

Workshop Manual

Audi A5 Coupé 2008 ➤

Audi A5 Sportback 2010 ➤

Communication

Edition 02.2014

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List of Workshop Manual Repair Groups

Repair Group

91 - Radio, telephone, navigation



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

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91 – Radio, telephone, navigation

1 Infotainment system

(ARL003709; Edition 02.2014)

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1.1 Layout - infotainment system

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1.1.1 Layout - infotainment system, up to week 44/2008

The data for the Infotainment, telephone, navigation and speech control systems, audio players, sound system and data bus diagnostic interface - J533- are transmitted via the fibre optic MOST bus.

The connection to other data bus systems in the vehicle is handled by the data bus diagnostic interface - J533- .

The central control unit is the control unit for front display and information control panel - J523- . The signals required to display information on the instrument cluster display are transmitted via the MOST bus to the data bus diagnostic interface - J533- and from there via the CAN bus (instrument cluster) to the instrument cluster.

Fault finding is performed via the “Guided Fault Finding” ⇒ Vehicle diagnostic tester.

Equipment versions:



MMI basic

- ◆ Control unit for front display and information control panel - J523- located in glove box contains radio - R- and CD player - R89-
- ◆ CD changer - R41- in dash panel
- ◆ Connection for external audio sources - R199- in centre console storage compartment
- ◆ Digital sound package control unit - J525- located in luggage compartment (rear left)
- ◆ Sound systems: basic plus/Standard/Bang & Olufsen
- ◆ Multimedia system operating unit - E380- in centre console
- ◆ Display unit for front information display and operating unit control unit - J685- in dash panel (centre)
- ◆ Digital radio - R147- in luggage compartment (rear left)
- ◆ Mobile phone pre-installation/Bluetooth car phone
- ◆ Multi-function steering wheel

MMI basic plus navigation system

- ◆ Control unit for front display and information control panel - J523- located in glove box contains radio - R- , CD player - R89- and navigation system with CD drive control unit - J401-
- ◆ CD changer - R41- in dash panel
- ◆ Connection for external audio sources - R199- in centre console storage compartment
- ◆ Digital sound package control unit - J525- located in luggage compartment (rear left)
- ◆ Sound systems: basic plus/Standard/Bang & Olufsen
- ◆ Multimedia system operating unit - E380- in centre console
- ◆ Display unit for front information display and operating unit control unit - J685- in dash panel (centre)
- ◆ Digital radio - R147- in luggage compartment (rear left)
- ◆ Mobile phone pre-installation/Bluetooth car phone
- ◆ Multi-function steering wheel

1 - Control unit in dash panel insert - J285- in dash panel

2 - Steering column electronics control unit - J527- on steering column on steering column switch

3 - Multi-function steering wheel

4 - Display unit for front information display and operating unit control unit - J685- in dash panel (centre)

5 - Multimedia system operating unit - E380- in centre console

6 - Radio, telephone and navigation system aerial - R52- (roof aerial)

7 - Rear window aerials

8 - Aerial amplifier 3 - R112- behind left C-pillar trim

9 - Control unit for front display and information control panel - J523- in glove box

❑ MMI basic contains radio - R- and CD player - R89-

❑ MMI basic plus Navigation contains radio - R- , CD player - R89- and navigation system with CD drive control unit

10 - Data bus diagnostic interface - J533- behind glove box (left-side)

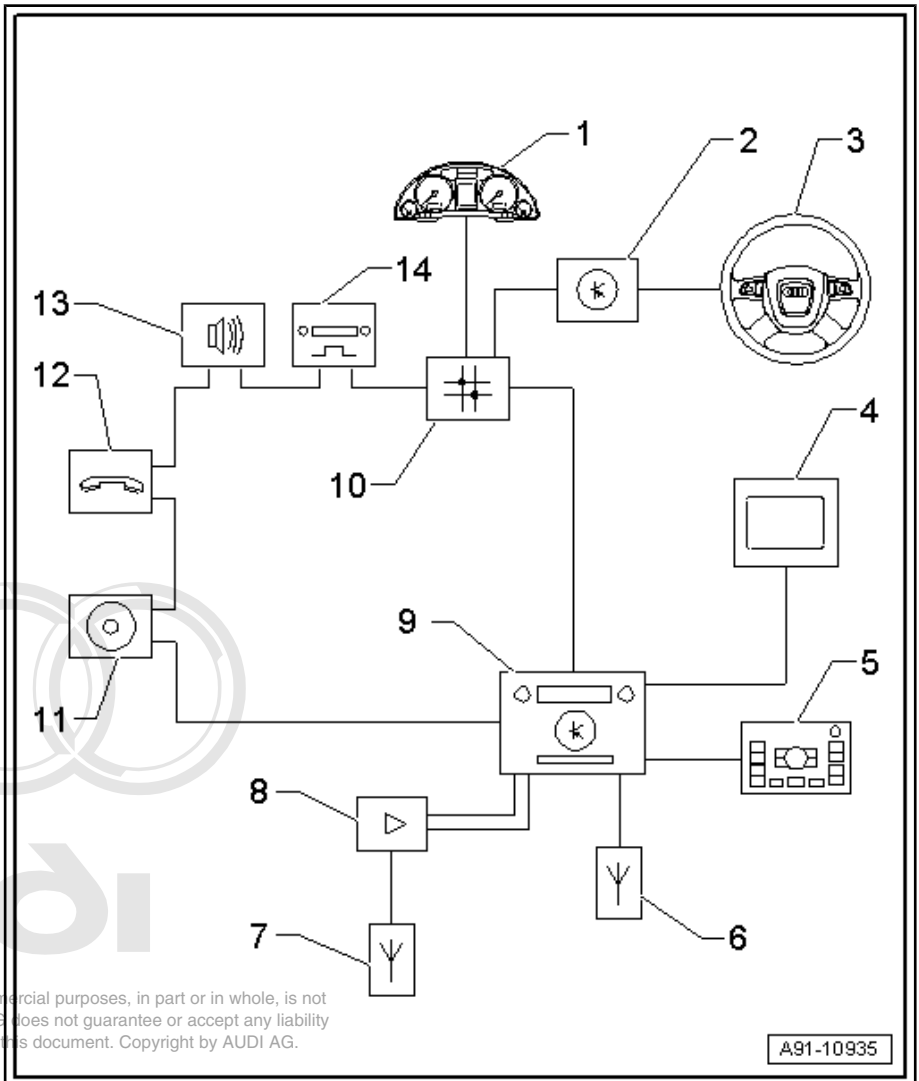
11 - CD changer - R41- in dash panel

- Connection for external audio sources - R199- (AUX IN) in centre console storage compartment

12 - Telephone transmitter and receiver unit - R36- beneath front seat (right-side)

13 - Digital sound package control unit - J525- behind luggage compartment side trim (left-side)

14 - Digital radio - R147- behind luggage compartment side trim (left-side)



MMI

- ◆ Control unit for front display and information control panel - J523- behind dash panel
- ◆ Multimedia system operating unit - E380- in centre console
- ◆ Display unit for front information display and operating unit control unit - J685- in dash panel (centre)
- ◆ Digital sound package control unit - J525- located in luggage compartment (rear left)
- ◆ Radio - R- (with speech input control unit - J507-) in luggage compartment (rear left)
- ◆ Sound systems: Standard/Bang & Olufsen

- ◆ CD changer - R41- in centre console (top)
- ◆ Connection for external audio sources - R199- in glove box/centre console storage compartment
- ◆ Navigation system with CD drive control unit - J401- located in luggage compartment (rear left)
- ◆ TV tuner - R78- in luggage compartment (rear left)
- ◆ Digital radio - R147- in luggage compartment (rear left)
- ◆ Mobile phone pre-installation/Bluetooth car phone
- ◆ Multi-function steering wheel

1 - Display unit for front information display and operating unit control unit - J685- in dash panel (centre)

2 - Control unit for front display and information control panel - J523- behind dash panel

3 - Control unit in dash panel insert - J285- in dash panel

4 - Data bus diagnostic interface - J533- behind glove box (left-side)

5 - Radio - R- with speech input control unit - J507- (fitted optionally), behind luggage compartment side trim (left-side)

6 - Digital radio - R147- behind luggage compartment side trim (left-side)

7 - TV tuner - R78- behind luggage compartment side trim (left-side)

8 - Navigation system with CD drive control unit - J401- behind luggage compartment side trim (left-side)

9 - Digital sound package control unit - J525- behind luggage compartment side trim (left-side)

10 - Telephone transmitter and receiver unit - R36- beneath front seat (right-side)

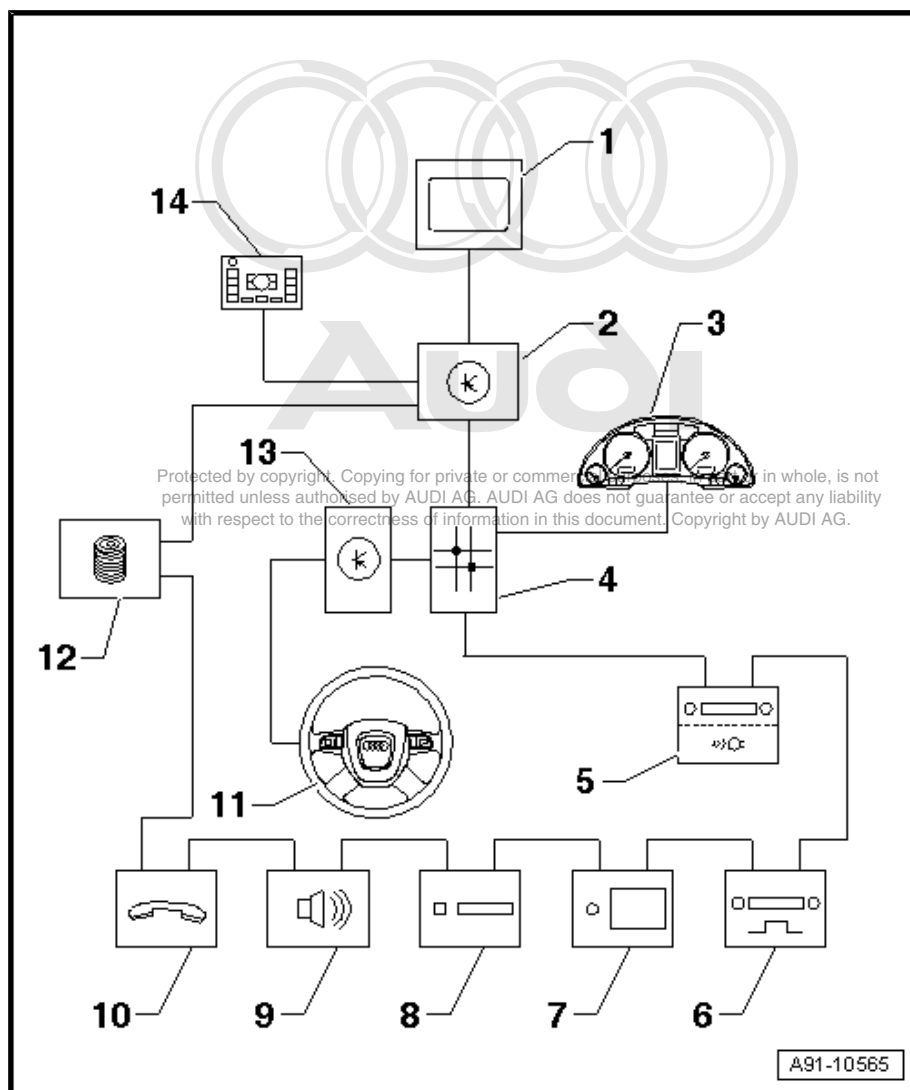
11 - Multi-function steering wheel

12 - CD changer - R41- in dash panel

- Connection for external audio sources - R199- in glove box

13 - Steering column electronics control unit - J527- on steering column on steering column switch

14 - Multimedia system operating unit - E380- in centre console



Notes on MOST bus

In addition to the CAN bus, the fibre optic data bus "MOST bus" is used.

A "fibre optic cable" is used as the connecting cable. The fibre optic cables are fitted in corrugated tubes for protection.

Renew the complete fibre optic cable whenever possible.

It is important to ensure that the end faces of the connectors do not become dirty.

If connectors are unplugged: fit a protective cap for cable connector - VAS 6223/9- .

When installing the fibre optic cables, be sure to observe the minimum bending radius of 25 mm. Do not crush or kink the fibre optic cable.

Repairing fibre optic cables ⇒ Electrical system; Rep. gr. 97 ;
Fibre optic cables .



1.1.2 Layout - infotainment system, from week 45/2008 onwards

The MMI fitted from week 45/08 onwards is an enhanced version of the MMI which has been used up to now. The functions for control unit, telephone, mobile phone pre-installation, connection for external audio sources, CD and DVD drives, navigation system (with hard disk) and speech dialogue system are all integrated in the control unit 1 for information electronics - J794- as one unit.

The radio - R- , CD changer - R41- , TV tuner - R78- and digital sound package control unit - J525- are externally linked to the system via the MOST bus. The basic sound systems are directly activated by the radio - R- . The optional digital radio - R147- (DAB) is integrated in the radio - R- .

The following versions of the MMI Infotainment system are available:

MMI minimum equipment

- ◆ Control unit 1 for information electronics - J794- in dash panel contains CD player / SD memory card readers
- ◆ Multimedia system operating unit - E380- in centre console
- ◆ Display unit for front information display and operating unit control unit - J685- in dash panel (centre)
- ◆ CD changer - R41- / optional connection for external audio sources - R199- (interface) in glove box
- ◆ Connection for external audio sources - R199- (AUX IN socket) in centre console storage compartment
- ◆ Digital sound package control unit - J525- in luggage compartment (rear left) - fitted optionally
- ◆ Sound systems: basic/basic plus/Standard/Bang & Olufsen
- ◆ Radio - R- in luggage compartment (rear left)
- ◆ Mobile phone pre-installation (fitted optionally)
- ◆ Bluetooth hands-free system (fitted optionally)

- ◆ Multi-function steering wheel (fitted optionally)

1 - Display unit for front information display and operating unit control unit - J685- in dash panel (centre)

2 - Control unit 1 for information electronics - J794- in dash panel

3 - Multimedia system operating unit - E380- in centre console

4 - MOST bus

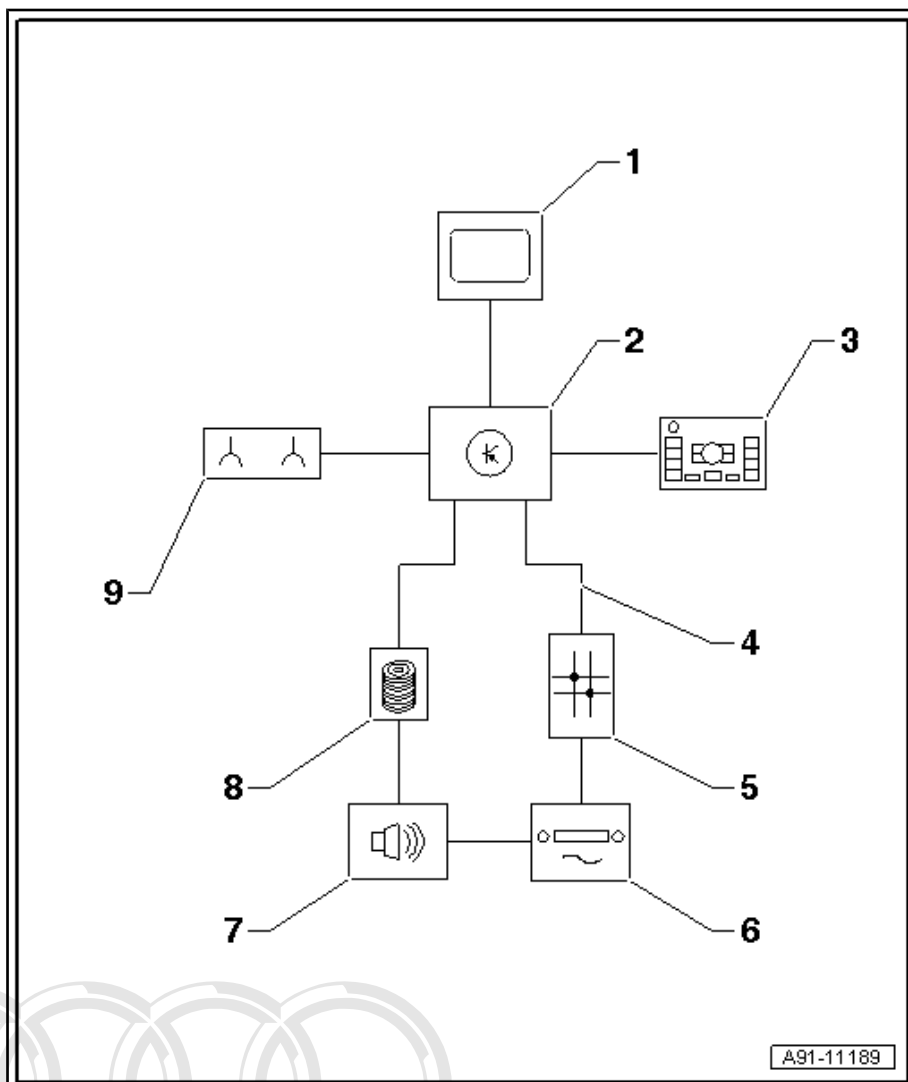
5 - Data bus diagnostic interface - J533- behind centre console (top right)

6 - Radio - R- behind luggage compartment side trim (left-side)

7 - Digital sound package control unit - J525- behind luggage compartment side trim (left-side)

8 - CD changer - R41- in glove box

9 - Connection for external audio sources - R199- (AUX IN socket) in centre console storage compartment



MMI maximum equipment

- ◆ Control unit 1 for information electronics - J794- in dash panel contains CD player / DVD player / navigation system / Bluetooth car phone / speech dialogue system / SD memory card reader
- ◆ Internal hard disk (HD) to store navigation data and MP3 files
- ◆ Multimedia system operating unit - E380- in centre console
- ◆ Display unit for front information display and operating unit control unit - J685- in dash panel (centre)
- ◆ CD changer - R41- / optional connection for external audio sources - R199- (interface) in glove box
- ◆ Connection for external audio sources - R199- (AUX IN socket) in centre console storage compartment
- ◆ Digital sound package control unit - J525- located in luggage compartment (rear left)
- ◆ Sound systems: Standard/Bang & Olufsen
- ◆ Radio - R- in luggage compartment (rear left)

- ◆ TV tuner - R78- in luggage compartment (rear left)
- ◆ Mobile phone pre-installation (fitted optionally)
- ◆ Bluetooth hands-free system (fitted optionally)
- ◆ Multi-function steering wheel (fitted optionally)
- ◆ WLAN (WiFi) - from model year 2012 onwards

1 - Multimedia system operating unit - E380- in centre console

2 - Radio, telephone and navigation system aerial - R52- (roof aerial)

3 - Display unit for front information display and operating unit control unit - J685- in dash panel (centre)

4 - Radio, telephone and navigation system aerial - R52- (roof aerial)

5 - Microphone unit in front roof module - R164- (front left microphone - R140-) in front interior light - W1-

6 - Telephone bracket - R126- in storage box in centre console

7 - Control unit 1 for information electronics - J794- in dash panel

8 - MOST bus

9 - FBAS wire

10 - CD changer - R41- in glove box

11 - TV tuner - R78- behind luggage compartment side trim (left-side)

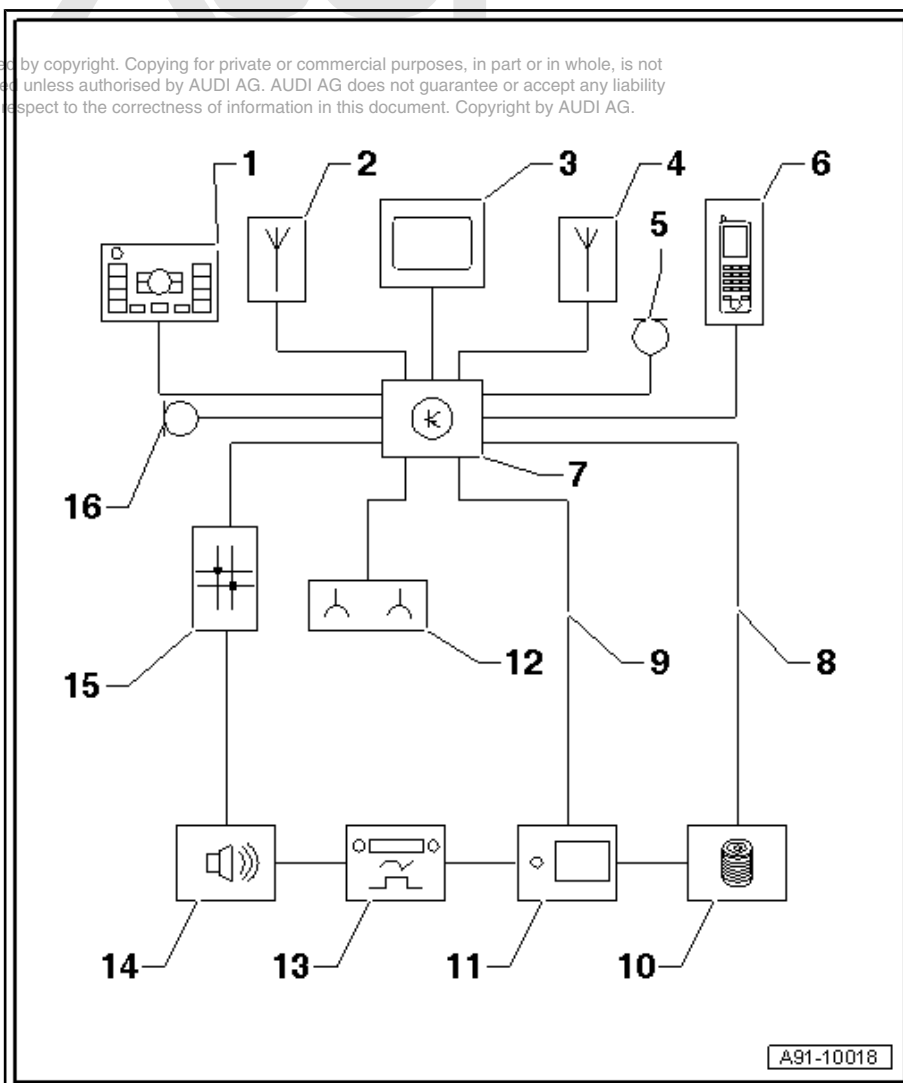
12 - Connection for external audio sources - R199- (AUX IN socket) in centre console storage compartment

13 - Radio - R- behind luggage compartment side trim (left-side)

14 - Digital sound package control unit - J525- behind luggage compartment side trim (left-side)

15 - Data bus diagnostic interface - J533- behind glove box (left-side)

16 - Microphone unit in front roof module - R164- (front right microphone - R141-) in front interior light - W1-



The exchange of data in the MMI systems takes place via the MOST bus.

The connection to other data bus systems in the vehicle is handled by the data bus diagnostic interface - J533- .

Fault finding is performed via the "Guided Fault Finding" ⇒ Vehicle diagnostic tester.

Control unit 1 for information electronics - J794- - layout

The control unit 1 for information electronics - J794- is a third-generation MMI version. Depending on the equipment version, the control unit 1 for information electronics - J794- may contain the following control units from the second generation:

1 - Control unit for front display and information control panel - J523-

2 - CD player - R89-

3 - Navigation system with CD drive control unit - J401-

4 - Chip card reader for telephone - R115- / SD card reader

5 - Speech input control unit - J507-

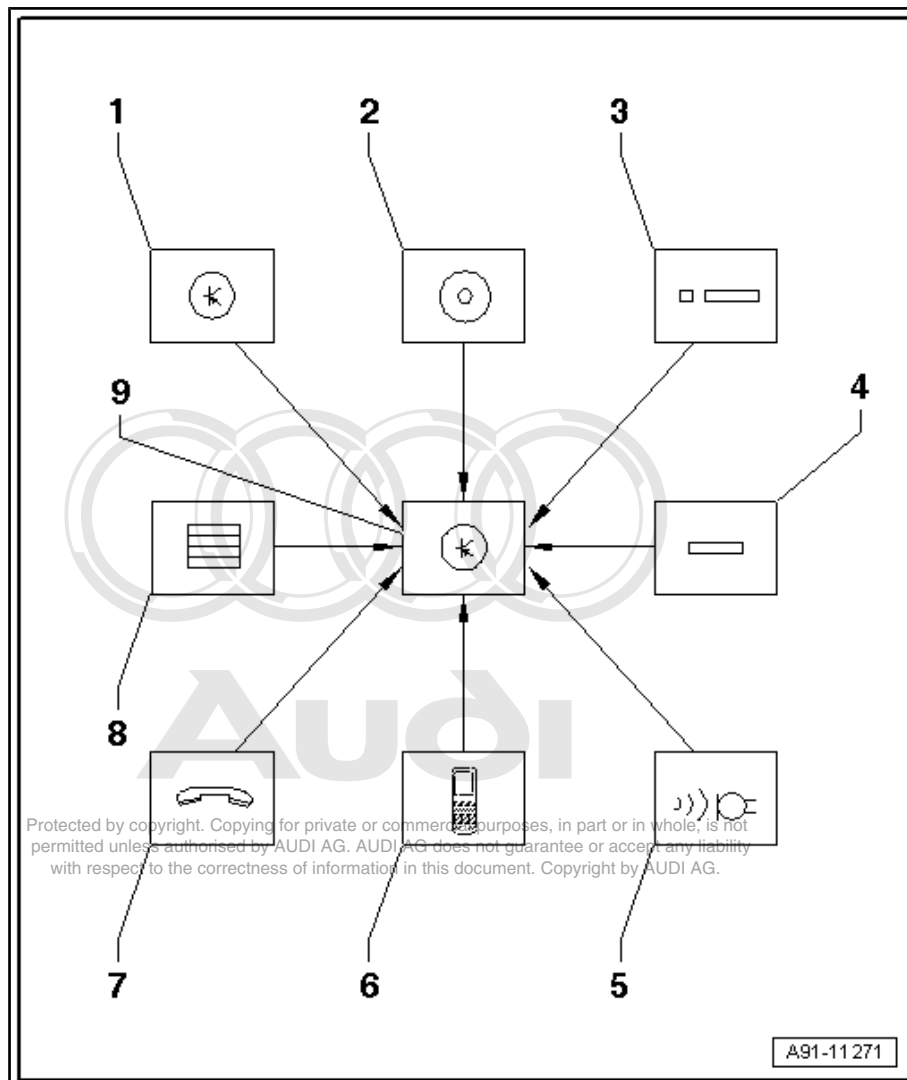
6 - Telephone transmitter and receiver unit - R36- (phone pre-installation)

- Bluetooth hands-free system

7 - Telephone transmitter and receiver unit - R36- (Bluetooth car phone)

8 - Internal hard drive (HD)

9 - Control unit 1 for information electronics - J794-



Radio - R- - layout

Depending on the equipment version, the radio - R- contains the following control units known from the second generation:

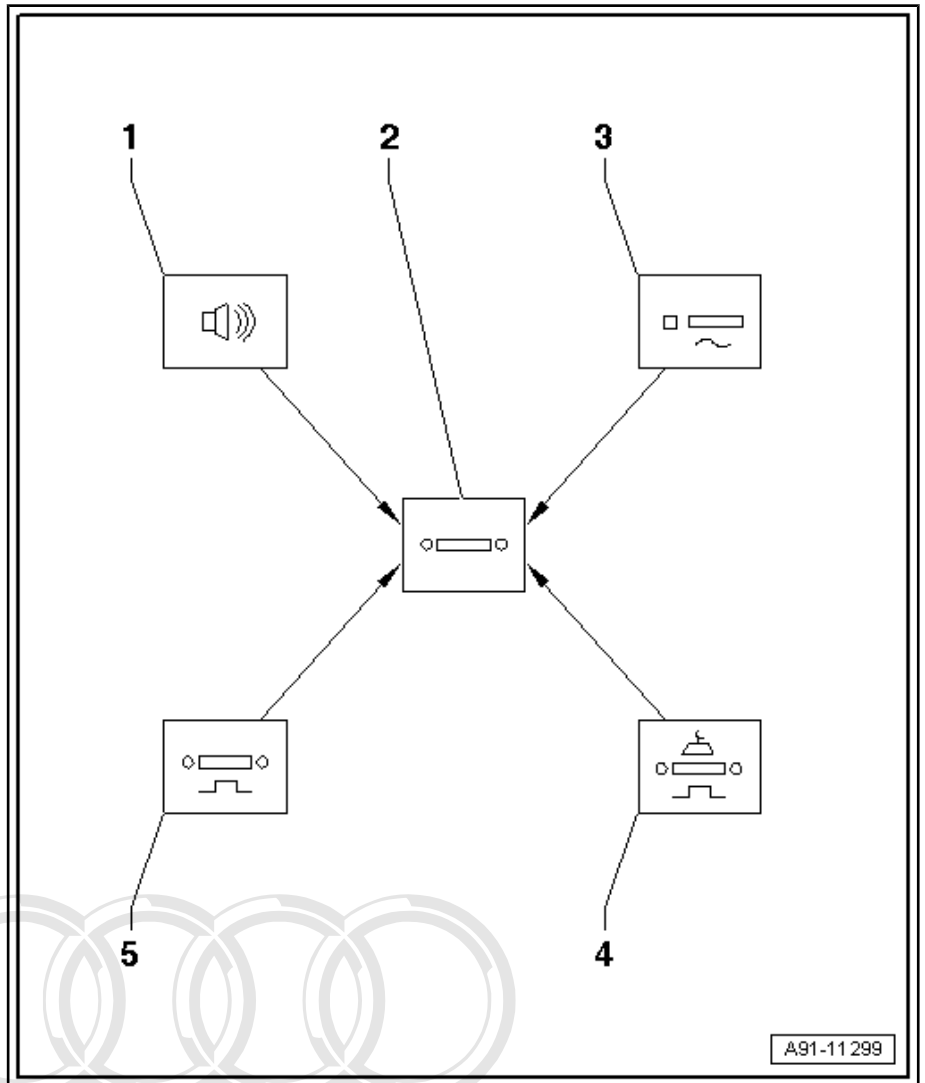
1 - Digital sound package control unit - J525-

2 - Radio - R-

3 - Radio - R- (AM/FM tuner)

4 - Satellite radio - R146- (USA only)

5 - Digital radio - R147- (Europe only)



MOST bus - layout

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1 - Display unit for front information display and operating unit control unit - J685-

2 - Control unit 1 for information electronics - J794-

3 - MOST bus

4 - CD changer - R41-

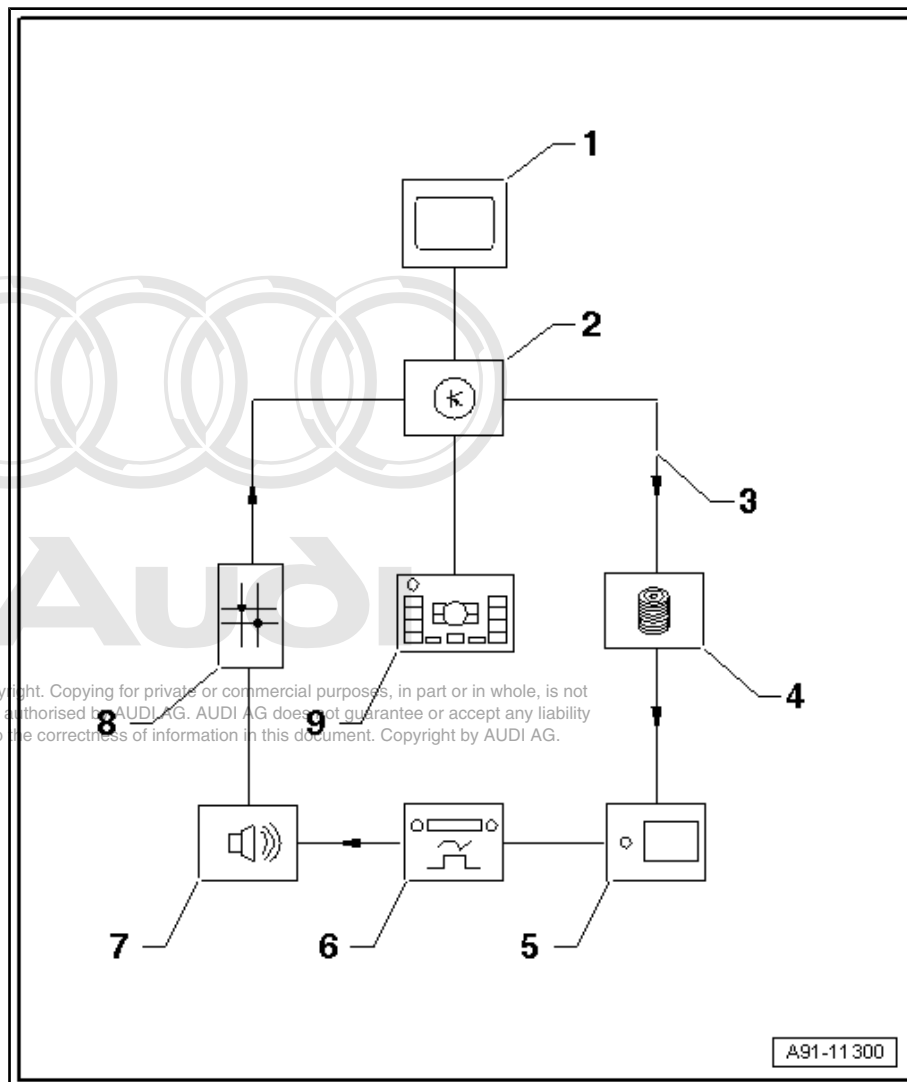
5 - TV tuner - R78-

6 - Radio - R-

7 - Digital sound package control unit - J525-

8 - Data bus diagnostic interface - J533-

9 - Multimedia system operating unit - E380-



Notes on MOST bus

In addition to the CAN bus, the fibre optic data bus "MOST bus" is used.

A "fibre optic cable" is used as the connecting cable. The fibre optic cables are fitted in corrugated tubes for protection.

Renew the complete fibre optic cable whenever possible.

It is important to ensure that the end faces of the connectors do not become dirty.

If connectors are unplugged: fit a protective cap for cable connector - VAS 6223/9- .

When installing the fibre optic cables, be sure to observe the minimum bending radius of 25 mm. Do not crush or kink the fibre optic cable.

Repairing fibre optic cables ⇒ Electrical system; Rep. gr. 97 ;
Fibre optic cables .



1.1.3 Layout - infotainment system, USA, up to week 44/2008

The data for the Infotainment, telephone, navigation and speech control systems, audio players, sound system and data bus diagnostic interface - J533- are transmitted via the fibre optic MOST bus.

The connection to the other data bus systems in the vehicle is handled by the data bus diagnostic interface - J533- .

The central control unit is the control unit for front display and information control panel - J523- . The signals required to display information on the instrument cluster display are transmitted via the MOST bus to the data bus diagnostic interface - J533- and from there via the CAN bus (instrument cluster) to the instrument cluster.

Fault finding is performed via the "Guided Fault Finding" ⇒ Vehicle diagnostic tester.

MMI

- ◆ Control unit for front display and information control panel - J523- behind dash panel
- ◆ Multimedia system operating unit - E380- in centre console
- ◆ Display unit for front information display and operating unit control unit - J685- in dash panel (centre)
- ◆ Radio - R- in luggage compartment (rear left)
- ◆ Satellite radio - R146- in luggage compartment (rear left)
- ◆ Digital sound package control unit - J525- located in luggage compartment (rear left)
- ◆ Sound systems: Standard/Bang & Olufsen
- ◆ CD changer - R41- in dash panel
- ◆ Connection for external audio sources - R199- in glove box/centre console storage compartment
- ◆ Navigation system with CD drive control unit - J401- located in luggage compartment (rear left)
- ◆ Phone pre-installation
- ◆ Multi-function steering wheel



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1 - Display unit for front information display and operating unit control unit - J685- in dash panel (centre)

2 - Control unit for front display and information control panel - J523- behind dash panel

3 - Control unit in dash panel insert - J285- in dash panel

4 - Data bus diagnostic interface - J533- behind glove box (left-side)

5 - Radio - R- behind luggage compartment side trim (left-side)

6 - Satellite radio - R146- behind luggage compartment side trim (left-side)

7 - Navigation system with CD drive control unit - J401- behind luggage compartment side trim (left-side)

8 - Digital sound package control unit - J525- behind luggage compartment side trim (left-side)

9 - Telephone transmitter and receiver unit - R36- beneath front seat (right-side)

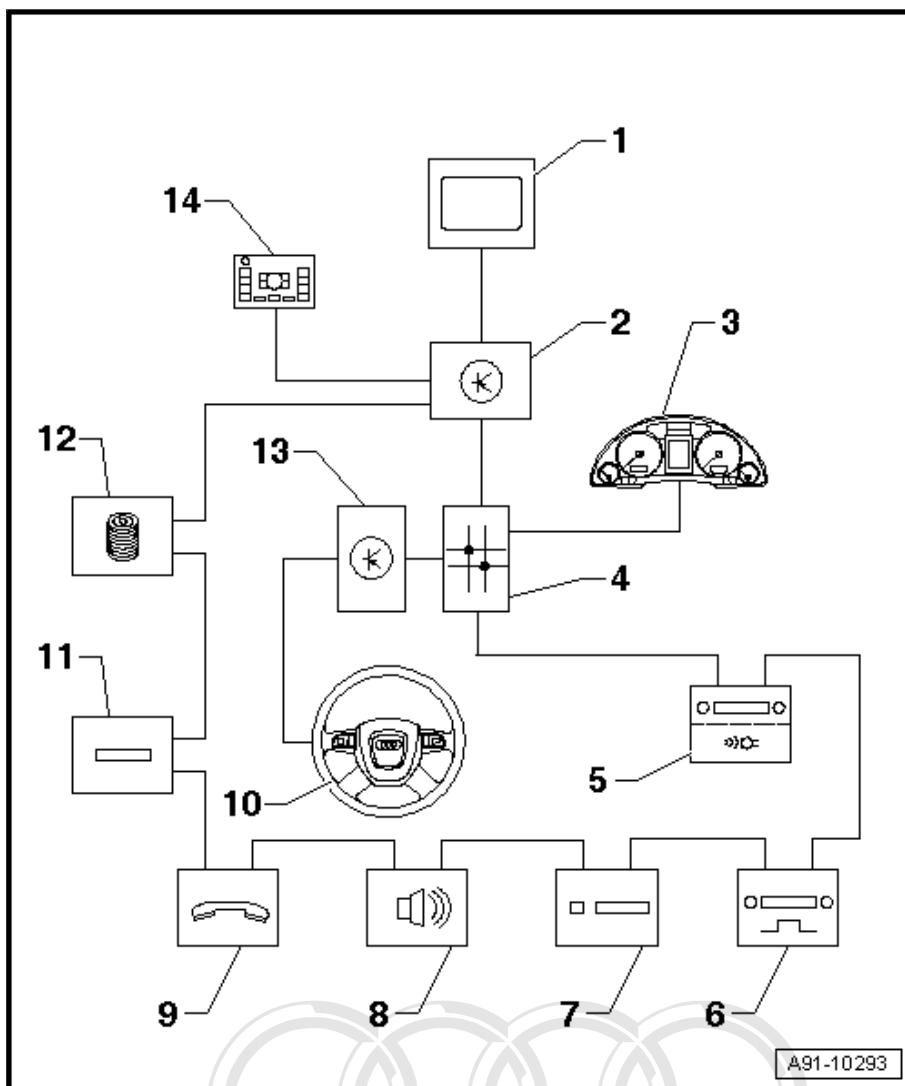
10 - Multi-function steering wheel

11 - Connection for external audio sources - R199- in glove box

12 - CD changer - R41- in dash panel

13 - Steering column electronics control unit - J527- on steering column on steering column switch

14 - Multimedia system operating unit - E380- in centre console



Notes on MOST bus

In addition to the CAN bus, the fibre optic data bus "MOST bus" is used.

A "fibre optic cable" is used as the connecting cable. The fibre optic cables are fitted in corrugated tubes for protection.

Renew the complete fibre optic cable whenever possible.

It is important to ensure that the end faces of the connectors do not become dirty.

If connectors are unplugged: fit a protective cap for cable connector - VAS 6223/9- .

When installing the fibre optic cables, be sure to observe the minimum bending radius of 25 mm. Do not crush or kink the fibre optic cable.

Repairing fibre optic cables ⇒ Electrical system; Rep. gr. 97 ;
Fibre optic cables .



1.1.4 Layout - infotainment system, USA, from week 45/2008 onwards

The MMI fitted from week 45/08 onwards is an enhanced version of the MMI which has been used up to now. The functions for control unit, mobile phone pre-installation, connection for external audio sources, CD and DVD drives, and navigation system (with hard disk) are all integrated in the control unit 1 for information electronics - J794- as one unit.

The radio - R- / CD changer - R41- and the digital sound package control unit - J525- are externally linked to the system via the MOST bus. The basic sound systems are directly activated by the radio - R- . The optional satellite radio - R146- (SDARS) is integrated in the radio - R- .

MMI maximum equipment

- ◆ Control unit 1 for information electronics - J794- in dash panel contains CD player / DVD player / navigation system / mobile phone pre-installation / SD memory card readers
- ◆ Internal hard disk (HD) to store navigation data and MP3 files
- ◆ Multimedia system operating unit - E380- in centre console
- ◆ Display unit for front information display and operating unit control unit - J685- in dash panel (centre)
- ◆ CD changer - R41- / optional connection for external audio sources - R199- (interface) in glove box
- ◆ Connection for external audio sources - R199- (AUX IN socket) in centre console storage compartment
- ◆ Digital sound package control unit - J525- located in luggage compartment (rear left)
- ◆ Sound system: Standard/Bang & Olufsen
- ◆ Radio - R- in luggage compartment (rear left) with optional satellite radio - R146-
- ◆ Multi-function steering wheel (fitted optionally)
- ◆ Bluetooth hands-free system (fitted optionally)
- ◆ WLAN (WiFi) - from model year 2012 onwards

1 - Multimedia system operating unit - E380- in centre console

2 - Radio, telephone and navigation system aerial - R52- (roof aerial)

3 - Display unit for front information display and operating unit control unit - J685- in dash panel (centre)

4 - Radio, telephone and navigation system aerial - R52- (roof aerial)

5 - Microphone unit in front roof module - R164- (front left microphone - R140-) in front interior light - W1-

6 - Not fitted

7 - Control unit 1 for information electronics - J794- in dash panel

8 - MOST bus

9 - FBAS wire

10 - CD changer - R41- in glove box

11 - Not fitted

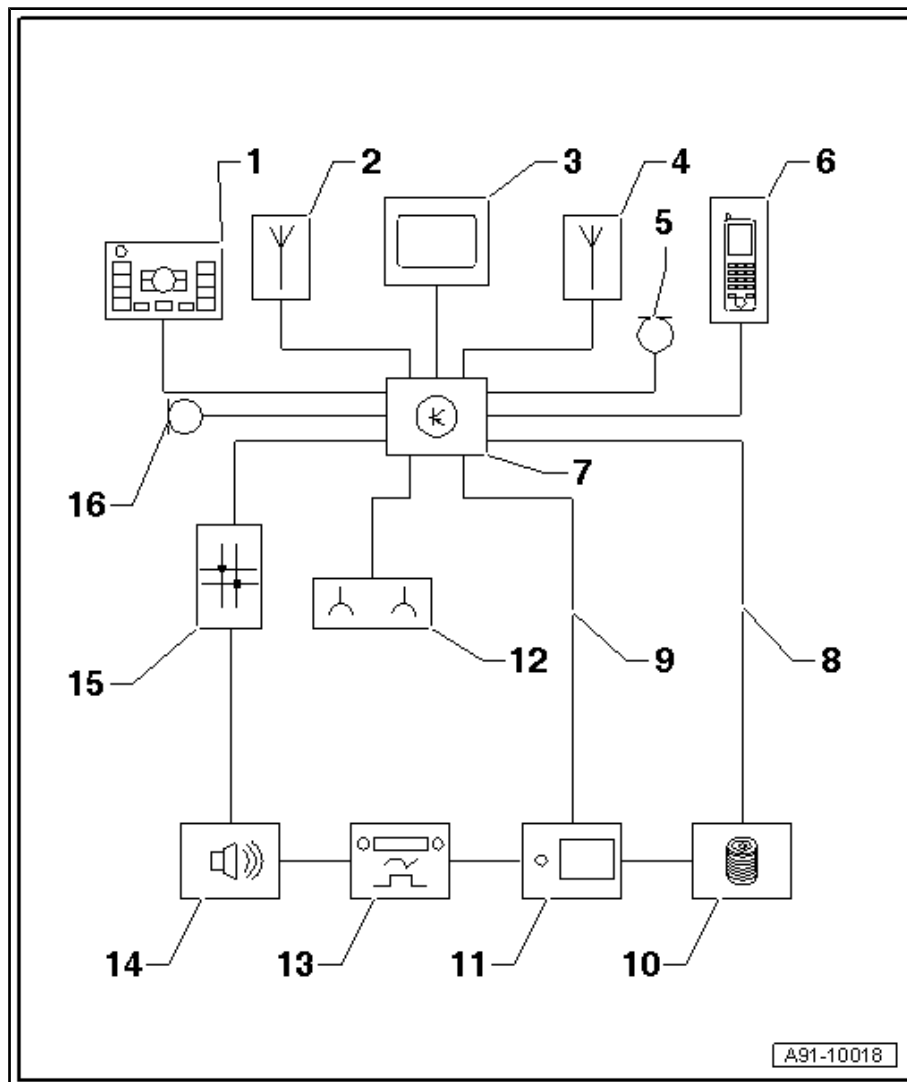
12 - Connection for external audio sources - R199- (AUX IN socket) in centre console storage area compartment

13 - Radio - R- behind luggage compartment side trim (left-side)

14 - Digital sound package control unit - J525- behind luggage compartment side trim (left-side)

15 - Data bus diagnostic interface - J533- behind glove box (left-side)

16 - Microphone unit in front roof module - R164- (front right microphone - R141-) in front interior light - W1-



The exchange of data in the MMI systems takes place via the MOST bus.

The connection to other data bus systems in the vehicle is handled by the data bus diagnostic interface - J533- .

Fault finding is performed via the "Guided Fault Finding" ⇒ Vehicle diagnostic tester.

Control unit 1 for information electronics - J794- - layout

The control unit 1 for information electronics - J794- is a third-generation MMI version. Depending on the equipment version, the control unit 1 for information electronics - J794- may contain the following control units from the second generation:

1 - Control unit for front display and information control panel - J523-

2 - CD player - R89-

3 - Navigation system with CD drive control unit - J401-

4 - SD card reader

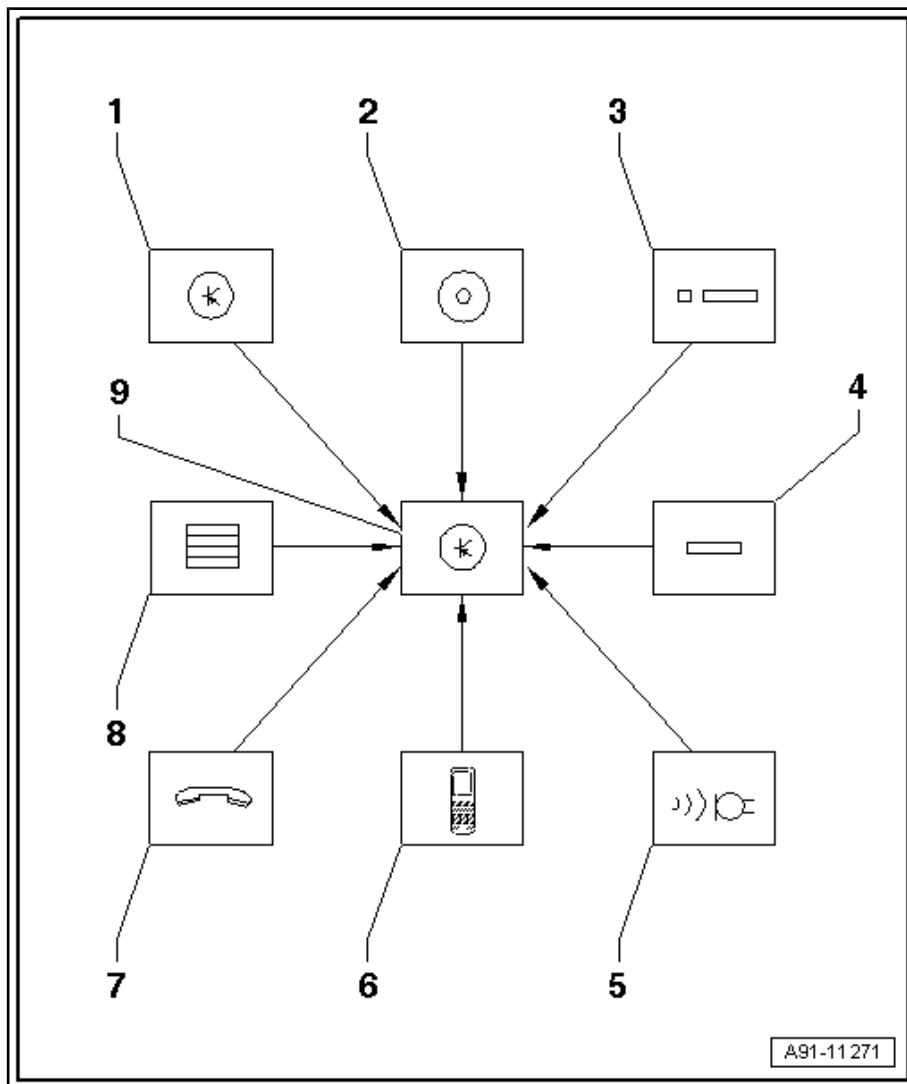
5 - Not fitted

6 - Bluetooth hands-free system

7 - Telephone transmitter and receiver unit - R36- (phone pre-installation)

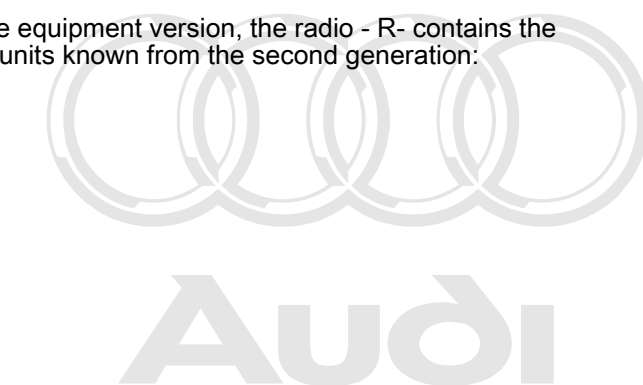
8 - Internal hard drive (HD)

9 - Control unit 1 for information electronics - J794-



Radio - R- - layout

Depending on the equipment version, the radio - R- contains the following control units known from the second generation:



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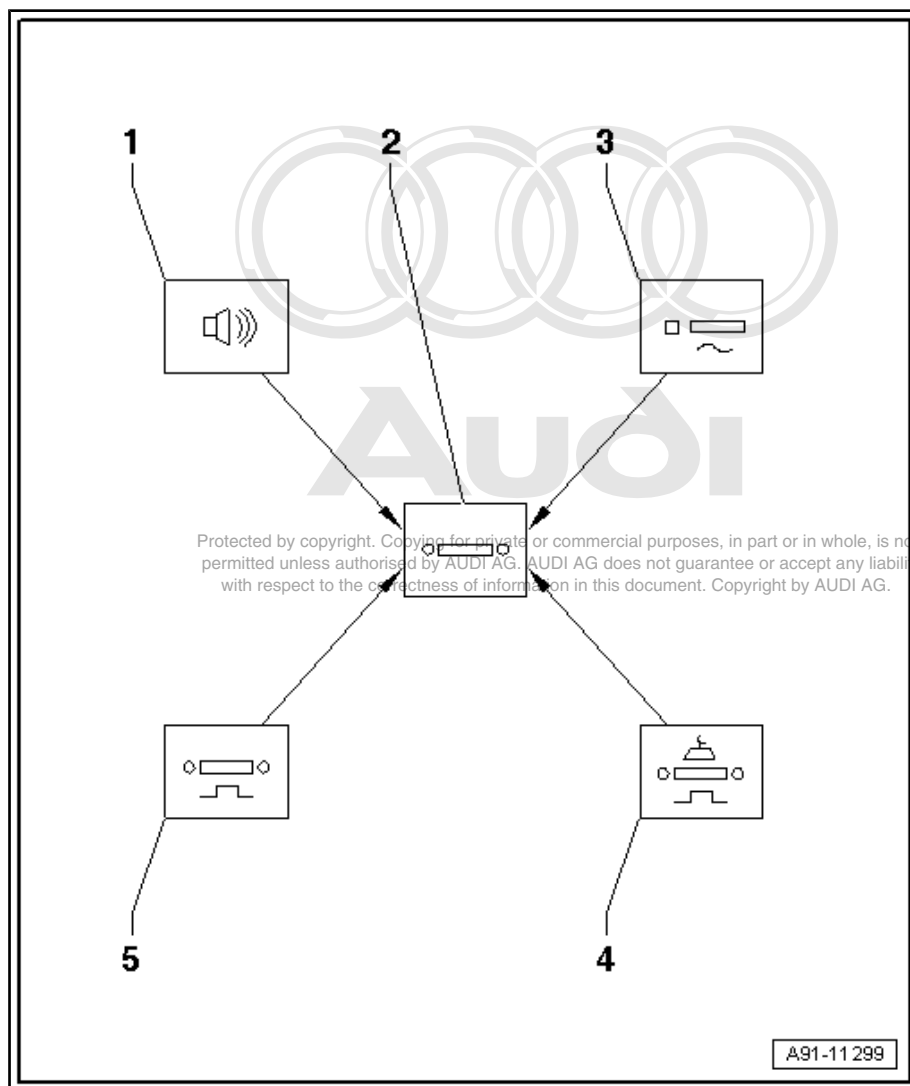
1 - Digital sound package control unit - J525-

2 - Radio - R-

3 - Radio - R- (AM/FM tuner)

4 - Satellite radio - R146-

5 - Not fitted



MOST bus - layout

1 - Display unit for front information display and operating unit control unit - J685-

2 - Control unit 1 for information electronics - J794-

3 - MOST bus

4 - CD changer - R41-

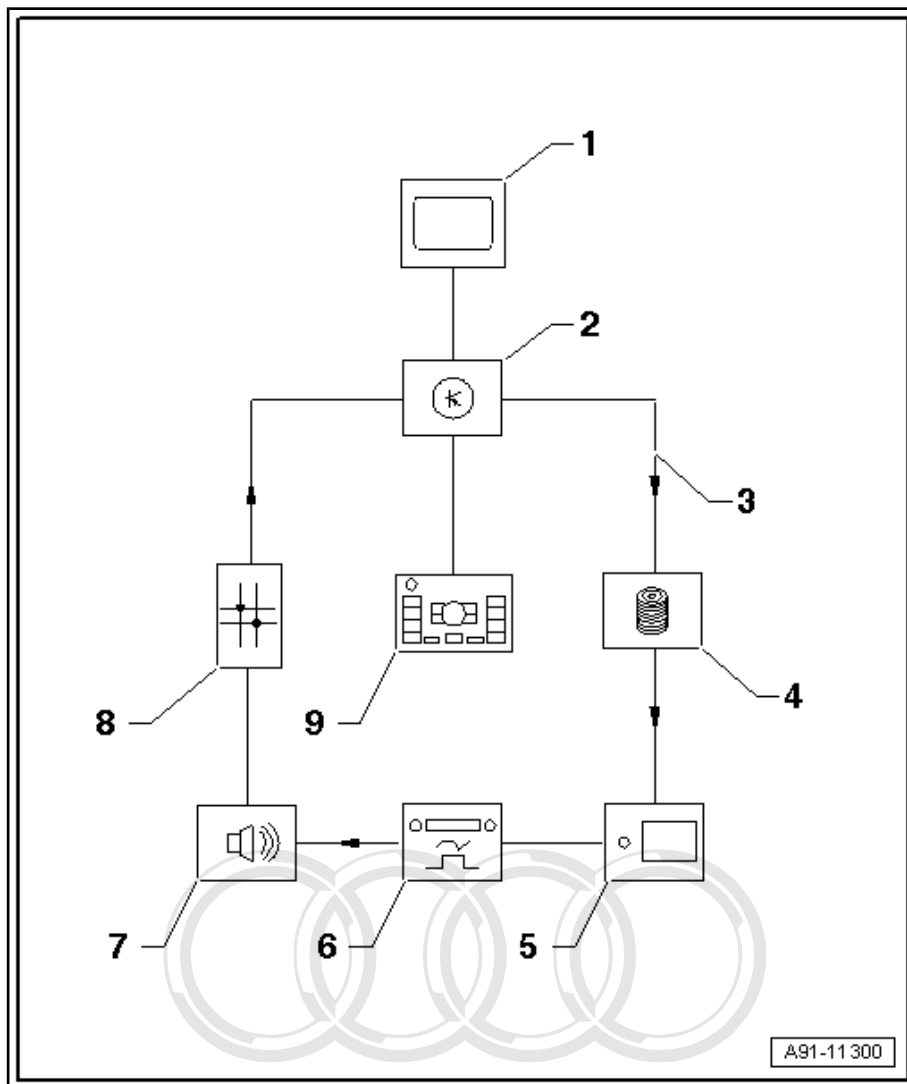
5 - Not fitted

6 - Radio - R-

7 - Digital sound package control unit - J525-

8 - Data bus diagnostic interface - J533-

9 - Multimedia system operating unit - E380-



Notes on MOST bus

In addition to the CAN bus, the fibre optic data bus "MOST bus" is used.

A "fibre optic cable" is used as the connecting cable. The fibre optic cables are fitted in corrugated tubes for protection.

Renew the complete fibre optic cable whenever possible.

It is important to ensure that the end faces of the connectors do not become dirty.

If connectors are unplugged: fit a protective cap for cable connector - VAS 6223/9- .

When installing the fibre optic cables, be sure to observe the minimum bending radius of 25 mm. Do not crush or kink the fibre optic cable.

Repairing fibre optic cables ⇒ Electrical system; Rep. gr. 97 ; Fibre optic cables .



1.1.5 Layout - infotainment system, Japan, up to week 44/2008

The data for the Infotainment, telephone, navigation and speech control systems, audio players, sound system and data bus diagnostic interface - J533- are transmitted via the fibre optic MOST bus.

The connection to the other data bus systems in the vehicle is handled by the data bus diagnostic interface - J533- .

The central control unit is the control unit for front display and information control panel - J523- . The signals required to display information on the instrument cluster display are transmitted via the MOST bus to the data bus diagnostic interface - J533- and from there via the CAN bus (instrument cluster) to the instrument cluster.

Fault finding is performed via the "Guided Fault Finding" ⇒ Vehicle diagnostic tester.

MMI

- ◆ Control unit for front display and information control panel - J523- behind dash panel
- ◆ Multimedia system operating unit - E380- in centre console
- ◆ Display unit for front information display and operating unit control unit - J685- in dash panel (centre)
- ◆ Digital sound package control unit - J525- located in luggage compartment (rear left)
- ◆ Radio - R- in luggage compartment (rear left)
- ◆ Sound systems: Standard/Bang & Olufsen
- ◆ CD changer - R41- in dash panel
- ◆ Connection for external audio sources - R199- in glove box/centre console storage compartment
- ◆ Navigation system with CD drive control unit - J401- located in luggage compartment (rear left)
- ◆ TV tuner - R78- in luggage compartment (rear left)
- ◆ Phone pre-installation
- ◆ Multi-function steering wheel

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1 - Multi-function steering wheel

2 - Steering column electronics control unit - J527- on steering column on steering column switch

3 - TV tuner - R78- behind luggage compartment side trim (left-side)

4 - Navigation system with CD drive control unit - J401- behind luggage compartment side trim (left-side)

5 - Digital sound package control unit - J525- behind luggage compartment side trim (left-side)

6 - Connection for external audio sources - R199- in glove box

7 - CD changer - R41- in dash panel

- Connection for external audio sources - R199- (AUX IN) in centre console storage compartment

8 - Radio - R- behind luggage compartment side trim (left-side)

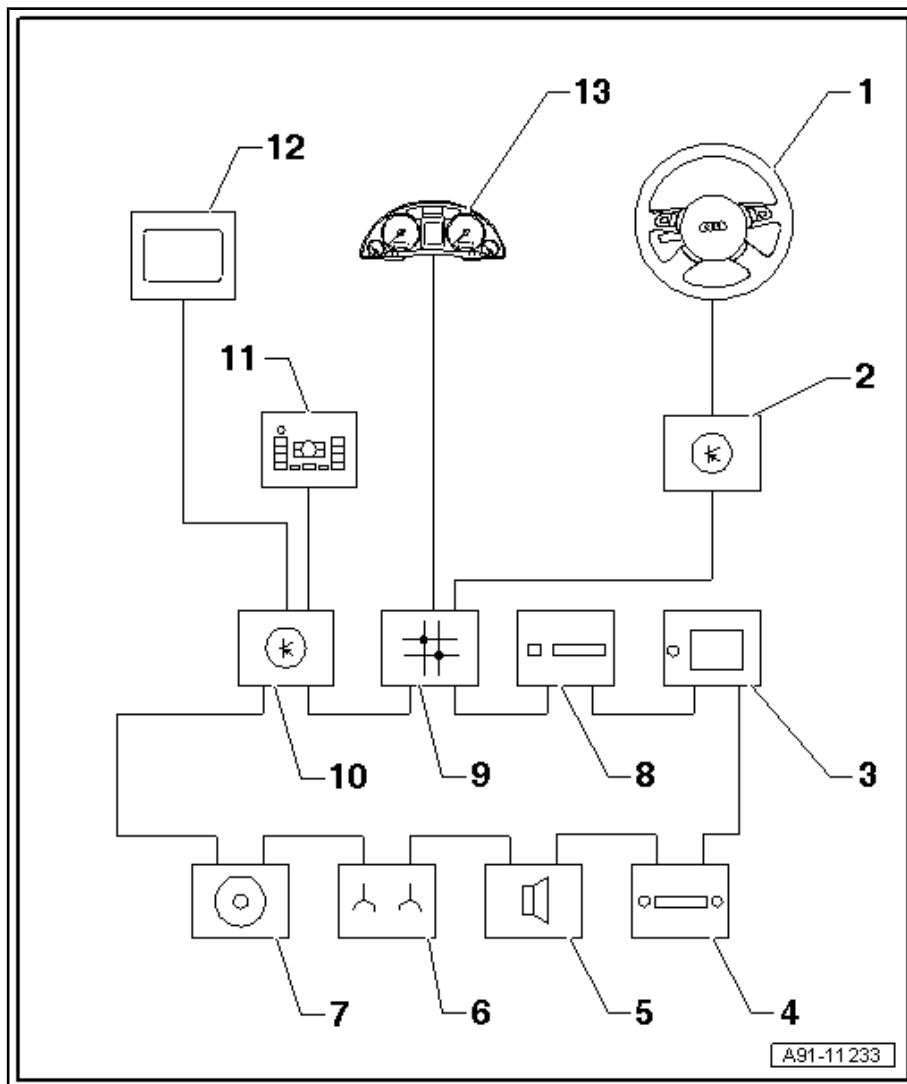
9 - Data bus diagnostic interface - J533- behind glove box (left-side)

10 - Control unit for front display and information control panel - J523- behind centre console (top)

11 - Multimedia system operating unit - E380- in centre console

12 - Display unit for front information display and operating unit control unit - J685- in dash panel (centre)

13 - Control unit in dash panel insert - J285- in dash panel



Notes on MOST bus

In addition to the CAN bus, the fibre optic data bus "MOST bus" is used.

A "fibre optic cable" is used as the connecting cable. The fibre optic cables are fitted in corrugated tubes for protection.

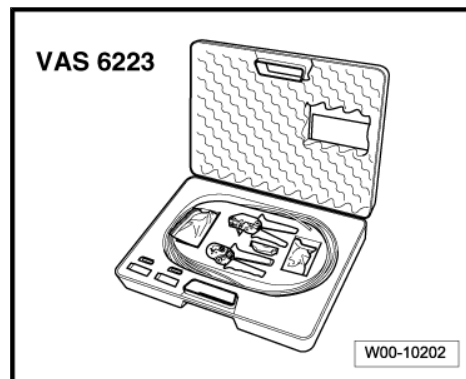
Renew the complete fibre optic cable whenever possible.

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If connectors are unplugged: fit a protective cap for cable connector - VAS 6223/9- .

When installing the fibre optic cables, be sure to observe the minimum bending radius of 25 mm. Do not crush or kink the fibre optic cable.

Repairing fibre optic cables ⇒ Electrical system; Rep. gr. 97 ;
Fibre optic cables .



1.1.6 Layout - infotainment system, Japan, from week 45/2008 onwards

The MMI fitted from week 45/08 onwards is an enhanced version of the MMI which has been used up to now. The functions for control unit, telephone, mobile phone pre-installation, connection for external audio sources, CD and DVD drives, and navigation system (with hard disk) are all integrated in the control unit 1 for information electronics - J794- as one unit.

MMI maximum equipment

- ◆ Control unit 1 for information electronics - J794- in dash panel contains CD player / DVD player / navigation system / SD memory card readers
- ◆ Internal hard disk (HD) to store navigation data and MP3 files
- ◆ Multimedia system operating unit - E380- in centre console
- ◆ Display unit for front information display and operating unit control unit - J685- in dash panel (centre)
- ◆ CD changer - R41- / optional connection for external audio sources - R199- (interface) in glove box
- ◆ Connection for external audio sources - R199- (AUX IN socket) in centre console storage compartment
- ◆ Digital sound package control unit - J525- located in luggage compartment (rear left)
- ◆ Sound system: Standard/Bang & Olufsen
- ◆ Radio - R- in luggage compartment (rear left)
- ◆ TV tuner - R78- in luggage compartment (rear left)
- ◆ Multi-function steering wheel (fitted optionally)
- ◆ Bluetooth hands-free system (fitted optionally)
- ◆ WLAN (WiFi) - from model year 2012 onwards

1 - Multimedia system operating unit - E380- in centre console

2 - Radio, telephone and navigation system aerial - R52- (roof aerial)

3 - Display unit for front information display and operating unit control unit - J685- in dash panel (centre)

4 - Not fitted

5 - Microphone unit in front roof module - R164- (front left microphone - R140-) in front interior light - W1-

6 - Not fitted

7 - Control unit 1 for information electronics - J794- in dash panel

8 - MOST bus

9 - FBAS wire

10 - CD changer - R41- in glove box

11 - TV tuner - R78- behind luggage compartment side trim (left-side)

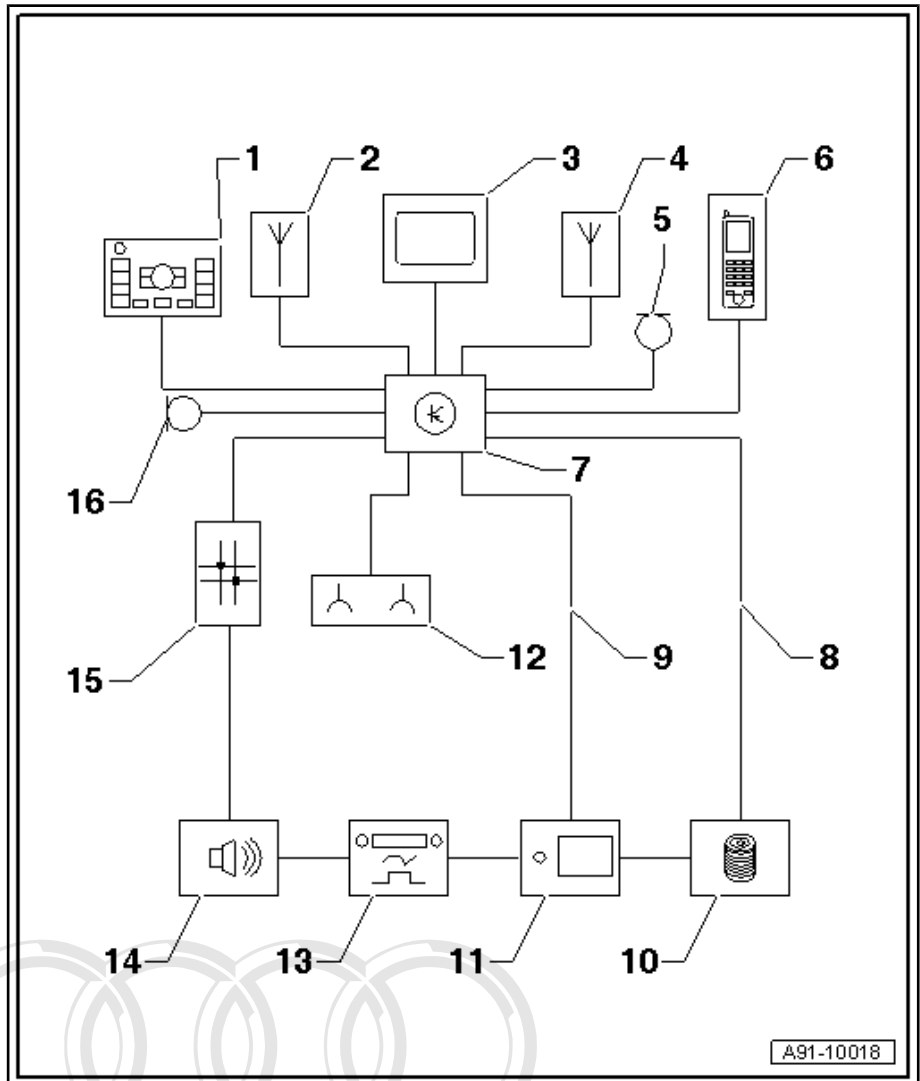
12 - Connection for external audio sources - R199- (AUX IN socket) in centre console storage compartment

13 - Radio - R- behind luggage compartment side trim (left-side)

14 - Digital sound package control unit - J525- behind luggage compartment side trim (left-side)

15 - Data bus diagnostic interface - J533- behind glove box (left-side)

16 - Not fitted



The exchange of data in the MMI systems takes place via the MOST bus.

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The connection to other data bus systems in the vehicle is handled by the data bus diagnostic interface - J533- .

Fault finding is performed via the "Guided Fault Finding" ⇒ Vehicle diagnostic tester.

Control unit 1 for information electronics - J794- - layout

The control unit 1 for information electronics - J794- is a third-generation MMI version. Depending on the equipment version, the control unit 1 for information electronics - J794- may contain the following control units from the second generation:

1 - Control unit for front display and information control panel - J523-

2 - CD player - R89-

3 - Navigation system with CD drive control unit - J401-

4 - SD card reader

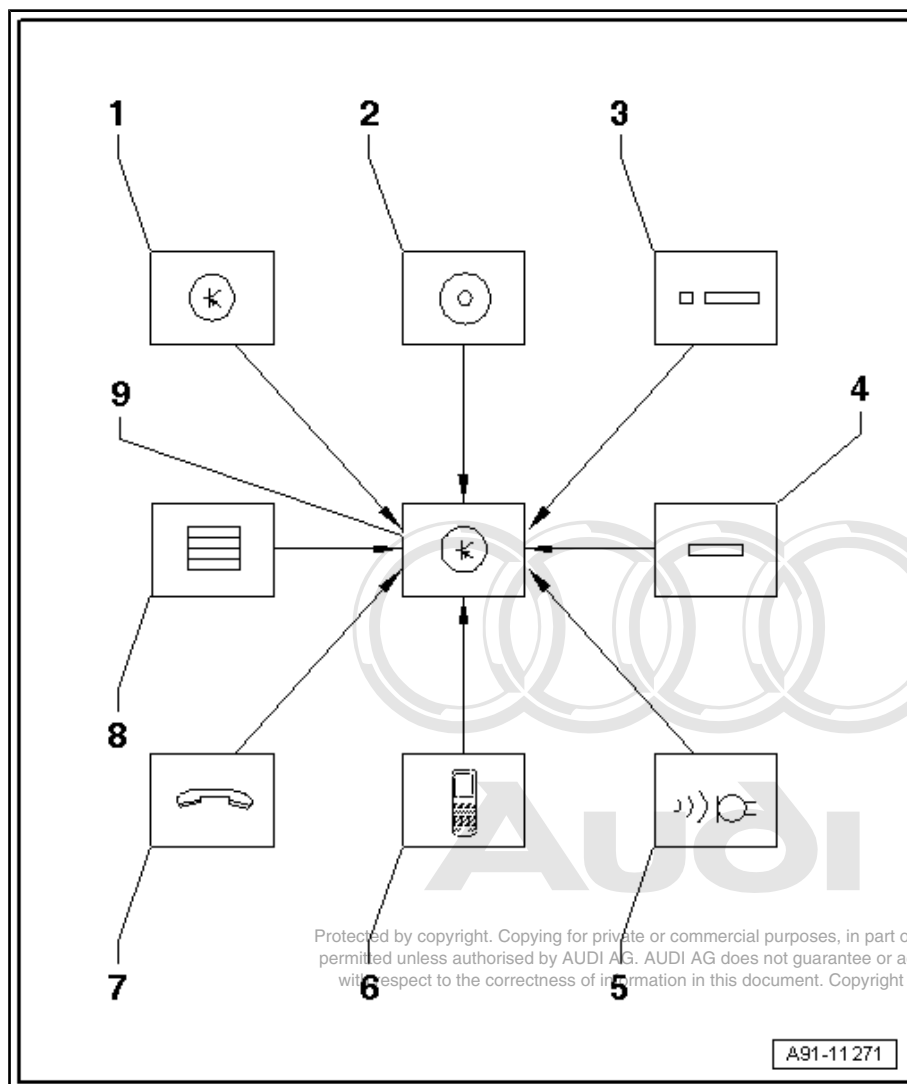
5 - Not fitted

6 - Bluetooth hands-free system

7 - Not fitted

8 - Internal hard drive (HD)

9 - Control unit 1 for information electronics - J794-



Radio - R- - layout

Depending on the equipment version, the radio - R- contains the following control units known from the second generation:

1 - Digital sound package control unit - J525-

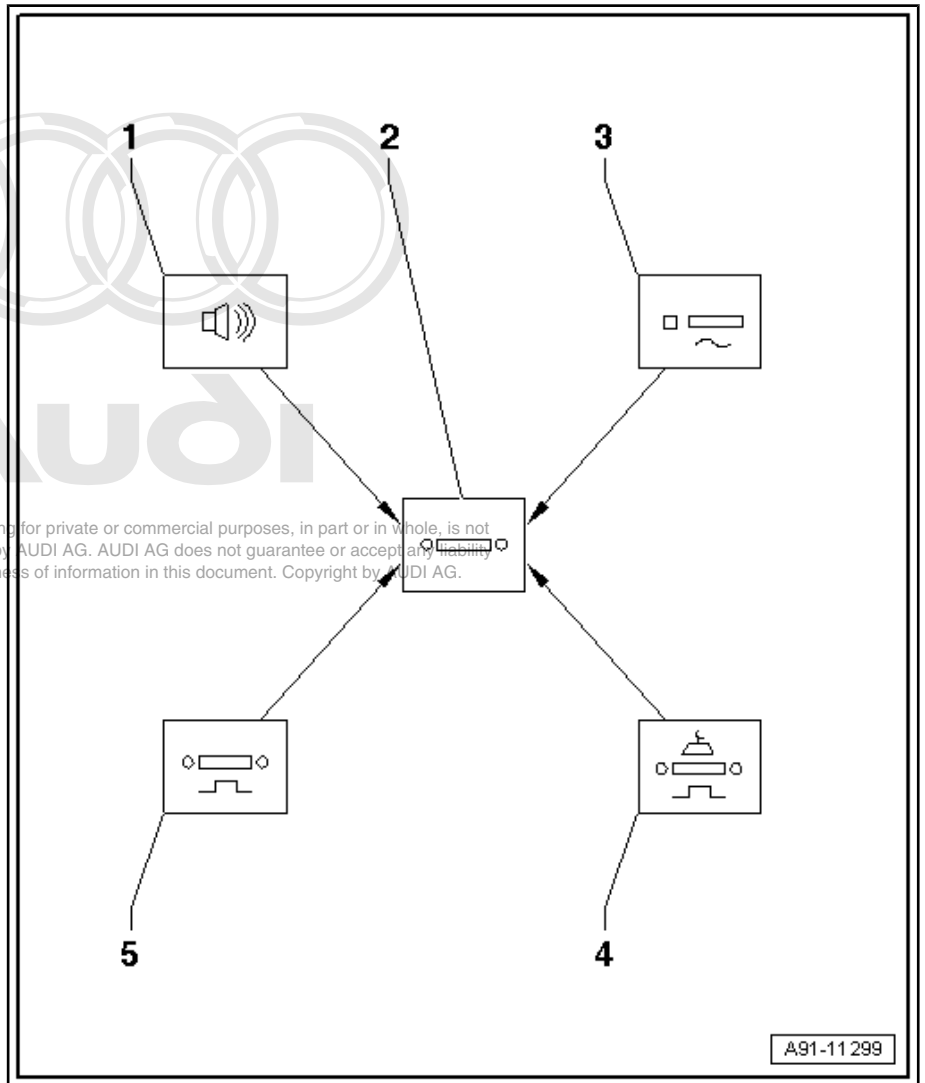
2 - Radio - R-

3 - Radio - R- (AM/FM tuner)

4 - Not fitted

5 - Not fitted

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MOST bus - layout

1 - Display unit for front information display and operating unit control unit - J685-

2 - Control unit 1 for information electronics - J794-

3 - MOST bus

4 - CD changer - R41-

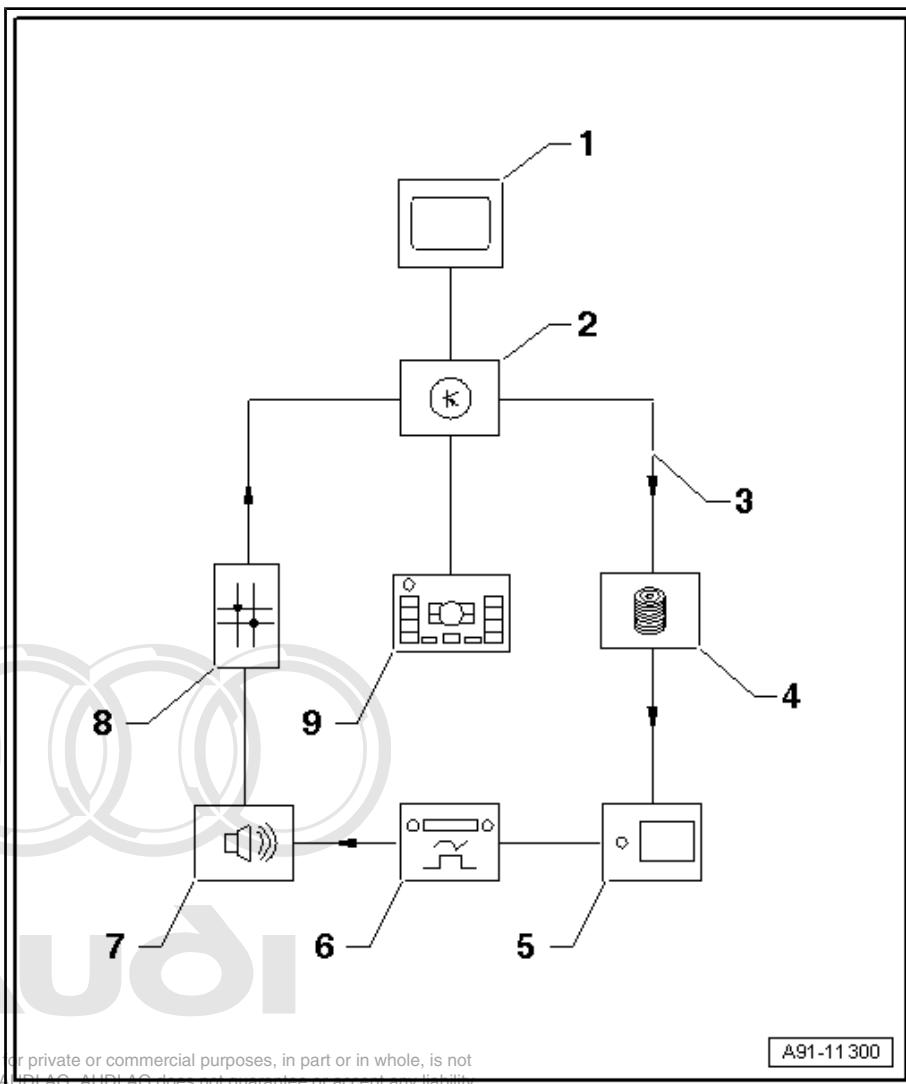
5 - TV tuner - R78-

6 - Radio - R-

7 - Digital sound package control unit - J525-

8 - Data bus diagnostic interface - J533-

9 - Multimedia system operating unit - E380-



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Notes on MOST bus

In addition to the CAN bus, the fibre optic data bus "MOST bus" is used.

