magnetic field pickup
- 20 - Speed signal from right speed sensor
- 21 - Screen
- 22 - Data signal (TxD)
- 23 - Control signal (CTS)
- 24 - Screen
- 25 - AF screen



26 - AF language output signal (AF-)

3.5 - Connectors on control unit for navigation system operating controls -J402-

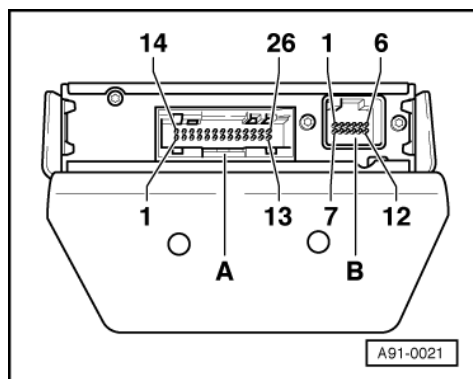


-> Connection for 26-pin connector -A-

Pin assignment:

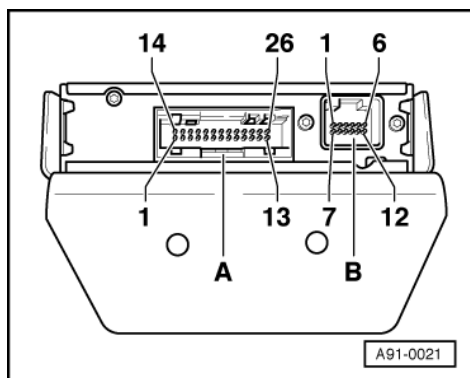
- 1 - Terminal 31
- 2 - Loudspeaker (-)
- 3 - Loudspeaker (+)
- 4 - not used
- 5 - Earth for operating unit
- 6 - Button section 1 for operating unit
- 7 - Button section 2 for operating unit
- 8 - Operating unit lighting
- 9 - not used
- 10 - not used
- 11 - not used
- 12 - Telephone AF screen (not used)

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- 13 - Telephone AF (-)
- 14 - Terminal 30
- 15 - Terminal 15
- 16 - Terminal 58
- 17 - GALA signal
- 18 - Enable signal to display
- 19 - Clock signal to display
- 20 - Data signal to display
- 21 - AF mute
- 22 - Enable signal from radio
- 23 - Clock signal from radio
- 24 - Data signal from radio
- 25 - Telephone mute signal

26 - Telephone AF (+)



-> Connection for 12-pin connector -B-

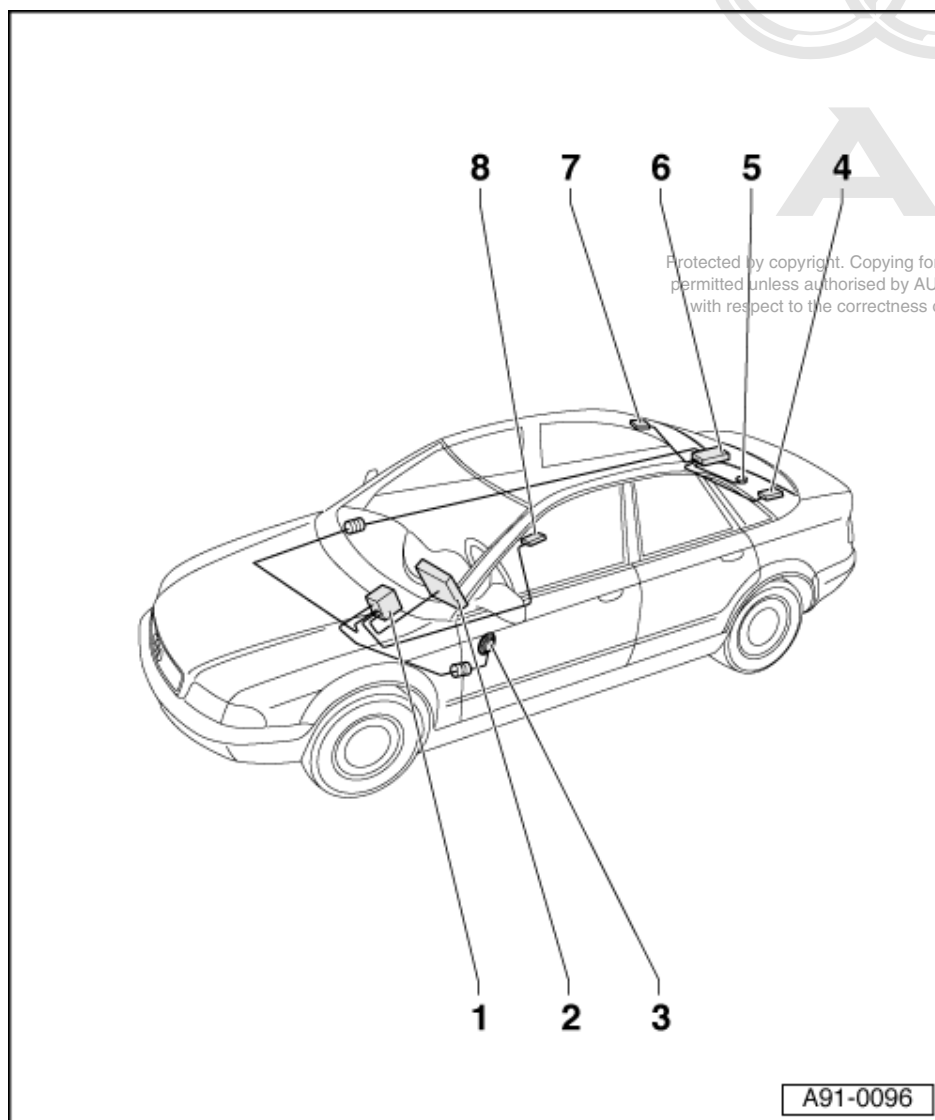
Pin assignment:

- 1 - Screen
- 2 - Data signal (RxD)
- 3 - Data signal (TxD)
- 4 - Control signal (RTS)
- 5 - Control signal (CTS)
- 6 - not used
- 7 - AF language output signal (AF+)
- 8 - AF language output signal (AF-)
- 9 - AF screen
- 10 - Mute signal
- 11 - not used
- 12 - not used

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3.6 - Navigation System I - general overview



Note:

Only the saloon is being illustrated. Component groups relating to the Avant are mentioned separately.

1 Control unit for navigation system operating controls -J402

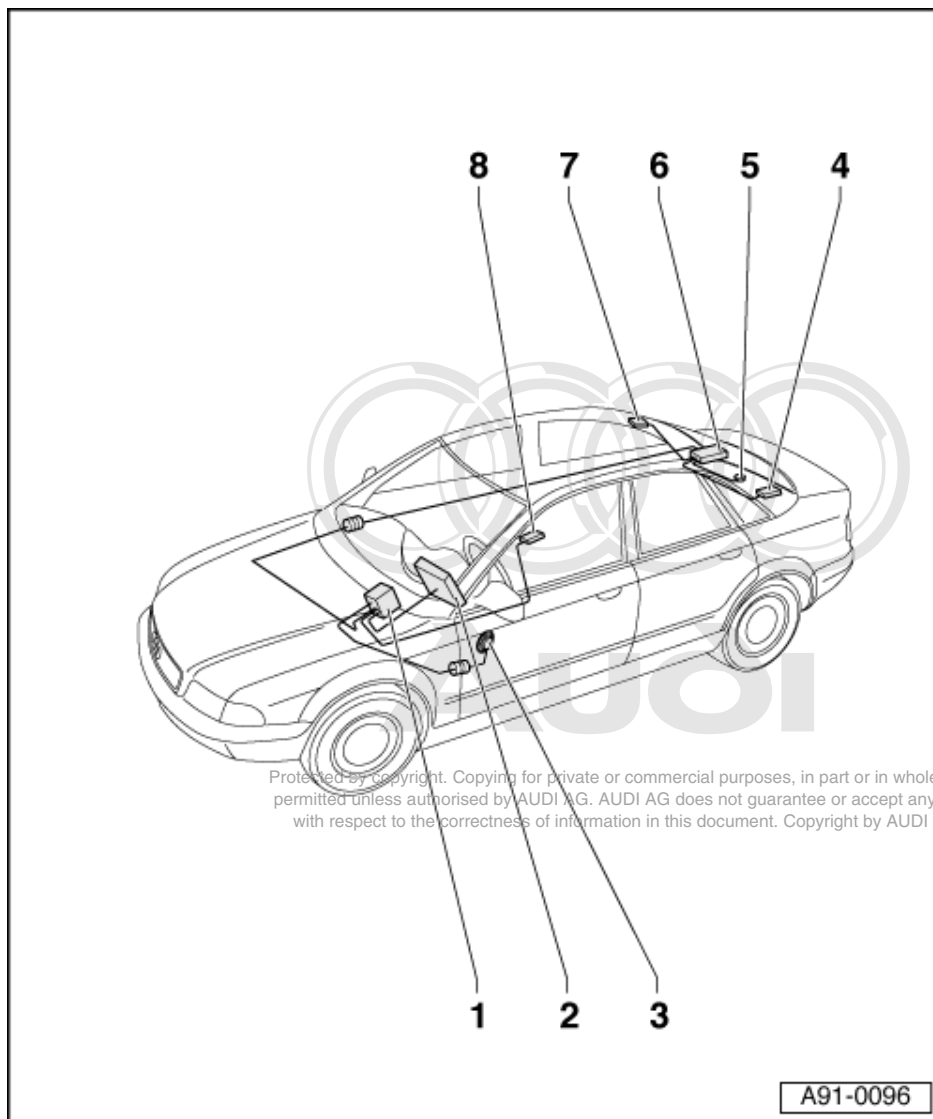
- ◆ Attached to centre console bracket beneath driver's storage compartment.
- ◆ Removing and installing
=> Page **135**

2 Dash panel insert display

- ◆ In dash panel
- ◆ Removing and installing

=> Electrical System; Repair group 90; Servicing dash panel insert up to model year 00; Removing and installing dash panel insert Servicing dash panel insert up to model year 00 Removing and installing dash panel insert

=> Electrical System; Repair group 90; Dash panel insert as of model year 00; Removing and installing dash panel insert Dash panel insert as of model year 00 Removing and installing dash panel insert



3 Hands-free loudspeaker

- ◆ In driver's door
- ◆ Removing and installing
=> Page 83
- ◆ Only for vehicles with BOSE sound system in conjunction with telephone
- ◆ For all other vehicles, the loudspeakers in the front door trims are used.
- ◆ Removing and installing => Page 45

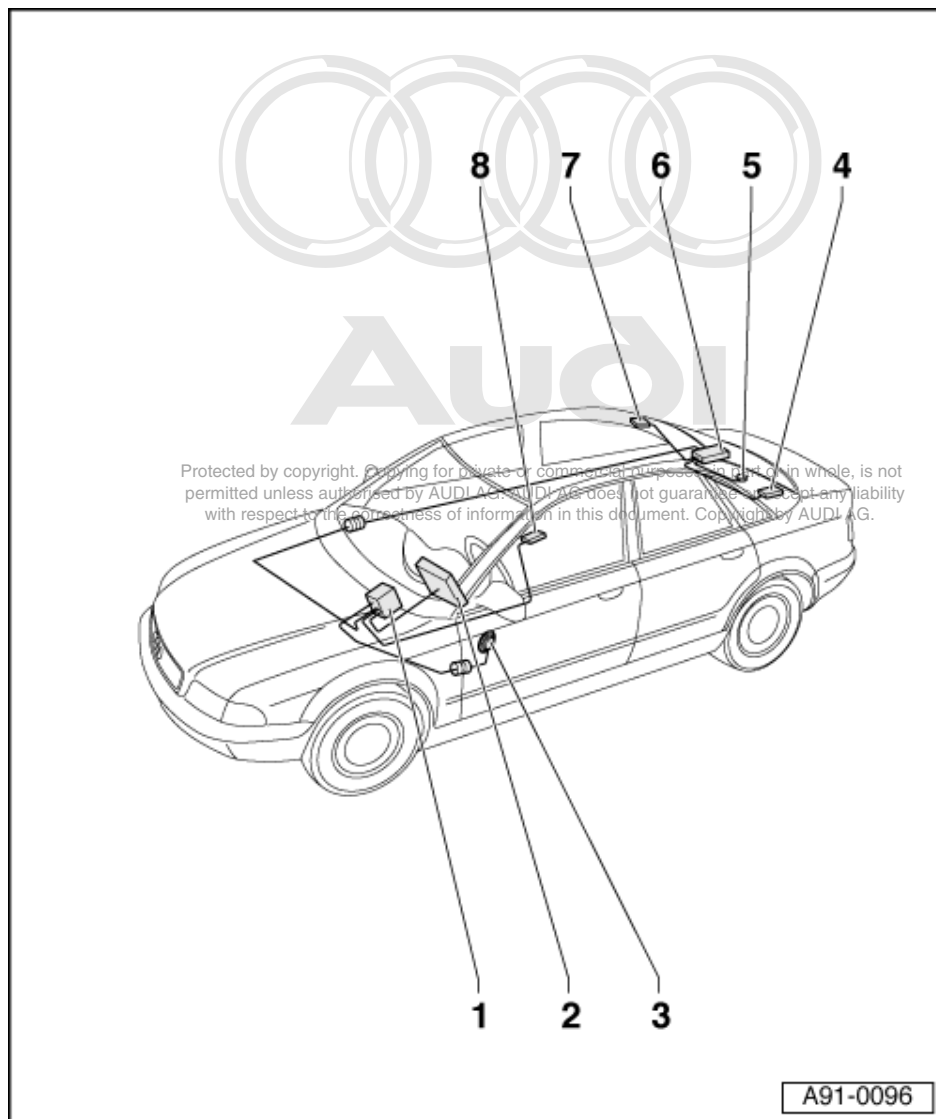
4 Control unit for navigation system with CD drive -J401

Saloon:

- ◆ Installed in upper right of luggage compartment (up to vehicle identification no. 8DZYA200000)
- ◆ Removing and installing => Page 131
- ◆ Installed in rear left of luggage compartment (from vehicle identification no. 8DZYA200001)
- ◆ Removing and installing => Page 132

Avant:

- ◆ Removing and installing => Page 134



5 Aerial for navigation system (GPS) -R50 or aerial for radio/telephone/navigation system (GPS) -R52

Saloon:

- ◆ Under rear shelf in centre
- ◆ Removing and installing => Page 136

Avant:

- ◆ On the vehicle roof
- ◆ Removing and installing
=> Page 62

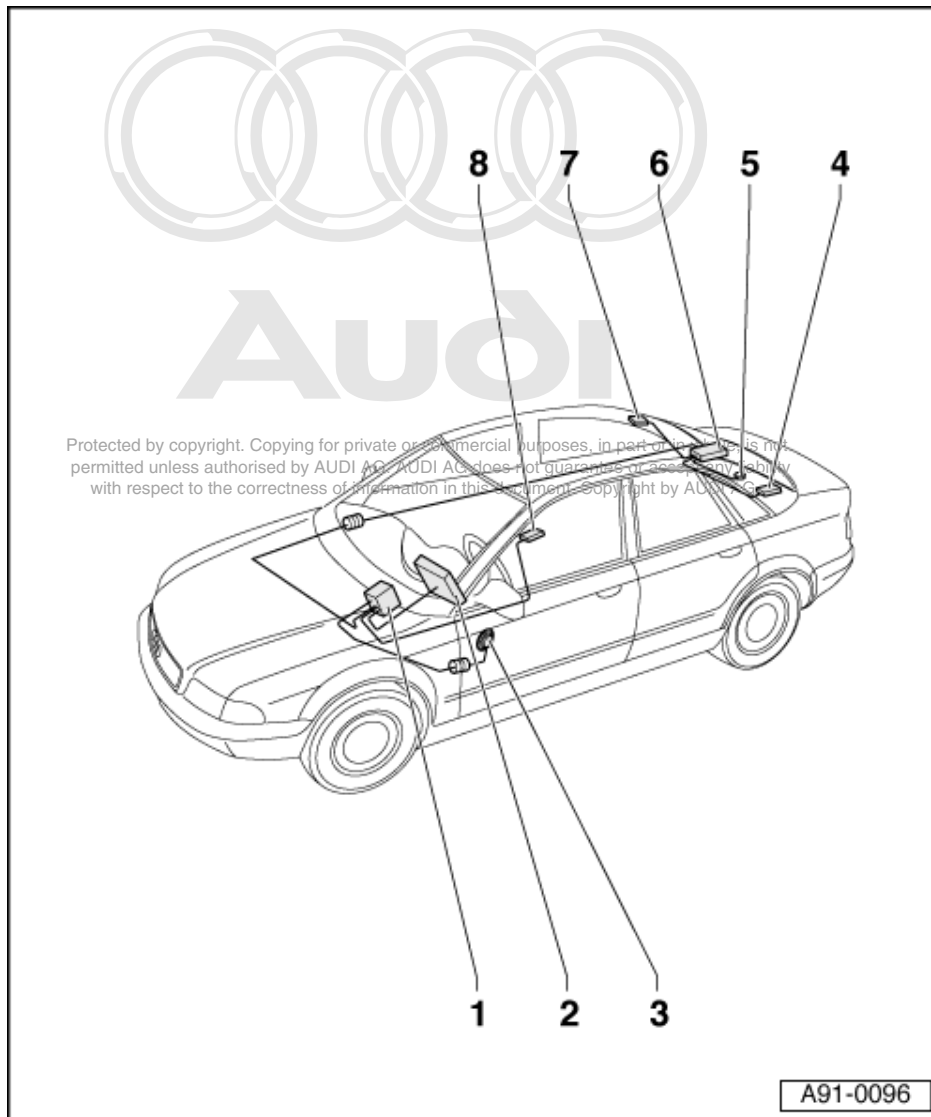
6 Magnetic field sender (electronic compass) -G197-

Saloon:

- ◆ Under rear shelf in centre
- ◆ Removing and installing
=> Page 137

Avant:

- ◆ At upper body cross member on rear below vehicle roof
- ◆ Removing and installing
=>Page 138



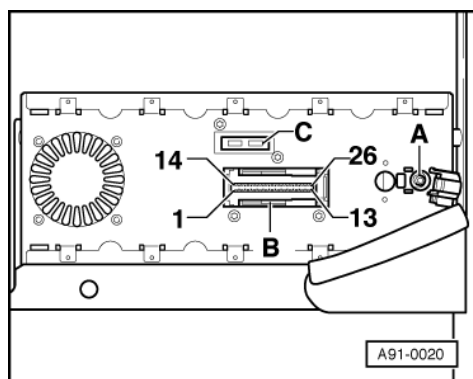
**7 Shunt resistor for rear window heating -N219
(Saloon only)**

- ◆ Behind D-panel trim
- ◆ Removing and installing => Page **138**

8 Operating unit for Navigation System -E199

- ◆ In centre console
- ◆ Removing and installing => Page **135**

3.7 - Servicing instructions for Navigation System I



- ♦ Always check that the following conditions are fulfilled:
 - -> Check power supply to navigation system and fuse -C- on rear of control unit for navigation system with CD-ROM drive (-J401).
 - Verify whether navigation system CD is correctly inserted, i.e. with label facing upwards.
 - Check control unit for navigation system with CD-ROM drive (-J401) is installed horizontally and is firmly seated.
- ♦ In the case of customer complaints, narrow down the possible causes by asking the customer specific questions => Page 96 .
- ♦ If the cause of the complaint is not obvious, try to recreate the malfunction yourself.
- ♦ For ambiguous complaints, always test the complete system with the customer service software => Page 117 .
- ♦ Always perform the necessary measures following repairs to the navigation system components => Page 98 .
- ♦ After replacement of a navigation system component, complete the "Navigation System Complaint Form" and return in the original packaging together with the defective component according to the warranty and replacement parts procedure => Page 131 .
- ♦ An appropriate test drive must be performed and the location entered following each servicing operation on the navigation system
=>Page 128 .

3.8 - Questions to customer in the case of complaints

- ♦ To which function of the navigation system does the customer's complaint refer?
- ♦ Has the customer operated the navigation system according to the operating instructions?
- ♦ Which messages appeared on the display? Assessing the messages => Page 96
- ♦ Could the customer have transported objects on the roof at any time? Possible causes of interference in or on the vehicle => Page 98 .
- ♦ Does the customer often transport magnetic metallic parts in the vehicle? Possible causes of interference in or on the vehicle => Page 98 .
- ♦ Has the customer exposed the vehicle to external sources of interference? => Page 98

Important display messages

Note:

Five important display messages are explained below and possible remedies offered.

Display message 1:

SYSTEM- ERROR:

PLEASE
INSERT
CD ROM

- ◆ There is no navigation system CD in the CD-ROM drive.
 - Insert a navigation system CD in the CD-ROM drive.

Display message 2:

SYSTEM-
ERROR:
PLEASE
CHECK
CD ROM

- ◆ The navigation system CD in the CD-ROM drive cannot be read.
 - Check whether the navigation CD has been inserted correctly. The label must be facing upwards and the CD must only be inserted with the ignition switched on.
 - Check the CD for dirt and, if present, remove carefully with a soft cloth. If you establish that the CD is scratched, use a replacement CD.
 - Check that the push button on the CD-ROM drive is in the "ON" position when the CD is inserted.
- ◆ The CD-ROM drive does not function in some cases.
 - Check that the navigation system control unit with CD-ROM drive is installed horizontally and is firmly seated.
 - Check that the normal function noises are emitted from the CD-ROM drive with the CD inserted and the navigation system activated. If grinding or scratching noises can be heard, replace the navigation system control unit and CD ROM drive => Page 131 .

Display message 3:

PLEASE
RE-ENTER
LOCATION

- ◆ The navigation system does not possess any usable location information.
 - Enter the location at a suitable junction => Page 128 .

Display message 4:

PLEASE
CONSULT
WORKSHOP

- ◆ The wheel sensor signals emitted by the ABS control unit are faulty.
 - Perform the system test (wheel pulse test) => Page 117 and rectify any faults.
- ◆ The navigation system has no/faulty calibration values.
 - Perform the following calibration operation:
Performing wheel calibration => Page 112
- ◆ Navigation system magnetic field sender (compass) and/or wiring is damaged.
 - Perform the system test (compass test) => Page 117 and rectify any faults.
- ◆ Navigation system aerial and/or wiring is damaged.
 - Perform the system test (interior control unit test) => Page 117 and rectify any faults.
- ◆ The satellites are not transmitting any GPS signals.

Note:

It can happen in certain circumstances, e.g. in a military emergency, that satellite signals are not always available.



Magnetic field sender (compass) possibly exposed to interference

Sources of interference in or on vehicle:

- ♦ Magnetic metal objects (e.g. bicycle, tool box, ladder, steel rims etc.) in vehicle
- ♦ Magnetic metal objects on roof or roof rack
- ♦ Signs, registration plates or aerials etc. with magnetic bases
- ♦ Move backrests

Sources of interference outside of vehicle:

- ♦ HT cables
- ♦ Steel bridges
- ♦ Industrial plants (e.g. electroplating plant)
- ♦ HGV with metallic charge
- ♦ High-rise buildings
- ♦ Wire fencing
- ♦ Railway overhead lines
- ♦ Railway lines

3.9 - Necessary measures after servicing or changing tyres

Notes:

- ♦ Always perform the requisite measures in the sequence described
- ♦ The navigation system automatically loads the language if necessary; the language can, however, be loaded directly via the navigation system basic menu at any time => Operating instructions.

Control unit for navigation system with CD drive -J401 has been replaced:

- Perform wheel calibration => Page 101
- Performing wiring test =>Page 108
- Perform system test (complete) => Page 117
- Perform test drive (basic calibration)
=> Page 112
- Re-load language => Operating instructions

Magnetic field sender (compass) -G197 has been replaced:

- Perform system test (compass test)
=> Page 117
- Perform test drive (basic calibration)
=> Page 112

Operating electronics control unit, navigation -J402 has been replaced:

- Re-load language => Operating instructions

Shunt resistor for rear window heating -N219 has been replaced:

- Perform system test (shunt resistor test or rear voltage test)
=> Page 117
- Perform basic calibration => Page 112
- Perform test drive (basic calibration)
=> Page 112

Operating unit for Navigation System -E199 has been replaced:

- Re-load language => Operating instructions

Aerial for Navigation System - R50 has been replaced:

- Perform system test (interior control unit) => Page 117

Rear window has been replaced:

- Perform test drive (basic calibration)
=> Page 112

ABS control unit has been replaced:

- Perform system test (wheel pulse test)
=> Page 117

Dash panel insert has been replaced:

- No action required.

Battery has been disconnected

- Re-load language => Operating instructions
- A new location may need to be entered

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Navigation system CD with new/modified software status has been used

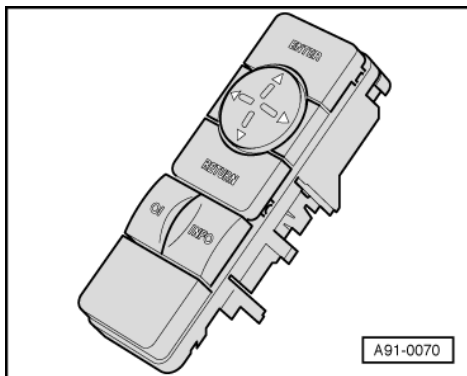
- Re-load language => Operating instructions

A tyre change has been performed, or tyres of a different size have been installed.

- Perform wheel calibration => Page 101

3.10 - Invoking customer service software

The customer service software has been invoked using the following procedure:



- Switch off ignition and wait approx. 5 seconds.
- -> Press the "OI key" and the "INFO key" on the operating unit simultaneously and switch the ignition to "On", then release both keys.

Display:

NAV. SYSTEM
4D0919887D



> AUDI
VW

- Select "AUDI" menu item using the -cursor up- and -cursor down- keys on the operating unit (the ">" arrow symbol will appear in front of the menu item) and confirm with the "ENTER" key.

Display:

> DEUTSCH
ENGLISH
ESPAÑOL
FRANÇAIS
ITALIANO
NEDERLAND.

- Select the language you require using the -cursor up- and -cursor down- keys on the operating unit - the ">" arrow symbol will appear in front of the language (e.g. ENGLISH).
- Confirm the selection with the "ENTER" key.

Display:

AUDI NAVI.
CALIBRAT.-
PROGRAM

FACT.
> SERV.

- Select "SERV" menu item using the -cursor up- and -cursor down- keys on the operating unit - the ">" arrow symbol will appear in front of the menu item.
- Confirm the selection with the "ENTER" key.

Display:

REAR
WINDOW-
HEATING
OFF!
> OK

The customer service software functions must be performed with the rear window heating deactivated.

- Check whether the rear window heating is switched off and switch off if necessary.
- Confirm the display OK with the "ENTER" key.

Display:

SERV. MENU:
> SET WHLS
WIRING
DRIVE TST
SYS. TEST
END

Notes:

- ◆ Exit the customer service software via the "EXIT" menu item where possible.
- ◆ The customer service software can be quit at any time by switching ignition to "Off", although calibrations already performed will not be stored.

3.11 - Automatic check of current vehicle parameter values

The vehicle parameter values are checked each time the customer service main menu is entered and the WIRING, DRIVE TST, SYS. TEST, END.

Display:

CHECK:
A4 - SAL - B5
TYRE:
205/60 15
> YES
NO

- If the selection is confirmed with the "ENTER" key, the program continues with the relevant menu item.
- If the selection is not confirmed with the "ENTER" key, the following instruction appears:

Display:

CARRY OUT
WHEEL
CALIBRATION
> OK

- Confirm the display OK with the "ENTER" key.

Note:

*If there are no specified parameters for a menu item, this menu item is deactivated and marked with a * symbol. In this case, the cursor is positioned on the menu item which, when executed, will set the missing parameters.*

Display:

SERV. MENU:
> SET WHLS
* WIRING
* DRIVE TST
SYS. TEST
* END

- Confirm the selection with the "ENTER" key and then proceed with the wheel calibration => Page 101 .

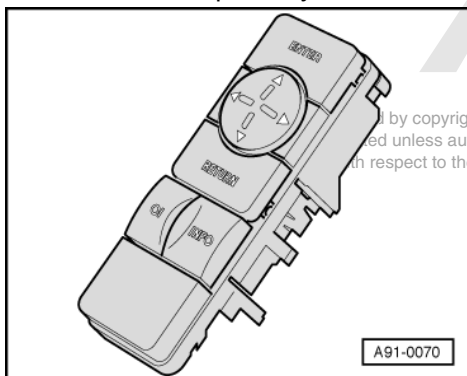
3.12 - Calibrating wheels when changing tyres or replacing control unit

The navigation system must be re-calibrated following each tyre change (if permanent length defects are determined) or each replacement of the navigation system control unit (-J401).

Otherwise the navigation system operates on the basis of an approximate travel measurement which can only be calibrated by the control unit after a distance of approx. 100 km.

The standard tyres are re-calibrated using a simple selection process.

Second-hand or special tyres are re-calibrated on completion of a specified distance.



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- Invoking customer service software => Page **99** .
- -> Select the menu item "SET WHLS" with the cursor keys.

Display:

```
SERV. MENU:  
> SET WHLS  
WIRING  
DRIVE TST  
SYS. TEST  
END
```

- Confirm the selection with the "ENTER" key.

Display:

```
SELECT  
MAKE OF  
VEHICLE:  
> CONTINUE
```

- Press "ENTER" key to continue.

Display:

```
A3-AB  
> A4 - SAL - B5  
A4 - AVT - B5  
A6 - SAL - C5  
A6 - AVT - C5  
A8-D2
```

- Confirm the selection with the "ENTER" key.

Display:

```
VEHICLE:  
A4 - SAL - B5  
> YES  
NO
```

- Confirm the selection with the "ENTER" key.

Display:

```
GET TYRE  
READINGS:  
CONDITION  
OF TYRES  
> NEW  
USED
```

Select tyre condition using cursor keys.

- In the case of new tyres, select menu item "NEW" and confirm selection with the "ENTER" key.

Reading on display => Page **103** :

- In the case of used tyres, select menu item "USED" and confirm selection with the "ENTER" key.



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Reading on display => Page **104** :

New tyres:

Display:

SELECT
 TYPE OF TYRE
 > CONTINUE

- Press "ENTER" key to continue.

Display:

195/65 15
 > 205/60 15
 205/55 16
 225/50 16
 225/45 17
 SPECIAL

- Use cursor keys to select tyre type for current vehicle from menu and confirm selection with "ENTER" key.

Possible tyre sizes => Tyre table, Page **103**

Tyre table:

Tyre type	Circumference (mm)				
		A8	A6	A4	A3
185/65 R15	1895	-	-	X	-
195/65 R15	1935	X	X	X	X
205/60 R15	1910	-	X	X	X
205/55 R16	1930	-	X	X	X
215/55 R16	1960	-	X	-	-
225/50 R16	1930	-	X	-	-
225/60 R16	2071	X	-	-	-
WI 225/60	2059	X	-	-	-
255/40 R17	1940	-	X	-	-
225/45 R17	1930	-	-	X	X
225/55 R17	2071	X	-	-	-
225/40 R18	1940	-	-	X	-
245/45 R18	2074	X	-	-	-
255/35 R18	1937	-	-	X	-

Note:

For special tyre types, select the menu item "SPECIAL".

=>Page **104**.

Example of display:



TYPE OF TYRE:

205/60 15

> YES

NO

- If the tyre type has been correctly selected, confirm the selection "YES" with "ENTER" and complete wheel calibration.
- If the wrong tyre type has been selected, select menu item "NO", confirm with "ENTER" and reselect tyre type.

Used tyres or special tyres:

Calibration requirements:

- ♦ Determine a fortified driving route measuring 100 to 120 m. Measure the starting and finishing points beforehand with a steel measuring tape and mark.
The route should be marked permanently (e.g. with paint) so that it can be used again.
- ♦ In order to achieve a high level of accuracy, open the driver's door and align a reference point on the door sill (e.g. marked with adhesive tape) with the marked starting point.
- ♦ Drive along the route as slowly and as straight as possible. Do not allow the tyres to spin.
- ♦ Align the mark on the vehicle with the mark at the finishing point and stop the vehicle.

Display:

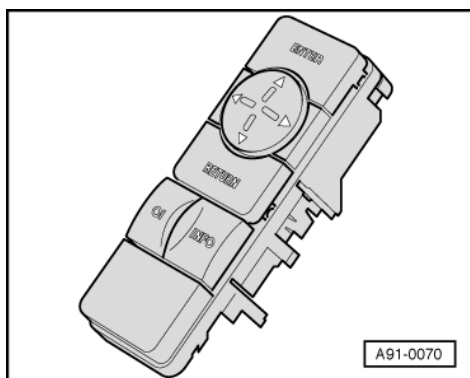
AMEND
TRACK
WIDTH?
YES
> NO

Notes:

- ♦ Used standard tyres do not cause any changes in the track width.
 - ♦ Special tyres can change the track width. Any changes greater than 1% must be entered.
 - ♦ If no new track width changes are entered, the track width according to the selected vehicle type is maintained.
Possible wheel treads => Wheel tread table, Page 105 .
- If there is no track width change, select the menu item "NO" and confirm with the "ENTER" key.
 - If the track width has changed, select the menu item "YES" and confirm with the "ENTER" key.

Display:

REAR TRACK
WIDTH:
.... MM
^
0123456789
^



- -> Enter the wheel tread using the cursor keys and the "ENTER" key.
- Once the wheel tread has been entered (e.g. 1.479 mm), hold down the "ENTER" key (approx. 2 seconds) to confirm.

Example of display:

REAR TRACK
 WIDTH:
 1479 MM
 > YES
 NO

Track width table:

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Model	Rear track (mm)	ABS pulse/rev.	Compass installation
A8-D2	1582	45	Specifically for A8
A6-C5 (SAL/AVT)	1569	45	Specifically for A6 Saloon/Avant
A4-B5 (SAL/AVT)	1479	45	Specifically for A4 Saloon/Avant
A3-AB	1495	43	Specifically for A3

If an unrealistic track width for the vehicle is entered (e.g. track width of the selected vehicle type ± 100 mm), the following display appears:

INVALID
 ENTRY
 > CONTINUE

- Press the "ENTER" key to continue and re-enter the tread width.

Display:

ESTABLISH
 TYRE
 VALUES BY
 DRIVING
 > CONTINUE

- Press "ENTER" key to continue.

Display:

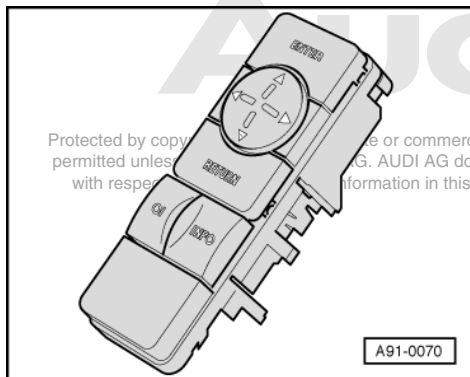
THE
 DISTANCE-
 FOR CALI-
 BRATION.
 > CONTINUE

- Press "ENTER" key to continue.

Display:



DISTANCE TO
TRAVEL:
.... M
^
0123456789
^



- -> Enter the length of the prepared driving route using the cursor keys and the "ENTER" key.
- Once the complete length of the driving route has been entered (e.g. 105 m), hold down the "ENTER" key (approx. 2 seconds) to confirm.

Example of display:

DISTANCE
ENTERED:
105.0 M
> YES
NO

- Confirm the selection with the "ENTER" key, if correct.
Alternatively, select "NO", confirm with the "ENTER" key and re-enter the driving route.

Display:

DRIVE TO
THE CALI-
BRATION-
TRACK.
> CONTINUE

- Drive the vehicle exactly to the starting point of the calibration route and continue with the "ENTER" key.

Display:

BEGIN
DRIVING
FOR CALI-
BRATION!
> START

- To start, confirm with the "ENTER" key and drive along the route according to the specifications.

Display:



DRIVE ASSTRAIGHT
AS POSS.!
END REACHED?
> OK

- Confirm the display OK with the "ENTER" key on completion of the route.

If the calibration is OK, the wheel calibration is terminated => Page **107** .

However, if errors occur during the wheel calibration, one of the following error causes will appear on the display:

1. Cause "Defective wheel pulse"

ERROR:
CHECK THE
WHEEL
PULSES
> CONTINUE

- Press the "ENTER" key to continue and check the wheel pulse signals.

=> Running Gear; Repair group 01, Self-diagnosis, Electrical test

- Repeat wheel calibration => Page **101** .

2. Cause "Route was too short"

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ERROR:
DISTANCE
WAS TOO
SHORT.
> CONTINUE

- Press the "ENTER" key to continue and re-enter the length of the calibration route => Page **106** .

3. Cause "Invalid vehicle values"

VEHICLE
READINGS
NOT VALID!-
> CONTINUE

- Press the "ENTER" key to continue and repeat the wheel calibration correctly => Page **101** .

Terminating the wheel calibration

Display:

SERV. MENU:
SET WHLS
WIRING
DRIVE TST
SYS. TEST
>END

- Confirm the selection with the "ENTER" key to terminate the wheel calibration.



3.13 - Wiring test on Navigation System I

Notes:

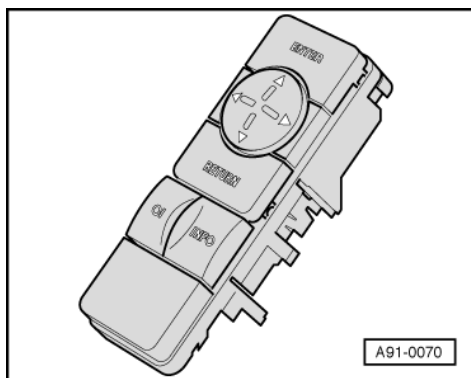
- ♦ The menu item >wiring is deactivated if any vehicle parameters are missing.
- ♦ Any faults recognised in the wiring test are listed. The faults recognised lead to the deactivation of the next commissioning step, > test drive.
- ♦ After taking appropriate measures (e.g. testing according to current flow diagram), the wiring test must be repeated until it can be terminated without any faults.

If the vehicle values are available, the electrical connections to the following components are tested in the wiring test:

- ♦ GPS aerial
- ♦ Magnetic field probe
- ♦ Shunt resistor or voltage tap
- ♦ ABS control unit
- ♦ Reversing light signal

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The wiring test must be performed when commissioning and in the event of customer complaints.



- Invoking customer service software => Page 99 .
- -> Select the menu item "WIRING" with the cursor keys.

Display:

```
SERV. MENU:  
SET WHLS  
> WIRING  
DRIVE TST  
SYS. TEST  
END
```

- A test of the electrical connections is started with the "ENTER" key in service.

Display:

```
CHECK:  
A4 - SAL - B5  
TYRE:  
205/60 15  
> YES  
NO
```

- If the selection is confirmed with the "ENTER" key, the program continues with the relevant menu item.
- If the selection is not confirmed with the "ENTER" key, the following instruction appears:

Display:

CARRY OUT
WHEEL
CALIBRATION!
> OK

- Confirm the display OK with the "ENTER" key.

Display:

PLEASE
WAIT

The GPS aerial and compass pickups are tested and checked whilst the "PLEASE WAIT" screen is displayed.

The following display appears if a fault is found in the GPS aerial:

NO SIGNALS
FROM GPS
AERIAL!
> CONTINUE

- Press "ENTER" key to continue.
- Check the fault in the wiring/from incorrect location selection and if necessary repair, either immediately or at the end of the wiring test when all faults are displayed once again
=>Page 111 .

The following display appears if a fault occurs in the compass:

NO
COMPASS-
SIGNALS!
> CONTINUE

- Press "ENTER" key to continue.
- Immediately check the fault in the wiring/from incorrect location selection and if necessary repair, either immediately or at the end of the wiring test when all faults are displayed once again =>Page 111 .

Next display:

REAR
WINDOW
HEATING
ON!
> OK

- Switch on rear window heating and confirm with the "ENTER" key.

Display:

REAR
WINDOW
HEATING
OFF!
> OK

- Switch off rear window heating and confirm with the "ENTER" key.

However, if the following display appears, a fault has been detected in the shunt resistor or voltage tap:



NO REAR
WINDOW-
READING.
CHECK
PLUG!
> CONTINUE

Switch for heated rear window has not been actuated or

- wiring to rear window heating is not OK.
- Press "ENTER" key to continue.
- Check the fault in the wiring/on the connectors and if necessary repair, either immediately or at the end of the wiring test when all faults are displayed once again
=>Page **111**.

Notes:

- ♦ A shunt resistor has been installed in the A4 Saloon.
- ♦ A voltage tap has been installed at the rear window of the A4 Avant, i.e. the battery voltage is measured.

Display:

DRIVE AT
CONSTANT
SPEED AND
COMPARE
> CONTINUE

- Press "ENTER" key to continue.

Display:

BOTH WHEEL
SPEEDS
WITH
SPEEDOMETER
> OK

- Confirm the display OK with the "ENTER" key.

Display:

L: 0,0
R: 0,0
> YES
NO

- Start the engine and drive forwards straight ahead. Compare the displays of both L and R wheel sensors.
- Stop the vehicle.
- If the values are within the permissible lower speed range (the difference must not be more than 5 km/h), use the "ENTER" key to permit the display > YES, otherwise select > NO.
- Check the fault in the wiring/wheel calibration and if necessary repair, either immediately or at the end of the wiring test when all faults are displayed once again =>Page **111**.

Display:

REVERSE
BRIEFLY!
> OK

- Engage reverse gear.
- Reverse the vehicle approx. 3 m and stop.
- Confirm the display OK with the "ENTER" key.
- Check the fault in the wiring/wheel calibration and if necessary repair, either immediately or at the end of the wiring test when all faults are displayed once again.

=>Page 111 .

If no faults are detected in the wiring test, the following display appears:

Display:

```
WIRING
OK
> MAIN MENU
```

- Confirm the display with the "ENTER" key to jump to the main menu. The next commissioning step DRIVE TST is then activated.

Display:

```
SERV. MENU:
SET WHLS
WIRING
> DRIVE TST
SYS. TEST
END
```

- Press "ENTER" key to start the TEST DRIVE
=>Page 112 .

Several faults can be recognised in the wiring test in extreme cases.

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Notes:

- ♦ Fault determination is based on the assessment of signals from the corresponding sensors. A defective sensor can also be the cause of the error in addition to a wiring error. This options should only be taken into consideration after ensuring that the wiring is correctly installed (see current flow plan).
- ♦ Fault areas can also be checked individually via the SYS. TEST menu, before e.g. the complete wiring test is performed after repair measures by clearing the menu item DRIVE TST.

Possible display:

```
ERROR:
GPS
COMPASS
SHUNT
WH. SENSOR
REV. GEAR
```

Note:

REAR VOLT. may also be displayed for SHUNT

- Rectify any faults by taking appropriate measures.
- Confirm the display with the "ENTER" key to jump to the main menu.

Display:



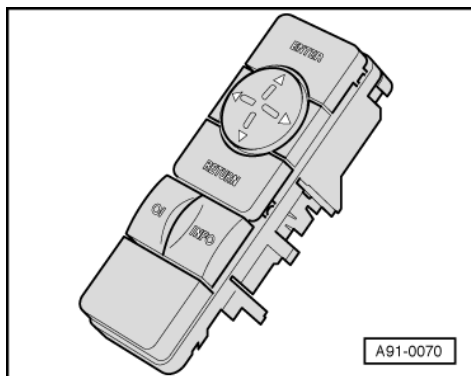
```
SERV. MENU:
SET WHLS
> WIRING
DRIVE TST
SYS. TEST
END
```

- Select the menu item "WIRING" once again with the cursor keys.
- Confirm the display with the "ENTER" key to repeat the electrical connections test in service.

3.14 - Test drive (basic calibration of Navigation System I)

The test drive is performed in three steps:

- ♦ Definition of position => Page 113
- ♦ Calibration of the shunt resistor =>Page 114
- ♦ Calibration of compass => Page 115



- Invoking customer service software => Page 99 .
- -> Select the menu item "DRIVE TST" with the cursor keys.

Display:

```
SERV. MENU:
SET WHLS
WIRING
> DRIVE TST
SYS. TEST
END
```

- Confirm the selection with the "ENTER" key.

Display:

```
CHECK:
A4 - SAL - B5
TYRE:
205/60 15
> YES
NO
```

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- If the selection is confirmed with the "ENTER" key, the program continues with the relevant menu item.
- If the selection is not confirmed with the "ENTER" key, the following instruction appears:

Display:

CARRY OUT
WHEEL-
CALIBRATION
> OK

- Confirm the display OK with the "ENTER" key.

First, the current location is defined.

Definition of position

Next display:

CHECKING
GPS
READINGS,
PLEASE
WAIT...

Notes:

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- ◆ The checking procedure is performed within the navigation unit. Please wait for the next display.
- ◆ GPS signals can only be received outdoors in areas which are as unobstructed as possible, i.e. not in tunnels, under bridges or trees, between high buildings or in enclosed areas (e.g. in the workshop).
- ◆ If reception is poor, drive to another location.

If a GPS signal is received for defining the position, the following display appears:

GPS
SIGNAL
RECEIVED!
> CONTINUE

- Press "ENTER" key to continue.

The test drive (basic calibration) is continued with calibration of the shunt resistor
=>Page 114 .

If no GPS signal is received for defining the position, the following display appears:

Display:

NO GPS
SIGNAL
RECEIVED!
> CONTINUE

- Press "ENTER" key to continue.

Note:

Definition of the position is generally performed up to 1 minute after switching the ignition on.

After connecting and disconnecting the battery, the GPS receiver is reactivated when the ignition is switched on. Initial definition of the position can take up to 15 minutes during this phase.

Display:



MOVE
VEHICLE TO
ANOTHER
LOCATION!
> OK

- Move the vehicle to a location more suitable for reception, i.e. outdoors in an area which is as unobstructed as possible and confirm with OK.
- Perform this measure until the display for GPS signal reception appears:

GPS
SIGNAL
RECEIVED!
> CONTINUE

- Press "ENTER" key to continue.

The test drive (basic calibration) is continued with calibration of the shunt resistor

=>Page **114** .

Calibrating the shunt resistor and voltage tap

The influence of the rear window on the magnetic field pickup is determined by switching the rear window heating on and off.

Notes:

- ♦ A shunt resistor has been installed in the A4 Saloon.
- ♦ A voltage tap has been installed at the rear window of the A4 Avant, i.e. the battery voltage is measured.
- ♦ During calibration (rear window heating on/off), the vehicle must not be moved as incorrect calibration values may be recorded.

Next display:

REAR
WINDOW-
HEATING
ON!
> OK

- Switch on rear window heating and confirm with the "ENTER" key.

Display:

PLEASE
WAIT...

Note:

- ♦ The checking procedure is performed within the navigation unit. Please wait for the next display.

REAR
WINDOW-
HEATING
OFF!
> OK

- Switch off rear window heating and confirm with the "ENTER" key.

Display:

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PLEASE
WAIT...

Note:

- ♦ Calibration is performed within the navigation unit. Please wait for the next display.

If the calibration is OK, the system will proceed with calibration of the compass => Page **115**.

However, if the following display appears:

NO REAR
WINDOW-
READING.
CHECK
PLUG!
> CONTINUE

Switch for heated rear window has not been actuated or

- check the connectors to the switch or rear window heating according to the current flow diagram and repair if necessary.
- Press the "ENTER" key to continue and repeat calibration of the shunt resistor or voltage tap => Page **114**.

Display if the vehicle was moved during calibration:

DO NOT
MOVE
VEHICLE
BETWEEN
ON/OFF!
> CONTINUE

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- Do not move the vehicle again.
- Press the "ENTER" key to continue and repeat calibration of the shunt resistor or voltage tap => Page **114**.

Calibration of the compass

Calibration requirements:

- ♦ An area which is as unobstructed and level as possible (inclination up to max. 4°).
- ♦ Avoid magnetic or electromagnetic interference fields, i.e. anywhere in the vicinity of power lines, a line of trucks, reinforced concrete buildings or iron aggregates (e.g. scrap, steel scaffolding etc.).
- ♦ Driving speed approx. 20 ... 30 km/h
- ♦ The driving route should ideally be a circle with a minimum diameter of 30 m.
A rectangular route can also be driven, providing the rectangle is closed.

Next display:

DRIVE
SLOWLY IN
CIRCLE > 30 M
.
> START

- Press the "ENTER" key to start the journey.



Display:

```
CIRCLE  
COMPLETED?  
> OK
```

- Drive along the route according to the calibration requirements and confirm the OK display at the end of the route by pressing the "ENTER" key.

Once the compass calibration has been performed successfully, the test drive (basic calibration) for the navigation system is terminated and the following display appears:

```
DRIVE-  
SETTING  
TEST  
COMPLETED  
> CONTINUE
```

- Press "ENTER" key to continue.

Display:

```
SERV. MENU:  
SET WHLS  
WIRING  
> DRIVE TST  
SYS. TEST  
END
```

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- Select the menu item "END" with the cursor keys.

Display:

```
SERV. MENU:  
SET WHLS  
WIRING  
DRIVE TST  
SYS. TEST  
> END
```

- Confirm the selection with the "ENTER" key.

If the compass could not be calibrated, the following fault message is displayed.

Fault message on display:

```
COMPASS  
CANNOT BE  
SET!-  
> CONTINUE
```

A more detailed description of the calibration fault is displayed.
Compass calibration must then be repeated => Page **115**.

- Press "ENTER" key to continue.

One of following three fault messages will appear on the display.

1. fault message on display:

DISTANCE
WAS TOO
SHORT.
> CONTINUE

- the "ENTER" key to continue and repeat compass calibration => Page 115 .

2. fault message on display:

INTER-
FERENCE
WHILST
CIRCLING
> CONTINUE

- the "ENTER" key to continue and repeat compass calibration => Page 115 .

3. fault message on display:

CIRCLE
INCOMPLETE-
> CONTINUE

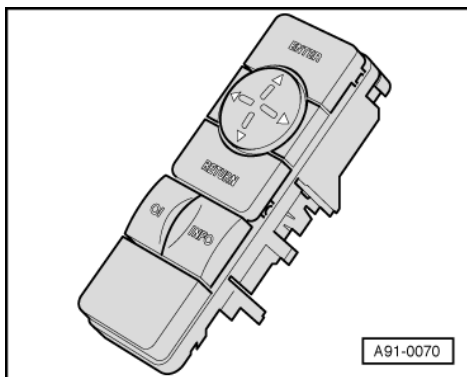
- the "ENTER" key to continue and repeat compass calibration => Page 115 .

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3.15 - System test on Navigation System I

An interior system diagnosis is possible with the system test which comprises four test steps:

- ◆ Invoking the current parameters => Page 118
- ◆ Wheel pulse test => Page 120
- ◆ Compass test => Page 122
- ◆ Shunt resistor test => Page 124
- ◆ Interior control unit test => Page 125



- Invoking customer service software => Page 99 .
- -> Select the menu item "SYS. TEST" with the cursor keys.

Display:



SERV. MENU:
SET WHLS
WIRING
DRIVE TST
> SYS. TEST
END

- Confirm the selection with the "ENTER" key.

Display:

CHECK:
A4 - SAL - B5
TYRE:
205/60 15
> YES
NO

- If the selection is confirmed with the "ENTER" key, the program continues with the relevant menu item.
- If the selection is not confirmed with the "ENTER" key, the following instruction appears:

Display:

CARRY OUT
WHEEL
CALIBRATION!
> OK

- Confirm the display OK with the "ENTER" key.

Display:

SYS. TEST
> PARAMETER
WH. SENSOR
COMPASS
SHUNT
INTERNAL

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Notes:

- ♦ It is possible to perform either the complete system test or individual test steps only.
- ♦ The "SYS. TEST" menu can only be quit by pressing the "RETURN" key.

Invoking the current parameters

Note:

The current parameters can be checked to ensure correct settings or to detect missing or incorrect settings/calibrations (e.g. a wrongly selected vehicle type) which can lead to poor navigation performance or complete failure of the navigation system.

Test requirements:

- ♦ The displays for vehicle type, track width and tyre type must correspond to the actual conditions.
- ♦ Calibration values from the test drive must be available, i.e. the test drive must be performed beforehand.
- Select the menu item "PARAMETER" with the cursor keys.

Display:

SYS. TEST
 > PARAMETER
 WH. SENSOR
 COMPASS
 SHUNT
 INTERNAL

- Confirm the selection with the "ENTER" key.

Display:

VEHICLE:

 A4 - SAL - B5

 > CONTINUE

- If there are no faults, press the "ENTER" key to continue the parameter test.

If there are faults, this means that the specifications on the display do not correspond to the actual vehicle type.

- Perform wheel calibration => Page **101**

Display:

REAR TRACK
 WIDTH:

 1479 MM
 > CONTINUE

- If there are no faults, **press the "ENTER" key to continue the parameter test**

If there is a fault, this means that the displayed track width does not correspond to the vehicle type (deviations > 1%).

Possible track widths => Track width table, Page **105**

- Perform wheel calibration => Page **101**

Note:

For special tyre types, select the menu item "SPECIAL".

*=>Page **104**.*

Notes:

- ◆ The actual circumference of new tyres is within a tolerance of $\pm 1\%$ and adapts itself as fully as possible when the navigation system is operating.
- ◆ Deviations from the specified circumferences for new tyres are thus normal and reflect the adaption process.
- ◆ The displayed tyre circumference only deviates widely from the usual circumferences if the calibration is grossly inaccurate (due to a wrongly entered route length being driven).
A tyre circumference should only be corrected via wheel calibration if this is the case, or if permanent length errors are identified by the customer.
Range of typical tyre circumferences =>Page **120**.



