

Audi A8 1994 ➤

Radio, telephone and navigation system

Edition 04.2002



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

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Radio, telephone and navigation system



Repair Group

91 - Radio, 2-way radio, Telephone

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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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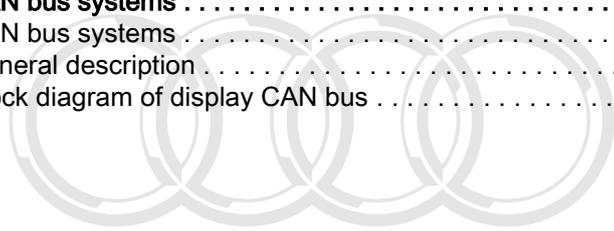


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91 - Radio, 2-way radio, Telephone

1 - Radio systems

1.1 - Radio systems

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1.2 - General information

Attention:

Disconnect battery earth strap before working on electrical system.

Telematics control unit service mode must be activated before disconnecting battery.=>Radio, Telephone and Navigation System Self-diagnosis; Repair Group 01; Telematics System Self-diagnosis; Adaption

Notes:

- ◆ Establish radio anti-theft code before disconnecting battery.
- ◆ Telematics control unit service mode must be activated before disconnecting battery.
- ◆ On re-connecting battery, remember to activate vehicle equipment (radio, clock, electric window lifters, etc.) in line with owner's manual and to deactivate telematics control-unit service mode.

Important:

To avoid contact corrosion exclusive use is to be made of approved bolts, nuts, washers etc.

These elements have a special surface coating and can be recognised from their greenish colour.

Such bolts also have to be stored separately.

Notes:

- ◆ For dealing with complaints, it is absolutely essential to be familiar with the functions and controls of the radio system.
- ◆ Additional information

=> Operating instructions

- ◆ For service installation, service work or fault-finding, consult

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

=> Fitting Instructions

- ◆ For detailed fitting instructions, e.g. detaching/attaching trim panels, consult Workshop Manual "General Body Repairs".
- ◆ As a general rule, exclusive use is to be made of radio sets and parts from the Volkswagen and Audi range (Votex), as this is the only way of ensuring problem-free installation and optimum reception.
- ◆ All radio systems feature anti-theft encoding.

Notes on service installation of radio:

- ◆ The connectors provided with the factory-fitted wiring harness for radio installation are intended for genuine Audi radio sets.
- ◆ Radio sets with different types of connector must be installed using adapter cables.
- ◆ When connecting the vehicle-speed signal wire (on radios with GALA function), take particular care to avoid short circuits, as this could result in vehicle malfunctions (e.g. in engine management system).



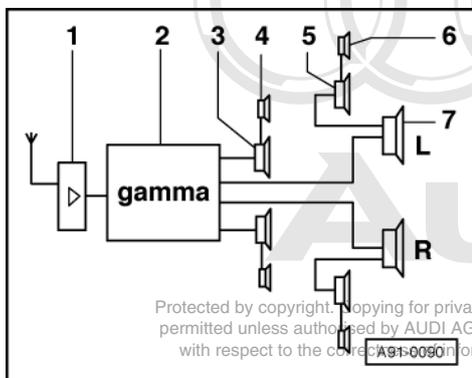
- ◆ Vehicle malfunctions may also occur if the vehicle-speed signal wire is connected to radios supplied by other manufacturers.
- ◆ The use of radios supplied by other manufacturers may affect the aerial amplifier, as genuine Audi radios have a "remotely powered aerial", i.e. the aerial amplifier is powered via the neutral conductor of the HF cable.
Use is therefore to be made of the remote power supply adapter from the Volkswagen and Audi range (Votex).

Notes on service installation of CD changers:

Vehicles which are equipped for the service installation of CD changers have a special factory-fitted wiring harness for the CD changer. The connecting cable can only be used in conjunction with genuine Audi CD changers.

1.3 - Block diagram of radio system (vehicles > 1997)

"gamma" radio system



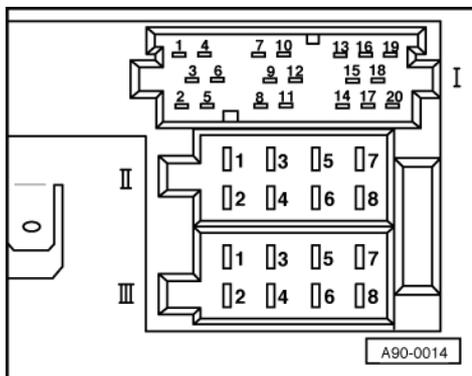
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- 1 - -> Power aerial or radio/telephone rod aerial with aerial amplifier
- 2 - gamma radio
- 3 - Front bass speaker in bottom of door trim
- 4 - Front treble/mid-range speaker in top of door trim
- 5 - Rear mid-range speaker in bottom of door trim
- 6 - Rear treble speaker in top of door trim
- 7 - Rear active speaker in rear shelf

Contact assignment of multi-pin connectors I, II, III on back of radio

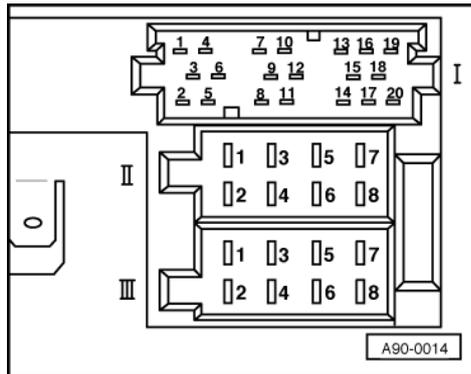
Note:

Non-listed plug contacts are not used.



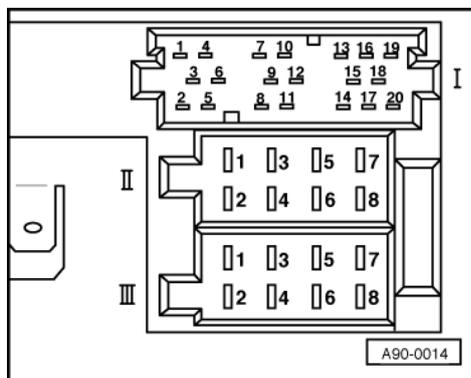
-> 20-pin connector I

- 1 - Line out, rear left
- 2 - Line out, rear right
- 3 - AF earth
- 4 - Line out, front left
- 5 - Line out, front right
- 6 - Switched positive (active speaker)
- 7 - BOSE identifier
- 8 - Clock signal for radio frequency display in dash panel insert
- 9 - Data signal for radio frequency display in dash panel insert
- 10 - Enable signal for radio frequency display in dash panel insert



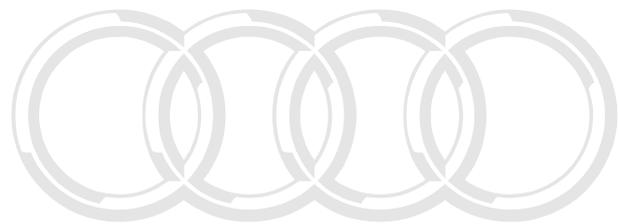
-> Brown 8-pin connector II

- 3 - Speaker (+) front right
- 4 - Speaker (-) front right
- 5 - Speaker (+) front left
- 6 - Speaker (-) front left



-> Black 8-pin connector III

- 1 - GALA (vehicle-speed signal)
- 2 - Telephone muting
- 3 - Battery + (terminal 30)
- 4 - Terminal 86s (S-contact)
- 5 - Switched positive for power aerial
- 6 - Switch illumination (terminal 58s)
- 7 - Battery + (terminal 30)
- 8 - Earth (terminal 31)

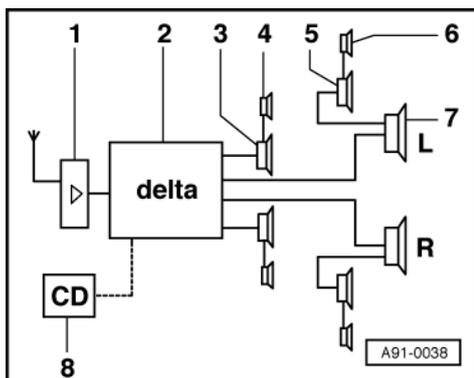


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"delta" radio system

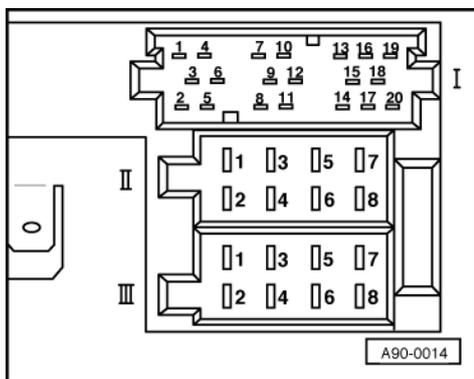


- 1 - -> Power aerial or radio/telephone rod aerial with aerial amplifier
- 2 - delta radio
- 3 - Front bass speaker in bottom of door trim
- 4 - Front treble/mid-range speaker in top of door trim
- 5 - Rear mid-range speaker in bottom of door trim
- 6 - Rear treble speaker in top of door trim
- 7 - Rear active speaker in rear shelf
- 8 - CD changer (optional) at rear left of luggage compartment beneath side trim

Contact assignment of multi-pin connectors I, II, III on back of radio

Note:

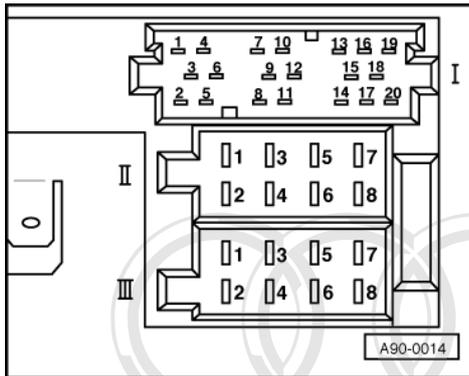
Non-listed plug contacts are not used.



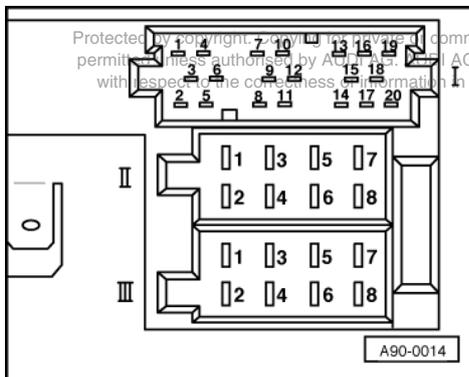
-> 20-pin connector I

- 1 - Line out, rear left
- 2 - Line out, rear right
- 3 - AF earth
- 4 - Line out, front left
- 5 - Line out, front right
- 6 - Switched positive (active speaker)
- 7 - BOSE identifier
- 8 - Clock signal for radio frequency display in dash panel insert
- 9 - Data signal for radio frequency display in dash panel insert
- 10 - Enable signal for radio frequency display in dash panel insert
- 11 - Remote control (steering wheel)
- 12 - USA code
- 13 - CD bus data (CD changer)
- 14 - CD bus clock (CD changer)

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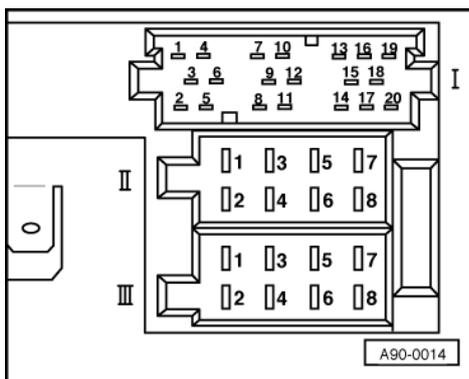
- 15 - -> Earth (CD changer)
- 16 - Permanent positive (CD changer)
- 17 - CD switched positive (CD changer)
- 18 - CD AF earth (CD changer)
- 19 - Left channel signal wire (CD-AF-L)
- 20 - Right channel signal wire (CD-AF-R)



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-> **Brown 8-pin connector II**

- 3 - Speaker (+) front right
- 4 - Speaker (-) front right
- 5 - Speaker (+) front left
- 6 - Speaker (-) front left



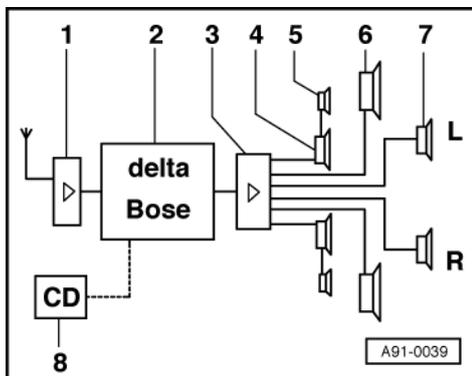
-> **Black 8-pin connector III**

- 1 - GALA (vehicle-speed signal)
- 2 - Telephone muting
- 3 - Battery + (terminal 30)
- 4 - Terminal 86s (S-contact)
- 5 - Switched positive for power aerial
- 6 - Switch illumination (terminal 58s)



- 7 - Battery + (terminal 30)
- 8 - Earth (terminal 31)

delta radio system with BOSE sound system

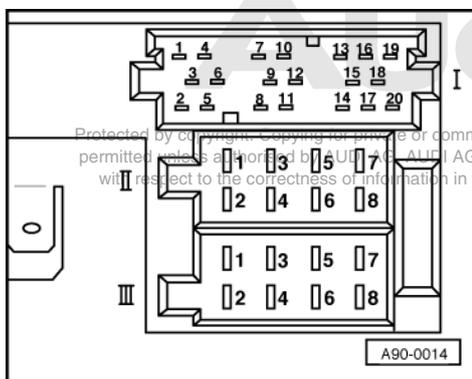


- 1 - -> Power aerial or radio/telephone rod aerial with aerial amplifier
- 2 - delta radio
- 3 - BOSE power amplifier at rear left of luggage compartment
- 4 - Front bass speaker in bottom of door trim
- 5 - Front treble speaker in top of door trim
- 6 - Rear treble/mid-range speaker in bottom of door trim
- 7 - Rear bass speaker in rear shelf
- 8 - CD changer (optional) at rear left of luggage compartment beneath side trim

Contact assignment of multi-pin connectors I, II, III on back of radio

Note:

Non-listed plug contacts are not used.

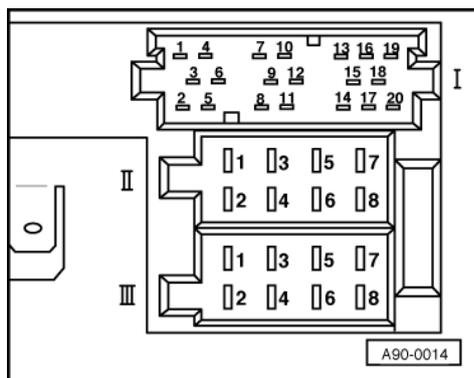


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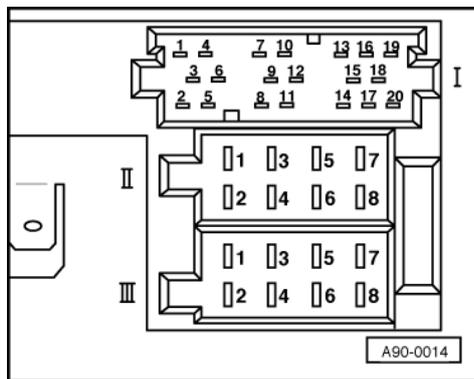
-> 20-pin connector I

- 1 - Line out, rear left
- 2 - Line out, rear right
- 3 - AF earth
- 4 - Line out, front left
- 5 - Line out, front right
- 6 - Switched positive (BOSE power amplifier)
- 7 - BOSE identifier
- 8 - Clock signal for radio frequency display in dash panel insert
- 9 - Data signal for radio frequency display in dash panel insert
- 10 - Enable signal for radio frequency display in dash panel insert
- 11 - Remote control (steering wheel)
- 12 - USA code
- 13 - CD bus data (CD changer)

14 - CD bus clock (CD changer)

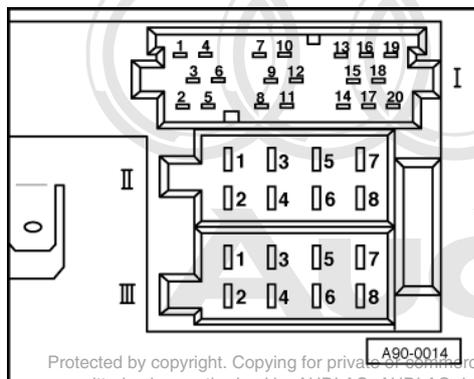


- 15 - -> Earth (CD changer)
- 16 - Permanent positive (CD changer)
- 17 - CD switched positive (CD changer)
- 18 - CD AF earth (CD changer)
- 19 - Left channel signal wire (CD-AF-L)
- 20 - Right channel signal wire (CD-AF-R)



-> **Brown 8-pin connector II**

- 3 - Speaker (+) front right
- 4 - Speaker (-) front right
- 5 - Speaker (+) front left
- 6 - Speaker (-) front left



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-> **Black 8-pin connector III**

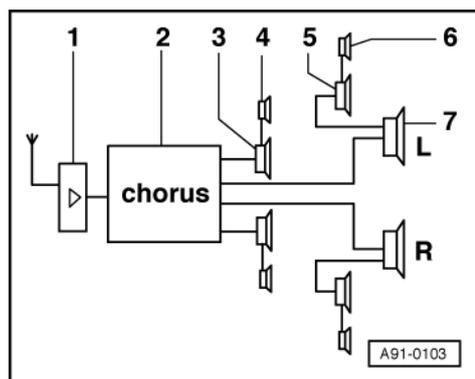
- 1 - GALA (vehicle-speed signal)
- 2 - Telephone muting
- 3 - Battery + (terminal 30)
- 4 - Terminal 86s (S-contact)



- 5 - Switched positive for power aerial
- 6 - Switch illumination (terminal 58s)
- 7 - Battery + (terminal 30)
- 8 - Earth (terminal 31)

1.4 - Block diagram of radio system (vehicles 1998 >)

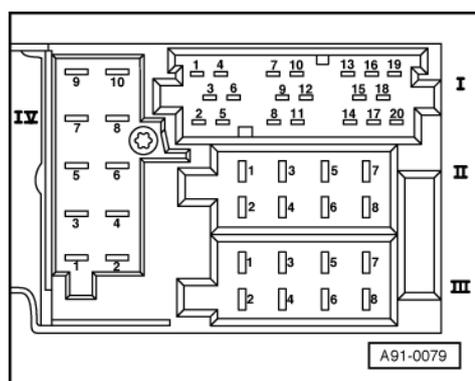
"chorus" radio system



- > 1 - Power aerial or radio/telephone rod aerial with aerial amplifier (up to MY 01)
 - Rear window aerial with aerial amplifier (as of MY 02)
- 2 - chorus radio
- 3 - Front bass speaker in bottom of door trim
- 4 - Front treble/mid-range speaker in top of door trim
- 5 - Rear mid-range speaker in bottom of door trim
- 6 - Rear treble speaker in top of door trim
- 7 - Rear active speaker in rear shelf

Contact assignment of multi-pin connectors I, II, III, IV on back of radio

Note:



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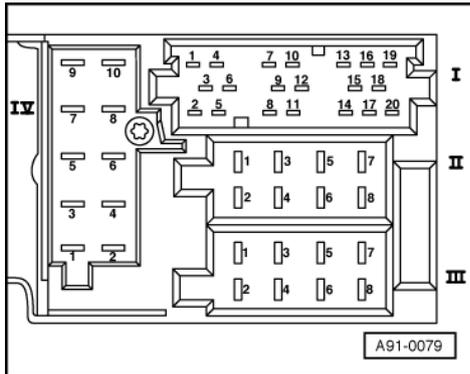
-> 20-pin connector I

- 1 - Line out, rear left
- 2 - Line out, rear right
- 3 - AF earth
- 6 - Switched positive (active speaker)
- 7 - CAN bus High (display) (as of MY 02)
- 8 - Clock signal for radio frequency display in dash panel insert (up to MY 01)
- 9 - Data signal for radio frequency display in dash panel insert

- (up to MY 01)
- 10 - Enable signal for radio frequency display in dash panel insert
- (up to MY 01)
- 11 - Remote control/steering wheel (up to MY 01)
- 12 - CAN bus Low (display) (as of MY 02)

Brown 8-pin connector II

- 3 - Speaker (+) front right
- 4 - Speaker (-) front right
- 5 - Speaker (+) front left
- 6 - Speaker (-) front left



-> Black 8-pin connector III

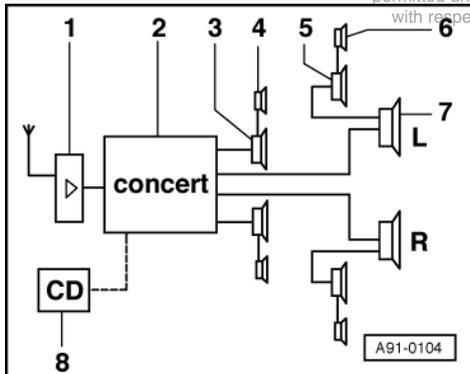
- 1 - GALA (vehicle-speed signal) (up to MY 01)
- 2 - AF muting (telephone system) (up to MY 01)
- Anti-theft alarm earth (as of MY 02)
- 3 - K-diagnosis
- 4 - Terminal 86s (S-contact) (up to MY 01)
- 5 - Switched positive for aerial amplifier (up to MY 01)
- 6 - Switch illumination (terminal 58s) (up to MY 01)
- 7 - Battery + (terminal 30)
- 8 - Earth (terminal 31)

Red 10-pin connector IV

- 1 - Telephone muting
- 3 - Telephone (AF+) (not with navigation)
- 4 - Telephone (AF-) (not with navigation)
- 5 - Navigation (AF+)
- 6 - Navigation (AF-)
- 7 - Navigation control wire
- 9 - Display illumination (terminal 58d) (up to MY 01)
- 10 - CD-GND (up to MY 01)

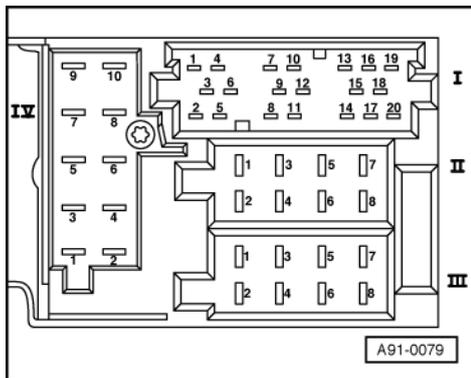
"concert" radio system

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- > 1 - Power aerial or radio/telephone rod aerial with aerial amplifier
(up to MY 01)
- Rear window aerial with diversity box (as of MY 02)
- 2 - concert radio
- 3 - Front bass speaker in bottom of door trim
- 4 - Front treble/mid-range speaker in top of door trim
- 5 - Rear mid-range speaker in bottom of door trim
- 6 - Rear treble speaker in top of door trim
- 7 - Rear active speaker in rear shelf
- 8 - CD changer (optional) at rear left of luggage compartment beneath side trim



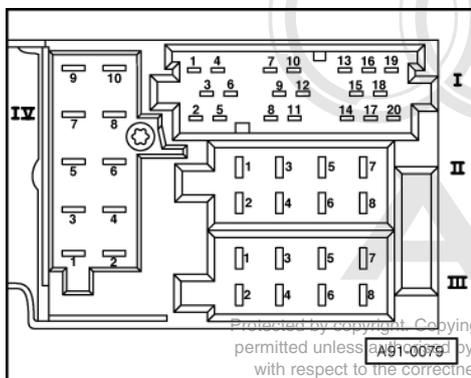
Contact assignment of multi-pin connectors I, II, III, IV on back of radio

Note:

Non-listed plug contacts are not used.

-> 20-pin connector I

- 1 - Line out, rear left
 - 2 - Line out, rear right
 - 3 - AF earth
 - 4 - Line out, front left
 - 5 - Line out, front right
 - 6 - Switched positive (active speaker)
 - 7 - CAN bus High (display) (as of MY 02)
 - 8 - Clock signal for radio frequency display in dash panel insert
- (up to MY 01)
- 9 - Data signal for radio frequency display in dash panel insert
- (up to MY 01)
- 10 - Enable signal for radio frequency display in dash panel insert
- (up to MY 01)
- CD earth (as of MY 02)

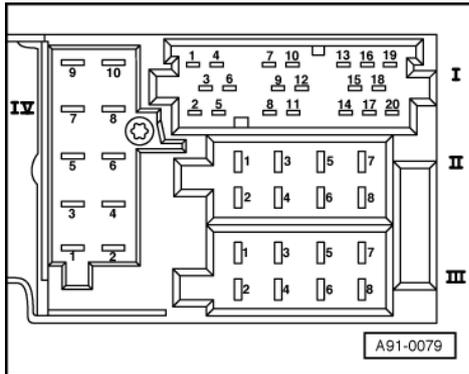


- > 11 - Remote control/steering wheel (up to MY 01)
- 12 - CAN bus Low (display) (as of MY 02)
 - 13 - CD bus data in (CD changer)
 - 14 - CD bus data out (CD changer)

- 15 - CD clock (CD changer)
- 16 - Permanent positive (CD changer)
- 17 - CD switched positive (CD changer)
- 18 - CD AF earth (CD changer)
- 19 - Left channel signal wire (CD-AF-L)
- 20 - Right channel signal wire (CD-AF-R)

Brown 8-pin connector II

- 3 - Speaker (+) front right
- 4 - Speaker (-) front right
- 5 - Speaker (+) front left
- 6 - Speaker (-) front left

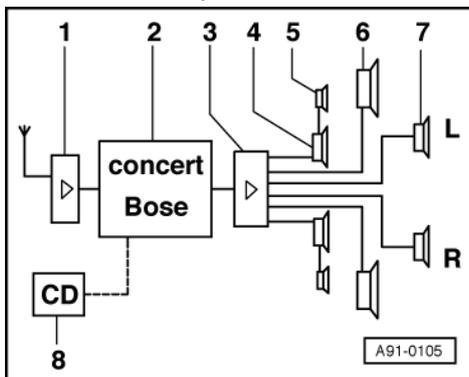
**-> Black 8-pin connector III**

- 1 - GALA (vehicle-speed signal) (up to MY 01)
- 2 - AF muting (telephone system) (up to MY 01)
- Anti-theft alarm earth (as of MY 02)
- 3 - K-diagnosis
- 4 - Terminal 86s (S-contact) (up to MY 01)
- 5 - Switched positive for aerial amplifier (up to MY 01)
- 6 - Switch illumination (terminal 58s) (up to MY 01)
- 7 - Battery + (terminal 30)
- 8 - Earth (terminal 31)

Red 10-pin connector IV

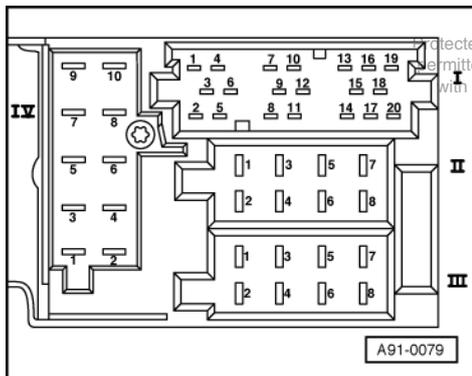
- 1 - Telephone muting
- 2 - Terminal 15 (navigation only) (up to MY 01)
- 3 - Telephone (AF+) (not with navigation)
- 4 - Telephone (AF-) (not with navigation)
- 5 - Navigation (AF+)
- 6 - Navigation (AF-)
- 7 - Navigation control wire
- 9 - Display illumination (terminal 58d) (up to MY 01)
- 10 - CD-GND (up to MY 01)

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"concert" radio system with BOSE sound system



- > 1 - Power aerial or radio/telephone rod aerial with aerial amplifier (up to MY 01)
 - Rear window aerial with diversity box (as of MY 02)
- 2 - concert radio
- 3 - BOSE power amplifier at rear left of luggage compartment
- 4 - Front bass speaker in bottom of door trim
- 5 - Front treble speaker in top of door trim
- 6 - Rear treble/mid-range speaker in bottom of door trim
- 7 - Rear bass speaker in rear shelf
- 8 - CD changer (optional) at rear left of luggage compartment beneath side trim



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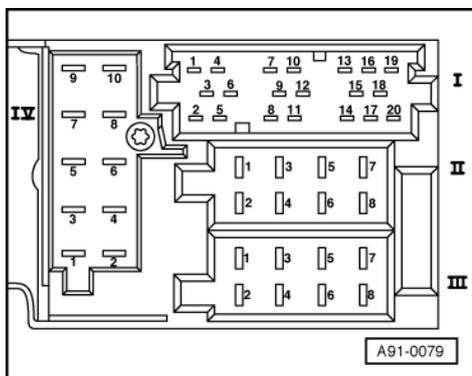
Contact assignment of multi-pin connectors I, II, III, IV on back of radio

Note:

Non-listed plug contacts are not used.

-> 20-pin connector I

- 1 - Line out, rear left
- 2 - Line out, rear right
- 3 - AF earth
- 4 - Line out, front left
- 5 - Line out, front right
- 6 - Switched positive (BOSE power amplifier)
- 7 - CAN bus High (display) (as of MY 02)
- 8 - Clock signal for radio frequency display in dash panel insert
- (up to MY 01)
- 9 - Data signal for radio frequency display in dash panel insert
- (up to MY 01)
- 10 - Enable signal for radio frequency display in dash panel insert
- (up to MY 01)
- CD earth (as of MY 02)

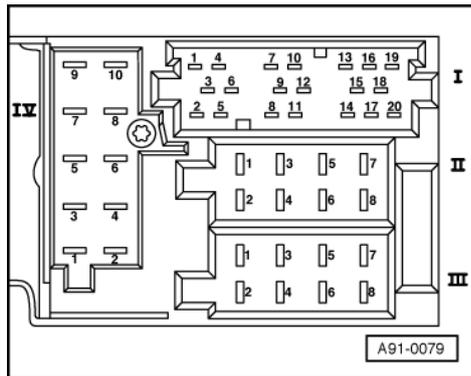


- > 11 - Remote control/steering wheel (up to MY 01)
- 12 - CAN bus Low (display) (as of MY 02)
- 13 - CD bus data in (CD changer)
- 14 - CD bus data out (CD changer)

- 15 - CD clock (CD changer)
- 16 - Permanent positive (CD changer)
- 17 - CD switched positive (CD changer)
- 18 - CD AF earth (CD changer)
- 19 - Left channel signal wire (CD-AF-L)
- 20 - Right channel signal wire (CD-AF-R)

Brown 8-pin connector II

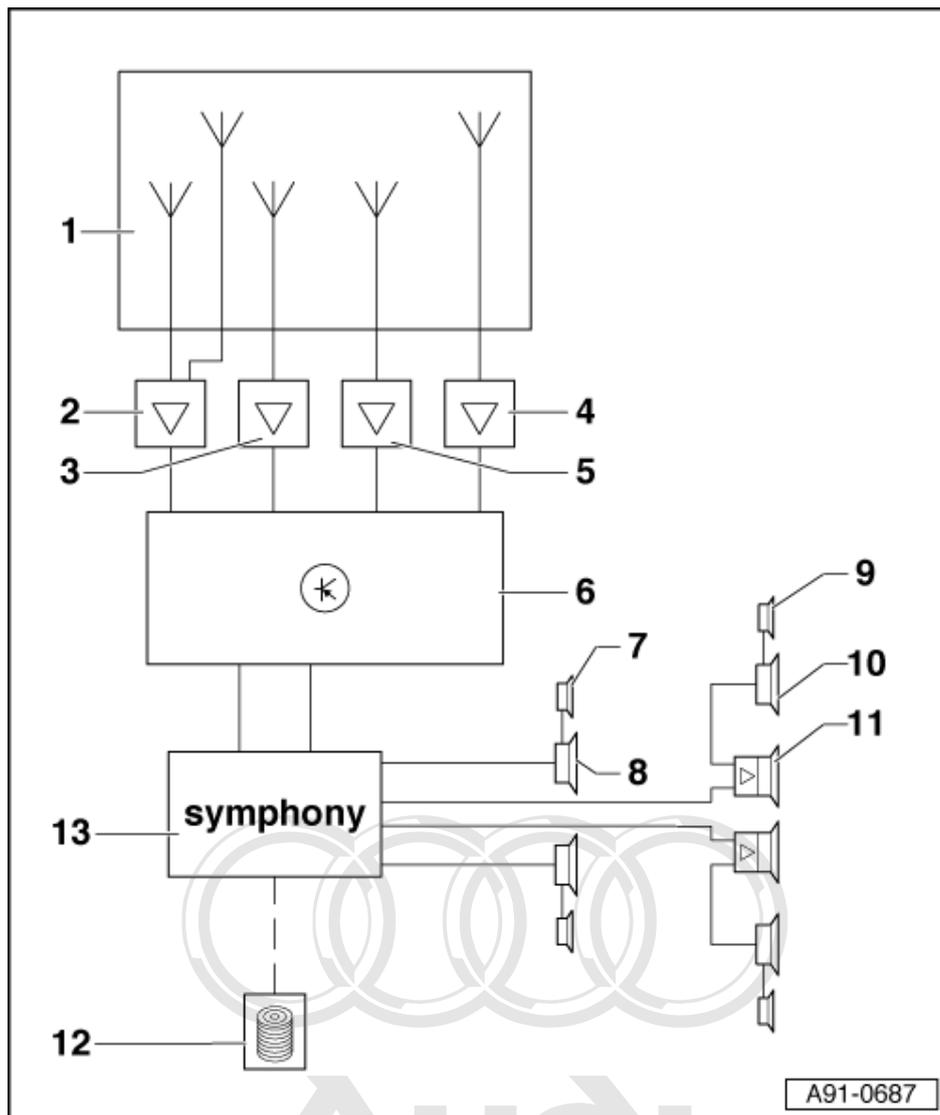
- 3 - Speaker (+) front right (up to MY 01)
- 4 - Speaker (-) front right (up to MY 01)
- 5 - Hands-free loudspeaker (+) (up to MY 01)
- 6 - Hands-free loudspeaker (-) (up to MY 01)

**-> Black 8-pin connector III**

- 1 - GALA (vehicle-speed signal) (up to MY 01)
- BOSE code (as of MY 02)
- 2 - AF muting (telephone system) (up to MY 01)
- Anti-theft alarm earth (as of MY 02)
- 3 - K-diagnosis
- 4 - Terminal 86s (S-contact) (up to MY 01)
- 5 - Switched positive for aerial amplifier (up to MY 01)
- 6 - Switch illumination (terminal 58s) (up to MY 01)
- 7 - Battery + (terminal 30)
- 8 - Earth (terminal 31)

Red 10-pin connector IV

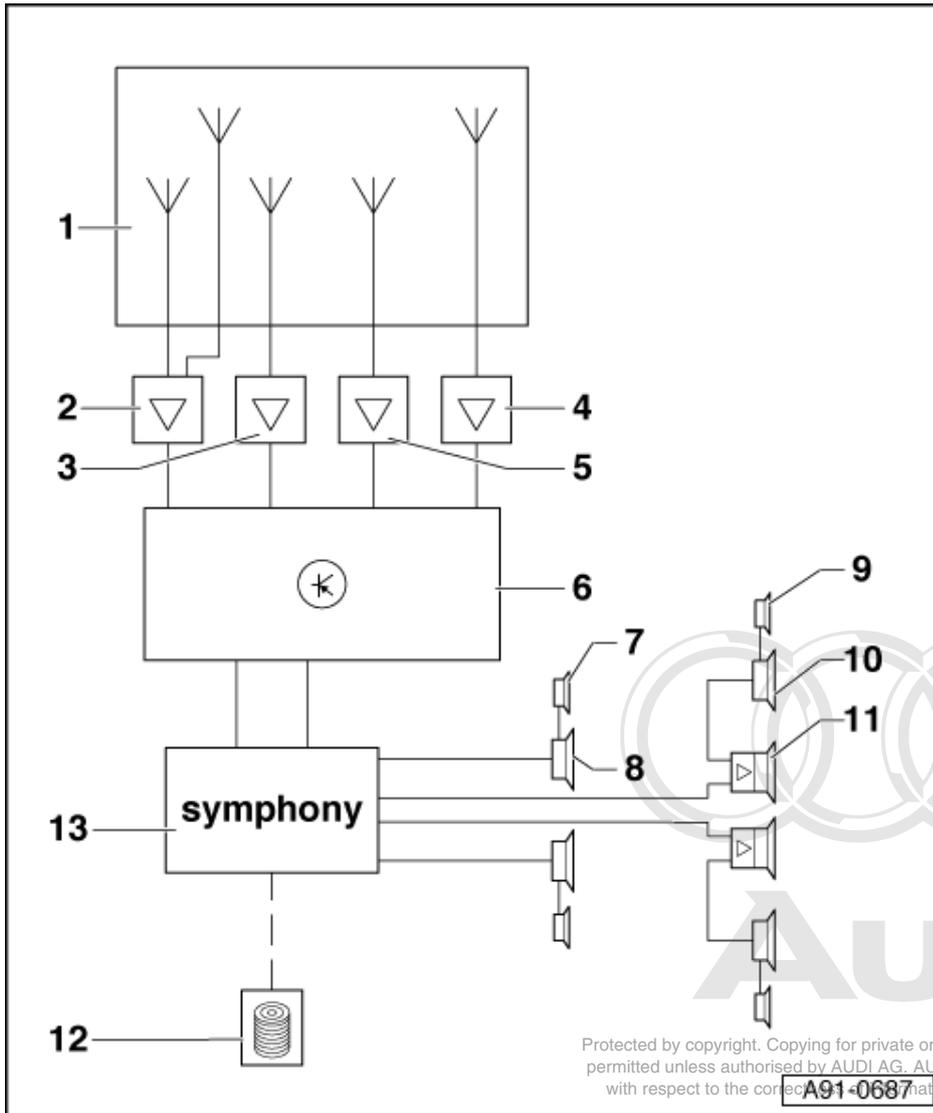
- 1 - Telephone muting
- 2 - Terminal 15 (navigation only) (up to MY 01)
- 3 - Telephone (AF+) (not with navigation)
- 4 - Telephone (AF-) (not with navigation)
- 5 - Navigation (AF+)
- 6 - Navigation (AF-)
- 7 - Navigation control wire
- 9 - Display illumination (terminal 58d) (up to MY 01)
- 10 - CD-GND (up to MY 01)



A91-0687

"symphony" radio system

- 1 **Rear window aerials**
- 2 **Aerial amplifier**
At top left beneath D pillar trim
- 3 **Aerial amplifier**
Beneath rear shelf on partition on left of luggage compartment
- 4 **Aerial amplifier**
At top right beneath D pillar trim
- 5 **Aerial amplifier**
Beneath rear shelf on partition on right of luggage compartment
- 6 **Aerial selection control unit** at bottom left beneath C-pillar trim
- 7 **Front treble/mid-range speaker** in top of door trim

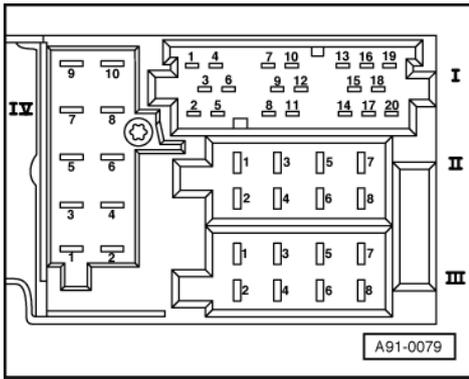


- 8 Front bass speaker
In bottom of door trim
- 9 Rear treble speaker in top of door trim
- 10 Rear mid-range speaker in bottom of door trim
- 11 Rear active speaker in rear shelf
- 12 CD changer (optional)
At rear left of luggage compartment
- 13 "symphony" radio

Contact assignment of multi-pin connectors I, II, III, IV on back of radio

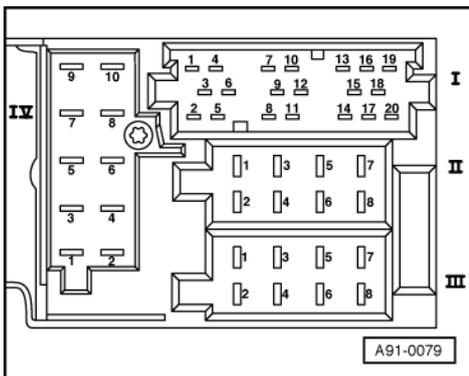
Note:

Non-listed plug contacts are not used.

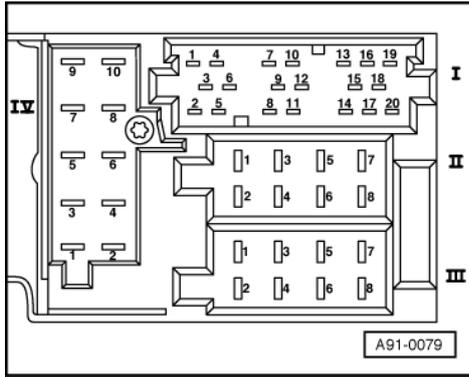
**-> 20-pin connector I**

- 1 - Line out, rear left
- 2 - Line out, rear right
- 3 - AF earth
- 4 - Line out, front left
- 5 - Line out, front right
- 6 - Switched positive (active speaker)
- 7 - CAN bus High (display) (as of MY 02)
- 8 - Clock signal (up to MY 01)
- 9 - Data signal (up to MY 01)
- 10 - Enable signal (up to MY 01)
- CD earth (as of MY 02)

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- > 11 - Remote control/steering wheel (up to MY 01)
- 12 - CAN bus Low (display) (as of MY 02)
- 13 - CD bus data in (CD changer)
- 14 - CD bus data out (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 - Left channel signal wire (CD-AF-L)
- 20 - Right channel signal wire (CD-AF-R)

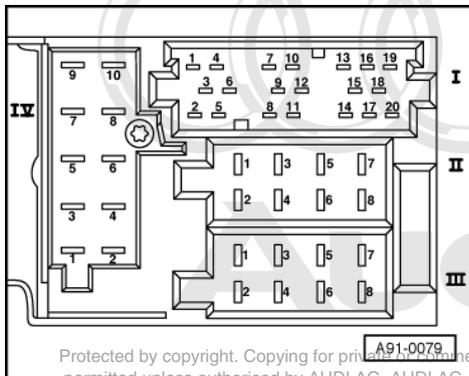


-> **Brown 8-pin connector II**

- 3 - Speaker (+) front right
- 4 - Speaker (-) front right
- 5 - Speaker (+) front left
- 6 - Speaker (-) front left

Black 8-pin connector III

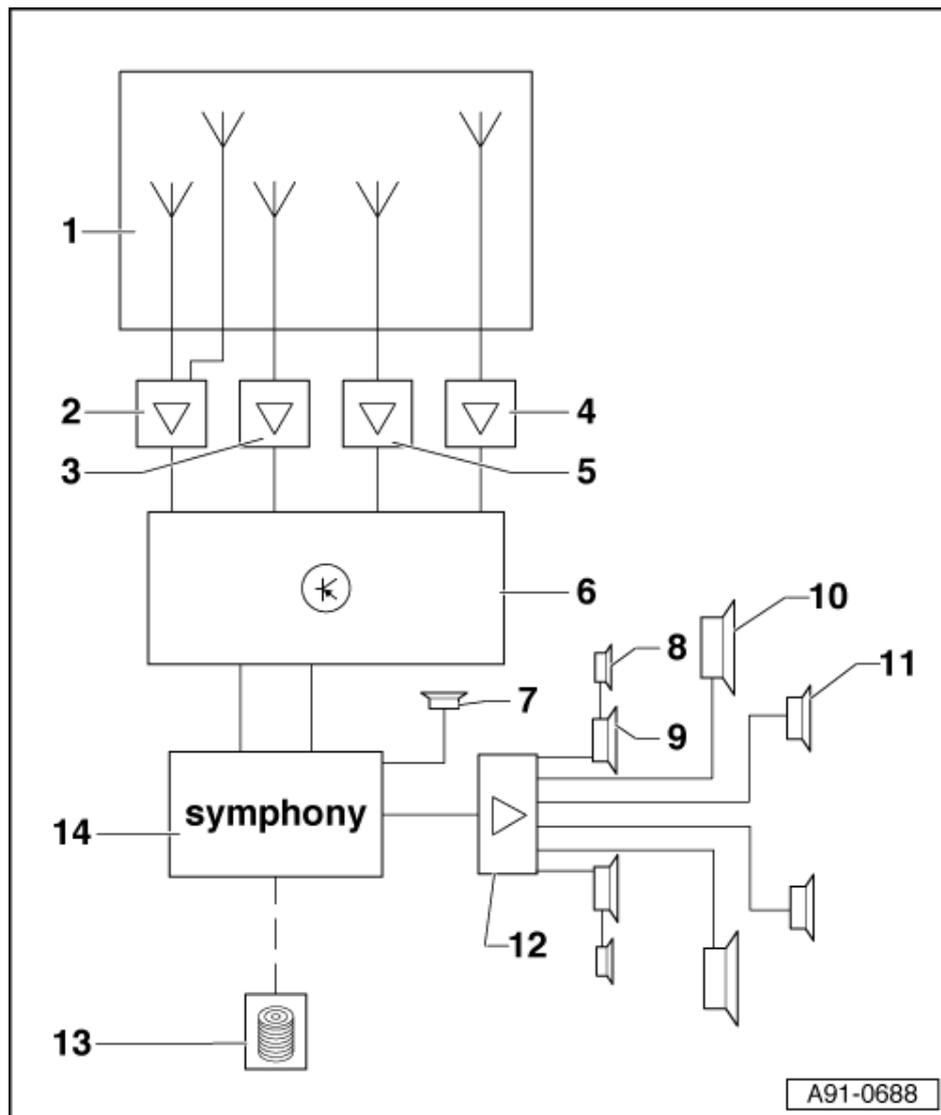
- 1 - GALA (vehicle-speed signal) (up to MY 01)
- 2 - AF muting (telephone system) (up to MY 01)
- Anti-theft alarm earth (as of MY 02)
- 3 - K-diagnosis
- 4 - Terminal 86s (S-contact) (up to MY 01)
- 5 - Switched positive for aerial amplifier (up to MY 01)
- 6 - Switch illumination (terminal 58s) (up to MY 01)
- 7 - Battery + (terminal 30)
- 8 - Earth (terminal 31)



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-> **Red 10-pin connector IV**

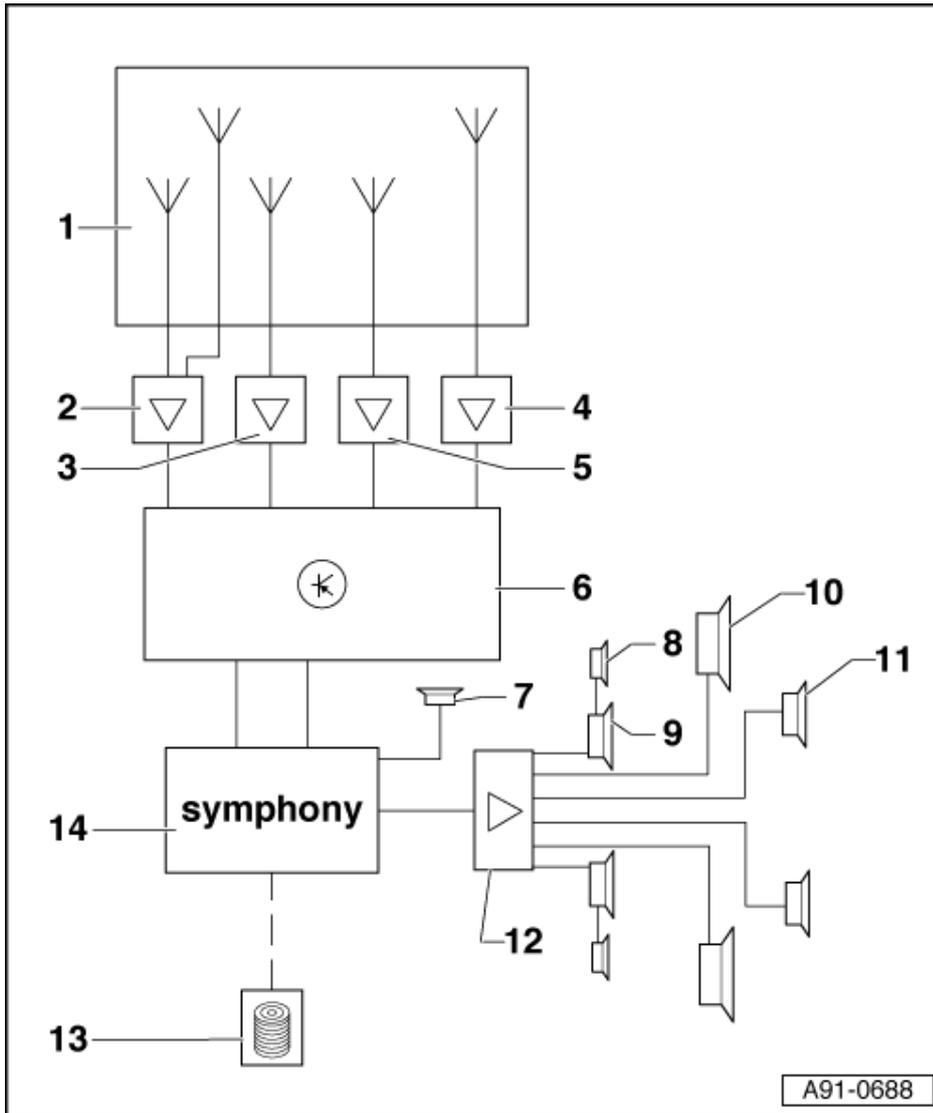
- 1 - Telephone muting
- 2 - Terminal 15 (navigation only) (up to MY 01)
- 3 - Telephone (AF+) (not with navigation)
- 4 - Telephone (AF-) (not with navigation)
- 5 - Navigation (AF+)
- 6 - Navigation (AF-)
- 7 - Navigation control wire
- 9 - Display illumination (terminal 58d) (up to MY 01)
- 10 - CD-GND (up to MY 01)



symphony radio system with BOSE sound system"

- 1 Rear window aerials
- 2 Aerial amplifier
At top left beneath D pillar trim
- 3 Aerial amplifier
Beneath rear shelf on partition on left of luggage compartment
- 4 Aerial amplifier
At top right beneath D pillar trim
- 5 Aerial amplifier
Beneath rear shelf on partition on right of luggage compartment
- 6 Aerial selection control unit at bottom left beneath C-pillar trim
- 7 Hands-free loudspeaker in B-pillar trim on left (telephone only) (up to MY 01)

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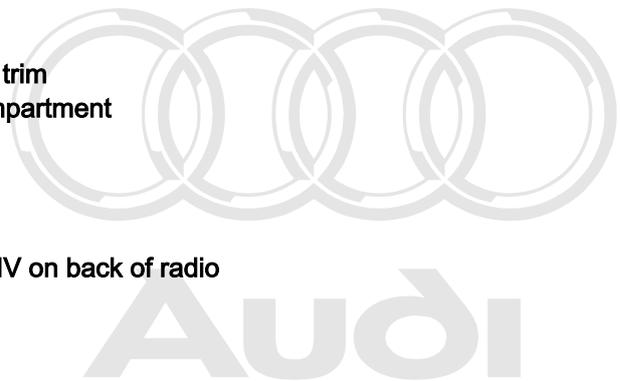


- 8 Front treble speaker in top of door trim
- 9 Front bass speaker
In bottom of door trim
- 10 Bass speaker in rear shelf
- 11 Rear treble/mid-range speaker in bottom of door trim
- 12 BOSE power amplifier at rear left of luggage compartment
- 13 CD changer (optional)
At rear left of luggage compartment
- 14 "symphony" radio

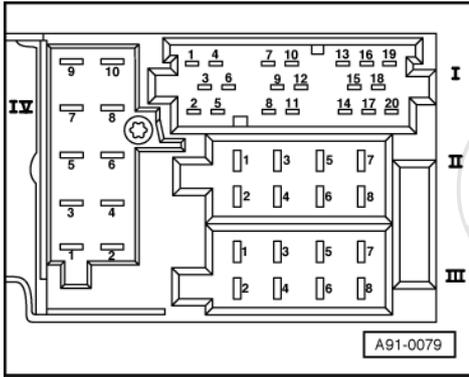
Contact assignment of multi-pin connectors I, II, III, IV on back of radio

Note:

Non-listed plug contacts are not used.



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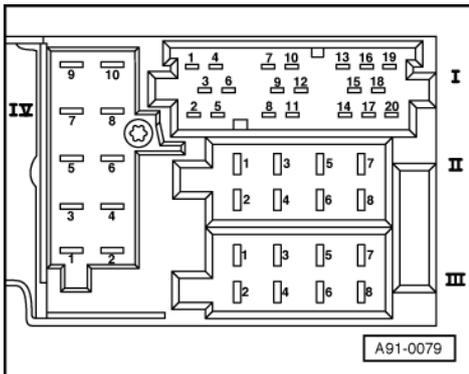


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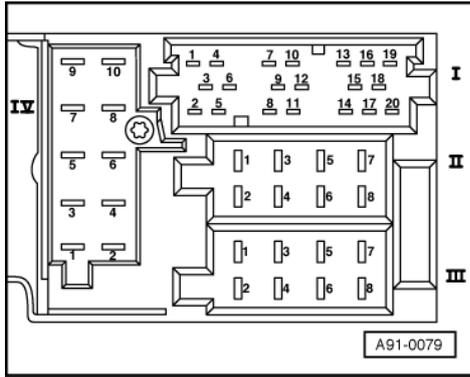
-> 20-pin connector I

- 1 - Line out, rear left
- 2 - Line out, rear right
- 3 - AF earth
- 4 - Line out, front left
- 5 - Line out, front right
- 6 - Switched positive (BOSE power amplifier)
- 7 - CAN bus High (display) (as of MY 02)
- 8 - Clock signal (up to MY 01)
- 9 - Data signal (up to MY 01)
- 10 - Enable signal (up to MY 01)
- CD earth (as of MY 02)

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- > 11 - Remote control/steering wheel (up to MY 01)
- 12 - CAN bus Low (display) (as of MY 02)
- 13 - CD bus data in (CD changer)
- 14 - CD bus data out (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 - Left channel signal wire (CD-AF-L)
- 20 - Right channel signal wire (CD-AF-R)



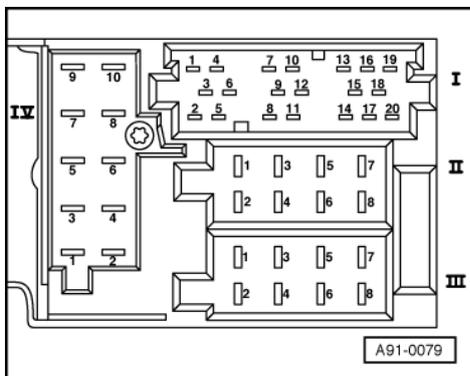
-> Brown 8-pin connector II

- 3 - Speaker (+) front right (up to MY 01)
- 4 - Speaker (-) front right (up to MY 01)
- 5 - Hands-free loudspeaker (+) (up to MY 01)
- 6 - Hands-free loudspeaker (-) (up to MY 01)

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Black 8-pin connector III

- 1 - GALA (vehicle-speed signal) (up to MY 01)
- BOSE code (as of MY 02)
- 2 - AF muting (telephone system) (up to MY 01)
- Anti-theft alarm earth (as of MY 02)
- 3 - K-diagnosis
- 4 - Terminal 86s (S-contact) (up to MY 01)
- 5 - Switched positive for aerial amplifier (up to MY 01)
- 6 - Switch illumination (terminal 58s) (up to MY 01)
- 7 - Battery + (terminal 30)
- 8 - Earth (terminal 31)

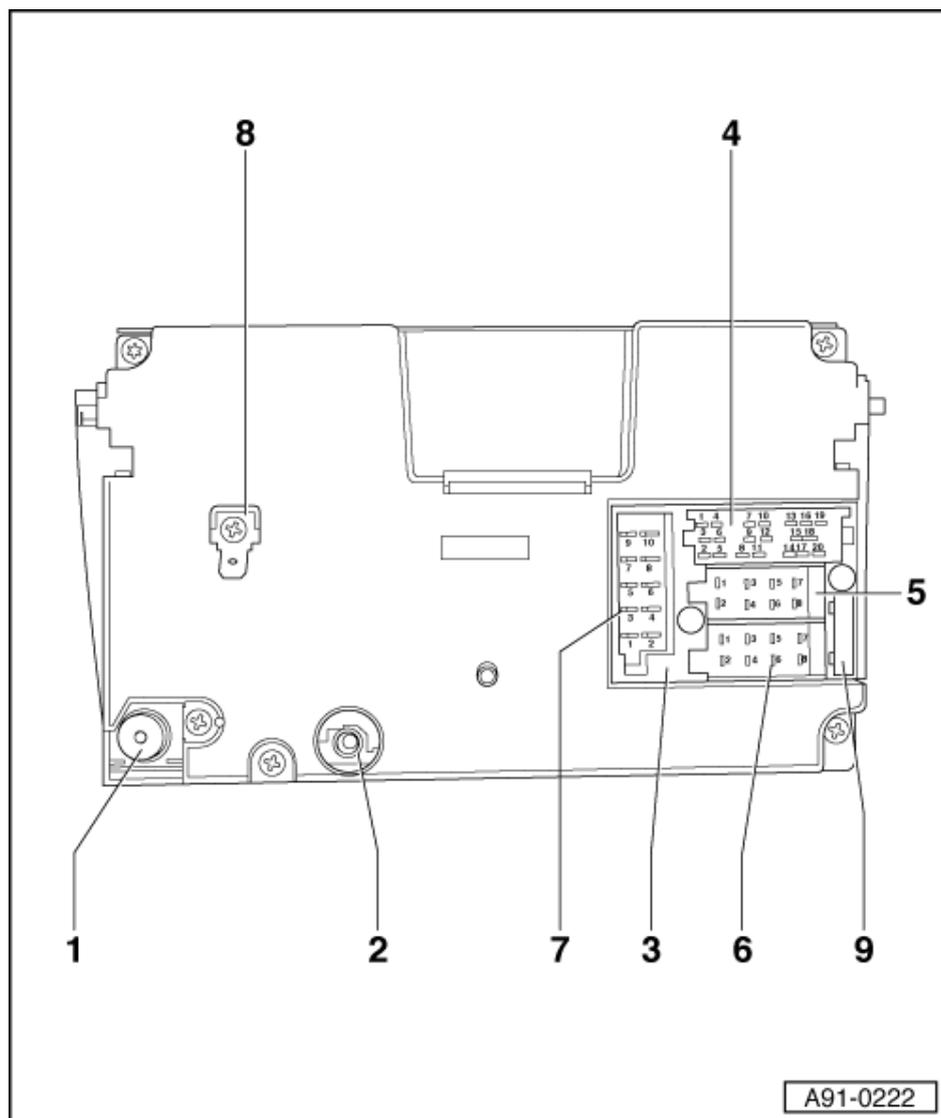


-> Red 10-pin connector IV

- 1 - Telephone muting (up to MY 01)
- 2 - Terminal 15 (navigation only)
- 3 - Telephone (AF+) (not with navigation)
- 4 - Telephone (AF-) (not with navigation)
- 5 - Navigation (AF+)
- 6 - Navigation (AF-)
- 7 - Navigation control wire
- 9 - Display illumination (terminal 58d) (up to MY 01)
- 10 - CD-GND (up to MY 01)

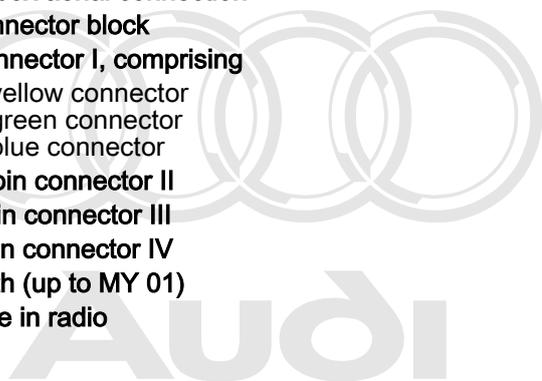


1.5 - Connectors on back of symphony radio



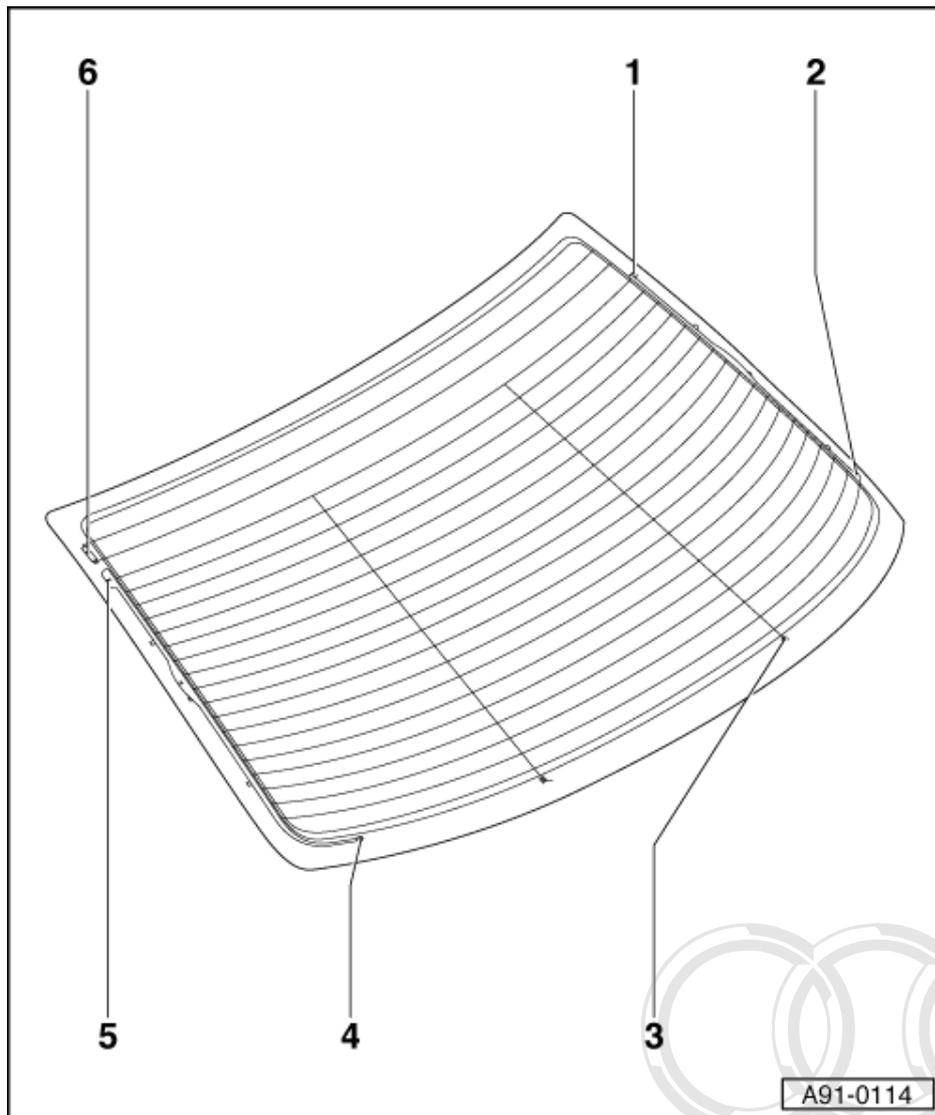
A91-0222

- 1 Diversity box aerial connection
- 2 Diversity box aerial connection
- 3 Radio connector block
- 4 20-pin connector I, comprising
 - ◆ 6-pin yellow connector
 - ◆ 6-pin green connector
 - ◆ 8-pin blue connector
- 5 Brown 8-pin connector II
- 6 Black 8-pin connector III
- 7 Red 10-pin connector IV
- 8 DWA earth (up to MY 01)
- 9 Radio fuse in radio



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1.6 - Rear window radio aerial connection points

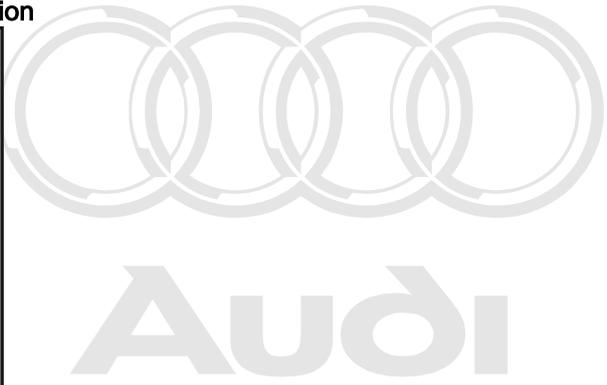
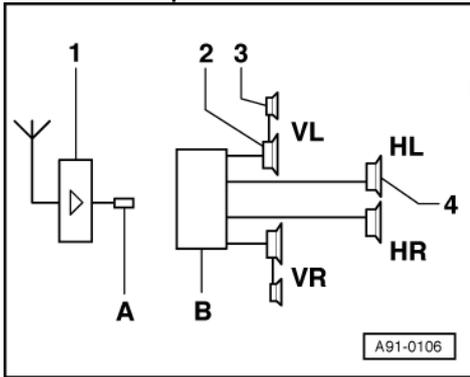


- 1 FM aerial 1
- 2 FM aerial 2
- 3 Auxiliary heater aerial
- 4 FM aerial 3
- 5 FM aerial 4
- 6 AM aerial

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Pre-fitted components for radio installation



A - -> Aerial cable

B - Connector II (8-pin) and connector III (8-pin)

1 - Power aerial or radio/telephone rod aerial with aerial amplifier (up to MY 01)

- Rear window aerial with splitter (as of MY 02)

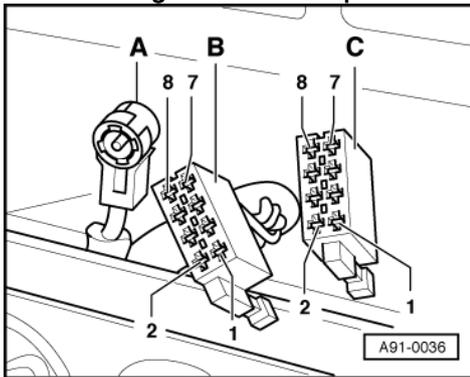
2 - Front bass speaker in bottom of door trim

3 - Front treble/mid-range speaker in top of door trim

4 - Rear broadband speaker in bottom of door trim

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Contact assignment of multi-pin connectors II and III

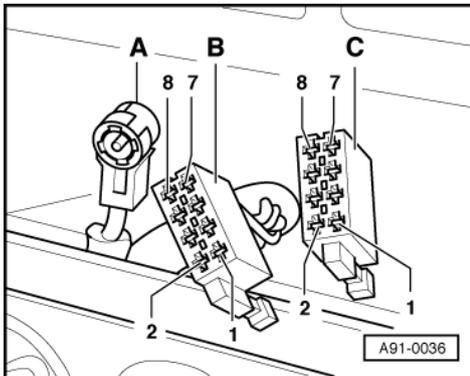


Note:

Non-listed plug contacts are not used.

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

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

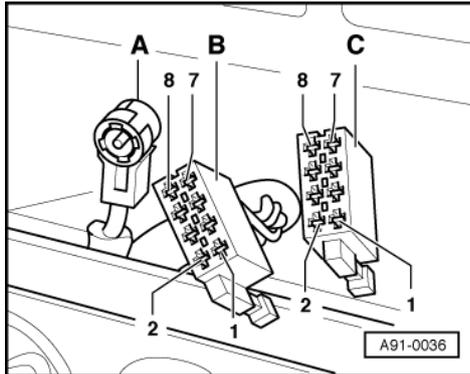


-> **Black 8-pin connector III -B-**

- 5 - Switched positive for power aerial (up to MY 01)
- 6 - Illumination (terminal 58s)
- 7 - Battery + (terminal 30)
- 8 - Earth (terminal 31)

Connecting radio with pre-fitted components for radio installation

- Carefully prise cover out of centre console and detach.



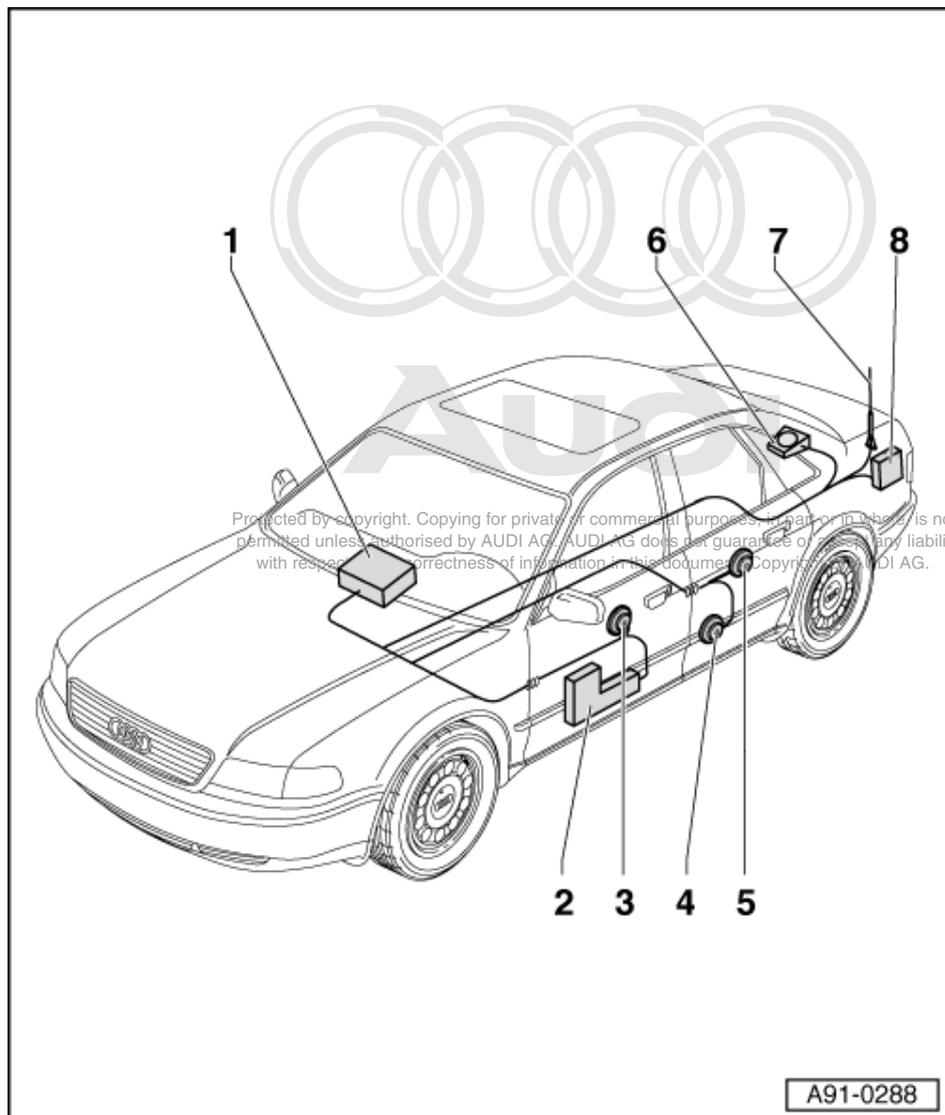
- -> Connect aerial wire -A-.
- Connect black connector -B- and brown connector -C- to radio.
- Carefully insert radio in dash panel and engage in mounting frame.
- If applicable, perform anti-theft encoding in line with radio operating instructions.