A "fibre optic cable" is used as the connecting cable. The fibre optic cables are fitted in corrugated tubes for protection.

Renew the complete fibre optic cable whenever possible.

It is important to ensure that the end faces of the connectors do not become dirty.

If connectors are unplugged: fit a protective cap for cable connector - VAS 6223/9- .

When installing the fibre optic cables, be sure to observe the minimum bending radius of 25 mm. Do not crush or kink the fibre optic cable.

Repairing fibre optic cables ⇒ Electrical system; Rep. gr. 97 ;
Fibre optic cables .



1.2 Overview of fitting locations - infotainment system

⇒ [“1.2.1 Overview of fitting locations - infotainment system, basic/basic plus navigation system”, page 25](#)

⇒ [“1.2.2 Overview of fitting locations - infotainment system, up to week 44/2008”, page 26](#)

⇒ [“1.2.3 Overview of fitting locations - infotainment system, from week 45/2008 onwards”, page 27](#)

⇒ [“1.2.4 Overview of fitting locations - infotainment system, USA, up to week 44/2008”, page 28](#)

⇒ [“1.2.5 Overview of fitting locations - infotainment system, USA, from week 45/2008 onwards”, page 29](#)

⇒ [“1.2.6 Overview of fitting locations - infotainment system, Japan, up to week 44/2008”, page 30](#)

⇒ [“1.2.7 Overview of fitting locations - infotainment system, Japan, from week 45/2008 onwards”, page 31](#)

1.2.1 Overview of fitting locations - infotainment system, basic/basic plus navigation system

1 - Radio release tool - T10057-

2 - Control unit for front display and information control panel - J523-

- ☐ Connectors
⇒ [page 38](#)
- ☐ Removing and installing
⇒ [page 32](#)

3 - Multimedia system operating unit - E380-

- ☐ Connectors
⇒ [page 53](#)
- ☐ Removing and installing
⇒ [page 36](#)

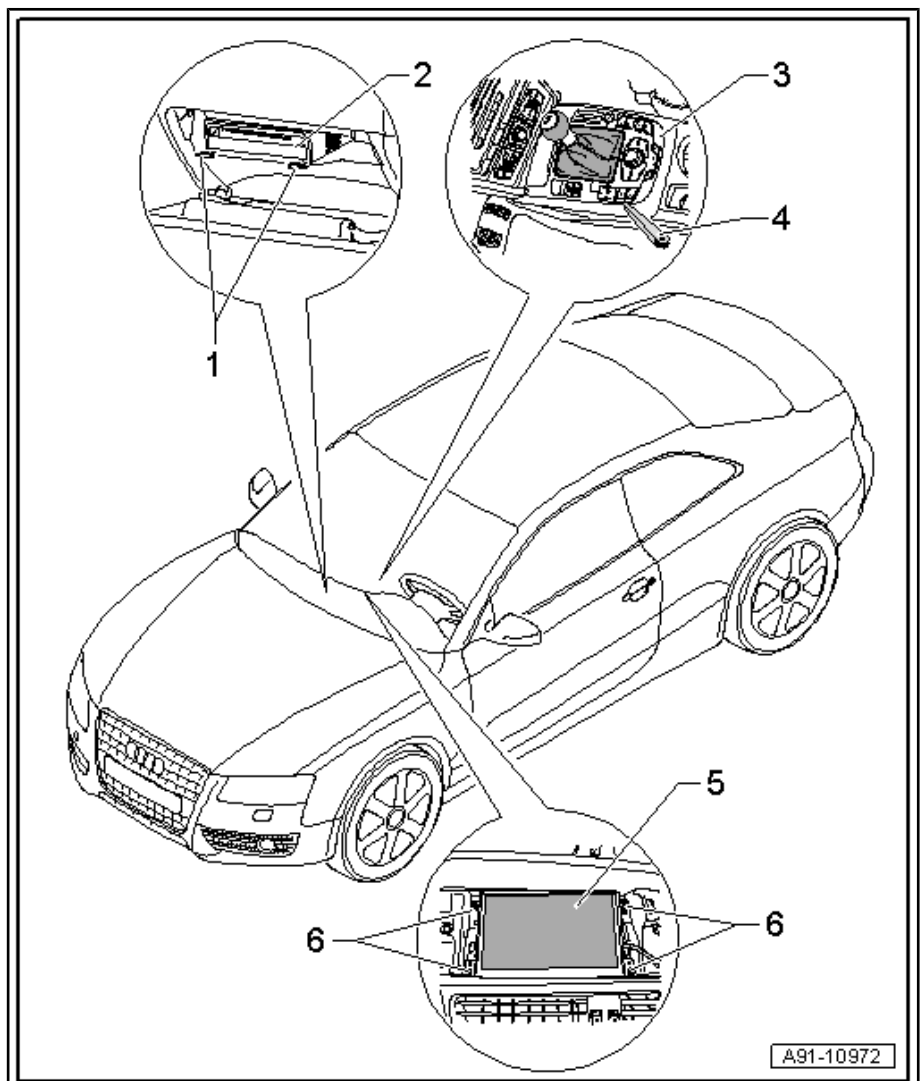
4 - Removal wedge - 3409-

5 - Display unit for front information display and operating unit control unit - J685-

- ☐ Connectors for MMI basic
⇒ [page 50](#)
- ☐ Removing and installing
⇒ [page 32](#)

6 - Bolt

- ☐ 2 Nm



1.2.2 Overview of fitting locations - infotainment system, up to week 44/2008

1 - Radio release tool - T10057-

2 - Connection for external audio sources - R199-

- ☐ Connectors (MMI) ➤ [page 264](#)
- ☐ Removing and installing ➤ [page 266](#)

3 - Bolt

- ☐ 2 Nm

- Bolt, bracket

- ☐ 2 Nm

4 - Control unit for front display and information control panel - J523-

- ☐ Connectors (up to week 44/2008) ➤ [page 40](#)
- ☐ Removing and installing (up to week 44/2008) ➤ [page 33](#)

5 - Multimedia system operating unit - E380-

- ☐ Connectors ➤ [page 53](#)
- ☐ Removing and installing ➤ [page 36](#)

6 - Removal wedge - 3409-

7 - Bolt (2x)

- ☐ 4.5 Nm

8 - Radio - R-

- ☐ Connectors (up to week 44/2008) ➤ [page 121](#)
- ☐ Removing and installing (up to week 44/2008) ➤ [page 108](#)

9 - Rack

10 - Digital radio - R147-

- ☐ Connectors (up to week 44/2008) ➤ [page 124](#)
- ☐ Removing and installing (up to week 44/2008) ➤ [page 111](#)

11 - Bolt

- ☐ 4.5 Nm

12 - Bolt

- ☐ 2 Nm

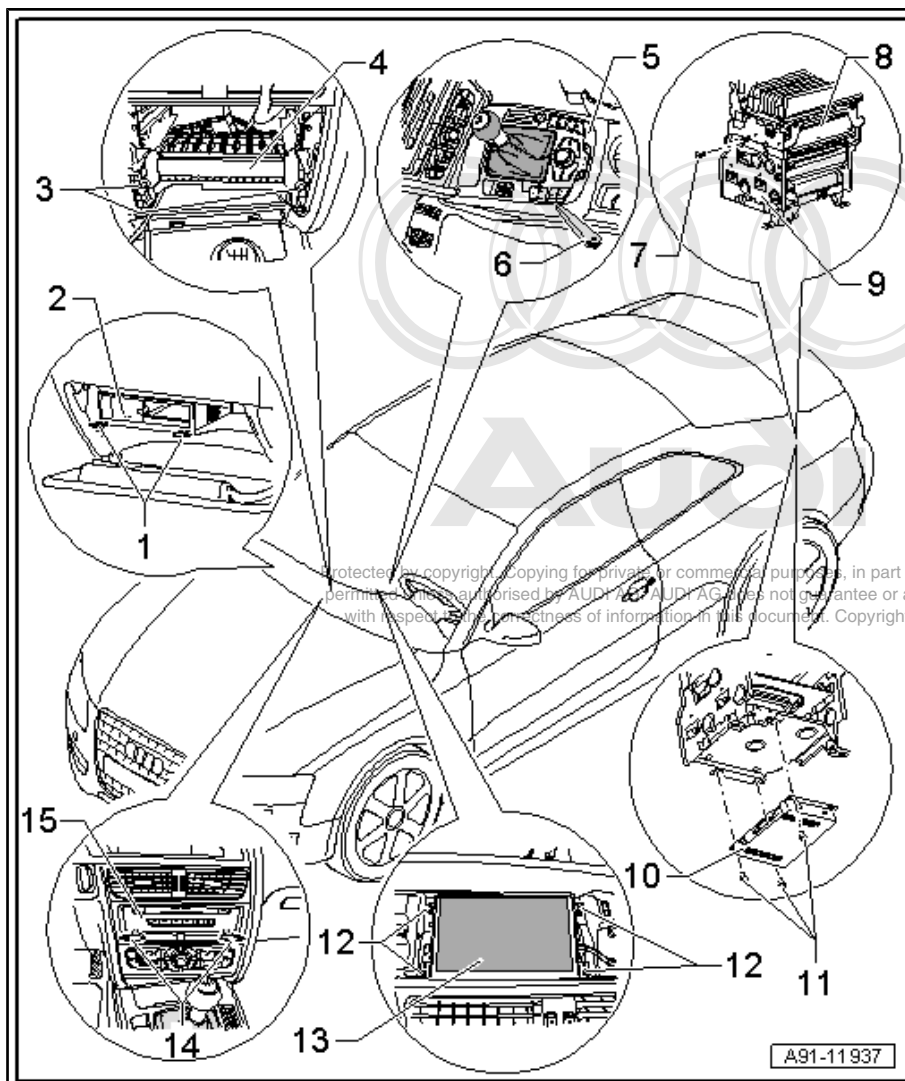
13 - Display unit for front information display and operating unit control unit - J685-

- ☐ Connectors, MMI (up to week 44/2008) ➤ [page 51](#)
- ☐ Removing and installing ➤ [page 32](#)

14 - Radio release tool - T10057-

15 - CD changer - R41-

- ☐ Connectors (MMI) ➤ [page 130](#)



- ❑ Removing and installing (up to week 44/2008) ⇒ [page 130](#)

1.2.3 Overview of fitting locations - infotainment system, from week 45/2008 onwards

1 - Radio release tool - T10057-

2 - Control unit 1 for information electronics - J794-

- ❑ Connectors (from week 45/2008 onwards) ⇒ [page 44](#)
- ❑ Removing and installing ⇒ [page 35](#)

3 - Multimedia system operating unit - E380-

- ❑ Connectors ⇒ [page 53](#)
- ❑ Removing and installing ⇒ [page 36](#)

4 - Removal wedge - 3409-

5 - Nut

- ❑ 3.5 Nm

6 - Bracket

7 - Bolt

- ❑ 3.5 Nm

8 - Nut

- ❑ 3.5 Nm

9 - Radio - R-

- ❑ Connectors (from week 45/2008 onwards) ⇒ [page 122](#)
- ❑ Removing and installing (from week 45/2008 onwards) ⇒ [page 109](#)

10 - Bolt

- ❑ 2 Nm

11 - Display unit for front information display and operating unit control unit - J685-

- ❑ Connectors, MMI (from week 45/2008 onwards) ⇒ [page 52](#)
- ❑ Removing and installing ⇒ [page 32](#)

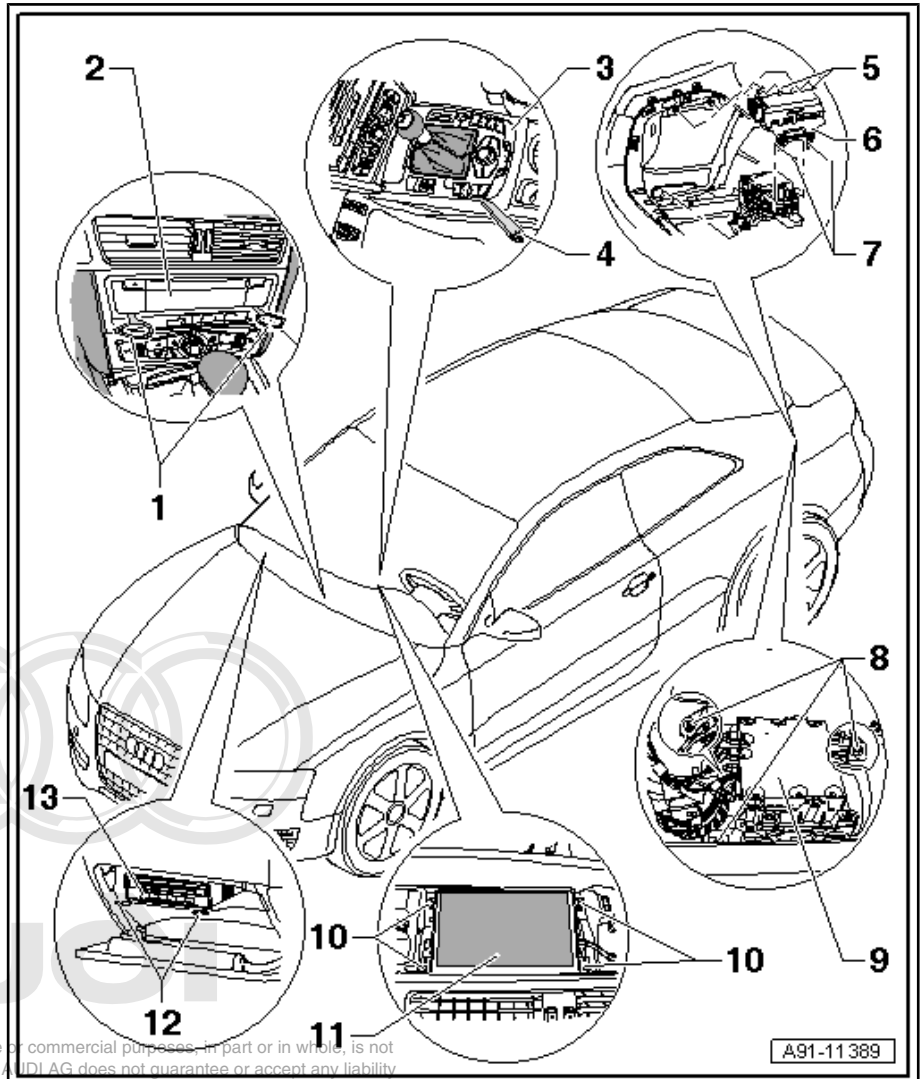
12 - Radio release tool - T10057-

13 - CD changer - R41-

- ❑ Connectors (MMI) ⇒ [page 130](#)
- ❑ Removing and installing (from week 45/2008 onwards) ⇒ [page 132](#)

- Connection for external audio sources - R199- (interface)

- ❑ Connectors ⇒ [page 265](#)
- ❑ Removing and installing ⇒ [page 268](#)



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1.2.4 Overview of fitting locations - infotainment system, USA, up to week 44/2008

1 - Radio release tool - T10057-

2 - Connection for external audio sources - R199-

- ☐ Connectors (MMI)
⇒ [page 264](#)
- ☐ Removing and installing
⇒ [page 266](#)

- Connection for external audio sources - R199- (AUX IN)

- ☐ Connectors (AUX IN)
⇒ [page 266](#)
- ☐ Removing and installing (AUX IN) ⇒ [page 268](#)

3 - Bolt

- ☐ 2 Nm

- Bolt, bracket

- ☐ 2 Nm

4 - Control unit for front display and information control panel - J523-

- ☐ Connectors (up to week 44/2008) ⇒ [page 40](#)
- ☐ Removing and installing (up to week 44/2008)
⇒ [page 33](#)

5 - Multimedia system operating unit - E380-

- ☐ Connectors
⇒ [page 53](#)
- ☐ Removing and installing
⇒ [page 36](#)

6 - Removal wedge - 3409-

7 - Satellite radio - R146-

- ☐ Connectors (up to week 44/2008) ⇒ [page 125](#)
- ☐ Removing and installing (up to week 44/2008) ⇒ [page 112](#)

8 - Radio - R-

- ☐ Connectors (up to week 44/2008) ⇒ [page 121](#)
- ☐ Removing and installing (up to week 44/2008) ⇒ [page 108](#)

9 - Rack

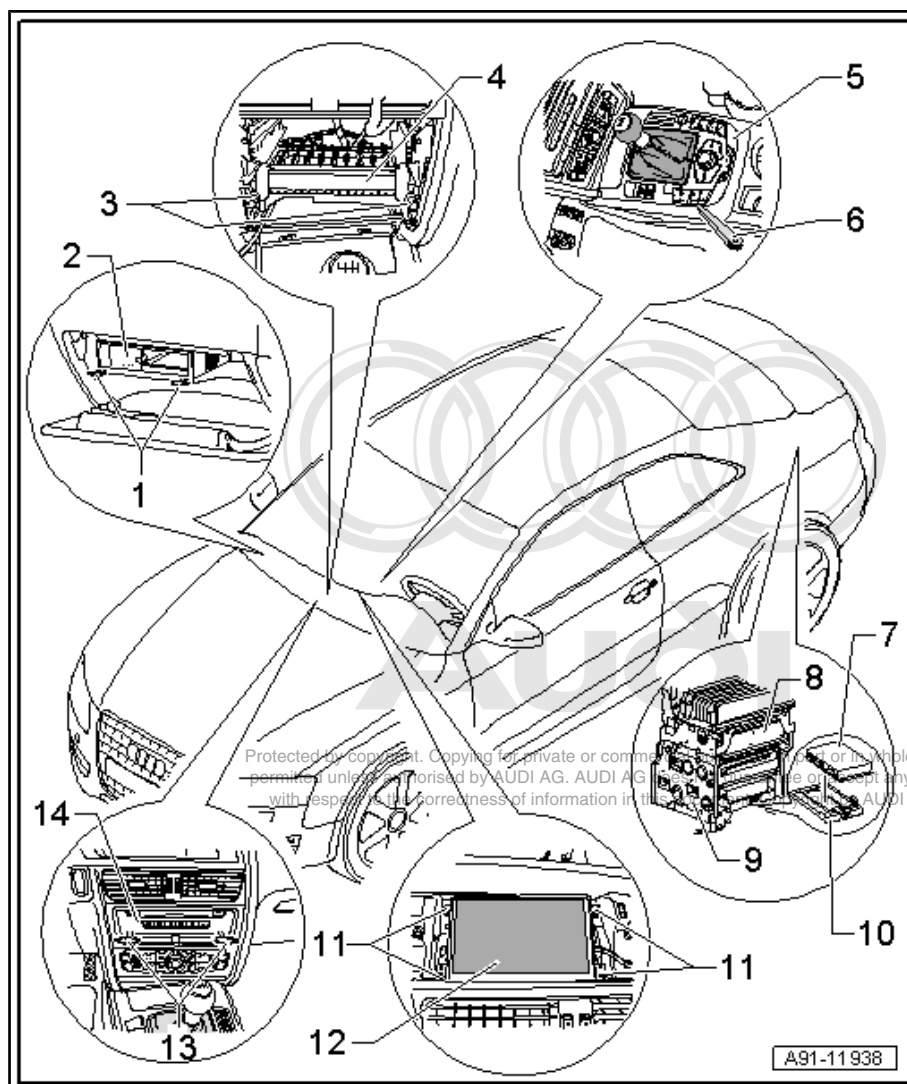
10 - Bracket

11 - Bolt

- ☐ 2 Nm

12 - Display unit for front information display and operating unit control unit - J685-

- ☐ Connectors, MMI (up to week 44/2008) ⇒ [page 51](#)
- ☐ Removing and installing ⇒ [page 32](#)



13 - Radio release tool - T10057-

14 - CD changer - R41-

- ☐ Connectors (MMI) ➔ [page 130](#)
- ☐ Removing and installing (up to week 44/2008) ➔ [page 130](#)

1.2.5 Overview of fitting locations - infotainment system, USA, from week 45/2008 onwards

1 - Radio release tool - T10057-

2 - Control unit 1 for information electronics - J794-

- ☐ Connectors (from week 45/2008 onwards) ➔ [page 44](#)
- ☐ Removing and installing ➔ [page 35](#)

3 - Multimedia system operating unit - E380-

- ☐ Connectors ➔ [page 53](#)
- ☐ Removing and installing ➔ [page 36](#)

4 - Removal wedge - 3409-

5 - Nut

- ☐ 3.5 Nm

6 - Bracket

7 - Bolt

- ☐ 3.5 Nm

8 - Nut

- ☐ 3.5 Nm

9 - Radio - R-

- ☐ Connectors (from week 45/2008 onwards) ➔ [page 126](#)
- ☐ Removing and installing (from week 45/2008 onwards) ➔ [page 109](#)

10 - Bolt

- ☐ 2 Nm

11 - Display unit for front information display and operating unit control unit - J685-

- ☐ Connectors, MMI (from week 45/2008 onwards) ➔ [page 52](#)
- ☐ Removing and installing ➔ [page 32](#)

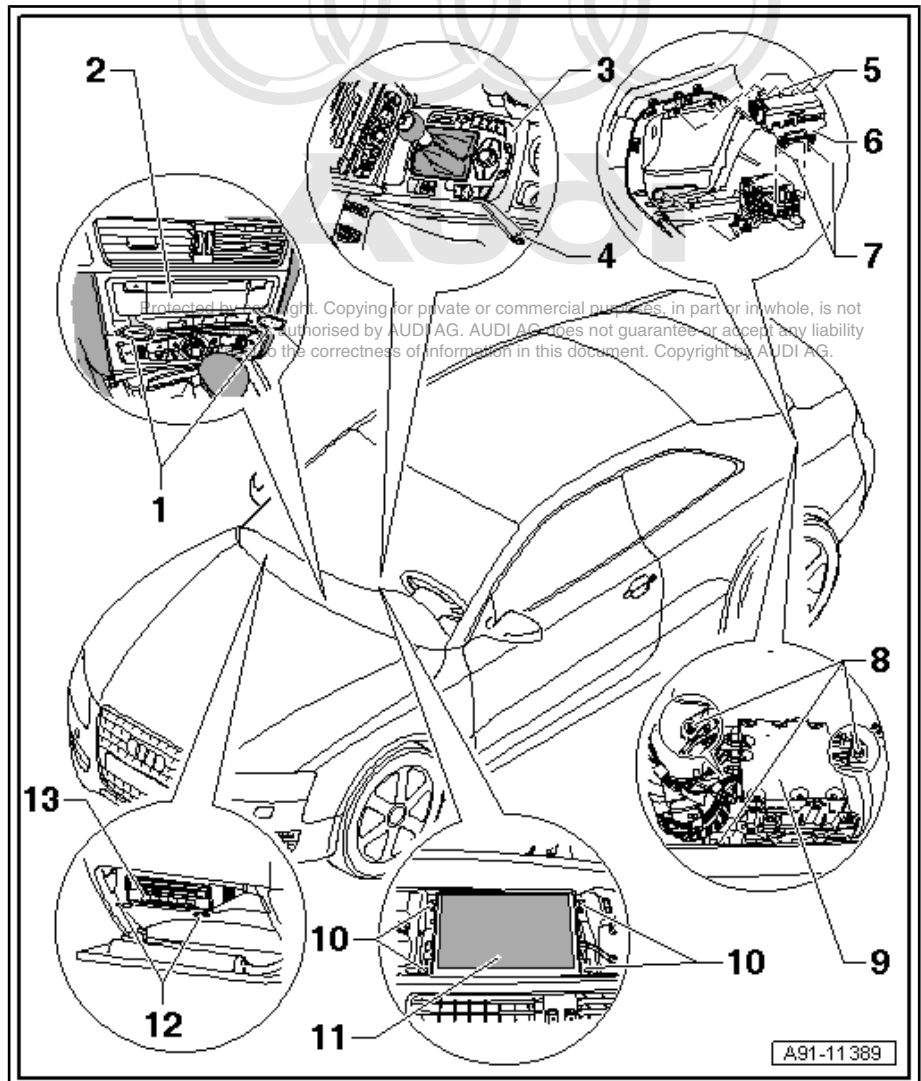
12 - Radio release tool - T10057-

13 - CD changer - R41-

- ☐ Connectors (MMI) ➔ [page 130](#)
- ☐ Removing and installing (from week 45/2008 onwards) ➔ [page 132](#)

- Connection for external audio sources - R199- (interface)

- ☐ Connectors ➔ [page 265](#)



- ❑ Removing and installing ➤ [page 268](#)

1.2.6 Overview of fitting locations - infotainment system, Japan, up to week 44/2008

1 - Radio release tool - T10057-

2 - Connection for external audio sources - R199-

- ❑ Connectors (MMI) ➤ [page 264](#)
- ❑ Removing and installing ➤ [page 266](#)

3 - Bolt

- ❑ 2 Nm

- Bolt, bracket

- ❑ 2 Nm

4 - Control unit for front display and information control panel - J523-

- ❑ Connectors (up to week 44/2008) ➤ [page 41](#)
- ❑ Removing and installing (up to week 44/2008) ➤ [page 33](#)

5 - Multimedia system operating unit - E380-

- ❑ Connectors ➤ [page 53](#)
- ❑ Removing and installing ➤ [page 36](#)

6 - Removal wedge - 3409-

7 - Radio - R-

- ❑ Connectors (up to week 44/2008) ➤ [page 121](#)
- ❑ Removing and installing (up to week 44/2008) ➤ [page 108](#)

8 - Bolt (2x)

- ❑ 4.5 Nm

9 - Rack

10 - Bolt

- ❑ 2 Nm

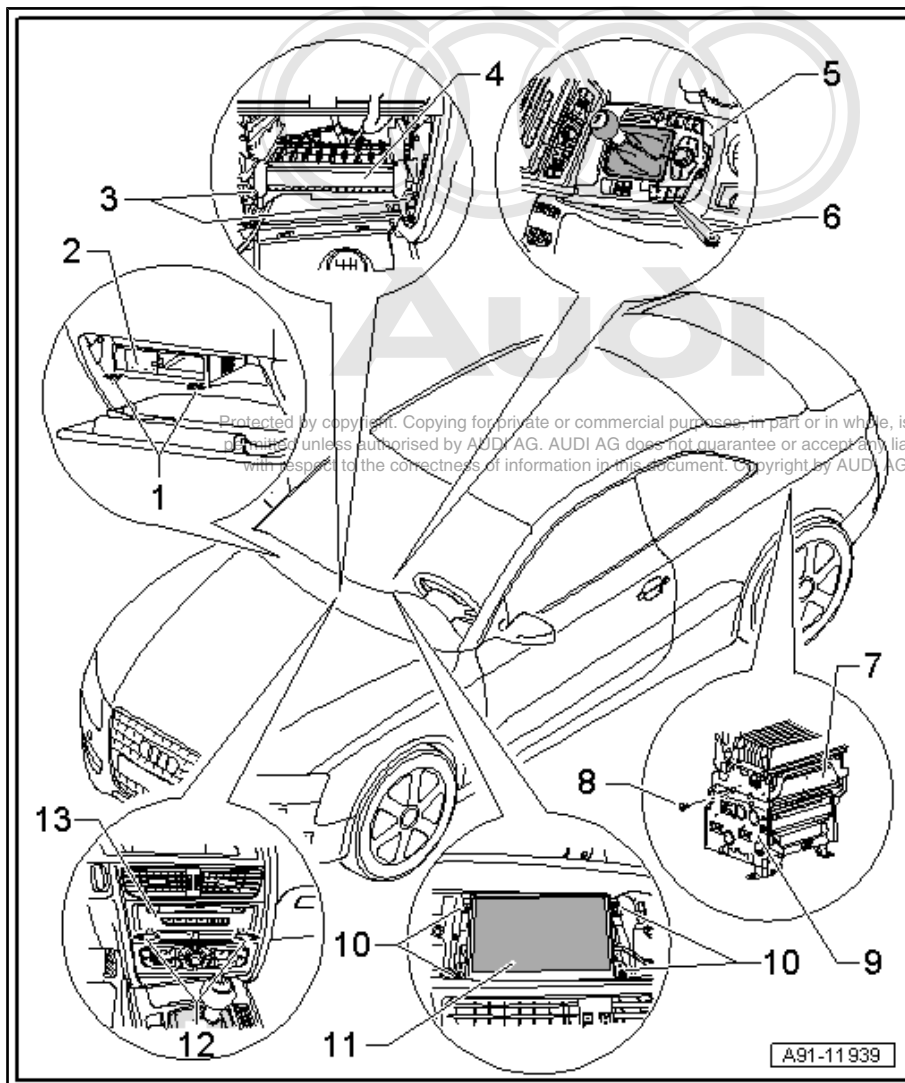
11 - Display unit for front information display and operating unit control unit - J685-

- ❑ Connectors, MMI (up to week 44/2008) ➤ [page 51](#)
- ❑ Removing and installing ➤ [page 32](#)

12 - Radio release tool - T10057-

13 - CD changer - R41-

- ❑ Connectors (MMI) ➤ [page 130](#)
- ❑ Removing and installing (up to week 44/2008) ➤ [page 130](#)



1.2.7 Overview of fitting locations - infotainment system, Japan, from week 45/2008 onwards

1 - Radio release tool - T10057-

2 - Control unit 1 for information electronics - J794-

- ☐ Connectors (from week 45/2008 onwards) ➔ [page 47](#)
- ☐ Removing and installing ➔ [page 35](#)

3 - Multimedia system operating unit - E380-

- ☐ Connectors ➔ [page 53](#)
- ☐ Removing and installing ➔ [page 36](#)

4 - Removal wedge - 3409-

5 - Nut

- ☐ 3.5 Nm

6 - Bracket

7 - Bolt

- ☐ 3.5 Nm

8 - Nut

- ☐ 3.5 Nm

9 - Radio - R-

- ☐ Connectors (from week 45/2008 onwards) ➔ [page 128](#)
- ☐ Removing and installing (from week 45/2008 onwards) ➔ [page 109](#)

10 - Bolt

- ☐ 2 Nm

11 - Display unit for front information display and operating unit control unit - J685-

- ☐ Connectors, MMI (from week 45/2008 onwards) ➔ [page 52](#)
- ☐ Removing and installing ➔ [page 32](#)

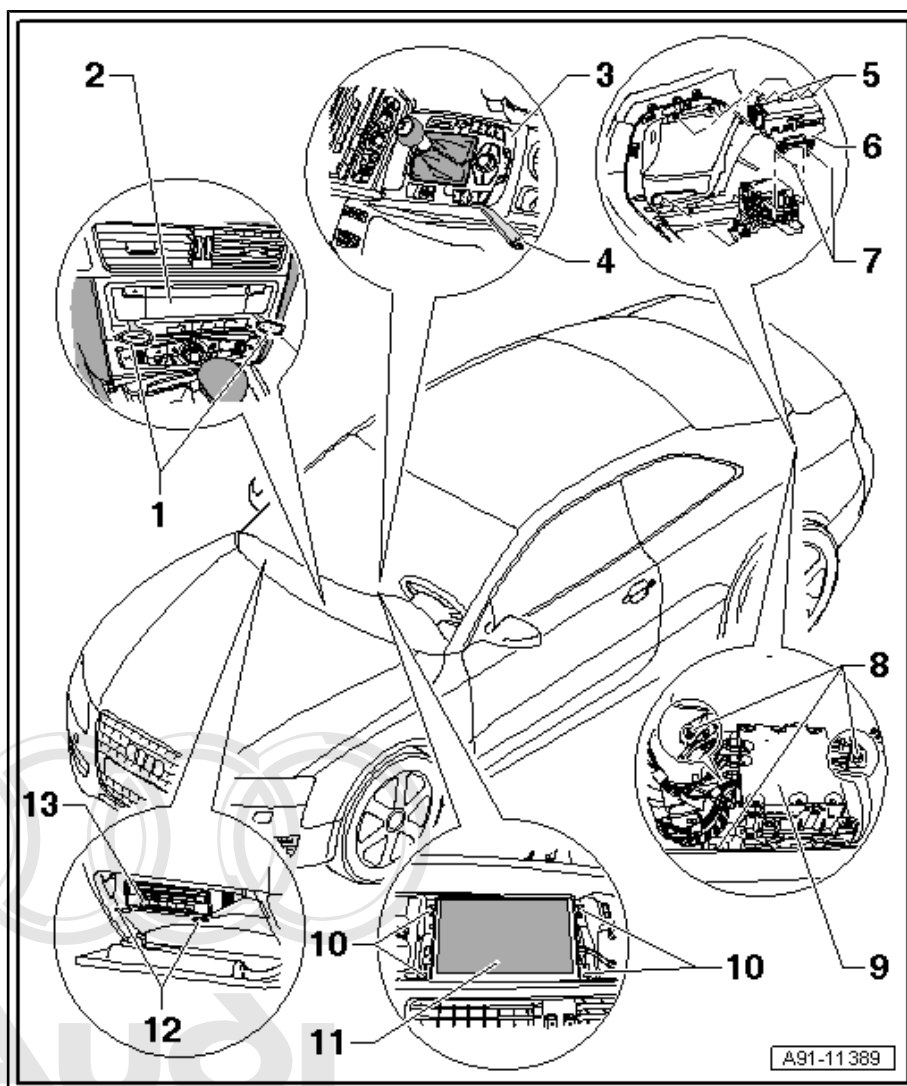
12 - Radio release tool - T10057-

13 - CD changer - R41-

- ☐ Connectors (MMI) ➔ [page 130](#)
- ☐ Removing and installing (from week 45/2008 onwards) ➔ [page 132](#)

- Connection for external audio sources - R199- (interface)

- ☐ Connectors (interface) ➔ [page 265](#)
- ☐ Removing and installing (interface) ➔ [page 268](#)



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1.3 Removing and installing infotainment system display

Display unit for front information display and operating unit control unit - J685- (display) is located in dash panel (centre).

- Switch off all electrical equipment.
- Remove ignition key.

Removing

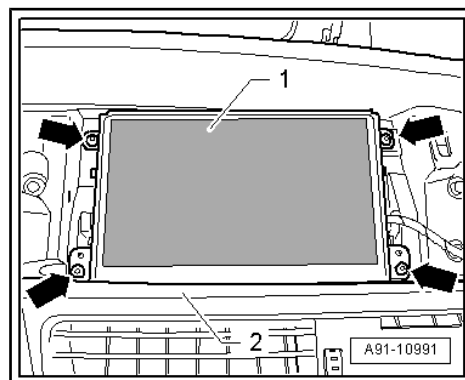
- Remove cover for MMI screen ⇒ General body repairs, interior; Rep. gr. 70 ; Dash panel; Removing and installing cover for MMI screen .
- Unscrew bolts -arrows- at display -1-.
- Lift display -1- out of dash panel -2-.
- Release and unplug connectors at display.

Installing

- Install in reverse sequence of removal.

Tightening torques

- ♦ ⇒ [“1.2 Overview of fitting locations - infotainment system”, page 25](#)
- ♦ ⇒ [“4.2 Overview of fitting locations - radio”, page 106](#)



1.4 Removing and installing control unit for front display and information control panel

⇒ [“1.4.1 Removing and installing control unit for front display and information control panel J523 , MMI basic”, page 32](#)

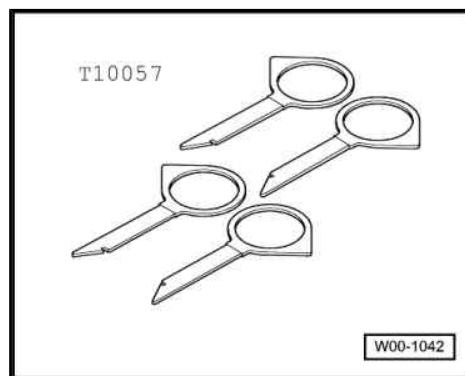
⇒ [“1.4.2 Removing and installing control unit for front display and information control panel J523 , up to week 44/2008”, page 33](#)

1.4.1 Removing and installing control unit for front display and information control panel - J523- , MMI basic

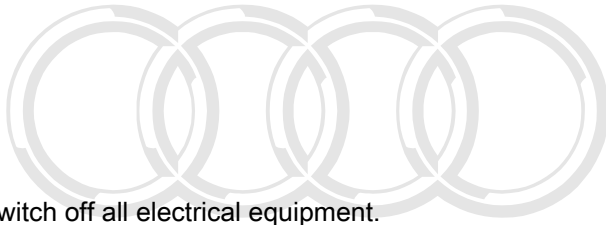
The control unit for front display and information control panel - J523- is located in the glove box.

Special tools and workshop equipment required

- ♦ Radio release tool - T10057-



◆ Protective cap for cable connector - VAS 6223/9-

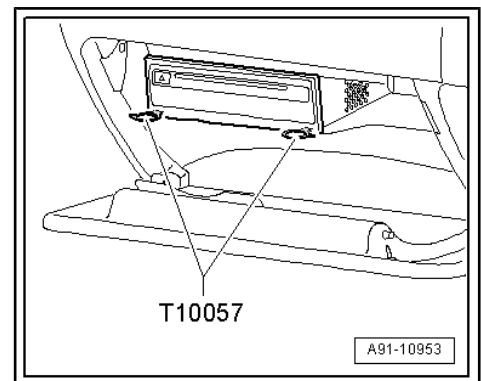


- Switch off all electrical equipment.
- Remove ignition key.
- When renewing control unit, select “Replacement” function for appropriate control unit in “Guided Fault Finding”.

To do so, use ⇒ **Vehicle diagnostic tester**.

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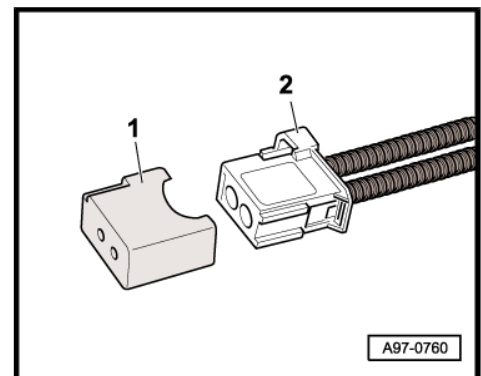
- **Open glove box.**
- Insert two radio release tools - T10057- into slots on control unit for front display and information control panel - J523- until they engage. Pointed ends of grips must face outwards.
- Pull control unit for front display and information control panel - J523- out of mounting frame.
- Pull out radio release tool - T10057- by pressing retaining tabs on control unit for front display and information control panel - J523- .
- Release and unplug connectors on control unit for front display and information control panel - J523- .



- Fit protective cap for cable connector - VAS 6223/9- -1- onto MOST bus connector -2-.

Installing

- Plug in connectors.
- Slide control unit for front display and information control panel - J523- into mounting frame until it engages.

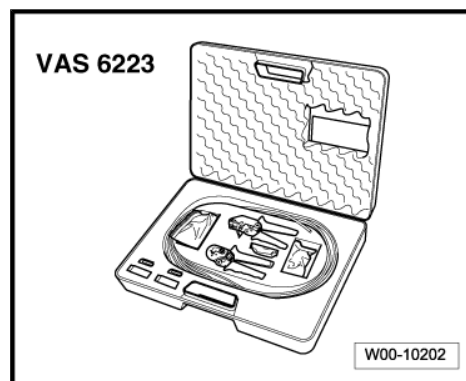


1.4.2 Removing and installing control unit for front display and information control panel - J523- , up to week 44/2008

The control unit for front display and information control panel - J523- is located behind dash panel.

Special tools and workshop equipment required

◆ Protective cap for cable connector - VAS 6223/9-



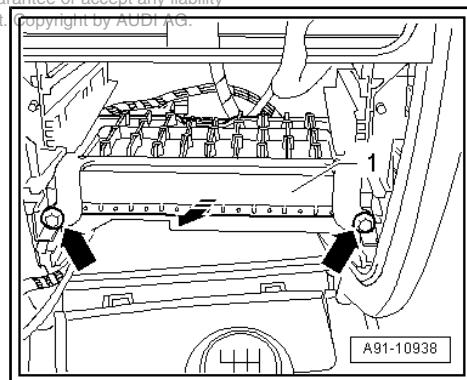
- Switch off all electrical equipment.
- Remove ignition key.
- When renewing control unit, select “Replacement” function for appropriate control unit in “Guided Fault Finding”.

To do so, use ⇒ **Vehicle diagnostic tester**.

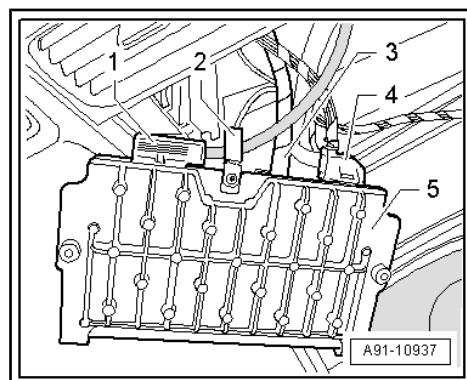
Removing

- Remove operating unit for air conditioning system ⇒ Heating, air conditioning; Rep. gr. 87 ; Operating and display unit; Removing and installing operating and display unit .
- Remove CD changer - R41- in centre console (top)
⇒ [page 130](#) .
- Remove bolts -arrows- and pull control unit for front display and information control panel - J523- -1- out of mounting frame in direction of -arrow-.

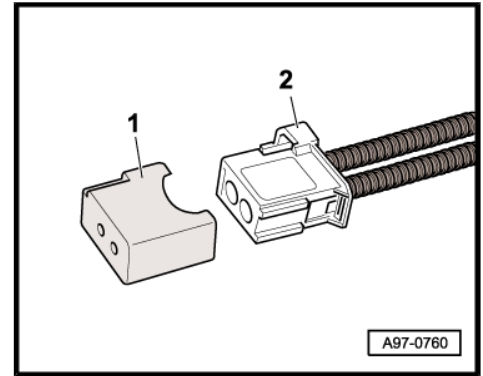
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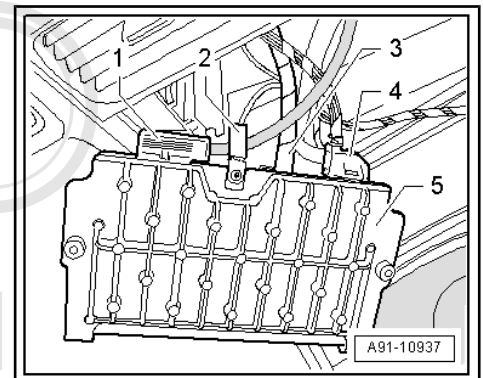
- Release and unplug connector to MOST bus -3-.



- Fit protective cap for cable connector - VAS 6223/9- -1- onto MOST bus connector -2-.



- Unscrew earth connection -2-.
- Release and unplug connectors -1- and -4- on control unit for front display and information control panel - J523- -5-.
- Turn around control unit for front display and information control panel - J523- together with bracket -5-.



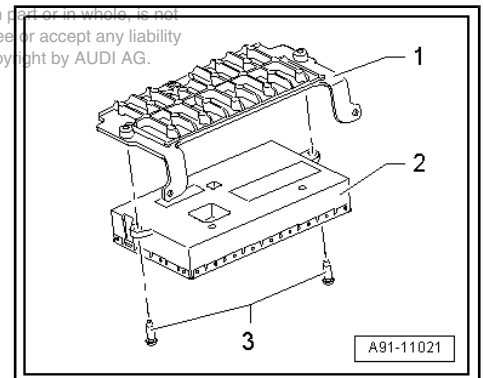
- Remove bolts -3- and detach control unit for front display and information control panel - J523- -2- from bracket -1-.

Installing

- Install in reverse sequence of removal.

Tightening torques

- ◆ ⇒ ["1.2.2 Overview of fitting locations - infotainment system, up to week 44/2008", page 26](#)
- ◆ ⇒ ["1.2.4 Overview of fitting locations - infotainment system, USA, up to week 44/2008", page 28](#)
- ◆ ⇒ ["1.2.6 Overview of fitting locations - infotainment system, Japan, up to week 44/2008", page 30](#)

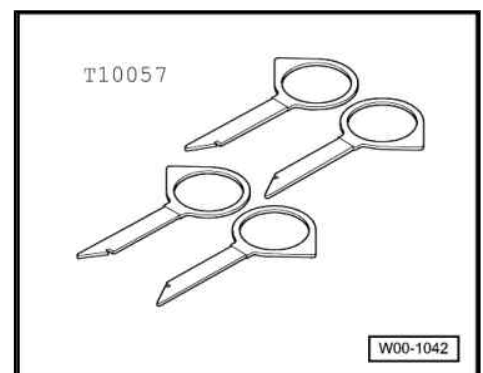


1.5 Removing and installing control unit 1 for information electronics - J794-

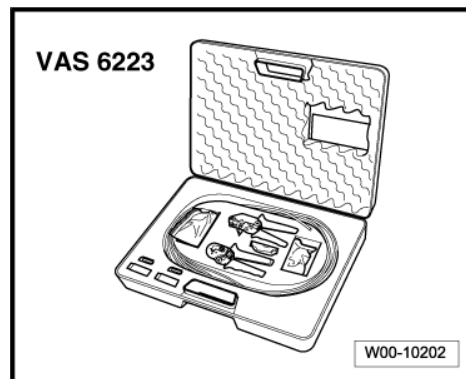
The control unit 1 for information electronics - J794- is located in the dash panel.

Special tools and workshop equipment required

- ◆ Radio release tool - T10057-



◆ Protective cap for cable connector - VAS 6223/9-

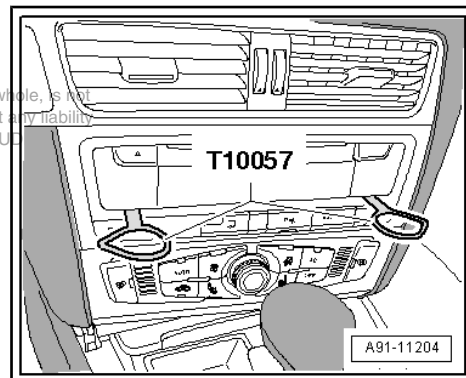


- Switch off all electrical equipment.
- Remove ignition key.
- When renewing control unit, select “Replacement” function for appropriate control unit in “Guided Fault Finding”.

To do so, use ⇒ **Vehicle diagnostic tester.**

Removing

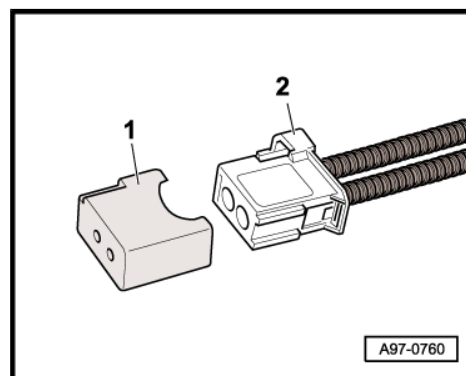
- Insert two radio release tools - T10057- into slots in control unit 1 for information electronics - J794- until they engage. Pointed ends of grips must face outwards.
- Pull control unit 1 for information electronics - J794- out of mounting frame.
- Press release tabs on control unit 1 for information electronics - J794- and remove radio release tools - T10057- .
- Release and unplug connectors at control unit 1 for information electronics - J794- .



- Fit protective cap for cable connector - VAS 6223/9- -1- onto MOST bus connector -2-.

Installing

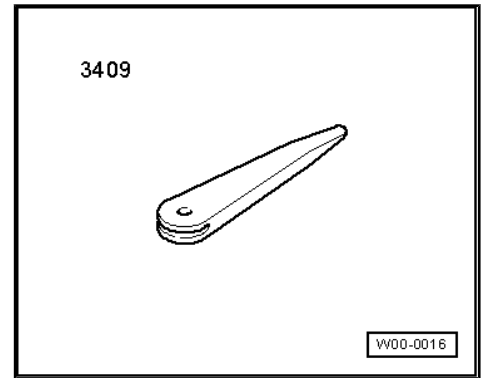
- Plug in all connectors.
- Slide control unit 1 for information electronics - J794- into mounting frame until it engages.



1.6 Removing and installing multimedia system operating unit - E380-

Special tools and workshop equipment required

◆ Removal wedge - 3409-



- Switch off all electrical equipment.

Removing

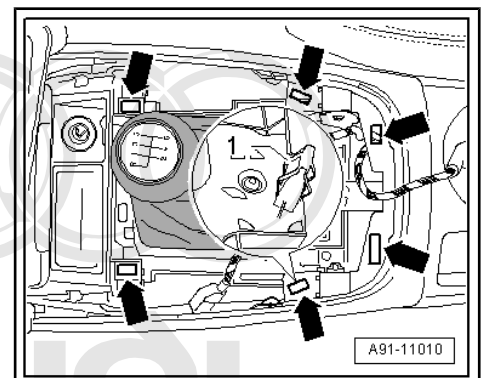
Vehicles with automatic gearbox:

- Switch on ignition.
- Shift selector lever to “S” position.
- Switch off ignition.

All vehicles:

- Remove ignition key.

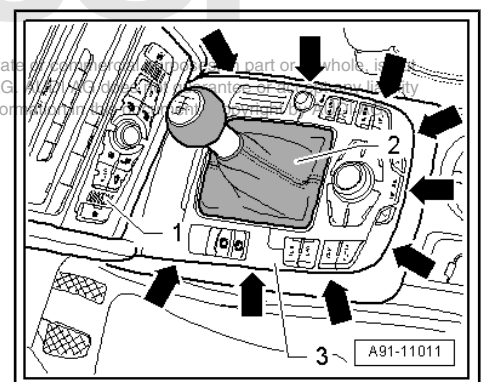
The multimedia system operating unit - E380- is secured in the centre console -arrows- with springs -1-.



- Remove air conditioner operating unit -1- ⇒ Heating, air conditioning; Rep. gr. 87 ; Operating and display unit; Removing and installing operating and display unit -2- up and over gear lever.
- Use removal wedge - 3409- to release springs and pry multimedia system operating unit - E380- -3- upwards out of centre console -arrows-.

Note short lengths of wires to multimedia system operating unit - E380- , electromechanical parking brake button - E538- and entry and start authorisation button - E408- .

- Unplug connectors on back.



Remove electromechanical parking brake button - E538- and entry and start authorisation button - E408- ⇒ Electrical system; Rep. gr. 96 ; Controls; Overview of fitting locations - controls in front centre console .

Installing

- Install in reverse sequence of removal.

1.7 Pin assignment

⇒ [“1.7.1 Pin assignment for MMI basic plus”, page 38](#)

⇒ [“1.7.2 Pin assignment for MMI, up to week 44/2008”, page 40](#)

⇒ [“1.7.3 Pin assignment for MMI, Japan, up to week 44/2008”, page 41](#)

⇒ [“1.7.4 Pin assignment for MMI, from week 45/2008 onwards, minimum equipment”, page 42](#)

⇒ [“1.7.5 Pin assignment for MMI, from week 45/2008 onwards, maximum equipment”, page 44](#)

⇒ [“1.7.6 Pin assignment for MMI, Japan, from week 45/2008 onwards”, page 47](#)

⇒ [“1.7.7 Pin assignment for MMI basic display”, page 50](#)

⇒ [“1.7.8 Pin assignment for MMI display, up to week 44/2008”, page 51](#)

⇒ [“1.7.9 Pin assignment for MMI display, from week 45/2008 onwards”, page 52](#)

⇒ [“1.7.10 Pin assignment for multimedia system operating unit E380”, page 53](#)

⇒ [“1.7.11 Pin assignment for display, radio”, page 53](#)

1.7.1 Pin assignment for MMI basic plus

Control unit for front display and information control panel - J523-

A - Connection HF (high frequency), white, from aerial amplifier 3 - R112-

B - Connection ZF (intermediate frequency), yellow, to aerial amplifier 3 - R112-

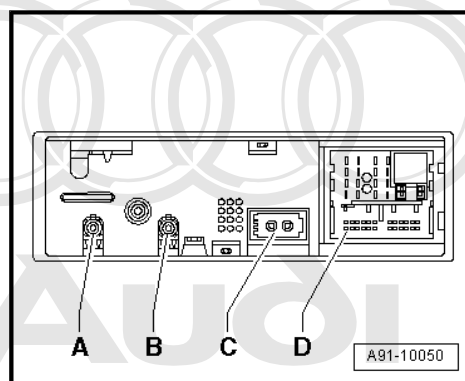
C - MOST bus

D - Connection block with four multi-pin connectors



Note

Contacts which are not listed are not used.



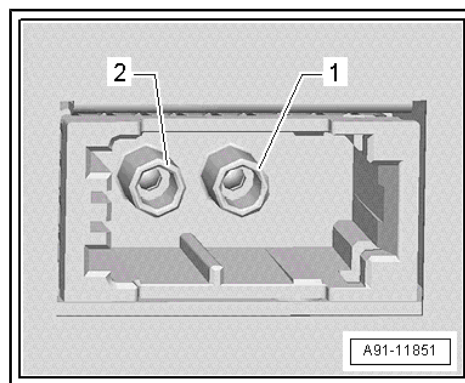
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C - MOST bus

1 - Input

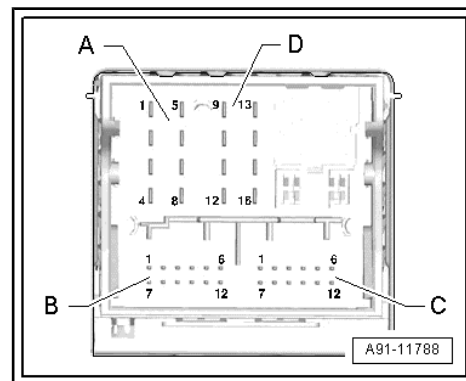
2 - Output

D - Connection block with four multi-pin connectors



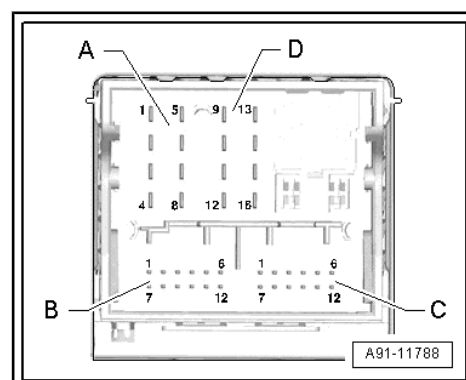
A - Multi-pin connector, 8-pin (T8ab)

- 1 - Wake-up to multimedia system operating unit - E380-
- 4 - Res HU to multimedia system operating unit - E380-
- 5 - Res BT to multimedia system operating unit - E380-
- 8 - Earth to display unit for front information display and operating unit control unit - J685-



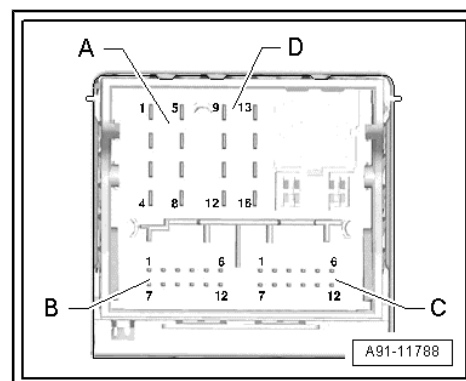
B - Multi-pin connector, 12-pin (T12q)

- 1 - Data to multimedia system operating unit - E380-
- 2 - Not used
- 3 - Data (+) to display unit for front information display and operating unit control unit - J685-
- 4 - Data (-) to display unit for front information display and operating unit control unit - J685-
- 5 - Data from multimedia system operating unit - E380-



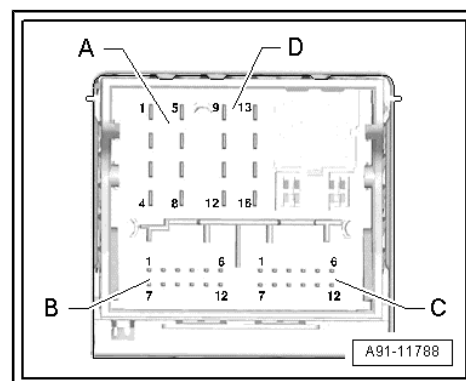
C - Multi-pin connector, 12-pin (T12r)

- 5 - Data (-) from display unit for front information display and operating unit control unit - J685-
- 7 - Earth to multimedia system operating unit - E380-
- 11 - Data (+) from display unit for front information display and operating unit control unit - J685-



D - Multi-pin connector, 8-pin (T16j)

- 11 - NF mute (low frequency) from pre-fitted components for mobile phone installation
- 12 - Terminal 31
- 13 - Voltage supply to display unit for front information display and operating unit control unit - J685-
- 14 - Open circuit diagnostic lead
- 15 - Terminal 30
- 16 - Voltage supply to multimedia system operating unit - E380-



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1.7.2 Pin assignment for MMI, up to week 44/2008

Control unit for front display and information control panel - J523-

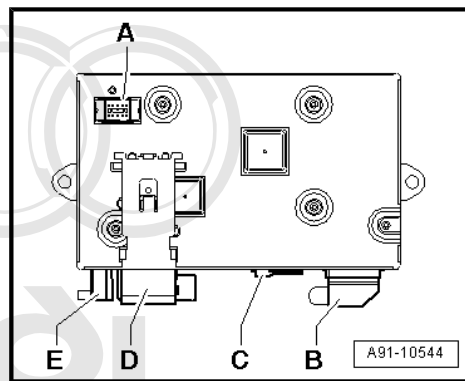
A - Multi-pin connector, 10-pin (Japan nav)

B - Multi-pin connector, 20-pin (T20b) to multimedia system operating unit - E380-

C - MOST bus

D - Connector (T22a) to display unit for front information display and operating unit control unit - J685-

E - FBAS input from TV tuner - R78- / reversing camera system control unit - J772-



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Note

Contacts which are not listed are not used.

B - Multi-pin connector, 20-pin (T20b)

1 - Terminal 30

2 - Terminal 31

3 - Open circuit diagnostic lead

6 - Wake-up to multimedia system operating unit - E380-

7 - Voltage supply to multimedia system operating unit - E380-

8 - Earth to multimedia system operating unit - E380-

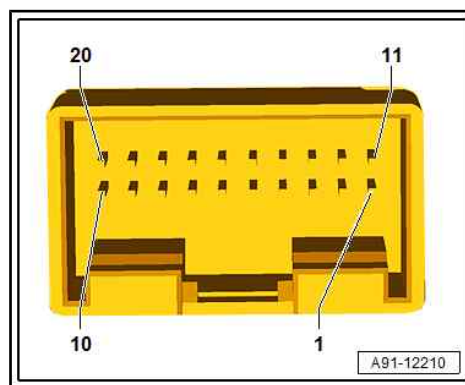
13 - RESET from multimedia system operating unit - E380-

14 - RESET to multimedia system operating unit - E380-

15 - Data to multimedia system operating unit - E380-

16 - Data from multimedia system operating unit - E380-

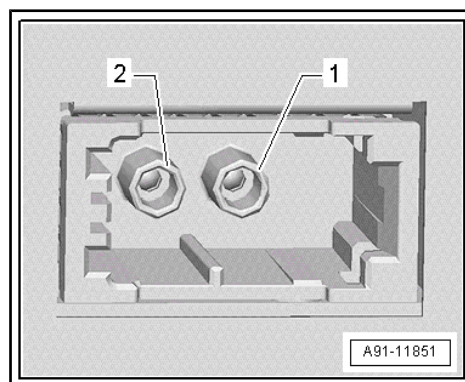
20 - NF mute (low frequency) from pre-fitted components for mobile phone installation



C - MOST bus

1 - Input

2 - Output



1.7.3 Pin assignment for MMI, Japan, up to week 44/2008

Control unit for front display and information control panel - J523-

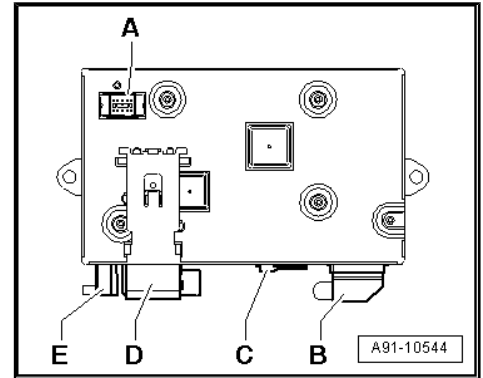
A - Multi-pin connector, 10-pin, LVDS wire to navigation system with CD drive control unit - J401-

B - Multi-pin connector, 20-pin (T20b) to multimedia system operating unit - E380-

C - MOST bus

D - Multi-pin connector (T22a) to display unit for front information display and operating unit control unit - J685-

E - FBAS input from TV tuner - R78- / reversing camera system control unit - J772-



Note

Contacts which are not listed are not used.

B - Multi-pin connector, 20-pin (T20b)

1 - Terminal 30

2 - Terminal 31

3 - Open circuit diagnostic lead

6 - Wake-up to multimedia system operating unit - E380-

7 - Voltage supply to multimedia system operating unit - E380-

8 - Earth to multimedia system operating unit - E380-

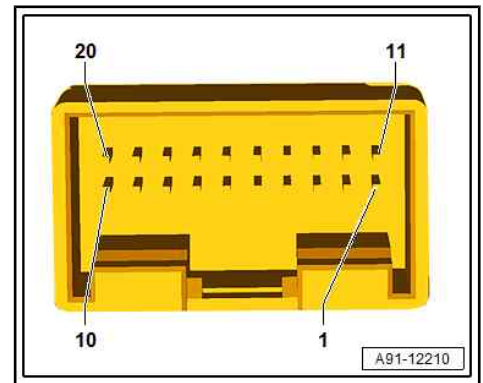
13 - RESET from multimedia system operating unit - E380-

14 - RESET to multimedia system operating unit - E380-

15 - Data to multimedia system operating unit - E380-

16 - Data from multimedia system operating unit - E380-

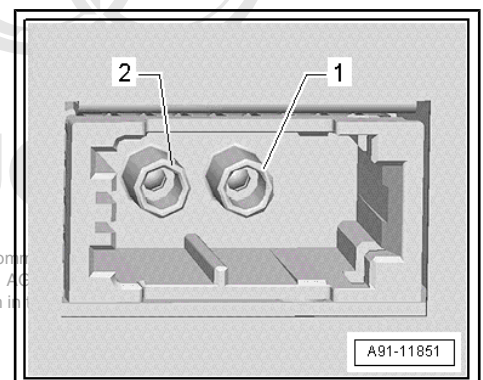
20 - NF mute (low frequency) from telephone transmitter and receiver unit - R36-



C - MOST bus

1 - Input

2 - Output



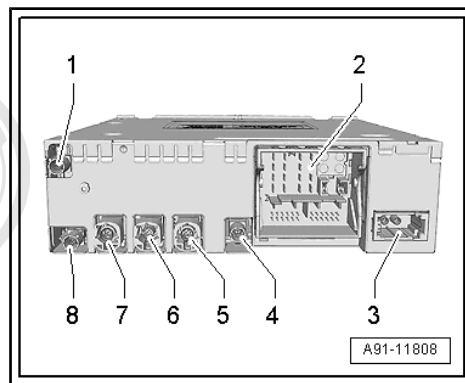
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1.7.4 Pin assignment for MMI, from week 45/2008 onwards, minimum equipment

Control unit 1 for information electronics - J794-

- 1 - Not used
- 2 - Connection block with four multi-pin connectors
- 3 - MOST bus
- 4 - Not used
- 5 - Multi-pin connector, 4-pin (T4al) to display unit for front information display and operating unit control unit - J685-
- 6 - Multi-pin connector, 4-pin (T4ap) to connection for external audio sources - R199-
- 7 - Not used
- 8 - Not used

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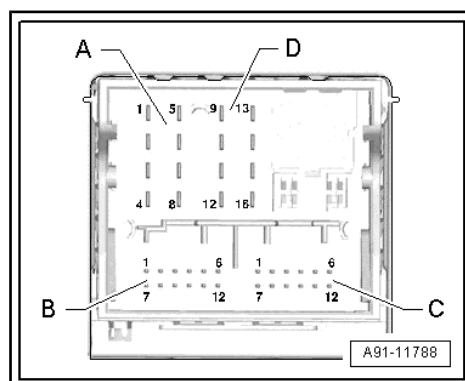
Note

Contacts which are not listed are not used.

2 - Connection block with four multi-pin connectors

A - Multi-pin connector, 8-pin (T8ah)

- 1 - NF mute (low frequency) from pre-fitted components for mobile phone installation
- 2 - Voltage supply to multimedia system operating unit - E380-
- 3 - Wake-up to multimedia system operating unit - E380-
- 4 - Not used
- 5 - Not used
- 6 - Res MU to multimedia system operating unit - E380-
- 7 - Open circuit diagnostic lead



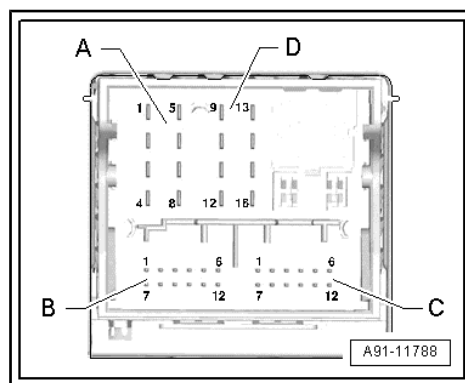
B - Multi-pin connector, 12-pin (T12x)

Left-hand drive vehicle

- 8 - Microphone input (+) from microphone unit in front roof module - R164- (front left microphone - R140-)
- 9 - Microphone input (-) from microphone unit in front roof module - R164- (front left microphone - R140-)

Right-hand drive vehicle

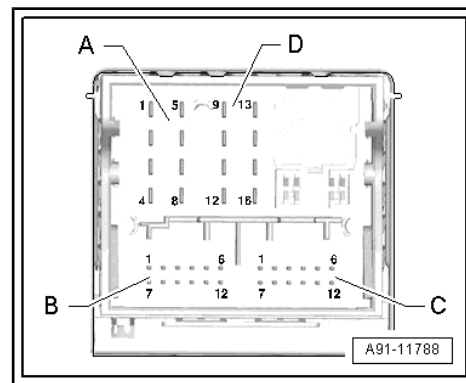
- 8 - Microphone input (+) from microphone unit in front roof module - R164- (front right microphone - R141-)
- 9 - Microphone input (-) from microphone unit in front roof module - R164- (front right microphone - R141-)



C - Multi-pin connector, 12-pin (T12y)

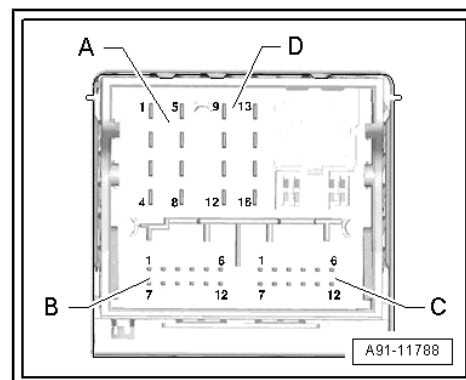
All pins are connected to the connection for external audio sources - R199- .

- 1 - NF in, earth (low frequency)
- 2 - NF in, right-side (low frequency)
- 3 - USB (+5 V)
- 4 - USB (earth)
- 5 - Not used
- 6 - Detect
- 7 - NF in, left-side (low frequency)
- 8 - NF in, screen earth (low frequency)
- 9 - FBAS wire (+)
- 10 - FBAS wire (-)
- 11 - iPod data
- 12 - iPod data



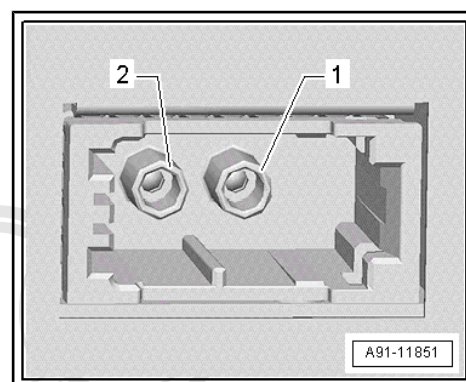
D - Multi-pin connector, 8-pin (T16q)

- 10 - Data from multimedia system operating unit - E380-
- 11 - Data to multimedia system operating unit - E380-
- 12 - Terminal 31
- 14 - Res BT from multimedia system operating unit - E380-
- 15 - Terminal 30
- 16 - Earth to multimedia system operating unit - E380-



3 - MOST bus

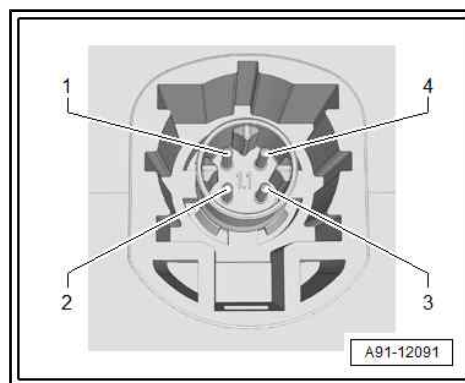
- 1 - Input
- 2 - Output



5 - Multi-pin connector, 4-pin (T4al)

All pins are connected to the display unit for front information display and operating unit control unit - J685- .

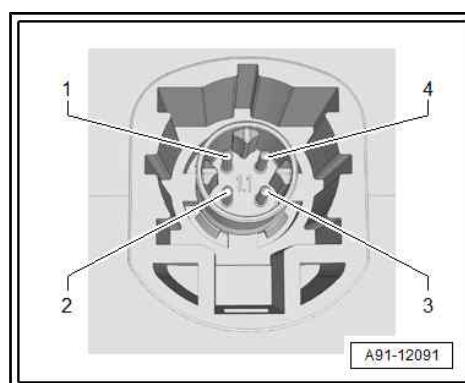
- 1 - LVDS (-)
- 2 - LIN
- 3 - LVDS (+)
- 4 - Earth



6 - Multi-pin connector, 4-pin (T4ap)

All pins are connected to the connection for external audio sources - R199- .

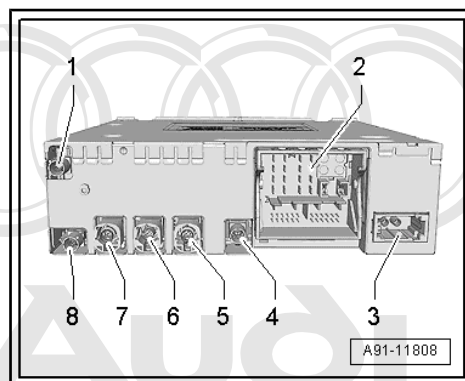
- 1 - D (+)
- 2 - iPod detected
- 3 - D (-)
- 4 - Earth



1.7.5 Pin assignment for MMI, from week 45/2008 onwards, maximum equipment

Control unit 1 for information electronics - J794-

- 1 - GSM connection from radio, telephone and navigation system aerial - R52- / roof aerial - R216-
- 2 - Connection block with four multi-pin connectors
- 3 - MOST bus
- 4 - FBAS input from TV tuner - R78-
- 5 - Multi-pin connector, 4-pin (T4am) to display unit for front information display and operating unit control unit - J685-
- 6 - Multi-pin connector, 4-pin (T4ap) to connection for external audio sources - R199- / internet access control unit - J666- (from model year 2012 onwards)
- 7 - Not used
- 8 - GPS connection from radio, telephone and navigation system aerial - R52- / roof aerial - R216-



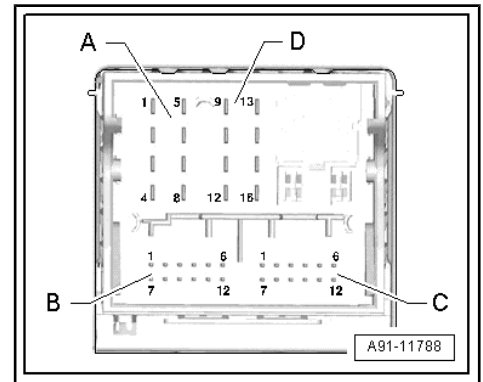
Note

Contacts which are not listed are not used.

2 - Connection block with four multi-pin connectors

A - Multi-pin connector, 8-pin (T8ah)

- 1 - NF mute (low frequency) from pre-fitted components for mobile phone installation
- 2 - Voltage supply to multimedia system operating unit - E380-
- 3 - Wake-up to multimedia system operating unit - E380-
- 4 - Not used
- 5 - Switch-on signal to aerial amplifier for mobile telephone - R86-
- 6 - Res MU to multimedia system operating unit - E380-
- 7 - Open circuit diagnostic lead



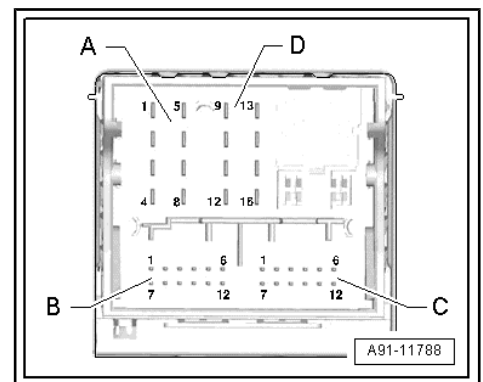
B - Multi-pin connector, 12-pin (T12x)

Left-hand drive vehicle

- 2 - Microphone input (+) from microphone unit in front roof module - R164- (front right microphone - R141-)
- 3 - Microphone input (-) from microphone unit in front roof module - R164- (front right microphone - R141-)
- 5 - FBAS wire (-) from reversing camera system control unit - J772-
- 8 - Microphone input (+) from microphone unit in front roof module - R164- (front left microphone - R140-)
- 9 - Microphone input (-) from microphone unit in front roof module - R164- (front left microphone - R140-)
- 11 - FBAS wire (+) from reversing camera system control unit - J772-

Right-hand drive vehicle

- 2 - Microphone input (+) from microphone unit in front roof module - R164- (front left microphone - R140-)
- 3 - Microphone input (-) from microphone unit in front roof module - R164- (front left microphone - R140-)
- 5 - FBAS wire (-) from reversing camera system control unit - J772-
- 8 - Microphone input (+) from microphone unit in front roof module - R164- (front right microphone - R141-)
- 9 - Microphone input (-) from microphone unit in front roof module - R164- (front right microphone - R141-)
- 11 - FBAS wire (+) from reversing camera system control unit - J772-



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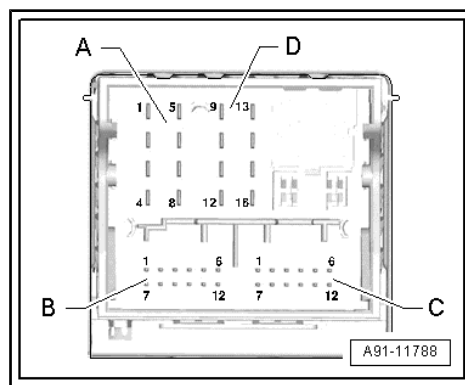
C - Multi-pin connector, 12-pin (T12y)

All pins are connected to the connection for external audio sources - R199- .