Table of typical tyre circumferences:

Tyre type for	typical circumferences of new tyres (after wheel calibration)
A8-D2	2050 - 2080
A6-C5	1900 - 1970
A4-B5	1900 - 1940
A3-AB	1900 - 1940

Note:

If the tyres have been used, the typical circumferences may deviate from the specified values.

Display:

TYPE OF TYRE: ----- 205/60 15 ----- C: 1910 MM > CONTINUE
--

- Press "ENTER" key to continue.

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Possible tyre sizes and tyre circumferences => Tyre table, Page 103

If a fault occurs, this means that the displayed tyre type does not correspond to the actual tyres.

- Perform wheel calibration => Page 101

Note:

For special tyre types, select the menu item "SPECIAL".

=>Page 104.

Display:

DRIVE TST ----- HAS BEEN CARRIED OUT! > OK
--

- If there are no faults, press the "ENTER" key to terminate the parameter test.

If there is a fault ("MISSING" is displayed), this means that the test drive has not been performed.

- Perform test drive => Page 112

Wheel pulse test

The speeds of the left and right wheels are displayed when the wheel pulses are checked.
The function for detecting a change in direction (forward or reverse driving) is also checked.

Test requirements:

- ♦ Driving straight ahead at a speed of
> 20 km/h.
- ♦ Reverse approx. 3 m for reverse gear detection.
- Select the menu item "WH. SENSOR" with the cursor keys.

Display:

SYS. TEST
PARAMETER
> WH. SENSOR
COMPASS
SHUNT
INTERNAL

- Confirm the selection with the "ENTER" key.

Display:

DRIVE AT
CONSTANT
SPEED AND COMPARE
> CONTINUE

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- Press "ENTER" key to continue.

Display:

BOTH WHEEL
SPEEDS WITH-SPEEDOMETER.
> OK

- Confirm the display OK with the "ENTER" key.

Display:

L: 0,0
R: 0,0
> OK

- Start the engine and drive forwards straight ahead. Compare the displays of both L and R wheel sensors.

Notes:

- ♦ The permissible difference in the lower speed range between the left (L) and right (R) wheel speeds must not exceed 5 km/h.
- ♦ If the difference is greater than 5 km/h, the output signals from the ABS control unit must be checked.

=> Running gear self-diagnosis; Repair group 01; Self-diagnosis, Electrical test Self-diagnosis, Electrical test

- ♦ The wheel pulse test must be repeated => Page 120 .
- Stop the vehicle.
- Confirm the display OK with the "ENTER" key if the values are within the permissible range.

Display:



REVERSE
BRIEFLY
.
> OK

- Engage reverse gear.
- Reverse the vehicle approx. 3 m and stop.
- Confirm the display OK with the "ENTER" key.

If the test is OK, the system will proceed with the compass test => Page **122** .

If there is a fault with the reverse gear detection, the following will appear on the display:

REVERSE
NOT
REGISTERED
> OK

- Confirm the display OK with the "ENTER" key.
- Check signal from reversing light switch according to current flow diagram and repeat wheel pulse test => Page **120** .

Compass test

The compass wiring is internally checked first in the compass test.
The compass directions are checked in the subsequent drive along a circular route.

Test requirements:

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- ♦ An area which is as unobstructed and level as possible (inclination up to max. 4°).
 - ♦ Avoid magnetic or electromagnetic interference fields, i.e. anywhere in the vicinity of power lines, a line of trucks, reinforced concrete buildings or iron aggregates (e.g. scrap, steel scaffolding etc.).
 - ♦ Driving speed approx. 20 ... 30 km/h
 - ♦ The driving route should ideally be a circle with a minimum diameter of 30 m.
It is also possible to drive along a rectangular route.
- Select the menu item "COMPASS" with the cursor keys.

Display:

SYS. TEST
PARAMETER
WH. SENSOR
>COMPASS
SHUNT
INTERNAL

- Confirm the selection with the "ENTER" key.

The interior wiring test is then performed.

If no fault occurs, the compass test automatically continues.

If a fault occurs, i.e. no compass data is recognised, the following fault message appears on the display:

Fault message on display:

NO COMPASS
DATA-
AVAILABLE.
> CONTINUE

- Press "ENTER" key to continue.

Display:

CHECK
COMPASS-
AND CABLE.
> OK

- Check the compass wiring according to the current flow plan and repair if necessary. Restart the compass test => Page 122 .

The compass test is automatically continued if the wiring is OK.

Display:

DRIVE
SLOWLY IN
A CIRCLE.
> START

- Confirm the display "Start" with the "ENTER" key.

Display:

CIRCLE
COMPLETED?
> OK

- Drive along the route according to the test requirements => Page 122 and confirm completion at the end of the route by pressing the "ENTER" key.

The following display appears once the compass test has been completed successfully:

COMPASS
OK!
> CONTINUE

If the compass test is OK, the system will proceed with the shunt resistor test => Page 124 .

If the compass data is not OK, one of the following three causes of the fault will be displayed:

- Press "ENTER" key to continue.

1st Cause "Compass unusable"

COMPASS
NOT OK!
> CONTINUE

The compass ellipse recorded is unusable.
This is due to magnetic interference or a defective magnetic field probe.

- Press "ENTER" key to continue.

2nd Cause "Route was too short"

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ERROR:
DISTANCE
WAS TOO
SHORT.
CONTINUE

The diameter of the circle was too small or the vehicle was driven too fast.

- Use the "ENTER" key to continue and repeat compass test correctly => Page **122** .

3rd Cause "Circle incomplete"

ERROR:
CIRCLE
INCOMPLETE-
> CONTINUE

No complete circle was recognised.

- Use the "ENTER" key to continue and repeat compass test correctly => Page **122** .

Shunt resistor test or voltage tap test

Notes:

- ♦ A shunt resistor has been installed in the A4 Saloon.
- ♦ A voltage tap has been installed at the rear window of the A4 Avant, i.e. the battery voltage is measured.

The wiring and the resistance values are checked in the shunt resistor test or voltage tap test by switching the rear window heating on and off (approx. 2-3 seconds).

- Select the menu item "SHUNT" or "REAR VOLT." with the cursor keys.

Display:

SYS. TEST
PARAMETER
WH. SENSOR
COMPASS
> SHUNT
INTERNAL

- Confirm the selection with the "ENTER" key.

Next display:

REAR
WINDOW-
HEATING
ON!
> OK

- Switch on rear window heating and confirm with the "ENTER" key.

Next display:

REAR
WINDOW-
HEATING
OFF!
> OK

- Switch off rear window heating and confirm with the "ENTER" key.

If the shunt resistor test or voltage tap test is OK, the selection menu for the system test reappears.

However, if the following display appears:

NO REAR
WINDOW-
READING.
CHECK
PLUG!
> CONTINUE

Switch for heated rear window has not been actuated or

- check the connectors to the switch or rear window heating according to the current flow diagram and repair if necessary.
- Press the "ENTER" key to continue and repeat shunt resistor test or voltage tap test => Page 124 .

Interior control unit test

Interior control unit components and the GPS aerial signals are checked in this test.

- Select the menu item "INTERIOR" with the cursor keys.

Display:

SYS. TEST
PARAMETER
WH. SENSOR
COMPASS
SHUNT
> INTERNAL

- Confirm the selection with the "ENTER" key.

Display:

INTERNAL
HARDWARE-
TEST...
(1 - 4 MIN.)
> START

- Press the "ENTER" key to start the interior test.

Display:

INTERNAL
TESTS
RUNNING.
PLEASE
WAIT...



Please wait for the next display.

The following display appears once the control unit test has been completed successfully:

SELF-TEST
OK!
> CONTINUE

- Press the "ENTER" key to continue and terminate the system test.

However, if faults occur during the control unit test, one of the following fault messages appears:

1st Cause "No signals from GPS aerial"

NO SIGNALS
FROM GPS
AERIAL!
> CONTINUE

- Test connector and wiring of GPS aerial according to current flow diagram and repair if necessary.
- If there is no fault in the wiring, check the GPS aerial and replace if necessary.
- Use the "ENTER" key to continue and repeat interior control unit test => Page **125** .

2nd Cause "Navigation unit defective"

NAVIGATION
UNIT
FAULTY.
PLEASE
REPLACE!
> CONTINUE

- Replace navigation system control unit.

Note:

*If replacing the navigation system control unit, observe the requisite measures => Page **98** .*

- Use the "ENTER" key to continue and repeat interior control unit test => Page **125** .

Terminate system test

Display:

SYS. TEST
PARAMETER
WH. SENSOR
COMPASS
SHUNT
> INTERNAL

- Press the "RETURN" key to terminate the system test.

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Display:

SERV. MENU:
SET WHLS
WIRING
DRIVE TST
SYS. TEST
> END

3.16 - Starting the navigation system

The navigation system can be started once the calibration program has been exited.

Display:

SERV. MENU:
SET WHLS
WIRING
DRIVE TST
SYS. TEST
> END

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- Select the menu item "END" with the cursor keys and confirm the selection with the "ENTER" key.

CHECK:
A4 - SAL - B5
TYRE:
205/60 16
> YES
NO

- If the selection is confirmed with the "ENTER" key, the program continues with the relevant menu item.
- If the selection is not confirmed with the "ENTER" key, the following instruction appears:

Display:

CARRY OUT
WHEEL
CALIBRATION
> OK

- Confirm the display OK with the "ENTER" key.

Display:

PLEASE
INSERT
NAVIGATION-
CD NOW.
> OK

- If you have not already done so, insert navigation system CD in CD-ROM drive and confirm with OK.

The navigation program is automatically loaded and started.

Display:

NAV. SYS. MENU:



NO DESTINATION
AVAILABLE.
* START
> SELECTION↓

Note:

The language is automatically loaded or, if required, can be loaded directly from the navigation system basic menu => Operating instructions.

The location can be entered manually during the navigation system test drive required by customer service => Page **128**.

It can, however, also be left to the navigation system to determine the location. To this end the vehicle must be driven a few kilometres along a route with as many bends and junctions as possible.

The navigation system then automatically determines the location.

3.17 - Entering the location

During the navigation system test drive required by customer service, the location must be entered using the following procedure.

Note:

Select a suitable junction in your town/city or a neighbouring town which can be found in digital form on the navigation system CD.

Only towns and cities with more than 50,000 inhabitants are currently completely digitised. In the case of smaller locations, a junction on a main road or similar can be used, for example.

- Start navigation => Page **127**

Display:

NAV. SYS. MENU:
NO DESTINATION
AVAILABLE.
* START
> SELECTION↓

- Press "OFF" button and hold down for approx. 3 seconds.

Display:

ENTRY OF
LOCATION
> DIRECT
MEMORY
* CURR. DESTINATION

- Confirm the selection with the "ENTER" key.

Display:

TOWN/CITY:
_

ABCDEFG
 HIJKLMN
 OPQRSTU
 VWXYZ. -
 ÄÖÜ _ 012
 3456789

- Select the respective town or city using the cursor keys and "ENTER" key.

Display for example "INGOLSTADT":

TOWN/CITY:
 INGOLSTADT
 ABCDEFG
 HIJKLMN
 OPQRSTU
 VWXYZ. -
 ÄÖÜ _ 012
 3456789

- Confirm the selection with the "ENTER" key.

Display:

STREET:
 -
 ABCDEFG
 HIJKLMN
 OPQRSTU
 VWXYZ. -
 ÄÖÜ _ 012
 3456789

- Select the respective street using the cursor keys and "ENTER" key.

Display for example "ETTINGERSTRASSE":

STREET:
 ETTINGERSTR
 ABCDEFG
 HIJKLMN
 OPQRSTU
 VWXYZ. -
 ÄÖÜ _ 012
 3456789

- Confirm the selection with the "ENTER" key.

Display:

JUNCTION:
 AUTO-UNION
 B13
 >B16

- Select the junction road, e.g. "B16" with the cursor keys and confirm the selection with the "ENTER" key.

Display:

LOCATION
 DIRECT:



ETTINGERSTR
ýB16
DISTANCE APPROX.
> 0 M
AHEAD↑↓

- Using the cursor keys, specify location of vehicle in relation to centre of junction as accurately as possible.

Example:

The vehicle is in Ettingerstraße approx. 75 m beyond the junction with the main road B16.

Display:

LOCATION
DIRECT:
ETTINGERSTR
ýB16
DISTANCE APPROX.
> 75 M
BACK↑↓

- Press "ENTER" to confirm the selection and return to the navigation system menu.

Display:

NAV. SYS. MENU:
NO DESTINATION
AVAILABLE.
* START
> SELECTION↓

Notes:

- ♦ If there is no suitable junction on the navigation system CD for entering the location in the selected town or city, this function is not available.
- ♦ The following appears on the display after the town or city has been selected:

ENTRY OF
LOCATION
POSITION-
ENTRY
UNSUITABLE

- Please re-enter the location in the next large town or city for which there is a junction on the navigation system CD.

3.18 - Interrogating software status of Navigation System I

The software status is interrogated by following the steps below:

- Simultaneously press the "RETURN" and "INFO" buttons on the operating unit and switch ignition to "On".

The following, for example, then appears on the dash panel insert display:

SOFTWARE
STATUS

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MMI: 6122A BIOS: 57213 CD: 66119
--

- Please note what is displayed and have available when raising queries.
- The function is exited by switching off the ignition.

3.19 - Instructions for replacing navigation system components

- ♦ After replacement of a navigation system component, complete the "Navigation System Complaint Form" and return in the original packaging together with the defective component according to the warranty and replacement parts procedure.
- ♦ This applies to the following navigation system components:
 - Control unit for navigation system with CD drive
 - Control unit for navigation system operating electronics
 - Aerial for navigation system
 - Magnetic field pickup (compass)
- ♦ The "Navigation System Complaint Form" can be found in the binder "Technical Service Handbook - Illustrated Catalogue".

3.20 - Removing and installing control unit for navigation system with CD drive -J401 -Saloon-

(up to vehicle identification no. 8DZYA200000)

The control unit is installed in the luggage compartment under the rear shelf.

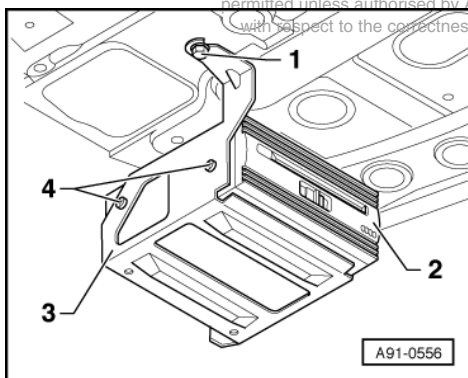
IMPORTANT:

If replacing the navigation system control unit, observe the requisite measures

=>Page 98.

Removing

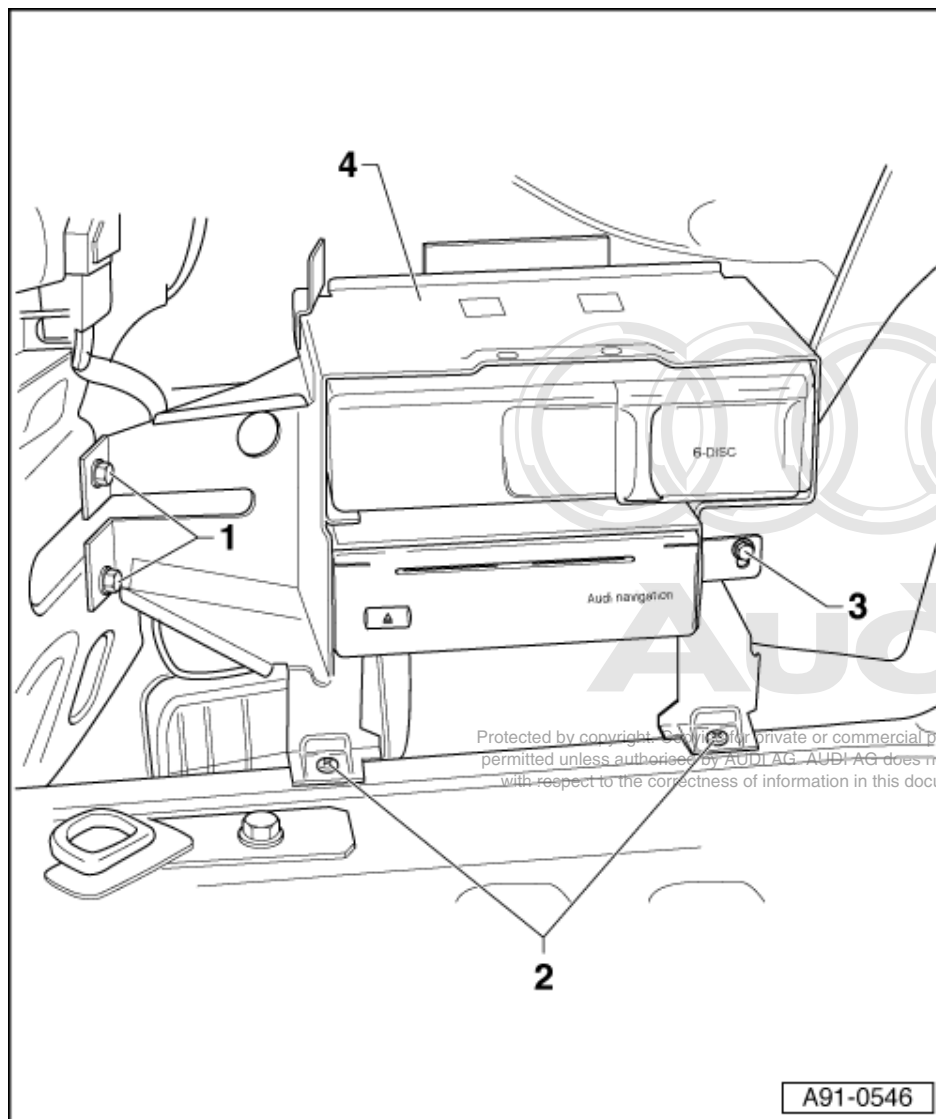
- Open luggage compartment.



- -> Remove the bracket -3- together with navigation system control unit -2- by removing the bolts -1- (1.4 Nm).
- Detach the electrical connectors and the aerial wiring (GPS) on the rear side of the navigation system control unit with CD drive and on the CD changer.
- Remove the control unit from the bracket by removing the screws -4- (2 Nm).

Installing:

- Installation is carried out in reverse sequence to removal.



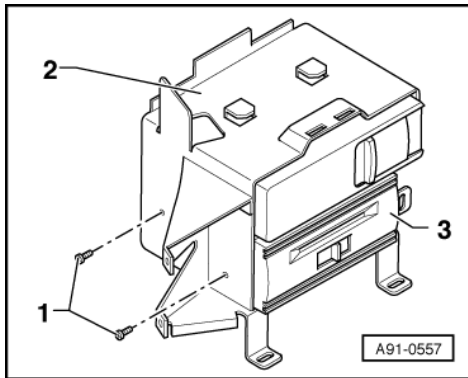
(From vehicle identification no. 8DZYA200001)

The control unit for navigation system with CD drive (-J401) is located in rear left of luggage compartment.

- Open left storage compartment in luggage compartment.
- Remove luggage compartment left trim.

=> General Body Assembly, Interior; Repair group 70; Trims; Removing and installing left/right luggage compartment trims Trims Removing and installing left/right luggage compartment trims

- Remove securing bolts -1-, -2- and -3- (2 Nm) for package holder (mounting frame) and remove package holder -4-.
- Disconnect the control unit connectors and remove the complete mounting frame -4-.



- -> Remove the two securing screws -1- from either side of the control unit for navigation system with CD drive (-J401) -3- and remove control unit from mounting frame -2-.

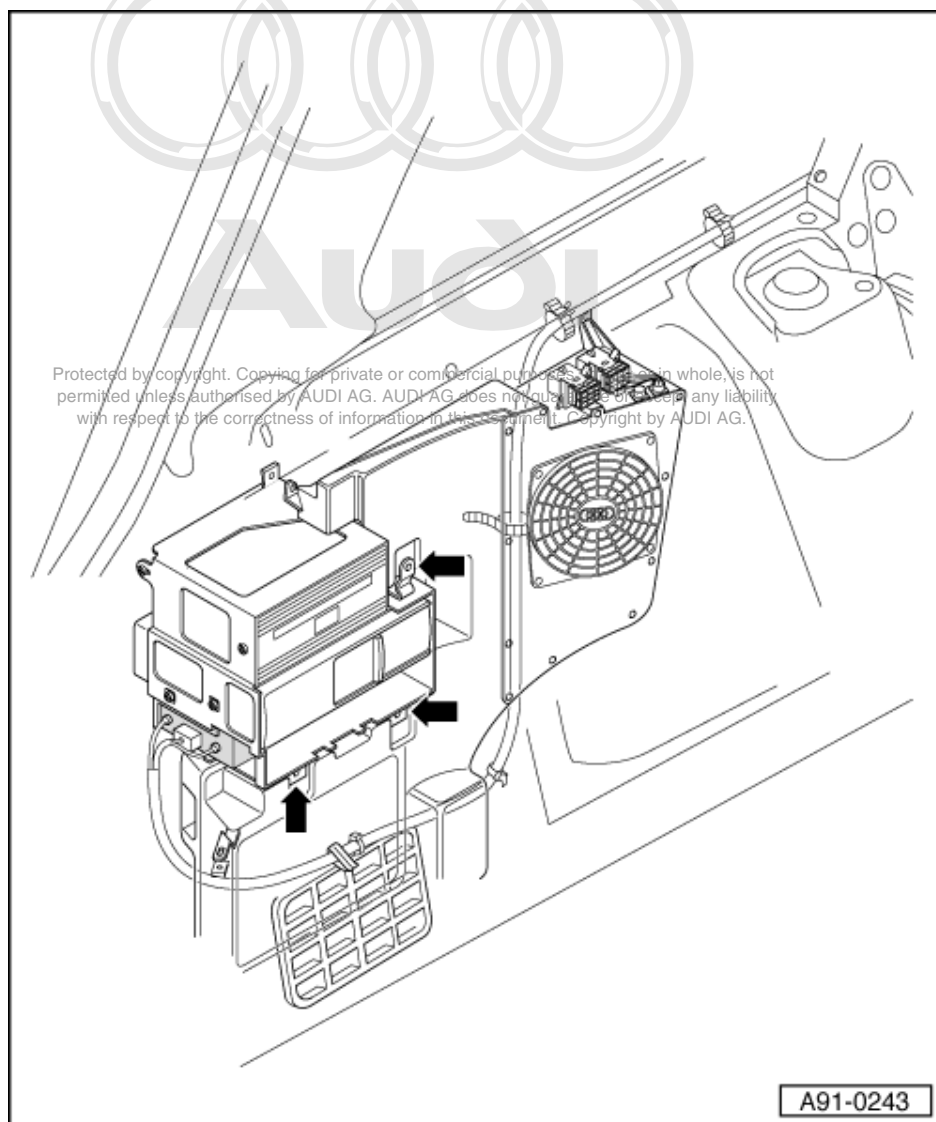
Installing:

- Installation is carried out in reverse sequence to removal.



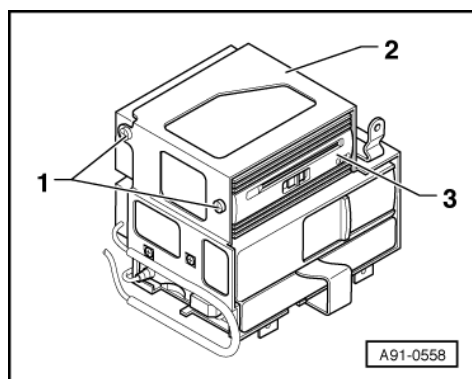
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3.21 - Removing and installing control unit for navigation system with CD drive -J401 -Avant-



The control unit for navigation system with CD drive (-J401) is located in rear left of luggage compartment.

- Open left storage compartment in luggage compartment.
- Remove the securing bolts from the package holder (mounting frame) -arrows- (2 Nm).
- Detach connectors from rear of control unit. Now remove the entire mounting frame -4-.



- -> Remove the two securing screws -1- (2 Nm) from either side of the control unit and remove control unit for navigation system with CD drive (-J401) -3- from mounting frame -2-.

Installing:

- Installation is carried out in reverse sequence to removal.

Important:

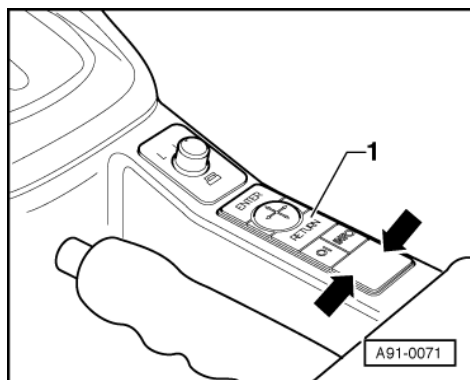
Always use original bolts to secure control unit; use of other bolts may damage the control unit.

Installation instructions:

- ◆ The navigation system control unit and mounting frame must be installed as horizontally and free of vibrations as possible to avoid system faults.
- ◆ Air circulation must also be guaranteed, i.e. the ventilation slots in the control unit must not be covered when installed.
- ◆ It is essential that the "Navigation System Complaint Form" is completed and returned together with the defective component following replacement of the control unit => Page **131**.

3.22 - Removing and installing operating unit for navigation system -E199

Removing



-> The operating unit (cursor element) -1- is located in the centre console next to the handbrake lever.

Note:

The operating unit must only be removed by drawing vertically upwards out of storage compartment. To avoid damaging the retainer tabs on the underside of the operating unit, do not tilt or rotate the operating unit during removal.

- Applying two screwdrivers at cover -arrows-, carefully prise the operating unit -1- upwards and remove by drawing upwards out of storage compartment.
- Detach 4-pin connector from operating unit.

Installing:

- Installation is carried out in reverse sequence to removal.

3.23 - Removing and electronic navigation control unit -J402

The control unit is located behind the driver's storage compartment.

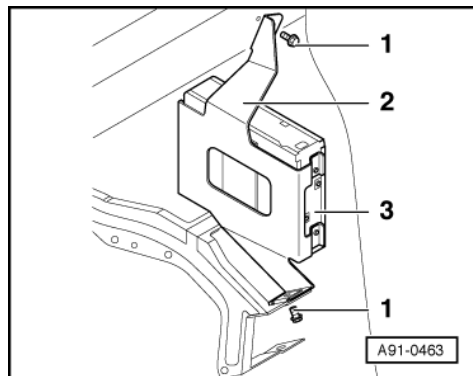
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Removing

- Remove storage compartment on driver's side

=> General Body Assembly, Interior; Repair group 68; Storage compartments, covers; Removing driver's storage compartment Storage compartments, covers Removing driver's storage compartment



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- -> Detach connectors from control unit -3-.
- Unscrew both securing bolts -1- (5 Nm) and detach control unit -3- together with bracket -2- from dash panel cross member.

Installing:

- Installation is carried out in reverse sequence to removal.

Note:

It is essential that the "Navigation System Complaint Form" is completed and returned together with the defective component following replacement of the control unit.

=>Page **131** .

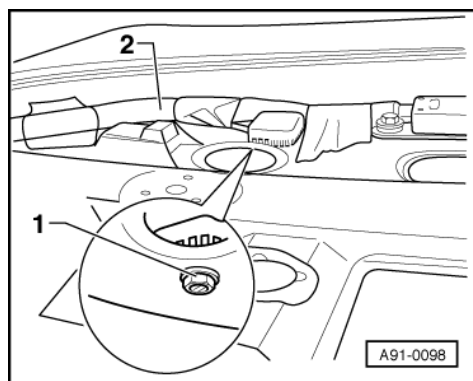
3.24 - Removing and installing navigation system aerial (GPS) -R50 -Saloon-

The aerial is located under the rear shelf.

Removing

- Remove the rear shelf.

=> General Body Assembly, Interior; Repair group 70; Trims; Removing and installing rear shelf Trims Removing and installing rear shelf



- -> Remove aerial screw connection -1- at upper edge of luggage compartment.
- Move foam trim 2- for connector to one side and detach connector.

Installing:

- Installation is carried out in reverse sequence to removal.

3.25 - Removing and installing magnetic field pickup (electronic compass) -G197 -Saloon-

The magnetic field pickup is located under the rear shelf.

Removing

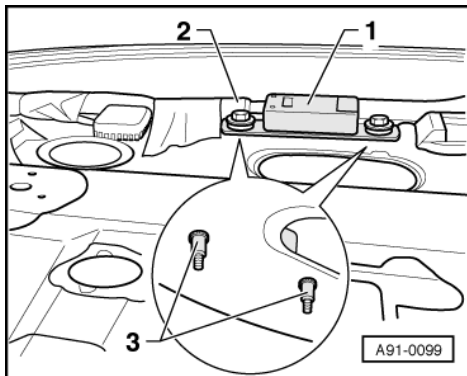
IMPORTANT:

If replacing the magnetic field pickup (compass), observe the requisite measures

=>Page **98** .

- Remove the rear shelf.

=> General Body Assembly, Interior; Repair group 70; Trims; Removing and installing rear shelf Trims Removing and installing rear shelf



- -> The connector for the magnetic field pickup -1- is located under the foam trim -2-, move this to one side and detach connector.
- Remove both securing elements -3- from the underside of the rear shelf in the luggage compartment by drawing downwards.
- Draw magnetic field pickup -1- with retaining plate upwards and remove from luggage compartment bulkhead.

Installing:

- Installation is carried out in reverse sequence to removal.

Installation instructions:

- ◆ Attach magnetic field pickup with retaining plate to luggage compartment bulkhead as horizontally as possible using securing clips.
- ◆ Fix wiring to bulkhead with adhesive tape.
- ◆ Ensure when installing the rear shelf that no cables are trapped and that the magnetic field pickup is not displaced.
- ◆ It is essential that the "Navigation System Complaint Form" is completed and returned together with the defective component following replacement of the magnetic field pickup => Page **131** .

3.26 - Removing and installing magnetic field pickup (electronic compass) -G197 -Avant-

The magnetic field pickup is located under the left roof trim next to the aerial mounting.

IMPORTANT:

If replacing the magnetic field pickup (compass), observe the requisite measures

=>Page **98**.

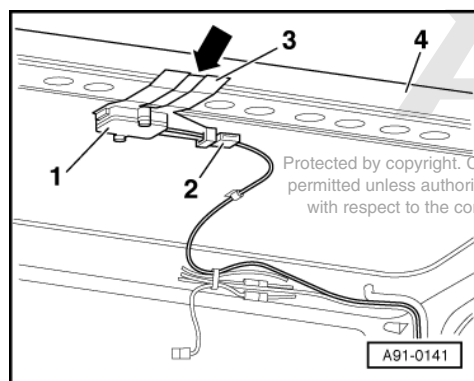
Removing

- Remove the interior light.

=> Electrical System; Repair group 96; Servicing interior lights (Saloon and Avant); Removing and installing front reading light Servicing interior lights (Saloon and Avant) Removing and installing front reading light

- Remove moulded headliner.

=> General Body Assembly, Interior; Repair group 70; Avant roof trims; Removing and installing moulded headliner Avant roof trims Removing and installing moulded headliner



- -> The connector -2- for the magnetic field pickup -1- is located to the left of the connector point for the roof aerial.
- Detach magnetic field pickup -1- with retaining plate -3- from body cross member -4- by applying a flat screwdriver at retaining plate (arrow).

Installing:

- Installation is carried out in reverse sequence to removal.

Installation instructions:

- ♦ Secure magnetic field pickup and retaining plate as horizontally as possible.
- ♦ Fix wiring in position with adhesive tape or cable ties.
- ♦ It is essential that the "Navigation System Complaint Form" is completed and returned together with the defective component following replacement of the magnetic field pickup => Page **131**.

3.27 - Removing and installing shunt resistor for rear window heating -N219 -Saloon-

The shunt resistor is attached under the right D-pillar trim (Avant Saloon only).

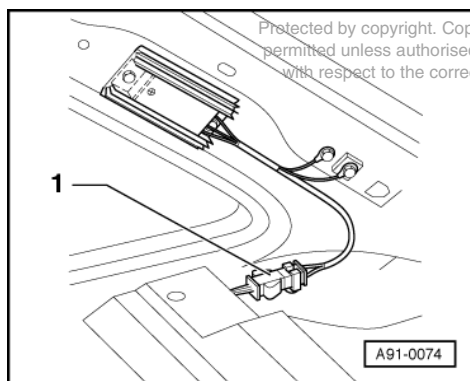
Removing

IMPORTANT:

If replacing the shunt resistor for rear window heating, observe the requisite measures => Page 98.

- Remove the rear shelf.

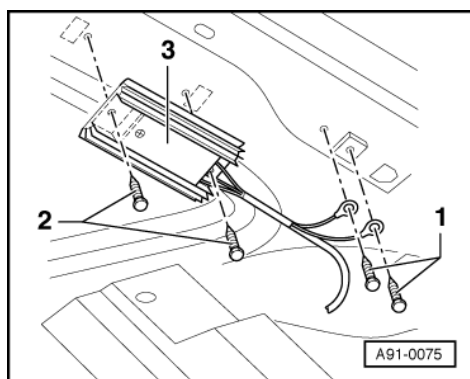
=> General Body Assembly, Interior; Repair group 70; Trims; Removing and installing rear shelf Trims Removing and installing rear shelf



- Remove D-pillar trim.

=> General Body Assembly, Interior; Repair group 70; Trims; Removing and installing C/D-pillar trim Trims Removing and installing C/D-pillar trim

- -> Disconnect electrical connector -1- to wiring harness.



- -> Remove both self-tapping screws -1- (11 Nm).
- Remove both self-tapping screws -2- (4 Nm) and remove shunt resistor -3-.

Installing:

- Installation is carried out in reverse sequence to removal.



4 - Navigation System II (Navigation System Plus)

4.1 - Navigation System II (Navigation System Plus)

Important:

Disconnect battery earth strap before working on electrical system.

Activate the service mode of telematics control unit before disconnecting battery. => Radio, Telephone and Navigation System Self-diagnosis; Repair group 01; Telematics Self-diagnosis; Adaption

Notes:

- ♦ On vehicles with coded radio, obtain anti-theft code before disconnecting battery.
- ♦ Activate the service mode of telematics control unit before disconnecting battery.
- ♦ If the battery is reconnected, please ensure that the vehicle equipment (radio, clock, electric window lifters, engine) is activated as described in operating instructions and the service mode of telematics control unit is deactivated.

4.2 - General description

The radio navigation system (RNS) combines the functions of a navigation system with those of a reliable RDS car radio. It is also possible to receive television programmes via a TV tuner.

Installed in the double DIN housing are:

- ♦ an RDS radio receiver
- ♦ a 5 coloured liquid crystal display
- ♦ a navigation system with angular acceleration sensor and GPS satellite receiver
- ♦ and a CD-ROM drive for the navigation system

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installed.

A TV tuner for receiving television programmes and video text is installed in the luggage compartment.

ACD changer can be installed to extend the range of audio equipment.

Notes:

- ♦ In the event of complaints, familiarity with the functions and operation of the relevant radio navigation system is essential.
- ♦ Additional information

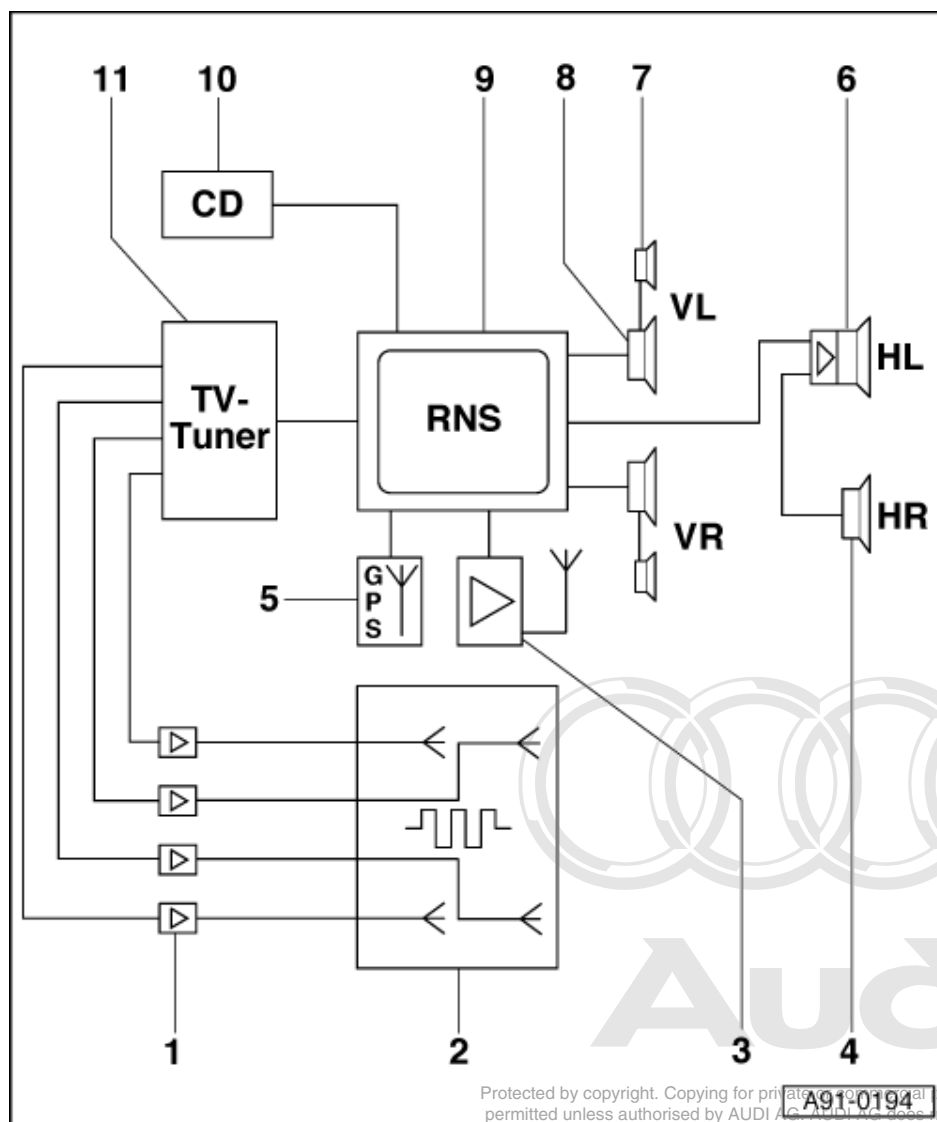
=> Operating instructions

- ♦ For retrofitting, repair work and troubleshooting

=> Current Flow Diagrams, Electrical Fault-finding and Fitting Locations

=> Installation instructions

- ♦ Comprehensive assembly instructions, e.g. removing and installing trims, are included in the General Body Assembly Workshop Manual.
- ♦ Use of other radio units may impair the aerial amplifier as the radio navigation system is equipped with a "remote powered aerial", which means that the power supply is fed to the aerial amplifier (including TV aerial amplifier) via the centre conductor of the high-frequency cable.



7 Mid-range/treble loudspeaker installed at front in top of door trim

8 Bass loudspeaker installed at front in bottom of door trim

9 Control unit for navigation system operating electronics

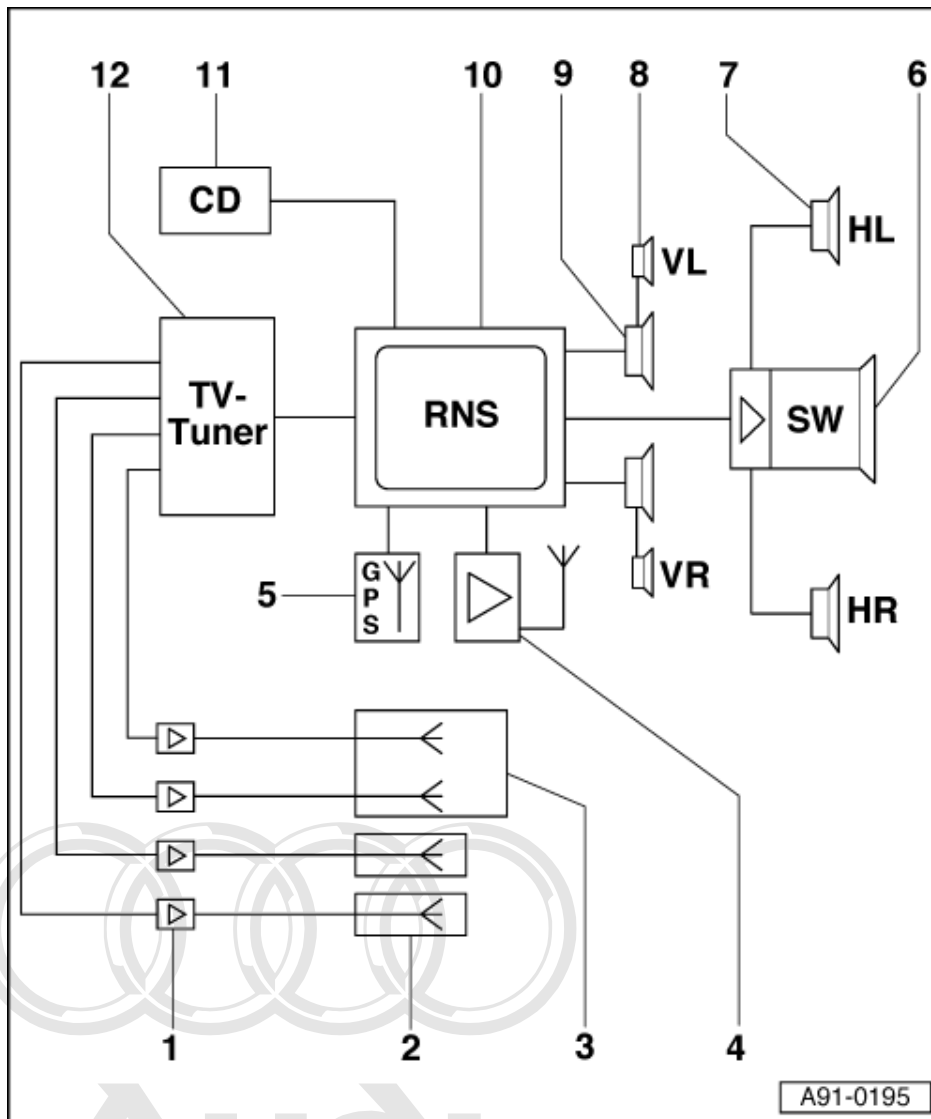
10 CD changer (optional) in rear left storage compartment in luggage compartment

11 TV tuner

installed in upper right corner of luggage compartment under rear shelf (up to vehicle identification no. 8DZYA200000)

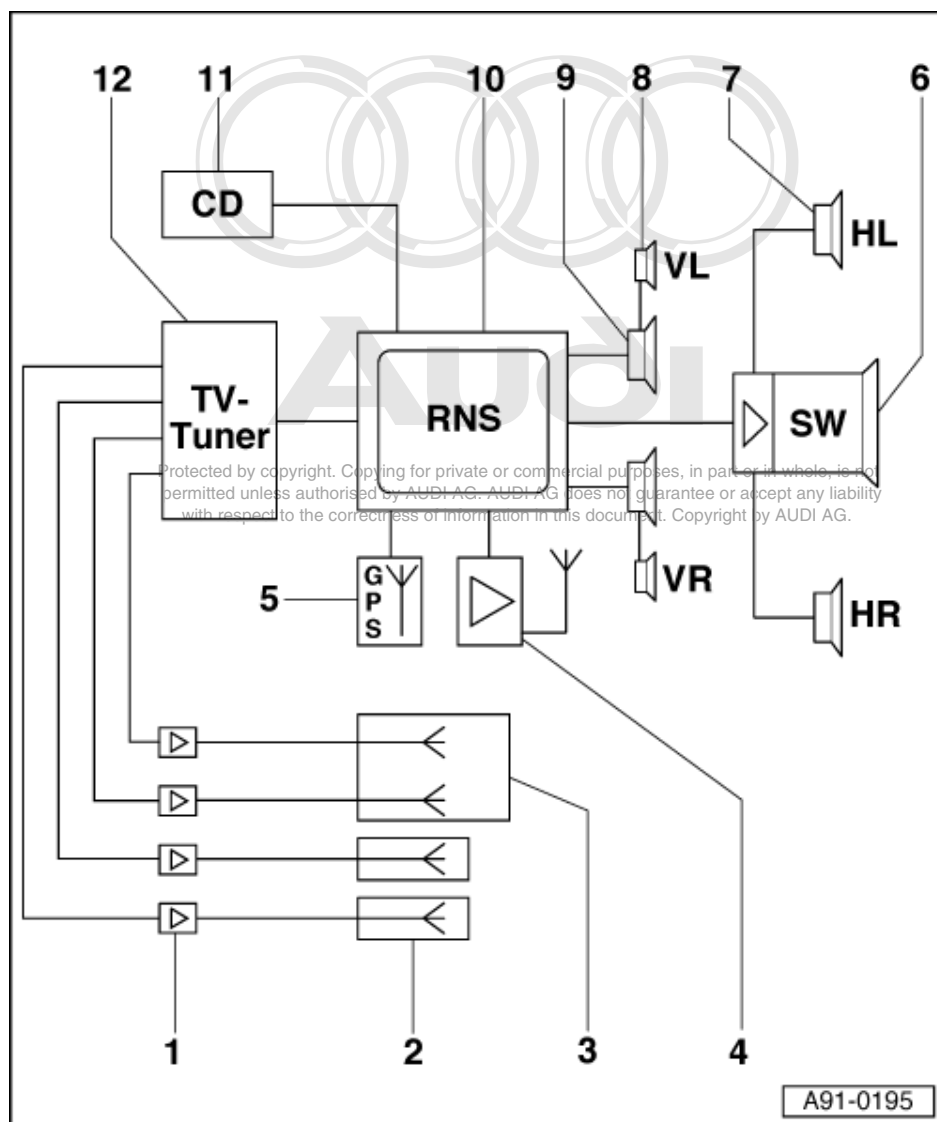
in rear left storage compartment in luggage compartment (from vehicle identification no. 8DZYA200001)

4.4 - Structure of Navigation System II -Avant-



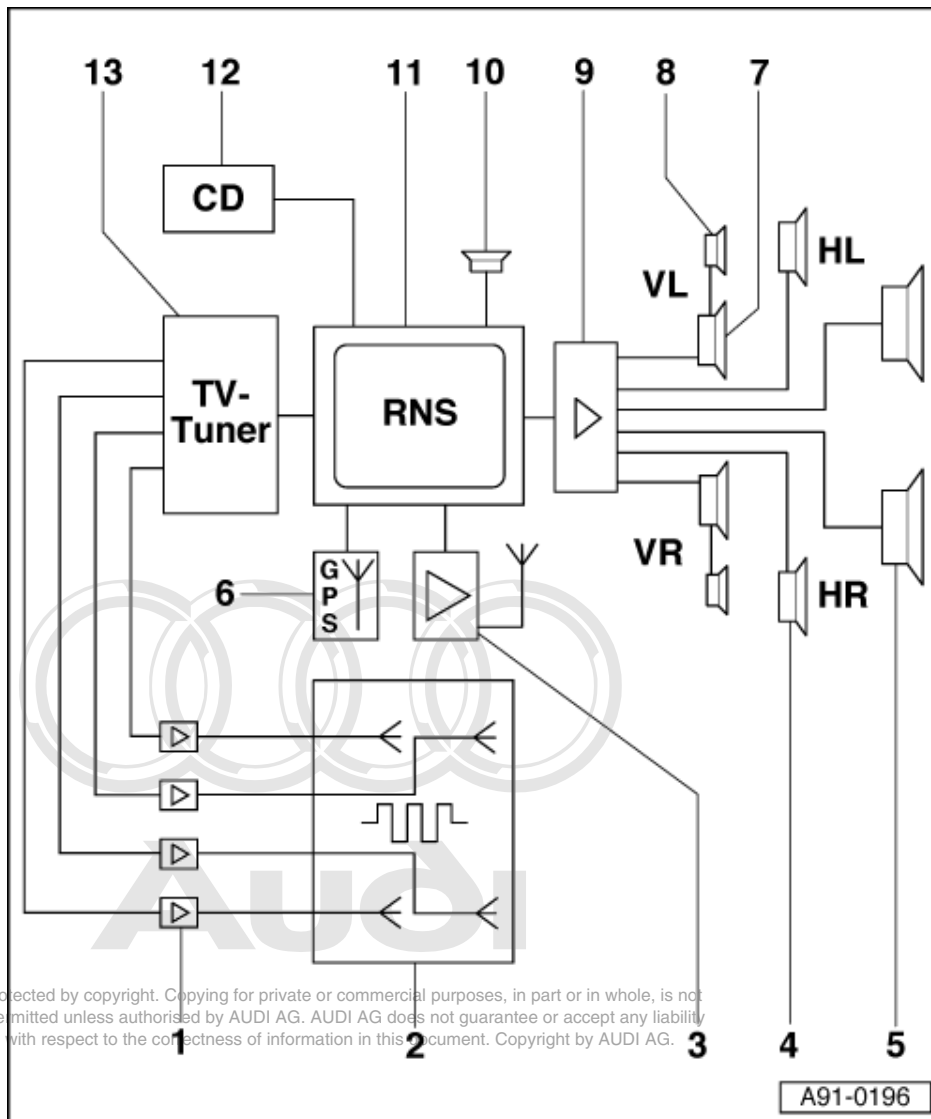
- 1 Four aerial amplifiers for TV aerials
- 2 Rear side window with one integrated TV aerial
- 3 Rear window with two integrated TV aerials
- 4 Roof aerial with aerial amplifier for radio integrated in triplex roof aerial
- 5 Aerial for navigation system (GPS) integrated in triplex roof aerial
- 6 Bass loudspeaker with amplifier (subwoofer) installed in rear left of luggage compartment under side trim

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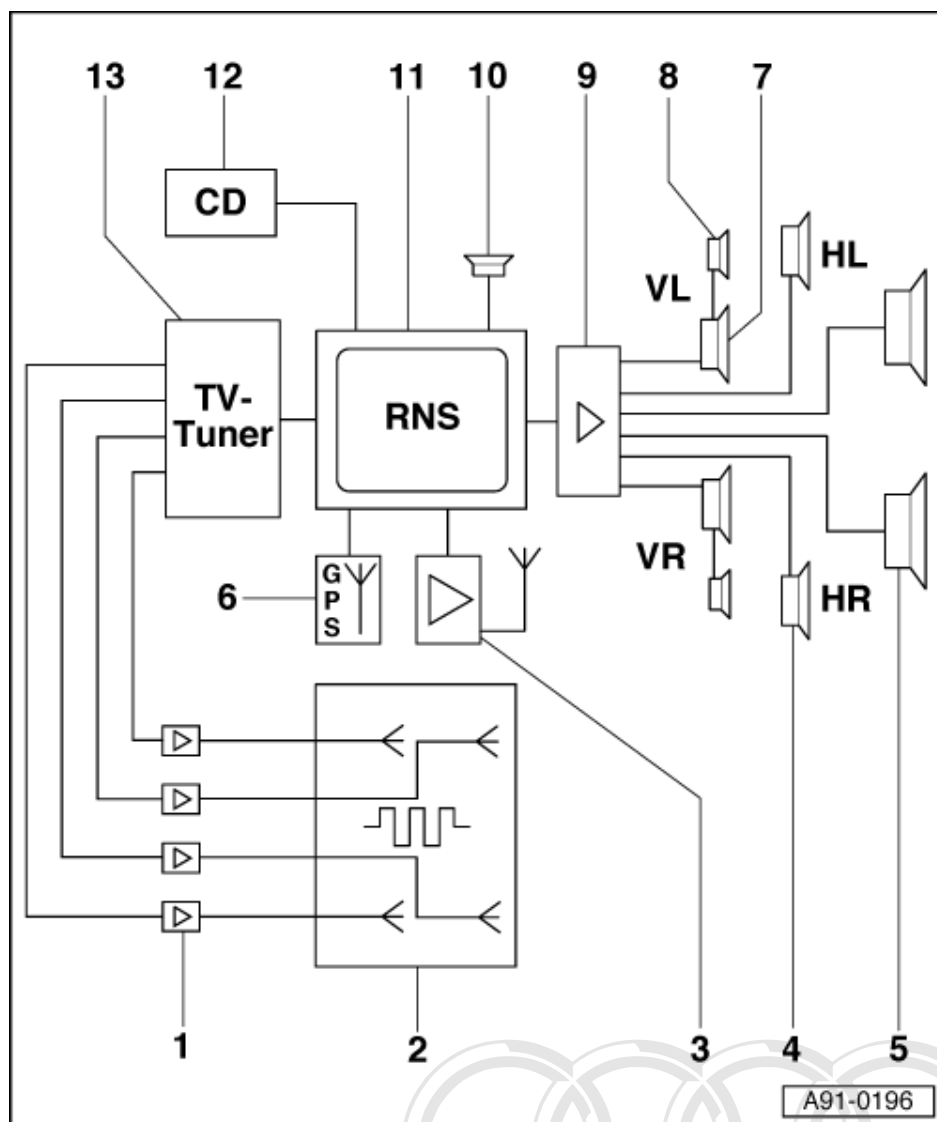


- 7 Wide-band loudspeaker installed in lower rear door trim
- 8 Mid-range/treble loudspeaker installed at front in top of door trim
- 9 Bass loudspeaker installed at front in bottom of door trim
- 10 Control unit for navigation system operating electronics
- 11 CD changer (optional) in rear left storage compartment in luggage compartment
- 12 TV tuner in rear left storage compartment in luggage compartment