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1.7 - Exploded view of "gamma", "delta" and "chorus" radio systems, as well as "concert" up to MY 01



1 Radio

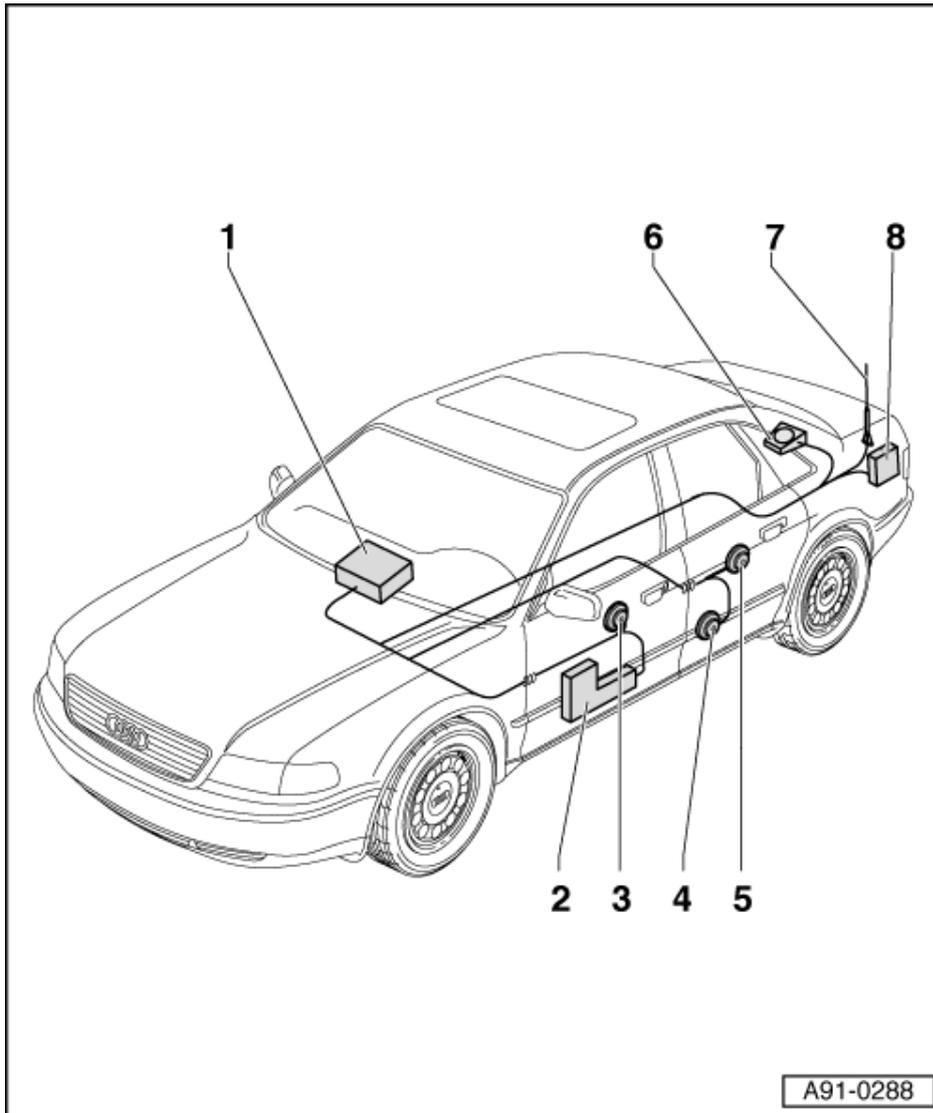
- ◆ Installed in centre console
- ◆ Removing and installing=>Page 36

2 Bass speaker

- ◆ In bottom of front door trim
- ◆ Removing and installing=>Page 38

3 Treble/mid-range speaker

- ◆ In top of front door trim
- ◆ Removing and installing=>Page 38



4 Mid-range speaker

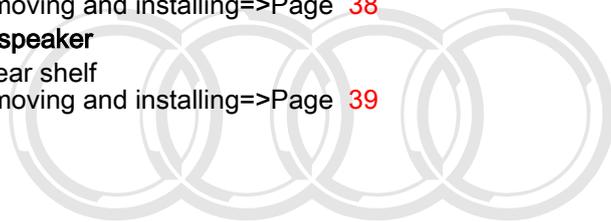
- ◆ In bottom of rear door trim
- ◆ Removing and installing=>Page 38

5 Treble speaker

- ◆ In top of rear door trim
- ◆ Removing and installing=>Page 38

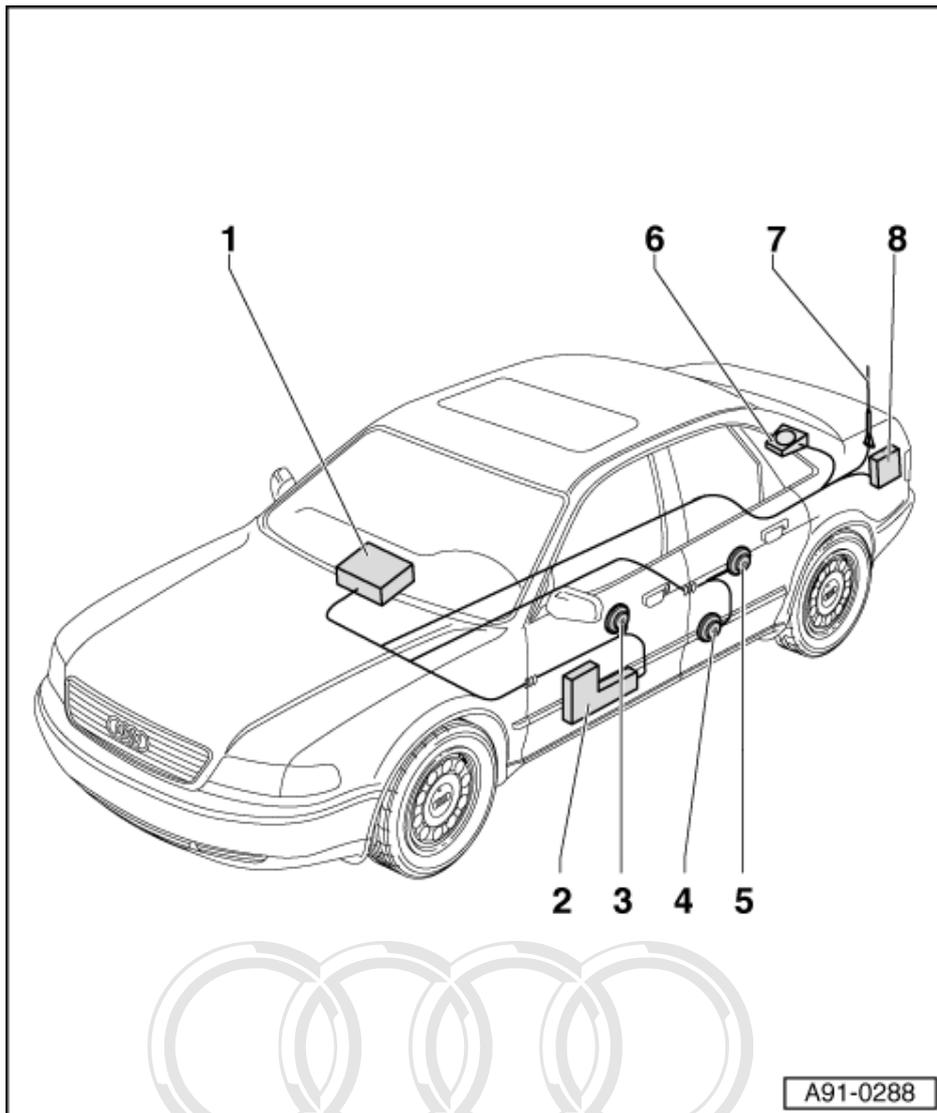
6 Active speaker

- ◆ In rear shelf
- ◆ Removing and installing=>Page 39



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7 Aerial

- ◆ Power aerial or radio/telephone rod aerial with filter (up to MY 01)
- ◆ At rear left of luggage compartment beneath side trim
- ◆ Removing and installing=>Page 40
- ◆ Rear window aerial (AM/FM) with aerial amplifier (as of MY 02)
- ◆ Removing and installing

=> General Body Repairs, Exterior; Repair Group 64; Glazing; Removing and installing rear window Glazing
Removing and installing rear window

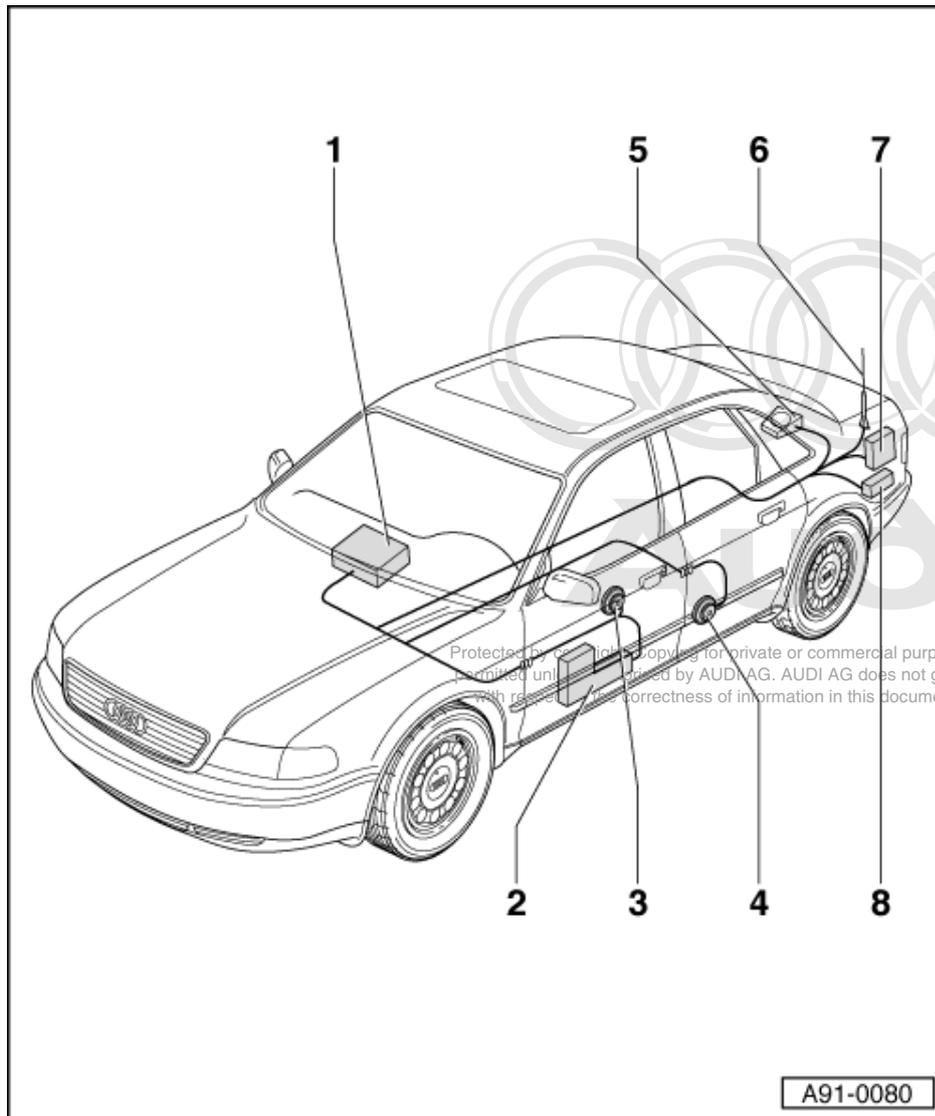
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- ◆ Removing and installing aerial amplifier => Page 43

8 CD changer

- ◆ In left luggage compartment storage area
- ◆ Removing and installing=>Page 41
- ◆ Checking wiring => Page 41

1.8 - Exploded view of delta radio with BOSE sound system and concert radio with BOSE sound system up to MY 01



1 Radio

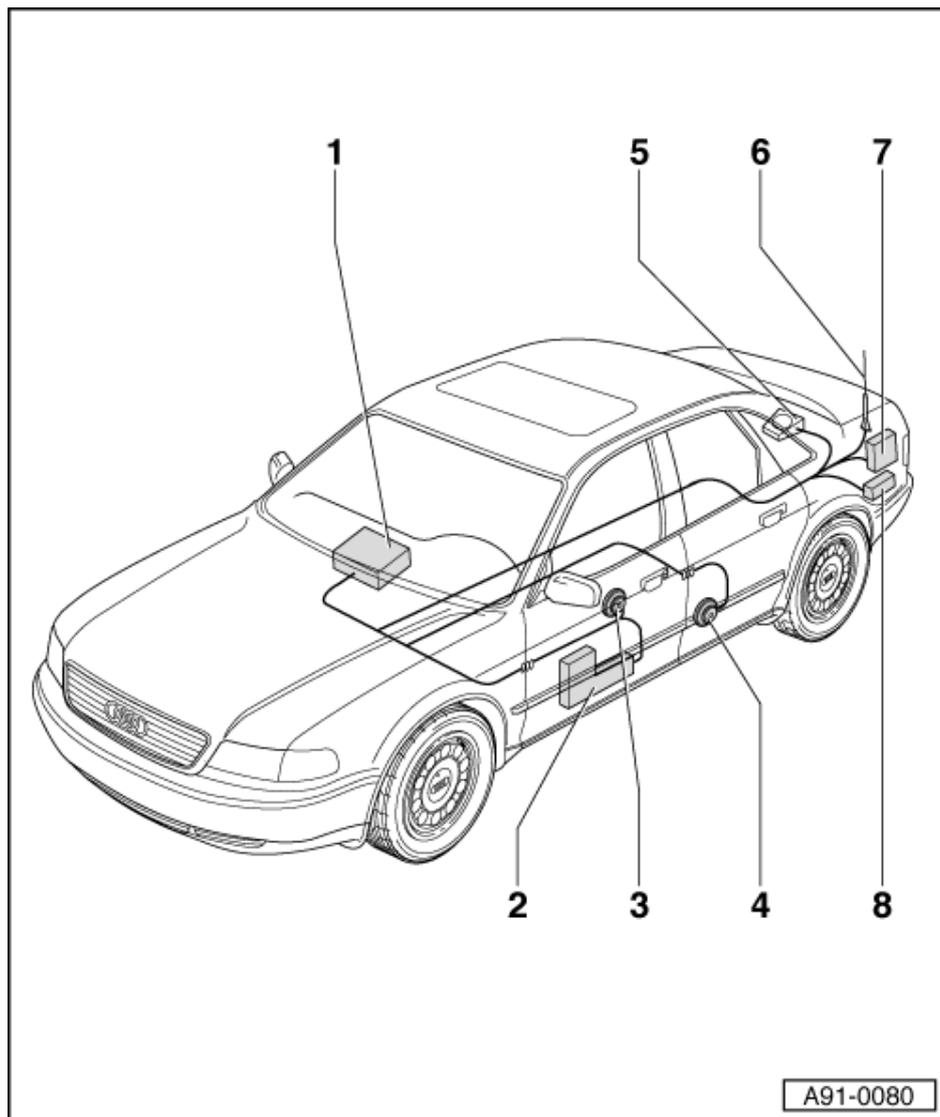
- ◆ Installed in centre console
- ◆ Removing and installing=>Page 36

2 Bass speaker

- ◆ In bottom of front door trim
- ◆ Removing and installing=>Page 38

3 Treble speaker

- ◆ In top of front door trim
- ◆ Removing and installing=>Page 38



4 Treble/mid-range speaker

- ◆ In bottom of rear door trim
- ◆ Removing and installing=>Page 39

5 Bass speaker

- ◆ In rear shelf
- ◆ Removing and installing=>Page 39

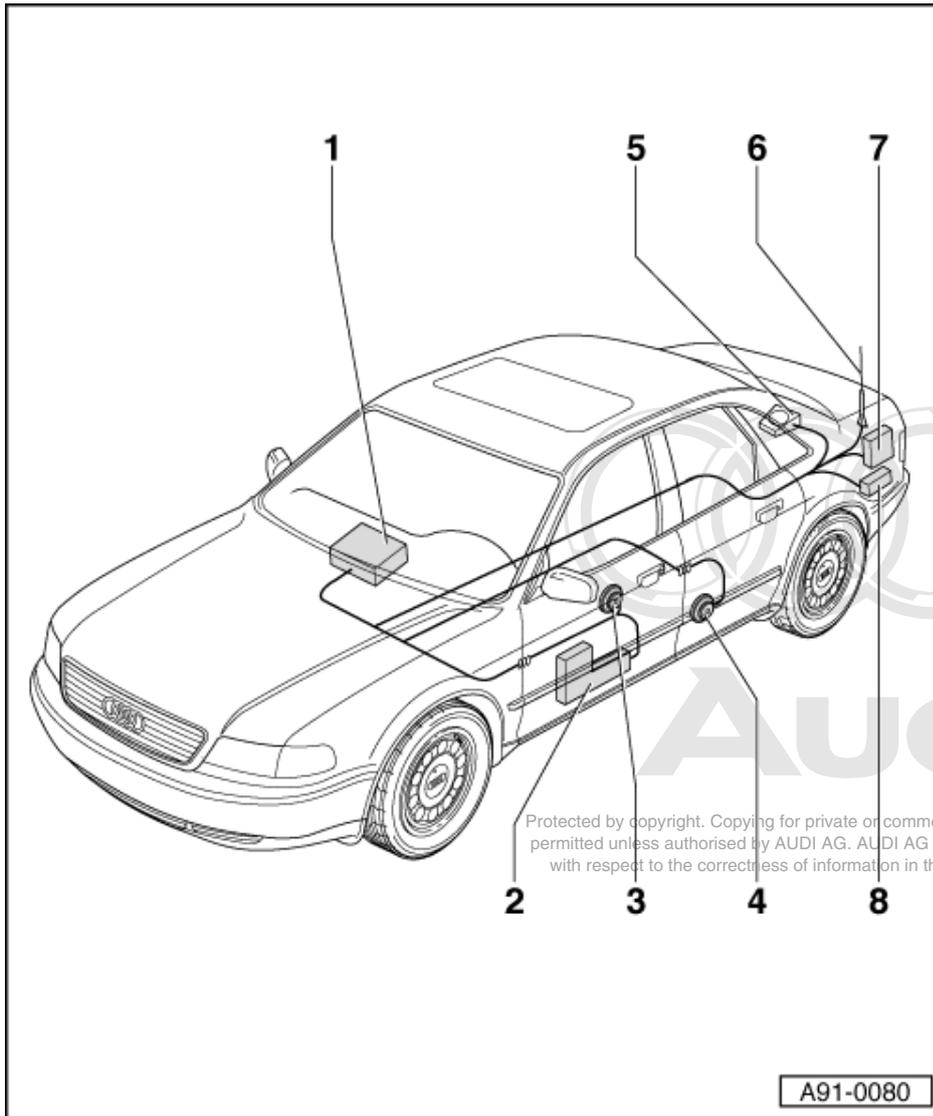
6 Aerial

- ◆ Power aerial or radio/telephone rod aerial with filter (up to MY 01)
- ◆ At rear left of luggage compartment beneath side trim
- ◆ Removing and installing=>Page 40
- ◆ Rear window aerial (AM/FM) with aerial amplifier (as of MY 02)
- ◆ Removing and installing

=> General Body Repairs, Exterior; Repair Group 64; Glazing; Removing and installing rear window Glazing
Removing and installing rear window

- ◆ Removing and installing aerial amplifier => Page 43

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7 CD changer

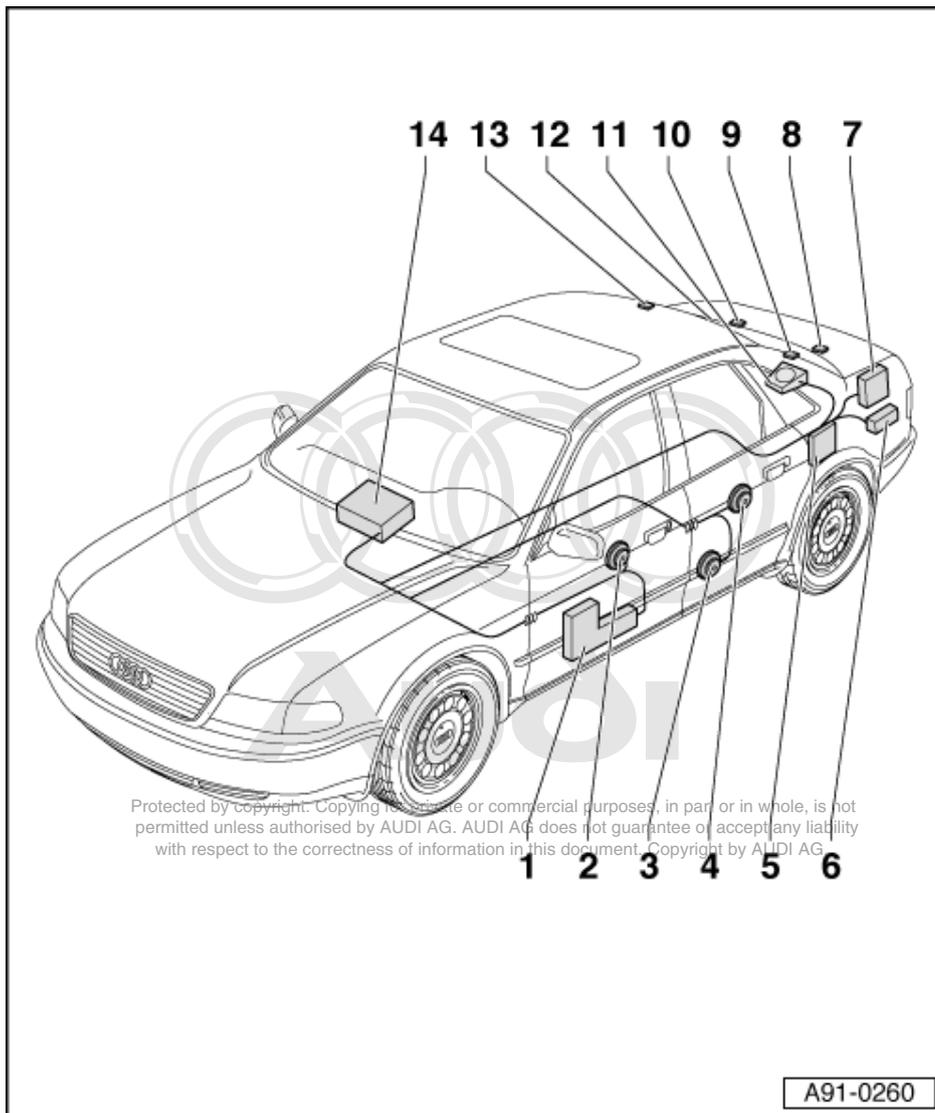
- ◆ In left luggage compartment storage area
- ◆ Removing and installing=>Page 41
- ◆ Checking wiring => Page 41

8 BOSE power amplifier

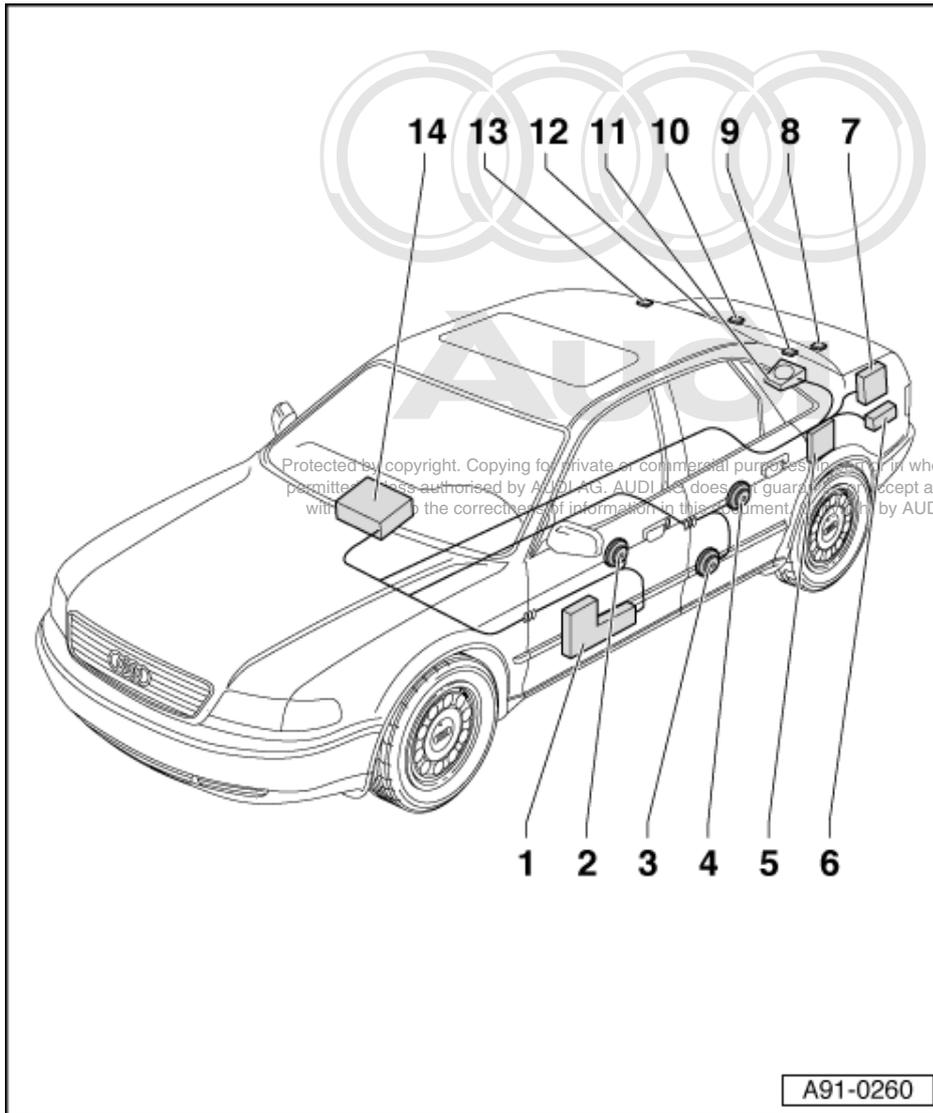
- ◆ In luggage compartment beneath CD changer
- ◆ Removing and installing=>Page 42



1.9 - Exploded view of "symphony" and as of MY 02 "concert" radio systems



- 1 **Bass speaker**
 - ◆ In bottom of front door trim
 - ◆ Removing and installing=>Page 38
- 2 **Treble/mid-range speaker**
 - ◆ In top of front door trim
 - ◆ Removing and installing=>Page 38
- 3 **Mid-range speaker**
 - ◆ Treble/mid-range speaker with BOSE sound system only
 - ◆ In bottom of rear door trim
 - ◆ Removing and installing=>Page 38



4 Treble speaker

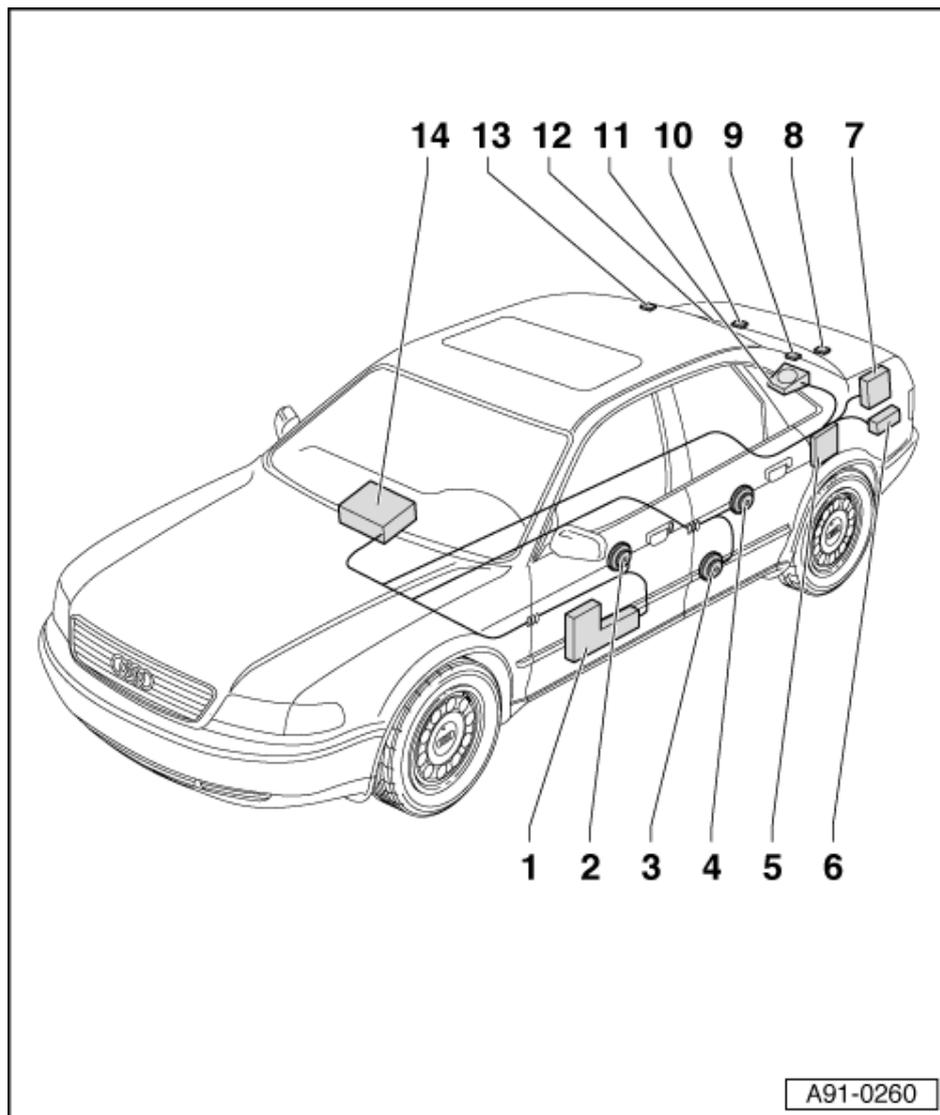
- ◆ Not with BOSE sound system
- ◆ In top of rear door trim
- ◆ Removing and installing=>Page 38

5 Aerial selection control unit

- ◆ Beneath C-pillar trim at bottom
- ◆ Removing and installing=>Page 45

6 BOSE power amplifier

- ◆ With BOSE sound system only
- ◆ At rear left of luggage compartment beneath CD changer
- ◆ Removing and installing=>Page 42



7 CD changer

- ◆ At rear left of luggage compartment beneath side trim
- ◆ Removing and installing=>Page 41
- ◆ Checking wiring => Page 41

8 Aerial amplifier

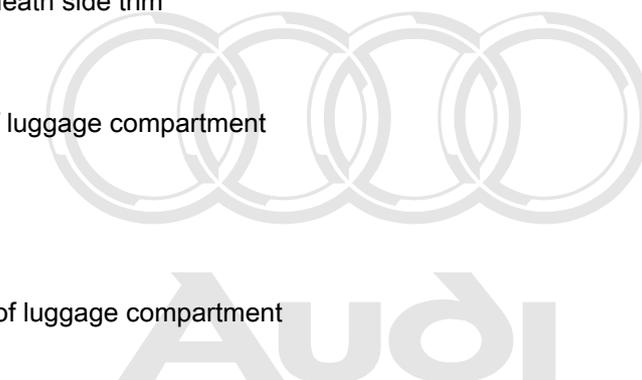
- ◆ Beneath rear shelf on partition on left of luggage compartment
- ◆ Removing and installing=>Page 43

9 Aerial amplifier

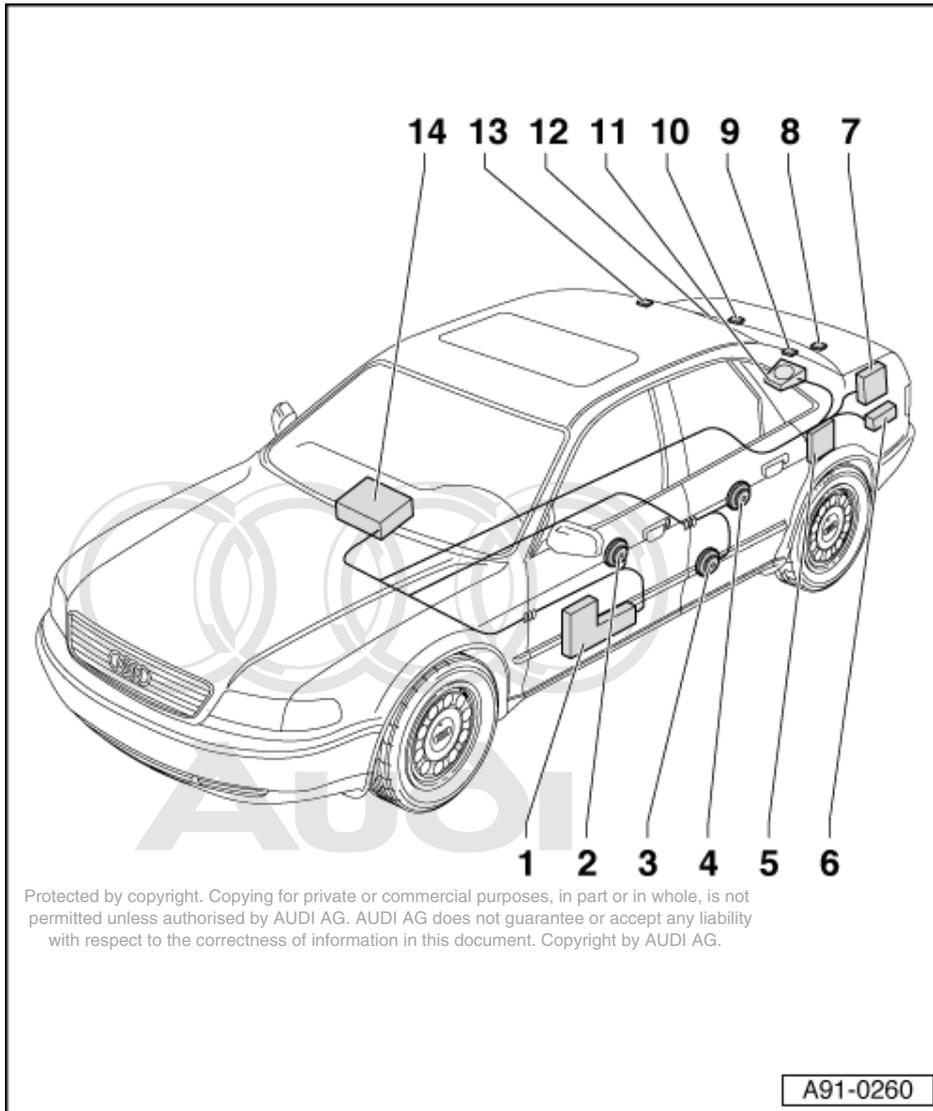
- ◆ At top left beneath D-pillar trim
- ◆ Removing and installing=>Page 43

10 Aerial amplifier

- ◆ Beneath rear shelf on partition on right of luggage compartment
- ◆ Removing and installing=>Page 43



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11 Active speaker

- Bass speaker (with BOSE sound system only)
- ◆ In rear shelf
- ◆ Removing and installing=>Page 38

12 Rear window aerial

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

=> General Body Repairs, Exterior; Repair Group 64; Glazing; Removing and installing rear window Glazing
 Removing and installing rear window

13 Aerial amplifier

- ◆ At top right beneath D-pillar trim
- ◆ Removing and installing=>Page 43

14 Radio

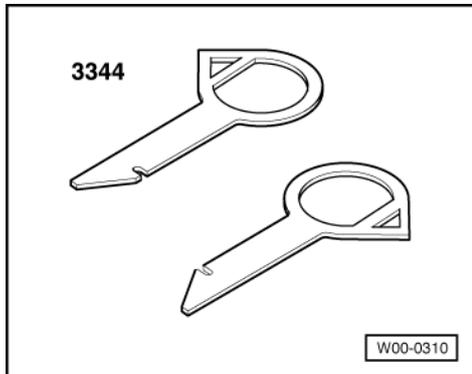
- ◆ In centre console
- ◆ Removing and installing=>Page 36



1.10 - Removing and installing radio set

Note:

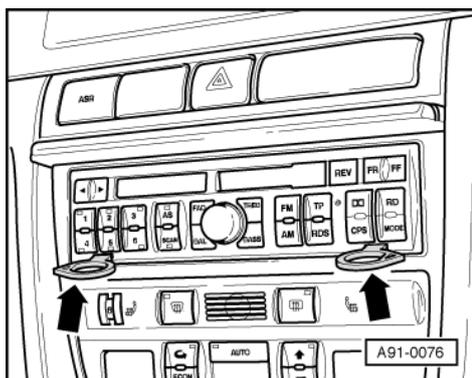
Obtain code number of radio set before removing.



-> Special tools, testers and other items required

- ◆ Radio release tool 3344

Removing:



- -> Insert radio release tool 3344 in front of radio as shown.

Top L - top left
Top R - top right

- Pull radio out of dash panel.
- Unplug connectors and disconnect aerial wire.

Installing:

- Pull release tool out of radio.
- Attach connectors.
- Carefully insert radio in dash panel and engage in mounting frame.
- Perform anti-theft encoding in line with radio operating instructions.

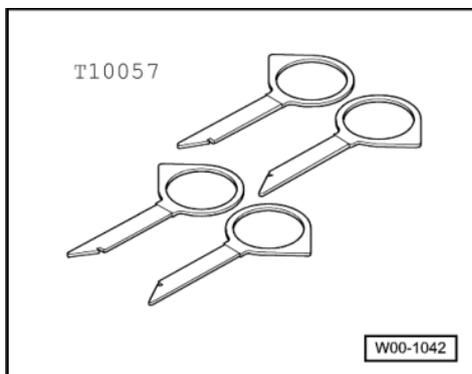
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1.11 - Removing and installing "symphony" radio set

Note:

Obtain code number of radio set before removing.

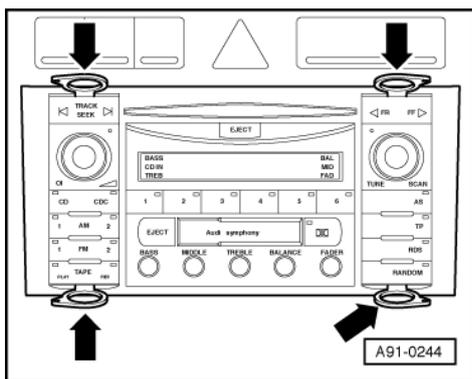


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-> Special tools, testers, measuring instruments and other items required

- ◆ T10057 Release tool

Removing:

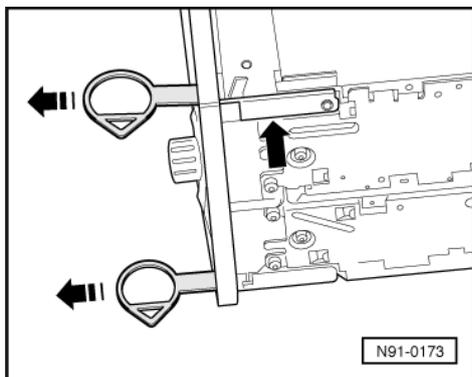


- -> Insert radio release tools T10057 in release slots as shown -arrows- until they engage.

Top L - top and bottom left
 Top R - top and bottom right

- Grasp hold of release tool grips and pull radio out of dash panel.
- Release and unplug connectors.

To pull off release tools:





- -> Press locking lug -arrow- and pull out release tool to front.

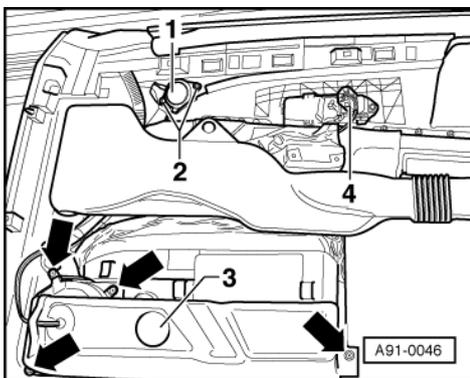
Installing:

- Attach connectors to radio.
- Hold radio straight and slide into dash panel until it engages in mounting frame.
- Perform anti-theft encoding in line with radio operating instructions.

1.12 - Removing and installing speakers

Removing and installing speakers in front door

Removing:



- Remove front door trim.

=> General Body Repairs, Interior; Repair Group 70; Front Door Trim Front Door Trim

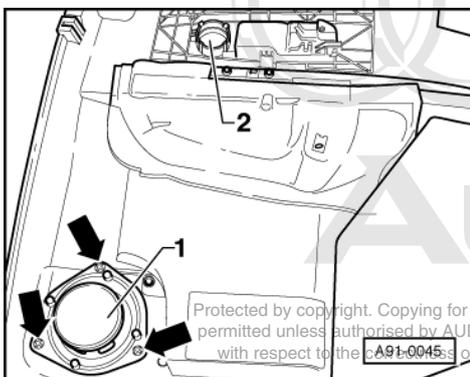
- Unplug all connectors and detach door trim.
- -> To remove upper speaker -1-, slacken off both bolts -2- and then detach from door trim.
- Lower speaker box -3- is secured with four bolts -arrows-. Slacken off bolts and detach speaker.

Installing:

- Install accordingly in reverse order of removal.

Removing and installing speakers in rear door

Removing:



- Remove rear door trim.

=> General Body Repairs, Interior; Repair Group 70; Rear Door Trim Rear Door Trim

- Unplug all connectors and detach door trim.
- -> Slacken off the three bolts -arrows- and remove lower speaker -1-.
- To remove upper speaker -2-, lift retainer tabs and detach speaker from door trim.

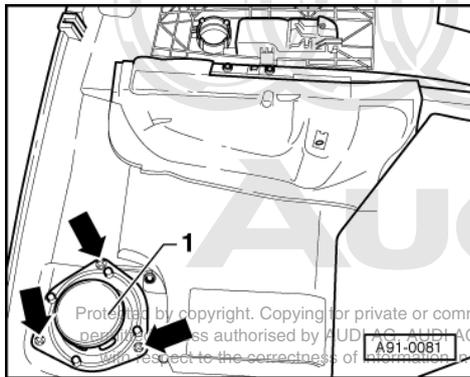
Installing:

- Install accordingly in reverse order of removal.

Removing and installing speaker in rear door

(with BOSE sound system)

Removing:



- Remove rear door trim.

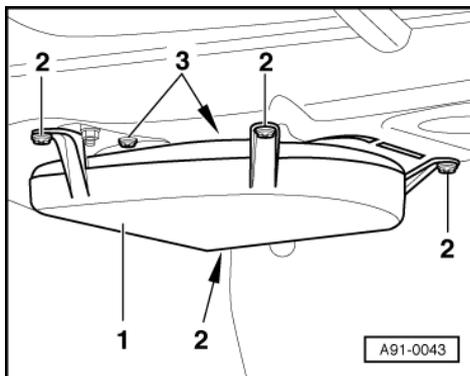
=> General Body Repairs, Interior; Repair Group 70; Rear Door Trim Rear Door Trim

- Unplug all connectors and detach door trim.
- -> Slacken off the three bolts -arrows- and remove speaker -1-.

Installing:

- Install accordingly in reverse order of removal.

Removing and installing speakers in rear shelf



Removing:

- -> Unscrew the 4 bolts -2- in each case and remove the two speaker covers -1- in luggage compartment on underside of rear shelf.
- Then unscrew the two bolts -3- at each speaker from underneath.



- Lift speakers out of rear shelf and unplug connectors.

Installing:

- Install accordingly in reverse order of removal.

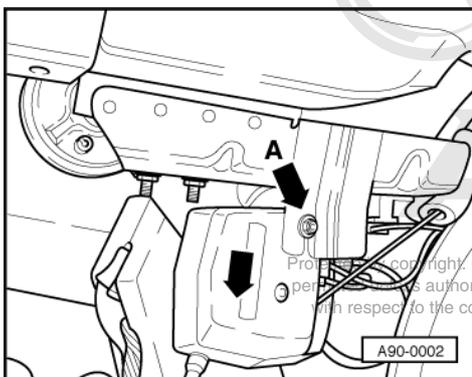
1.13 - Removing and installing aerial

Removing and installing power aerial

Removing:

- Remove mounting frame for CD changer and/or telephone transmitter/receiver unit => Page 41 .
- Remove luggage compartment left side trim.

=> General Body Repairs, Interior; Repair Group 70; Trim Panels; Removing luggage compartment trim Trim Panels Removing luggage compartment trim



- Unplug connector and unscrew aerial wire.

Note:

Aerial is only plugged in at top of wing.

- -> Unfasten nut -A- (5 Nm) and then detach aerials downwards in direction of arrow.

Installing:

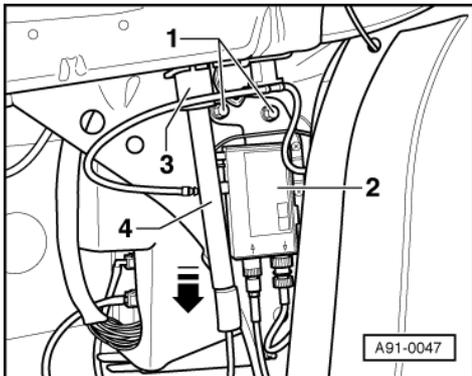
- Install accordingly in reverse order of removal.

Removing and installing radio/telephone rod aerial

Removing:

- Remove mounting frame for CD changer and/or telephone transmitter/receiver unit => Page 41 .
- Remove luggage compartment left side trim.

=> General Body Repairs, Interior; Repair Group 70; Trim Panels; Removing luggage compartment trim Trim Panels Removing luggage compartment trim



- -> Slacken off the two bolts -1- and detach aerial amplifier -2- together with holder.
- Unplug connectors and unscrew aerial wires.

Note:

Aerial is only plugged in at top of wing.

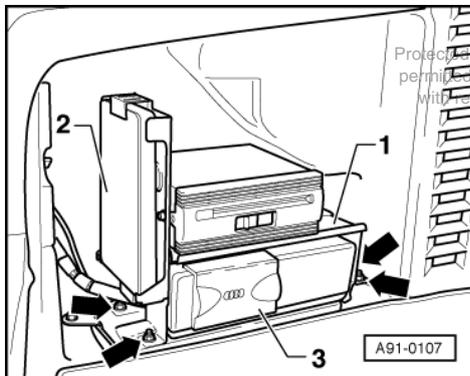
- Unfasten brown plastic clip -3- downwards and detach aerial -4- downwards in direction of arrow.

Installing:

- Install accordingly in reverse order of removal.

1.14 - Removing and installing CD changer

Removing:



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- Open left storage area lid in luggage compartment and detach.
- -> If a telephone transmitter/receiver unit -2- is installed in mounting frame -1-, start by removing this from frame.
- Unplug connector at CD changer.
- Slacken off four bolts (2 Nm) on side of mounting frame -1- on a level with CD changer -3- to enable CD changer to be pulled out of mounting frame.
- Should it be necessary to remove mounting frame, unfasten the four nuts -arrows- (6 Nm).

Installing:

- Install accordingly in reverse order of removal.
- After installation, always check wiring => Page 41 .

Checking wiring between radio and CD changer

- Switch off radio.
- Press MODE button ("concert" radio) or button no. 4 ("symphony" radio) on radio and at the same time switch on radio.
- Release MODE button.

1. Wiring OK

Indicated on radio display:

"CONNECT" and "CD"

2. Wiring not OK

Indicated on radio display:



"NO CDC"

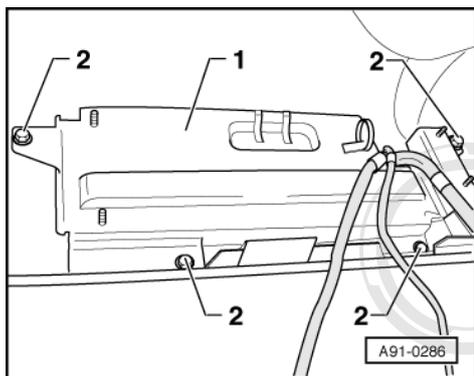
- Check connector at CD changer.
- Repeat wiring check and use current flow diagram to check wiring if not OK.

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

1.15 - Removing and installing BOSE power amplifier

Removing:

- Remove mounting frame for CD changer and/or telephone transmitter/receiver unit => Page 41 .

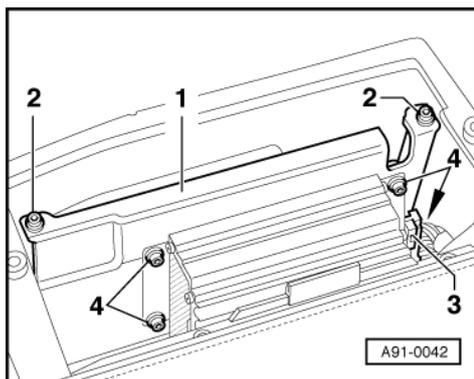


-> Take out cover plate -1- before removing mounting frame for BOSE power amplifier.

- To do so, screw out the 4 bolts -2- (3 Nm).
- Detach any cable fasteners before removing cover plate.
- Remove luggage compartment left side trim.

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=> General Body Repairs, Interior, Repair Group 70; Trim Panels; Removing luggage compartment trim Trim Panels Removing luggage compartment trim



- -> Unscrew the two bolts (3 Nm) -2- to remove mounting frame -1-.
- Unplug connector -3- and lift out mounting frame with power amplifier.
- Slacken off the four bolts -4- (3 Nm) and detach power amplifier.

Installing:

- Install accordingly in reverse order of removal.

1.16 - Removing and installing radio aerial amplifier

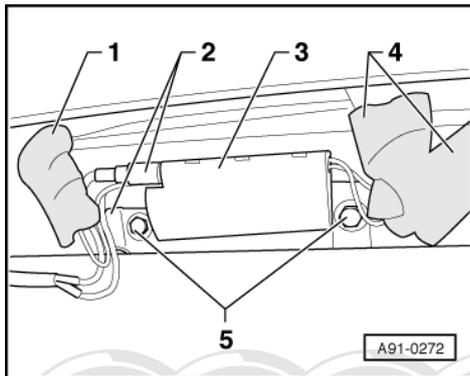
Radio aerial amplifier is located at top of left D-pillar.

Removing:

- Remove left C/D-pillar trim.

=> General Body Repairs, Interior; Repair Group 70; Trim Panels Trim Panels

=> General Body Repairs, Interior; Repair Group 70; Trim Panels gradually introduced as of 10.98 (with interior mirror at headliner) Trim Panels gradually introduced as of 10.98 (with interior mirror at headliner)

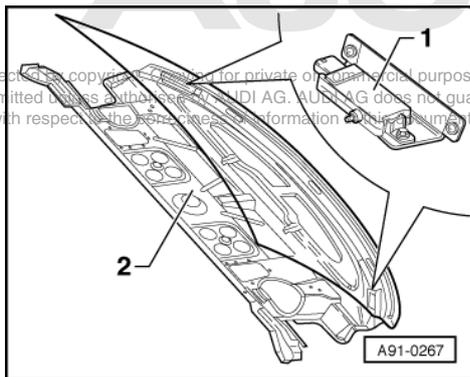


- -> Unplug connectors -1-, -2- and -4-.
- Slacken off the two bolts -5- (1.5 Nm) and take out aerial amplifier -3-.

Installing:

- Install accordingly in reverse order of removal.

1.17 - Removing and installing radio aerial amplifier ("symphony" and, as of MY 02, "concert")

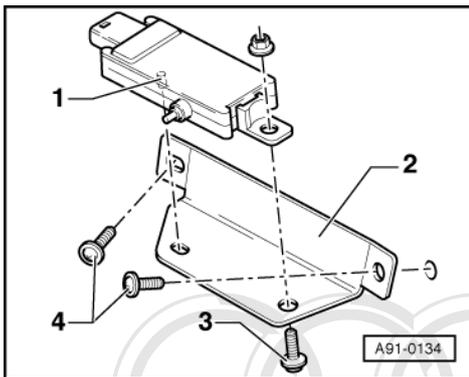


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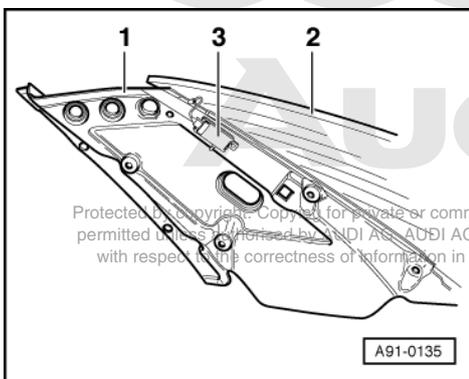
-> Two of the four radio aerial amplifiers -1- are bolted to the luggage compartment partition -2-.

- Remove rear shelf.

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



-> Each of the two aerial amplifiers is attached with a bolt -3- (4.5 Nm) and a locating pin -1- to a holder -2-. This in turn is attached by means of two bolts -4- (4.5 Nm) to the luggage compartment partition.



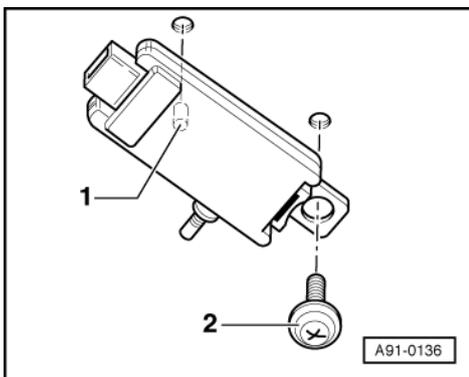
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Two further aerial amplifiers are bolted on at top of right and left D-pillar.

-> One aerial amplifier -3- is bolted to D-pillar -1- beneath rear window -2-.

- Remove D-pillar trim.

=> General Body Repairs, Interior; Repair Group 70; Trim; Removing and installing D-pillar trim Trim Removing and installing D-pillar trim



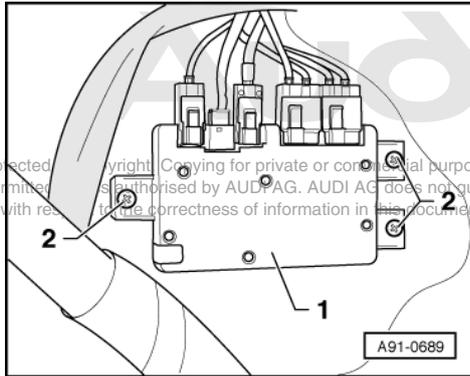
-> Each of the aerial amplifiers is attached with a bolt -2- (1.5 Nm) and a locating pin -1- to the D-pillar.

1.18 - Removing and installing aerial selection control unit -J515

Removing:

- Remove rear seat backrest.

=> General Body Repairs, Interior; Repair Group 72; Rear Seats; Removing and installing rear seat backrest
 Rear Seats Removing and installing rear seat backrest



- Remove lower C-pillar trim.

=> General Body Repairs, Interior; Repair Group 70; Trim Panels; Removing and installing lower C-pillar trim
 Trim Panels Removing and installing lower C-pillar trim

- -> Screw out the 3 bolts -2- (2 Nm).
- Unplug connectors and detach control unit -1-.

Installing:

- Install accordingly in reverse order of removal.

2 - Telephone system

2.1 - Telephone system

2.2 - General information

Attention:

Disconnect battery earth strap before working on electrical system.

Telematics control unit service mode must be activated before disconnecting battery.=>Radio, Telephone and Navigation System Self-diagnosis; Repair Group 01; Telematics System Self-diagnosis; Adaption

Notes:

- ◆ Obtain radio anti-theft code before disconnecting battery.
- ◆ Telematics control unit service mode must be activated before disconnecting battery.
- ◆ On reconnecting battery, remember to activate vehicle equipment (radio, clock, electric window lifters, etc.) in accordance with owner's manual and to deactivate service mode of telematics control unit.



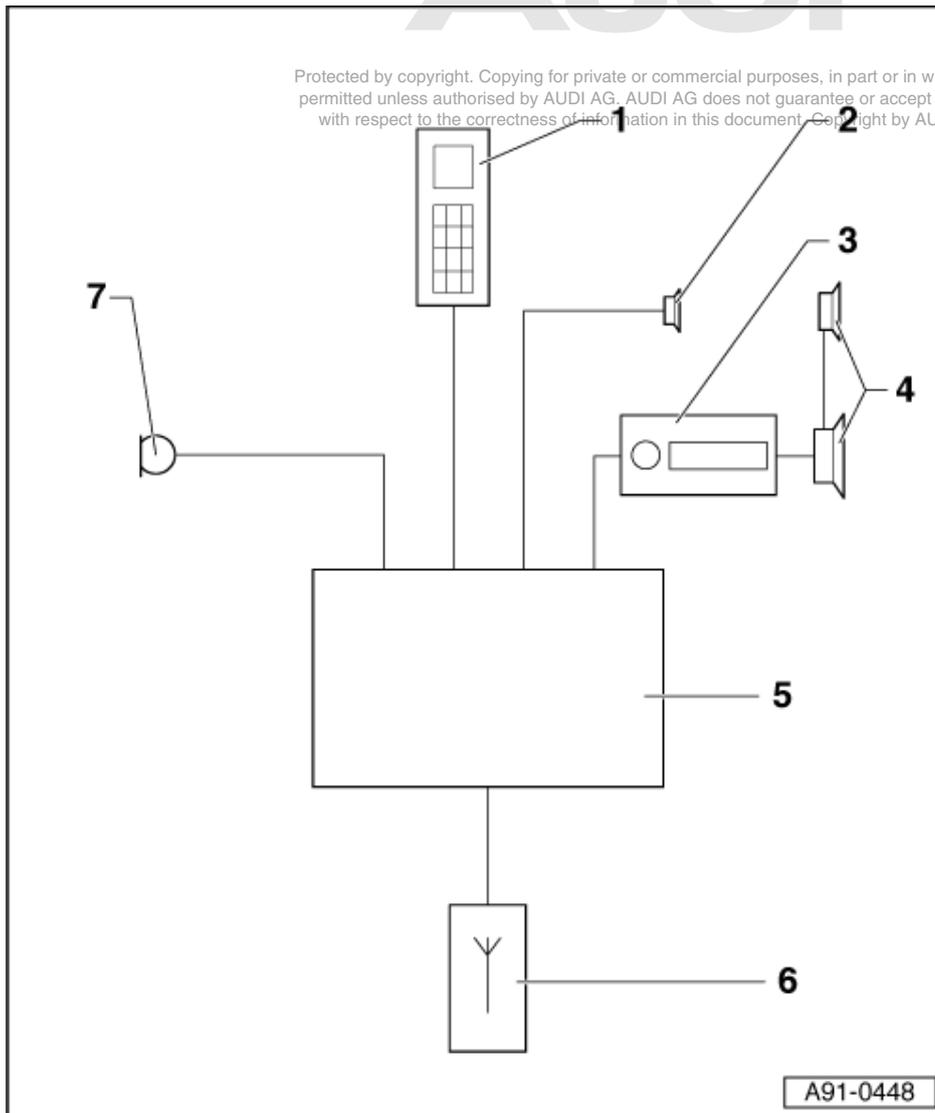
Important:

To prevent contact corrosion, only use approved bolts, screws, nuts, washers, etc..

These have a special surface coating and can be recognised from their greenish colour.

Such bolts also have to be stored separately.

2.3 - Permanently installed telephone



1 Handset

- ◆ In centre console
- ◆ Removing and installing=>Page 55
- ◆ In centre armrest
- ◆ Removing and installing=>Page 56

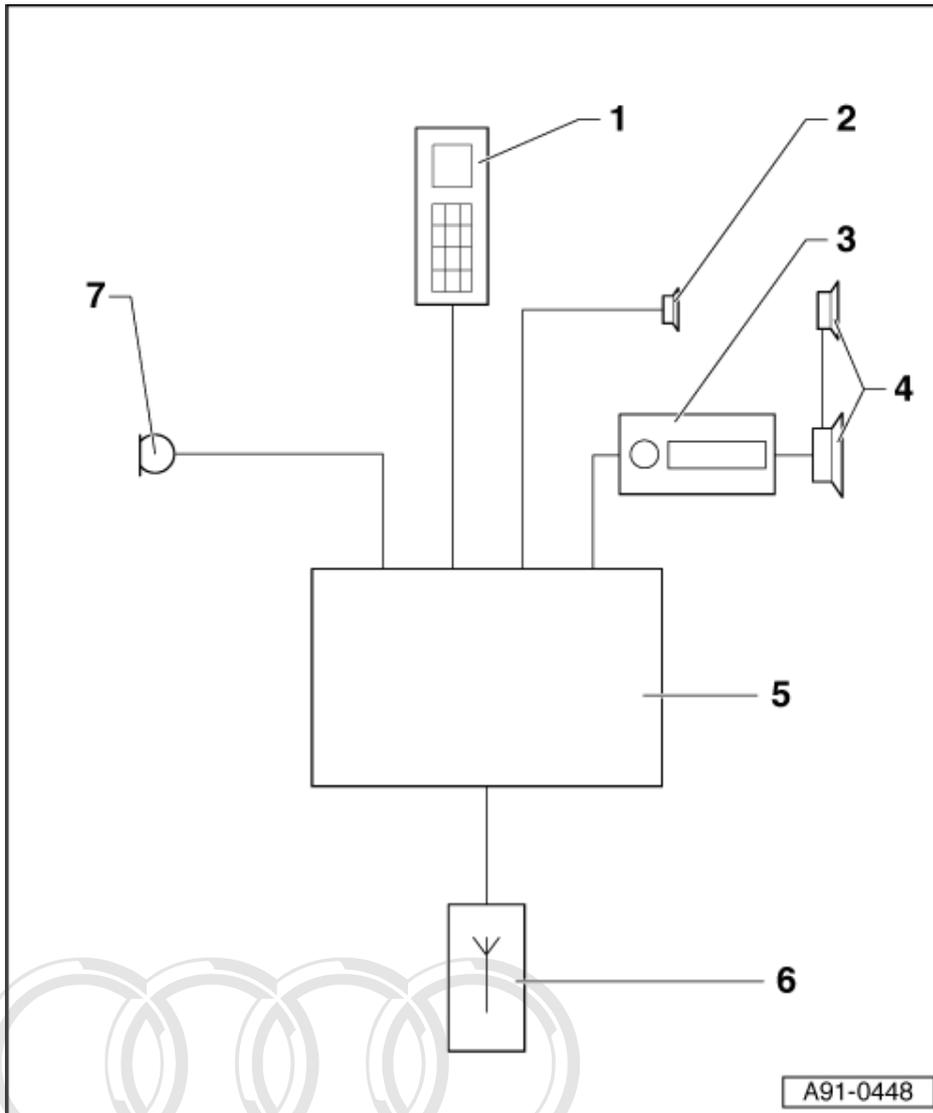
2 Hands-free loudspeaker (up to MY 01)

- ◆ Vehicles with BOSE sound system only
- ◆ In B-pillar trim on driver's side
- ◆ Removing and installing=>Page 63

3 Radio

- ◆ Installed in centre console

◆ Removing and installing=>Page 36



4 Treble/mid-range speaker and bass speaker

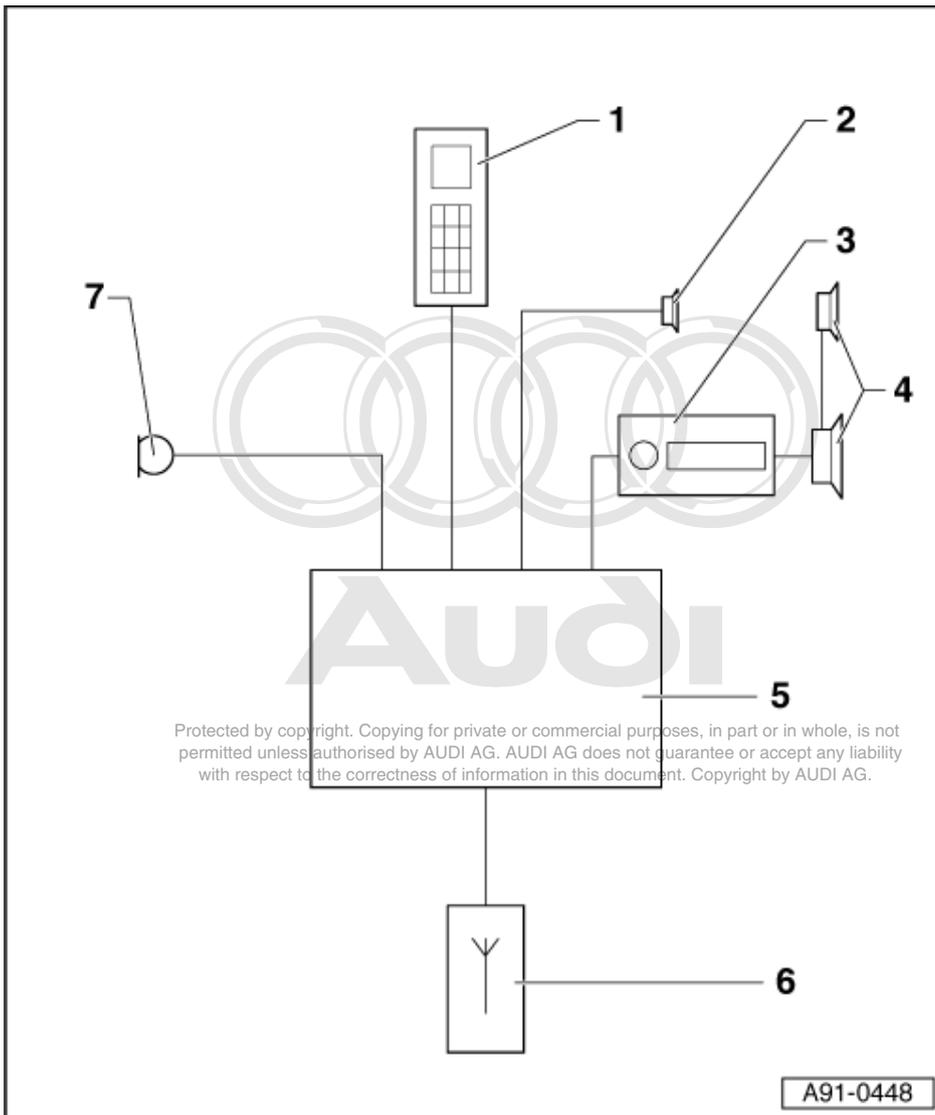
- ◆ In front left door trim
- ◆ Removing and installing=>Page 38

5 Transmitter/receiver unit

- ◆ Beneath rear shelf up to MY 98
- ◆ Removing and installing=>Page 59
- ◆ Behind left luggage compartment storage area as of MY 99
- ◆ Removing and installing=>Page 60

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◆ Nokia, in luggage compartment beneath rear shelf as of MY 01
 ◆ Removing and installing => Page 219, telephone/telematics control unit -J526



6 Rod aerial

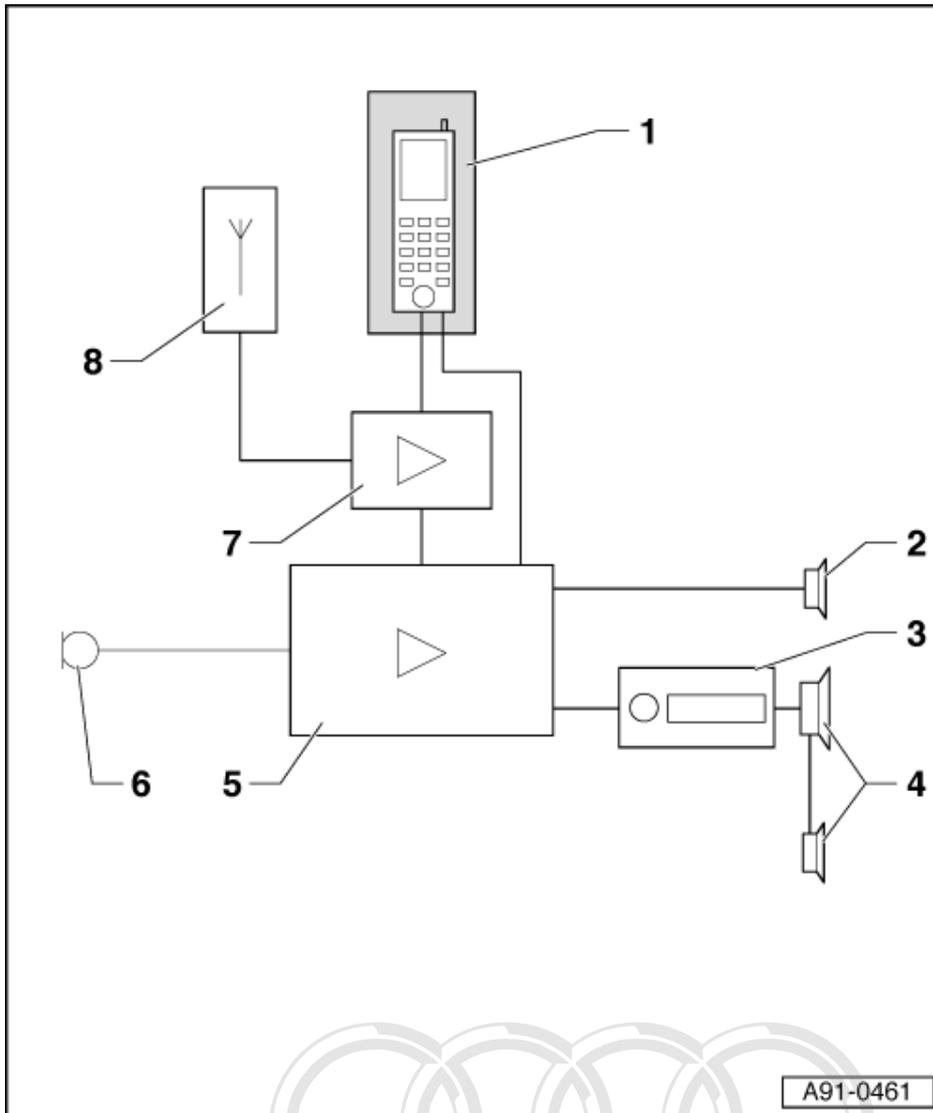
(on vehicles with mirrored glass windows, radio/telephone rod aerial with filter)

- ◆ In rear left wing
- ◆ Removing and installing=>Page 64

7 Hands-free microphone

- ◆ In interior light cover up to MY 99
- ◆ Removing and installing=>Page 61
- ◆ In cover of interior light operating element as of MY 00
- ◆ Removing and installing=>Page 63

2.4 - Mobile phone and, as of MY 02, pre-fitted components for mobile phone installation



1 Mobile phone in handset cradle

- ◆ In centre console
- ◆ Removing and installing=>Page 57
- ◆ In centre armrest
- ◆ Removing and installing=>Page 59

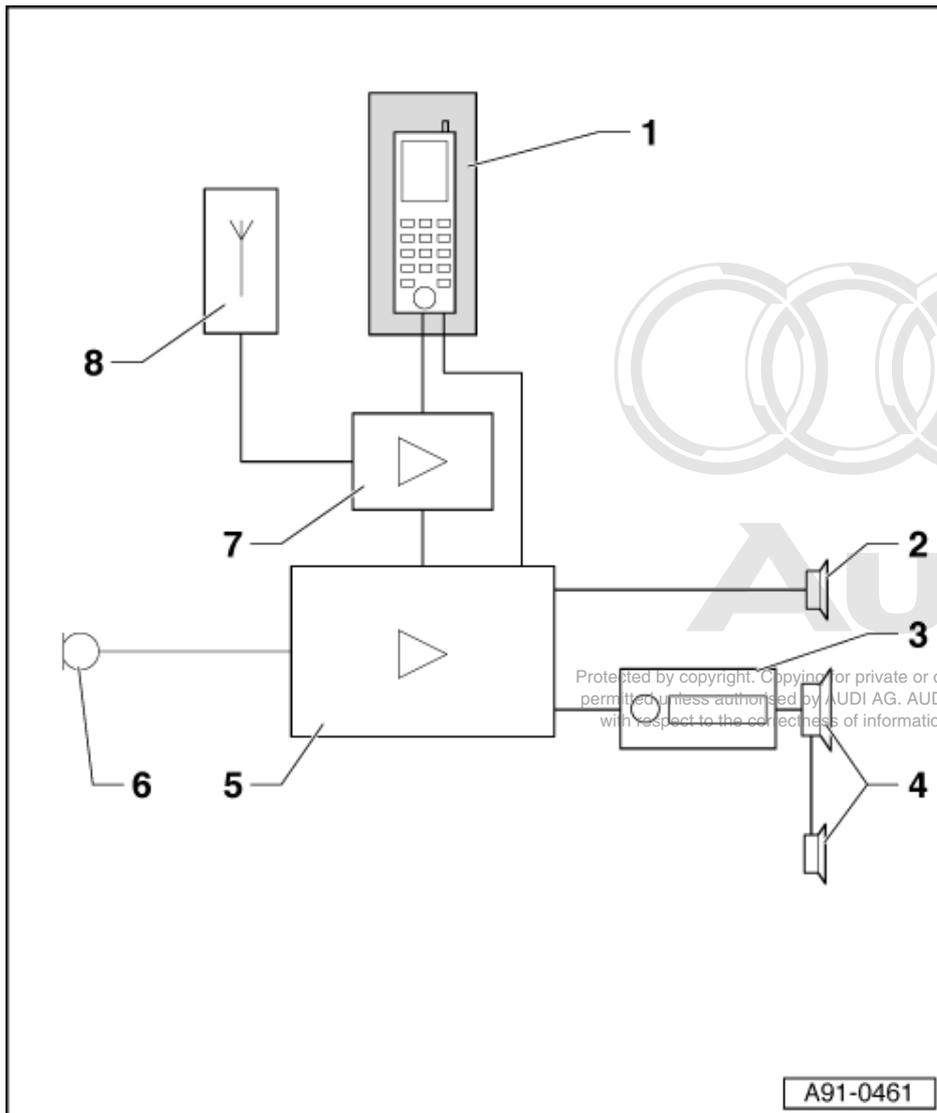
2 Hands-free loudspeaker (up to MY 01)

- ◆ Vehicles with BOSE sound system only
- ◆ In B-pillar trim on driver's side
- ◆ Removing and installing=>Page 63

3 Radio

- ◆ Installed in centre console
- ◆ Removing and installing=>Page 36

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4 Treble/mid-range speaker and bass speaker

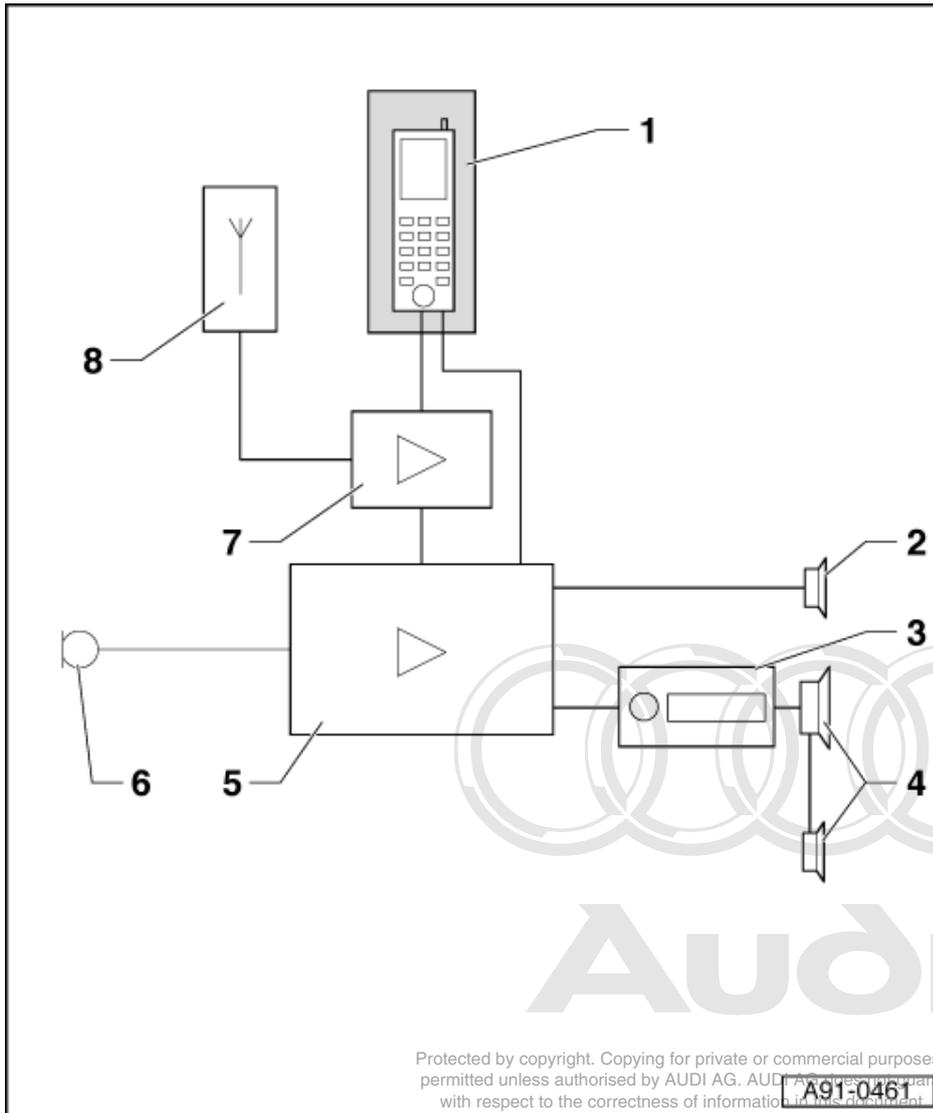
- ◆ In front left door trim
- ◆ Removing and installing=>Page 38

5 Mobile phone operating electronics control unit (interface)

- ◆ Beneath centre console at rear, next to handbrake lever
- ◆ Removing and installing=>Page 61

6 Hands-free microphone

- ◆ In interior light cover up to MY 99
- ◆ Removing and installing=>Page 61
- ◆ In cover of interior light operating element as of MY 00
- ◆ Removing and installing=>Page 63



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7 Amplifier for mobile phone (compensor)

- ◆ Behind left storage area in luggage compartment
- ◆ Removing and installing=>Page 60

8 Rod aerial

- (on vehicles with mirrored glass windows, radio/telephone rod aerial with filter)
- ◆ In rear left wing
- ◆ Removing and installing=>Page 64

2.5 - Pre-fitted components for mobile phone installation (up to 6/98)

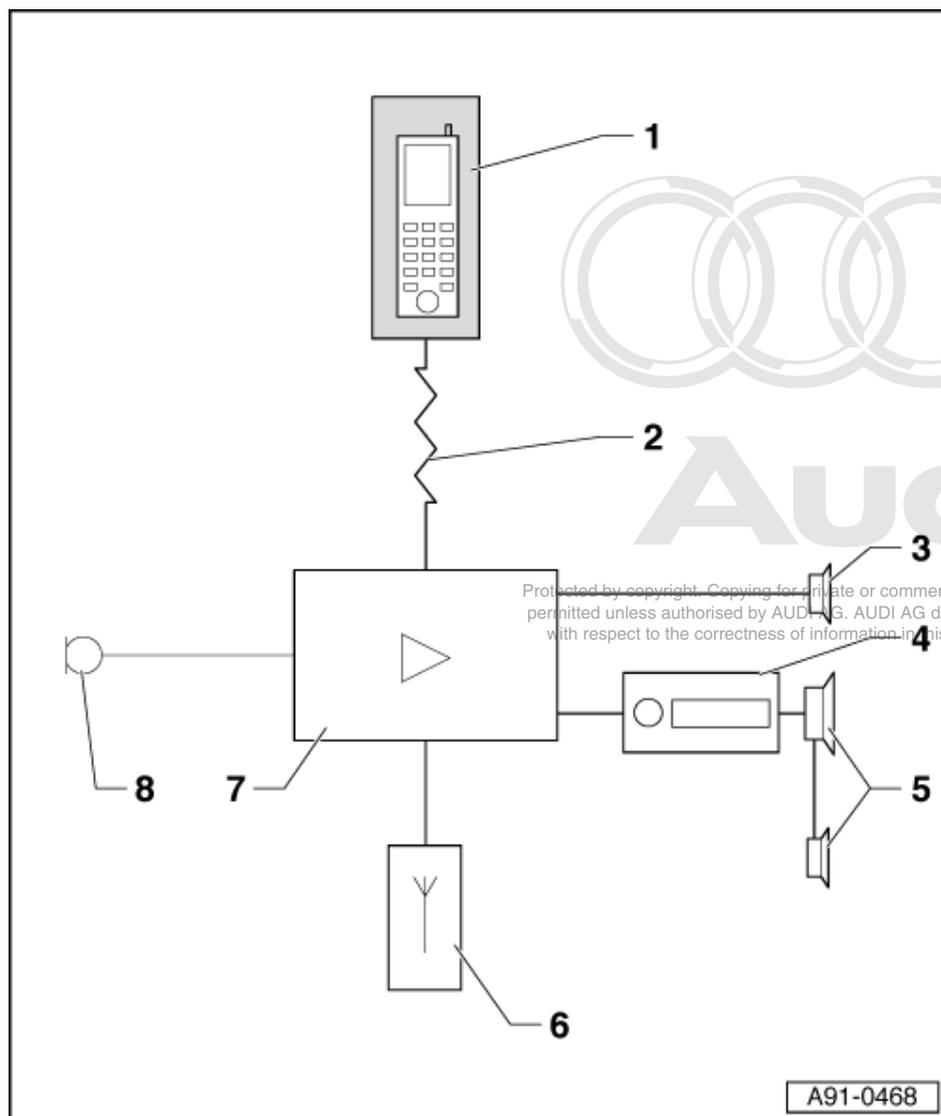
- ◆ Telephone rod aerial, or radio/telephone rod aerial with filter (with mirrored glass windows)
- ◆ Wiring harness for telephone system
- ◆ With standard radio equipment, speakers in front driver's side door trim are used as telephone loudspeakers.
- ◆ In the case of telephones without radio or radio with BOSE sound system, a separate hands-free loudspeaker is installed in driver's side B-pillar.

Note:

The hands-free microphone must be retrofitted.



2.6 - Pre-fitted components for mobile phone installation (as of 7/98)

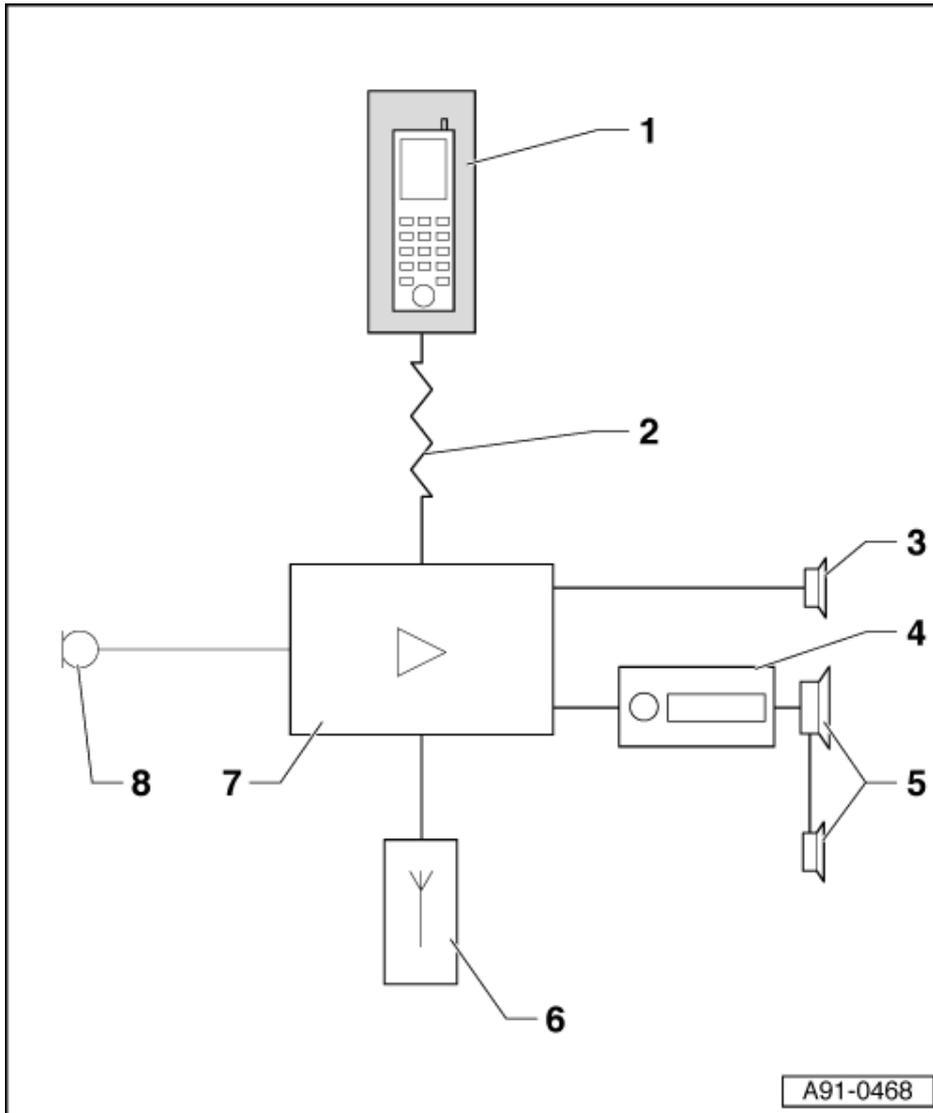


- 1 Special mobile phone rest
- 2 System cable (helical cable)

Note:

System cable and rest are retrofit components.

- 3 Hands-free loudspeaker
 - ◆ Vehicles with BOSE sound system only
 - ◆ In B-pillar trim on driver's side
 - ◆ Removing and installing=>Page 63
- 4 Radio
 - ◆ Installed in centre console
 - ◆ Removing and installing=>Page 36



5 Treble/mid-range speaker and bass speaker

- ◆ In front left door trim
- ◆ Removing and installing=>Page 38

6 Rod aerial

(on vehicles with mirrored glass windows, radio/telephone rod aerial with filter)

- ◆ In rear left wing
- ◆ Removing and installing=>Page 64

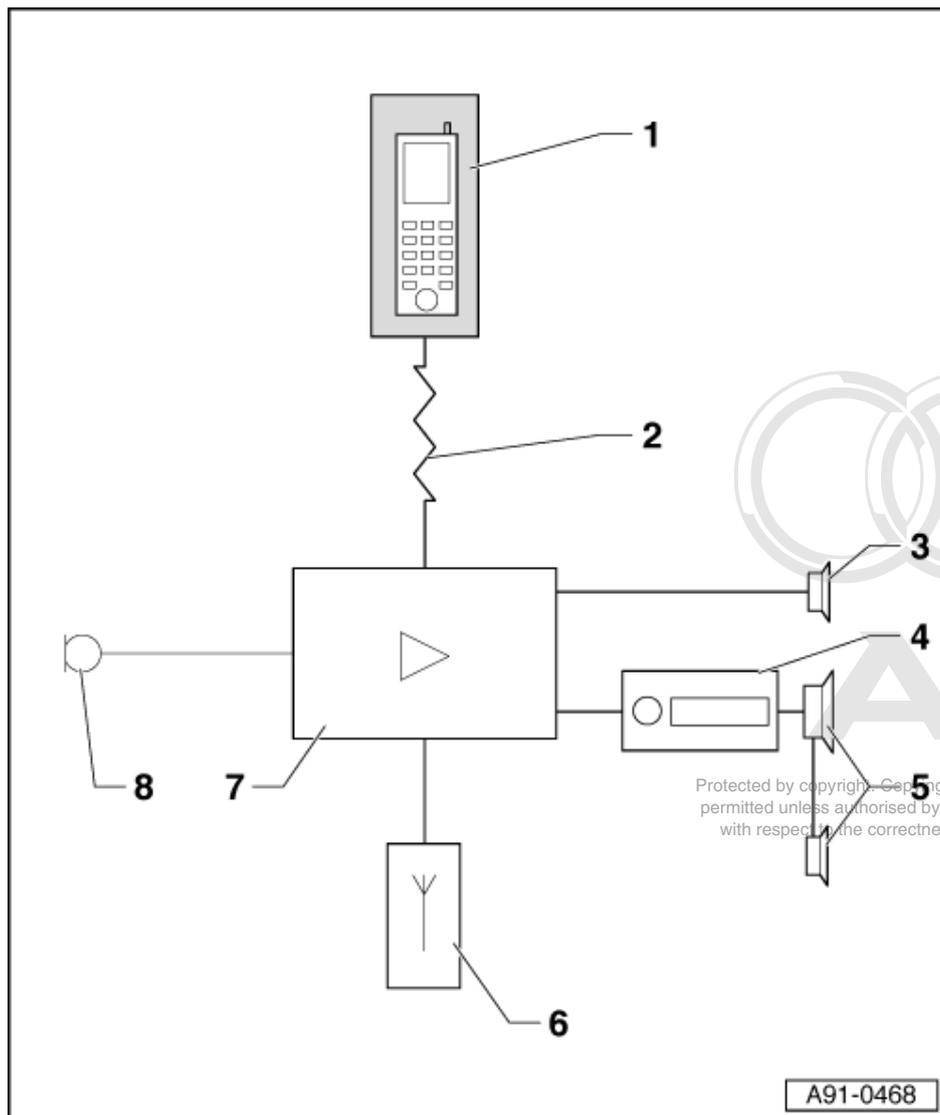
7 Mobile phone operating electronics control unit (interface)

- ◆ Beneath centre console at rear, next to handbrake lever
- ◆ Removing and installing=>Page 61



Audi

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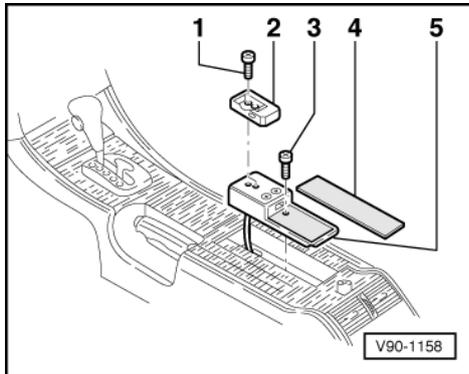


8 Hands-free microphone

- ◆ In interior light cover up to MY 99
- ◆ Removing and installing=>Page 61
- ◆ In cover of interior light operating element as of MY 00
- ◆ Removing and installing=>Page 63

2.7 - Removing and installing handset cradle

Removing:



- -> Handset cradle -2- is attached by means of two bolts -1- (2 Nm) to base plate -5-.
- To remove base plate -5-, slacken off bolt -3- (2.5 Nm) through slit in felt mat -4-.