- 1 - NF in, earth (low frequency)
- 2 - NF in, right-side (low frequency)
- 3 - USB (+5 V) - not with internet access control unit - J666- (from model year 2012 onwards)
- 4 - USB (earth)
- 5 - Not used
- 6 - Detect, not with internet access control unit - J666- (from model year 2012 onwards)
- 7 - NF in, left-side (low frequency)
- 8 - NF in, screen earth (low frequency)
- 9 - FBAS wire (+)
- 10 - FBAS wire (-)
- 11 - iPod data
- 12 - iPod data

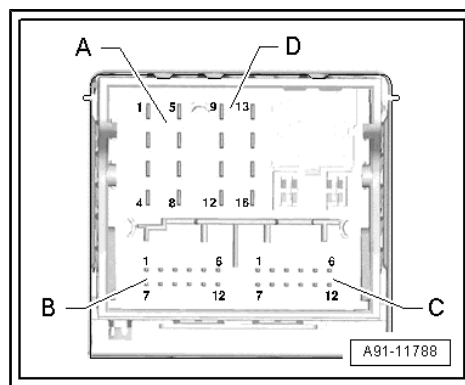
The following pins are also connected to the internet access control unit - J666- (from model year 2012 onwards).

- 3 - USB (+5 V)
- 4 - USB (earth)
- 6 - Detect



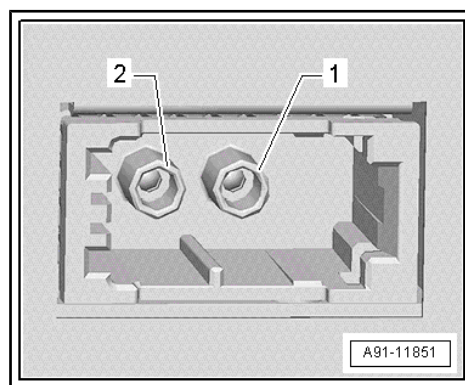
D - Multi-pin connector, 8-pin (T16q)

- 9 - Switch-on signal to telephone bracket - R126-
- 10 - Data from multimedia system operating unit - E380-
- 11 - Data to multimedia system operating unit - E380-
- 12 - Terminal 31
- 13 - DIAG signal from telephone bracket - R126-
- 14 - Res BT from multimedia system operating unit - E380-
- 15 - Terminal 30
- 16 - Earth to multimedia system operating unit - E380-



3 - MOST bus

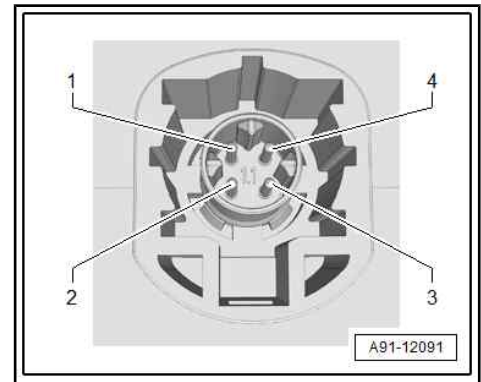
- 1 - Input
- 2 - Output



5 - Multi-pin connector, 4-pin (T4am)

All pins are connected to the display unit for front information display and operating unit control unit - J685- .

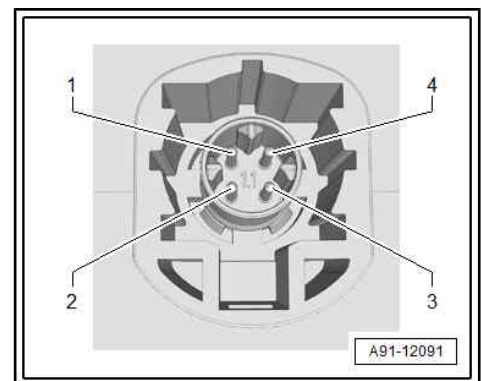
- 1 - LVDS (-)
- 2 - LIN
- 3 - LVDS (+)
- 4 - Earth



6 - Multi-pin connector, 4-pin (T4ap)

All pins are connected to the connection for external audio sources - R199- / internet access control unit - J666- .

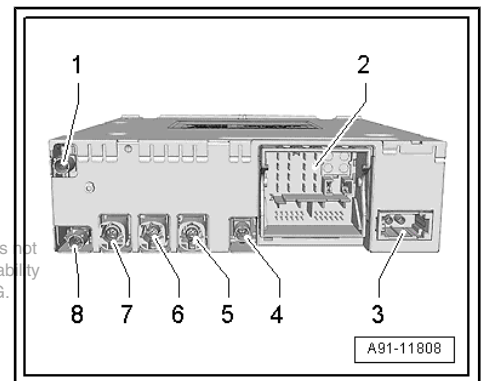
- 1 - D (+)
- 2 - iPod detected
- 3 - D (-)
- 4 - Earth



1.7.6 Pin assignment for MMI, Japan, from week 45/2008 onwards

Control unit 1 for information electronics - J794-

- 1 - Not used
- 2 - Connection block with four multi-pin connectors
- 3 - MOST bus
- 4 - FBAS input from TV tuner - R78-
- 5 - Multi-pin connector, 4-pin (T4am) to display unit for front information display and operating unit control unit - J685-
- 6 - Multi-pin connector, 4-pin (T4ap) to connection for external audio sources - R199- / internet access control unit - J666- (from model year 2012 onwards)
- 7 - Not used
- 8 - GPS connection from radio, telephone and navigation system aerial - R52- / roof aerial - R216-



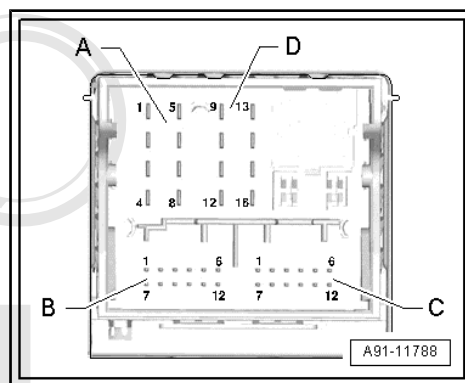
Note

Contacts which are not listed are not used.

2 - Connection block with four multi-pin connectors

A - Multi-pin connector, 8-pin (T8ah)

- 1 - Not used
- 2 - Voltage supply to multimedia system operating unit - E380-
- 3 - Wake-up to multimedia system operating unit - E380-
- 4 - Not used
- 5 - Not used
- 6 - Res MU to multimedia system operating unit - E380-
- 7 - Open circuit diagnostic lead



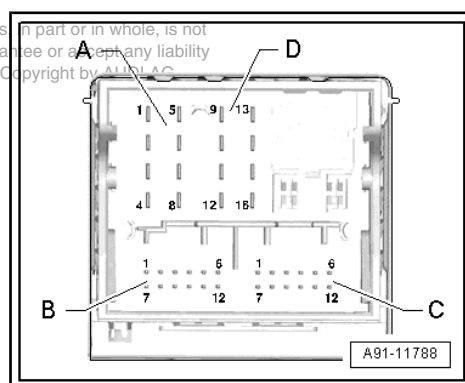
B - Multi-pin connector, 12-pin (T12x)

Left-hand drive vehicle

- 5 - FBAS wire (-) from reversing camera system control unit - J772-
- 8 - Microphone input (+) from microphone unit in front roof module - R164- (front left microphone - R140-)
- 9 - Microphone input (-) from microphone unit in front roof module - R164- (front left microphone - R140-)
- 11 - FBAS wire (+) from reversing camera system control unit - J772-

Right-hand drive vehicle

- 2 - Microphone input (+) from microphone unit in front roof module - R164- (front left microphone - R140-)
- 3 - Microphone input (-) from microphone unit in front roof module - R164- (front left microphone - R140-)
- 5 - FBAS wire (-) from reversing camera system control unit - J772-
- 11 - FBAS wire (+) from reversing camera system control unit - J772-



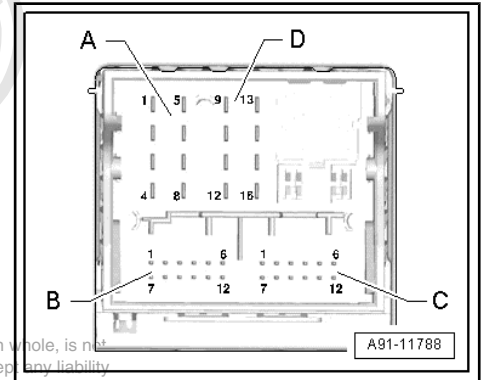
C - Multi-pin connector, 12-pin (T12y)

All pins are connected to the connection for external audio sources - R199- .

- 1 - NF in, earth (low frequency)
- 2 - NF in, right-side (low frequency)
- 3 - USB (+5 V) - not with internet access control unit - J666- (from model year 2012 onwards)
- 4 - USB (earth)
- 5 - Not used
- 6 - Detect - not with internet access control unit J666- (from model year 2012 onwards)
- 7 - NF in, left-side (low frequency)
- 8 - NF in, screen earth (low frequency)
- 9 - FBAS wire (+)
- 10 - FBAS wire (-)
- 11 - iPod data
- 12 - iPod data

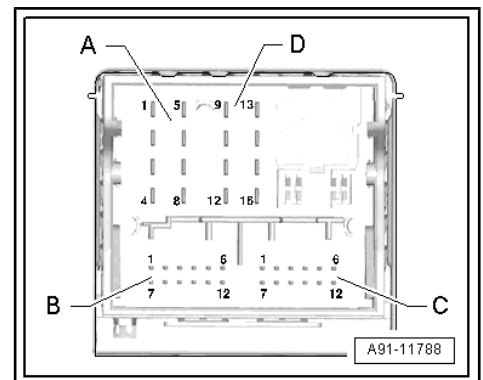
The following pins are also connected to the internet access control unit - J666- (from model year 2012 onwards).

- 3 - USB (+5 V)
- 4 - USB (earth)
- 6 - Detect



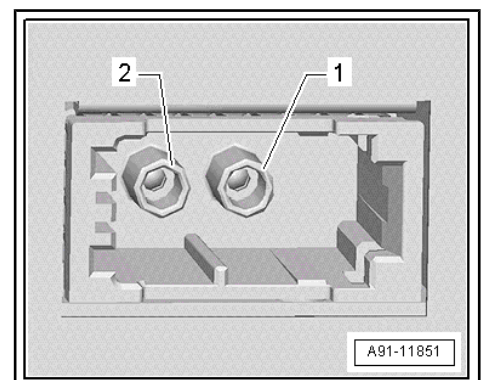
D - Multi-pin connector, 8-pin (T16q)

- 10 - Data from multimedia system operating unit - E380-
- 11 - Data to multimedia system operating unit - E380-
- 12 - Terminal 31
- 14 - Res BT from multimedia system operating unit - E380-
- 15 - Terminal 30
- 16 - Earth to multimedia system operating unit - E380-



3 - MOST bus

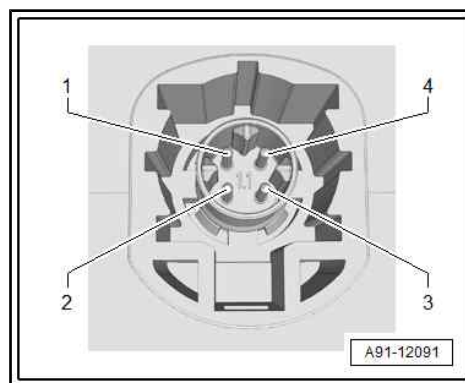
- 1 - Input
- 2 - Output



5 - Multi-pin connector, 4-pin (T4am)

All pins are connected to the display unit for front information display and operating unit control unit - J685- .

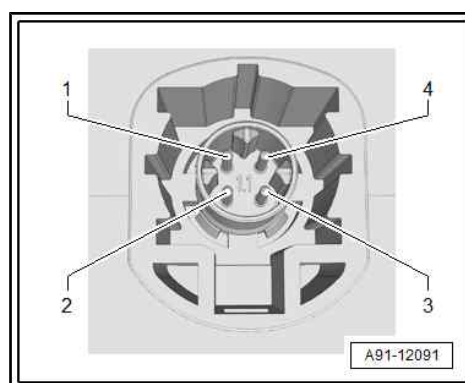
- 1 - LVDS (-)
- 2 - LIN
- 3 - LVDS (+)
- 4 - Earth



6 - Multi-pin connector, 4-pin (T4ap)

All pins are connected to the connection for external audio sources - R199- / internet access control unit - J666- .

- 1 - D (+)
- 2 - iPod detected
- 3 - D (-)
- 4 - Earth



1.7.7 Pin assignment for MMI basic display

Display unit for front information display and operating unit control unit - J685-



Note

Contacts which are not listed are not used.

Multi-pin connector, 10-pin (T10t)

2 - Voltage supply from control unit for front display and information control panel - J523-

3 - Earth from control unit for front display and information control panel - J523-

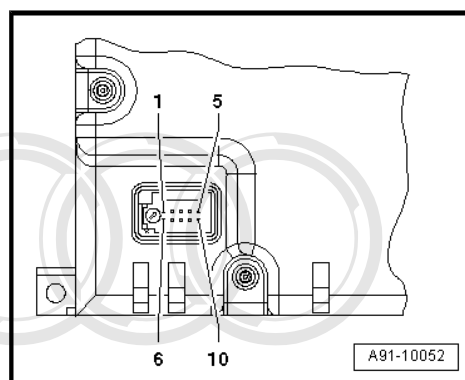
6 - Terminal 31

7 - Data (+) from control unit for front display and information control panel - J523-

8 - Data (-) from control unit for front display and information control panel - J523-

9 - Data (+) to control unit for front display and information control panel - J523-

10 - Data (-) to control unit for front display and information control panel - J523-



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1.7.8 Pin assignment for MMI display, up to week 44/2008

Display unit for front information display and operating unit control unit - J685-



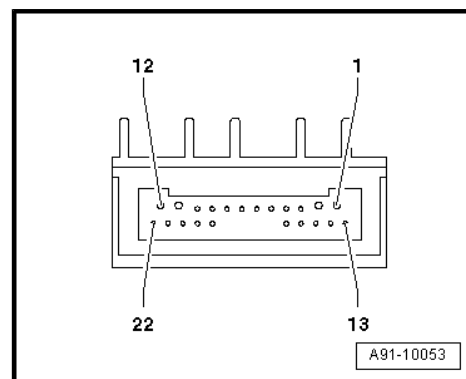
Note

Contacts which are not listed are not used.

Multi-pin connector, 22-pin (T22b)

All pins are connected to the control unit for front display and information control panel - J523- .

- 1 - Voltage supply
- 2 - Earth
- 3 - Not used
- 4 - Earth
- 5 - TMP
- 6 - Rx2 (+)
- 7 - Rx2 (-)
- 8 - FOTO rear
- 9 - INV status
- 10 - FOTO display
- 11 - Earth
- 12 - Earth
- 13 - Rx0 (+)
- 14 - Rx0 (-)
- 15 - Earth
- 16 - Rx1 (-)
- 17 - Rx1 (+)
- 18 - Rxclk (+)
- 19 - Rxclk (-)
- 20 - Cable Diag.
- 21 - Rx3 (-)
- 22 - Rx3 (+)



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1.7.9 Pin assignment for MMI display, from week 45/2008 onwards

Display unit for front information display and operating unit control unit - J685-

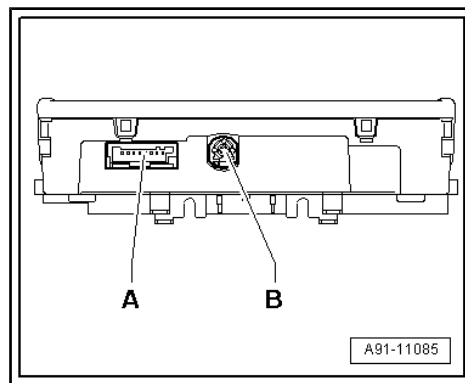
A - Multi-pin connector, 8-pin (T8ai)

B - Multi-pin connector, 4-pin (T4an/T4ao) from control unit 1 for information electronics - J794-



Note

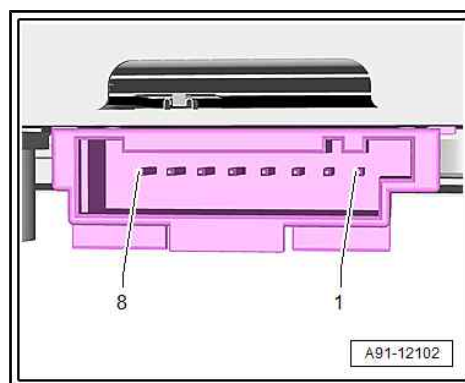
Contacts which are not listed are not used.



A - Multi-pin connector, 8-pin (T8ai)

4 - Terminal 30

5 - Terminal 31



B - Multi-pin connector, 4-pin (T4an/T4ao)

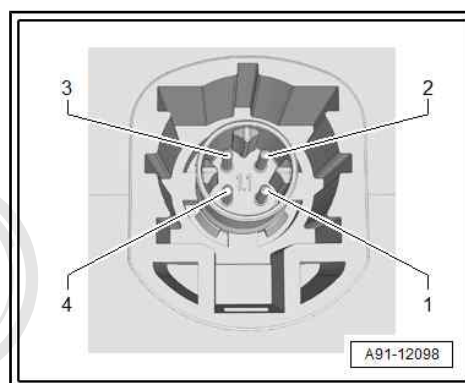
All pins are connected to the control unit 1 for information electronics - J794- .

1 - LVDS (-)

2 - LIN

3 - LVDS (+)

4 - Earth



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1.7.10 Pin assignment for multimedia system operating unit - E380-

Multimedia system operating unit - E380-



Note

Contacts which are not listed are not used.

Multi-pin connector, 16-pin (T16c)

All pins are connected to the control unit for front display and information control panel - J523- .

6 - Wake up

7 - Voltage supply

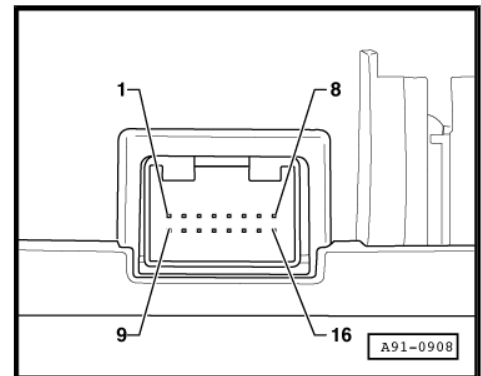
8 - Earth

13 - RES HU

14 - RES BT

15 - Rx D

16 - Tx D



1.7.11 Pin assignment for display, radio

Display unit for front information display and operating unit control unit - J685-



Note

Contacts which are not listed are not used.

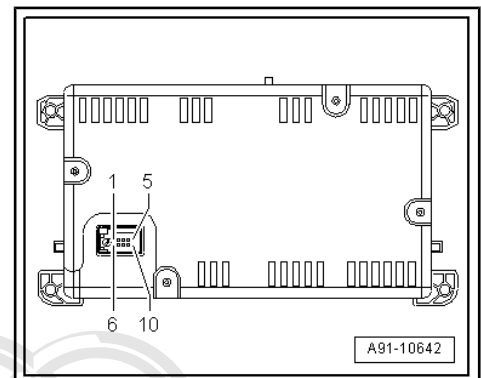
"chorus" (T10u)

1 - CAN bus (display) from radio - R-

2 - CAN bus (display) from radio - R-

3 - Voltage supply from radio - R-

4 - Terminal 31



"concert" / "symphony" (T10w)

All pins are connected to the radio - R- .

1 - Voltage supply

2 - Earth

3 - Not used

4 - Diag. display

5 - Diag. cable

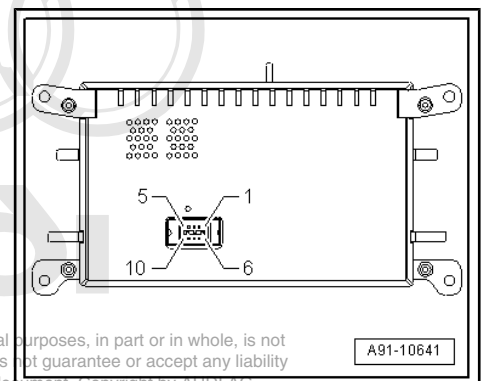
6 - LVDS out (+)

7 - LVDS out (-)

8 - LVDS earth

9 - Diag. T0

10 - Diag. T1



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2 Sound system

⇒ [“2.1 Layout - sound system”, page 54](#)

⇒ [“2.2 Overview of fitting locations - sound system”, page 61](#)

⇒ [“2.3 Removing and installing digital sound package control unit/ amplifier”, page 66](#)

⇒ [“2.4 Removing and installing rear treble loudspeakers R14 / R16 ”, page 69](#)

⇒ [“2.5 Removing and installing front treble loudspeakers R20 / R22 ”, page 70](#)

⇒ [“2.6 Removing and installing rear mid-range loudspeaker”, page 72](#)

⇒ [“2.7 Removing and installing front mid-range loudspeakers”, page 73](#)

⇒ [“2.8 Removing and installing rear mid-range and bass loudspeakers”, page 74](#)

⇒ [“2.9 Removing and installing front bass loudspeakers R21 / R23 ”, page 75](#)

⇒ [“2.10 Removing and installing subwoofer R211 ”, page 76](#)

⇒ [“2.11 Removing and installing centre loudspeaker”, page 77](#)

⇒ [“2.12 Pin assignment”, page 78](#)

2.1 Layout - sound system

The following systems are available:

Radio (CAN) sound system basic

- ◆ One loudspeaker in each front door (left and right)
- ◆ One loudspeaker on each side of dash panel

Radio (CAN) sound system basic



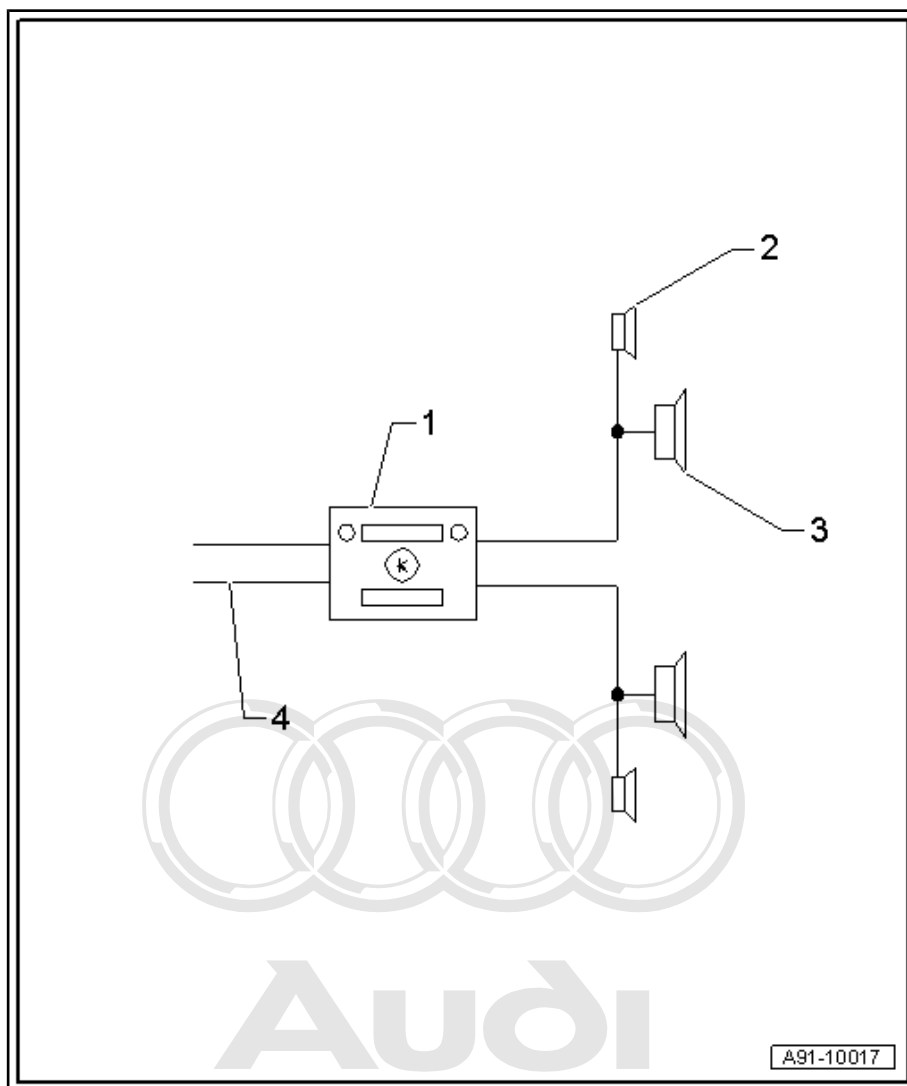
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1 - Radio - R- in dash panel

2 - Front left treble loudspeaker - R20- / front right treble loudspeaker - R22- in dash panel

3 - Front left mid-range and bass loudspeaker - R101- / front right mid-range and bass loudspeaker - R102- in front doors (bottom)

4 - CAN bus (infotainment)



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Radio (CAN) sound system basic plus

- ◆ One loudspeaker in each front door (left and right)
- ◆ One loudspeaker on each side of dash panel
- ◆ Two loudspeakers in each side trim (rear left and right) (Coupé)
- ◆ Two loudspeakers in each rear door (left and right) - Sportback

1 - Radio - R- in dash panel/
behind luggage compartment
side trim (left-side)

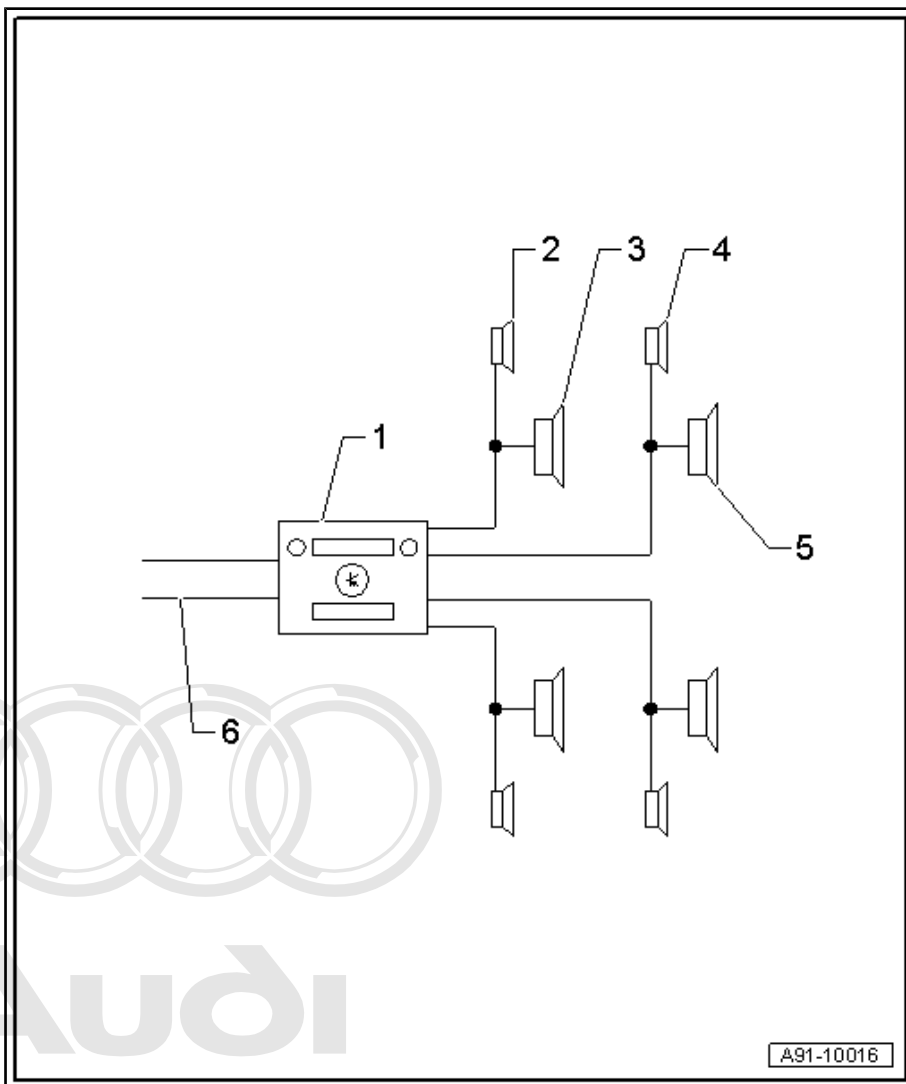
2 - Front left treble loudspeaker
- R20- / front right treble loud-
speaker - R22- in dash panel

3 - Front left mid-range and
bass loudspeaker - R101- /
front right mid-range and bass
loudspeaker - R102- in front
doors (bottom)

4 - Rear left treble loudspeaker
- R14- / rear right treble loud-
speaker - R16- in rear side trim
(top)/in rear doors (top)

5 - Rear left mid-range and
bass loudspeaker - R159- /
rear right mid-range and bass
loudspeaker - R160- in rear
side trim/in rear doors (bottom)

6 - CAN bus (infotainment) /
MOST bus



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MMI sound system basic plus (up to week 44/2008)

- ◆ One loudspeaker in each door (left and right)
- ◆ One loudspeaker on each side of dash panel
- ◆ Two loudspeakers in each side trim (rear left and right)
- ◆ Digital sound package control unit - J525-
- ◆ Connection for external audio sources - R199-

1 - Digital sound package control unit - J525- behind luggage compartment side trim (left-side)

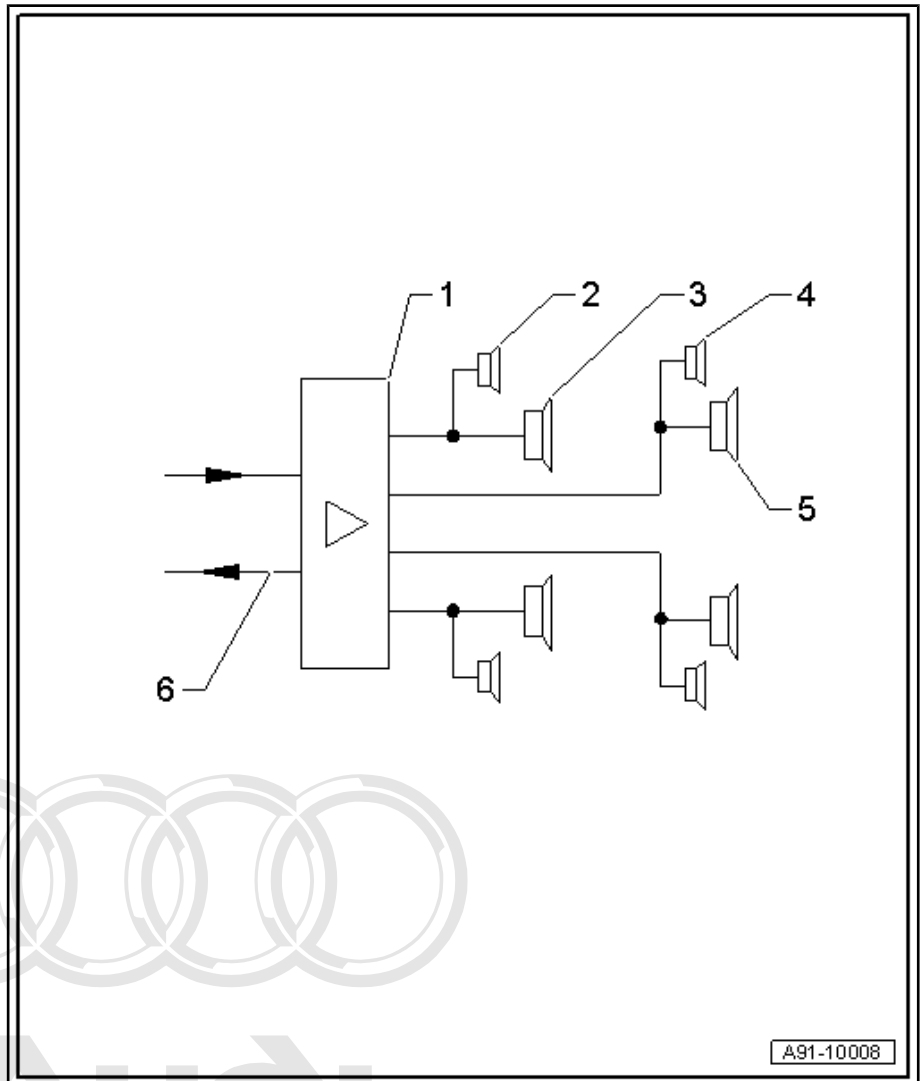
2 - Front left treble loudspeaker - R20- / front right treble loudspeaker - R22- in dash panel

3 - Front left mid-range and bass loudspeaker - R101- / front right mid-range and bass loudspeaker - R102- in doors (bottom)

4 - Rear left treble loudspeaker - R14- and rear right treble loudspeaker - R16- in rear side trim (top)

5 - Rear left mid-range and bass loudspeaker - R159- / rear right mid-range and bass loudspeaker - R160- in rear side trim

6 - MOST bus



MMI sound system basic (from week 45/2008 onwards)

- ◆ One loudspeaker in each front door (left and right)
- ◆ One loudspeaker on each side of dash panel
- ◆ Two loudspeakers in each side trim (rear left and right) (Coupé)
- ◆ Two loudspeakers in each rear door (left and right) - Sportback

Radio (CAN)/MMI standard sound system, up to week 44/2008

- ◆ One loudspeaker in each front door (left and right)
- ◆ Three loudspeakers in dash panel (left, centre and right)
- ◆ Two loudspeakers in each side trim (rear left and right) (Coupé)
- ◆ Two loudspeakers in each rear door (left and right) - Sportback
- ◆ Subwoofer in rear shelf - R157- (Coupé)
- ◆ Subwoofer in rear shelf - R157- in spare wheel well (Sportback)
- ◆ Digital sound package control unit - J525-
- ◆ Connection for external audio sources - R199- (MMI)

1 - MOST bus

2 - Digital sound package control unit - J525- behind luggage compartment side trim (left-side)

3 - Front left treble loudspeaker - R20- / front right treble loudspeaker - R22- in dash panel

4 - Front left mid-range and bass loudspeaker - R101- / front right mid-range and bass loudspeaker - R102- in front doors (bottom)

5 - Rear left treble loudspeaker - R14- / rear right treble loudspeaker - R16- in rear side trim (top)/in rear doors (top)

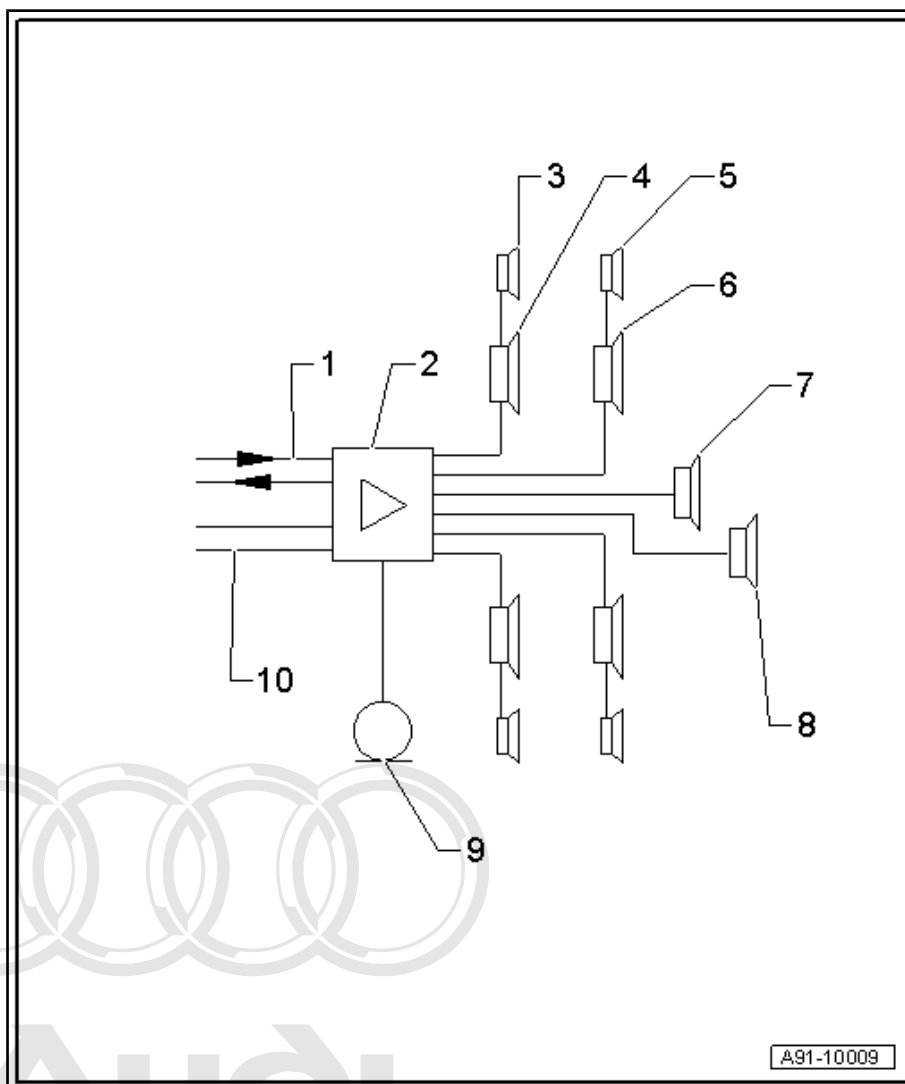
6 - Rear left mid-range and bass loudspeaker - R159- / rear right mid-range and bass loudspeaker - R160- in rear side trim/in rear doors (bottom)

7 - Centre mid-range and treble loudspeaker - R158- in dash panel (centre)

8 - Subwoofer in rear shelf - R157- /in spare wheel well

9 - Microphone unit in front roof module - R164- (voice command microphone - R206-) in front interior light - W1- (MMI only)

10 - CAN bus (infotainment)



MMI standard sound system (from week 45/2008 onwards)

- ◆ One loudspeaker in each front door (left and right)
- ◆ Three loudspeakers in dash panel (left, centre and right)
- ◆ Two loudspeakers in each side trim (rear left and right) (Coupé)
- ◆ Two loudspeakers in each rear door (left and right) - Sportback
- ◆ Subwoofer in rear shelf - R157- (Coupé)
- ◆ Subwoofer in rear shelf - R157- in spare wheel well (Sportback)

1 - Radio - R- behind luggage compartment side trim (left-side)

2 - Front left treble loudspeaker - R20- / front right treble loudspeaker - R22- in dash panel

3 - Front left mid-range and bass loudspeaker - R101- / front right mid-range and bass loudspeaker - R102- in front doors (bottom)

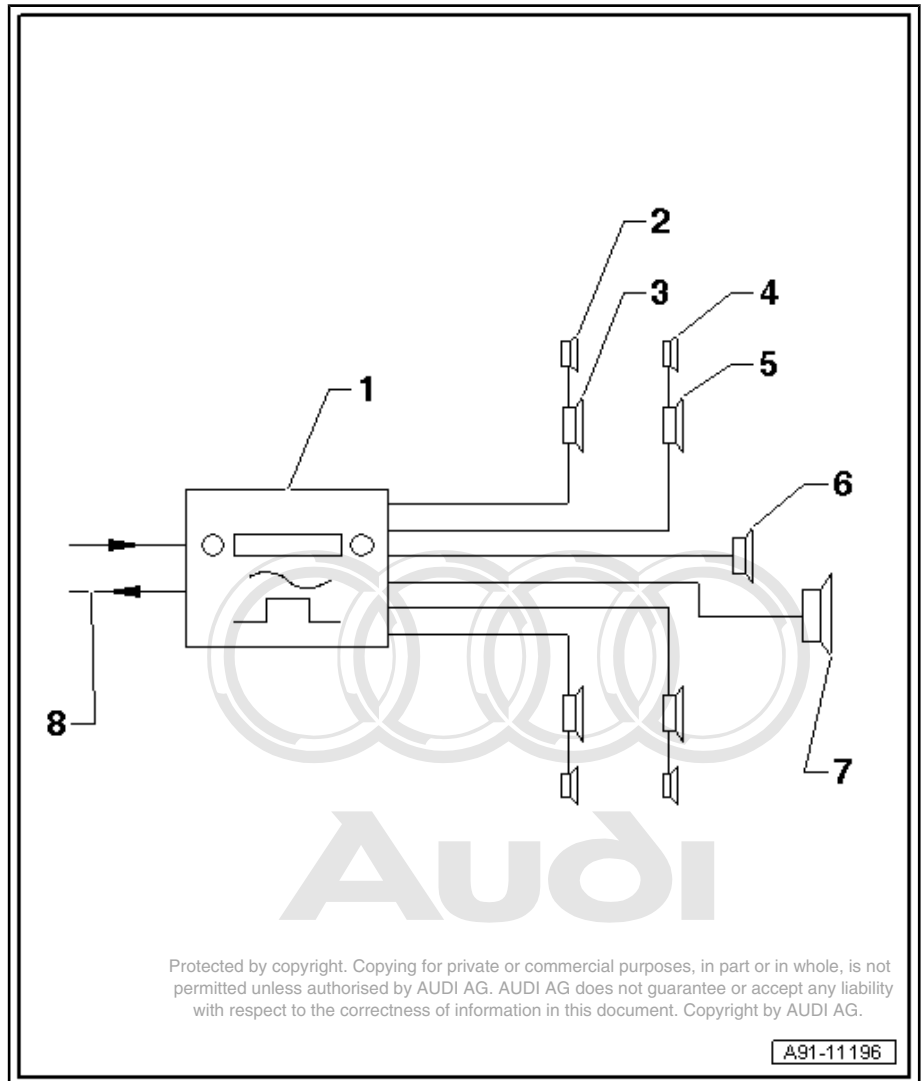
4 - Rear left treble loudspeaker - R14- / rear right treble loudspeaker - R16- in rear side trim (top)/in rear doors (top)

5 - Rear left mid-range and bass loudspeaker - R159- / rear right mid-range and bass loudspeaker - R160- in rear side trim/in rear doors (bottom)

6 - Centre mid-range and treble loudspeaker - R158- in dash panel (centre)

7 - Subwoofer in rear shelf - R157- /in spare wheel well

8 - MOST bus



Radio (CAN)/MMI sound system premium (Bang and Olufsen)

- ◆ One loudspeaker in each front door (left and right)
- ◆ One loudspeaker in each mirror triangle (left and right)
- ◆ Three loudspeakers in dash panel (left, centre and right)
- ◆ Two loudspeakers in each side trim (rear left and right) (Coupé)
- ◆ Two loudspeakers in each rear door (left and right) - Sportback
- ◆ Two loudspeakers on each side of rear shelf (left and right) (Coupé)
- ◆ Two loudspeakers in each trim (top left and right) (Sportback)
- ◆ Subwoofer in rear shelf - R157- (Coupé)
- ◆ Subwoofer in rear shelf - R157- in spare wheel well (Sportback)
- ◆ Digital sound package control unit - J525-
- ◆ Connection for external audio sources - R199- (up to week 44/08)

1 - Digital sound package control unit - J525- behind luggage compartment side trim (left-side)

2 - Front left treble loudspeaker - R20- and front right treble loudspeaker - R22- in mirror triangle

3 - Front left mid-range loudspeaker - R103- and front right mid-range loudspeaker - R104- in dash panel

4 - Front left bass loudspeaker - R21- / front right bass loudspeaker - R23- in front doors (bottom)

5 - Rear left treble loudspeaker - R14- / rear right treble loudspeaker - R16- in rear side trim (top)/in rear doors (top)

6 - Rear left mid-range and bass loudspeaker - R159- / rear right mid-range and bass loudspeaker - R160- in rear side trim/in rear doors (bottom)

7 - Rear left mid-range loudspeaker - R105- / rear right mid-range loudspeaker - R106- in rear shelf/in top trim

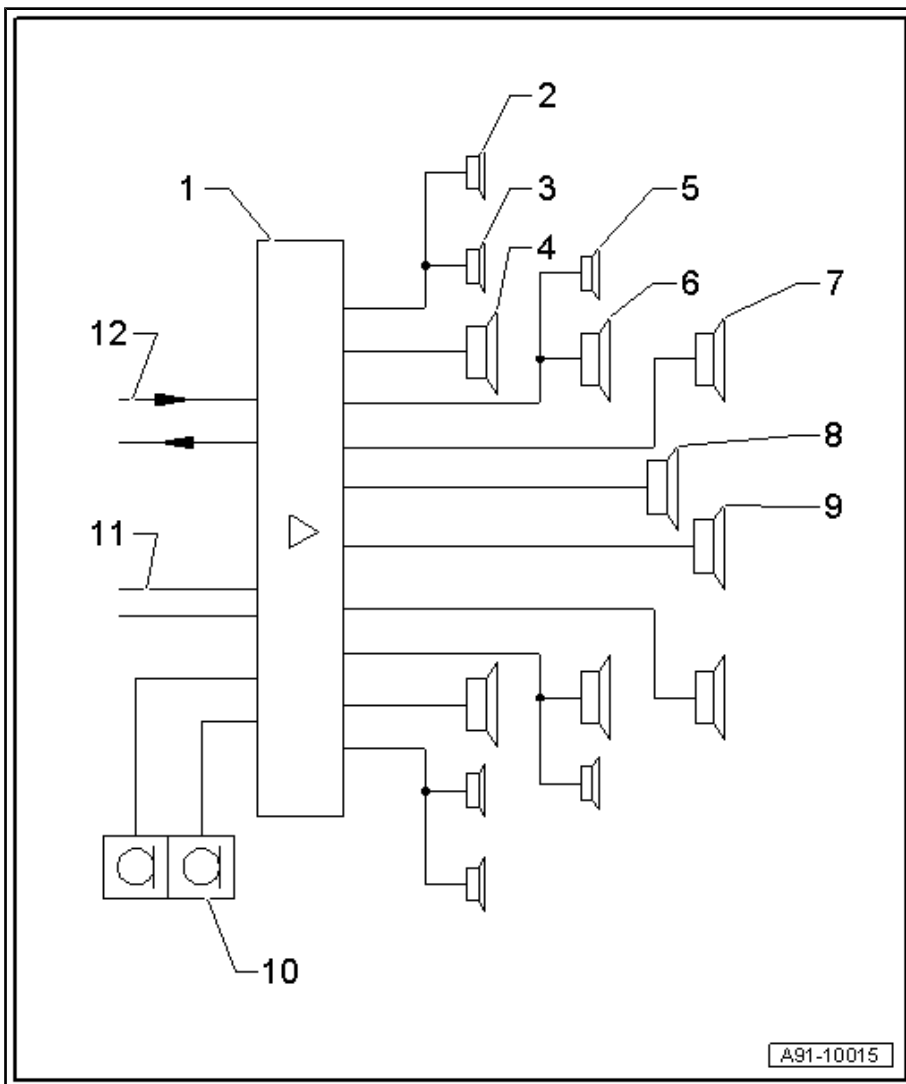
8 - Centre mid-range and treble loudspeaker - R158- in dash panel (centre)

9 - Subwoofer in rear shelf - R157- /in spare wheel well

10 - Microphone unit in front roof module - R164- (internal microphone - R74- , all vehicles/ voice command microphone - R206- , MMI up to week 44/08) in front interior light - W1-

11 - CAN bus (infotainment)

12 - MOST bus



Notes on MOST bus

In addition to the CAN bus, the fibre optic data bus "MOST bus" is used.

The connection to other data bus systems in the vehicle is handled by the data bus diagnostic interface - J533- .

A "fibre optic cable" is used as the connecting cable. The fibre optic cables are fitted in corrugated tubes for protection.

Renew the complete fibre optic cable whenever possible.

It is important to ensure that the end faces of the connectors do not become dirty.

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If connectors are unplugged: fit a protective cap for cable connector - VAS 6223/9- .

When installing the fibre optic cables, be sure to observe the minimum bending radius of 25 mm. Do not crush or kink the fibre optic cable.

Repairing fibre optic cables ⇒ Electrical system; Rep. gr. 97 ;
Fibre optic cables .



2.2 Overview of fitting locations - sound system

⇒ [“2.2.1 Overview of fitting locations - sound system, up to week 44/2008”, page 61](#)

⇒ [“2.2.2 Overview of fitting locations - sound system, Coupé, from week 45/2008 onwards”, page 63](#)

⇒ [“2.2.3 Overview of fitting locations - sound system, Sportback”, page 65](#)

2.2.1 Overview of fitting locations - sound system, up to week 44/2008



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1 - Front left treble loudspeaker - R20- / front right treble loudspeaker - R22-

- ☐ Removing and installing ➔ [page 71](#)
- ☐ Front left mid-range loudspeaker - R103- / front right mid-range loudspeaker - R104- (B+O)
- ☐ Removing and installing ➔ [page 73](#)

2 - Bolt

- ☐ 1 Nm

3 - Front left treble loudspeaker - R20- / front right treble loudspeaker - R22- (B+O)

- ☐ Removing and installing ➔ [page 70](#)

4 - Rear left mid-range loudspeaker - R105- / rear right mid-range loudspeaker - R106-

- ☐ Removing and installing ➔ [page 72](#)

5 - Bolt

- ☐ 2 Nm

6 - Subwoofer in rear shelf - R157-

- ☐ Removing and installing ➔ [page 76](#)

7 - Bolt

- ☐ 2 Nm

8 - Digital sound package control unit - J525- (CAN)

- ☐ Connectors for standard (CAN) ➔ [page 79](#)
- ☐ Connectors for B+O (CAN) ➔ [page 82](#)
- ☐ Removing and installing (CAN) ➔ [page 66](#)

9 - Bolt

- ☐ 3.5 Nm

10 - Digital sound package control unit - J525- (MMI)

- ☐ Connectors for basic plus (MMI up to week 44/2008) ➔ [page 78](#)
- ☐ Connectors for Standard (MMI up to week 44/2008) ➔ [page 80](#)
- ☐ Connectors for B+O (MMI) ➔ [page 83](#)
- ☐ Removing and installing (MMI up to week 44/2008) ➔ [page 67](#)

11 - Bolt

- ☐ 4.5 Nm

12 - Rear left mid-range and bass loudspeaker - R159- / rear right mid-range and bass loudspeaker - R160-

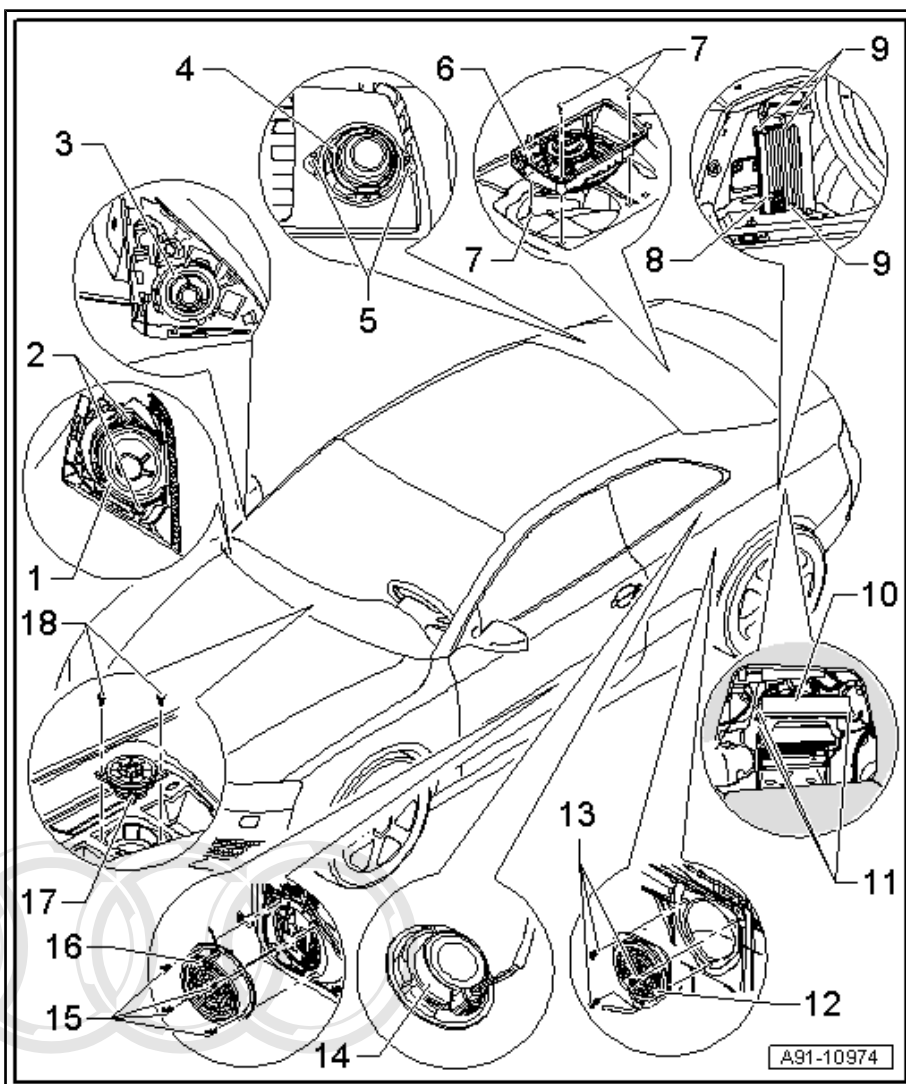
- ☐ Removing and installing ➔ [page 74](#)

13 - Bolt

- ☐ 3 Nm

14 - Rear left treble loudspeaker - R14- / rear right treble loudspeaker - R16-

- ☐ Removing and installing ➔ [page 69](#)



15 - Bolt

- ☐ 3 Nm

16 - Front left mid-range and bass loudspeaker - R101- / front left bass loudspeaker - R21- / front right mid-range and bass loudspeaker - R102- / front right bass loudspeaker - R23-

- ☐ Removing and installing ➔ [page 75](#)

17 - Centre mid-range and treble loudspeaker - R158-

- ☐ Removing and installing ➔ [page 77](#)

18 - Bolt

- ☐ 1 Nm

2.2.2 Overview of fitting locations - sound system, Coupé, from week 45/2008 onwards

1 - Front left treble loudspeaker - R20- / front right treble loudspeaker - R22-

- ☐ Removing and installing ➔ [page 71](#)
- ☐ Front left mid-range loudspeaker - R103- / front right mid-range loudspeaker - R104- (B+O)
- ☐ Removing and installing ➔ [page 73](#)

2 - Bolt

- ☐ 1 Nm

3 - Front left treble loudspeaker - R20- / front right treble loudspeaker - R22- (B+O)

- ☐ Removing and installing ➔ [page 70](#)

4 - Rear left mid-range loudspeaker - R105- / rear right mid-range loudspeaker - R106-

- ☐ Removing and installing ➔ [page 72](#)

5 - Bolt

- ☐ 2 Nm

6 - Subwoofer in rear shelf - R157-

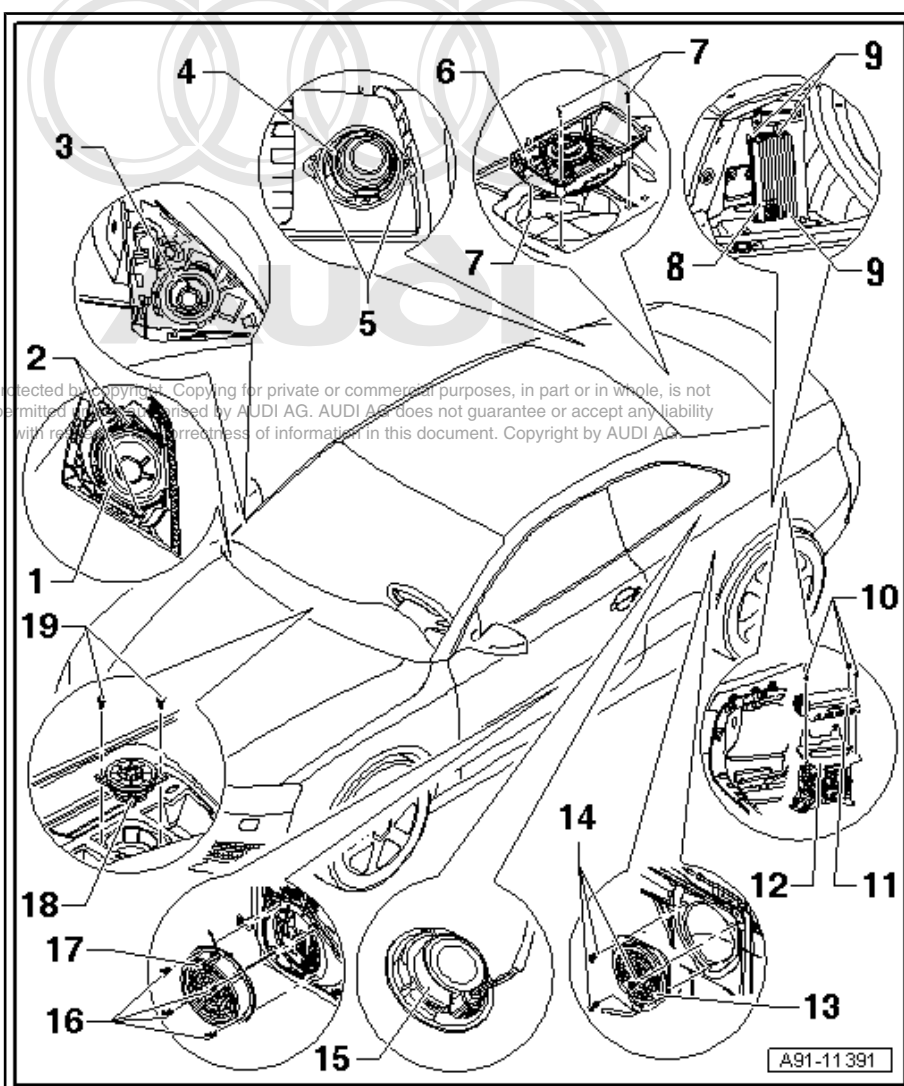
- ☐ Removing and installing ➔ [page 76](#)

7 - Bolt

- ☐ 2 Nm

8 - Digital sound package control unit - J525- (CAN)

- ☐ Connectors for standard (CAN) ➔ [page 79](#)
- ☐ Connectors for B+O (CAN) ➔ [page 82](#)
- ☐ Removing and installing (CAN) ➔ [page 66](#)



9 - Bolt

- ☐ 3.5 Nm

10 - Bolt

- ☐ 3.5 Nm

11 - Digital sound package control unit - J525- (MMI)

- ☐ Connectors for B+O (MMI) ⇒ [page 83](#)
- ☐ Removing and installing (MMI from week 45/2008 onwards) ⇒ [page 68](#)

12 - Bracket

13 - Rear left mid-range and bass loudspeaker - R159- / rear right mid-range and bass loudspeaker - R160-

- ☐ Removing and installing ⇒ [page 74](#)

14 - Bolt

- ☐ 3 Nm

15 - Rear left treble loudspeaker - R14- / rear right treble loudspeaker - R16-

- ☐ Removing and installing ⇒ [page 69](#)

16 - Bolt

- ☐ 3 Nm

17 - Front left mid-range and bass loudspeaker - R101- / front left bass loudspeaker - R21- / front right mid-range and bass loudspeaker - R102- / front right bass loudspeaker - R23-

- ☐ Removing and installing ⇒ [page 75](#)

18 - Centre mid-range and treble loudspeaker - R158-

- ☐ Removing and installing ⇒ [page 77](#)

19 - Bolt

- ☐ 1 Nm



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2.2.3 Overview of fitting locations - sound system, Sportback

1 - Bolt

- ☐ 1 Nm

2 - Front left treble loudspeaker - R20- / front right treble loudspeaker - R22-

- ☐ Removing and installing ➔ [page 71](#)
- ☐ Front left mid-range loudspeaker - R103- / front right mid-range loudspeaker - R104- (B+O)
- ☐ Removing and installing ➔ [page 73](#)

3 - Front left treble loudspeaker - R20- / front right treble loudspeaker - R22- (B+O)

- ☐ Removing and installing ➔ [page 70](#)

4 - Bolt

- ☐ 2 Nm

5 - Rear left mid-range loudspeaker - R105- / rear right mid-range loudspeaker - R106-

- ☐ Removing and installing ➔ [page 72](#)

6 - Subwoofer in rear shelf - R157-

- ☐ Removing and installing ➔ [page 76](#)

7 - Bolt

- ☐ 4.5 Nm

8 - Digital sound package control unit - J525- (CAN)

- ☐ Connectors for standard (CAN) ➔ [page 79](#)
- ☐ Connectors for B+O (CAN) ➔ [page 82](#)
- ☐ Removing and installing (CAN) ➔ [page 66](#)

9 - Bolt

- ☐ 3.5 Nm

10 - Bolt

- ☐ 3.5 Nm

11 - Bracket

12 - Digital sound package control unit - J525- (MMI)

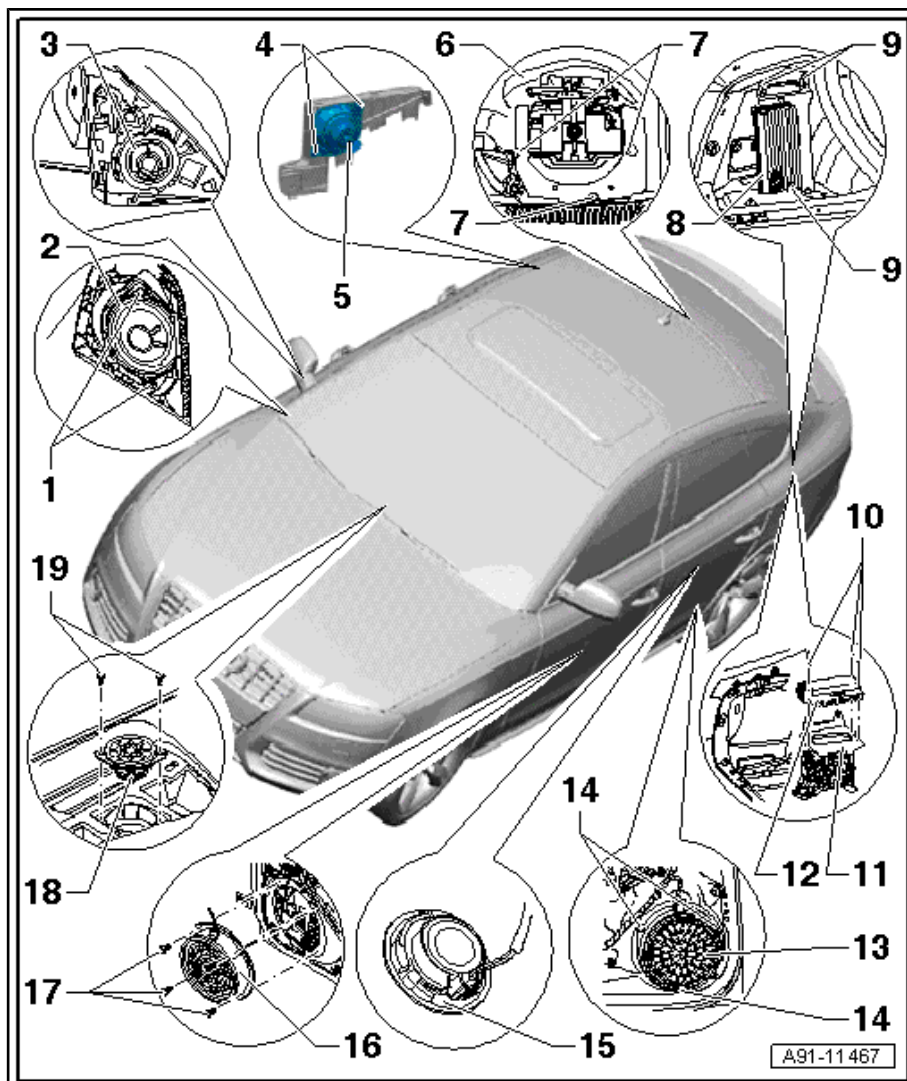
- ☐ Connectors for B+O (MMI) ➔ [page 83](#)
- ☐ Removing and installing (MMI from week 45/2008 onwards) ➔ [page 68](#)

13 - Rear left mid-range and bass loudspeaker - R159- / rear right mid-range and bass loudspeaker - R160-

- ☐ Removing and installing ➔ [page 74](#)

14 - Bolt

- ☐ 3 Nm



15 - Rear left treble loudspeaker - R14- / rear right treble loudspeaker - R16-

- ❑ Removing and installing ⇒ [page 70](#)

16 - Front left mid-range and bass loudspeaker - R101- / front left bass loudspeaker - R21- / front right mid-range and bass loudspeaker - R102- / front right bass loudspeaker - R23-

- ❑ Removing and installing ⇒ [page 75](#)

17 - Bolt

- ❑ 3 Nm

18 - Centre mid-range and treble loudspeaker - R158-

- ❑ Removing and installing ⇒ [page 77](#)

19 - Bolt

- ❑ 1 Nm

2.3 Removing and installing digital sound package control unit/amplifier

⇒ [“2.3.1 Removing and installing digital sound package control unit J525 \(CAN\)”, page 66](#)

⇒ [“2.3.2 Removing and installing digital sound package control unit J525 , MMI, up to week 44/2008”, page 67](#)

⇒ [“2.3.3 Removing and installing digital sound package control unit J525 , MMI, from week 45/2008 onwards”, page 68](#)

2.3.1 Removing and installing digital sound package control unit - J525- (CAN)

The digital sound package control unit - J525- is located behind the luggage compartment side trim (left-side).

- When renewing control unit, select “Replacement” function for appropriate control unit in “Guided Fault Finding”.

To do so, use ⇒ **Vehicle diagnostic tester.**

- Switch off all electrical equipment.
- Remove ignition key.

Removing

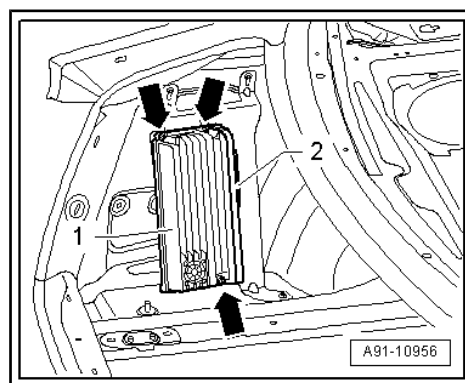
- Open left-side luggage compartment storage area.
- Loosen bolts -arrows- on digital sound package control unit - J525- -1- and swivel it aside.
- Unplug connector -2- on digital sound package control unit - J525- -1- and detach.

Installing

- Install in reverse sequence of removal.

Tightening torques

- ◆ ⇒ [“2.2 Overview of fitting locations - sound system”, page 61](#)

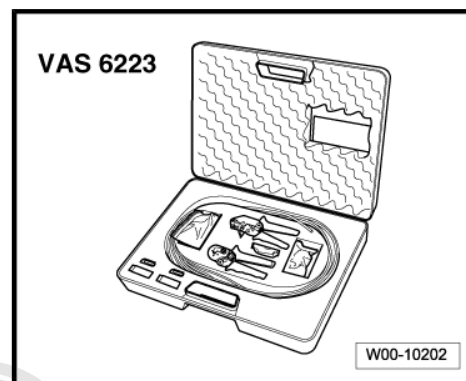


2.3.2 Removing and installing digital sound package control unit - J525- , MMI, up to week 44/2008

The digital sound package control unit - J525- is located behind the luggage compartment side trim (left-side) at the top of the infotainment rack.

Special tools and workshop equipment required

- ◆ Protective cap for cable connector - VAS 6223/9-



- When renewing control unit, select "Replacement" function for appropriate control unit in "Guided Fault Finding".

To do so, use ⇒ Vehicle diagnostic tester.

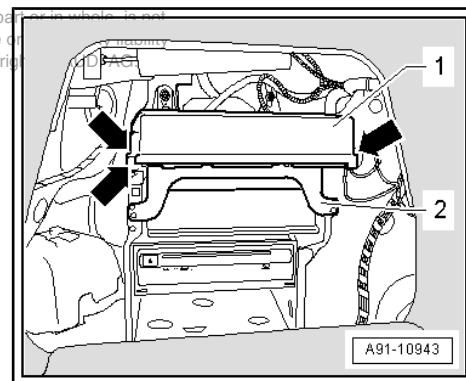
- Switch off all electrical equipment.
- Remove ignition key.

Removing

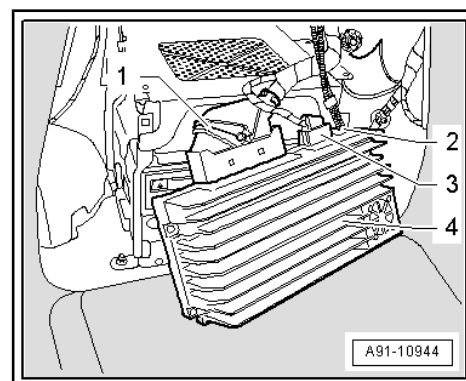
- Open left-side luggage compartment storage area.

It is not necessary to remove rack.

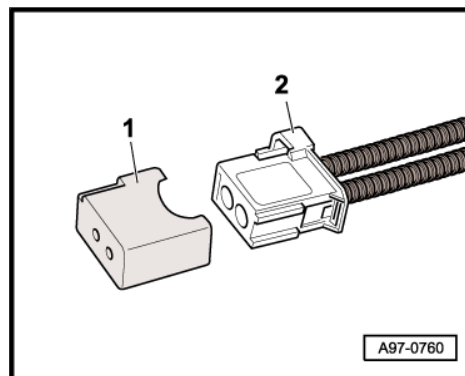
- Loosen bolts -arrows on rack -2- and swivel digital sound package control unit - J525- -1- into luggage compartment.



- Unplug connector to MOST bus -2- on digital sound package control unit - J525- -4-.



- Fit protective cap for cable connector - VAS 6223/9- -1- onto MOST bus connector -2-.



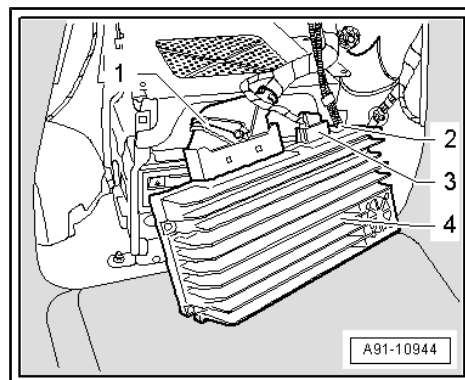
- Unplug connectors -1- and -3- and detach digital sound package control unit - J525- -4-.

Installing

- Install in reverse sequence of removal.

Tightening torques

- ◆ ⇒ [“2.2.1 Overview of fitting locations - sound system, up to week 44/2008”, page 61](#)

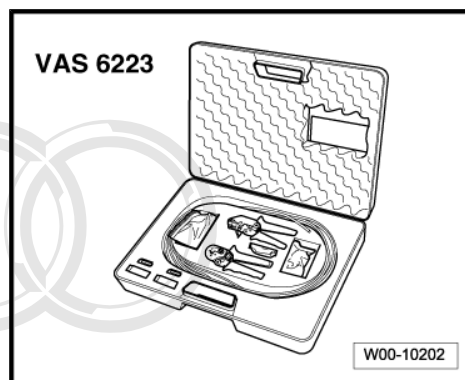


2.3.3 Removing and installing digital sound package control unit - J525- , MMI, from week 45/2008 onwards

The digital sound package control unit - J525- is located behind the luggage compartment side trim (left-side) at the top of the infotainment rack.

Special tools and workshop equipment required

- ◆ Protective cap for cable connector - VAS 6223/9-



- When renewing control unit, select “Replacement” function for appropriate control unit in “Guided Fault Finding”.

To do so, use ⇒ Vehicle diagnostic tester.

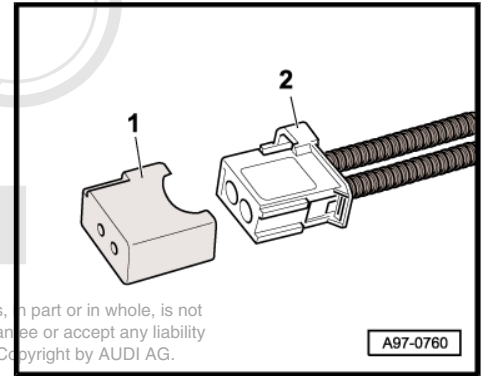
- Switch off all electrical equipment.

- Remove ignition key.

Removing

- Open left-side luggage compartment storage area.
- Release and unplug all connectors at digital sound package control unit - J525- .

- Fit protective cap for cable connector - VAS 6223/9- -1- onto MOST bus connector -2-.



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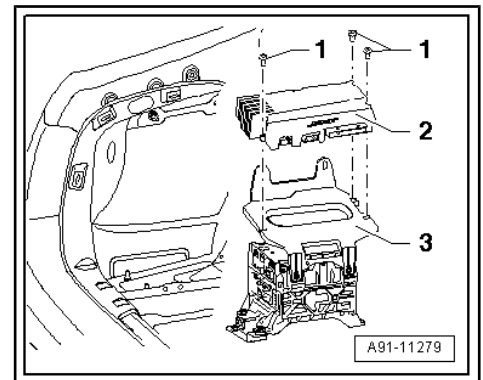
- Unscrew bolts -1- at digital sound package control unit - J525- -2- and detach digital sound package control unit - J525- -2- from bracket -3-.

Installing

- Install in reverse sequence of removal.

Tightening torques

- ◆ ⇒ [“2.2.2 Overview of fitting locations - sound system, Coupé, from week 45/2008 onwards”, page 63](#)
- ◆ ⇒ [“2.2.3 Overview of fitting locations - sound system, Sportback”, page 65](#)



2.4 Removing and installing rear treble loudspeakers -R14- / -R16-

⇒ [“2.4.1 Removing and installing rear treble loudspeaker \(Coupé\)”, page 69](#)

⇒ [“2.4.2 Removing and installing rear treble loudspeakers, Sportback”, page 70](#)

2.4.1 Removing and installing rear treble loudspeaker (Coupé)

Rear left treble loudspeaker - R14- and rear right treble loudspeaker - R16- are located in rear side trims.

The removal and installation procedure is similar for all components.

- Switch off all electrical equipment.
- Remove ignition key.

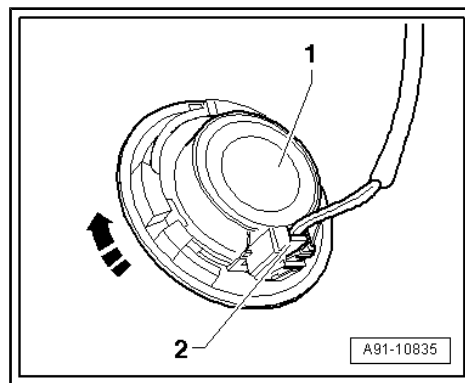
Removing

- Remove rear side trim ⇒ General body repairs, interior; Rep. gr. 70 ; Passenger compartment trim panels; Removing and installing side trim .

- Release and unplug electrical connector -2- at rear left treble loudspeaker - R14- -1-.
- Turn rear left treble loudspeaker - R14- -1- in direction of -arrow- and lift it off side trim.

Installing

- Install in reverse sequence of removal.



2.4.2 Removing and installing rear treble loudspeakers, Sportback

Rear left treble loudspeaker - R14- and rear right treble loudspeaker - R16- are located in rear door trim panels.

The removal and installation procedure is similar for all components.

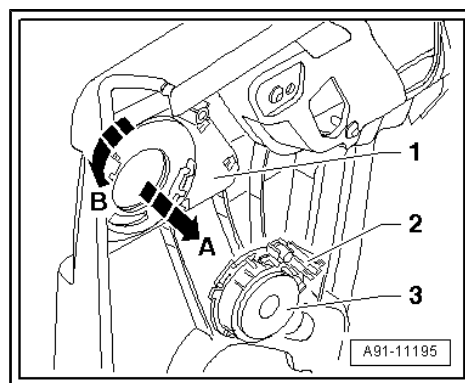
- Switch off all electrical equipment.
- Remove ignition key.