4.5 - Structure of Navigation System II with BOSE sound system -Saloon-



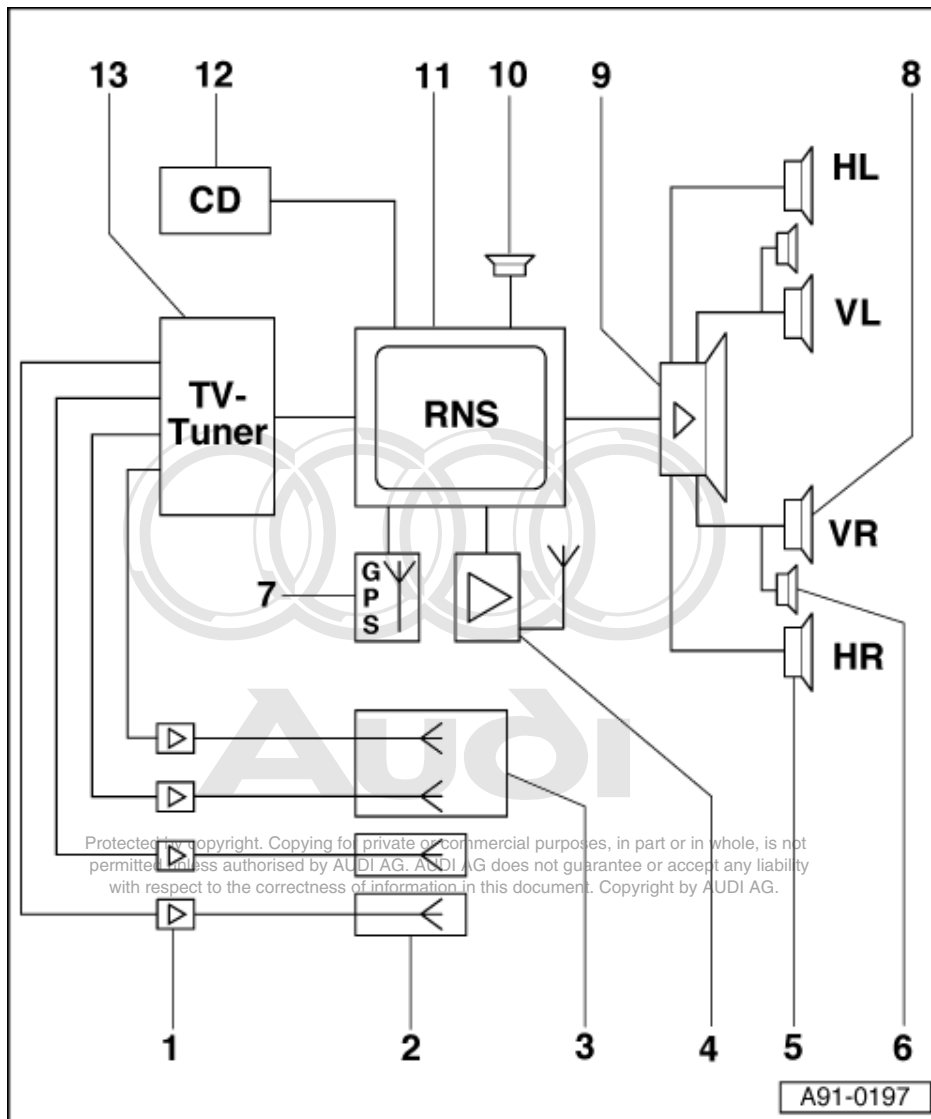
- 1 Four aerial amplifiers for TV aerals
- 2 Rear window with four integrated TV aeras and heating
- 3 Rear window aerial with aerial amplifier for radio
- 4 Wide-band loudspeaker installed at rear in bottom of door trim
- 5 Bass loudspeaker installed in rear shelf
- 6 Aerial for navigation system (GPS) installed on right, below rear shelf



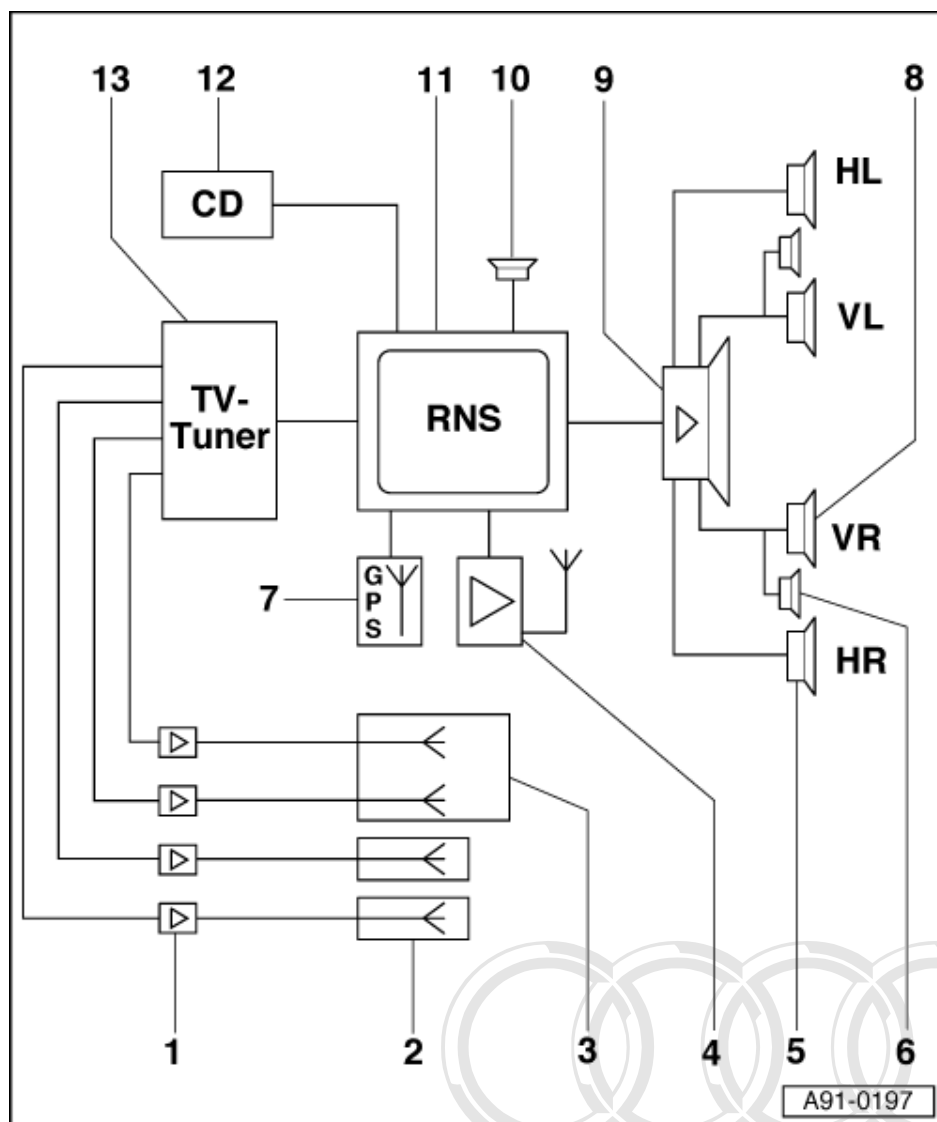
- 7 Bass loudspeaker installed at front in bottom of door trim
- 8 Mid-range/treble loudspeaker installed at front in top of door trim
- 9 BOSE power amplifier installed in upper left corner of luggage compartment under rear shelf
- 10 Hands-free loudspeaker installed in left door trim
- 11 Control unit for navigation system operating electronics
- 12 CD changer (optional) in rear left storage compartment in luggage compartment
- 13 TV tuner
installed in upper right corner of luggage compartment under rear shelf (up to vehicle identification no. 8DZYA200000)
in rear left storage compartment in luggage compartment (from vehicle identification no. 8DZYA200001)

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4.6 - Structure of Navigation System II with BOSE sound system -Avant-



- 1 Four aerial amplifiers for TV aerials
- 2 Rear side window with one integrated TV aerial
- 3 Rear window with two integrated TV aerials
- 4 Roof aerial with aerial amplifier for radio integrated in triplex roof aerial
- 5 Wide-band loudspeaker installed at rear in bottom of door trim
- 6 Mid-range/treble loudspeaker installed at front in top of door trim



7 Aerial for navigation system (GPS) integrated in triplex roof aerial

8 Bass loudspeaker installed at front in bottom of door trim

9 Bass loudspeaker (subwoofer) with BOSE power amplifier installed in rear left of luggage compartment under side trim

10 Hands-free loudspeaker installed in left door trim

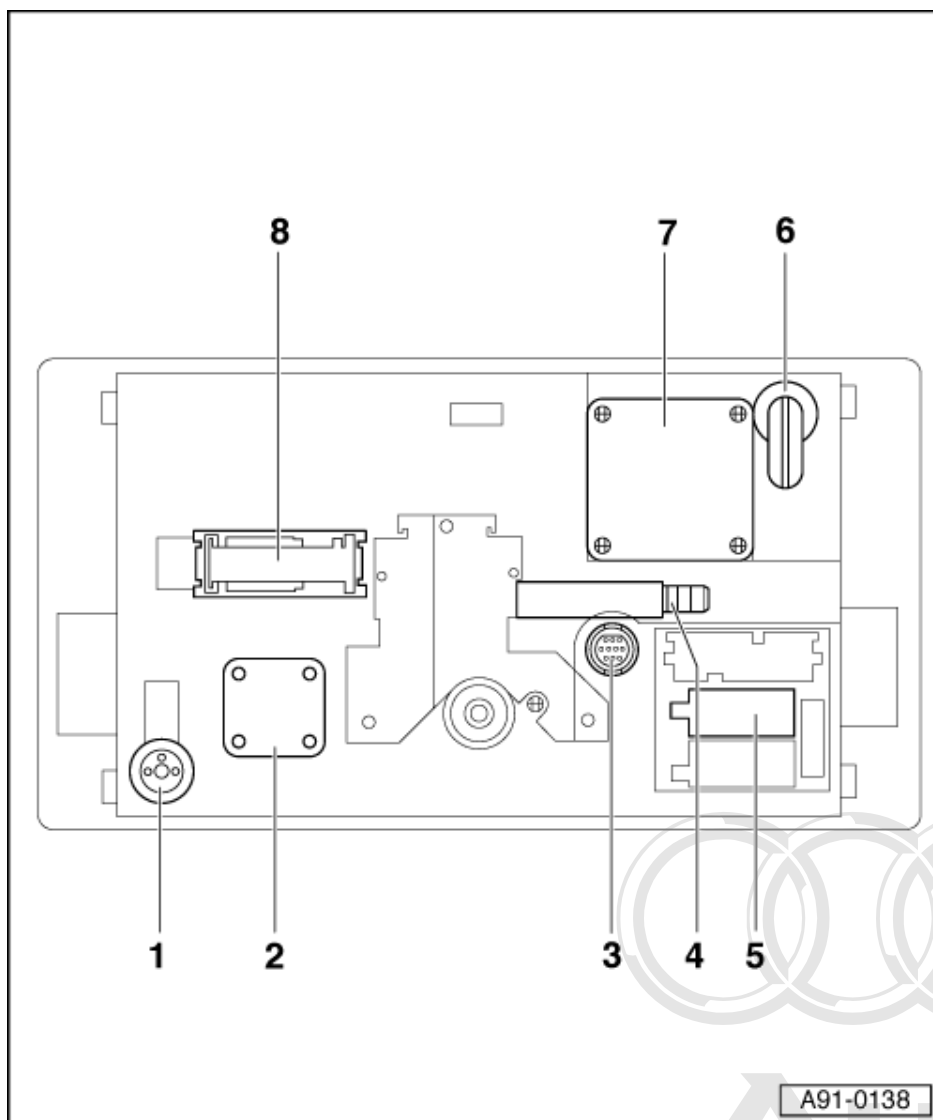
11 Control unit for navigation system operating electronics

12 CD changer (optional) in rear left storage compartment in luggage compartment

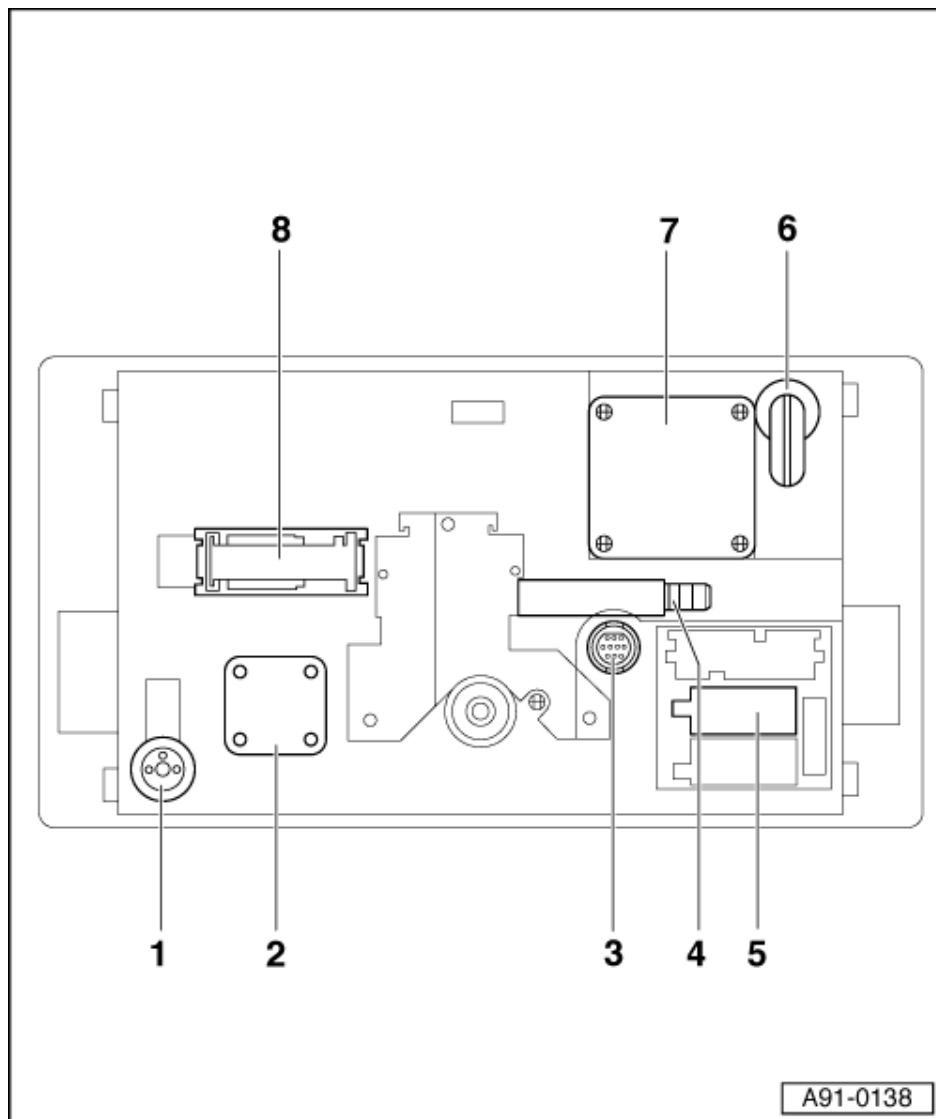
13 TV tuner in rear left storage compartment in luggage compartment

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4.7 - Connectors on rear of operating electronics control unit, navigation -J402



- 1 Radio aerial connection: Connection socket for radio aerial
- 2 Fan for cooling system
- 3 Video connection; 11-pin connector for connection of TV tuner in rear left storage compartment in luggage compartment
- 4 Earth connection



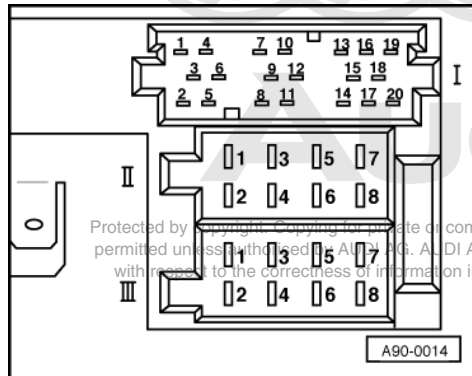
A91-0138

- 5 Radio connection: 36-pin connection block with three multi-pin connectors and a fuse
- 6 GPS aerial connection; connection socket for navigation system aerial on luggage compartment lid (for Avant triplex roof aerial)
- 7 Fan for cooling system
- 8 Navigation system connection: 26-pin connector for navigation system pickups

Contact assignment of multi-pin connectors for operating electronics/navigation system control unit

Note:

Connector contacts not listed have not been assigned.



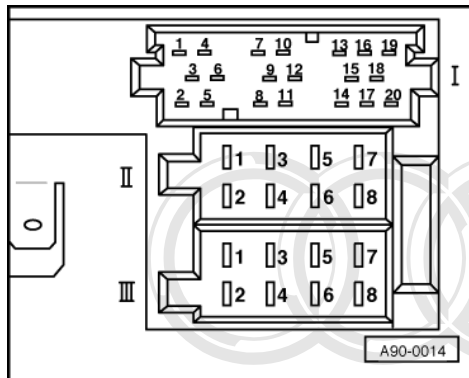
A90-0014

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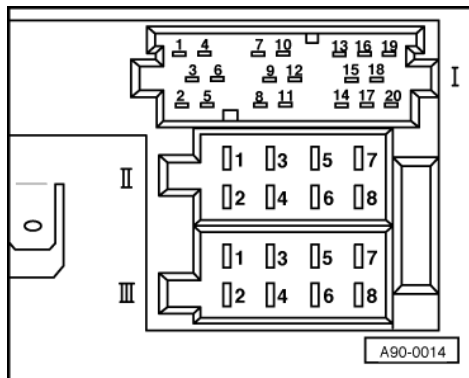
-> Radio connection:

Multi-pin connector I, 20-pin

- 1 - Line output for rear left loudspeaker
- 2 - Line output for rear right loudspeaker
- 3 - Line output, earth
- 4 - Line output for front left loudspeaker
- 5 - Line output for front right loudspeaker
- 6 - Switched positive for BOSE power amplifier
- 7 - Telephone AF +
- 8 - CLOCK display
- 9 - DATA display
- 10 - ENA display
- 11 - Remote control



- 12 - Telephone AF -
- 13 - CD DATA IN
- 14 - CD DATA OUT
- 15 - CD CLOCK
- 16 - Supply voltage to CD changer
- 17 - Control wire to CD changer
- 18 - Earth signal wire (CD-NF earth)
- 19 - Signal wire for left channel (CD AF left)
- 20 - Signal wire for right channel (CD AF right)



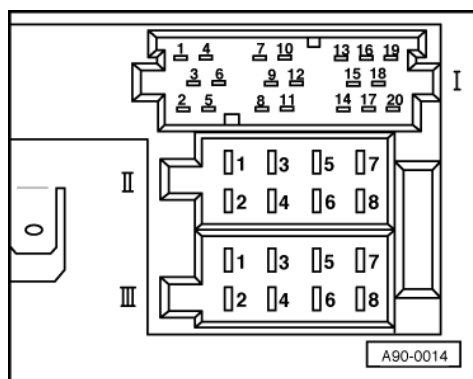
-> Radio connection:

Multi-pin connector II, 8-pin, brown

- 3 - Loudspeaker +, front right
- 4 - Loudspeaker -, front right
- 5 - Loudspeaker +, front left (for BOSE sound system in conjunction with telephone hands-free loudspeaker +)



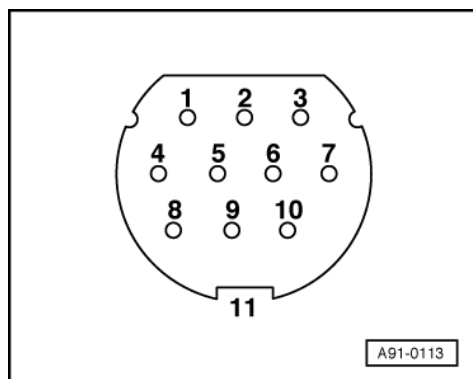
6 - Loudspeaker -, front left (for BOSE sound system in conjunction with telephone hands-free loudspeaker -)



-> Radio connection:

Multi-pin connector III, 8-pin, black

- 1 - Gala (speed signal)
- 2 - Telephone mute
- 3 - K wire (self-diagnosis)
- 4 - Connection for switching on and off via ignition key (S contact)
- 5 - Switched positive for power aerial
- 6 - Lighting dimmer (terminal 58b)
- 7 - Supply voltage (terminal 30)
- 8 - Earth (terminal 31)



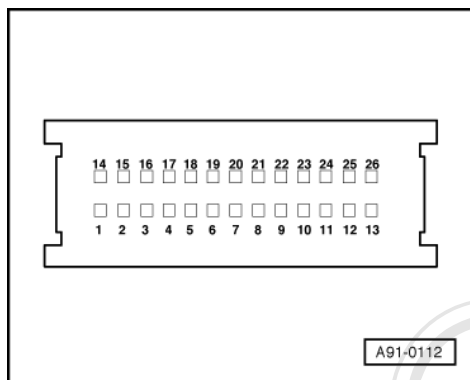
-> Video connection (RGB video input)

Multi-pin connector, 11-pin

- 1 - AF earth
- 2 - AF left
- 3 - AF right
- 4 - Video signal (CSYNC)
- 5 - Video earth
- 6 - PAL/NTSC
- 7 - V switch
- 8 - input B
- 9 - input G
- 10 - input R
- 11 - Screen earth



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-> Navigation system connection

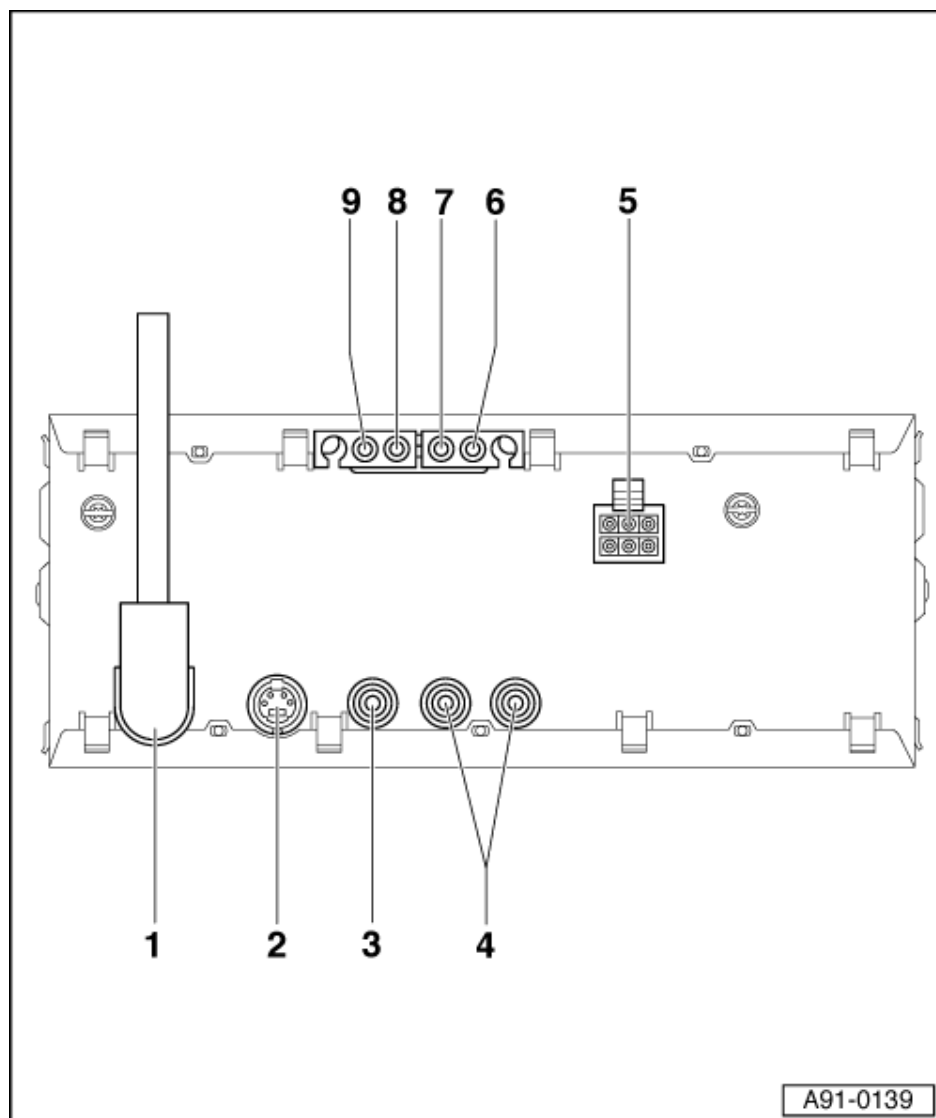
Multi-pin connector, 26-pin

- 4 - Terminal 15
- 5 - Speed sensor input, left (ABS)
- 6 - Driving instructions AF +
- 13 - CAN bus high
- 14 - Switched positive (power aerial)
- 17 - Reversing light switch
- 18 - Speed sensor input, right (ABS)
- 19 - Driving instructions AF -
- 20 - Driving instructions, AF screen
- 26 - CAN bus low

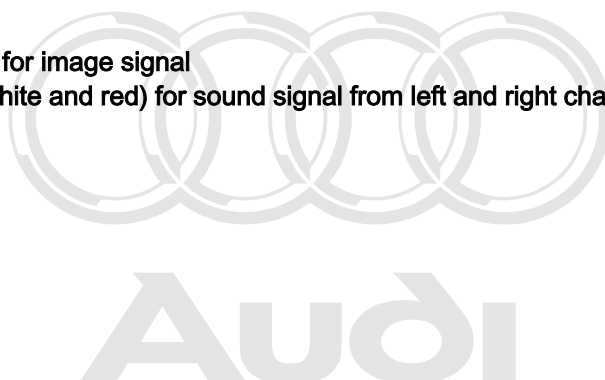
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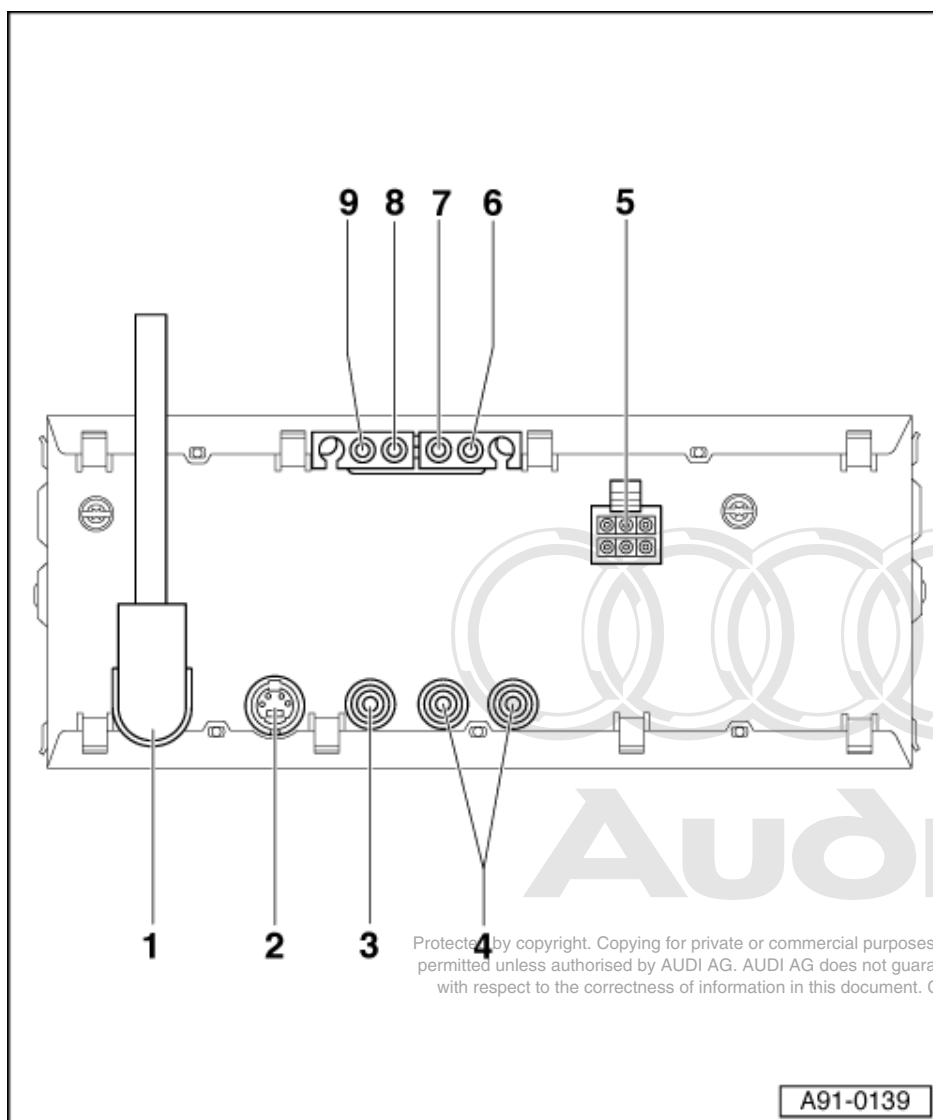
4.8 - Connectors on rear of TV tuner -J415 (up to week 35/00)



- 1 Video connection; 11-pin connector for connecting operating electronics control unit, navigation in centre console
- 2 Video input; 4-pin connector (SVHS)
- 3 Video input; 2-pin connector (yellow cinch socket) for image signal
- 4 Video input; 2-pin connector (two cinch sockets, white and red) for sound signal from left and right channel



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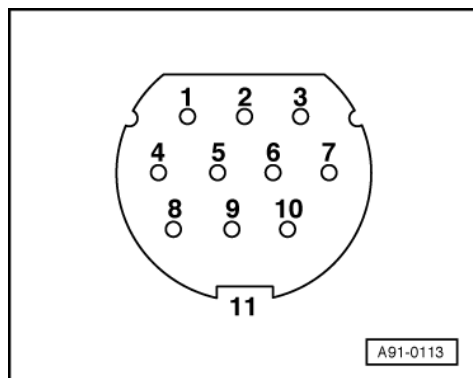


- 5 Power supply; 6-pin connector for power supply and control bus connections
- 6 TV aerial connection; connection to TV aerial amplifier 4 at rear window (at rear side window in Avant vehicles)
- 7 TV aerial connection; connection to TV aerial amplifier 3 at rear window (at rear side window in Avant vehicles)
- 8 TV aerial connection; connection to TV aerial amplifier 2 at rear window (at rear side window in Avant vehicles)
- 9 TV aerial connection; connection to TV aerial amplifier 1 at rear window (at rear side window in Avant vehicles)

Contact assignment of multi-pin connectors for TV tuner

Note:

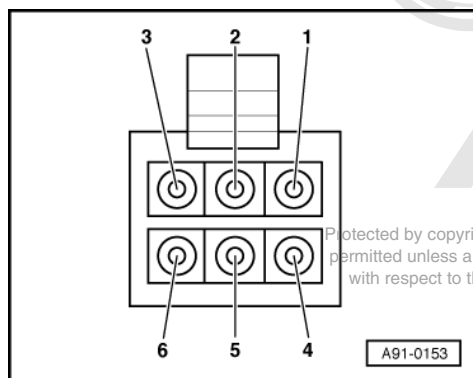
Connector contacts not listed have not been assigned.



-> Video connection (RGB video input)

Multi-pin connector, 11-pin

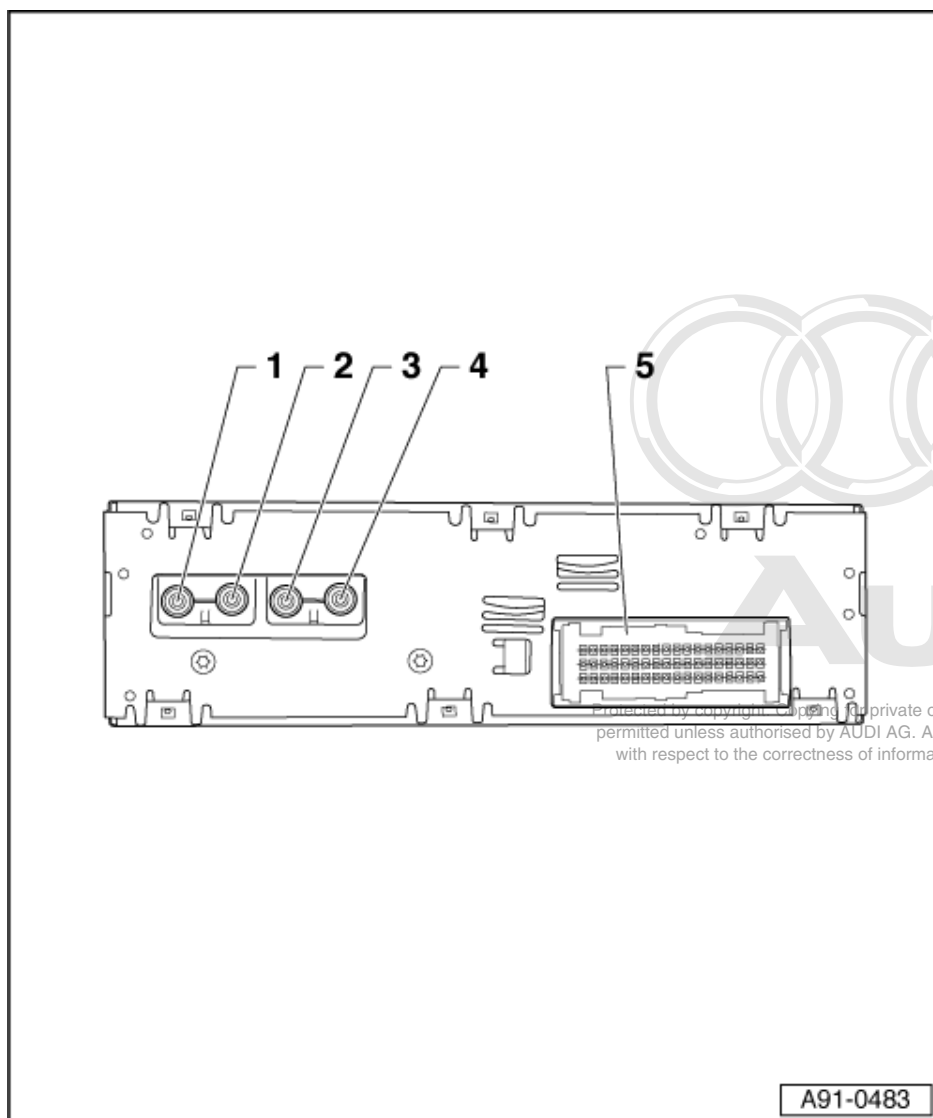
- 1 - AF earth
- 2 - AF left
- 3 - AF right
- 4 - Video signal (CSYNC)
- 5 - Video earth
- 6 - PAL/NTSC
- 7 - V switch
- 8 - Input B
- 9 - Input G (yellow input signal)
- 10 - Input R
- 11 - Screen earth



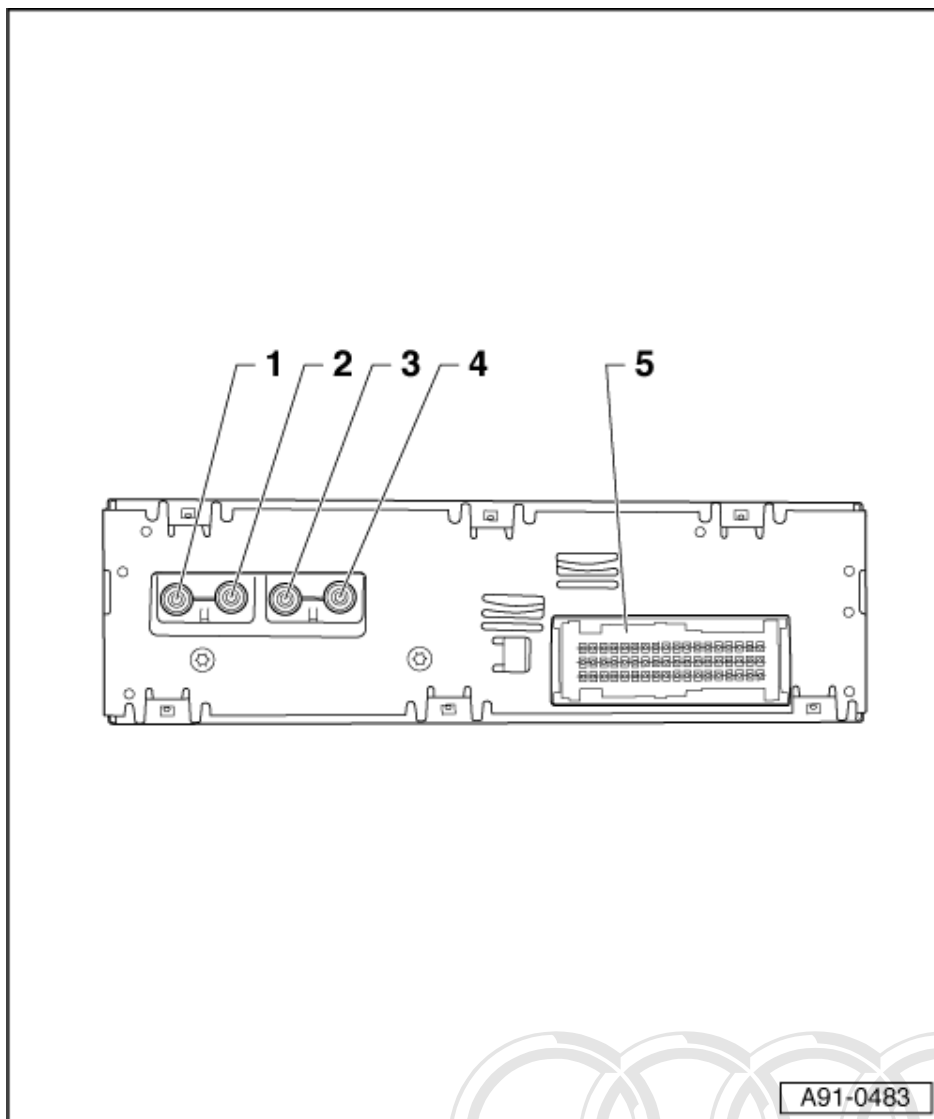
-> Connector for power supply and control bus connections

- 1 - Earth, terminal 31
- 2 - Power supply, terminal 30
- 3 - Data bus high
- 4 - Terminal 15
- 5 - Earth, terminal 31
- 6 - Data bus low

4.9 - Connectors on rear of TV tuner -J415 (from week 36/00)



- 1 TV aerial connection; connection to TV aerial amplifier 1 at rear window (at rear side window in Avant vehicles)
- 2 TV aerial connection; connection to TV aerial amplifier 2 at rear window (at rear side window in Avant vehicles)
- 3 TV aerial connection; connection to TV aerial amplifier 3 at rear window (at rear side window in Avant vehicles)

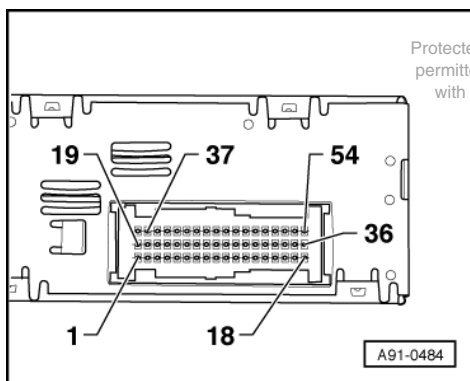


- 4 TV aerial connection; connection to TV aerial amplifier 4 at rear window (at rear side window in Avant vehicles)
- 5 Connector; 54-pin video inputs and outputs, power supply, data BUS

Contact assignment of multi-pin connector for TV tuner

Note:

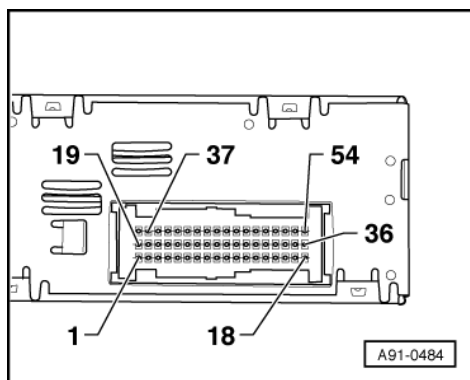
Connector contacts not listed are not presently assigned.



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-> Multi-pin connector, 54-pin

- 2 - CAN bus low
- 3 - CAN bus high
- 5 - AF, front right
- 7 - AF, front left
- 8 - AF earth
- 9 - Total screen earth, front
- 10 - Video screen, front
- 11 - Video signal (CSYNC), front
- 12 - Video earth
- 13 - Video B, front
- 14 - Video earth
- 15 - Video G, front
- 16 - Video earth
- 17 - Video R, front

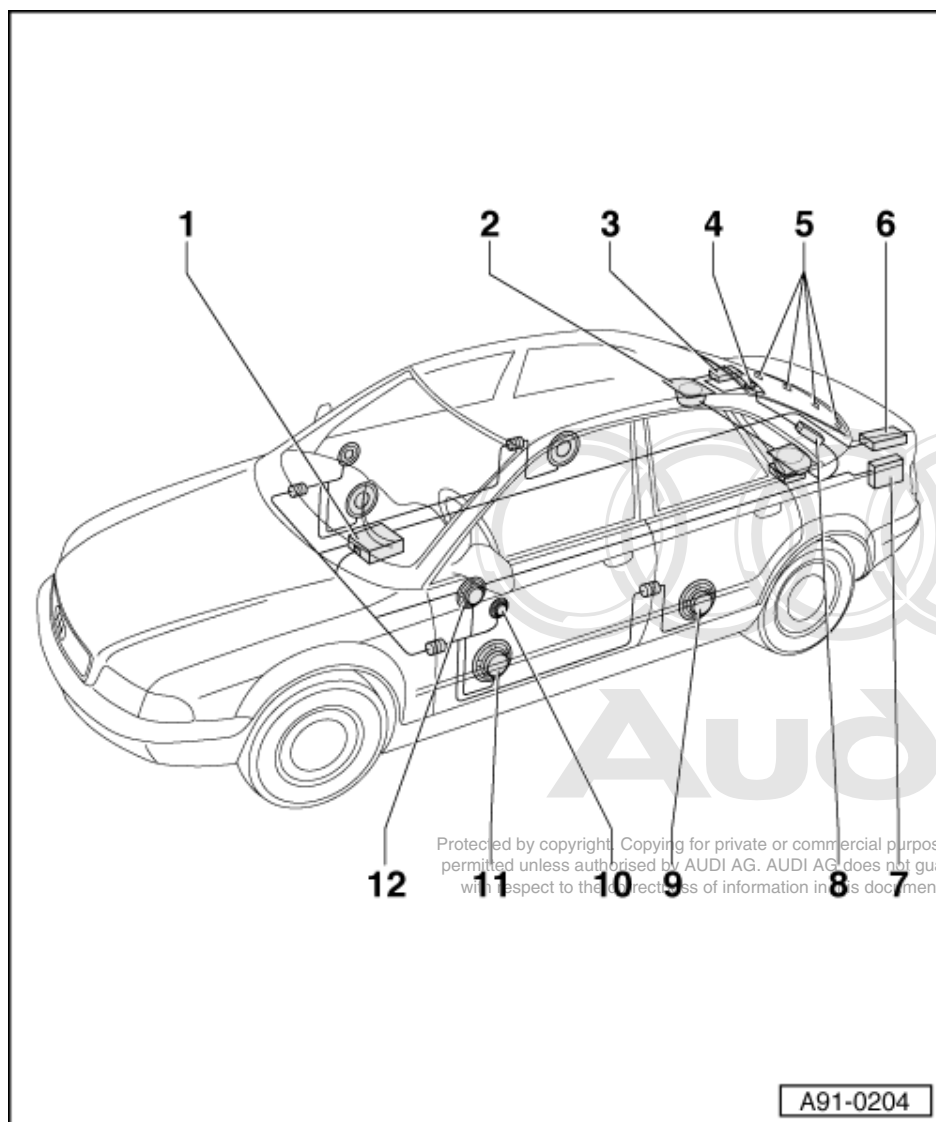


- 19 - Earth, terminal 31
- 20 - Terminal 30
- 21 - K wire (self-diagnosis)



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4.10 - General overview of Navigation System II -Saloon-



1 Control unit for navigation system operating controls -J402

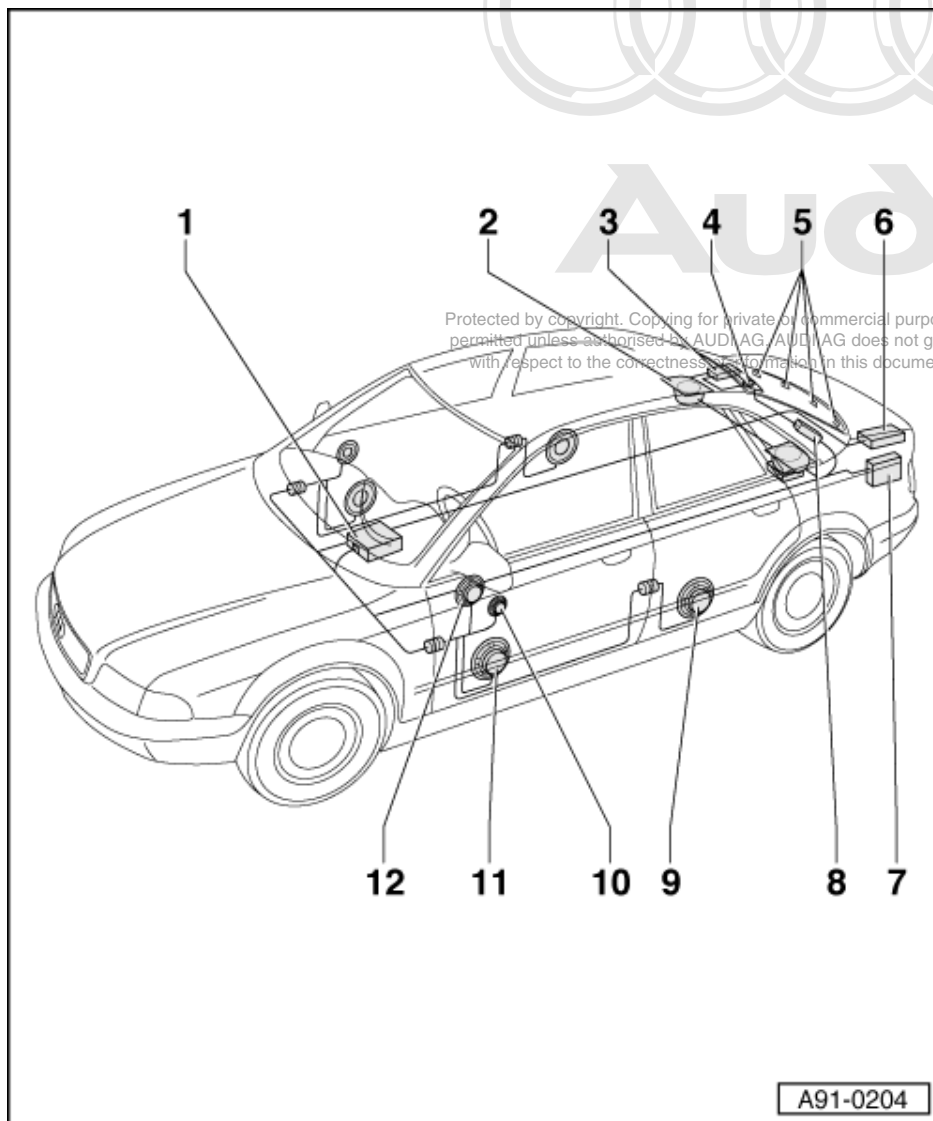
- ◆ Installed in centre console
- ◆ Removing and installing
=> Page 167

2 Loudspeaker installed in rear shelf

- ◆ Wide-band loudspeaker (2-way system)
- ◆ Right loudspeaker passive and left loudspeaker active with twin amplifier

3 TV tuner -J415

- ◆ Installed in upper right of luggage compartment below rear shelf (up to vehicle identification no. 8DZYA200000)
- ◆ Removing and installing
=> Page 169
- ◆ Installed in rear left of luggage compartment (from vehicle identification no. 8DZYA200001)
- ◆ Removing and installing => Page 170

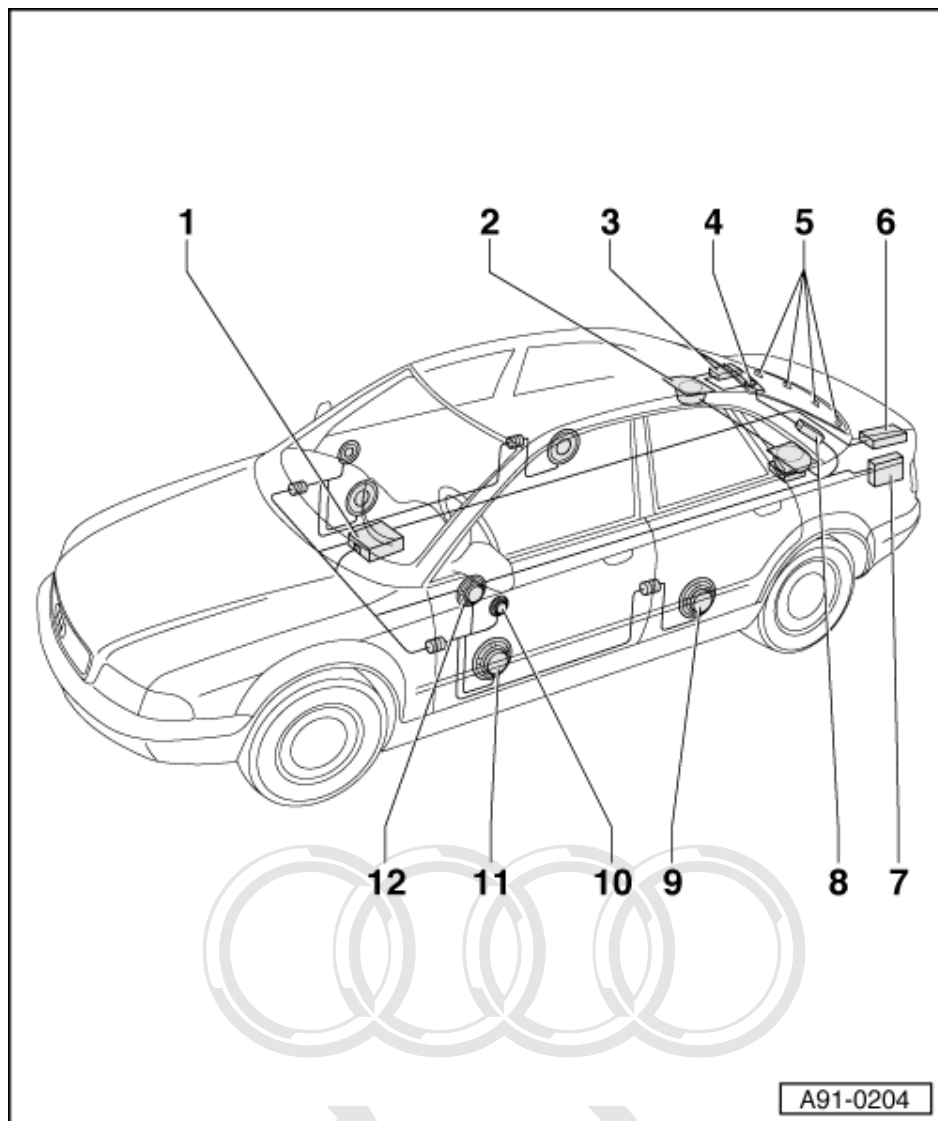


4 GPS navigation system aerial -R50

- ♦ on right, below rear shelf
- ♦ Removing and installing => Page 136

5 TV aerial amplifier

- ♦ Four TV aerial amplifiers installed under rear shelf (up to vehicle identification no. 8DZYA200000)
- ♦ Removing and installing => Page 174
- ♦ Connection points for TV aerals => Page 172
- ♦ Three TV aerial amplifiers installed under rear shelf, one at D-pillar (from vehicle identification no. 8DZYA200001)
- ♦ Removing and installing => Page 175
- ♦ Connection points for TV aerals => Page 173



6 BOSE power amplifier

- ◆ in rear left of luggage compartment under rear shelf
- ◆ Removing and installing

=> Page 52

7 CD changer

- ◆ in rear left of luggage compartment under side trim
- ◆ Removing and installing