Note:

Connection for handset is already pre-installed in base plate and handset only has to be connected.

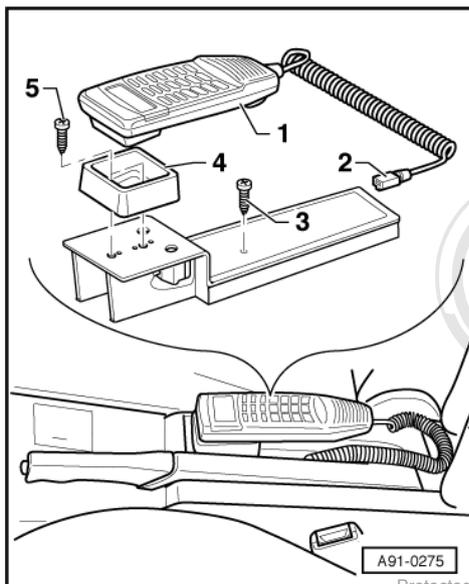
- For removal and installation of connector, take out base plate and then slacken off the two bolts.

Installing:

- Install accordingly in reverse order of removal.

2.8 - Removing and installing handset with holder in centre console

Removing:



- -> Detach handset -1- from handset holder -4- and unplug handset connector -2-.
- Screw out the two bolts -5- (2 Nm) and detach handset holder -4-.
- Screw out bolt -3- (2.5 Nm), detach holder and unclip connector of telephone wiring harness.

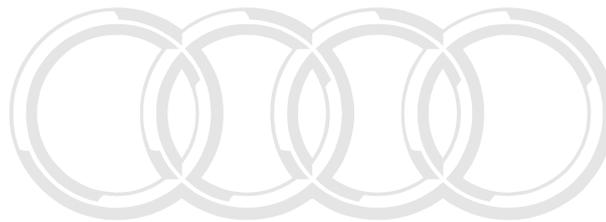


Installing:

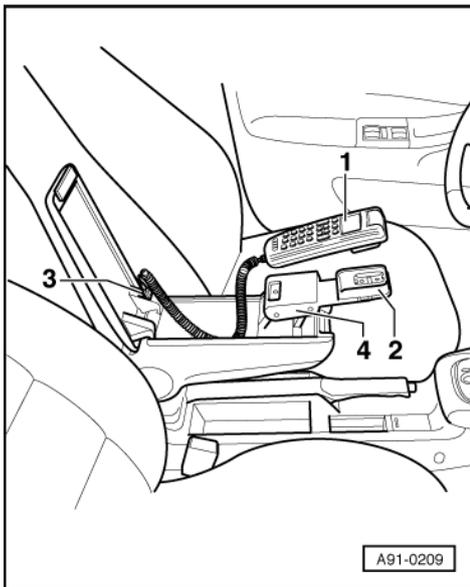
- Install accordingly in reverse order of removal.

Note:

Ensure that connector is correctly fitted.



2.9 - Removing and installing handset with holder in centre armrest



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- Open centre armrest lid.
- -> Detach handset -1- from handset holder -2- and unplug connector of handset -3- (with permanently installed systems only) from hinge of centre armrest lid.
- Remove holder together with handset cradle -4- from centre armrest and unclip connector of telephone wiring harness.

=> General Body Repairs, Interior; Repair Group 68; Shelves/Trim Shelves/Trim

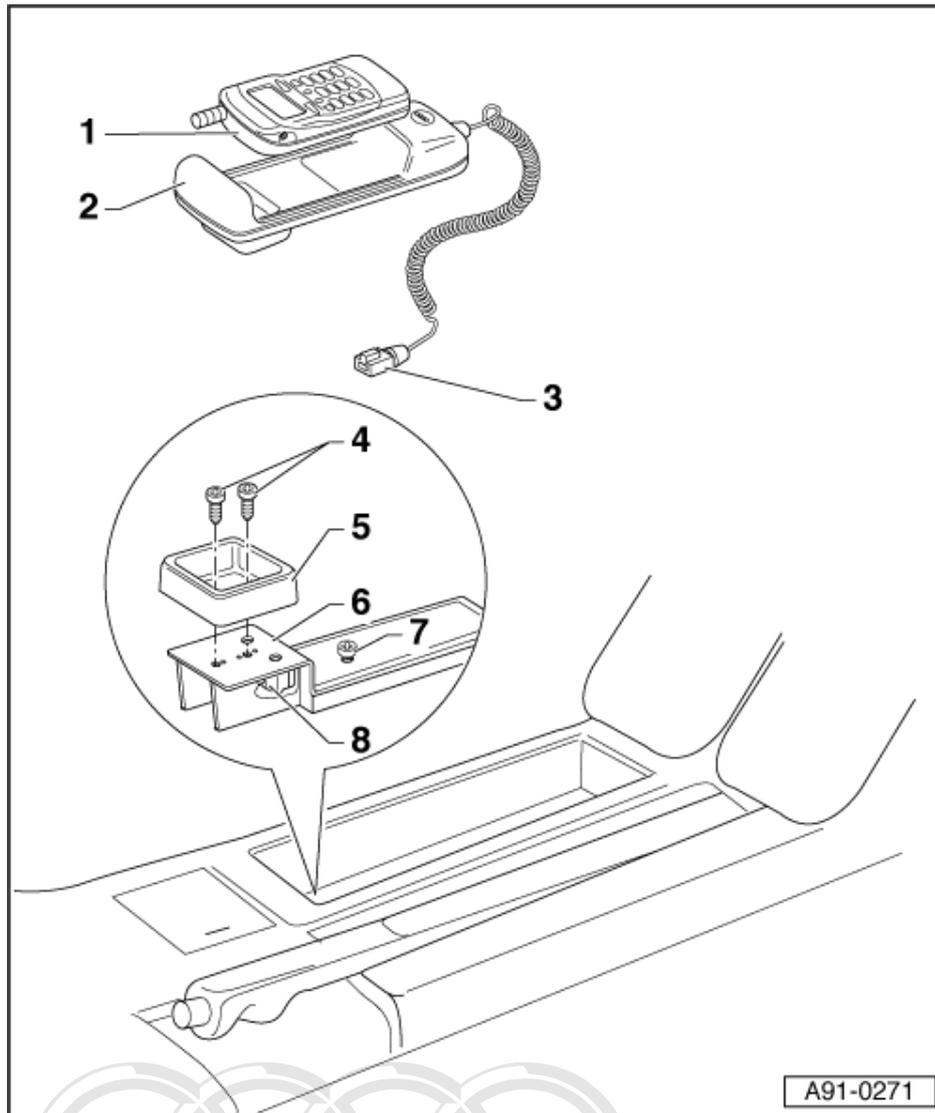
Installing:

- Install accordingly in reverse order of removal.

Note:

Ensure that connector is correctly fitted.

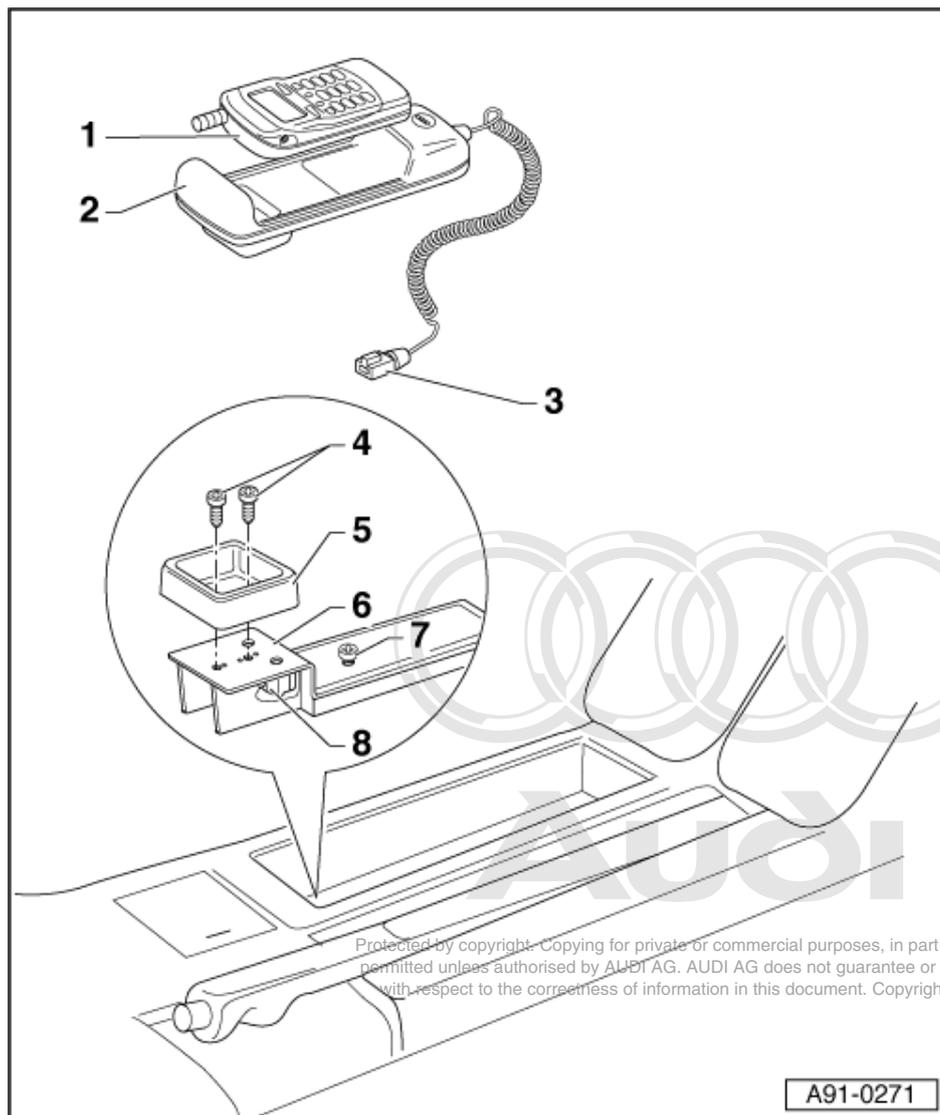
2.10 - Removing and installing mobile phone with holder in centre console



Removing:

- Detach mobile phone -1- from handset cradle (mobile phone) -2- and unplug mobile phone connector -3- at holder mount -6-.
- Screw out the two bolts -4- (2 Nm) and detach adapter cradle -5-.
- Screw out bolt -7-, detach holder -6- and unclip connector of telephone wiring harness -8-.

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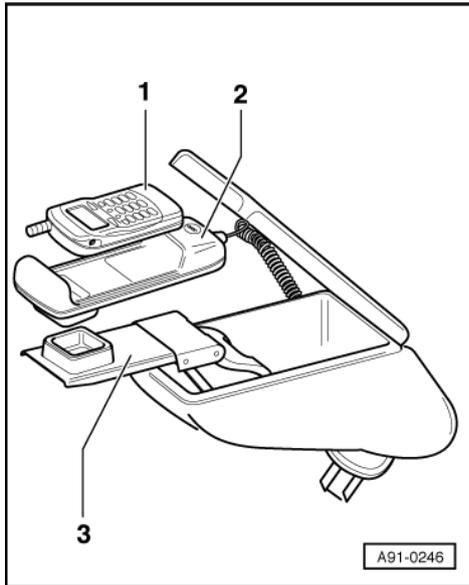
Installing:

- Install accordingly in reverse order of removal.

Note:

Ensure that connector is correctly fitted.

2.11 - Removing and installing mobile phone with holder in centre armrest



- Open centre armrest lid.
- -> Detach mobile phone -1- from handset cradle (mobile phone) -2- and unplug mobile phone connector.
- Remove holder together with handset cradle -3- from centre armrest and unclip connector of telephone wiring harness.

=> General Body Repairs, Interior; Repair Group 68; Shelves/Trim Shelves/Trim

Installing:

- Install accordingly in reverse order of removal.

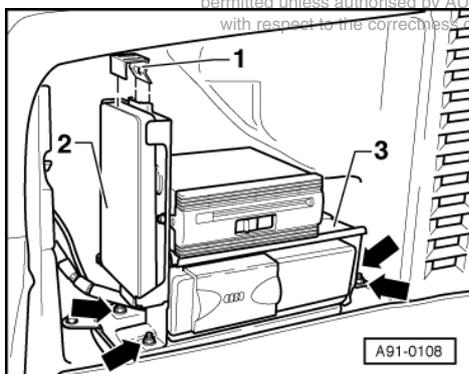
Note:

Ensure that connector is correctly fitted.

2.12 - Removing and installing transmitter/receiver unit up to MY 98

Removing:

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- Open left storage area lid in luggage compartment and detach.
- -> Detach clip -1- to permit removal of transmitter/receiver unit -2- from mounting frame -3-.
- Unplug connectors at telephone transmitter/receiver unit and, if applicable, at CD changer.
- Should it be necessary to remove mounting frame, unfasten the four nuts -arrows-.



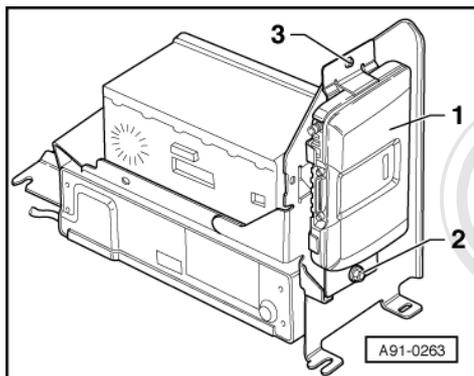
Installing:

- Install accordingly in reverse order of removal.

2.13 - Removing and installing transmitter/receiver unit as of MY 99

Removing:

- Open left storage area lid in luggage compartment and detach.
- If necessary, remove mounting frame => Page 41 .



- -> Unfasten nut -2- (3 Nm) and slacken off bolt -3- (2 Nm).
- Unplug connectors and remove transmitter/receiver unit -1-.

Installing:

- Install accordingly in reverse order of removal.

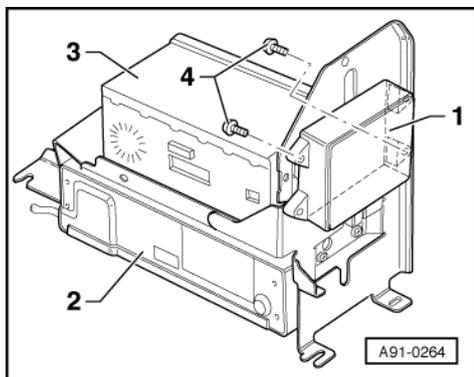
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2.14 - Removing and installing amplifier for mobile phone (compensor)

Compensor is located behind left luggage compartment storage area.

Removing:

- Open left storage area in luggage compartment.
- Remove entire mounting frame.



- -> Unplug connectors to CD changer -2- and/or TV tuner -3- and remove mounting frame together with the units.
- Unplug connectors at compensor -1- and slacken off bolts -4- (3 Nm).

Installing:

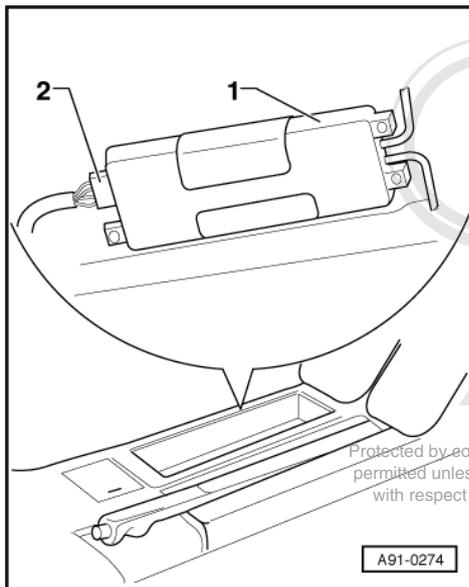
- Install accordingly in reverse order of removal.

2.15 - Removing and installing operating electronics control unit/telephone (interface)

Operating electronics control unit is located beneath rear centre console.

- Remove rear centre console.

=> General Body Repairs, Interior; Repair Group 68; Shelves/Trim; Removing and installing centre console
Shelves/Trim Removing and installing centre console



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- -> Unplug connector -2- and disconnect aerial cable.
- Detach control unit -1- from retaining spring.

Installing:

- Install accordingly in reverse order of removal.

2.16 - Removing and installing interface for multi-function steering wheel up to MY 99

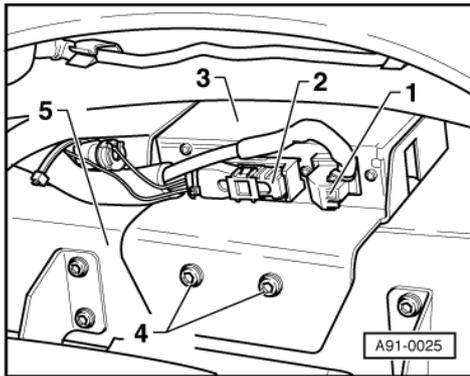
Note:

Interface is only fitted in vehicles with multi-function steering wheel, radio/navigation system (monitor navigation) and mobile or permanently installed telephone.

Removing:

- Remove dash panel insert.

=> Electrical System; Repair Group 90; Dash panel insert; Removing and installing dash panel insert
Dash panel insert Removing and installing dash panel insert

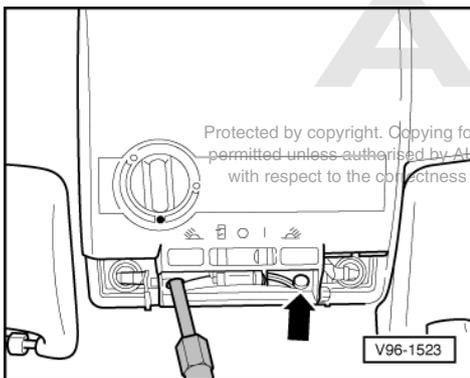


- -> Unplug both connectors -1- and -2- at control unit -3-.
- Unscrew the two bolts -4- (4.5 Nm) and detach control unit from dash panel cross member -5-.

Installing:

- Install accordingly in reverse order of removal.

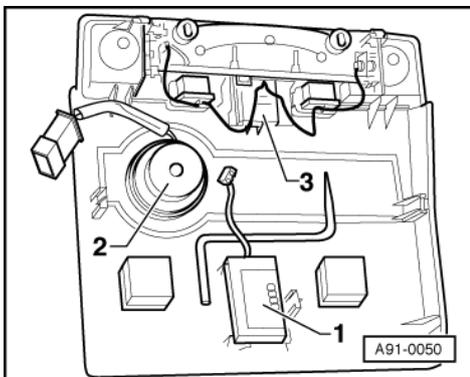
2.17 - Removing and installing hands-free microphone up to MY 99



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Removing:

- Use flat screwdriver to carefully prise off lens.
- -> Screw out the two bolts in the area of the interior lights -arrow-.
- Use screwdriver to prise entire interior light cover at front out of headliner and then carefully disengage.



- -> Unplug connectors to hands-free microphone -1-, sun roof switch -2- and interior light -3-.
- Detach entire cover and unclip hands-free microphone from holder.

Installing:

- Clip hands-free microphone into holder.
- Attach all connectors.
- Then engage entire insert in headliner and clip in on opposite side.
- Tighten the two bolts and attach lens.

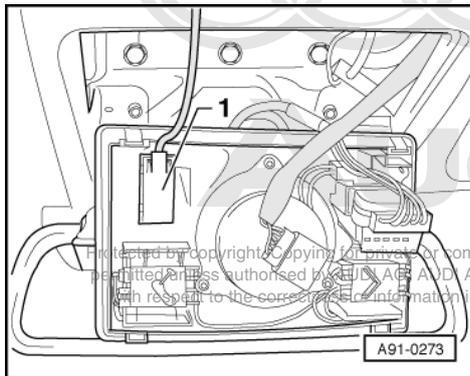
2.18 - Removing and installing hands-free microphone as of MY 00

Hands-free microphone is installed in reading light operating element at front.

Removing:

- Remove front reading light.

=> Electrical System 02.99 ä; Repair Group 96; Servicing interior lights; Removing and installing front reading light Servicing interior lights Removing and installing front reading light



- -> Carefully unclip hands-free microphone -1- using a flat screwdriver and unplug connector.

Installing:

- Install accordingly in reverse order of removal.

2.19 - Removing and installing hands-free loudspeaker

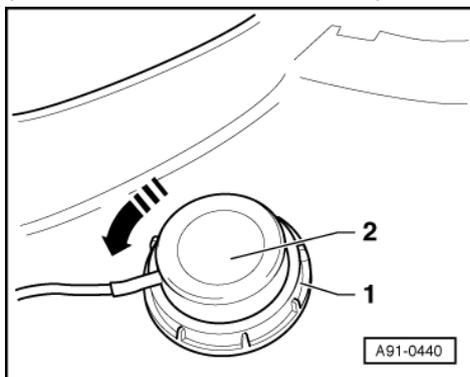
Loudspeaker is fitted in B-pillar trim.

Removing:

- Remove lower B-pillar trim on driver's side.

=> General Body Repairs, Interior; Repair Group 70; Trim Panels; Removing and installing B-pillar trim Trim Panels Removing and installing B-pillar trim

=> General Body Repairs, Interior; Repair Group 70; Trim Panels gradually introduced as of 10.98 (with interior mirror at headliner); Removing and installing lower B-pillar trim Trim Panels gradually introduced as of 10.98 (with interior mirror at headliner) Removing and installing lower B-pillar trim





- Unplug connectors and detach trim.
- -> Release fastener -1- around outside of loudspeaker -2- by turning in direction of arrow and take loudspeaker forwards out of trim.

Installing:

- Install accordingly in reverse order of removal.

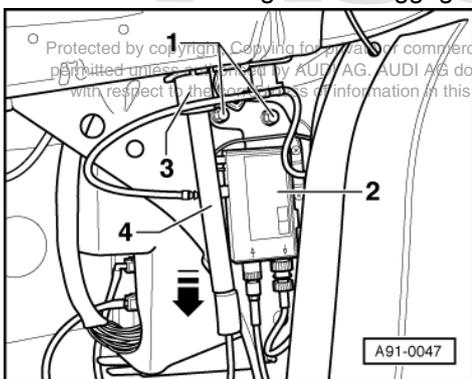
2.20 - Removing and installing aerial

Removing and installing radio/telephone rod aerial

Removing:

- Remove mounting frame for CD changer and/or telephone transmitter/receiver unit => Page 59 .
- Remove left side trim in luggage compartment.

=> General Body Repairs, Interior; Repair Group 70; Trim Panels; Removing trim for luggage compartment
Trim Panels Removing trim for luggage compartment



- -> Slacken off the two bolts -1- and detach aerial amplifier -2- together with holder.
- Unplug connectors and unscrew aerial wires.

Note:

Aerial is only plugged in at top of wing.

- Unfasten brown plastic clip -3- downwards and detach aerial -4- downwards in direction of arrow.

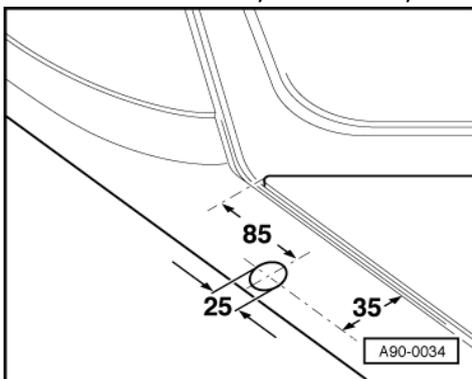
Installing:

- Install accordingly in reverse order of removal.

2.21 - Service installation of aerial

Note:

If an aerial is to be retrofitted, always use genuine spare parts (Audi A8) from the V.A. G range to ensure problem-free installation and optimum reception.



- -> Fitting location for service installation of aerial is at rear left wing.

Note:

Make sure there is nothing behind drilling location before starting work.

- Mark aerial hole and tap lightly with a centre punch to stop drill slipping.
- Drill aerial hole (if necessary pre-drill with smaller bit).
- Thoroughly remove or extract any drilling swarf and filings.

- Re-establish paint structure at hole.

=> Workshop Manual, Paintwork

=> Surface Treatment, Chemical Materials binder

- Install aerial.
- Install wiring and connect.

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

Notes:

- ◆ To prevent malfunction and interference, always provide the aerial with a good earth connection.
- ◆ Always use genuine Vortex accessories to ensure material compatibility with aluminium body.

2.22 - Pre-fitted components for telephone installation

- ◆ Rear left rod aerial
- ◆ Wiring harness for telephone system
- ◆ Hands-free loudspeaker in driver's B-pillar trim
- ◆ Hands-free microphone in interior light cover at headliner

3 - Navigation system I (destination finding system) (up to week 26/99)

3.1 - Navigation system I (destination finding system) (up to week 26/99)

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3.2 - General information

Attention:

Disconnect battery earth strap before working on electrical system.

Telematics control unit service mode must be activated before disconnecting battery.=>Radio, Telephone and Navigation System Self-diagnosis; Repair Group 01; Telematics System Self-diagnosis; Adaption

Notes:

- ◆ Establish radio anti-theft code before disconnecting battery.
- ◆ Telematics control unit service mode must be activated before disconnecting battery.
- ◆ On re-connecting battery, remember to activate vehicle equipment (radio, clock, electric window lifters, etc.) in line with owner's manual and to deactivate telematics control-unit service mode.

Important:

To avoid contact corrosion exclusive use is to be made of approved bolts, nuts, washers etc.



These elements have a special surface coating and can be recognised from their greenish colour.

Such bolts also have to be stored separately.

3.3 - General information on navigation system I

Features:

- ◆ Dead reckoning and use of satellite navigation data
- ◆ User prompting for destination input and function selection via display in dash panel insert
- ◆ Active route guidance with recommendations in the form of arrow symbols on dash panel insert display
- ◆ Voice recommendations
- ◆ Display of current road/street name
- ◆ Display of current distance from destination

Functional description

Given the appropriate conditions, the Audi navigation system can process signals from the worldwide satellite navigation system GPS (Global Positioning System).

Following initial commissioning or if vehicle has been transported by rail, ferry or other means, the vehicle location is established using signals from the satellite navigation system GPS or by manually entering the new location.

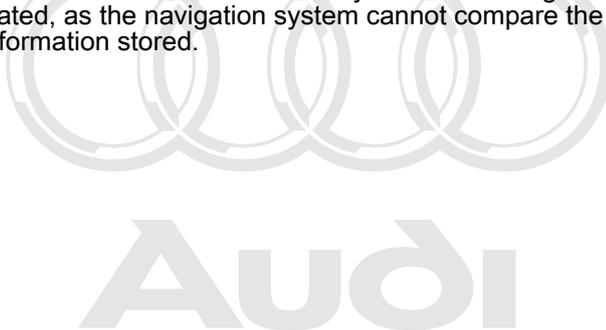
From this point onwards the navigation system is ready for use and operates on the dead reckoning principle.

The location is then constantly monitored with the aid of the magnetic field sender (electronic compass) and the rear-axle wheel sensor data of the ABS control unit.

The system uses these measured values to establish the direction of and distance covered by the vehicle. The values are compared to the road network stored on the navigation CD, i.e. the vehicle location is established by comparing measured values and stored data.

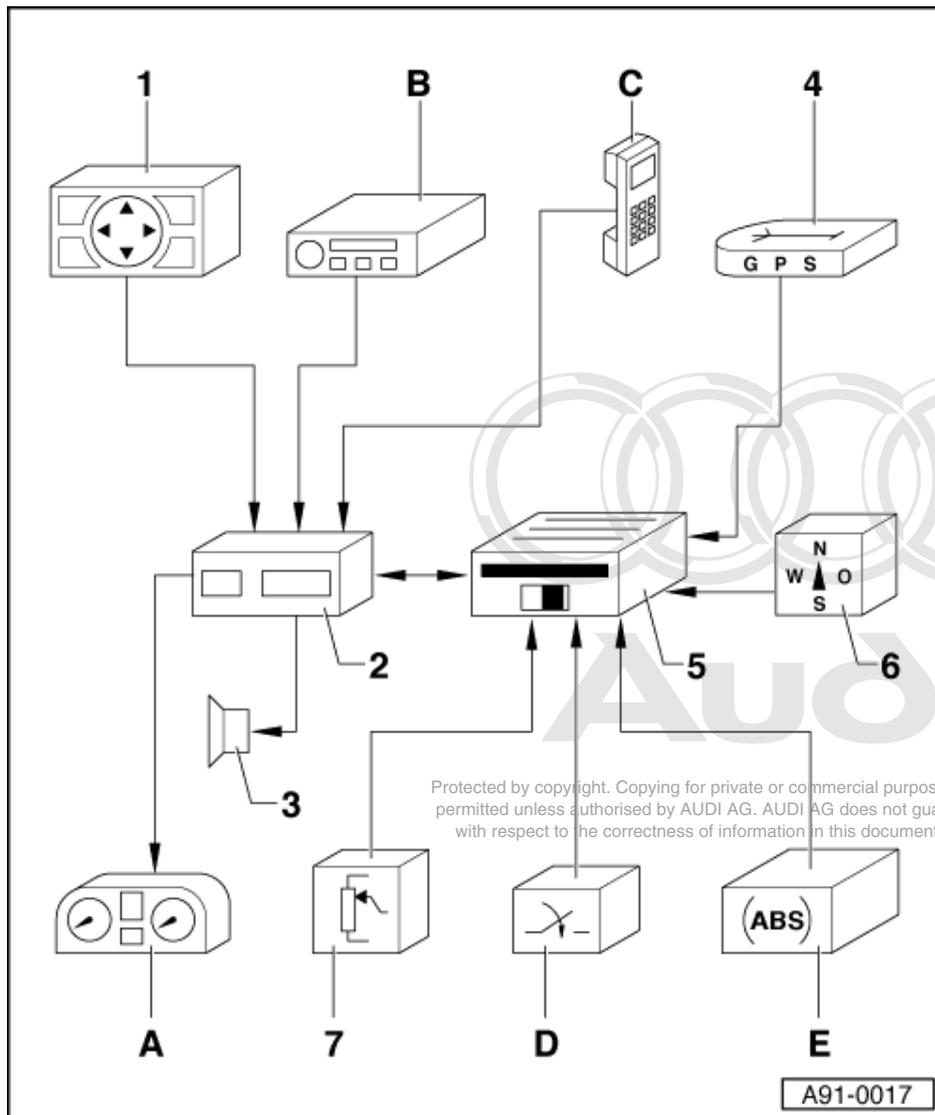
Correction is made in the navigation control unit if there is a discrepancy between position measured (measured values of magnetic field sender and ABS data) and potential position (position on stored road network).

If the vehicle is in an area (country, town or road) not covered by the navigation CD, "OFF ROAD" or "OFF MAP" appears on the display of the dash panel insert. In such cases only the direct straight line distance and the direction of the destination are indicated, as the navigation system cannot compare the GPS signals and the vehicle measured values with the information stored.



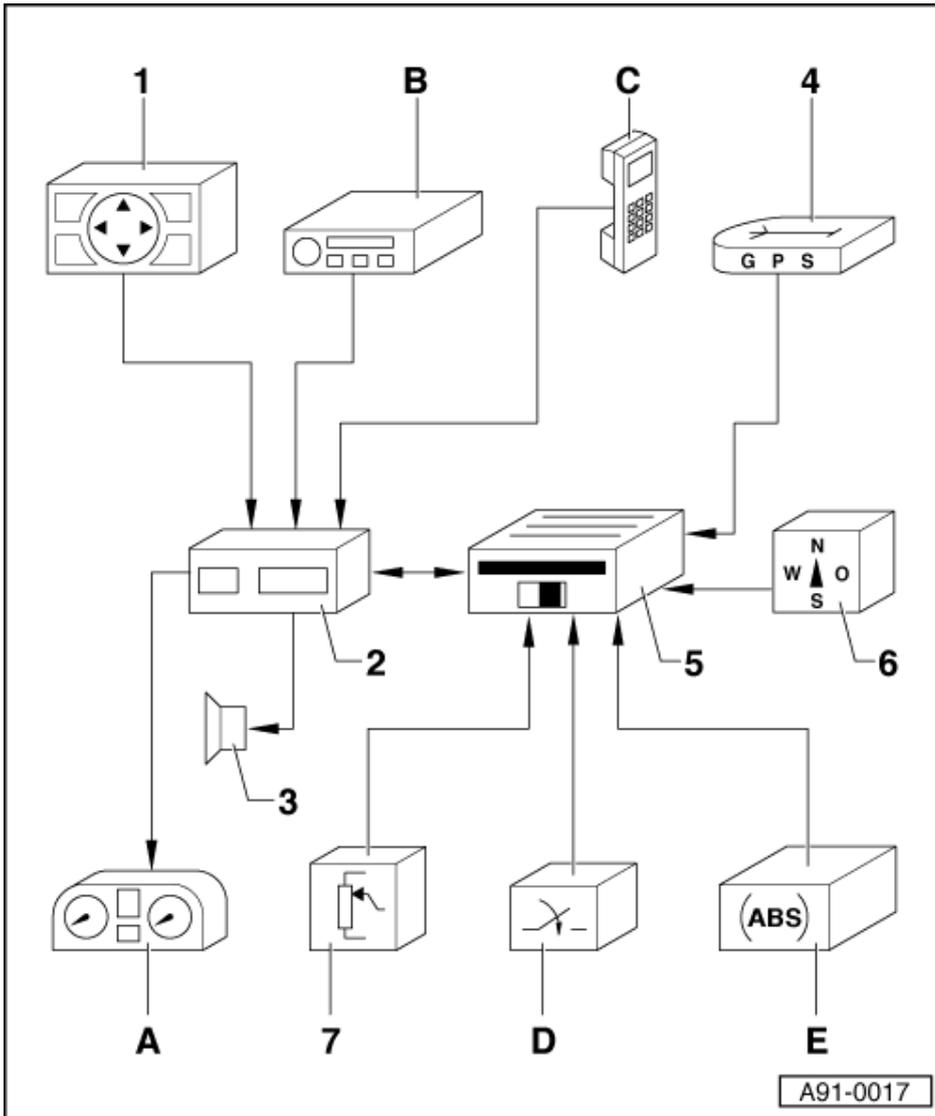
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3.4 - Block diagram



Basic components

- 1 Navigation system operating unit -E199
- 2 Operating electronics control unit, navigation -J402
- 3 Hands-free loudspeaker (telephone/navigation system loudspeaker -R39) (with BOSE sound system only)
- 4 Navigation aerial (GPS) -R50
- 5 Navigation system with CD drive control unit -J401
- 6 Magnetic field sender (compass) -G197
- 7 Heated rear window measuring resistor -N219



A91-0017

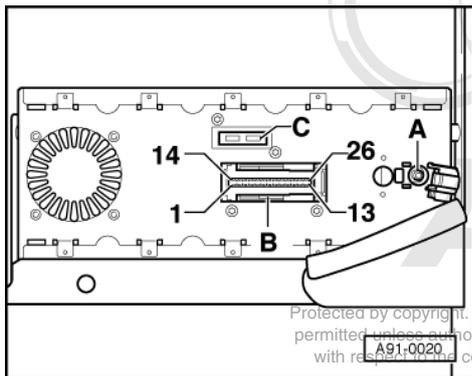
Additional components

- A - Display in dash panel insert**
For indication of recommended route and/or radio frequency
- B - Radio system**
Supplies radio frequency data for display
- C - Telephone system**
Hands-free function possible via joint loudspeaker
- D - Reversing light switch -F4**
Supplies reversing signal
- E - ABS with EDL control unit -J104**
Supplies rear-axle wheel sensor signals

Connectors on back of navigation system with CD drive control unit -J401

Note:

Non-listed plug contacts are not used.



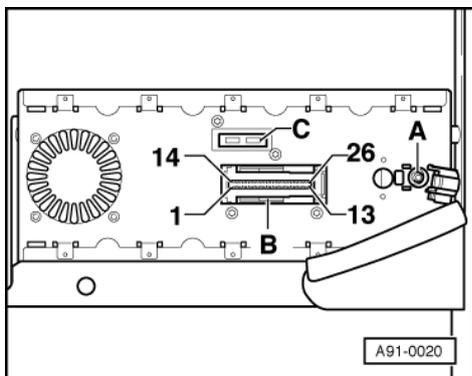
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-> Connection for aerial wire -A-

Connection for 26-pin connector -B-

Pin assignment:

- 1 - Earth (terminal 31)
- 2 - Screen
- 3 - Screen
- 4 - Shunt signal voltage
- 5 - Sinusoidal signal from magnetic field sender
- 6 - Signal earth/magnetic field sender
- 7 - Signal from left speed sensor
- 8 - Signal from reversing light switch
- 9 - Data signal (RxD)
- 10 - Control signal (RTS)
- 12 - Mute signal



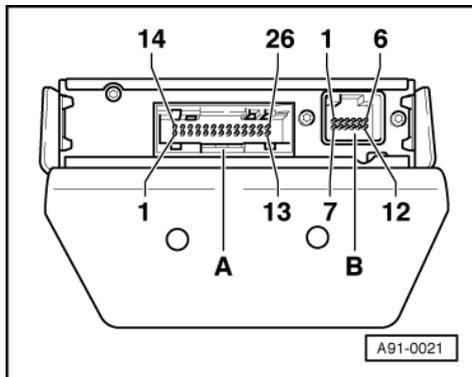
- 13 - AF voice output signal (AF+)
- 14 - Battery + (terminal 30)
- 15 - Terminal 15
- 16 - Screen
- 17 - Shunt signal voltage
- 18 - Cosine signal from magnetic field sender
- 19 - Power supply for magnetic field sender
- 20 - Signal from right speed sensor
- 21 - Screen
- 22 - Data signal (TxD)
- 23 - Control signal (CTS)
- 24 - Screen
- 25 - AF screen
- 26 - AF voice output signal (AF-)



Connectors at operating electronics control unit, navigation -J402

Note:

Non-listed plug contacts are not used.



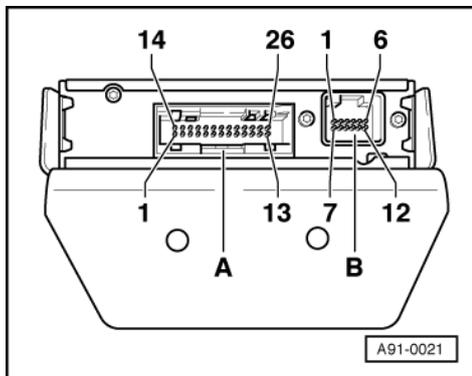
Audi

-> Connection for 26-pin connector -A-

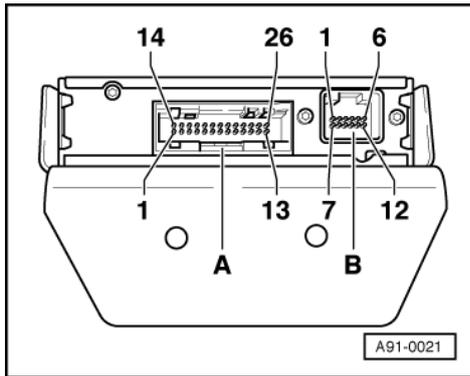
Pin assignment:

- 1 - Terminal 31
- 2 - Speaker (-)
- 3 - Speaker (+)
- 5 - Earth for operating unit
- 6 - Control group 1 for operating unit
- 7 - Control group 2 for operating unit
- 8 - Operating unit illumination
- 12 - Telephone AF screen

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- 13 - Telephone AF (-)
- 14 - Battery + (terminal 30)
- 15 - Terminal 15
- 16 - Terminal 58
- 17 - GALA signal
- 18 - Enable signal to dash panel insert
- 19 - Clock signal to dash panel insert
- 20 - Data signal to dash panel insert
- 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:

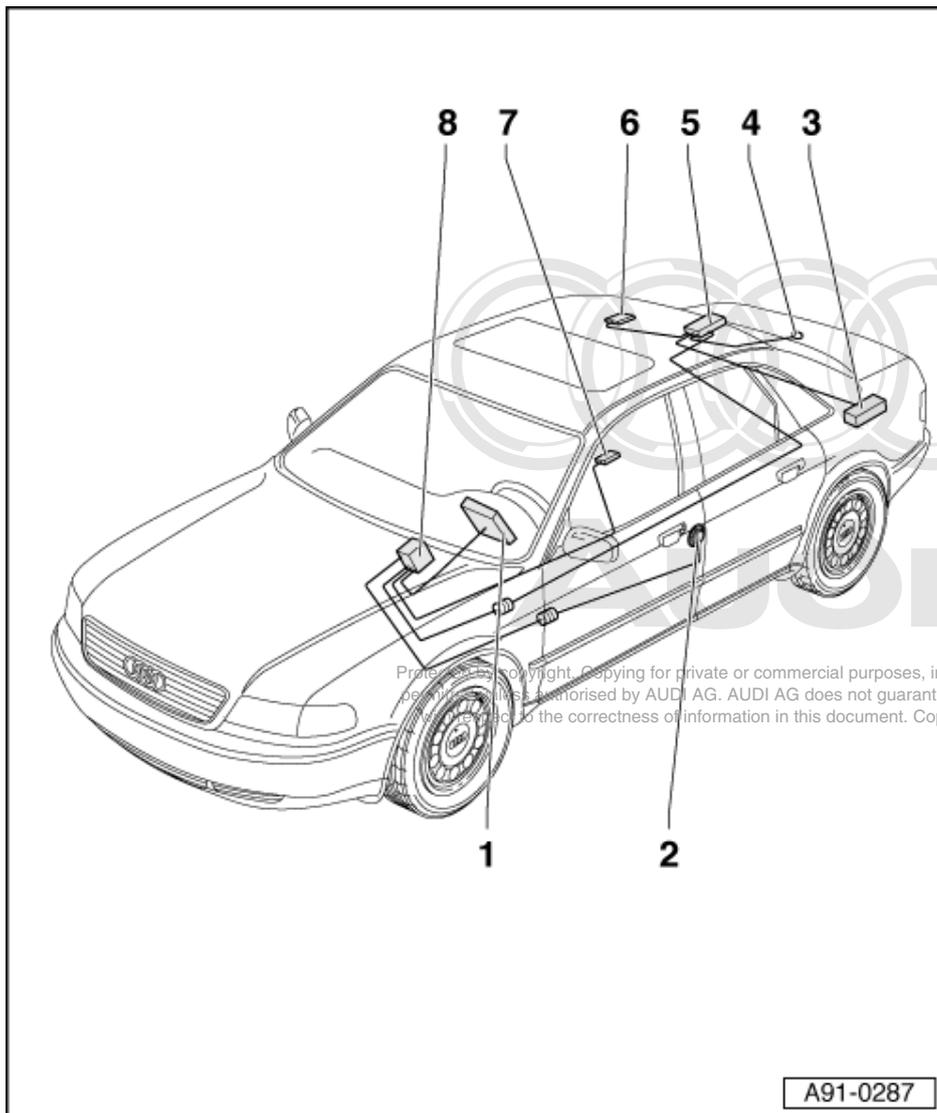
- 1 - Screen
- 2 - Data signal (RxD)
- 3 - Data signal (TxD)
- 4 - Control signal (RTS)
- 5 - Control signal (CTS)
- 7 - AF voice output signal (AF+)
- 8 - AF voice output signal (AF-)
- 9 - AF screen
- 10 - Mute signal



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3.5 - Exploded view of navigation system I



1 Display in dash panel insert

- ◆ In dash panel
- ◆ Removing and installing

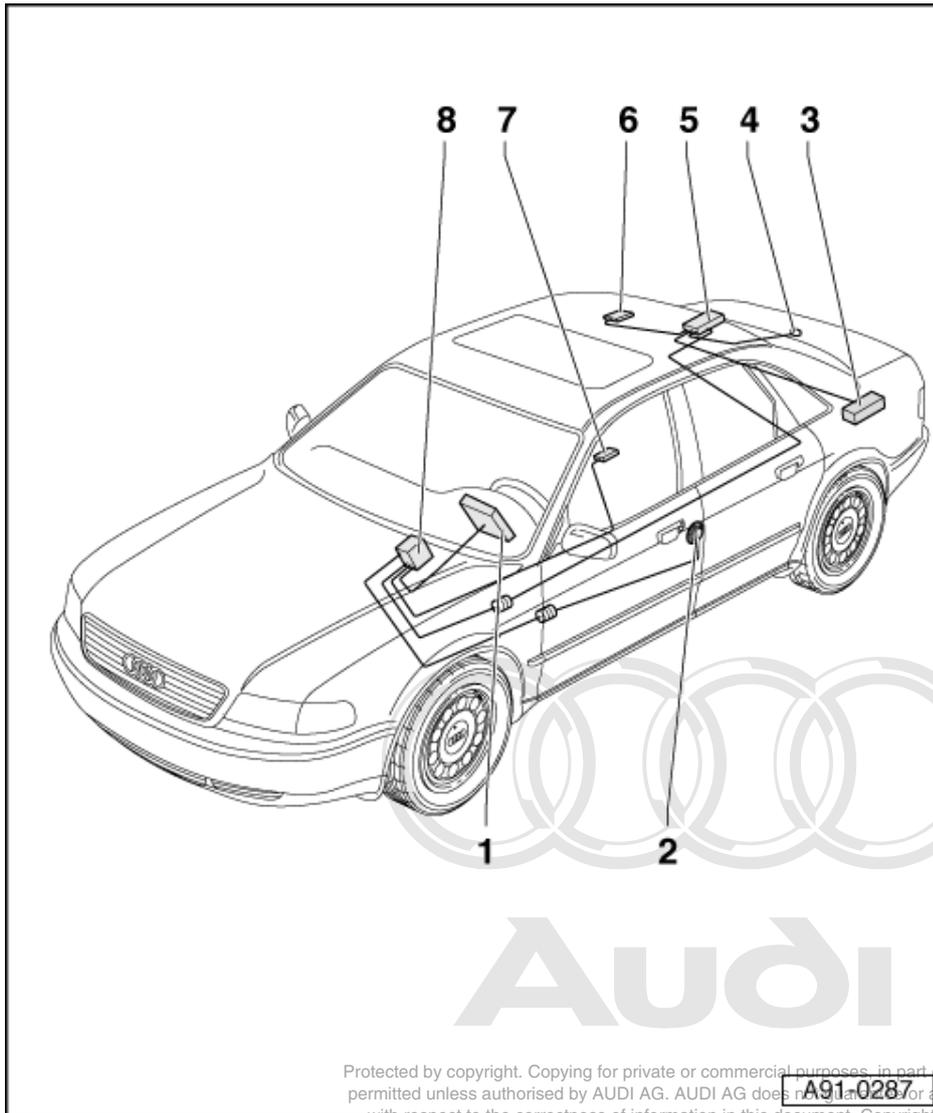
=> Electrical System; Repair Group 90; Dash panel insert Dash panel insert

2 Hands-free loudspeaker

- ◆ Vehicles with BOSE sound system only
- ◆ In B-pillar trim on driver's side
- ◆ Removing and installing=>Page 63

3 Navigation system with CD drive control unit -J401

- ◆ In luggage compartment behind left side trim
- ◆ Removing and installing
=> Page 111



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4 Navigation aerial (GPS) -R50

- ◆ On boot lid
- ◆ Removing and installing
=> Page 113

5 Magnetic field sender (electronic compass) -G197

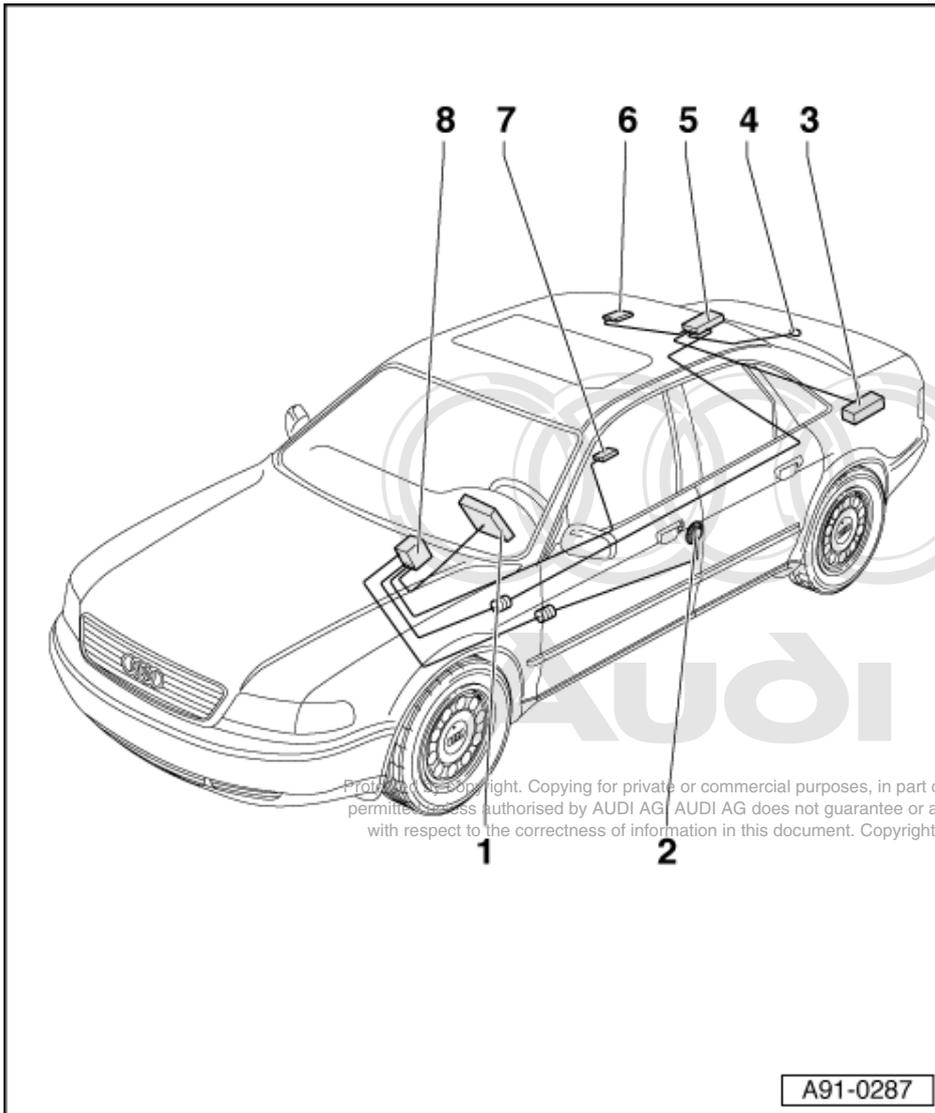
- ◆ Beneath rear shelf
- ◆ Removing and installing
=> Page 114

6 Heated rear window measuring resistor -N219

- ◆ Behind D-pillar trim
- ◆ Removing and installing
=> Page 115

7 Navigation system operating unit -E199

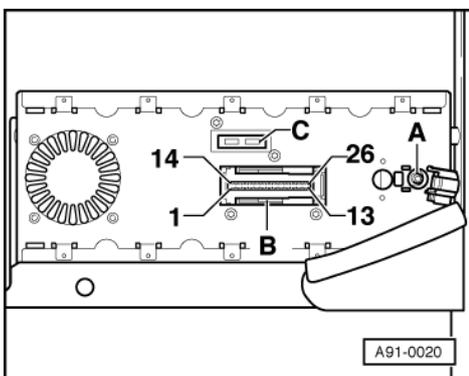
- ◆ In centre console
- ◆ Removing and installing
=> Page 112



8 Operating electronics control unit, navigation -J402

- ◆ Behind dash panel insert at dash panel cross member
- ◆ Removing and installing
=> Page 113

3.6 - Service information on navigation system I



- ◆ Always start by checking the following:
 - -> Check power supply of navigation system and fuse -C- on back of navigation system with CD-ROM drive control unit (-J401).

- Check that navigation CD has been correctly inserted and loaded, i.e. with labelling facing upwards.
- Check horizontal installation and firm attachment of navigation system with CD-ROM drive control unit (-J401).
- ◆ In the event of complaints, localise the possible causes by asking customer for specific information => Page 75 .
- ◆ In the event of non-specific complaints, attempt to reconstruct the malfunction.
- ◆ If complaint is not specific, always implement full system test using technical service software => Page 97 .
- ◆ On completion of service work on navigation components, always implement the necessary measures => Page 77 .
- ◆ Whenever navigation system components have been replaced, complete the "Annex to navigation system fault report" and submit it together with the defective component in its original packaging in line with the warranty/ replacement part procedures => Page 111 .
- ◆ After servicing navigation system, always perform appropriate test drive and enter location => Page 108 .

3.7 - Customer consultation in the event of complaints

- ◆ Which navigation system function is giving rise to complaints?
- ◆ Has navigation system been used in line with operating instructions?
- ◆ Which messages appeared on display? Evaluation of messages
=> Page 75 .
- ◆ Have objects possibly been transported on roof? Sources of interference in or on vehicle => Page 76 .
- ◆ Have magnetic/metallic items frequently been transported in vehicle? Sources of interference in or on vehicle
=> Page 76 .
- ◆ Possible exposure to external sources of interference?
=> Page 76

Important display messages

Note:

The following explains five important display messages and provides possible solutions.

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Display message 1:

SYSTEM
FAULT:
PLEASE
INSERT
CD-ROM

- ◆ No navigation CD in drive
 - Insert navigation CD in drive.

Display message 2:

SYSTEM
FAULT:
PLEASE
CHECK
CD-ROM

- ◆ Navigation CD in CD-ROM drive not readable
 - Check that navigation CD has been inserted correctly. Labelling must face upwards and ignition must be on when inserting CD.
 - Check that CD is not dirty, clean carefully with a soft cloth if required. Use another CD if CD is scratched.



- With CD inserted, check whether slide switch on CD-ROM drive is set to "ON".
- ◆ Intermittent CD-ROM drive operation
 - Check that navigation system with CD-ROM drive control unit has been installed horizontally and attached securely.
 - With CD inserted and navigation system activated, check for normal operating noise at CD-ROM drive. If grinding or scratching noises can be heard, replace navigation system with CD-ROM drive control unit => Page 111 .

Display message 3:

PLEASE
ENTER
NEW
LOCATION

- ◆ Navigation system has no relevant location information
 - Enter location at a suitable road junction => Page 108
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Display message 4:

PLEASE
CONTACT
WORKSHOP

- ◆ Wheel sensor signals supplied by ABS control unit not OK
 - Perform system test (wheel pulse test) => Page 97 and rectify any faults.
- ◆ No/incorrect calibration values in navigation system
 - Perform following calibration measures:
 - Wheel calibration => Page 91
- ◆ Fault in magnetic field sender (compass) for navigation and/or wiring
 - Perform system test (compass test) => Page 97 and rectify any faults.
- ◆ Fault in navigation aerial and/or wiring
 - Perform system test (internal control unit test) => Page 97 and rectify any faults.
- ◆ No GPS signals from satellites

Note:

In certain crisis situations satellite signals may not always be available.

Possible sources of interference affecting magnetic field sender (compass)

Sources of interference in or on vehicle:

- ◆ Magnetic/metallic items in vehicle (e.g. bicycle, tool box, ladder, steel wheel rims)
- ◆ Magnetic/metallic items on roof or roof rack
- ◆ Signs, number plates, aerials and other items with magnetic bases
- ◆ Seat backrest folded down

Sources of interference outside vehicle:

- ◆ High-tension wires
- ◆ Steel bridges
- ◆ Industrial facilities (e.g. electroplating factories)
- ◆ Goods vehicle with a metallic load
- ◆ High-rise buildings
- ◆ Wire fences
- ◆ Overhead tram wires

- ◆ Railway tracks

3.8 - Action to be taken on navigation system I following service work or tyre change

Notes:

- ◆ Always perform the necessary measures in the sequence described.
- ◆ Navigation system loads required language automatically where necessary, but it is also possible to load language directly using navigation system basic menu => Operating instructions.

Following replacement of navigation system with CD drive control unit -J401:

- Perform wheel calibration => Page 80
- Perform wiring test => Page 87
- Perform (full) system test => Page 97
- Perform test drive (basic calibration) => Page 91
- Reload language => Operating instructions

Following replacement of magnetic field sender (compass) -G197:

- Perform system test (compass test) => Page 97
- Perform test drive (basic calibration) => Page 91

Following replacement of operating electronics control unit, navigation -J402:

- Reload language => Operating instructions

Following replacement of heated rear window measuring resistor -N219:

- Perform system test (shunt resistor and rear voltage test)
=> Page 97
- Perform test drive (basic calibration) => Page 91

Following replacement of navigation system operating unit

-E199:

- Reload language => Operating instructions

Following replacement of navigation aerial -R50:

- Perform system test (internal control unit test) => Page 97
- Perform test drive (basic calibration) => Page 91

Following replacement of rear window:

- Perform test drive (basic calibration) => Page 91

Following replacement of ABS control unit:

- Perform system test (wheel pulse test) => Page 97

Following replacement of dash panel insert:

- No action required

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Following disconnection of battery:

- Reload language => Operating instructions
- Location may have to be entered



Following use of navigation CD with new/modified software version:

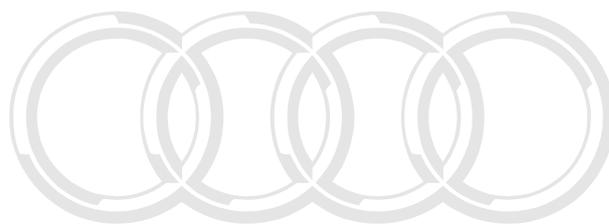
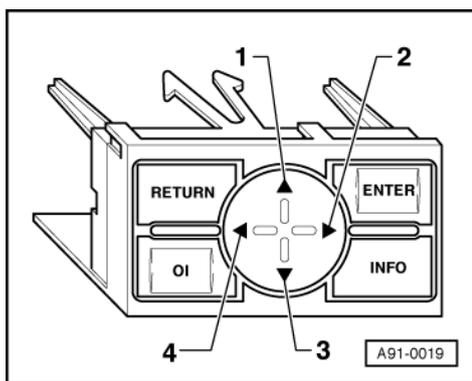
- Reload language => Operating instructions

After changing tyre or fitting different tyre size:

- Perform wheel calibration => Page 80

3.9 - Calling up technical service software

Technical service software is called up as follows:



Audi

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- Switch off ignition and wait approx. 5 seconds.
- -> Then press "0I" button and "INFO" button on operating unit simultaneously, switch ignition to "ON" and release both buttons again.

Indicated on display:



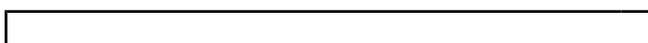
- Select "AUDI" using "Up" and "Down" cursor keys on operating unit, i.e. move arrow symbol ">" to menu item required and press "ENTER" to confirm.

Indicated on display:



- Select required language using "Up" and "Down" cursor keys on operating unit, i.e. move arrow symbol ">" to desired language (e.g. DEUTSCH).
- Confirm selection by pressing "ENTER".

Indicated on display:



```
AUDI NAVI
CALIBRATION
PROGRAM
-----
>      FACTORY
      SERVICE
```

- Select "SERVICE" using "Up" and "Down" cursor keys on operating unit, i.e. move arrow symbol ">" to menu item required.
- Confirm selection by pressing "ENTER".

Indicated on display:

```
HEATED
REAR
WINDOW
OFF
>      OK
```

Technical service software functions must be implemented with heated rear window switched off.

- Check that heated rear window is switched off and switch off if necessary.
- Confirm OK display by pressing "ENTER".

Indicated on display:

```
SERVICE MENU:
>      WHEEL CALIB.
      WIRING
      TEST DRIVE
      SYS. TEST
      END
```

Notes:

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- ◆ Terminate technical service software if possible via menu item "END".
- ◆ Exit from technical service software can be achieved at any time by switching off ignition, but calibration settings made will not be saved.

3.10 - Automatic checking of current parameters

Each time service main menu is started and the following items are selected WIRING, TEST DRIVE, SYS. TEST, END a check is first made on the vehicle values.

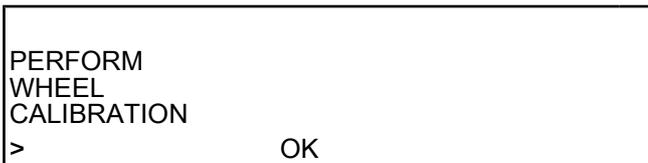
Indicated on display:

```
CHECK:
A8 - SAL - D2
TYRES:
225/60 16
>      YES
      NO
```

- If "ENTER" is pressed to confirm selection, program continues with selected menu item.
- If selection is not confirmed with "ENTER", the following message appears:



Indicated on display:



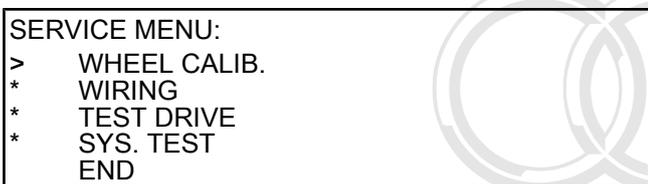
- Confirm OK display by pressing "ENTER", then perform wheel calibration => Page 80 .

Note:

If the parameters required for a menu item are not yet available, the menu item is deactivated and marked with a * symbol.

In this case, cursor appears next to menu item to be implemented in order to set required parameter values.

Indicated on display:



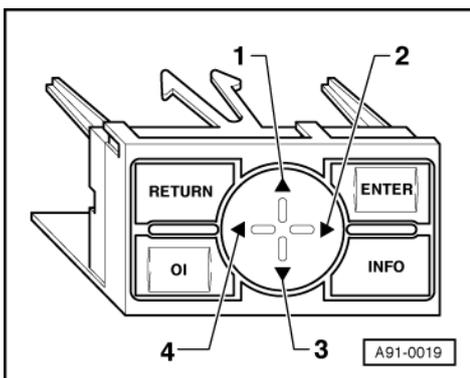
- Confirm selection with "ENTER" button to perform wheel calibration => Page 80 .

3.11 - Wheel calibration after changing tyre or replacing control unit

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Navigation system must be recalibrated whenever tyres are changed (if consistent distance errors occur) or if navigation system control unit (-J401) is replaced. Otherwise navigation system distance measurement function will be inaccurate and can only be corrected by control unit after approx. 100 km.

If standard tyres are fitted, the navigation system can be recalibrated by means of a simple selection procedure. Used tyres and special tyres are recalibrated by driving a certain distance.



- Call up technical service software => Page 78 .
- -> Select menu item "WHEEL CALIB." with cursor keys -1- and -3-.

Indicated on display:



```
> WHEEL CALIB.  
WIRING  
TEST DRIVE  
SYS. TEST  
END
```

- Confirm selection by pressing "ENTER".

Indicated on display:

```
SELECT  
VEHICLE  
TYPE:  
> CONTINUE
```

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- Continue by pressing "ENTER".

Indicated on display:

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

- Press "ENTER" to select vehicle type.

Indicated on display:

```
VEHICLE:  
A8 - D2  
> YES  
NO
```

- Confirm selection by pressing "ENTER".

Indicated on display:

```
DETERMINE  
TYRE  
VALUES:  
T. CONDITION  
> NEW  
USED
```

Select tyre condition with cursor keys.

- If new tyres are fitted, select menu item "NEW" and confirm selection with "ENTER".

Display => Page 82 :

- For used tyres, select menu item "USED" and confirm selection by pressing "ENTER".

Display => Page 83 :

**New tyres:**

Indicated on display:

```

SELECT TYRE
TYPE
> CONTINUE

```

- Continue by pressing "ENTER".

Indicated on display:

```

> 225/60 16
  225/55 17
  245/45 18
  WI 225/60
  ...
  SPECIAL

```

- Use cursor keys to select tyre type for current vehicle in menu and confirm selection by pressing "ENTER".

Possible tyre sizes =>Tyre table, Page [82](#)**Tyre table:**

Tyre type	Circumference (mm)	A8	A6	A4	A3	A2
145/80 R14	1790	-	-	-	-	X
155/65 R15	1775	-	-	-	-	X
165/65 R15	1815	-	-	-	-	X
175/60 R15	1803	-	-	-	-	X
185/50 R16	1806	-	-	-	-	X
185/65 R15	1895	-	-	X	X	-
195/65 R15	1935	-	X	X	X	-
205/60 R15	1910	-	X	X	X	-
205/55 R16	1930	-	X	X	X	-
205/40 ZR17	1818	-	-	-	-	X
215/55 R16	1960	-	X	-	-	-
215/65 R16	2095	-	X	-	-	-
225/45 R17	1930	-	-	X	X	-
225/50 R16	1930	-	X	-	-	-
225/40 R18	1940	-	-	X	-	-

Tyre type	Circumference (mm)	A8	A6	A4	A3	A2
225/40 ZR18	1943	-	-	-	X	-
225/60 R16	2060	X	-	-	-	-
WI 225/60	2059	X	-	-	-	-
225/45 R17	1930	-	-	X	X	-
225/55 R17	2074	X	X	-	-	-
235/50 R16	1960	-	X	-	-	-
235/45 R17	1964	-	X	-	-	-

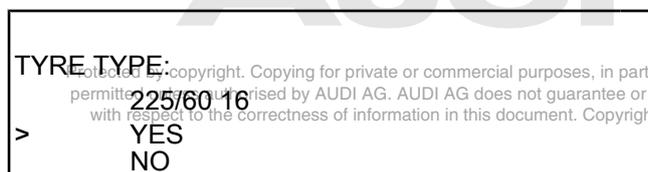
Tyre type	Circumference (mm)	A8	A6	A4	A3	A2
235/45 R18	2040	X	-	-	-	-
235/50 R18	2114	X	-	-	-	-
235/40 ZR18	1967	-	X	-	-	-
245/45 R18	2065	X	-	-	-	-
245/45 ZR18	2065	X	X	X	-	-
255/40 R17	1940	-	X	-	-	-
255/35 ZR18	1937	-	X	X	-	-
255/35 ZR20	2092	X	-	-	-	-

Note:

If tyres are a special type, menu item "SPECIAL" must be selected

=> Page 83.

Display example:



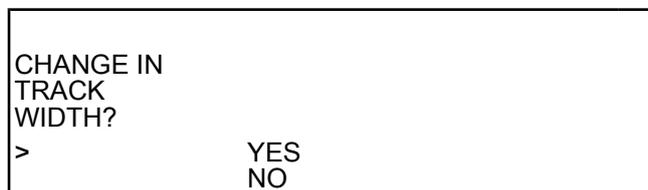
- If tyre type selection is correct, confirm "YES" by pressing "ENTER" and end wheel calibration.
- If tyre type selection is incorrect, select menu item "NO", confirm by pressing "ENTER" and select tyre type again.

Used tyres or special tyres:

Calibration requirements:

- ◆ Choose a stretch of surfaced road measuring 100 to 120 m in length. Measure start and end point beforehand using steel tape measure and then mark out. Apply permanent markings (e.g. with paint) to permit repeated use.
- ◆ To ensure accurate results, open driver's door and align reference mark (made with adhesive tape, for example) on sill panel with marked start position.
- ◆ Drive over set distance in a straight line and as slowly as possible. Do not allow wheels to spin.
- ◆ Align mark on vehicle with end mark and stop vehicle.

Indicated on display:

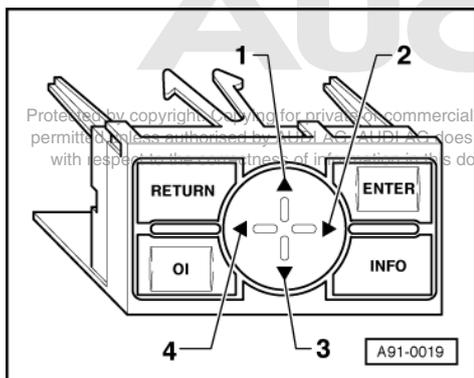
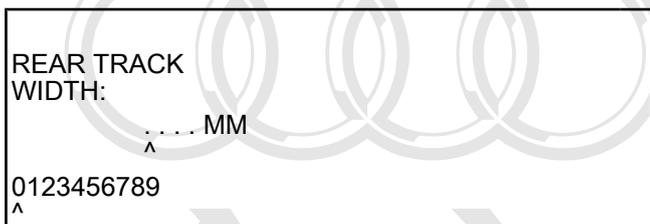


Notes:

- ◆ Used standard tyres do not change track width.
 - ◆ Special tyres may change track width. If difference is greater than 1%, new track width must be entered.
 - ◆ If new track width is not entered, default track width for selected vehicle model is retained. Possible track widths => Table of track widths, Page 84
- If track width has not changed, select menu item "NO" and confirm by pressing "ENTER".
 - If track width has changed, select menu item "YES" and confirm by pressing "ENTER".



Indicated on display:



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- -> Enter track width using cursor keys -2- and -4-, pressing "ENTER" each time.
- After entering track width (e.g. 1582 mm), confirm by pressing "ENTER" for approx. 2 seconds.

Display example:

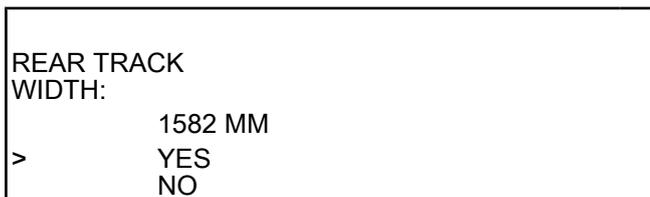
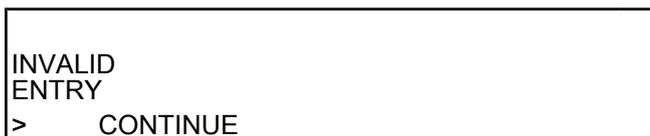


Table of track widths:

Vehicle model	Rear track width (mm)
A8-D2	1582
A6-C5 (SAL/AVT)	1569
A4-B5 (SAL/AVT)	1479
A3-AB	1495

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



- Press "ENTER" to continue and enter track width again.

Indicated on display:



```

DETERMINE
TYRE
VALUES
BY
> CONTINUE
    
```

- Continue by pressing "ENTER".

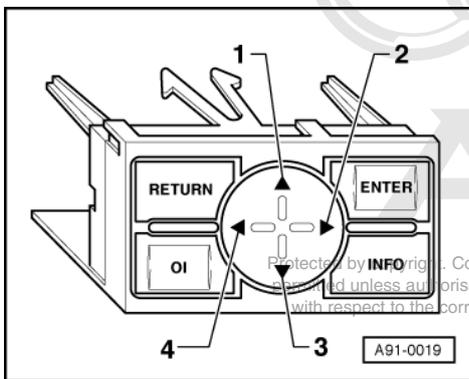
Indicated on display:

```

DRIVING
OVER
CALIBRATION
DISTANCE
> CONTINUE
    
```

- Continue by pressing "ENTER".

Indicated on display:



```

CALIBRATION
DISTANCE:
      . . . . M
      ^
0123456789
^
    
```

- -> Enter length of prepared calibration distance using cursor keys -2- and -4-, pressing "ENTER" each time.
- Following entry of full calibration distance (e.g. 105 m), confirm by pressing "ENTER" for approx. 2 seconds.

Display example:

```

ENTERED
DISTANCE:
      1 0 5 . 0 M
> YES
  NO
    
```

- If OK, confirm "YES" by pressing "ENTER".
- If not, select "NO", confirm by pressing "ENTER" and enter calibration distance again.

Indicated on display:

```


```



DRIVE
TO
CALIBRATION
LOCATION
> CONTINUE

- Drive vehicle to exact start point of calibration run and press "ENTER" to continue.

Indicated on display:

START
THE
CALIBRATION
PROCESS
> START

- Press "ENTER" to confirm start and cover calibration distance exactly as instructed.

Indicated on display:

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DRIVE AS STRAIGHT
AS POSSIBLE
END
REACHED?
> OK

- On completion of calibration distance, confirm OK display by pressing "ENTER".

If calibration is OK, wheel calibration is terminated => Page 87 .

If faults occur during wheel calibration, one of the following causes will be displayed:

1st cause: "Wheel pulses not OK"

FAULT:
CHECK
WHEEL
PULSES
> CONTINUE

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

=> Running Gear; Repair Group 01; Self-diagnosis, Electrical Check Self-diagnosis, Electrical Check

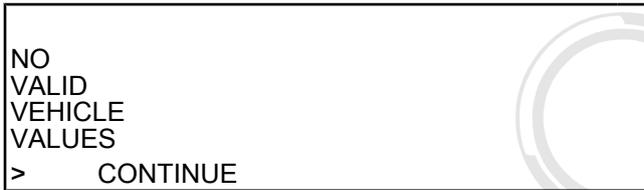
- Repeat wheel calibration => Page 80 .

2nd cause: "Distance too short"

FAULT:
DISTANCE
TOO
SHORT.
> CONTINUE

- Press "ENTER" to continue and enter calibration distance again
=> Page 85 .

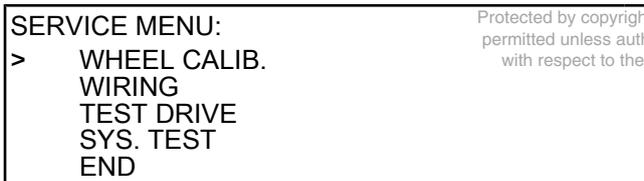
3rd cause: "Invalid vehicle values"



- Press "ENTER" to continue and perform wheel calibration again correctly => Page 80 .

Termination of wheel calibration

Indicated on display:



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- Confirm selection by pressing "ENTER" to terminate wheel calibration.

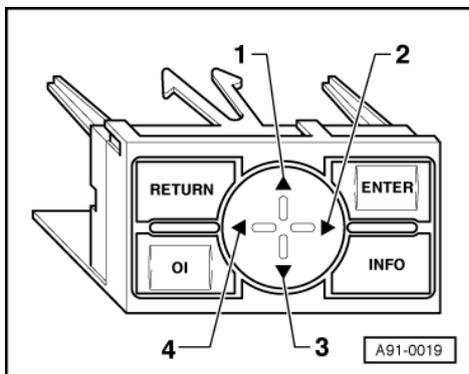
3.12 - Wiring test on navigation system I

Notes:

- ◆ Menu item >Wiring is deactivated in the absence of vehicle parameters.
- ◆ A list is made of all faults detected during wiring test. Fault detection causes next start-up step >Test drive to be deactivated.
- ◆ After appropriate measures have been taken (e.g. checking in line with current flow diagram), wiring test must be performed as often as necessary until it is completed without faults.

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

- ◆ GPS aerial
- ◆ Magnetic field probe
- ◆ Shunt
- ◆ ABS control unit
- ◆ Reversing light signal



- Call up technical service software => Page 78 .
- -> Select menu item "WIRING" with cursor keys -1- and -3-.



Indicated on display:

```
SERVICE MENU:  
> WHEEL CALIB.  
  WIRING  
  TEST DRIVE  
  SYS. TEST  
  END
```

- When servicing, testing of electrical connections is started by pressing "ENTER".