Removing

- Remove door trim (rear) ⇒ General body repairs, interior; Rep. gr. 70 ; Door trim (rear); Removing and installing door trim (rear) .
- Release and unplug electrical connector -2- at rear left treble loudspeaker - R14- -3-.
- Turn rear left treble loudspeaker - R14- -3- in direction of -arrow B- until rear left treble loudspeaker - R14- -3- can be detached from door trim -1- in direction of -arrow A-.

Installing

- Install in reverse sequence of removal.



2.5 Removing and installing front treble loudspeakers -R20- / -R22-

⇒ **"2.5.1 Removing and installing front treble loudspeaker, B+O", page 70**

⇒ **"2.5.2 Removing and installing front treble loudspeakers", page 71**

2.5.1 Removing and installing front treble loudspeaker, B+O

Front left treble loudspeaker - R20- and front right treble loudspeaker - R22- are located in mirror triangles.

The removal and installation procedure is similar for all components.

- Switch off all electrical equipment.
- Remove ignition key.

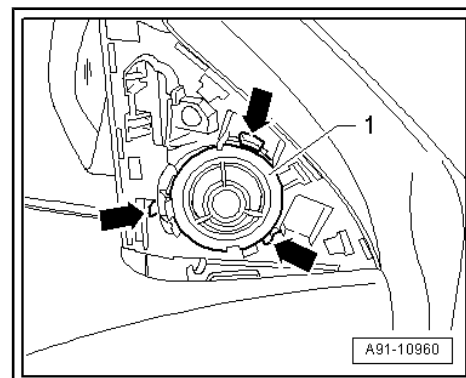
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Removing

- Remove mirror triangle cover ⇒ General body repairs, interior; Rep. gr. 70 ; Door trim (front); Removing and installing trim panel for treble loudspeaker .
- Push retaining tabs -arrows- on front left treble loudspeaker - R20- -1- outwards and pull out front left treble loudspeaker - R20- -1-.
- Release and unplug connector at front left treble loudspeaker - R20- -1-.

Installing

- Install in reverse sequence of removal.



2.5.2 Removing and installing front treble loudspeakers

Front left treble loudspeaker - R20- / front right treble loudspeaker - R22- are located in dash panel (front).

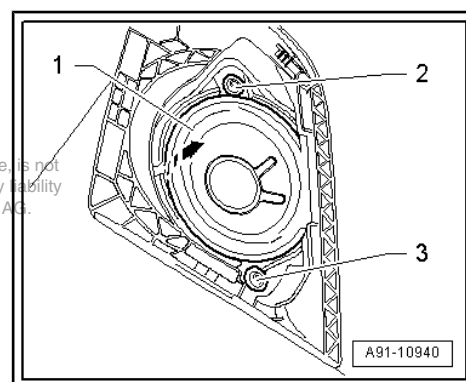
The removal and installation procedure is similar for all components.

- Switch off all electrical equipment.
- Remove ignition key.

Removing

- Unclip trim panel for loudspeaker in dash panel.
- Unscrew bolts -2- and -3- on front left treble loudspeaker - R20- -1- and lift front left treble loudspeaker - R20- -1- out of dash panel in direction of -arrow-.

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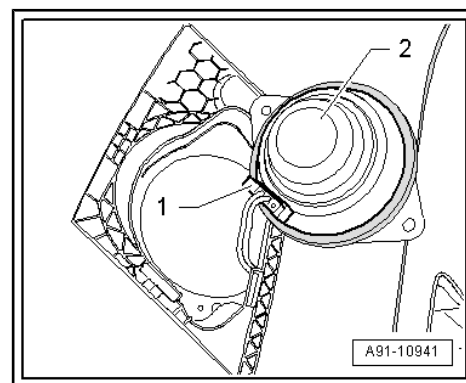
- Release and unplug electrical connector -1- at front left treble loudspeaker - R20- -2-.
- Detach front left treble loudspeaker - R20- -2- from dash panel.

Installing

- Install in reverse sequence of removal.

Tightening torques

- ◆ ⇒ [“2.2 Overview of fitting locations - sound system”, page 61](#)



2.6 Removing and installing rear mid-range loudspeaker

⇒ [“2.6.1 Removing and installing rear mid-range loudspeaker, Coupé”, page 72](#)

⇒ [“2.6.2 Removing and installing rear mid-range loudspeakers, Sportback”, page 72](#)

2.6.1 Removing and installing rear mid-range loudspeaker, Coupé

Rear left mid-range loudspeaker - R105- and rear right mid-range loudspeaker - R106- are located in rear shelf.

The removal and installation procedure is similar for all components.

- Switch off all electrical equipment.
- Remove ignition key.

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Removing

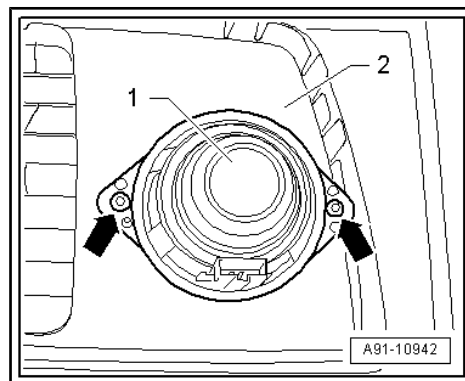
- Remove loudspeaker trim in rear shelf ⇒ General body repairs, interior; Rep. gr. 70 ; Passenger compartment trim panels; Removing and installing loudspeaker trim .
- Unplug connector at rear left mid-range loudspeaker - R105- .
- Unscrew bolts -arrows- at rear left mid-range loudspeaker - R105- -1-.
- Detach rear left mid-range loudspeaker - R105- -1- from loudspeaker trim -2-.

Installing

- Install in reverse sequence of removal.

Tightening torques

- ◆ ⇒ [“2.2.1 Overview of fitting locations - sound system, up to week 44/2008”, page 61](#)
- ◆ ⇒ [“2.2.2 Overview of fitting locations - sound system, Coupé, from week 45/2008 onwards”, page 63](#)



2.6.2 Removing and installing rear mid-range loudspeakers, Sportback

Rear left mid-range loudspeaker - R105- and rear right mid-range loudspeaker - R106- are located in luggage compartment side trim.

The removal and installation procedure is similar for all components.

- Switch off all electrical equipment.
- Remove ignition key.

Removing

- Remove luggage compartment side trim ⇒ General body repairs, interior; Rep. gr. 70 ; Luggage compartment trim panels; Removing and installing luggage compartment side trim .
- Release and unplug connector at rear left mid-range loudspeaker - R105- .

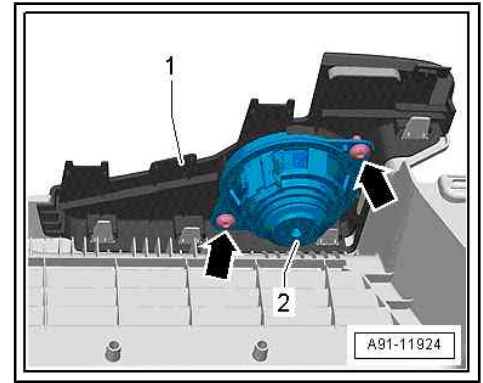
- Unscrew bolts -arrows- at rear left mid-range loudspeaker - R105- -2-.
- Detach rear left mid-range loudspeaker - R105- -2- from luggage compartment side trim -1-.

Installing

- Install in reverse sequence of removal.

Tightening torques

- ◆ ⇒ [“2.2.3 Overview of fitting locations - sound system, Sportback”, page 65](#)



2.7 Removing and installing front mid-range loudspeakers

⇒ [“2.7.1 Removing and installing front mid-range loudspeaker, B+O”, page 73](#)

2.7.1 Removing and installing front mid-range loudspeaker, B+O

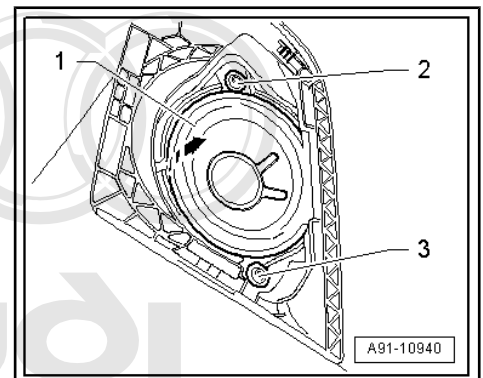
Front left mid-range loudspeaker - R103- and front right mid-range loudspeaker - R104- are located in dash panel (front).

The removal and installation procedure is similar for all components.

- Switch off all electrical equipment.
- Remove ignition key.

Removing

- Unclip trim panel for loudspeaker in dash panel.
- Unscrew bolts -2- and -3- at front left mid-range loudspeaker - R103- -1- and lift front left mid-range loudspeaker - R103- -1- out of dash panel in direction of -arrow-.



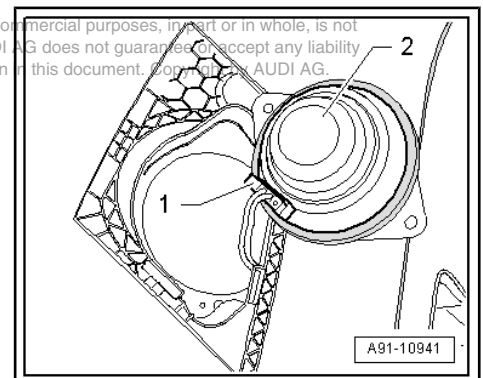
- Release and unplug electrical connector 1- at front left mid-range loudspeaker - R103- -2-.
- Detach front left mid-range loudspeaker - R103- -2- from dash panel.

Installing

- Install in reverse sequence of removal.

Tightening torques

- ◆ ⇒ [“2.2 Overview of fitting locations - sound system”, page 61](#)



2.8 Removing and installing rear mid-range and bass loudspeakers

⇒ ["2.8.1 Removing and installing rear mid-range and bass loudspeaker \(Coupé\)", page 74](#)

⇒ ["2.8.2 Removing and installing rear mid-range and bass loudspeakers, Sportback", page 74](#)

2.8.1 Removing and installing rear mid-range and bass loudspeaker (Coupé)

Rear left mid-range and bass loudspeaker - R159- and rear right mid-range and bass loudspeaker - R160- are located behind rear side trim.

The removal and installation procedure is similar for all components.

- Switch off all electrical equipment.
- Remove ignition key.

Removing

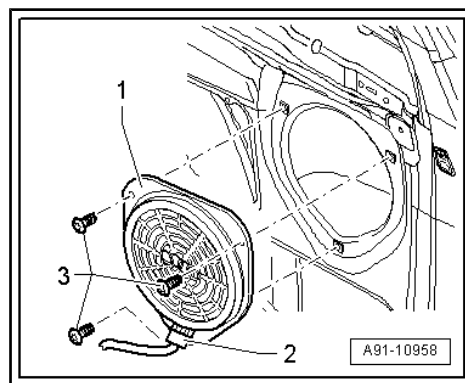
- Remove rear side trim ⇒ General body repairs, interior; Rep. gr. 70 ; Passenger compartment trim panels; Removing and installing side trim .
- Release and unplug electrical connector -2- at rear left mid-range and bass loudspeaker - R159- -1-.
- Unscrew bolts -3- and remove rear left mid-range and bass loudspeaker - R159- -1-.

Installing

- Install in reverse sequence of removal.

Tightening torques

- ♦ ⇒ ["2.2.1 Overview of fitting locations - sound system, up to week 44/2008", page 61](#)
- ♦ ⇒ ["2.2.2 Overview of fitting locations - sound system, Coupé, from week 45/2008 onwards", page 63](#)



2.8.2 Removing and installing rear mid-range and bass loudspeakers, Sportback

Rear left mid-range and bass loudspeaker - R159- and rear right mid-range and bass loudspeaker - R160- are located in rear doors (bottom).

The removal and installation procedure is similar for all components.

- Switch off all electrical equipment.
- Remove ignition key.

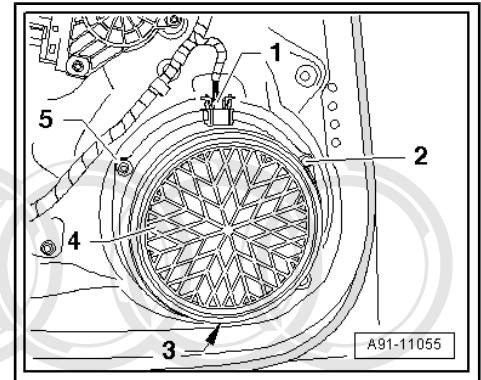
Removing

- Remove door trim (rear) ⇒ General body repairs, interior; Rep. gr. 70 ; Door trim (rear); Removing and installing door trim (rear) .

- Release and unplug electrical connector -1- at rear left mid-range and bass loudspeaker - R159- -4-.
- Unscrew bolts -2-, -3- and -5- and remove rear left mid-range and bass loudspeaker - R159- -4-.

Installing

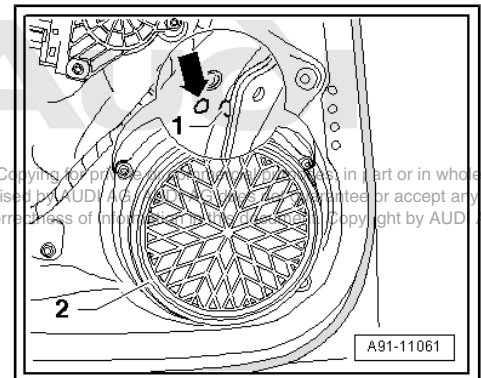
- Install in reverse sequence of removal.



- Make sure that pins -1- on rear left mid-range and bass loudspeaker - R159- -2- engage properly in holes -arrow- (left and right) beneath tapped holes.

Tightening torques

- ◆ ⇒ [“2.2.3 Overview of fitting locations - sound system, Sportback”, page 65](#)



2.9 Removing and installing front bass loudspeakers -R21- / -R23-

⇒ [“2.9.1 Removing and installing front mid-range and bass loudspeaker/ bass loudspeaker”, page 75](#)

2.9.1 Removing and installing front mid-range and bass loudspeaker/ bass loudspeaker

Front left mid-range and bass loudspeaker - R101- , front right mid-range and bass loudspeaker - R102- , front left bass loudspeaker - R21- and front right bass loudspeaker - R23- are located in doors (bottom).

The removal and installation procedure is similar for all components.

- Switch off all electrical equipment.
- Remove ignition key.

Removing

- Remove door trim ⇒ General body repairs, interior; Rep. gr. 70 ; Door trim (front); Removing and installing door trim (front) .

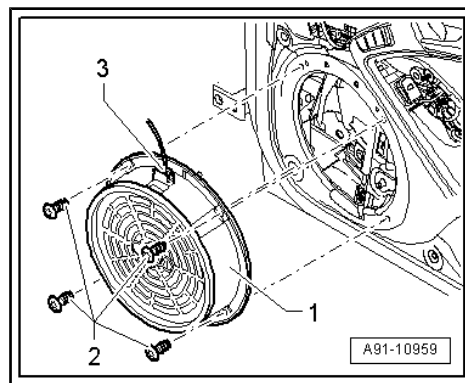
- Release and unplug connector -3- at front left bass loudspeaker - R21- -1-.
- Remove bolts -2-.
- Detach front left bass loudspeaker - R21- -1-.

Installing

- Install in reverse sequence of removal.

Tightening torques

- ◆ ⇒ [“2.2 Overview of fitting locations - sound system”, page 61](#)



2.10 Removing and installing subwoofer - R211-

⇒ [“2.10.1 Removing and installing subwoofer in rear shelf R157, Coupé”, page 76](#)

⇒ [“2.10.2 Removing and installing subwoofer in rear shelf R157, Sportback”, page 76](#)

2.10.1 Removing and installing subwoofer in rear shelf - R157- , Coupé

Subwoofer in rear shelf - R157- is located in rear shelf.

- Switch off all electrical equipment.
- Remove ignition key.

Removing

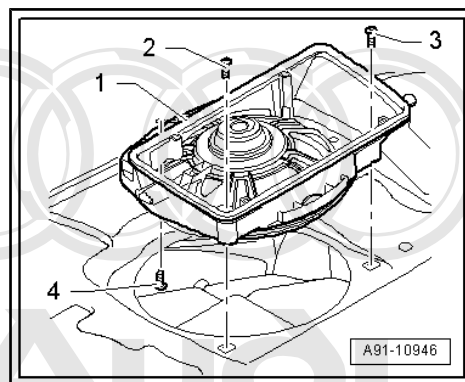
- Remove rear shelf ⇒ General body repairs, interior; Rep. gr. 70 ; Passenger compartment trim panels; Removing and installing rear shelf .
- Remove bolts -2- and -3- from subwoofer in rear shelf - R157- -1-.
- Unscrew bolt -4- (from luggage compartment side).
- Unplug connector and lift off subwoofer in rear shelf - R157- .

Installing

- Install in reverse sequence of removal.

Tightening torques

- ◆ ⇒ [“2.2.1 Overview of fitting locations - sound system, up to week 44/2008”, page 61](#)
- ◆ ⇒ [“2.2.2 Overview of fitting locations - sound system, Coupé, from week 45/2008 onwards”, page 63](#)



2.10.2 Removing and installing subwoofer in rear shelf - R157- , Sportback

Subwoofer in rear shelf - R157- is located in spare wheel well.

- Switch off all electrical equipment.
- Remove ignition key.

Removing

- Take out luggage compartment floor and spare wheel.

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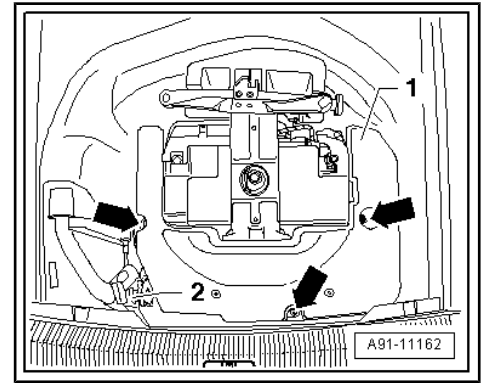
- Remove nuts -arrows- from subwoofer in rear shelf - R157- -1-.
- Unplug connector -2- and lift out subwoofer in rear shelf - R157- -1-.

Installing

- Install in reverse sequence of removal.

Tightening torques

- ◆ ⇒ [“2.2.3 Overview of fitting locations - sound system, Sportback”, page 65](#)



2.11 Removing and installing centre loudspeaker

⇒ [“2.11.1 Removing and installing centre mid-range and treble loudspeaker R158”, page 77](#)

2.11.1 Removing and installing centre mid-range and treble loudspeaker - R158-

Centre mid-range and treble loudspeaker - R158- is located in dash panel (front centre).

- Switch off all electrical equipment.
- Remove ignition key.

Removing

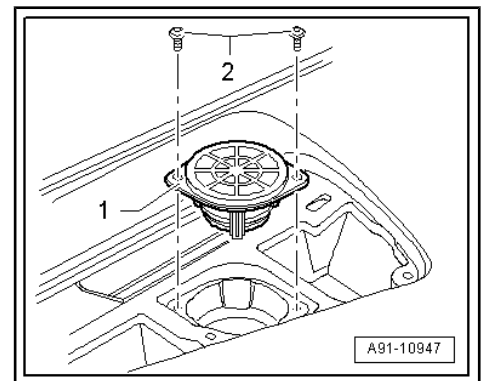
- Unclip trim panel for loudspeaker in dash panel.
- Remove bolts -2- on centre mid-range and treble loudspeaker - R158- -1-.
- Release and unplug connector at centre mid-range and treble loudspeaker - R158- -1-.
- Remove centre mid-range and treble loudspeaker - R158- -1- from dash panel.

Installing

- Install in reverse sequence of removal.

Tightening torques

- ◆ ⇒ [“2.2 Overview of fitting locations - sound system”, page 61](#)



2.12 Pin assignment

⇒ [“2.12.1 Pin assignment for sound system basic plus, MMI, up to week 44/2008”, page 78](#)

⇒ [“2.12.2 Pin assignment for standard sound system, CAN”, page 79](#)

⇒ [“2.12.3 Pin assignment for standard sound system, MMI, up to week 44/2008”, page 80](#)

⇒ [“2.12.4 Pin assignment for Bang & Olufsen sound system, CAN”, page 82](#)

⇒ [“2.12.5 Pin assignment for Bang & Olufsen sound system, MMI”, page 83](#)

2.12.1 Pin assignment for sound system basic plus, MMI, up to week 44/2008

Digital sound package control unit - J525-

A - MOST bus

B - Multi-pin connector, 32-pin (T32h)



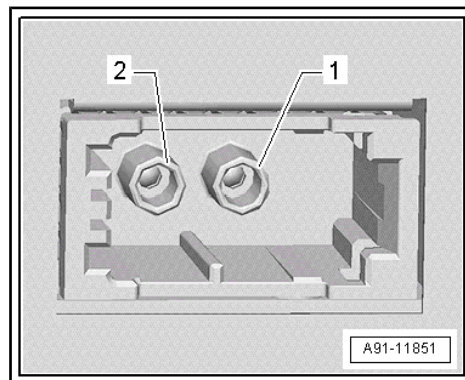
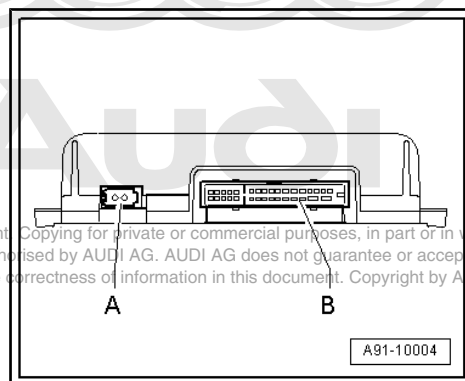
Note

Contacts which are not listed are not used.

A - MOST bus

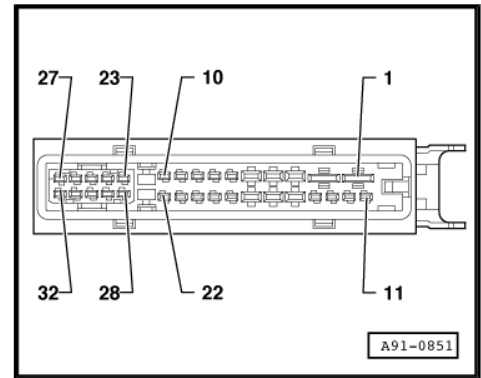
- 1 - Input
- 2 - Output

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B - Multi-pin connector, 32-pin (T32h)

- 1 - Terminal 30
- 2 - Terminal 31
- 3 - Front left loudspeaker (+)
- 4 - Front right loudspeaker (+)
- 6 - Rear left loudspeaker (+)
- 7 - Rear right loudspeaker (+)
- 15 - Front left loudspeaker (-)
- 16 - Front right loudspeaker (-)
- 18 - Rear left loudspeaker (-)
- 19 - Rear right loudspeaker (-)
- 24 - NF in, left-side (low frequency) from connection for external audio sources - R199-
- 25 - NF (+) (low frequency) from pre-fitted components for mobile phone installation/Japan nav
- 26 - NF in, right-side (low frequency) from connection for external audio sources - R199-
- 27 - Open circuit diagnostic lead
- 29 - NF in, earth, left-side (low frequency) from connection for external audio sources - R199-
- 30 - NF (-) (low frequency) from pre-fitted components for mobile phone installation/Japan nav
- 31 - NF in, earth, right-side (low frequency) from connection for external audio sources - R199-



2.12.2 Pin assignment for standard sound system, CAN

Digital sound package control unit - J525-

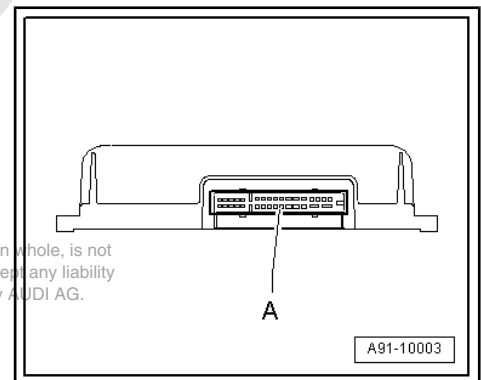
A - Multi-pin connector, 32-pin, black (T32h)



Note

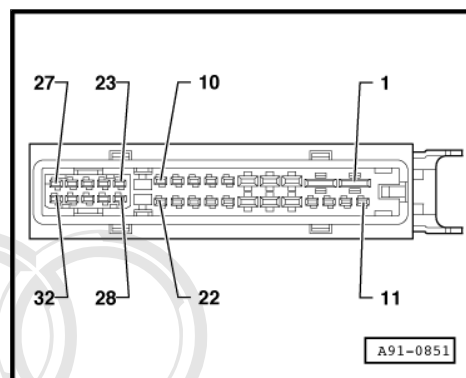
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Contacts which are not listed are not used.



A - Multi-pin connector, 32-pin (T32h)

- 1 - Terminal 30
- 2 - Terminal 31
- 3 - Subwoofer in rear shelf - R157- (+)
- 4 - Front left loudspeaker (+)
- 5 - Front right loudspeaker (+)
- 6 - Rear left loudspeaker (+)
- 7 - Rear right loudspeaker (+)
- 8 - Centre mid-range and treble loudspeaker - R158- (+)
- 13 - CAN bus High (infotainment)
- 14 - CAN bus Low (infotainment)
- 15 - Subwoofer in rear shelf - R157- (-)
- 16 - Front left loudspeaker (-)
- 17 - Front right loudspeaker (-)
- 18 - Rear left loudspeaker (-)
- 19 - Rear right loudspeaker (-)
- 20 - Centre mid-range and treble loudspeaker - R158- (-)
- 23 - Signal (+), rear right from radio - R-
- 24 - Signal (+), rear left from radio - R-
- 25 - Signal (+), front right from radio - R-
- 26 - Signal (+), front left from radio - R-
- 28 - Signal (-), rear right from radio - R-
- 29 - Signal (-), rear left from radio - R-
- 30 - Signal (-), front right from radio - R-
- 31 - Signal (-), front left from radio - R-



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2.12.3 Pin assignment for standard sound system, MMI, up to week 44/2008

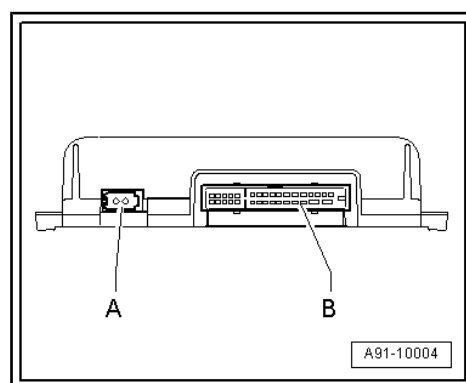
Digital sound package control unit - J525-

- A - MOST bus
- B - Multi-pin connector, 32-pin (T32h)



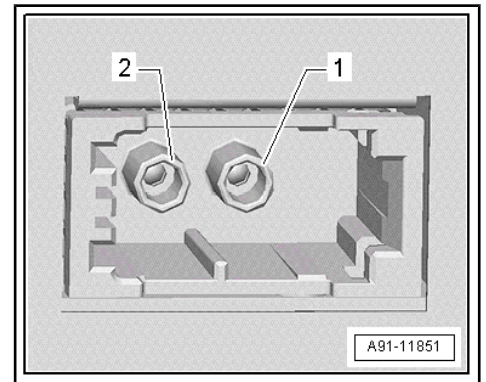
Note

Contacts which are not listed are not used.



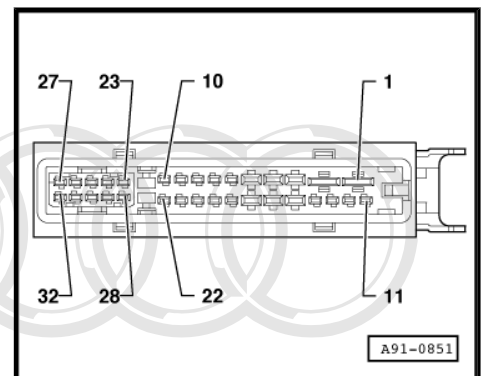
A - MOST bus

- 1 - Input
- 2 - Output



B - Multi-pin connector, 32-pin (T32h)

- 1 - Terminal 30
- 2 - Terminal 31
- 3 - Subwoofer in rear shelf - R157- (+)
- 4 - Front left loudspeaker (+)
- 5 - Front right loudspeaker (+)
- 6 - Rear left loudspeaker (+)
- 7 - Rear right loudspeaker (+)
- 8 - Middle loudspeaker - R148- (+)
- 15 - Subwoofer in rear shelf - R157- (-)
- 16 - Front left loudspeaker (-)
- 17 - Front right loudspeaker (-)
- 18 - Rear left loudspeaker (-)
- 19 - Rear right loudspeaker (-)
- 20 - Middle loudspeaker - R148- (-)
- 23 - Microphone 1 (+) from microphone unit in front roof module - R164- (voice command microphone - R206-)
- 24 - NF in, left-side (low frequency) from connection for external audio sources - R199-
- 25 - NF (+) (low frequency) from pre-fitted components for mobile phone installation/Japan nav
- 26 - NF in, right-side (low frequency) from connection for external audio sources - R199-
- 27 - Open circuit diagnostic lead
- 28 - Microphone 1 (-) from microphone unit in front roof module - R164- (voice command microphone - R206-)
- 29 - NF in, earth, left-side (low frequency) from connection for external audio sources - R199-
- 30 - NF (-) (low frequency) from pre-fitted components for mobile phone installation/Japan nav
- 31 - NF in, earth, right-side (low frequency) from connection for external audio sources - R199-



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2.12.4 Pin assignment for Bang & Olufsen sound system, CAN

Digital sound package control unit - J525-

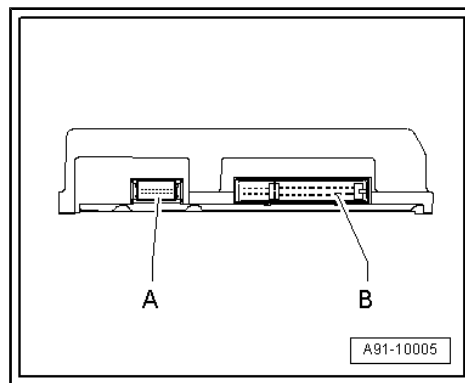
A - Multi-pin connector, 18-pin (T18b)

B - Multi-pin connector, 32-pin (T32h)



Note

Contacts which are not listed are not used.



A - Multi-pin connector, 18-pin (T18b)

1 - Microphone input 1 (+) from microphone unit in front roof module - R164- (internal microphone - R74-)

2 - Microphone input 1 (screen earth) from microphone unit in front roof module - R164- (internal microphone - R74-)

4 - Signal (+), rear right from radio - R-

5 - Signal (+), rear left from radio - R-

6 - Signal (+), front right from radio - R-

7 - Signal (+), front left from radio - R-

9 - CAN bus High (infotainment)

10 - Microphone input 1 (-) from microphone unit in front roof module - R164- (internal microphone - R74-)

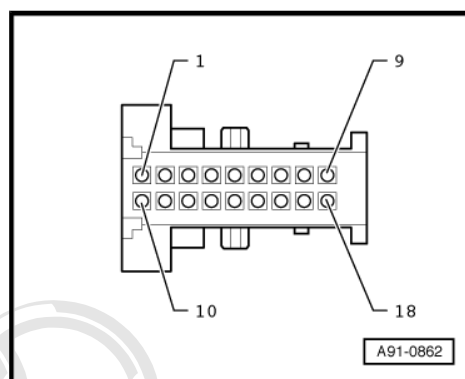
13 - Signal (-), rear right from radio - R-

14 - Signal (-), rear left from radio - R-

15 - Signal (-), front right from radio - R-

16 - Signal (-), front left from radio - R-

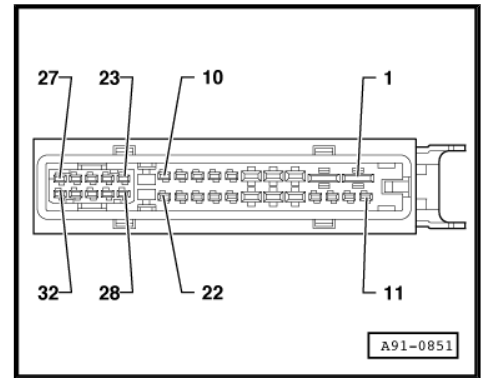
18 - CAN bus Low (infotainment)



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B - Multi-pin connector, 32-pin (T32h)

- 1 - Terminal 30
- 2 - Terminal 31
- 3 - Loudspeaker (+), rear left
- 4 - Loudspeaker (+), rear right
- 5 - Centre mid-range and treble loudspeaker - R158- (+)
- 6 - Loudspeaker (+), front left
- 7 - Loudspeaker (+), front right
- 8 - Rear left mid-range loudspeaker - R105- (+)
- 9 - Rear right mid-range loudspeaker - R106- (+)
- 10 - Front right bass loudspeaker - R23- (+)
- 15 - Loudspeaker (-), rear left
- 16 - Loudspeaker (-), rear right
- 17 - Centre mid-range and treble loudspeaker - R158- (-)
- 18 - Loudspeaker (-), front left
- 19 - Loudspeaker (-), front right
- 20 - Rear left mid-range loudspeaker - R105- (-)
- 21 - Rear right mid-range loudspeaker - R106- (-)
- 22 - Front right bass loudspeaker - R23- (-)
- 23 - Front left bass loudspeaker - R21- (+)
- 25 - Subwoofer in rear shelf - R157- (+)
- 28 - Front left bass loudspeaker - R21- (-)
- 30 - Subwoofer in rear shelf - R157- (-)



2.12.5 Pin assignment for Bang & Olufsen sound system, MMI

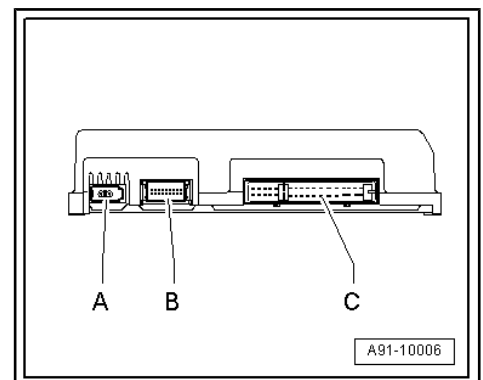
Digital sound package control unit - J525-

- A - MOST bus
- B - Multi-pin connector, 18-pin (T18b)
- C - Multi-pin connector, 32-pin (T32h)



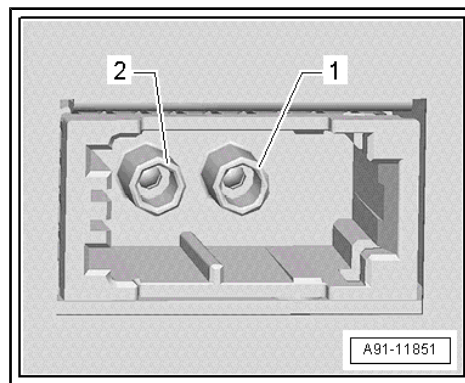
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Contacts which are not listed are not used.



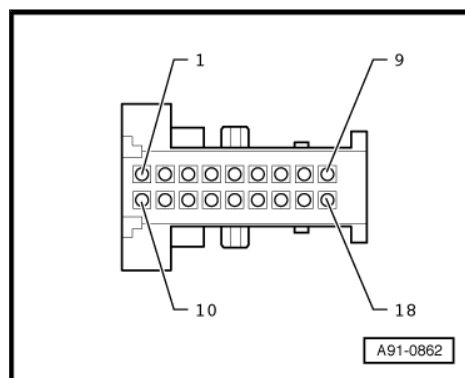
A - MOST bus

- 1 - Input
- 2 - Output



B - Multi-pin connector, 18-pin, black (T18b)

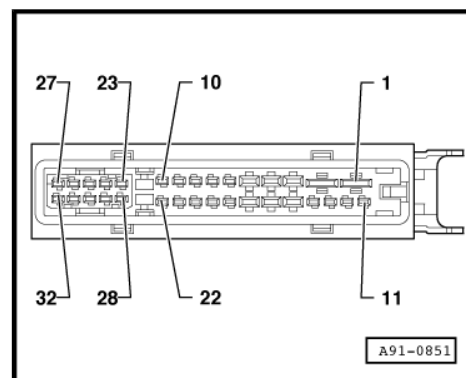
- 1 - Microphone input 1 (+) from microphone unit in front roof module - R164- (internal microphone - R74-)
- 2 - Microphone input 1 (screen earth) from microphone unit in front roof module - R164- (internal microphone - R74-)
- 3 - Microphone input 2 (+) from microphone unit in front roof module - R164- (voice command microphone - R206-) up to week 44/08
- 4 - NF (+) (low frequency) from pre-fitted components for mobile phone installation/Japan nav (up to week 44/08)
- 6 - NF in, right-side (low frequency) from connection for external audio sources - R199- (up to week 44/08)
- 7 - NF in, left-side (low frequency) from connection for external audio sources - R199- (up to week 44/08)
- 10 - Microphone input 1 (-) from microphone unit in front roof module - R164- (internal microphone - R74-)
- 11 - Microphone input 2 (screen earth) from microphone unit in front roof module - R164- (voice command microphone - R206-) up to week 44/08
- 12 - Microphone input 2 (-) from microphone unit in front roof module - R164- (voice command microphone - R206-) up to week 44/08
- 13 - NF (-) (low frequency) from pre-fitted components for mobile phone installation/Japan nav (up to week 44/08)
- 15 - NF in, earth, right-side (low frequency) from connection for external audio sources - R199- (up to week 44/08)
- 16 - NF in, earth, left-side (low frequency) from connection for external audio sources - R199- (up to week 44/08)
- 17 - Open circuit diagnostic lead



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C - Multi-pin connector, 32-pin (T32h)

- 1 - Terminal 30
- 2 - Terminal 31
- 3 - Loudspeaker (+), rear left
- 4 - Loudspeaker (+), rear right
- 5 - Centre mid-range and treble loudspeaker - R158- (+)
- 6 - Loudspeaker (+), front left
- 7 - Loudspeaker (+), front right
- 8 - Rear left mid-range loudspeaker - R105- (+)
- 9 - Rear right mid-range loudspeaker - R106- (+)
- 10 - Front right bass loudspeaker - R23- (+)
- 15 - Loudspeaker (-), rear left
- 16 - Loudspeaker (-), rear right
- 17 - Centre mid-range and treble loudspeaker - R158- (-)
- 18 - Loudspeaker (-), front left
- 19 - Loudspeaker (-), front right
- 20 - Rear left mid-range loudspeaker - R105- (-)
- 21 - Rear right mid-range loudspeaker - R106- (-)
- 22 - Front right bass loudspeaker - R23- (-)
- 23 - Front left bass loudspeaker - R21- (+)
- 25 - Subwoofer in rear shelf - R157- (+)
- 28 - Front left bass loudspeaker - R21- (-)
- 30 - Subwoofer in rear shelf - R157- (-)



3 Aerial systems

⇒ [“3.1 Layout - aerial systems”, page 86](#)

⇒ [“3.2 Overview of fitting locations - aerial systems”, page 87](#)

⇒ [“3.3 Removing and installing aerial amplifiers”, page 90](#)

⇒ [“3.4 Removing and installing traffic data aerial”, page 92](#)

⇒ [“3.5 Removing and installing roof aerial”, page 93](#)

⇒ [“3.6 Removing and installing internet access aerial”, page 94](#)

⇒ [“3.7 Pin assignment for aerial amplifier”, page 94](#)

3.1 Layout - aerial systems

⇒ [“3.1.1 Layout - aerial systems, Coupé”, page 86](#)

⇒ [“3.1.2 Layout - aerial systems, Sportback”, page 87](#)

3.1.1 Layout - aerial systems, Coupé

The aerial system consists of the rear window aerials and the roof aerial.

The following aerials are fitted in the roof aerial (radio, telephone and navigation system aerial - R52-):

- ◆ GPS aerial - R50-
- ◆ Telephone aerial - R65-
- ◆ Aerial for remote control receiver for auxiliary heating - R64-
- ◆ Satellite tuner aerial - R172- (CAN radio), USA only
- ◆ Satellite aerial - R170- (MMI), USA only (up to week 44/2008)
- ◆ Satellite aerial - R172- (MMI), USA only (from week 45/2008 onwards)

System with phase diversity (CAN radio/MMI, from week 45/2008 onwards)

- ◆ Aerial amplifier 3 - R112- (AM/FM1/FM2/FZV, remote locking) at C-pillar (left-side) (CAN)
- ◆ Aerial amplifier 3 - R112- (AM/FM1/FM2/TV1/TV2/FZV, remote locking) at C-pillar (left-side) (MMI)
- ◆ Aerial amplifier 2 - R111- (DAB) at C-pillar (right-side) (CAN)
- ◆ Aerial amplifier 2 - R111- (DAB/TV3) at C-pillar (right-side) (MMI)
- ◆ Radio, telephone and navigation system aerial - R52- (GPS/GSM/RC/SAT), roof aerial

System with switching diversity (MMI, up to week 44/2008)

- ◆ Aerial amplifier 3 - R112- (HF/ZF, intermediate frequency/TV1/TV2/FZV, remote locking) at C-pillar (left-side)
- ◆ Aerial amplifier 2 - R111- (FM3/DAB/VICS/TV3) at C-pillar (right-side)
- ◆ Radio, telephone and navigation system aerial - R52- (GPS/GSM/RC/SAT), roof aerial

Radio, telephone and navigation system aerial - R52- with SAT connection applies for USA versions only.

Aerial amplifier 2 - R111- with DAB connection applies for European versions only.

Aerial amplifier 2 - R111- with VICS connection applies for Japanese versions only (up to week 44/2008).

Repairing aerial wiring ⇒ Electrical system; Rep. gr. 97 ; Repairing aerial wires .

3.1.2 Layout - aerial systems, Sportback

The aerial system consists of the rear window aerals and the roof aerial - R216- .

The following aerals are fitted in the roof aerial - R216- :

- ◆ GPS aerial - R50-
- ◆ Telephone aerial - R65-
- ◆ Aerial for remote control receiver for auxiliary heating - R64-
- ◆ Satellite tuner aerial - R172- , USA only

Window aerals

- ◆ Digital radio aerial - R183- (DAB)/ aerial amplifier 3 - R112- on rear lid (top right) (CAN)
- ◆ Digital radio aerial - R183- (DAB)/ TV aerial 2 - R56- (TV2)/ aerial amplifier 3 - R112- on rear lid (top right) (MMI)
- ◆ Radio aerial 2 - R93- (FM2)/ central locking and anti-theft alarm system aerial - R47- (FZV, remote locking)/ aerial amplifier 2 - R111- on rear lid (bottom left) (CAN)
- ◆ Radio aerial 2 - R93- (AM/FM1)/ TV aerial 1 - R55- (TV1)/ aerial amplifier - R24- on rear lid (top left) (MMI)
- ◆ Aerial - R11- (AM/FM1)/ aerial amplifier - R24- on rear lid (top left) (CAN)
- ◆ Aerial - R11- (FM2)/ central locking and anti-theft alarm system aerial - R47- (FZV, remote locking)/ aerial amplifier 2 - R111- on rear lid (bottom left) (MMI)
- ◆ TV aerial 3 - R57- (TV3)/ aerial amplifier 4 - R113- on rear lid (bottom right) (MMI)

Roof aerial - R216- with SAT connection applies for USA versions only.

Aerial amplifier 3 - R112- with DAB connection applies for European versions only.

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Repairing aerial wiring ⇒ Electrical system; Rep. gr. 97 ; Repairing aerial wires .

3.2 Overview of fitting locations - aerial systems

⇒ [“3.2.1 Overview of fitting locations - aerial systems, Coupé”, page 87](#)

⇒ [“3.2.2 Overview of fitting locations - aerial systems, Sportback”, page 89](#)

3.2.1 Overview of fitting locations - aerial systems, Coupé

1 - Nut

- ❑ 6 Nm

2 - Radio, telephone and navigation system aerial - R52-

- ❑ Removing and installing
⇒ [page 93](#)

3 - Bolt

- ❑ 2 Nm

4 - Aerial amplifier 2 - R111-

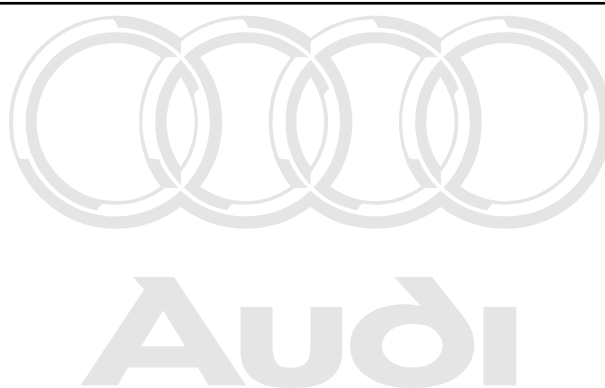
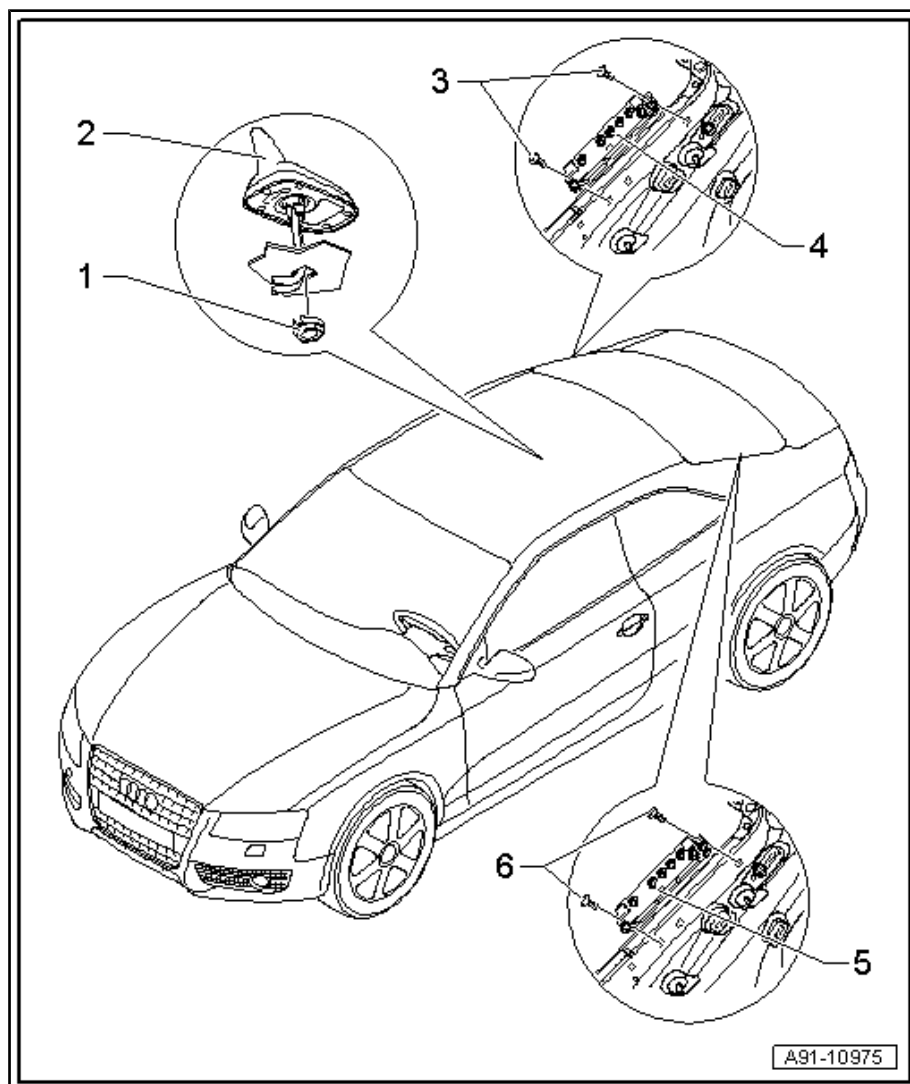
- ❑ Connectors (up to week 44/2008) ⇒ [page 97](#)
- ❑ Connectors (from week 45/2008 onwards)
⇒ [page 98](#)
- ❑ Removing and installing
⇒ [page 90](#)

5 - Aerial amplifier 3 - R112-

- ❑ Connectors (CAN)
⇒ [page 94](#)
- ❑ Connectors (MMI, up to week 44/2008)
⇒ [page 95](#)
- ❑ Connectors (MMI from week 45/2008 onwards)
⇒ [page 96](#)
- ❑ Removing and installing
⇒ [page 90](#)

6 - Bolt

- ❑ 2 Nm



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3.2.2 Overview of fitting locations - aerial systems, Sportback

1 - Nut

- ❑ 6 Nm

2 - Roof aerial - R216-

- ❑ Removing and installing
⇒ [page 93](#)

3 - Aerial amplifier 3 - R112-

- ❑ Connectors (CAN)
⇒ [page 101](#)
- ❑ Connectors (MMI)
⇒ [page 102](#)
- ❑ Removing and installing
⇒ [page 90](#)

4 - Bolt

- ❑ 2 Nm

5 - Aerial amplifier 4 - R113-

- ❑ Connectors
⇒ [page 102](#)
- ❑ Removing and installing
⇒ [page 91](#)

6 - Bolt

- ❑ 2 Nm

7 - Aerial amplifier 2 - R111-

- ❑ Connectors (CAN)
⇒ [page 100](#)
- ❑ Connectors (MMI)
⇒ [page 101](#)
- ❑ Removing and installing
⇒ [page 91](#)

8 - Bolt

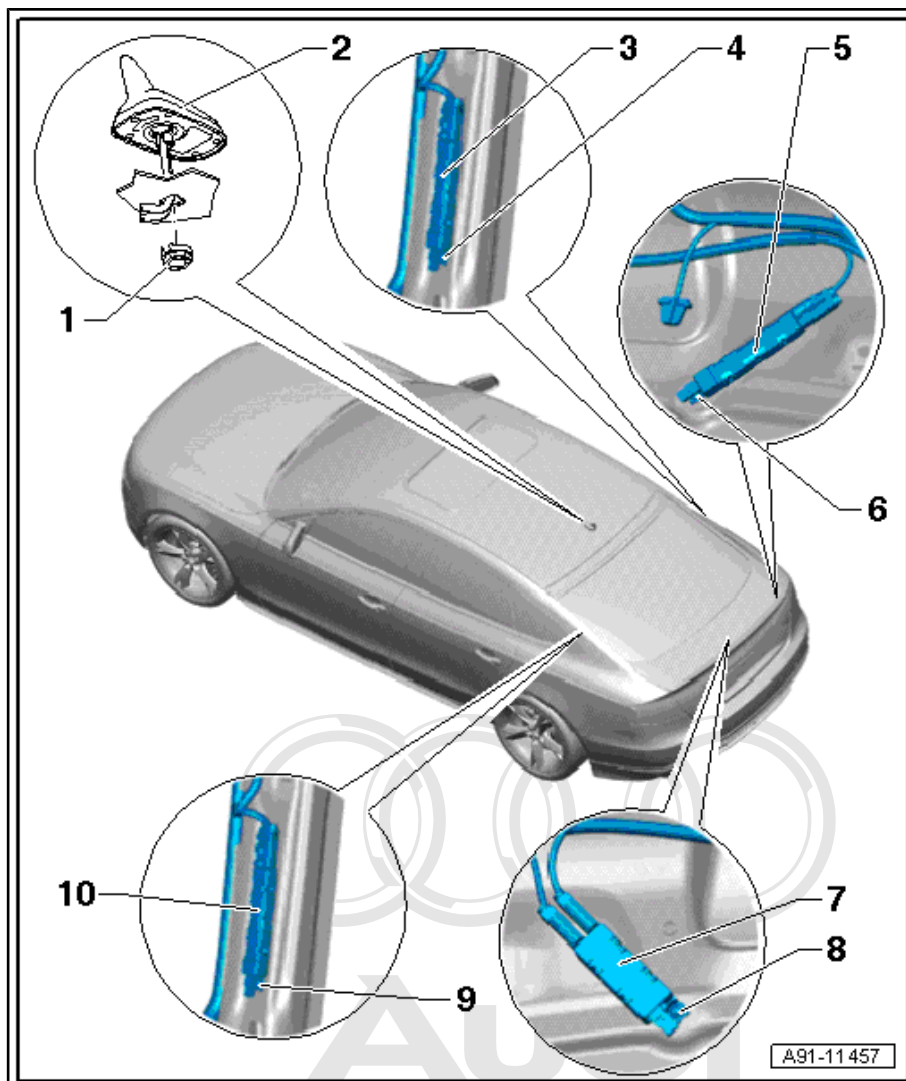
- ❑ 2 Nm

9 - Bolt

- ❑ 2 Nm

10 - Aerial amplifier - R24-

- ❑ Connectors (CAN) ⇒ [page 99](#)
- ❑ Connectors (MMI) ⇒ [page 100](#)
- ❑ Removing and installing ⇒ [page 90](#)



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3.3 Removing and installing aerial amplifiers

⇒ [“3.3.1 Removing and installing aerial amplifier R111 / R112, Coupé”, page 90](#)

⇒ [“3.3.2 Removing and installing aerial amplifier R24 / R112, Sportback”, page 90](#)

⇒ [“3.3.3 Removing and installing aerial amplifier 2 R111, Sportback”, page 91](#)

⇒ [“3.3.4 Removing and installing aerial amplifier 4 R113, Sportback”, page 91](#)

3.3.1 Removing and installing aerial amplifier -R111- / -R112-, Coupé

Aerial amplifier 2 - R111- / aerial amplifier 3 - R112- are located at C-pillar (left and right).

The removal and installation procedure is similar for all components.

- Switch off all electrical equipment.
- Remove ignition key.

Removing

- Remove C-pillar trim ⇒ General body repairs, interior; Rep. gr. 70 ; Passenger compartment trim panels; Removing and installing C-pillar trim .
- Release and unplug connector at aerial amplifier 2 - R111- .
- Unscrew bolts -arrows- and detach aerial amplifier 2 - R111- -1- from C-pillar -2-.

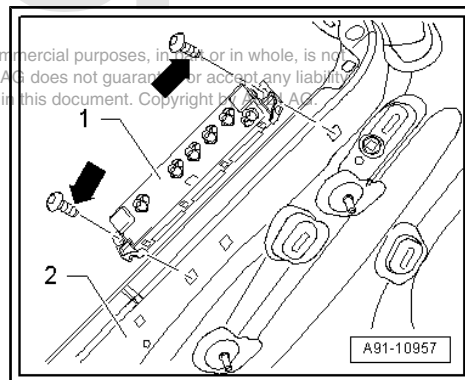
Installing

- Install in reverse sequence of removal.

Tightening torques

- ◆ ⇒ [“3.2.1 Overview of fitting locations - aerial systems, Coupé”, page 87](#)

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3.3.2 Removing and installing aerial amplifier -R24- / -R112-, Sportback

The aerial amplifier - R24- / aerial amplifier 3 - R112- are located on the rear lid (top left and right).

The removal and installation procedure is similar for all components.

- Switch off all electrical equipment.
- Remove ignition key.

Removing

- Remove rear lid trim ⇒ General body repairs, interior; Rep. gr. 70 ; Luggage compartment trim panels; Removing and installing rear lid trim (top) .

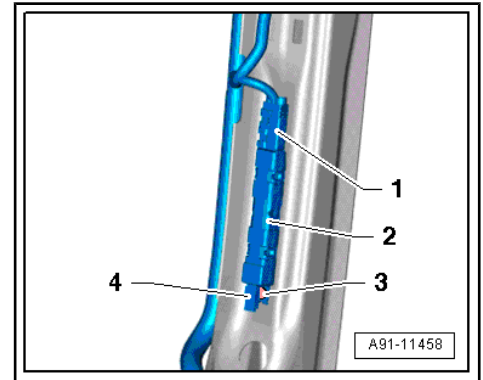
- Release and unplug connectors -1- and -4- at aerial amplifier - R24- -2-.
- Unscrew bolt -3- and remove aerial amplifier - R24- -2- from rear lid.

Installing

- Install in reverse sequence of removal.

Tightening torques

- ◆ ⇒ [“3.2.2 Overview of fitting locations - aerial systems, Sportback”, page 89](#)



3.3.3 Removing and installing aerial amplifier 2 - R111- , Sportback

The aerial amplifier 2 - R111- is located on the rear lid (bottom left).

- Switch off all electrical equipment.
- Remove ignition key.

Removing

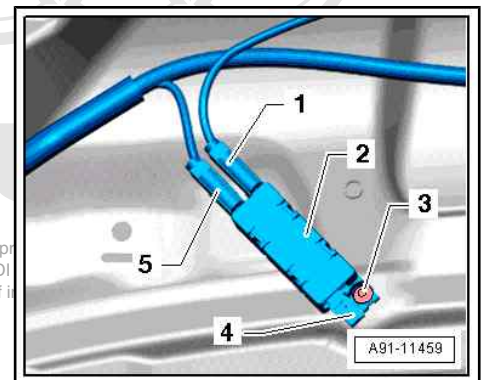
- Remove rear lid trim ⇒ General body repairs, interior; Rep. gr. 70 ; Luggage compartment trim panels; Removing and installing rear lid trim (bottom) .
- Release and unplug connectors -1-, -4- and -5- at aerial amplifier 2 - R111- -2-.
- Unscrew bolt -3- and remove aerial amplifier 2 - R111- -2- from rear lid.

Installing

- Install in reverse sequence of removal.

Tightening torques

- ◆ ⇒ [“3.2.2 Overview of fitting locations - aerial systems, Sportback”, page 89](#)



3.3.4 Removing and installing aerial amplifier 4 - R113- , Sportback

The aerial amplifier 4 - R113- is located on the rear lid (bottom right).

- Switch off all electrical equipment.
- Remove ignition key.

Removing

- Remove rear lid trim ⇒ General body repairs, interior; Rep. gr. 70 ; Luggage compartment trim panels; Removing and installing rear lid trim (bottom) .

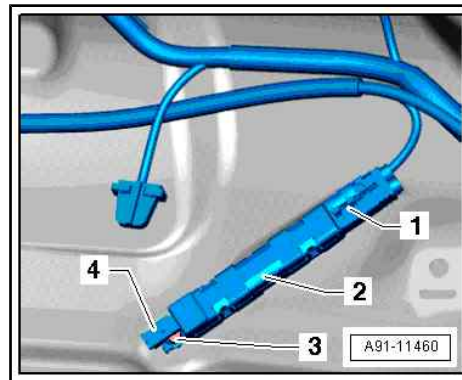
- Release and unplug connectors -1- and -4- at aerial amplifier 4 - R113- -2-.
- Unscrew bolt -3- and remove aerial amplifier 4 - R113- -2- from rear lid.

Installing

- Install in reverse sequence of removal.

Tightening torques

- ♦ ➔ [“3.2.2 Overview of fitting locations - aerial systems, Sportback”, page 89](#)



3.4 Removing and installing traffic data aerial

- Switch off all electrical equipment.
- Remove ignition key.

Removing

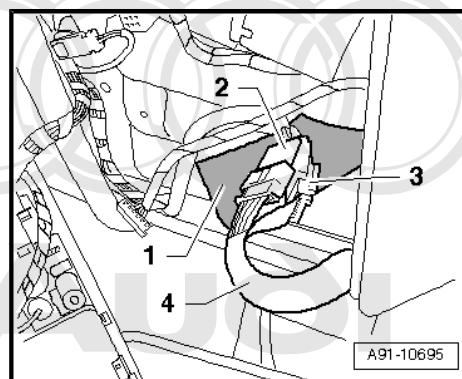
The connectors for the traffic data aerial - R173- are located behind the front interior light - W1- .

- Remove front interior light - W1- ➔ Electrical system; Rep. gr. 96 ; Controls; Removing and installing front interior light/reading light .

Connectors at front interior light - W1- -3- do not need to be detached.

- Detach foam sheath -1-.
- Release and disconnect connectors -2- and -3-.
- Push wiring -4- towards traffic data aerial - R173- at windscreen.

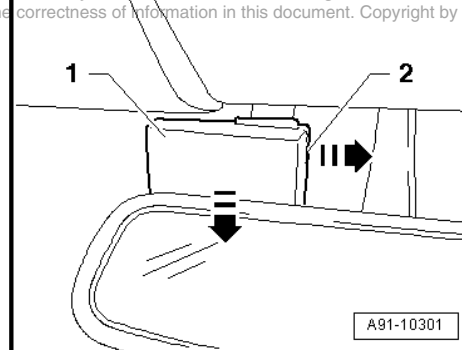
Removing traffic data aerial - R173-



- Use a small screwdriver to pull out the expanding clip -2- in direction of arrow.
- Pull traffic data aerial - R173- -1- down off windscreen in direction of arrow.

Installing

- Install in reverse sequence of removal.



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3.5 Removing and installing roof aerial

⇒ [“3.5.1 Removing and installing roof aerial, Coupé”, page 93](#)

⇒ [“3.5.2 Removing and installing roof aerial R216 , Sportback”, page 93](#)

3.5.1 Removing and installing roof aerial, Coupé

Radio, telephone and navigation system aerial - R52- (GSM/GPS/RC/SAT), has a maximum of four connections.

The aerial wires are fitted on the C-pillar (left and right).

To remove radio, telephone and navigation system aerial - R52- , remove C-pillar trims and headliner.

- Switch off all electrical equipment.
- Remove ignition key.

Removing

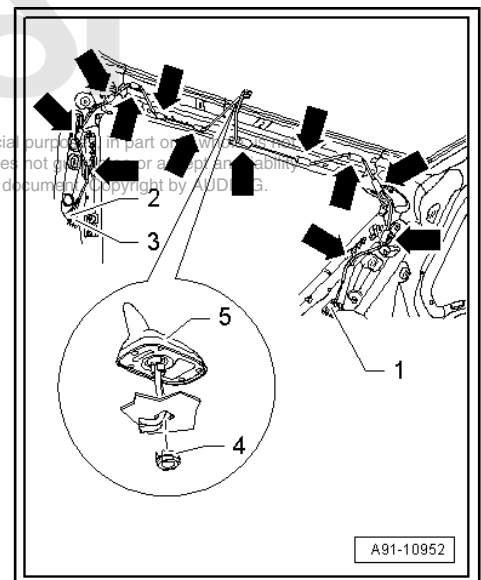
- Remove C-pillar trim (left and right) ⇒ General body repairs, interior; Rep. gr. 70 ; Passenger compartment trim panels; Removing and installing C-pillar trim .
- Remove headliner completely ⇒ General body repairs, interior; Rep. gr. 70 ; Roof trim; Removing and installing moulded headliner , and lay it down on dash panel.
- Release and unplug connectors -1-, -2- and -3- to aerial wires.
- Remove aerial wires up to radio, telephone and navigation system aerial - R52- -arrows-.
- Unscrew nut -4-.
- Detach radio, telephone and navigation system aerial - R52- -5- from roof.

Installing

- Guide in aerial wires through roof opening and carefully fit radio, telephone and navigation system aerial - R52- onto roof.
- Ensure that seal is seated properly.
- Install in reverse sequence of removal.

Tightening torques

- ◆ ⇒ [“3.2.1 Overview of fitting locations - aerial systems, Coupé”, page 87](#)



3.5.2 Removing and installing roof aerial - R216- , Sportback

The roof aerial - R216- (GSM/GPS/RC/SAT) has a maximum of four connections.

Aerial wires are plugged in at roof cross member (left and right).

To remove roof aerial - R216- , lower headliner at rear.

- Switch off all electrical equipment.
- Remove ignition key.

Removing

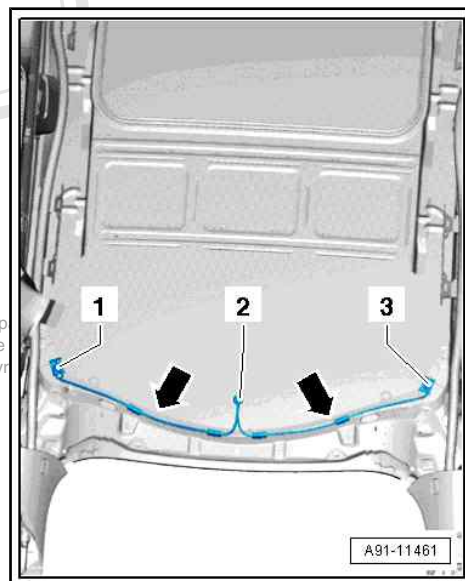
- Lower headliner at rear ⇒ General body repairs, interior; Rep. gr. 70 ; Roof trim panels; Removing and installing moulded headliner .
- Release and unplug connectors -1- and -3- to aerial wires.
- Remove aerial wires up to roof aerial - R216- -arrows-.
- Unscrew nut -2-.
- Lift roof aerial - R216- off roof.

Installing

- Guide in aerial wires through roof opening and carefully fit roof aerial - R216- onto roof.
- Ensure that seal is seated properly.
- Install in reverse sequence of removal.

Tightening torques

- ♦ ⇒ [“3.2.2 Overview of fitting locations - aerial systems, Sportback”, page 89](#)



3.6 Removing and installing internet access aerial

The internet access aerial - R266- (WLAN aerial) is located behind the glove box on the air duct.

Removing

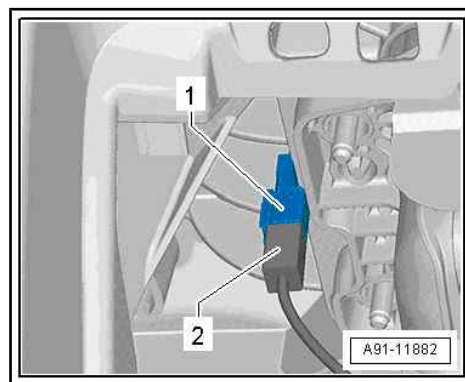
- Remove glove box ⇒ General body repairs, interior; Rep. gr. 68 ; Shelves / trim panels; Removing and installing glove box .

Internet access aerial - R266- is bonded to air duct.

- Unplug connector -2- at internet access aerial - R266- -1-.
- Use a small screwdriver to remove internet access aerial - R266- -1- from bonding area.

Installing

- Clean bonding area on air duct thoroughly with isopropanol.
- Remove protective foil on bonding surface of internet access aerial - R266- .
- Press and hold internet access aerial - R266- -1- against bonding area on air duct for about 10 seconds.
- Continue installation in reverse sequence.