=> Page 46

8 Radio aerial amplifier

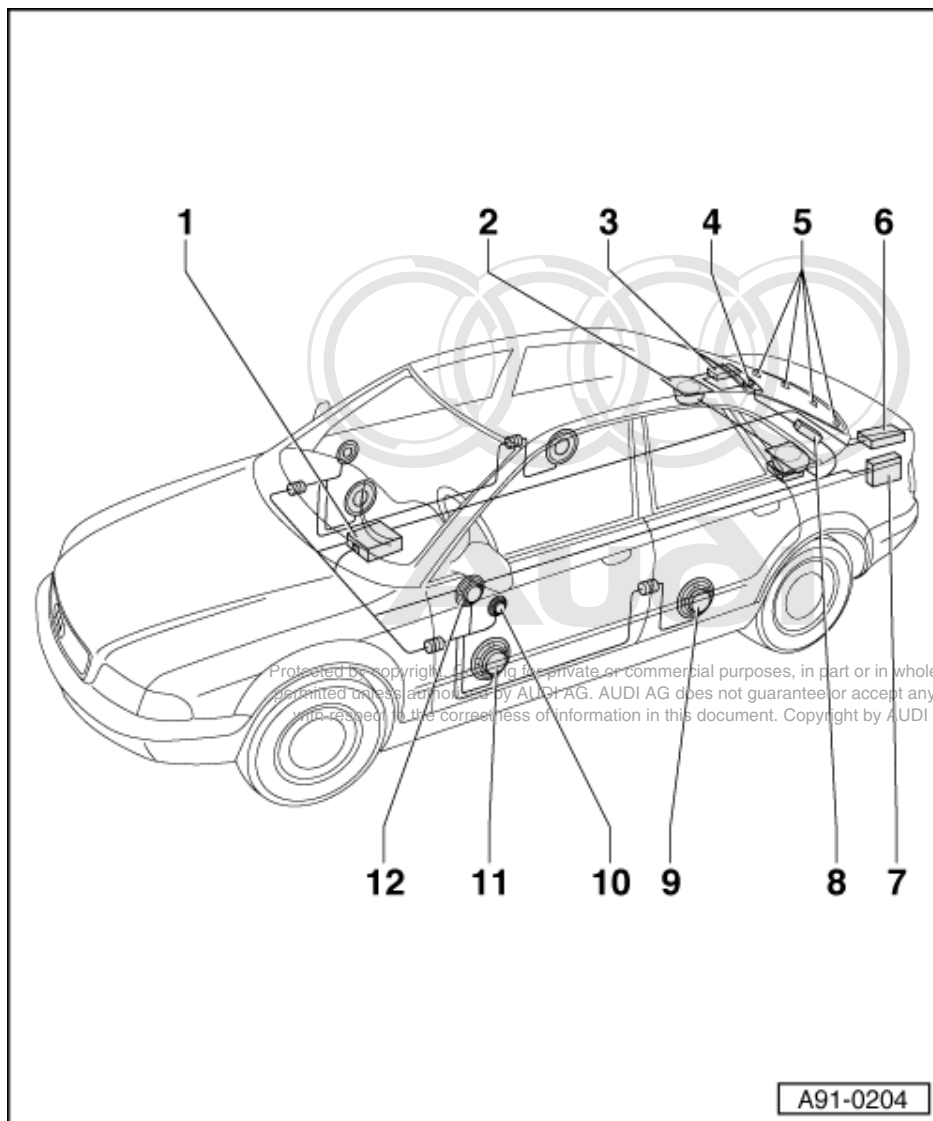
- ◆ in D-pillar trim, left
- ◆ Removing and installing

=> Page 54

9 Wide-band loudspeaker

- ◆ in rear door trim (with Bose sound system only)
- ◆ Removing and installing

=>Page 46



10 Hands-free loudspeaker

- ◆ In front driver's door.
- ◆ only in vehicles with BOSE sound system
- ◆ For all other vehicles, the loudspeakers in the front door trims are used.
- ◆ Removing and installing
=> Page 83

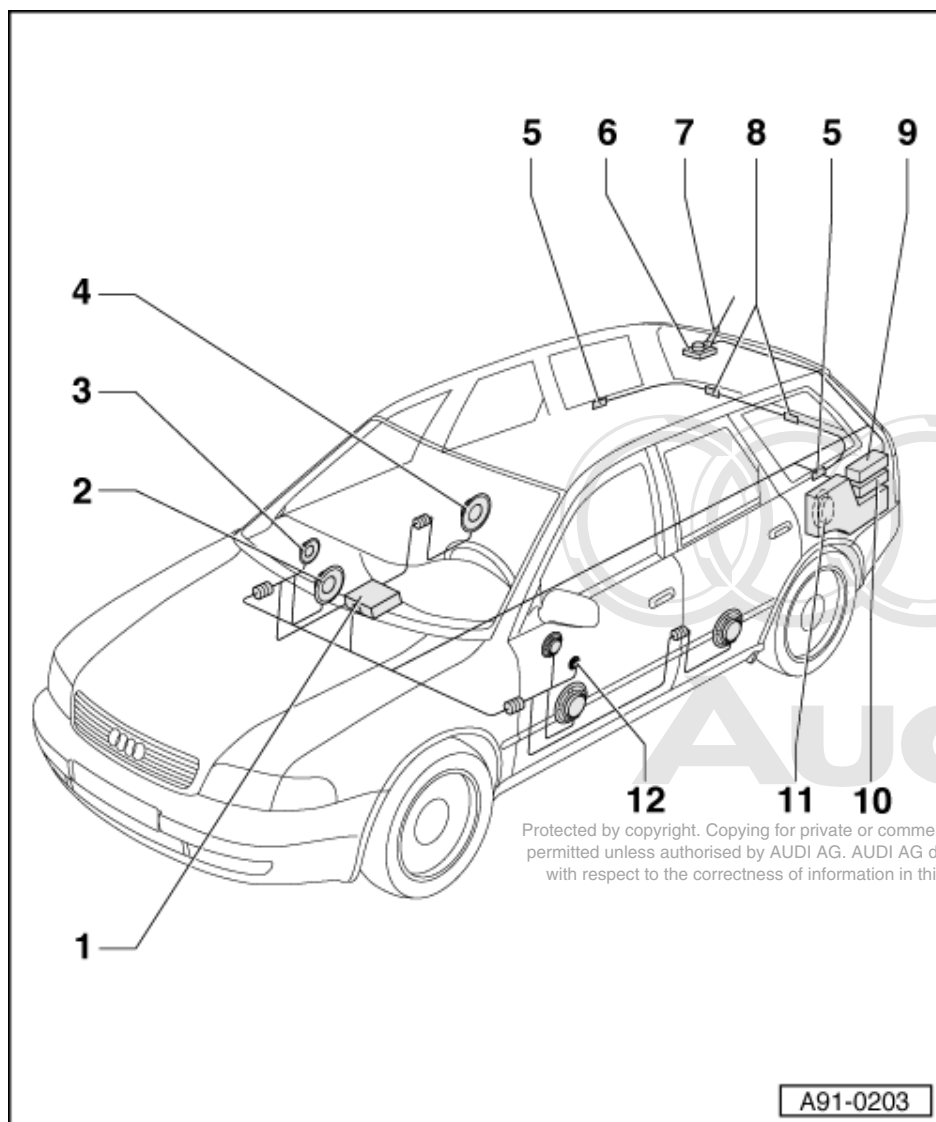
11 Bass loudspeaker

- ◆ in front lower door trim
- ◆ Removing and installing
=> Page 44

12 Mid-range/treble loudspeaker

- ◆ in front upper door trim
- ◆ Removing and installing
=> Page 45

4.11 - General overview of Navigation System II -Avant-



1 Control unit for navigation system operating controls -J402

- ◆ Installed in centre console
- ◆ Removing and installing

=> Page 167

2 Bass loudspeaker

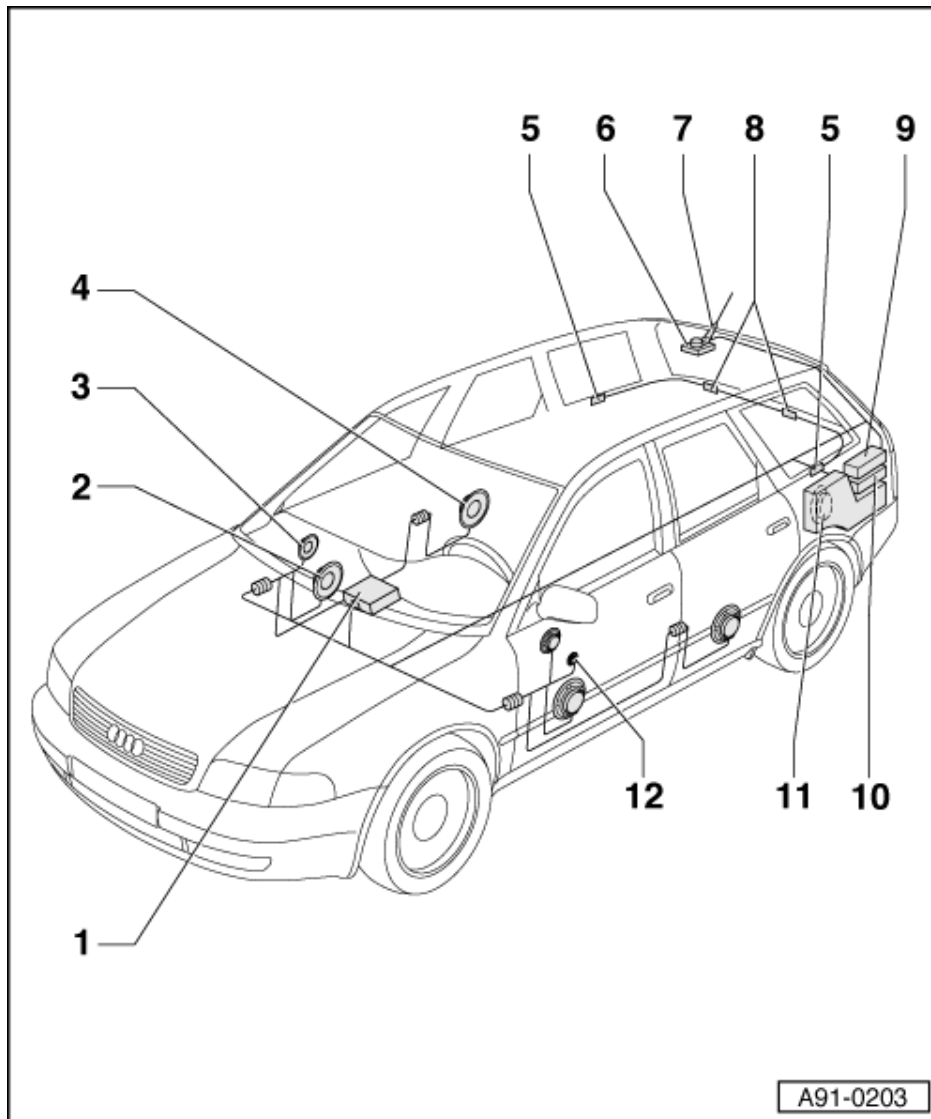
- ◆ In front lower door trim
- ◆ Removing and installing

=> Page 44

3 Mid-range/treble loudspeaker

- ◆ In front upper door trim
- ◆ Removing and installing

=> Page 45



4 Wide-band loudspeaker

- ◆ Installed in rear lower door trim (2-way system)

5 TV aerial amplifier

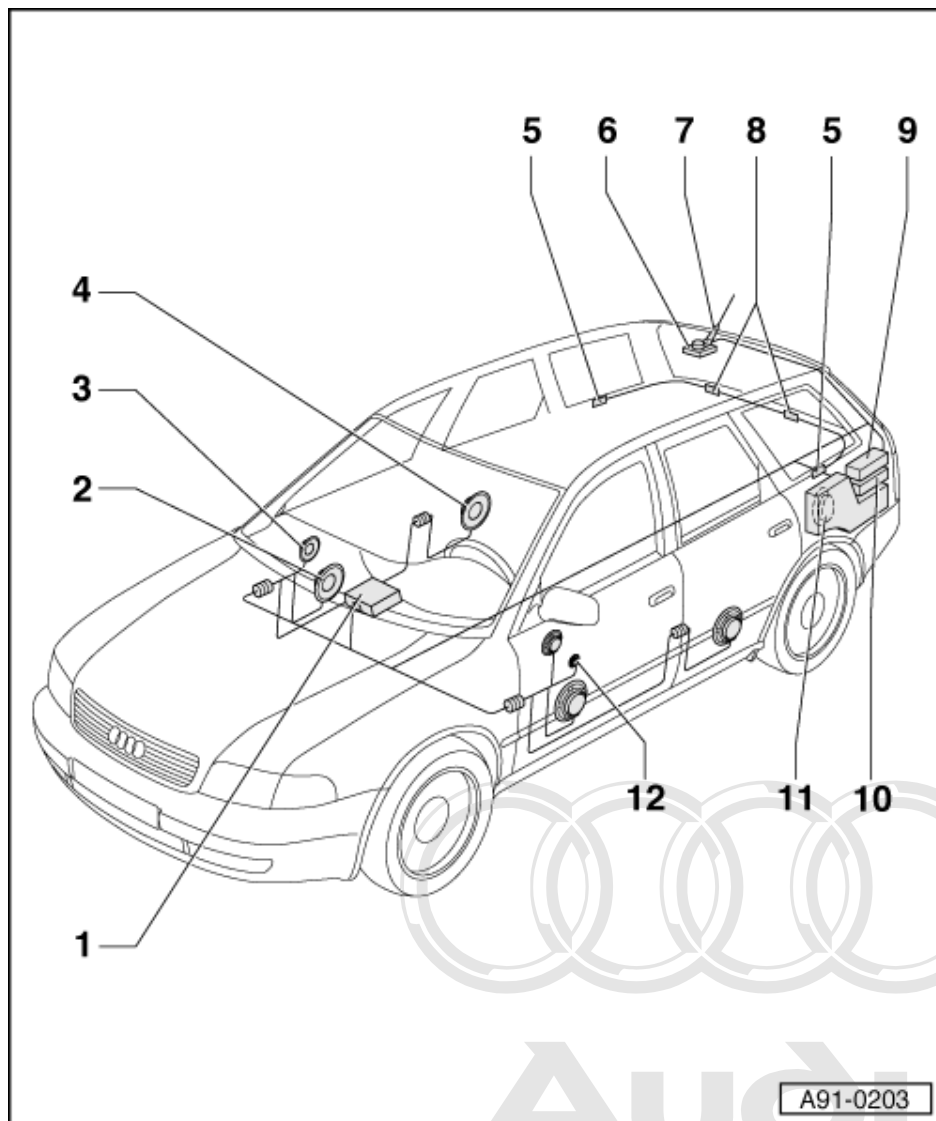
- ◆ At rear right side window: aerial -2- for TV
- ◆ At rear left side window: aerial -1- for TV
- ◆ Connection points for TV aerials at rear side windows => Page 174
- ◆ Removing and installing => Page 177

6 Radio/telephone/navigation system (GPS) aerial base -R52

- ◆ Triplex roof aerial
- ◆ With integrated amplifier
- ◆ Removing and installing
=> Page 62

7 Aerial rod for radio/telephone

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8 TV aerial amplifier

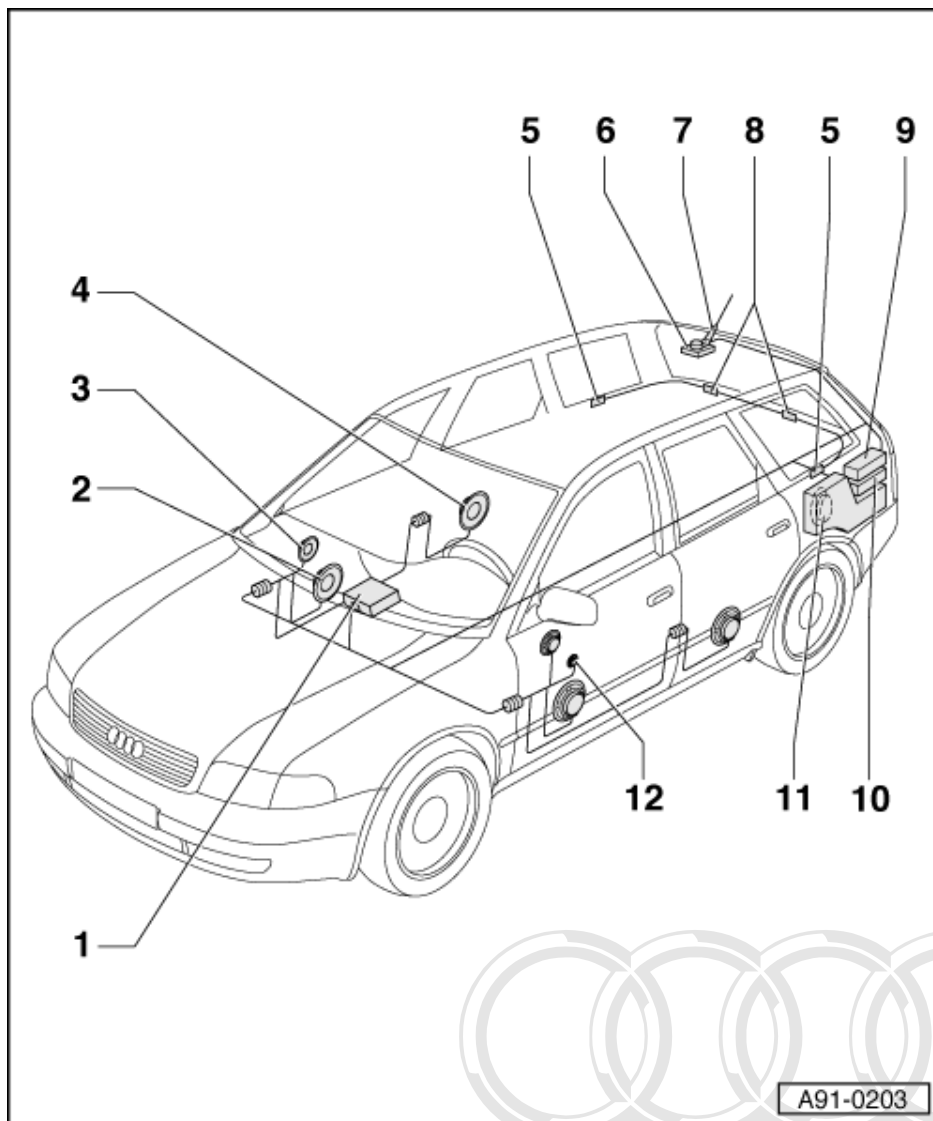
- ◆ Two off, installed at rear window
- ◆ Connection points for TV aerials at rear window
=> Page 174
- ◆ Removing and installing => Page 176

9 TV tuner -J415

- ◆ In side compartment in luggage compartment (left)
- ◆ Removing and installing
=> Page 169

10 CD changer

- ◆ In rear left of luggage compartment under side trim
- ◆ Removing and installing
=> Page 46



11 Bass loudspeaker (subwoofer) with amplifier (vehicles with BOSE sound system and BOSE amplifier)

- ◆ In rear right of luggage compartment under side trim
- ◆ Removing and installing
=> Page 52

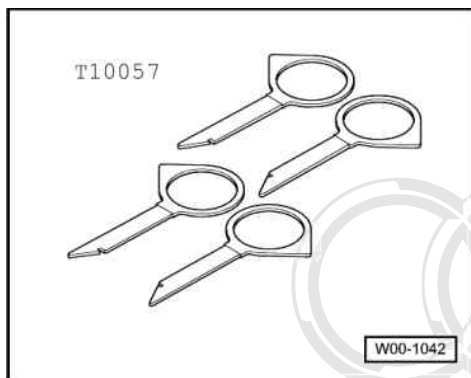
12 Hands-free loudspeaker

- ◆ In front driver's door.
- ◆ Only for vehicles with BOSE sound system in conjunction with telephone
- ◆ For all other vehicles, the loudspeakers in the front door trims are used.
- ◆ Removing and installing
=> Page 83

4.12 - Removing and installing navigation operating electronics control unit -J402

Note:

- ◆ The replacement part number for the complete operating electronics control unit, navigation can be found on a label on the housing.



-> Special tools, test equipment and auxiliary items required

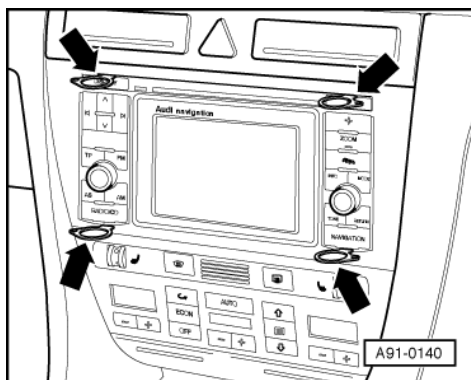
- ♦ T10057 Unlocking tool

Removing

Note:

Before removing, the code no. for the navigation system operating electronics control unit must be obtained from the customer. If the control unit is replaced, it is essential that the anti-theft code is activated (see operating instructions). The new code no. must be conveyed to the customer.

Carry out procedure as follows:



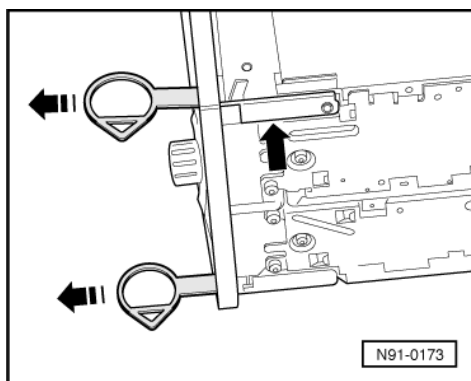
- -> Insert release tool for radio T10057 in release slot as shown -arrows- until the two engage.

Top L - top and bottom left

Top R - top and bottom right

- Remove navigation system operating electronics control unit from dash panel using gripping lugs on release tools.
- Release and detach connectors.

Remove release tools:



- -> Press locking tab -arrow- and remove release tool by pulling forwards.

Installing:

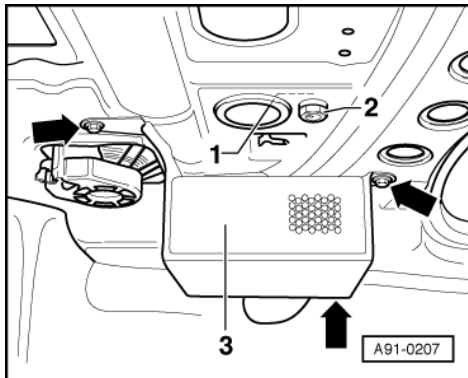
- Insert connectors in control unit for navigation system operating electronics.
- Straighten operating unit and insert in dash panel until it engages in mounting frame.

4.13 - Removing and installing TV tuner -J415 -Saloon- (up to vehicle identification no. 8DZYA200000)

The tuner for TV -J415 is located in the upper right corner of the luggage compartment under rear shelf.

Removing

- Open luggage compartment lid.



- -> Remove the three securing bolts -arrows- (1.4 Nm) and remove the bracket with TV tuner -3- downwards.
- Detach connectors from rear of TV tuner -3- and remove TV tuner from luggage compartment.
- The TV tuner -3- is attached to the bracket with two bolts on either side.

Important:
The TV tuner must only be secured at the tapped holes illustrated.

Installing:

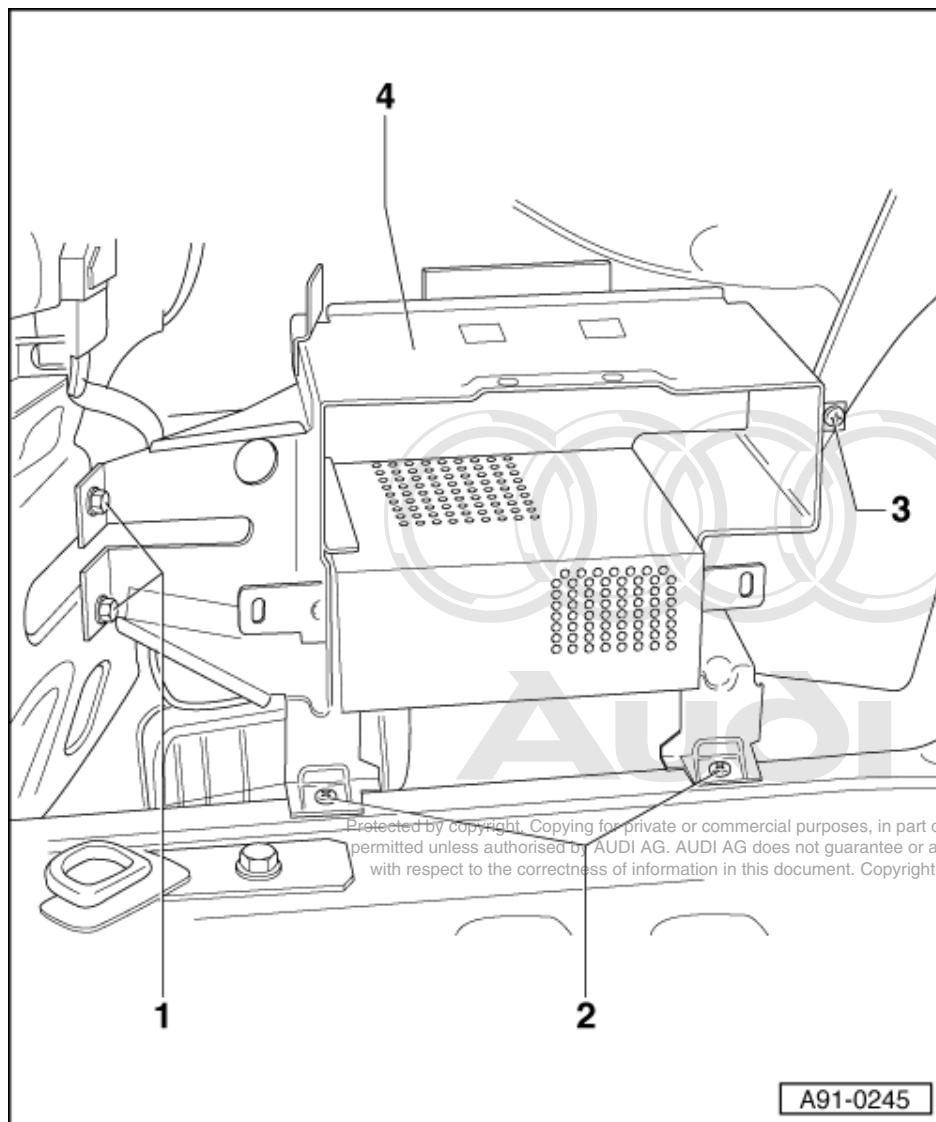
- Installation is performed in the reverse sequence to removal.



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4.14 - Removing and installing TV tuner -J415 -Saloon- (from vehicle identification no. 8DZYA200001)



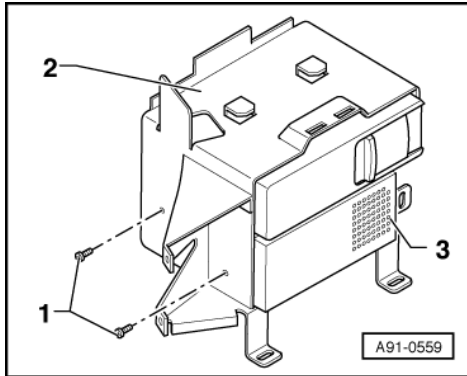
The tuner for TV -J415 is located at the rear left storage compartment in luggage compartment.

Removing

- Open left storage compartment in luggage compartment.
- Remove luggage compartment left trim.

=> General Body Assembly, Interior; Repair group 70; Trims; Removing and installing left/right luggage compartment trims Trims Removing and installing left/right luggage compartment trims

- Remove securing bolts -1-, -2- and -3- (2 Nm) for package holder (mounting frame) and remove package holder -4-.
- Disconnect the control unit connectors and remove the complete mounting frame -4-.



- -> Remove 2 securing screws -1- (2 Nm) on left and right of control unit and remove TV tuner -3- from mounting frame -2-.

Important:
The TV tuner must only be secured at the tapped holes illustrated.

Installing:

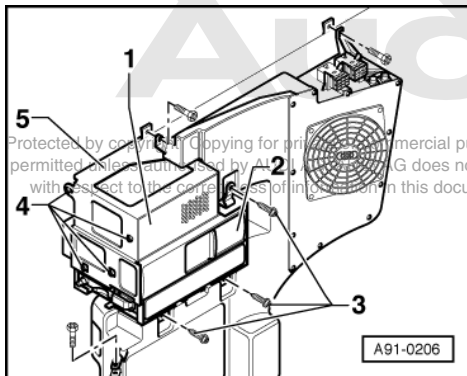
- Installation is performed in the reverse sequence to removal.

4.15 - Removing and installing tuner for TV -J415 -Avant-

The tuner for TV -J415 is located at the rear left storage compartment in luggage compartment.

Removing

- Open the rear left storage compartment in luggage compartment.



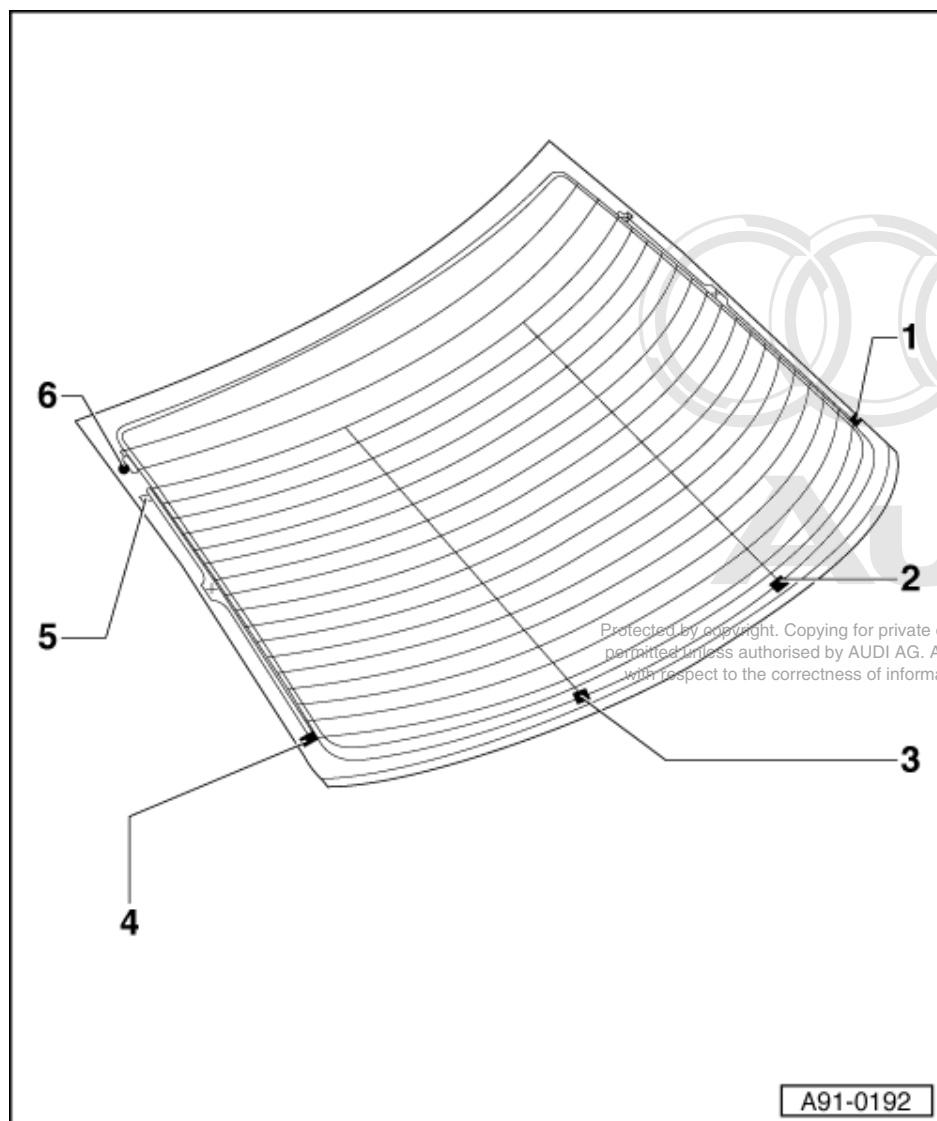
- -> Remove the three screws -3- (2 Nm) and pull out the mounting frame -5- slightly.
- Detach connectors from rear of TV tuner -1- and from CD changer -2-. Now remove the entire mounting frame -5-.
- Remove two screws -4- (2 Nm) from each side of tuner and remove TV tuner -1- from mounting frame -5-.

Important:
The TV tuner must only be secured at the tapped holes illustrated.

Installing:

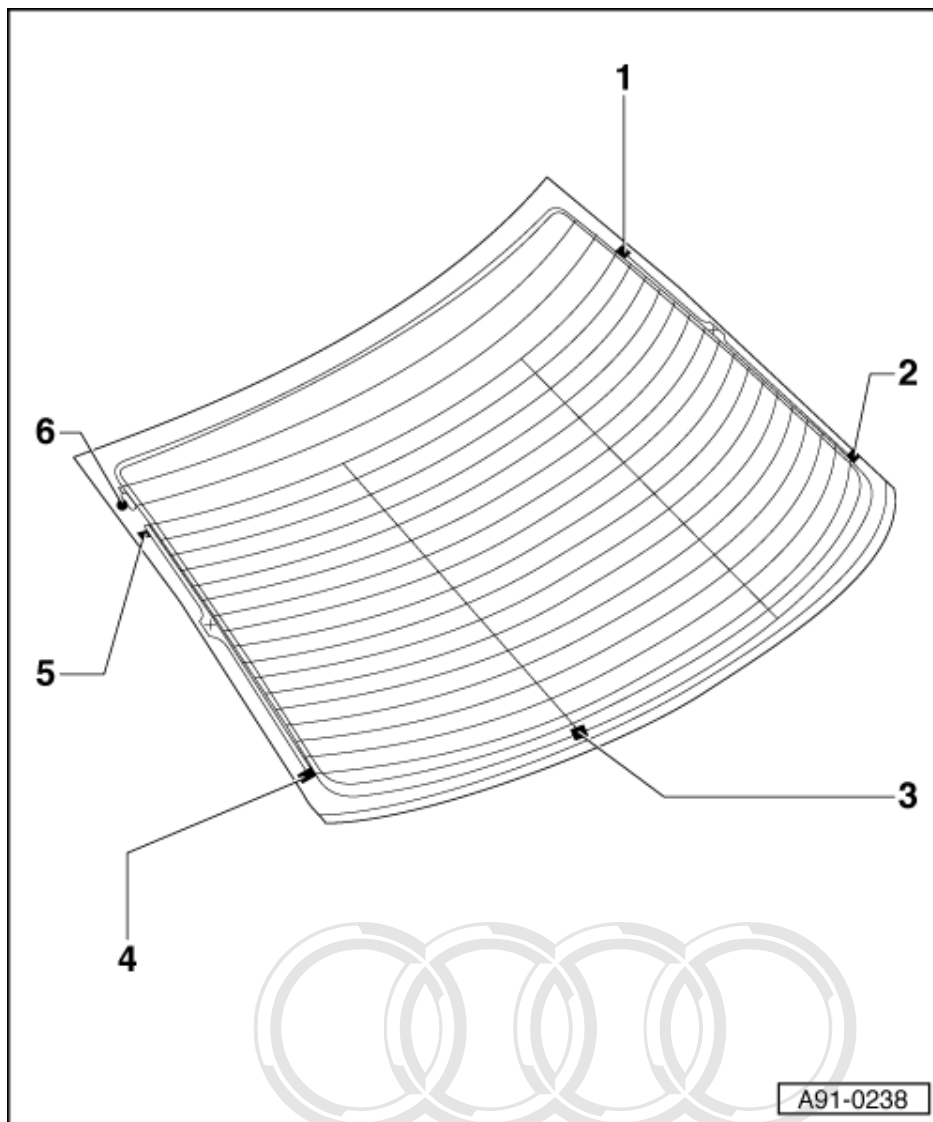
- Installation is performed in the reverse sequence to removal.

4.16 - Connection points for TV aerials on rear window -Saloon- (up to vehicle identification no. 8DZYA200000)



- 1 TV aerial 4
- 2 TV aerial 3
- 3 TV aerial 2
- 4 TV aerial 1
- 5 FM radio aerial
- 6 AM radio aerial

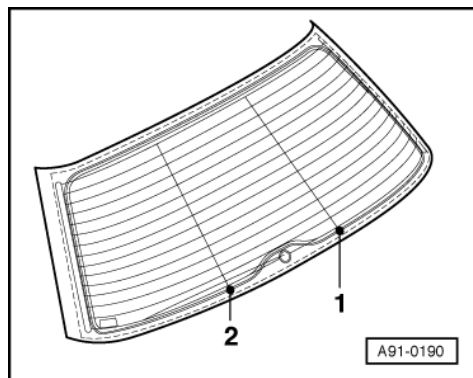
4.17 - Connection points for TV aerials on rear window -Saloon- (from vehicle identification no. 8DZYA200001)



- 1 TV aerial 1
- 2 TV aerial 2
- 3 TV aerial 3
- 4 TV aerial 4
- 5 FM radio aerial
- 6 AM radio aerial

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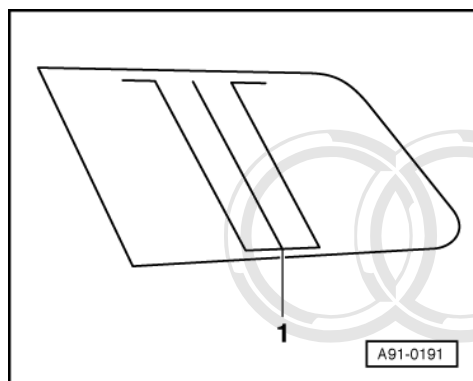
4.18 - Connection points for TV aerials -Avant-



Connection points for TV aerials at rear window

-> In the Audi A4 Avant, two TV aerials are located in the rear window and one in each of the rear side windows.

- 1 - TV aerial 3
- 2 - TV aerial 4



Connection points for TV aerials at rear side windows

-> In the Audi A4 Avant, one TV aerial is located in both the left (TV aerial 1) and right (TV aerial 2) rear side windows.

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- 1 - TV aerial connection

4.19 - Removing and installing TV aerial amplifier -Saloon-

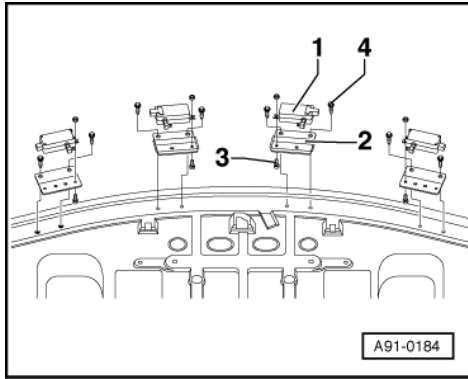
(up to vehicle identification no. 8DZYA200000)

The four TV aerial amplifiers are installed under the rear shelf.

Removing

- First remove the rear shelf

=> General Body Assembly, Interior; Repair group 70; Trims; Removing and installing rear shelf Trims Removing and installing rear shelf



-> Each of the four TV aerial amplifiers -1- are attached to a bracket -2- with a bolt and nut -3- (2.5 Nm) and an anti-twist element. The bracket is then attached to the rear shelf via two screws -4- (2.5 Nm).

- Remove bolt and nut -3- (2.5 Nm).
- Disconnect the electrical connectors and remove the TV aerial amplifier -1-.

Installing:

- Installation is performed in the reverse sequence to removal.

(from vehicle identification no. 8DZYA200001)

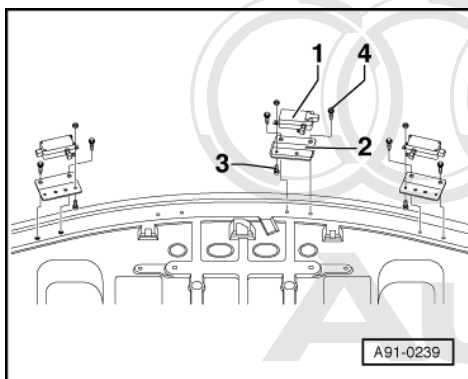
Three of the four TV aerial amplifiers are installed under the rear shelf. One TV aerial amplifier is bolted on right at D-pillar.

Removing and installing TV aerial amplifier under rear shelf

Removing

- First remove the rear shelf

=> General Body Assembly, Interior; Repair group 70; Trims; Removing and installing rear shelf Trims Removing and installing rear shelf



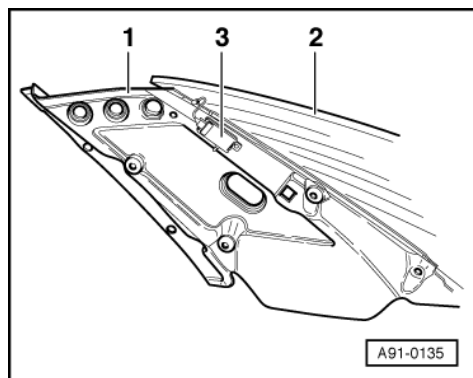
-> Each of the three TV aerial amplifiers -1- are attached to a bracket -2- with a bolt and nut -3- (2.5 Nm) and an anti-twist element. The bracket is then attached to the rear shelf via two screws -4- (4.5 Nm).

- Remove bolt and nut -3- (2.5 Nm).
- Disconnect the electrical connectors and remove the TV aerial amplifier -1-.

Installing:

- Installation is performed in the reverse sequence to removal.

Removing and installing TV aerial amplifier at D-pillar

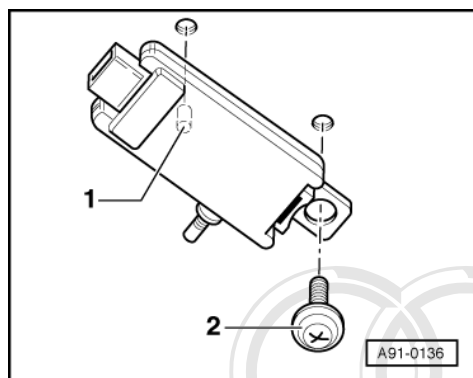


Removing

-> One aerial amplifier -3- is bolted to D-pillar -1- under rear shelf -2-.

- Remove C/D-pillar trim.

=> General Body Assembly, Interior; Repair group 70; Trims; Removing and installing C/D-pillar trim Trims
Removing and installing C/D-pillar trim



-> The aerial amplifier is attached to the D-pillar with a cross-head screw -2- (2.5 Nm) and an anti-twist element -1-.

- Disconnect the electrical connectors and remove the TV aerial amplifier.

Installing:

- Installation is carried out in reverse sequence to removal.

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4.20 - Removing and installing TV aerial amplifier -Avant-

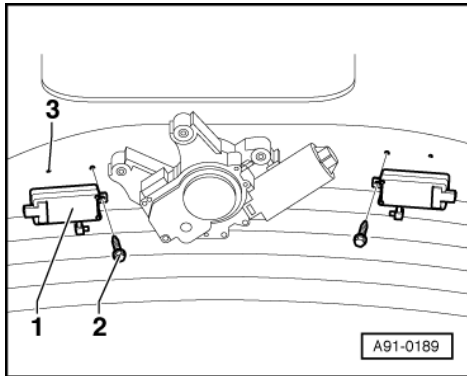
One aerial amplifier is located at both the left and right rear side windows, two at the rear window.

Removing and installing TV aerial amplifier at rear window

Removing

- Remove tailgate trim

=> General Body Assembly, Interior; Repair group 70; Avant trims; Removing and installing tailgate trim Avant trims Removing and installing tailgate trim



- -> Disconnect electrical connectors.
- Remove screw -2- (2.5 Nm) and remove TV aerial amplifier.
- The TV aerial amplifier is equipped with an anti-twist element which fixes the amplifier in position in hole -3-.

Installing:

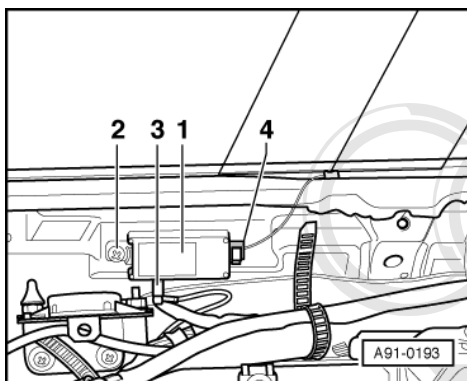
- Installation is performed in the reverse sequence to removal.

Removing and installing TV aerial amplifiers at rear side windows

Removing

- Remove left or right side trim in luggage compartment

=> General Body Assembly, Interior; Repair group 70; Avant trims; Removing and installing left and right side trims Avant trims Removing and installing left and right side trims



- -> Disconnect electrical connectors -3- and -4- from TV aerial amplifier.
- Remove screw -2- (2.5 Nm) and detach TV aerial amplifier -1-.
- In addition to the screw connection, the TV aerial amplifier is held in position by an anti-twist element.

Installing:

- Installation is performed in the reverse sequence to removal.

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4.21 - Checking functionality of individual aerial amplifiers

The TV system is equipped with a special function for visually monitoring the performance of the aerials.



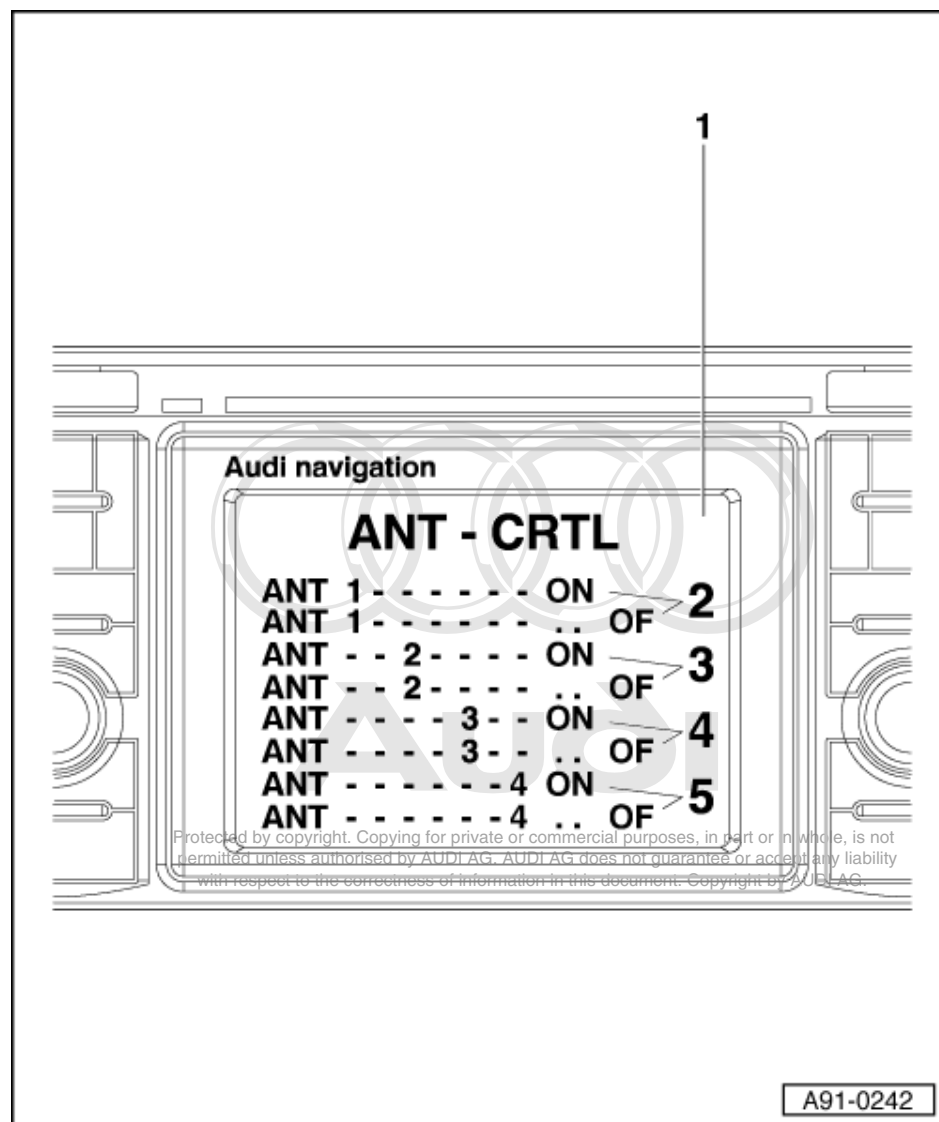
As soon as this function is started up, a check of the basic functions of the television system is initiated.

To invoke the test function,

- activate television operation and then search for a television transmitter which will provide good reception.

=> Radio navigation system operating instructions

- Simultaneously press AM button and TONE button.



Display on screen:

- 1 Aerial monitoring function
- 2 Aerial -1-, TV -R55 with ON and OFF function
- 3 Aerial -2-, TV -R56 with ON and OFF function
- 4 Aerial -3-, TV -R57 with ON and OFF function
- 5 Aerial -4-, TV -R58 with ON and OFF function

Note:

The image received from the aerial currently selected can now be seen on the screen.

- The remote power supply to the respective TV aerial amplifier can be switched on or off using the right rotary control.
The quality of the image must deteriorate noticeably when the remote power supply is switched on.
- Press RETURN to exit the function.

Test options:

- ◆ Information concerning the functionality of the respective aerial amplifier can be obtained by switching on and off (ON or OFF position) the remote power supply to the aerial amplifier in question.
- ◆ The CAN bus is tested with regard to hardware and software (partial test) by operating the TV diversity receiver via the Audi RNS.
- ◆ The main functions of the television receiver are activated and the audio/video link guaranteed by commissioning the TV system, selecting a channel and invoking the video text.
- ◆ Should a fault arise (no change in the image), the only way to ascertain whether there is an open circuit in the aerial cable or the TV aerial amplifier is defective is to check the voltage (10V) at the coaxial cable (inner conductor) on the amplifier side.

5 - Navigation system II-D (Navigation system plus) (as of CW 48/99)

5.1 - Navigation system II-D (Navigation system plus) (as of CW 48/99)

Important:

Disconnect battery earth strap before working on electrical system.

Activate the service mode of telematics control unit before disconnecting battery.=>Radio, Telephone and Navigation System Self-diagnosis; Repair group 01; Telematics Self-diagnosis; Adaption

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Notes:

- ◆ On vehicles with coded radio, obtain anti-theft code before disconnecting battery.
- ◆ Activate the service mode of telematics control unit before disconnecting battery.
- ◆ If the battery is reconnected, please ensure that the vehicle equipment (radio, clock, electric window lifters, engine) is activated as described in operating instructions and the service mode of telematics control unit is deactivated.

5.2 - General description

The navigation system II-D is the improved version of the well-known navigation system II (navigation system plus). Important innovations are, for example, control unit for aerial selection, extended self-diagnosis, connection to data BUS information and a dynamic routing.

Notes:

- ◆ In the event of complaints, familiarity with the functions and operation of the relevant radio navigation system is essential.
- ◆ Additional information

=> Operating instructions

- ◆ For retrofitting, repair work and troubleshooting

=> Current Flow Diagrams, Electrical Fault-finding and Fitting Locations



=> Installation instructions

- ◆ Comprehensive assembly instructions, e.g. removing and installing trims, are included in the General Body Assembly Workshop Manual.

Notes on CD retrofitting:

The wiring harness for the CD changer is installed in the vehicle during preparation for CD installation. The connection cable can only be used for original Audi CD changers.

5.3 - Fault messages on the screen

If there is a fault in the system either a fault is stored in the fault memory and/or a fault message on the control unit display for operating electronics, Navigation -J402.

Currently the following fault message can be shown on the display:

-> Indicated on display of the navigation system II-D

RDS-TMC-Tuner:
Connection to RDS-TMC
Tuner is faulty or could
not be established.

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This fault message appears with the following situations:

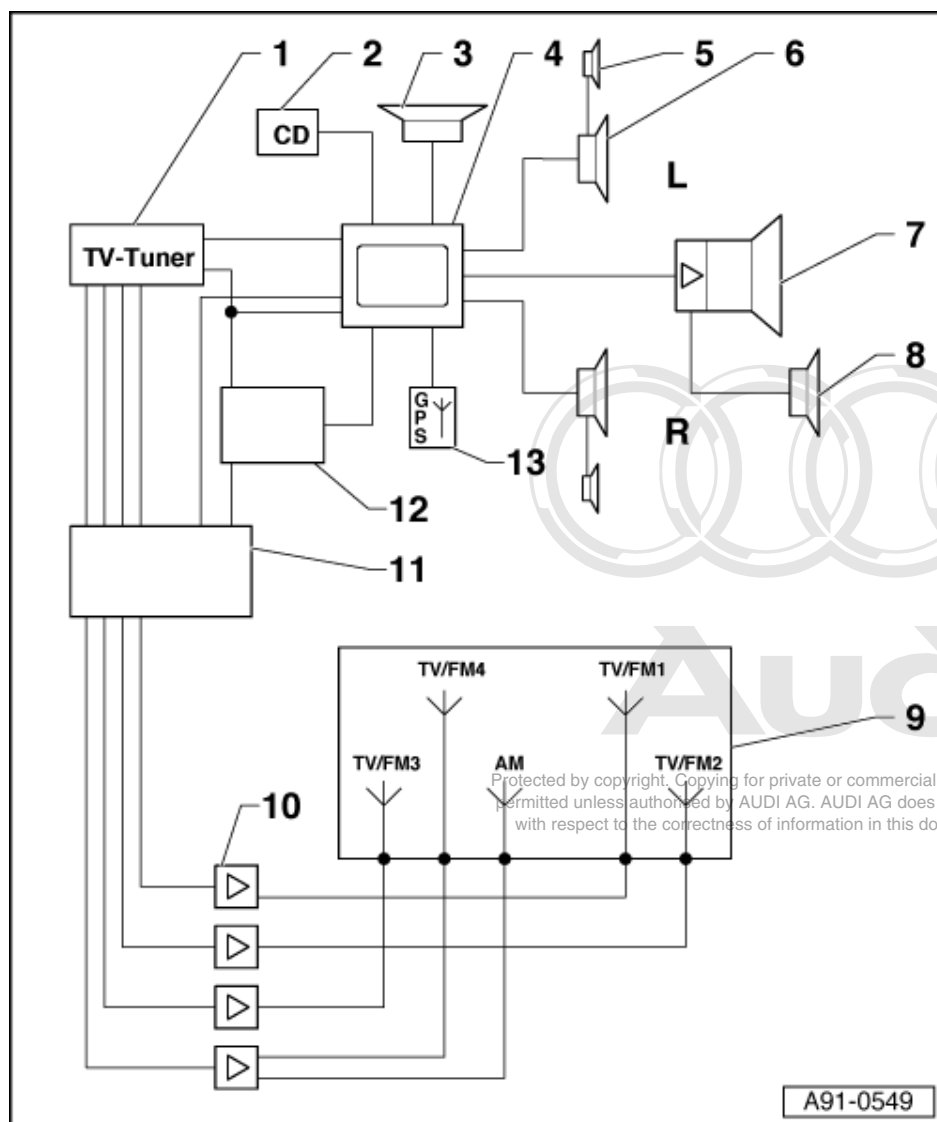
- ◆ None-existent or faulty CAN communication between the control unit for the operating electronics, navigation -J402 and the interface for navigation -R94. (Open circuit or wiring not connected).
- ◆ Interface for navigation -R94 defective

When this fault occurs no RDS-TMC-traffic announcements are received and the setting menu stopping function cannot be called up.