Indicated on display:

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```
CHECK:  
A8 - SAL - D2  
TYRES:  
225/60 16  
> YES  
  NO
```

- If "ENTER" is pressed to confirm selection, program continues with selected menu item.
- If selection is not confirmed with "ENTER", the following message appears:

Indicated on display:

```
PERFORM  
WHEEL  
CALIBRATION  
> OK
```

- Confirm OK display by pressing "ENTER", then perform wheel calibration => Page 80 .

Indicated on display:

```
PLEASE  
WAIT
```

Sensors of GPS aerial and compass are tested and checked while "PLEASE WAIT" mask is displayed.

If GPS aerial fault is detected, the following display appears:

```
NO  
SIGNALS  
FROM GPS  
AERIAL  
> CONTINUE
```

- Continue by pressing "ENTER".
- Either immediately check and repair fault in wiring and/or fault caused by incorrect location selection or wait until end of wiring test when all faults occurring are displayed again =>Page 91 .

The following display appears if a compass fault is detected:

```
NO  
COMPASS  
SIGNALS
```

> CONTINUE

- Continue by pressing "ENTER".
- Either immediately check and repair fault in wiring and/or fault caused by incorrect location selection or wait until end of wiring test when all faults occurring are displayed again =>Page 91 .

Next display:

HEATED
 REAR
 WINDOW
 ON
 > OK

- Switch on heated rear window and confirm by pressing "ENTER".

Next display:

HEATED
 REAR
 WINDOW
 OFF
 > OK

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- Switch off heated rear window and confirm by pressing "ENTER".

If following display appears, a fault has been detected at shunt and/or voltage tap:

NO REAR
 WINDOW
 MEASURED VALUE
 CHECK
 CONNECTOR
 > CONTINUE

Switch for heated rear window was not actuated or

- Wiring to heated rear window is not OK.
- Continue by pressing "ENTER".
- Either immediately check and repair fault in wiring and/or fault at connectors or wait until end of wiring test when all faults occurring are displayed again =>Page 91 .

Next display:

DRIVE AT
 CONSTANT
 SPEED
 AND COMPARE
 > CONTINUE

- Continue by pressing "ENTER".

Indicated on display:



BOTH
WHEEL SPEEDS
TO
SPEEDOMETER
> OK

- Confirm OK display by pressing "ENTER".

Next display:

L: 0.0
R: 0.0
> YES
NO

- Start engine and drive forwards in a straight line. Whilst doing so, compare displays for left (L) and right (R) wheel sensors.
- Bring vehicle to a halt.
- If values are within permitted lower speed range (difference must not be greater than 5 km/h), press "ENTER" to confirm >YES on display, otherwise select and confirm >NO.
- Either immediately check and, if necessary, rectify wiring/wheel calibration fault or wait until end of wiring test to do so, when all faults which have occurred are displayed again =>Page 91 .

Next display:

REVERSE
VEHICLE
BRIEFLY
> OK

- Engage reverse gear.
- Reverse for about 3 metres and stop vehicle.
- Confirm OK display by pressing "ENTER".
- Either immediately check and, if necessary, rectify wiring/wheel calibration fault or wait until end of wiring test to do so, when all faults which have occurred are displayed again =>Page 91 .

If no faults were detected during wiring test, the following display appears:

WIRING
OK
> MAIN MENU

- Confirm display with "ENTER" in order to return to main menu. Next start-up step TEST DRIVE is then activated.

Indicated on display:

SERVICE MENU:
> WHEEL CALIB.
WIRING
TEST DRIVE
SYS. TEST
END

- Start TEST DRIVE by pressing "ENTER" =>Page 91
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In extreme cases several faults may be detected during wiring test.

Notes:

- ◆ Fault detection is based on evaluation of signals from respective sensors. As well as a wiring problem, a defective sensor may also be the cause of the fault.
 This possibility should, however, only be considered after it has been confirmed that wiring is OK (see current flow diagram).
- ◆ Fault locations can also be checked individually via SYS. TEST menu, e.g. following repair work, before complete wiring test required to activate menu item TEST DRIVE is performed.

Possible display:

```

FAULT:
GPS
COMPASS
SHUNT
WHEEL SENSOR
REV. GEAR
    
```

Note:

REAR VOLT. may also be displayed instead of SHUNT.

- Eliminate faults by taking the appropriate action.
- Confirm display with "ENTER" in order to return to main menu.

Next display:

```

SERVICE MENU:
> WHEEL CALIB.
  WIRING
  TEST DRIVE
  SYS. TEST
  END
    
```

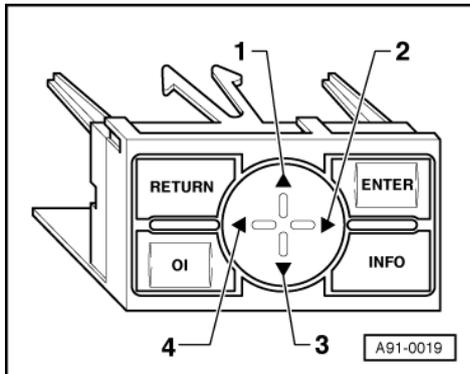
- Select menu item "WIRING" again with cursor keys.
- Confirm display with "ENTER". Testing of electrical connections is then repeated when performing service work.

3.13 - Test drive (basic calibration of navigation system I)

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The test drive consists of three stages:

- ◆ Determination of location =>Page 92
- ◆ Calibration of shunt =>Page 93
- ◆ Calibration of compass =>Page 95





- Call up technical service software => Page 78 .
- -> Select menu item "TEST DRIVE" using cursor keys.

Indicated on display:

```
SERVICE MENU:
>  WHEEL CALIB.
    WIRING
    TEST DRIVE
    SYS. TEST
    END
```

- Confirm selection by pressing "ENTER".

Indicated on display:

```
CHECK:
A8 - SAL - D2
TYRES:
225/60 16
>                YES
                  NO
```

- If "ENTER" is pressed to confirm selection, program continues with selected menu item.
- If selection is not confirmed with "ENTER", the following message appears:

Indicated on display:

```
PERFORM
WHEEL
CALIBRATION
>                OK
```

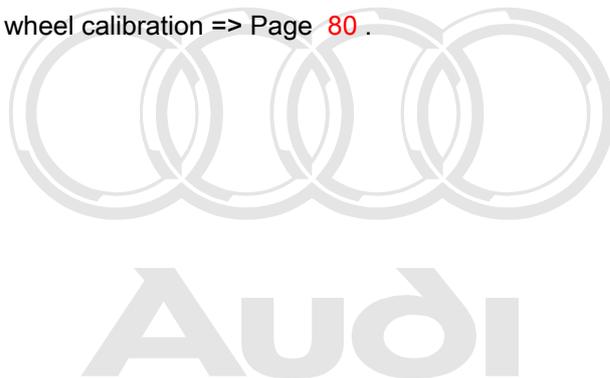
- Confirm OK display by pressing "ENTER", then perform wheel calibration => Page 80 .

Actual location is determined first.

Determination of location

Next display:

```
CHECKING
OF
GPS
VALUES,
PLEASE
WAIT...
```



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Notes:

- ◆ The test takes place internally in the navigation unit. Wait for next display.
- ◆ Reception of GPS signals is only possible outdoors in as open a space as possible, i.e. not in a tunnel, under a bridge or trees, between high buildings or in enclosed spaces (e.g. workshop).
- ◆ If reception is poor move to a different location.

If GPS signal allowing location determination is received, the following display appears:

```
[Empty display box]
```

```
GPS  
SIGNAL  
RECEIVED  
> CONTINUE
```

- Continue by pressing "ENTER".

The test drive (basic calibration) is then continued with shunt calibration =>Page 93 .

If no GPS signal allowing location determination is received, the following display appears:

Indicated on display:

```
NO GPS  
SIGNAL  
RECEIVED  
> CONTINUE
```

- Continue by pressing "ENTER".

Note:

Normally the location of the vehicle is determined within 1 minute of switching on ignition.

If battery has been disconnected and then re-connected, GPS receiver is re-initialised when ignition is switched on. In such cases initial determination of vehicle location may take up to 15 minutes.

Indicated on display:

```
MOVE  
VEHICLE  
TO DIFFERENT  
LOCATION  
> OK
```

- Move vehicle to an area with better reception, i.e. outdoors in as open a space as possible and confirm with OK.
- Continue with this procedure until display indicates reception of GPS signal:

```
GPS  
SIGNAL  
RECEIVED  
> CONTINUE
```

- Continue by pressing "ENTER".

The test drive (basic calibration) is then continued with shunt calibration =>Page 93 .

Shunt calibration

Notes:

- ◆ The Audi A8 is fitted with a shunt.
- ◆ Vehicle is not to be moved during calibration (heated rear window ON/OFF), as otherwise incorrect calibration values could be recorded.



- ◆ Influence of rear window on magnetic field sender is determined with heated rear window switched on and off.

Indicated on display:

```
HEATED  
REAR  
WINDOW  
ON  
> OK
```

- Switch on heated rear window and confirm by pressing "ENTER".

Indicated on display:

```
PLEASE  
WAIT
```

Note:

The test takes place internally in the navigation unit. Wait for next display.

Indicated on display:

```
HEATED  
REAR  
WINDOW  
OFF  
> OK
```

- Switch off heated rear window and confirm by pressing "ENTER".

Indicated on display:

```
PLEASE  
WAIT
```

Note:

Calibration takes place internally in the navigation unit. Wait for next display.

If calibration is OK, program continues with compass calibration
=> Page 95 .

If following display appears:

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```
NO REAR  
WINDOW  
MEASURED VALUE  
CHECK  
CONNECTOR  
> CONTINUE
```

Switch for heated rear window was not actuated or

- Check connectors at switch or heated rear window using current flow diagram and repair if necessary.
- Press "ENTER" to continue and repeat calibration of shunt

=> Page 93 .

Display if vehicle moved during calibration:

```
DO NOT  
MOVE  
VEHICLE  
BETWEEN  
ON/OFF  
> CONTINUE
```

- Press "ENTER" to continue and repeat calibration of shunt
=> Page 93 .

Calibration of compass

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Calibration requirements:

- ◆ Open, flat area (max. gradient 4°)
- ◆ Avoid magnetic or electromagnetic fields, i.e. do not drive alongside power lines, past a line of trucks or close to reinforced-concrete structures and not where there is a lot of iron in the vicinity (e.g. scrap, steel scaffolding, etc.).
- ◆ Vehicle speed approx. 20 ... 30 km/h
- ◆ An ideal test circuit is a circle with a minimum diameter of 30 m.
It is also possible to follow a rectangular path, provided that the vehicle returns to its starting point.

Next display:

```
SLOWLY  
DRIVE IN  
> 30 M  
CIRCLE  
> START
```

- Press "ENTER" and start negotiating circular course.

Indicated on display:

```
END OF  
CIRCLE  
REACHED?  
> OK
```

- Complete circuit in line with calibration requirements and confirm OK display on completion by pressing "ENTER".

After successful completion of compass calibration, test drive (basic calibration) of navigation system is over and the following is displayed:

```
CALIBR-  
ATION  
TEST DRIVE  
OVER.  
> CONTINUE
```

- Continue by pressing "ENTER".



Indicated on display:

```
SERVICE MENU:  
> WHEEL CALIB.  
  WIRING  
  TEST DRIVE  
  SYS. TEST  
  END
```

- Select menu item "END" using cursor keys.

Indicated on display:

```
SERVICE MENU:  
> WHEEL CALIB.  
  WIRING  
  TEST DRIVE  
  SYS. TEST  
  END
```

- Confirm selection by pressing "ENTER".

If compass cannot be calibrated the following fault message is displayed.

Fault message on display:

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```
COMPASS  
CANNOT  
BE  
CALIBRATED  
> CONTINUE
```

A more detailed description of the calibration fault is given on the display.

Compass calibration is then to be repeated => Page 95 .

- Continue by pressing "ENTER".

One of the three following fault messages appears on the display.

1st cause of fault:

```
DISTANCE  
TOO  
SHORT.  
> CONTINUE
```

- Press "ENTER" to continue and repeat compass calibration
=> Page 95 .

2nd cause of fault:

```
INTER-  
FERENCE  
DURING  
CIRC. COURSE  
> CONTINUE
```

- Press "ENTER" to continue and repeat compass calibration

=> Page 95 .

3rd cause of fault:

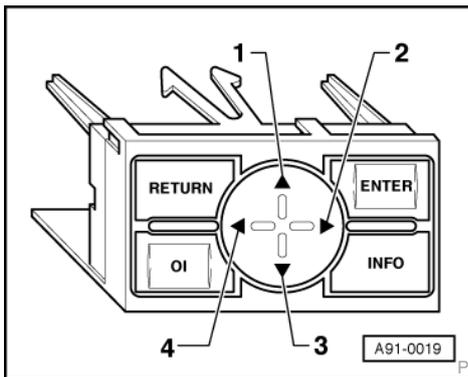
```
CIRCLE
NOT
COMPLETE
> CONTINUE
```

- Press "ENTER" to continue and repeat compass calibration
=> Page 95 .

3.14 - System test on navigation system I

The system test is an internal system diagnostic procedure consisting of five test steps:

- ◆ Call-up of current parameters => Page 98
- ◆ Wheel pulse test => Page 100
- ◆ Compass test => Page 102
- ◆ Shunt test => Page 104
- ◆ Internal control unit test => Page 105



- Call up technical service software => Page 78
- -> Select menu item "SYS. TEST" with cursor keys -1- and -3-.

Indicated on display:

```
SERVICE MENU:
> WHEEL CALIB.
  WIRING
  TEST DRIVE
  SYS. TEST
  END
```

- Confirm selection by pressing "ENTER".

Indicated on display:

```
CHECK:
A8 - SAL - D2
TYRES:
225/60 16
```



>	YES
	NO

- If "ENTER" is pressed to confirm selection, program continues with selected menu item.
- If selection is not confirmed with "ENTER", the following message appears:

Indicated on display:

PERFORM WHEEL CALIBRATION	
>	OK



- Confirm OK display by pressing "ENTER", then perform wheel calibration => Page 80.

Indicated on display:

SYSTEM TEST	
> PARAMETERS	
WHEEL SENSOR	
COMPASS	
SHUNT	
INTERNAL	



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Notes:

- ◆ Either complete system test or individual test steps can be implemented.
- ◆ Press "RETURN" to exit from "SYSTEM TEST" menu.

Call-up of current parameters

Note:

Current parameters can be checked to ensure correct settings or to locate missing or incorrect settings and calibration values which could impair navigation performance or lead to total failure of navigation system (e.g. incorrect vehicle model selected).

Test requirements:

- ◆ Displays for vehicle model, track width and tyre type must match actual parameters.
 - ◆ Calibration values from test drive are required, i.e. test drive must have been performed beforehand.
- Select menu item "PARAMETERS" using cursor keys.

Indicated on display:

SYSTEM TEST	
> PARAMETERS	
WHEEL SENSOR	
COMPASS	
SHUNT	
INTERNAL	

- Confirm selection by pressing "ENTER".

Indicated on display:

--

```

VEHICLE
-----
A8 - D2
-----
>   CONTINUE
    
```

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

If fault is detected, i.e. information on display does not match actual vehicle model:

- Perform wheel calibration => Page 80

Indicated on display:

```

REAR TRACK
WIDTH
-----
1592 MM
>   CONTINUE
    
```

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

If fault is detected, i.e. displayed track width does not match vehicle model (deviations > 1%):

Possible track widths => Table of track widths, Page 84

- Perform wheel calibration => Page 80

Note:

If tyres are a special type, menu item "SPECIAL" must be selected

=>Page 83.

Notes:

- ◆ Effective circumference for new tyres lies within a tolerance range of approx. $\pm 1\%$ and is adapted to the best possible extent during navigation.
- ◆ Deviations from specified new tyre circumferences are therefore normal and reflect the adaption process.
- ◆ Major deviations between indicated tyre circumference and normal circumferences only occur in the case of serious miscalibration (driving over an incorrectly entered distance).
 Tyre circumference setting should only be corrected by performing wheel calibration if the above case applies or if customer has reported consistent distance errors.
 Possible typical tyre circumferences =>Page 99 .

Table of typical tyre circumferences:

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

Note:

If tyres are not new, typical circumferences may deviate from specified values.



Indicated on display:

```

TYRE TYPE:
-----
225/60 16
-----
C:      2071 MM
>      CONTINUE

```

- Continue by pressing "ENTER".

Possible tyre sizes => Tyre table, Page 82

If fault is detected, i.e. displayed tyre type does not match actual tyres:

- Perform wheel calibration => Page 80

Note:

If tyres are a special type, menu item "SPECIAL" must be selected

=>Page 83.

Indicated on display:

```

TEST DRIVE
-----
HAS BEEN
PERFORMED
>                OK

```

- If no faults are detected, press "ENTER" to conclude parameter test.

If a fault is detected ("MISSING" is displayed), i.e. test drive has not been performed:

- Perform test drive => Page 91 .

Wheel pulse test

When wheel pulse test is performed, display shows speeds of left and right wheels. Reverse gear recognition for detecting change in direction is also checked by reversing briefly.

Test requirements:

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- ◆ Drive in a straight line at a speed of > 20 km/h.
- ◆ Reverse for about 3 metres for reverse gear recognition.
- Select menu item "WHEEL SENSOR" using cursor keys.

Indicated on display:

```

SYSTEM TEST
>  PARAMETERS
   WHEEL SENSOR
   COMPASS
   SHUNT
   INTERNAL

```

- Confirm selection by pressing "ENTER".

Indicated on display:

DRIVE AT
CONSTANT
SPEED
AND COMPARE
> CONTINUE

- Continue by pressing "ENTER".

Indicated on display:

BOTH
WHEEL
SPEEDS
> OK

- Confirm OK display by pressing "ENTER".
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Indicated on display:

L: 0.0
R: 0.0
> YES
NO

- Start engine and drive forwards in a straight line. Whilst doing so, compare displays for left (L) and right (R) wheel sensors.

Notes:

- ◆ Difference between speed of left (L) and right (R) wheel in lower speed range must not exceed 5 km/h.
- ◆ If difference exceeds 5 km/h, check output signals of ABS control unit.

=> Running Gear Self-diagnosis; Repair Group 01; Self-diagnosis, Electrical check Self-diagnosis, Electrical check

- ◆ Wheel pulse test must be repeated => Page 100 .
- Bring vehicle to a halt.
- If values are within permitted range, confirm YES display by pressing "ENTER".

Indicated on display:

REVERSE
VEHICLE
BRIEFLY
> OK

- Engage reverse gear.
- Reverse for about 3 metres and stop vehicle.
- Confirm OK display by pressing "ENTER".

If test is OK, program continues with compass test => Page 102 .

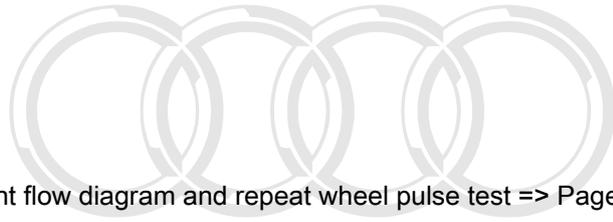
If there is a fault with reverse gear recognition, the following display appears:



```

REVERSE
DRIVING
NOT
DETECTED
>          OK

```



- Confirm OK display by pressing "ENTER".
- Check signal from reversing light switch using current flow diagram and repeat wheel pulse test => Page 100.

Compass test



The first step in the compass test is an internal check on the compass wiring.
 The compass directions are then checked by driving around a circular course.

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Test requirements:

- Open, flat area (max. gradient 4°)
- Avoid magnetic or electromagnetic fields, i.e. do not drive alongside power lines, past a line of trucks or close to reinforced-concrete structures and not where there is a lot of iron in the vicinity (e.g. scrap, steel scaffolding, etc.).
- Vehicle speed approx. 20 ... 30 km/h
- The test circuit is ideally a circle with a minimum diameter of 30 m. It is also possible to follow a rectangular path.

- Select menu item "COMPASS" using cursor keys.

Indicated on display:

```

SYSTEM TEST
>  PARAMETERS
   WHEEL SENSOR
   COMPASS
   SHUNT
   INTERNAL

```

- Confirm selection by pressing "ENTER".

Internal wiring test is now performed.

If there are no faults, compass test continues automatically.

If there is a fault, i.e. no compass data detected, following fault message appears on display:

Fault message on display:

```

NO
COMPASS
DATA
AVAILABLE.
>  CONTINUE

```

- Continue by pressing "ENTER".

Indicated on display:

```


```

```
CHECK
COMPASS
AND
WIRING
>          OK
```

- Check compass wiring using current flow diagram and repair if necessary. Restart compass test => Page 102.

Compass test continues automatically if wiring is OK.

Indicated on display:

```
DRIVE
SLOWLY
IN
CIRCLE.
>          START
```

- Confirm START display by pressing "ENTER".

Indicated on display:

```
END OF
CIRCLE
REACHED?
>          OK
```

- Negotiate test circuit in line with test requirements => Page 102 and, when end of test circuit is reached, confirm by pressing "ENTER".

After successful completion of compass test, the following display appears:

```
COMPASS
OK
>          CONTINUE
```

If compass test is OK, program continues with shunt test => Page 104.

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

1st cause: "Compass unusable"

```
COMPASS
NOT OK
>          CONTINUE
```

Recorded compass ellipse is unusable. This is caused by magnetic interference and/or defective magnetic field probe.

- Continue by pressing "ENTER".

2nd cause: "Distance too short"



```
FAULT:
DISTANCE
TOO
SHORT.
> CONTINUE
```

Diameter of circle was too small and/or circular course was negotiated at too high a speed.

- Press "ENTER" to continue and perform compass test correctly
=> Page 102 .

3rd cause: "Circle incomplete"

```
FAULT:
CIRCLE
NOT
COMPLETE
> CONTINUE
```

Complete circle was not detected.

- Press "ENTER" to continue and perform compass test correctly
=> Page 102 .

Shunt test

Shunt test checks wiring and resistance values with heated rear window switched on and off (approx. 2-3 seconds).

- Select menu item "SHUNT" using cursor keys.

Indicated on display:

```
SYSTEM TEST
> PARAMETERS
  WHEEL SENSOR
  COMPASS
  SHUNT
  INTERNAL
```

- Confirm selection by pressing "ENTER".

Next display:

```
HEATED
REAR
WINDOW
ON
> OK
```

- Switch on heated rear window and confirm by pressing "ENTER".

Next display:

```
HEATED
REAR
WINDOW
OFF
```

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```
> OK
```

- Switch off heated rear window and confirm by pressing "ENTER".

If shunt test is OK, system test selection menu reappears.

If following display appears:

```
NO REAR
WINDOW
MEASURED VALUE
CHECK
CONNECTOR
> CONTINUE
```

Switch for heated rear window was not actuated or

- Check connectors at switch or heated rear window using current flow diagram and repair if necessary.
- Press "ENTER" to continue and repeat shunt test => Page 104 .

Internal control unit test

Internal control unit components and the connection for the GPS aerial are checked during this test.

- Select menu item "INTERNAL" using cursor keys.

Indicated on display:

```
SYSTEM TEST
> PARAMETERS
  WHEEL SENSOR
  COMPASS
  SHUNT
  INTERNAL
```

- Confirm selection by pressing "ENTER".

Indicated on display:

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

- Start internal tests by pressing "ENTER".

Indicated on display:

```
INTERNAL
TESTS
RUNNING.
PLEASE
WAIT . . .
```

Wait for next display.

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On successful completion of control unit test, following display appears:

```
SELF TEST
OK
> CONTINUE
```

- Press "ENTER" to continue and end system test.

If faults occur during control unit test, one of the following fault messages is displayed:

1st cause: "No signals from GPS aerial"

```
NO
SIGNALS
FROM GPS
AERIAL
> CONTINUE
```

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- Use current flow diagram to check wiring and connector of GPS aerial and repair if necessary.
- If there are no wiring faults, test GPS aerial and replace if necessary.
- Press "ENTER" to continue and repeat internal control unit test
=> Page 105 .

2nd cause: "Navigation unit defective"

```
NAVIGAT.
UNIT
DEFECTIVE.
> PLEASE
REPLACE
CONTINUE
```

- Replace navigation system control unit.

Note:

If navigation system control unit is replaced, heed action to be taken => Page 77 .

- Press "ENTER" to continue and repeat internal control unit test
=> Page 105 .

Ending system test

Indicated on display:

```
SYSTEM TEST
> PARAMETERS
WHEEL SENSOR
COMPASS
SHUNT
INTERNAL
```

- Press "RETURN" to end system test.

Indicated on display:

```
SERVICE MENU:
```

```

>  WHEEL CALIB.
    WIRING
    TEST DRIVE
    SYS. TEST
    END
    
```

3.15 - Starting navigation system

Navigation system can be started on completion of calibration program.

Indicated on display:

```

SERVICE MENU:
>  WHEEL CALIB.
    WIRING
    TEST DRIVE
    SYS. TEST
    END
    
```

- Select menu item "END" with cursor key and confirm selection by pressing "ENTER".

Indicated on display:

```

CHECK:
A8 - D2
TYRES:
225/60 16
>                YES
                  NO
    
```

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- If "ENTER" is pressed to confirm selection, program continues with selected menu item.
- If selection is not confirmed with "ENTER", the following message appears:

Indicated on display:

```

PERFORM
WHEEL
CALIBRATION
>                OK
    
```

- Confirm OK display by pressing "ENTER", then perform wheel calibration => Page 80 .

Indicated on display:

```

PLEASE
INSERT
NAVI-
GATION CD
NOW.
>                OK
    
```

- Place navigation CD in CD-ROM drive if not already inserted and confirm with OK.

Navigation program is loaded and started automatically.



Indicated on display:

NAV MENU:
NO DEST.
ENTERED
* START
> SELECT

Note:

Language is loaded automatically or can be loaded directly using navigation basic menu if necessary => Operating instructions.

When performing the necessary Service navigation test drive, location can be entered manually => Page 108 .

Navigation system itself can however also determine location. This involves driving vehicle for several kilometres over a route with as many bends or junctions as possible.

Navigation system then determines location automatically.

3.16 - Entering location

When performing the necessary Service navigation test drive, location is to be entered as follows.

Note:

Select suitable road junction which is available in digital format on navigation CD.

At present only towns with more than 50,000 inhabitants have been fully digitised. In smaller towns, use can be made of a major road junction or the like.

- Start navigation system => Page 107 .

Indicated on display:

NAV MENU:
NO DEST.
ENTERED
* START
> SELECT

- Press "OFF" for approx. 3 seconds.

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LOCATION
ENTRY
> DIRECT
* MEMORY
CURR. DEST.

- Confirm selection by pressing "ENTER".

Indicated on display:

TOWN:

```
ABCDEFGH  
HIJKLMN  
OPQRSTU  
VWXYZ . -  
ÄÖÜ _ 012  
3456789
```

- Select name of town using cursor keys and press "ENTER".

Display example "INGOLSTADT":

```
TOWN:  
INGOLSTADT  
ABCDEFGH  
HIJKLMN  
OPQRSTU  
VWXYZ . -  
ÄÖÜ _ 012  
3456789
```

- Confirm selection by pressing "ENTER".

Indicated on display:

```
ROAD:  
-  
ABCDEFGH  
HIJKLMN  
OPQRSTU  
VWXYZ . -  
ÄÖÜ _ 012  
3456789
```

- Enter name of road using cursor keys and press "ENTER".

Display example "ETTINGERSTRASSE":

```
ROAD:  
ETTINGERSTR.  
ABCDEFGH  
HIJKLMN  
OPQRSTU  
VWXYZ . -  
ÄÖÜ _ 012  
3456789
```

- Confirm selection by pressing "ENTER".

Indicated on display:

```
JUNCTION:  
> AUTO-UNION  
B13  
B16
```

- Select junction using cursor keys, e.g. "B16", and confirm selection by pressing "ENTER".

Indicated on display:

```
DIRECT  
ENTRY:
```

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```

ETTINGERSTR.
ýB16
DIST. APPROX.
> 0 M
AHEAD↑↓

```

- Enter location of vehicle relative to centre point of junction as accurately as possible using cursor keys.

Example:

Vehicle is in Ettingerstrasse, about 75 metres beyond junction with major road B16.

Indicated on display:

```

DIRECT
ENTRY:
  ETTINGERSTR.
  ýB16
  DIST. APPROX.
  > 75 M
  BACK↑↓

```

- Confirm selection by pressing "ENTER" and return to navigation menu.

Indicated on display:

```

NAV MENU:
NO DEST.
ENTERED
*      START
>      SELECT

```

Notes:

- ♦ This function cannot be implemented if navigation CD has no record of a suitable road junction in selected town for purposes of entering location.
- ♦ The following display then appears after selection of town:

```

LOCATION
ENTRY
LOCATION
ENTRY
UNSUITABLE

```

- Repeat location entry in nearest larger town with a junction registered on navigation CD.

3.17 - Interrogating navigation system I software version

Software version is interrogated by implementing the following steps:

- Press both "RETURN" and "INFO" on operating unit and switch ignition "ON".

The following then appears on centre display of dash panel insert (example):