3.7 Pin assignment for aerial amplifier

⇒ [“3.7.1 Pin assignment for aerial amplifier, Coupé”, page 94](#)

⇒ [“3.7.2 Pin assignment for aerial amplifier, Sportback”, page 99](#)

3.7.1 Pin assignment for aerial amplifier, Coupé

Aerial amplifier 3 - R112- (radio CAN bus)

1 - Connection for window aer-
ials

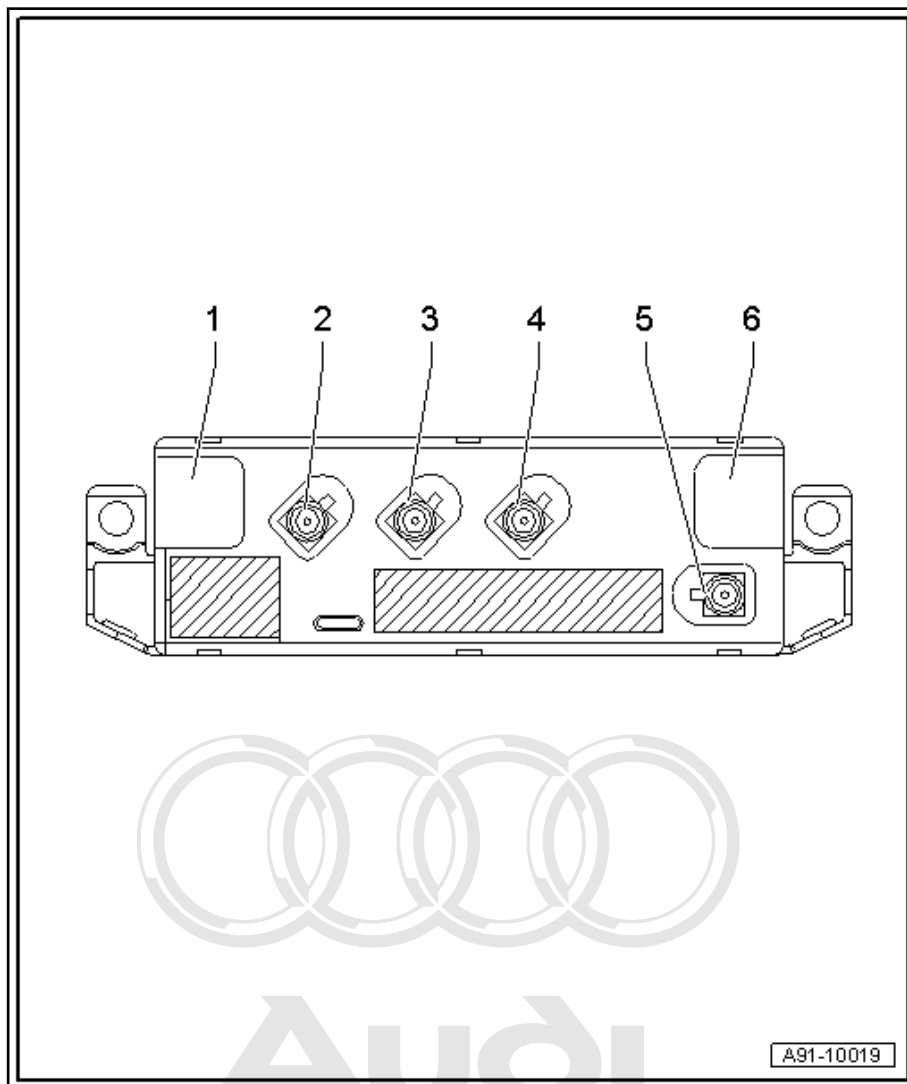
2 - Not used

3 - Connection AM/FM1 (yel-
low) to radio - R-

4 - Connection FM2 (white) to
radio - R-

5 - Connection FZV (remote
locking) (grey) to convenience
system central control unit -
J393-

6 - Connection for window aer-
ials



Aerial amplifier 3 - R112- (MMI up to week 44/08)

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**1 - Connection for window aeri-
als**

**2 - Connection TV1 (brown) to
TV tuner - R78-**

**3 - Connection intermediate
frequency/ZF (yellow) from ra-
dio - R-**

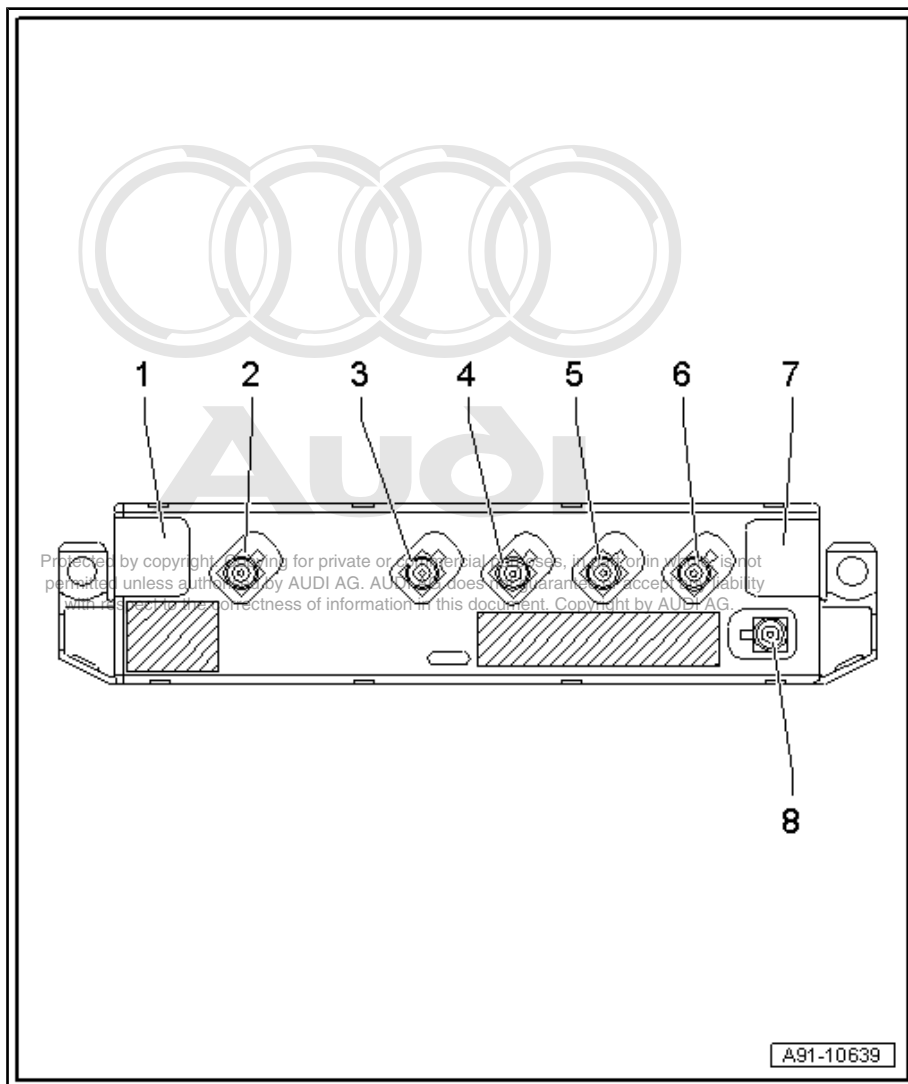
**4 - Connection FM3 (purple)
from aerial amplifier 2 - R111-**

**5 - Connection HF (high fre-
quency) (white) to radio - R-**

**6 - Connection TV2 (green) to
TV tuner - R78-**

**7 - Connection for window aer-
ials**

**8 - Connection FZV (remote
locking) (grey) to convenience
system central control unit -
J393-**



Aerial amplifier 3 - R112- (MMI from week 45/08 onwards)

1 - Connection for window aer-
ials

2 - Connection TV1 (brown) to
TV tuner - R78-

3 - Connection AM/FM1 (yel-
low) to radio - R-

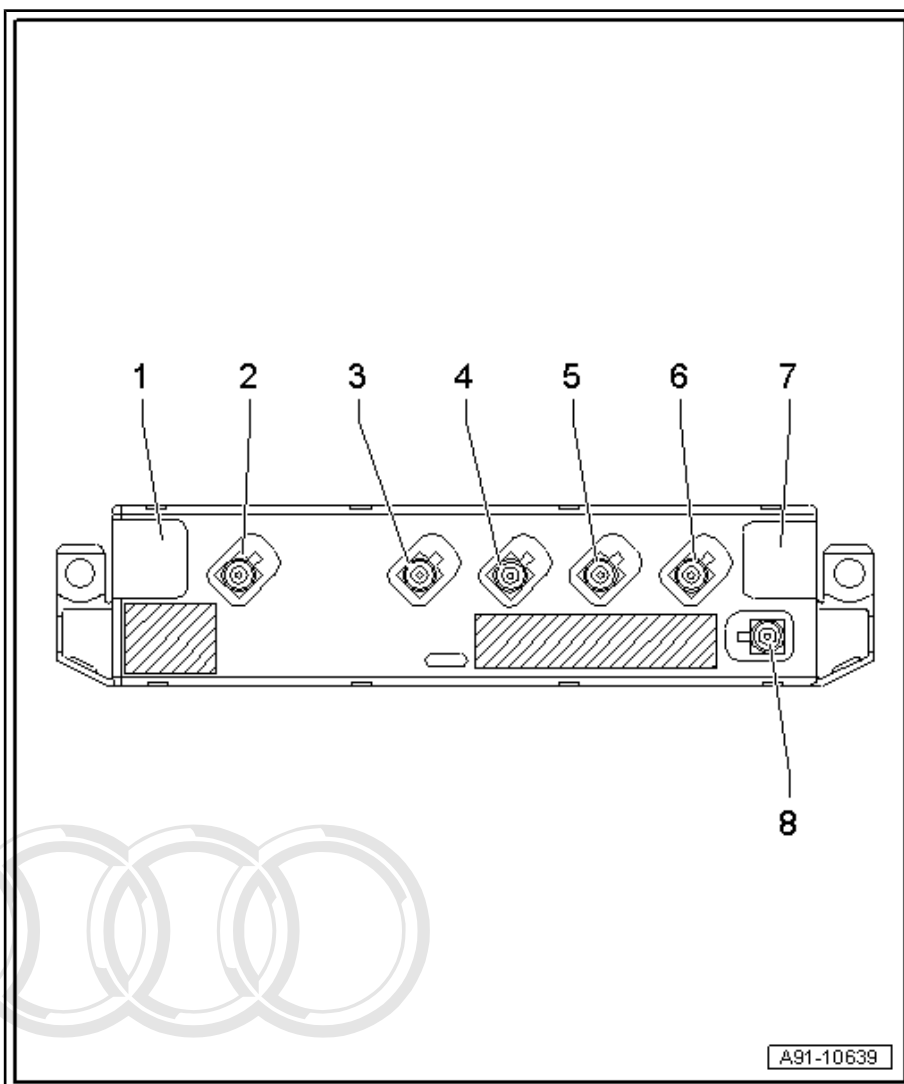
4 - Not used

5 - Connection FM2 (white) to
radio - R-

6 - Connection TV2 (green) to
TV tuner - R78-

7 - Connection for window aer-
ials

8 - Connection FZV (remote
locking) (grey) to convenience
system central control unit -
J393-



Aerial amplifier 2 - R111- (up to week 44/08)

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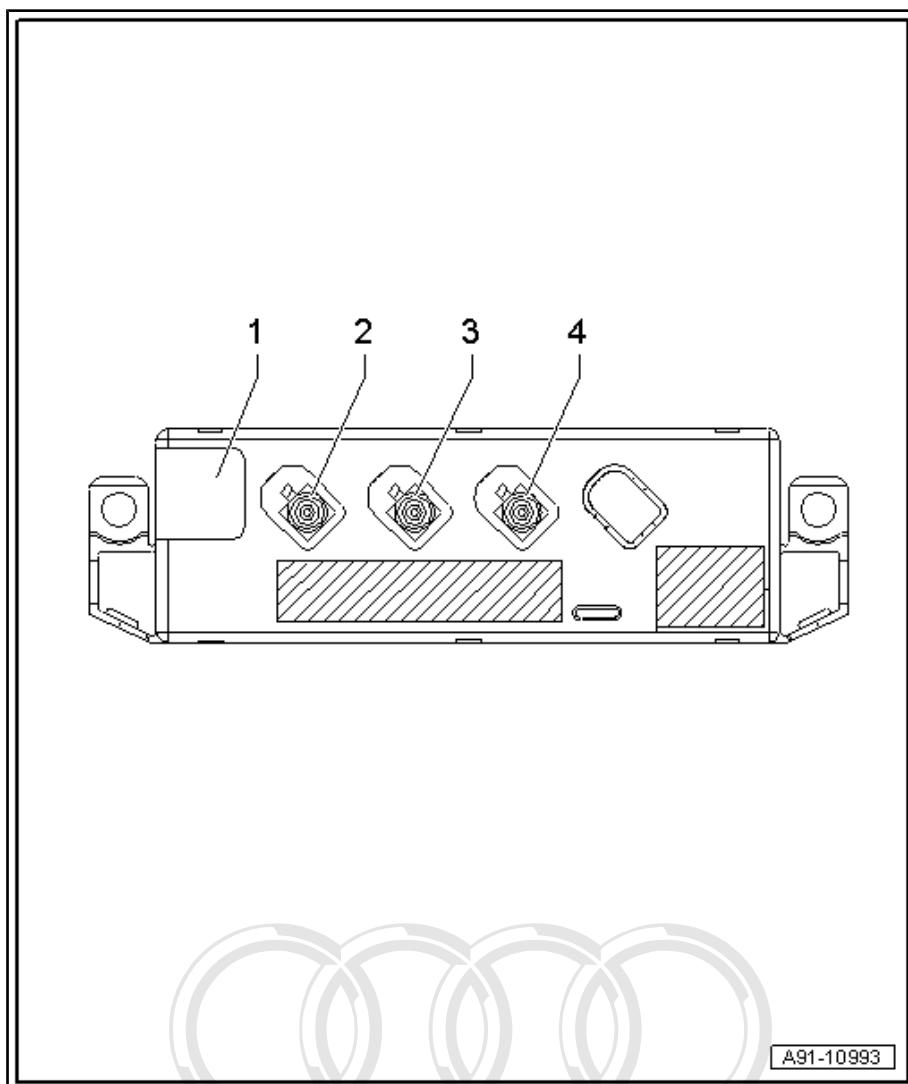
1 - Connection for window aeri-
als

2 - Connection DAB (black) to
radio - R- / digital radio - R147-
(Europe)

- Connection VICS (black) to
navigation system with CD
drive control unit - J401- (Ja-
pan)

3 - Connection FM3 (purple) to
aerial amplifier 3 - R112- (MMI)

4 - Connection TV3 (green) to
TV tuner - R78- (MMI)



Aerial amplifier 2 - R111- (from week 45/08 onwards)



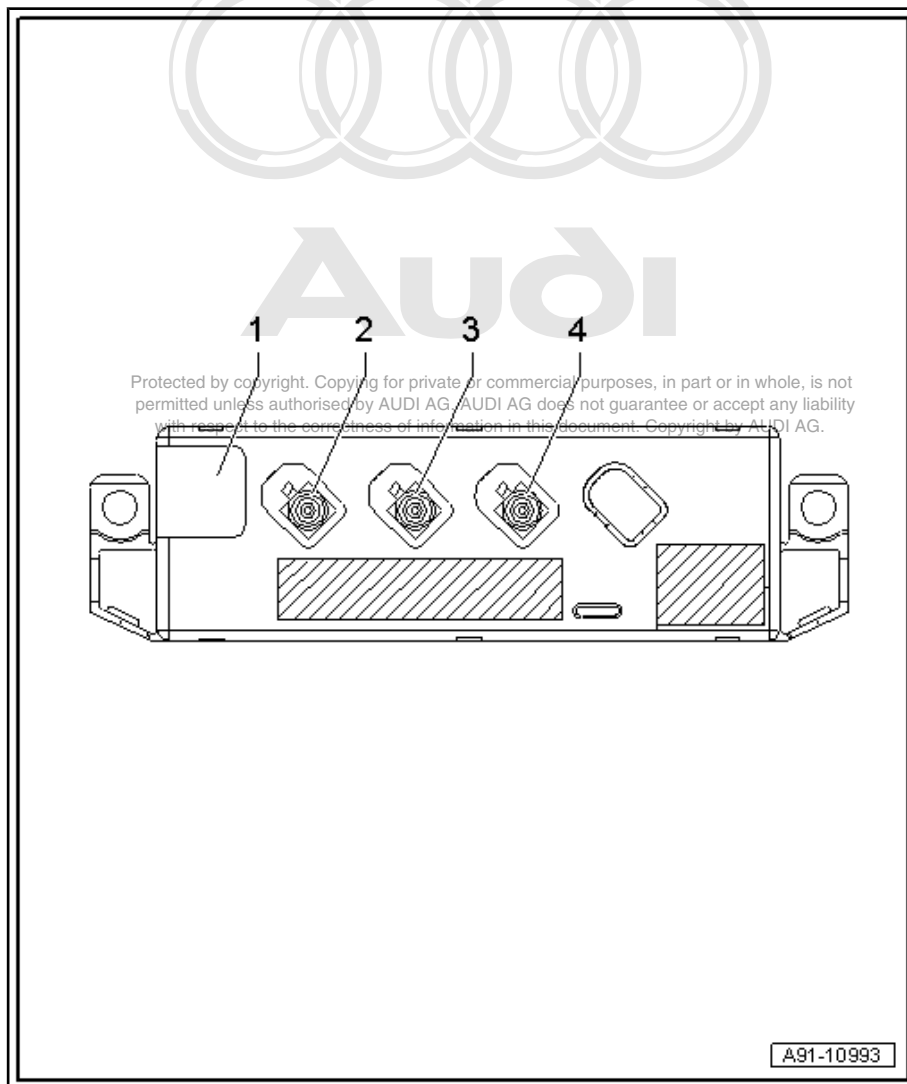
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1 - Connection for window aeri-
als

2 - Connection DAB (black) to
radio - R- (Europe)

3 - Not used

4 - Connection TV3 (green) to
TV tuner - R78- (MMI)



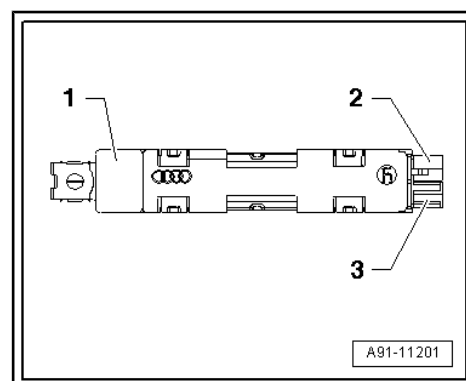
3.7.2 Pin assignment for aerial amplifier, Sportback

Aerial amplifier - R24- (CAN)

1 - Aerial - R11- (AM/FM1)

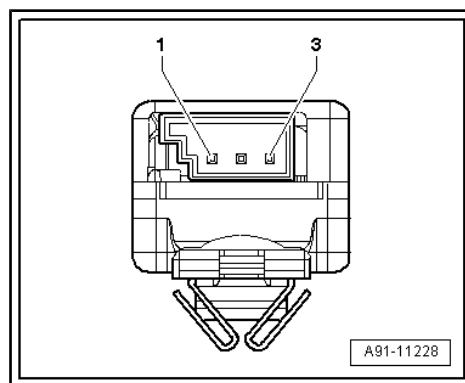
2 - Connection AM/FM1 to radio - R-

3 - Not used



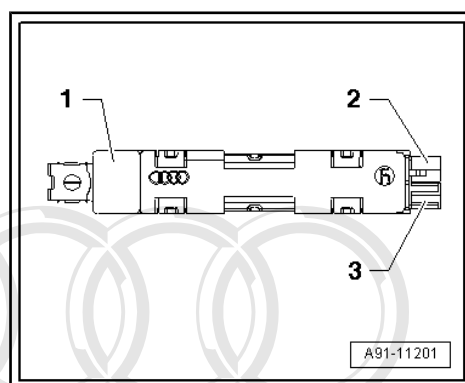
Window aerial connectors

- 1 - Aerial - R11-
- 2 - Aerial - R11- /diagnosis
- 3 - Not used



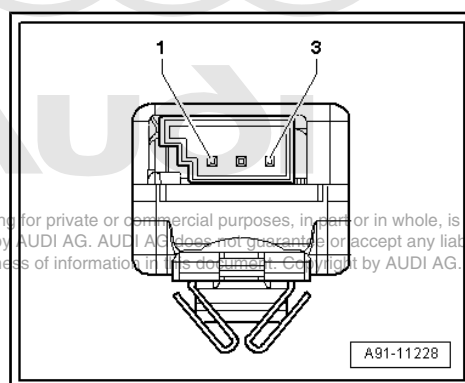
Aerial amplifier - R24- (MMI)

- 1 - Radio aerial 2 - R93- (AM/FM1)/ TV aerial 1 - R55- (TV1)
- 2 - Connection AM/FM1 to radio - R-
- 3 - Connection TV1 to TV tuner - R78-



Window aerial connectors

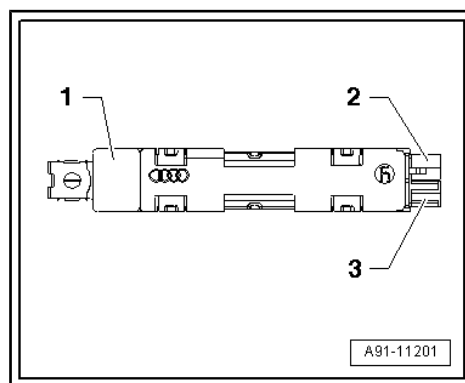
- 1 - Radio aerial 2 - R93-
- 2 - Radio aerial 2 - R93- / TV aerial 1 - R55- /diagnosis
- 3 - Not used



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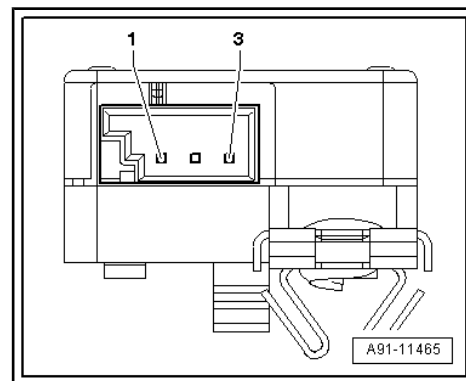
Aerial amplifier 2 - R111- (CAN)

- 1 - Radio aerial 2 - R93- (FM2)/ central locking and anti-theft alarm system aerial - R47- (FZV, remote locking)
- 2 - Connection FM2 to radio - R-
- 3 - Connection FZV (remote locking) to convenience system central control unit - J393-



Window aerial connectors

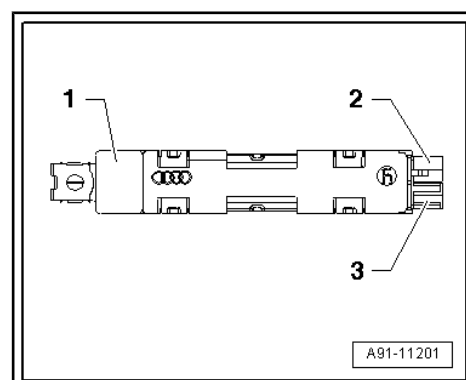
- 1 - Radio aerial 2 - R93-
- 2 - Central locking and anti-theft alarm system aerial - R47- / diagnosis
- 3 - Not used



Aerial amplifier 2 - R111- (MMI)

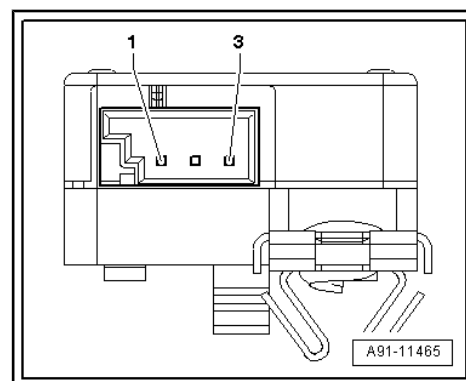
- 1 - Aerial - R11- (FM2)/ central locking and anti-theft alarm system aerial - R47- (FZV, remote locking)
- 2 - Connection FM2 to radio - R-
- 3 - Connection FZV (remote locking) to convenience system central control unit - J393-

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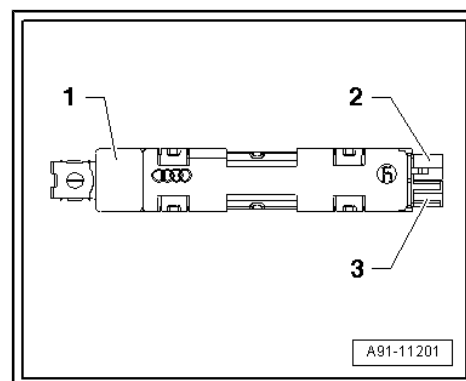
Window aerial connectors

- 1 - Aerial - R11-
- 2 - Central locking and anti-theft alarm system aerial - R47- / diagnosis
- 3 - Not used



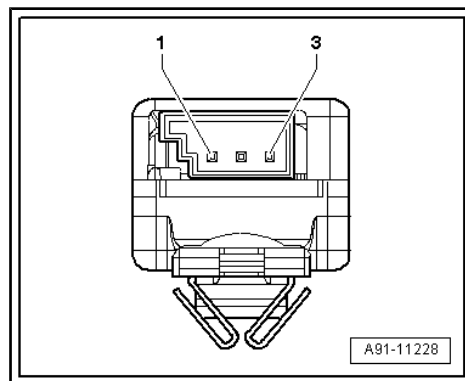
Aerial amplifier 3 - R112- (CAN)

- 1 - Digital radio aerial - R183- (DAB)
- 2 - DAB connection to radio - R-
- 3 - Not used



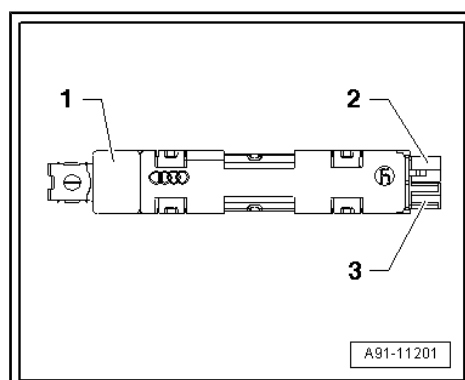
Window aerial connectors

- 1 - Digital radio aerial - R183- (DAB)
- 2 - Diagnosis
- 3 - Not used



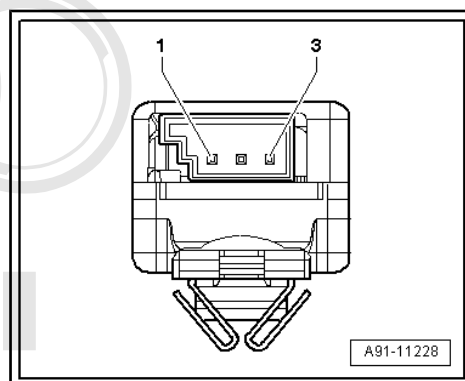
Aerial amplifier 3 - R112- (MMI)

- 1 - Digital radio aerial - R183- (DAB)/ TV aerial 2 - R56- (TV2)
- 2 - DAB connection to radio - R-
- 3 - Connection TV2 to TV tuner - R78-



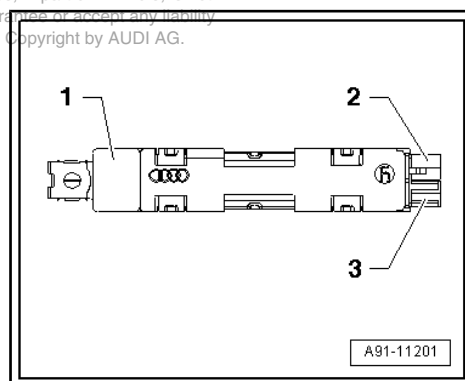
Window aerial connectors

- 1 - Digital radio aerial - R183-
- 2 - TV aerial 2 - R56- /diagnosis
- 3 - Not used



Aerial amplifier 4 - R113- (MMI)

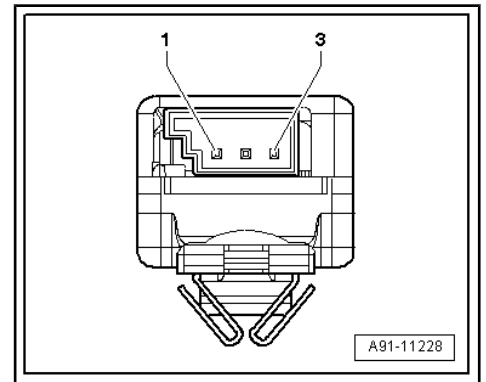
- 1 - TV aerial 3 - R57- (TV3)
- 2 - Connection TV3 to TV tuner - R78-
- 3 - Not used



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Window aerial connectors

- 1 - Not used
- 2 - TV aerial 3 - R57- /diagnosis
- 3 - Not used



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4 Radio

⇒ [“4.1 Layout - radio”, page 104](#)

⇒ [“4.2 Overview of fitting locations - radio”, page 106](#)

⇒ [“4.3 Removing and installing radio”, page 107](#)

⇒ [“4.4 Pin assignment”, page 114](#)

4.1 Layout - radio

⇒ [“4.1.1 Layout - radio”, page 104](#)

⇒ [“4.1.2 Layout - radio \(USA\)”, page 105](#)

4.1.1 Layout - radio

The radio systems consist of the following:

Radio chorus

- ◆ Radio with integrated CD player
- ◆ Sound system: basic
- ◆ Display Low
- ◆ Pre-fitted components for mobile phone installation

Radio concert

- ◆ Radio with integrated CD player (MP3)
- ◆ Sound system: basic plus
- ◆ Display Mid
- ◆ Pre-fitted components for mobile phone installation

SD memory card readers

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Optional features

- ◆ Sound systems: Standard/Bang & Olufsen
- ◆ Phone pre-installation
- ◆ Bluetooth hands-free system
- ◆ Digital radio - R147- integrated in radio concert
- ◆ Connection for external audio sources - R199-

Radio symphony

- ◆ Radio with integrated CD changer
- ◆ Sound system: basic plus
- ◆ Display Mid
- ◆ SD memory card readers
- ◆ Pre-fitted components for mobile phone installation

Optional features

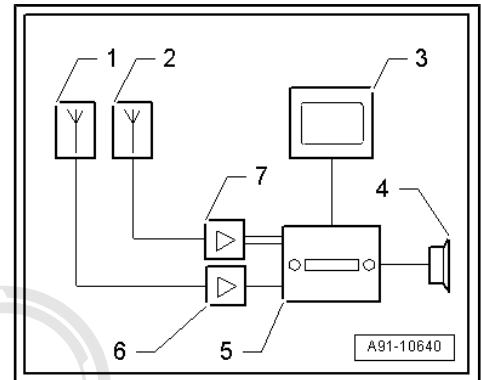
- ◆ Sound systems: Standard/Bang & Olufsen
- ◆ Phone pre-installation
- ◆ Bluetooth hands-free system
- ◆ Digital radio - R147- integrated in radio symphony
- ◆ Connection for external audio sources - R199-

The connection to other systems in the vehicle takes place via the CAN bus (infotainment) and the data bus diagnostic interface - J533- .

Fault finding is performed via the "Guided Fault Finding" ⇒ Vehicle diagnostic tester.

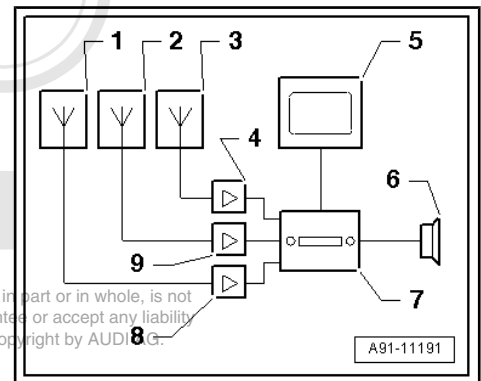
Layout - radio, Coupé

- 1 - Digital radio aerial - R183- in rear window (right-side)
- 2 - Aerial - R11- / radio aerial 2 - R93- in rear window
- 3 - Display unit for front information display and operating unit control unit - J685- in dash panel
- 4 - Sound systems
- 5 - Radio - R- in dash panel
- 6 - Aerial amplifier 2 - R111- behind right C-pillar trim
- 7 - Aerial amplifier 3 - R112- behind left C-pillar trim



Layout - radio, Sportback

- 1 - Digital radio aerial - R183- in rear window (right-side)
- 2 - Aerial - R11- in rear window
- 3 - Radio aerial 2 - R93- in rear window
- 4 - Aerial amplifier 2 - R111- on rear lid (bottom left)
- 5 - Display unit for front information display and operating unit control unit - J685- in dash panel
- 6 - Sound systems
- 7 - Radio - R- in dash panel
- 8 - Aerial amplifier 3 - R112- on rear lid (top right)
- 9 - Aerial amplifier - R24- on rear lid (top left)



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4.1.2 Layout - radio (USA)

The radio system consists of the following:

Radio symphony

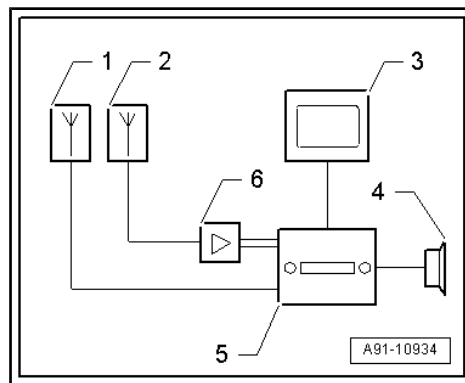
- ◆ Radio with integrated CD changer
- ◆ Display Mid
- ◆ Sound system: standard
- ◆ SD memory card readers
- ◆ Satellite radio - R146- integrated in radio symphony
- ◆ Optional features
- ◆ Sound system: Bang & Olufsen
- ◆ Connection for external audio sources - R199-
- ◆ Phone pre-installation
- ◆ Bluetooth hands-free system

The connection to other systems in the vehicle takes place via the CAN bus (infotainment) and the data bus diagnostic interface - J533- .

Fault finding is performed via the "Guided Fault Finding" ⇒ Vehicle diagnostic tester.

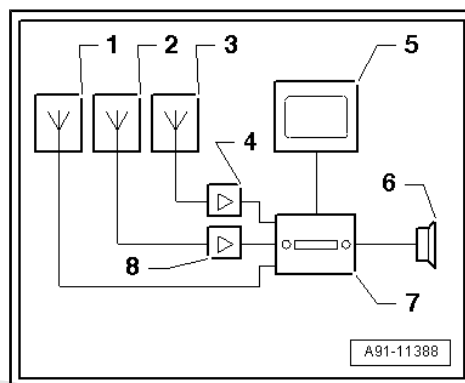
Layout - radio, Coupé, USA

- 1 - Radio, telephone and navigation system aerial - R52- (satellite tuner aerial - R172-), roof aerial
- 2 - Aerial - R11- / radio aerial 2 - R93- in rear window
- 3 - Display unit for front information display and operating unit control unit - J685- in dash panel
- 4 - Sound systems
- 5 - Radio - R- in dash panel
- 6 - Aerial amplifier 3 - R112- behind left C-pillar trim



Layout - radio, Sportback, USA

- 1 - Roof aerial - R216- (satellite tuner aerial - R172-)
- 2 - Aerial - R11- in rear window
- 3 - Radio aerial 2 - R93- in rear window
- 4 - Aerial amplifier 2 - R111- on rear lid (bottom left)
- 5 - Display unit for front information display and operating unit control unit - J685- in dash panel
- 6 - Sound systems
- 7 - Radio - R- in dash panel
- 8 - Aerial amplifier - R24- on rear lid (top left)



4.2 Overview of fitting locations - radio

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1 - Radio release tool - T10057-

2 - Connection for external audio sources - R199-

- ☐ Connectors (CAN)
⇒ [page 265](#)
- ☐ Removing and installing
⇒ [page 266](#)

3 - Radio - R-

- ☐ Connectors for chorus radio
⇒ [page 114](#)
- ☐ Connectors for concert / symphony radios
⇒ [page 116](#)
- ☐ Connectors for symphony radio USA
⇒ [page 118](#)
- ☐ Removing and installing
⇒ [page 107](#)

4 - Bolt

- ☐ 3 Nm

5 - Connection for external audio sources - R199- (AUX IN)

- ☐ Connectors (AUX IN)
⇒ [page 266](#)
- ☐ Removing and installing (AUX IN) ⇒ [page 268](#)

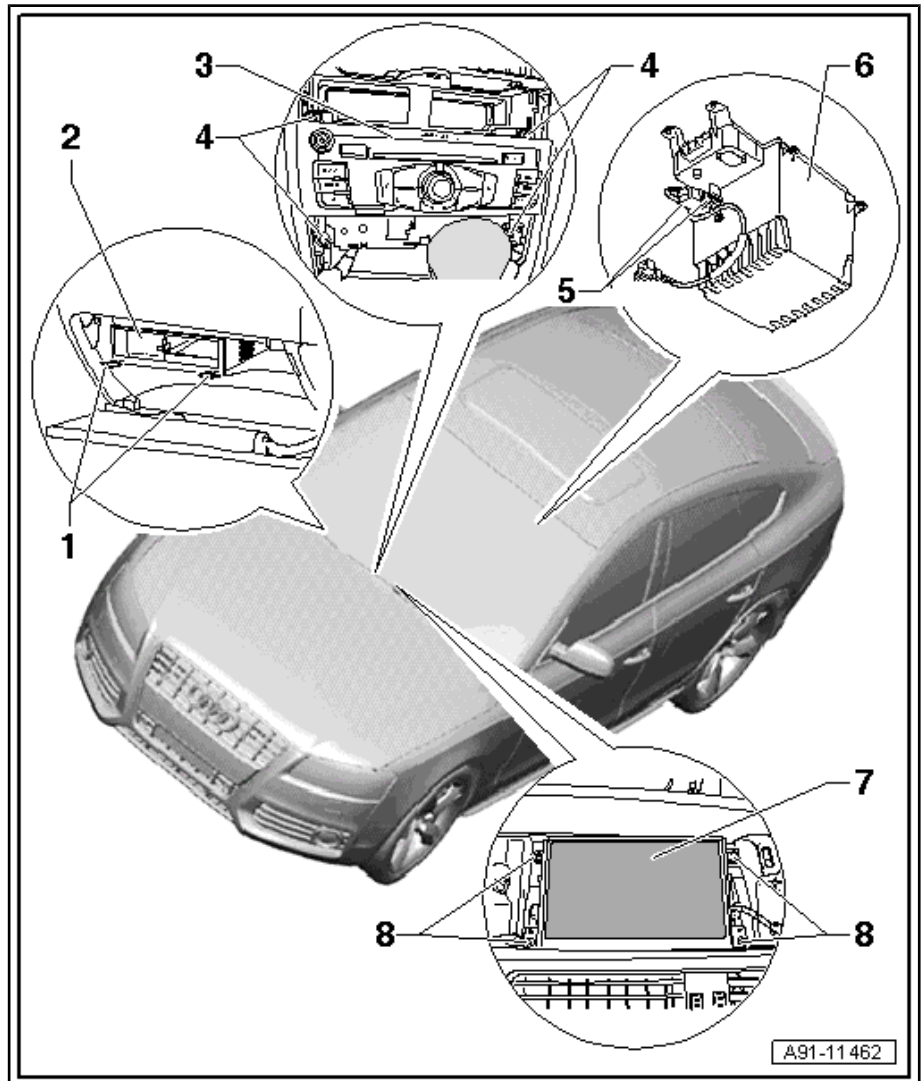
6 - Storage compartment

7 - Display unit for front information display and operating unit control unit - J685-

- ☐ Connectors (CAN)
⇒ [page 53](#)
- ☐ Removing and installing ⇒ [page 32](#)

8 - Bolt

- ☐ 2 Nm



4.3 Removing and installing radio

⇒ ["4.3.1 Removing and installing radio R ", page 107](#)

⇒ ["4.3.2 Removing and installing radio R , MMI, up to week 44/2008", page 108](#)

⇒ ["4.3.3 Removing and installing radio R , MMI, from week 45/2008 onwards", page 109](#)

⇒ ["4.3.4 Removing and installing digital radio R147 , up to week 44/2008", page 111](#)

⇒ ["4.3.5 Removing and installing satellite radio R146 , USA, up to week 44/2008", page 112](#)

4.3.1 Removing and installing radio - R-

- When renewing control unit, select "Replacement" function for appropriate control unit in "Guided Fault Finding".

To do so, use ➔ Vehicle diagnostic tester.

- Switch off all electrical equipment.
- Shift selector lever to “N” position (automatic gearbox) or move gear lever to the rear (manual gearbox).
- Remove ignition key.

Removing

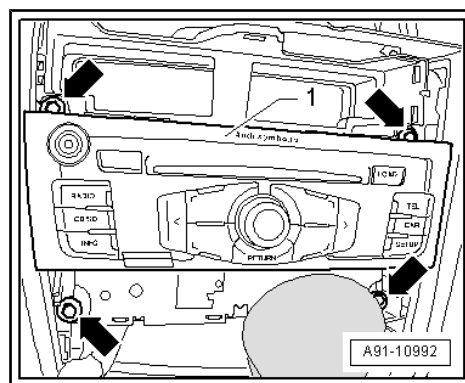
- Remove air conditioner operating unit ➔ Heating, air conditioning; Rep. gr. 87 ; Operating and display unit; Removing and installing operating and display unit .
- Remove dash panel vent above radio - R- ➔ General body repairs, interior; Rep. gr. 70 ; Dash panel; Removing and installing dash panel vents .
- Remove bolts -arrows- at radio - R- -1-.
- Pull radio - R- -1- out of dash panel.
- Release and unplug connectors at radio - R- .

Installing

- Install in reverse sequence of removal.

Tightening torques

- ♦ ➔ [“4.2 Overview of fitting locations - radio”, page 106](#)

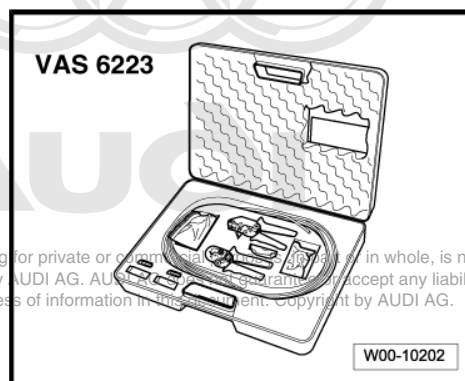


4.3.2 Removing and installing radio - R- , MMI, up to week 44/2008

The radio - R- (MMI) is located behind the luggage compartment side trim (left-side) in the infotainment rack.

Special tools and workshop equipment required

- ♦ Protective cap for cable connector - VAS 6223/9-



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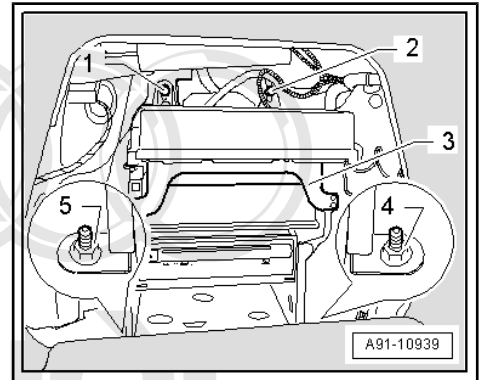
- Switch off all electrical equipment.
- Remove ignition key.
- When renewing control unit, select “Replacement” function for appropriate control unit in “Guided Fault Finding”.

To do so, use ➔ Vehicle diagnostic tester.

Removing

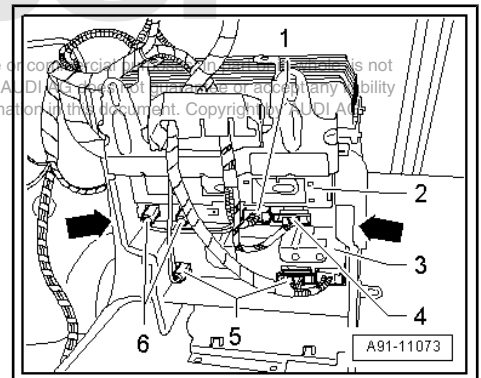
- Open left-side luggage compartment storage area.

- Unscrew nuts -1-, -2-, -4- and -5- on infotainment rack -3-.
- Pivot rack into luggage compartment.

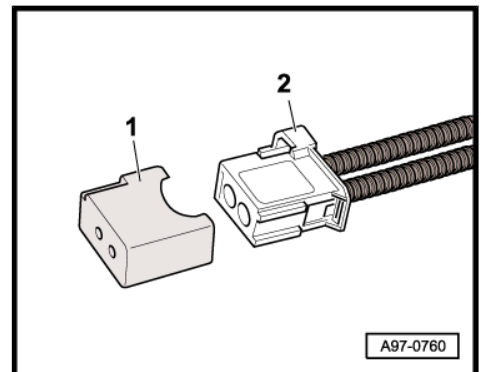


- Release and unplug connectors -1-, -4- and -6-, at radio - R- -2- and -5- and at navigation system with CD drive control unit - J401- -3- on reverse side.

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- Fit protective cap for cable connector - VAS 6223/9- -1- onto MOST bus connector -2-.



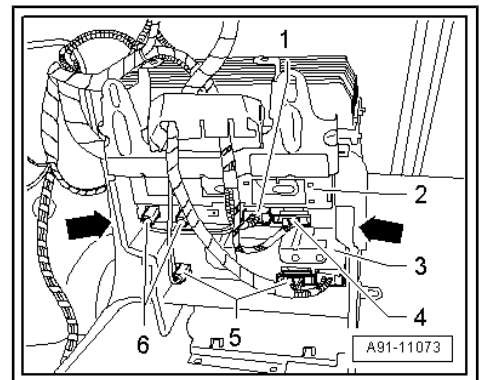
- Unscrew bolts -arrows- at rack (left and right).
- Pull radio - R- -2- to rear out of rack.

Installing

- Install in reverse sequence of removal.

Tightening torques

- ◆ ⇒ [“1.2.2 Overview of fitting locations - infotainment system, up to week 44/2008”, page 26](#)
- ◆ ⇒ [“1.2.4 Overview of fitting locations - infotainment system, USA, up to week 44/2008”, page 28](#)
- ◆ ⇒ [“1.2.6 Overview of fitting locations - infotainment system, Japan, up to week 44/2008”, page 30](#)

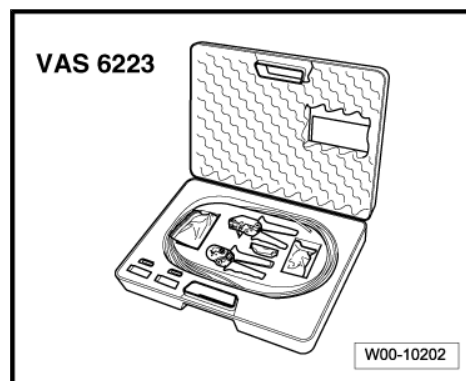


4.3.3 Removing and installing radio - R- , MMI, from week 45/2008 onwards

The radio - R- is located behind the luggage compartment side trim (left-side).

Special tools and workshop equipment required

◆ Protective cap for cable connector - VAS 6223/9-



- Switch off all electrical equipment.
- Remove ignition key.
- When renewing control unit, select “Replacement” function for appropriate control unit in “Guided Fault Finding”.

To do so, use ⇒ **Vehicle diagnostic tester.**

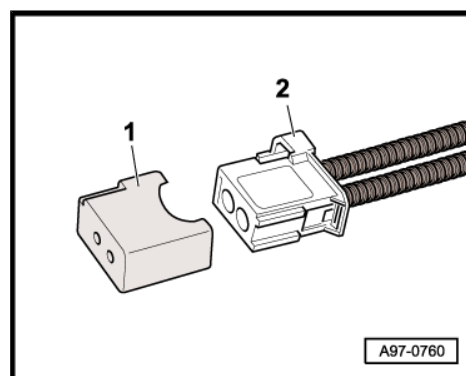
Removing

First remove the infotainment rack.

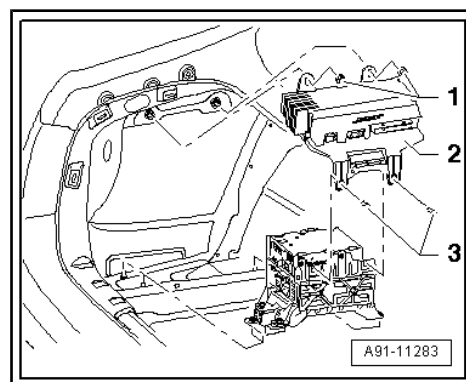
If a digital sound package control unit - J525- is installed, it must be removed together with the bracket.

- Open left-side luggage compartment storage area.
- Release and unplug connectors at digital sound package control unit - J525- .
- Fit protective cap for cable connector - VAS 6223/9- -1- onto MOST bus connector -2-.

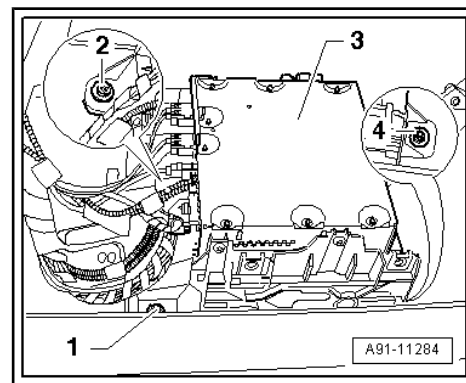
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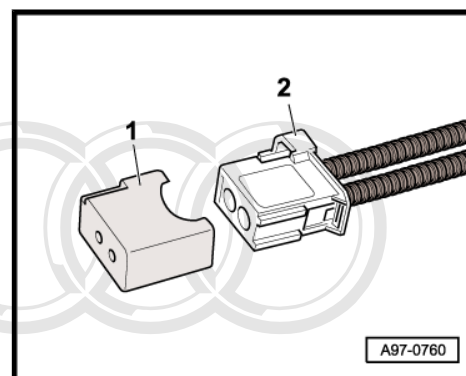
- Unscrew nuts -1- and bolts -3- from bracket -2- and lift bracket with digital sound package control unit - J525- into luggage compartment.



- Unscrew nuts -1-, -2- and -4- on infotainment rack -3-.
- Pivot infotainment rack -3- into luggage compartment. Unplug any connectors that are in the way.
- Release and unplug connectors at radio - R- .



- Fit protective cap for cable connector - VAS 6223/9- -1- onto MOST bus connector -2-.



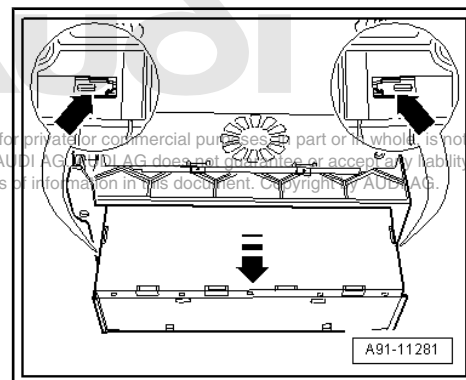
- Push the two tabs -arrows- (left and right) on radio - R- and pull radio - R- -arrow- out of infotainment rack.

Installing

- Install in reverse sequence of removal.

Tightening torques

- ◆ ⇒ [“1.2.3 Overview of fitting locations - infotainment system, from week 45/2008 onwards”, page 27](#)
- ◆ ⇒ [“1.2.5 Overview of fitting locations - infotainment system, USA, from week 45/2008 onwards”, page 29](#)
- ◆ ⇒ [“1.2.7 Overview of fitting locations - infotainment system, Japan, from week 45/2008 onwards”, page 31](#)



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4.3.4 Removing and installing digital radio - R147- , up to week 44/2008

The digital radio - R147- is located behind the luggage compartment side trim (left-side) at the bottom of the infotainment rack.

Special tools and workshop equipment required

- ◆ Protective cap for cable connector - VAS 6223/9-

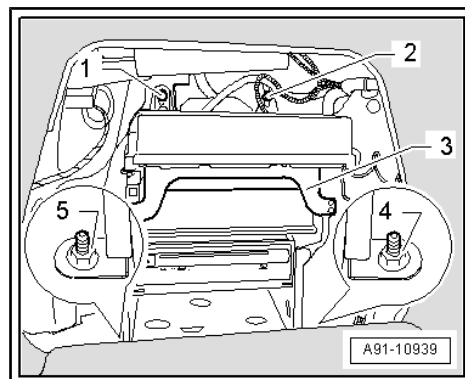


- Switch off all electrical equipment.
- Remove ignition key.
- When renewing control unit, select “Replacement” function for appropriate control unit in “Guided Fault Finding”.

To do so, use ➔ **Vehicle diagnostic tester.**

Removing

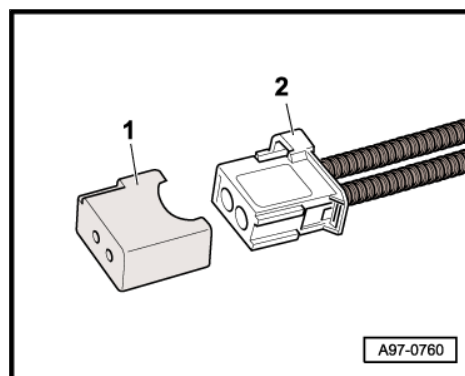
- Open left-side luggage compartment storage area.
- Unscrew nuts -1-, -2-, -4- and -5- on infotainment rack -3-.
- Pivot rack into luggage compartment until connector at digital radio - R147- is accessible.
- Unplug MOST bus connector.



- Fit protective cap for cable connector - VAS 6223/9- -1- onto MOST bus connector -2-.
- Release and unplug remaining connectors at digital radio - R147- .

The digital radio - R147- is secured to bottom of rack.

- Turn around rack.



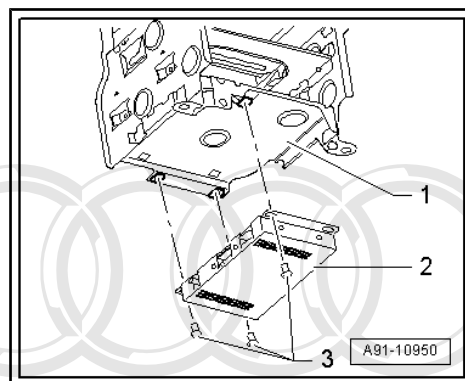
- Remove bolts -3- and detach digital radio - R147- -2- from rack -1-.

Installing

- Install in reverse sequence of removal.

Tightening torques

- ♦ ➔ [“1.2.2 Overview of fitting locations - infotainment system, up to week 44/2008”, page 26](#)



4.3.5 Removing and installing satellite radio - R146- , USA, up to week 44/2008

The satellite radio - R146- is located behind the luggage compartment side trim (left-side) in the infotainment rack.

Special tools and workshop equipment required

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VAS 6223

W00-10202

-
- 2
- 1
- A91-10990

-

4.4 Pin assignment

⇒ [“4.4.1 Pin assignment for radio chorus”, page 114](#)

⇒ [“4.4.2 Pin assignment for radio concert/symphony”, page 116](#)

⇒ [“4.4.3 Pin assignment for radio symphony, USA”, page 118](#)

⇒ [“4.4.4 Pin assignment for radio R , MMI, up to week 44/2008”, page 121](#)

⇒ [“4.4.5 Pin assignment for radio R , MMI, from week 45/2008 onwards”, page 122](#)

⇒ [“4.4.6 Pin assignment for digital radio R147 , MMI, up to week 44/2008”, page 124](#)

⇒ [“4.4.7 Pin assignment for satellite radio R146 , MMI, USA, up to week 44/2008”, page 125](#)

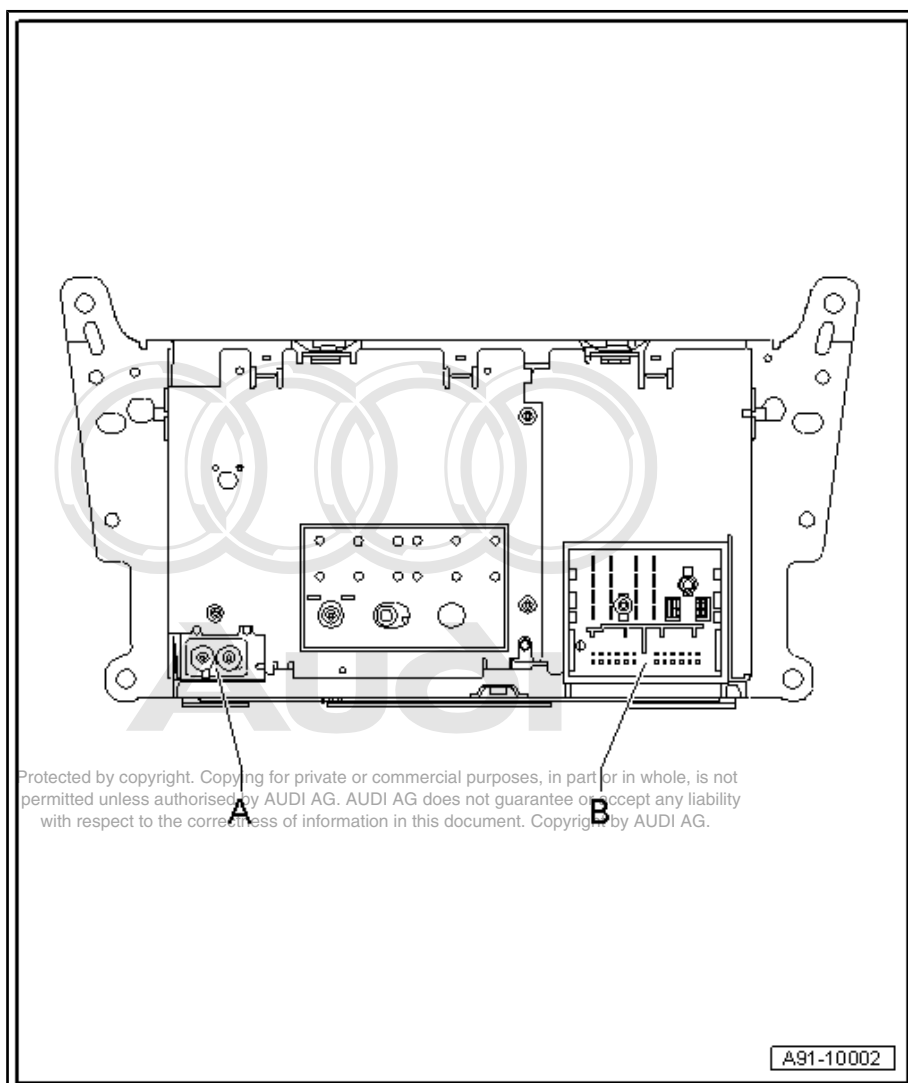
⇒ [“4.4.8 Pin assignment for radio R , MMI, USA, from week 45/2008 onwards”, page 126](#)

⇒ [“4.4.9 Pin assignment for radio R , MMI, Japan, from week 45/2008 onwards”, page 128](#)

4.4.1 Pin assignment for radio chorus

A - Aerial connection (AM/FM1/FM2)

B - Connection block with four multi-pin connectors





Note

Contacts which are not listed are not used.

A - Aerial connection (AM/FM1/FM2)

Coupé

A - Contact 2 (AM/FM1) from aerial amplifier 3 - R112- (aerial - R11-)

B - Contact 1 (FM2) from aerial amplifier 3 - R112- (radio aerial 2 - R93-)

Sportback

A - Contact 2 (AM/FM1) from aerial amplifier - R24- (aerial - R11-)

B - Contact 1 (FM2) from aerial amplifier 2 - R111- (radio aerial 2 - R93-)

B - Connection block with four multi-pin connectors

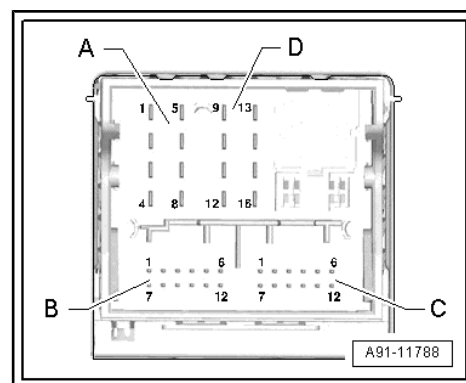
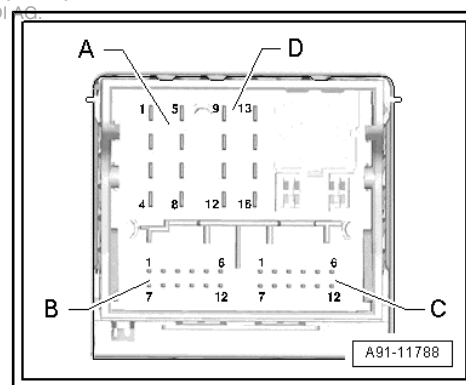
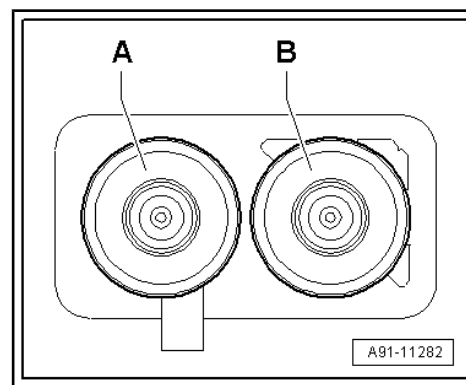
A - Multi-pin connector, 8-pin (T8k)

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

B - Not used

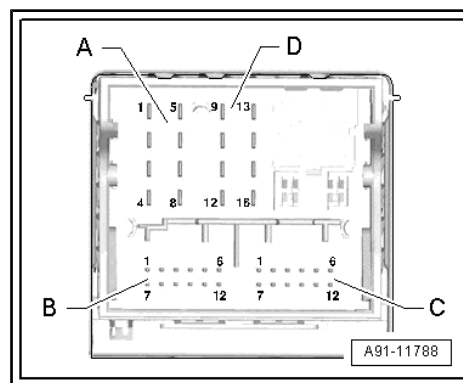
C - Multi-pin connector, 12-pin (T12a)

- 1 - Microphone input (-)
- 2 - NF out, right-side (low frequency)
- 3 - NF out, earth (low frequency)
- 4 - Microphone output (-)
- 5 - NF in, left-side (low frequency) (-)
- 6 - NF (-) (low frequency) from pre-fitted components for mobile phone installation / telephone transmitter and receiver unit - R36-
- 7 - Microphone input (+)
- 8 - NF out, left-side (low frequency)
- 9 - Microphone output (+)
- 10 - NF mute (low frequency) from pre-fitted components for mobile phone installation
- 11 - NF in, left-side (low frequency) (+)
- 12 - NF (+) (low frequency) from pre-fitted components for mobile phone installation / telephone transmitter and receiver unit - R36-



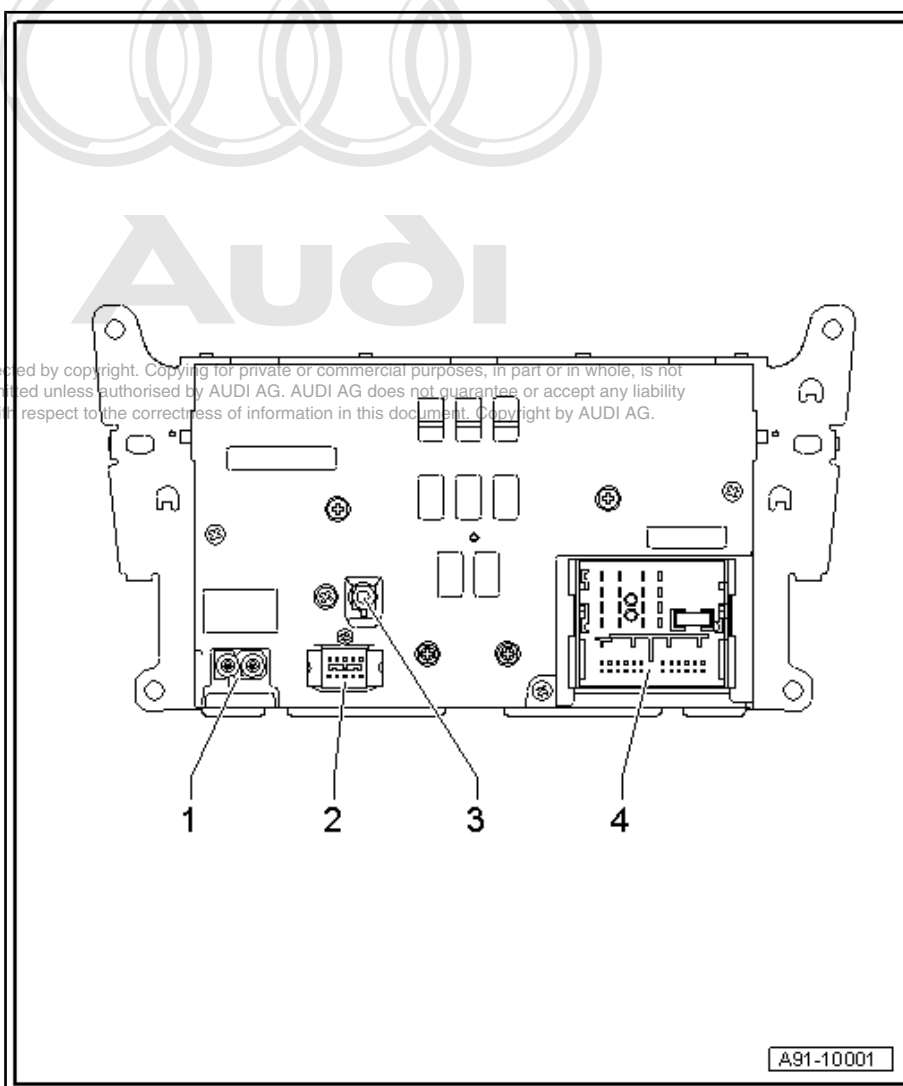
D - Multi-pin connector, 8-pin (T16I)

- 9 - CAN bus High (infotainment)
- 10 - CAN bus Low (infotainment)
- 11 - Voltage supply to display unit for front information display and operating unit control unit - J685-
- 12 - Terminal 31
- 13 - CAN bus (display) to display unit for front information display and operating unit control unit - J685-
- 14 - CAN bus (display) to display unit for front information display and operating unit control unit - J685-
- 15 - Terminal 30
- 16 - Permanent live (not used)



4.4.2 Pin assignment for radio concert/symphony

- 1 - Aerial connection (AM/FM1/FM2)
- 2 - Multi-pin connector, 10-pin (T10v) to display unit for front information display and operating unit control unit - J685-
- 3 - Aerial connection (DAB) from aerial amplifier 2 - R111- - Coupé
- Aerial connection (DAB) from aerial amplifier 3 - R112- - Sportback
- 4 - Connection block with four multi-pin connectors





Note

Contacts which are not listed are not used.

1 - Aerial connection (AM/FM1/FM2)

Coupé

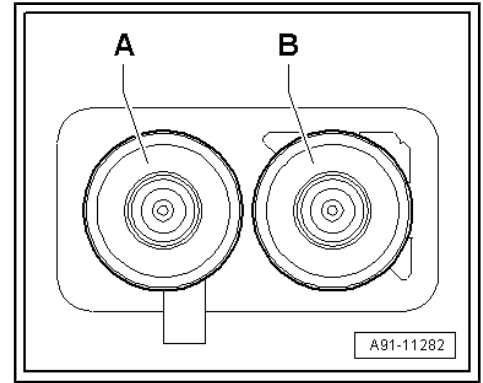
A - Contact 2 (AM/FM1) from aerial amplifier 3 - R112- (aerial - R11-)

B - Contact 1 (FM2) from aerial amplifier 3 - R112- (radio aerial 2 - R93-)

Sportback

- Contact 2 (AM/FM1) from aerial amplifier - R24- (aerial - R11-)

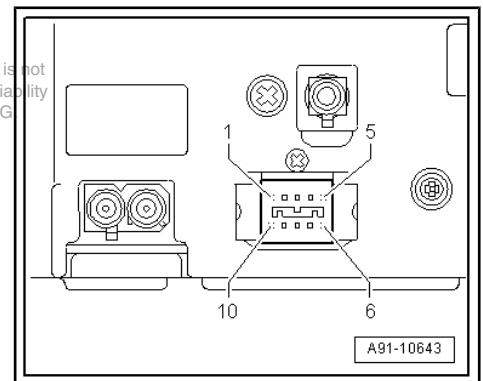
- Contact 1 (FM2) from aerial amplifier 2 - R111- (radio aerial 2 - R93-)



2 - Multi-pin connector, 10-pin (T10v)

All pins are connected to the display unit for front information display and operating unit control unit J685-

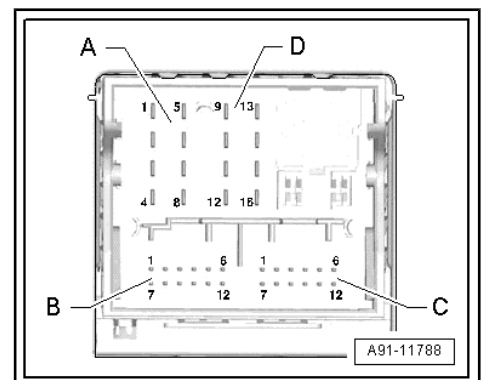
- 1 - Voltage supply
- 2 - Earth
- 3 - Not used
- 4 - Diag. display
- 5 - Diag. cable
- 6 - LVDS out (+)
- 7 - LVDS out (-)
- 8 - LVDS out (earth)
- 9 - Diag. T0
- 10 - Diag. T1



4 - Connection block with four multi-pin connectors

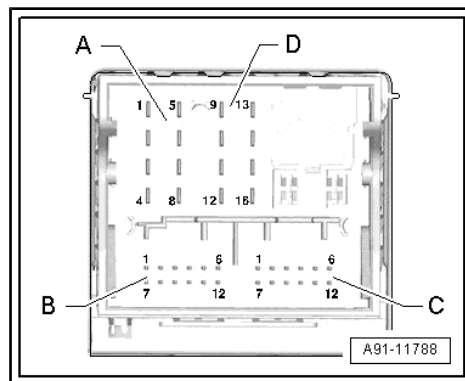
A - Multi-pin connector, 8-pin (T8k)

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



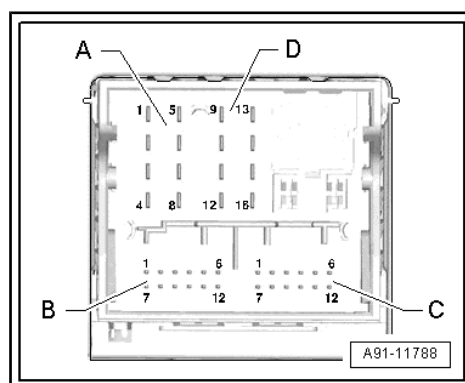
B - Multi-pin connector, 12-pin

- 1 - NF in, left-side (low frequency) from connection for external audio sources - R199-
- 2 - NF in, earth (low frequency) from connection for external audio sources - R199-
- 7 - NF in, right-side (low frequency) from connection for external audio sources - R199-



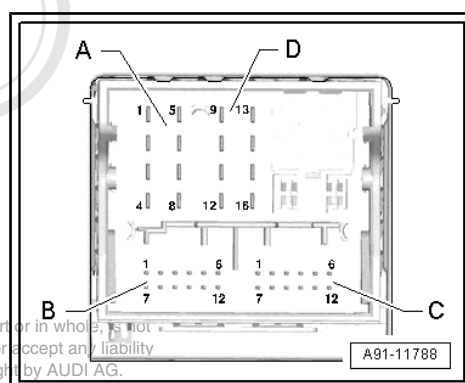
C - Multi-pin connector, 12-pin (T12a)

- 1 - Microphone input (-)
- 2 - NF out, right-side (low frequency)
- 3 - NF out, earth (low frequency)
- 4 - Microphone output (-)
- 5 - NF in, left-side (low frequency) (-)
- 6 - NF (-) (low frequency) from pre-fitted components for mobile phone installation / telephone transmitter and receiver unit - R36-
- 7 - Microphone input (+)
- 8 - NF out, left-side (low frequency)
- 9 - Microphone output (+)
- 10 - NF mute (low frequency) from pre-fitted components for mobile phone installation
- 11 - NF in, left-side (low frequency) (+)
- 12 - NF (+) (low frequency) from pre-fitted components for mobile phone installation / telephone transmitter and receiver unit - R36-



D - Multi-pin connector, 8-pin (T16l)

- 9 - CAN bus High (infotainment)
- 10 - CAN bus Low (infotainment)
- 12 - Terminal 31
- 15 - Terminal 30
- 16 - Permanent live (not used)



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4.4.3 Pin assignment for radio symphony, USA

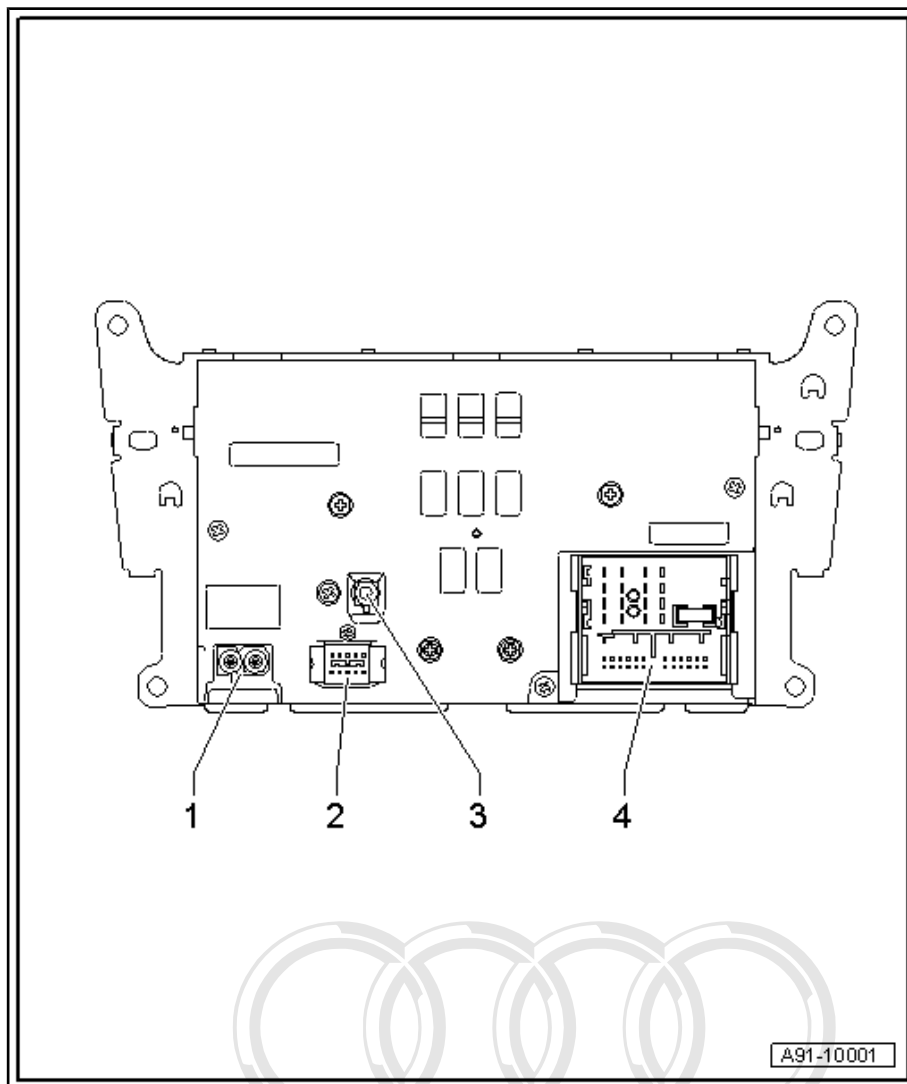
1 - Aerial connection (AM/FM1/ FM2)

2 - Multi-pin connector, 10-pin (T10v) to display unit for front information display and operating unit control unit - J685-

3 - Connection (SAT) from radio, telephone and navigation system aerial - R52- (satellite aerial - R170-) - Coupé

- Connection (SAT) from roof aerial - R216- (satellite aerial - R170-) - Sportback

4 - Connection block with four multi-pin connectors



Note

Contacts which are not listed are not used.

1 - Aerial connection (AM/FM1/FM2)

Coupé

A - Contact 2 (AM/FM1) from aerial amplifier 3 - R112- (aerial - R11-)

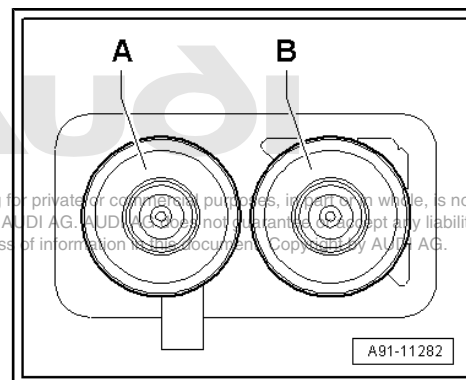
B - Contact 1 (FM2) from aerial amplifier 3 - R112- (radio aerial 2 - R93-)

Sportback

- Contact 2 (AM/FM1) from aerial amplifier - R24- (aerial - R11-)

- Contact 1 (FM2) from aerial amplifier 2 - R111- (radio aerial 2 - R93-)

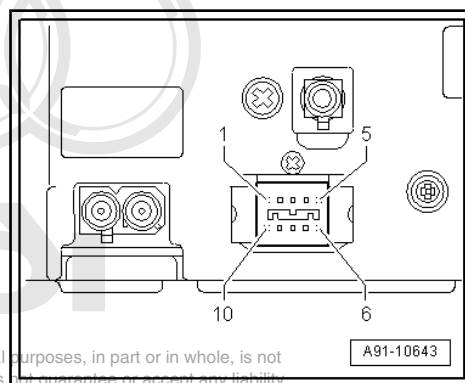
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2 - Multi-pin connector, 10-pin (T10v)

All pins are connected to the display unit for front information display and operating unit control unit - J685- .

- 1 - Voltage supply
- 2 - Earth
- 3 - Not used
- 4 - Diag. display
- 5 - Diag. cable
- 6 - LVDS out (+)
- 7 - LVDS out (-)
- 8 - LVDS out (earth)
- 9 - Diag. T0
- 10 - Diag. T1

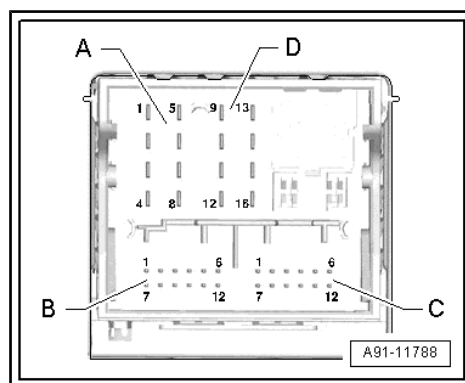


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4 - Connection block with four multi-pin connectors

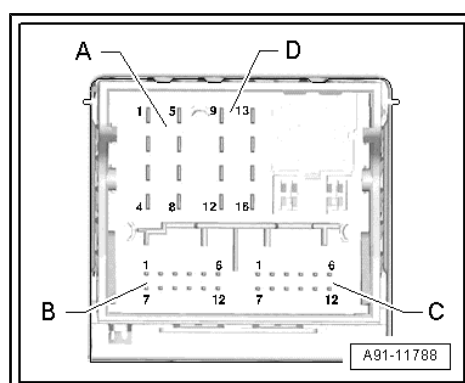
A - Multi-pin connector, 8-pin (T8k)

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



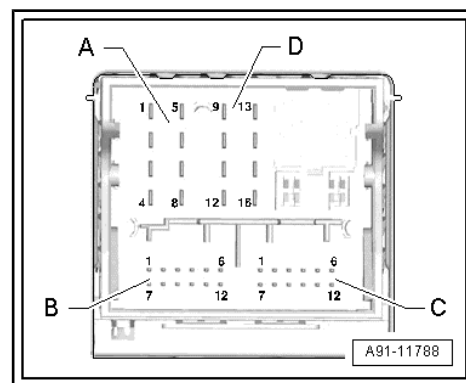
B - Multi-pin connector, 12-pin

- 1 - NF in, left-side (low frequency) from connection for external audio sources - R199-
- 2 - NF in, earth (low frequency) from connection for external audio sources - R199-
- 7 - NF in, right-side (low frequency) from connection for external audio sources - R199-



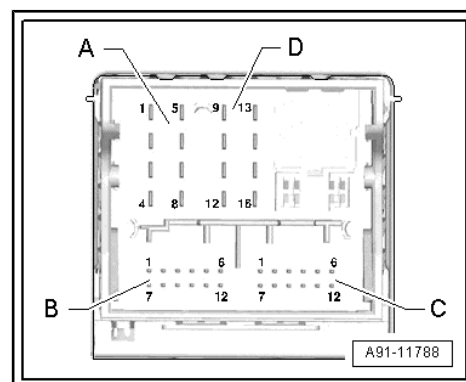
C - Multi-pin connector, 12-pin (T12a)

- 1 - Microphone input (-)
- 2 - NF out, right-side (low frequency)
- 3 - NF out, earth (low frequency)
- 4 - Microphone output (-)
- 5 - NF in, left-side (low frequency) (-)
- 6 - NF- (low frequency) from telephone transmitter and receiver unit - R36-
- 7 - Microphone input (+)
- 8 - NF out, left-side (low frequency)
- 9 - Microphone output (+)
- 10 - NF mute (low frequency)
- 11 - NF in, left-side (low frequency) (+)
- 12 - NF+ (low frequency) from telephone transmitter and receiver unit - R36-



D - Multi-pin connector, 8-pin (T16l)

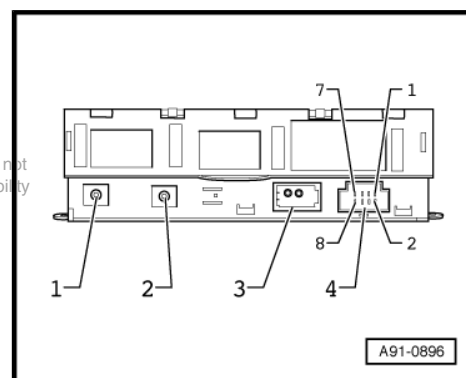
- 9 - CAN bus High (infotainment)
- 10 - CAN bus Low (infotainment)
- 12 - Terminal 31
- 15 - Terminal 30
- 16 - Permanent live (not used)



4.4.4 Pin assignment for radio - R-, MMI, up to week 44/2008

Radio - R-

- 1 - Connection HF (high frequency), white, from aerial amplifier 3 - R112-
- 2 - Connection ZF (intermediate frequency), yellow, to aerial amplifier 3 - R112-
- 3 - MOST bus
- 4 - Multi-pin connector, 8-pin (T8m)

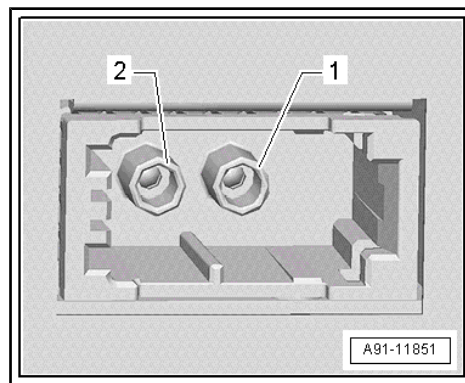


Note

Contacts which are not listed are not used.

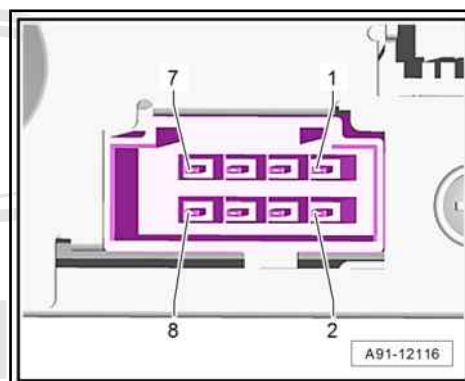
3 - MOST bus

- 1 - Input
- 2 - Output



4 - Multi-pin connector, 8-pin (T8m)

- 1 - Terminal 31
- 2 - Terminal 30
- 5 - Open circuit diagnostic lead



4.4.5 Pin assignment for radio - R-, MMI, from week 45/2008 onwards

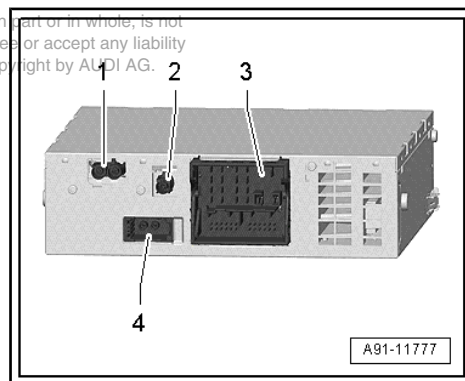
Radio - R-

Coupé

- 1 - Aerial connection (AM/FM1/FM2)
- 2 - Aerial connection (DAB) from aerial amplifier 2 - R111-
- 3 - Connection block with four multi-pin connectors
- 4 - MOST bus

Sportback

- 1 - Aerial connection (AM/FM1/FM2)
- 2 - Aerial connection (DAB) from aerial amplifier 3 - R112-
- 3 - Connection block with four multi-pin connectors
- 4 - MOST bus



Note

Contacts which are not listed are not used.