The fault message is indicated until the fault was rectified or was confirmed by pressing the RETURN key.

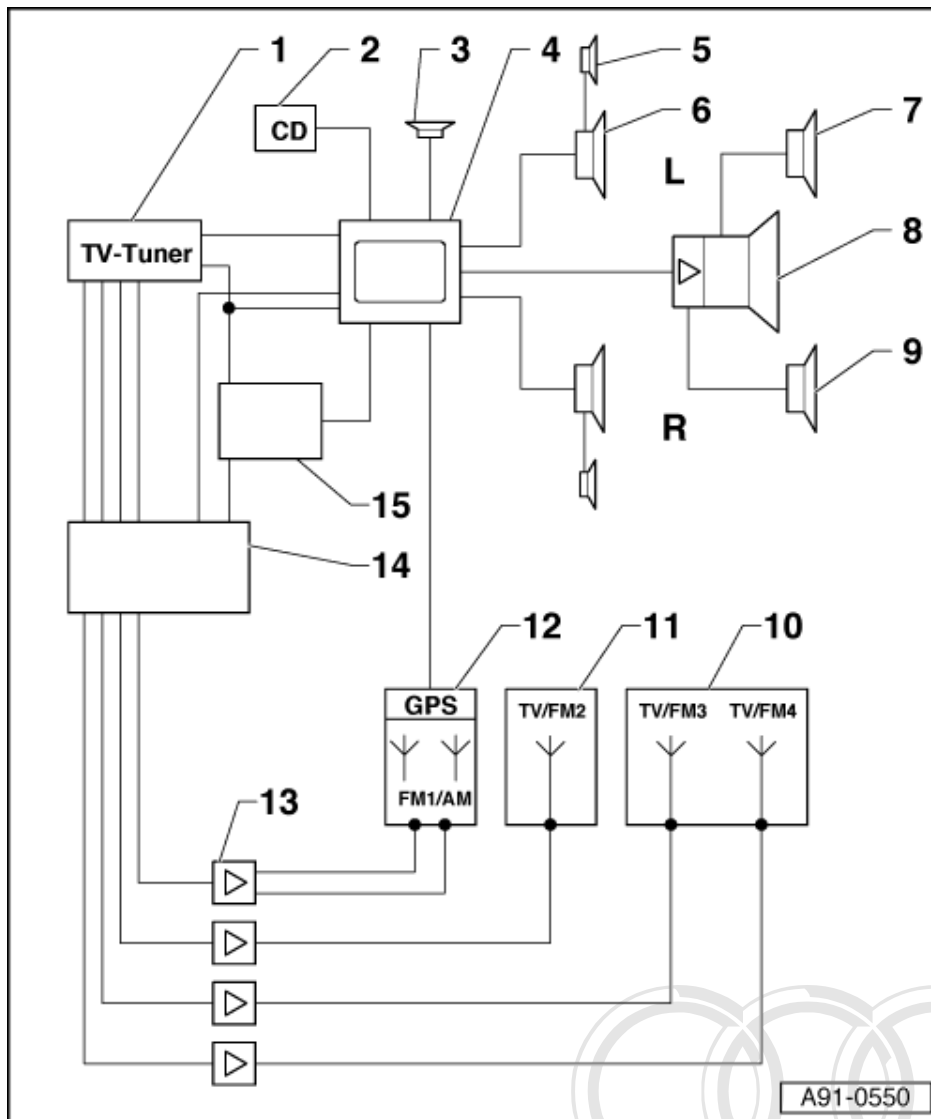
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- 5.4 - Structure of Navigation System II -D -Saloon- 181



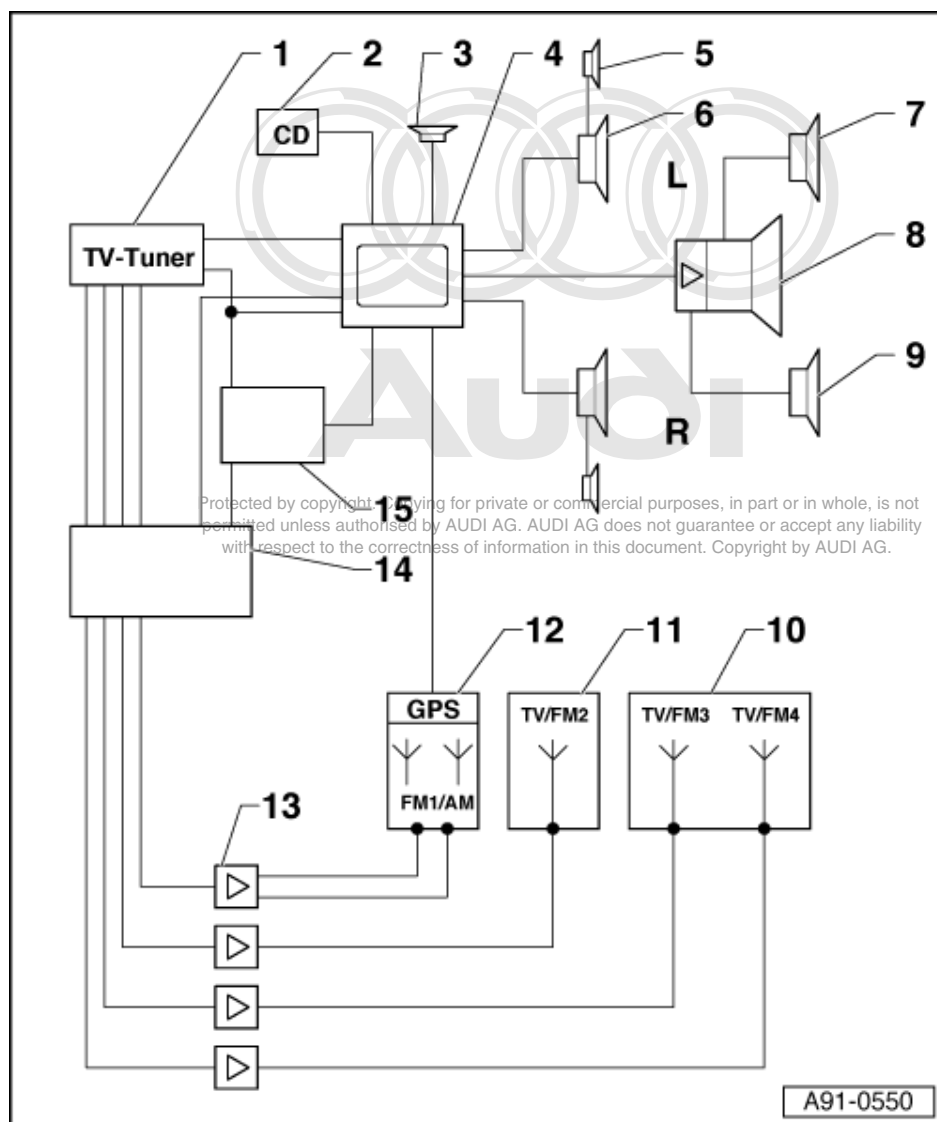
- 8 Wide-band loudspeaker installed at rear right in rear shelf
- 9 Rear window with four integrated TV/FM aerials and one AM aerial
- 10 Four aerial amplifiers for radio or TV aerial in rear window
- 11 Aerial selection control unit in rear left of luggage compartment under side trim
- 12 Interface for navigation under the storage compartment on driver's side
- 13 Aerial for navigation system (GPS) installed on right, below rear shelf

5.5 - Structure of Navigation System II -D -Avant-

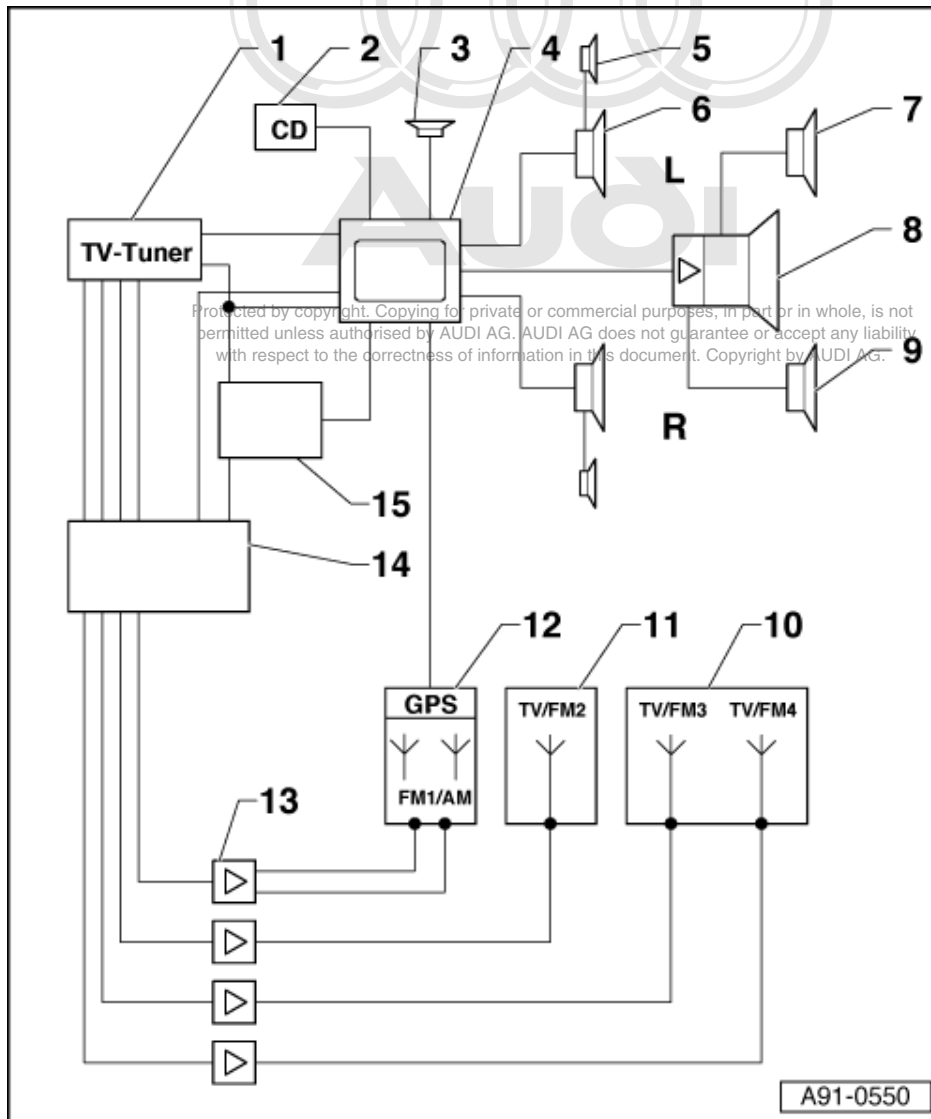


- 1 TV tuner in rear left storage compartment in luggage compartment
- 2 CD changer (optional) in rear left storage compartment in luggage compartment
- 3 Hands-free loudspeaker installed in driver's door (telephone only)
- 4 Control unit for navigation system operating electronics
- 5 Mid-range/treble loudspeaker installed at front in top of door trim
- 6 Bass loudspeaker installed at front in bottom of door trim

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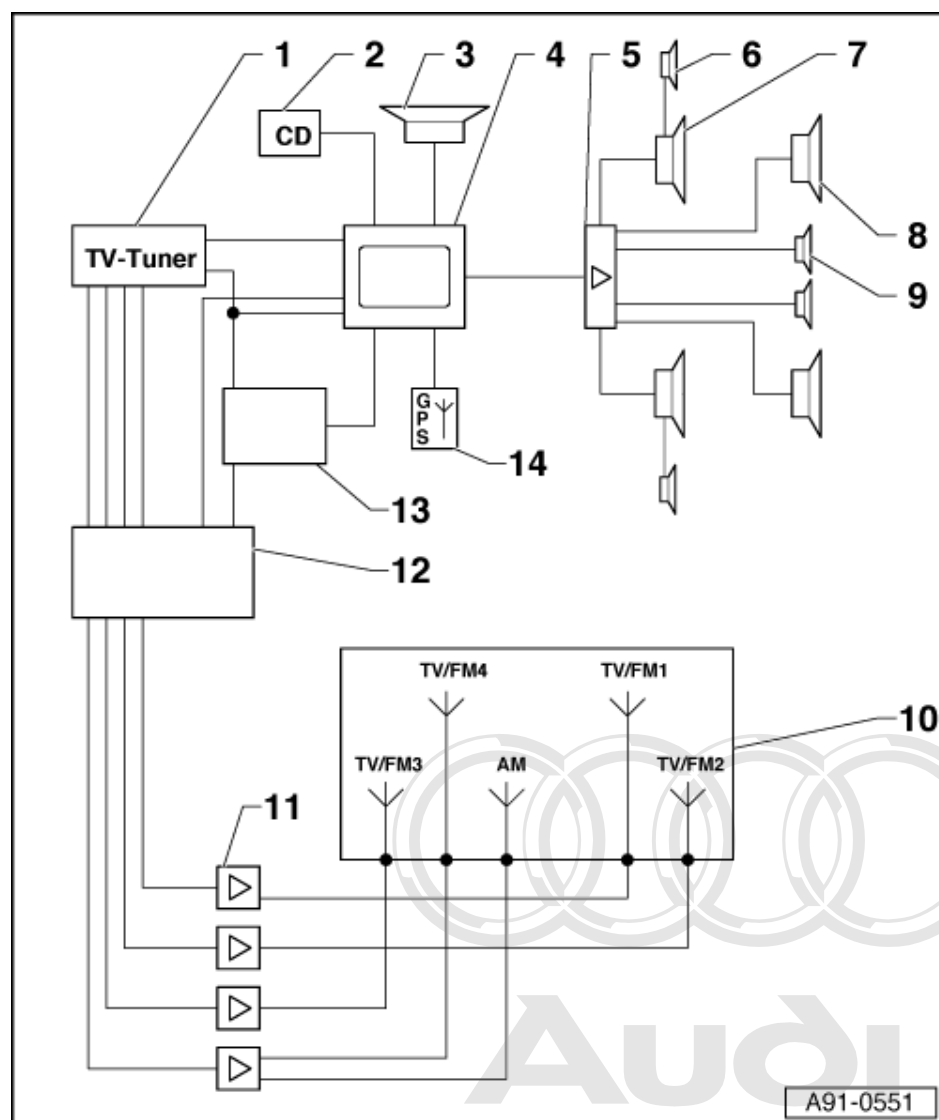


- 7 Wide-band loudspeaker
installed in lower rear left door trim
- 8 Bass loudspeaker with amplifier (subwoofer) installed in rear left of luggage compartment under side trim
- 9 Wide-band loudspeaker
installed in lower rear right door trim
- 10 Rear window with two integrated TV aerials
- 11 Rear side window with one integrated TV aerial
- 12 Triplex roof aerial (radio/telephone rod aerial with amplifier and GPS aerial for navigation)
- 13 Four aerial amplifiers for TV aerials

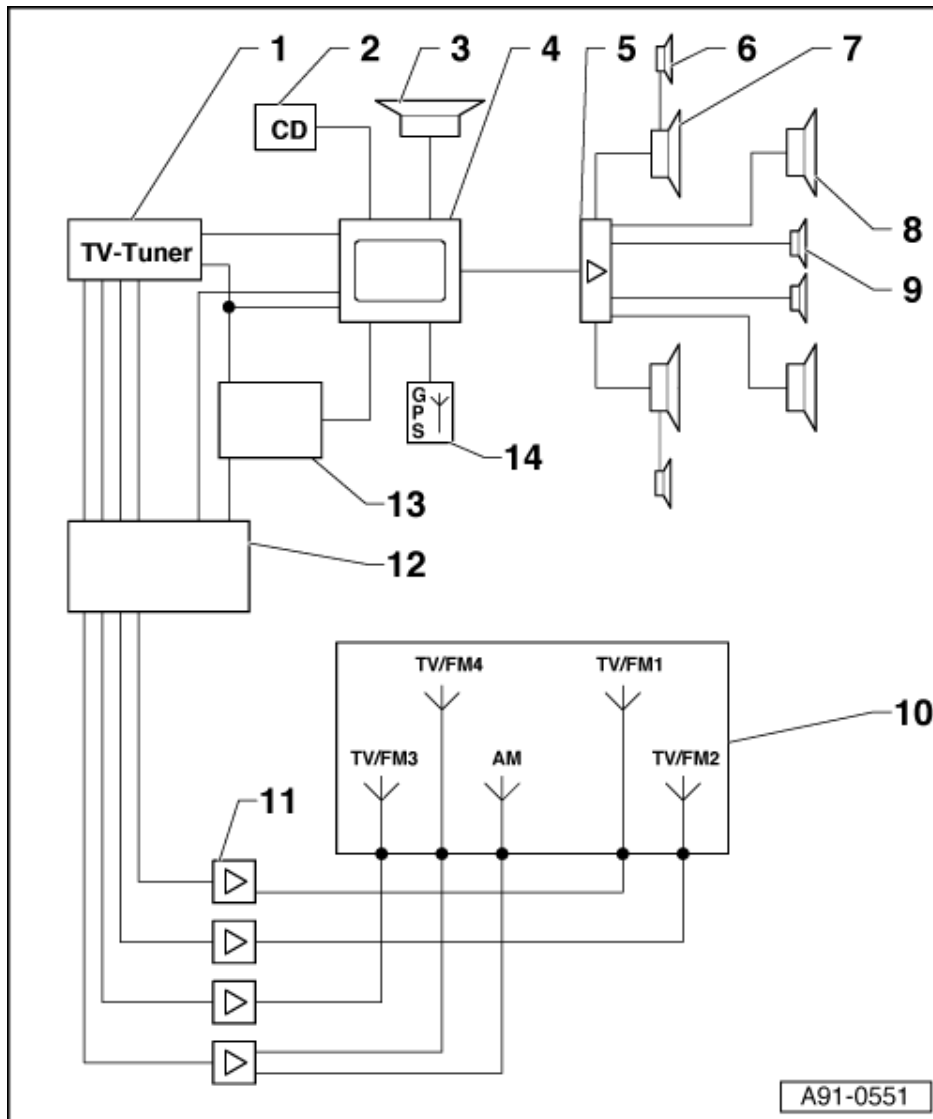


- 14 Aerial selection control unit in rear left of luggage compartment under side trim
15 Interface for navigation under the storage compartment on driver's side

5.6 - Structure of Navigation System II -D with BOSE-sound system -Saloon-



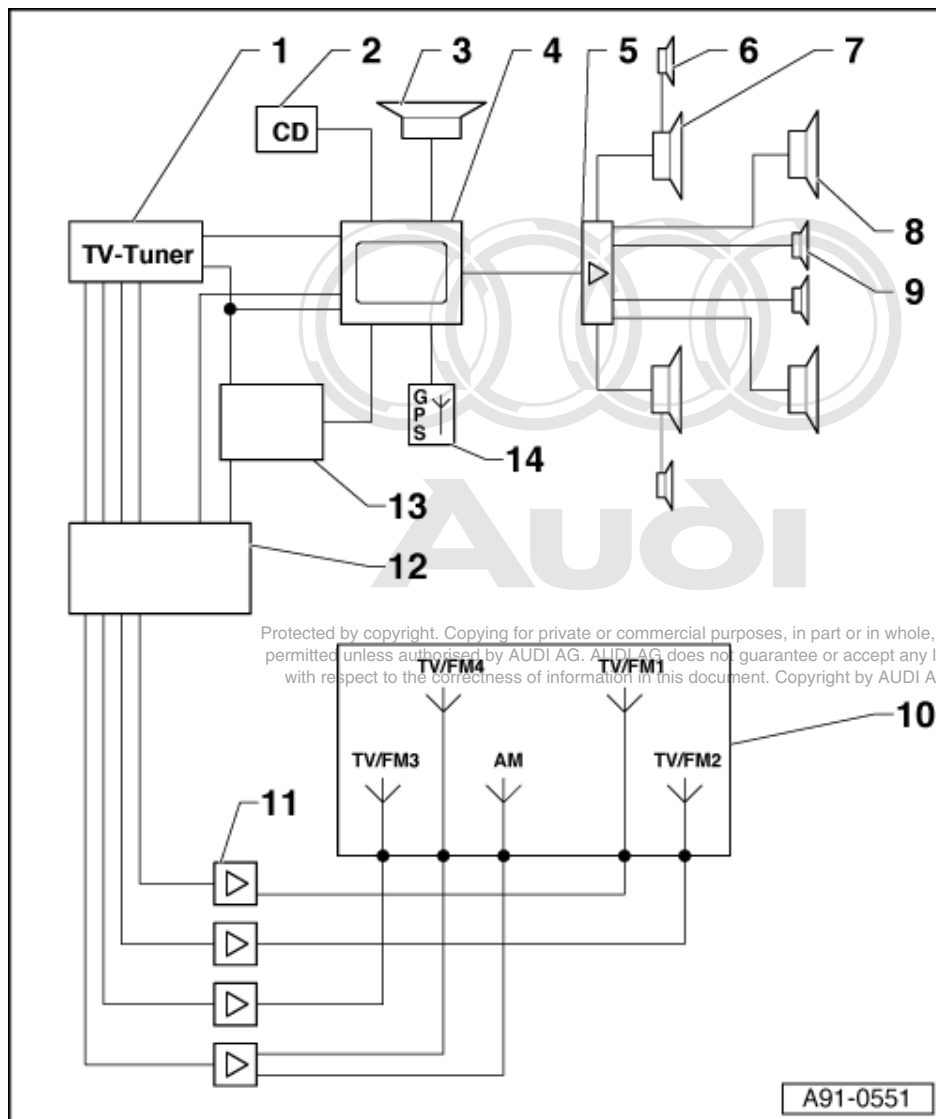
- 1 TV tuner in rear left storage compartment in luggage compartment
- 2 CD changer (optional) in rear left storage compartment in luggage compartment
- 3 Hands-free loudspeaker in driver's door
- 4 Control unit for navigation system operating electronics
- 5 BOSE power amplifier installed in upper left corner of luggage compartment under rear shelf
- 6 Mid-range/treble loudspeaker installed at front in top of door trim



- 7 Bass loudspeaker installed at front in bottom of door trim
- 8 Wide-band loudspeaker installed at rear in bottom of door trim
- 9 Bass loudspeaker installed in rear shelf
- 10 Rear window with four integrated TV/FM aeriels and one AM aerial.
- 11 Four aerial amplifiers for radio or TV aerial in rear window.
- 12 Aerial selection control unit in rear left of luggage compartment under side trim



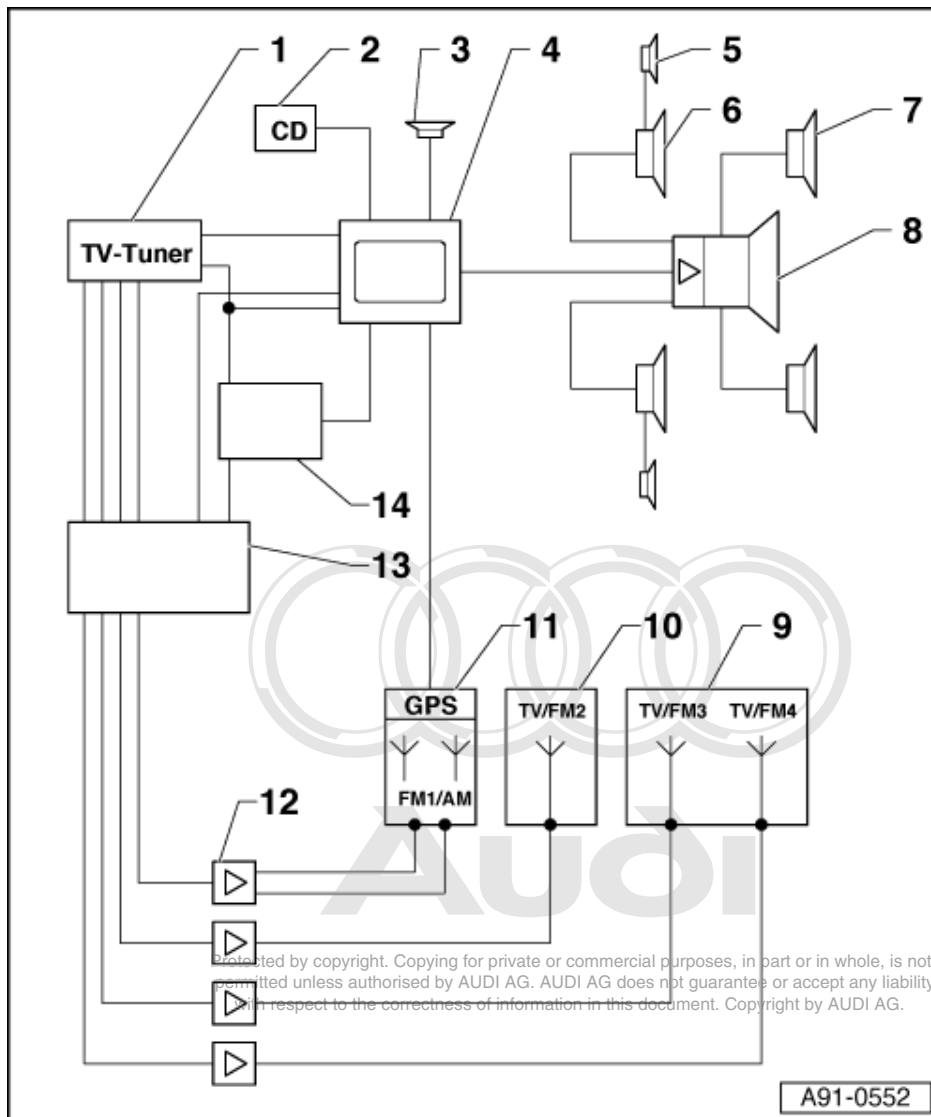
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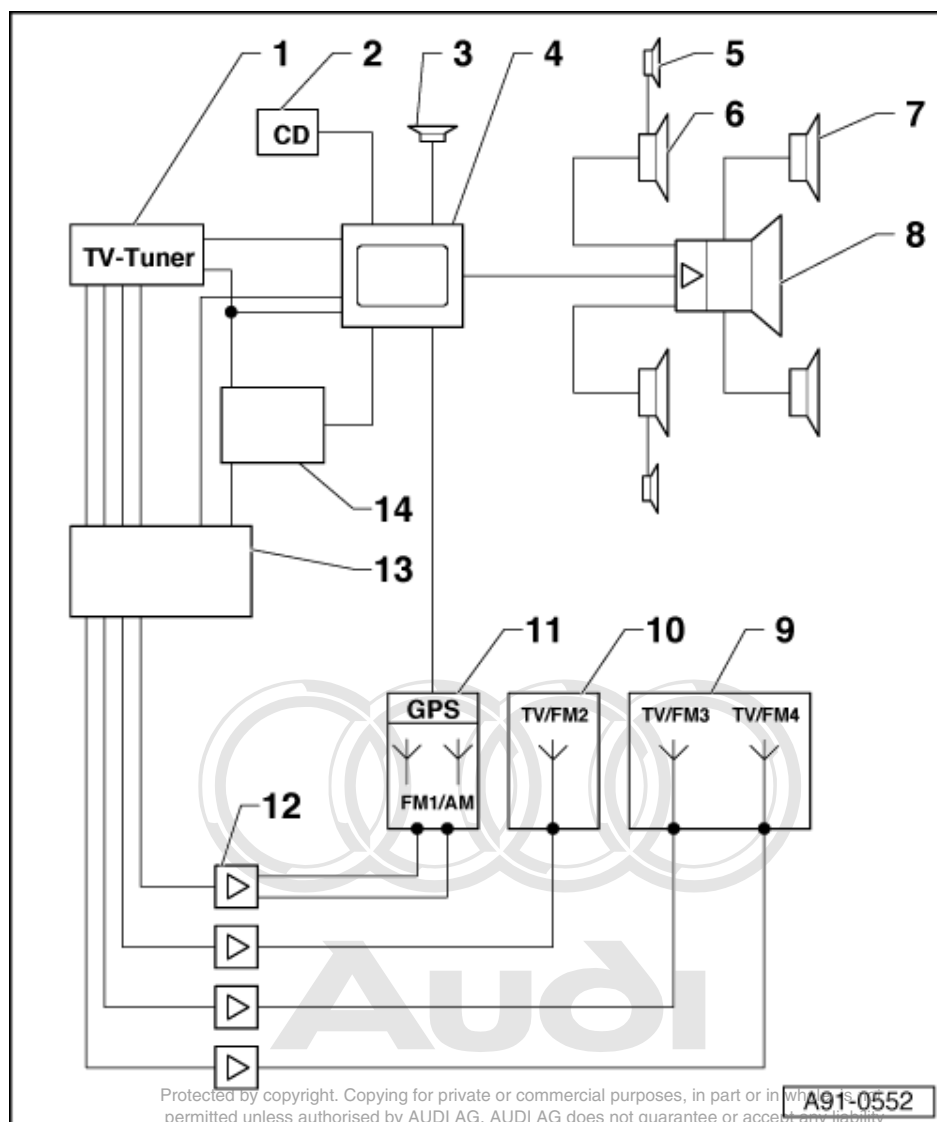
13 Interface for navigation under the storage compartment on driver's side.

14 Aerial for navigation system (GPS) installed on right, below rear shelf

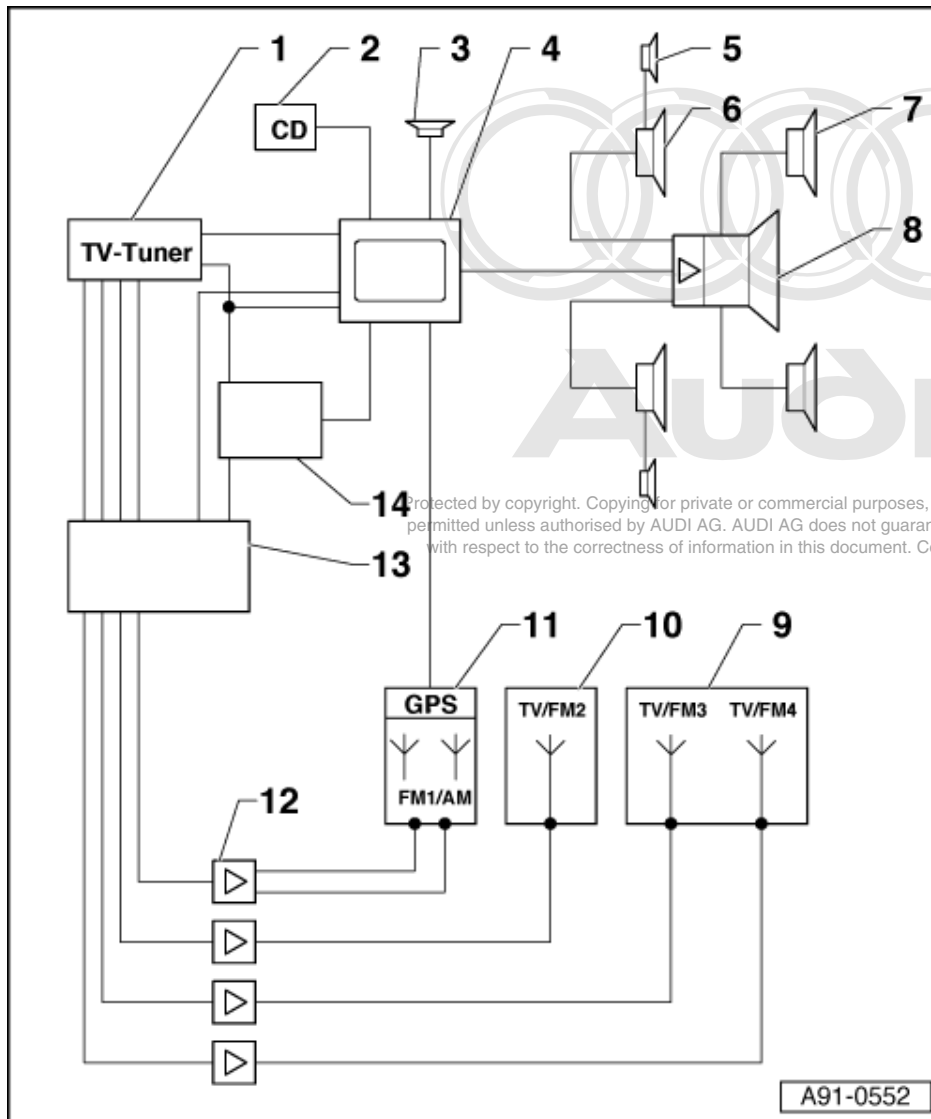
5.7 - Structure of Navigation System II -D with BOSE-sound system -Avant-



- 1 TV tuner in rear left storage compartment in luggage compartment
- 2 CD changer (optional) in rear left storage compartment in luggage compartment
- 3 Hands-free loudspeaker in driver's door
- 4 Control unit for navigation system operating electronics
- 5 Mid-range/treble loudspeaker installed at front in top of door trim
- 6 Bass loudspeaker installed at front in bottom of door trim



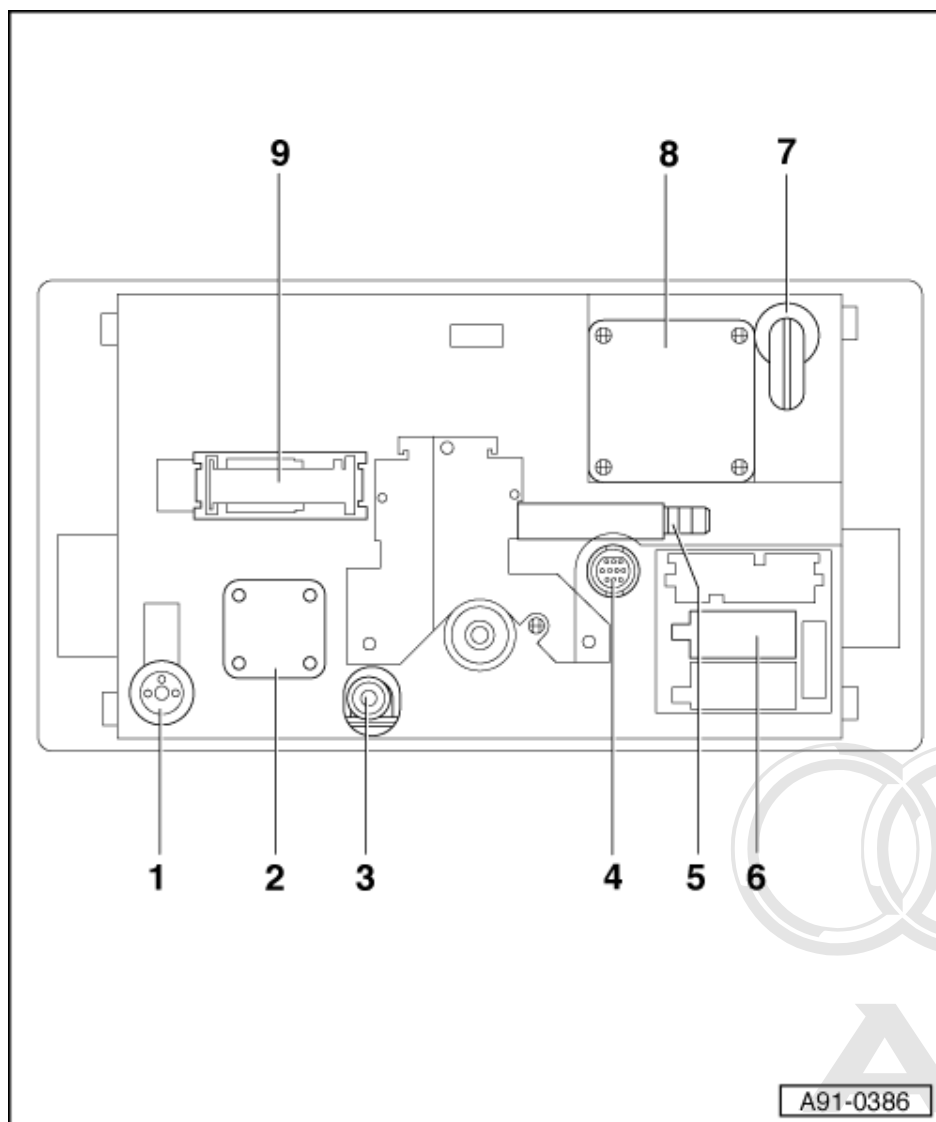
- 7 Wide-band loudspeaker installed at rear in bottom of door trim
- 8 BOSE power amplifier, combined with bass loudspeaker (subwoofer), installed in rear left of luggage compartment under side trim
- 9 Rear window with two integrated TV aerials
- 10 Rear side window with one integrated TV aerial
- 11 Triplex roof aerial (radio/telephone rod aerial with amplifier and GPS aerial for navigation)
- 12 Four aerial amplifiers for TV aerials



- 13 Aerial selection control unit in rear left of luggage compartment under side trim
14 Interface for navigation under the storage compartment on driver's side.

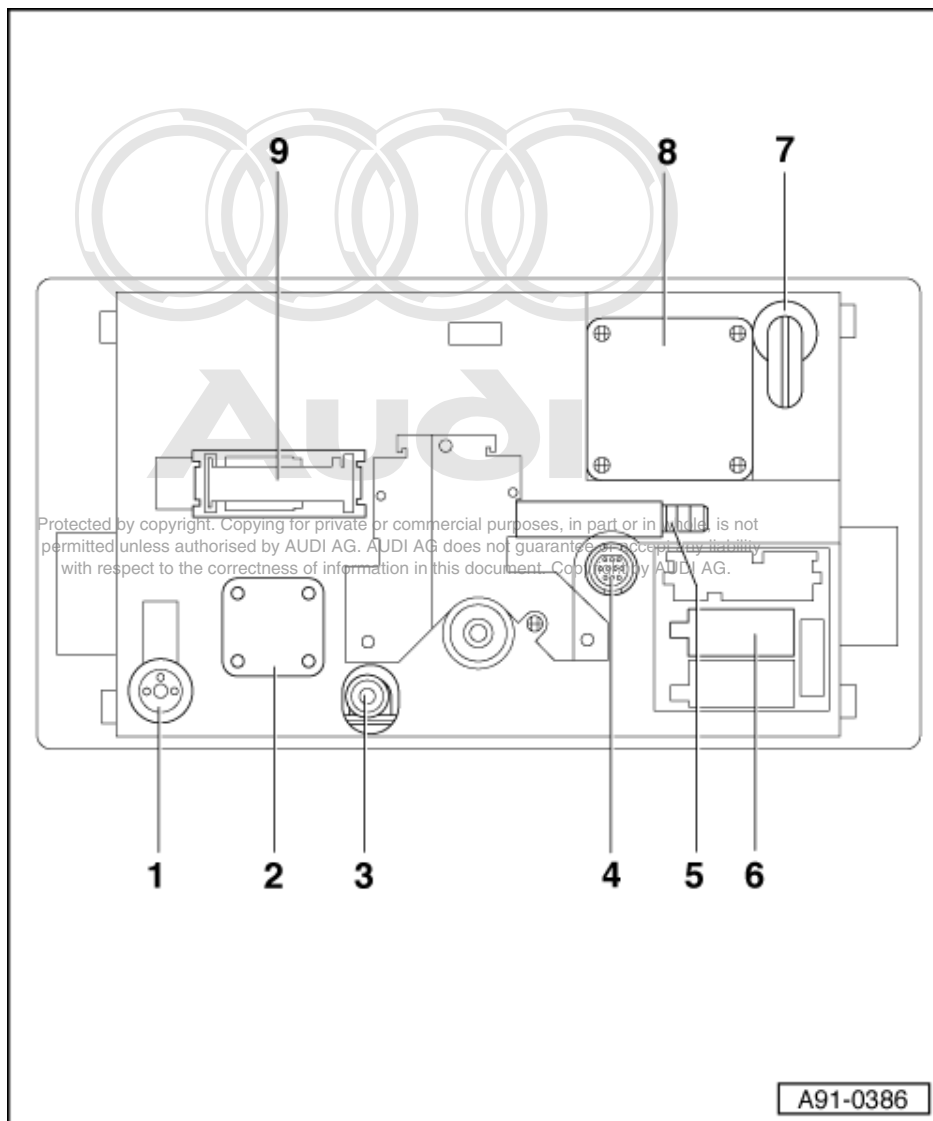


5.8 - Connectors on rear of operating electronics control unit, navigation -J402



- 1 **Radio aerial connection:** Connection socket for radio aerial
- 2 **Fan for cooling system**
- 3 **IF wiring**
- 4 **Video connection;** 11-pin connector for connection of TV tuner in rear left storage compartment in luggage compartment
- 5 **Earth connection**
- 6 **Radio connection:** 36-pin connection block with three multi-pin connectors and a fuse

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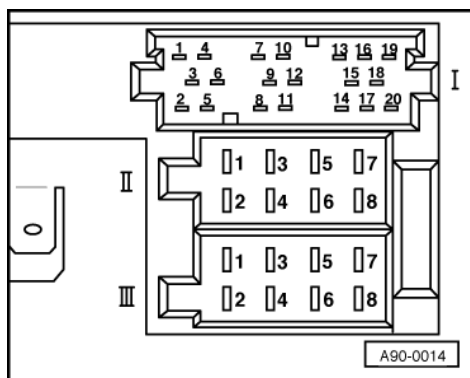


- 7 GPS aerial connection; connection socket for the navigation system aerial on the luggage compartment lid
- 8 Fan for cooling system
- 9 Navigation system connection: 26-pin connector for navigation system pickups

Contact assignment of multi-pin connectors for operating electronics/navigation system control unit

Note:

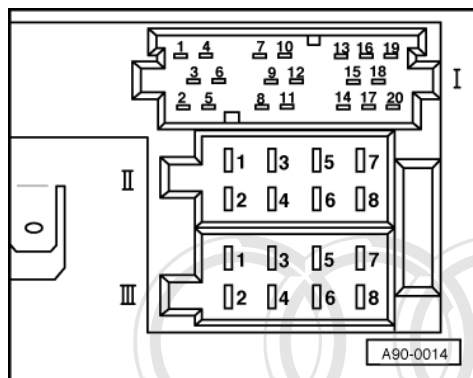
Connector contacts not listed have not been assigned.



-> Radio connection:

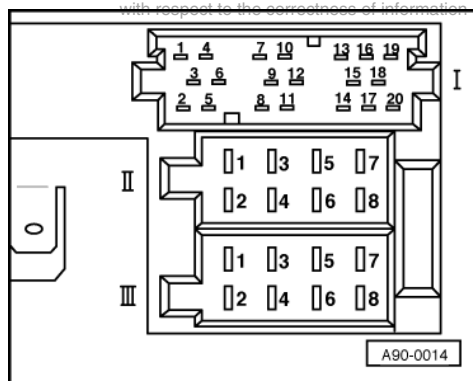
Multi-pin connector I, 20-pin

- 1 - Line output for rear left loudspeaker
- 2 - Line output for rear right loudspeaker
- 3 - Line output, earth
- 4 - Line output for front left loudspeaker
- 5 - Line output for front right loudspeaker
- 6 - Switched positive for BOSE power amplifier
- 7 - Telephone AF +
- 11 - Remote control (from control unit for multi-functional steering wheel)



- 12 - Telephone AF -
- 13 - CD DATA IN
- 14 - CD DATA OUT
- 15 - CD CLOCK
- 16 - Supply voltage to CD changer
- 17 - Control wire to CD changer
- 18 - Earth signal wire (CD-NF-earth)
- 19 - Signal wire for left channel (CD AF left)
- 20 - Signal wire for right channel (CD AF right)

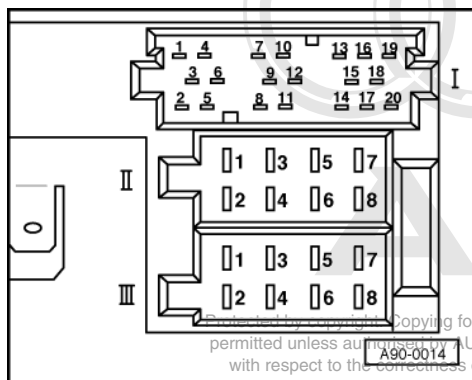
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-> Radio connection:

Multi-pin connector II, 8-pin, brown

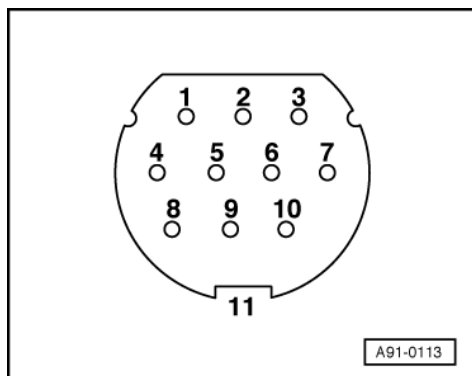
- 3 - Loudspeaker +, front right
- 4 - Loudspeaker -, front right
- 5 - Loudspeaker +, front left (for BOSE sound system in conjunction with telephone hands-free loudspeaker +)
- 6 - Loudspeaker -, front left (for BOSE sound system in conjunction with telephone hands-free loudspeaker -)



-> Radio connection:

Multi-pin connector III, 8-pin, black

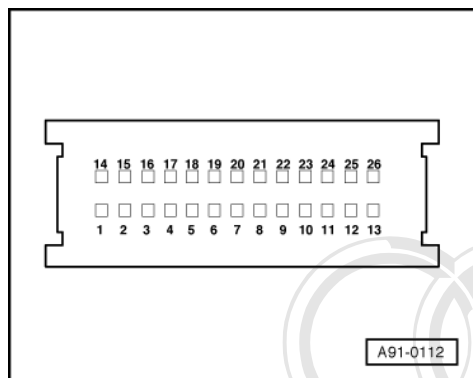
- 1 - Gala (speed signal)
- 2 - Telephone mute
- 3 - K wire (self-diagnosis)
- 4 - Connection for switching on and off via ignition key (S contact)
- 5 - Safe (constant positive from battery; anti-theft protection)
- 6 - Lighting dimmer (terminal 58s)
- 7 - Supply voltage (terminal 30)
- 8 - Earth (terminal 31)



-> Video connection (RGB video input)

Multi-pin connector, 11-pin

- 1 - AF earth
- 2 - AF left
- 3 - AF right
- 4 - Video signal (CSYNC)
- 5 - Video earth
- 6 - PAL/NTSC
- 7 - V switch
- 8 - Input B
- 9 - Input G
- 10 - Input R
- 11 - Screen earth



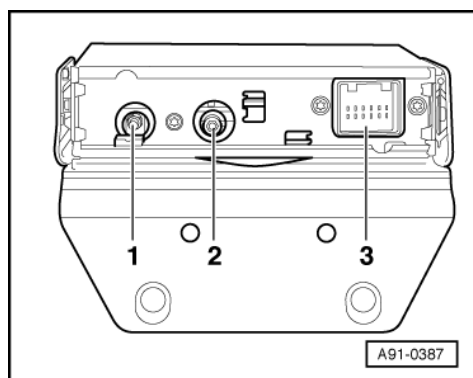
-> Navigation system connection

Multi-pin connector, 26-pin

- 4 - Terminal 15
- 5 - Speed sensor input, left (ABS)
- 13 - CAN bus high
- 14 - Switched positive (power aerial)
- 17 - Reversing light switch
- 18 - Speed sensor input, right (ABS)
- 26 - CAN bus low

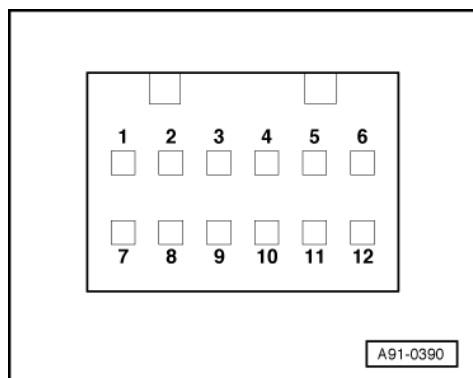
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5.9 - Connections to interface for navigation -R94



-> The interface for navigation converts the interior BUS system (Bosch CAN) into Display BUS. Furthermore, the interface for navigation contains a TMC tuner (Traffic Message Channel), which passes on the traffic information to the control unit for the navigation and enables a dynamic return.

- 1 - HF-wiring from radio (aerial wiring)
- 2 - HF-wiring to control unit for aerial selection (aerial wiring)
- 3 - Connection for voltage supply and bus connections



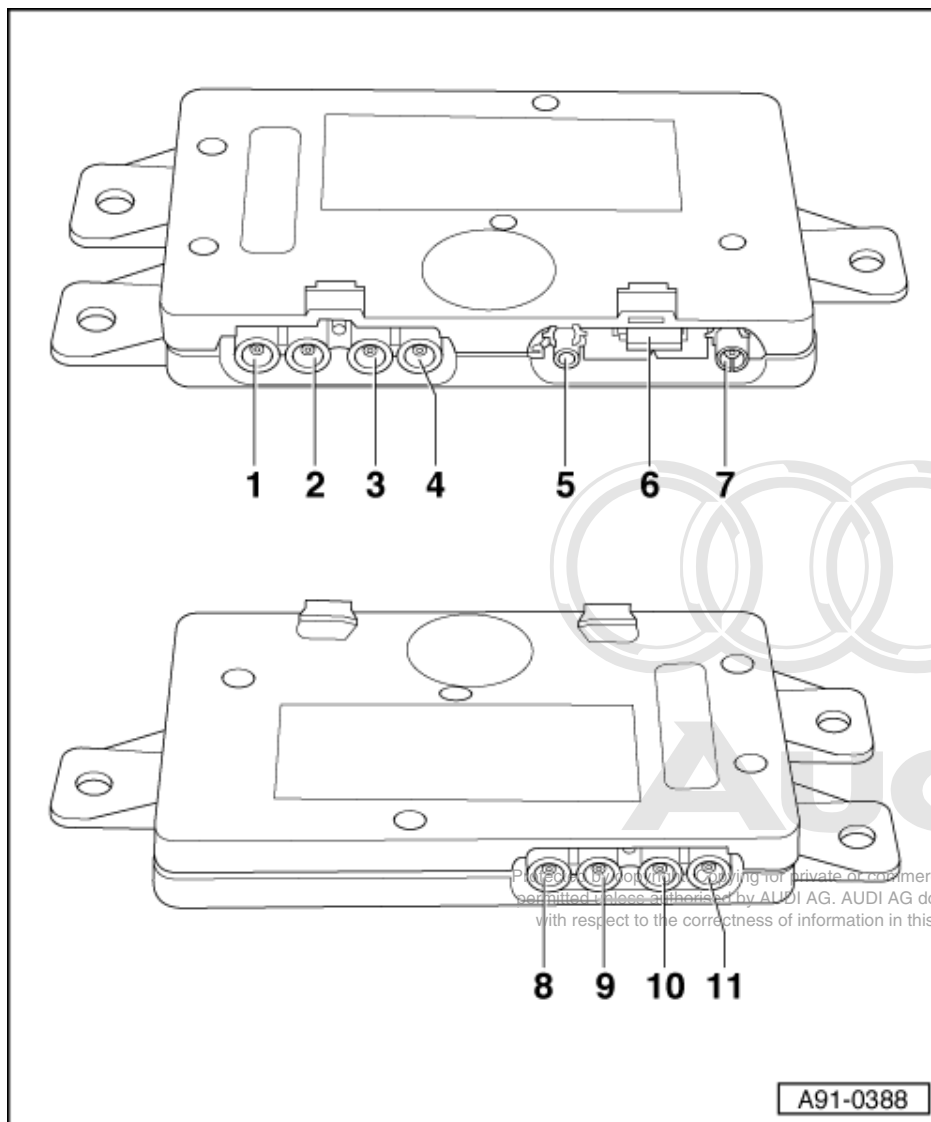
-> Connector for power supply and control bus connections

- 2 - CAN-BUS-Low (Display)
- 3 - CAN-BUS-High (Display)
- 6 - Permanent positive Terminal 30
- 8 - CAN-BUS-Low (Bosch CAN)
- 9 - CAN-BUS-High (Bosch-CAN)
- 12 - Earth (terminal 31)

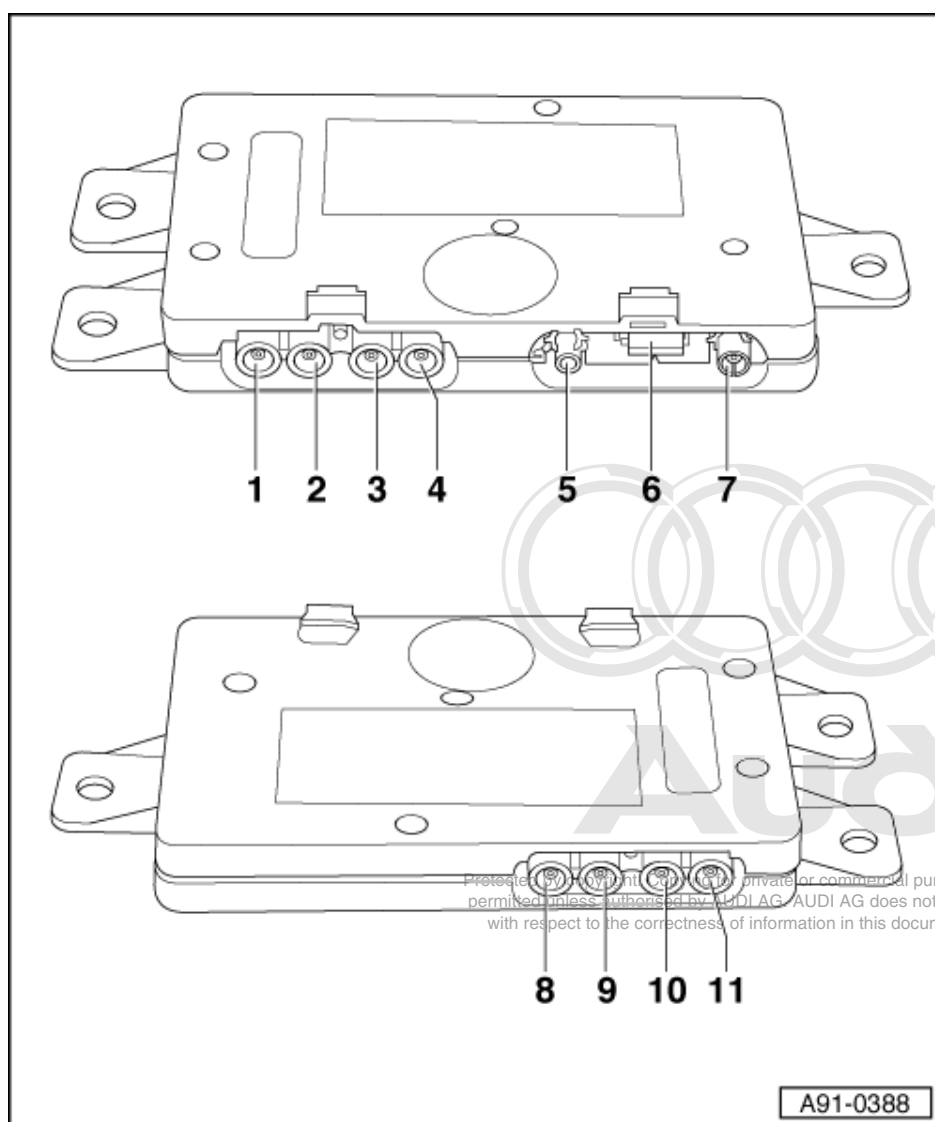
Note:

Connector contacts not listed have not been assigned.