```

SOFTWARE
VERSION

```

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

- Note down display and keep to hand when making enquiries.
- Switching off ignition terminates this function.

3.18 - Notes on replacing navigation system components

- ◆ After exchanging navigation component, always complete "Annex to navigation system fault report" and submit it together with defective component in original packaging in line with warranty/ replacement part procedures.
- ◆ This applies to the following navigation components:
 - Navigation system with CD drive control unit
 - Operating electronics control unit, navigation
 - Navigation aerial
 - Magnetic field sender (compass)
- ◆ "Annex to navigation system fault report" can be found in "Technical Service Handbook - Illustrated catalogue".

3.19 - Removing and installing navigation system with CD drive control unit -J401

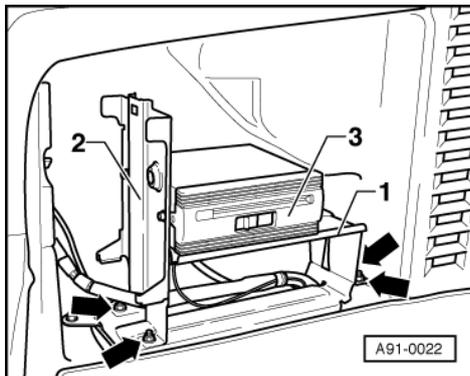
Control unit is located in left luggage compartment storage area.

IMPORTANT:

If navigation system control unit is replaced, heed action to be taken =>Page 77 .

Removing:

- Open left luggage compartment storage area.



- -> If a telephone transmitter/receiver unit is installed in mounting frame -1-, start by removing this from frame -2-.

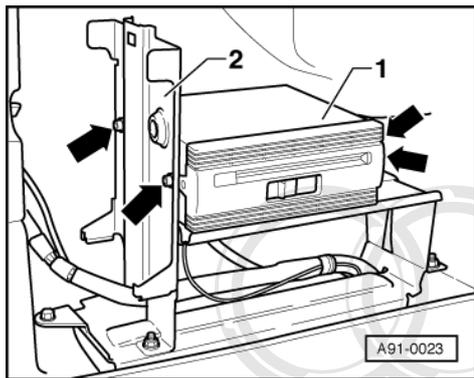
Attention:

Never use any bolts other than genuine bolts for securing control unit, as this could otherwise be destroyed.

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Remove mounting frame together with navigation control unit -3- and audio CD changer if fitted.

- Slacken off and unscrew the four nuts -arrows- (6 Nm).



- Take out entire mounting frame.
- -> Unscrew the four bolts -arrows- (2 Nm) and take control unit -1- out of mounting frame -2-.
- Unplug wiring-harness connector and aerial wire connector on back of control unit.

Installing:

- Install accordingly in reverse order of removal.

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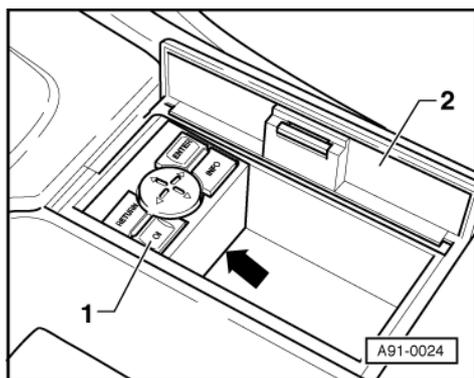
Notes on installation:

- ♦ To avoid system malfunctions, navigation system control unit and mounting frame must be installed horizontally and protected as far as possible against vibration.
- ♦ Air circulation is also to be ensured, i.e. vent slots in control unit are not to be obstructed on installation.
- ♦ On control unit replacement, always complete "Annex to navigation system fault report" and submit it together with defective component => Page 111 .

3.20 - Removing and installing navigation system operating unit -E199

Operating unit (cursor element) is located in centre console storage compartment.

Removing:



- -> Open cover of storage compartment -2- in centre console.

Note:

Keep operating unit vertical when lifting it out of compartment. Do not tilt or turn operating unit, as this could break off retainer tabs on underside.

- Apply offset screwdriver (max. 1 x 6.5 mm) to lower edge -arrow- of operating unit -1-, prise up carefully and lift out of storage compartment.
- Unplug connector from operating unit.

Installing:

- Install accordingly in reverse order of removal.

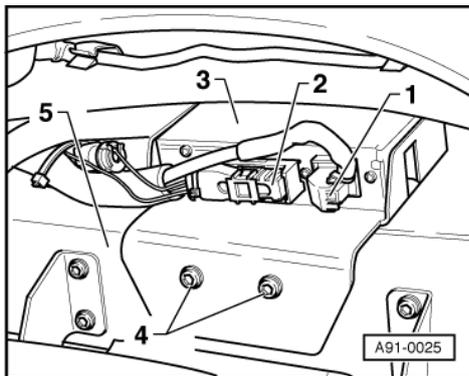
3.21 - Removing and installing operating electronics control unit, navigation -J402

Control unit is located behind dash panel insert at dash panel cross member.

Removing:

- Remove dash panel insert.

=> Electrical System; Repair Group 90; Removing and installing dash panel insert Removing and installing dash panel insert



- -> Unplug both connectors -1- and -2- at control unit -3-.
- Unscrew the two bolts -4- (4.5 Nm) and detach control unit from dash panel cross member -5-.

Installing:

- Install accordingly in reverse order of removal.

Note:

- ♦ On control unit replacement, always complete "Annex to navigation system fault report" and submit it together with defective component => Page 111 .

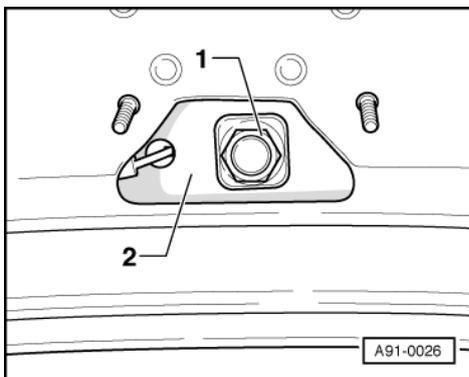
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3.22 - Removing and installing navigation aerial (GPS) -R50

Aerial is mounted on boot lid.

Removing:

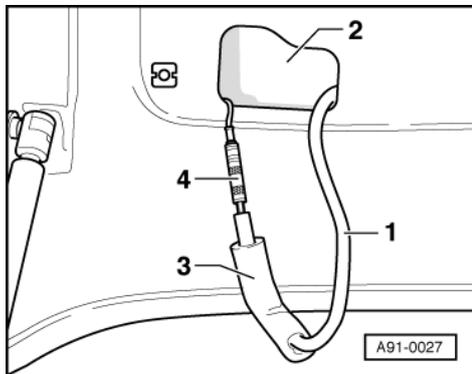
- Start by removing boot lid trim.





Notes:

- ◆ Before removing aerial, attach piece of cable or cord (approx. 1 m long) to end of aerial wire and then pull out aerial wire through aerial hole.
- -> Unscrew aerial connection -1- (3.5 Nm) from boot lid -2-.



- -> Carefully guide aerial wire -1- out of left opening in boot lid panel -2-.
- Move aside foam sleeve -3- covering connector and unplug connector -4-.
- Carefully detach aerial upwards and pull out aerial wire through aerial hole.

Installing:

- Install accordingly in reverse order of removal.

Notes:

- ◆ Before fitting new aerial, primed navigation aerial must be painted in appropriate vehicle colour.
- ◆ On installing new aerial wire, use piece of cable or cord to draw wire into boot lid.
- ◆ On control unit replacement, always complete "Annex to navigation system fault report" and submit it together with defective component => Page 111 .

3.23 - Removing and installing magnetic field sender (electronic compass) -G197

Magnetic field sender is located beneath rear shelf on luggage compartment partition.

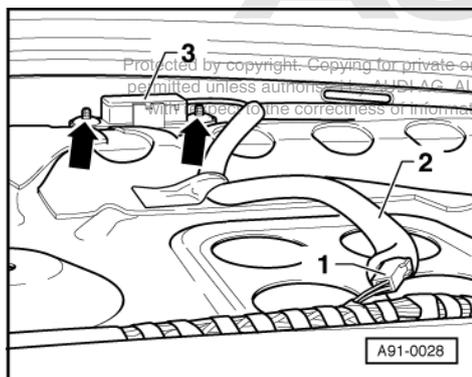
IMPORTANT:

If magnetic field sender (compass) is replaced, heed action to be taken =>Page 77 .

Removing:

- Remove rear shelf.

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



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- -> Connector for magnetic field sender -1- is located under foam sleeve -2-. Move aside foam sleeve and unplug connector.
- Working from luggage compartment, remove the two clips -arrows- downwards from luggage compartment partition.
- Lift magnetic field sender -3- together with bracket off luggage compartment partition.

Installing:

- Install accordingly in reverse order of removal.

Notes on installation:

- ◆ Magnetic field sender and bracket must be installed as horizontally as possible and secured to luggage compartment partition with clips.
- ◆ Secure wiring to partition with adhesive tape.
- ◆ When installing rear shelf, ensure that none of the wires is trapped and that magnetic field sender is not dislodged.
- ◆ On control unit replacement, always complete "Annex to navigation system fault report" and submit it together with defective component => Page 111

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3.24 - Removing and installing heated rear window measuring resistor -N219

Shunt is attached beneath right D-pillar trim.

IMPORTANT:

If shunt for heated rear window is replaced, heed action to be taken

=> Page 77.

Removing:

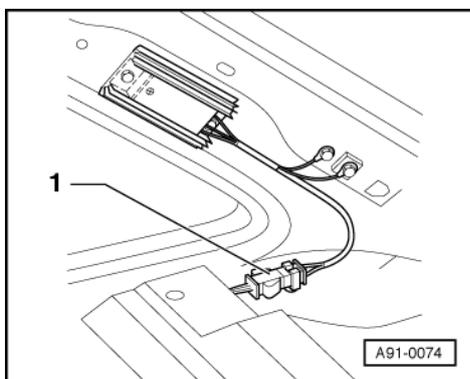
- Remove rear shelf.

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

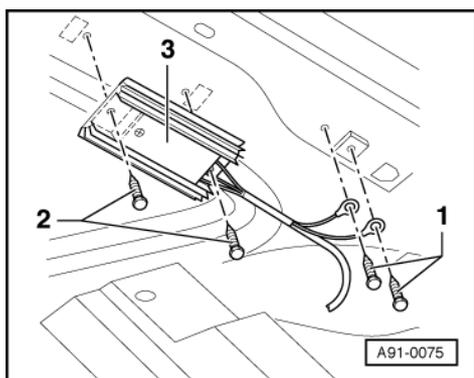
- Remove D-pillar trim.

=> General body repairs, Interior; Repair group 70; Trim panels; Removing and installing D-pillar trim Trim panels Removing and installing D-pillar trim

=> General Body Repairs, Interior; Repair Group 70; Trim Panels gradually introduced as of 10.98 (with interior mirror at headliner); Removing and installing D-pillar trim Trim Panels gradually introduced as of 10.98 (with interior mirror at headliner) Removing and installing D-pillar trim



- -> Unplug connector -1- to wiring harness.



- -> Unscrew the two bolts -1- (9 Nm).
- Unscrew the two bolts -2- (4 Nm) and detach shunt -3-.

Installing:

- Install accordingly in reverse order of removal.

4 - Navigation system II (navigation system Plus) (up to week 47/99)

4.1 - Navigation system II (navigation system Plus) (up to week 47/99)

4.2 - General information

Attention:

Disconnect battery earth strap before working on electrical system.

Telematics control unit service mode must be activated before disconnecting battery.=>Radio, Telephone and Navigation System Self-diagnosis; Repair Group 01; Telematics System Self-diagnosis; Adaption

Notes:

- ◆ Establish radio anti-theft code before disconnecting battery.
- ◆ Telematics control unit service mode must be activated before disconnecting battery.
- ◆ On re-connecting battery, remember to activate vehicle equipment (radio, clock, electric window lifters, etc.) in line with owner's manual and to deactivate telematics control-unit service mode.

Important:

To avoid contact corrosion exclusive use is to be made of approved bolts, nuts, washers etc.

These elements have a special surface coating and can be recognised from their greenish colour.

Such bolts also have to be stored separately.

4.3 - General description

The radio navigation system (RNS) combines the functions of a navigation system with those of a top-quality RDS car radio. An additional option enables the reception of television programmes via a TV tuner

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The system twin DIN housing contains the following:

- ◆ RDS radio receiver
- ◆ 5-inch colour LCD
- ◆ Navigation system with angular acceleration sensor and GPS satellite receiver
- ◆ CD-ROM drive for navigation system

A TV tuner for reception of television programmes and video text is located in the left luggage compartment storage area.

Audio system can also be extended to include connection of a 6x CD changer.

Notes:

- ◆ For dealing with complaints, it is absolutely essential to be familiar with the functions and controls of the radio system.
- ◆ Additional information

=> Operating instructions

- ◆ For service installation, service work or fault-finding, consult

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

=> Fitting Instructions

- ◆ For detailed fitting instructions, e.g. detaching/attaching trim panels, consult Workshop Manual "General Body Repairs".
- ◆ The use of radios supplied by other manufacturers may affect the aerial amplifier, as the radio navigation system has a "remotely powered aerial", i.e. the aerial amplifier (including TV aerial amplifier) is powered via the neutral conductor of the HF cable.

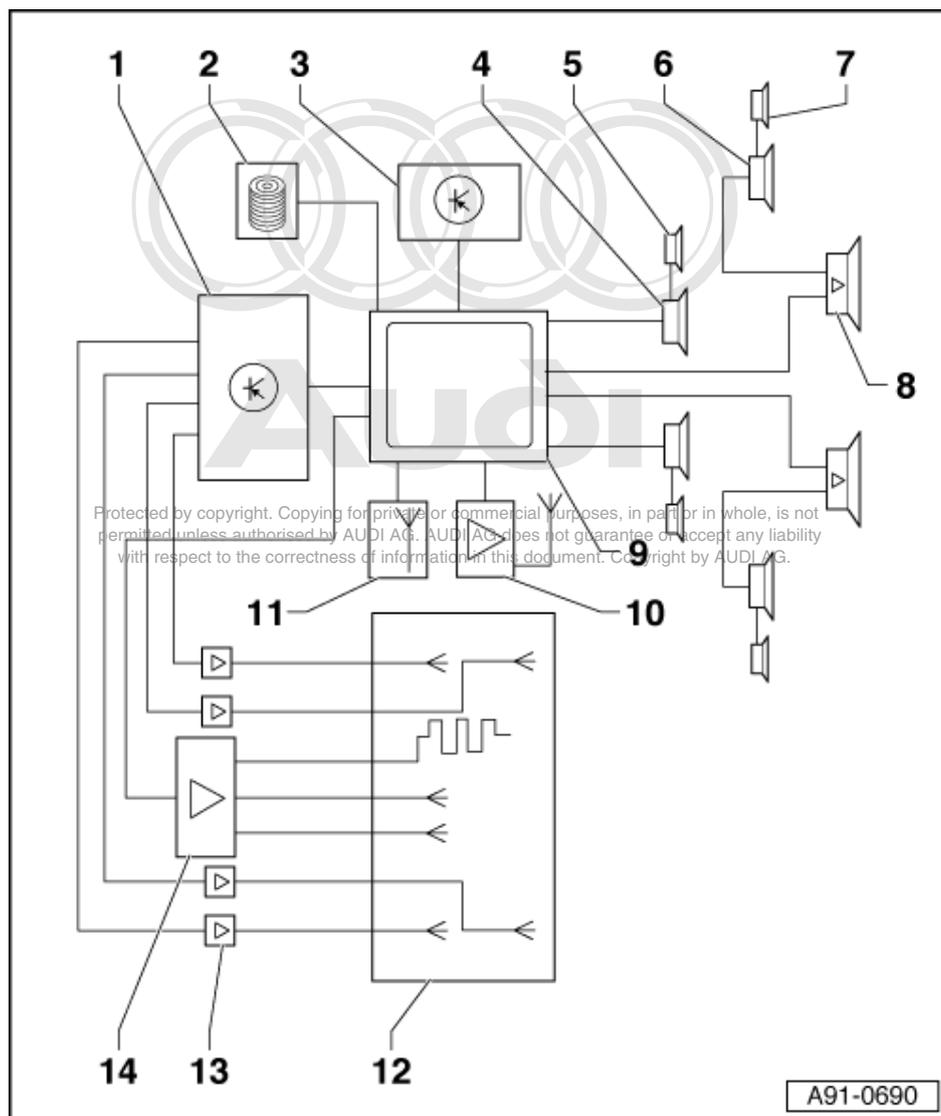
Notes on service installation of CD changers:

Vehicles which are equipped for the service installation of CD changers have a special factory-fitted wiring harness for the CD changer. The connecting cable can only be used in conjunction with genuine Audi CD changers.

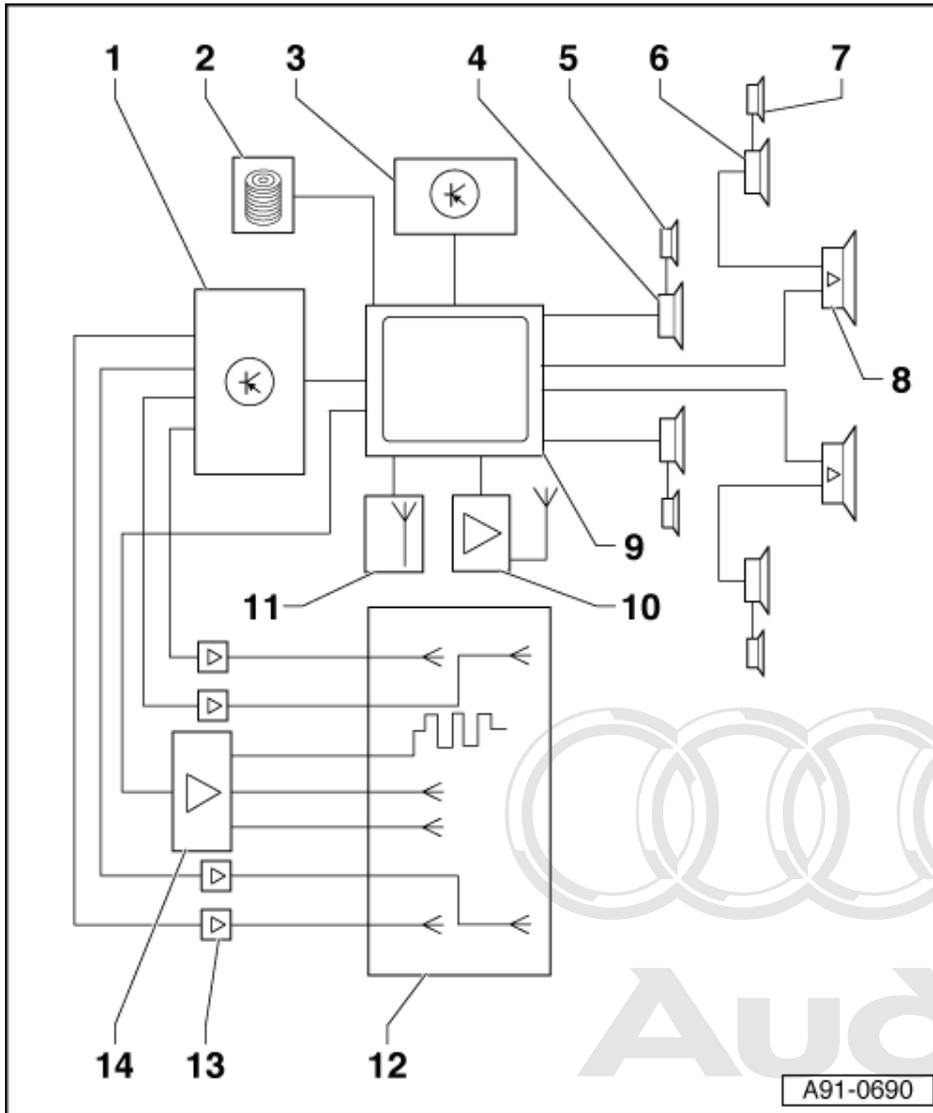
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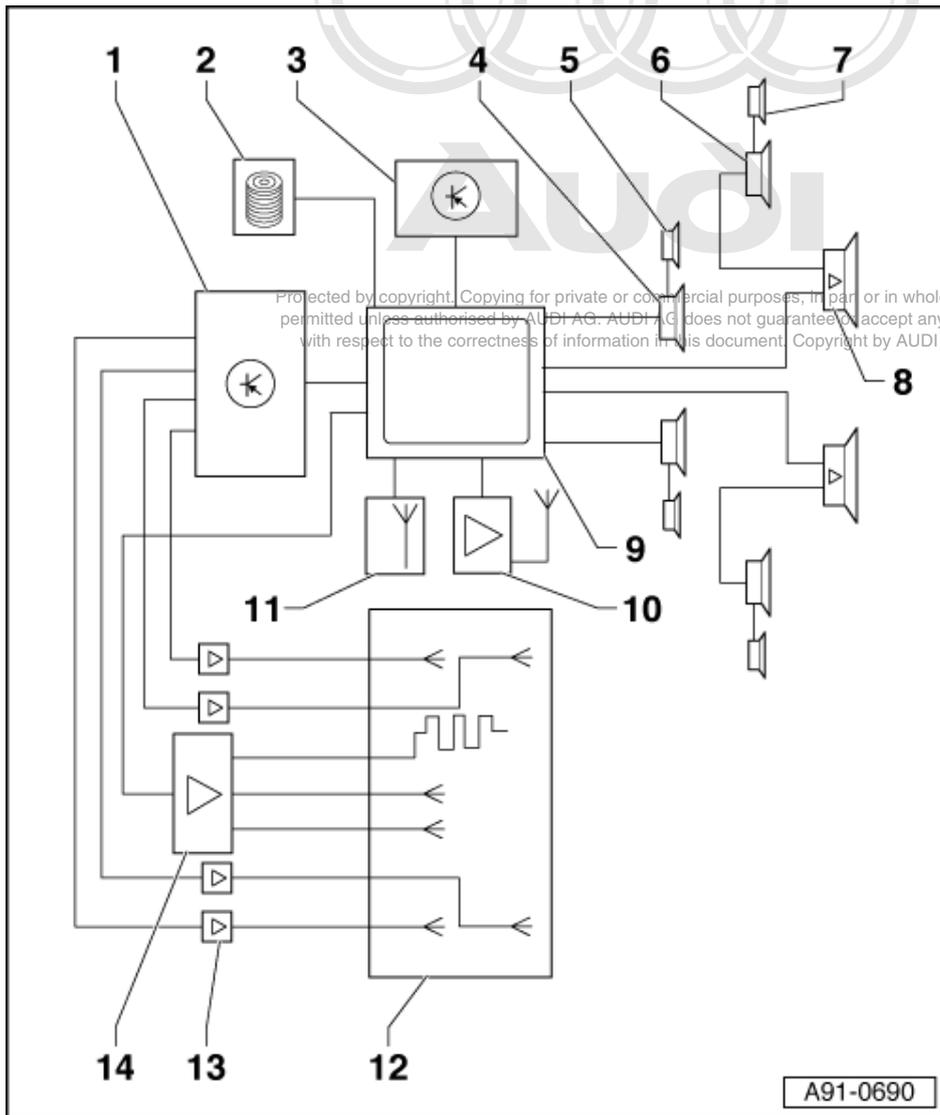
4.4 - Block diagram of navigation system II (navigation system Plus)



- 1 TV tuner at rear left of luggage compartment beneath side trim
- 2 CD changer (optional) at rear left of luggage compartment beneath side trim
- 3 Interface for multi-function steering wheel behind dash panel insert (up to MY 99)
- 4 Front bass speaker in bottom of door trim
- 5 Front treble/mid-range speaker in top of door trim



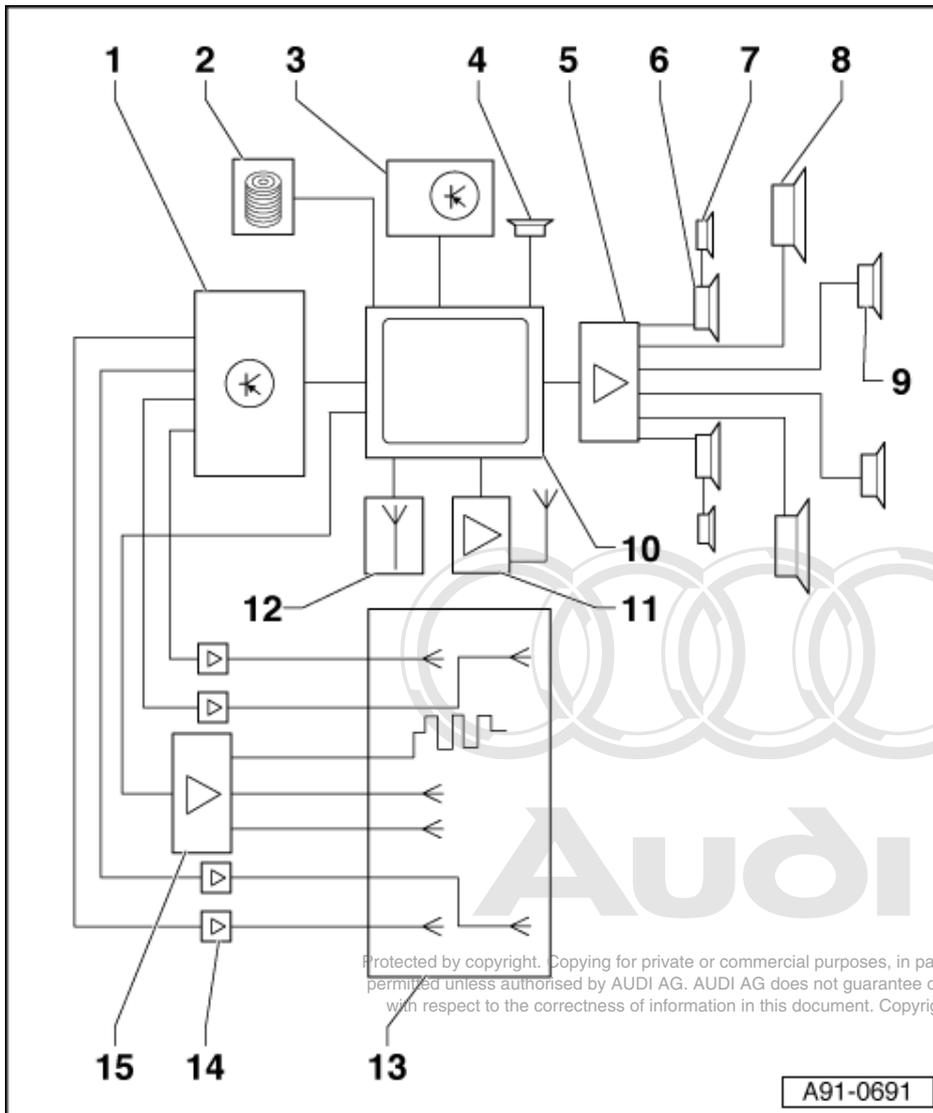
- 6 Rear mid-range speaker in bottom of door trim
 7 Rear treble speaker in top of door trim
 8 Rear active speaker in rear shelf
 9 Operating electronics control unit, navigation
 10 Power aerial or radio/telephone rod aerial with filter for mirrored glass windows/telephone
 11 Navigation (GPS) aerial on boot lid
 12 Rear window with four integrated TV aerials, two radio aerials and heating



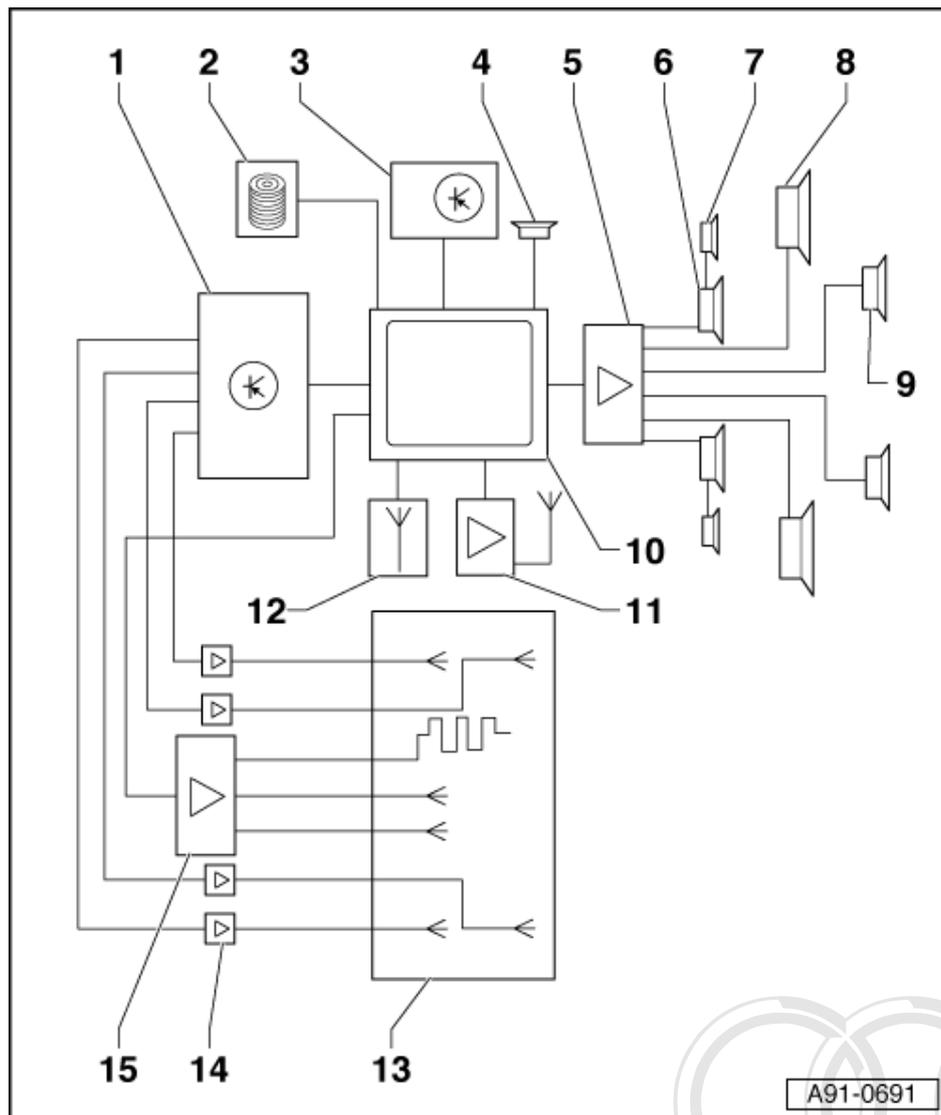
13 Four amplifiers for TV aerials

14 Amplifier for radio aerials

4.5 - Block diagram of navigation system II (navigation system Plus) with BOSE sound system

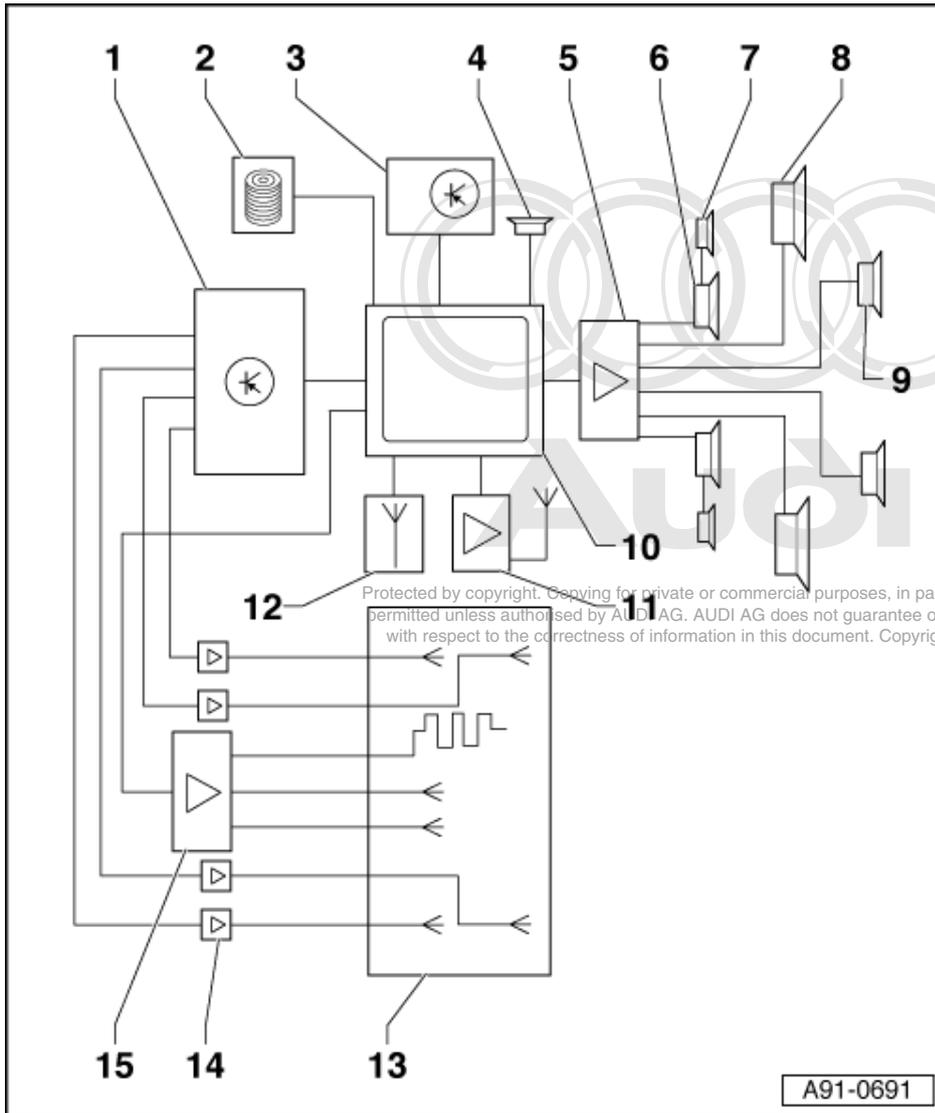


- 1 TV tuner at rear left of luggage compartment beneath side trim
- 2 CD changer (optional) at rear left of luggage compartment beneath side trim
- 3 Interface for multi-function steering wheel behind dash panel insert (up to MY 99)
- 4 Hands-free loudspeaker (telephone/navigation system loudspeaker -R39) in left B-pillar trim



- 5 BOSE power amplifier at rear left of luggage compartment
- 6 Front bass speaker in bottom of door trim
- 7 Front treble speaker in top of door trim
- 8 Rear bass speaker in rear shelf
- 9 Rear treble/mid-range speaker in bottom of door trim
- 10 Operating electronics control unit, navigation
- 11 Power aerial or radio/telephone rod aerial with filter for mirrored glass windows/telephone

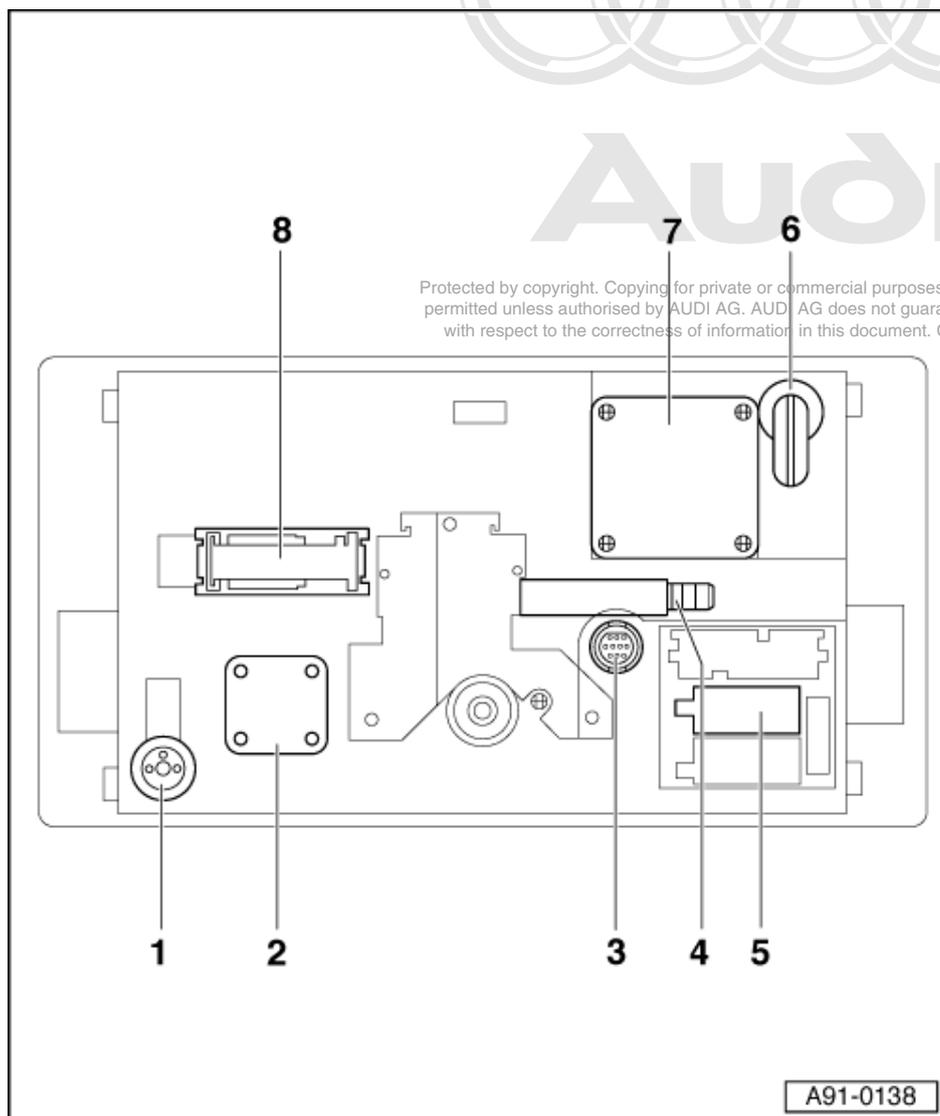
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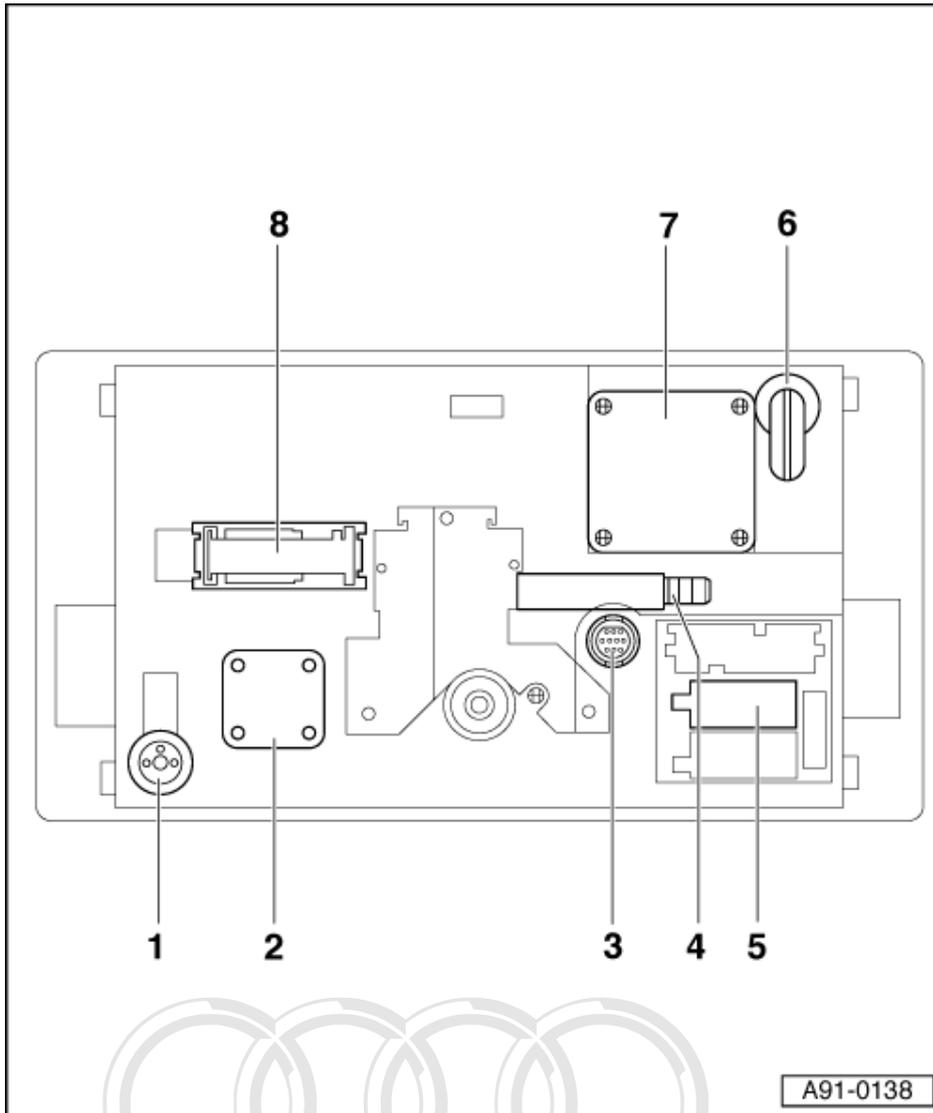
- 12 Navigation (GPS) aerial on boot lid
- 13 Rear window with four integrated TV aerials, two radio aerials and heating
- 14 Four amplifiers for TV aerials
- 15 Amplifier for radio aerials



4.6 - Connectors on back of operating electronics control unit, navigation -J402



- 1 Radio aerial connection: Connection socket for radio aerial
- 2 Cooling fan
- 3 Video connection: 11-pin connector for connection of TV tuner
- 4 Earth connection

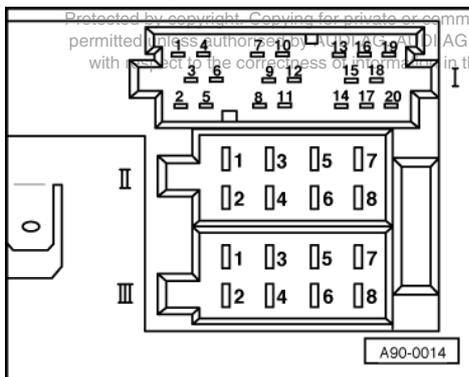


- 5 Radio connection: 36-pin connection block with three multi-pin connectors and one fuse
- 6 GPS aerial connection: Connection socket for navigation aerial
- 7 Cooling fan
- 8 Navigation connection: 26-pin connector for navigation sensors

Contact assignments of multi-pin connectors of operating electronics control unit, navigation

Note:

Non-listed plug contacts are not used.

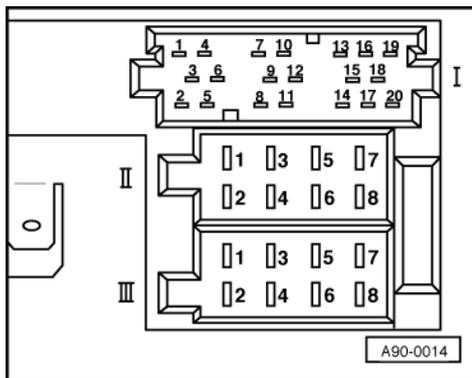




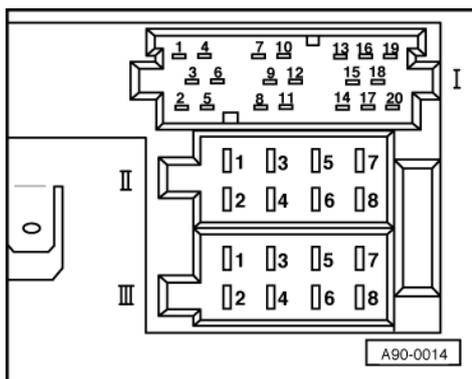
-> Radio connection

20-pin connector I

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



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



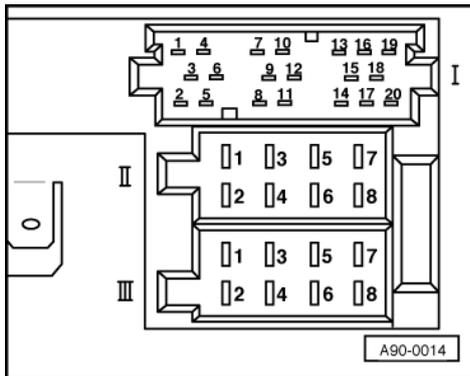
-> Radio connection

Brown 8-pin connector II

- 3 - Speaker (+) front right
- 4 - Speaker (-) front right
- 5 - Speaker (+) front left (hands-free loudspeaker + with BOSE sound system)

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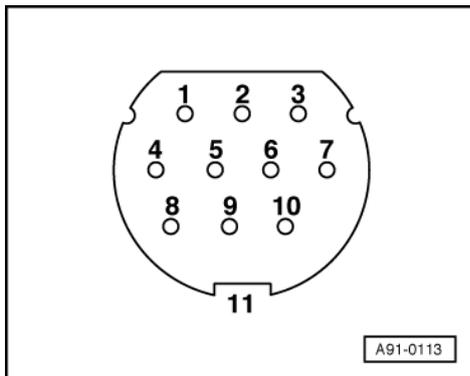
6 - Speaker (-) front left (hands-free loudspeaker - with BOSE sound system)



-> Radio connection

Black 8-pin connector III

- 1 - GALA (vehicle-speed signal)
- 2 - Telephone muting
- 3 - K-wire (self-diagnosis)
- 4 - Terminal 86s (S-contact)
- 5 - Switched positive for power aerial
- 6 - Switch illumination (terminal 58s)
- 7 - Battery + (terminal 30)
- 8 - Earth (terminal 31)

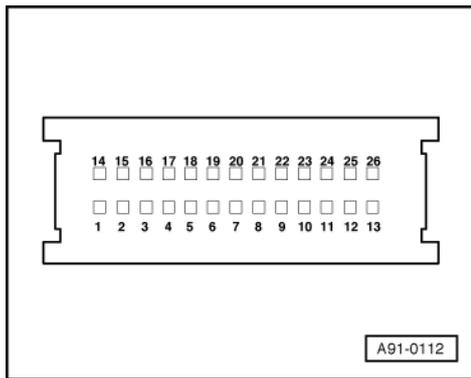


-> Video connection (RGB video input)

11-pin connector

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

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-> Navigation connection

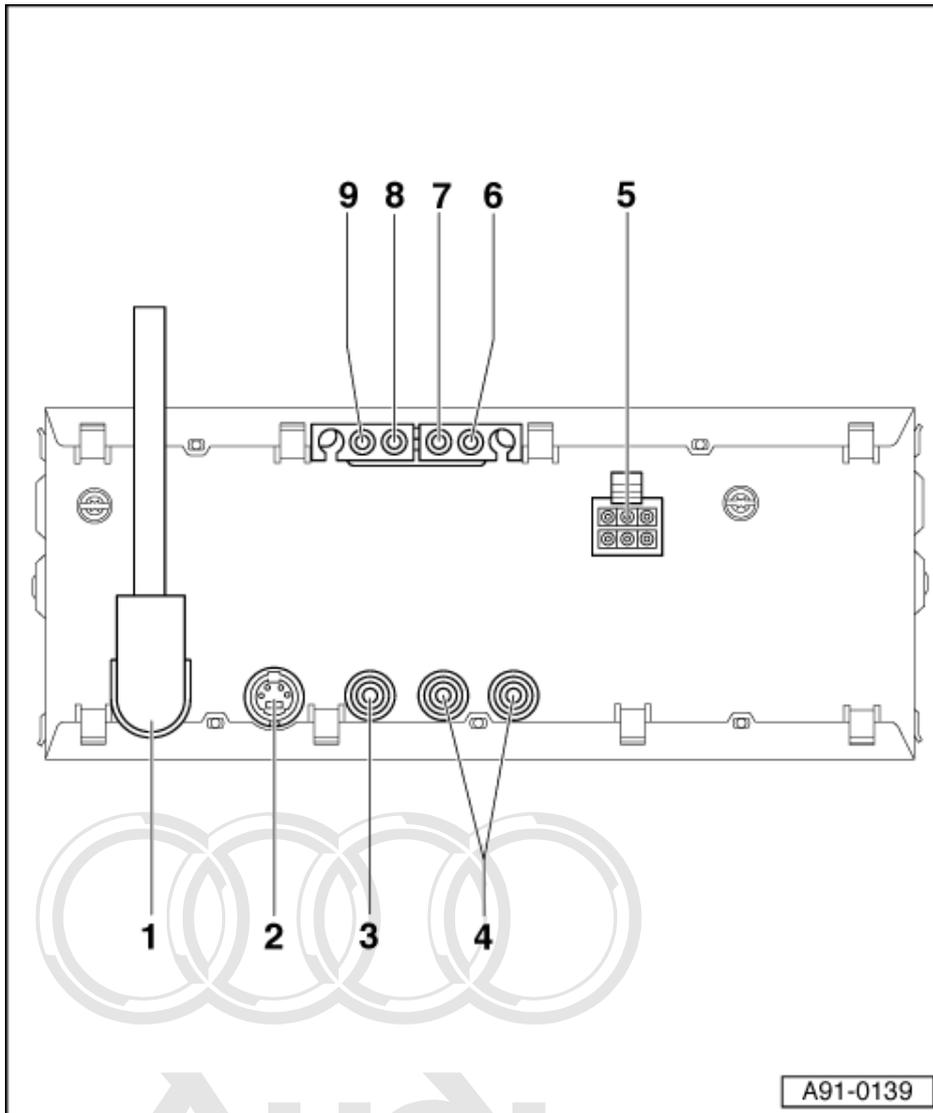
26-pin connector

- 4 - Terminal 15
- 5 - Left speed sensor input (ABS)
- 13 - CAN bus High (to -J415)
- 14 - Switched positive (power aerial)
- 17 - Reversing light switch
- 18 - Right speed sensor input (ABS)
- 26 - CAN bus Low (to -J415)



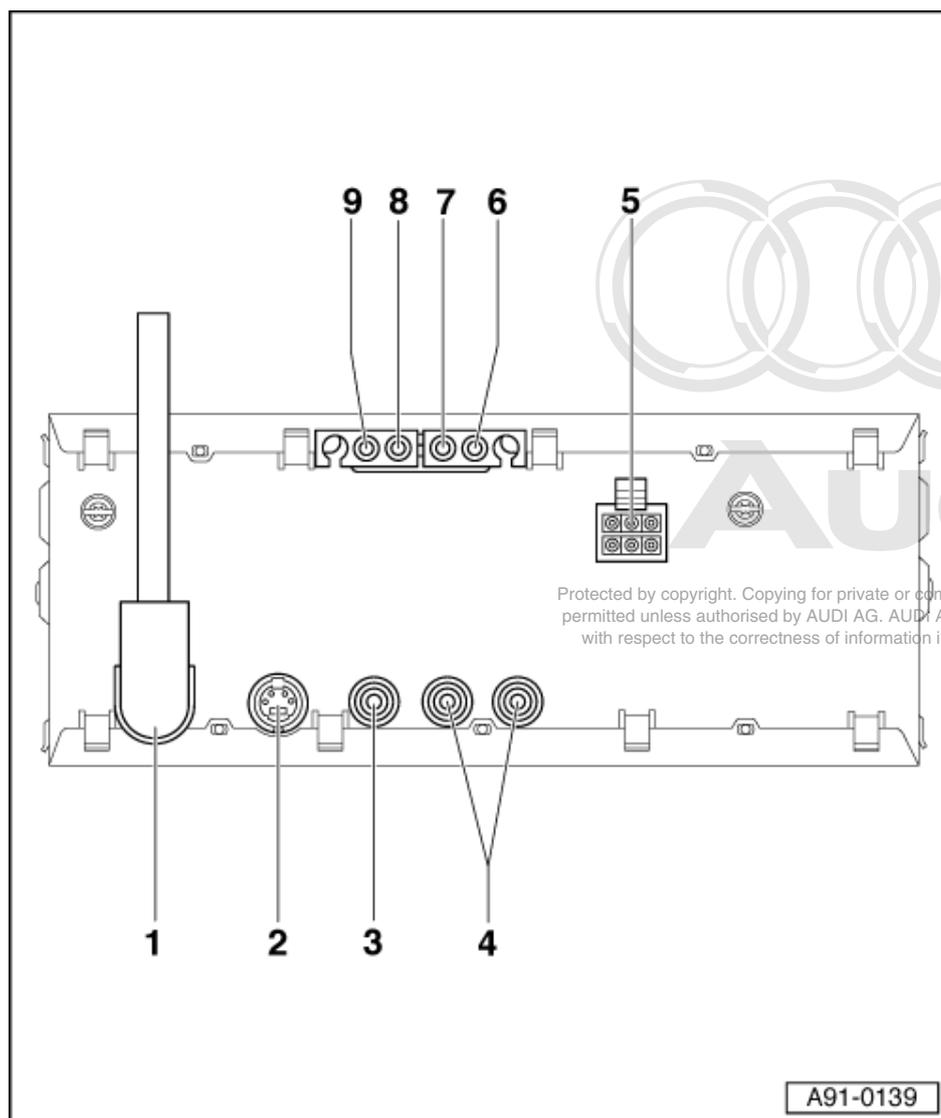
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4.7 - Connectors on back of navigation/TV tuner -J415



- 1 Video connection: 11-pin connector for connection of operating electronics control unit, navigation**
- 2 Video input: 4-pin connector (SVHS)**
- 3 Video input: 2-pin connector (yellow cinch socket) for video signal**
- 4 Video input: 2-pin connector (two cinch sockets, white and red) for left and right channel sound signal**

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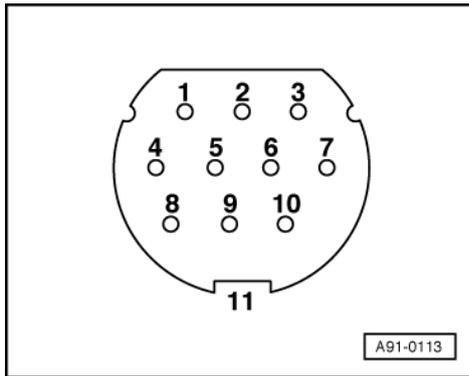
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- 5 Power supply: 6-pin connector for power supply and control bus connections
- 6 TV aerial connection: Connection to TV aerial 4 amplifier at rear window -R58
- 7 TV aerial connection: Connection to TV aerial 3 amplifier at rear window -R57
- 8 TV aerial connection: Connection to TV aerial 2 amplifier at rear window -R56
- 9 TV aerial connection: Connection to TV aerial 1 amplifier at rear window -R55

Contact assignments of multi-pin connectors of TV tuner

Note:

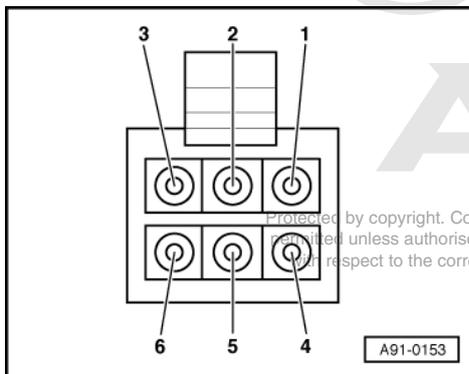
Non-listed plug contacts are not used.



-> Video connection (RGB video input)

11-pin connector

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



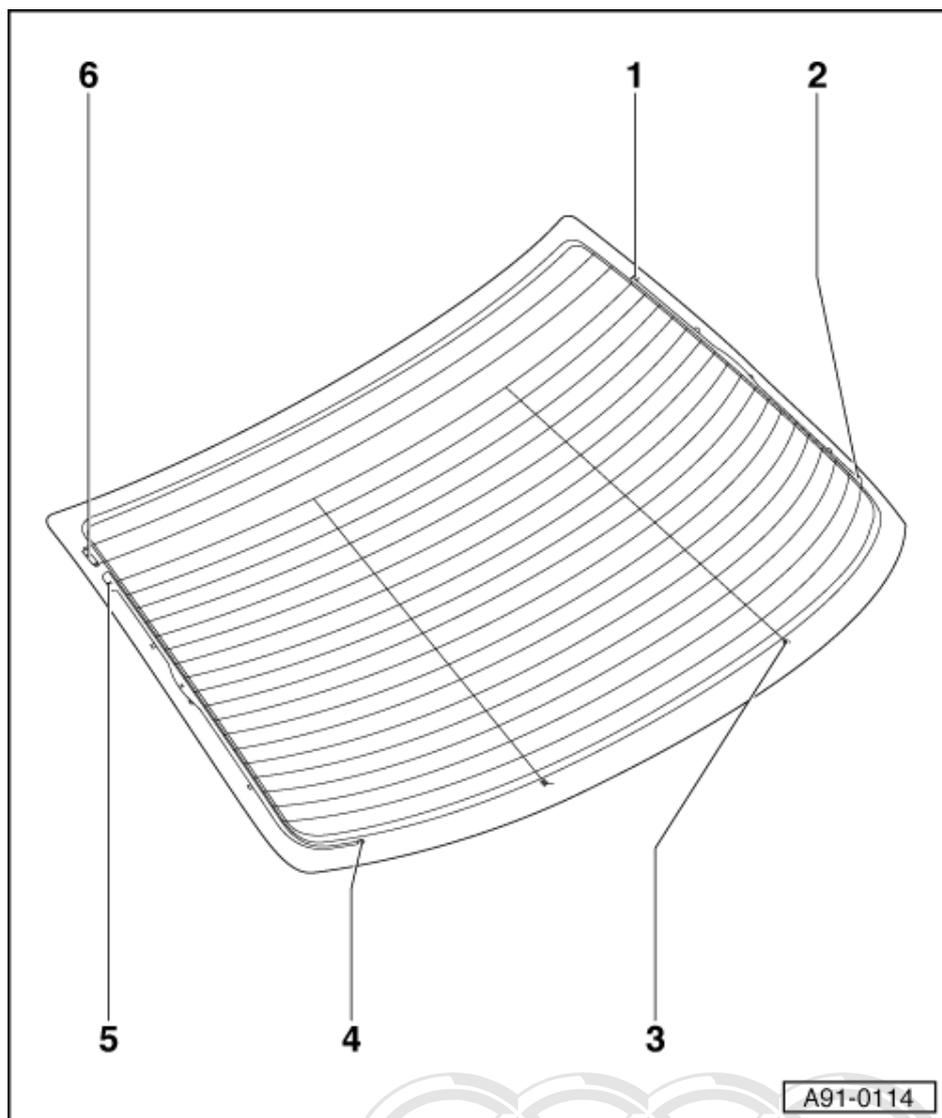
-> Connector for power supply and CAN bus connections

6-pin connector

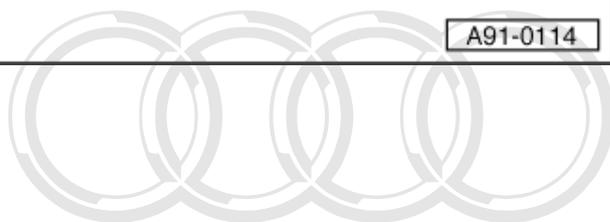
- 1 - Earth (terminal 31)
- 2 - Battery + (terminal 30)
- 3 - CAN bus High (to -J402)
- 4 - Terminal 15
- 5 - Earth (terminal 31)
- 6 - CAN bus Low (to -J402)



4.8 - Rear window aerial connection points



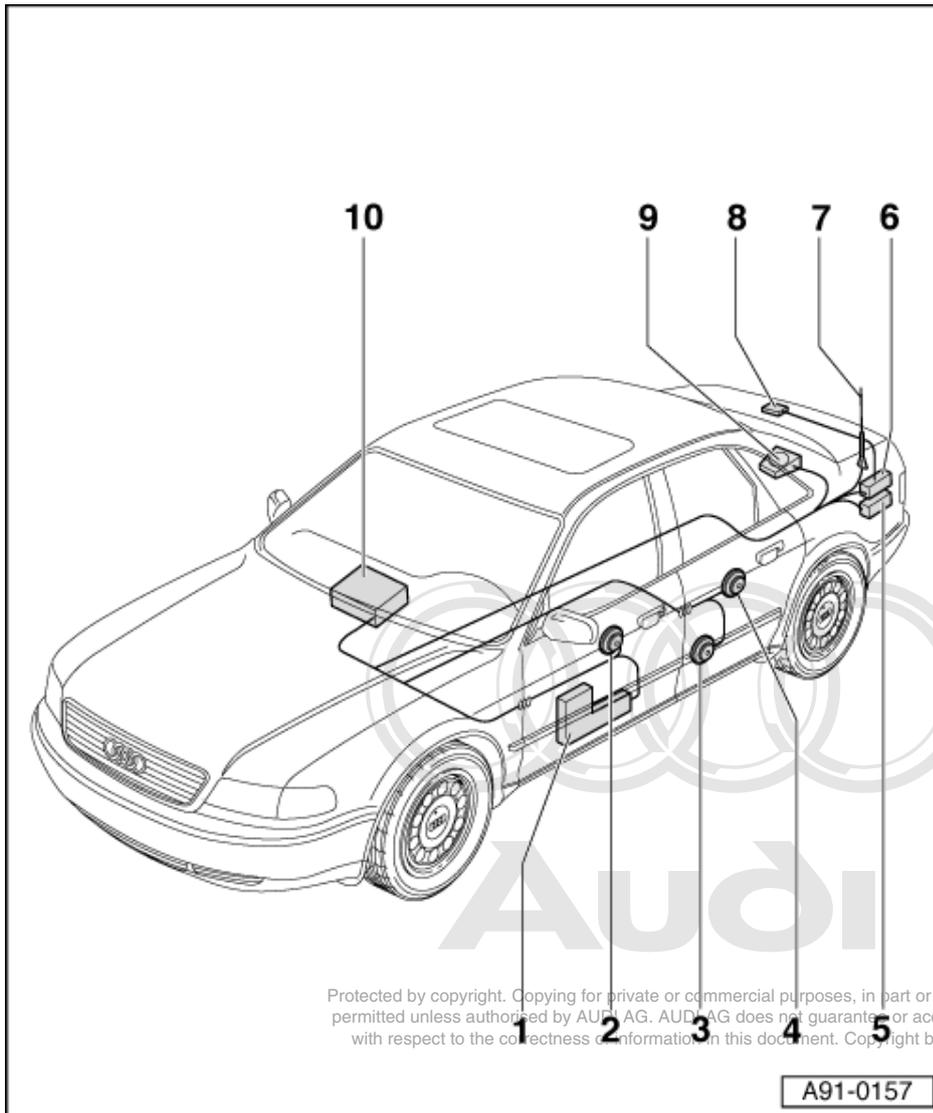
- 1 TV aerial 1
- 2 TV aerial 2
- 3 TV aerial 3
- 4 TV aerial 4
- 5 FM radio aerial
- 6 AM radio aerial



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4.9 - Exploded view of navigation system II



1 Bass speaker

- ◆ In bottom of front door trim
- ◆ Removing and installing=>Page 38

2 Treble/mid-range speaker

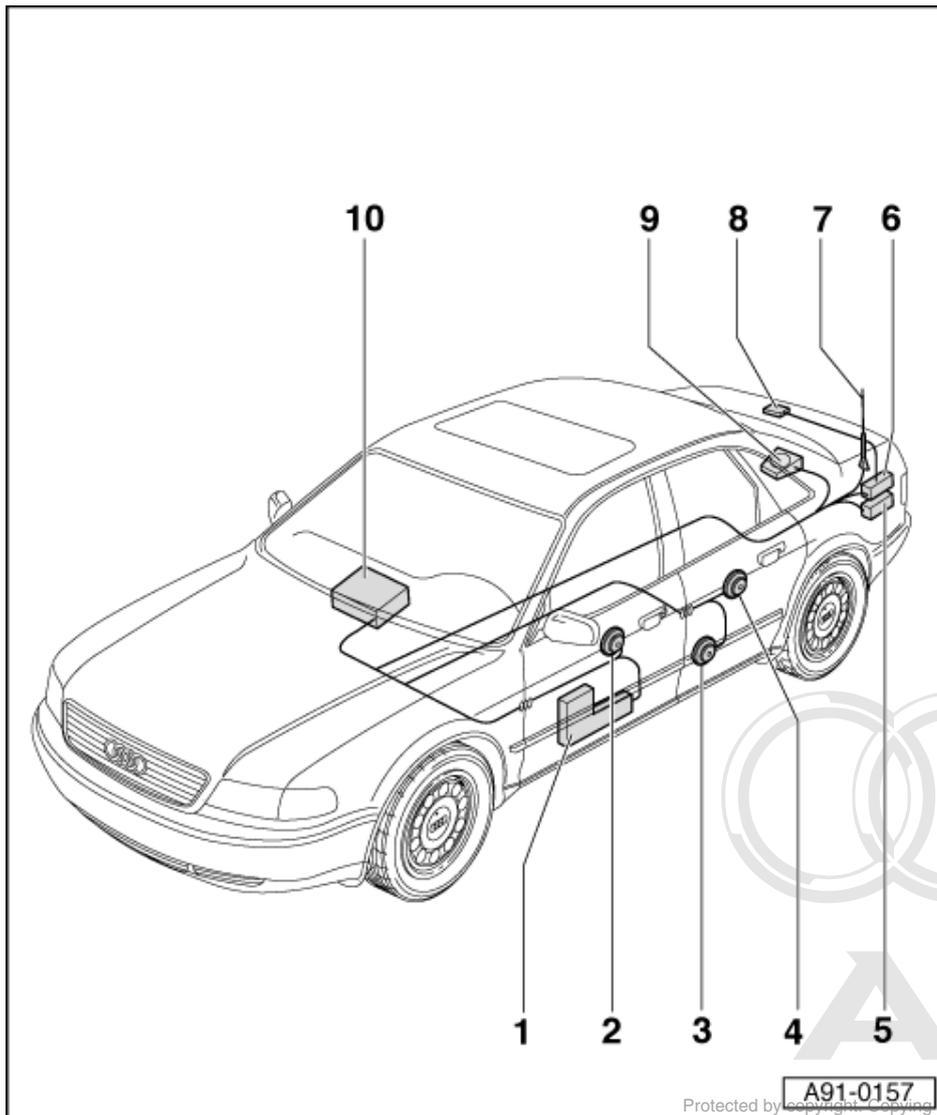
- ◆ In top of front door trim
- ◆ Removing and installing=>Page 38

3 Mid-range speaker

- ◆ In bottom of rear door trim
- ◆ Removing and installing=>Page 38

4 Treble speaker

- ◆ In top of rear door trim
- ◆ Removing and installing=>Page 38



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5 CD changer

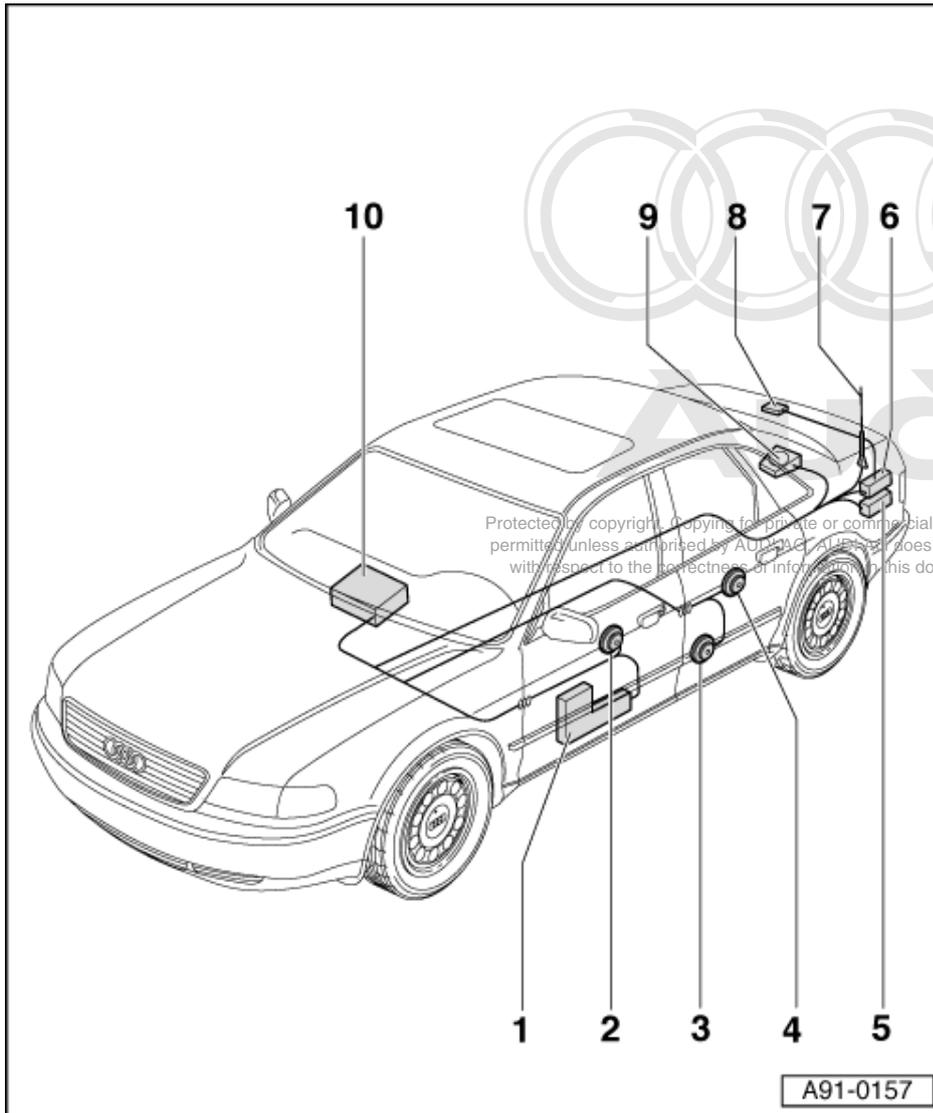
- ◆ In left luggage compartment storage area
- ◆ Removing and installing=>Page 41

6 Navigation/TV tuner -J415

- ◆ In left luggage compartment storage area
- ◆ Removing and installing
=> Page 141

7 Rod aerial

- ◆ Only in combination with telephone system for mirrored glass windows, otherwise rear window aerial with aerial amplifier
- ◆ At rear left of luggage compartment beneath side trim
- ◆ Removing and installing=>Page 40



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8 Navigation aerial (GPS) -R50

- ◆ On boot lid
- ◆ Removing and installing
=> Page **113**

9 Active speaker

- ◆ In rear shelf
- ◆ Removing and installing=>Page **39**

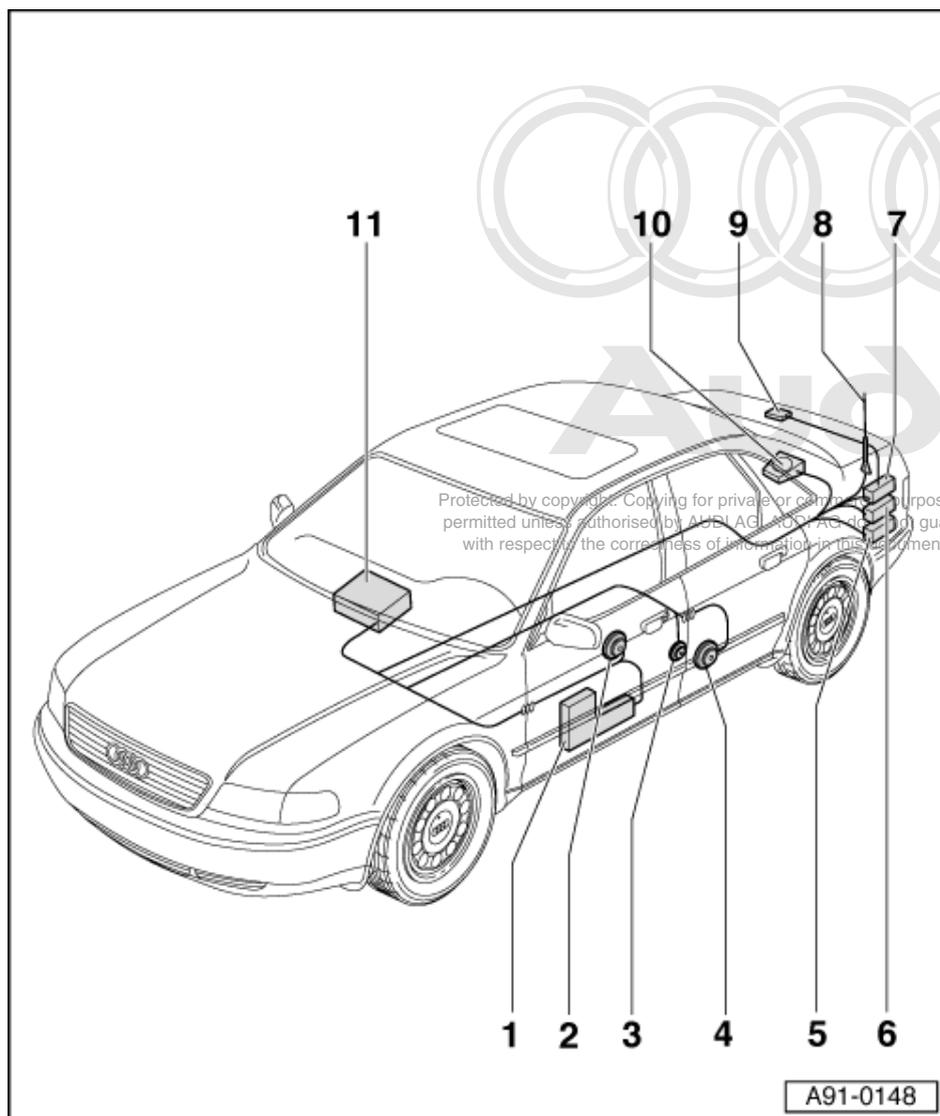
10 Operating electronics control unit, navigation -J402

- ◆ In centre console
- ◆ Removing and installing
=> Page **139**

The four TV aerial amplifiers, the radio aerial amplifier and the four rear window TV aerials are not shown.

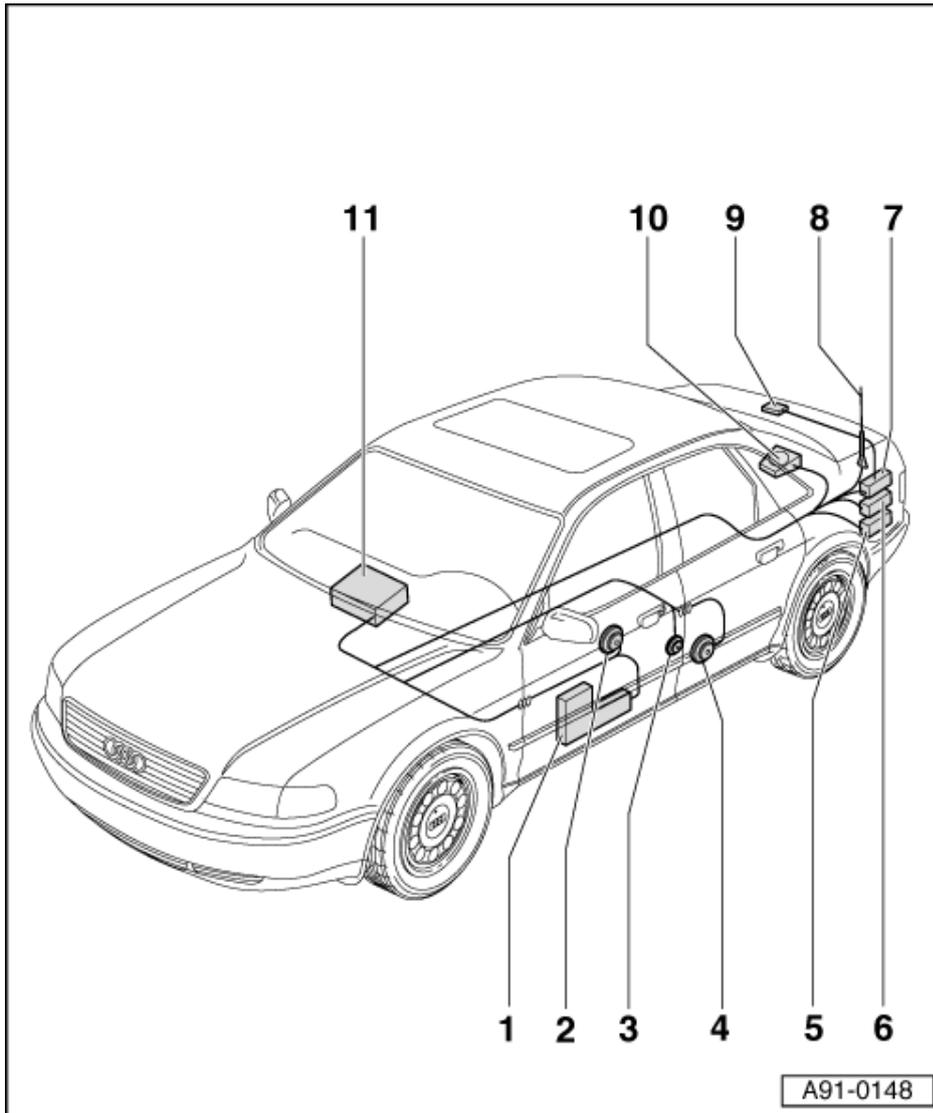


4.10 - Block diagram of navigation system II with BOSE sound system



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- 1 **Bass/mid-range speaker**
 - ◆ In bottom of front door trim
 - ◆ Removing and installing=>Page 38
- 2 **Treble speaker**
 - ◆ In top of front door trim
 - ◆ Removing and installing=>Page 38
- 3 **Hands-free loudspeaker**
 - ◆ In driver's B-pillar trim
 - ◆ Removing and installing=>Page 63



4 Treble/mid-range speaker

- ◆ In bottom of rear door trim
- ◆ Removing and installing=>Page 39

5 BOSE power amplifier

- ◆ In left luggage compartment storage area beneath CD changer
- ◆ Removing and installing=>Page 42

6 CD changer

- ◆ In left luggage compartment storage area
- ◆ Removing and installing=>Page 41
- ◆ Checking wiring => Page 41

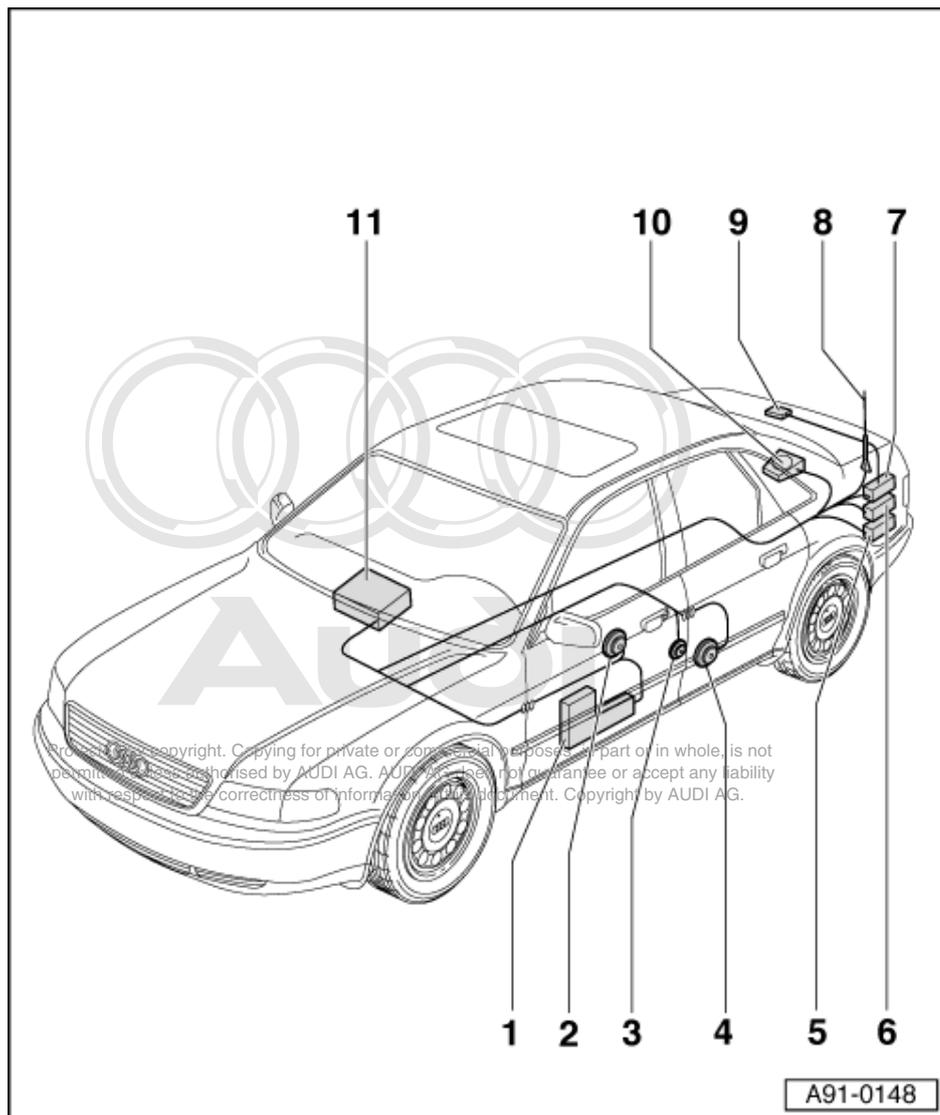
7 Navigation/TV tuner -J415

- ◆ In left luggage compartment storage area
- ◆ Removing and installing
=> Page 141



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8 Rod aerial

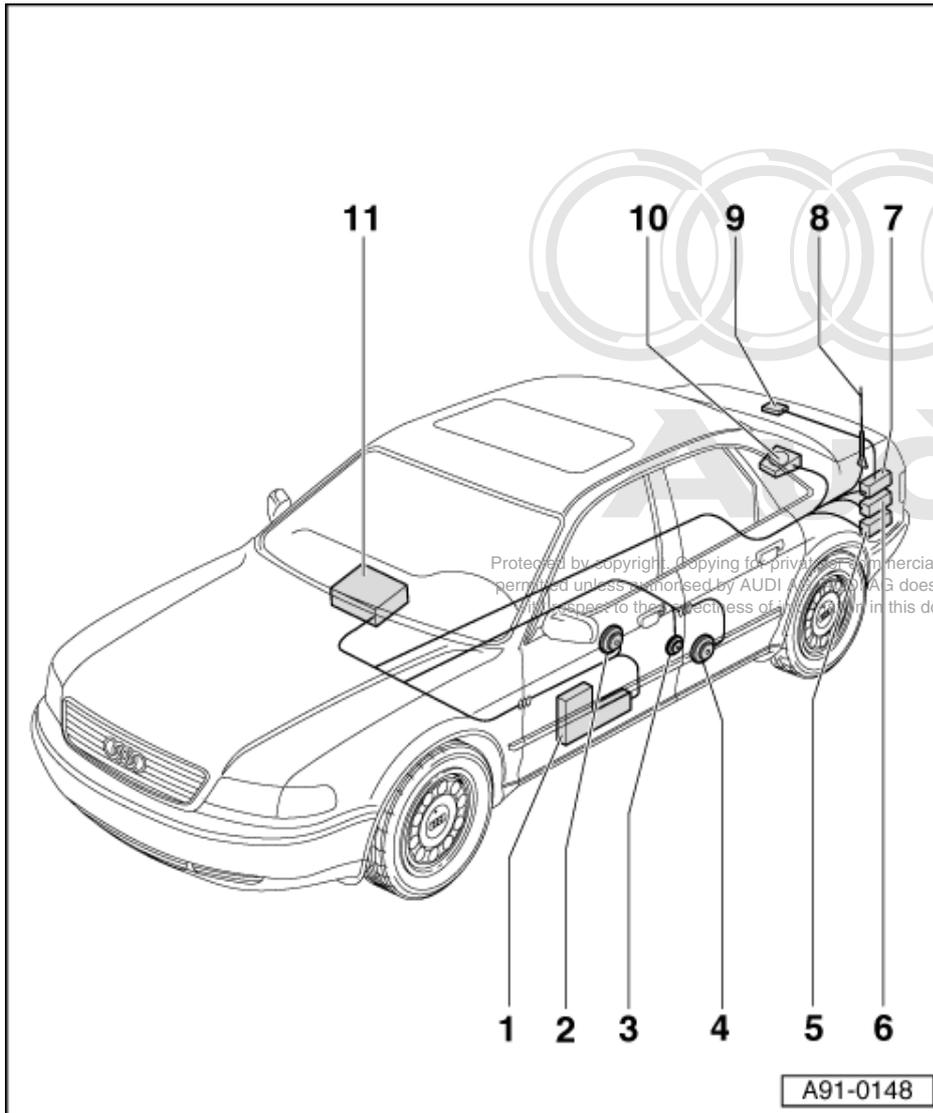
- ◆ Only in combination with telephone system for mirrored glass windows, otherwise rear window aerial with aerial amplifier
- ◆ At rear left of luggage compartment beneath side trim
- ◆ Removing and installing=>Page 40

9 Navigation aerial (GPS) -R50

- ◆ On boot lid
- ◆ Removing and installing
=> Page 113

10 Bass speaker

- ◆ In rear shelf
- ◆ Removing and installing=>Page 39



11 Operating electronics control unit, navigation -J402

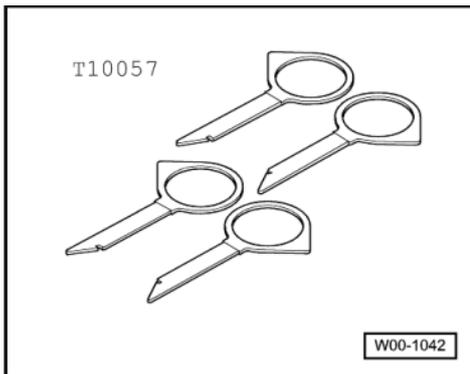
- ◆ In centre console
- ◆ Removing and installing
 => Page 139

The four TV aerial amplifiers, the radio aerial amplifier and the four rear window TV aerials are not shown.

4.11 - Removing and installing operating electronics control unit, navigation -J402

Note:

- ◆ The part number for the entire operating electronics control unit, navigation can be found on a sticker at the housing.



-> Special tools, testers, measuring instruments and other items required

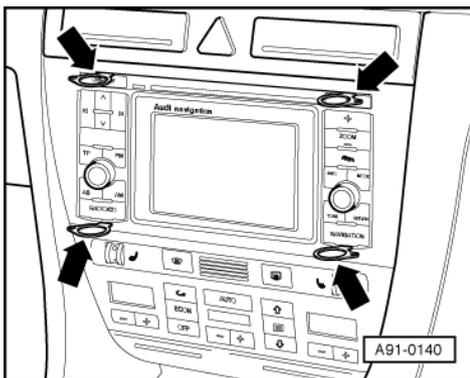
- ◆ T10057 Release tool

Removing:

Note:

Prior to removal, ask customer for code number of operating electronics control unit, navigation. If control unit is replaced, anti-theft encoding is always to be activated (refer to operating instructions). Customer is to be informed of new code number.

Proceed as follows:

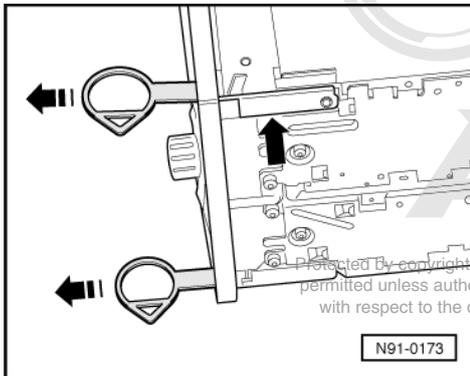


- -> Insert release tools T10057 in release slots as shown -arrows- until they engage.

Top L - top and bottom left
Top R - top and bottom right

- Grasp hold of release tool grips and pull operating electronics control unit, navigation out of dash panel.
- Release and unplug connectors.

To pull off release tools:



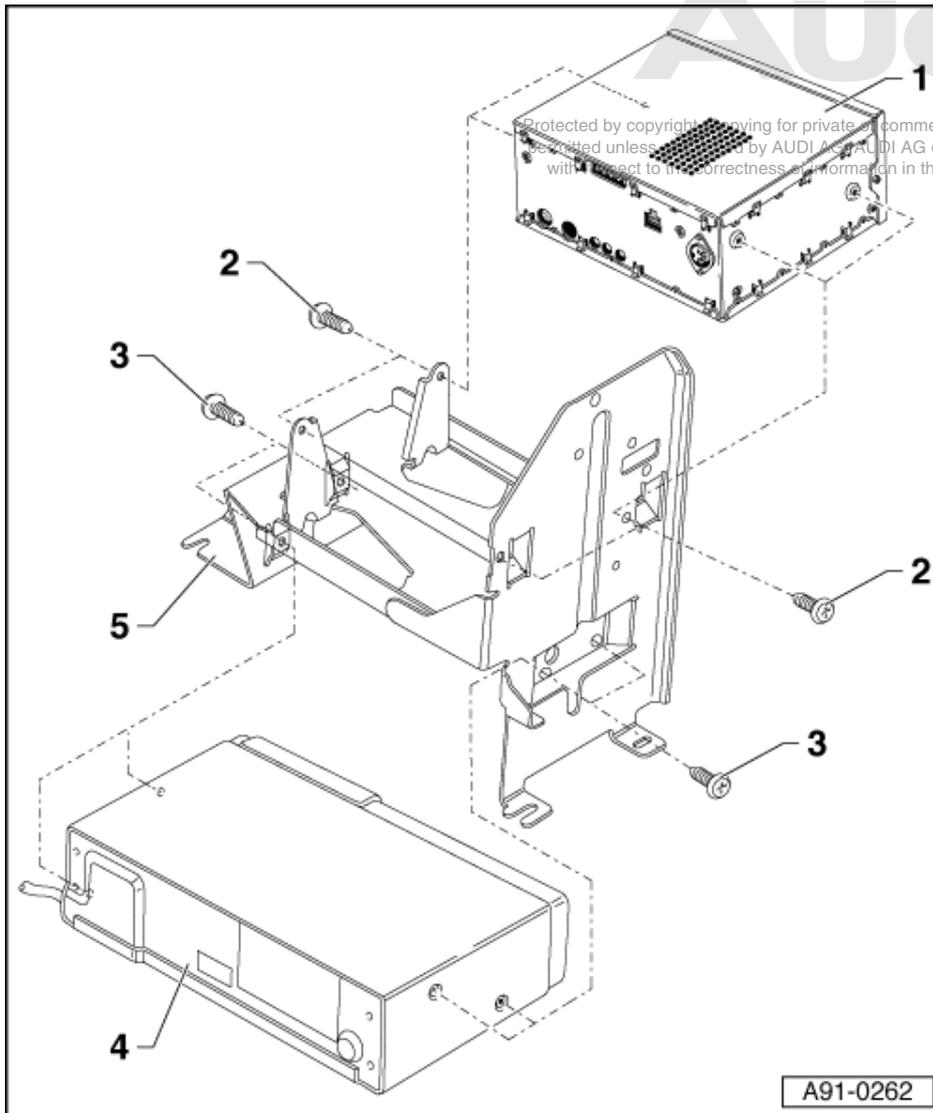
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- -> Press locking lug -arrow- and pull out release tool to front.

Installing:

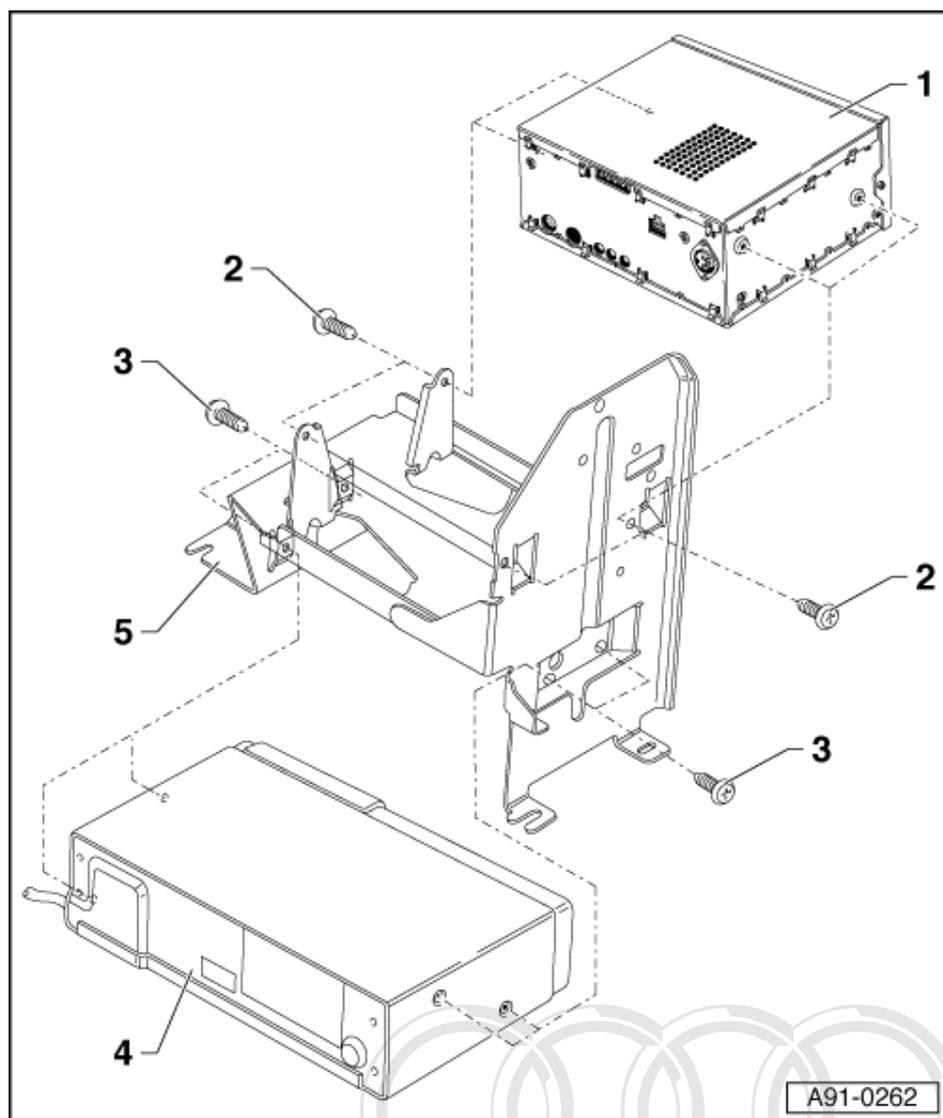
- Attach connectors to operating electronics control unit, navigation.
- Hold operating element straight and slide into dash panel until it engages in mounting frame.
- Perform anti-theft encoding in line with radio operating instructions.

4.12 - Removing and installing navigation/TV tuner -J415



Removing:

- Open left luggage compartment storage area.
- Unscrew the four bolts -2- (2 Nm).
- If necessary, start by removing mounting frame -5- => Page 41 .
- Detach TV tuner -1- from holder -5-.
- Unplug connectors on back of TV tuner.



Attention:
TV tuner is only to be secured at tapped holes shown.
Always use genuine bolts for attachment, as otherwise TV tuner could be destroyed.

Installing:

- Install accordingly in reverse order of removal.

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4.13 - Removing and installing radio aerial amplifier

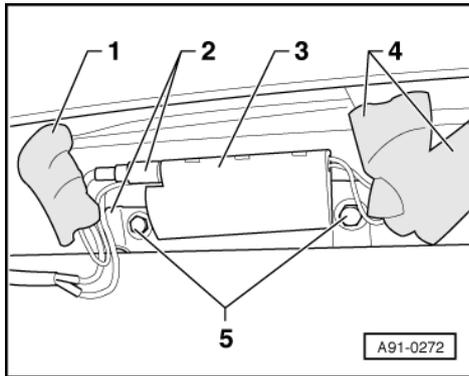
Radio aerial amplifier is located at top of left D-pillar.

Removing:

- Remove left C/D-pillar trim.

=> General Body Repairs, Interior; Repair Group 70; Trim Panels Trim Panels

=> General Body Repairs, Interior; Repair Group 70; Trim Panels gradually introduced as of 10.98 (with interior mirror at headliner) Trim Panels gradually introduced as of 10.98 (with interior mirror at headliner)

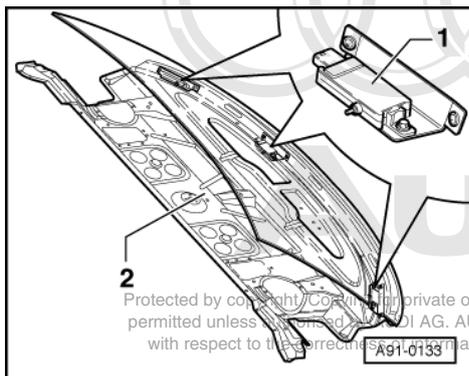


- -> Unplug connectors -1-, -2- and -4-.
- Slacken off the two bolts -5- (1.5 Nm) and take out aerial amplifier -3-.

Installing:

- Install accordingly in reverse order of removal.

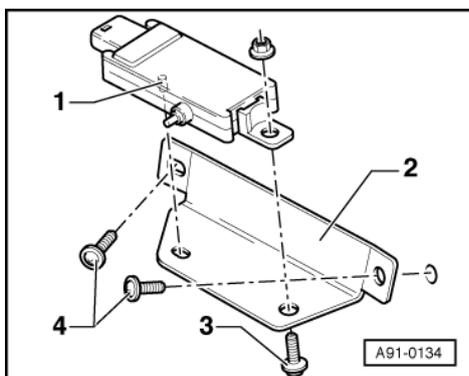
4.14 - Removing and installing TV aerial amplifier



-> Three of the four TV aerial amplifiers -1- are bolted to the luggage compartment partition -2-.

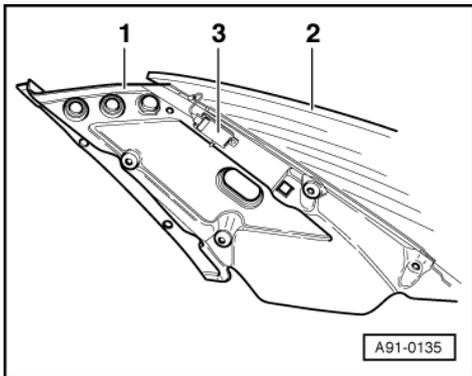
- Remove rear shelf.

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





-> Each of the three aerial amplifiers is attached with a bolt -3- (4.5 Nm) and a locating pin -1- to a holder -2-. This in turn is attached by means of two bolts -4- (1.5 Nm) to the luggage compartment partition.



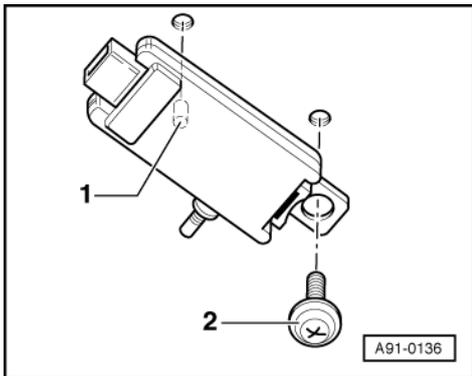
-> One aerial amplifier -3- is bolted to right D-pillar -1- beneath rear window -2-.

- Remove D-pillar trim.

=> General Body Repairs, Interior; Repair Group 70; Trim; Removing and installing D-pillar trim Trim Removing and installing D-pillar trim

=> General Body Repairs, Interior; Repair Group 70; Trim Panels gradually introduced as of 10.98 (with interior mirror at headliner); Removing and installing D-pillar trim Trim Panels gradually introduced as of 10.98 (with interior mirror at headliner) Removing and installing D-pillar trim

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-> The aerial amplifier is attached with a bolt -2- (1.5 Nm) and a locating pin -1- to the D-pillar.

4.15 - Checking operation of individual TV aerial amplifiers

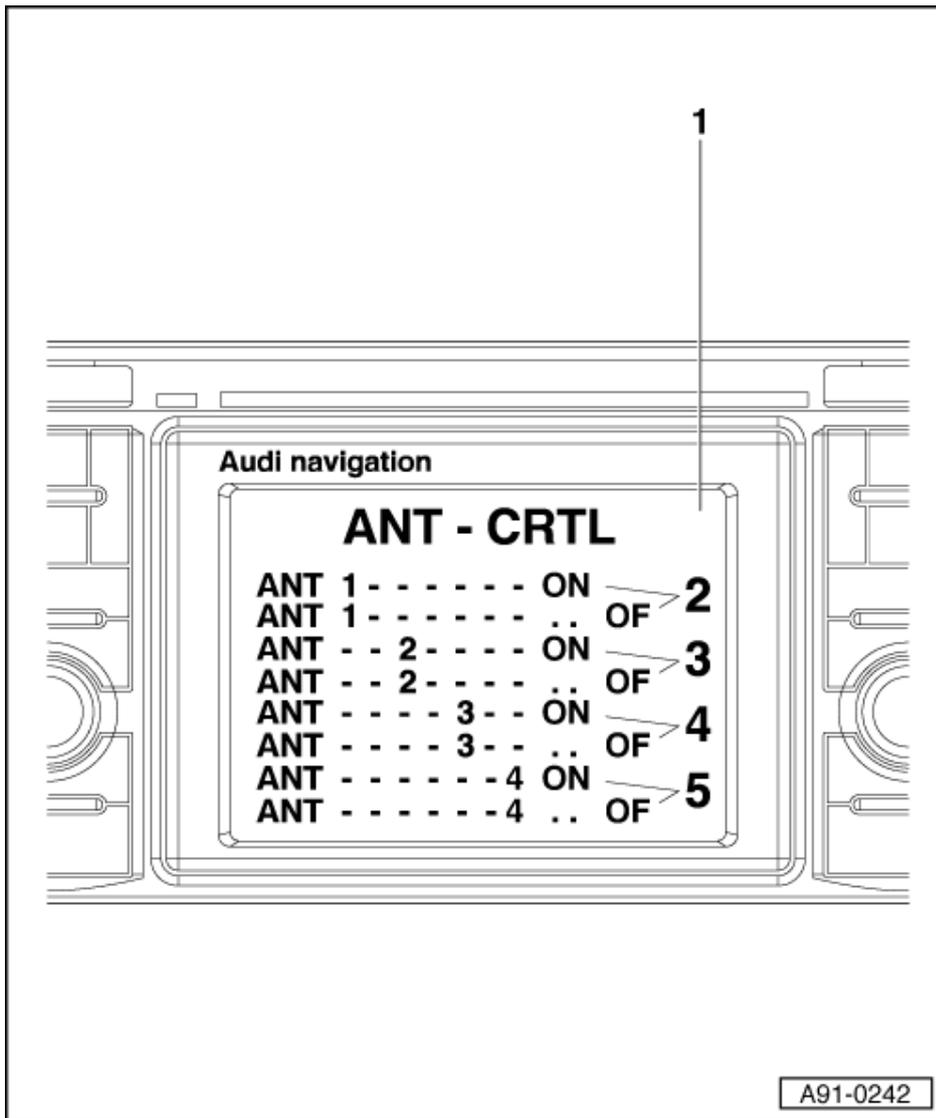
The TV system features a special display for visual monitoring of aerial performance. When this display is selected, a general check is also made on TV system operation.

Test display is enabled by:

- Selecting TV mode and then searching for a powerful TV station

=> Radio/navigation system operating instructions

- Simultaneously pressing AM and TONE buttons



Indicated on screen:

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

Note:

Picture being received by currently selected aerial appears on screen.

- Right rotary control can be used to activate or deactivate remote power supply for respective TV aerial amplifier.
 Picture quality must deteriorate appreciably with remote power supply deactivated.
- Press RETURN to exit from display.

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Test options:

- ◆ Activation/deactivation (ON/OFF position) of remote power supply for respective aerial amplifier provides information on operation of each aerial amplifier.
- ◆ Operation of TV diversity receiver by way of Audi RNS performs a hardware and software check (sub-test) on CAN bus.
- ◆ Start-up of TV system, selection of channel and selection of video text starts up the main TV receiver functions and establishes the audio/video link.
- ◆ Whether a fault (no change in picture) is due to an open circuit in aerial cable or a defective TV aerial amplifier can only be established by way of voltage measurement (10V) at coax cable (inner conductor) on amplifier end.

5 - Navigation system II-D (navigation system Plus) RNS 4.1 (as of week 48/99)

5.1 - Navigation system II-D (navigation system Plus) RNS 4.1 (as of week 48/99)

5.2 - General information

Attention:

Disconnect battery earth strap before working on electrical system.

Telematics control unit service mode must be activated before disconnecting battery => Radio, Telephone and Navigation System Self-diagnosis; Repair Group 01; Telematics System Self-diagnosis; Adaption

Notes:

- ◆ Obtain radio anti-theft code before disconnecting battery.
- ◆ Telematics control unit service mode must be activated before disconnecting battery.
- ◆ On reconnecting battery, remember to activate vehicle equipment (radio, clock, electric window lifters, etc.) in accordance with owner's manual and to deactivate service mode of telematics control unit.

Important:

To prevent contact corrosion, only use approved bolts, screws, nuts, washers, etc..

These have a special surface coating and can be recognised from their greenish colour.

Such bolts also have to be stored separately.

5.3 - General description

Navigation system II-D (RNS 4.1) is a more advanced version of the familiar navigation system II (navigation system Plus). Important new features include a control unit for aerial selection, extended self-diagnosis, an interface with the information data bus, and dynamic navigation.

Notes:

- ◆ For dealing with complaints, it is absolutely essential to be familiar with the functions and controls of the radio/navigation system.
- ◆ Additional information

=> Operating instructions

- ◆ For service installation, service work or fault-finding, consult

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

=> Fitting instructions

- ◆ Detailed fitting instructions, e.g. detaching/attaching trim panels, can be found in the Workshop Manual "General Body Repairs, Interior".

Note on retrofitting CD changer:

Vehicles with pre-fitted components for CD changer installation have a special factory-fitted CD changer wiring harness. Connecting cable can only be used for genuine Audi CD changers.

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5.4 - On-screen fault messages

If system is not functioning properly, fault is stored in fault memory and/or fault message is output on display of operating electronics control unit, navigation -J402.

At present the following fault messages can be displayed:

Indicated on display of navigation system II-D:

RDS-TMC tuner: Link with RDS-TMC tuner faulty or could not be established
--

This fault message occurs in the following situations:

- ◆ No or faulty CAN communication between operating electronics control unit, navigation -J402 and navigation system interface -R94 (open circuit or wiring not connected)
- ◆ Navigation system interface -R94 defective

If this fault occurs, no TMC traffic information can be received via the radio and the traffic jam function cannot be called up.

Indicated on display of navigation system II-D:

Dynamic navigation: Telephone not responding Dynamic operation only available with ignition ON

This fault message occurs in the following situations:

- ◆ No or faulty CAN communication between operating electronics control unit, navigation -J402 and telephone/telematics control unit -J526 (open circuit or wiring not connected)
- ◆ Telephone/telematics control unit -J256 defective
- ◆ Terminal 15 OFF (ignition switched off)

If this fault occurs, TMC traffic information cannot be received via telephone. Dynamic navigation is not possible and traffic jam function cannot be called up.

Indicated on display of navigation system II-D:



Connection to logbook faulty Journeys not being stored Log journeys manually Confirm with RETURN

This fault message occurs in the following situations:

- ◆ No or faulty CAN communication between operating electronics control unit, navigation -J402 and electronic logbook
- ◆ Electronic logbook not connected or defective

If this fault occurs, data cannot be read into navigation system from electronic logbook or stored on chip card.

Indicated on display of navigation system II-D:

LOGBOOK Logbook not active Activate on PC Log journeys manually
--

This message appears:

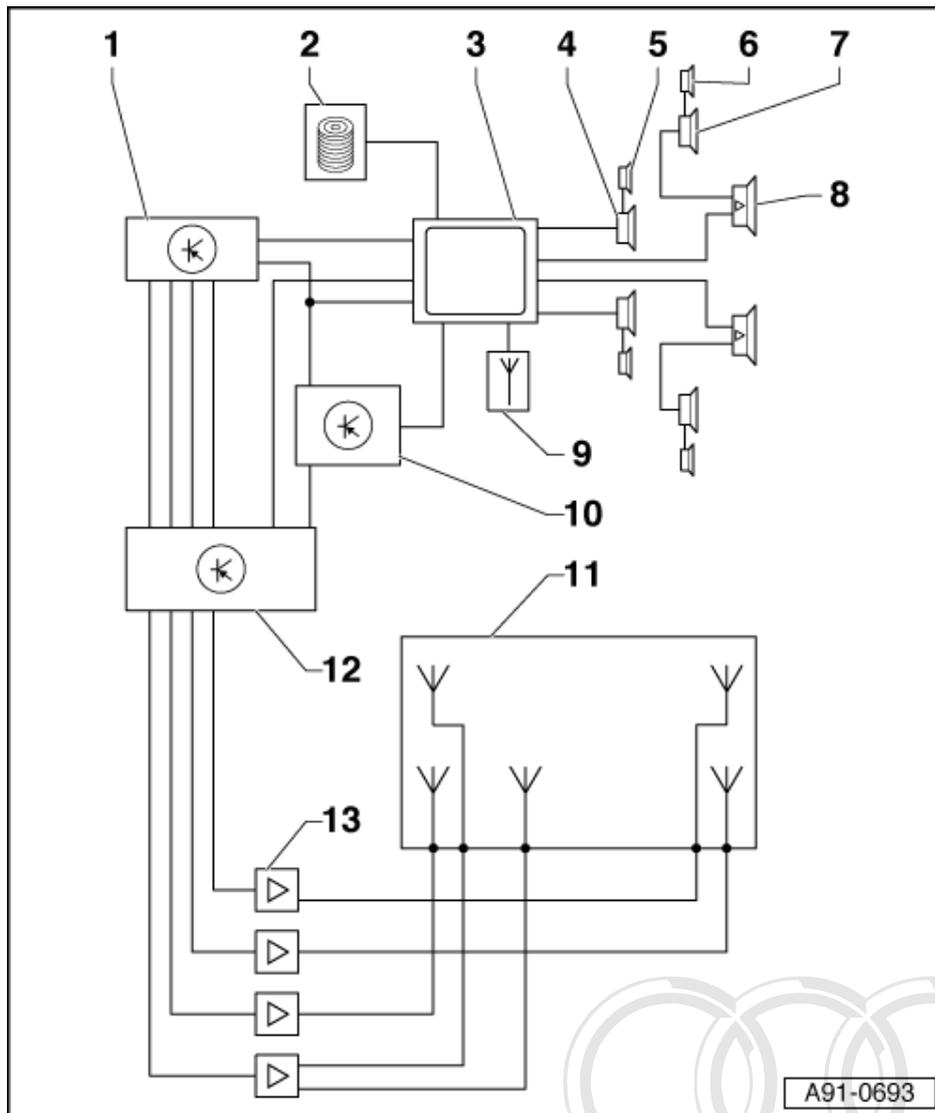
- ◆ If, after taking delivery of vehicle, chip card for electronic logbook has not been activated on PC.
- ◆ This message on navigation system display does not indicate a fault.

Inform the customer.

Fault messages are displayed until fault has been eliminated or confirmation provided by pressing RETURN.

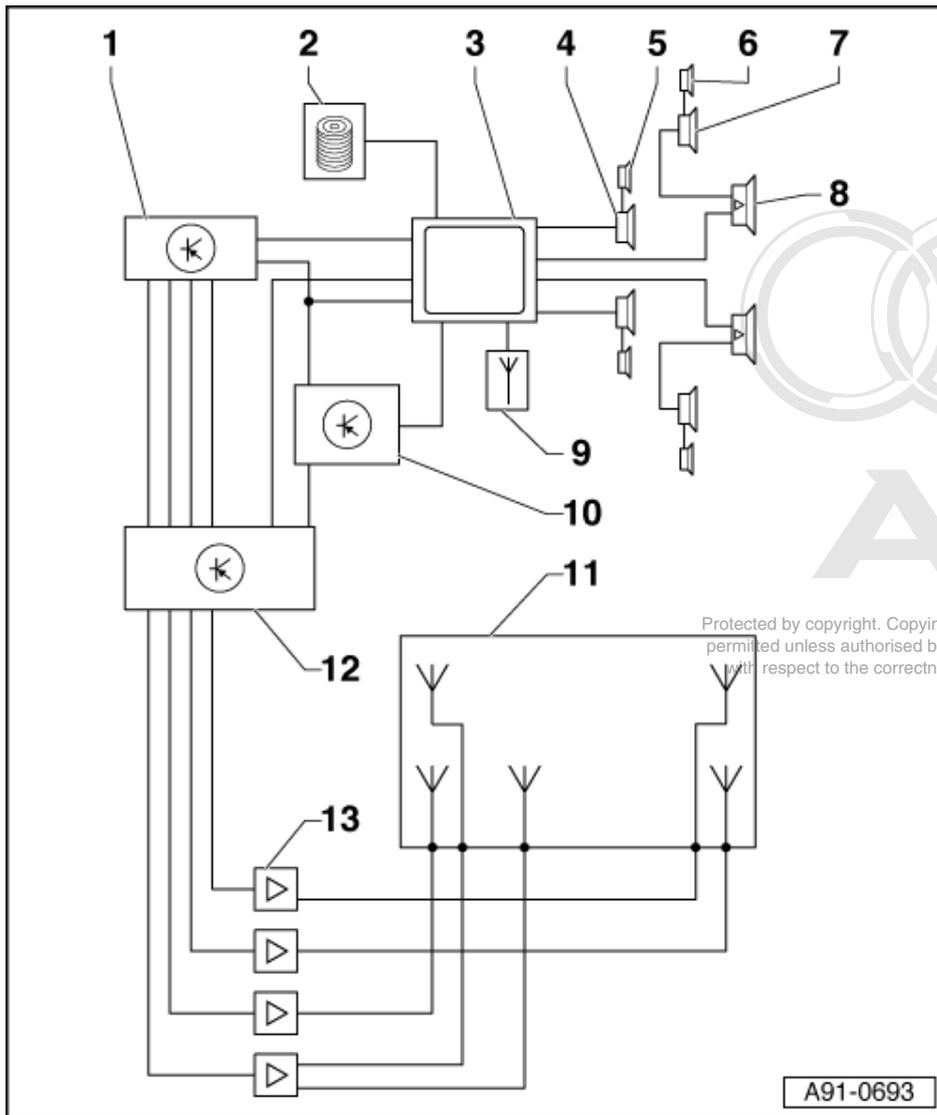
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5.5 - Block diagram of navigation system II-D



- 1 TV tuner at rear left of luggage compartment beneath side trim
- 2 CD changer (optional) at rear left of luggage compartment beneath side trim
- 3 Operating electronics control unit, navigation
- 4 Front bass speaker in bottom of door trim
- 5 Front treble/mid-range speaker in top of door trim
- 6 Rear treble speaker in top of door trim

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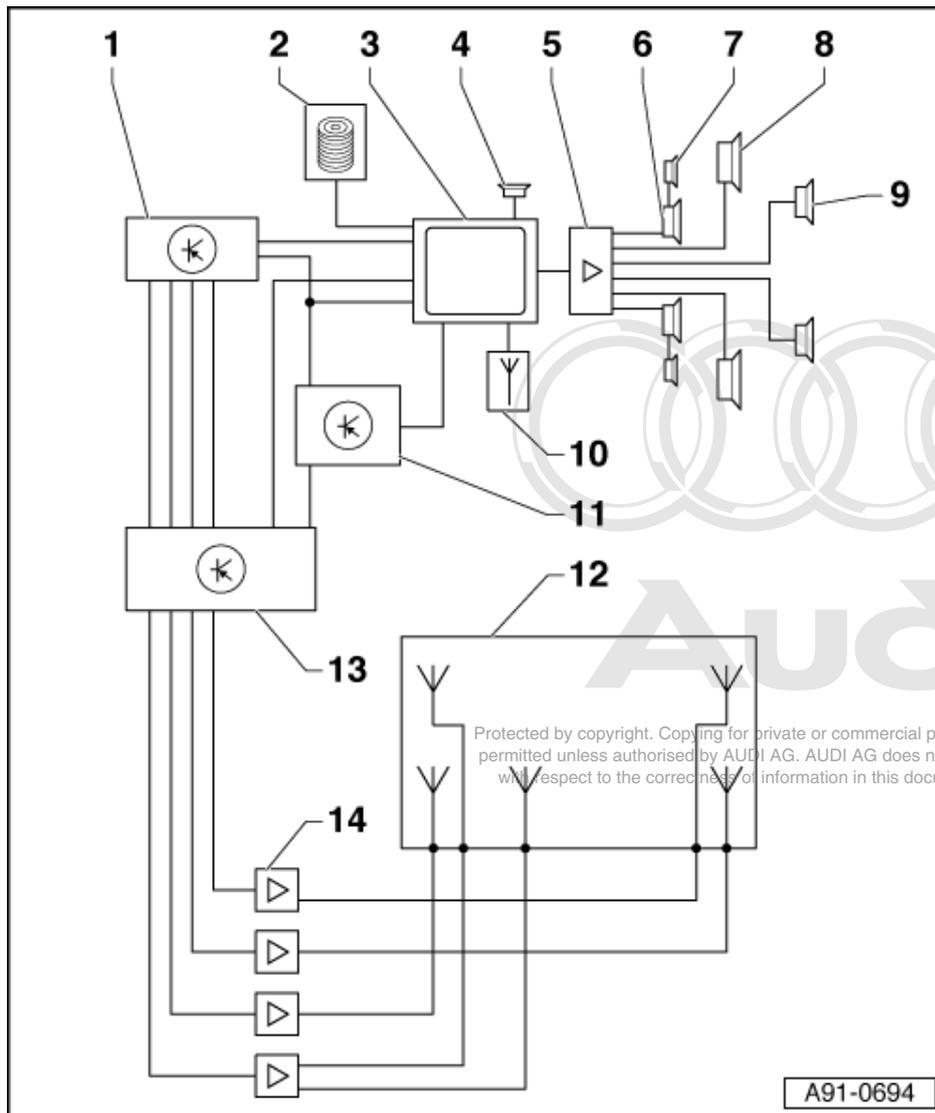


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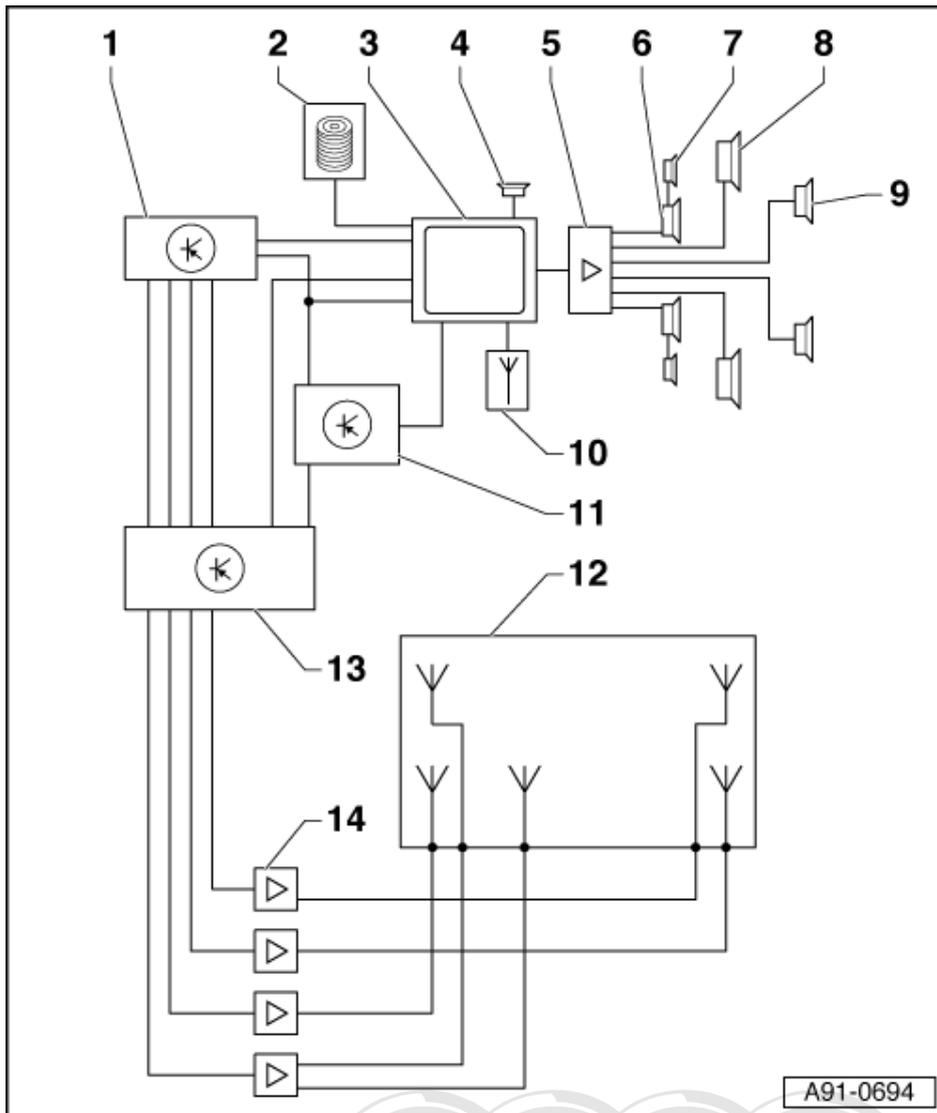
A91-0693

- 7 Rear mid-range speaker in bottom of door trim
- 8 Rear active speaker in rear shelf
- 9 Navigation system aerial (GPS) attached to boot lid
- 10 Navigation system interface behind dash panel insert
- 11 Rear window with four integrated FM aerials and one AM aerial
- 12 Aerial selection control unit at bottom left beneath C-pillar trim
- 13 Four amplifiers for radio/ TV aerials in rear window

5.6 - Block diagram of navigation system II-D with BOSE sound system



- 1 TV tuner at rear left of luggage compartment beneath side trim
- 2 CD changer (optional) at rear left of luggage compartment beneath side trim
- 3 Operating electronics control unit, navigation
- 4 Hands-free loudspeaker in left B-pillar trim (up to MY 01)
- 5 BOSE power amplifier at rear left of luggage compartment
- 6 Front bass speaker in bottom of door trim
- 7 Front treble speaker in top of door trim

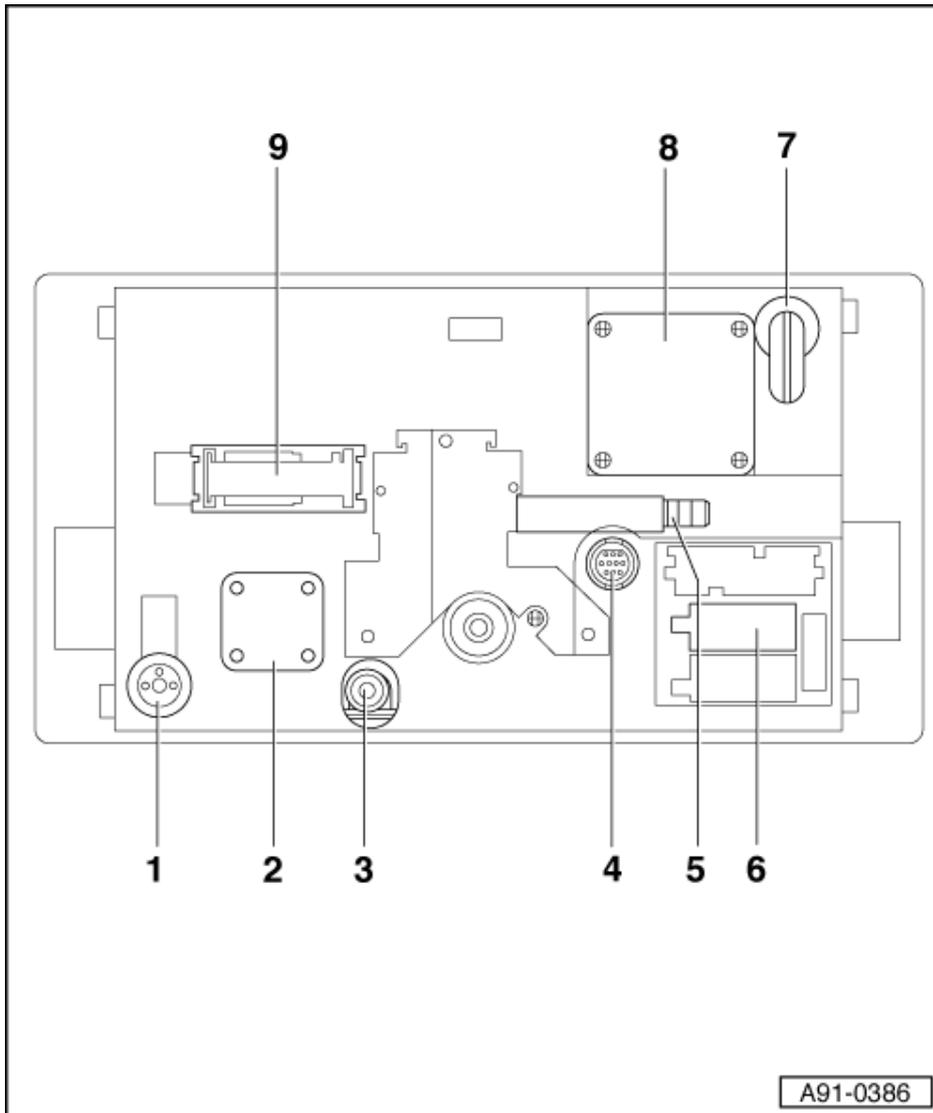


- 8 Rear treble/mid-range speaker in bottom of door trim
- 9 Rear bass speaker in rear shelf
- 10 Navigation system aerial (GPS) attached to boot lid
- 11 Navigation system interface behind dash panel insert
- 12 Rear window with four integrated FM aerials and one AM aerial
- 13 Aerial selection control unit at bottom left beneath C-pillar trim
- 14 Four amplifiers for radio/ TV aerials in rear window



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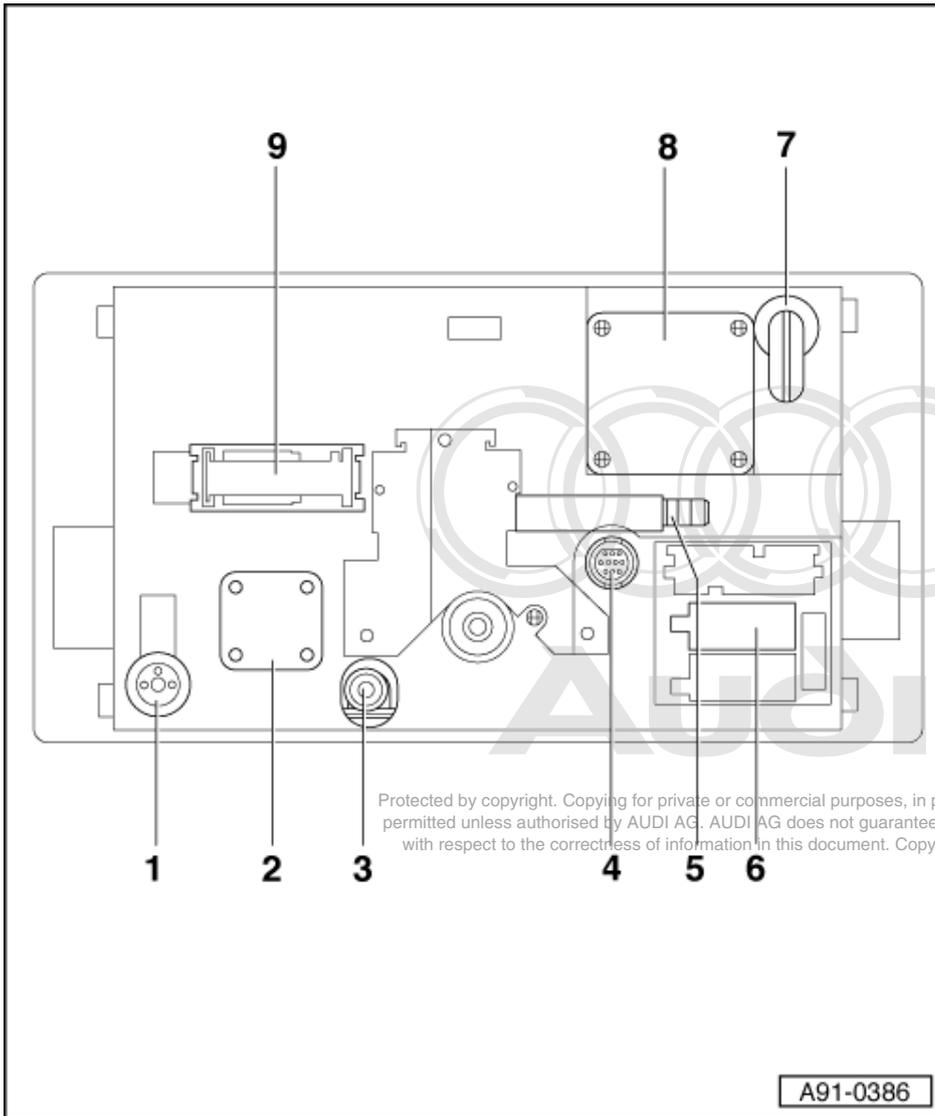
5.7 - Connectors on back of operating electronics control unit, navigation -J402



- 1 Radio aerial connection: Connection socket for radio aerial
- 2 Cooling fan
- 3 IF wire
- 4 Video connection: 11-pin connector for connection of TV tuner
- 5 Earth connection

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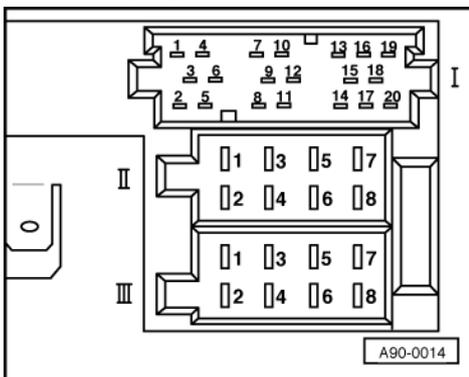


- 6 Radio connection: 36-pin connection block with 3 multi-pin connectors and 1 fuse
- 7 GPS aerial connection: Connection socket for navigation system aerial
- 8 Cooling fan
- 9 Navigation system connection: 26-pin connector for navigation system sensors

Contact assignments of multi-pin connectors for operating electronics control unit, navigation

Note:

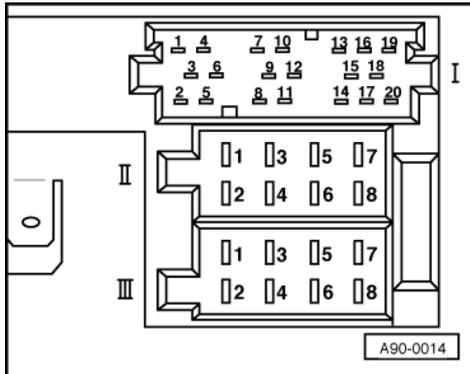
Non-listed plug contacts are not used.



-> Radio connection

20-pin connector I

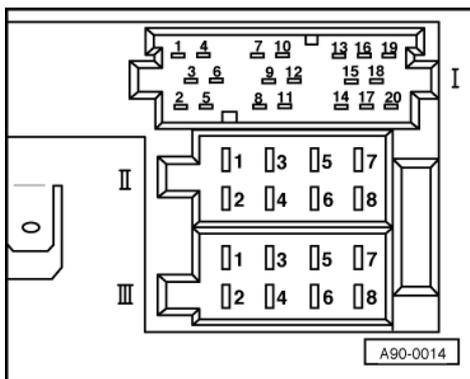
- 1 - Line out for rear left speaker
- 2 - Line out for rear right speaker
- 3 - Line out (earth)
- 4 - Line out for front left speaker
- 5 - Line out for front right speaker
- 6 - Switched positive for BOSE power amplifier
- 7 - Telephone (AF+)
- 11 - Remote control (multi-function steering wheel control unit)
(up to MY 01)



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



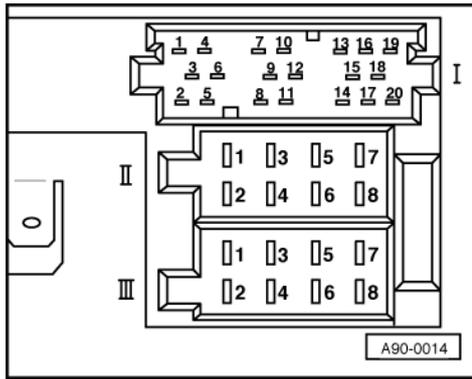
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-> Radio connection

Brown, 8-pin connector II

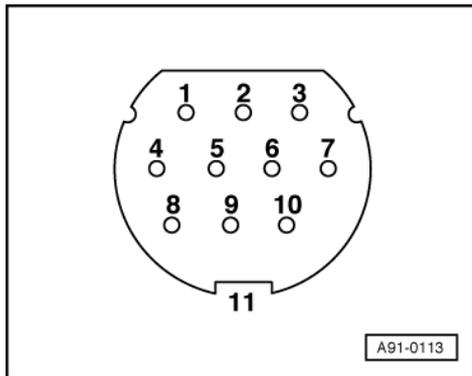
- 3 - Speaker (+) front right
- 4 - Speaker (-) front right
- 5 - Speaker (+) front left (with BOSE sound system, hands-free loudspeaker +) (up to MY 01)
- 6 - Speaker (-) front left (with BOSE sound system, hands-free loudspeaker -) (up to MY 01)



-> Radio connection

Black, 8-pin connector III

- 1 - GALA (vehicle-speed signal)
- 2 - Telephone muting
- 3 - K-wire (self-diagnosis)
- 4 - Terminal 86s (S-contact)
- 5 - Safe (permanent positive from battery; anti-theft protection)
- 6 - Switch illumination (terminal 58s)
- 7 - Battery + (terminal 30)
- 8 - Earth (terminal 31)

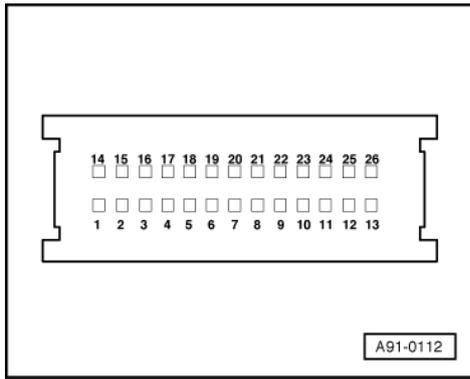


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-> Video connection (RGB video input)

11-pin connector

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



-> Navigation system connection

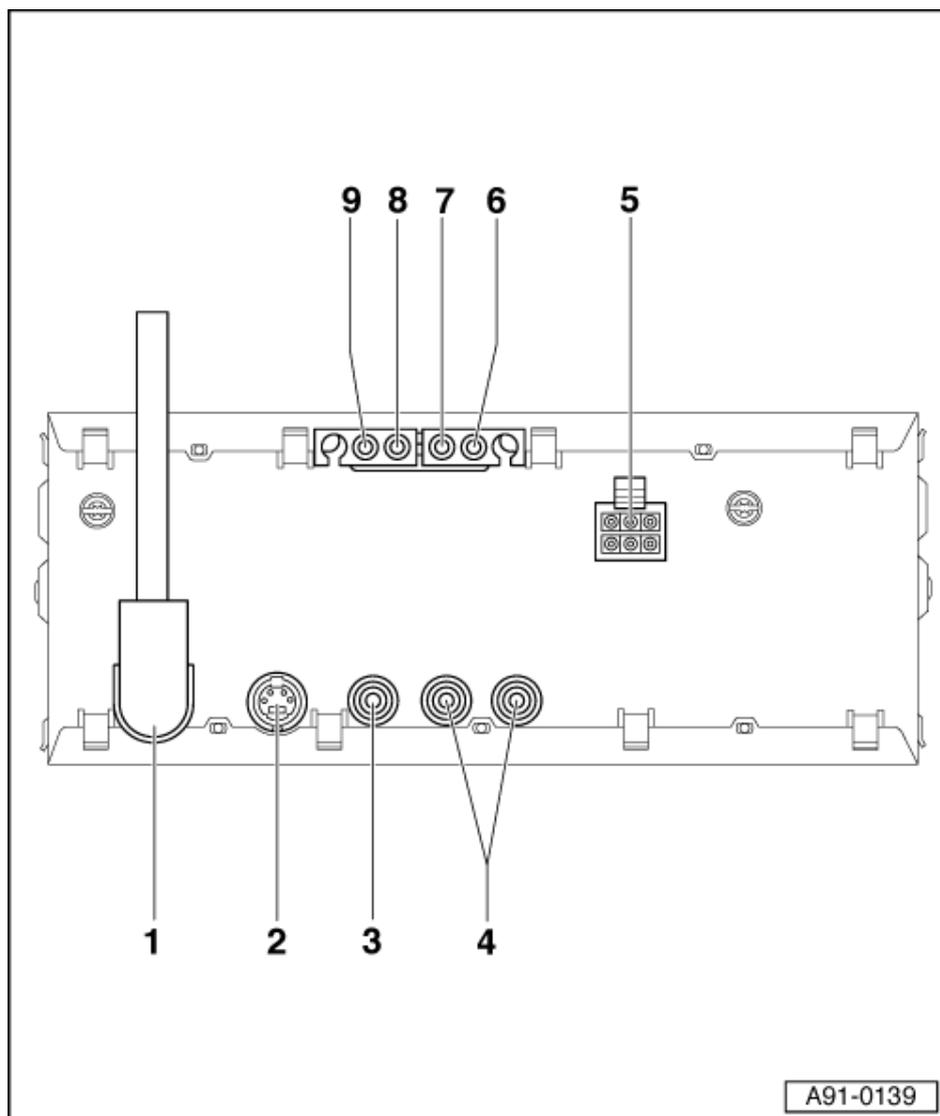
26-pin connector

- 1 - Anti-theft alarm earth (as of MY 02)
- 4 - Terminal 15
- 5 - Left speed sensor input (ABS)
- 13 - CAN bus high (Bosch)
- 14 - Switched positive (power aerial) (up to MY 01)
- 17 - Reversing light switch
- 18 - Right speed sensor input (ABS)
- 26 - CAN bus low (Bosch)

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5.8 - Connectors on back of navigation/TV tuner -J415 (up to MY 01)

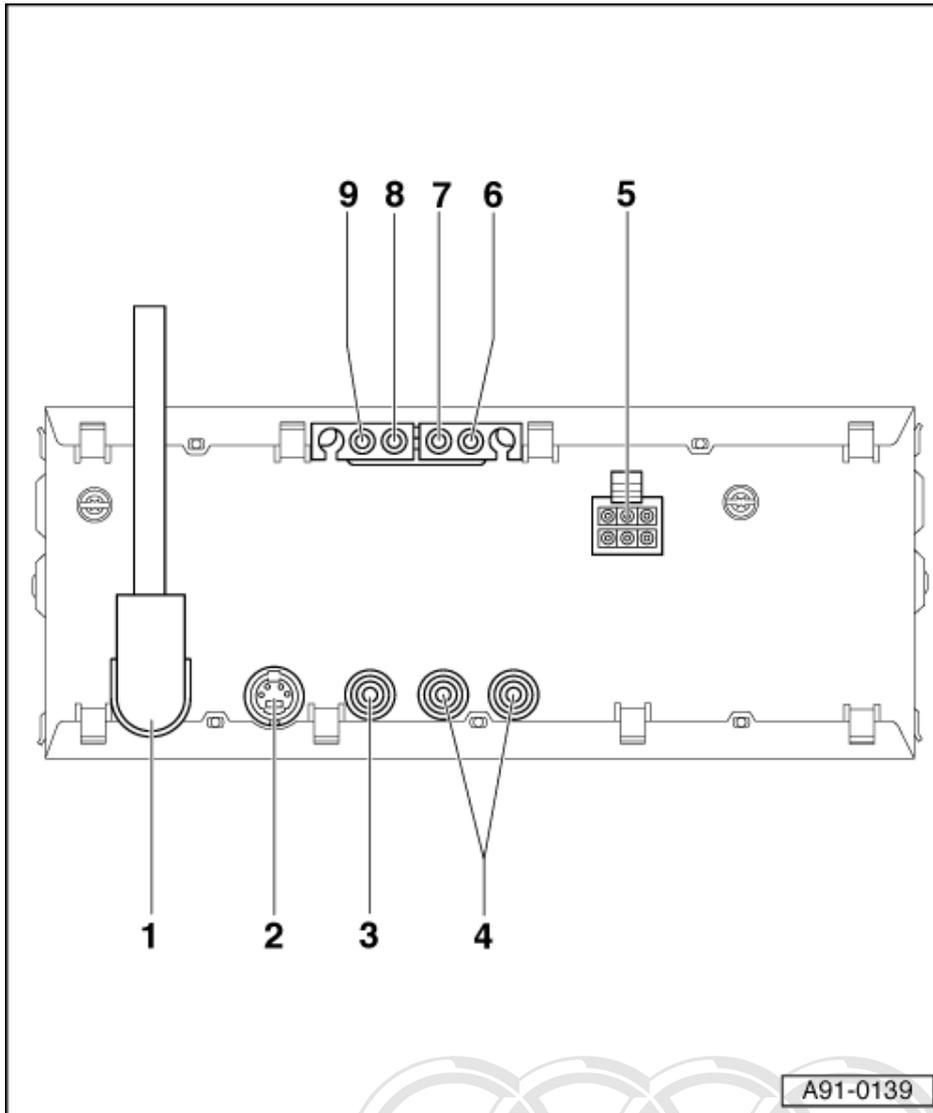


- 1 Video connection: 11-pin connector for connection of operating electronics control unit, navigation
- 2 Video input: 4-pin connector (SVHS)
- 3 Video input; 2-pin connector (yellow cinch socket) for picture signal
- 4 Video input; 2-pin connector (2 cinch sockets, white and red) for sound signal for left and right channels



Audi

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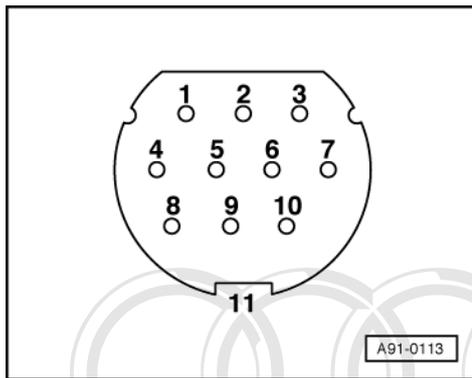
- 5 Power supply: 6-pin connector for power supply and CAN bus connections
- 6 TV aerial connection: Connection to aerial selection control unit -J515
- 7 TV aerial connection: Connection to aerial selection control unit -J515
- 8 TV aerial connection: Connection to aerial selection control unit -J515
- 9 TV aerial connection: Connection to aerial selection control unit -J515

Contact assignments of multi-pin connectors of TV tuner

Note:

Non-listed plug contacts are not used.

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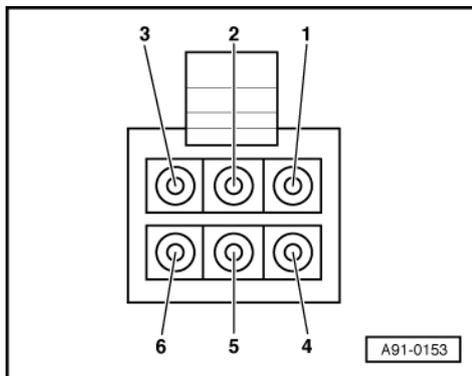


-> Video connection (RGB video input)

11-pin connector

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

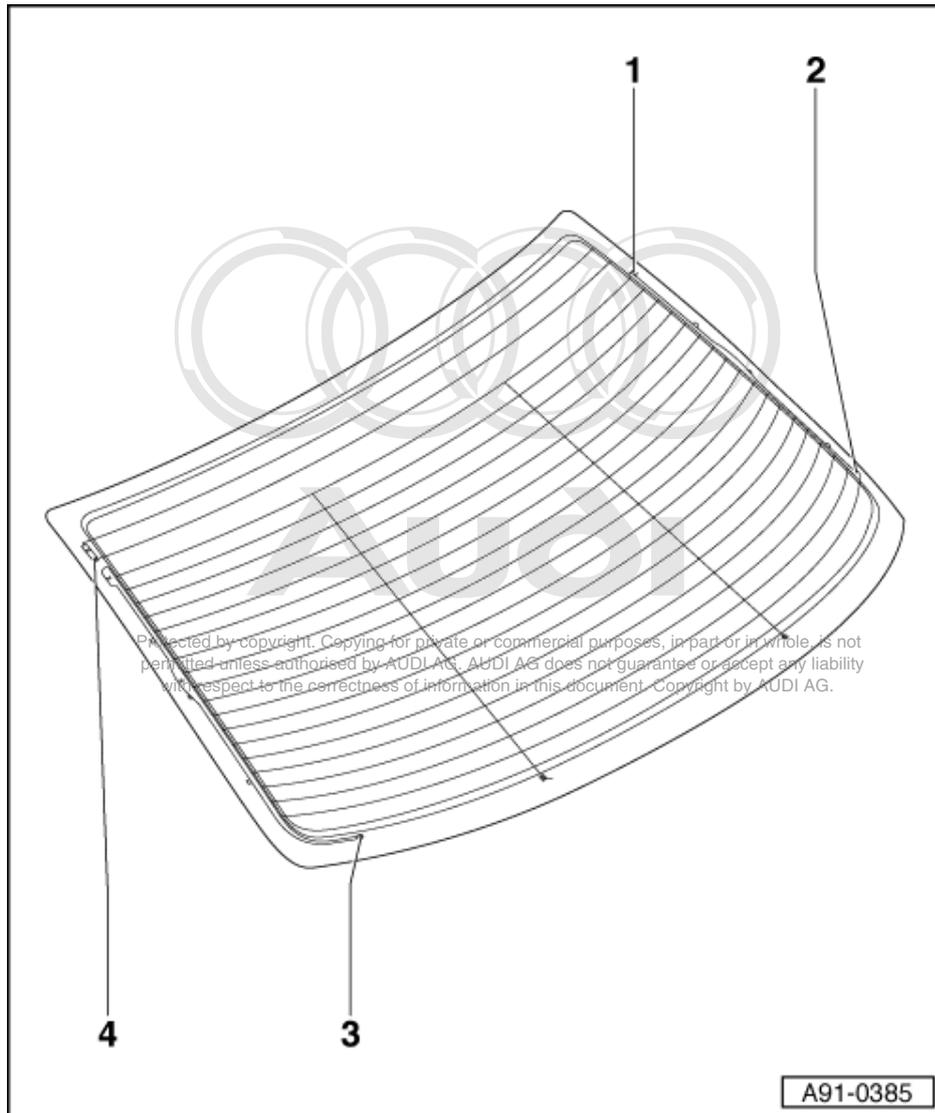
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-> Connector for power supply and CAN bus connections

- 1 - Earth (terminal 31)
- 2 - Battery + (terminal 30)
- 3 - CAN bus high (Bosch)
- 4 - Terminal 15
- 5 - Earth (terminal 31)
- 6 - CAN bus low (Bosch)

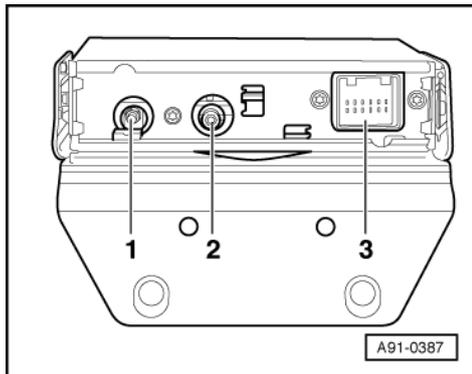
5.9 - Rear window aerial connection points



- 1 Aerial FM1
- 2 Aerial FM2
- 3 Aerial FM3
- 4 Aerial FM4/AM

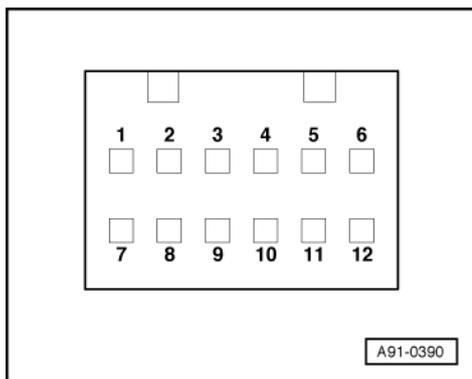


5.10 - Connectors at navigation system interface -R94



-> Navigation system interface transposes internal BUS system (Bosch-CAN) onto display bus. Navigation system interface also contains a TMC tuner (Traffic Message Channel), which relays traffic information to navigation system control unit and permits dynamic navigation.

- 1 - HF wire from radio
- 2 - HF wire to aerial selection control unit
- 3 - Connector for power supply and CAN bus connections



-> Connector for power supply and bus connections

- 2 - CAN bus low (display)
- 3 - CAN bus high (display)
- 6 - Battery + (terminal 30)
- 8 - CAN bus low (Bosch)
- 9 - CAN bus high (Bosch)
- 12 - Earth (terminal 31)

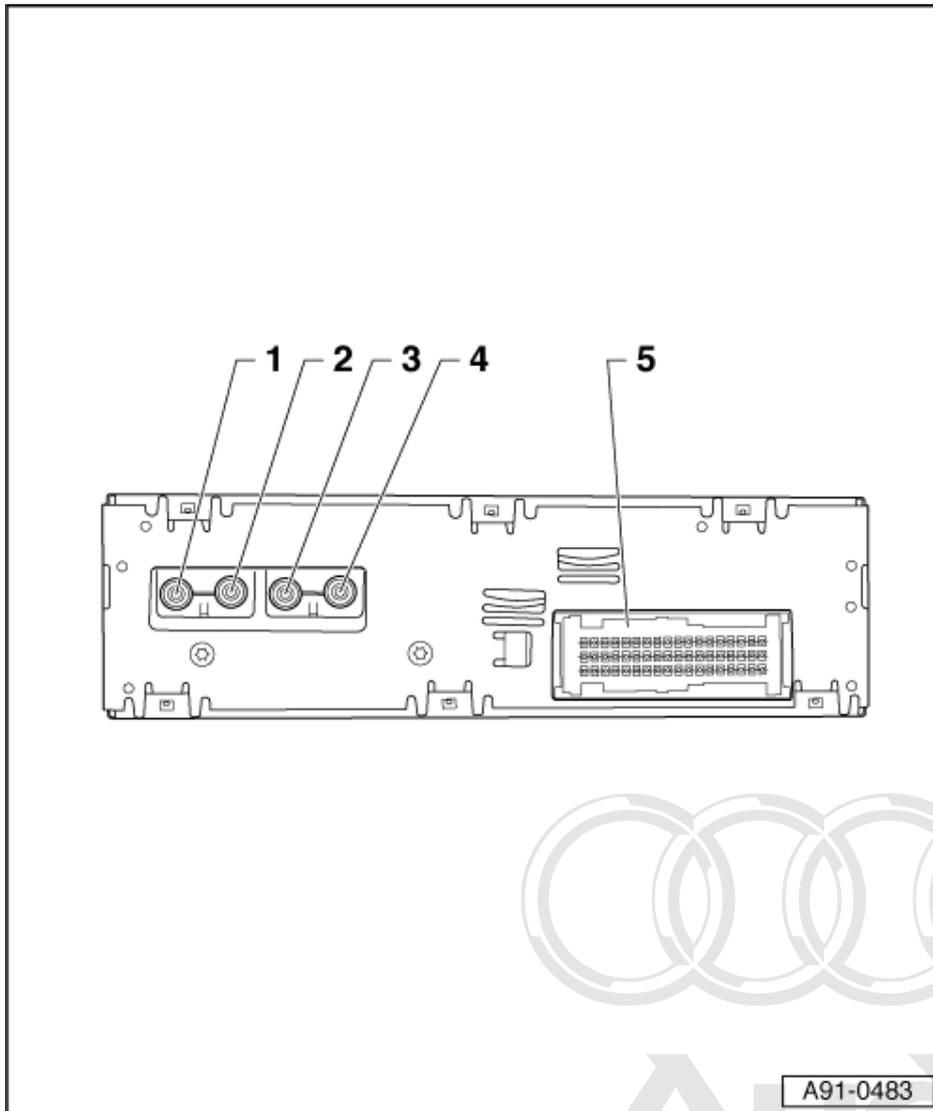
Note:

Non-listed plug contacts are not used.



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5.11 - Connectors on back of navigation/TV tuner -J415 as of MY 02

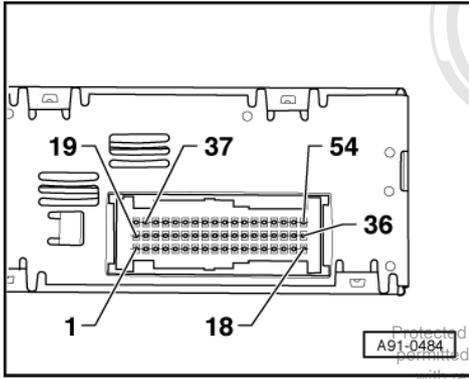


- 1 TV aerial connection: Connection to TV aerial amplifier 1 at rear window
- 2 TV aerial connection: Connection to TV aerial amplifier 2 at rear window
- 3 TV aerial connection: Connection to TV aerial amplifier 3 at rear window
- 4 TV aerial connection: Connection to TV aerial amplifier 4 at rear window
- 5 Connector: 54-pin video inputs and outputs, power supply, CAN bus

Contact assignments of multi-pin connectors of TV tuner

Note:

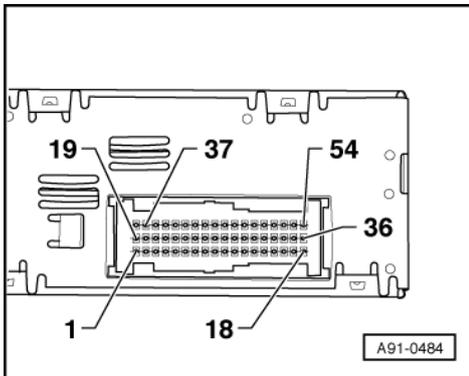
Non-listed plug contacts are not used at present.



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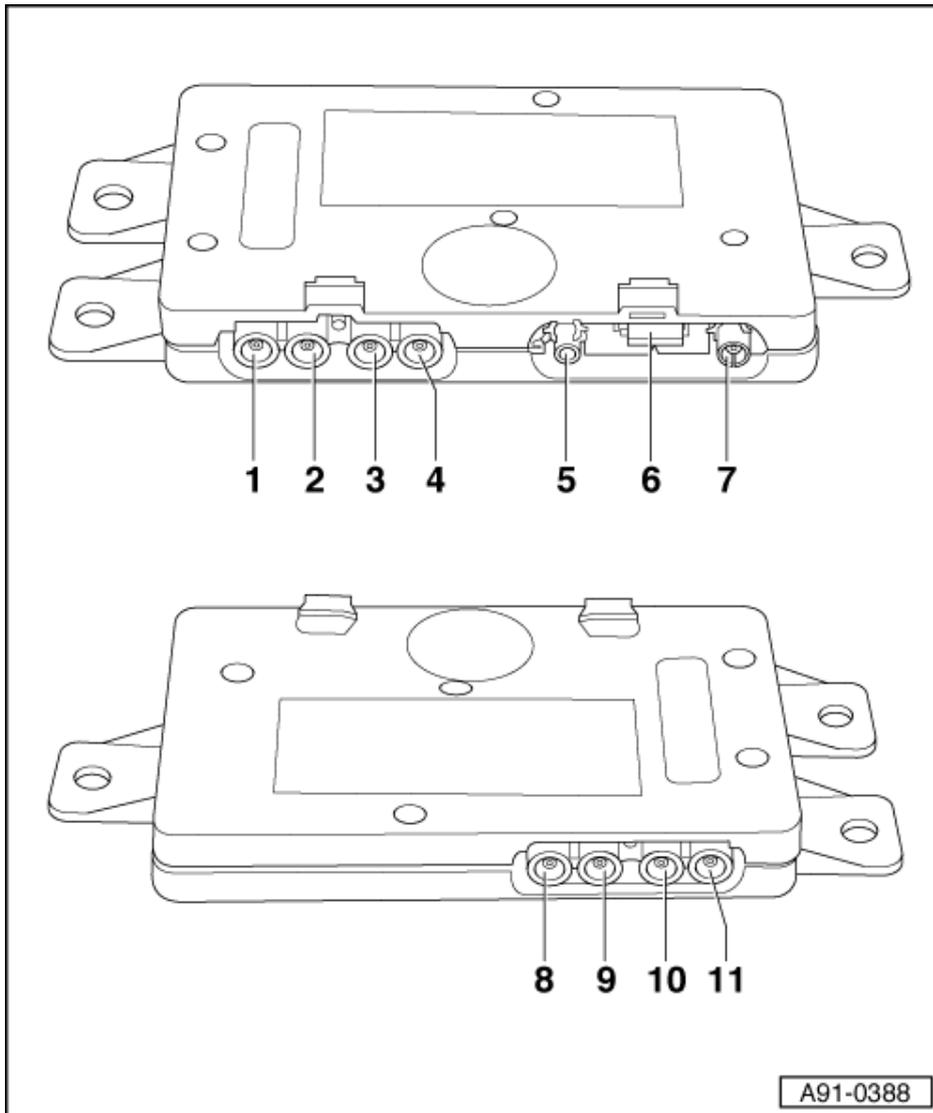
-> 54-pin connector

- 2 - CAN bus low (Bosch)
- 3 - CAN bus high (Bosch)
- 5 - AF right, front
- 7 - AF left, front
- 8 - AF earth
- 9 - Full 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 - Battery + (terminal 30)
- 21 - K-wire (self-diagnosis)

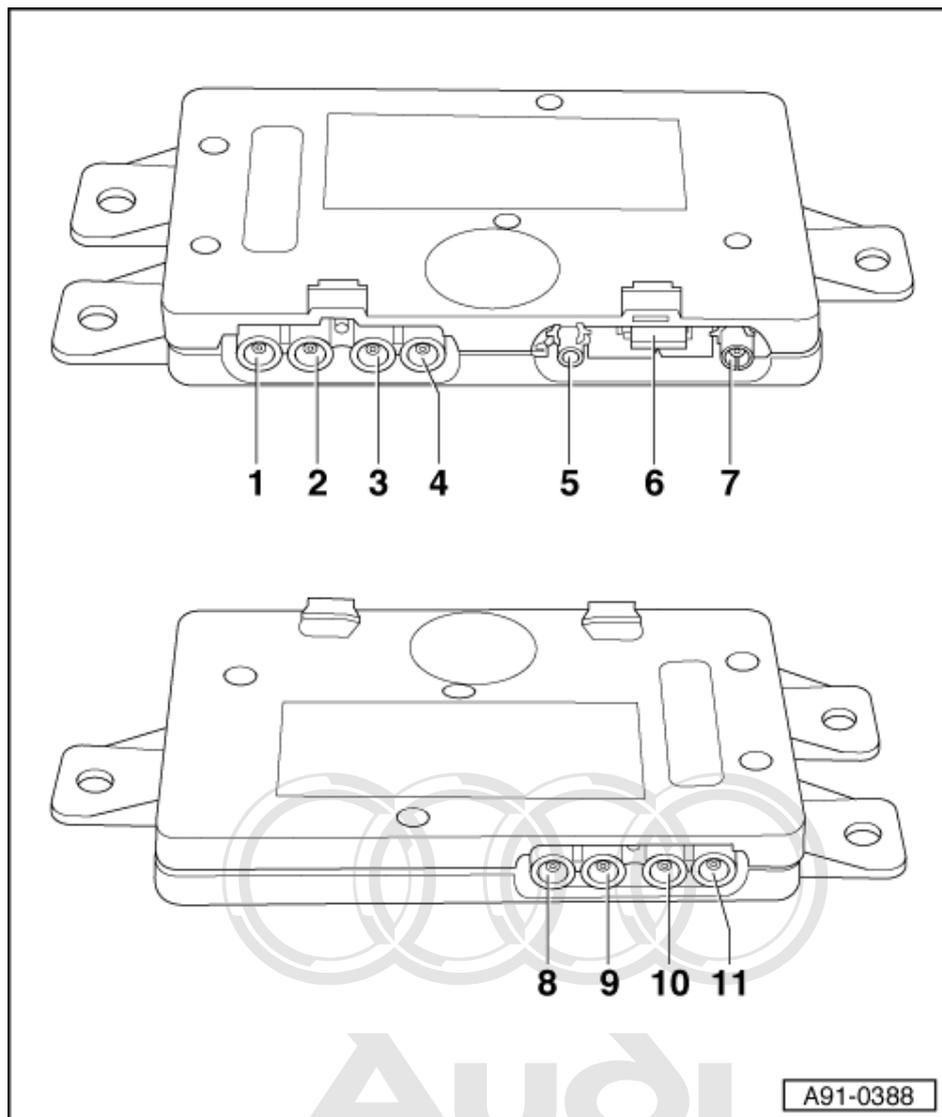
5.12 - Connectors at aerial selection control unit -J515



- 1 Aerial connection FM1 from window aerial amplifier
- 2 Aerial connection FM2 from window aerial amplifier
- 3 Aerial connection FM3 from window aerial amplifier
- 4 Aerial connection AM/FM4 from window aerial amplifier
- 5 HF wire connection from navigation system interface
- 6 Connector for power supply (pin 1: terminal 30; pin 2: terminal 31)

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7 IF wire connection from operating electronics control unit, navigation

8 Aerial connection FM4 to TV tuner

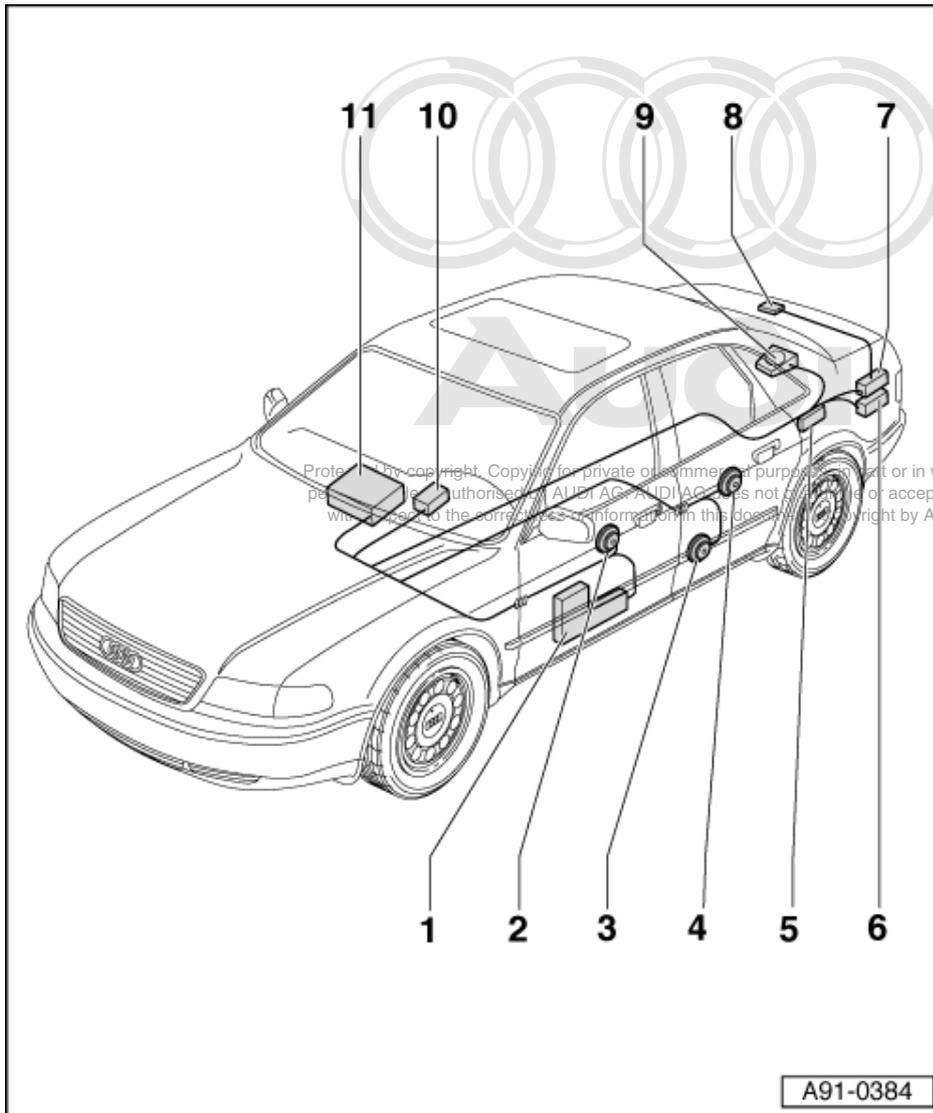
9 Aerial connection FM3 to TV tuner

10 Aerial connection FM2 to TV tuner

11 Aerial connection FM1 to TV tuner

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5.13 - Exploded view of navigation system II-D



1 Bass speaker

- ◆ In bottom of front door trim
- ◆ Removing and installing=>Page 38

2 Treble/mid-range speaker

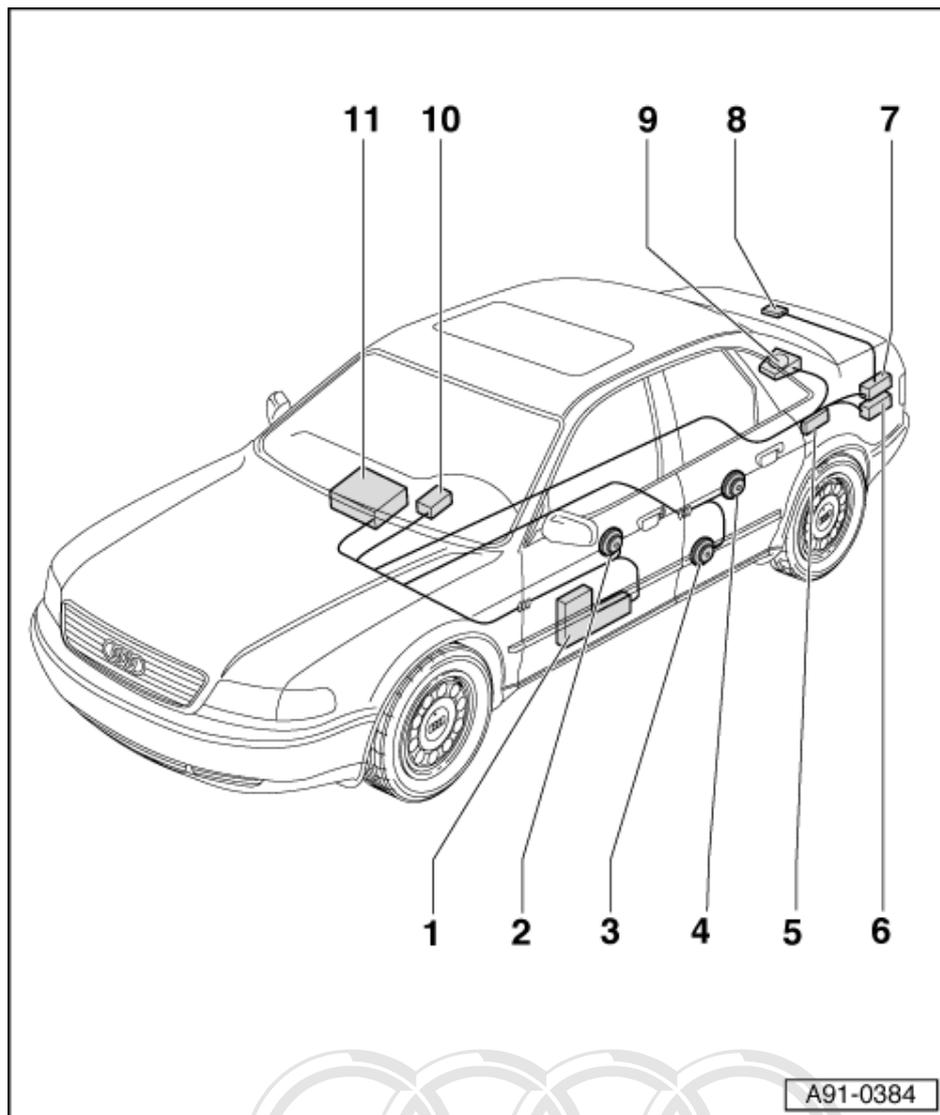
- ◆ In top of front door trim
- ◆ Removing and installing=>Page 38

3 Mid-range speaker

- ◆ In bottom of rear door trim
- ◆ Removing and installing=>Page 38

4 Treble speaker

- ◆ In top of rear door trim
- ◆ Removing and installing=>Page 38



5 Aerial selection control unit -J515

- ◆ Beneath C-pillar trim at bottom left
- ◆ Removing and installing=>Page 45

6 CD changer -R41

- ◆ In left luggage compartment storage area
- ◆ Removing and installing=>Page 41

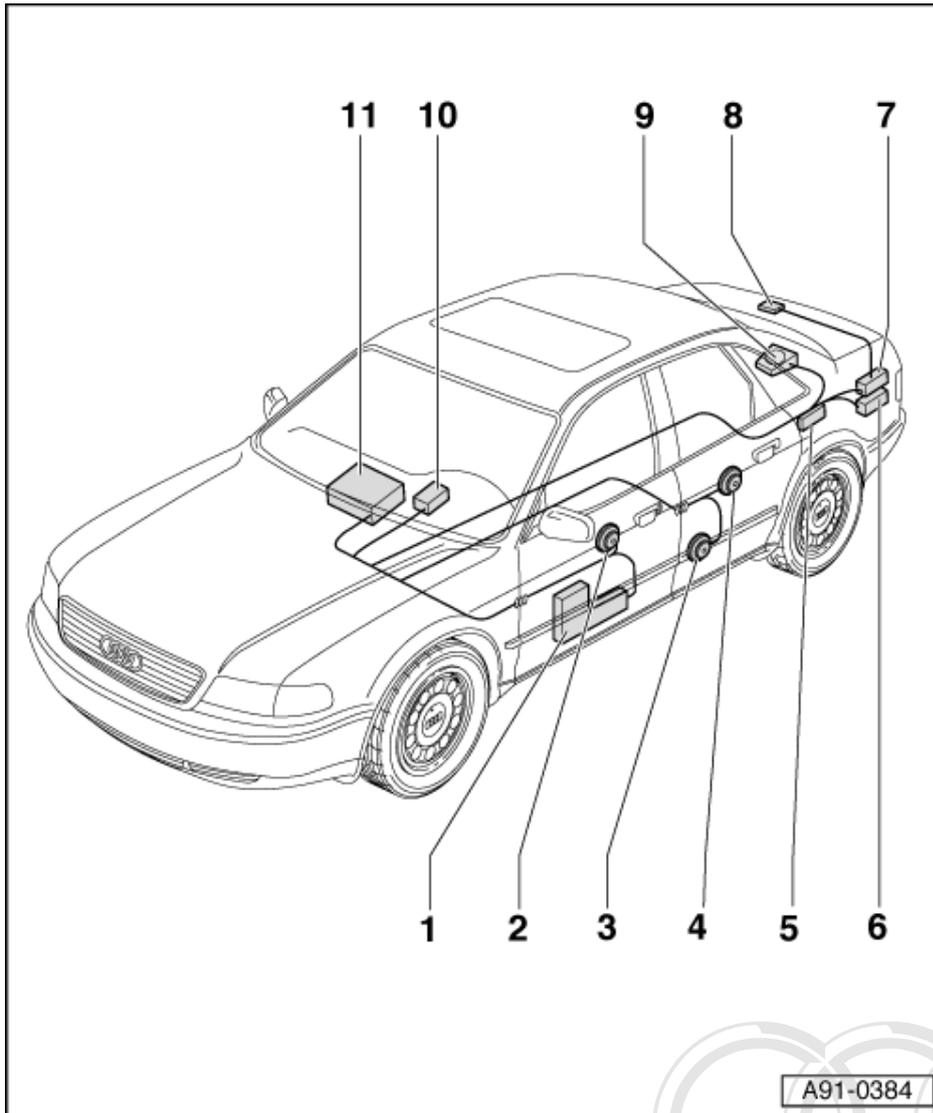
7 Navigation/TV tuner -J415

- ◆ In left luggage compartment storage area
- ◆ Removing and installing
=> Page 141

8 Navigation aerial -R50

- ◆ On boot lid
- ◆ Removing and installing
=> Page 113

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9 Active speaker

- ◆ In rear shelf
- ◆ Removing and installing=>Page 39

10 Navigation system interface -R94

- ◆ Behind dash panel insert at dash panel cross member
- ◆ Removing and installing
=> Page 173

11 Operating electronics control unit, navigation -J402

- ◆ In centre console
- ◆ Removing and installing
=> Page 139

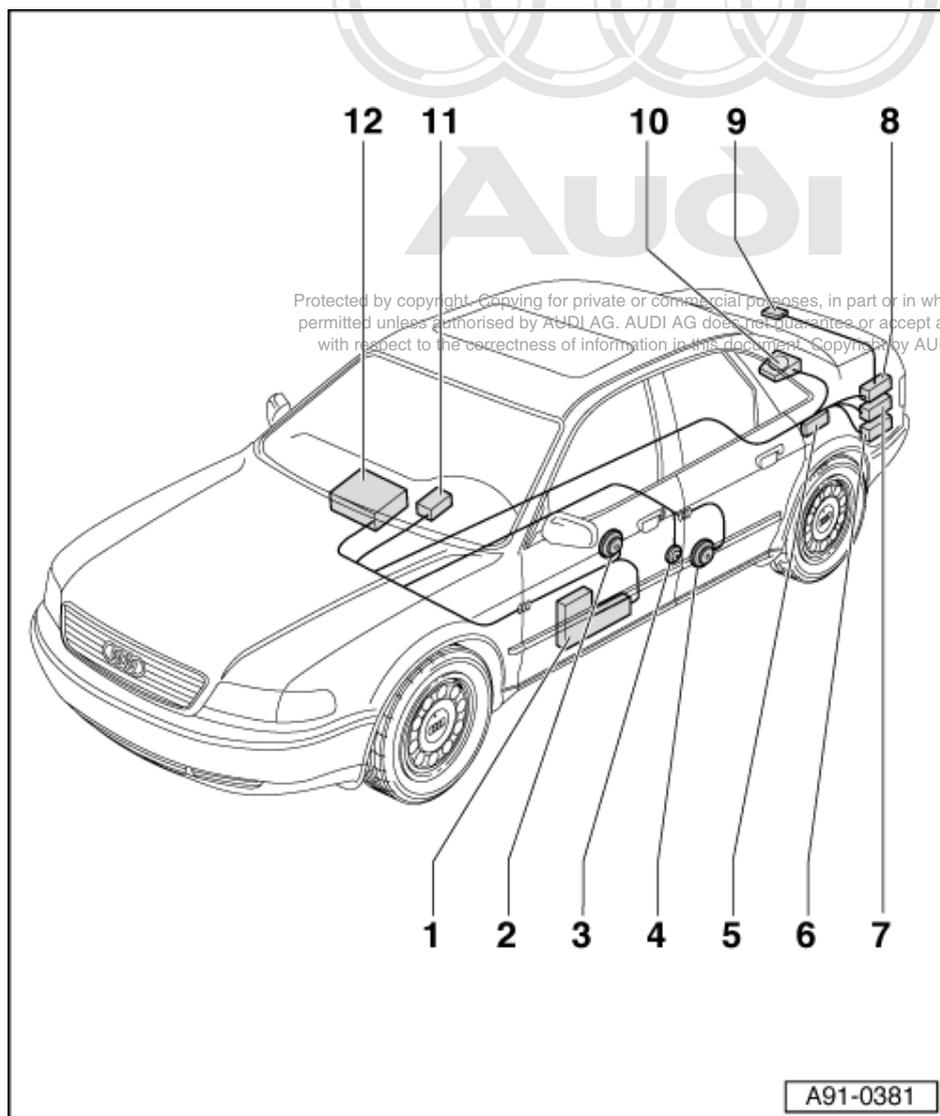


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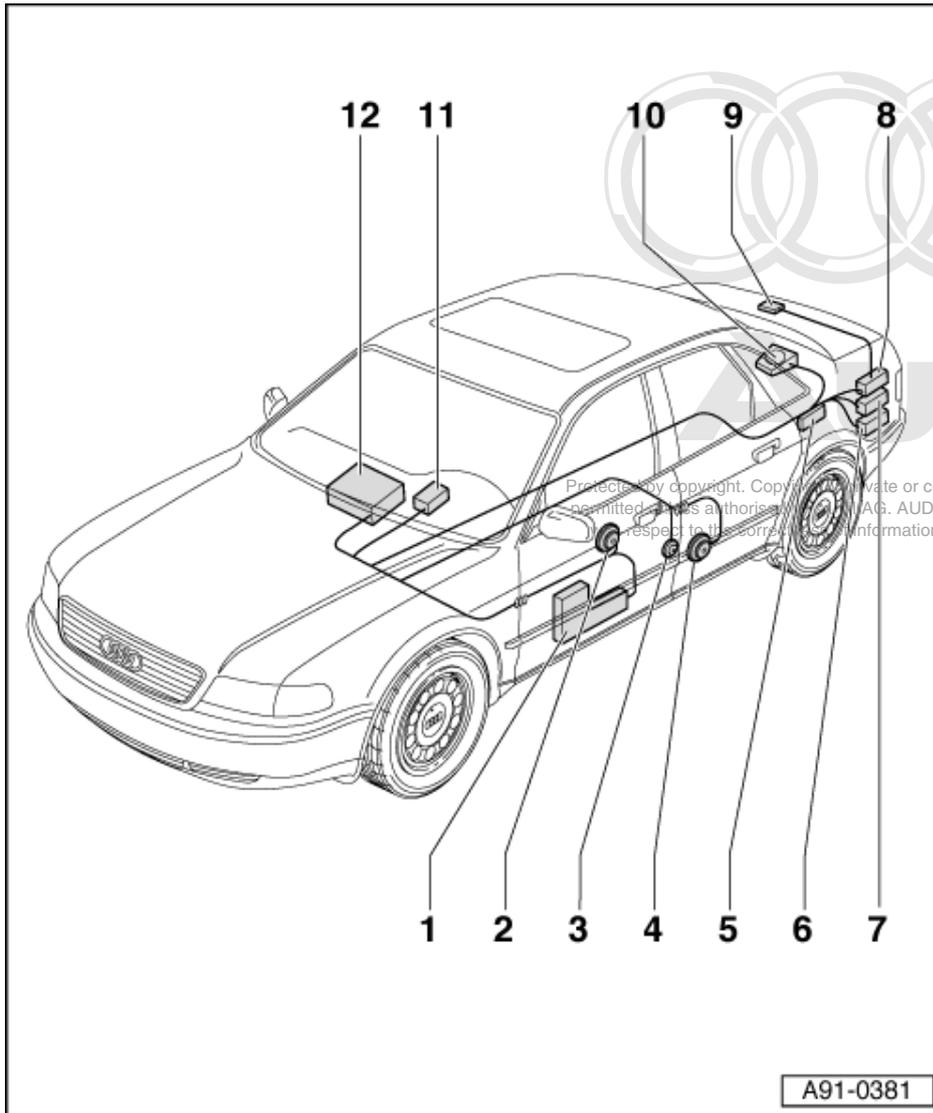
The four aerial amplifiers and the four aerals in the rear window are not shown.



5.14 - Exploded view of navigation system II-D with BOSE sound system



- 1 Mid-range/bass speaker**
 - ◆ In bottom of front door trim
 - ◆ Removing and installing=>Page 38
- 2 Treble speaker**
 - ◆ In top of front door trim
 - ◆ Removing and installing=>Page 38
- 3 Hands-free loudspeaker (up to MY 01)**
 - ◆ In driver's B-pillar trim
 - ◆ Removing and installing=>Page 63



4 Treble/mid-range speaker

- ◆ In bottom of rear door trim
- ◆ Removing and installing=>Page 39

5 Aerial selection control unit -J515

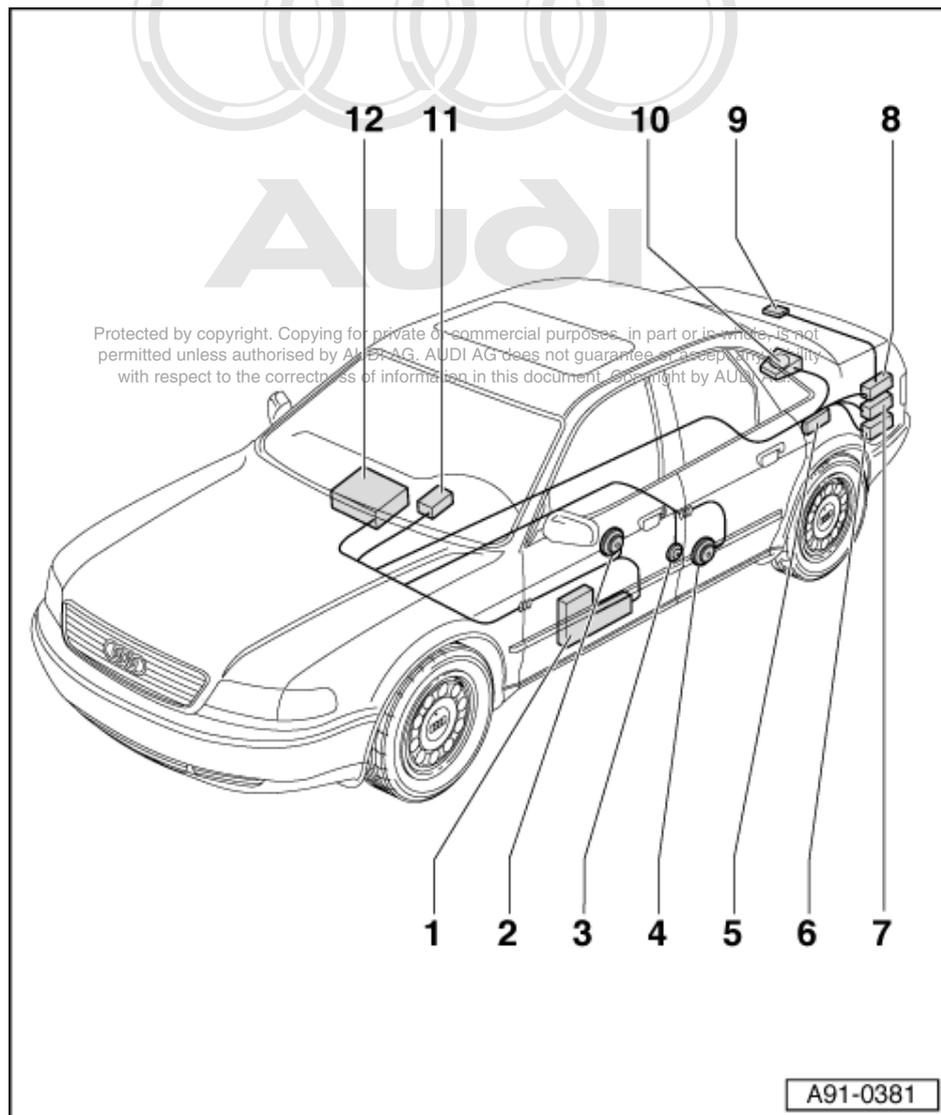
- ◆ Beneath C-pillar trim at bottom left
- ◆ Removing and installing=>Page 45

6 BOSE power amplifier -R12

- ◆ In left luggage compartment storage area beneath CD changer
- ◆ Removing and installing=>Page 42

7 CD changer -R41

- ◆ In left luggage compartment storage area
- ◆ Removing and installing=>Page 41
- ◆ Checking wiring => Page 41



8 Navigation/TV tuner -J415

- ◆ In left luggage compartment storage area
- ◆ Removing and installing
=> Page 141

9 Navigation aerial -R50

- ◆ On boot lid
- ◆ Removing and installing
=> Page 113

10 Bass speaker

- ◆ In rear shelf
- ◆ Removing and installing=>Page 39

11 Navigation system interface -R94

- ◆ Behind dash panel insert at dash panel cross member
- ◆ Removing and installing
=> Page 173

12 Operating electronics control unit, navigation -J402

- ◆ In centre console
- ◆ Removing and installing
=> Page 139

The four aerial amplifiers and the four aerials in the rear window are not shown.

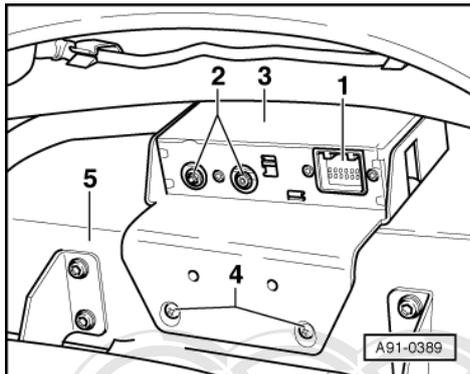
5.15 - Removing and installing navigation system interface -R94

Note:

The navigation system interface transposes the internal bus system (Bosch-CAN) onto the display bus. Navigation system interface also contains a TMC tuner (Traffic Message Channel), which relays traffic information to navigation system control unit and permits dynamic navigation.

Removing:

- Remove dash panel insert.

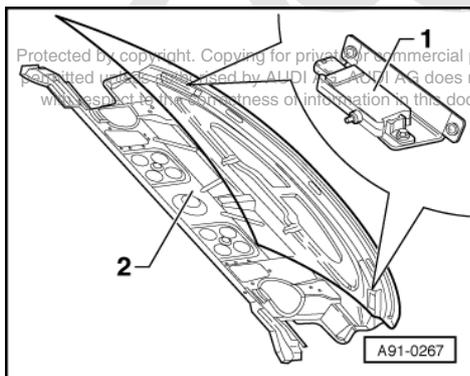


- -> Unplug connector -1- and disconnect aerial wires -2- at navigation system interface -3-.
- Unscrew the two bolts -4- (4.5 Nm) and detach interface from dash panel cross member -5-.

Installing:

- Install accordingly in reverse order of removal.

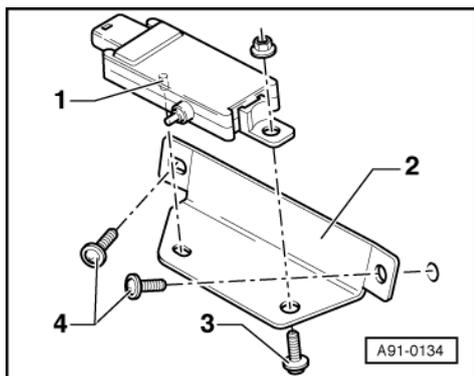
5.16 - Removing and installing rear window aerial amplifiers



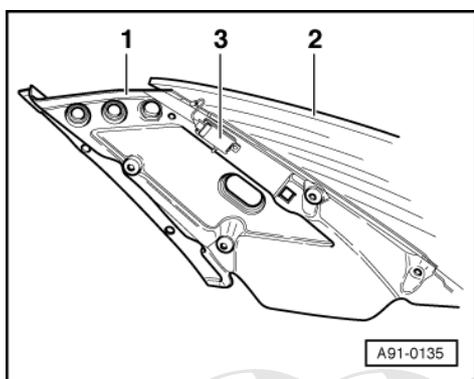
-> Two of the four aerial amplifiers -1- are bolted to the luggage compartment partition -2-.

- Remove rear shelf.

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



-> Each of the two aerial amplifiers is attached with a bolt -3- (4.5 Nm) and locating pin -1- to a holder -2-. This in turn is attached by means of two bolts -4- (1.5 Nm) to the luggage compartment partition.



Two further aerial amplifiers are bolted on at top of right and left D-pillar.

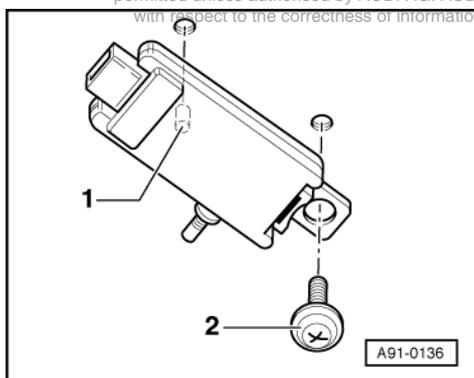
-> One aerial amplifier -3- is bolted to D-pillar -1- beneath rear window -2-.

- Remove D-pillar trim.

=> General Body Repairs, Interior; Repair Group 70; Trim panels; Removing and installing D-pillar trim Trim panels Removing and installing D-pillar trim

=> General Body Repairs, Interior; Repair Group 70; Trim Panels gradually introduced as of 10.98 (with interior mirror at headliner); Removing and installing D-pillar trim Trim Panels gradually introduced as of 10.98 (with interior mirror at headliner) Removing and installing D-pillar trim

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-> Each of the aerial amplifiers is attached with a bolt -2- (1.5 Nm) and a locating pin -1- to the D-pillar.

5.17 - Checking operation of individual aerial amplifiers

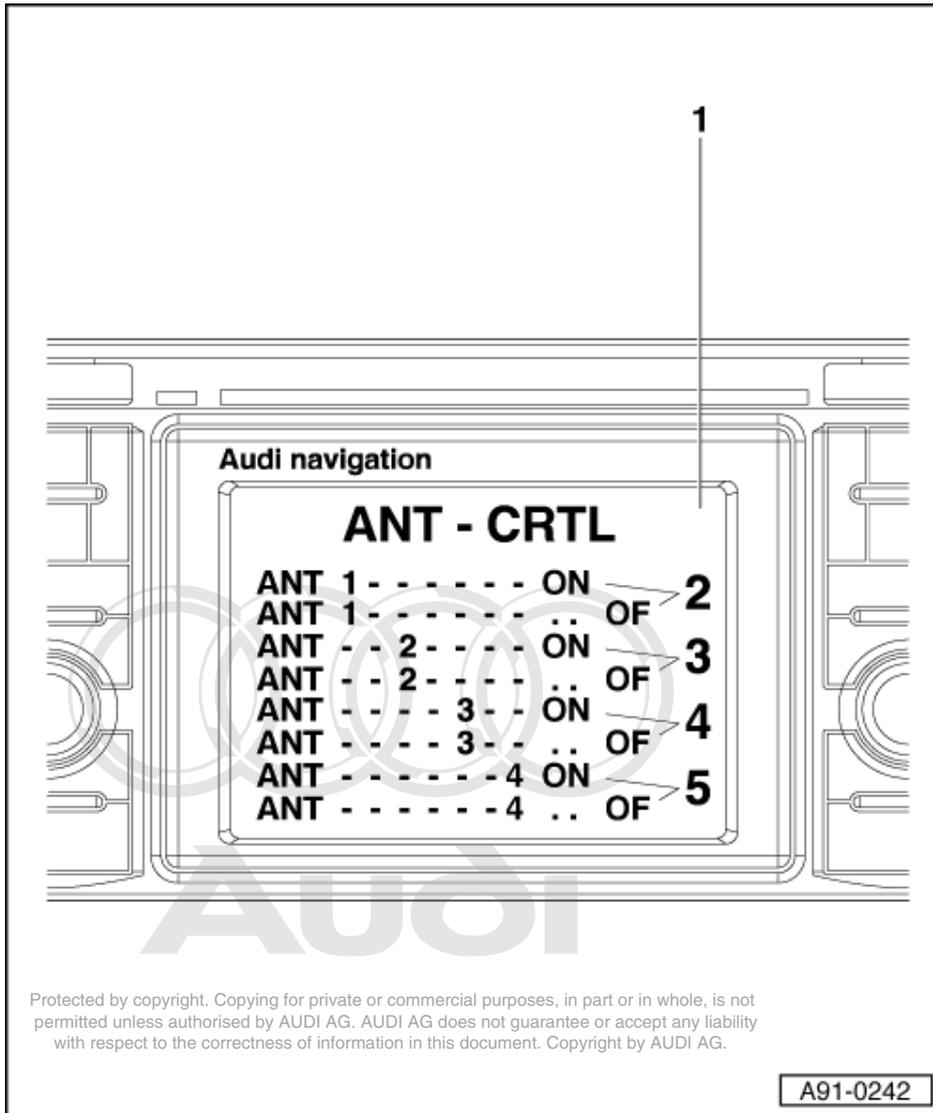
Navigation system II-D has a special display for visual monitoring of aerial performance. This display also checks the basic functions of the TV system.

The test display is enabled by:

- Switching on TV mode and then searching for TV station with good reception

=> Operating instructions for navigation system Plus

- Pressing AM and TONE buttons simultaneously



Display on screen:

- 1 **Aerial monitoring display**
- 2 **FM1 aerial -R55 with ON and OFF function**
- 3 **FM2 aerial -R56 with ON and OFF function**
- 4 **FM3 aerial -R57 with ON and OFF function**



5 FM4/AM aerial -R58 mit ON and OFF function

Note:

Picture received by aerial currently selected now appears on screen.

- Right rotary control can be used to activate/deactivate remote power supply for respective aerial amplifier. Picture quality must deteriorate appreciably with remote power supply deactivated.
- Use "RETURN" to exit from interface.

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Test options:

- ◆ Activation/deactivation (ON/OFF position) of remote power supply for respective aerial amplifier provides information on operation of each aerial amplifier.
- ◆ Whether or not a fault (no change in picture quality) is caused by an open circuit in the aerial cable or a defective aerial amplifier can only be clarified by measuring voltage (10 V) at coax cable (inner conductor) on amplifier end.
- ◆ The most important functions of the television receiver are activated and the audio/video link established by starting up TV system, selecting station and calling up video text.

6 - Navigation system III (destination finding system) (as of week 27/99)

6.1 - Navigation system III (destination finding system) (as of week 27/99)

6.2 - General information

Attention:

Disconnect battery earth strap before working on electrical system.

Telematics control unit service mode must be activated before disconnecting battery.=>Radio, Telephone and Navigation System Self-diagnosis; Repair Group 01; Telematics System Self-diagnosis; Adaption

Notes:

- ◆ Obtain radio anti-theft code before disconnecting battery.
- ◆ Telematics control unit service mode must be activated before disconnecting battery.
- ◆ On reconnecting battery, remember to activate vehicle equipment (radio, clock, electric window lifters, etc.) in accordance with owner's manual and to deactivate service mode of telematics control unit.

Important:

To prevent contact corrosion, only use approved bolts, screws, nuts, washers, etc..

These have a special surface coating and can be recognised from their greenish colour.

Such bolts also have to be stored separately.

6.3 - General description

Navigation system III is designed to replace navigation system I (destination finding system).

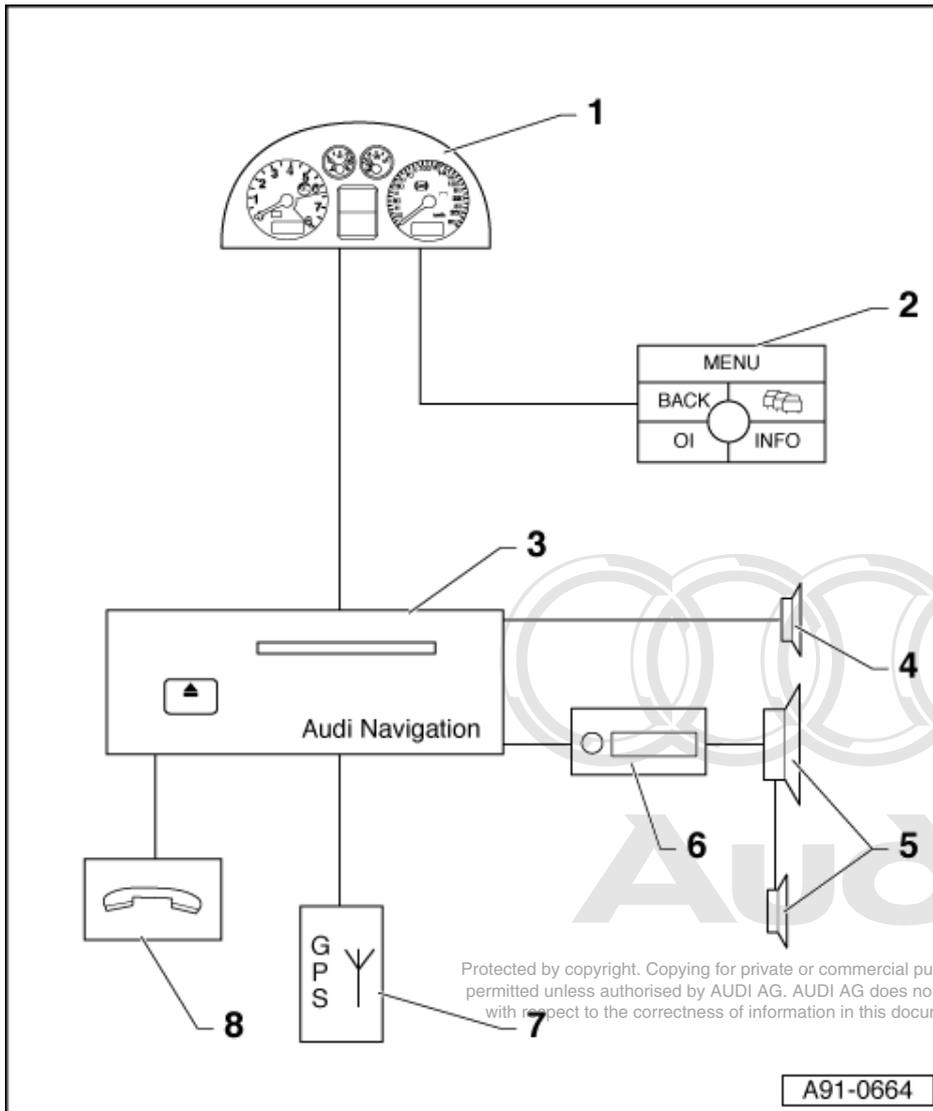
The system (which now features self-diagnosis capability) is based extensively on the technology employed for navigation system II (monitor navigation).

All information is displayed on dash panel insert connected to CAN bus.
 All information is entered via buttons on 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

6.4 - Block diagram of navigation system III

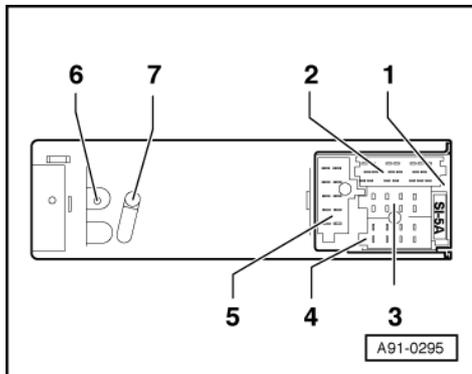


- 1 Dash panel insert (display unit)
- 2 Function selection switch (operating unit)
- 3 Control unit for navigation system with CD drive (central unit and navigation unit)
- 4 Hands-free loudspeaker (telephone/navigation system loudspeaker -R39) (up to MY 01) (with BOSE sound system only)
- 5 Front treble/mid-range speaker and bass speaker
- 6 Radio



- 7 Navigation aerial (GPS)
- 8 Telephone (pre-fitted components for telephone installation, permanently installed telephone or mobile phone)

6.5 - Connectors on back of navigation system with CD drive control unit -J401

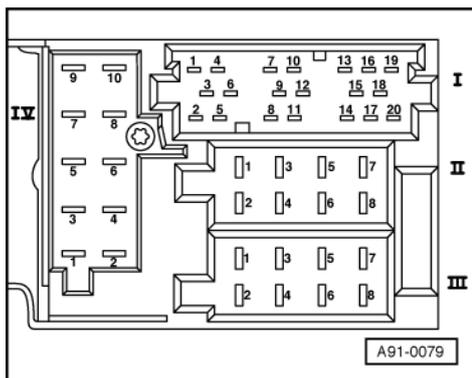


- 1 - -> Connection block with four multi-pin connectors and one fuse
- 2 - 20-pin connector I, consisting of
Yellow, 6-pin connector
Green, 6-pin connector
Blue, 8-pin connector
- 3 - Brown, 8-pin connector II
- 4 - Black, 8-pin connector III
- 5 - Red, 10-pin connector IV
- 6 - GPS aerial connection: Connection socket for navigation system aerial (GPS)
- 7 - Locking clip for aerial connection

Contact assignment of multi-pin connectors I, II, III, IV on back of navigation system with CD drive control unit -J401

Note:

Non-listed plug contacts are not used.



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-> 20-pin connector I

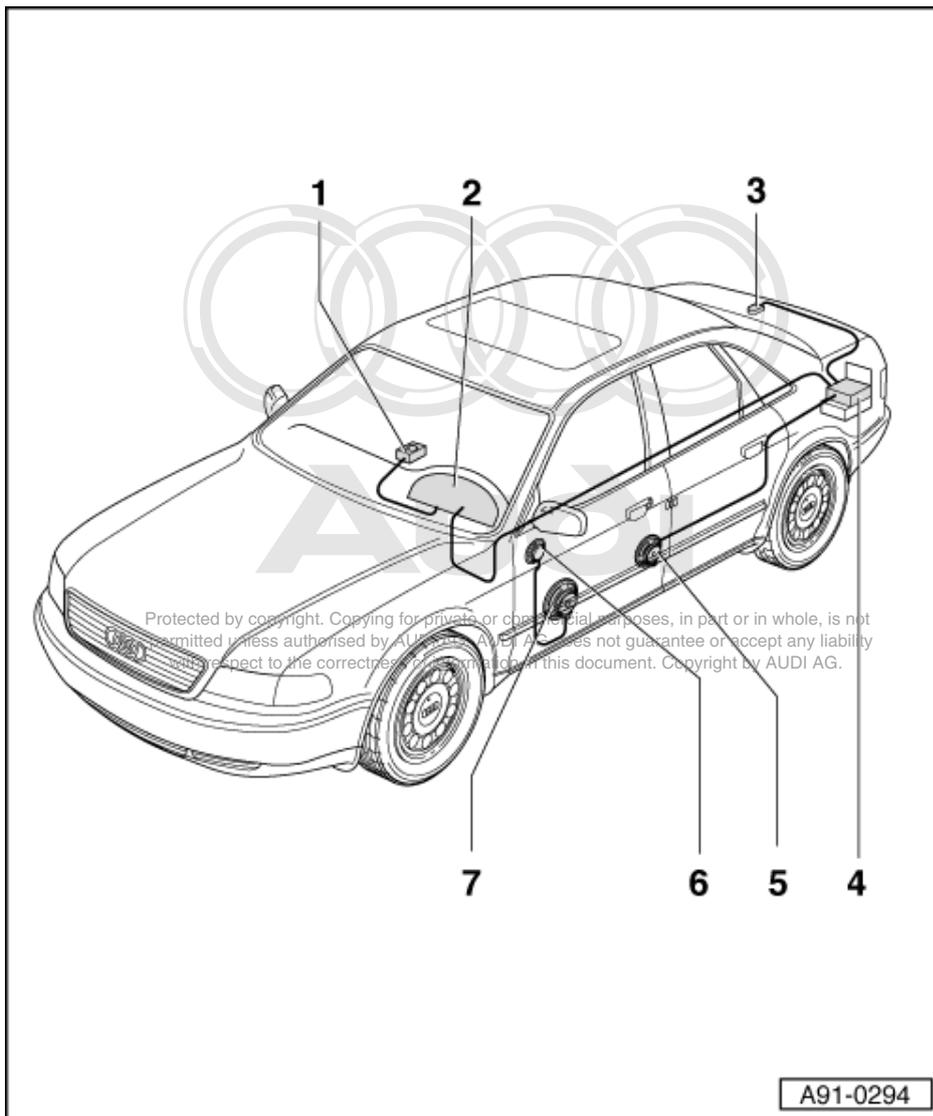
- 2 - CAN bus high (display)
- 5 - CAN low (display)
- 13 - AF + (to radio)
- 14 - AF muting (to radio)
- 15 - AF - (to radio)
- 16 - Telephone (AF +) (from telephone)
- 17 - AF muting (telephone)
- 18 - Tel-AF screen

19 - Telephone (AF -) (from telephone)

Black, 8-pin connector III

- 1 - GALA (vehicle-speed signal)
- 2 - Reversing light switch
- 3 - K-diagnosis
- 4 - Terminal 15
- 7 - Battery + (terminal 30)
- 8 - Earth (terminal 31)

6.6 - Exploded view of navigation system III



1 Function selection switch II in centre console -E272

- ◆ In centre console
- ◆ Removing and installing
=> Page **181**

2 Display in dash panel insert