1 - Aerial connection (AM/FM1/FM2)

Coupé

A - Contact 2 (AM/FM1) from aerial amplifier 3 - R112- (radio aerial 2 - R93-)

B - Contact 1 (FM2) from aerial amplifier 3 - R112- (aerial - R11-)

Sportback

A - Contact 2 (AM/FM1) from aerial amplifier - R24- (radio aerial 2 - R93-)

B - Contact 1 (FM2) from aerial amplifier 2 - R111- (aerial - R11-)

3 - Connection block with four multi-pin connectors

A - Multi-pin connector, 8-pin (T8ag)

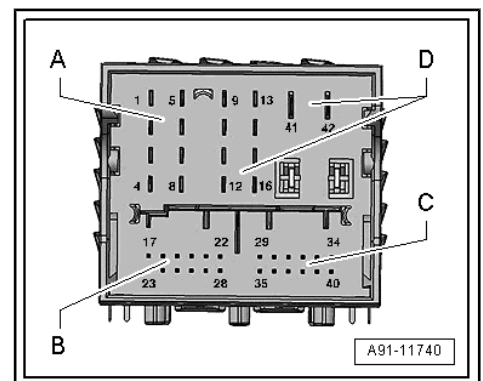
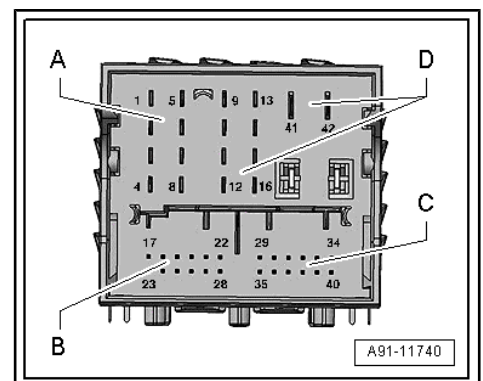
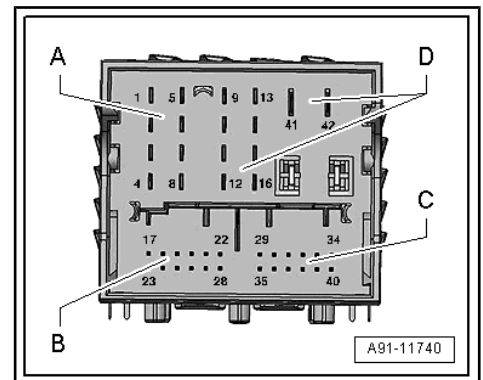
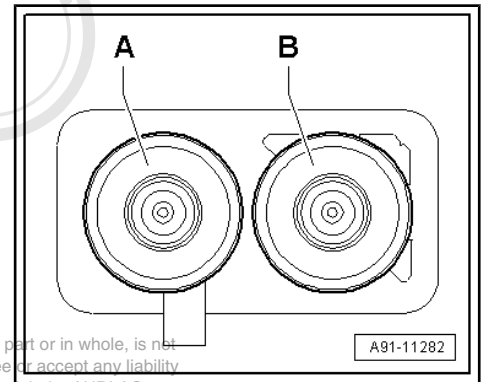
- 1 - Loudspeaker (+), rear right
- 2 - Loudspeaker (+), front right
- 3 - Loudspeaker (+), front left
- 4 - Loudspeaker (+), rear left
- 5 - Loudspeaker (-), rear right
- 6 - Loudspeaker (-), front right
- 7 - Loudspeaker (-), front left
- 8 - Loudspeaker (-), rear left

B - Multi-pin connector, 12-pin (T12w)

- 17 - NF in, left-side (low frequency)
- 18 - NF in, earth (low frequency)
- 19 - NF in, diag (low frequency)
- 21 - NF diag (low frequency)
- 22 - NF (-) (low frequency) from pre-fitted components for mobile phone installation
- 23 - NF in, right-side (low frequency)
- 24 - NF in, screen earth (low frequency)
- 27 - NF screen earth (low frequency)
- 28 - NF (+) (low frequency) from pre-fitted components for mobile phone installation

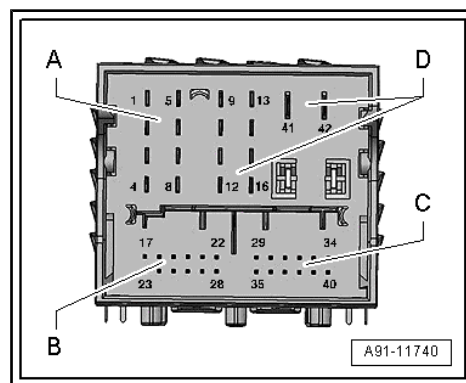
C - Multi-pin connector, 12-pin

- 29 - Headphones output 1 (diag)
- 31 - Headphones output 1/2 (diag)
- 34 - Headphones output 2 (diag)
- 35 - Headphones output 1 (left)
- 36 - Headphones output 1 (earth)
- 37 - Headphones output 1 (right)
- 38 - Headphones output 2 (left)
- 39 - Headphones output 2 (earth)
- 40 - Headphones output 1 (right)



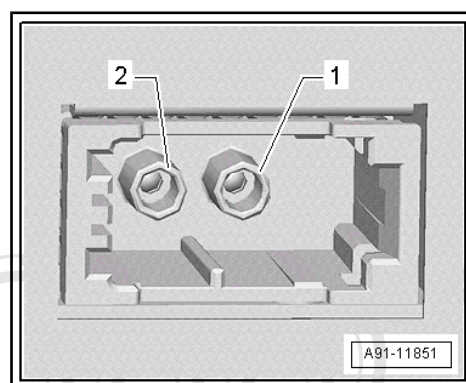
D - Multi-pin connector, 10-pin (T10ag)

- 9 - Subwoofer in rear shelf - R157-
- 10 - Centre mid-range and treble loudspeaker - R158-
- 11 - Open circuit diagnostic lead
- 13 - Subwoofer in rear shelf - R157-
- 14 - Centre mid-range and treble loudspeaker - R158-
- 41 - Terminal 31
- 42 - Terminal 30



4 - MOST bus

- 1 - Input
- 2 - Output



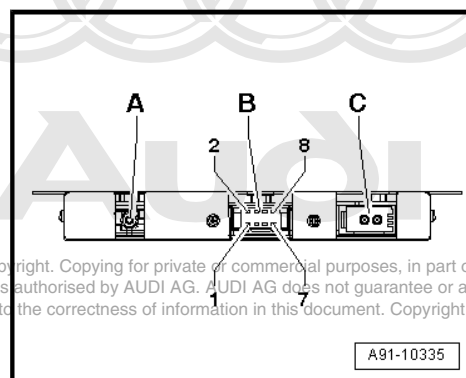
4.4.6 Pin assignment for digital radio - R147- , MMI, up to week 44/2008

Digital radio - R147-

- A - Aerial connection (DAB) from aerial amplifier 2 - R111-
- B - Multi-pin connector, 8-pin (T8o)
- C - MOST bus



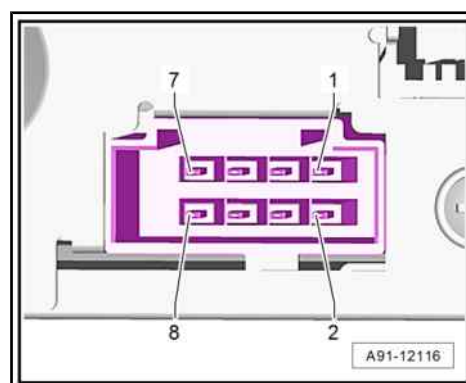
Contacts which are not listed are not used.



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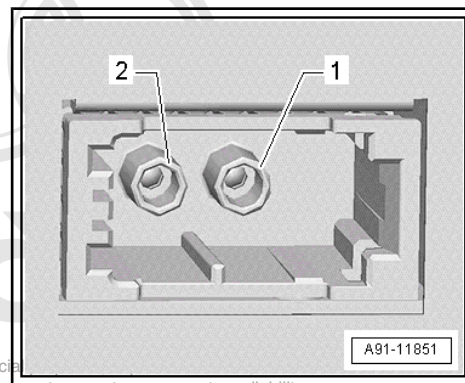
B - Multi-pin connector, 8-pin (T8o)

- 1 - Terminal 31
- 2 - Terminal 30
- 5 - Open circuit diagnostic lead



C - MOST bus

- 1 - Input
- 2 - Output



4.4.7 Pin assignment for satellite radio - R146- , MMI, USA, up to week 44/2008

Satellite radio - R146-

A - Multi-pin connector, 8-pin (T8p)

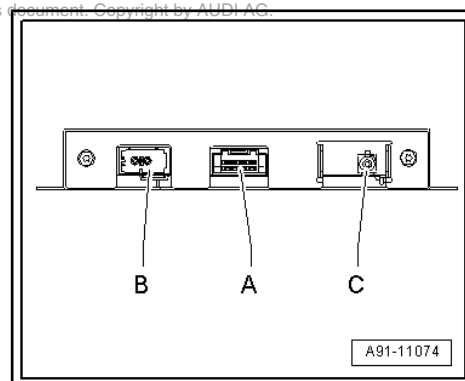
B - MOST bus

C - Connection (SAT) from radio, telephone and navigation system aerial - R52- (satellite aerial - R170-)



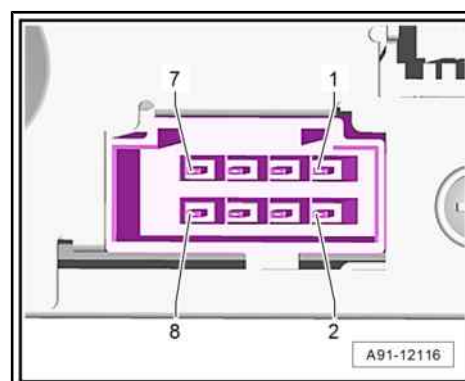
Note

Contacts which are not listed are not used.



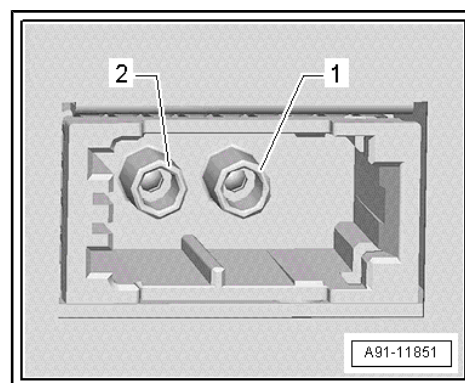
A - Multi-pin connector, 8-pin (T8p)

- 1 - Terminal 31
- 2 - Terminal 30
- 5 - Open circuit diagnostic lead



B - MOST bus

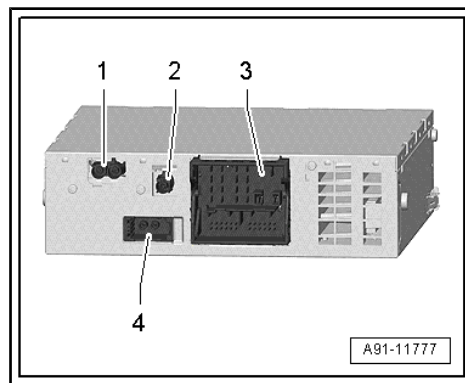
- 1 - Input
- 2 - Output



4.4.8 Pin assignment for radio - R- , MMI, USA, from week 45/2008 onwards

Radio - R-

- 1 - Aerial connection (AM/FM1/FM2)
- 2 - Aerial connection (SAT) from radio, telephone and navigation system aerial - R52- / roof aerial - R216- (satellite tuner aerial - R172-)
- 3 - Connection block with four multi-pin connectors
- 4 - MOST bus



Note

Contacts which are not listed are not used.

1 - Aerial connection (AM/FM1/FM2)

Coupé

A - Contact 2 (AM/FM1) from aerial amplifier 3 - R112- (radio aerial 2 - R93-)

B - Contact 1 (FM2) from aerial amplifier 3 - R112- (aerial - R11-)

Sportback

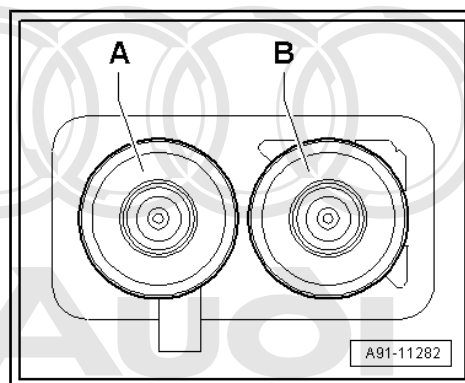
A - Contact 2 (AM/FM1) from aerial amplifier - R24- (radio aerial 2 - R93-)

B - Contact 1 (FM2) from aerial amplifier 2 - R111- (aerial - R11-)

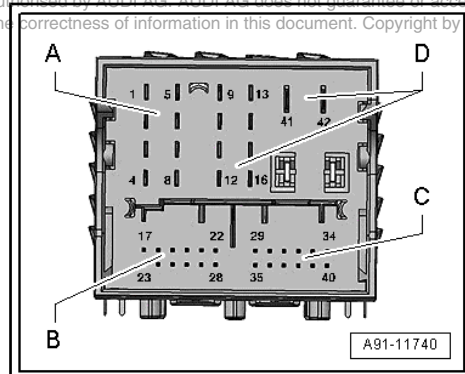
3 - Connection block with four multi-pin connectors

A - Multi-pin connector, 8-pin (T8ag)

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

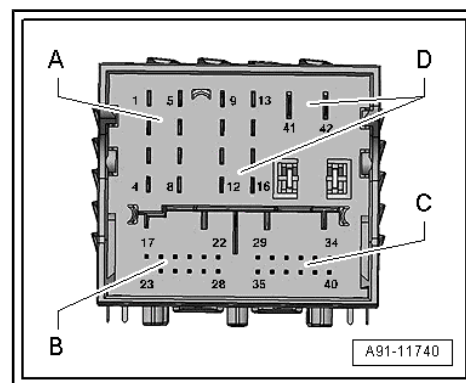


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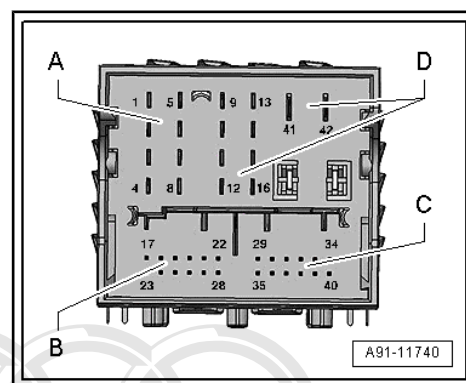
B - Multi-pin connector, 12-pin (T12w)

- 17 - NF in, left-side (low frequency)
- 18 - NF in, earth (low frequency)
- 19 - NF in, diag (low frequency)
- 21 - NF diag (low frequency)
- 22 - NF (low frequency) (-)
- 23 - NF in, right-side (low frequency)
- 24 - NF in, screen earth (low frequency)
- 27 - NF screen earth (low frequency)
- 28 - NF (low frequency) (+)



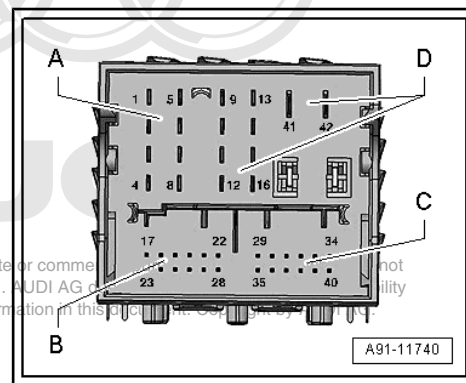
C - Multi-pin connector, 12-pin

- 29 - Headphones output 1 (diag)
- 31 - Headphones output 1/2 (diag)
- 34 - Headphones output 2 (diag)
- 35 - Headphones output 1 (left)
- 36 - Headphones output 1 (earth)
- 37 - Headphones output 1 (right)
- 38 - Headphones output 2 (left)
- 39 - Headphones output 2 (earth)
- 40 - Headphones output 1 (right)



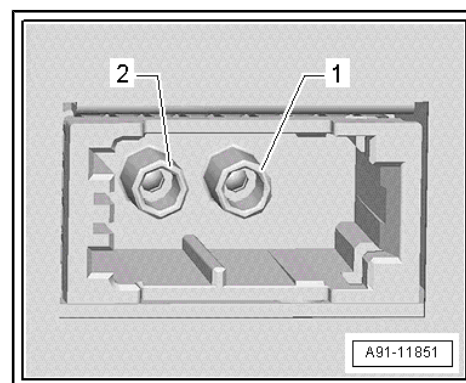
D - Multi-pin connector, 10-pin (T10ag)

- 9 - Subwoofer in rear shelf - R157-
- 10 - Centre mid-range and treble loudspeaker - R158-
- 11 - Open circuit diagnostic lead
- 13 - Subwoofer in rear shelf - R157-
- 14 - Centre mid-range and treble loudspeaker - R158-
- 41 - Terminal 31
- 42 - Terminal 30



4 - MOST bus

- 1 - Input
- 2 - Output



4.4.9 Pin assignment for radio - R- , MMI, Japan, from week 45/2008 onwards

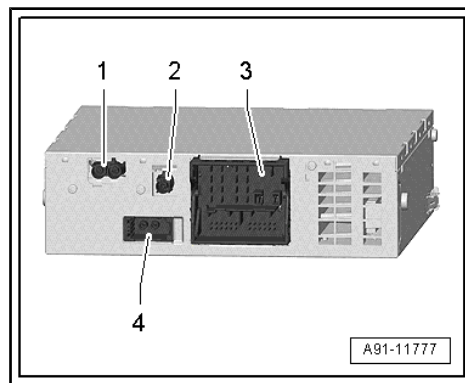
Radio - R-

- 1 - Aerial connection (AM/FM1/FM2)
- 2 - Not used
- 3 - Connection block with four multi-pin connectors
- 4 - MOST bus



Note

Contacts which are not listed are not used.



1 - Aerial connection (AM/FM1/FM2)

Coupé

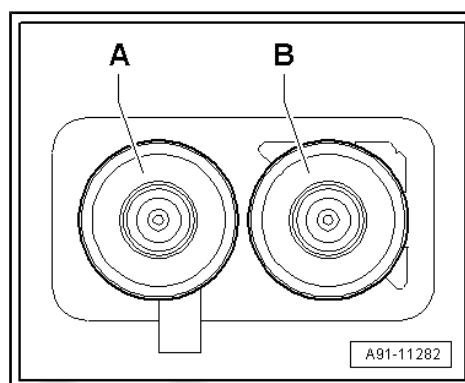
A - Contact 2 (AM/FM1) from aerial amplifier 3 - R112- (radio aerial 2 - R93-)

B - Contact 1 (FM2) from aerial amplifier 3 - R112- (aerial - R11-)

Sportback

A - Contact 2 (AM/FM1) from aerial amplifier - R24- (radio aerial 2 - R93-)

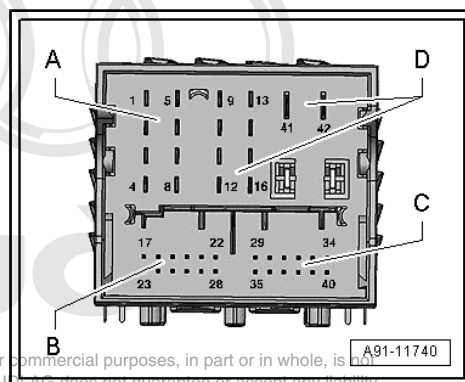
B - Contact 1 (FM2) from aerial amplifier 2 - R111- (aerial - R11-)



3 - Connection block with four multi-pin connectors

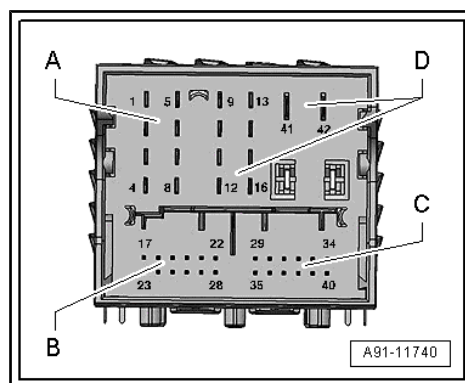
A - Multi-pin connector, 8-pin (T8ag)

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



B - Multi-pin connector, 12-pin (T12w)

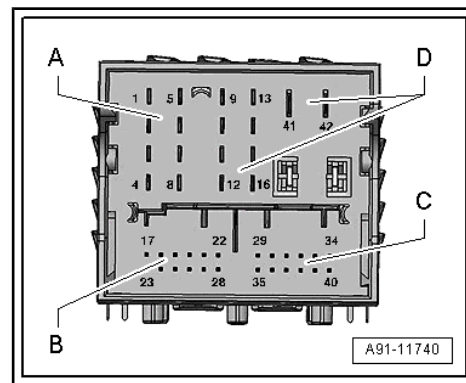
- 17 - NF in, left-side (low frequency)
- 18 - NF in, earth (low frequency)
- 19 - NF in, diag (low frequency)
- 21 - NF diag (low frequency)
- 22 - NF (low frequency) (-)
- 23 - NF in, right-side (low frequency)
- 24 - NF in, screen earth (low frequency)
- 27 - NF screen earth (low frequency)
- 28 - NF (low frequency) (+)



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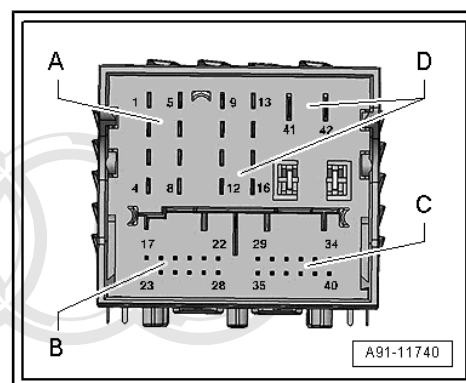
C - Multi-pin connector, 12-pin

- 29 - Headphones output 1 (diag)
- 31 - Headphones output 1/2 (diag)
- 34 - Headphones output 2 (diag)
- 35 - Headphones output 1 (left)
- 36 - Headphones output 1 (earth)
- 37 - Headphones output 1 (right)
- 38 - Headphones output 2 (left)
- 39 - Headphones output 2 (earth)
- 40 - Headphones output 1 (right)



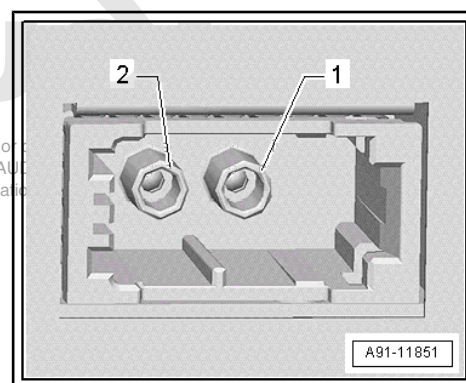
D - Multi-pin connector, 10-pin (T10ag)

- 9 - Subwoofer in rear shelf - R157-
- 10 - Centre mid-range and treble loudspeaker - R158-
- 11 - Open circuit diagnostic lead
- 13 - Subwoofer in rear shelf - R157-
- 14 - Centre mid-range and treble loudspeaker - R158-
- 41 - Terminal 31
- 42 - Terminal 30



4 - MOST bus

- 1 - Input
- 2 - Output



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5 DVD/CD changer

⇒ ["5.1 Pin assignment", page 130](#)

⇒ ["5.2 Removing and installing CD changer", page 130](#)

5.1 Pin assignment

⇒ ["5.1.1 Pin assignment for CD changer R41 \(MMI\)", page 130](#)

5.1.1 Pin assignment for CD changer - R41- (MMI)

CD changer - R41-

A - Multi-pin connector, 8-pin (T8aa)

B - MOST bus



Note

Contacts which are not listed are not used.

A - Multi-pin connector, 8-pin (T8aa)

1 - Terminal 31

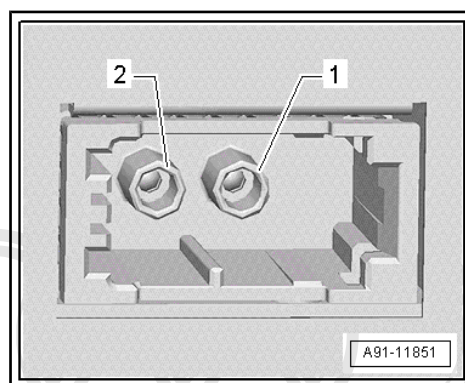
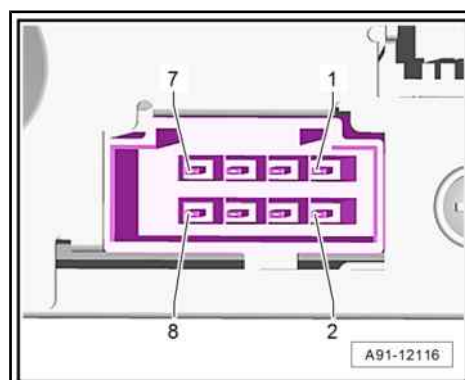
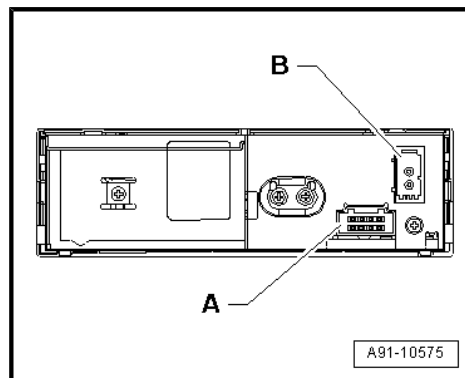
2 - Terminal 30

5 - Open circuit diagnostic lead

B - MOST bus

1 - Input

2 - Output



5.2 Removing and installing CD changer

⇒ ["5.2.1 Removing and installing CD changer R41 , up to week 44/2008", page 130](#)

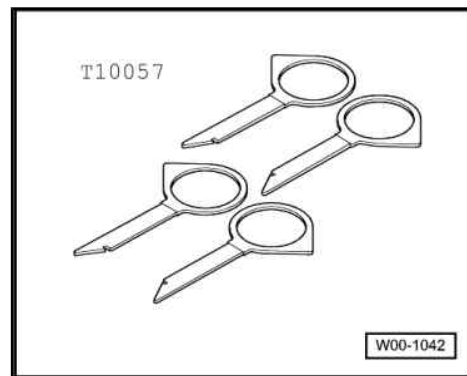
⇒ ["5.2.2 Removing and installing CD changer R41 , from week 45/2008 onwards", page 132](#)

5.2.1 Removing and installing CD changer - R41- , up to week 44/2008

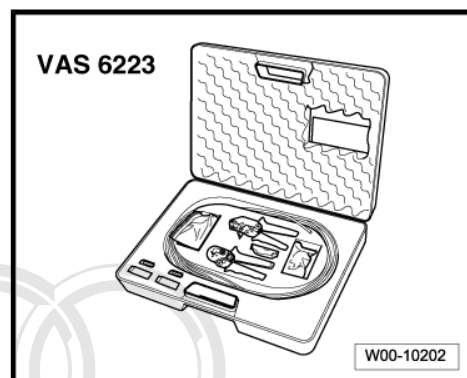
Special tools and workshop equipment required

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◆ Radio release tool - T10057-



◆ Fibre-optic conductor repair set - VAS 6223-



◆ Protective cap for cable connector - VAS 6223/9-

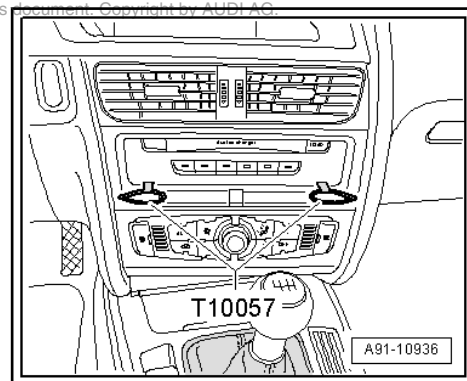
- When renewing control unit, select “Replacement” function for appropriate control unit in “Guided Fault Finding”.

To do so, use ⇒ Vehicle diagnostic tester.

- Switch off all electrical equipment.
- Remove ignition key.

Removing

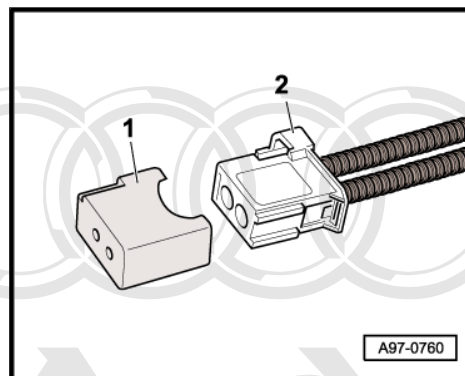
- Insert two radio release tools - T10057- into release slots on CD changer - R41- until they engage. Pointed ends of tool grips must face outwards.
- Pull CD changer - R41- out of mounting frame.
- Release and unplug all connectors on CD changer - R41- .



- Fit protective cap for cable connector - VAS 6223/9- -1- onto MOST bus connector -2-.
- Press release tabs on CD changer - R41- and remove radio release tools - T10057- .
- Unclip switches from trim panel on CD changer - R41- .

Installing

- Plug in all connectors.
- Slide CD changer - R41- into mounting frame until it engages.



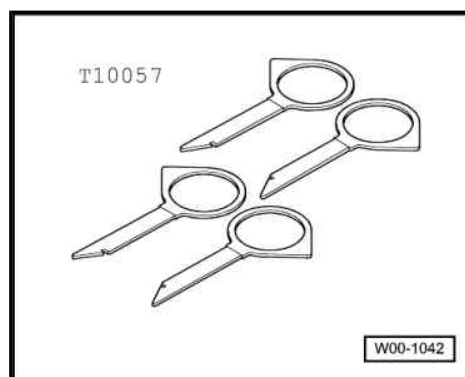
5.2.2 Removing and installing CD changer - R41- , from week 45/2008 onwards

The CD changer - R41- is fitted in the glove box.

Special tools and workshop equipment required

- ◆ Radio release tool - T10057-

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- ◆ Fibre-optic conductor repair set - VAS 6223-



- ◆ Protective cap for cable connector - VAS 6223/9-
- When renewing control unit, select “Replacement” function for appropriate control unit in “Guided Fault Finding”.

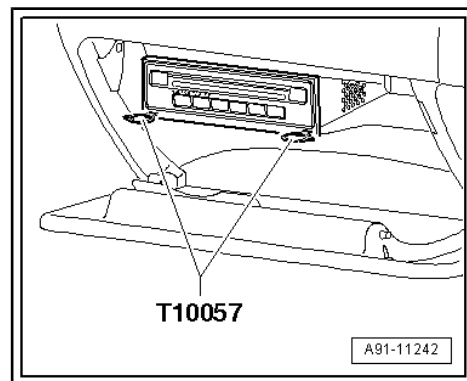
To do so, use ⇒ **Vehicle diagnostic tester.**

- Switch off all electrical equipment.
- Remove ignition key.

Removing

- Open glove box.

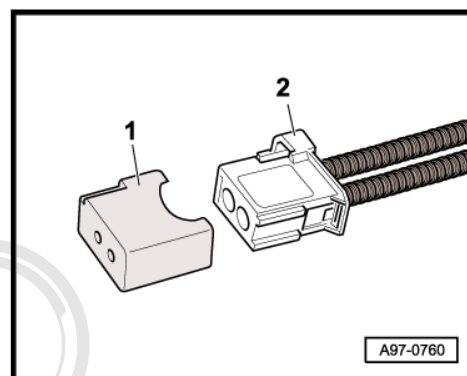
- Insert two radio release tools - T10057- into release slots on CD changer - R41- until they engage. Pointed ends of grips must face outwards.
- Pull CD changer - R41- out of mounting frame.
- Release and unplug all connectors on CD changer - R41- .



- Fit protective cap for cable connector - VAS 6223/9- -1- onto MOST bus connector -2-.
- Press release tabs on CD changer - R41- and remove radio release tools - T10057- .

Installing

- Plug in all connectors.
- Slide CD changer - R41- into mounting frame until it engages.



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6 Telephone system

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⇒ [“6.2 Overview of fitting locations - telephone system”, page 153](#)

⇒ [“6.3 Exploded view - microphone unit”, page 158](#)

⇒ [“6.4 Removing and installing microphone unit in front roof module R164”, page 160](#)

⇒ [“6.5 Removing and installing aerial amplifier for mobile telephone R86”, page 161](#)

⇒ [“6.6 Removing and installing telephone bracket R126”, page 162](#)

⇒ [“6.7 Removing and installing telephone transmitter and receiver unit”, page 163](#)

⇒ [“6.8 Pin assignment”, page 166](#)

6.1 Layout - telephone

⇒ [“6.1.1 Layout - telephone, up to week 44/2008”, page 134](#)

⇒ [“6.1.2 Layout - telephone, from week 45/2008 onwards”, page 137](#)

⇒ [“6.1.3 Layout - telephone, USA, up to week 44/2008”, page 143](#)

⇒ [“6.1.4 Layout - telephone, USA, from week 45/2008 onwards”, page 145](#)

⇒ [“6.1.5 Layout - telephone, Japan, up to week 44/2008”, page 149](#)

⇒ [“6.1.6 Layout - telephone, Japan, from week 45/2008 onwards”, page 151](#)

6.1.1 Layout - telephone, up to week 44/2008

General notes

The telephone system consists of the following versions:

◆ Phone pre-installation

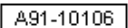
The telephone transmitter and receiver unit - R36- is linked to the MMI Infotainment system via the CAN or MOST bus. It also has an aerial for Bluetooth - R152- .

The telephone bracket - R126- is fitted in the centre console. The system is operated using the multimedia system operating unit - E380- (MOST), the radio - R- (CAN) or the mobile telephone - R54- .

Microphones for the microphone unit in front roof module - W1- are integrated in the front interior light - R164- . One microphone (telephone microphone - R38-) is connected directly to the telephone transmitter and receiver unit - R36- .

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- 16 - Radio, telephone and navigation system aerial - R52- (roof aerial)**



The Bluetooth car phone and mobile phone are either operated via the Bluetooth handset, the hands-free unit with multi-function steering wheel or via the speech dialogue system.

The telephone transmitter and receiver unit - R36- is linked to the MMI Infotainment system via the MOST bus.

Microphones for the microphone unit in front roof module - W1- are integrated in the front interior light - R164- . One microphone (telephone microphone - R38-) is connected directly to the telephone transmitter and receiver unit - R36- .

1 - Display unit for front information display and operating unit control unit - J685- in dash panel (centre)

2 - Control unit for front display and information control panel - J523- in glove box (left-side) (MMI basic) / behind dash panel (MMI)

3 - Multimedia system operating unit - E380- in centre console

4 - Data bus diagnostic interface - J533- behind glove box (left-side)

5 - Control unit in dash panel insert - J285- in dash panel

6 - Steering column electronics control unit - J527- on steering column on steering column switch

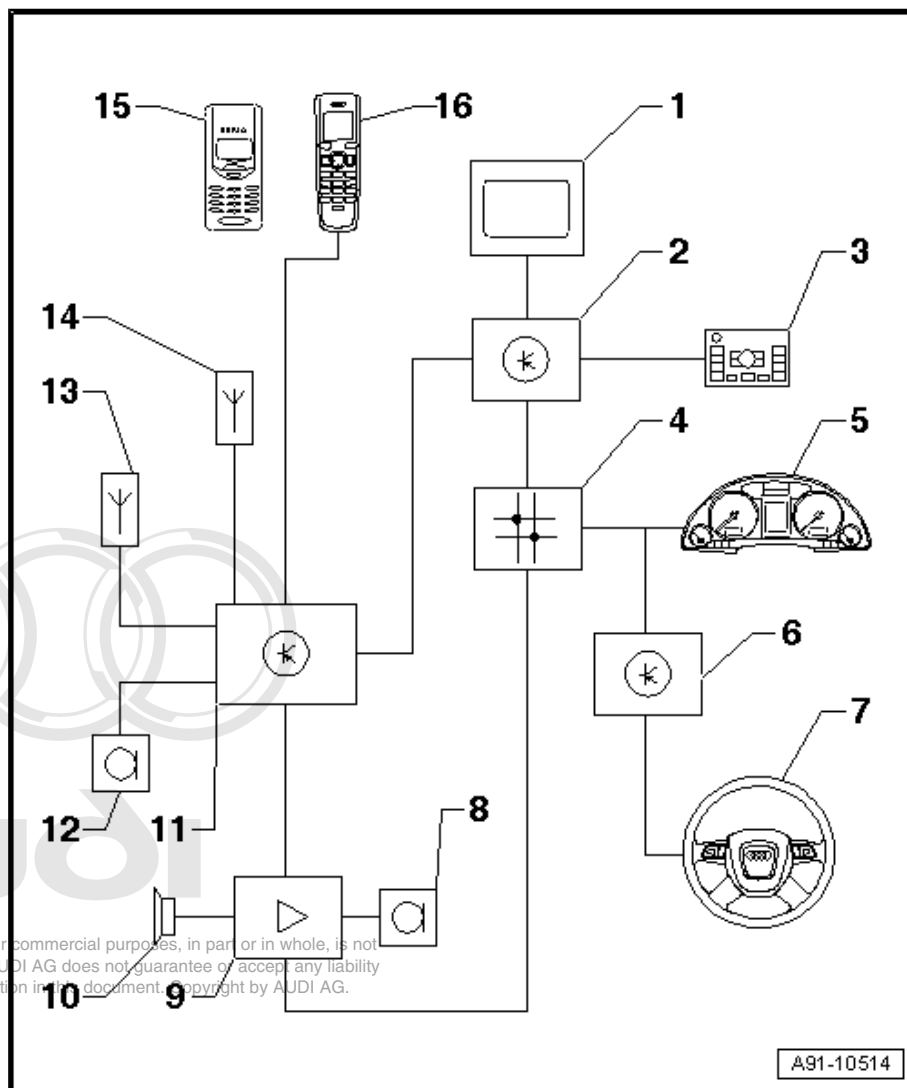
7 - Multi-function steering wheel

8 - Microphone unit in front roof module - R164- in front interior light - W1-

9 - Digital sound package control unit - J525- behind luggage compartment side trim (left-side)

10 - Sound systems

11 - Telephone transmitter and receiver unit - R36- beneath front seat (right-side)



12 - Microphone unit in front roof module - R164- (telephone microphone - R38-) in front interior light - W1-

13 - Radio, telephone and navigation system aerial - R52- (roof aerial)

14 - Aerial for Bluetooth - R152- on telephone transmitter and receiver unit - R36-

15 - Mobile telephone - R54-

16 - Telephone bracket - R126- with telephone handset - R37-

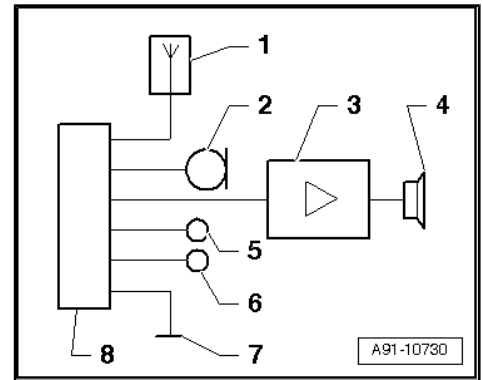
◆ Pre-fitted components for mobile phone installation

The connector for pre-fitted components is located beneath the storage compartment in the centre console.

Microphones for the microphone unit in front roof module - W1- are integrated in the front interior light - R164- . One of the microphones (telephone microphone - R38-) is connected to the connector.

The aerial connection for the radio, telephone and navigation system aerial - R52- (GPS/GSM/RC) is located at the connector.

- 1 - Radio, telephone and navigation system aerial - R52- / roof aerial - R216-
- 2 - Microphone unit in front roof module - R164- in front interior light - W1-
- 3 - Radio - R- / digital sound package control unit - J525-
- 4 - Sound systems
- 5 - Terminal 15
- 6 - Terminal 30
- 7 - Terminal 31
- 8 - Multi-pin connector, 18-pin (T18a) in centre console (rear)



Fault finding is performed via the "Guided Fault Finding" → Vehicle diagnostic tester.

Notes on Bluetooth technology

A standardised radio connection system (Bluetooth technology) has been used to transmit data between telephone transmitter and receiver unit - R36- and telephone handset - R37- / mobile telephone - R54- .

An additional transmitter/receiver unit is fitted in the telephone transmitter/receiver unit - R36- . A separate Bluetooth aerial - R152- links the telephone transmitter and receiver unit - R36- and the telephone bracket - R126- / mobile telephone - R54- , allowing cordless operation of the telephone handset - R37- / mobile telephone - R54- .

The range of the radio wave connection is approx. 10 m.

6.1.2 Layout - telephone, from week 45/2008 onwards

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The telephone system consists of the following versions:

◆ Mobile phone pre-installation (CAN)

The telephone transmitter and receiver unit - R36- is linked to the infotainment system (radio) via the CAN bus. It also has an aerial for Bluetooth - R152- .

The telephone bracket - R126- is fitted in the centre console. The system is operated using the radio - R- or the mobile telephone - R54- .

Microphones for the microphone unit in front roof module - W1- are integrated in the front interior light - R164- . One of these microphones (front left microphone - R140-) is connected to the telephone transmitter and receiver unit - R36- .

1 - Telephone bracket - R126-
with mobile telephone - R54-

2 - Radio - R- in dash panel

3 - Sound systems

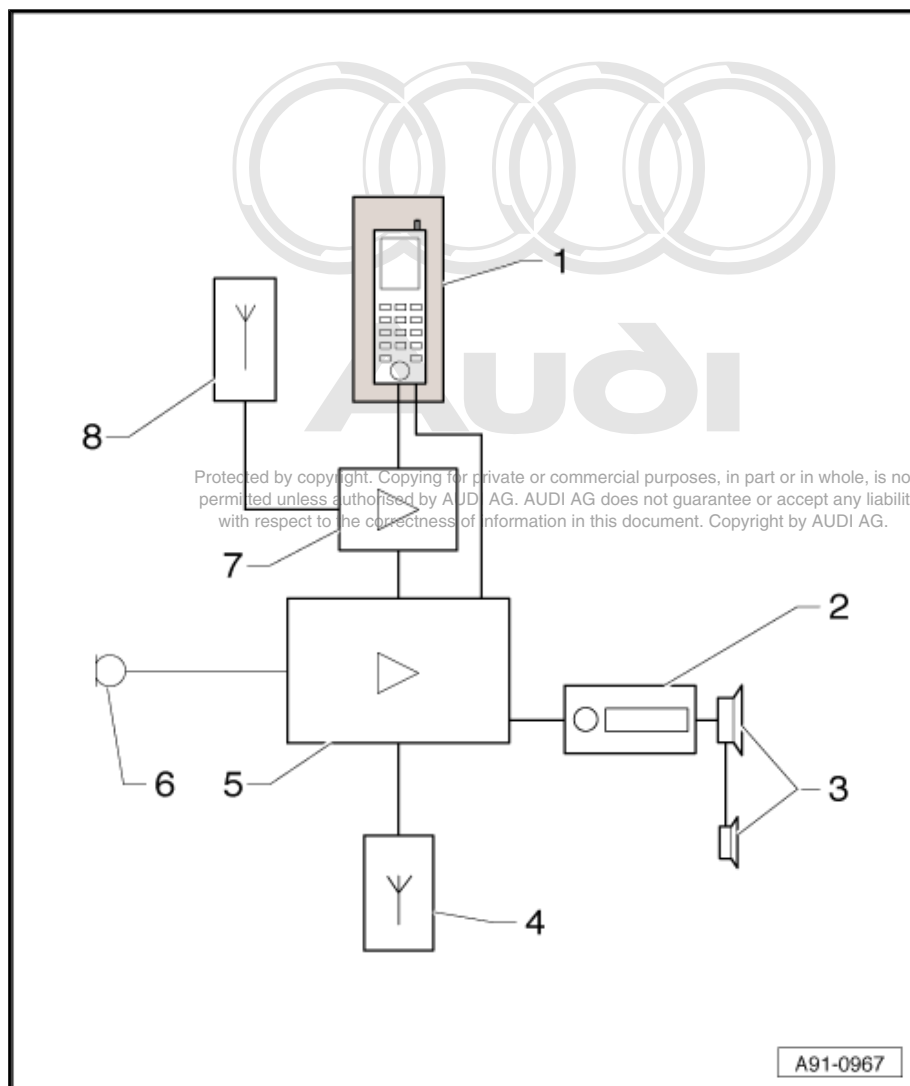
4 - Aerial for Bluetooth - R152-
on telephone transmitter and
receiver unit - R36-

5 - Telephone transmitter and
receiver unit - R36- beneath
front seat (right-side)

6 - Microphone unit in front roof
module - R164- (telephone mi-
crophone - R38-) in front inter-
ior light - W1-

7 - Aerial amplifier for mobile
telephone - R86- behind lug-
gage compartment side trim
(right-side)

8 - Radio, telephone and navi-
gation system aerial - R52- /
roof aerial - R216-



◆ Mobile phone pre-installation in control unit 1 for information electronics - J794- (MMI)

The telephone bracket - R126- is fitted in the centre console. The system is operated using the MMI infotainment system or the mobile telephone - R54- .

Microphones for the microphone unit in front roof module - W1- are integrated in the front interior light - R164- . One of these microphones (front left microphone - R140-) is connected directly to the control unit 1 for information electronics - J794- .

The aerial connection is located at the telephone bracket - R126- .

1 - Radio, telephone and navigation system aerial - R52- / roof aerial - R216-

2 - Display unit for front information display and operating unit control unit - J685- in dash panel (centre)

3 - Multimedia system operating unit - E380- in centre console

4 - Control unit 1 for information electronics - J794- in dash panel

5 - Microphone unit in front roof module - R164- (front right microphone - R141-) in front interior light - W1-

6 - Data bus diagnostic interface - J533- behind glove box (left-side)

7 - Steering column electronics control unit - J527- on steering column on steering column switch

8 - Multi-function steering wheel

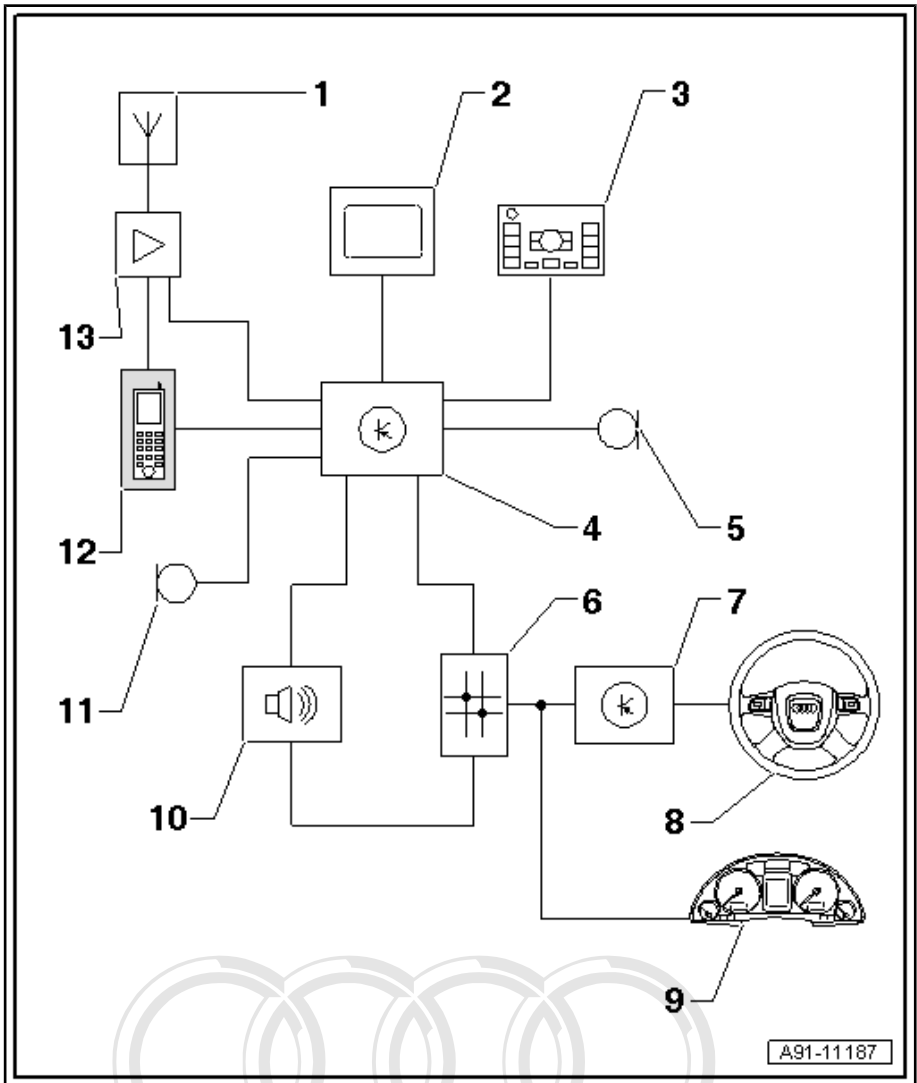
9 - Control unit in dash panel insert - J285- in dash panel

10 - Digital sound package control unit - J525- behind luggage compartment side trim (left-side)

11 - Microphone unit in front roof module - R164- (front left microphone - R140-) in front interior light - W1-

12 - Telephone bracket - R126- with mobile telephone - R54-

13 - Aerial amplifier for mobile telephone - R86- behind luggage compartment side trim (right-side)



◆ Bluetooth car phone in control unit 1 for information electronics - J794- (MMI)

The Bluetooth car phone supports the operation of Bluetooth mobile telephones - R54-. It is not necessary to fit the Bluetooth mobile telephone - R54- into a bracket and it does not have to be linked to the hands-free unit in the vehicle.

In this case, the Bluetooth link is the only means of connecting the mobile phone. It is also possible to read out the SIM card of the mobile telephone - R54- (phone book) via Bluetooth.

The Bluetooth car phone has its own telephone handset - R37- (Bluetooth handset) equipped with SIM card slide-in module and charging cradle.

The Bluetooth car phone and the mobile telephone - R54- are either operated via the telephone handset - R37-, the hands-free unit with multi-function steering wheel or via the speech dialogue system.

The aerial for Bluetooth - R152- is fitted in the control unit 1 for information electronics - J794-.

Microphones for the microphone unit in front roof module - W1- are integrated in the front interior light - R164- . One of these microphones (front left microphone - R140-) is connected directly to the control unit 1 for information electronics - J794- .

The aerial connection is located at the control unit 1 for information electronics - J794- .

1 - Radio, telephone and navigation system aerial - R52- / roof aerial - R216-

2 - Display unit for front information display and operating unit control unit - J685- in dash panel (centre)

3 - Multimedia system operating unit - E380- in centre console

4 - Control unit 1 for information electronics - J794- in dash panel

5 - Microphone unit in front roof module - R164- (front right microphone - R141-) in front interior light - W1-

6 - Data bus diagnostic interface - J533- behind glove box (left-side)

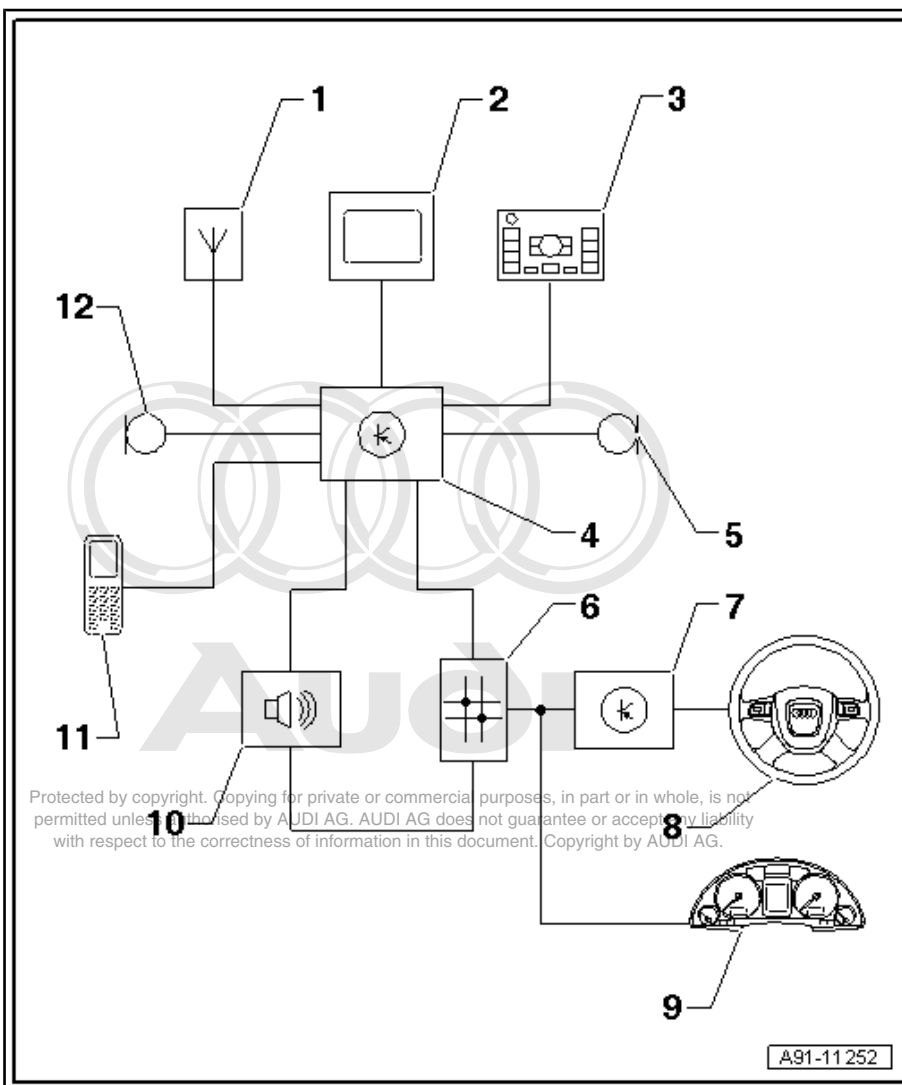
7 - Steering column electronics control unit - J527- on steering column on steering column switch

8 - Multi-function steering wheel

9 - Control unit in dash panel insert - J285- in dash panel

10 - Digital sound package control unit - J525- behind luggage compartment side trim (left-side)

11 - Telephone bracket - R126- with telephone handset - R37-



12 - Microphone unit in front roof module - R164- (front left microphone - R140-) in front interior light - W1-

◆ Pre-fitted components for mobile phone installation

The connector for pre-fitted components is located beneath the storage compartment in the centre console.

Microphones for the microphone unit in front roof module - W1- are integrated in the front interior light - R164- . One of the microphones (front left microphone - R140-) is connected to the connector.

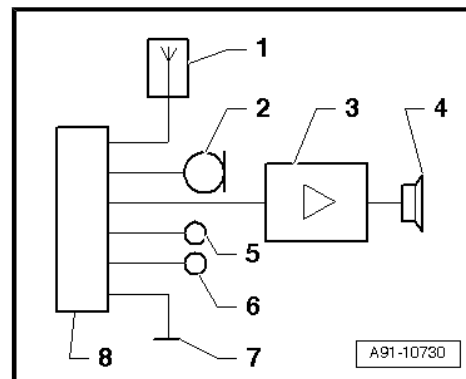
The aerial connection for the radio, telephone and navigation system aerial - R52- / roof aerial - R216- (GPS/GSM/RC) is located at the connector.

- 1 - Radio, telephone and navigation system aerial - R52- / roof aerial - R216-
- 2 - Microphone unit in front roof module - R164- in front interior light - W1-
- 3 - Radio - R- / digital sound package control unit - J525-
- 4 - Sound systems
- 5 - Terminal 15
- 6 - Terminal 30
- 7 - Terminal 31
- 8 - Multi-pin connector, 18-pin (T18a) in centre console (rear)

◆ **Bluetooth hands-free system in control unit 1 for information electronics - J794- (MMI)**

The control unit 1 for information electronics - J794- with microphone unit in front roof module - R164- is fitted and used as a hands-free system only. It is connected to the mobile telephone - R54- via Bluetooth.

The aerial for Bluetooth - R152- is fitted in the control unit 1 for information electronics - J794- .



1 - Display unit for front information display and operating unit control unit - J685- in dash panel (centre)

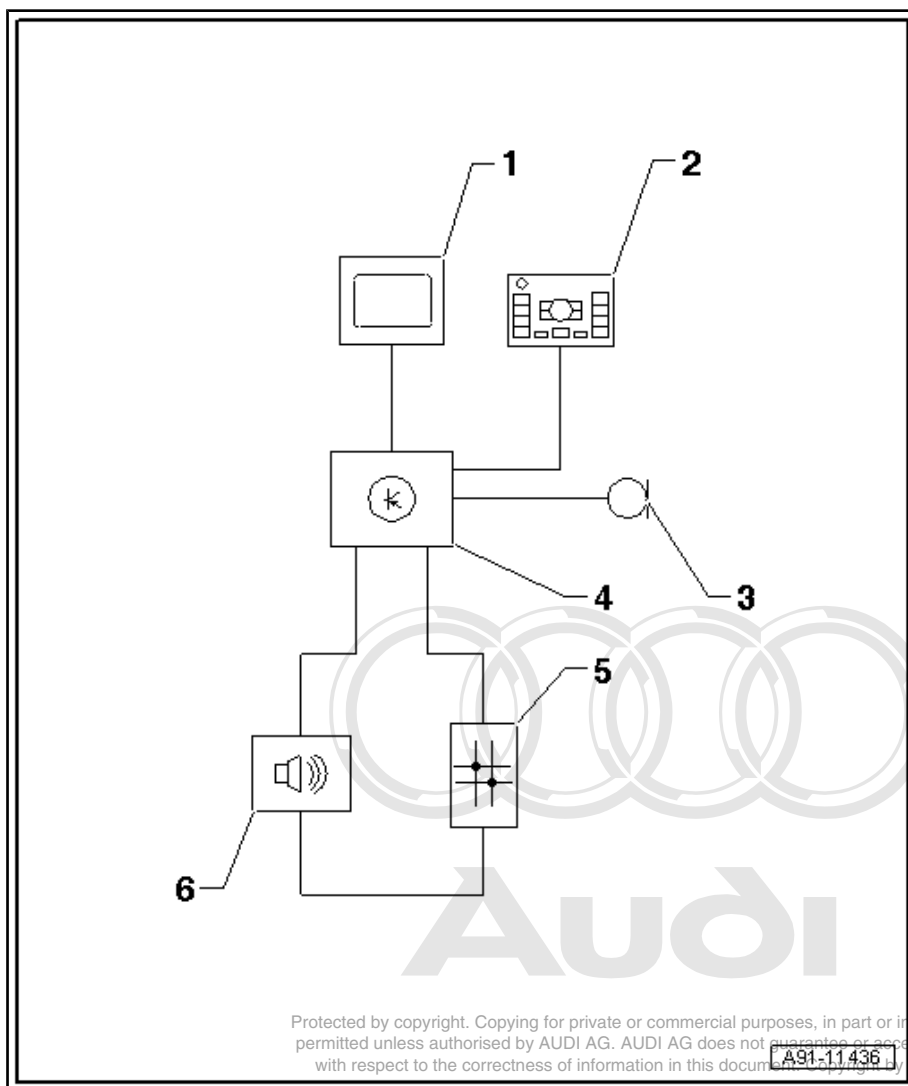
2 - Multimedia system operating unit - E380- in centre console

3 - Microphone unit in front roof module - R164- (front right microphone - R141-) in front interior light - W1-

4 - Control unit 1 for information electronics - J794- with aerial for Bluetooth - R152- in dash panel

5 - Data bus diagnostic interface - J533- behind glove box (left-side)

6 - Digital sound package control unit - J525- behind luggage compartment side trim (left-side)

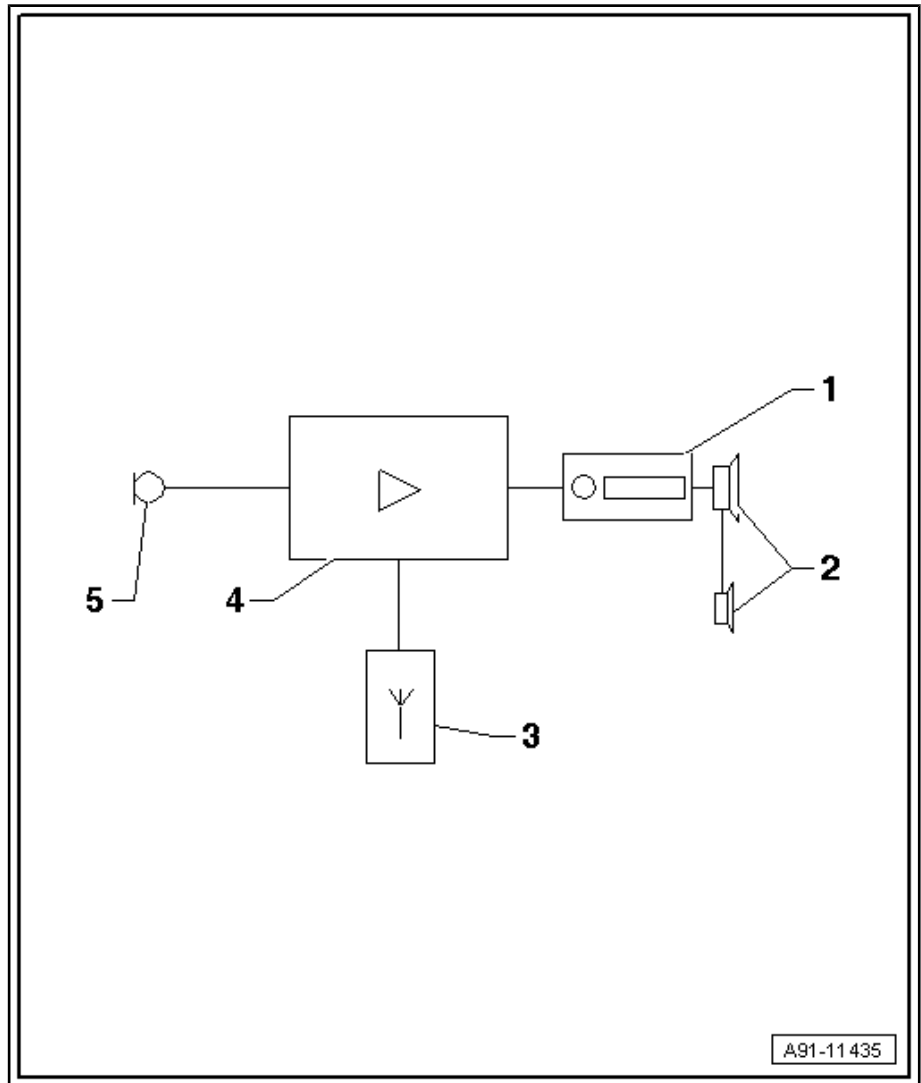


◆ Bluetooth hands-free system (CAN)

The telephone transmitter and receiver unit - R36- with microphone unit in front roof module - R164- / aerial for Bluetooth - R152- is fitted and used as a hands-free system only. It is connected to the mobile telephone - R54- via Bluetooth.

The aerial for Bluetooth - R152- is attached to the telephone transmitter and receiver unit - R36- .

- 1 - Radio - R- in dash panel
- 2 - Sound systems
- 3 - Aerial for Bluetooth - R152-
on telephone transmitter and
receiver unit - R36-
- 4 - Telephone transmitter and
receiver unit - R36- beneath
front seat (right-side)
- 5 - Microphone unit in front roof
module - R164- (front right mi-
crophone - R141-) in front in-
terior light - W1-



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Fault finding is performed via the "Guided Fault Finding" → Vehicle diagnostic tester.

Notes on Bluetooth technology

A standardised radio connection system (Bluetooth technology) is used to transmit data between telephone transmitter and receiver unit - R36- / control unit 1 for information electronics - J794- and telephone handset - R37- / mobile telephone - R54- .

An additional transmitter and receiver unit is fitted in the telephone transmitter and receiver unit - R36- / control unit 1 for information electronics - J794- . A separate aerial for Bluetooth - R152- links the telephone transmitter and receiver unit - R36- / control unit 1 for information electronics - J794- and the telephone bracket - R126- / mobile telephone - R54- , allowing cordless operation of the telephone handset - R37- / mobile telephone - R54- .

The range of the radio wave connection is approx. 10 m.

6.1.3 Layout - telephone, USA, up to week 44/2008

The telephone system consists of the mobile phone pre-installation components.

The telephone transmitter and receiver unit - R36- is linked to the MMI Infotainment system via the CAN or MOST bus. It also has an aerial for Bluetooth - R152- .

The telephone bracket - R126- is fitted in the centre console. The system is operated using the multimedia system operating unit - E380- (MOST), the radio - R- (CAN) or the mobile telephone - R54- .

Microphones for the microphone unit in front roof module - W1- are integrated in the front interior light - R164- . One microphone (telephone microphone - R38-) is connected directly to the telephone transmitter and receiver unit - R36- .

1 - Telephone bracket - R126- with mobile telephone - R54-

2 - Display unit for front information display and operating unit control unit - J685- in dash panel (centre)

3 - Control unit for front display and information control panel - J523- behind dash panel

4 - Multimedia system operating unit - E380- in centre console

5 - Data bus diagnostic interface - J533- behind glove box (left-side)

6 - Control unit in dash panel insert - J285- in dash panel

7 - Steering column electronics control unit - J527- on steering column on steering column switch

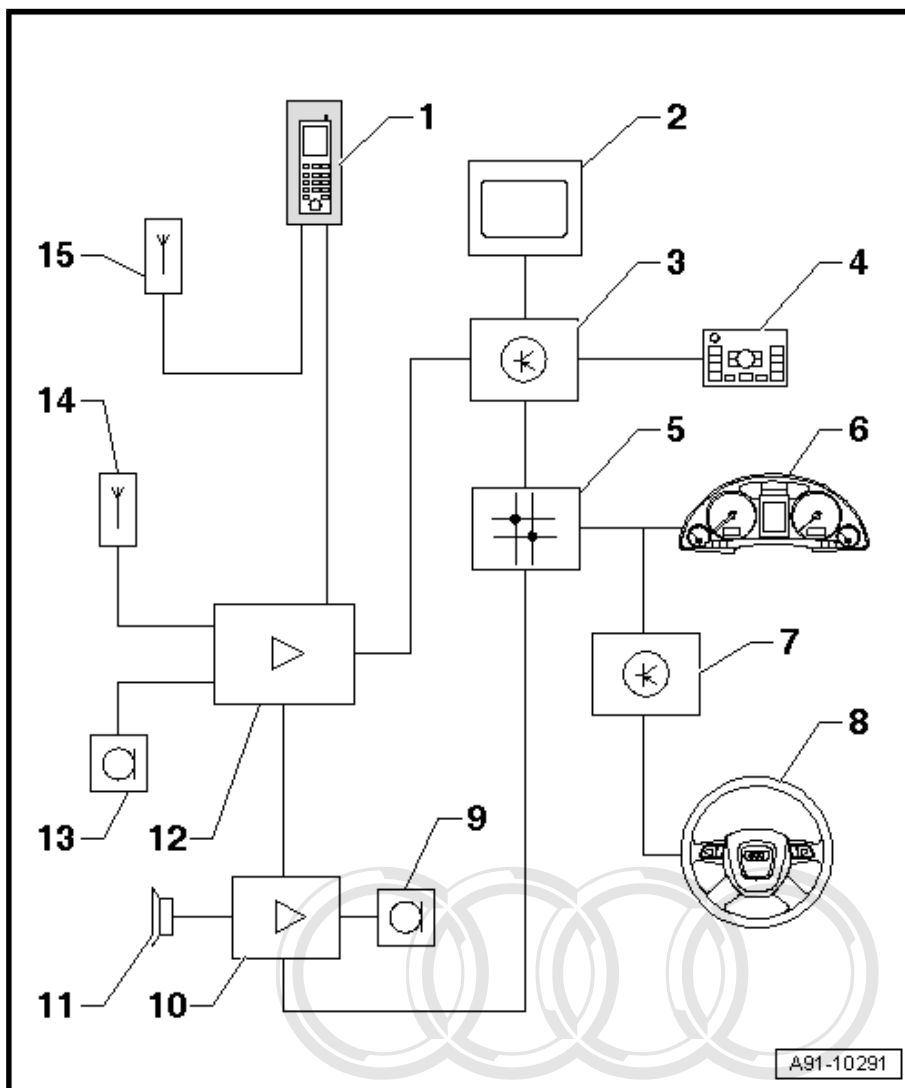
8 - Multi-function steering wheel

9 - Microphone unit in front roof module - R164- in front interior light - W1-

10 - Digital sound package control unit - J525- behind luggage compartment side trim (left-side)

11 - Sound systems

12 - Telephone transmitter and receiver unit - R36- beneath front seat (right-side)



13 - Microphone unit in front roof module - R164- (telephone microphone - R38-) in front interior light - W1-

14 - Aerial for Bluetooth - R152- on telephone transmitter and receiver unit - R36-

15 - Radio, telephone and navigation system aerial - R52- (roof aerial)

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Fault finding is performed via the "Guided Fault Finding" ⇒ Vehicle diagnostic tester.

Notes on Bluetooth technology

A standardised radio connection system (Bluetooth technology) has been used to transmit data between telephone transmitter

and receiver unit - R36- and telephone handset - R37- / mobile telephone - R54- .

An additional transmitter/receiver unit is fitted in the telephone transmitter/receiver unit - R36- . A separate Bluetooth aerial - R152- links the telephone transmitter and receiver unit - R36- and the telephone bracket - R126- / mobile telephone - R54- , allowing cordless operation of the telephone handset - R37- / mobile telephone - R54- .

The range of the radio wave connection is approx. 10 m.

6.1.4 Layout - telephone, USA, from week 45/2008 onwards

The telephone system consists of the following versions:

◆ Mobile phone pre-installation (CAN)

The telephone transmitter and receiver unit - R36- is linked to the infotainment system (radio) via the CAN bus. It also has an aerial for Bluetooth - R152- .

The system is operated using the radio - R- or the mobile telephone - R54- .

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Microphones for the microphone unit in front roof module - W1- are integrated in the front interior light - R164- . One of these microphones (front left microphone - R140-) is connected to the telephone transmitter and receiver unit - R36- .

1 - Telephone bracket - R126-
with mobile telephone - R54-
(up to model year 2008)

2 - Radio - R- in dash panel

3 - Sound systems

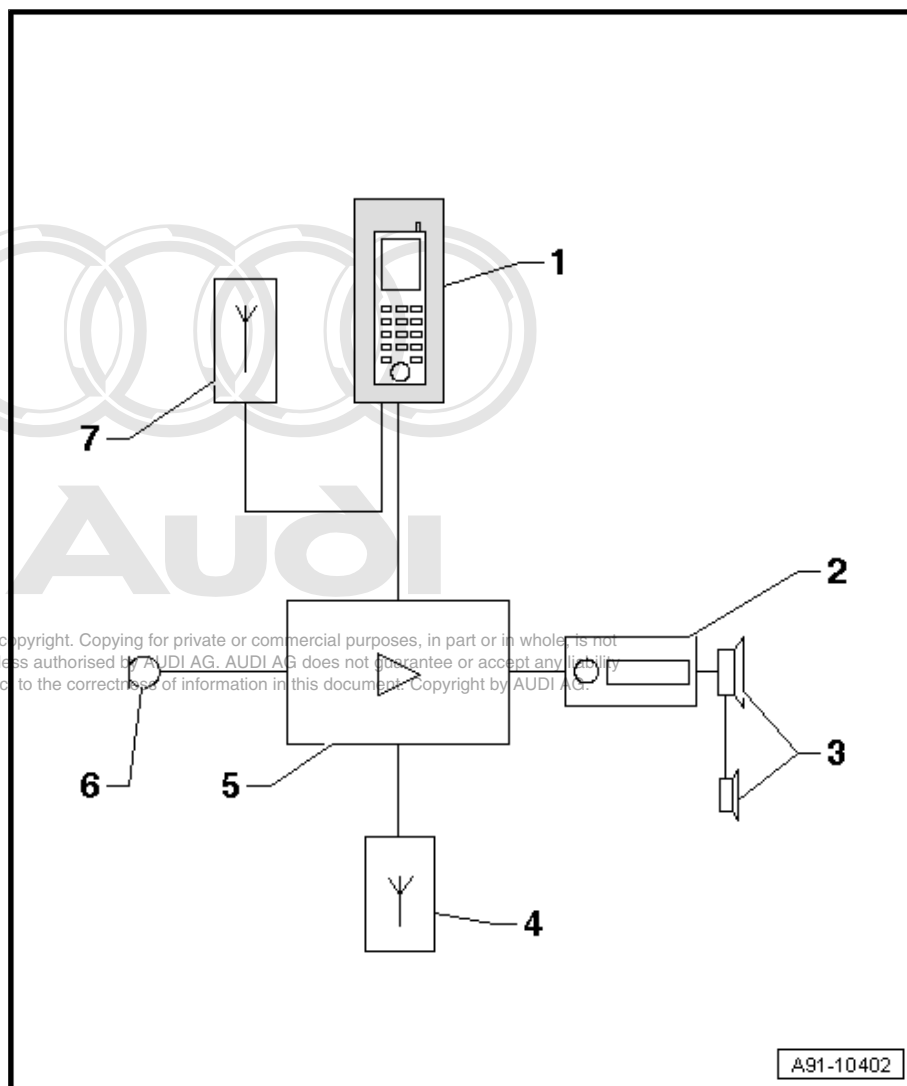
4 - Aerial for Bluetooth - R152-
on telephone transmitter and
receiver unit - R36-

5 - Telephone transmitter and
receiver unit - R36- beneath
front seat (right-side)

6 - Microphone unit in front roof
module - R164- in front interior
light - W1-

7 - Radio, telephone and navi-
gation system aerial - R52- /
roof aerial - R216-

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◆ Mobile phone pre-installation in control unit 1 for information electronics - J794- (MMI)

The mobile phone pre-installation does not have a separate control unit (telephone transmitter and receiver unit - R36-), but all functions are integrated in the control unit 1 for information electronics - J794- . The system is operated using the MMI infotainment system or the mobile telephone - R54- .

Microphones for the microphone unit in front roof module - W1- are integrated in the front interior light - R164- . One of these microphones (front left microphone - R140-) is connected directly to the control unit 1 for information electronics - J794- .

1 - Radio, telephone and navigation system aerial - R52- / roof aerial - R216-

2 - Display unit for front information display and operating unit control unit - J685- in dash panel (centre)

3 - Multimedia system operating unit - E380- in centre console

4 - Control unit 1 for information electronics - J794- in dash panel

5 - Microphone unit in front roof module - R164- (front right microphone - R141-) in front interior light - W1-

6 - Data bus diagnostic interface - J533- behind glove box (left-side)

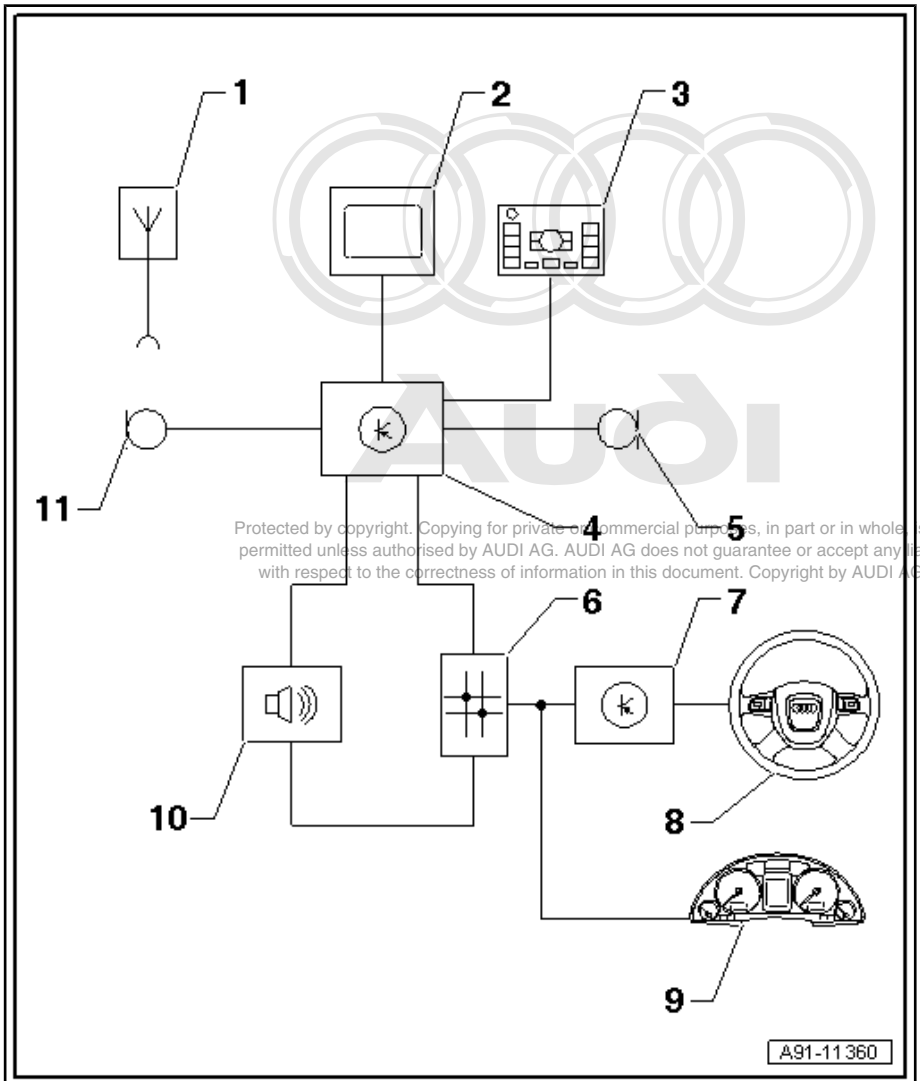
7 - Steering column electronics control unit - J527- on steering column on steering column switch

8 - Multi-function steering wheel

9 - Control unit in dash panel insert - J285- in dash panel

10 - Digital sound package control unit - J525- behind luggage compartment side trim (left-side)

11 - Microphone unit in front roof module - R164- (front left microphone - R140-) in front interior light - W1-



◆ Bluetooth hands-free system in control unit 1 for information electronics - J794- (MMI)

The control unit 1 for information electronics - J794- with microphone unit in front roof module - R164- is fitted and used as a hands-free system only. It is connected to the mobile telephone - R54- via Bluetooth.

The aerial for Bluetooth - R152- is fitted in the control unit 1 for information electronics - J794- .