5.10 - Connections to control unit for aerial selection -J515

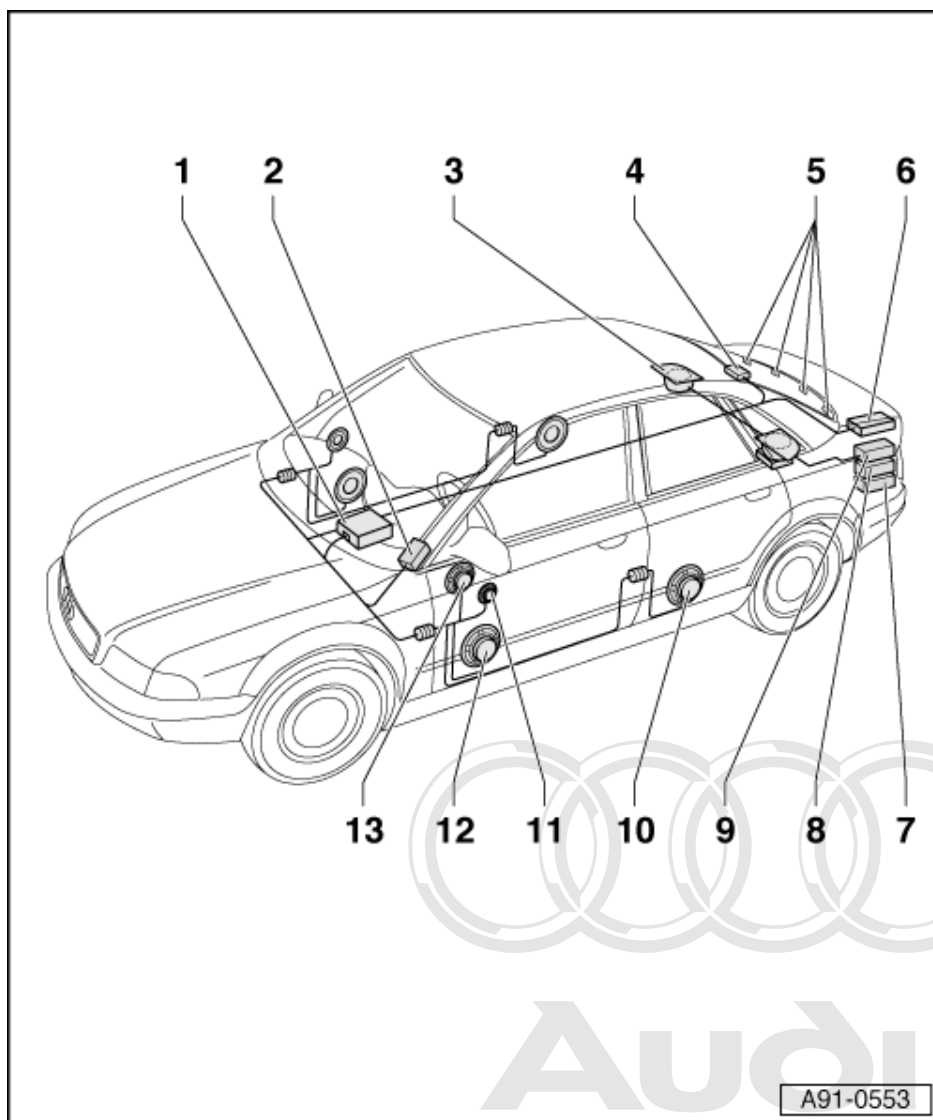


- 1 Aerial connection FM1 from amplifier window aerial
- 2 Aerial connection FM2 from amplifier window aerial
- 3 Aerial connection FM3 from amplifier window aerial
- 4 Aerial connection FM4 from window aerial amplifier (in Avant, from roof aerial with amplifier)
- 5 Connection for high frequency wiring from interface for navigation
- 6 Connector for voltage supply (Pin 1: Terminal 30; Pin 2: Terminal 31)



- 7 Connection for ZF wiring from interface for operating electronics, navigation
- 8 Aerial connection FM4 to TV tuner (in Avant, this connection is unused)
- 9 Aerial connection FM3 to TV tuner
- 10 Aerial connection FM2 to TV tuner
- 11 Aerial connection FM1 to TV tuner

5.11 - General overview of Navigation System II -D -Saloon-



1 Control unit for navigation system operating controls -J402

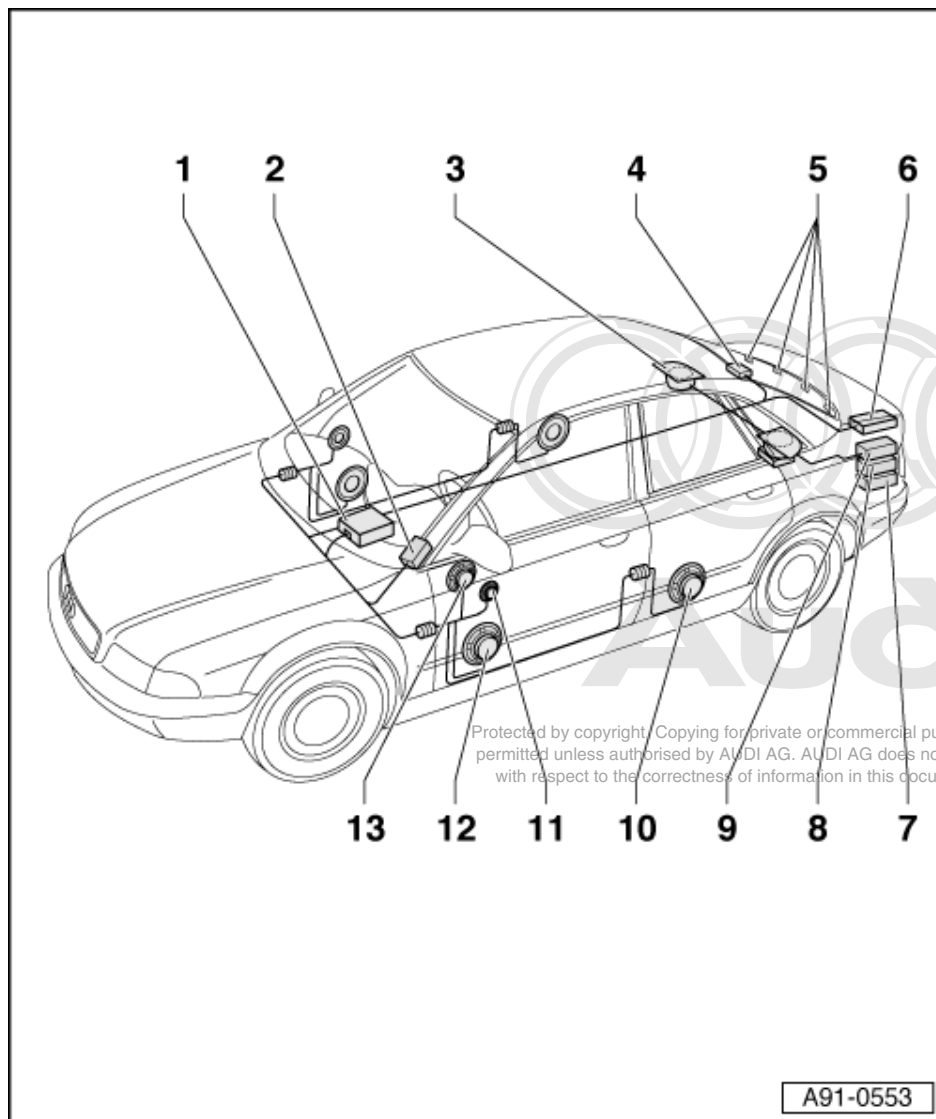
- ♦ Installed in centre console
- ♦ Removing and installing
=> Page 167

2 Interface for navigation -R94

- ♦ Under centre console bracket beneath driver's shelf.
- ♦ Removing and installing
=> Page 207

3 Loudspeaker installed in rear shelf

- ♦ Wide-band loudspeaker (2-way system)
- ♦ Right loudspeaker passive and left loudspeaker active with twin amplifier



4 Navigation system aerial -R50

- ◆ On luggage compartment lid
- ◆ Removing and installing
=> Page 136

5 Aerial amplifier TV/FM

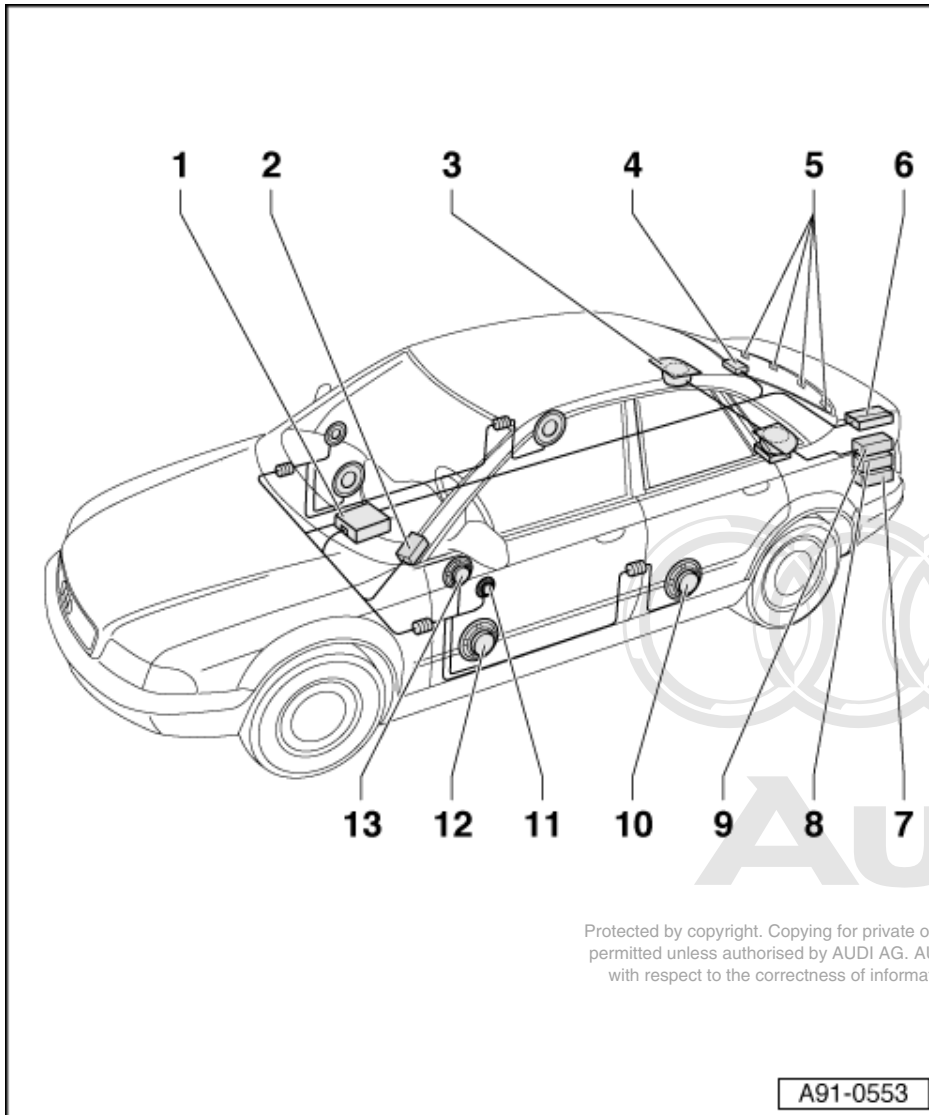
- ◆ Three TV aerial amplifiers installed under rear shelf, one at D-pillar (from vehicle identification no. 8DZYA200001)
- ◆ Removing and installing => Page 175
- ◆ Connection points for TV aerials => Page 173

6 BOSE power amplifier

- ◆ In rear left of luggage compartment under rear shelf
- ◆ Removing and installing
=> Page 52

7 TV tuner -J415

- ◆ In side compartment in luggage compartment (left)
- ◆ Removing and installing
=> Page 169



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8 CD changer

- ◆ In side compartment in luggage compartment (left)
- ◆ Removing and installing
=> Page 46

9 Control unit for aerial selection

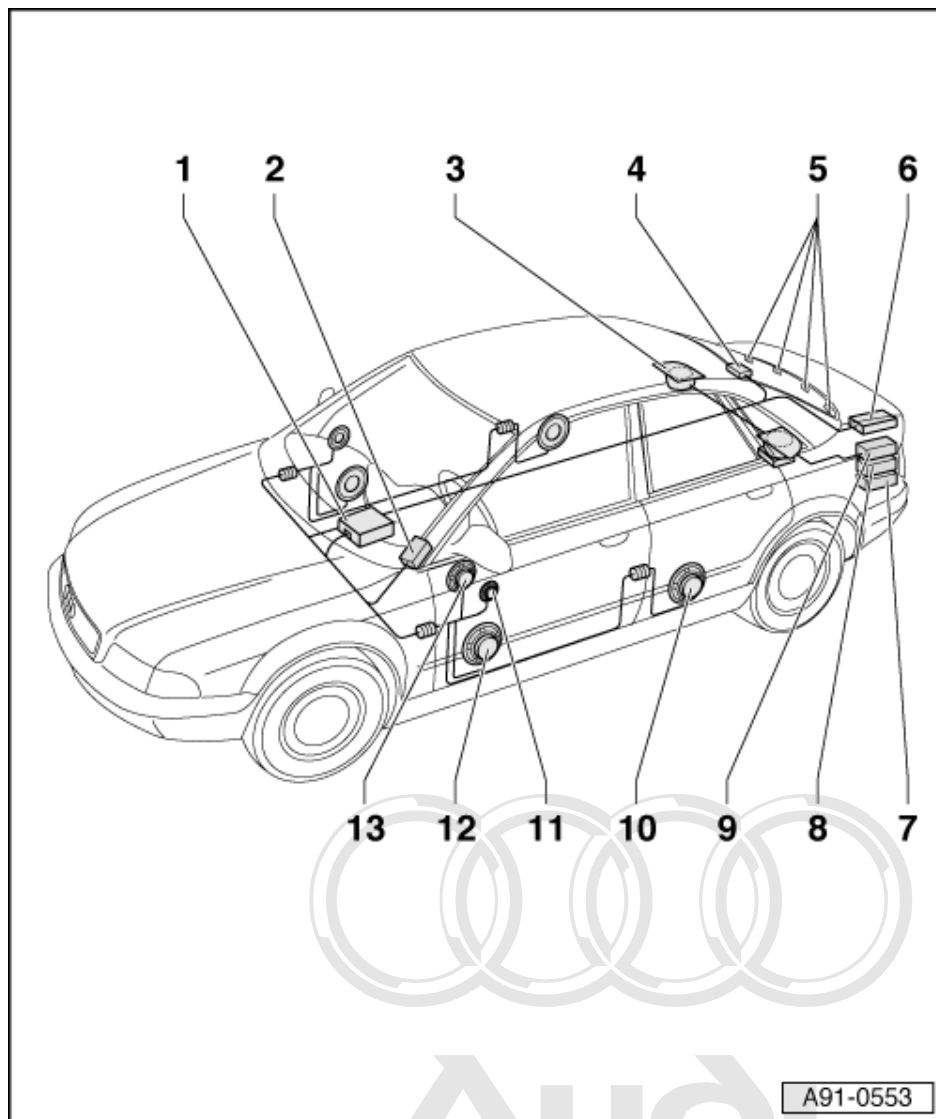
- ◆ Under rear shelf on left
- ◆ Removing and installing
=> Page 57

10 Bass loudspeaker

- ◆ In lower rear door trim
- ◆ Removing and installing
=> Page 44

11 Hands-free loudspeaker

- ◆ In driver's door
- ◆ Removing and installing
=> Page 83
- ◆ Only for vehicles with BOSE sound system in conjunction with telephone
- ◆ For all other vehicles, the loudspeakers in the front door trims are used.



12 Bass loudspeaker

- ◆ In front lower door trim
- ◆ Removing and installing

=> Page 44

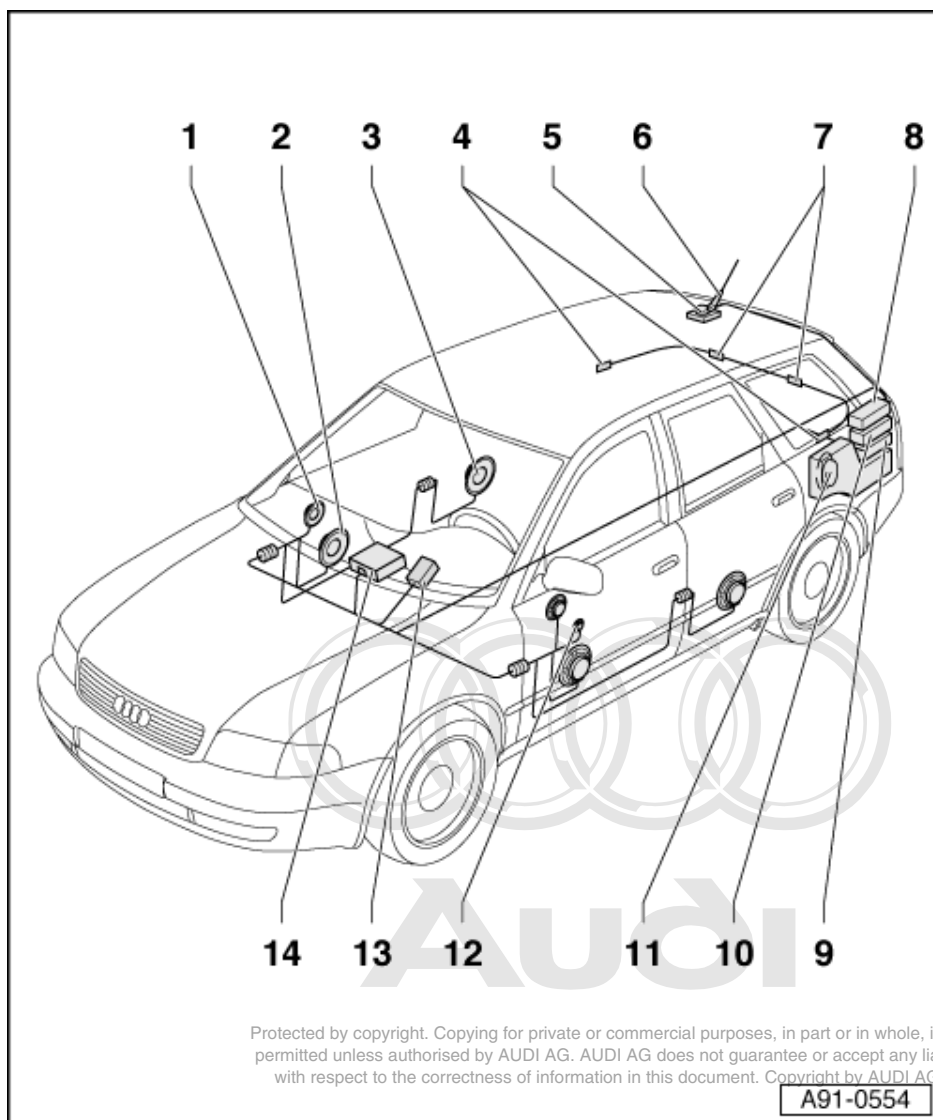
13 Mid-range/treble loudspeaker

- ◆ In front upper door trim
- ◆ Removing and installing

=> Page 45

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5.12 - General overview of Navigation System II -D -Avant-



1 Mid-range/treble loudspeaker

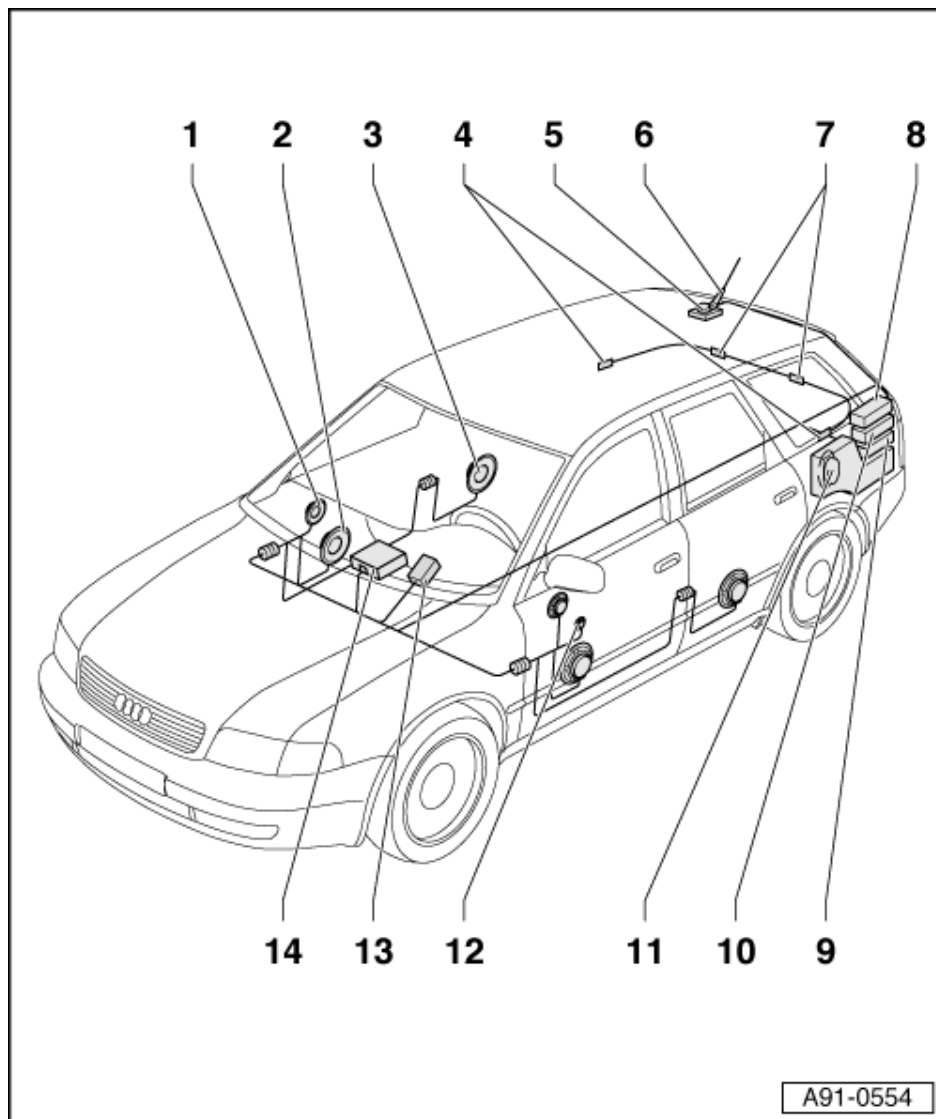
- ♦ In front upper door trim
- ♦ Removing and installing
=> Page 45

2 Bass loudspeaker

- ♦ In front lower door trim
- ♦ Removing and installing
=> Page 44

3 Wide-band loudspeaker

- ♦ Installed in rear lower door trim (2-way system)



4 Aerial amplifier TV/FM

- ◆ At rear right side window: aerial -2- for TV
- ◆ At rear left side window: aerial -1- for TV
- ◆ Connection points for TV aerials at rear side windows => Page 174
- ◆ Removing and installing => Page 177

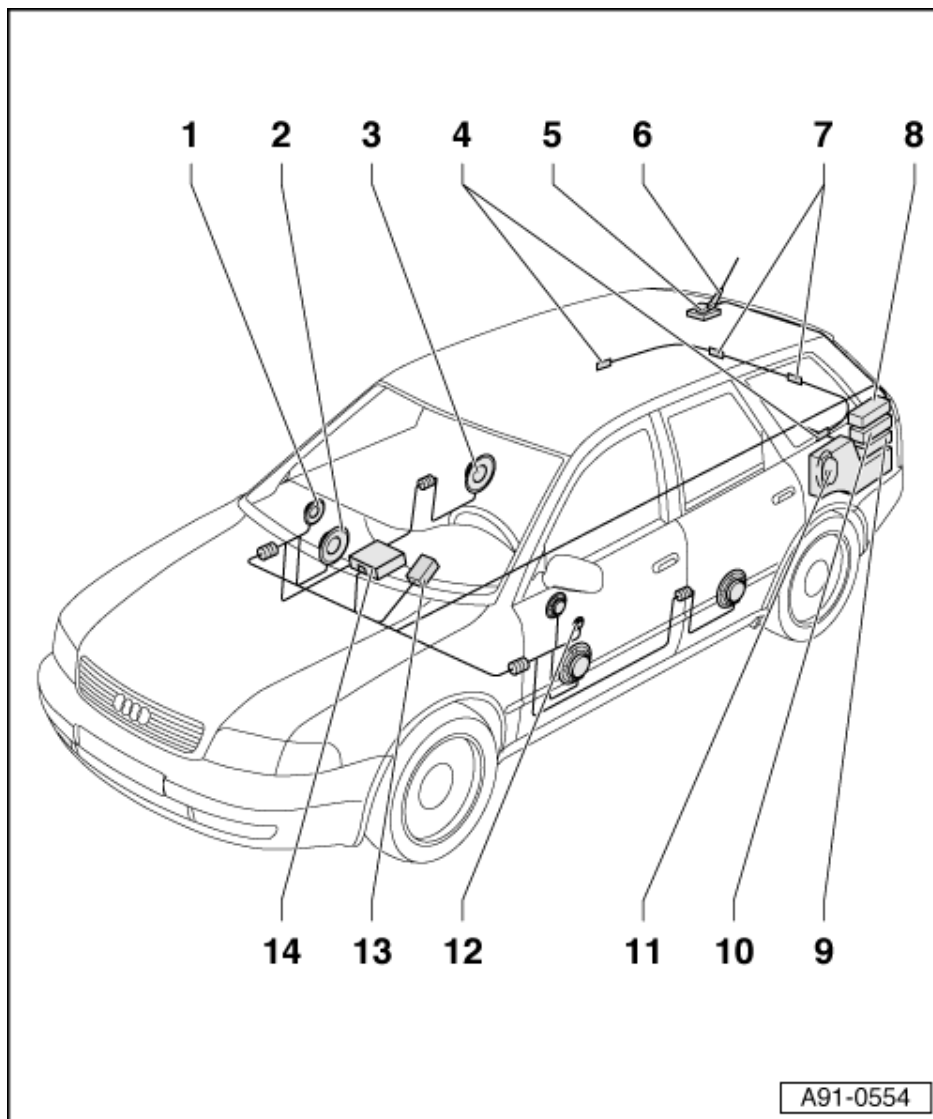
5 Radio/telephone/navigation system (GPS) aerial base -R52

- ◆ Triplex roof aerial
- ◆ With integrated amplifier
- ◆ Removing and installing
=> Page 62

6 TV aerial amplifier

- ◆ Two off, installed at rear window
- ◆ Connection points for TV aerials at rear window
=> Page 174
- ◆ Removing and installing => Page 176

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7 Aerial rod for radio/telephone

- ♦ Two off, installed at rear window
- ♦ Connection points for TV aerials at rear window
=> Page 174
- ♦ Removing and installing => Page 176

8 Control unit for aerial selection

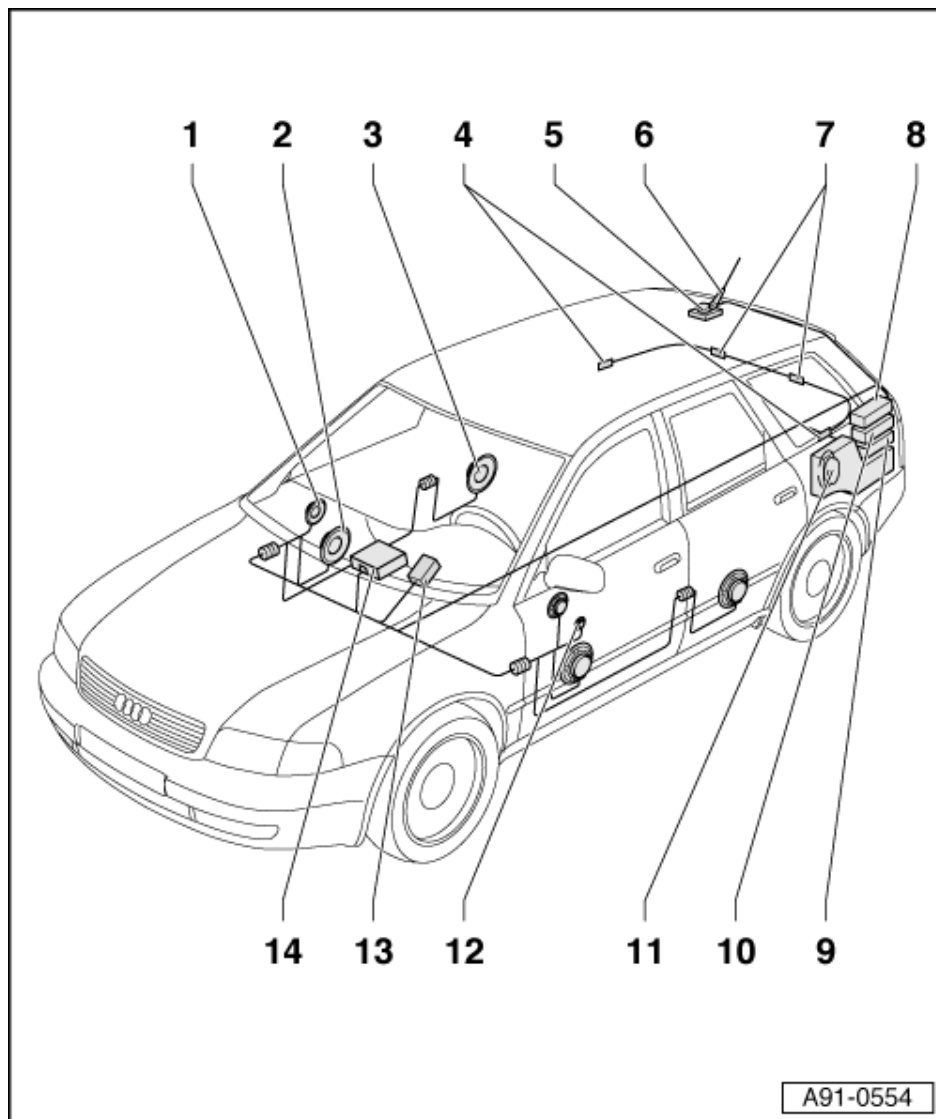
- ♦ In side compartment in luggage compartment (left)
- ♦ Removing and installing
=> Page 60

9 CD changer

- ♦ In side compartment in luggage compartment (left)
- ♦ Removing and installing
=> Page 46

10 TV tuner -J415

- ♦ In side compartment in luggage compartment (left)
- ♦ Removing and installing
=> Page 169



11 Bass loudspeaker (subwoofer) with amplifier (vehicles with BOSE sound system and BOSE amplifier)

- ◆ In rear left of luggage compartment under side trim
- ◆ Removing and installing
=> Page 52

12 Hands-free loudspeaker

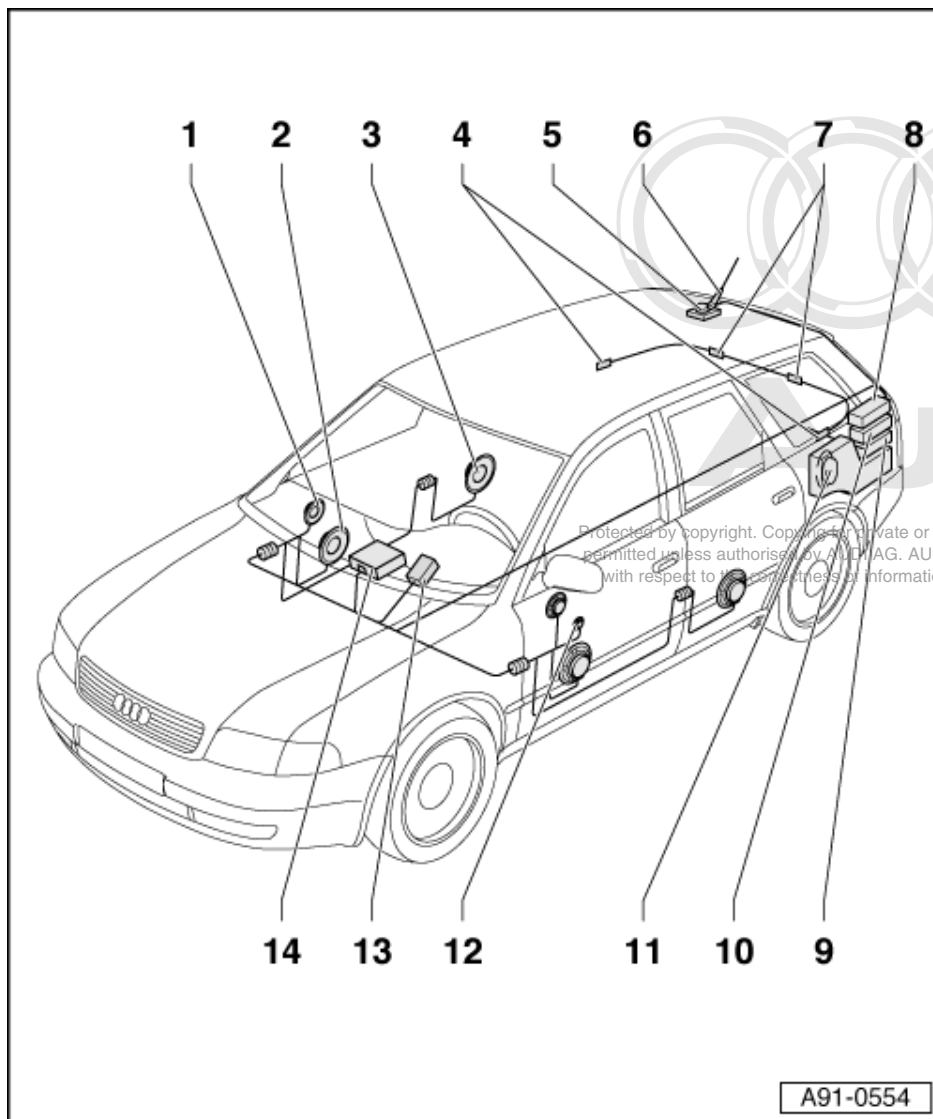
- ◆ In driver's door
- ◆ Removing and installing
=> Page 83
- ◆ Only for vehicles with BOSE sound system in conjunction with telephone
- ◆ For all other vehicles, the loudspeakers in the front door trims are used.

13 Interface for navigation -R94

- ◆ Under centre console bracket beneath driver's shelf.



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14 Control unit for navigation system operating controls -J402

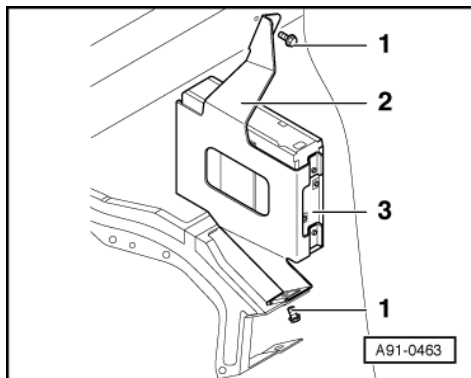
- ♦ Installed in centre console
- ♦ Removing and installing
=> Page 167
- ♦ Removing and installing
=> Page 207

5.13 - Removing and installing interface for navigation -R94

Removing

- Remove glove box driver's side.

=> General Body Assembly, Interior; Repair group 68; Storage compartments, covers; Removing driver's storage compartment Storage compartments, covers Removing driver's storage compartment



- -> Detach connectors from control unit -2-.
- Unscrew both hexagon bolts -1- (5 Nm) and detach control unit -3- together with bracket -2- from dash panel cross member.

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Installing:

- Installation is carried out in reverse sequence to removal.

5.14 - Checking functionality of individual TV aerial amplifiers

The navigation system II-D is equipped with a special function for visually monitoring the performance of the aerials.

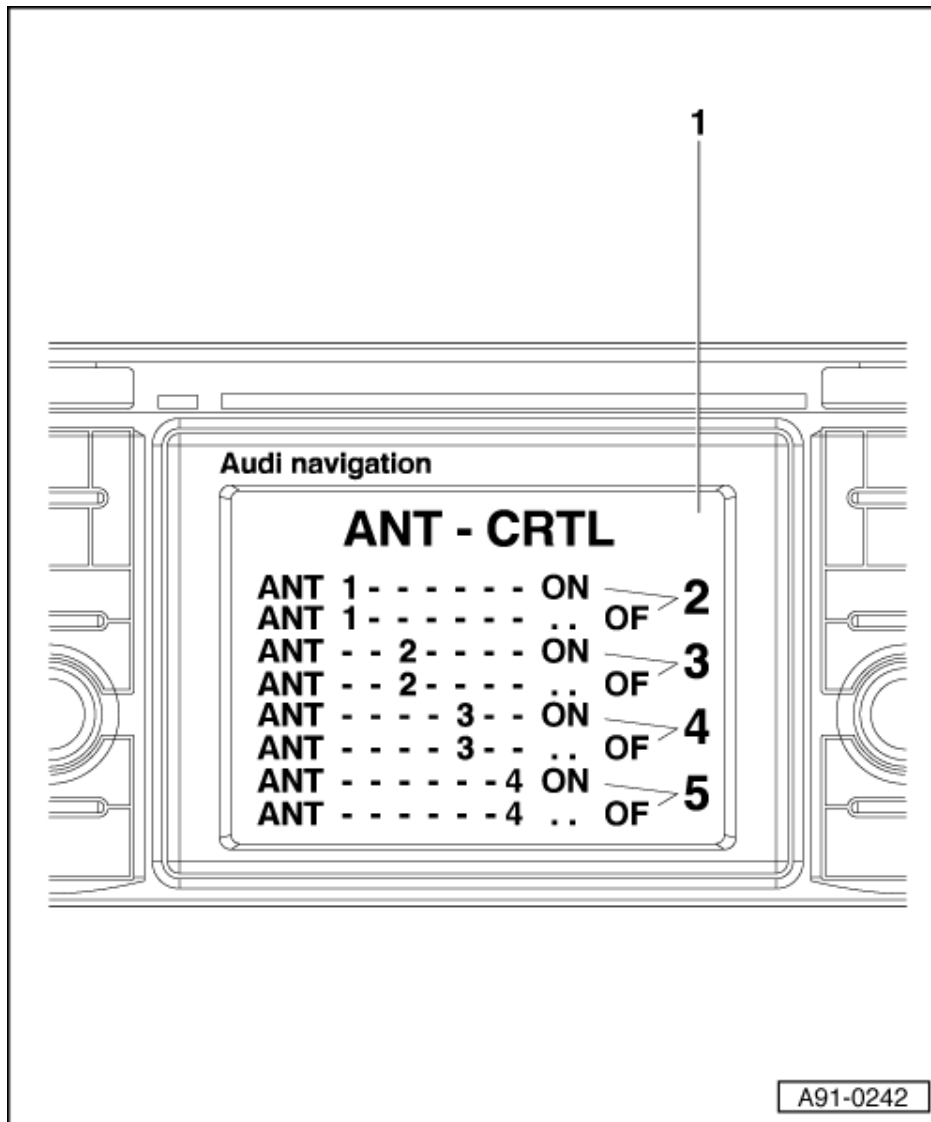
As soon as this function is started up, a check of the basic functions of the television system is initiated.

To invoke the test function,

- activate television operation and then search for a television transmitter which will provide good reception.

=> Operating instructions navigation system Plus

- Simultaneously press AM button and TONE button.



Display on screen:

- 1 Aerial monitoring function
- 2 Aerial TV/FM1 -R55 with ON and OFF function
- 3 Aerial TV/FM1 -R56 with ON and OFF function
- 4 Aerial TV/FM1 -R57 with ON and OFF function
- 5 Aerial TV/FM4 and AM -R58 with ON and OFF function (in Avant only TV4, as FM4/AM via roof aerial)

Note:

The image received from the aerial currently selected can now be seen on the screen.

- The remote power supply to the respective TV aerial amplifier can be switched on or off using the right rotary control.
- The quality of the image must deteriorate noticeably when the remote power supply is switched on.
- Press RETURN to exit the function.



Test options:

- ◆ Information concerning the functionality of the respective aerial amplifier can be obtained by switching on and off (ON or OFF position) the remote power supply to the aerial amplifier in question.
- ◆ Should a fault arise (no change in the image), the only way to ascertain whether there is an open circuit in the aerial cable or the TV aerial amplifier is defective is to check the voltage (10V) at the coaxial cable (inner conductor) on the amplifier side.
- ◆ The main functions of the television receiver are activated and the audio/video link guaranteed by commissioning the TV system, selecting a channel and invoking the video text.

6 - Navigation system III (route navigation) (as of CW 29/99)

6.1 - Navigation system III (route navigation) (as of CW 29/99)

Important:

Disconnect battery earth strap before working on electrical system.

Activate the service mode of telematics control unit before disconnecting battery. => Radio, Telephone and Navigation System Self-diagnosis; Repair group 01; Telematics Self-diagnosis; Adaption

Notes:

- ◆ On vehicles with coded radio, obtain anti-theft code before disconnecting battery.
- ◆ Activate the service mode of telematics control unit before disconnecting battery.
- ◆ If the battery is reconnected, please ensure that the vehicle equipment (radio, clock, electric window lifters, engine) is activated as described in operating instructions and the service mode of telematics control unit is deactivated.

6.2 - General description

The navigation system III replaces the navigation system I. Navigation system III has self-diagnosis capability.

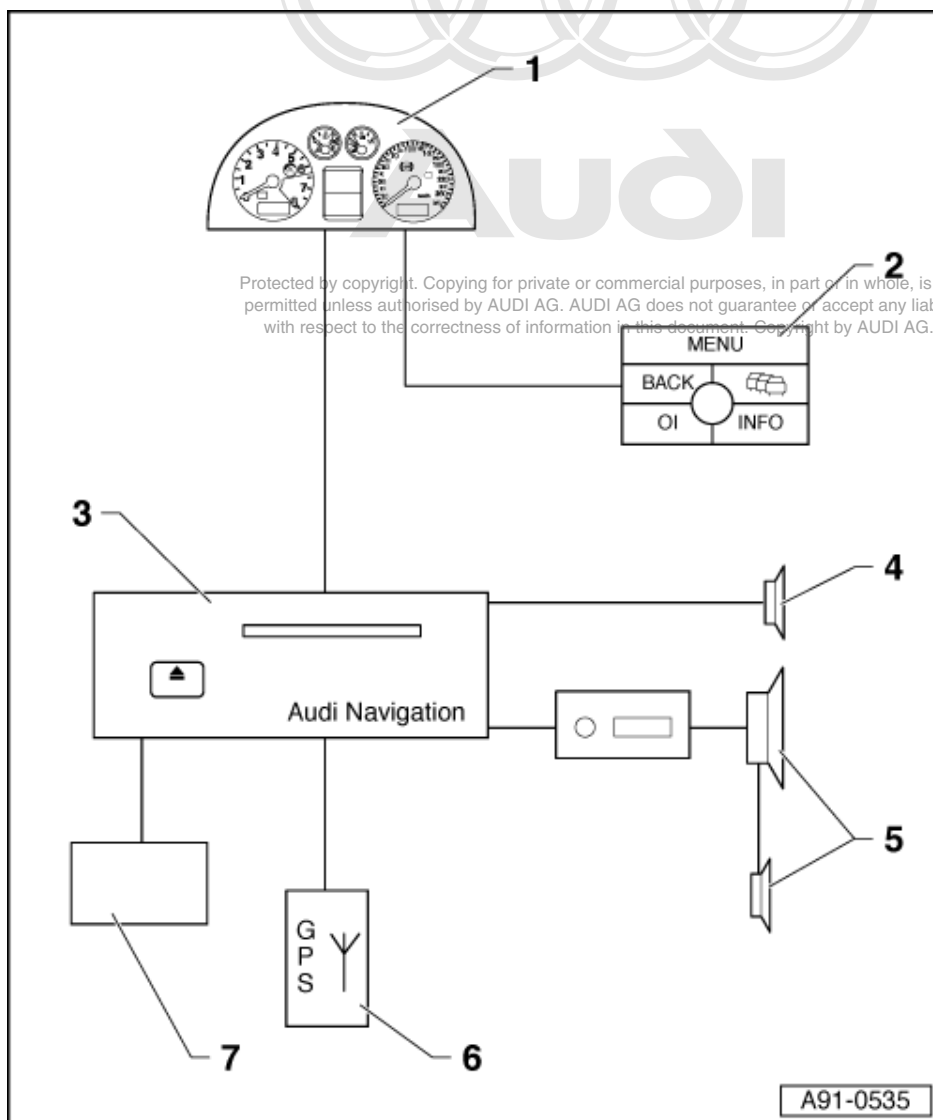
All displays appear via the dash panel insert connected to the CAN bus.

All entries are made using the keys on the multi-function switch.