- ◆ In dash panel
- ◆ Removing and installing



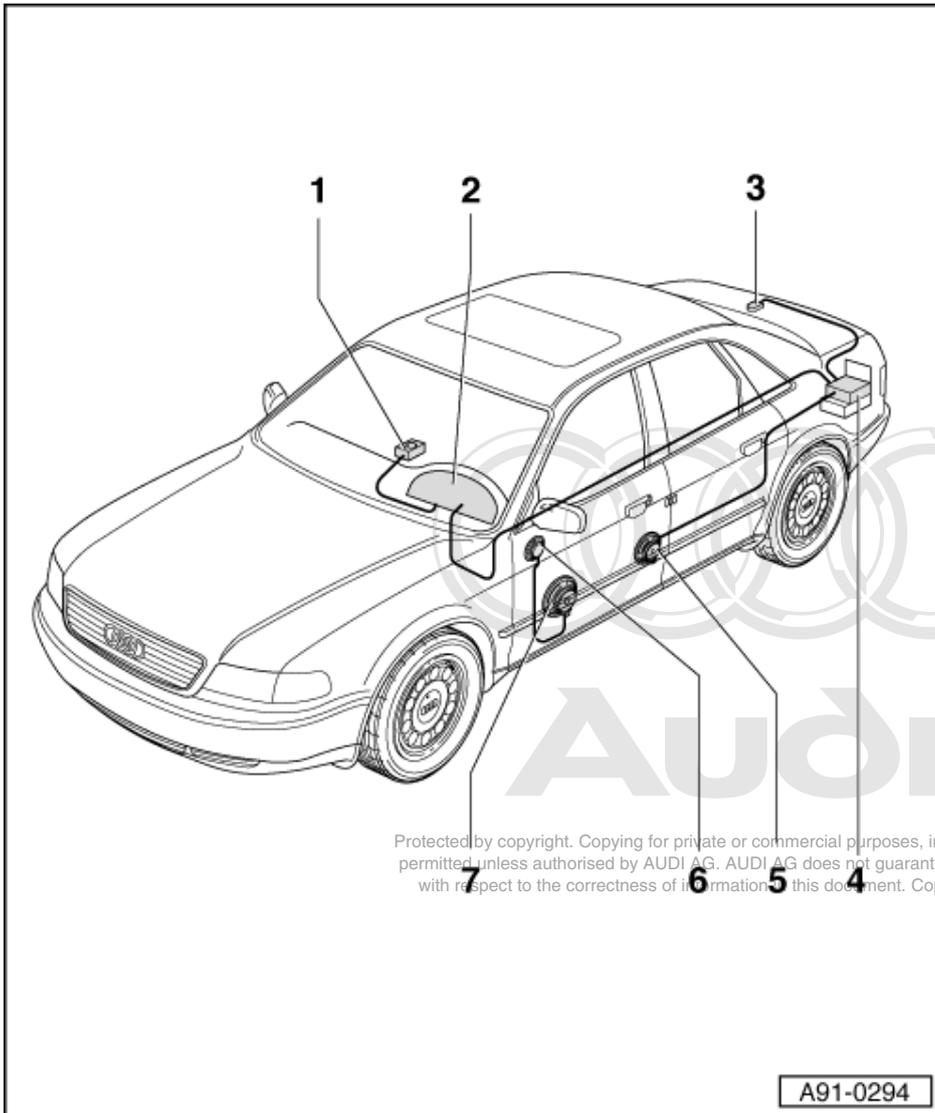
=> Electrical System; Repair Group 90; Dash panel insert Dash panel insert

3 Navigation aerial -R50

- ◆ On boot lid
- ◆ Removing and installing
=> Page 113

4 Navigation system with CD drive control unit -J401

- ◆ In luggage compartment behind left side trim
- ◆ Removing and installing
=> Page 181



5 Hands-free loudspeaker (up to MY 01)

- ◆ In driver's B-pillar trim
- ◆ Removing and installing=>Page 63

6 Treble/mid-range speaker

- ◆ In top of front door trim
- ◆ Removing and installing=>Page 38

7 Bass speaker

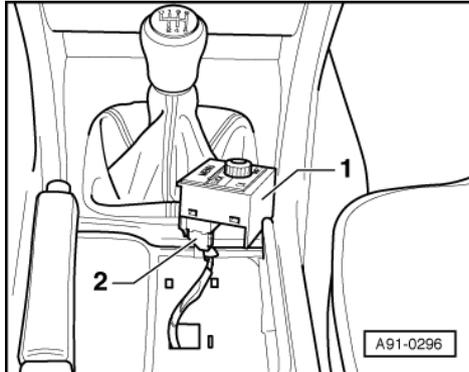
- ◆ In bottom of front door trim
- ◆ Removing and installing=>Page 38

6.7 - Removing and installing function selection switch II -E272

Function selection switch II is located in centre console storage compartment.

Removing:

- Press on cover on right of handbrake lever to open.



- Take out drinks holder if fitted.
- Release entire switch unit -1- by pulling carefully and then lift up.
- -> Unplug connector -2- to permit switch replacement.

Installing:

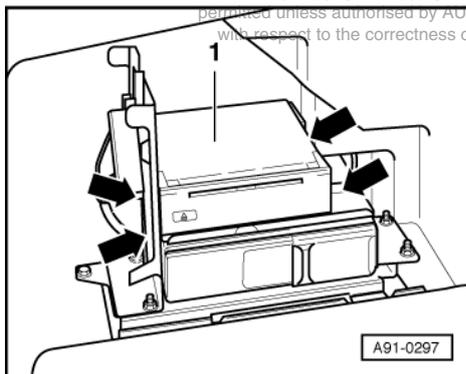
- Install accordingly in reverse order of removal.

6.8 - Removing and installing navigation system with CD drive control unit -J401

Control unit is located in left luggage compartment storage area.

Removing:

- Open left luggage compartment storage area.



- -> Screw out the four bolts (arrows).
- Unplug connector and disconnect aerial wire on back of control unit.
- Take out control unit -1-.

Attention:

Never use any bolts other than genuine bolts for securing control unit, as this could otherwise be destroyed.



Installing:

- Install accordingly in reverse order of removal.

Notes on installation:

- ♦ To avoid system malfunctions, navigation system control unit and mounting frame must be installed horizontally and protected as far as possible against vibration.
- ♦ Air circulation is also to be ensured, i.e. vent slots in control unit are not to be obstructed on installation.
- ♦ On control unit replacement, always complete "Annex to navigation system fault report" and submit it together with defective component => Page 111 .

7 - Rear Seat Entertainment system (RSE)

7.1 - Rear Seat Entertainment system (RSE)

Attention:

This monitor navigation system has been modified for the RSE system and does not correspond to the standard navigation system.

When performing service work, RSE navigation system can be replaced with standard navigation system, the only consequence being restricted RSE system operation.

If servicing is necessary, please consult Quattro GmbH Service Department.

Notes:

The Rear Seat Entertainment system (RSE) provides maximum convenience and represents the highest possible standards in terms of information/entertainment systems. The RSE system is available from quattro GmbH. The entire RSE system is specifically designed for the Audi A8. In other words, if components have to be replaced it is not possible to make use of commercially available monitor navigation systems and head restraint monitors.

7.2 - General information

Attention:

Disconnect battery earth strap before working on electrical system.

Telematics control unit service mode must be activated before disconnecting battery.=>Radio, Telephone and Navigation System Self-diagnosis; Repair Group 01; Telematics System Self-diagnosis; Adaption

Notes:

- ♦ For dealing with complaints, it is absolutely essential to be familiar with the functions and controls of the RSE system.
- ♦ In the event of complaints it is essential to work through the fault table in the operating instructions for the DVD player.
- ♦ **Additional information**

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=> Rear Seat Entertainment system (RSE) operating instructions

- ♦ For service installation, service work or fault-finding, consult

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

=> Fitting Instructions

- ♦ For detailed fitting instructions, e.g. detaching/attaching trim panels, consult Workshop Manual "General Body Repairs, Interior".

Notes:

- ◆ Establish navigation system anti-theft code before disconnecting battery.
- ◆ On re-connecting battery, remember to activate vehicle equipment (radio, clock, electric window lifters, etc.) in line with owner's manual and to deactivate telematics control-unit service mode.

Important:

To avoid contact corrosion exclusive use is to be made of approved bolts, nuts, washers etc. These elements have a special surface coating and can be recognised from their greenish colour. Such bolts also have to be stored separately.

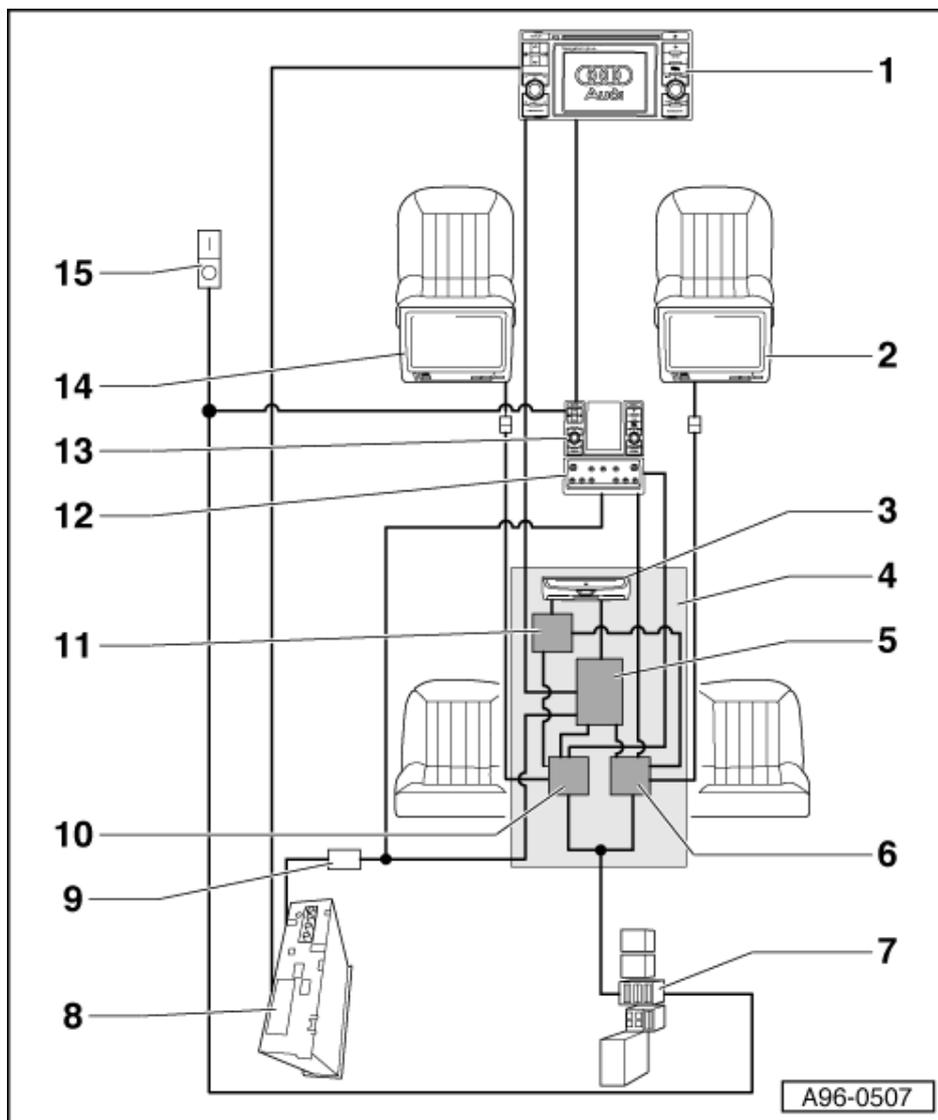
7.3 - Operating conditions

Requirements for RSE system start-up:

- Safety switch for rear window lifters (driver's door) must be off (this switch is also used as master switch for the RSE system)
- Vehicle should be started
- Battery voltage must be greater than 12 V

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7.4 - Exploded view of Rear Seat Entertainment system



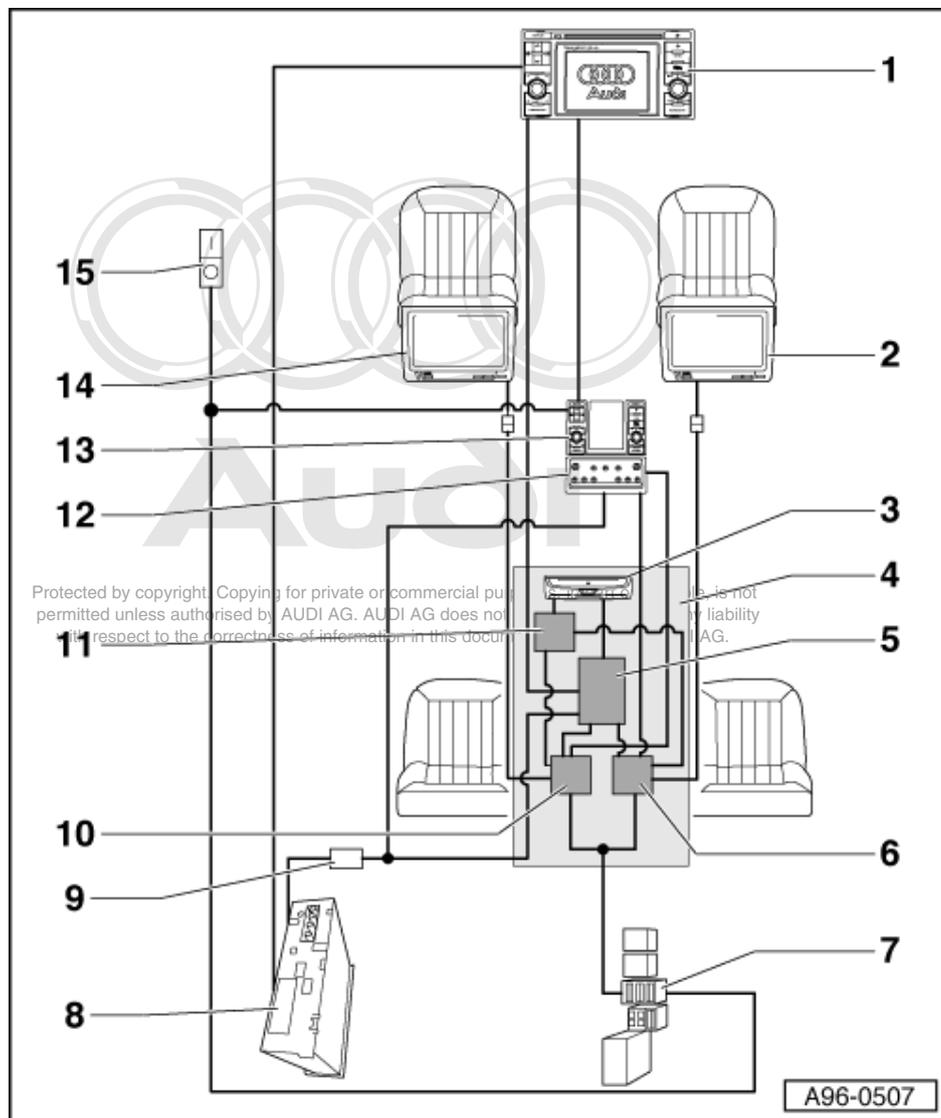


1 Operating electronics control unit, navigation -J402

- ◆ Does not correspond to standard component
- ◆ Removing and installing => As for standard unit

2 Multimedia display unit -1- -Y22 (rear monitor)

- ◆ In right head restraint
- ◆ Removing and installing



3 DVD player -R129

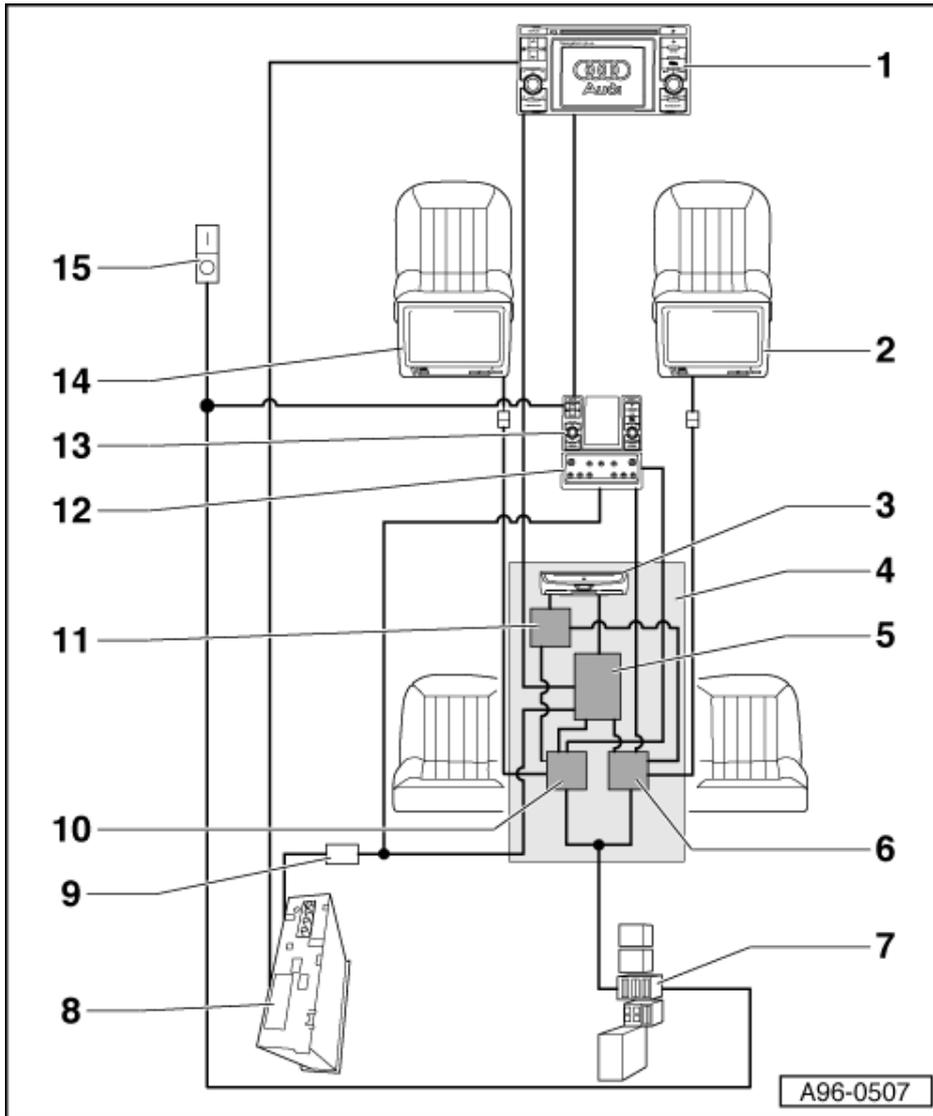
- ◆ In DVD console, item 4
- ◆ Removing and installing=>Page 38

4 Centre cushion with DVD console for RSE components

- ◆ Between electrically adjustable individual rear seats
- ◆ Removing and installing DVD console => Page 190

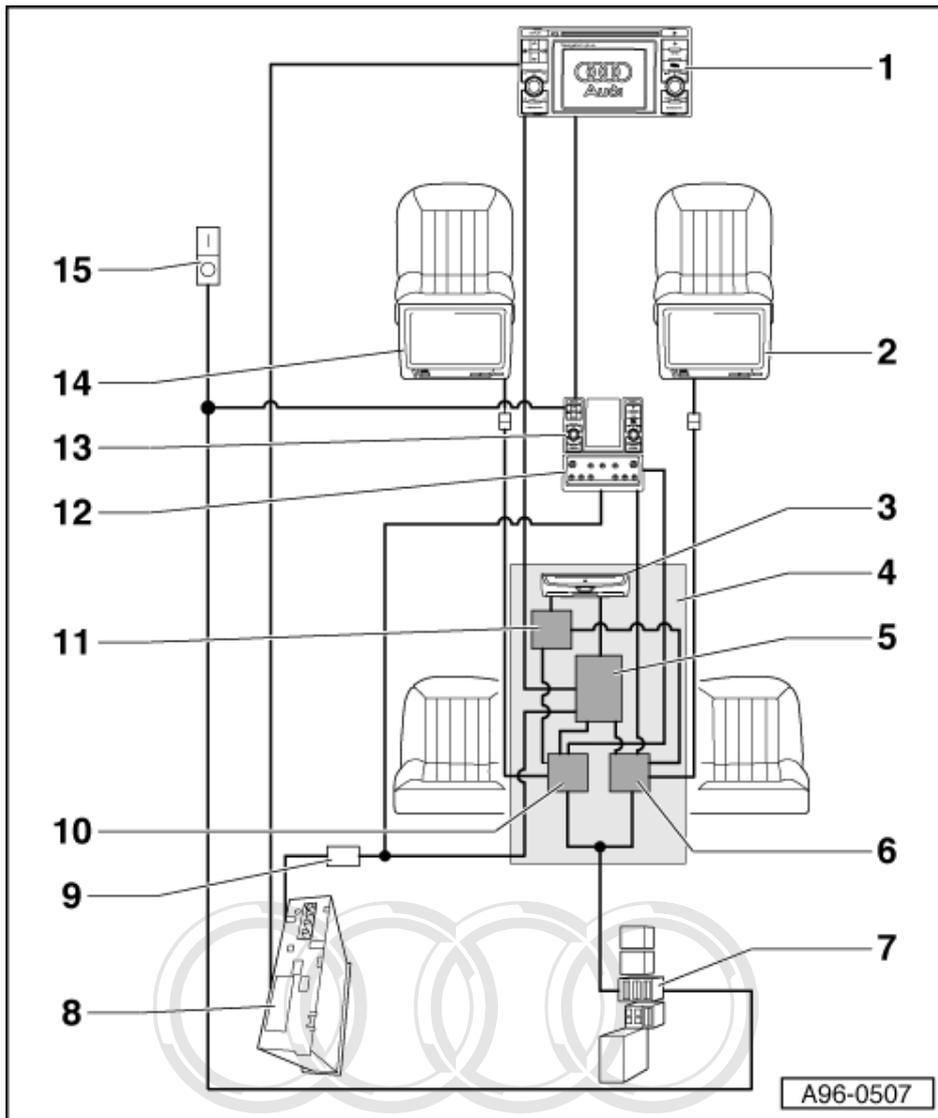
5 Multimedia control unit -J650 (RGB/AV splitter)

- ◆ In DVD console, item 4
- ◆ Removing and installing=>Page 38



- 6 Treble/mid-range speaker
 - ◆ In DVD console, item 4
 - ◆ Connections => Page 187
 - ◆ Removing and installing=>Page 38
- 7 Fuse and relay carrier for RSE system with battery monitor
- 8 TV tuner -R78
- 9 AF transformer in wiring harness
- 10 Treble/mid-range speaker
 - ◆ In DVD console, item 4
 - ◆ Connections => Page 187
 - ◆ Removing and installing=>Page 38
- 11 Remote splitter in power supply wiring harness

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12 Signal connections in multimedia operating unit -E380

13 Control unit for rear radio operating unit -J661 in RSE console (2nd operating element)

14 Multimedia display unit -2- -Y23 (rear monitor)

- ◆ In left head restraint
- ◆ Removing and installing

15 Master switch for RSE system power supply -E39

- ◆ Safety switch for rear window lifters in driver's door is used as master switch for RSE system

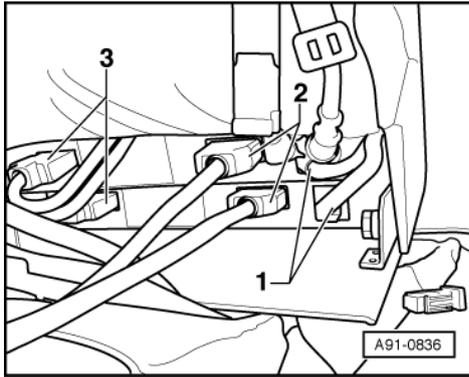


Fig.1 Connections at rear information display and operating unit control units -J648 and -J649 in DVD console

- 1 - Power supply for rear information display and operating unit control units -J648 and -J649
- 2 - Connecting cables to rear monitors -Y22 and -Y23
- Upper rear information display and operating unit control unit
- J649 is used for right rear monitor -Y22
- 3 - TV INPUT signal: Transmitted by TV tuner -R78 via multimedia control unit -J650

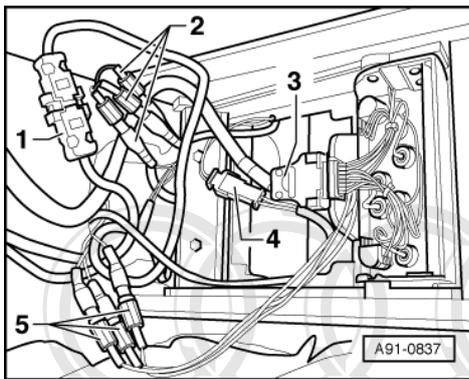


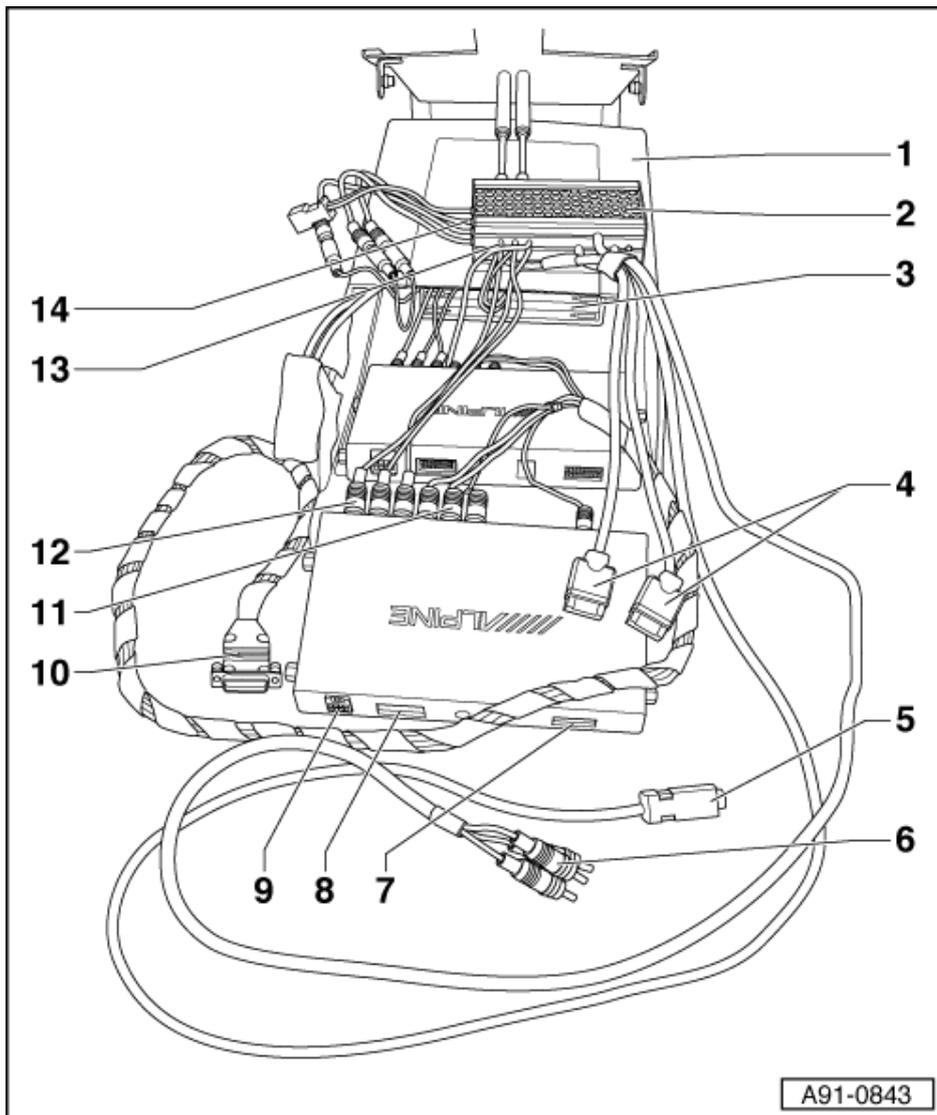
Fig.2 RSE console connections

- 1 - Connection between multimedia control unit -J650 and operating electronics control unit, navigation -J402
- 2 - Signal connection (AV1) for all 3 monitors; DVD player -R129 via multimedia control unit -J650 to TV tuner -R78
- 3 - Signal connections for rear information display and operating unit control units -J648 and -J649; left and right monitor
- 4 - Power supply
- 5 - Signal connection (AV2) for all 3 monitors; input to TV tuner -R78

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7.5 - Exploded view of fitting locations - DVD console



1 Centre cushion with DVD console for RSE components

- ◆ Between electrically adjustable individual rear seats
- ◆ Removing and installing DVD console => Page 190

2 Multimedia control unit -J650 (RGB/AV splitter)

- ◆ In DVD console, item 4
- ◆ Removing and installing=>Page 38

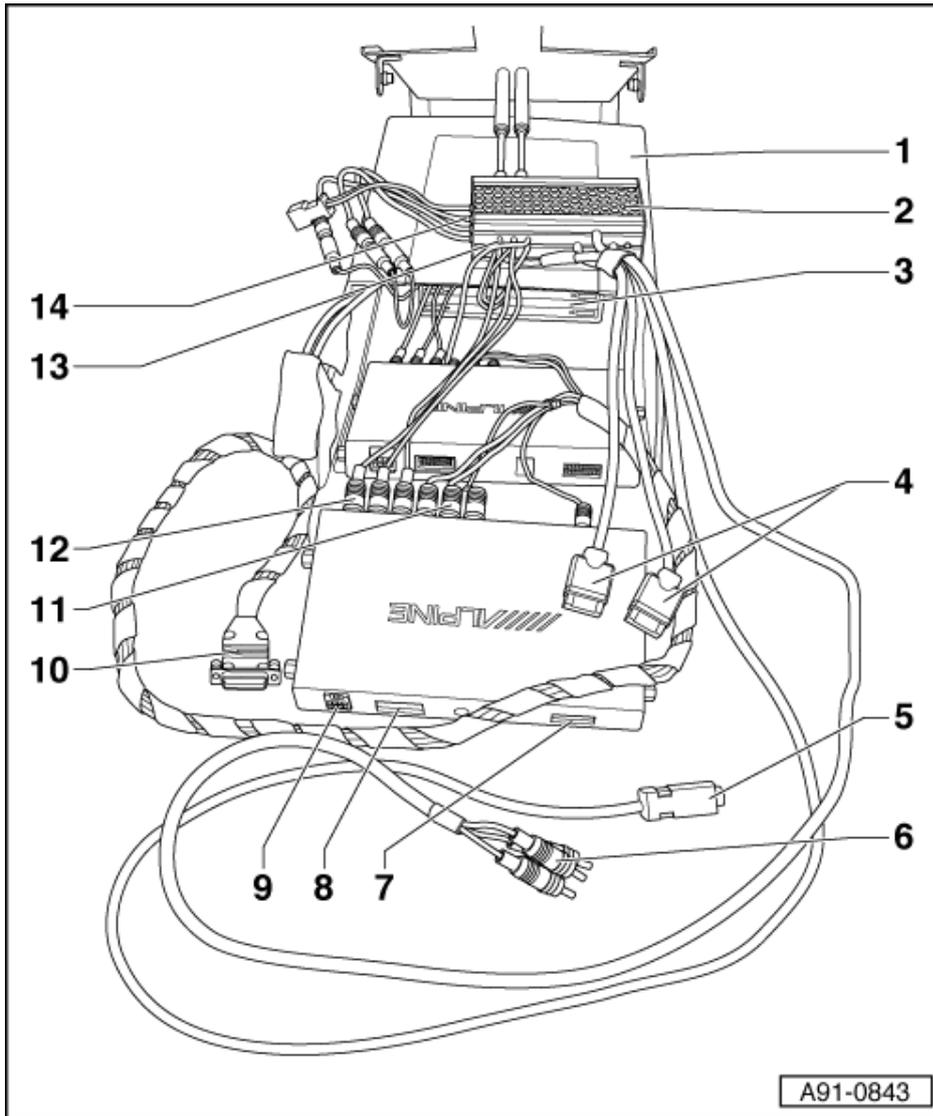
3 DVD player -R129

- ◆ In DVD console, item 4
- ◆ Removing and installing=>Page 38

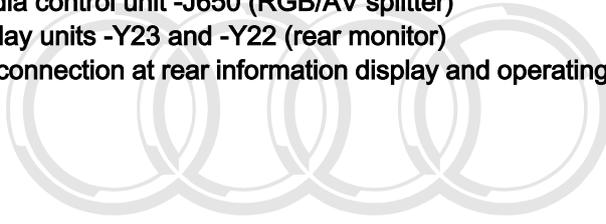
4 Connectors for rear information display and operating unit control units -J648 and -J649; "TV TUNER" input



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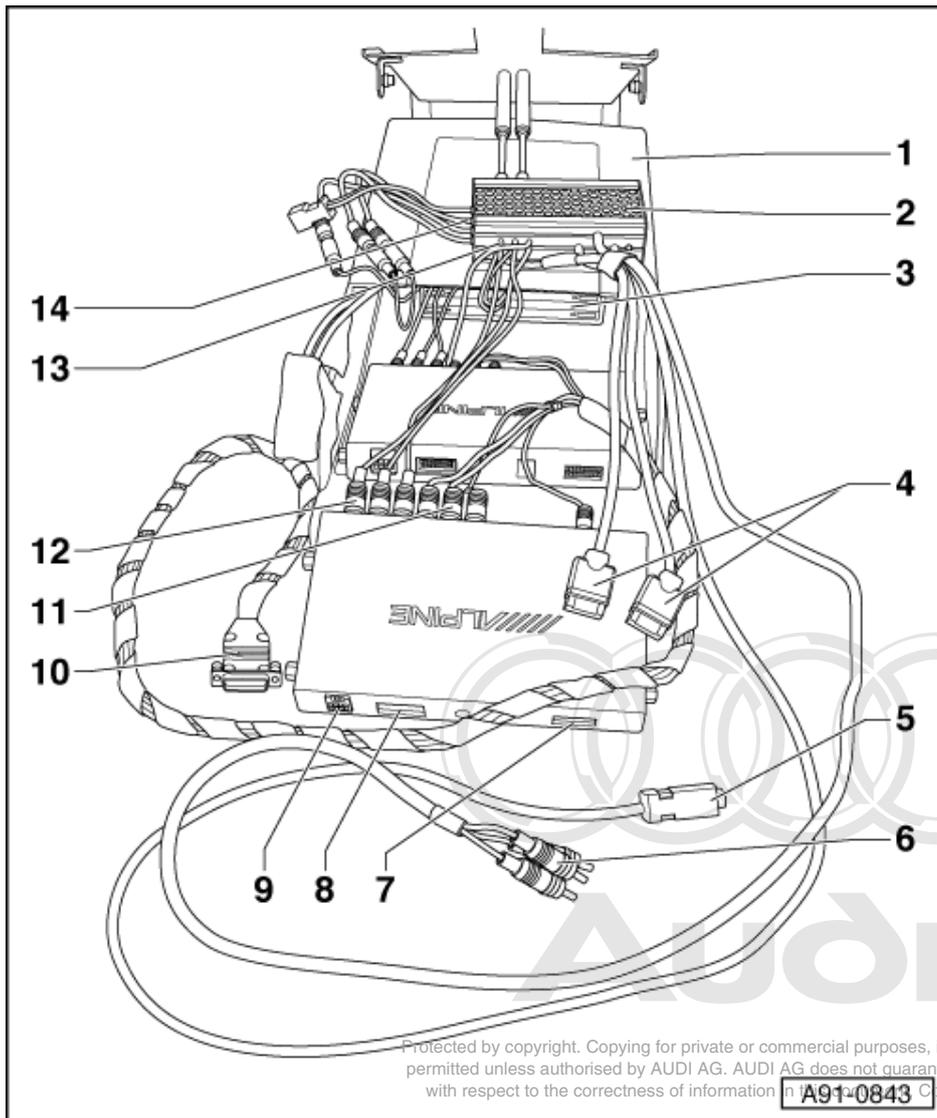


- 5 Connection between operating electronics control unit, navigation -J402 (RGB signal from -J402) and multimedia control unit -J650
- 6 AUX1 (AV1) cable to TV tuner -R78
- 7 TV TUNER input from multimedia control unit -J650 (RGB/AV splitter)
- 8 Connection for multimedia display units -Y23 and -Y22 (rear monitor)
- 9 Power supply and remote wire connection at rear information display and operating unit control units -J648 and -J649



Audi

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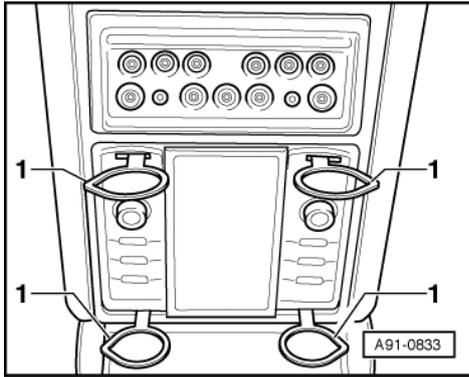
- 10 AUX2 cable to "AUX INPUT2" input at rear information display and operating unit control units -J648 and -J649
- 11 "AUX INPUT2" input at rear information display and operating unit control units -J648 and -J649
- 12 "AUX INPUT1" input at rear information display and operating unit control units -J648 and -J649
- 13 Output signals at multimedia control unit -J650
- 14 Connections for DVD player and power supply at multimedia control unit -J650

7.6 - Removing and installing DVD console

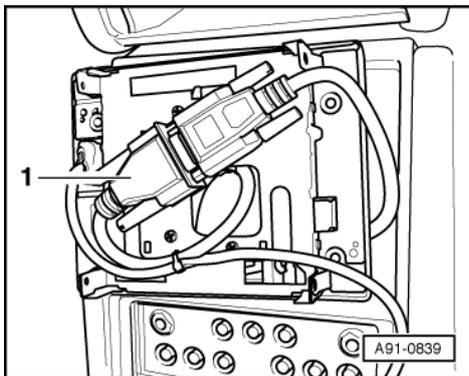
Removing:

Notes:

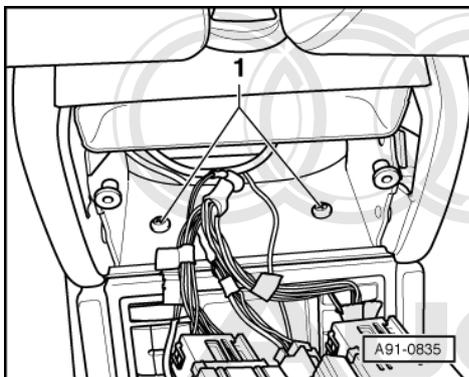
- ◆ Take care not to interchange cable connections, as otherwise monitor assignment will no longer be correct.



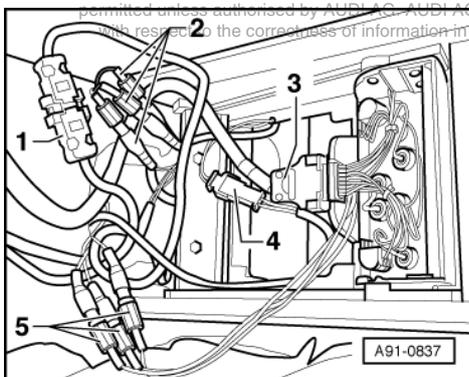
- Remove 2nd operating element.



- Unplug all connectors at 2nd operating element.

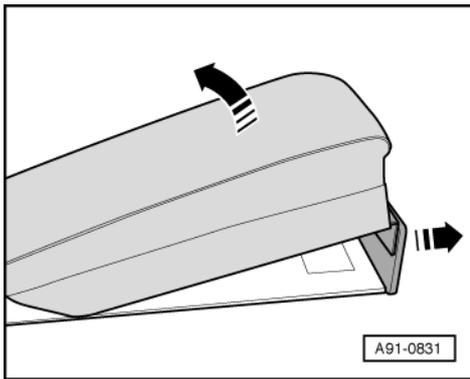


- Remove rear air vent and screw out bolts -1-.

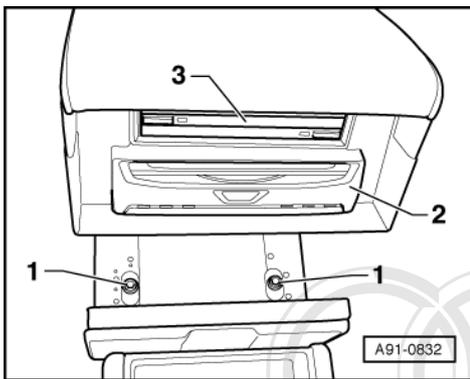


- Unplug all connectors.

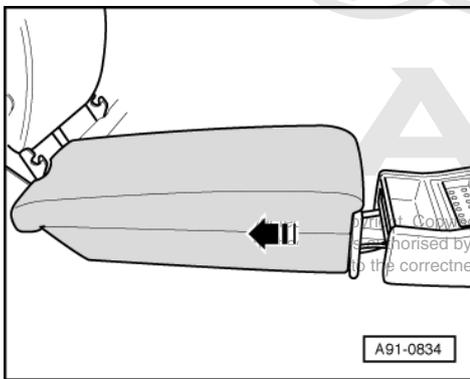
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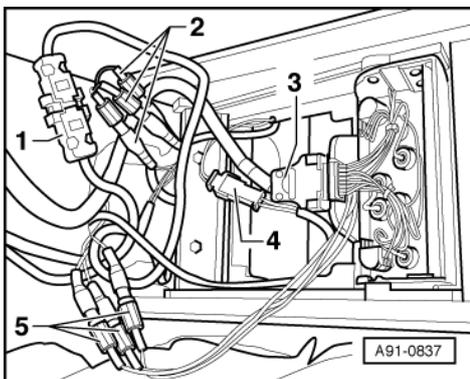
- Raise DVD console beyond stop.



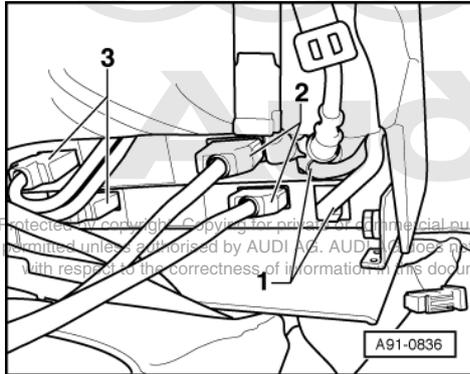
- Screw out bolts -1-.



- Slide DVD console in direction of arrow until RSE console -E380 and signal connections are exposed. Then turn RSE console through 90°.



- Unplug all connectors at RSE console -E380.



- Unplug all connectors at DVD console.

Installing:

- Install accordingly in reverse order of removal.

Note:

Take care not to trap any cable connections.

7.7 - Dismantling DVD console

Removing:

- Start by removing DVD console. Refer to "Removing and installing DVD console" => Page 190 .

Notes:

- ◆ Take care not to interchange any cable connections.
- ◆ Heed instructions on removing DVD player =>Page 193 .

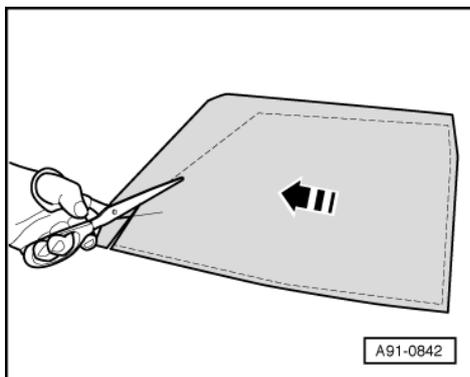
- Slacken off bolts (beneath leather) on both sides of DVD console and remove all control units with the exception of DVD player -R129.

Notes:

Mark all connectors unplugged.

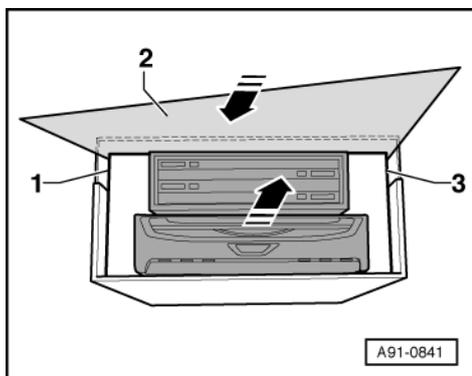
Removing DVD player

Removing:





- Start by removing DVD console. Refer to "Removing and installing DVD console" => Page 190 .
- Cut out a piece of commercially available sheeting (0.5 mm thick) as shown. This piece of sheeting should be approx. 30 x 30 cm.



- Then slide this sheeting approx. 13 cm (in direction of arrow) into DVD console as shown. Make sure corners -1- and -3- are protected by sheeting.
- Slacken off bolts (beneath leather) on both sides of DVD console.
- After slackening off bolt on back, slide out DVD player to front.

Notes:

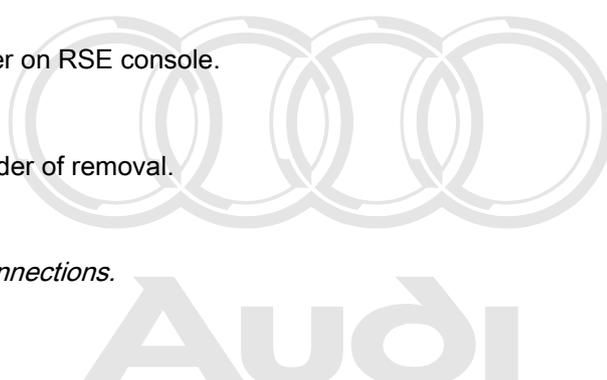
- ◆ DVD player is a very tight fit.
- ◆ Take care not to damage leather on RSE console.

Installing:

- Install accordingly in reverse order of removal.

Note:

Take care not to trap any cable connections.



7.8 - Fault table

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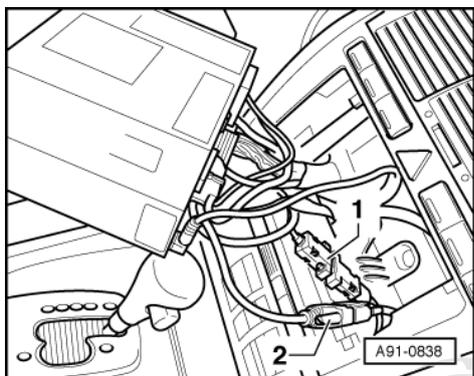
Note:

- ◆ As the RSE system is linked with the navigation unit, the RSE-specific connectors must be unplugged in the event of a fault entry in the navigation unit to rule out the possibility of an RSE fault being the cause of the problem. On account of this link, the navigation system cannot distinguish between internal and external faults.
- ◆ In the event of complaints it is essential to work through the fault table in the operating instructions for the DVD player.

Fault	Fault remedy
All faults output by self-diagnosis function for operating electronics control unit, navigation	Refer to => Page 195
Rear RSE operating unit not functioning	Refer to => Page 195
One monitor in head restraints not functioning	Refer to => Page 196
Poor picture on both rear monitors	Refer to => Page 196
No power display on either rear monitor	Refer to => Page 197

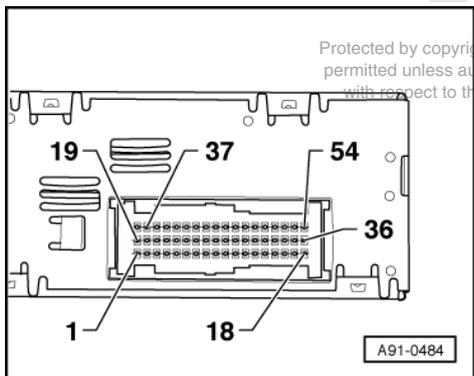
DVD player not functioning Refer to => Page **197**

All faults output by self-diagnosis function for navigation unit



Note:

- ◆ As the RSE system is linked with the navigation unit, the RSE-specific connectors must be unplugged in the event of a fault entry in the navigation unit to rule out the possibility of an RSE fault being the cause of the problem. On account of this link, the navigation system cannot distinguish between internal and external faults.
- Unplug connectors -1- and -2- on back of operating electronics control unit, navigation and erase fault memory.



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- Unplug connectors from TV tuner (PIN 42 to PIN 52).
- Erase fault memory.

If faults are not entered again, this indicates a fault in the extra RSE components.

If faults are still entered:

- Heed repair instructions in Workshop Manual.

=> Radio, Telephone, Navigation; Repair Group 01

Rear RSE operating unit not functioning

- Check operating conditions. Refer to => Page **183** .
- Use current flow diagram to check power supply.

If operating unit still does not function:

- Use new cable to jumper data cable to 2nd operating element.



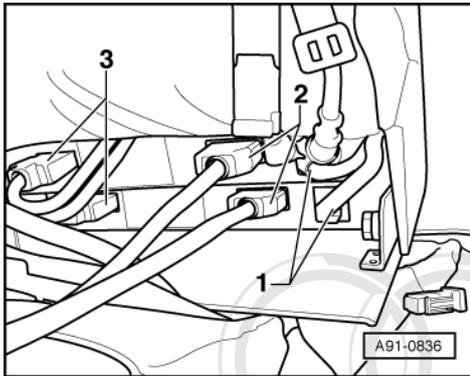
If operating unit still does not function:

- 2nd operating element must be replaced.

If operating unit still does not function:

- Replace operating electronics control unit, navigation (not standard navigation system).

One monitor in head restraints not functioning



- Check power supply -1- of rear information display and operating unit control units -J648 or -J649.

If this monitor still does not function and monitor in other head restraint is OK:

- Interchange connectors -2- to monitor boxes in DVD console, item 26 .
 - Connectors can be exchanged without removing DVD console.

If this monitor now functions and monitor in other head restraint is now not OK:

- Replace rear information display and operating unit control unit -J648 or -J649.

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If this monitor still does not function and monitor in other head restraint is OK:

- Interchange head restraints (refer to repair instructions).

If this monitor now functions and monitor in other head restraint is now not OK:

- Replace head restraint with monitor.

If this monitor still does not function and monitor in other head restraint is OK:

- Replace cable between monitor box and head restraint monitor.

Poor picture on both rear monitors; picture in operating electronics control unit, navigation -J402 OK and picture on head restraint monitor for DVD selection OK

- Connect source (e.g. video camera) to signal connections in RSE console and select this signal source on monitor.

=> Rear Seat Entertainment system (RSE) operating instructions

If picture on monitors is now OK, monitor box cannot be defective.

- RGB connecting cable defective

Or

- RGB splitter defective

No power display on either rear monitor

- Use current flow diagram to check power supply.

DVD player not functioning

- Use current flow diagram to check power supply.
- Check operating conditions. Refer to => Page **183** .
- Consult fault table in operating instructions for DVD player.

8 - Navigation system Nav 4 (BNS 4.0) as of week 04/01

8.1 - Navigation system Nav 4 (BNS 4.0) as of week 04/01

8.2 - General information

Attention:
Disconnect battery earth strap before working on electrical system.
Telematics control unit service mode must be activated before disconnecting battery. => Radio, Telephone and Navigation System Self-diagnosis; Repair Group 01; Telematics System Self-diagnosis; Adaption

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- ◆ Establish radio anti-theft code before disconnecting battery.
- ◆ Telematics control unit service mode must be activated before disconnecting battery.
- ◆ On re-connecting battery, remember to activate vehicle equipment (radio, clock, electric window lifters, etc.) in line with owner's manual and to deactivate telematics control-unit service mode.

Important:

To avoid contact corrosion exclusive use is to be made of approved bolts, nuts, washers etc.

These elements have a special surface coating and can be recognised from their greenish colour.

Such bolts also have to be stored separately.

8.3 - General description

The navigation system BNS 4.0 (Nav 4) is a more advanced version of the familiar navigation system III (destination finding system).

Important new features include link with display CAN bus and dynamic navigation function.

The system obtains dynamic navigation information from the radio TMC function or via the telephone.

The design corresponds to that of navigation system III.



8.4 - Block diagram of navigation system BNS 4.0

=> Page 177

8.5 - Connectors and contact assignments

=> Page 178

8.6 - Exploded view of BNS 4.0

=> Page 179

9 - Multi-function steering wheel

9.1 - Multi-function steering wheel

9.2 - General information

Attention:

Disconnect battery earth strap before working on electrical system.

Telematics control unit service mode must be activated before disconnecting battery.=>Radio, Telephone and Navigation System Self-diagnosis; Repair Group 01; Telematics System Self-diagnosis; Adaption

Notes:

- ◆ Establish radio anti-theft code before disconnecting battery.
- ◆ Telematics control unit service mode must be activated before disconnecting battery.
- ◆ On re-connecting battery, remember to activate vehicle equipment (radio, clock, electric window lifters, etc.) in line with owner's manual and to deactivate telematics control-unit service mode.

Important:

To avoid contact corrosion exclusive use is to be made of approved bolts, nuts, washers etc.

These elements have a special surface coating and can be recognised from their greenish colour.

Such bolts also have to be stored separately.

9.3 - General description

System features:

- ◆ Illuminated function buttons in steering wheel
- ◆ Steering wheel wiring
- ◆ Steering wheel electronics
- ◆ Vehicle control unit

◆ Vehicle wiring

Description of operation:

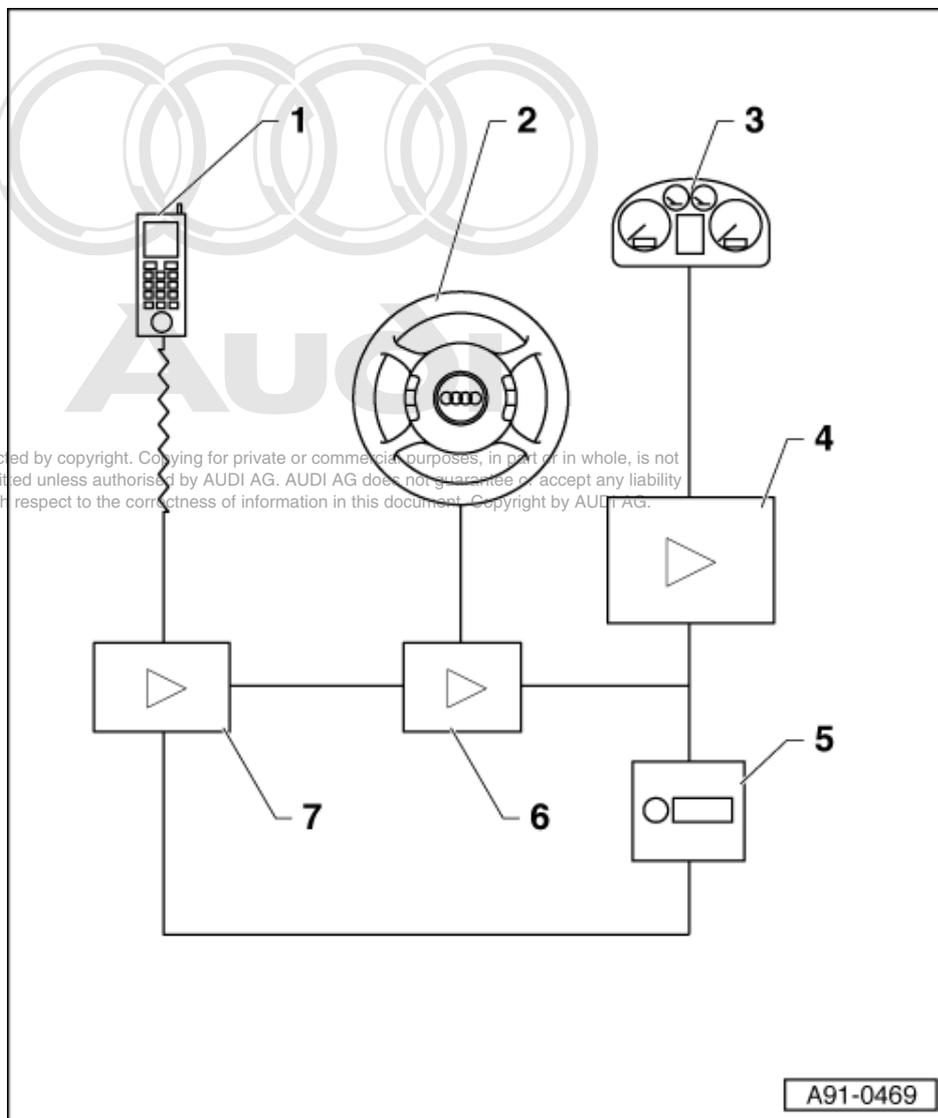
Function buttons are integrated into the steering wheel to facilitate operation of radio, telephone and Tiptronic (with automatic gearbox) whilst driving. Electric heating of the multi-function steering wheel is also provided.

The steering wheel electronics are responsible for control of steering wheel heating, transfer of button functions to CAN bus and dimming of function button illumination.

The multi-function steering wheel control unit is designed for control of radio set (or radio/navigation system), telephone system, dash panel insert, steering wheel heating and Tiptronic function.

Central display of dash panel insert indicates the station selected when radio is in use and the name and telephone number of the caller from the telephone memory when using telephone. If a cassette is inserted in radio mode, "TAPE <>" is displayed and, when using CD changer, the CD number "CD 02" and the current track "TR 09" appear on the central display.

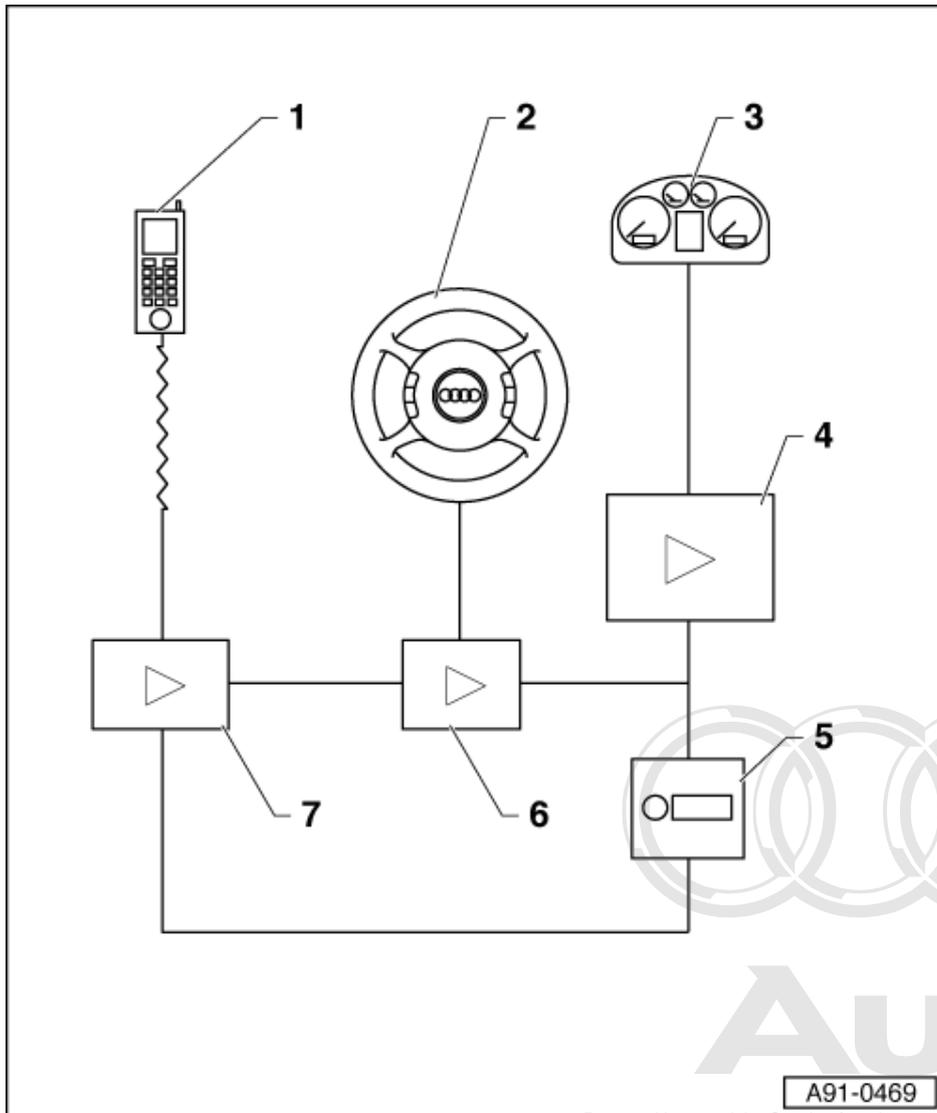
9.4 - Block diagram of multi-function steering wheel (up to MY 01)



- 1 Handset for telephone/mobile phone
- 2 Multi-function steering wheel
 - ◆ With integrated switches



- ◆ With steering wheel electronics
- 3 Dash panel insert**
 - ◆ Installed in dash panel
- 4 Operating electronics control unit, navigation -J402**
 - ◆ Installed in centre console
 - ◆ Either a radio set or the operating electronics control unit, navigation is fitted
- 5 Radio**
 - ◆ Installed in centre console



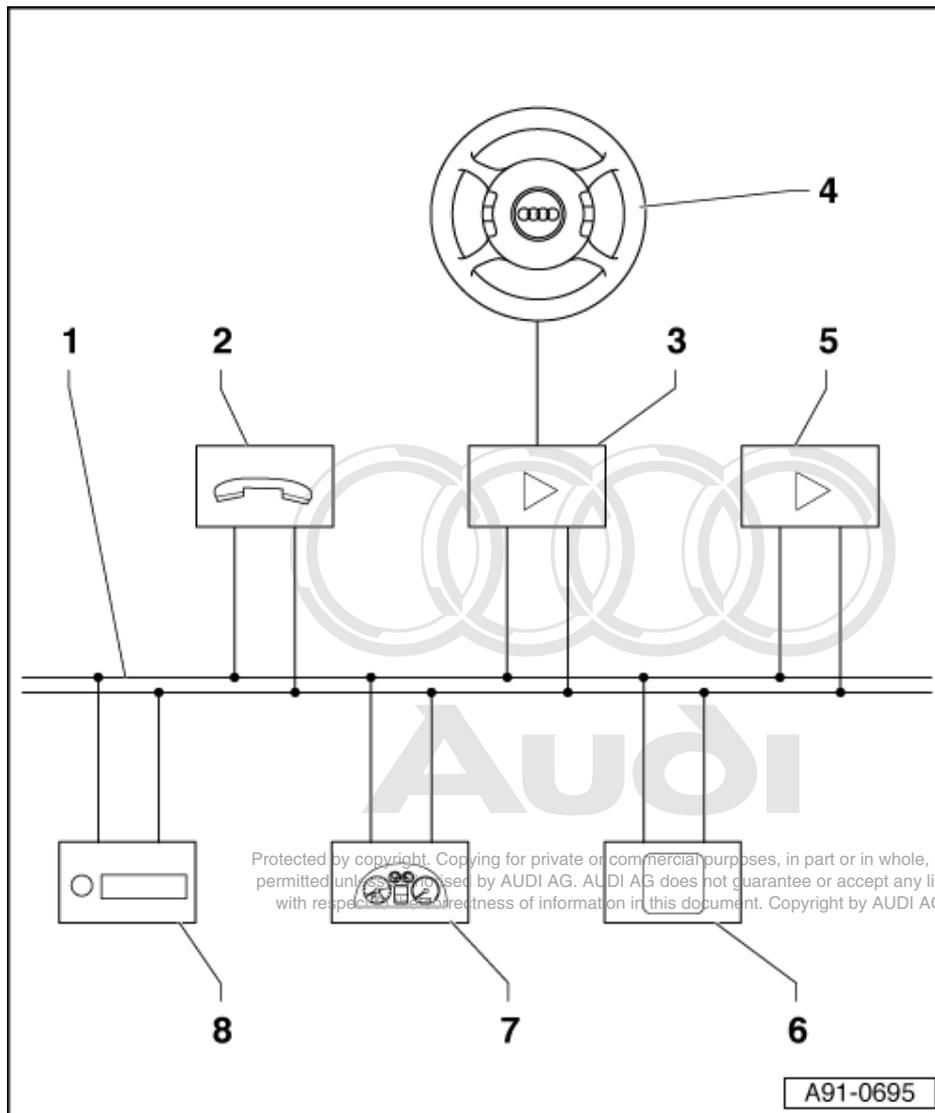
A91-0469

6 Multi-function steering wheel control unit -J453

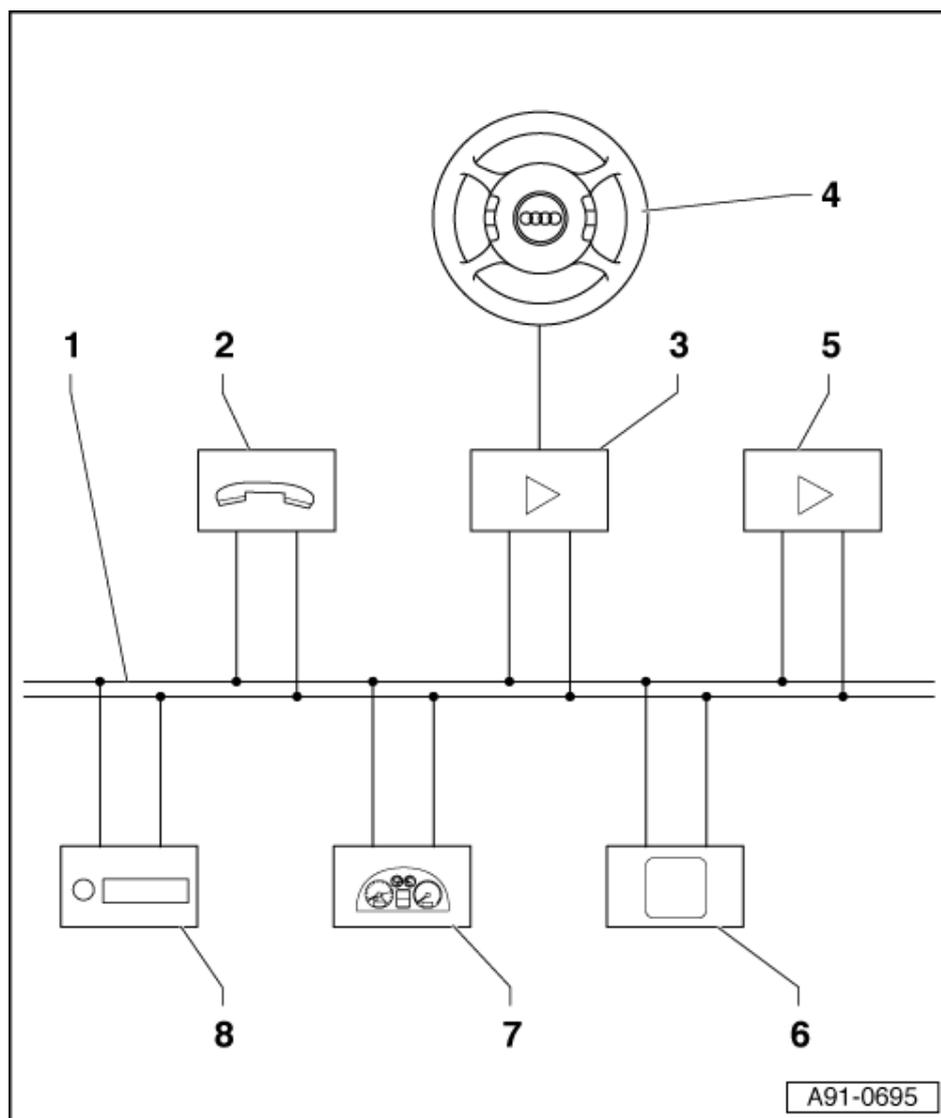
- ◆ At relay carrier beneath driver's storage compartment
- ◆ Removing and installing
=> Page 209

7 Mobile phone operating electronics control unit -J412 or telephone transmitter and receiver unit -R36

9.5 - Block diagram of multi-function steering wheel (as of MY 02)



- 1 Display CAN bus
- 2 Mobile phone operating electronics control unit -J412 or telephone transmitter and receiver unit -R36
- 3 Multi-function steering wheel control unit -J453
 - ◆ At relay carrier beneath driver's storage compartment
 - ◆ Removing and installing
=> Page 209
- 4 Multi-function steering wheel
 - ◆ With integrated switches
 - ◆ With steering wheel electronics



**5 Telephone/telematics control unit
-J526**

- ◆ In luggage compartment beneath rear shelf

6 Operating electronics control unit, navigation -J402

- ◆ Installed in centre console
- ◆ Either a radio set or the operating electronics control unit, navigation is fitted

7 Dash panel insert

- ◆ Installed in dash panel

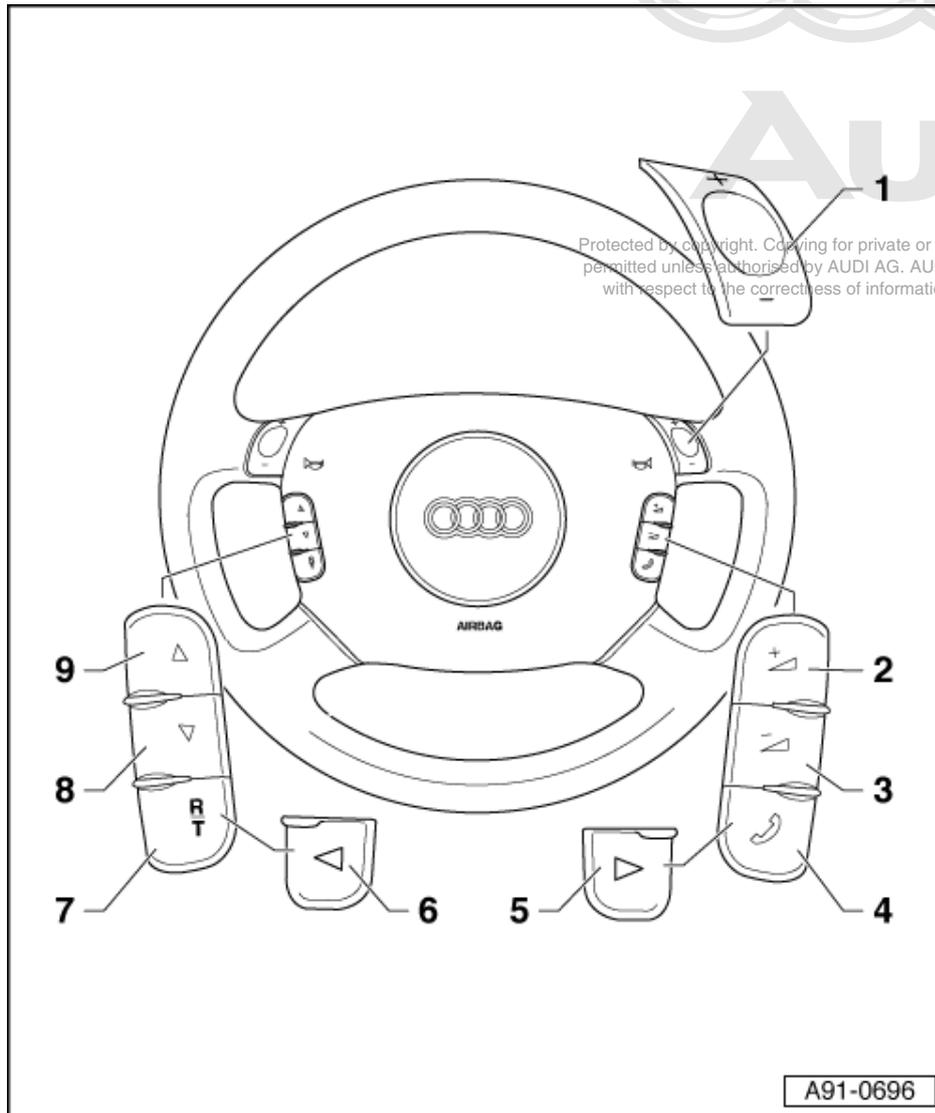
8 Radio

- ◆ Installed in centre console



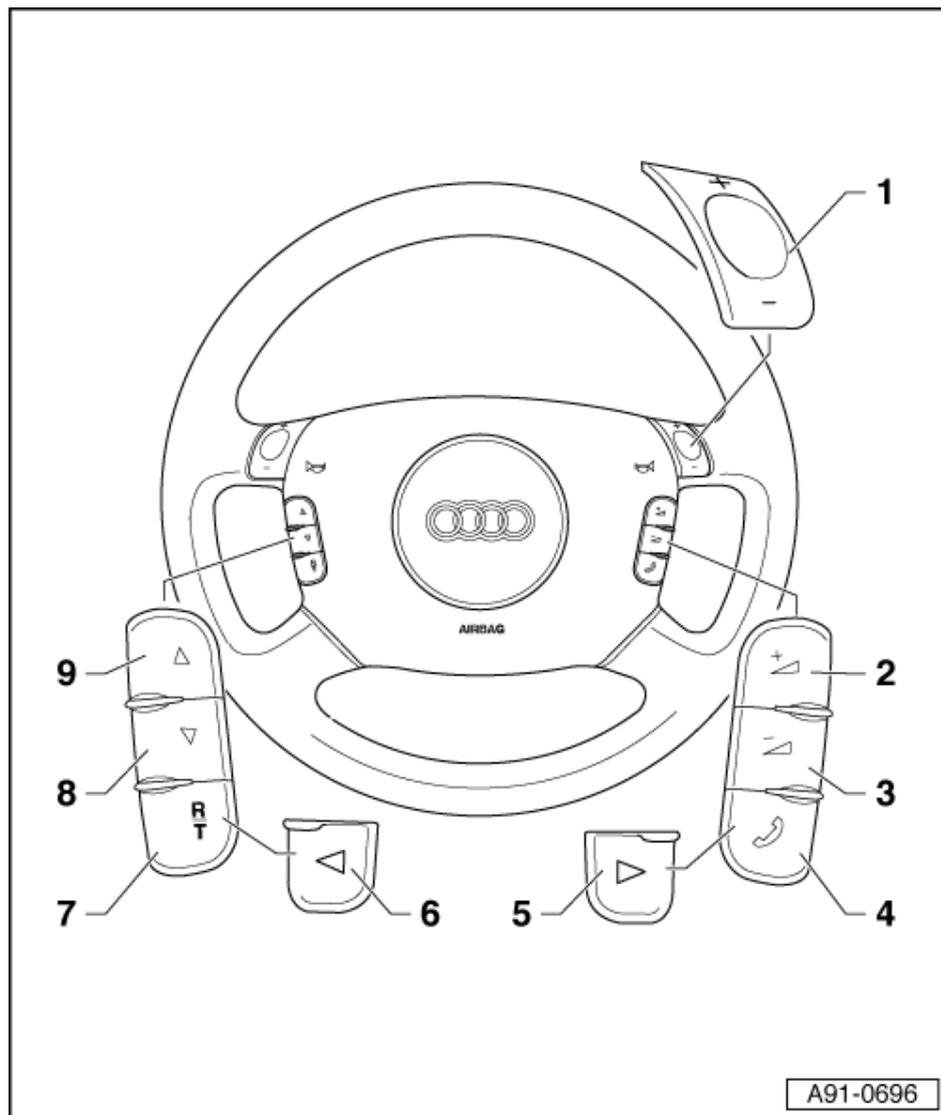
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9.6 - Button assignment on multi-function steering wheels



Radio button assignment

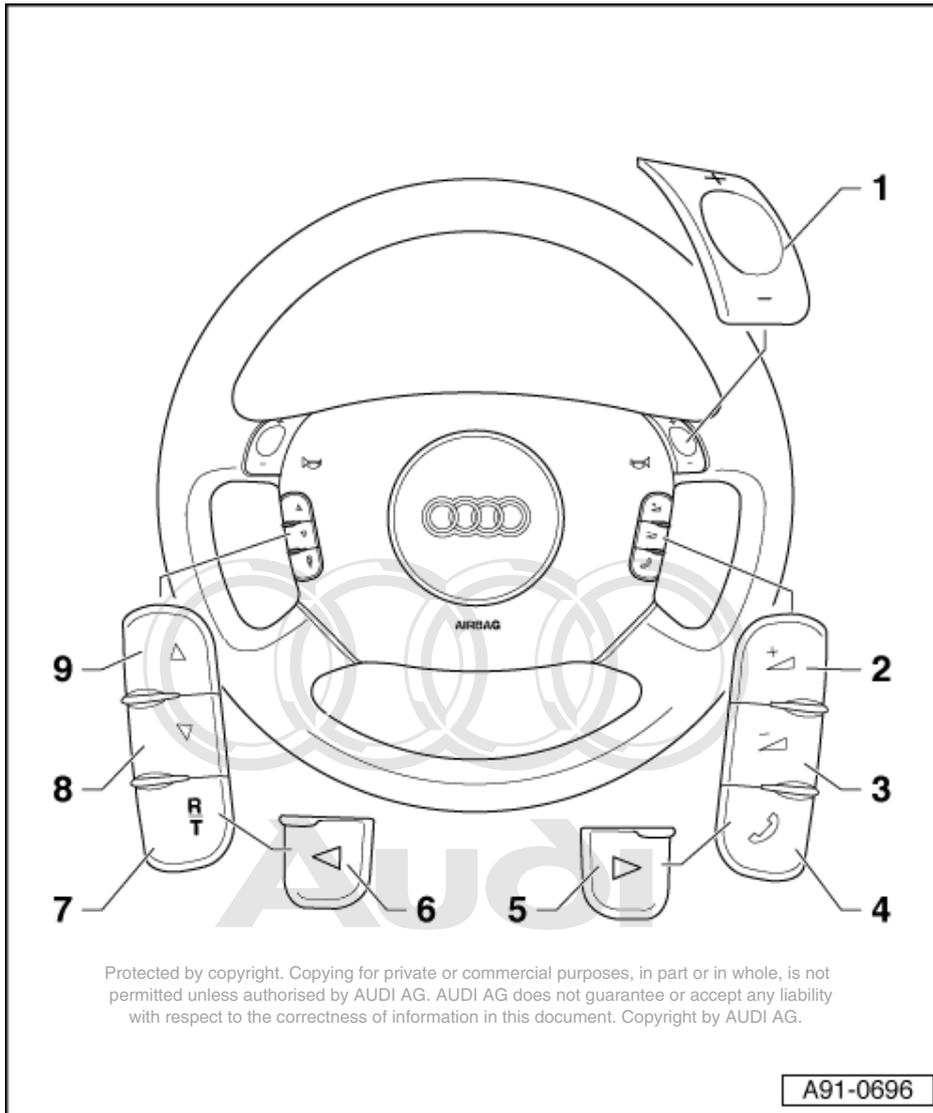
- 1 Tiptronic
 - ◆ "+" change-up
 - ◆ "-" change-down
- 2 Increase volume
- 3 Reduce volume
- 4 SBS activation
- 5 Station button, up
- 6 Station button, down
- 7 Telephone/radio switching
- 8 Search, down
- 9 Search, up



Cassette button assignment

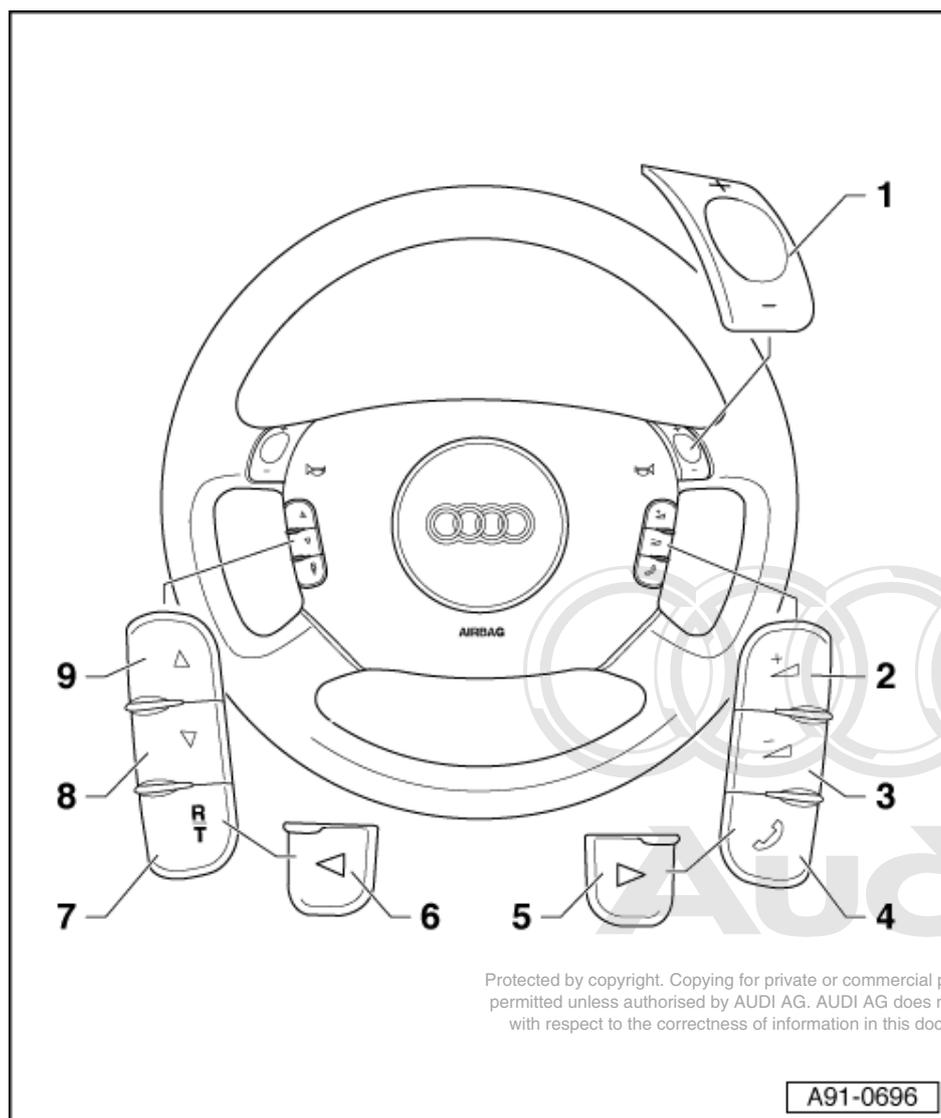
- 1 Tiptronic
 - ◆ "+" change-up
 - ◆ "-" change-down
- 2 Increase volume
- 3 Reduce volume
- 4 SBS activation
- 5 Music search, forwards
- 6 Music search, back
- 7 Telephone/radio switching
- 8 Fast rewind
- 9 Fast forward

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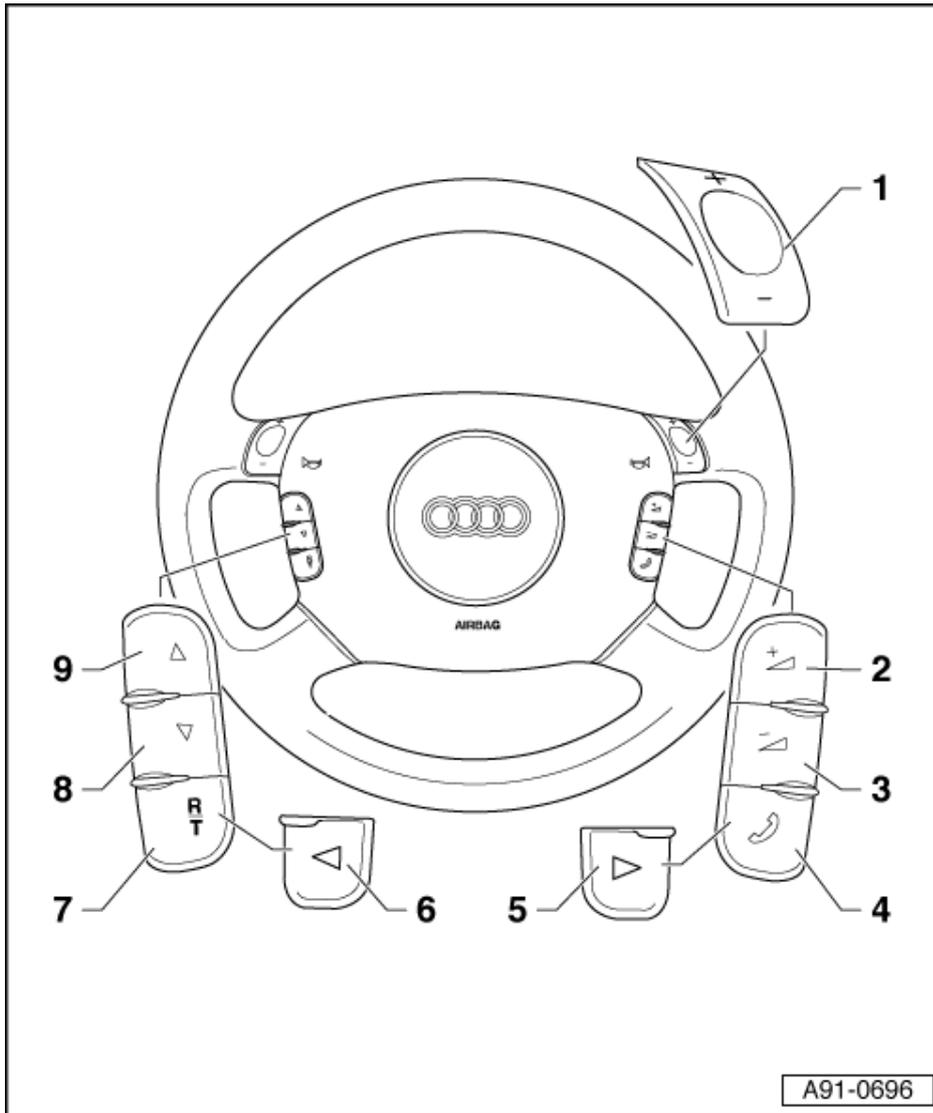
CD button assignment

- 1 Tiptronic
 - ◆ "+" change-up
 - ◆ "-" change-down
- 2 Increase volume
- 3 Reduce volume
- 4 SBS activation
- 5 Load next CD
- 6 Load previous CD
- 7 Telephone/radio switching
- 8 Track, back
- 9 Track, forwards



TV button assignment

- 1 Tiptronic
 - ◆ "+" change-up
 - ◆ "-" change-down
- 2 Increase volume
- 3 Reduce volume
- 4 SBS activation
- 5 Station display, up
- 6 Station button, down
- 7 Telephone/radio switching
- 8 Search, down
- 9 Search, up



Telephone button assignment

- 1 Tiptronic
 - ◆ "+" change-up
 - ◆ "-" change-down
- 2 Increase hands-free volume
- 3 Reduce hands-free volume
- 4 Make call
 Accept call
 End call
 SBS activation/deactivation
- 5 Not used
- 6 Not used
- 7 Telephone/radio switching
- 8 Scrolling back in map memory
 (alphabetical)
- 9 Scrolling forwards in map memory
 (alphabetical)



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9.7 - Removing and installing multi-function steering wheel switches

Removing:

- Detach battery earth strap/cable.

Note:

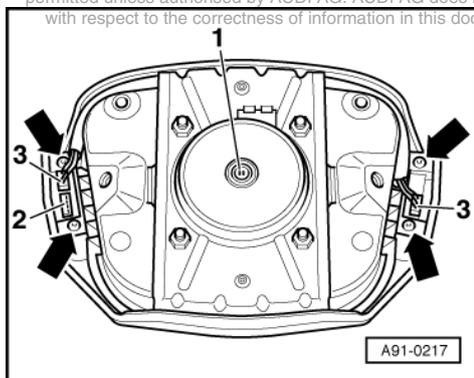
When working on airbag system components, always heed safety regulations for airbag systems.

=> General Body Repairs, Interior; Repair Group 69; Airbag Safety Regulations; Safety precautions when working on airbag Airbag Safety Regulations Safety precautions when working on airbag

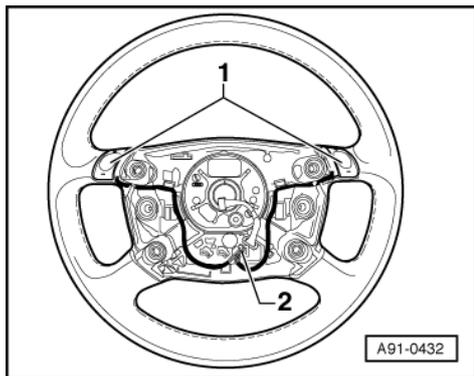
- Release steering column adjuster. Pull steering wheel out as far as possible and swivel up.
- Detach airbag unit.

=> General Body Repairs, Interior; Repair Group 69; Servicing driver's airbag Servicing driver's airbag

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- Carefully fold airbag unit forwards.
- -> Unplug connectors -1- and -2- at airbag unit.
- Detach airbag unit.
- Unplug connector -3- and slacken off the two bolts at left/right switch.
- Pull out switch to front.



- -> Unplug connector -2- to remove Tiptronic switch -1-.
- Press out Tiptronic switch -1- inwards (towards centre of steering wheel).

Installing:

Note:

On installation, make sure connector cables are re-inserted in guides and not trapped.