1 - Display unit for front information display and operating unit control unit - J685- in dash panel (centre)

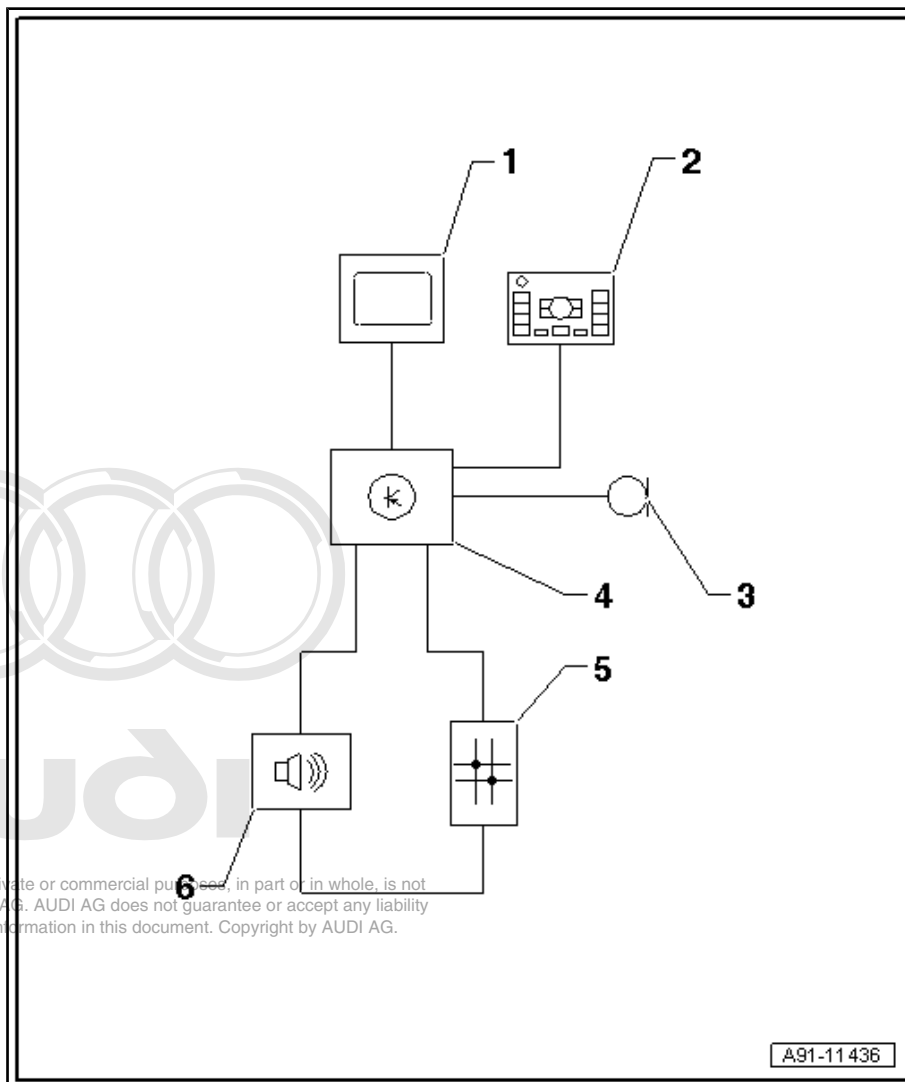
2 - Multimedia system operating unit - E380- in centre console

3 - Microphone unit in front roof module - R164- (front right microphone - R141-) in front interior light - W1-

4 - Control unit 1 for information electronics - J794- with aerial for Bluetooth - R152- in dash panel

5 - Data bus diagnostic interface - J533- behind glove box (left-side)

6 - Digital sound package control unit - J525- behind luggage compartment side trim (left-side)

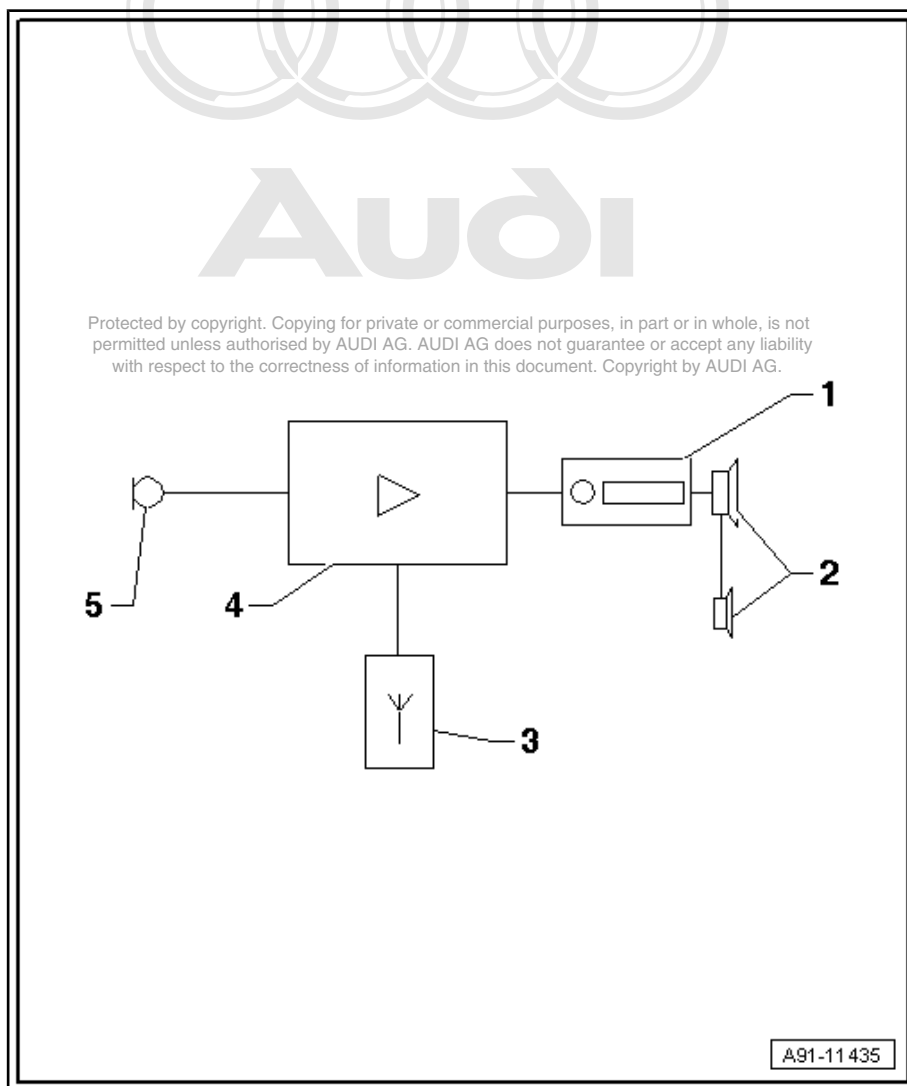


◆ Bluetooth hands-free system (CAN)

The telephone transmitter and receiver unit - R36- with microphone unit in front roof module - R164- / aerial for Bluetooth - R152- is fitted and used as a hands-free system only. It is connected to the mobile telephone - R54- via Bluetooth.

The aerial for Bluetooth - R152- is attached to the telephone transmitter and receiver unit - R36- .

- 1 - Radio - R- in dash panel
- 2 - Sound systems
- 3 - Aerial for Bluetooth - R152- on telephone transmitter and receiver unit - R36-
- 4 - Telephone transmitter and receiver unit - R36- beneath front seat (right-side)
- 5 - Microphone unit in front roof module - R164- (front right microphone - R141-) in front interior light - W1-



Fault finding is performed via the "Guided Fault Finding" → Vehicle diagnostic tester.

Notes on Bluetooth technology

A standardised radio connection system (Bluetooth technology) is used to transmit data between the control unit 1 for information electronics - J794- and the mobile telephone - R54- .

An additional transmitter and receiver unit is fitted in the control unit 1 for information electronics - J794- . A separate aerial for Bluetooth - R152- links the control unit 1 for information electronics - J794- and the mobile telephone - R54- .

The range of the radio wave connection is approx. 10 m.

6.1.5 Layout - telephone, Japan, up to week 44/2008

The telephone system consists of the mobile phone pre-installation components.

The telephone transmitter and receiver unit - R36- is linked to the MMI Infotainment system via the navigation system with CD drive control unit - J401- .

The connector cable for the mobile telephone holder is located in the centre console. The system is operated using the multimedia system operating unit - E380- or the mobile telephone - R54- .

Microphones for the microphone unit in front roof module - W1- are integrated in the front interior light - R164- . One microphone (telephone microphone - R38-) is connected directly to the navigation system with CD drive control unit - J401- .

The telephone aerial - R65- is located in the roof aerial (radio, telephone and navigation system aerial - R52-).

Up to model year 2007

1 - Display unit for front information display and operating unit control unit - J685- in dash panel (centre)

2 - Control unit for front display and information control panel - J523- behind dash panel

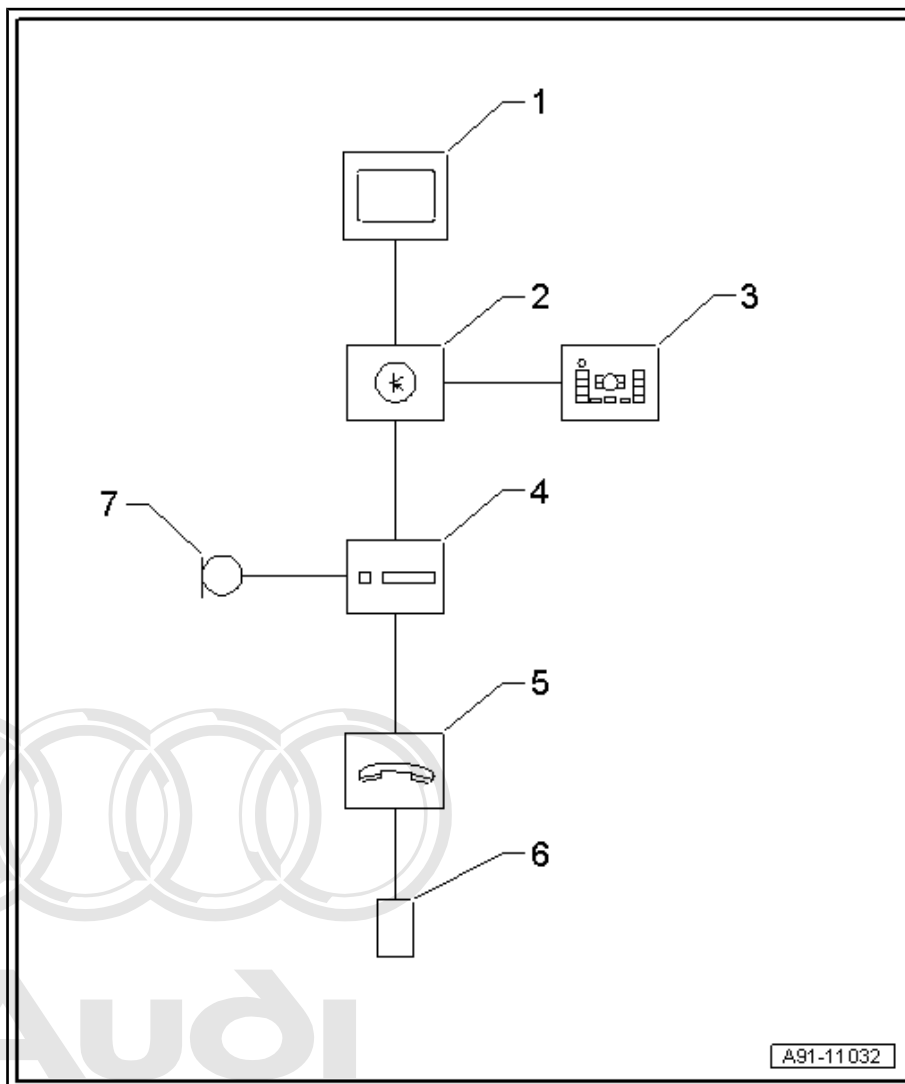
3 - Multimedia system operating unit - E380- in centre console

4 - Navigation system with CD drive control unit - J401- behind luggage compartment side trim (left-side)

5 - Telephone transmitter and receiver unit - R36- beneath front seat (right-side)

6 - Connector cable in centre console storage compartment

7 - Microphone unit in front roof module - R164- (telephone microphone - R38-) in front interior light - W1-



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From model year 2008 onwards, up to week 44/2008

1 - Display unit for front information display and operating unit control unit - J685- in dash panel (centre)

2 - Control unit for front display and information control panel - J523- behind dash panel

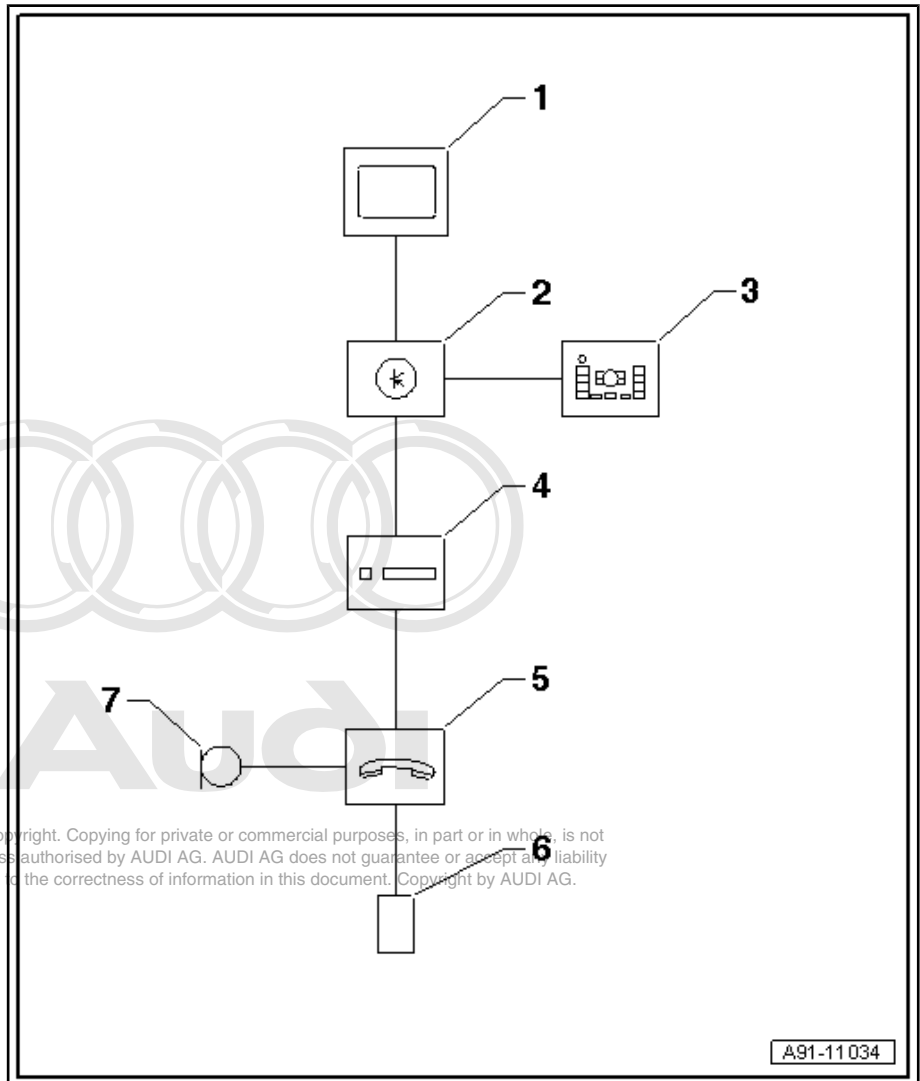
3 - Multimedia system operating unit - E380- in centre console

4 - Navigation system with CD drive control unit - J401- behind luggage compartment side trim (left-side)

5 - Telephone transmitter and receiver unit - R36- beneath front seat (right-side)

6 - Connector in centre console storage compartment

7 - Microphone unit in front roof module - R164- (telephone microphone - R38-) in front interior light - W1-



Fault finding is performed via the “Guided Fault Finding” → Vehicle diagnostic tester.

6.1.6 Layout - telephone, Japan, from week 45/2008 onwards

The telephone system consists of the Bluetooth hands-free system.

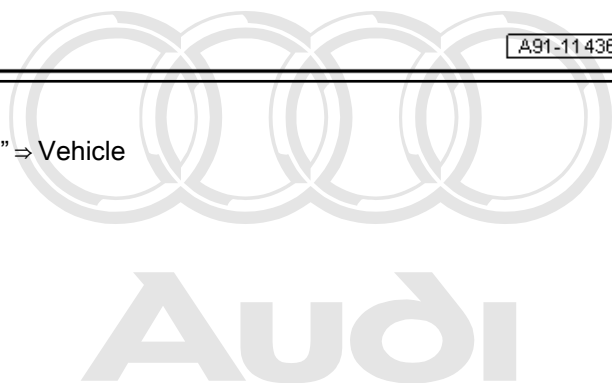
- ◆ Bluetooth hands-free system in control unit 1 for information electronics - J794- (MMI)

The control unit 1 for information electronics - J794- with microphone unit in front roof module - R164- is fitted and used as a hands-free system only. It is connected to the mobile telephone - R54- via Bluetooth.

The aerial for Bluetooth - R152- is fitted in the control unit 1 for information electronics - J794- .

Communication - Edition 02.2014

- 6 - Digital sound package control unit - J525- behind luggage compartment side trim (left-side)**



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6.2 Overview of fitting locations - telephone system

⇒ [“6.2.1 Overview of fitting locations - telephone system, up to week 44/2008”, page 153](#)

⇒ [“6.2.2 Overview of fitting locations - telephone system, from week 45/2008 onwards”, page 154](#)

⇒ [“6.2.3 Overview of fitting locations - telephone system, USA, up to week 44/2008”, page 155](#)

⇒ [“6.2.4 Overview of fitting locations - telephone system, USA, from week 45/2008 onwards”, page 156](#)

⇒ [“6.2.5 Overview of fitting locations - telephone system, Japan, up to week 44/2008”, page 157](#)

⇒ [“6.2.6 Overview of fitting locations - telephone system, Japan, from week 45/2008 onwards”, page 158](#)

6.2.1 Overview of fitting locations - telephone system, up to week 44/2008

1 - Microphone unit in front roof module - R164-

- ☐ Overview ⇒ [page 158](#)
- ☐ Removing and installing ⇒ [page 160](#)

2 - Radio, telephone and navigation system aerial - R52-

- ☐ Overview ⇒ [page 87](#)

3 - Nut

- ☐ 6 Nm

4 - Aerial amplifier for mobile telephone - R86-

- ☐ Pin assignment (up to model year 2008) ⇒ [page 182](#)
- ☐ Removing and installing ⇒ [page 161](#)

5 - Telephone bracket - R126-

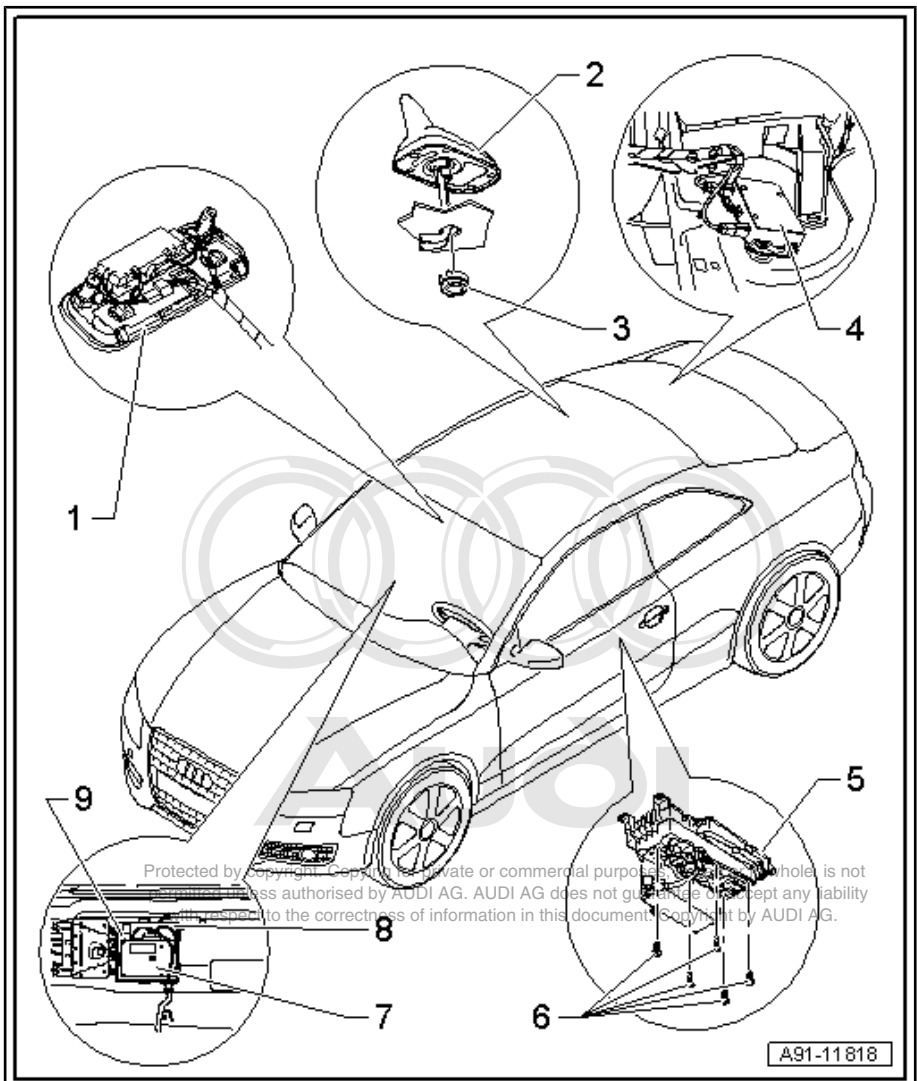
- ☐ Removing and installing (handset cradle) ⇒ [page 162](#)
- ☐ Removing and installing (telephone bracket) ⇒ [page 162](#)

6 - Bolt

- ☐ 1 Nm

7 - Telephone transmitter and receiver unit - R36-

- ☐ Pin assignment for mobile phone pre-installation (CAN) ⇒ [page 166](#)
- ☐ Pin assignment for mobile phone pre-installation (MMI up to week 44/2008) ⇒ [page 169](#)
- ☐ Pin assignment for Bluetooth car phone (up to week 44/2008) ⇒ [page 176](#)
- ☐ Removing and installing ⇒ [page 163](#)



8 - Electronics box

9 - Aerial for Bluetooth - R152-

6.2.2 Overview of fitting locations - telephone system, from week 45/2008 onwards

1 - Telephone transmitter and receiver unit - R36-

- ☐ Pin assignment for mobile phone pre-installation (CAN) ➤ [page 166](#)
- ☐ Pin assignment for Bluetooth hands-free system (CAN) ➤ [page 179](#)
- ☐ Removing and installing ➤ [page 163](#)

2 - Aerial for Bluetooth - R152-

3 - Electronics box

4 - Radio, telephone and navigation system aerial - R52- / roof aerial - R216-

- ☐ Overview (Coupé) ➤ [page 87](#)
- ☐ Overview (Sportback) ➤ [page 89](#)

5 - Nut

- ☐ 6 Nm

6 - Aerial amplifier for mobile telephone - R86-

- ☐ Pin assignment (from model year 2009 onwards) ➤ [page 182](#)
- ☐ Removing and installing ➤ [page 161](#)

7 - Telephone bracket - R126-

- ☐ Removing and installing (handset cradle) ➤ [page 162](#)

- ☐ Removing and installing (telephone bracket) ➤ [page 162](#)

8 - Bolt

- ☐ 1 Nm

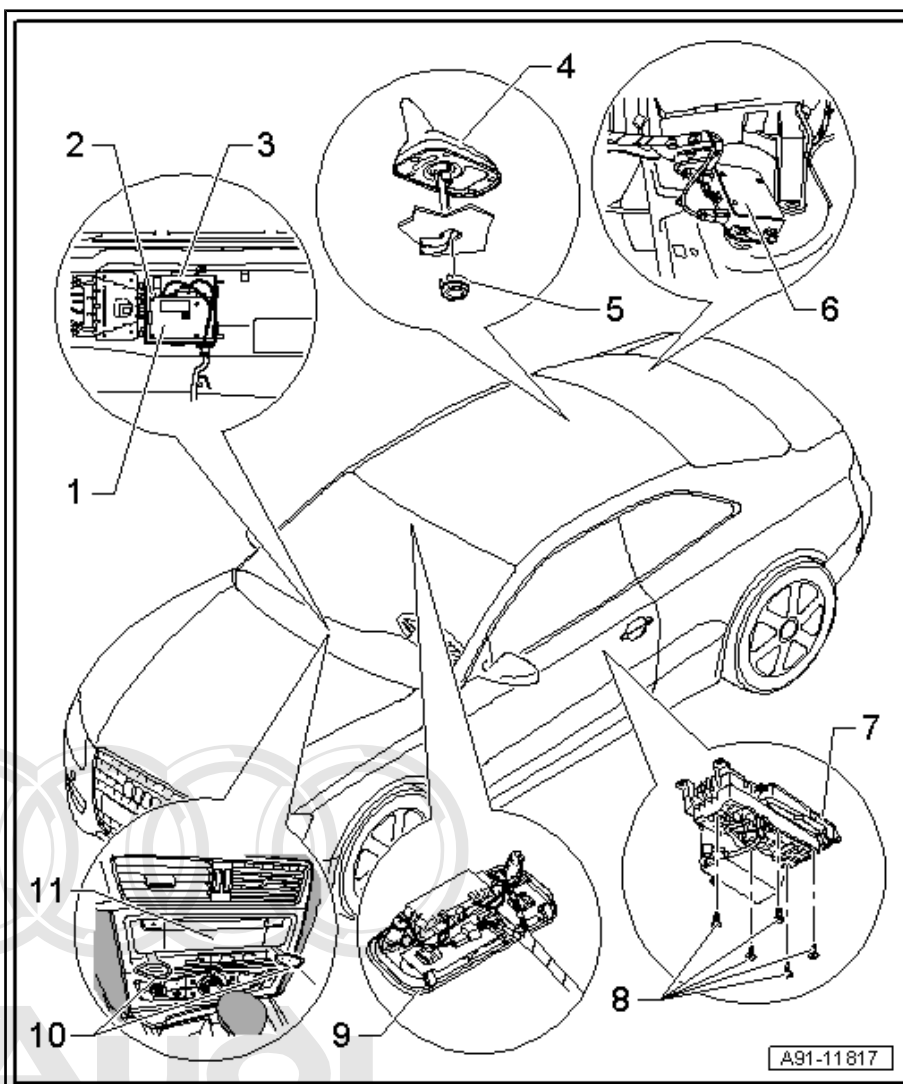
9 - Microphone unit in front roof module - R164-

- ☐ Overview ➤ [page 159](#)
- ☐ Removing and installing ➤ [page 160](#)

10 - Radio release tool - T10057-

11 - Control unit 1 for information electronics - J794-

- ☐ Pin assignment for mobile phone pre-installation (MMI from week 45/2008 onwards) ➤ [page 172](#)
- ☐ Pin assignment for Bluetooth car phone (from week 45/2008 onwards) ➤ [page 177](#)
- ☐ Pin assignment for Bluetooth hands-free system (MMI) ➤ [page 180](#)
- ☐ Removing and installing ➤ [page 35](#)



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6.2.3 Overview of fitting locations - telephone system, USA, up to week 44/2008

1 - Telephone transmitter and receiver unit - R36-

- ☐ Pin assignment for mobile phone pre-installation (CAN) ➤ [page 167](#)
- ☐ Pin assignment for mobile phone pre-installation (MMI up to week 44/2008) ➤ [page 171](#)
- ☐ Removing and installing ➤ [page 163](#)

2 - Aerial for Bluetooth - R152-

3 - Electronics box

4 - Microphone unit in front roof module - R164-

- ☐ Overview ➤ [page 158](#)
- ☐ Removing and installing ➤ [page 160](#)

5 - Radio, telephone and navigation system aerial - R52-

- ☐ Overview (Coupé) ➤ [page 87](#)

6 - Nut

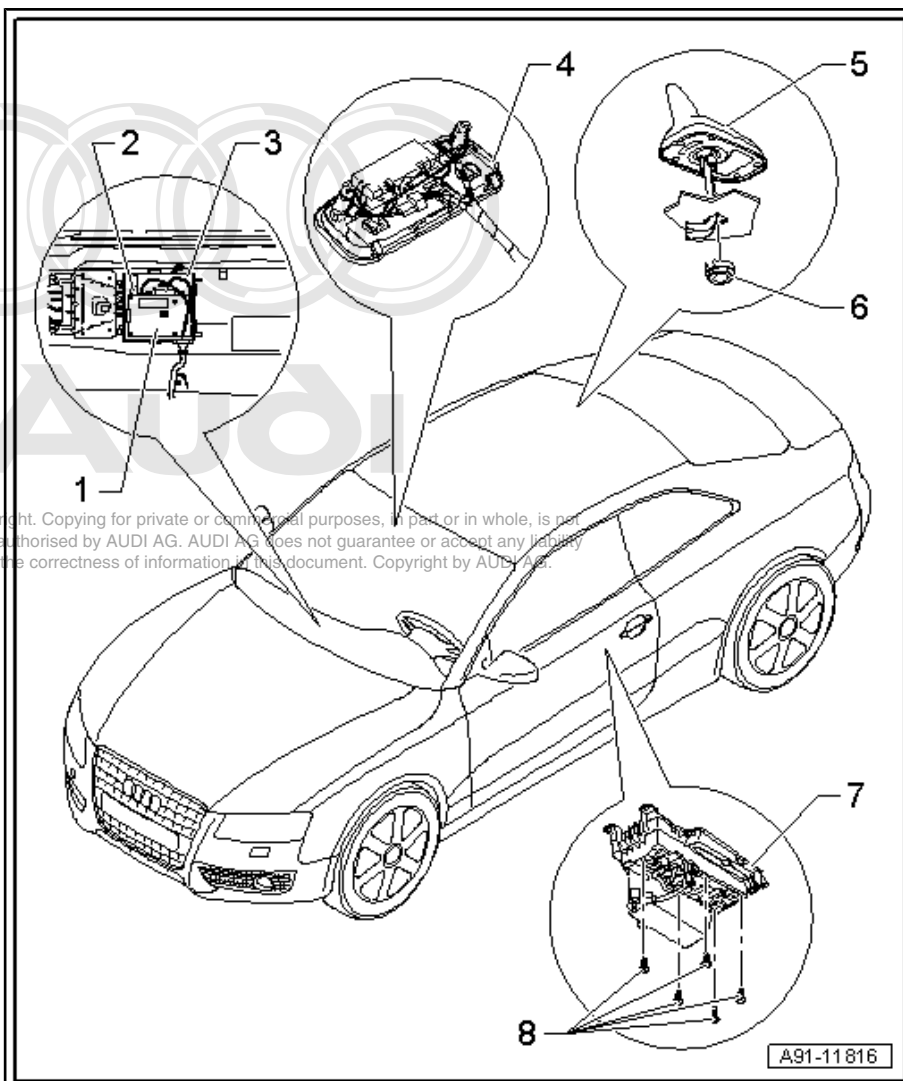
- ☐ 6 Nm

7 - Telephone bracket - R126-

- ☐ Removing and installing (telephone bracket) ➤ [page 162](#)

8 - Bolt

- ☐ 1 Nm



6.2.4 Overview of fitting locations - telephone system, USA, from week 45/2008 onwards

1 - Telephone transmitter and receiver unit - R36-

- ☐ Pin assignment (CAN from model year 2009 onwards) ➤ [page 168](#)
- ☐ Pin assignment for Bluetooth hands-free system (CAN) ➤ [page 179](#)
- ☐ Removing and installing ➤ [page 163](#)

2 - Aerial for Bluetooth - R152-

3 - Electronics box

4 - Microphone unit in front roof module - R164-

- ☐ Overview ➤ [page 158](#)
- ☐ Removing and installing ➤ [page 160](#)

5 - Radio, telephone and navigation system aerial - R52- / roof aerial - R216-

- ☐ Overview (Coupé) ➤ [page 87](#)
- ☐ Overview (Sportback) ➤ [page 89](#)

6 - Nut

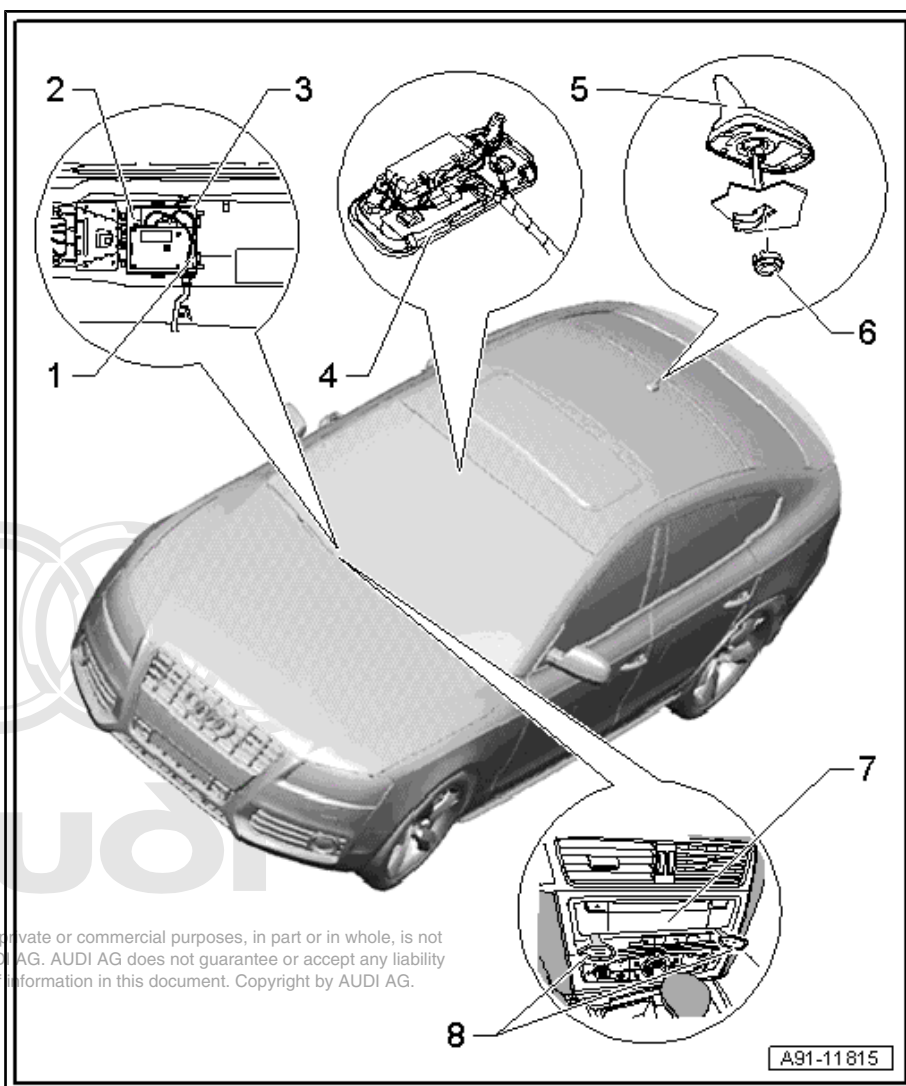
- ☐ 6 Nm

7 - Control unit for information electronics - J794-

- ☐ Pin assignment for mobile phone pre-installation (MMI from week 45/2008 onwards) ➤ [page 174](#)

- ☐ Pin assignment for Bluetooth hands-free system (MMI) ➤ [page 180](#)
- ☐ Removing and installing ➤ [page 35](#)

8 - Radio release tool - T10057-



6.2.5 Overview of fitting locations - telephone system, Japan, up to week 44/2008

1 - Telephone transmitter and receiver unit - R36-

- ☐ Pin assignment (up to week 44/2008)
⇒ [page 183](#)
- ☐ Removing and installing (up to week 44/2008)
⇒ [page 163](#)

2 - Electronics box

3 - Microphone unit in front roof module - R164-

- ☐ Overview ⇒ [page 158](#)
- ☐ Removing and installing
⇒ [page 160](#)

4 - Radio, telephone and navigation system aerial - R52-

- ☐ Overview (Coupé)
⇒ [page 87](#)

5 - Nut

- ☐ 6 Nm

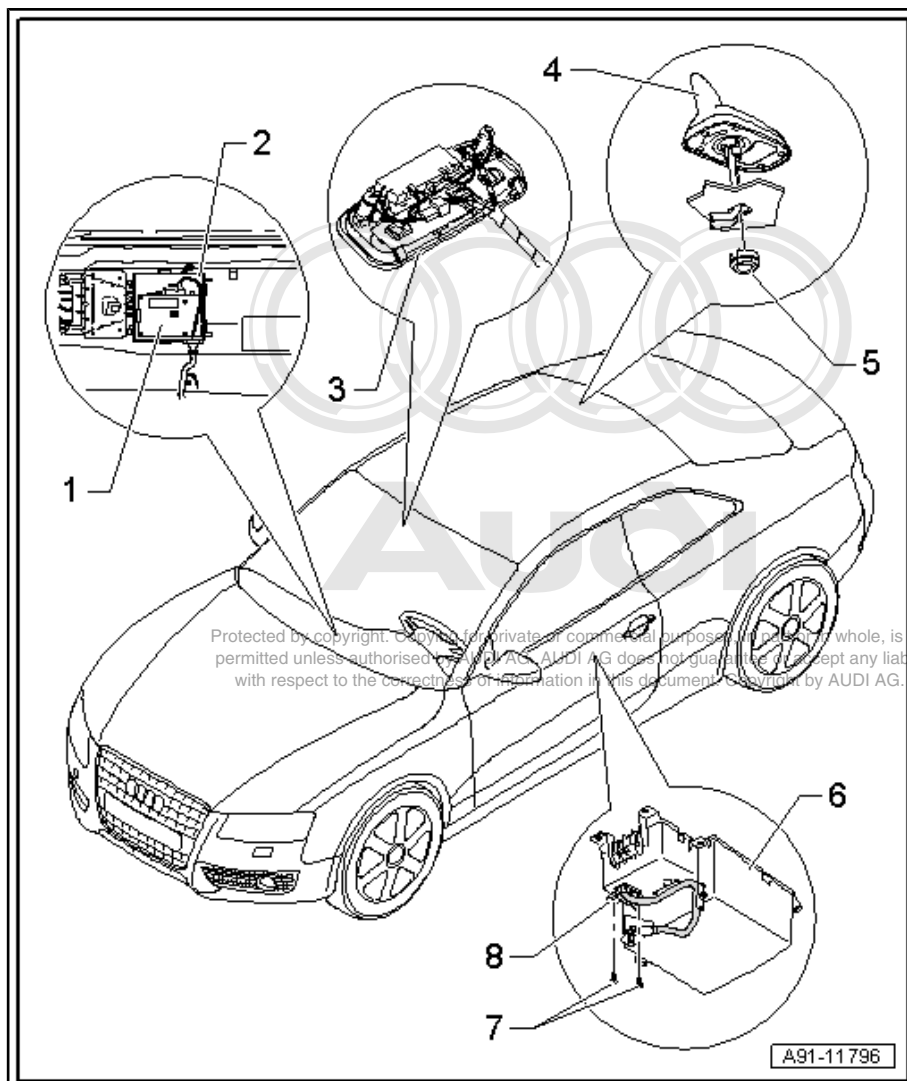
6 - Centre console storage compartment

7 - Bolt

- ☐ 1 Nm

8 - Connector cable

- ☐ Removing and installing (up to week 44/2008)
⇒ [page 163](#)



6.2.6 Overview of fitting locations - telephone system, Japan, from week 45/2008 onwards

1 - Microphone unit in front roof module - R164-

- ☐ Overview ➤ [page 158](#)
- ☐ Removing and installing ➤ [page 160](#)

2 - Radio, telephone and navigation system aerial - R52- / roof aerial - R216-

- ☐ Overview (Coupé) ➤ [page 87](#)
- ☐ Overview (Sportback) ➤ [page 89](#)

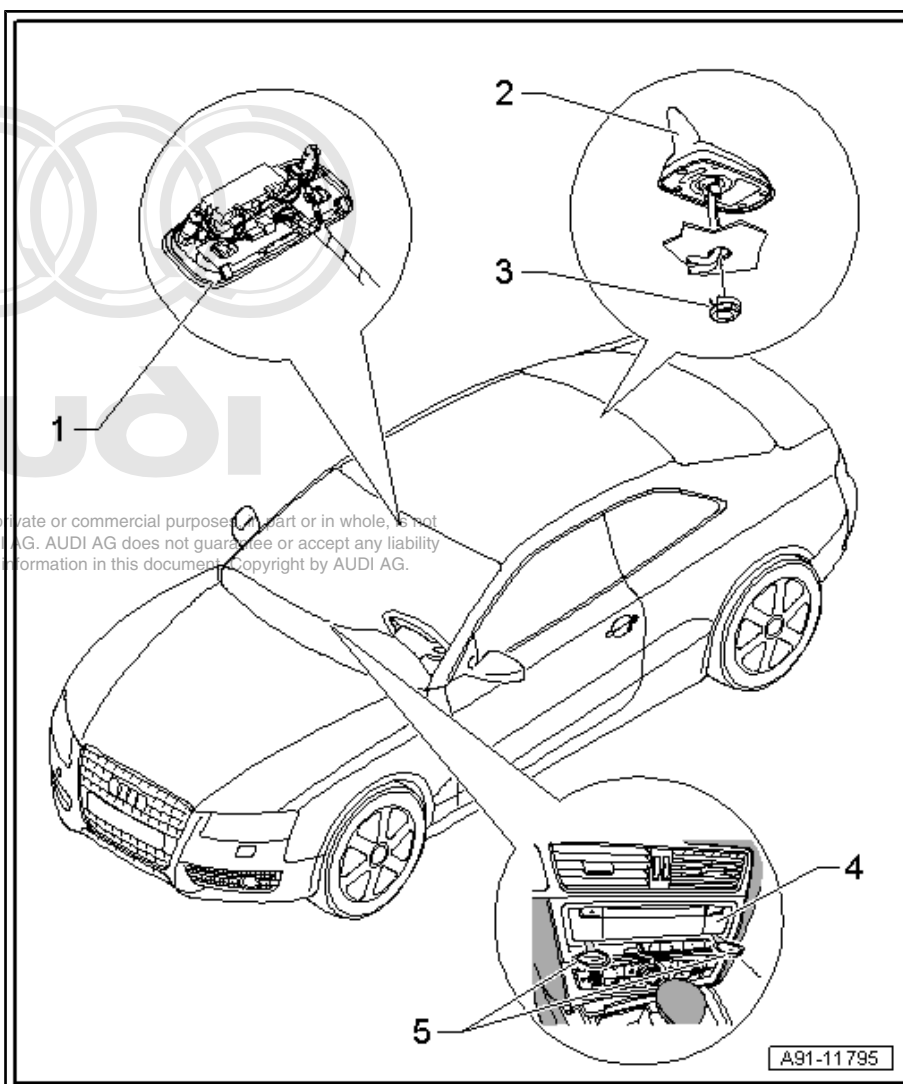
3 - Nut

- ☐ 6 Nm

4 - Control unit 1 for information electronics - J794-

- ☐ Pin assignment for Bluetooth hands-free system (MMI from week 45/2008 onwards) ➤ [page 180](#)
- ☐ Removing and installing ➤ [page 35](#)

5 - Radio release tool - T10057-



6.3 Exploded view - microphone unit

➤ ["6.3.1 Microphone unit in front roof module R164 , up to week 44/2008", page 158](#)

➤ ["6.3.2 Microphone unit in front roof module R164 , from week 45/2008 onwards", page 159](#)

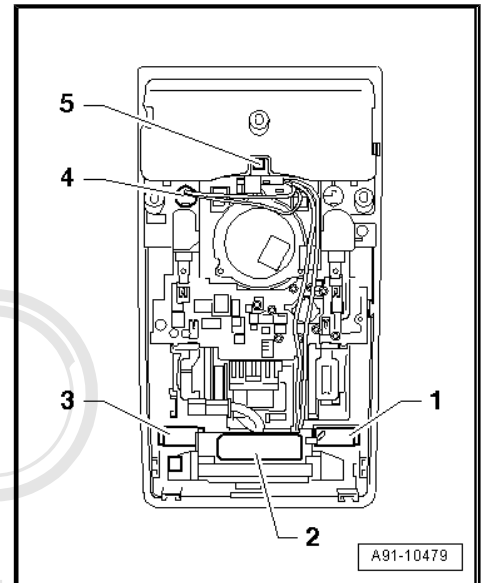
6.3.1 Microphone unit in front roof module - R164- , up to week 44/2008

The microphone unit in front roof module - R164- is fitted in the front interior light - W1- . There are up to three microphones installed (depending on equipment).

One microphone (telephone microphone - R38-) is connected directly to the telephone transmitter and receiver unit - R36- . The other microphones are connected to the digital sound package control unit - J525- (from Standard MOST onwards).

Microphone unit in front roof module - R164-

- 1 - Microphone (blue) for telephone transmitter and receiver unit - R36- (left-hand drive) and digital sound package control unit - J525- (right-hand drive)
- 2 - Interior monitor send and receive module 1 - G303-
- 3 - Microphone (black) for digital sound package control unit - J525- (left-hand drive) and telephone transmitter and receiver unit - R36- (right-hand drive)
- 4 - Internal microphone - R74- (black) for digital sound package control unit - J525- (from standard sound system onwards)
- 5 - Multi-pin connector, 6-pin (T6c)



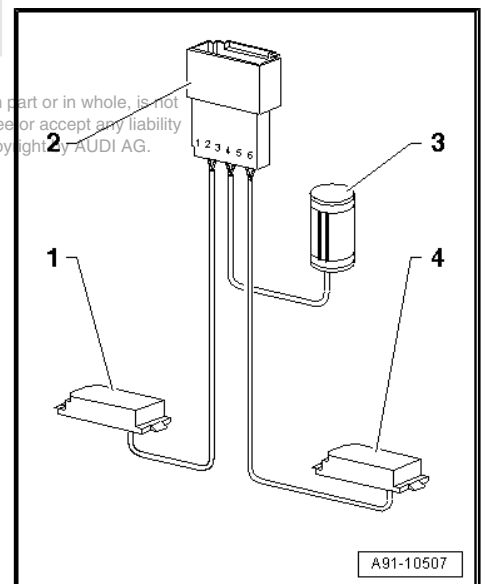
Pin assignment

Left-hand drive vehicles:

- 1 - Telephone microphone - R38- (black)
- 2 - 6-pin connector (T6c), pins 1-2: telephone microphone - R38- (black), pins 3-4: internal microphone - R74- (black), pins 5-6: voice command microphone - R206- (blue)
- 3 - Internal microphone - R74- (black)
- 4 - Voice command microphone - R206- (blue)

Right-hand drive vehicles:

- 1 - Voice command microphone - R206- (blue)
- 2 - 6-pin connector (T6c), pins 1-2: voice command microphone - R206- (blue), pins 3-4: internal microphone - R74- (black), pins 5-6: telephone microphone - R38- (black)
- 3 - Internal microphone - R74- (black)
- 4 - Telephone microphone - R38- (black)



Removing and installing microphone unit in front roof module - R164- ➔ [page 160](#) .

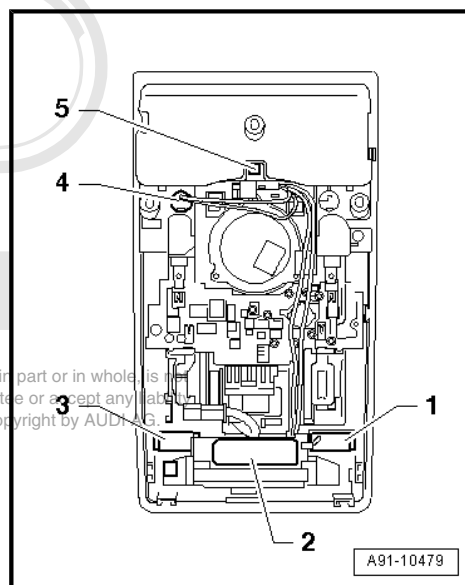
6.3.2 Microphone unit in front roof module - R164- , from week 45/2008 onwards

The microphone unit in front roof module - R164- is fitted in the front interior light - W1- . There are up to three microphones installed (depending on equipment).

One of the microphones (internal microphone - R74-) is connected directly to the digital sound package control unit - J525- . The other microphones are connected to the telephone transmitter and receiver unit - R36- / control unit 1 for information electronics - J794- .

Microphone unit in front roof module - R164-

- 1 - Microphone (blue) to control unit 1 for information electronics - J794- (MMI)/ telephone transmitter and receiver unit - R36- (CAN, left-hand drive)
- 2 - Interior monitor send and receive module 1 - G303-
- 3 - Microphone (black) to control unit 1 for information electronics - J794- (MMI)/ telephone transmitter and receiver unit - R36- (CAN, right-hand drive)
- 4 - Internal microphone - R74- (black) to digital sound package control unit - J525-
- 5 - Multi-pin connector, 6-pin (T6c)



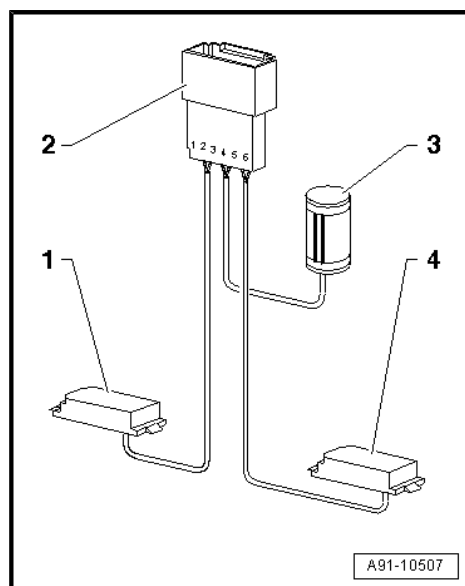
Pin assignment

Left-hand drive vehicles:

- 1 - Front left microphone - R140- (black)
- 2 - 6-pin connector (T6c), pins 1-2: front left microphone - R140- (black), pins 3-4: internal microphone - R74- (black), pins 5-6: front right microphone - R141- (blue)
- 3 - Internal microphone - R74- (black)
- 4 - Front right microphone - R141- (blue)

Right-hand drive vehicles:

- 1 - Front right microphone - R141- (blue)
- 2 - 6-pin connector (T6c), pins 1-2: front right microphone - R141- (blue), pins 3-4: internal microphone - R74- (black), pins 5-6: front left microphone - R140- (black)
- 3 - Internal microphone - R74- (black)
- 4 - Front left microphone - R140- (black)



Removing and installing microphone unit in front roof module - R164- ➔ [page 160](#) .

6.4 Removing and installing microphone unit in front roof module - R164-

The microphone unit in front roof module - R164- in the front interior light - W1- can only be renewed as a complete unit.

- Switch off all electrical equipment.
- Remove ignition key.

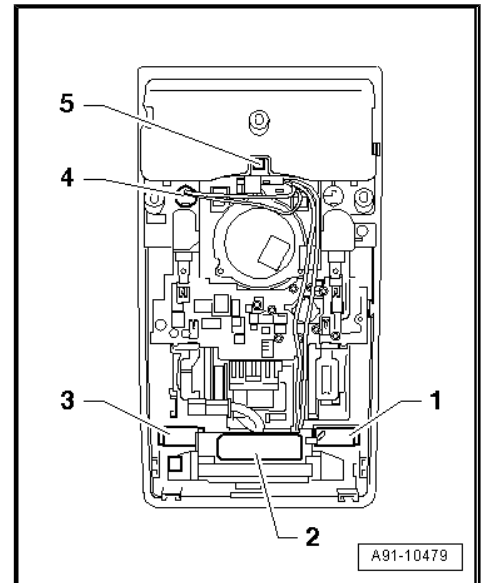
Removing

- Remove front interior light - W1- ➔ Electrical system; Rep. gr. 96 ; Controls; Removing and installing front interior light/reading light .

- Unclip connector -5- from retainer in front interior light - W1- and unplug.
- Pry individual microphones -1-, -3- and -4- out of retainer.

Installing

- Install in reverse sequence of removal.



6.5 Removing and installing aerial amplifier for mobile telephone - R86-

The aerial amplifier for mobile telephone - R86- is located behind the luggage compartment side trim (right-side).

- Switch off all electrical equipment.
- Remove ignition key.

Removing

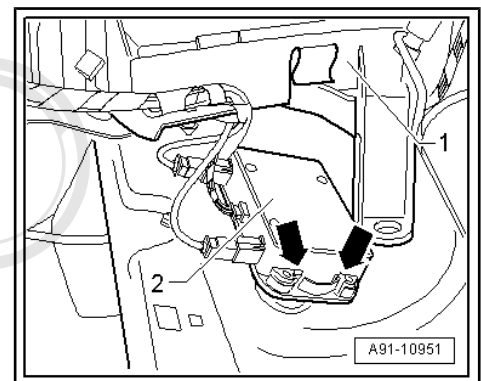
- Remove luggage compartment side trim (right-side) ⇒ General body repairs, interior; Rep. gr. 70 ; Luggage compartment trim panels; Removing and installing luggage compartment side trim .
- Detach control unit retainer -1-.

The aerial amplifier for mobile telephone - R86- is clipped into a retainer.

- Release and unplug all connectors at aerial amplifier for mobile telephone - R86- -2-.
- Press retaining tabs -arrows- towards inside and remove aerial amplifier for mobile telephone - R86- -2-.

Installing

- Install in reverse sequence of removal.



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6.6 Removing and installing telephone bracket - R126-

⇒ [“6.6.1 Removing and installing telephone bracket R126 \(mobile telephone retainer\)”, page 162](#)

⇒ [“6.6.2 Removing and installing telephone bracket R126 \(handset cradle\)”, page 162](#)

⇒ [“6.6.3 Removing and installing connecting wiring, mobile telephone retainer, Japan, up to week 44/2008”, page 163](#)

6.6.1 Removing and installing telephone bracket - R126- (mobile telephone retainer)

- Switch off all electrical equipment.
- Remove ignition key.

Removing

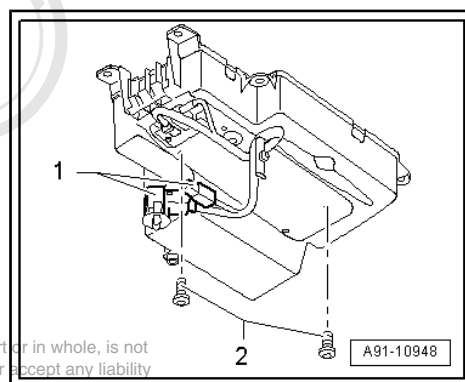
- Remove storage compartment for centre console ⇒ General body repairs, interior; Rep. gr. 68 ; Centre console; Removing and installing storage compartment for centre console (front) .
- Release and unplug connector -1-.
- Unscrew bolts -2- on reverse side.
- Press telephone bracket - R126- upwards out of storage compartment.

Installing

- Install in reverse sequence of removal.

Tightening torques

- ◆ ⇒ [“6.2.1 Overview of fitting locations - telephone system, up to week 44/2008”, page 153](#)
- ◆ ⇒ [“6.2.2 Overview of fitting locations - telephone system, from week 45/2008 onwards”, page 154](#)
- ◆ ⇒ [“6.2.3 Overview of fitting locations - telephone system, USA, up to week 44/2008”, page 155](#)



6.6.2 Removing and installing telephone bracket - R126- (handset cradle)

- Switch off all electrical equipment.
- Remove ignition key.

Removing

- Remove telephone handset - R37- .
- Remove SIM card from holder.
- Remove storage compartment for centre console ⇒ General body repairs, interior; Rep. gr. 68 ; Centre console; Removing and installing storage compartment for centre console (front) .

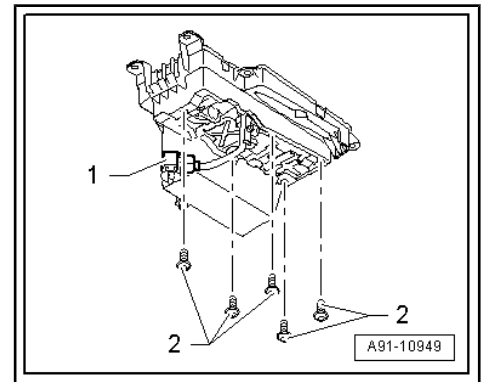
- Release and unplug connector -1-.
- Unscrew bolts -2- on reverse side.
- Press telephone bracket - R126- upwards out of storage compartment.

Installing

- Install in reverse sequence of removal.

Tightening torques

- ◆ ⇒ [“6.2.1 Overview of fitting locations - telephone system, up to week 44/2008”, page 153](#)
- ◆ ⇒ [“6.2.2 Overview of fitting locations - telephone system, from week 45/2008 onwards”, page 154](#)



6.6.3 Removing and installing connecting wiring, mobile telephone retainer, Japan, up to week 44/2008

- Switch off all electrical equipment.
- Remove ignition key.

Removing

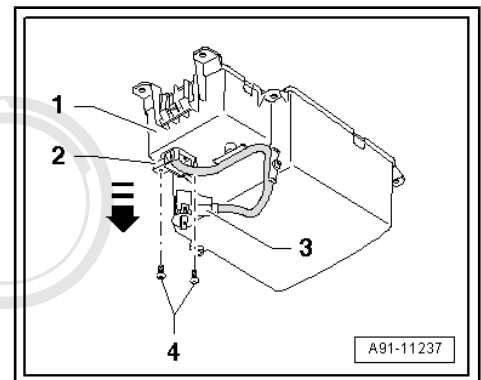
- Remove storage compartment for centre console ⇒ General body repairs, interior; Rep. gr. 68 ; Centre console; Removing and installing storage compartment for centre console (front) .
- Release and unplug connector -3-.
- Unscrew bolts -4- on reverse side.
- Press connector cable -2- downwards out of storage compartment -1- -arrow-.

Installing

- Install in reverse sequence of removal.

Tightening torques

- ◆ ⇒ [“6.2.5 Overview of fitting locations - telephone system, Japan, up to week 44/2008”, page 157](#)



6.7 Removing and installing telephone transmitter and receiver unit

The telephone transmitter and receiver unit - R36- is located beneath front seat (right-side).

Special tools and workshop equipment required

- ◆ Protective cap for cable connector - VAS 6223/9-



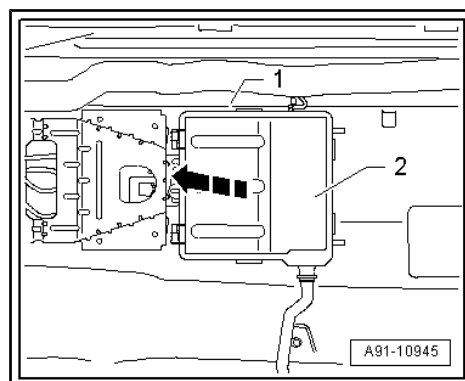
- Switch off all electrical equipment.
- Remove ignition key.
- When renewing control unit, select “Replacement” function for appropriate control unit in “Guided Fault Finding”.

To do so, use ➔ **Vehicle diagnostic tester.**

Removing

- Remove front seat (right-side) ➔ General body repairs, interior; Rep. gr. 72 ; Front seats; Removing and installing front seat .
- Fold back floor covering ➔ General body repairs, interior; Rep. gr. 70 ; Passenger compartment trim panels; Removing and installing floor covering .
- Release electronics box cover -2- and open electronics box -1-.

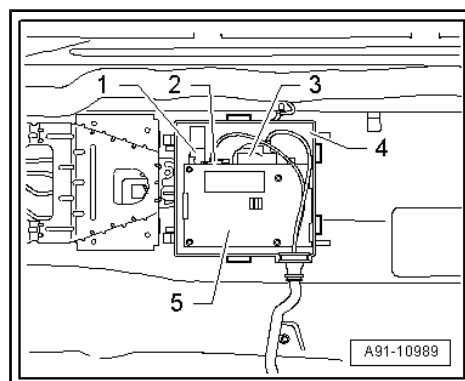
The telephone transmitter and receiver unit - R36- is only wedged in the electronics box.



- Pry telephone transmitter and receiver unit - R36- -5- out of electronics box -4-.

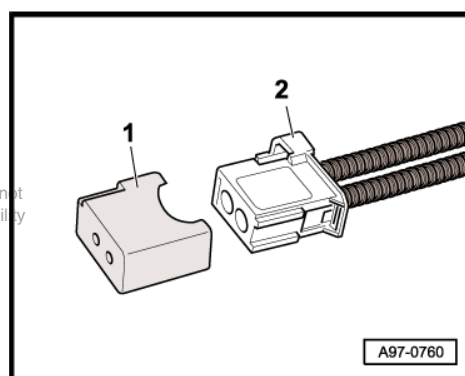
Applies to MOST bus only

- Release and unplug connector -2-.



- Fit protective cap for cable connector - VAS 6223/9- -1- onto MOST bus connector -2-.

All

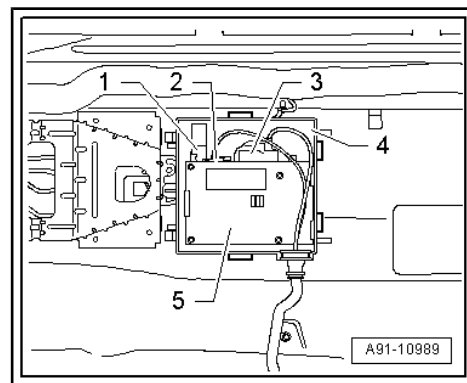


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- Release and unplug connector -3-.
- Unplug aerial for Bluetooth - R152- -1-.

Installing

- Install in reverse sequence of removal.
- Readapt Bluetooth connection between telephone transmitter and receiver unit - R36- and telephone handset - R36- / mobile telephone - R54- .



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6.8 Pin assignment

⇒ [“6.8.1 Pin assignment for mobile phone pre-installation, CAN”, page 166](#)

⇒ [“6.8.2 Pin assignment for mobile phone pre-installation, CAN, USA, up to model year 2008”, page 167](#)

⇒ [“6.8.3 Pin assignment for mobile phone pre-installation, CAN, USA, from model year 2009 onwards”, page 168](#)

⇒ [“6.8.4 Pin assignment for mobile phone pre-installation, MMI, up to week 44/2008”, page 169](#)

⇒ [“6.8.5 Pin assignment for mobile phone pre-installation, MMI, USA, up to week 44/2008”, page 171](#)

⇒ [“6.8.6 Pin assignment for mobile phone pre-installation, MMI, from week 45/2008 onwards”, page 172](#)

⇒ [“6.8.7 Pin assignment for mobile phone pre-installation, MMI, USA, from week 45/2008 onwards”, page 174](#)

⇒ [“6.8.8 Pin assignment for Bluetooth car phone, up to week 44/2008”, page 176](#)

⇒ [“6.8.9 Pin assignment for Bluetooth car phone, from week 45/2008 onwards”, page 177](#)

⇒ [“6.8.10 Pin assignment for pre-fitted components for mobile phone installation”, page 179](#)

⇒ [“6.8.11 Pin assignment for Bluetooth hands-free system, CAN”, page 179](#)

⇒ [“6.8.12 Pin assignment for Bluetooth hands-free system, MMI”, page 180](#)

⇒ [“6.8.13 Pin assignment for aerial amplifier for mobile telephone R86 \(up to model year 2008\)”, page 182](#)

⇒ [“6.8.14 Pin assignment for aerial amplifier for mobile telephone R86 \(from model year 2009 onwards\)”, page 182](#)

⇒ [“6.8.15 Pin assignment for mobile phone pre-installation, Japan, up to week 44/2008”, page 183](#)

6.8.1 Pin assignment for mobile phone pre-installation, CAN

Telephone transmitter and receiver unit - R36-

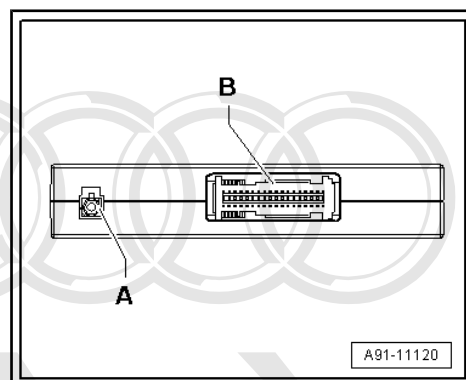
A - Connection for aerial for Bluetooth - R152-

B - Multi-pin connector, 54-pin (T54a)



Note

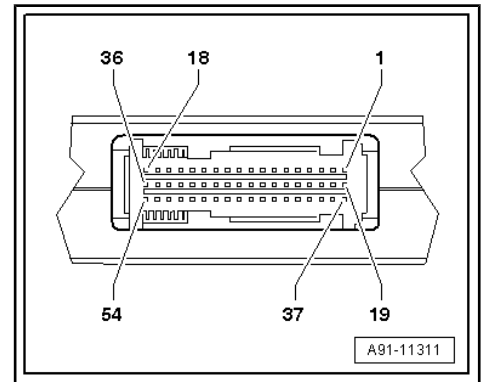
Contacts which are not listed are not used.



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B - Multi-pin connector, 54-pin (T54a)

- 1 - Terminal 30
- 2 - Terminal 31
- 3 - Switch-on signal to aerial amplifier for mobile telephone - R86-
- 8 - NF (+) (low frequency) to radio - R-
- 9 - NF (-) (low frequency) to radio - R-
- 10 - Terminal 31 screen earth (not used)
- 11 - Microphone input (+) from microphone unit in front roof module - R164- (telephone microphone - R38-)
- 12 - Microphone input (-) from microphone unit in front roof module - R164- (telephone microphone - R38-)
- 16 - NF mute (low frequency) (not used)
- 17 - CAN bus High (infotainment)
- 18 - CAN bus Low (infotainment)
- 37 - Terminal 30 to telephone bracket - R126-
- 39 - Terminal 31 to telephone bracket - R126-
- 41 - Terminal 30 to telephone bracket - R126-
- 42 - Microphone output (+) to telephone bracket - R126-
- 43 - Microphone output (-) to telephone bracket - R126-
- 44 - Terminal 31 (screen earth)
- 45 - NF (+) (low frequency) from telephone bracket - R126-
- 46 - NF (-) (low frequency) from telephone bracket - R126-
- 47 - DIAG signal from telephone bracket - R126-
- 49 - Ser-Tx (+) to telephone bracket - R126-
- 50 - Ser-Tx (-) to telephone bracket - R126-
- 51 - Ser-Rx (+) from telephone bracket - R126-
- 52 - Ser-Rx (-) from telephone bracket - R126-



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6.8.2 Pin assignment for mobile phone pre-installation, CAN, USA, up to model year 2008

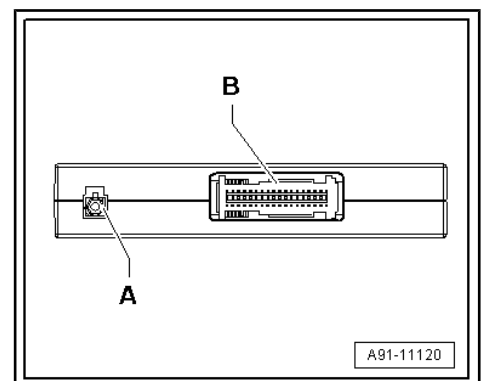
Telephone transmitter and receiver unit - R36-

- A - Connection for aerial for Bluetooth - R152-
- B - Multi-pin connector, 54-pin (T54a)



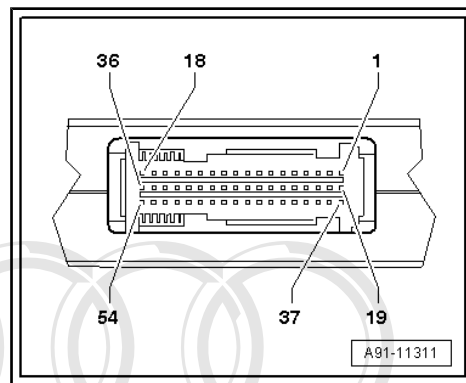
Note

Contacts which are not listed are not used.



B - Multi-pin connector, 54-pin (T54a)

- 1 - Terminal 30
- 2 - Terminal 31
- 8 - NF (+) (low frequency) to radio - R-
- 9 - NF (-) (low frequency) to radio - R-
- 10 - Terminal 31 screen earth (not used)
- 11 - Microphone input (+) from microphone unit in front roof module - R164- (telephone microphone - R38-)
- 12 - Microphone input (-) from microphone unit in front roof module - R164- (telephone microphone - R38-)
- 16 - NF mute (low frequency) (not used)
- 17 - CAN bus High (infotainment)
- 18 - CAN bus Low (infotainment)
- 37 - Terminal 30 to telephone bracket - R126-
- 39 - Terminal 31 to telephone bracket - R126-
- 41 - Terminal 30 to telephone bracket - R126-
- 42 - Microphone output (+) to telephone bracket - R126-
- 43 - Microphone output (-) to telephone bracket - R126-
- 44 - Terminal 31 (screening earth)
- 45 - NF (+) (low frequency) from telephone bracket - R126-
- 46 - NF (-) (low frequency) from telephone bracket - R126-
- 47 - DIAG signal from telephone bracket - R126-
- 49 - Ser-Tx (+) to telephone bracket - R126-
- 50 - Ser-Tx (-) to telephone bracket - R126-
- 51 - Ser-Rx (+) from telephone bracket - R126-
- 52 - Ser-Rx (-) from telephone bracket - R126-



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6.8.3 Pin assignment for mobile phone pre-installation, CAN, USA, from model year 2009 onwards

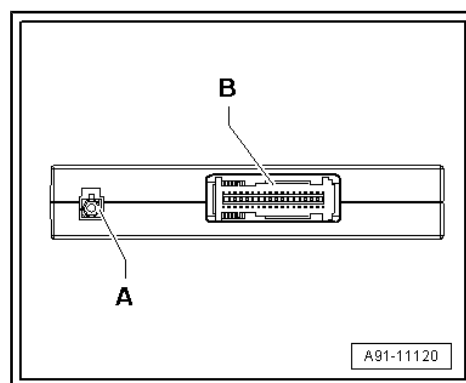
Telephone transmitter and receiver unit - R36-

- A - Connection for aerial for Bluetooth - R152-
- B - Multi-pin connector, 54-pin (T54a)



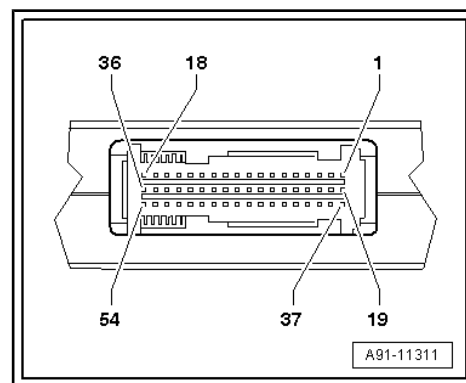
Note

Contacts which are not listed are not used.



B - Multi-pin connector, 54-pin (T54a)

- 1 - Terminal 30
- 2 - Terminal 31
- 8 - NF (+) (low frequency) to radio - R-
- 9 - NF (-) (low frequency) to radio - R-
- 10 - Terminal 31 screen earth (not used)
- 11 - Microphone input (+) from microphone unit in front roof module - R164-
- 12 - Microphone input (-) from microphone unit in front roof module - R164-
- 16 - NF mute (low frequency) (not used)
- 17 - CAN bus High (infotainment)
- 18 - CAN bus Low (infotainment)



6.8.4 Pin assignment for mobile phone pre-installation, MMI, up to week 44/2008

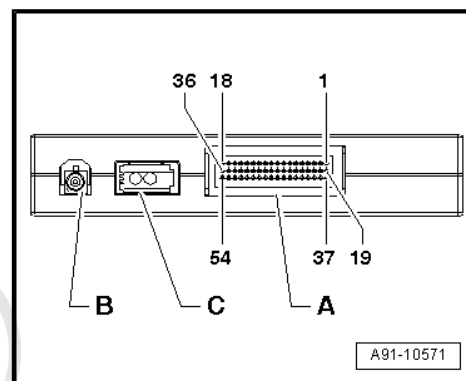
Telephone transmitter and receiver unit - R36-

- A - Multi-pin connector, 54-pin (T54a)
- B - Connection for aerial for Bluetooth - R152-
- C - MOST bus



Note

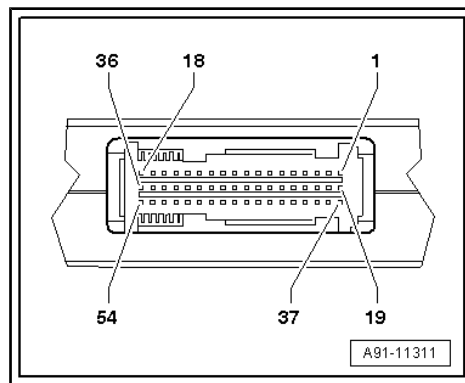
Contacts which are not listed are not used.



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A - Multi-pin connector, 54-pin (T54a)

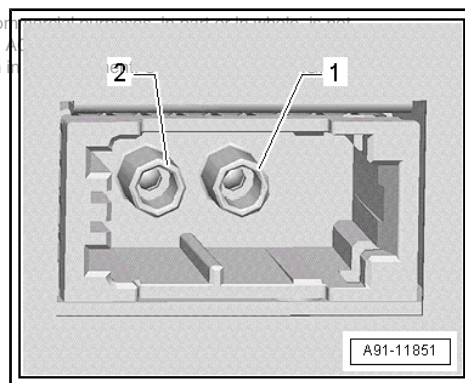
- 1 - Terminal 30
- 2 - Terminal 31
- 3 - Switch-on signal to aerial amplifier for mobile telephone - R86-
- 11 - Microphone input (+) from microphone unit in front roof module - R164- (telephone microphone - R38-)
- 12 - Microphone input (-) from microphone unit in front roof module - R164- (telephone microphone - R38-)
- 14 - Open circuit diagnostic lead
- 37 - Terminal 30 to telephone bracket - R126-
- 39 - Terminal 31 to telephone bracket - R126-
- 41 - Terminal 30 to telephone bracket - R126-
- 42 - Microphone output (+) to telephone bracket - R126-
- 43 - Microphone output (-) to telephone bracket - R126-
- 44 - Terminal 31 (screen earth) to telephone bracket - R126-
- 45 - NF (+) (low frequency) from telephone bracket - R126-
- 46 - NF (-) (low frequency) from telephone bracket - R126-
- 47 - DIAG signal from telephone bracket - R126-
- 49 - Data (+) to telephone bracket - R126-
- 50 - Data (-) to telephone bracket - R126-
- 51 - Data (+) from telephone bracket - R126-
- 52 - Data (-) from telephone bracket - R126-



C - MOST bus

- 1 - Input
- 2 - Output

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6.8.5 Pin assignment for mobile phone pre-installation, MMI, USA, up to week 44/2008

Telephone transmitter and receiver unit - R36-

- A - Multi-pin connector, 54-pin (T54a)
- B - Connection for aerial for Bluetooth - R152-
- C - MOST bus



Note

Contacts which are not listed are not used.

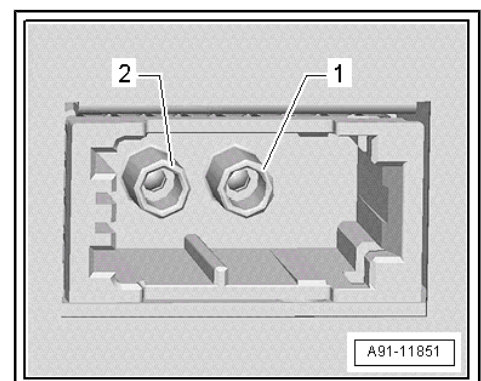
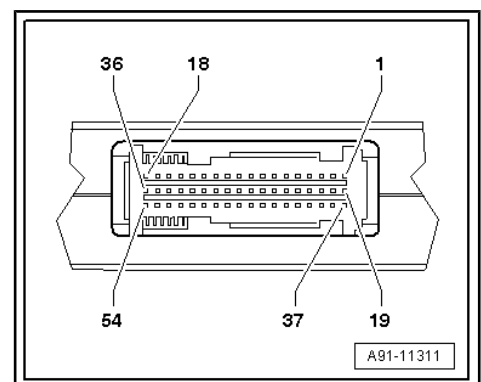
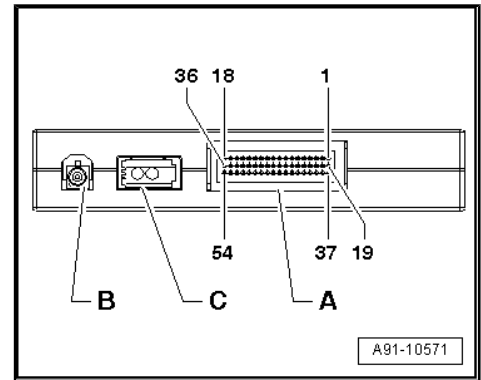
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A - Multi-pin connector, 54-pin (T54a)

- 1 - Terminal 30
- 2 - Terminal 31
- 11 - Microphone input (+) from microphone unit in front roof module - R164- (telephone microphone - R38-)
- 12 - Microphone input (-) from microphone unit in front roof module - R164- (telephone microphone - R38-)
- 14 - Open circuit diagnostic lead
- 37 - Terminal 30 to telephone bracket - R126-
- 39 - Terminal 31 to telephone bracket - R126-
- 41 - Terminal 30 to telephone bracket - R126-
- 42 - Microphone output (+) to telephone bracket - R126-
- 43 - Microphone output (-) to telephone bracket - R126-
- 44 - Terminal 31 (screening earth) to telephone bracket - R126-
- 45 - NF (+) (low frequency) from telephone bracket - R126-
- 46 - NF (-) (low frequency) from telephone bracket - R126-
- 47 - DIAG signal from telephone bracket - R126-
- 49 - Data (+) to telephone bracket - R126-
- 50 - Data (-) to telephone bracket - R126-
- 51 - Data (+) from telephone bracket - R126-
- 52 - Data (-) from telephone bracket - R126-

C - MOST bus

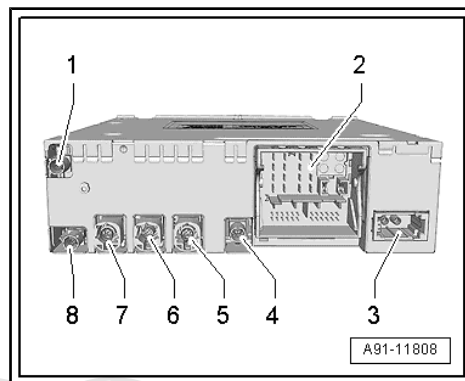
- 1 - Input
- 2 - Output



6.8.6 Pin assignment for mobile phone pre-installation, MMI, from week 45/2008 onwards

Control unit 1 for information electronics - J794-

- 1 - GSM connection from radio, telephone and navigation system aerial - R52- / roof aerial - R216-
- 2 - Connection block with four multi-pin connectors
- 3 - MOST bus
- 4 - FBAS input from TV tuner - R78-
- 5 - Multi-pin connector, 4-pin (T4am) to display unit for front information display and operating unit control unit - J685-
- 6 - Multi-pin connector, 4-pin (T4ap) to connection for external audio sources - R199- / internet access control unit - J666- (from model year 2012 onwards)
- 7 - Not used
- 8 - Not used



Note

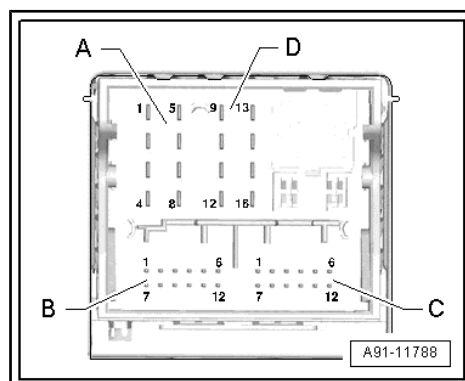
Contacts which are not listed are not used.