The system consists of:

- ◆ Multi-function switch (operating unit)
- ◆ Dash panel insert (display unit)
- ◆ Control unit for navigation system with CD drive (central unit and navigation unit)
- ◆ GPS aerial

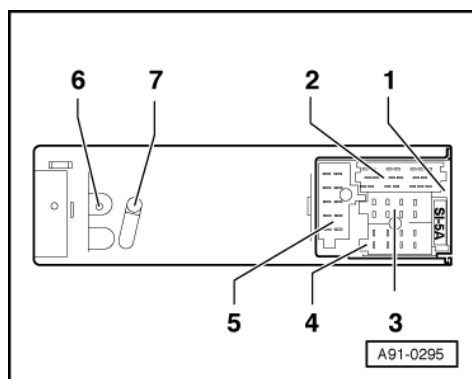
6.3 - Structure of Navigation System III



- 1 Dash panel insert:
(Display unit)
- 2 Function selector switch
(operating unit)
- 3 Control unit for navigation system with CD drive
(central unit and navigation system unit)
- 4 Hands-free loudspeaker
- 5 The mid-range/treble loudspeaker and front bass loudspeaker
- 6 Aerial for navigation system (GPS)
- 7 Telephone (preparation)



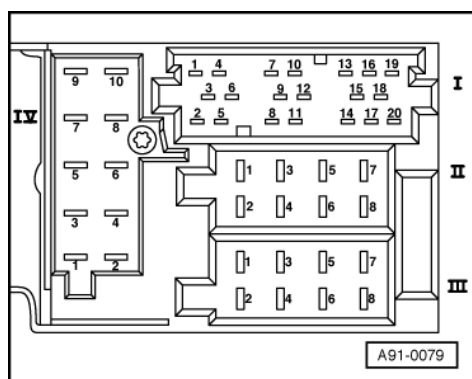
6.4 - Connectors on rear of the control unit for navigation system with CD drive -J401



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- 1 - -> Connection block with four multi-pin connectors and a fuse
- 2 - Multipin connector I, 20-pin, consists of
 - Partial connector, 6-pin, yellow
 - Partial connector, 6-pin, green
 - Partial connector, 8-pin, blue
- 3 - Multipin connector II, 8-pin, brown
- 4 - Multipin connector III, 8-pin, black
- 5 - Multipin connector IV, 10-pin, red
- 6 - GPS aerial connection; connection socket for navigation system aerial
- 7 - Retainer bar for aerial connection

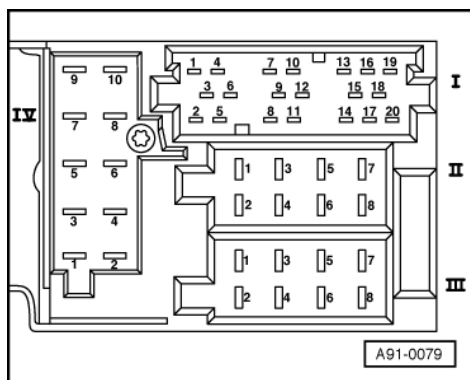
Contact assignment of multi-pin connectors I, II, III, and IV on rear side of control unit for navigation system with CD drive -J401



-> Multi-pin connector I, 20-pin

- 1 - CAN high telematics
- 2 - CAN high display
- 3 - CAN screen telematics
- 4 - CAN low telematics
- 5 - CAN low display
- 6 - CAN screen display
- 7 - Button section 2
- 8 - Output A
- 9 - Switch
- 10 - Button section 3
- 11 - Output B
- 12 - Earth
- 13 - AF +
- 14 - AF mute, navigation system
- 15 - AF -
- 16 - Telephone AF (+)
- 17 - Tel. active / mute FAW
- 18 - Tel. AF screen
- 19 - Telephone AF (-)

20 - not used



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

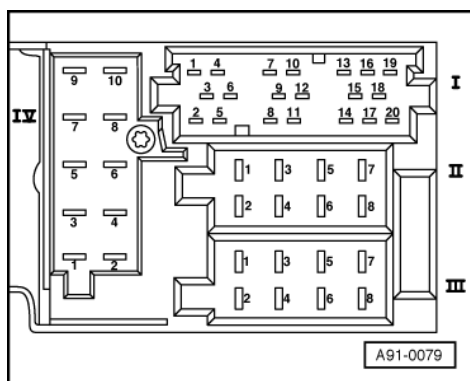
- 1 - not used
- 2 - not used
- 3 - not used
- 4 - not used
- 5 - not used
- 6 - not used
- 7 - not used
- 8 - not used

Multi-pin connector III, 8-pin, black

- 1 - Gala (speed signal)
- 2 - Reversing light switch
- 3 - K diagnosis
- 4 - Terminal 15
- 5 - not used
- 6 - not used
- 7 - Terminal 30
- 8 - Terminal 31



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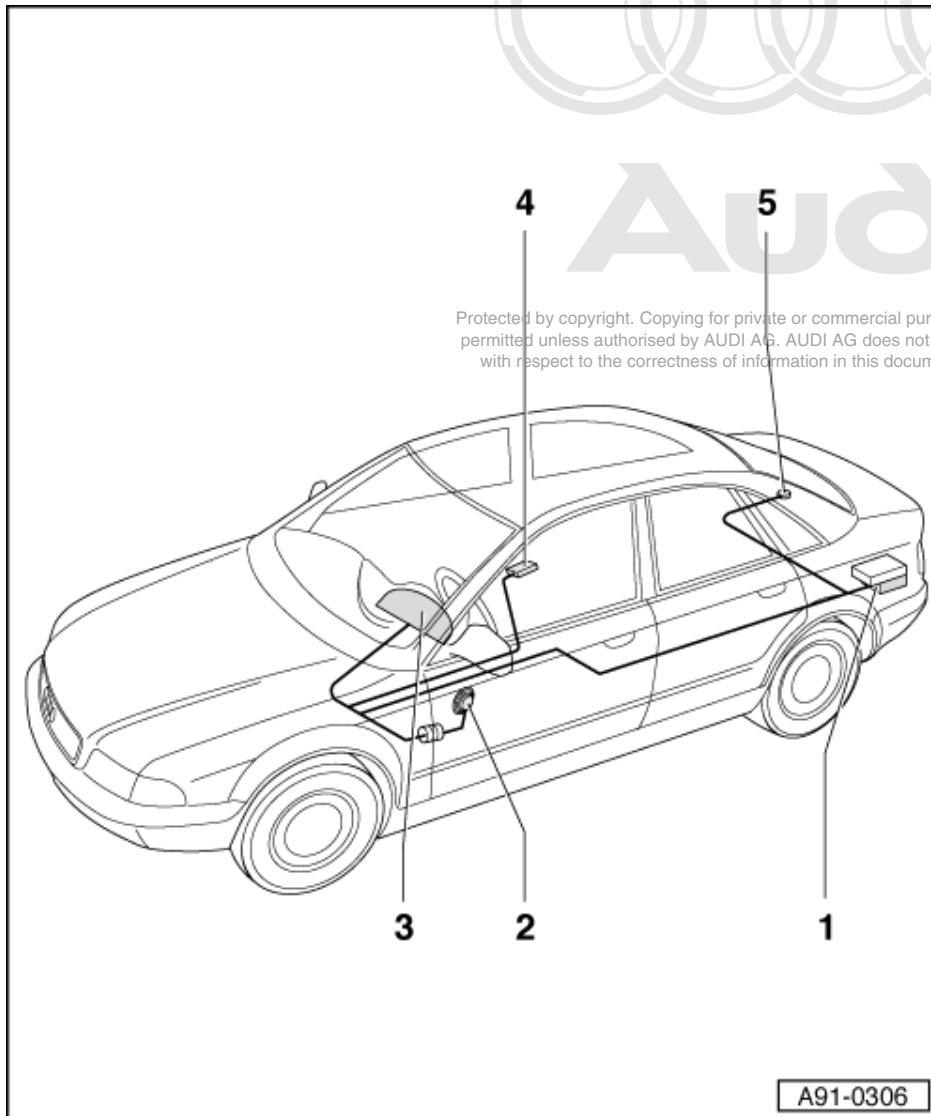


Multi-pin connector IV, 10-pin, red

- 1 - not used
- 2 - not used
- 3 - not used
- 4 - not used
- 5 - not used
- 6 - not used
- 7 - not used
- 8 - not used
- 9 - not used

10 - not used

6.5 - General overview of Navigation System III -Saloon-

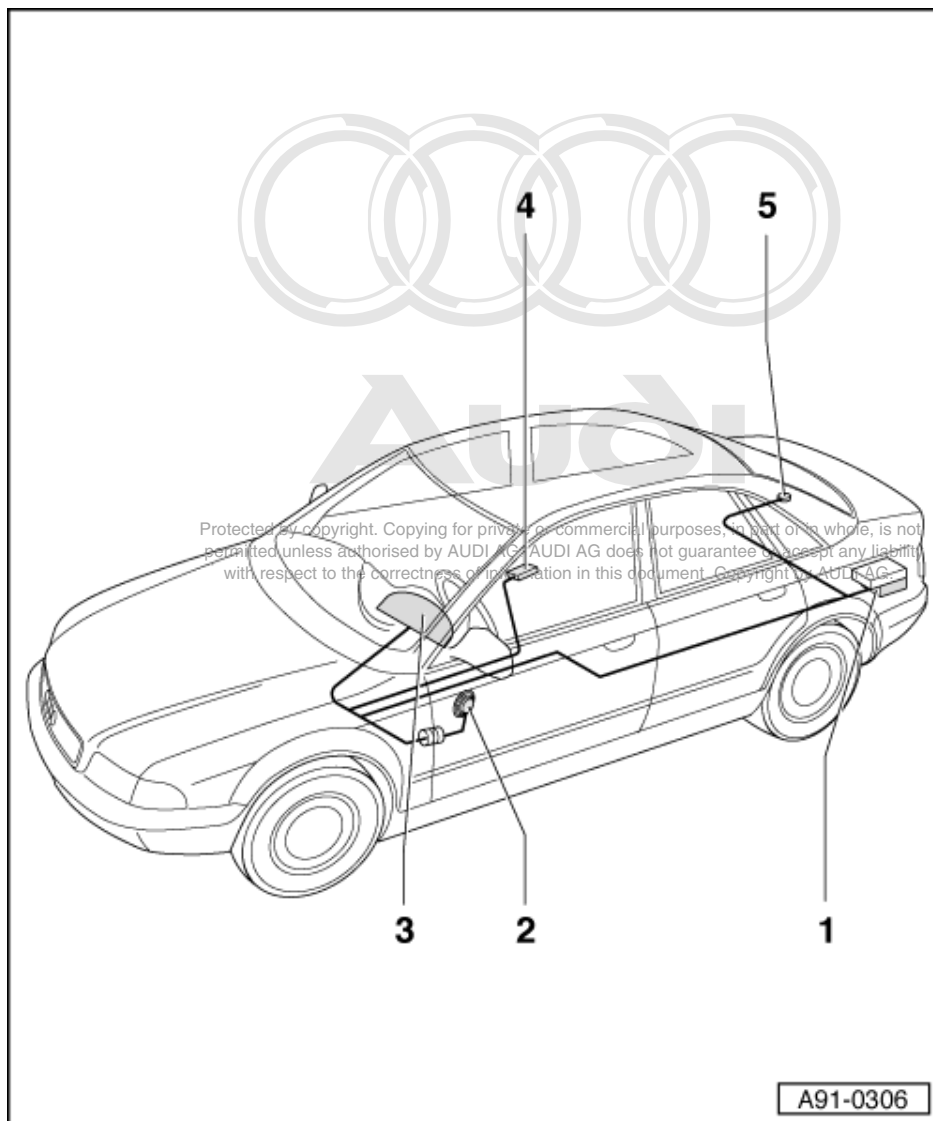


1 Control unit for navigation system with CD drive -J401

- ◆ In luggage compartment behind left side trim
- ◆ Removing and installing
=> Page 131

2 Hands-free loudspeaker

- ◆ In driver's door
- ◆ Removing and installing
=> Page 83
- ◆ Only for vehicles with BOSE sound system in conjunction with telephone
- ◆ For all other vehicles, the loudspeakers in the front door trims are used.



3 Dash panel insert display

- ◆ In dash panel
- ◆ Removing and installing

=> Electrical System; Repair group 90; Servicing dash panel insert up to model year 00; Removing and installing dash panel insert Servicing dash panel insert up to model year 00 Removing and installing dash panel insert

=> Electrical System; Repair group 90; Dash panel insert as of model year 00; Removing and installing dash panel insert Dash panel insert as of model year 00 Removing and installing dash panel insert

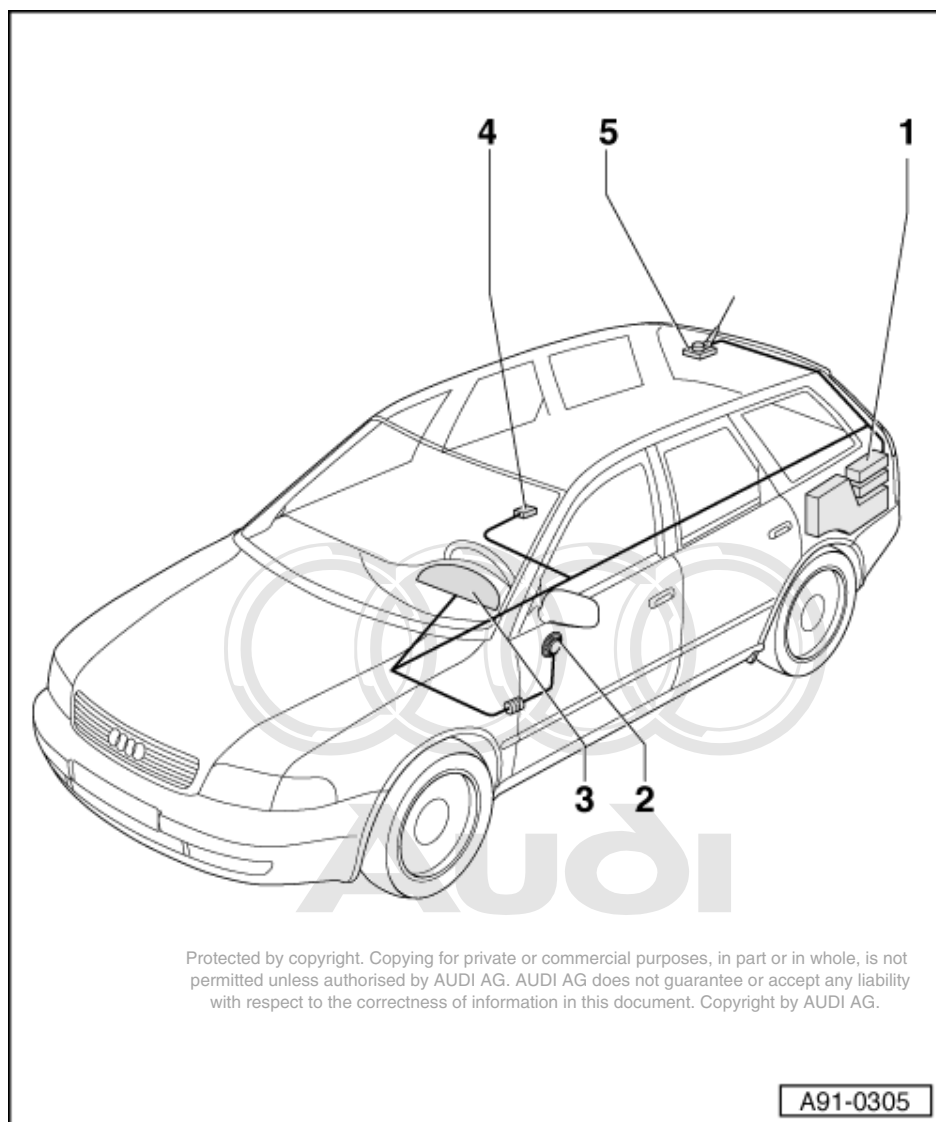
4 Function selector switch II in centre console -E272

- ◆ In centre console
- ◆ Removing and installing => Page 218

5 GPS navigation system aerial -R50

- ◆ Under rear shelf in centre
- ◆ Removing and installing => Page 136

6.6 - General overview of Navigation System III -Avant-



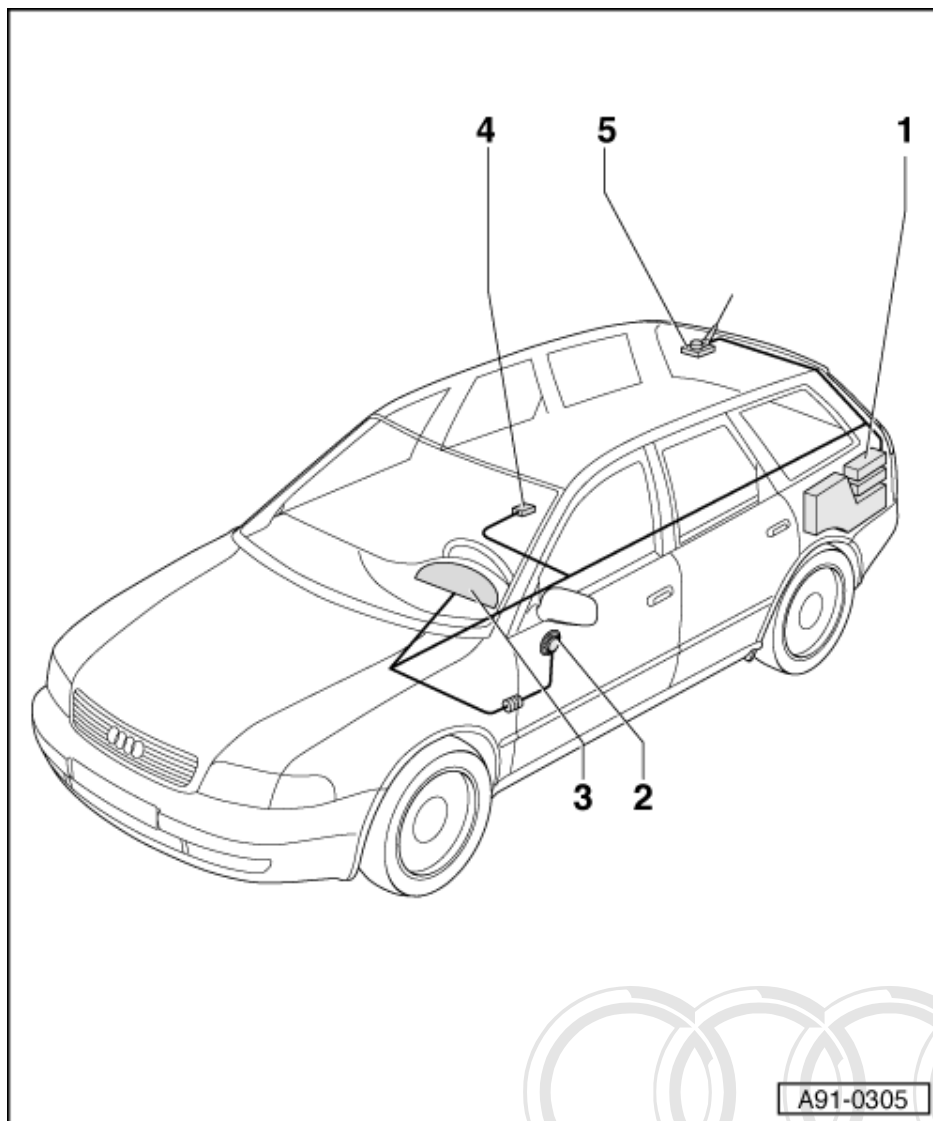
1 Control unit for navigation system with CD drive -J401

- ◆ In luggage compartment behind left side trim
- ◆ Removing and installing

=> Page 131

2 Hands-free loudspeaker

- ◆ In driver's door
 - ◆ Removing and installing
- => Page 83
- ◆ Only for vehicles with BOSE sound system in conjunction with telephone
 - ◆ For all other vehicles, the loudspeakers in the front door trims are used.



3 Dash panel insert display

- ◆ In dash panel
- ◆ Removing and installing

=> Electrical System; Repair group 90; Servicing dash panel insert up to model year 00; Removing and installing dash panel insert Servicing dash panel insert up to model year 00 Removing and installing dash panel insert

=> Electrical System; Repair group 90; Dash panel insert as of model year 00; Removing and installing dash panel insert Dash panel insert as of model year 00 Removing and installing dash panel insert

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4 Function selector switch II in centre console -E272

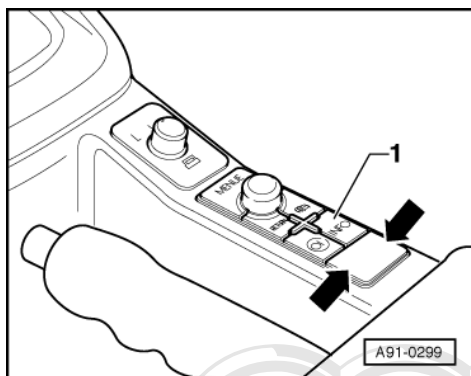
- ◆ In centre console
- ◆ Removing and installing => Page 218

5 Radio/telephone/navigation system (GPS) aerial -R52

- ◆ On the vehicle roof
- ◆ Removing and installing
- => Page 62

6.7 - Removing and installing function selector switch -E272

Removing



-> The function selector switch -1- is located in the centre console next to the handbrake lever.

Note:

The function selector switch must only be removed by drawing vertically upwards out of storage compartment. To avoid damaging the retainer tabs on the underside of the function selector switch, do not tilt or rotate the function selector switch during removal.

- Applying two screwdrivers at cover -arrows-, carefully prise the function selector switch -1- upwards and remove by drawing upwards out of storage compartment.
- Detach 4-pin connector from function selector switch.

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- Installation is performed in the reverse sequence to removal.

7 - Multi-function steering wheel

7.1 - Multi-function steering wheel

Important:

Disconnect battery earth strap before working on electrical system.

Activate the service mode of telematics control unit before disconnecting battery.=>Radio, Telephone and Navigation System Self-diagnosis; Repair group 01; Telematics Self-diagnosis; Adaption

Notes:

- ♦ On vehicles with coded radio, obtain anti-theft code before disconnecting battery.
- ♦ Activate the service mode of telematics control unit before disconnecting battery.
- ♦ If the battery is reconnected, please ensure that the vehicle equipment (radio, clock, electric window lifters, engine) is activated as described in operating instructions and the service mode of telematics control unit is deactivated.

7.2 - General description

System components:

- ♦ six illuminated function buttons in steering wheel for radio and telephone operation

- ◆ two illuminated function buttons on left and right of steering wheel for Tiptronic operation
- ◆ wiring on steering wheel side
- ◆ electronics on steering wheel side
- ◆ control unit on vehicle side
- ◆ wiring on vehicle side

Description of function:

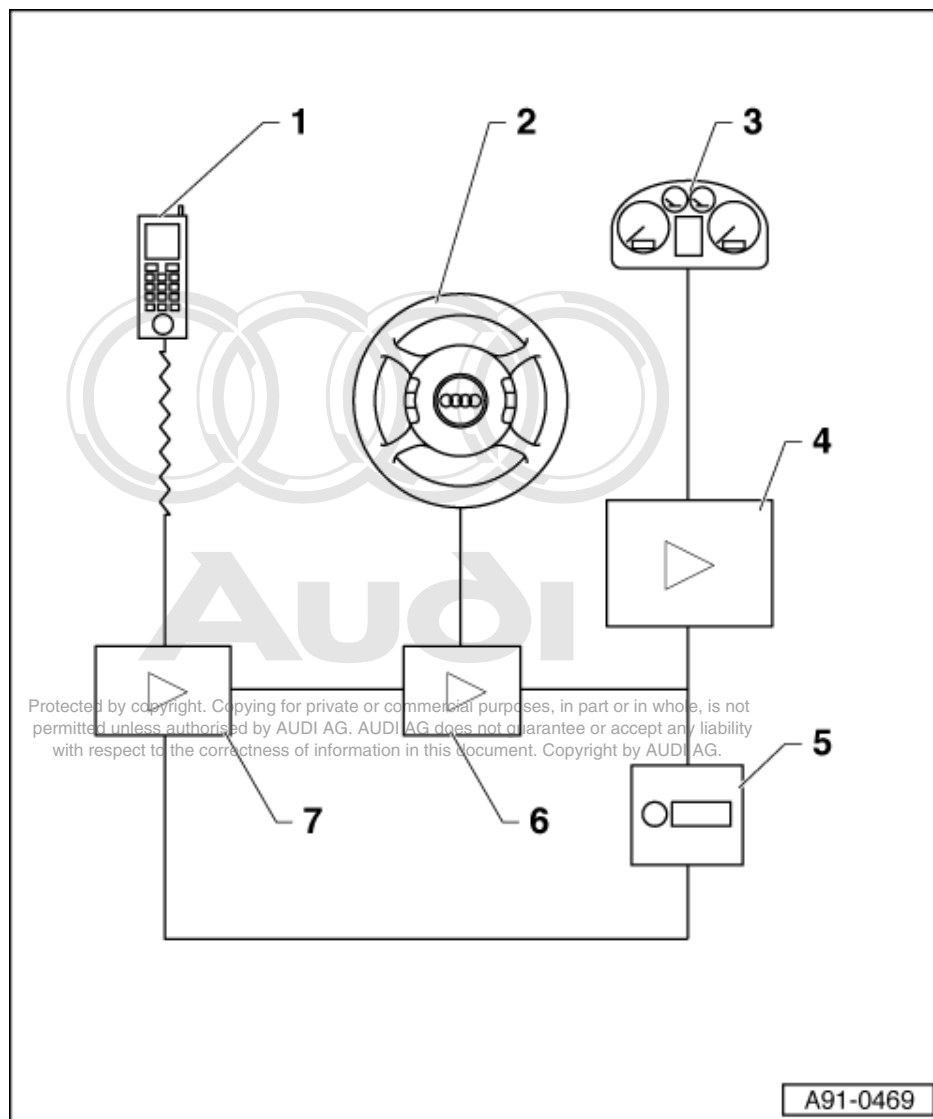
Six function keys have been incorporated in the steering wheel to facilitate operation of the radio and telephone systems during driving. One function button on left and on right side of steering wheel for Tiptronic operation. Furthermore, the multi-function steering wheel is electrically heated.

The steering wheel electronics control the steering wheel heating, convey the commands from the six function buttons to the CAN bus and dim the function key illumination. The steering wheel electronics can not be replaced separately; in the event of a fault, the entire steering wheel must be replaced.

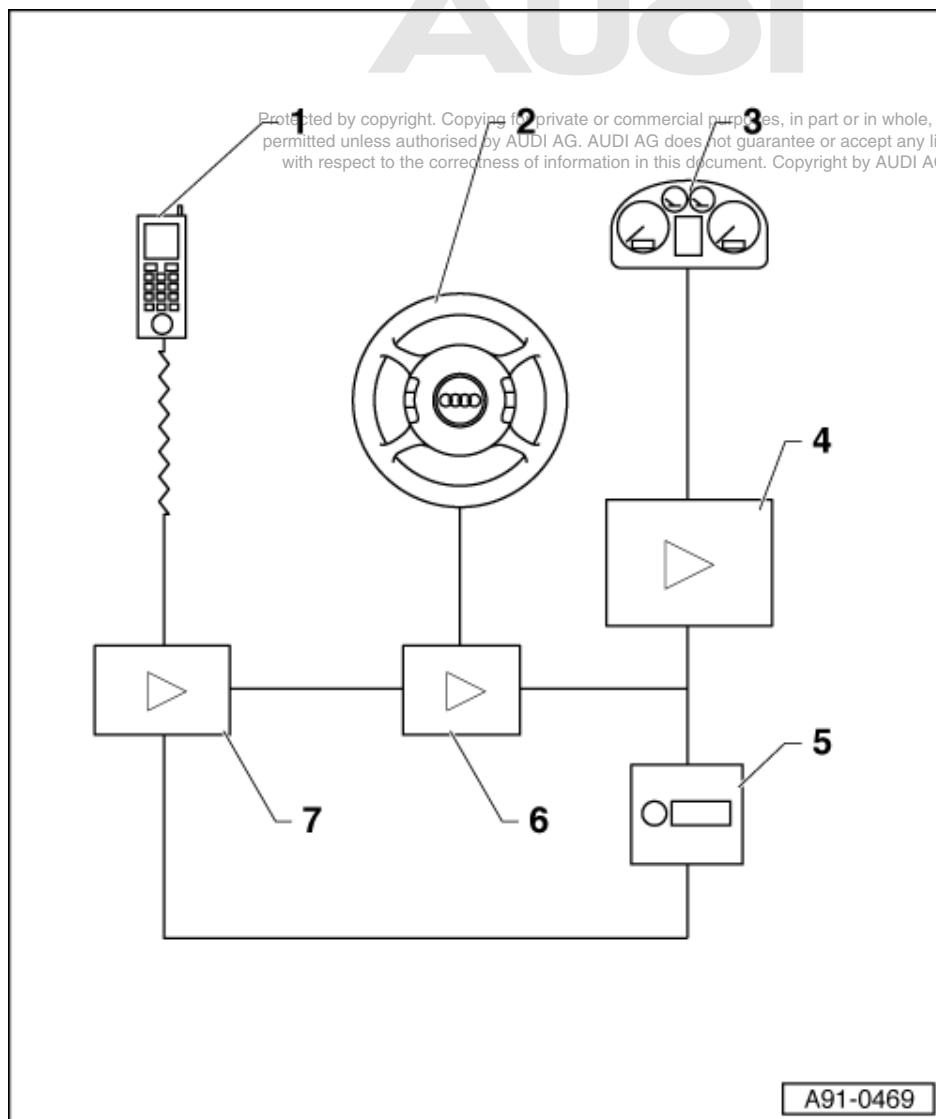
The control unit for the multi-function steering wheel actuates the radio unit, telephone system, dash panel insert and steering wheel heating.

During radio operation, the selected transmitter is indicated on the centre display of the dash panel insert. If, during radio operation, a cassette is inserted, "TAPE <>" appears on the centre display, and during CD operation, the CD number "CD 02" and the relevant track "TR 09" is displayed.

7.3 - Multi-function steering wheel - general overview



- 1 Handset for telephone or mobile phone
- 2 Multi-function steering wheel
 - ♦ With integrated control switches
 - ♦ With electronics on steering wheel side
- 3 Instrument cluster
 - ♦ installed in dash panel
- 4 Control unit for navigation system operating controls -J402
 - ♦ Installed in centre console
 - ♦ Either a radio unit or the operating electronics control unit, navigation is installed
- 5 Radio
 - ♦ Installed in centre console



- 6 Control unit for multi- function steering wheel -J453
 - ♦ At 13-box relay carrier under driver's storage compartment
 - ♦ Removing and installing => Page [222](#)
- 7 Control unit for telephone -J412 (mobile phone) operating electronics or transmitter/receiver unit for telephone -R36

7.4 - Removing and installing multi-function steering wheel control switches

Removing

- Disconnect battery/earthing strap/cable

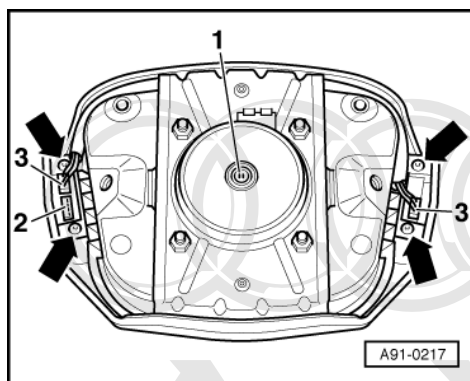
Note:

Always observe safety regulations for airbag systems when working on airbag system components.

=> General Body Assembly, Interior; Repair group 69; Airbag safety regulations; Safety measures for working on airbag Airbag safety regulations Safety measures for working on airbag

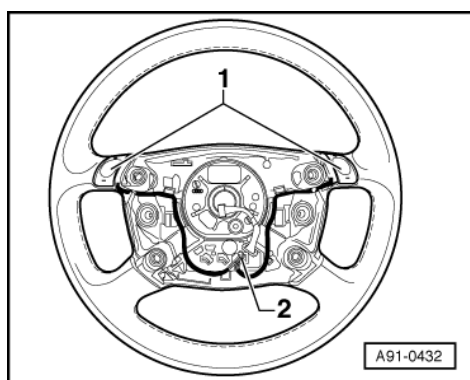
- Release steering column adjuster. Pull steering wheel out as far as possible and swivel upwards.
- Remove airbag unit.

=> General Body Assembly, Interior; Repair group 69; Servicing airbag on driver's side Servicing airbag on driver's side



- Carefully fold the airbag forwards.
- -> Detach connectors -1- and -2- from airbag unit.
- Detach airbag unit.
- Detach connector -3- and remove both Torx screws T10 from left or right control switch.

Pull control switch forwards and remove
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- -> In order to remove the Tiptronic control switch -1-, detach connector -2-.
- Press out Tiptronic control switch -1- inwards (towards centre of steering wheel).

Installing:

Note:

When installing, ensure that the connection cable for connectors is reinserted in the guides and is not trapped.

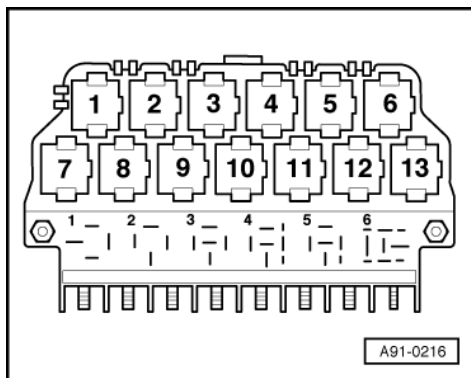
- Install in reverse sequence to removal.

7.5 - Removing and installing control unit for multi-function steering wheel -J453

Removing

- Remove storage compartment on driver's side

=> General Body Assembly, Interior; Repair group 68; Storage compartments, covers; Removing driver's storage compartment Storage compartments, covers Removing driver's storage compartment



-> The control unit for the multi-function steering wheel -J453 is installed in a twin relay housing and is located at positions -2- and -3- of 13-box relay carrier above central electrics.

- Remove control unit for multi-function steering wheel from relay panel.

Installing:

- Install in reverse sequence to removal.

8 - Telematics

8.1 - Telematics

Important:

Disconnect battery earth strap before working on electrical system.

Activate the service mode of telematics control unit before disconnecting battery.=>Radio, Telephone and Navigation System Self-diagnosis; Repair group 01; Telematics Self-diagnosis; Adaption

Notes:

- ♦ On vehicles with coded radio, obtain anti-theft code before disconnecting battery.
- ♦ If the battery is reconnected, please ensure that the vehicle equipment (radio, clock, electric window lifters, engine) is activated as described in operating instructions and the service mode of telematics control unit is deactivated.

=> Radio, Telephone and Navigation System Self-diagnosis; Repair group 01; Telematics Self-diagnosis; Adaption Telematics Self-diagnosis Adaption

- ♦ If SIM card is defective, request replacement via fax.
- Hot line no.: 0800/2 83 47 27

- Fax no.: 0800/3 29 38 37

8.2 - General description

The telematics system combines traffic information, service call and emergency call.

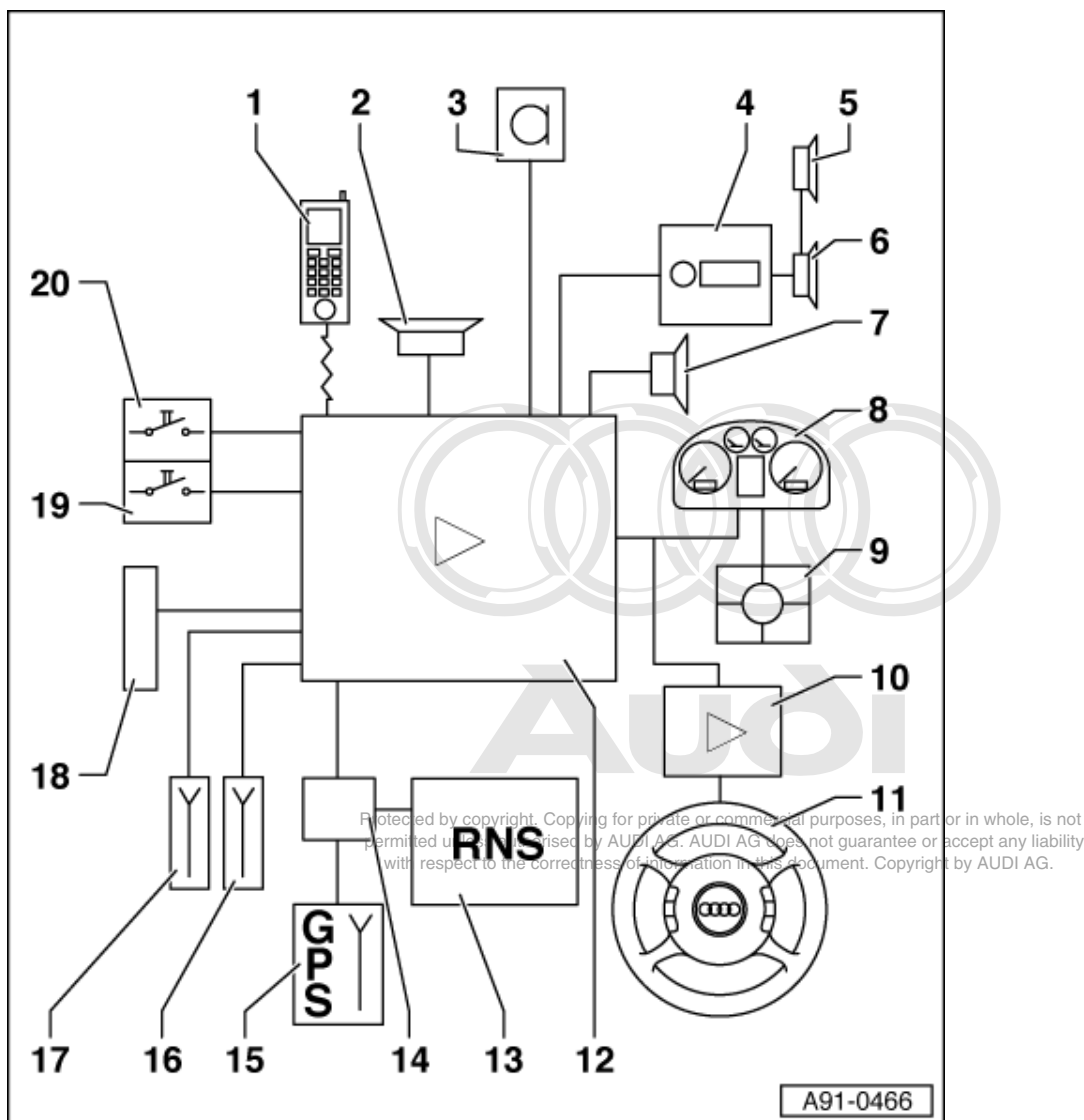
The telematics control unit can also include a mobile phone.

Current traffic information can be called up and if necessary an emergency call or a service call can be made via a telematics service centre.

The telematics control unit determines the exact position of the vehicle from GPS data, which is also passed on to the telematics service centre.

An emergency call is made automatically if the airbag control unit activates a crash signal.

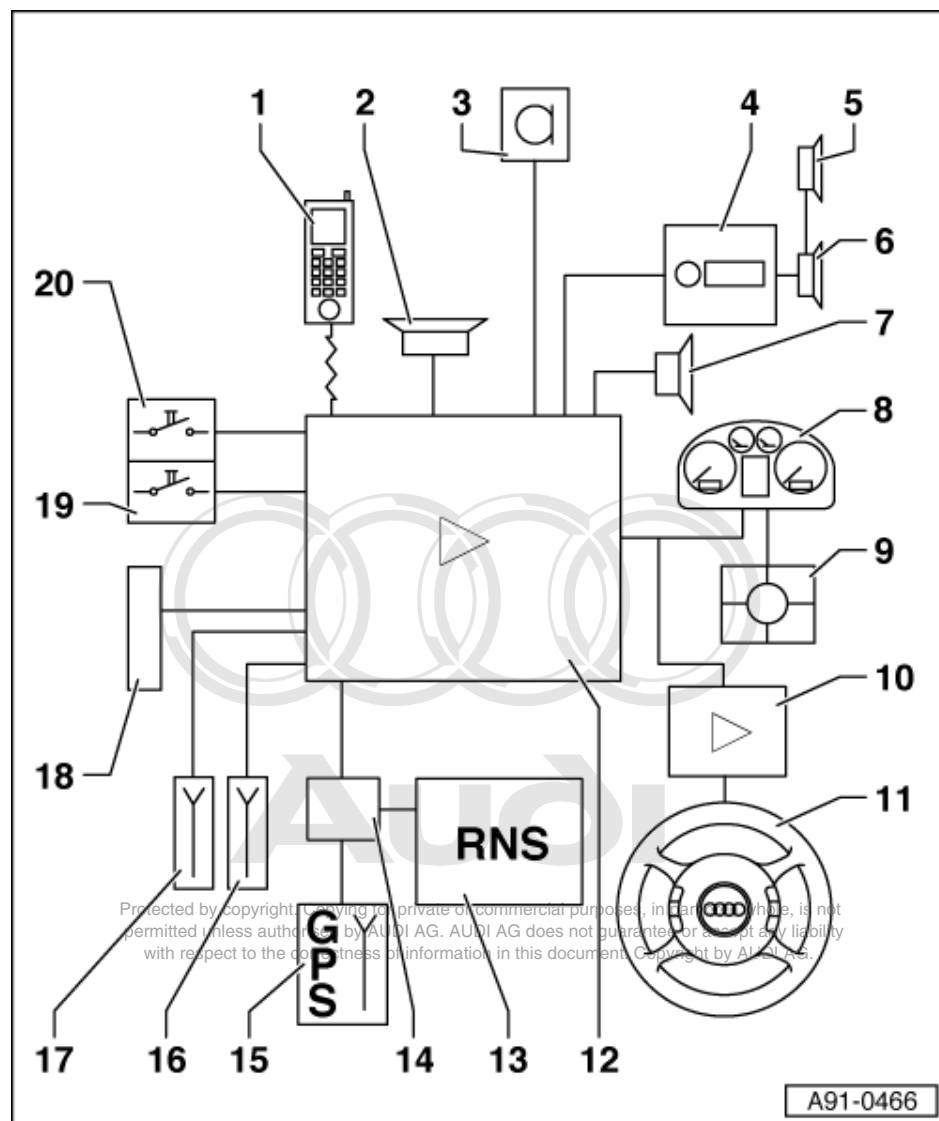
8.3 - Design of the telematics system



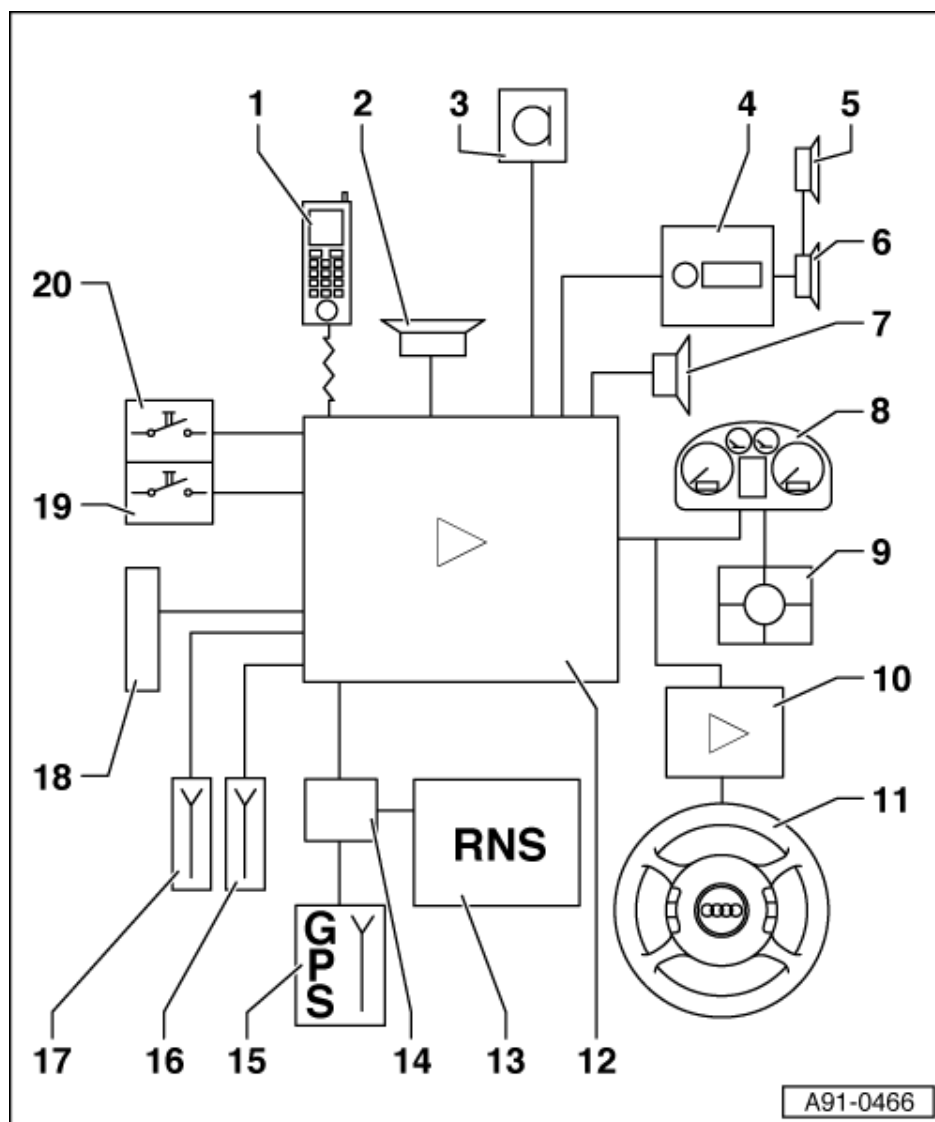
1 Handset for telephone/telematics in centre console

2 Additional loudspeaker for Telematics (emergency loudspeaker) in passenger's door

- 3 Hands-free microphone in front interior light
- 4 Radio in centre console
- 5 Mid-range/treble loudspeaker installed at front in top of door trim
- 6 Bass loudspeaker installed at front in bottom of door trim
- 7 Hands-free loudspeaker in driver's door
- 8 Dash panel insert:



- 9 Function selector switch in centre console
- 10 Control unit for multi-function steering wheel in relay carrier below the driver's-side storage compartment
- 11 Multi-function steering wheel
- 12 Control unit for telephone/telematics under driver's seat
- 13 Control unit for navigation system operating electronics
- 14 Aerial multiplexer for GPS aerial
 - Saloon: In luggage compartment under rear shelf
 - Avant: In side compartment in luggage compartment (left)
- 15 Aerial for navigation system (GPS)
- 16 Telephone rod aerial

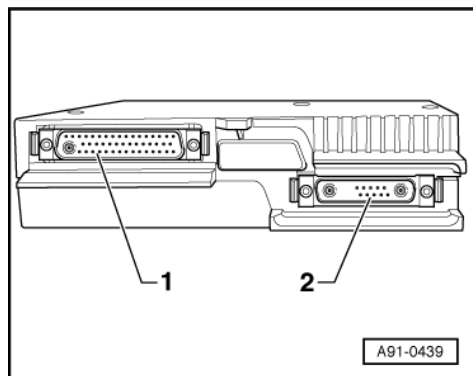


- 17 Telematics additional aerial (emergency aerial) in rear bumper
- 18 Connector for fax/laptop in centre console
- 19 Emergency call switch in front interior light
- 20 Breakdown call switch in front interior light



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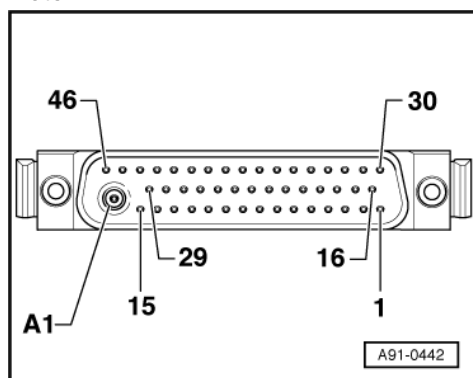
8.4 - Connectors on control unit for telephone/telematics -J526



- > 1 - 46- pin connector for connection of
GPS aerial,
Receiver,
Switch -E275 and -E276,
Emergency loudspeaker and
Speech entry control unit-J507
2 - 10-pin connector for
Voltage supply,
Telephone aerial and
Emergency aerial

Contact assignment of multi-pin connectors for telephone/telematics control unit -J526

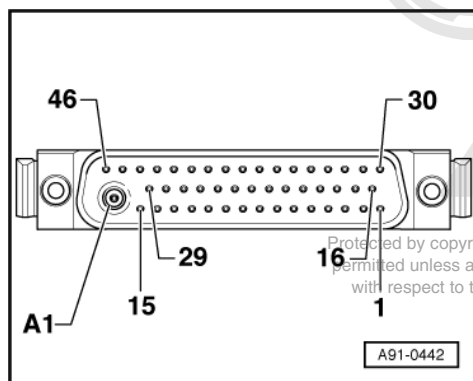
Note:



Connector contacts not listed have not been assigned.

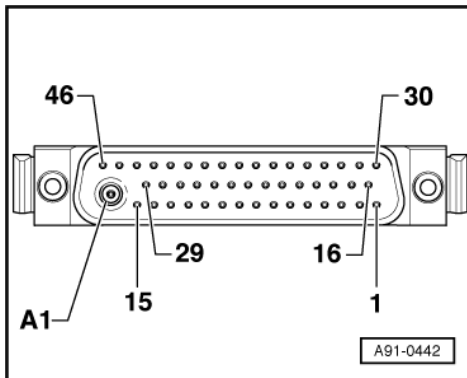
-> Multi-pin connector, 46-pin T46

- 1 - Line(-)-output for hands-free loudspeaker (via speech entry control unit -J507)
- 2 - Line(+)-output for hands-free loudspeaker (via speech entry control unit -J507)
- 3 - Handset, telephone receiver (-)
- 4 - Handset, telephone receiver (+)

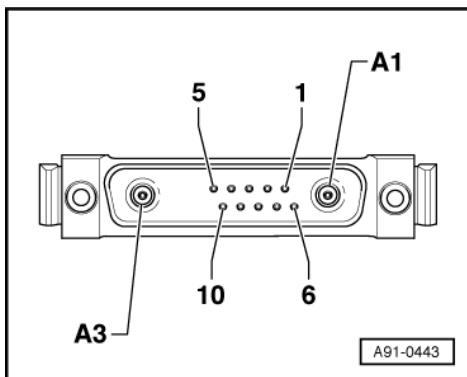


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- > 5 - Handset, telephone FCH (+)
- 6 - Handset, telephone FCH (-)
- 10 - LED breakdown call switch -E275
- 11 - LED emergency call switch -E276
- 12 - Screen earth
- 13 - CTS for fax socket
- 14 - TXD for fax socket
- 16 - Emergency loudspeaker, earth
- 17 - Emergency loudspeaker, signal
- 18 - Handset, telephone, microphone (+)
- 19 - Handset, telephone, earth
- 20 - Handset, telephone FHC (-)
- 21 - Breakdown call switch -E275
- 22 - Speed signal
- 23 - Reverse gear signal
- 27 - RTS for fax socket
- 28 - RXD for fax socket
- 29 - Earth for fax socket
- 30 - Input, hands-free microphone (via speech entry control unit -J507)
- 31 - Input, hands-free microphone (via speech entry control unit -J507)
- 32 - Handset, telephone, microphone (-)
- 33 - Handset, telephone, power supply
(12 V)



- > 34 - Handset, telephone FCH (+)
- 35 - Handset, telephone, screen
- 36 - Crash signal
- 37 - Emergency call switch -E276
- 38 - CAN bus high
- 39 - CAN bus low
- 41 - K wire
- 42 - DTR for fax socket
- 43 - DCD for fax socket
- A1 - Aerial multiplexer for GPS aerial



-> Multi-pin connector, 10-pin T10ae

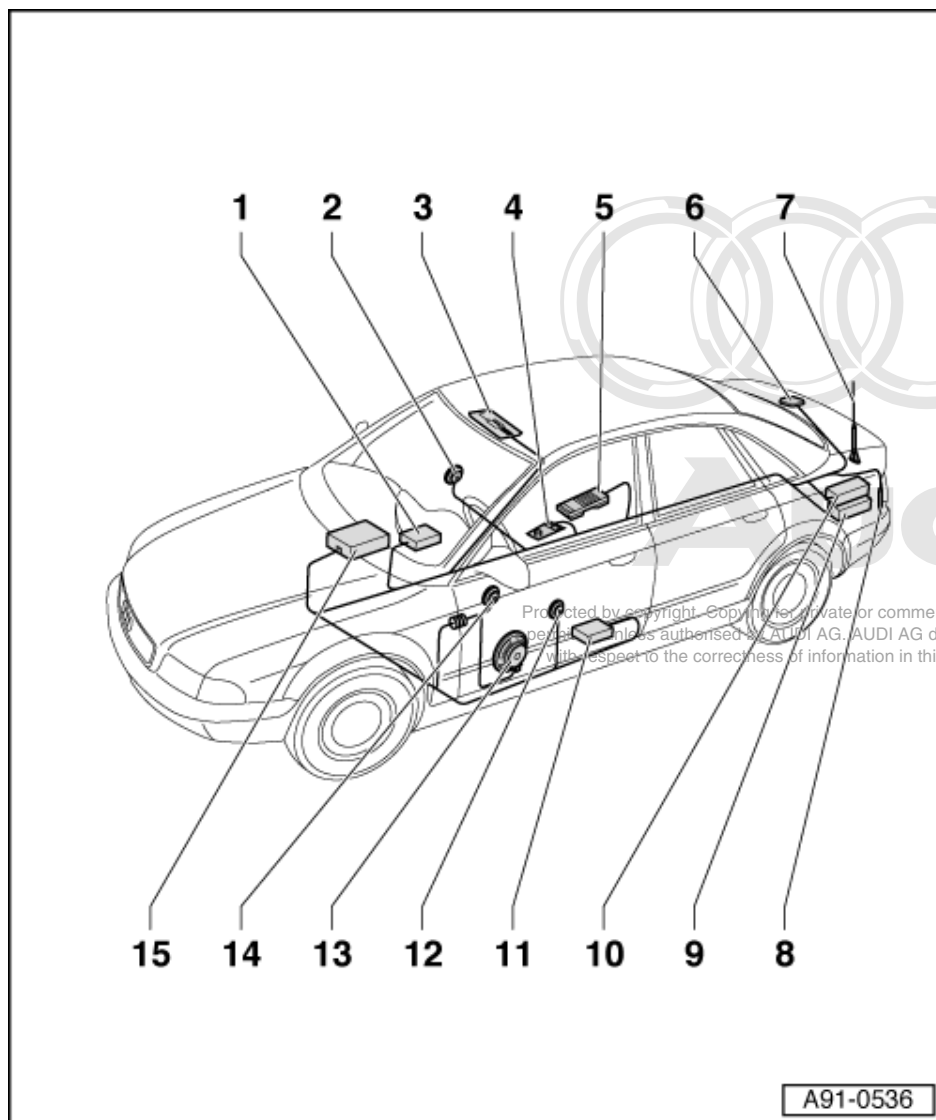
- 1 - Terminal 30
- 2 - Telephone/telematics mute



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- 3 - Terminal 15
- 4 - Earth
- 5 - Earth
- 6 - Terminal 30
- 7 - Terminal 30
- 9 - Lighting dimmer (terminal 58s)
- 10 - Earth
- A1 - Telephone aerial
- A3 - Emergency aerial

8.5 - Telematics system - general overview



1 Dash panel insert display

- ◆ In dash panel
- ◆ Removing and installing

=> Electrical System; Repair group 90; Dash panel insert as of model year 00; Removing and installing dash panel insert Dash panel insert as of model year 00 Removing and installing dash panel insert

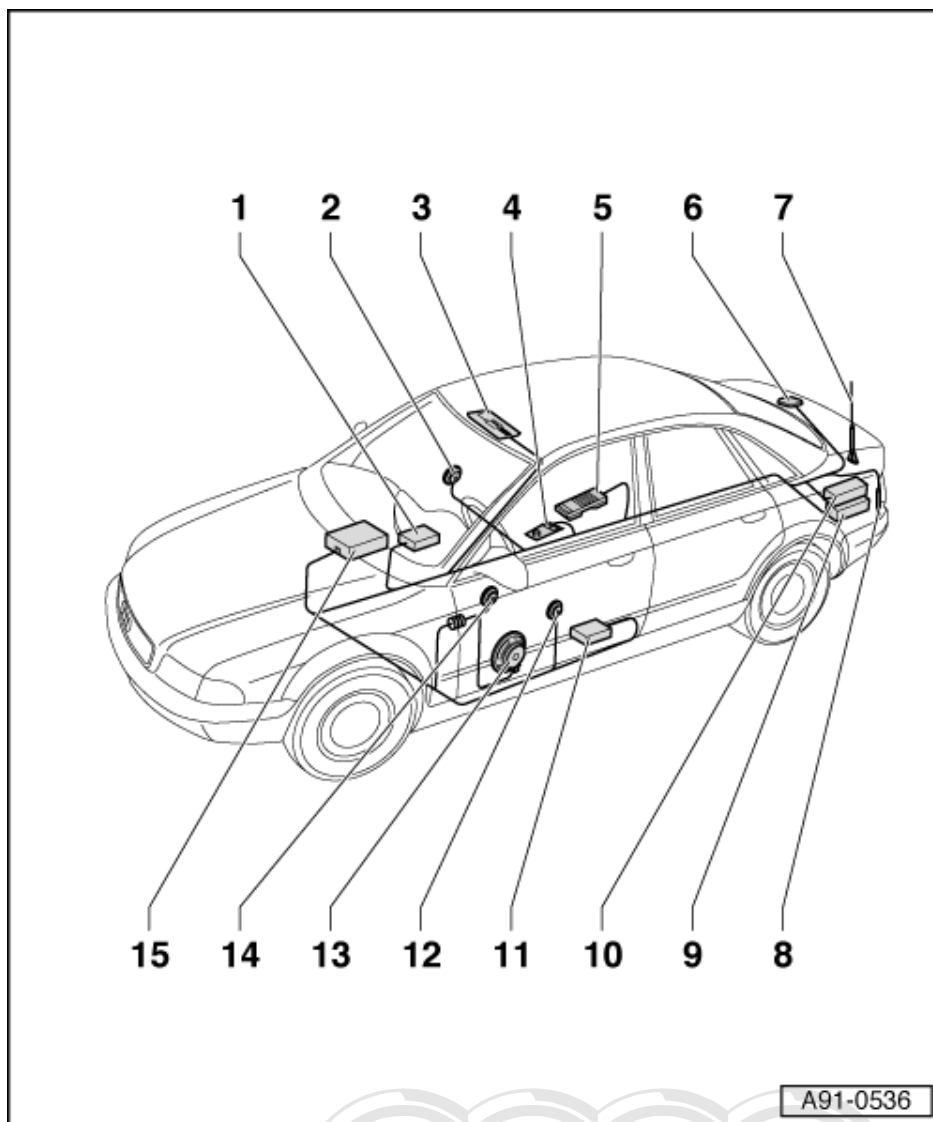
2 Additional loudspeaker for telematics -R91 (emergency loudspeaker)