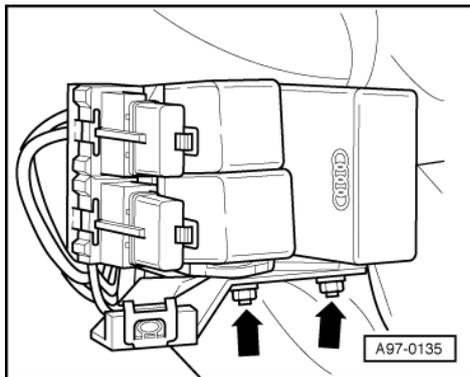
- Install accordingly in reverse order of removal.

9.8 - Removing and installing multi-function steering wheel control unit -J453

Removing:

- Remove driver's storage compartment.

=> General Body Repairs, Interior; Repair Group 68; Storage compartments, covers and trim panels; Removing and installing driver's storage compartment Storage compartments, covers and trim panels Removing and installing driver's storage compartment



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-> Multi-function steering wheel control unit -J453 is located in a twin relay housing at positions -3- and -4- of relay carrier beneath driver's storage compartment.

- Pull multi-function steering wheel control unit out of relay socket.

Installing:

- Install accordingly in reverse order of removal.

10 - Telematics

10.1 - Telematics

10.2 - General information

Attention:

Disconnect battery earth strap before working on electrical system.

Telematics control unit service mode must be activated before disconnecting battery.=>Radio, Telephone and Navigation System Self-diagnosis; Repair Group 01; Telematics System Self-diagnosis; Adaption

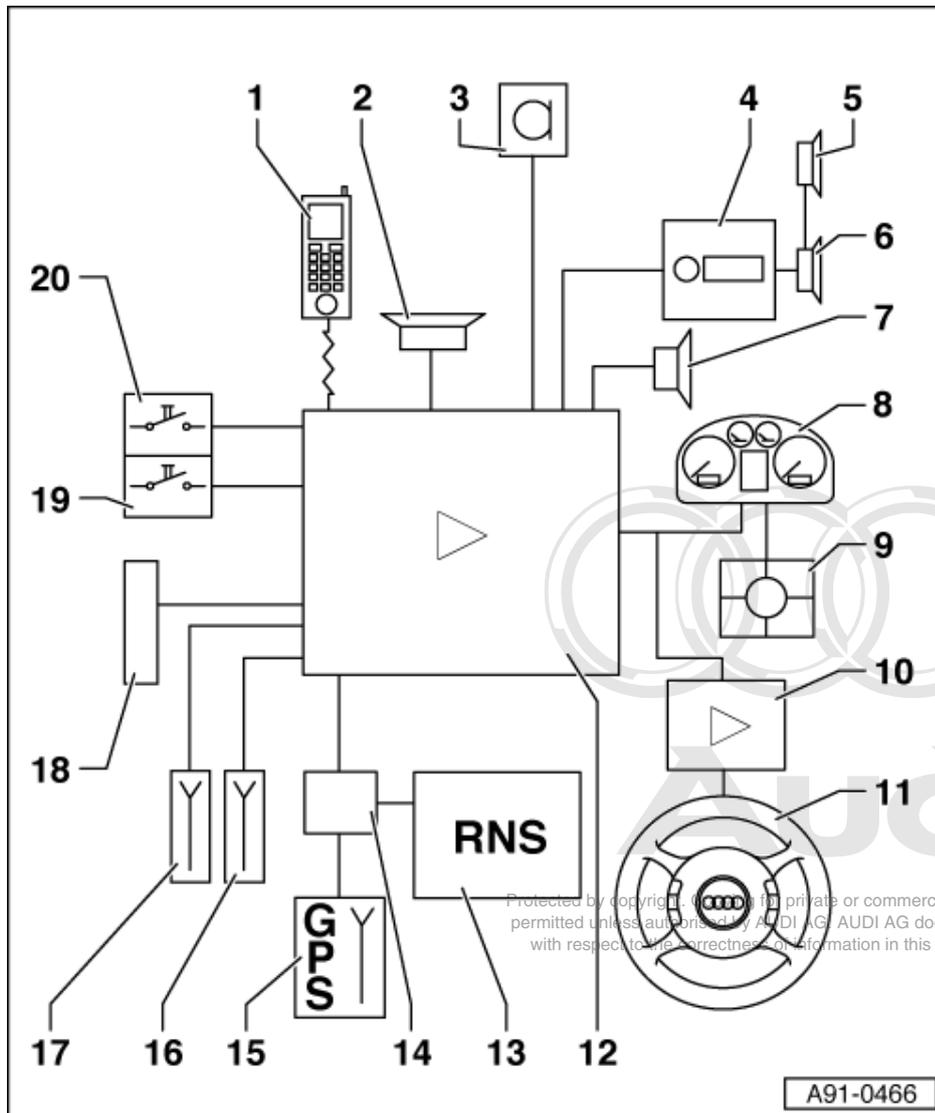
Notes:

- ◆ Obtain radio anti-theft code before disconnecting battery.
- ◆ On reconnecting battery, remember to activate vehicle equipment (radio, clock, electric window lifters, etc.) in accordance with Owner's Manual and to deactivate service mode of telematics control unit.

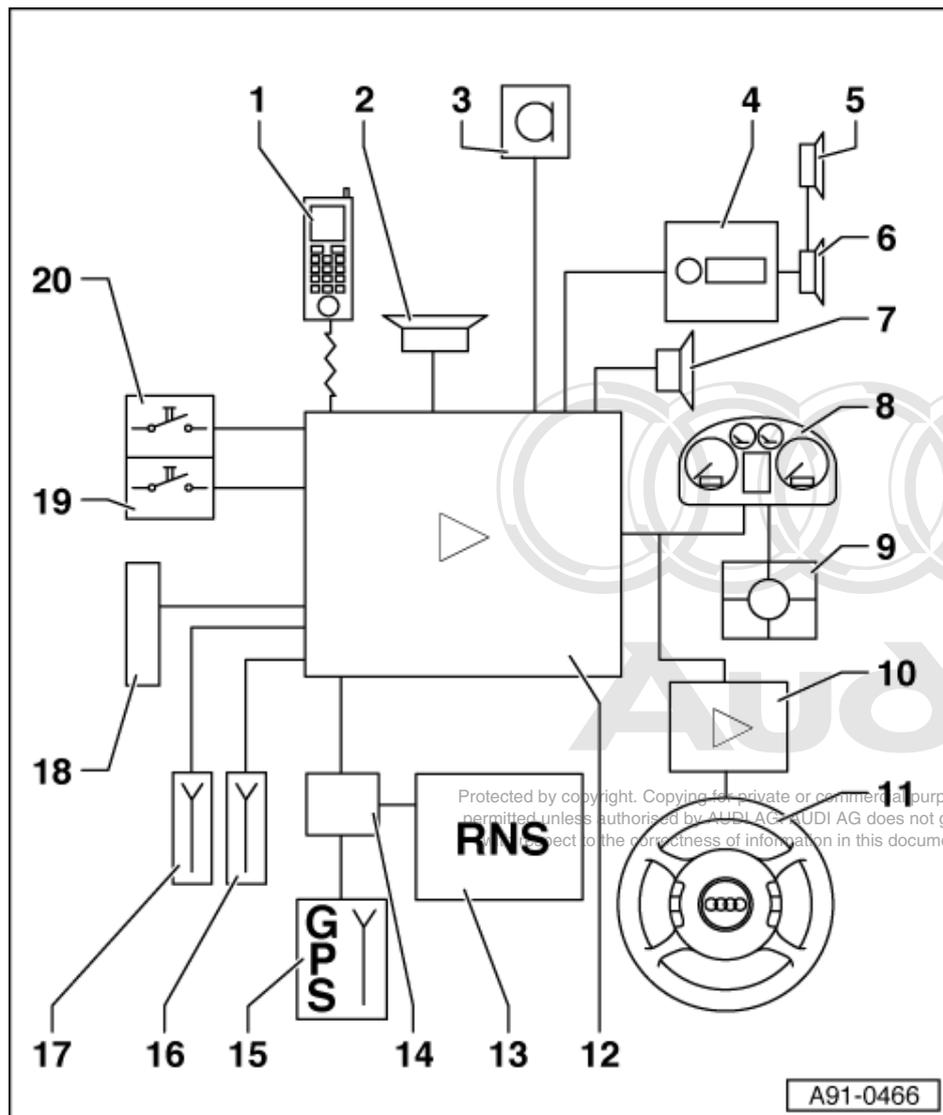
=> Radio, Telephone and Navigation System Self-diagnosis; Repair Group 01; Telematics System Self-diagnosis; Adaption Telematics System Self-diagnosis Adaption

- ◆ If SIM card is defective, request new card by fax
- Hotline number: 0800/283 47 27

- 1 Handset for telephone/telematics in centre console
- 2 Additional telematics loudspeaker (emergency loudspeaker) in right B-pillar
- 3 Hands-free microphone in front interior light
- 4 Radio in centre console
- 5 Front treble/mid-range speaker in top of door trim
- 6 Front bass speaker in bottom of door trim
- 7 Hands-free loudspeaker in driver's B-pillar trim (up to MY 01)

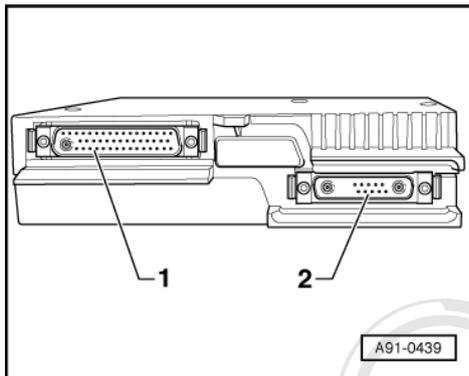


- 8 Dash panel insert
- 9 Function selection switch in centre console
- 10 Multi-function steering wheel control unit in relay carrier beneath driver's storage compartment
- 11 Multi-function steering wheel
- 12 Telephone/telematics control unit in luggage compartment beneath rear shelf
- 13 Operating electronics control unit, navigation
- 14 Filter for GPS aerial at telephone/telematics control unit
- 15 Navigation system aerial (GPS) attached to boot lid



- 16 Telephone aerial in rear left wing
- 17 Additional telematics aerial (emergency aerial) in rear bumper
- 18 Fax/laptop connector in centre console
- 19 Emergency call button in front interior light
- 20 Breakdown help button in front interior light

10.5 - Connectors at telephone/telematics control unit -J526

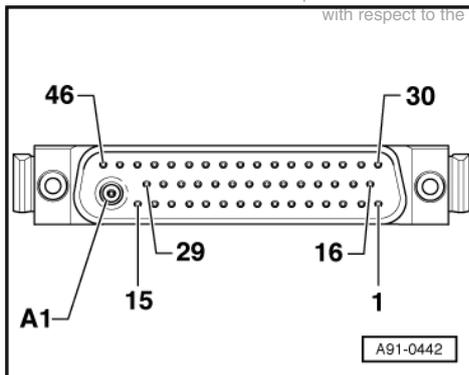


- > 1 - 46-pin connector for connection of
 - GPS aerial
 - Telephone receiver
 - Buttons -E275 and -E276
 - Emergency loudspeaker
 - Language input control unit -J507
- 2 - 10-pin connector for
 - Power supply
 - Telephone aerial
 - Emergency aerial

Contact assignments of multi-pin connectors of telephone/telematics control unit -J526

Note:

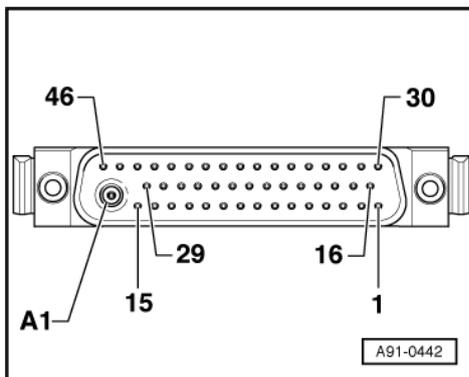
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Non-listed plug contacts are not used.

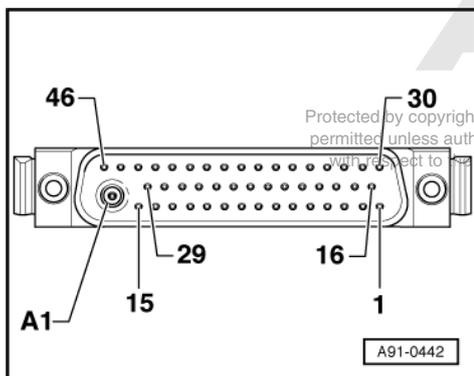
-> 46-pin connector T46

- 1 - Line(-) out for hands-free loudspeaker (up to MY 01)
- 2 - Line(+) out for hands-free loudspeaker (up to MY 01)
- 3 - Handset/telephone receiver (-)
- 4 - Handset/telephone receiver (+)

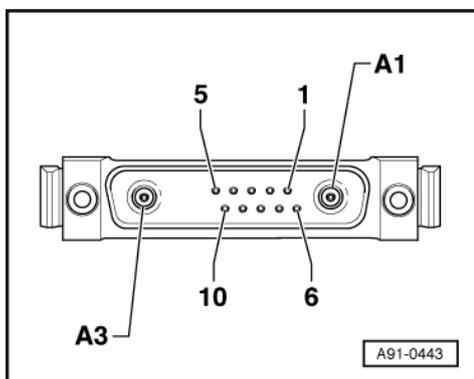




- > 5 - Telephone handset FCH (+)
- 6 - Telephone handset FCH (-)
- 10 - Breakdown help button -E275 LED
- 11 - Emergency call button -E276 LED
- 12 - Screen earth
- 13 - CTS for fax socket
- 14 - TXD for fax socket
- 16 - Emergency loudspeaker, earth
- 17 - Emergency loudspeaker, signal
- 18 - Telephone handset microphone (+)
- 19 - Telephone handset earth
- 20 - Telephone handset FHC (-)
- 21 - Breakdown help button -E275
- 22 - Vehicle-speed signal
- 23 - Reverse gear signal
- 27 - RTS for fax socket
- 28 - RXD for fax socket
- 29 - Earth for fax socket
- 30 - Hands-free microphone input via language input control unit -J507
- 31 - Hands-free microphone input via language input control unit -J507
- 32 - Telephone handset microphone (-)
- 33 - Telephone handset power supply (12 V)



- > 34 - Telephone handset FHC (+)
- 35 - Telephone handset screen
- 36 - Crash signal
- 37 - Emergency call button -E276
- 38 - CAN bus high (display)
- 39 - CAN bus low (display)
- 41 - K-wire
- 42 - DTR for fax socket
- 43 - DCD for fax socket
- A1 - GPS aerial filter

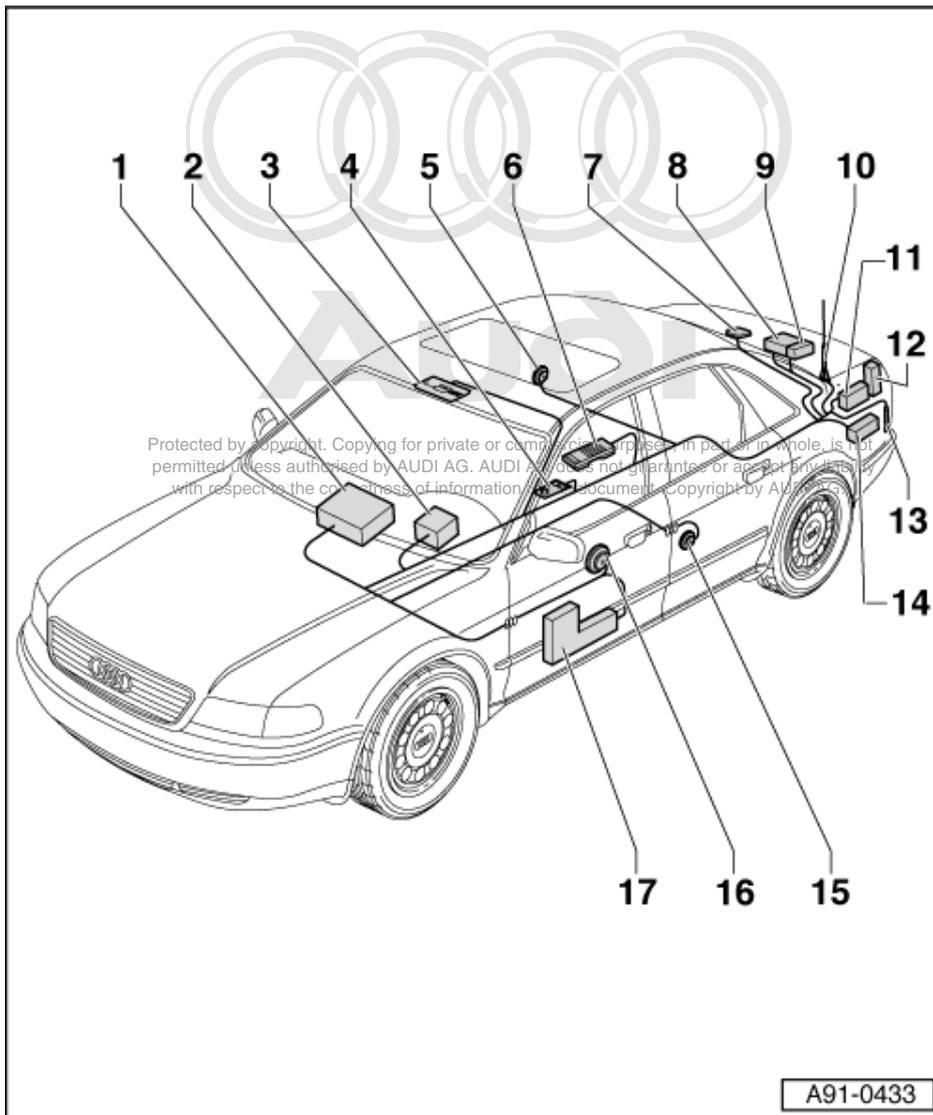


-> 10-pin connector T10ae

- 1 - Battery + (terminal 30)
- 2 - Telephone/telematics muting
- 3 - Terminal 15

- 8 - Earth (terminal 31)
- 5 - Earth (terminal 31)
- 6 - Battery + (terminal 30)
- 7 - Battery + (terminal 30)
- 6 - Switch illumination (terminal 58s) (up to MY 01)
- 10 - Earth (terminal 31)
- A1 - Telephone aerial
- A3 - Emergency aerial

10.6 - Exploded view of telematics system



1 Operating electronics control unit, navigation -J402

- ◆ In centre console
- ◆ Removing and installing
=> Page **139**

2 Display in dash panel insert

- ◆ In dash panel
- ◆ Removing and installing

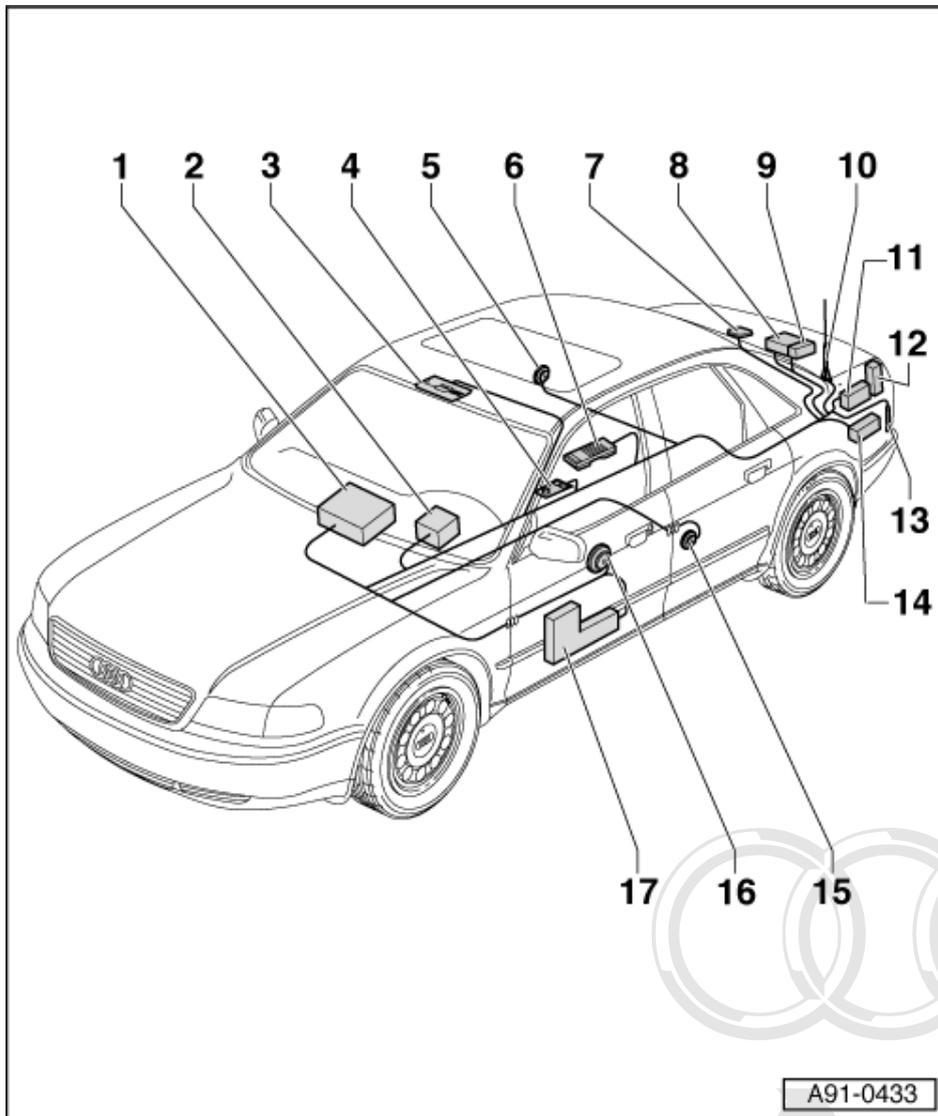
=> Electrical System; Repair Group 90; Dash panel insert Dash panel insert

**3 Front interior light
with emergency call button -E276,
breakdown help button -E275,**



hands-free microphone

- ◆ In roof at front
- ◆ Removing and installing
=> Page 223



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4 Function selection switch -E272

- ◆ In centre console
- ◆ Removing and installing
=> Page 181

5 Additional loudspeaker for telematics -R91 (emergency loudspeaker)

- ◆ In B-pillar trim, front passenger's side
- ◆ Removing and installing
=> Page 225

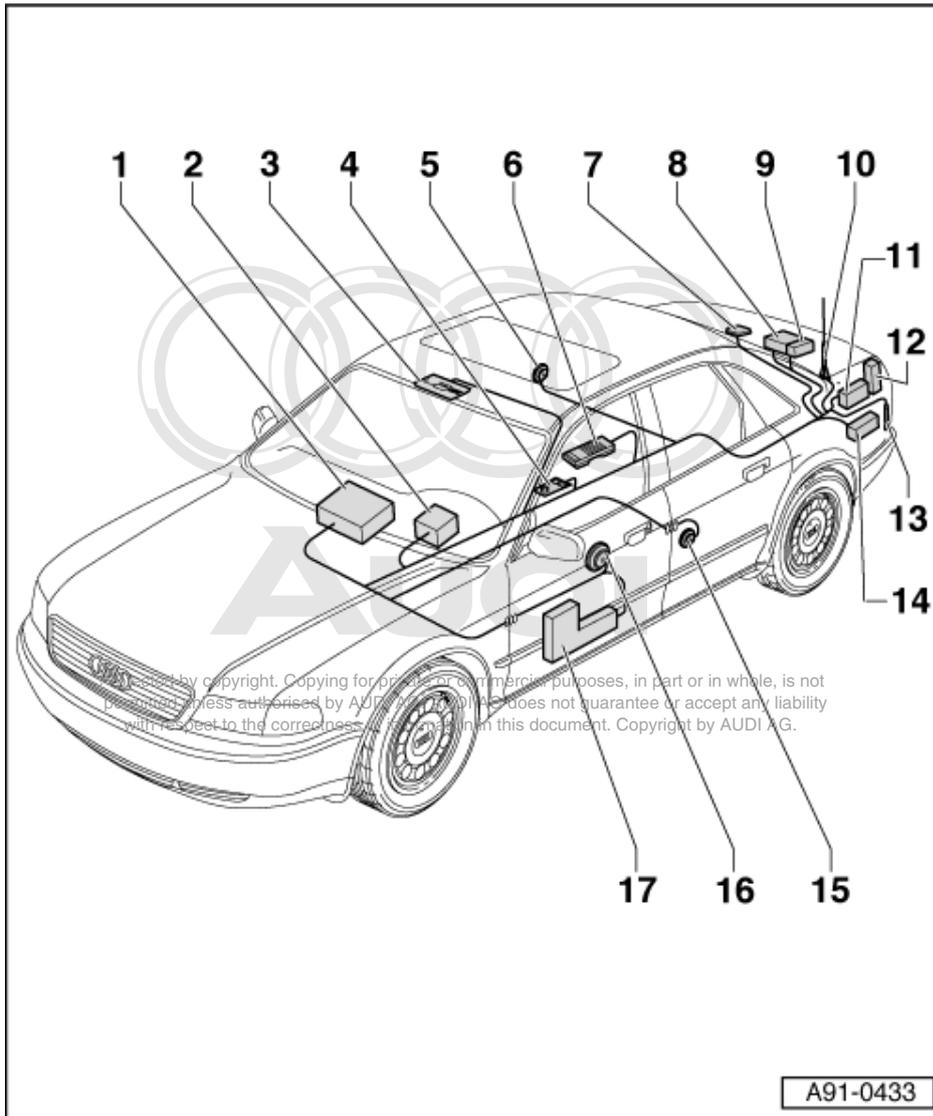
6 Telephone handset -R37

- ◆ In centre armrest
- ◆ Removing and installing
=> Page 56

7 Navigation aerial -R50

- ◆ On boot lid
- ◆ Removing and installing
=> Page 113

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8 Telephone/telematics control unit -J526

- ◆ In luggage compartment beneath rear shelf
- ◆ Removing and installing
=> Page **219**

9 GPS aerial filter -R87

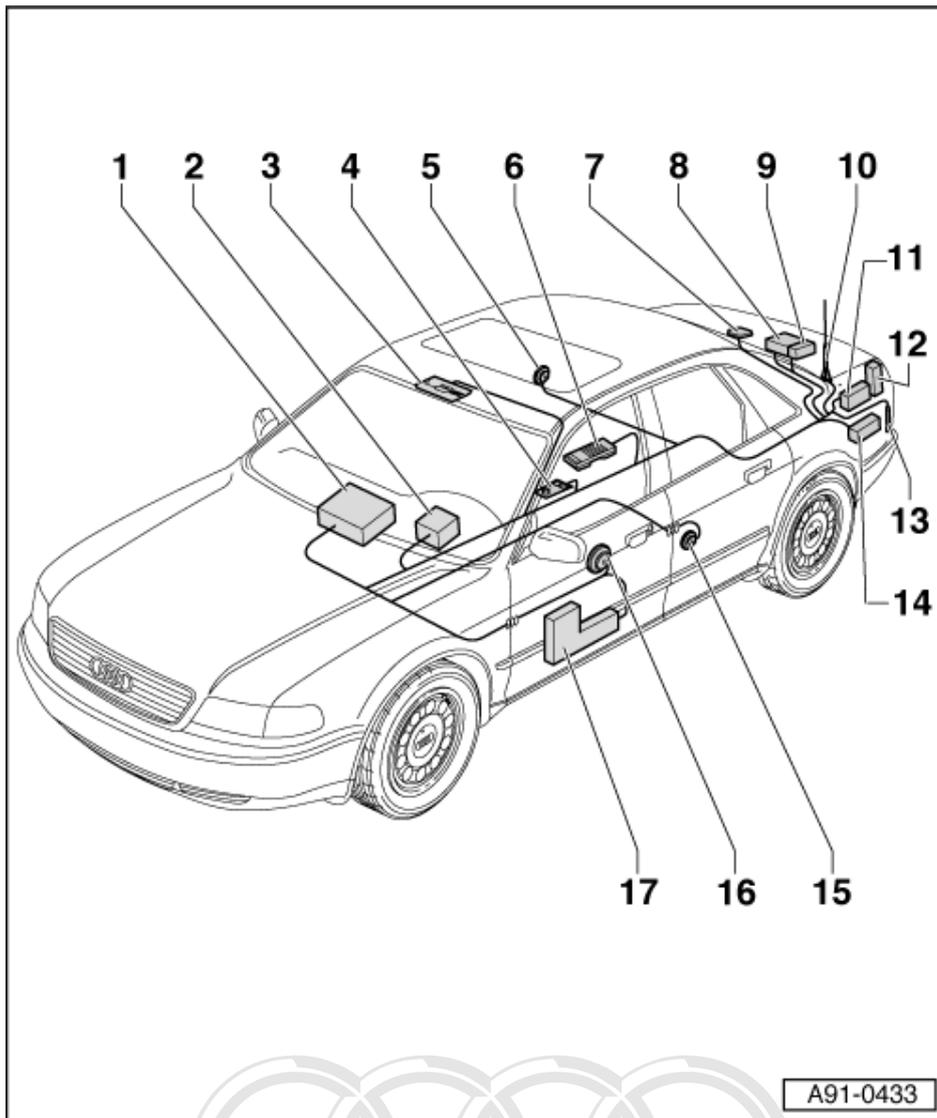
- ◆ At telephone/telematics control unit -J526
- ◆ Removing and installing
=> Page **222**

10 Rod aerial for telephone

- ◆ At rear left of luggage compartment beneath side trim
- ◆ Removing and installing=>Page **40**

11 Navigation/TV tuner -J415

- ◆ In left luggage compartment storage area
- ◆ Removing and installing
=> Page **141**



12 Language input control unit -J507 (optional)

- ◆ In left luggage compartment storage area
- ◆ Removing and installing
=> Page 232

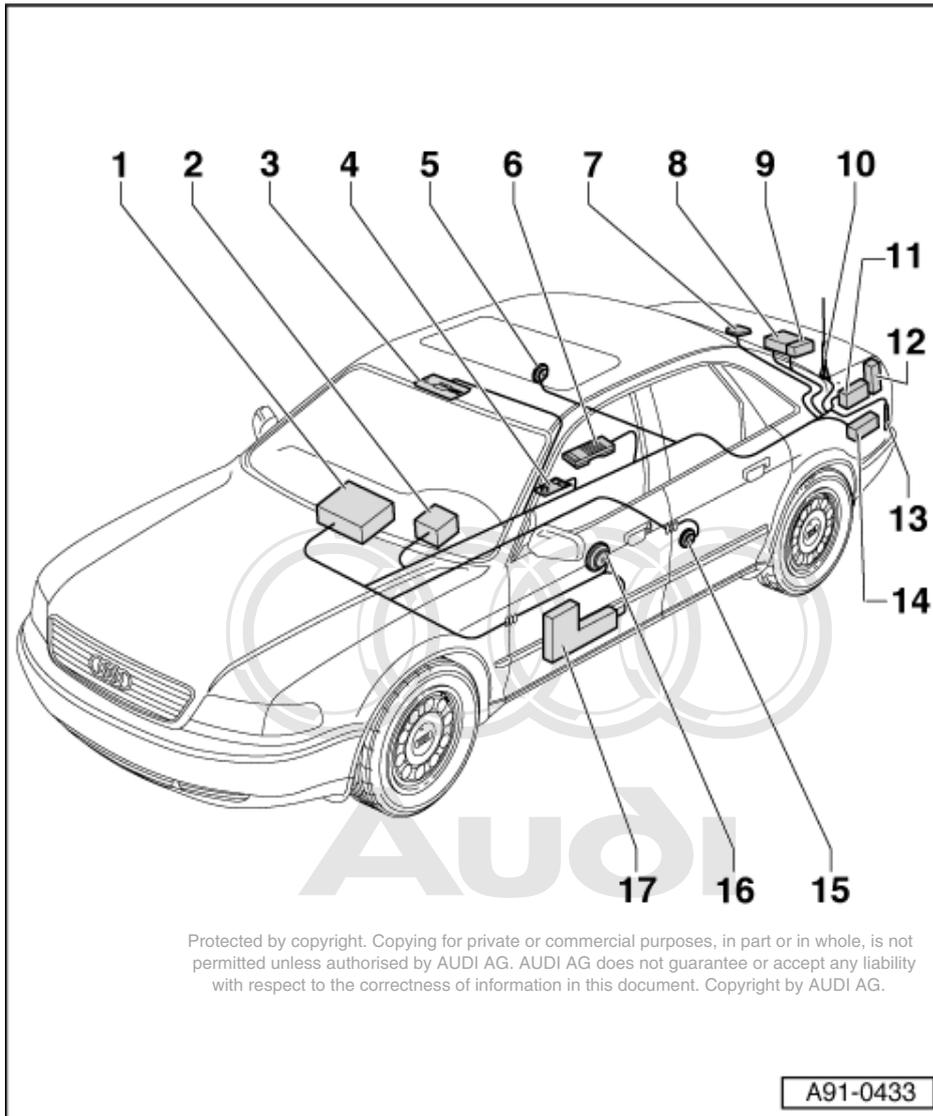
13 Additional aerial for telematics -R90 (emergency aerial)

- ◆ In rear bumper
- ◆ Removing and installing
=> Page 225

14 CD changer

- ◆ In left luggage compartment storage area
- ◆ Removing and installing
=> Page 41

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A91-0433

15 Hands-free loudspeaker (up to MY 01)

- ◆ In driver's B-pillar trim
- ◆ Removing and installing=>Page 63
- ◆ Vehicles with BOSE sound system only

16 Treble speaker

- ◆ In top of front door trim
- ◆ Removing and installing=>Page 38

17 Mid-range/bass speaker

- ◆ In bottom of front door trim
- ◆ Removing and installing=>Page 38

10.7 - Removing and installing telephone/telematics control unit -J526

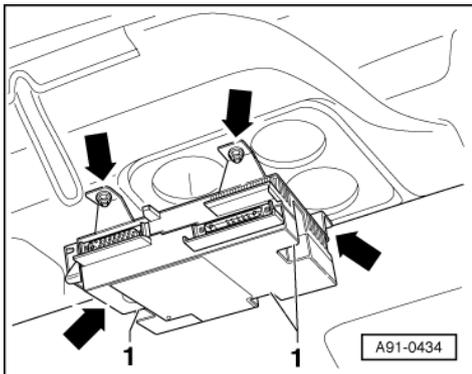
Removing:

- Activate service mode of control unit.

=> Radio, Telephone and Navigation System Self-diagnosis; Repair Group 01; Telematics System Self-diagnosis; Adaption Telematics System Self-diagnosis Adaption



- Unplug connectors of control unit and aerial filter -R87.



- -> Slacken off nuts -1- (10 Nm) and detach control unit from holder.
- Remove aerial filter -R87 => Page 222 .
- If holder is also to be removed, unfasten the four nuts -arrows- (10 Nm).

Installing:

- Install accordingly in reverse order of removal.
- Deactivate service mode of control unit.

=> Radio, Telephone and Navigation System Self-diagnosis; Repair Group 01; Telematics System Self-diagnosis; Adaption Telematics System Self-diagnosis Adaption

Observe the following if control unit is to be replaced:

- Remove control unit => Page 219 .
- Remove telematics SIM card => Page 220 .
- Complete and submit fax form "Activation of Audi telematics (Fax 1.1)" (enter new control unit data and mark unit replacement).

Notes:

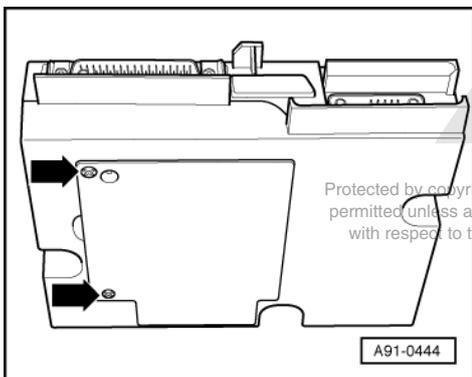
- ◆ Telematics SIM card in control unit remains with vehicle.
- ◆ Back-up battery must be ordered separately.

- Install new back-up battery => Page 224 .
- Insert telematics SIM card.
- Install control unit => Page 220 .
- Deactivate service mode of control unit.

=> Radio, Telephone and Navigation System Self-diagnosis; Repair Group 01; Telematics System Self-diagnosis; Adaption Telematics System Self-diagnosis Adaption

- Perform initialisation => Page 221 .

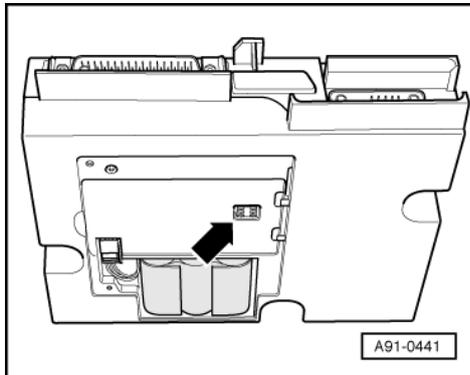
10.8 - Replacing telematics SIM cards



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Proceed as follows if telematics SIM cards are defective:

- -> Slacken off both bolts -arrows- on underside of telematics control unit and detach cover.



- -> Take SIM card -arrow- out of telematics control unit.
- Complete and submit fax form "Activation of Audi telematics (Fax 1.1)".
- Insert new, activated SIM card in telematics control unit.
- Destroy old SIM card.
- Perform initialisation of telephone/telematics control unit -J526
=> Page 221 .

10.9 - Initialising telephone/telematics control unit -J526

Initialisation must be performed:

- ◆ On initial commissioning before delivery to customer
- ◆ Following change of vehicle owner
- ◆ After SIM card has been exchanged
- ◆ Following control unit replacement

During initialisation, data is exchanged between telematics control unit and service centre.

Initialisation can only be performed following receipt of reply to activation fax and activation of SIM card.

Requirements:

- ◆ Adequate reception of D2 mobile radio telephone network
- ◆ Reception of min. 4 GPS satellites
- ◆ Second mobile radio telephone card not fitted in handset

Initialisation procedure:

- Switch on telephone.

"Service mode" appears in display.

- Repeatedly press navigation button until "Security code" appears in display.
- Enter security code (always "12345") via keypad and confirm entry by pressing navigation button.

Note:

Security code should be stored.

- Then enter number of telematics centre:
49 172 227 022 0
and confirm entry by pressing navigation button.
- Enter number of telematics provider:



2002

and confirm entry by pressing navigation button.

Initialisation of unit now begins (takes approx. 3 to 6 minutes).

"New vehicle data received" then appears in display.

- Confirm by pressing navigation button.

"Telematics data received" appears in display.

- Confirm by pressing navigation button.

Vehicle data transmitted can then be compared to entries on activation fax.

- Press arrow keys to scroll through this menu. Press C-key to return to first menu level.

This completes initialisation procedure.

Dynamic navigation must be activated in the case of vehicles with navigation systems RNS 4.1 and BNS 4.0:

- Press traffic jam button.
- Under "Alternative route always automatic", press

"ON" option

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- Under "Traffic info source", press

"Telephone" option

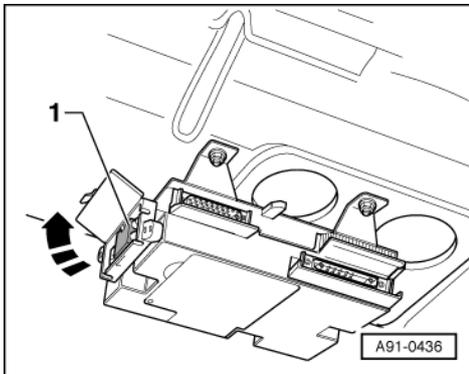
- Under "Traffic info enquiry rate", press

"Always cyclical" option

The units are now ready for operation.

10.10 - Removing and installing GPS aerial filter -R87

Removing:



- -> Open up holder for aerial filter -arrow-.
- Unclip aerial filter from holder and take it out.
- Unplug connectors.

Installing:

- Install accordingly in reverse order of removal.

Note:

Aerial filter must be under retainer tabs of holder.

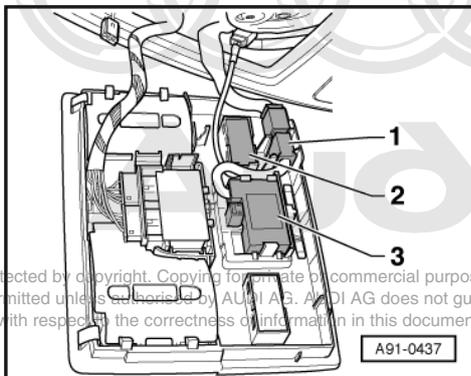
10.11 - Removing and installing emergency call button -E276 and breakdown help button - E275

Both buttons are fitted in front interior light.

Removing:

- Remove front interior light.

=> Electrical System 02.99 ä; Repair Group 96; Servicing interior lights; Removing and installing front interior light Servicing interior lights Removing and installing front interior light



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- -> Carefully unclip buttons -3- using a flat screwdriver and unplug connector -1-.

Installing:

- Install accordingly in reverse order of removal.

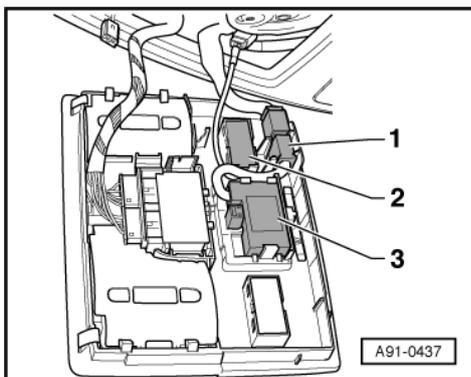
10.12 - Removing and installing hands-free microphone

Hands-free microphone is fitted in front interior light.

Removing:

- Remove front interior light.

=> Electrical System 02.99 ä; Repair Group 96; Servicing interior lights; Removing and installing front interior light Servicing interior lights Removing and installing front interior light





- -> Carefully unclip hands-free microphone -2- using a flat screwdriver and unplug connector.

Installing:

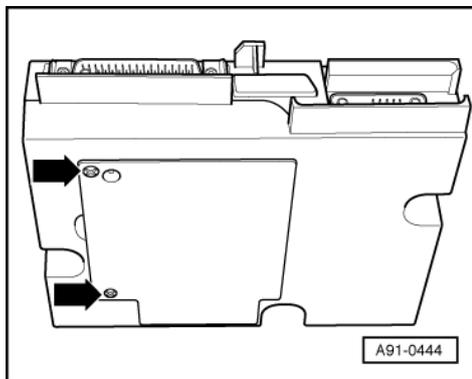
- Install accordingly in reverse order of removal.

Notes:

- ◆ Fit hands-free microphone on driver's side.
- ◆ Arrow on hands-free microphone must point towards driver.

10.13 - Removing and installing telematics back-up battery

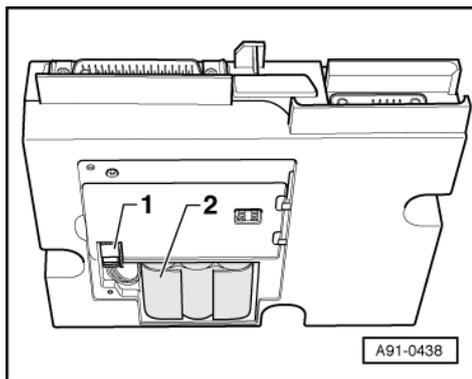
Note:



Back-up battery is only to be disconnected from control unit if it is to be replaced.

Removing:

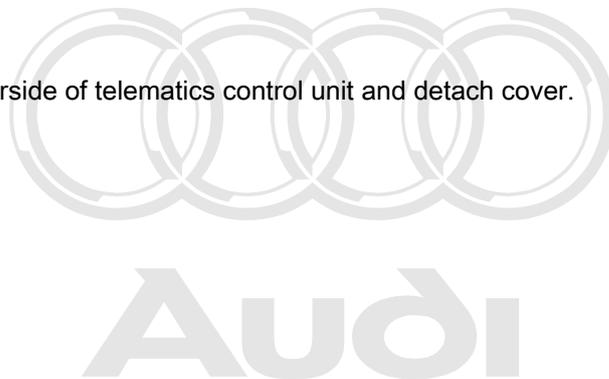
- -> Slacken off both bolts -arrows- on underside of telematics control unit and detach cover.



- -> Pull connector -1- apart and pull out back-up battery -2-.

Installing:

- Install accordingly in reverse order of removal.



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10.14 - Removing and installing additional loudspeaker for telematics -R91 (emergency loudspeaker)

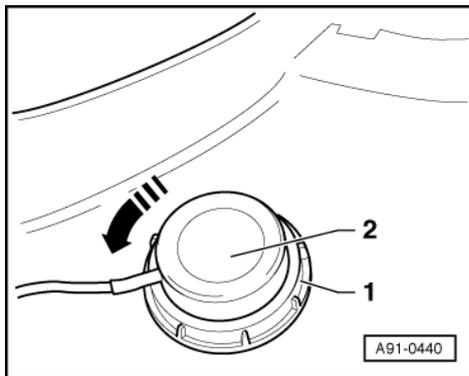
Loudspeaker is fitted in B-pillar trim on front passenger's side.

Removing:

- Remove lower B-pillar trim on front passenger's side.

=> General Body Repairs, Interior; Repair Group 70; Trim Panels gradually introduced as of 10.98 (with interior mirror at headliner); Removing and installing lower B-pillar trim Trim Panels gradually introduced as of 10.98 (with interior mirror at headliner) Removing and installing lower B-pillar trim

- Unplug connectors.

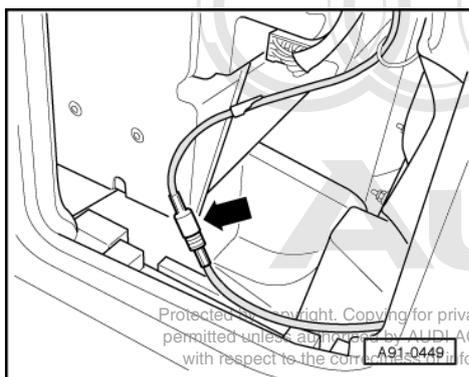


- -> Release fastener -1- around outside of loudspeaker -2- by turning in direction of arrow and take loudspeaker forwards out of trim.

Installing:

- Install accordingly in reverse order of removal.

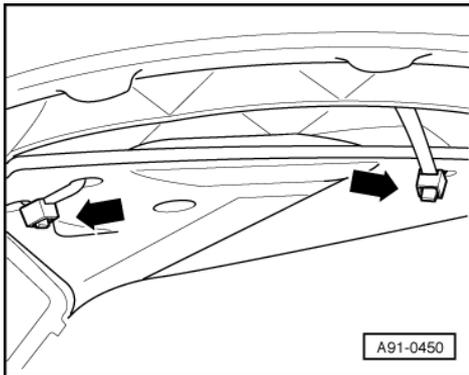
10.15 - Removing and installing additional aerial for telematics -R90 (emergency aerial)



Emergency aerial is located in rear bumper on left and right.

- -> Open left/right storage area in luggage compartment and unplug connector -arrow-.
- Remove rear bumper cover.

=> General Body Repairs, Exterior; Repair Group 63; Removing and installing rear bumper; Exploded view Removing and installing rear bumper Exploded view



- -> Using a suitable tool, release fasteners (4x) -arrows- and remove emergency aerial.

Installing:

- Install accordingly in reverse order of removal.

11 - Voice control system

11.1 - Voice control system

Attention:

Disconnect battery earth strap before working on electrical system.

Telematics control unit service mode must be activated before disconnecting battery.=>Radio, Telephone and Navigation System Self-diagnosis; Repair Group 01; Telematics System Self-diagnosis; Adaption

Notes:

- ◆ Establish radio anti-theft code before disconnecting battery.
- ◆ On re-connecting battery, remember to activate vehicle equipment (radio, clock, electric window lifters, etc.) in line with owner's manual and to deactivate telematics control-unit service mode.

=> Radio, Telephone and Navigation System Self-diagnosis; Repair Group 01; Telematics System Self-diagnosis; Adaption Telematics System Self-diagnosis Adaption

11.2 - General description

The voice control system is designed for acoustic operation of telephone, telematics, radio and navigation systems.

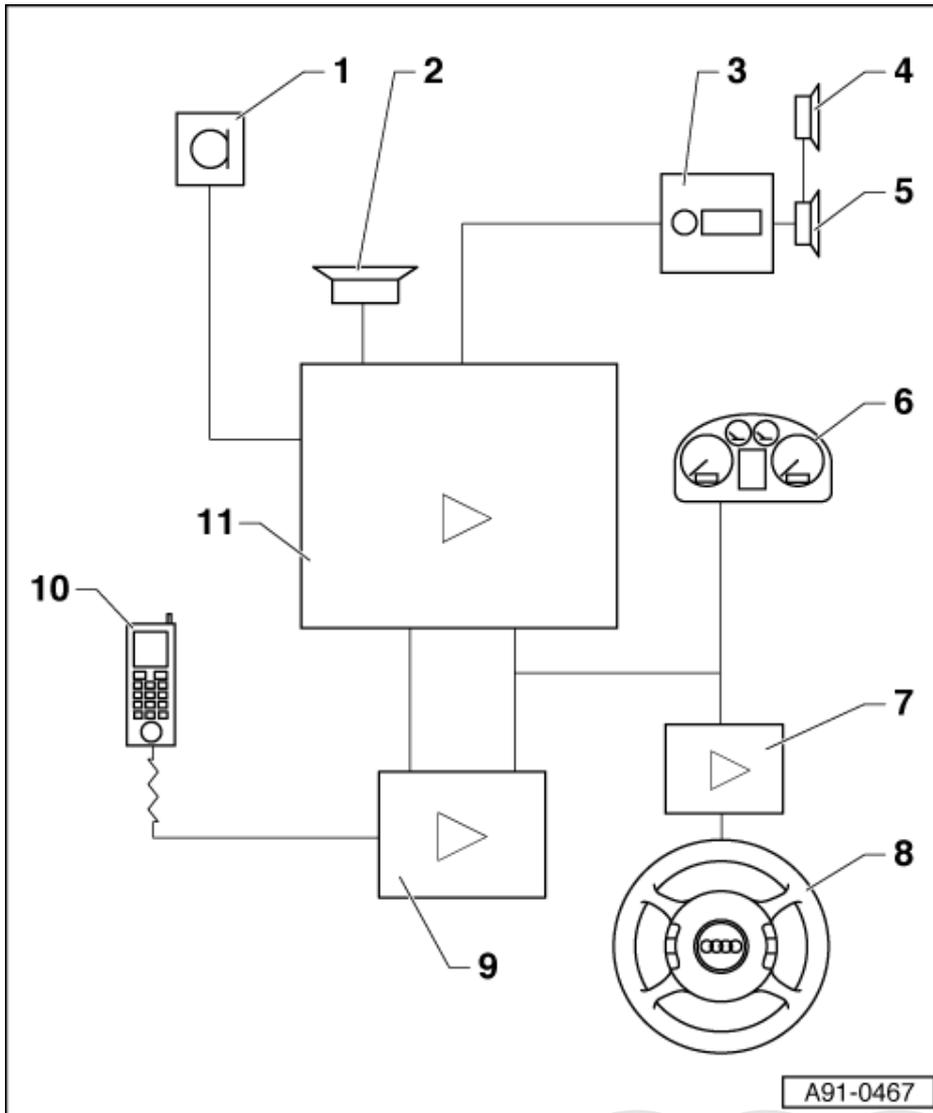
Functions can be conveniently implemented by way of voice commands. System is activated via PTT button (button with receiver symbol) in multi-function steering wheel.

For button assignment on multi-function steering wheels, refer to

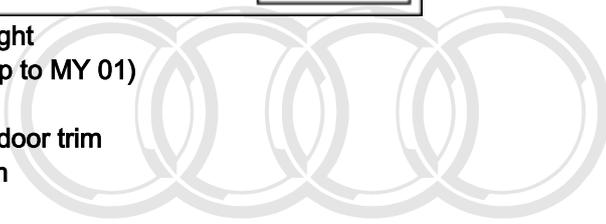
=> Page 203 .

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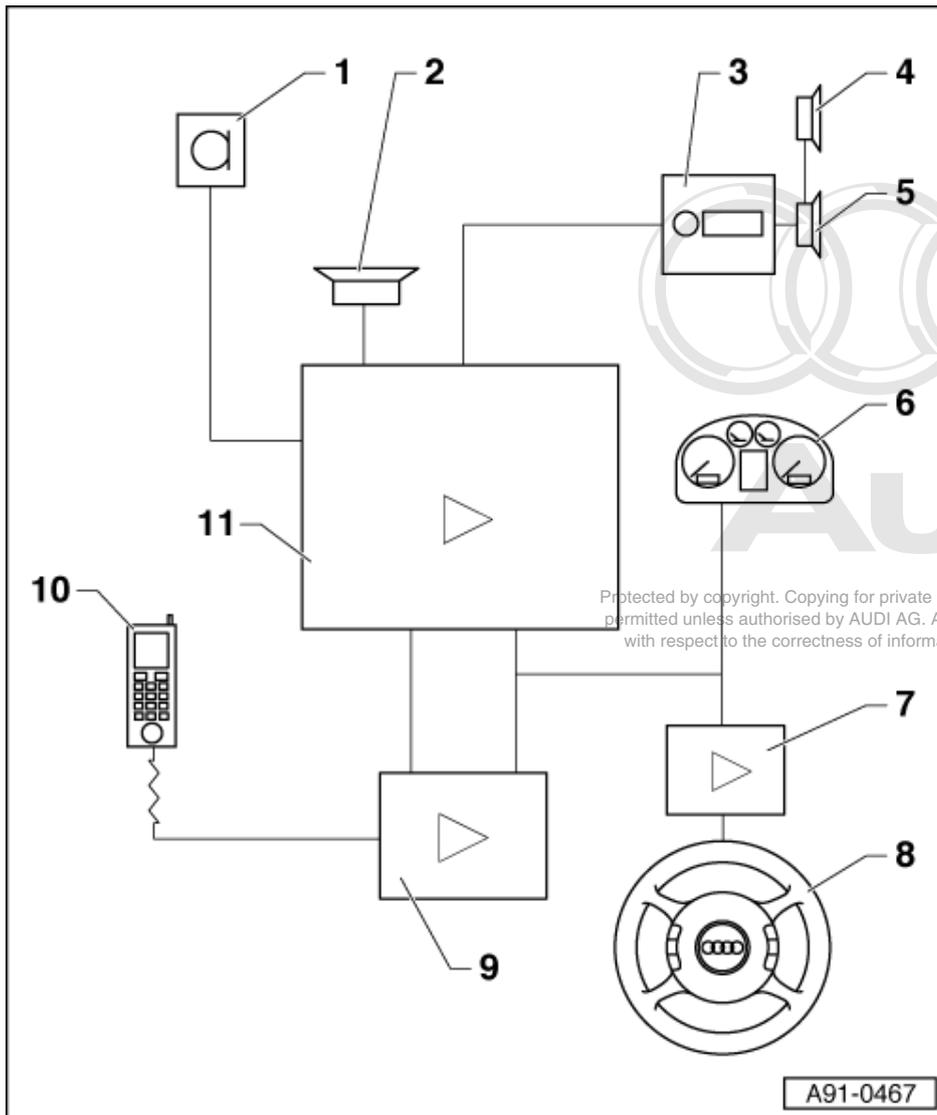
11.3 - Block diagram of voice control system



- 1 Hands-free microphone in front interior light
- 2 Hands-free loudspeaker in left B-pillar (up to MY 01)
- 3 Radio in centre console
- 4 Front treble/mid-range speaker in top of door trim
- 5 Front bass speaker in bottom of door trim
- 6 Dash panel insert
- 7 Control unit for multi-function steering wheel in relay carrier beneath driver's storage compartment


Audi

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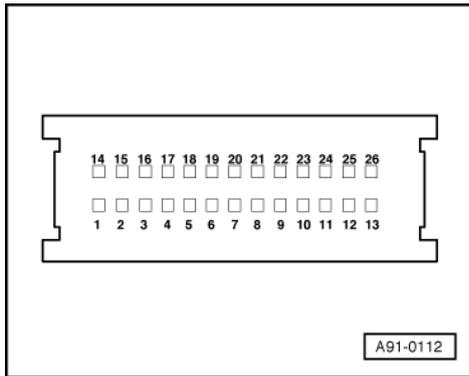
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- 8 Multi-function steering wheel with PTT button
- 9 Telephone/telematics control unit in luggage compartment beneath rear shelf
- 10 Telephone/telematics handset in centre console
- 11 Voice input control unit in left luggage compartment storage area

11.4 - Connectors at language input control unit -J507

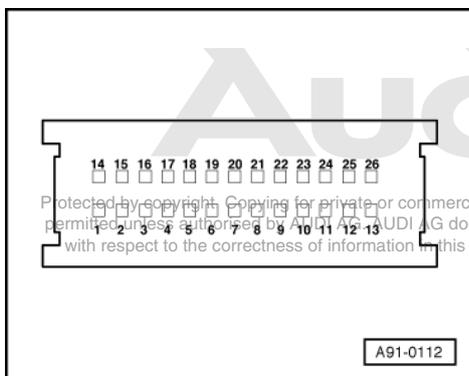
Note:

Non-listed plug contacts are not used.



-> Multi-pin connector at language input control unit -J507 T26f

- 1 - Line(-) input from telephone/telematics control unit -J526
- 2 - Line(+) input from telephone/telematics control unit -J526
- 3 - Terminal 15
- 5 - Telephone/telematics muting (output)
- 6 - Telephone/telematics muting (input)
- 7 - K-wire
- 8 - CAN bus Low (display)
- 9 - CAN bus High (display)
- 13 - Earth (terminal 31)
- 14 - Hands-free loudspeaker output (+) (up to MY 01)
- 15 - Hands-free loudspeaker output (-) (up to MY 01)
- 16 - Hands-free microphone output (+)
- 17 - Hands-free microphone output (-)
- 18 - Hands-free microphone input (+)
- 19 - Hands-free microphone input (-)

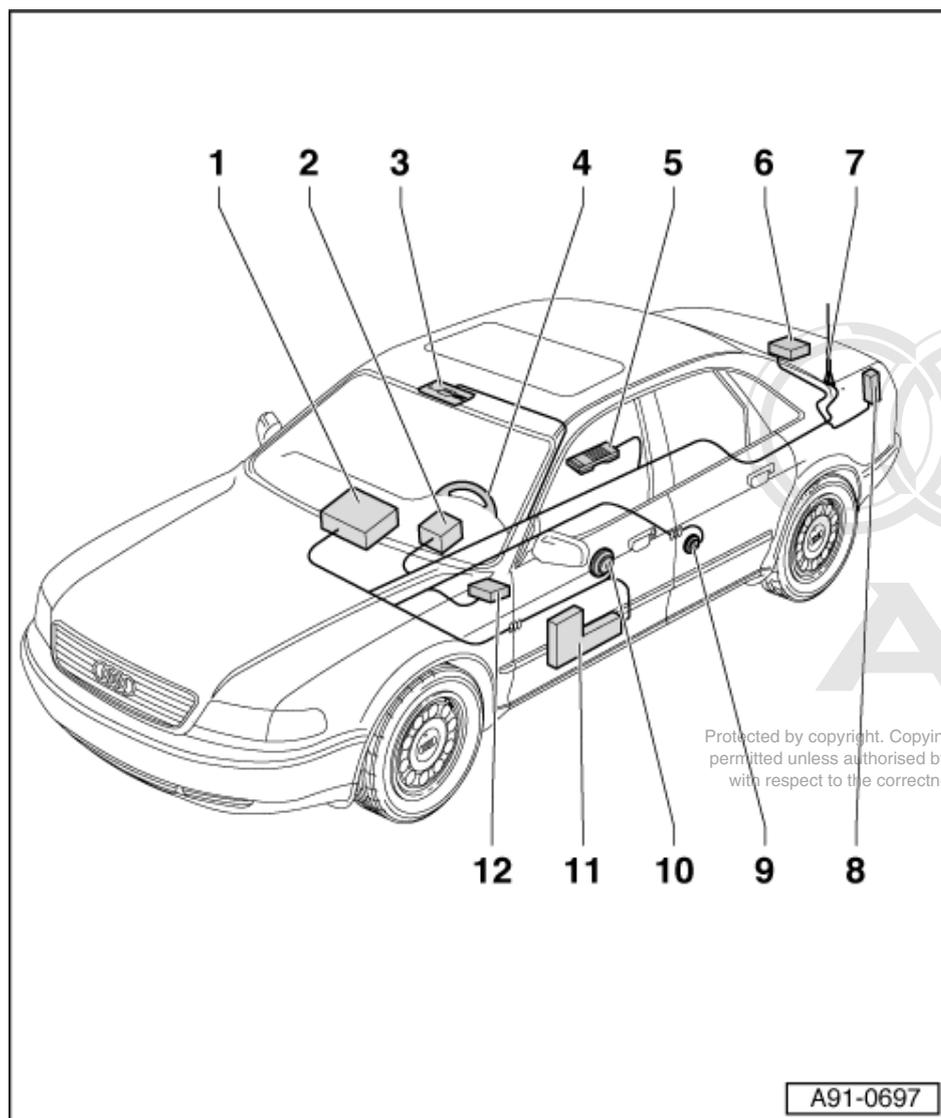


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- 20 - Earth for fax socket
- 21 - Ser TXT for fax socket
- 22 - Ser RXT for fax socket
- 26 - Battery + (terminal 30)



11.5 - Exploded view of voice control system



1 Radio

- ◆ Installed in centre console
- ◆ Removing and installing
=> Page 36 .

2 Display in dash panel insert

- ◆ In dash panel
- ◆ Removing and installing

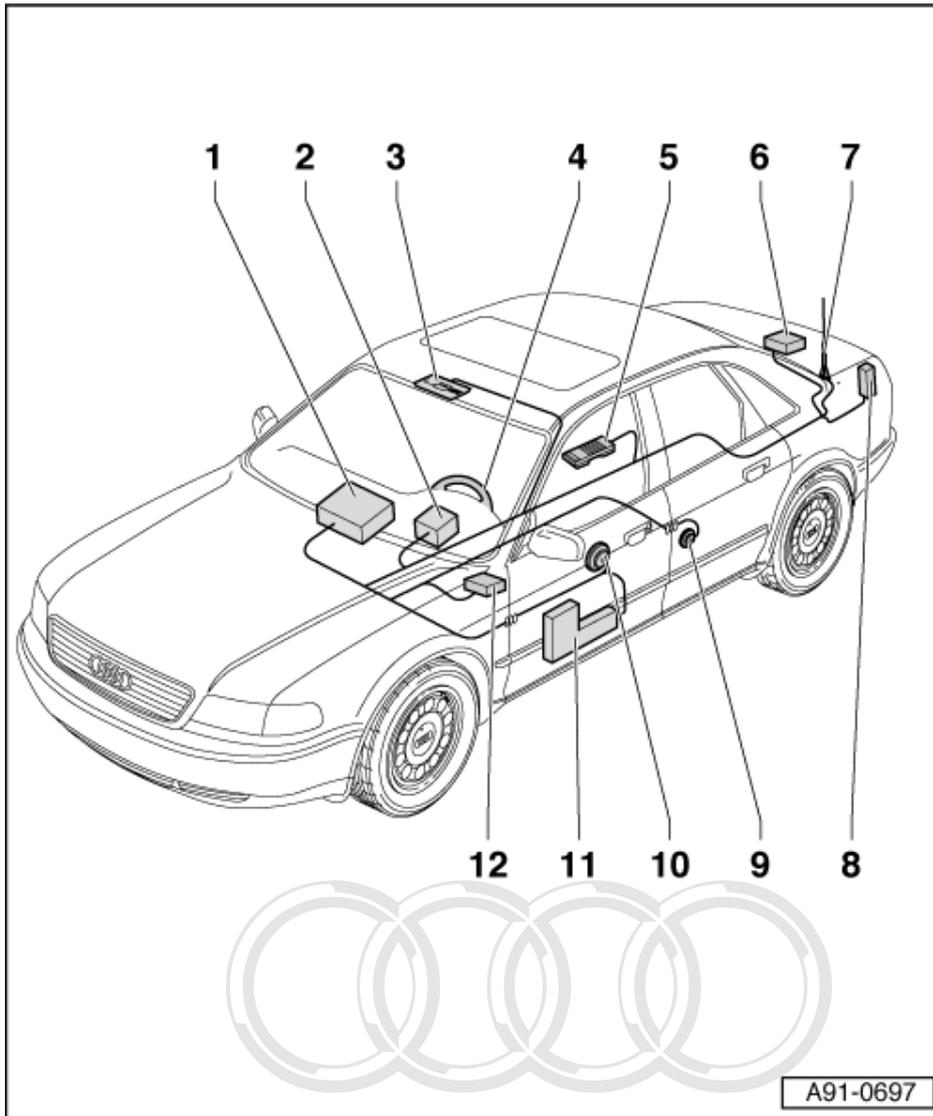
=> Electrical System; Repair Group 90; Dash panel insert; Removing and installing dash panel insert Dash panel insert Removing and installing dash panel insert

3 Front interior light with hands-free microphone

- ◆ In roof at front
- ◆ Removing and installing
=> Page 223

4 Multi-function steering wheel

- ◆ Removing and installing
=> Page 198



5 Telephone handset -R37

- ◆ In centre armrest
- ◆ Removing and installing=>Page 56

6 Telephone/telematics control unit -J526

- ◆ In luggage compartment beneath rear shelf
- ◆ Removing and installing
 => Page 219

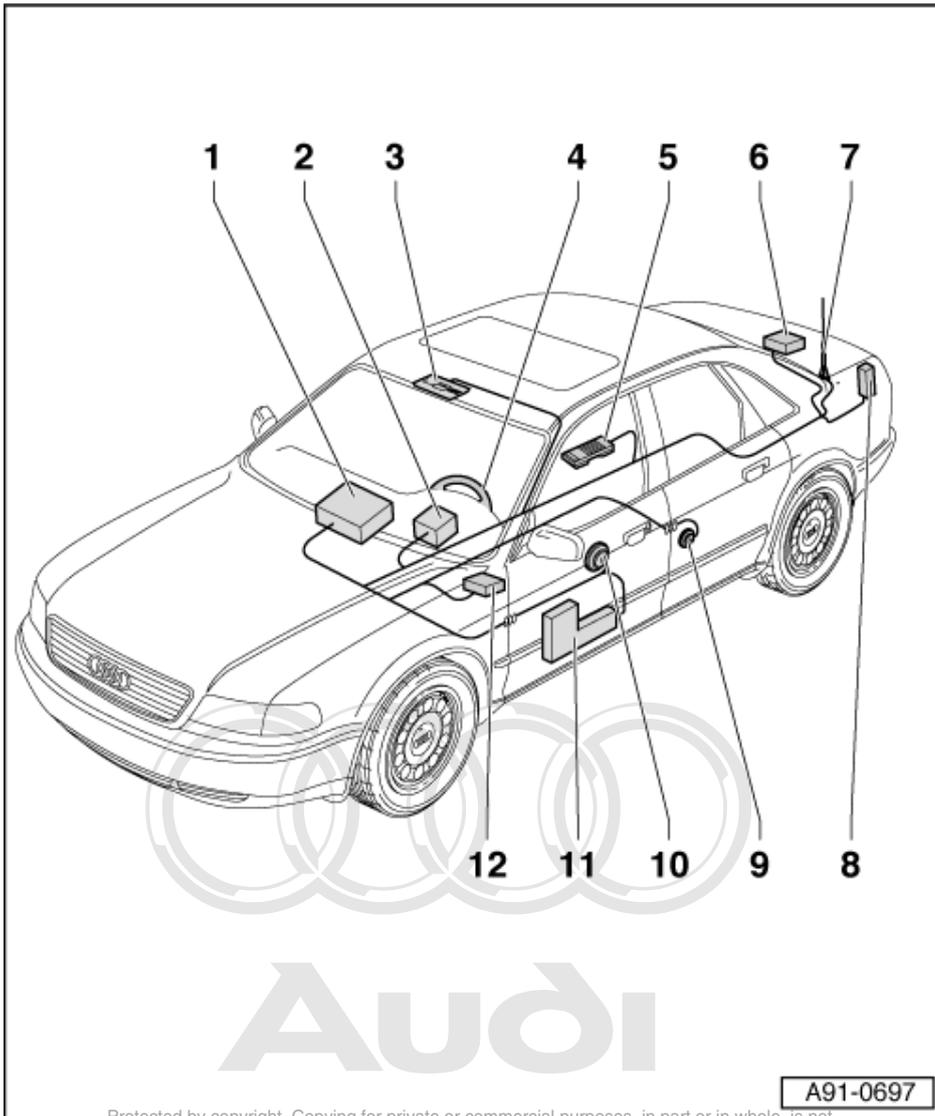
7 Rod aerial for telephone

- ◆ Rod aerial in rear left wing
- ◆ Removing and installing=>Page 40

8 Language input control unit -J507

- ◆ In left luggage compartment storage area
- ◆ Removing and installing
 => Page 232

A91-0697



9 Hands-free loudspeaker (up to MY 01)

- ◆ In driver's B-pillar trim
- ◆ Removing and installing=>Page 63
- ◆ Vehicles with BOSE sound system only

10 Treble speaker

- ◆ In top of front door trim
- ◆ Removing and installing=>Page 38

11 Bass/mid-range speaker

- ◆ In bottom of front door trim
- ◆ Removing and installing=>Page 38

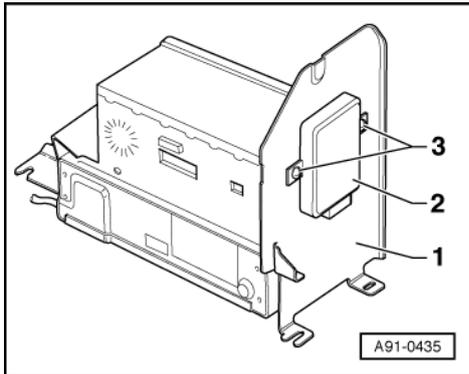
12 Multi-function steering wheel control unit -J453

- ◆ Relay carrier behind driver's storage compartment
- ◆ Removing and installing
=> Page 209

11.6 - Removing and installing language input control unit -J507

Control unit is located behind left luggage compartment storage area.

Removing:



- Open left luggage compartment storage area.
- -> Unplug connector at control unit -2-.
- Slacken off bolts -3- (2 Nm) and detach control unit -2- from mounting frame -1-.

Installing:

- Install accordingly in reverse order of removal.

12 - Electronic logbook

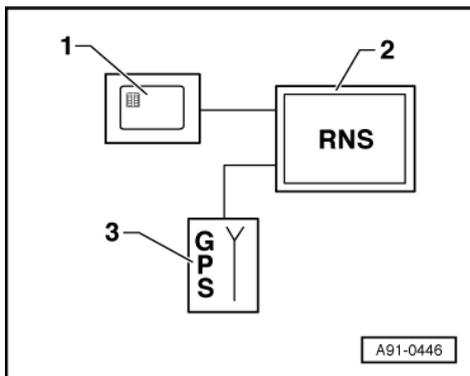
12.1 - Electronic logbook

12.2 - Function:

Start position, kilometres driven and destination are transmitted via navigation system and data BUS to chip-card reader and stored on chip card.

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12.3 - Block diagram of electronic logbook



- > 1 - Chip-card reader
- 2 - Operating electronics control unit, navigation
- 3 - GPS aerial



12.4 - Fault message

Fault message is provided by way of navigation system operating electronics control unit display (monitor navigation).

The following text is displayed:

Card reader connection faulty
Journeys not being stored
Log journeys manually
Confirm with RETURN

Fault message is displayed until "RETURN" is pressed.

Cause of trouble:

Fault in data BUS between navigation system operating electronics control unit and card reader

- Check data bus link.

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

Card reader defective

- Replace card reader => Page 234 .

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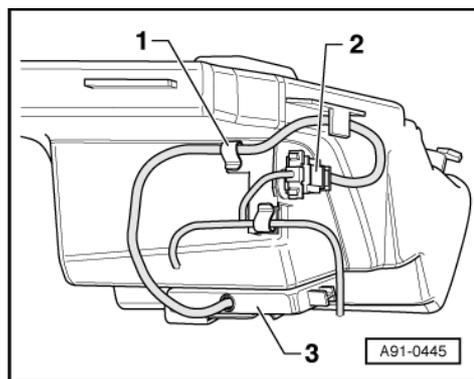
12.5 - Removing and installing chip-card reader

Chip-card reader is located in driver's storage bin.

- Remove driver's storage compartment.

=> General Body Repairs, Interior; Repair Group 68; Storage compartments, covers and trim panels; Removing and installing driver's storage compartment Storage compartments, covers and trim panels Removing and installing driver's storage compartment

Removing:



- -> Carefully unclip wire -1- to reader.
- Unplug connector -2-.
- Carefully pull reader out of retaining spring -3-.

Installing:

- Install accordingly in reverse order of removal.

- On initial installation or on replacing navigation unit, navigation system operating electronics control unit must be appropriately adapted.

=> Radio, Telephone and Navigation System Self-diagnosis; Repair Group 01, Navigation system self-diagnosis; Adaption Adaption

13 - CAN bus systems

13.1 - CAN bus systems

13.2 - General description

The volume of data to be transferred from and to the individual control units in the vehicle is constantly increasing. To date, this has required the use of more and more individual wires.

The use of a CAN bus makes it possible to transfer large volumes of data via two wires. For this purpose, the control units are linked by means of two (parallel) twisted wire pairs.

Use is currently made of three CAN bus systems in the vehicle:

- ◆ Drive system CAN bus
- ◆ Convenience CAN bus
- ◆ Display CAN bus

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The display CAN bus is used for data transfer relating to radio, telephone and navigation systems.

The three bus systems are interlinked via an interface (gateway) in the dash panel insert.

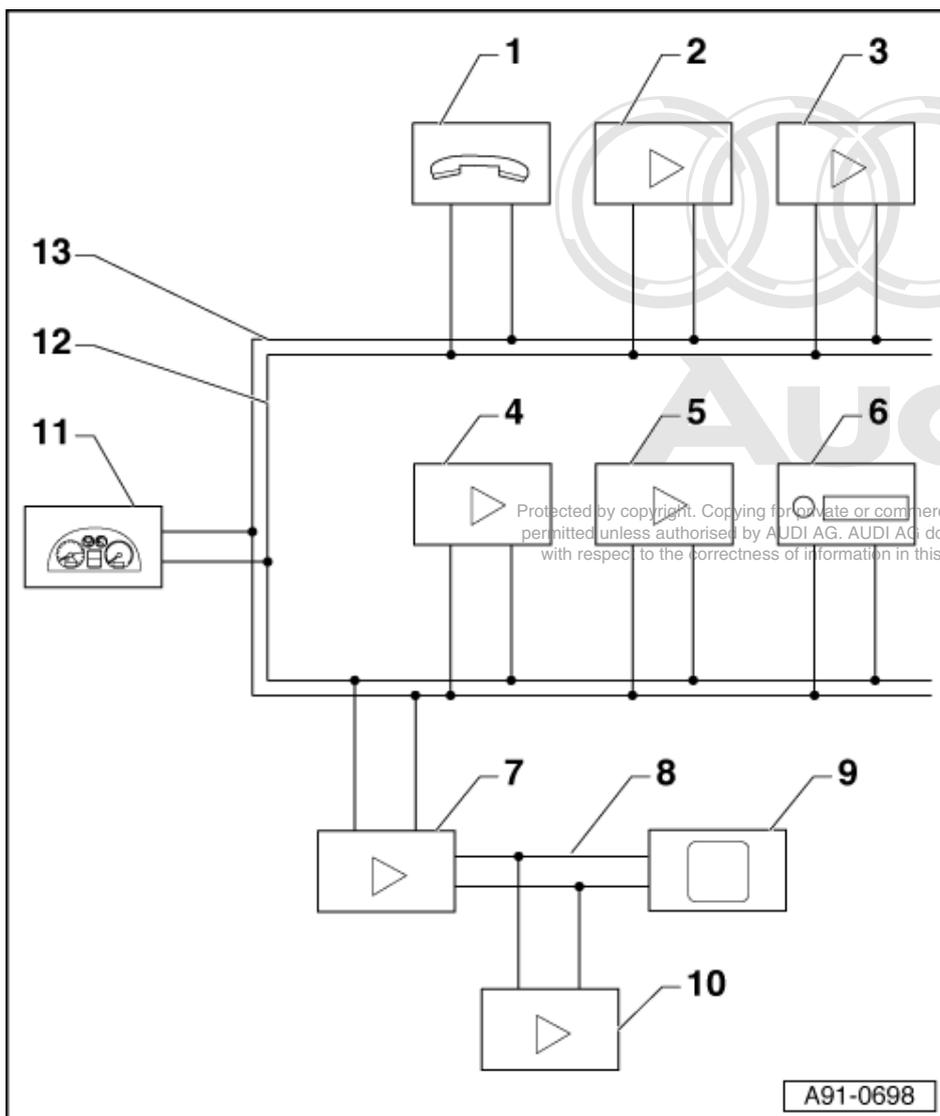
If data transfer errors occur, corresponding fault codes are stored in the control units.

=> Radio, Telephone, Navigation; Repair Group 01

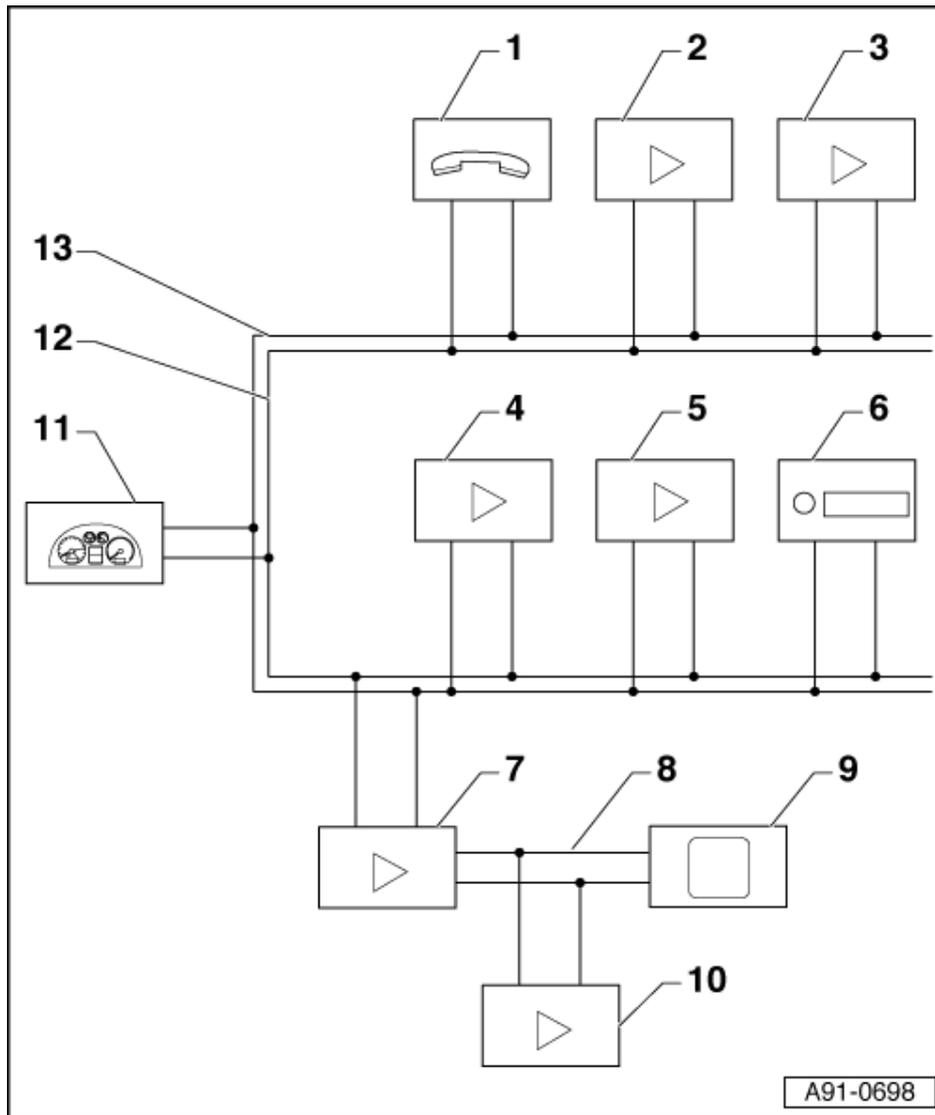
For more detailed information, refer to appropriate AUDI publications.



13.3 - Block diagram of display CAN bus



- 1 Telephone/telematics control unit
-J526 or
mobile phone operating electronics control unit -J412
- 2 Multi-function steering wheel control unit -J453
- 3 Navigation system with CD drive control unit -J401
- 4 Language input control unit -J507
- 5 Tachograph (electronic logbook) -G24
- 6 Radio -R
- 7 Navigation interface -R94
- 8 CAN bus (Bosch)



- 9 Operating electronics control unit, navigation -J402
- 10 Navigation/TV tuner -J415
- 11 Dash panel insert (with control unit with display in dash panel insert -J285 and diagnosis interface for data bus -J533)
- 12 CAN bus Low (display)
- 13 CAN bus High (display)



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