- ◆ In passenger's door
- ◆ Removing and installing

=> Page 237

**3 Front interior light
with emergency call switch -E276,
breakdown call switch -E275,
hands-free microphone**

- ◆ In roof at front
- ◆ Removing and installing
=> Page 235



4 Function selector switch -E272

- ◆ In centre console
- ◆ Removing and installing => Page 218

5 Handset for telephone -R37

- ◆ In centre armrest
- ◆ Removing and installing
=> Page 73

6 Aerial for navigation system (GPS) -R50 or aerial for radio/telephone/navigation system (GPS) -R52

Saloon:

- ◆ Under rear shelf in centre
- ◆ Removing and installing => Page 136

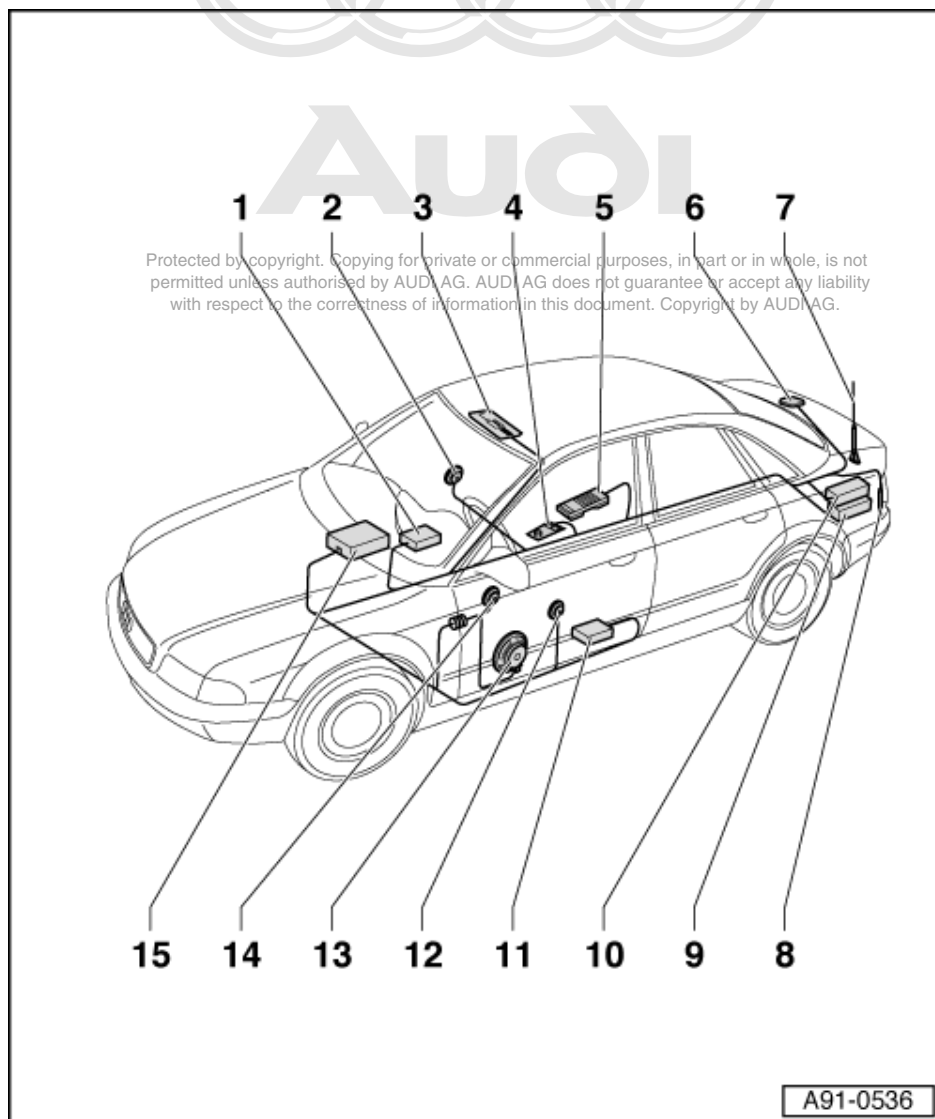
Avant:

- ◆ On the vehicle roof
- ◆ Removing and installing

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=> Page 62



7 Aerial

Saloon:

- ♦ Rod aerial in rear left wing
- ♦ Removing and installing

=> Page 84

Avant:

- ♦ Roof aerial on roof
- ♦ Removing and installing

=> Page 62

8 Telematics additional aerial -R90 (emergency aerial)

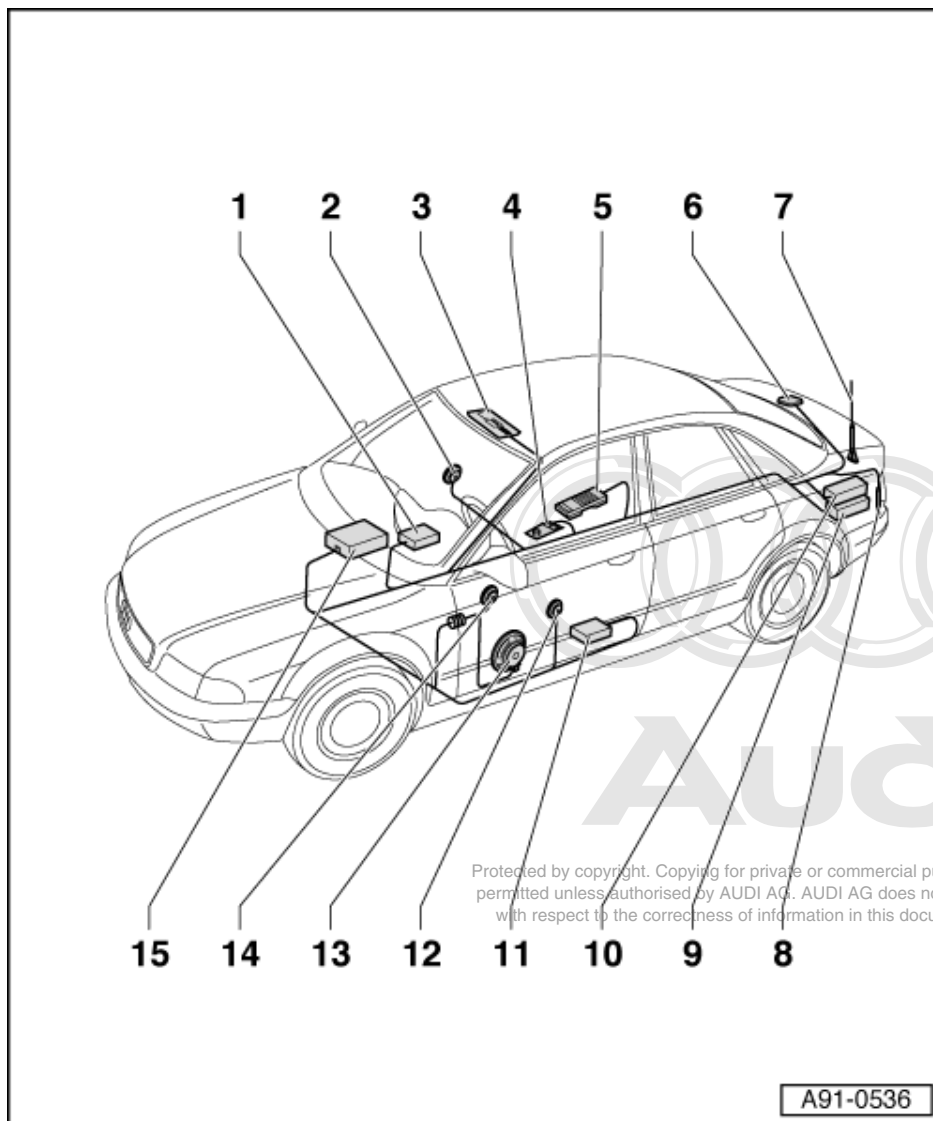
- ♦ In rear bumper
- ♦ Removing and installing

=> Page 238

9 TV tuner -J415

- ♦ In side compartment in luggage compartment (left)
- ♦ Removing and installing

=> Page 169



10 Aerial multiplexer -R87 for GPS aerial

Saloon:

- ◆ In luggage compartment under rear shelf
- ◆ Removing and installing
=> Page 234

Avant:

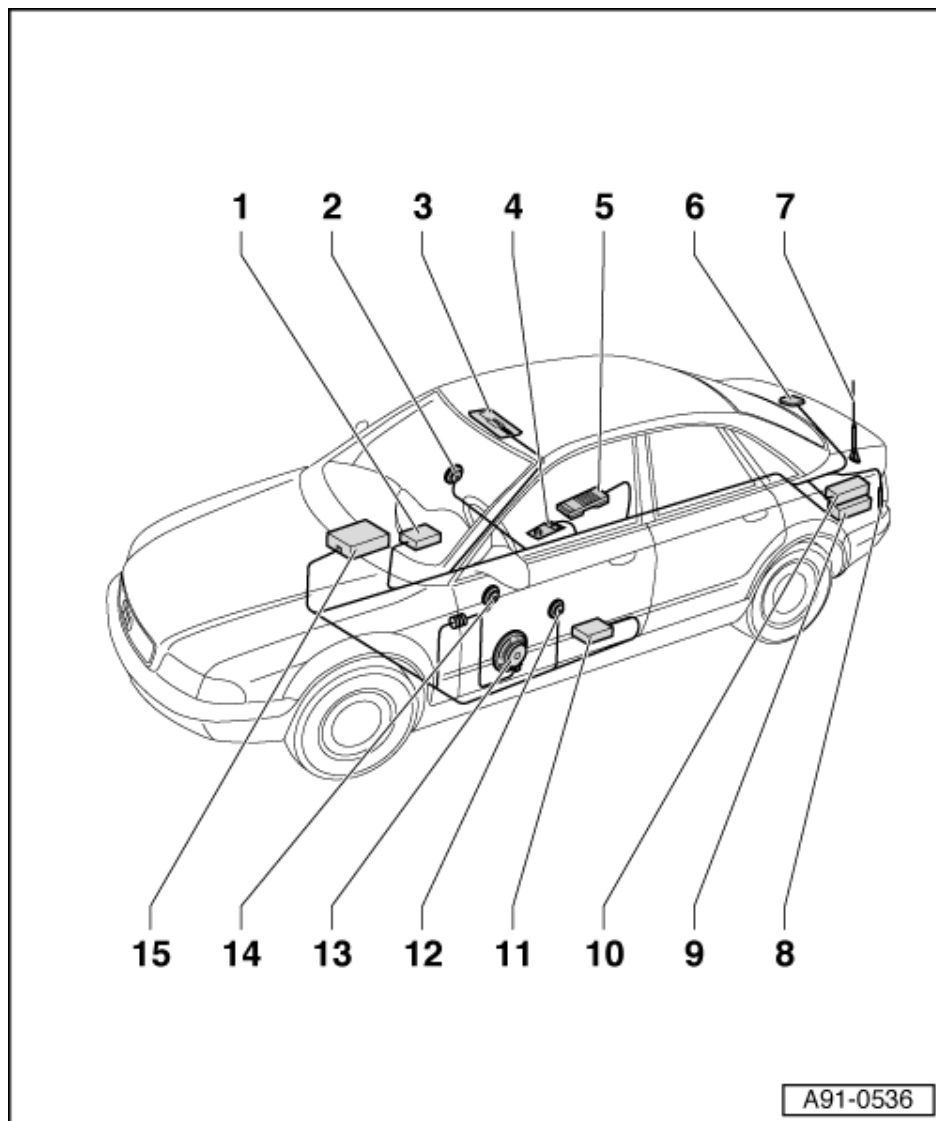
- ◆ In side compartment in luggage compartment (left)
- ◆ Removing and installing
=> Page 235

11 Control unit for telephone/telematics -J526

- ◆ Under driver's seat
- ◆ Removing and installing
=> Page 232

12 Hands-free loudspeaker

- ◆ in driver's door
- ◆ Removing and installing
=> Page 83
- ◆ Only for vehicles with BOSE sound system in conjunction with telephone
- ◆ For all other vehicles, the loudspeakers in the front door trims are used.



13 Mid-range/bass loudspeaker

- ◆ In front lower door trim
- ◆ Removing and installing
=> Page 44

14 Treble loudspeaker

- ◆ In front upper door trim
- ◆ Removing and installing
=> Page 44

15 Control unit for navigation system operating controls -J402

- ◆ Installed in centre console
- ◆ Removing and installing
=> Page 167

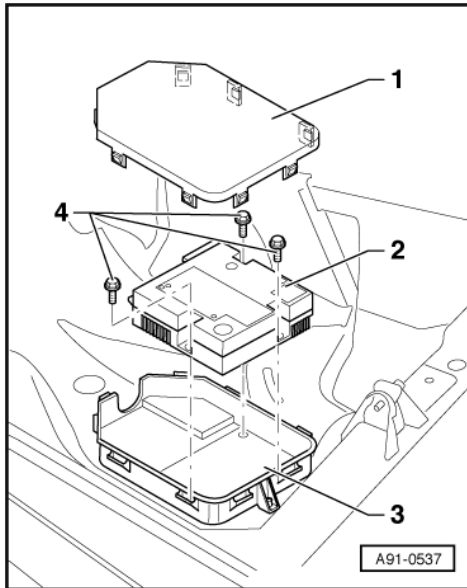
8.6 - Removing and installing control unit for telephone/telematics -J526

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Removing

- Remove driver's seat.

=> General Body Assembly, Interior; Repair group 72; Front seats Front seats



- Remove the floor covering.
- Detach connectors at control unit.
- Remove cover -1- from electronics box -3-.
- -> Remove bolts -4- (2 Nm) and detach control unit from electronics box -3-.
- Remove the telematics SIM card => Page 233 .

Note:

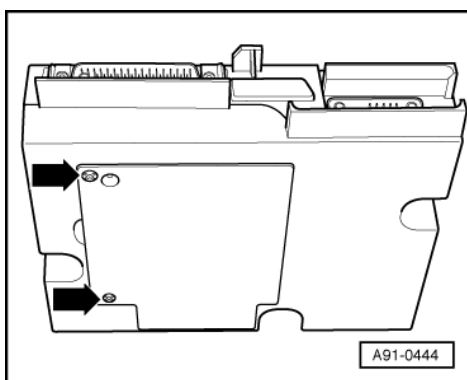
The telematics SIM card in the control unit remains with the vehicle.

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Installing:

- Installation is performed in the reverse sequence to removal.

8.7 - Replacing telematics SIM card



The following procedure is carried out when the telematics SIM card is defective:

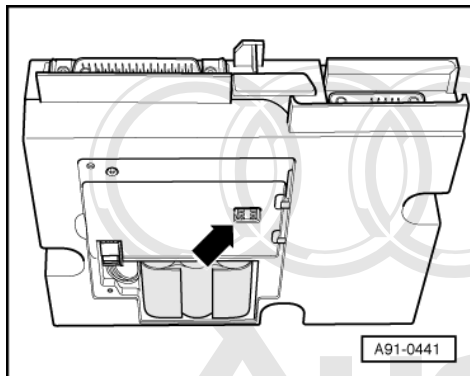
- -> Slacken both bolts -arrows- on underside of telematics control unit and remove cover.

Note:

If SIM card is defective, request replacement via fax:



- ♦ Hot line no.: 0800/2 83 47 27
- ♦ Fax no.: 0800/3 29 38 37



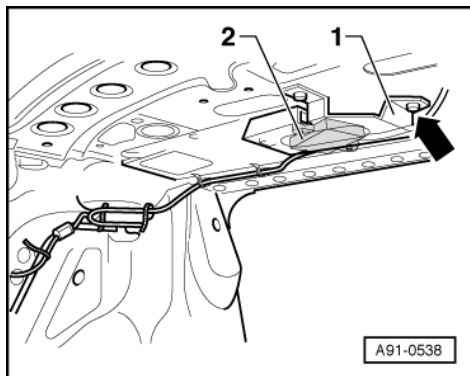
- -> Remove the SIM card -arrow- from the telematics control unit.
- Fill in form for fax -retrieval "Enabling of Audi telematics (fax)" and send off.
- Insert new already enabled SIM card received in telematics control unit.
- **Destroy old SIM card.**

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8.8 - Removing and installing aerial multiplexer -R87 for GPS aerial -Saloon-

Removing

- Open luggage compartment lid.

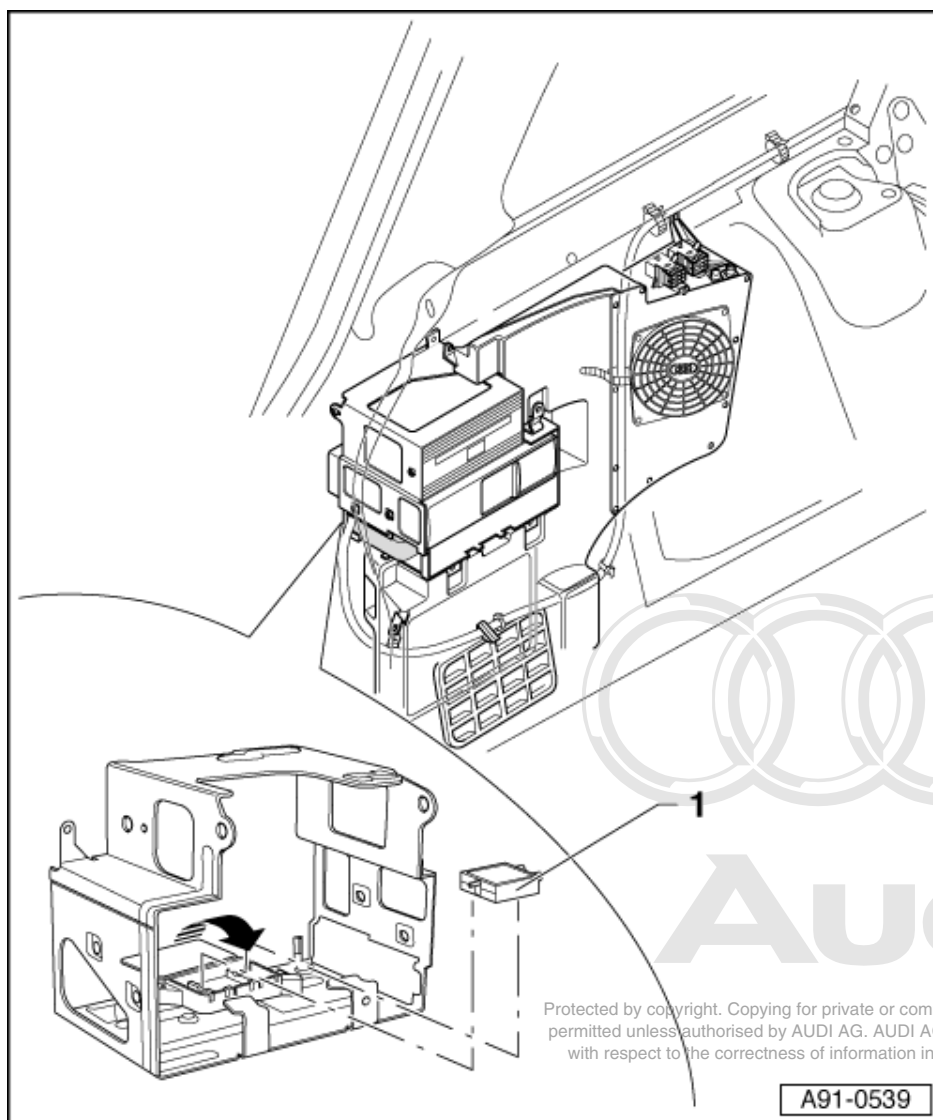


- -> Remove screw -arrow- from bracket -1- (3-Nm) and loosen the other screws in bracket -1-.
- Open housing for aerial multiplexer -2- and remove aerial multiplexer.
- Detach connectors from aerial multiplexer.

Installing:

- Install in reverse sequence to removal.

8.9 - Removing and installing aerial multiplexer -R87 for GPS aerial -Avant-



Removing

- Open left storage compartment in luggage compartment.
- Open housing for aerial multiplexer -arrow-.
- Remove aerial multiplexer -1- from housing.
- Detach connectors from aerial multiplexer.

Installing:

- Installation is performed in the reverse sequence to removal.

8.10 - Removing and installing emergency call switch -E276 and breakdown call button - E275

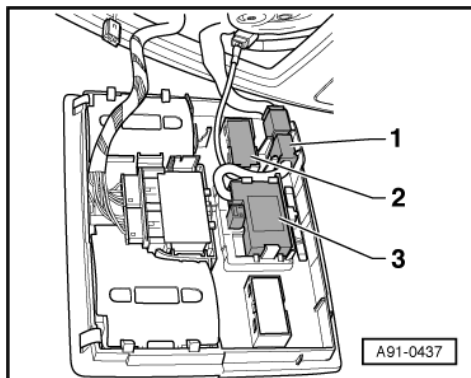
Both switches are fitted in the front interior light.



Removing

- Remove the front interior light.

=> Electrical System; Repair group 96; Servicing interior lights (Saloon and Avant); Removing and installing front interior / reading light Servicing interior lights (Saloon and Avant) Removing and installing front interior / reading light



- -> Carefully unclip switch -3- using a flat screwdriver and detach connector -1-.

Installing:

- Installation is performed in the reverse sequence to removal.

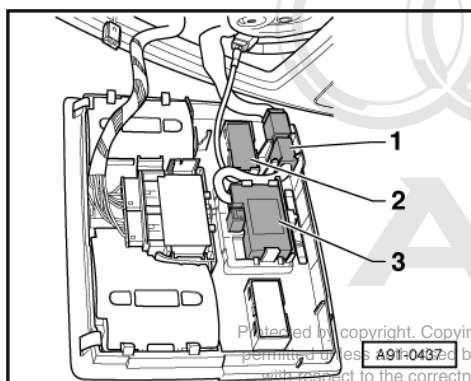
8.11 - Removing and installing hands-free microphone

The hands-free microphone is installed in front interior light

Removing

- Remove the front interior light.

=> Electrical System; Repair group 96; Servicing interior lights (Saloon and Avant); Removing and installing front interior / reading light Servicing interior lights (Saloon and Avant) Removing and installing front interior / reading light

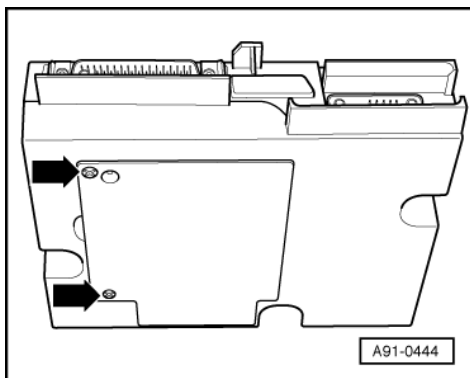


- -> Carefully unclip hands-free microphone using a flat screwdriver -2- and detach connector.

Installing:

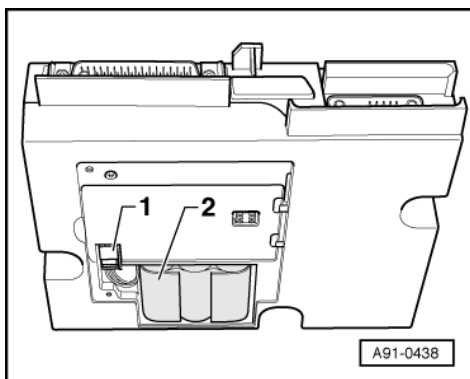
- Installation is performed in the reverse sequence to removal.

8.12 - Removing and installing telematics emergency battery



Removing

- -> Remove both bolts -arrows- on underside of telematics control unit and remove cover.



- -> Pull connectors -1- apart and pull out emergency battery -2-.

Installing:

- Installation is performed in the reverse sequence to removal.

8.13 - Removing and installing telematics additional loudspeaker -R91 (emergency loudspeaker)

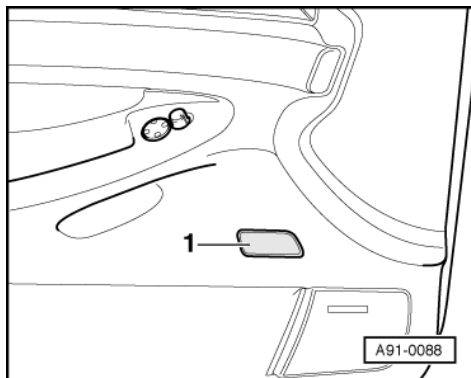
The loudspeaker is installed in the passenger's door.

Removing

- Remove front door trim.

=> General Body Assembly, Interior; Repair group 70; Front door trims; Removing and installing front door trim
Front door trims Removing and installing front door trim

- Detach connectors for electric window lifers and exterior mirror and remove door opener.

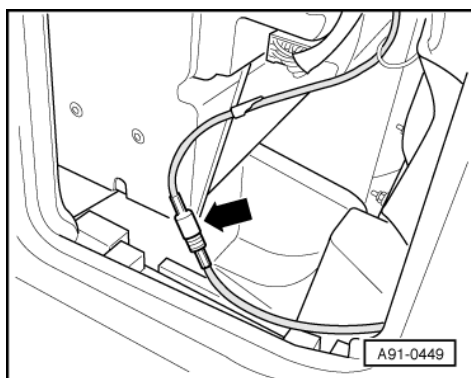


- -> Carefully lift soundproofing mat and disconnect electrical connector from hands-free loudspeaker-1-.
- Detach door trim, remove securing bolts and remove loudspeaker from trim.

Installing:

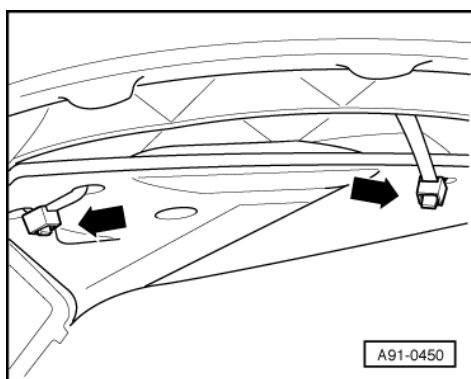
- Install in reverse sequence to removal.

8.14 - Removing and installing telematics additional aerial -R90 (emergency aerial)



The emergency aerial is located in rear bumper on left and right.

- -> Open left or right luggage storage compartment and disconnect electrical connector -arrow-.
- Remove rear bumper cover.



- -> Detach fastenings (4x) -arrows- using a suitable tool and remove emergency aerial.

Installing:

- Installation is performed in the reverse sequence to removal.

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9 - Voice control system

9.1 - Voice control system

Important:

Disconnect battery earth strap before working on electrical system.

Activate the service mode of telematics control unit before disconnecting battery.=>Radio, Telephone and Navigation System Self-diagnosis; Repair group 01; Telematics Self-diagnosis; Adaption

Notes:

- ♦ On vehicles with coded radio, obtain anti-theft code before disconnecting battery.
- ♦ If the battery is reconnected, please ensure that the vehicle equipment (radio, clock, electric window lifters, engine) is activated as described in operating instructions and the service mode of telematics control unit is deactivated.

=> Radio, Telephone and Navigation System Self-diagnosis; Repair group 01; Telematics Self-diagnosis; Adaption Telematics Self-diagnosis Adaption

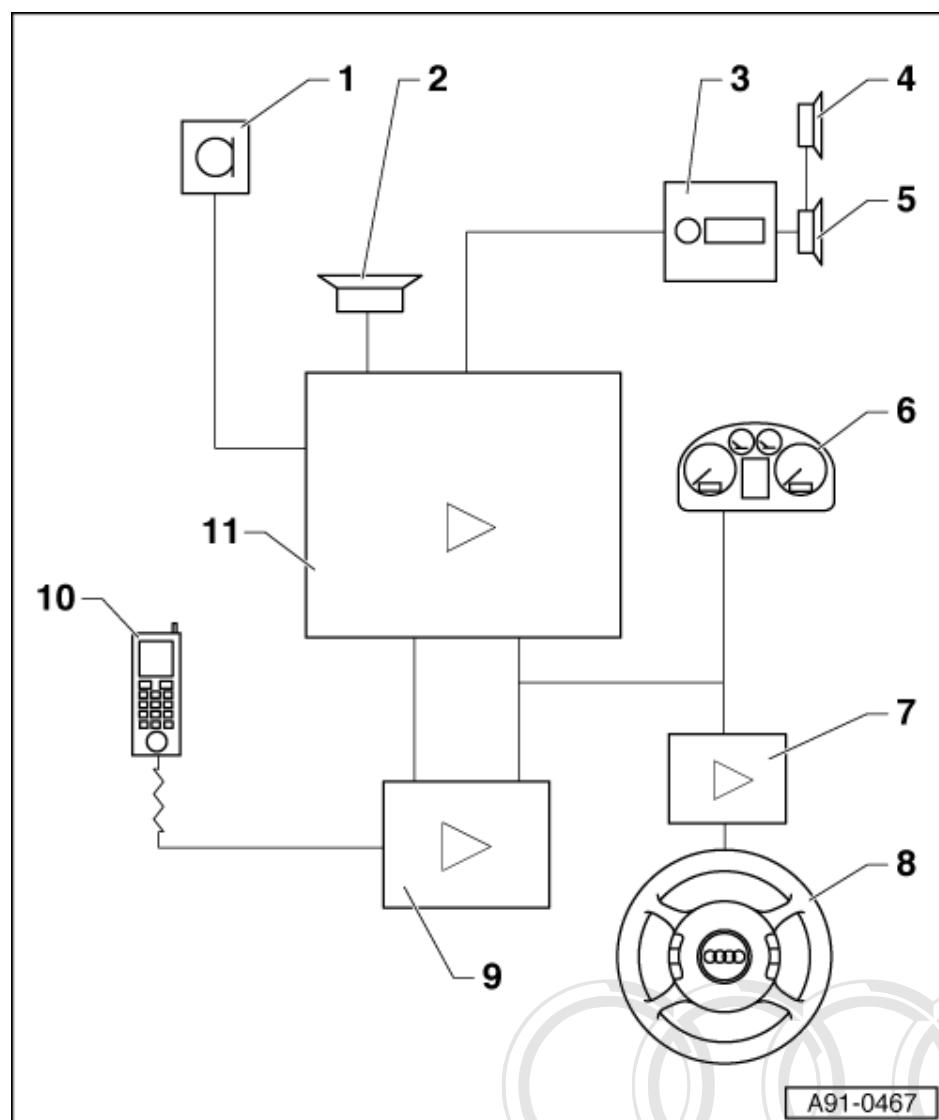
9.2 - General description

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The voice control system is for the acoustic operation of telephone and telematics.

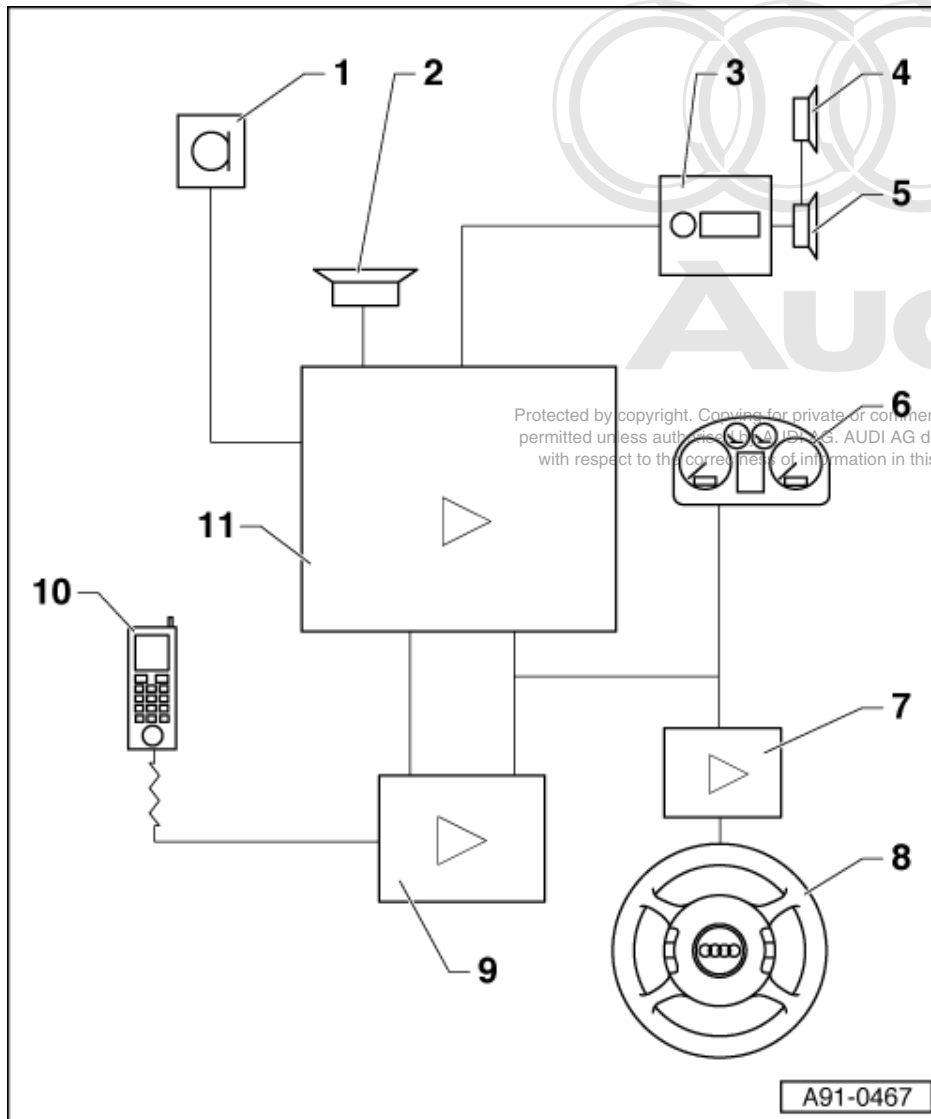
The telephone and telematics functions can be conveniently operated by spoken commands. The system is activated via the PTT button in the multi-function steering wheel

9.3 - Design of the voice control system



- 1 Hands-free microphone in front interior light
- 2 Hands-free loudspeaker in driver's door
- 3 Radio in centre console
- 4 Mid-range/treble loudspeaker installed at front in top of door trim
- 5 Bass loudspeaker installed at front in bottom of door trim
- 6 Dash panel insert:
- 7 Control unit for multi-function steering wheel in relay carrier below the driver's-side storage compartment

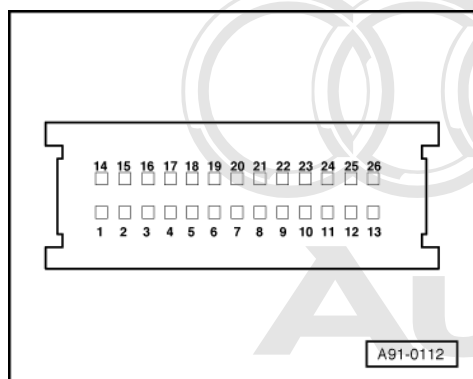
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- 8 Multi-function steering wheel with PTT button
- 9 Control unit for telephone/telematics under driver's seat
- 10 Handset for telephone/telematics in centre console
- 11 Speech entry control unit below rear bench seat, on right



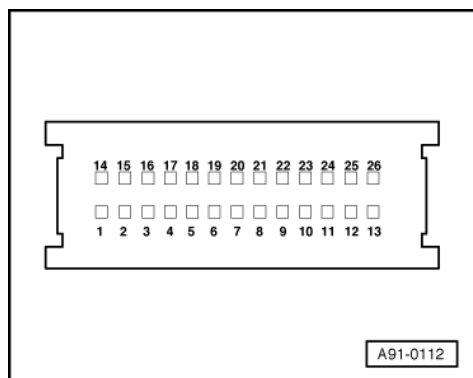
9.4 - Connections on speech entry control unit -J507



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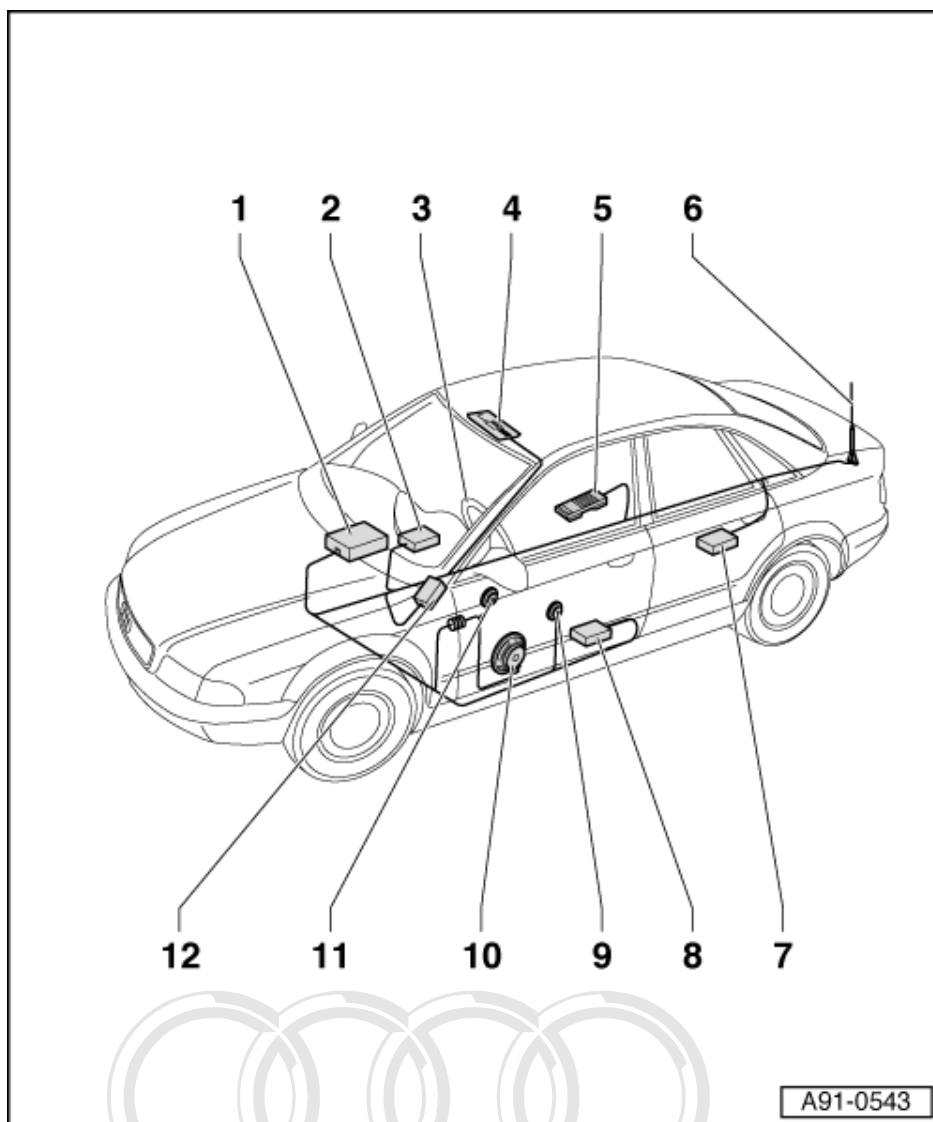
-> Multi-pin connector on speech entry control unit -J507 T26f

- 1 - Line(-)-input from control unit for telephone/telematics -J526
- 2 - Line(+)-input from control unit for telephone/telematics -J526
- 3 - Terminal 15
- 5 - Telephone/telematics mute (output)
- 6 - Telephone/telematics mute (input)
- 7 - K wire
- 8 - CAN bus low
- 9 - CAN bus high
- 13 - Earth
- 14 - Hands-free loudspeaker output (+)
- 15 - Hands-free loudspeaker output (-)
- 16 - Hands-free microphone output (+)
- 17 - Hands-free microphone output (-)
- 18 - Hands-free microphone input (+)
- 19 - Hands-free microphone input (-)



- 20 - Earth for fax socket
- 21 - Ser TXT for fax socket
- 22 - Ser RXT for fax socket
- 26 - Terminal 30

9.5 - Voice control system - general overview



1 Radio

- ◆ Installed in centre console
- ◆ Removing and installing
=> Page 42

2 Dash panel insert display

- ◆ In dash panel
- ◆ Removing and installing

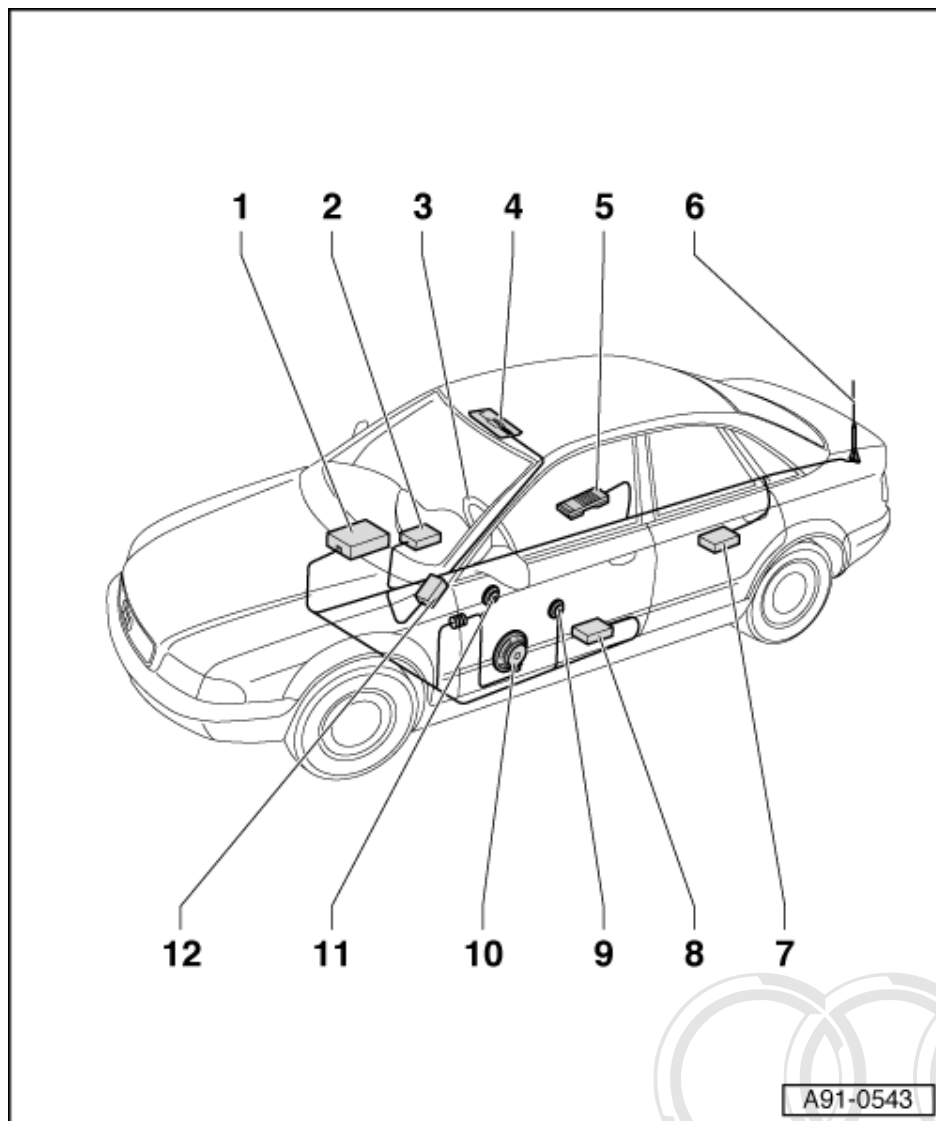
=> Electrical System; Repair group 90; Dash panel insert as of model year 00; Removing and installing dash panel insert Dash panel insert as of model year 00 Removing and installing dash panel insert

3 Multi-function steering wheel

- ◆ Removing and installing
=> Page 218

4 Front interior light with hands-free microphone

- ◆ In roof at front
- ◆ Removing and installing
=> Page 236



5 Handset for telephone -R37

- ◆ In centre armrest
- ◆ Removing and installing
=> Page 73

6 Aerial

Saloon:

- ◆ Rod aerial in rear left wing
- ◆ Removing and installing
=> Page 84

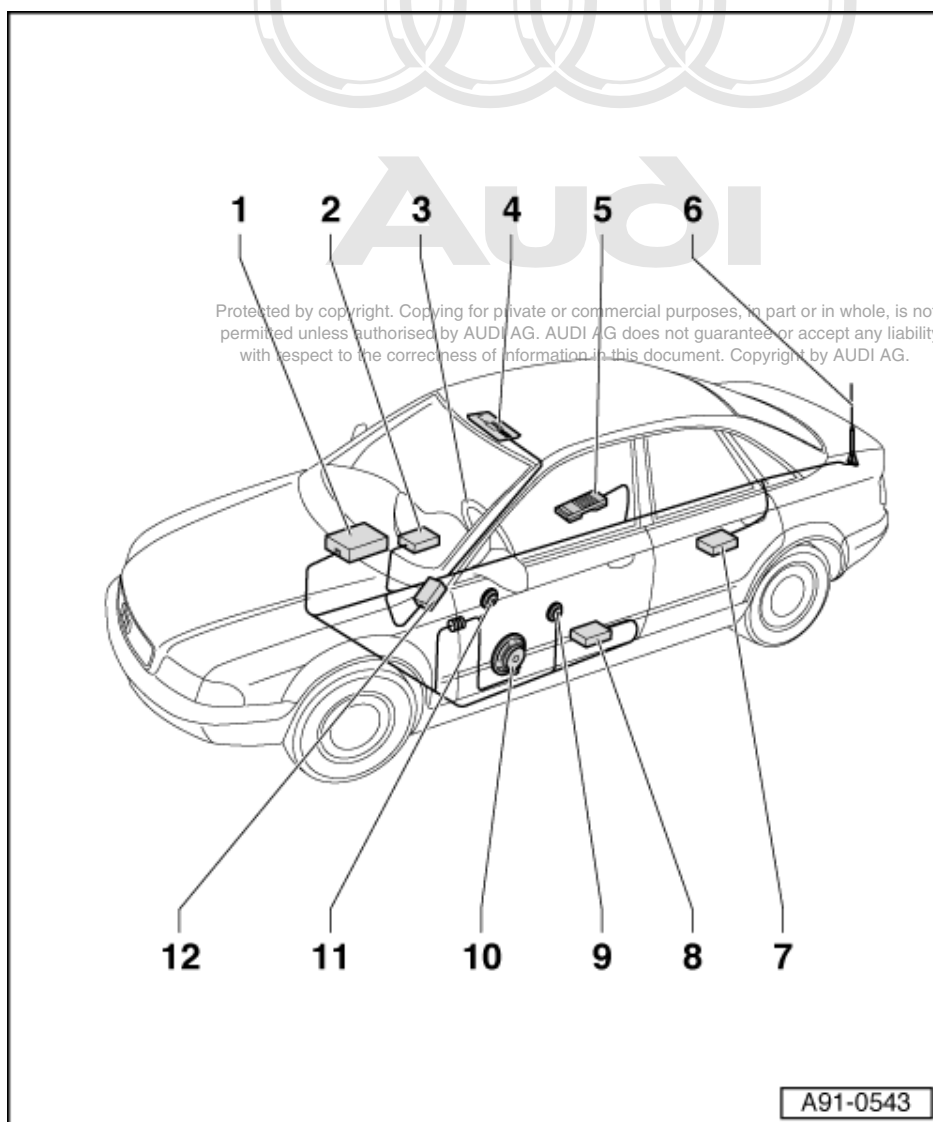
Avant:

- ◆ Roof aerial on the roof, Avant
- ◆ Removing and installing
=> Page 62

7 Speech entry control unit-J507

- ◆ Under left rear seat bench
- ◆ Removing and installing
=> Page 247

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8 Control unit for telephone/telematics -J526

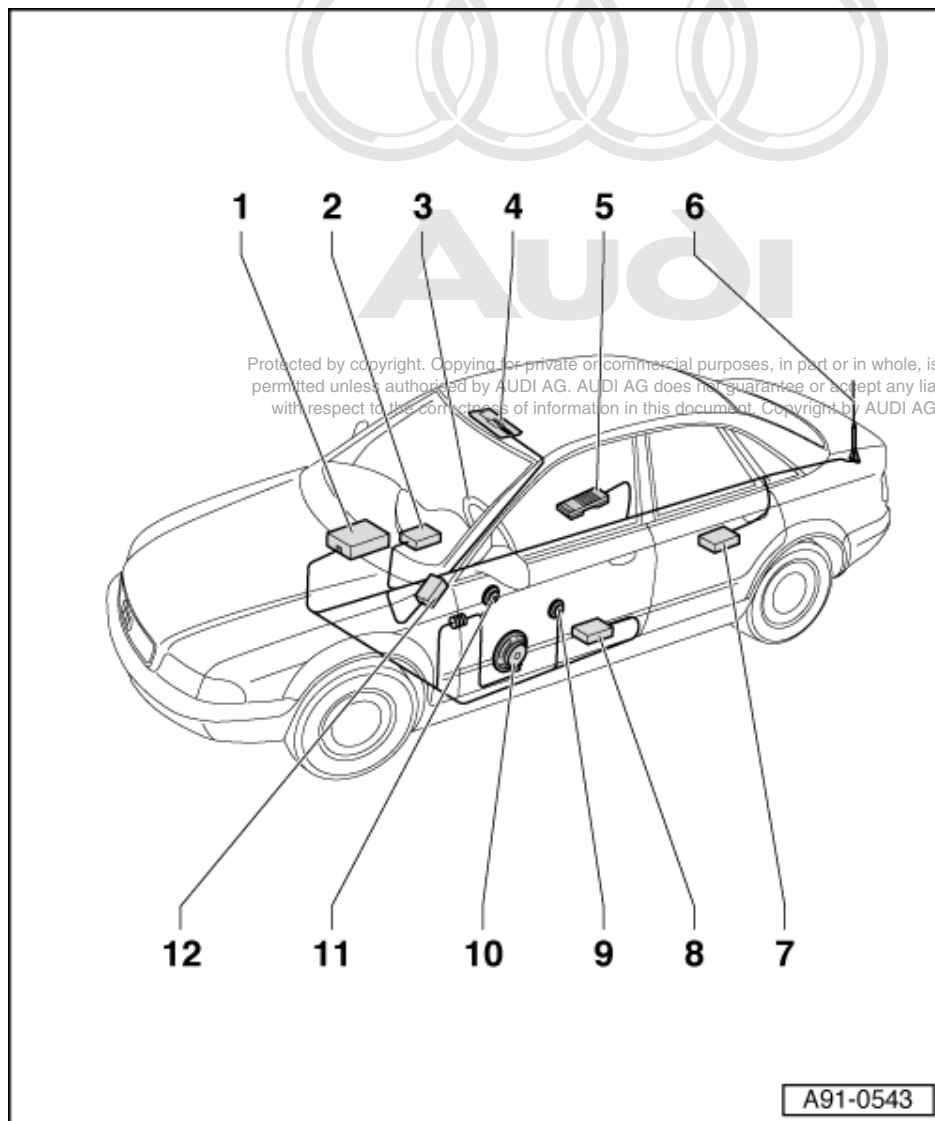
- ◆ Under driver's seat
- ◆ Removing and installing
=> Page 232

9 Hands-free loudspeaker

- ◆ In driver's door
- ◆ Removing and installing
=> Page 83
- ◆ Only for vehicles with BOSE sound system in conjunction with telephone
- ◆ For all other vehicles, the loudspeakers in the front door trims are used.

10 Mid-range/bass loudspeaker

- ◆ In front lower door trim
- ◆ Removing and installing
=> Page 44



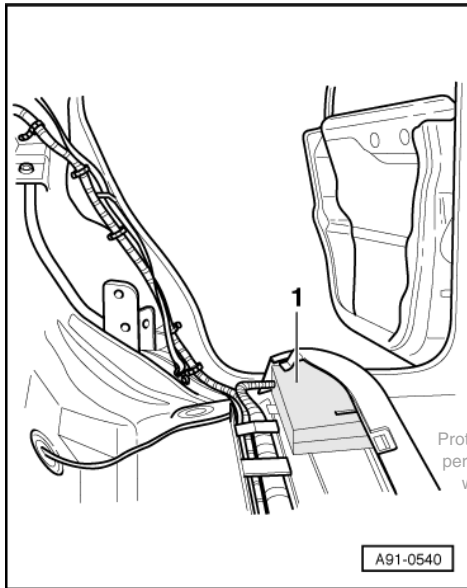
11 Treble loudspeaker

- ◆ In front upper door trim
- ◆ Removing and installing
=> Page [44](#)

12 Control unit for multi- function steering wheel -J453

- ◆ Relay carrier behind driver's storage compartment
- ◆ Removing and installing => Page [222](#)

9.6 - Removing and installing speech entry control unit -J507



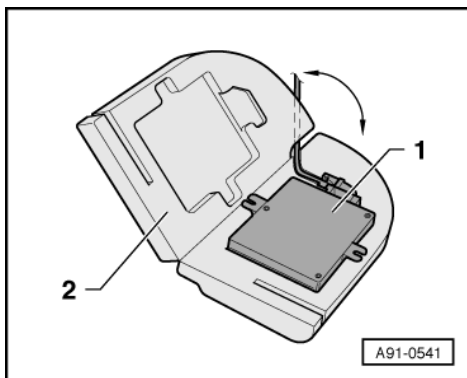
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-> The speech entry control unit -1- is located below the rear bench seat, on left

Removing

- Remove rear bench seat.

=> General Body Assembly, Interior; Repair group 72; Rear seats; Removing and installing rear seat bench
Rear seats Removing and installing rear seat bench



- -> Open assembly box -2- and remove control unit -1-.
- Detach the connector.

Installing:

- Installation is performed in the reverse sequence to removal.