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2 - Connection block with four multi-pin connectors

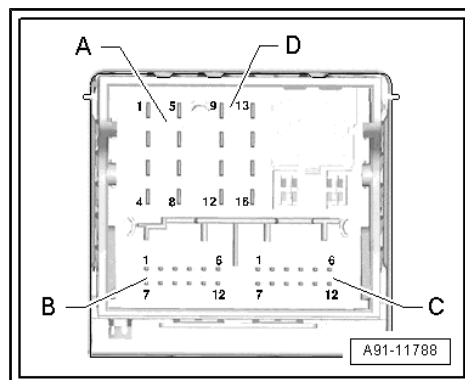
A - Multi-pin connector, 8-pin (T8ah)

- 1 - Not used
- 2 - Voltage supply to multimedia system operating unit - E380-
- 3 - Wake-up to multimedia system operating unit - E380-
- 4 - Not used
- 5 - Switch-on signal to aerial amplifier for mobile telephone - R86-
- 6 - Res MU to multimedia system operating unit - E380-
- 7 - Open circuit diagnostic lead



B - Multi-pin connector, 12-pin (T12x)

- 8 - Microphone input (+) from microphone unit in front roof module - R164- (front left microphone - R140-), left-hand drive
- Microphone input (+) from microphone unit in front roof module - R164- (front right microphone - R141-), right-hand drive
- 9 - Microphone input (-) from microphone unit in front roof module - R164- (front left microphone - R140-), left-hand drive
- Microphone input (-) from microphone unit in front roof module - R164- (front right microphone - R141-), right-hand drive



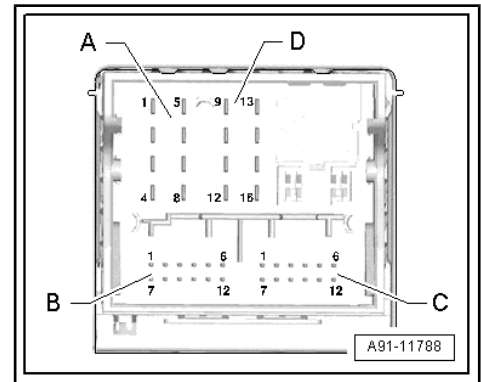
C - Multi-pin connector, 12-pin (T12y)

All pins are connected to the connection for external audio sources - R199- .

- 1 - NF in, earth (low frequency)
- 2 - NF in, right-side (low frequency)
- 3 - USB (+5 V) - not with internet access control unit - J666- (from model year 2012 onwards)
- 4 - USB (earth)
- 5 - Not used
- 6 - Detect - not with internet access control unit - J666- (from model year 2012 onwards)
- 7 - NF in, left-side (low frequency)
- 8 - NF in, screen earth (low frequency)
- 9 - FBAS wire (+)
- 10 - FBAS wire (-)
- 11 - iPod data
- 12 - iPod data

The following pins are also connected to the internet access control unit - J666- (from model year 2012 onwards).

- 3 - USB (+5 V)
- 4 - USB (earth)
- 6 - Detect

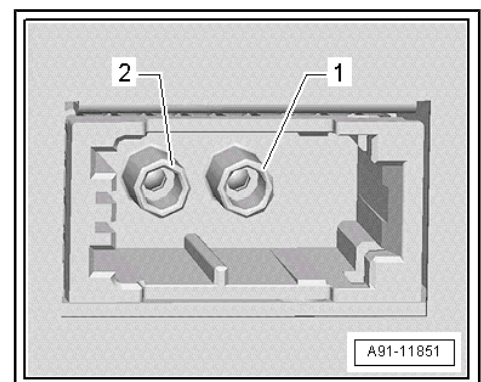
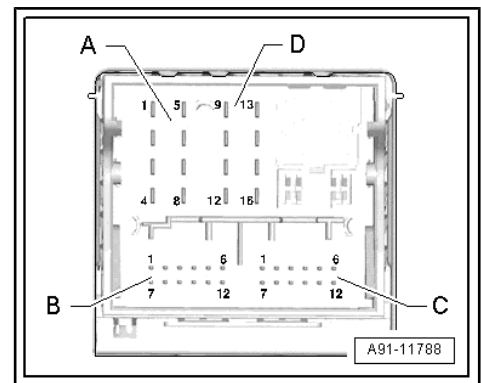


D - Multi-pin connector, 8-pin (T16q)

- 10 - Data from multimedia system operating unit - E380-
- 11 - Data to multimedia system operating unit - E380-
- 12 - Terminal 31
- 13 - DIAG signal from telephone bracket - R126-
- 14 - Res BT from multimedia system operating unit - E380-
- 15 - Terminal 30
- 16 - Earth to multimedia system operating unit - E380-

3 - MOST bus

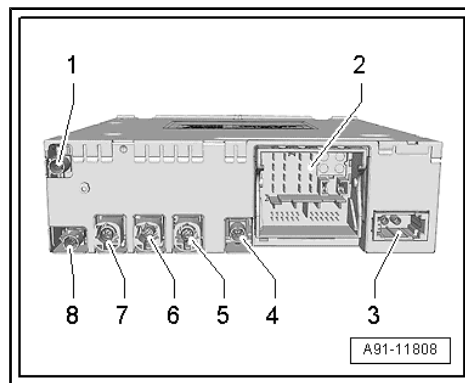
- 1 - Input
- 2 - Output



6.8.7 Pin assignment for mobile phone pre-installation, MMI, USA, from week 45/2008 onwards

Control unit 1 for information electronics - J794-

- 1 - Not used
- 2 - Connection block with four multi-pin connectors
- 3 - MOST bus
- 4 - Not used
- 5 - Multi-pin connector, 4-pin (T4am) to display unit for front information display and operating unit control unit - J685-
- 6 - Multi-pin connector, 4-pin (T4ap) to connection for external audio sources - R199- / internet access control unit - J666- (from model year 2012 onwards)
- 7 - Not used
- 8 - Not used



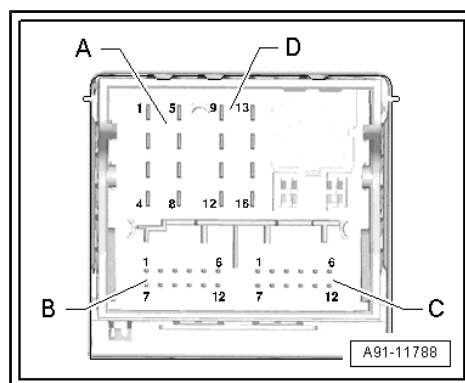
Note

Contacts which are not listed are not used.

2 - Connection block with four multi-pin connectors

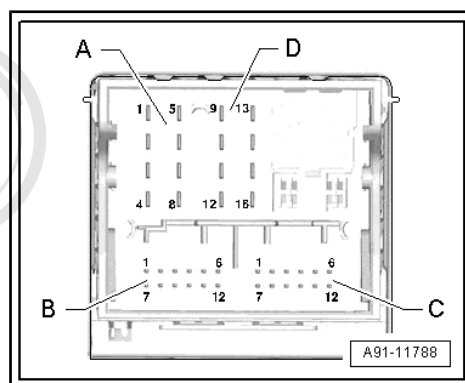
A - Multi-pin connector, 8-pin (T8ah)

- 1 - Not used
- 2 - Voltage supply to multimedia system operating unit - E380-
- 3 - Wake-up to multimedia system operating unit - E380-
- 4 - Not used
- 5 - Switch-on signal to telephone bracket - R126-
- 6 - Res MU to multimedia system operating unit - E380-
- 7 - Open circuit diagnostic lead



B - Multi-pin connector, 12-pin (T12x)

- 8 - Microphone input (+) from microphone unit in front roof module - R164- (front left microphone - R140-), left-hand drive
- Microphone input (+) from microphone unit in front roof module - R164- (front right microphone - R141-), right-hand drive
- 9 - Microphone input (-) from microphone unit in front roof module - R164- (front left microphone - R140-), left-hand drive
- Microphone input (-) from microphone unit in front roof module - R164- (front right microphone - R141-), right-hand drive



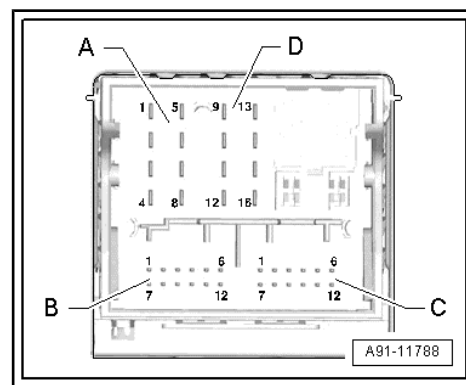
C - Multi-pin connector, 12-pin (T12y)

All pins are connected to the connection for external audio sources - R199- .

- 1 - NF in, earth (low frequency)
- 2 - NF in, right-side (low frequency)
- 3 - USB (+5 V) - not with internet access control unit - J666- (from model year 2012 onwards)
- 4 - USB (earth)
- 5 - Not used
- 6 - Detect - not with internet access control unit - J666- (from model year 2012 onwards)
- 7 - NF in, left-side (low frequency)
- 8 - NF in, screen earth (low frequency)
- 9 - FBAS wire (+)
- 10 - FBAS wire (-)
- 11 - iPod data
- 12 - iPod data

The following pins are also connected to the internet access control unit - J666- (from model year 2012 onwards).

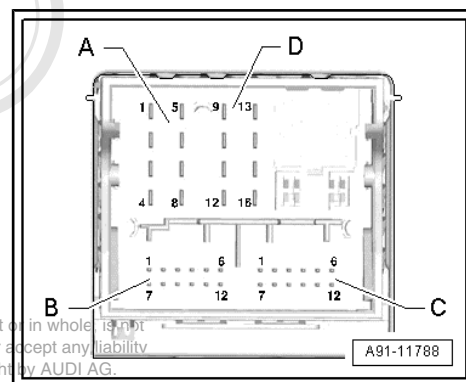
- 3 - USB (+5 V)
- 4 - USB (earth)
- 6 - Detect



D - Multi-pin connector, 8-pin (T16q)

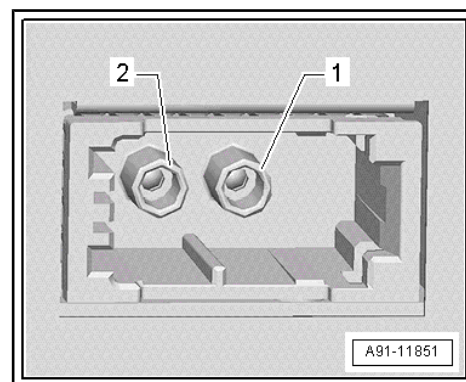
- 10 - Data from multimedia system operating unit - E380-
- 11 - Data to multimedia system operating unit - E380-
- 12 - Terminal 31
- 14 - Res BT from multimedia system operating unit - E380-
- 15 - Terminal 30
- 16 - Earth to multimedia system operating unit - E380-

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3 - MOST bus

- 1 - Input
- 2 - Output



6.8.8 Pin assignment for Bluetooth car phone, up to week 44/2008

Telephone transmitter and receiver unit - R36-

A - Connection for aerial for Bluetooth - R152-

B - MOST bus

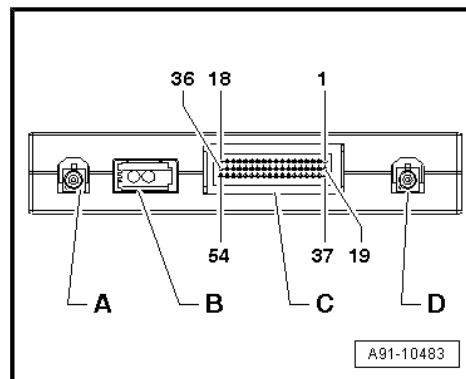
C - Multi-pin connector, 54-pin (T54a)

D - Connection (GSM) from radio, telephone and navigation system aerial - R52-



Note

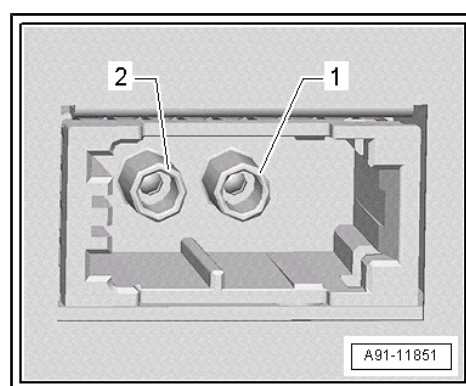
Contacts which are not listed are not used.



B - MOST bus

1 - Input

2 - Output



C - Multi-pin connector, 54-pin (T54a)

1 - Terminal 30

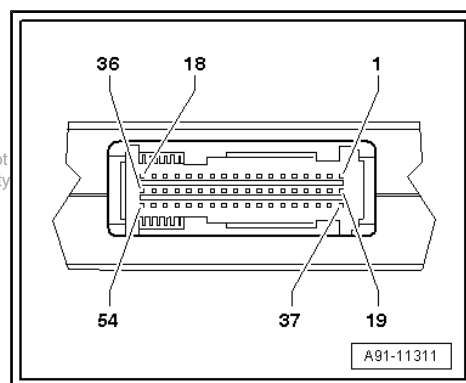
2 - Terminal 31

3 - Switch-on signal from telephone bracket - R126-
10 - Terminal 31 (screen earth)

11 - Microphone input (+) from microphone unit in front roof module - R164- (telephone microphone - R38-)

12 - Microphone input (-) from microphone unit in front roof module - R164- (telephone microphone - R38-)

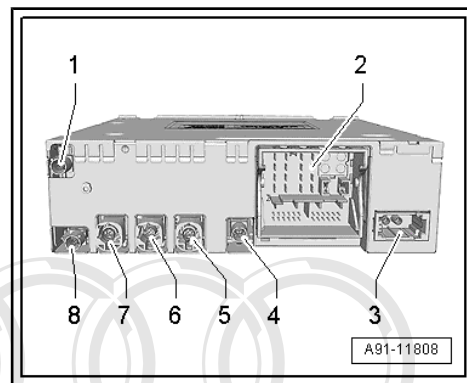
14 - Open circuit diagnostic lead



6.8.9 Pin assignment for Bluetooth car phone, from week 45/2008 onwards

Control unit 1 for information electronics - J794-

- 1 - GSM connection from radio, telephone and navigation system aerial - R52- / roof aerial - R216-
- 2 - Connection block with four multi-pin connectors
- 3 - MOST bus
- 4 - FBAS input from TV tuner - R78-
- 5 - Multi-pin connector, 4-pin (T4am) to display unit for front information display and operating unit control unit - J685-
- 6 - Multi-pin connector, 4-pin (T4ap) to connection for external audio sources - R199- / internet access control unit - J666- (from model year 2012 onwards)
- 7 - Not used
- 8 - Not used



Note

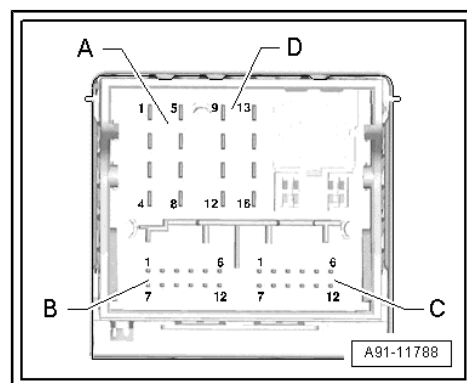
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Contacts which are not listed are not used.

2 - Connection block with four multi-pin connectors

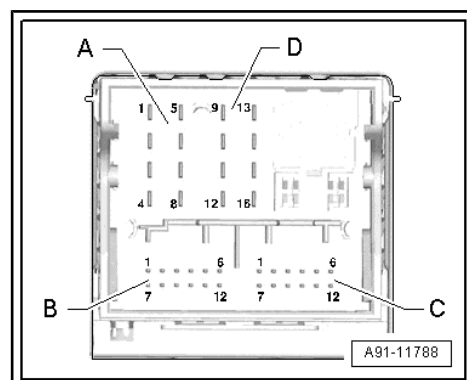
A - Multi-pin connector, 8-pin (T8ah)

- 1 - Not used
- 2 - Voltage supply to multimedia system operating unit - E380-
- 3 - Wake-up to multimedia system operating unit - E380-
- 4 - Not used
- 5 - Not used
- 6 - Res MU to multimedia system operating unit - E380-
- 7 - Open circuit diagnostic lead



B - Multi-pin connector, 12-pin (T12x)

- 8 - Microphone input (+) from microphone unit in front roof module - R164- (front left microphone - R140-), left-hand drive
- Microphone input (+) from microphone unit in front roof module - R164- (front right microphone - R141-), right-hand drive
- 9 - Microphone input (-) from microphone unit in front roof module - R164- (front left microphone - R140-), left-hand drive
- Microphone input (-) from microphone unit in front roof module - R164- (front right microphone - R141-), right-hand drive



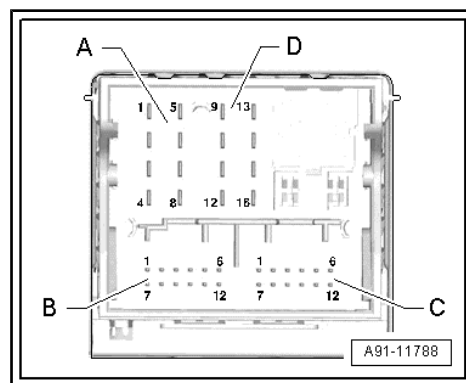
C - Multi-pin connector, 12-pin (T12y)

All pins are connected to the connection for external audio sources - R199- .

- 1 - NF in, earth (low frequency)
- 2 - NF in, right-side (low frequency)
- 3 - USB (+5 V) - not with internet access control unit - J666- (from model year 2012 onwards)
- 4 - USB (earth)
- 5 - Not used
- 6 - Detect - not with internet access control unit - J666- (from model year 2012 onwards)
- 7 - NF in, left-side (low frequency)
- 8 - NF in, screen earth (low frequency)
- 9 - FBAS wire (+)
- 10 - FBAS wire (-)
- 11 - iPod data
- 12 - iPod data

The following pins are also connected to the internet access control unit - J666- (from model year 2012 onwards).

- 3 - USB (+5 V)
- 4 - USB (earth)
- 6 - Detect

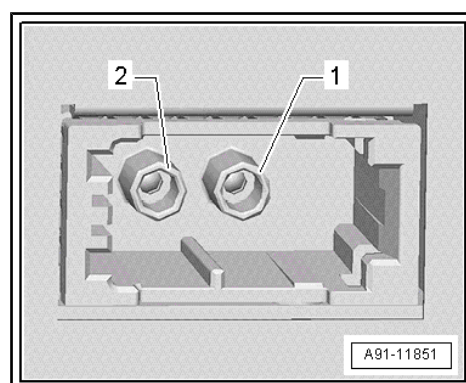
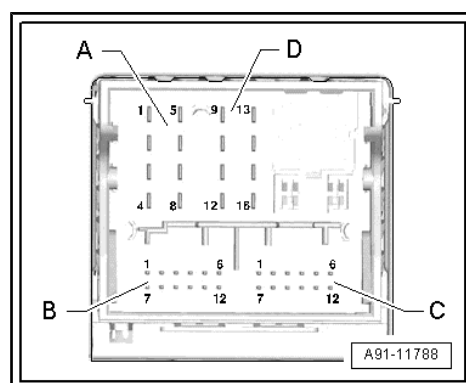


D - Multi-pin connector, 8-pin (T16q)

- 9 - Switch-on signal to telephone bracket - R126-
- 10 - Data from multimedia system operating unit - E380-
- 11 - Data to multimedia system operating unit - E380-
- 12 - Terminal 31
- 14 - Res BT from multimedia system operating unit - E380-
- 15 - Terminal 30
- 16 - Earth to multimedia system operating unit - E380-

3 - MOST bus

- 1 - Input
- 2 - Output



6.8.10 Pin assignment for pre-fitted components for mobile phone installation



Contacts which are not listed are not used.

Multi-pin connector, 18-pin (T18a)

1 - Terminal 31

4 - NF mute (low frequency) to radio - R- / control unit for front display and information control panel - J523- / control unit 1 for information electronics - J794-

7 - NF (-) (low frequency) to radio - R- / digital sound package control unit - J525-

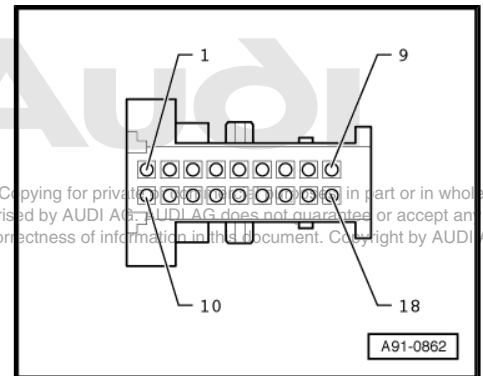
9 - Microphone input (-) from microphone unit in front roof module - R164-

10 - Terminal 15

11 - Terminal 30

16 - NF+ (low frequency) to radio - R- / digital sound package control unit - J525-

18 - Microphone input (+) from microphone unit in front roof module - R164-



6.8.11 Pin assignment for Bluetooth hands-free system, CAN

Telephone transmitter and receiver unit - R36-

A - Connection for aerial for Bluetooth - R152-

B - Multi-pin connector, 54-pin (T54a)



Contacts which are not listed are not used.

B - Multi-pin connector, 54-pin (T54a)

1 - Terminal 30

2 - Terminal 31

8 - NF (+) (low frequency) to radio - R-

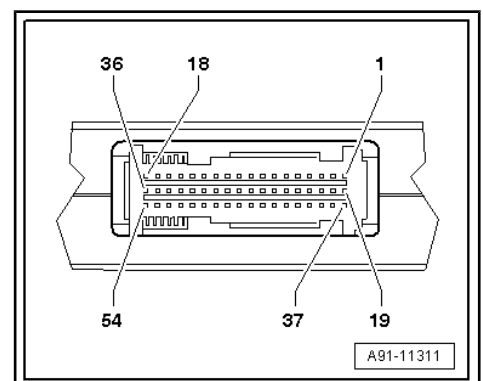
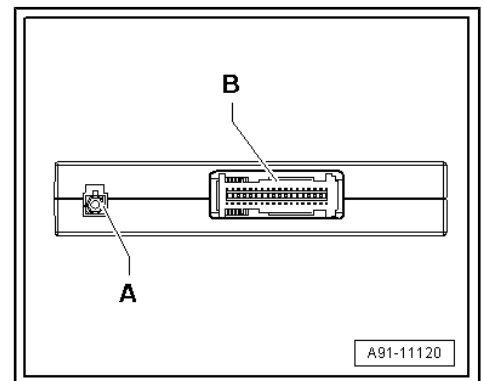
9 - NF (-) (low frequency) to radio - R-

11 - Microphone input (+) from microphone unit in front roof module - R164- (front left microphone - R140-)

12 - Microphone input (-) from microphone unit in front roof module - R164- (front left microphone - R140-)

17 - CAN bus High (infotainment)

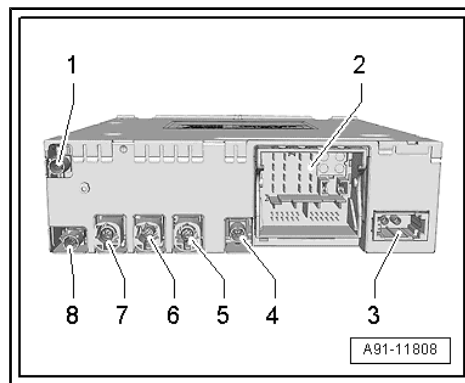
18 - CAN bus Low (infotainment)



6.8.12 Pin assignment for Bluetooth hands-free system, MMI

Control unit 1 for information electronics - J794-

- 1 - Not used
- 2 - Connection block with four multi-pin connectors
- 3 - MOST bus
- 4 - Not used
- 5 - Multi-pin connector, 4-pin, grey (T4am) to display unit for front information display and operating unit control unit - J685-
- 6 - Multi-pin connector, 4-pin (T4ap) to connection for external audio sources - R199- / internet access control unit - J666- (from model year 2012 onwards)
- 7 - Not used
- 8 - Not used



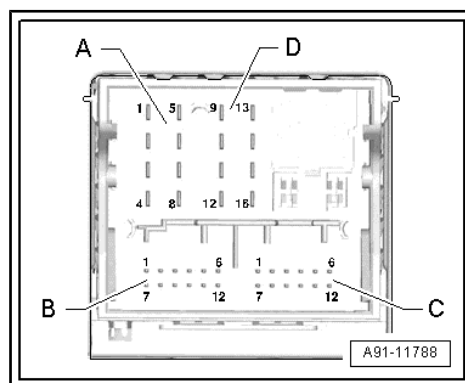
Note

Contacts which are not listed are not used.

2 - Connection block with four multi-pin connectors

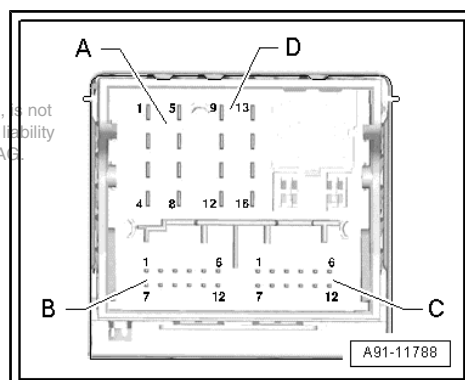
A - Multi-pin connector, 8-pin (T8ah)

- 1 - Not used
- 2 - Voltage supply to multimedia system operating unit - E380-
- 3 - Wake-up to multimedia system operating unit - E380-
- 4 - Not used
- 5 - Not used
- 6 - Res MU to multimedia system operating unit - E380-
- 7 - Open circuit diagnostic lead



B - Multi-pin connector, 12-pin (T12x)

- 8 - Microphone input (+) from microphone unit in front roof module - R164- (front left microphone - R140-), left-hand drive
- Microphone input (+) from microphone unit in front roof module - R164- (front right microphone - R141-), right-hand drive
- 9 - Microphone input (-) from microphone unit in front roof module - R164- (front left microphone - R140-), left-hand drive
- Microphone input (-) from microphone unit in front roof module - R164- (front right microphone - R141-), right-hand drive



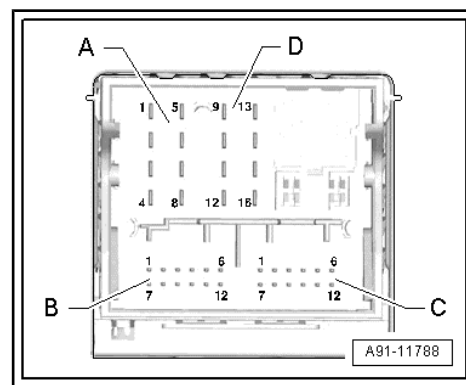
C - Multi-pin connector, 12-pin (T12y)

All pins are connected to the connection for external audio sources - R199- .

- 1 - NF in, earth (low frequency)
- 2 - NF in, right-side (low frequency)
- 3 - USB (+5 V) - not with internet access control unit - J666- (from model year 2012 onwards)
- 4 - USB (earth)
- 5 - Not used
- 6 - Detect - not with internet access control unit - J666- (from model year 2012 onwards)
- 7 - NF in, left-side (low frequency)
- 8 - NF in, screen earth (low frequency)
- 9 - FBAS wire (+)
- 10 - FBAS wire (-)
- 11 - iPod data
- 12 - iPod data

The following pins are also connected to the internet access control unit - J666- (from model year 2012 onwards).

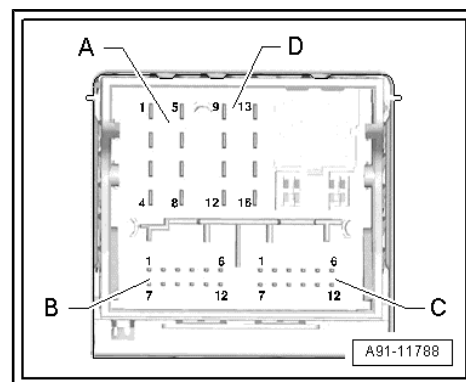
- 3 - USB (+5 V)
- 4 - USB (earth)
- 6 - Detect



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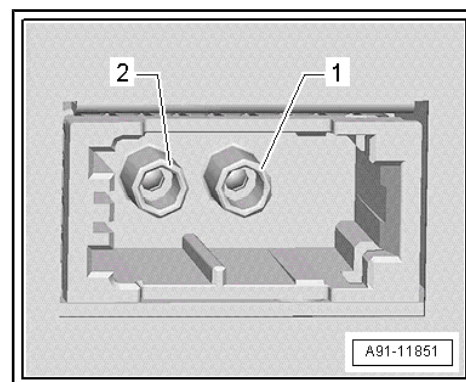
D - Multi-pin connector, 8-pin (T16q)

- 10 - Data from multimedia system operating unit - E380-
- 11 - Data to multimedia system operating unit - E380-
- 12 - Terminal 31
- 14 - Res BT from multimedia system operating unit - E380-
- 15 - Terminal 30
- 16 - Earth to multimedia system operating unit - E380-



3 - MOST bus

- 1 - Input
- 2 - Output



6.8.13 Pin assignment for aerial amplifier for mobile telephone - R86- (up to model year 2008)

Aerial amplifier for mobile telephone - R86-

A - Multi-pin connector, 3-pin (T3w)

B - Connection (GSM) from radio, telephone and navigation system aerial - R52-

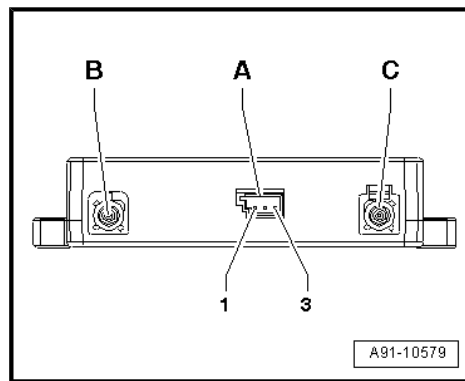
C - Aerial connection to telephone bracket - R126-



Note

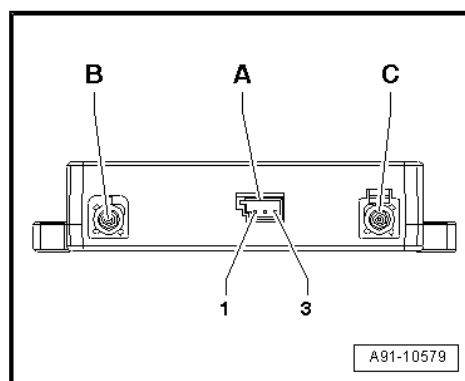
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Contacts which are not listed are not used.



A - Multi-pin connector, 3-pin (T3w)

- 1 - Terminal 30
- 2 - Terminal 31
- 3 - Switch-on signal from telephone transmitter and receiver unit - R36-



6.8.14 Pin assignment for aerial amplifier for mobile telephone - R86- (from model year 2009 onwards)

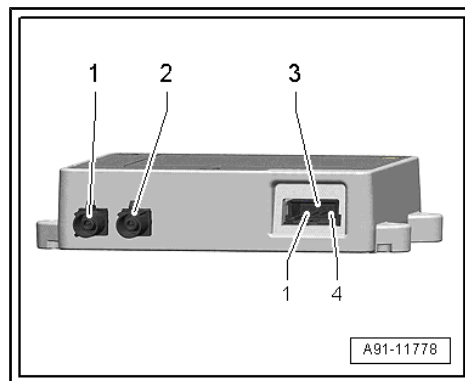
Aerial amplifier for mobile telephone - R86-

- 1 - GSM connection from radio, telephone and navigation system aerial - R52- / roof aerial - R216-
- 2 - Aerial connection to telephone bracket - R126-
- 3 - Multi-pin connector, 4-pin (T4ak)



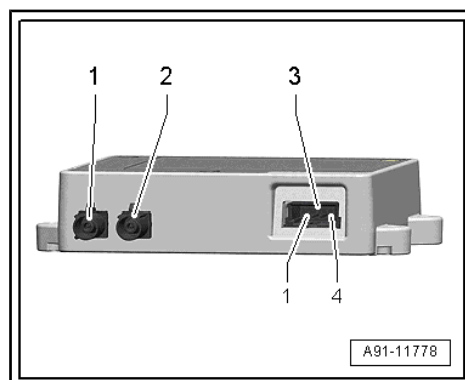
Note

Contacts which are not listed are not used.



A - Multi-pin connector, 4-pin, (T4ak)

- 1 - Terminal 30
- 2 - Terminal 31
- 3 - Switch-on signal from telephone transmitter and receiver unit - R36- (CAN)/ control unit 1 for information electronics - J794- (MMI)
- 4 - Safety PIN (not used)



6.8.15 Pin assignment for mobile phone pre-installation, Japan, up to week 44/2008

Telephone transmitter and receiver unit - R36-

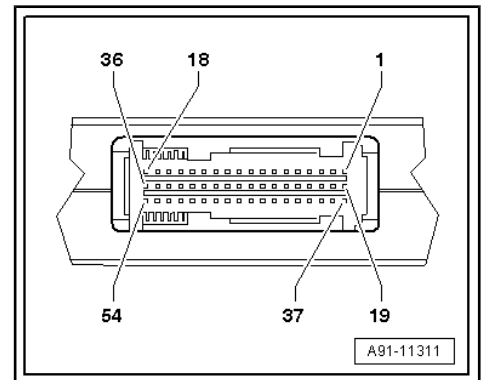


Note

Contacts which are not listed are not used.

Multi-pin connector, 54-pin (T54a)

- 1 - Terminal 30
- 2 - Terminal 31
- 4 - Switch-on signal to navigation system with CD drive control unit - J401-
- 6 - Data from navigation system with CD drive control unit - J401-
- 7 - Data to navigation system with CD drive control unit - J401-
- 8 - NF (+) (low frequency) to digital sound package control unit - J525-
- 9 - NF (-) (low frequency) to digital sound package control unit - J525-
- 10 - Terminal 31 (screen earth) to navigation system with CD drive control unit - J401-
- 11 - Microphone input (+) from microphone unit in front roof module - R164- (telephone microphone - R38-) from model year 2008 onwards
- 12 - Microphone input (-) from microphone unit in front roof module - R164- (telephone microphone - R38-) from model year 2008 onwards
- 16 - NF mute (low frequency) to control unit for front display and information control panel - J523-
- 37 - Connector cable (CU)
- 38 - Connector cable (TxAF)
- 39 - Connector cable (AG)
- 42 - Connector cable (TTxD)
- 43 - Connector cable (TRxD)
- 45 - Connector cable (CU)
- 46 - Connector cable (RxAF)
- 48 - Connector cable (PCon1)
- 49 - Connector cable (PCon2)
- 50 - Connector cable (AdPDt)
- 51 - Connector cable (AdPCT)



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7 Navigation system

⇒ [“7.1 Layout - navigation system”, page 184](#)

⇒ [“7.2 Overview of fitting locations - navigation system”, page 191](#)

⇒ [“7.3 Pin assignment”, page 195](#)

⇒ [“7.4 Removing and installing control unit for navigation system”, page 206](#)

⇒ [“7.5 Removing and installing chip card reader control unit”, page 209](#)

7.1 Layout - navigation system

⇒ [“7.1.1 Layout - navigation system, up to week 44/2008”, page 184](#)

⇒ [“7.1.2 Layout - navigation system, from week 45/2008 onwards”, page 186](#)

⇒ [“7.1.3 Layout - navigation system, Japan, up to week 44/2008”, page 188](#)

⇒ [“7.1.4 Layout - navigation system, Japan, from week 45/2008 onwards”, page 189](#)

7.1.1 Layout - navigation system, up to week 44/2008

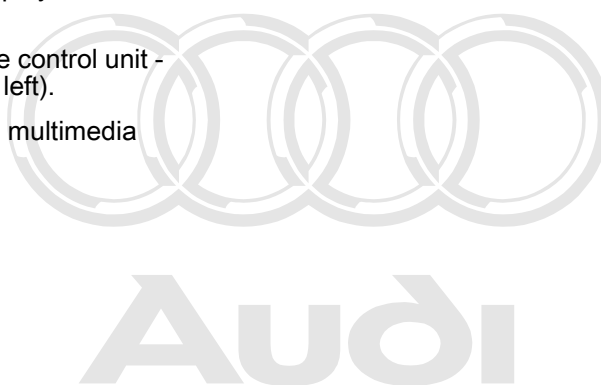
The navigation system is linked to the MMI Infotainment system via the fibre optic MOST bus.

The navigation system is available starting with the “MMI basic plus Navigation” system.

With the “MMI basic plus Navigation” the navigation system with CD drive control unit - J401- is located in the glove box and contains the radio - R- and the control unit for front display and information control panel - J523- .

With the “MMI” the navigation system with CD drive control unit - J401- is located in the luggage compartment (rear left).

The operation of all versions takes place using the multimedia system operating unit - E380- .



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1 - Control unit in dash panel insert - J285- in dash panel

2 - Steering column electronics control unit - J527- on steering column on steering column switch

3 - Multi-function steering wheel

4 - Display unit for front information display and operating unit control unit - J685- in dash panel (centre)

5 - Multimedia system operating unit - E380- in centre console

6 - Radio, telephone and navigation system aerial - R52- (roof aerial)

7 - Window aerials

8 - Aerial amplifier 3 - R112- behind C-pillar trim (left-side)

9 - Navigation system with CD drive control unit - J401- in glove box (left-side)

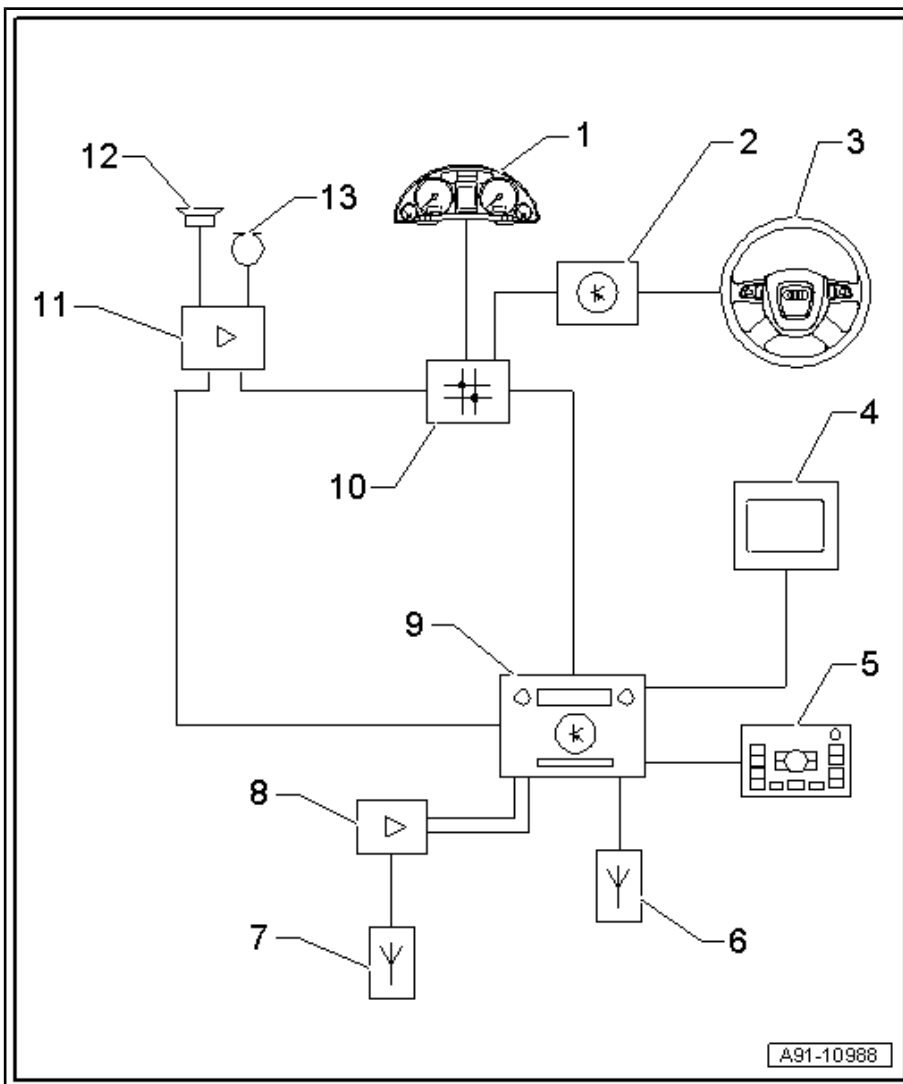
- Contains control unit for front display and information control panel - J523- , radio - R- and CD player - R89-

10 - Data bus diagnostic interface - J533- behind glove box (left-side)

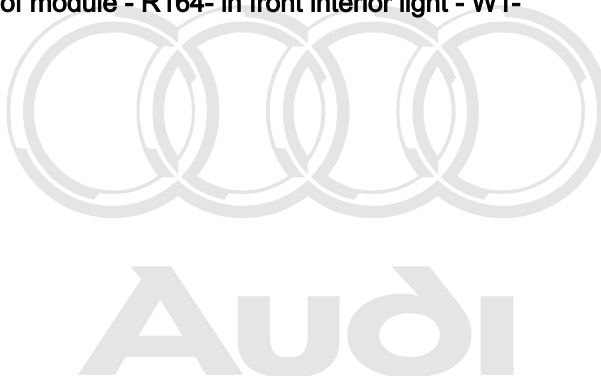
11 - Digital sound package control unit - J525- behind luggage compartment side trim (left-side)

12 - Sound systems

13 - Microphone unit in front roof module - R164- in front interior light - W1-

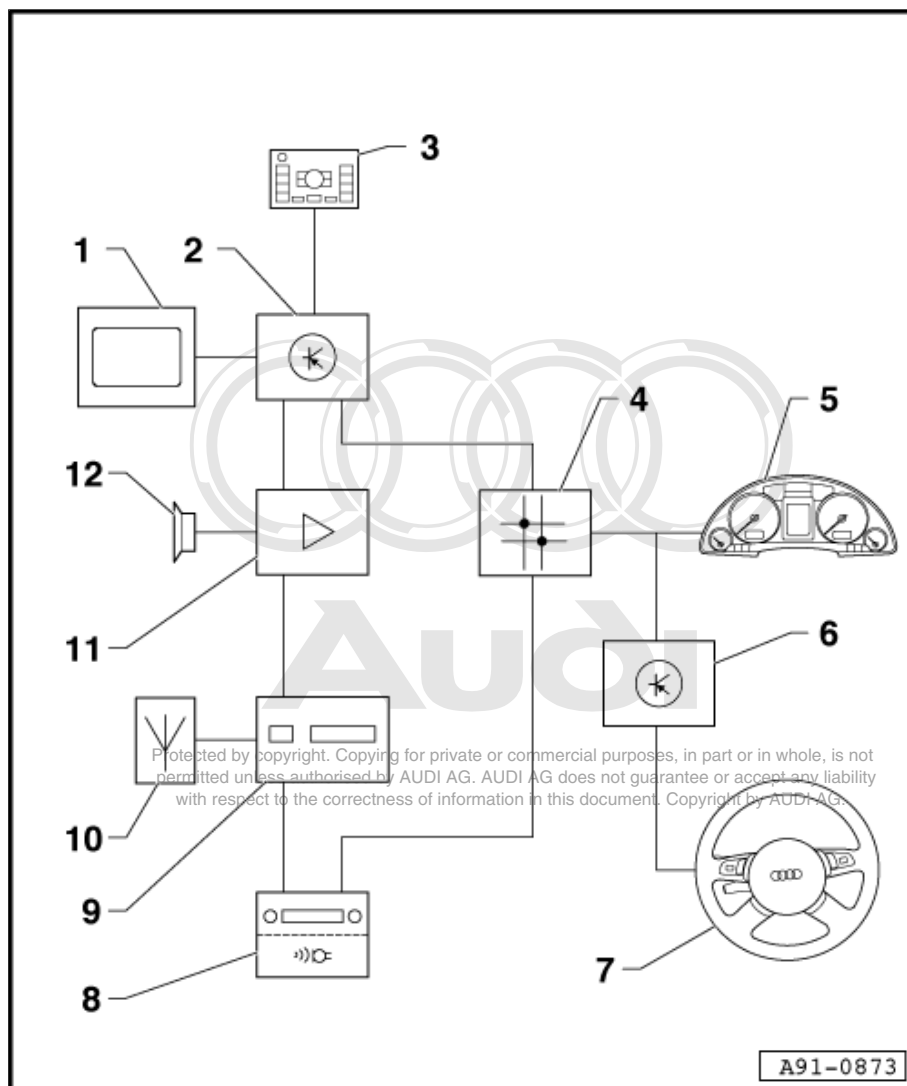


MMI



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- 1 - Display unit for front information display and operating unit control unit - J685- in dash panel (centre)
- 2 - Control unit for front display and information control panel - J523- behind dash panel
- 3 - Multimedia system operating unit - E380- in centre console
- 4 - Data bus diagnostic interface - J533- behind glove box (left-side)
- 5 - Control unit in dash panel insert - J285- in dash panel
- 6 - Steering column electronics control unit - J527- on steering column on steering column switch
- 7 - Multi-function steering wheel
- 8 - Radio - R- with speech input control unit - J507- behind luggage compartment side trim (left-side)
- 9 - Navigation system with CD drive control unit - J401- behind luggage compartment side trim (left-side)
- 10 - Radio, telephone and navigation system aerial - R52- (roof aerial)
- 11 - Digital sound package control unit - J525- behind luggage compartment side trim (left-side)
- 12 - Sound systems



Fault finding is performed via the "Guided Fault Finding" ⇒ Vehicle diagnostic tester.

7.1.2 Layout - navigation system, from week 45/2008 onwards

The navigation system is part of the control unit 1 for information electronics - J794- located in the centre console (top).

The multimedia system operating unit - E380- is used for operation.

Navigation data are stored on an internal hard disk (HDD) on MMI system with maximum equipment.

MMI minimum equipment

1 - Radio, telephone and navigation system aerial - R52- / roof aerial - R216-

2 - Display unit for front information display and operating unit control unit - J685- in dash panel (centre)

3 - Control unit 1 for information electronics - J794- in dash panel

4 - Multimedia system operating unit - E380- in centre console

5 - Data bus diagnostic interface - J533- behind glove box (left-side)

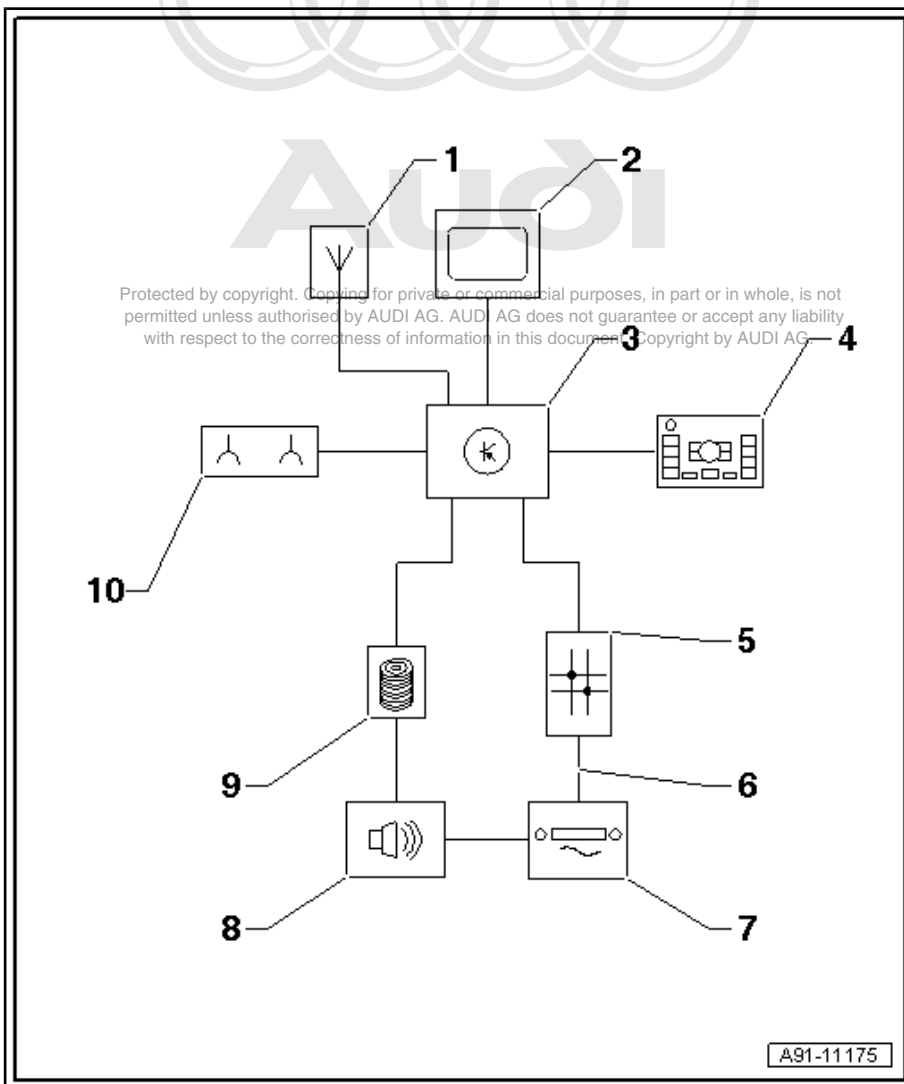
6 - MOST bus

7 - Radio - R- behind luggage compartment side trim (left-side)

8 - Digital sound package control unit - J525- behind luggage compartment side trim (left-side)

9 - CD changer - R41- in glove box

10 - Connection for external audio sources - R199- (interface) in glove box



MMI maximum equipment

1 - Radio, telephone and navigation system aerial - R52- / roof aerial - R216-

2 - Display unit for front information display and operating unit control unit - J685- in dash panel (centre)

3 - Control unit 1 for information electronics - J794- in dash panel

4 - Multimedia system operating unit - E380- in centre console

5 - Data bus diagnostic interface - J533- behind glove box (left-side)

6 - Steering column electronics control unit - J527- on steering column on steering column switch

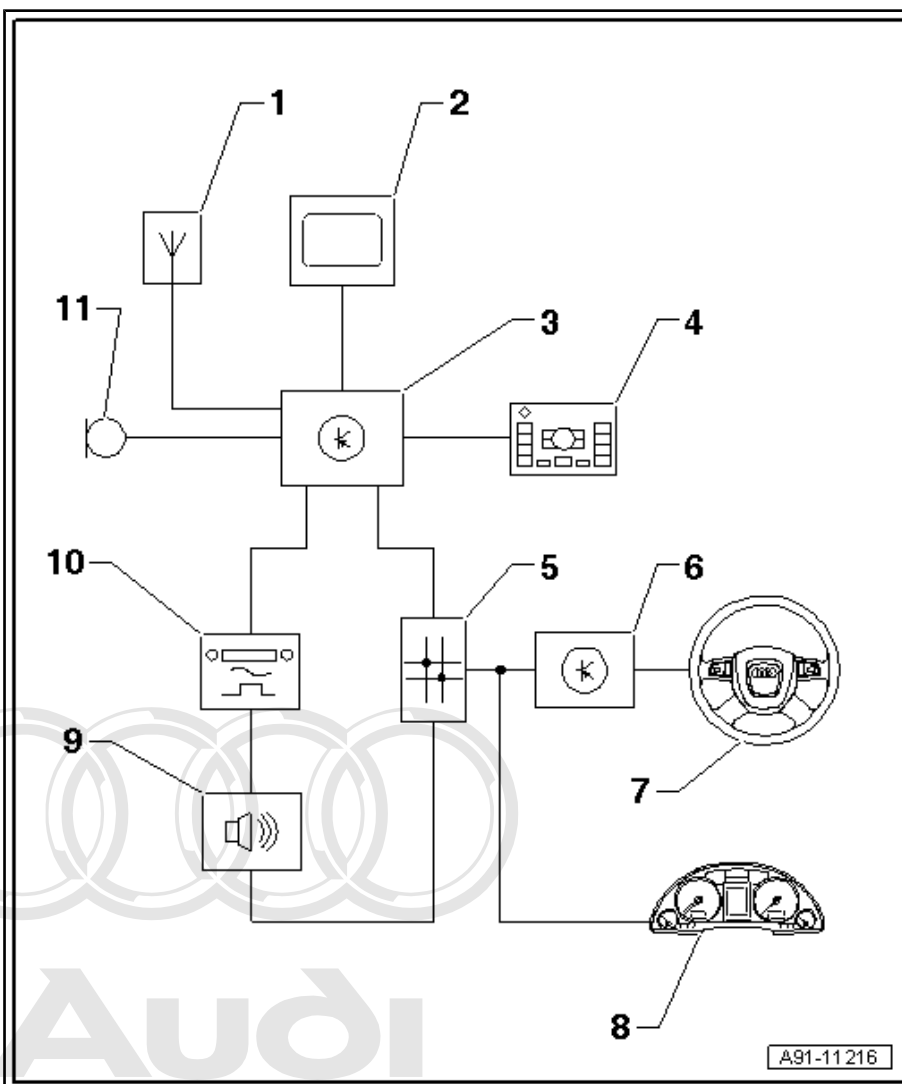
7 - Multi-function steering wheel

8 - Control unit in dash panel insert - J285- in dash panel

9 - Digital sound package control unit - J525- behind luggage compartment side trim (left-side)

10 - Radio - R- behind luggage compartment side trim (left-side)

11 - Microphone unit in front roof module - R164- (front right microphone - R141-) in front interior light - W1-



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Fault finding is performed via the "Guided Fault Finding" ⇒ Vehicle diagnostic tester.

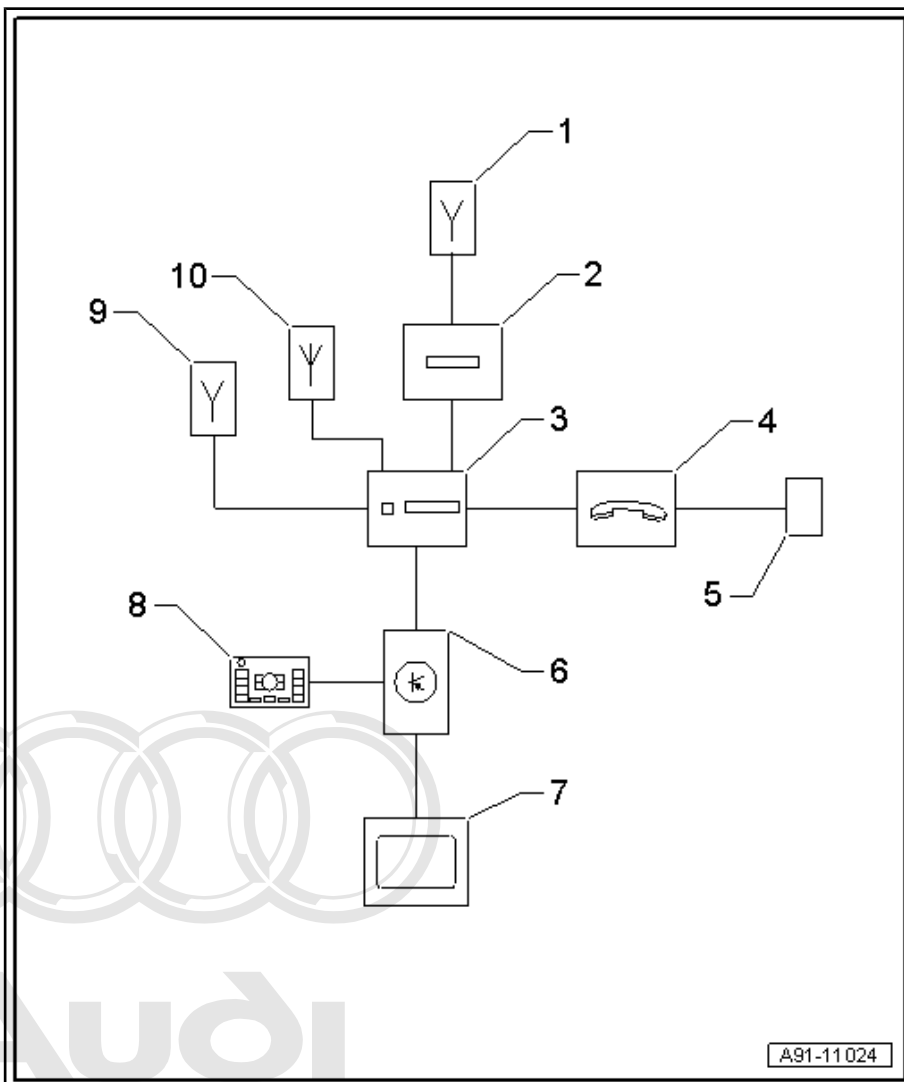
7.1.3 Layout - navigation system, Japan, up to week 44/2008

The navigation system is linked to the MMI Infotainment system via the MOST bus.

The navigation system with CD drive control unit - J401- is located in the luggage compartment. The multimedia system operating unit - E380- is used for operation.

A chip card reader control unit - J676- with traffic data aerial - R173- (toll) and the mobile phone pre-installation are integrated in the system.

- 1 - Traffic data aerial - R173- on windscreen (top centre)
- 2 - Chip card reader control unit - J676- in glove box
- 3 - Navigation system with CD drive control unit - J401- behind luggage compartment side trim (left-side)
- 4 - Telephone transmitter and receiver unit - R36- beneath front seat (right-side)
- 5 - Connector cable for mobile telephone - R54- in centre console storage compartment
- 6 - Microphone unit in front roof module - R164- (telephone microphone - R38-) in front interior light - W1-
- 7 - Control unit for front display and information control panel - J523- behind dash panel
- 8 - Display unit for front information display and operating unit control unit - J685- in dash panel (centre)
- 9 - Multimedia system operating unit - E380- in centre console
- 10 - Aerial amplifier 2 - R111- behind right C-pillar trim
- 11 - Radio, telephone and navigation system aerial - R52- (roof aerial)



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Fault finding is performed via the "Guided Fault Finding" ➤ Vehicle diagnostic tester.

7.1.4 Layout - navigation system, Japan, from week 45/2008 onwards

The navigation system is part of the control unit 1 for information electronics - J794- located in the centre console (top).

The multimedia system operating unit - E380- is used for operation.

Navigation data are stored on an internal hard disk (HDD).

A chip card reader control unit - J676- with traffic data aerial - R173- (toll) is integrated in the system.

1 - Radio, telephone and navigation system aerial - R52- / roof aerial - R216-

2 - Display unit for front information display and operating unit control unit - J685- in dash panel (centre)

3 - Control unit 1 for information electronics - J794- in dash panel

4 - Traffic data aerial - R173- on windscreen (top centre)

5 - Chip card reader control unit - J676- in glove box

6 - Multimedia system operating unit - E380- in centre console

7 - Steering column electronics control unit - J527- on steering column on steering column switch

8 - Data bus diagnostic interface - J533- behind glove box (left-side)

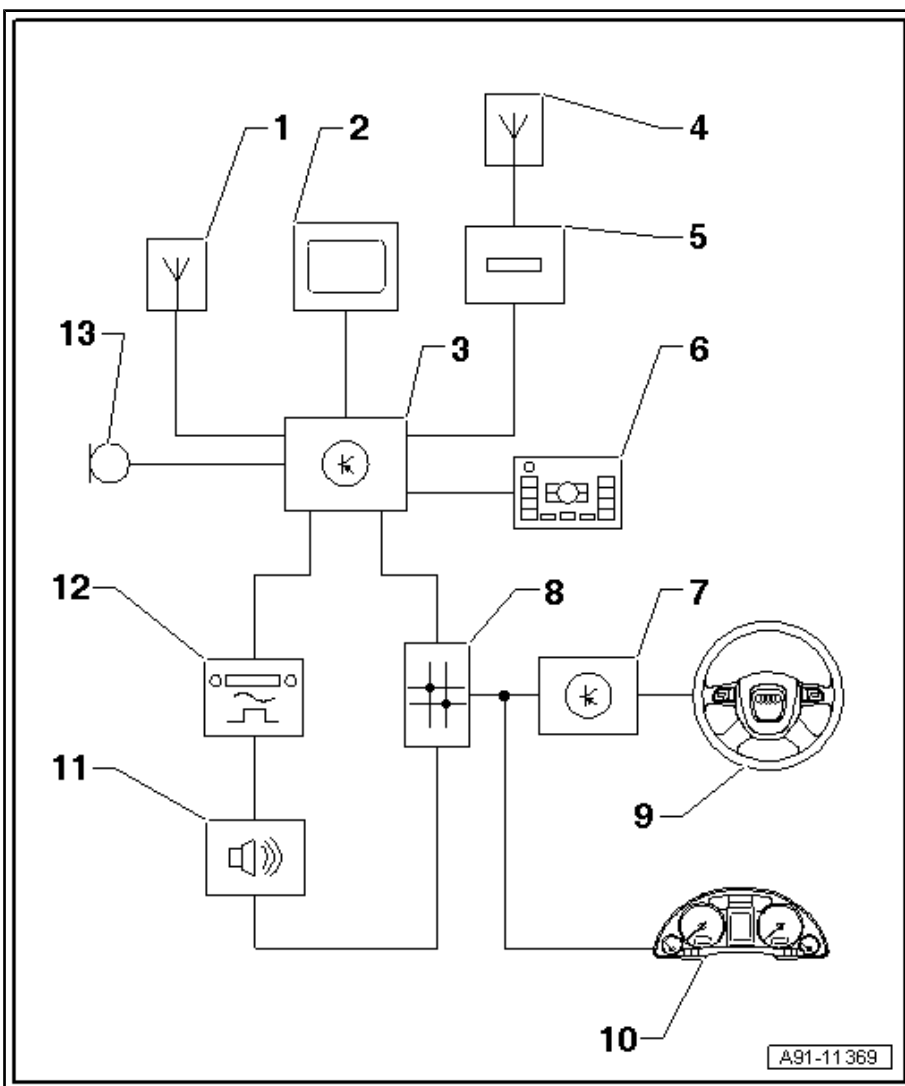
9 - Multi-function steering wheel

10 - Control unit in dash panel insert - J285- in dash panel

11 - Digital sound package control unit - J525- behind luggage compartment side trim (left-side)

12 - Radio - R- behind luggage compartment side trim (left-side)

13 - Microphone unit in front roof module - R164- (front right microphone - R141-) in front interior light - W1-



Fault finding is performed via the "Guided Fault Finding" ⇒ Vehicle diagnostic tester.

7.2 Overview of fitting locations - navigation system

⇒ [“7.2.1 Overview of fitting locations - navigation system, up to week 44/2008”, page 191](#)

⇒ [“7.2.2 Overview of fitting locations - navigation system, from week 45/2008 onwards”, page 192](#)

⇒ [“7.2.3 Overview of fitting locations - navigation system, Japan, up to week 44/2008”, page 193](#)

⇒ [“7.2.4 Overview of fitting locations - navigation system, Japan, from week 45/2008 onwards”, page 194](#)

7.2.1 Overview of fitting locations - navigation system, up to week 44/2008

1 - Navigation system with CD drive control unit - J401- (MMI basic plus Navigation)

- ❑ Pin assignment (basic plus navigation system)

⇒ [page 195](#)

- ❑ Removing and installing (basic plus)

⇒ [page 206](#)

2 - Radio release tool - T10057-

3 - Nut

- ❑ 5 Nm

4 - Nut

- ❑ 5 Nm

5 - Radio release tool - T10057-

6 - Nut

- ❑ 5 Nm

7 - Navigation system with CD drive control unit - J401- (MMI)

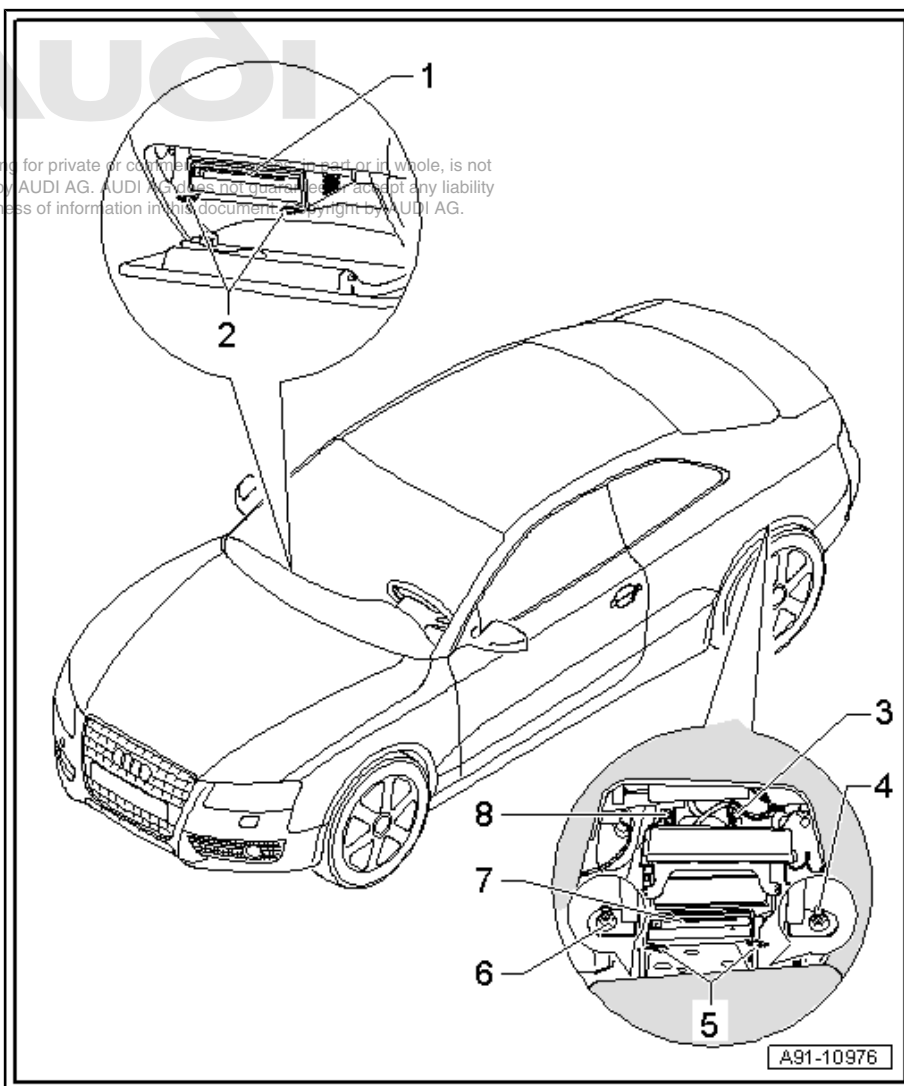
- ❑ Pin assignment (MMI up to week 44/2008)

⇒ [page 197](#)

- ❑ Removing and installing (MMI up to week 44/2008) ⇒ [page 207](#)

8 - Nut

- ❑ 5 Nm



7.2.2 Overview of fitting locations - navigation system, from week 45/2008 onwards

1 - Radio release tool - T10057-

2 - Control unit 1 for information electronics - J794-

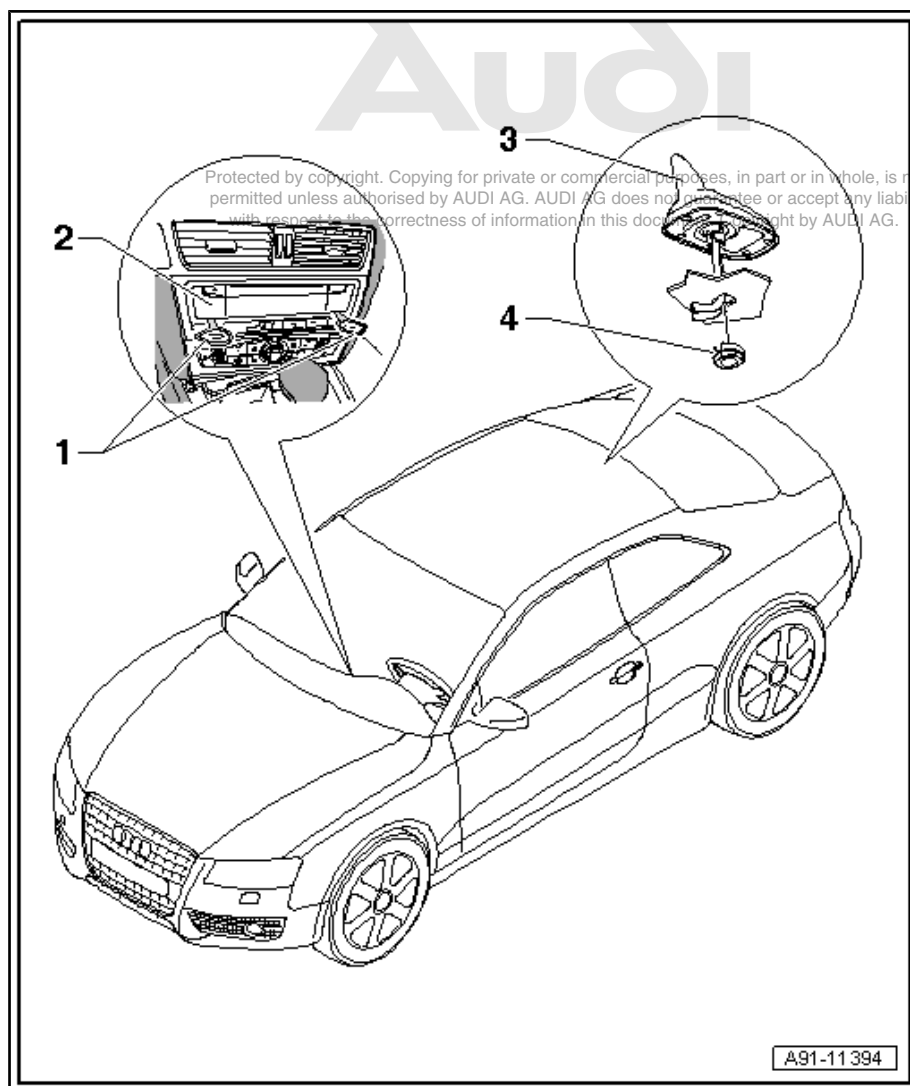
- ☐ Pin assignment (MMI from week 45/2008 onwards) ➔ [page 198](#)
- ☐ Removing and installing ➔ [page 35](#)

3 - Radio, telephone and navigation system aerial - R52- / roof aerial - R216-

- ☐ Overview (Coupé) ➔ [page 87](#)
- ☐ Overview (Sportback) ➔ [page 89](#)

4 - Nut

- ☐ 6 Nm



7.2.3 Overview of fitting locations - navigation system, Japan, up to week 44/2008

1 - Traffic data aerial - R173-

- ❑ Removing and installing
⇒ [page 92](#)

2 - Pin

3 - Nut

- ❑ 5 Nm

4 - Nut

- ❑ 5 Nm

5 - Radio release tool - T10057-

6 - Nut

- ❑ 5 Nm

7 - Navigation system with CD drive control unit - J401-

- ❑ Pin assignment (MMI up to week 44/2008)
⇒ [page 200](#)
- ❑ Removing and installing (MMI up to week 44/2008) ⇒ [page 207](#)

8 - Nut

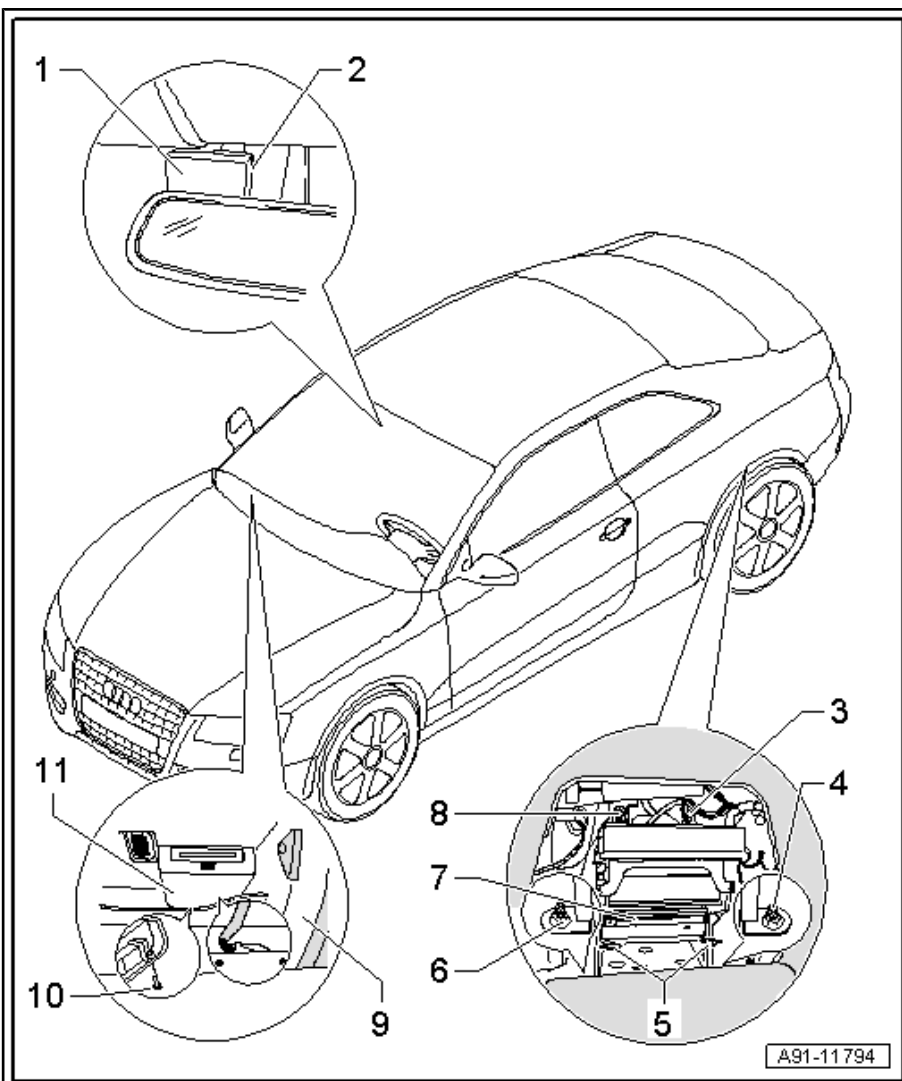
- ❑ 5 Nm

9 - Glove box

10 - Pin

11 - Chip card reader control unit - J676-

- ❑ Pin assignment (up to week 44/2008)
⇒ [page 205](#)
- ❑ Removing and installing
⇒ [page 209](#)



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7.2.4 Overview of fitting locations - navigation system, Japan, from week 45/2008 onwards

1 - Traffic data aerial - R173-

- ❑ Removing and installing
⇒ [page 92](#)

2 - Pin

3 - Control unit 1 for information electronics - J794-

- ❑ Pin assignment (MMI from week 45/2008 onwards) ⇒ [page 202](#)
- ❑ Removing and installing
⇒ [page 35](#)

4 - Radio release tool - T10057-

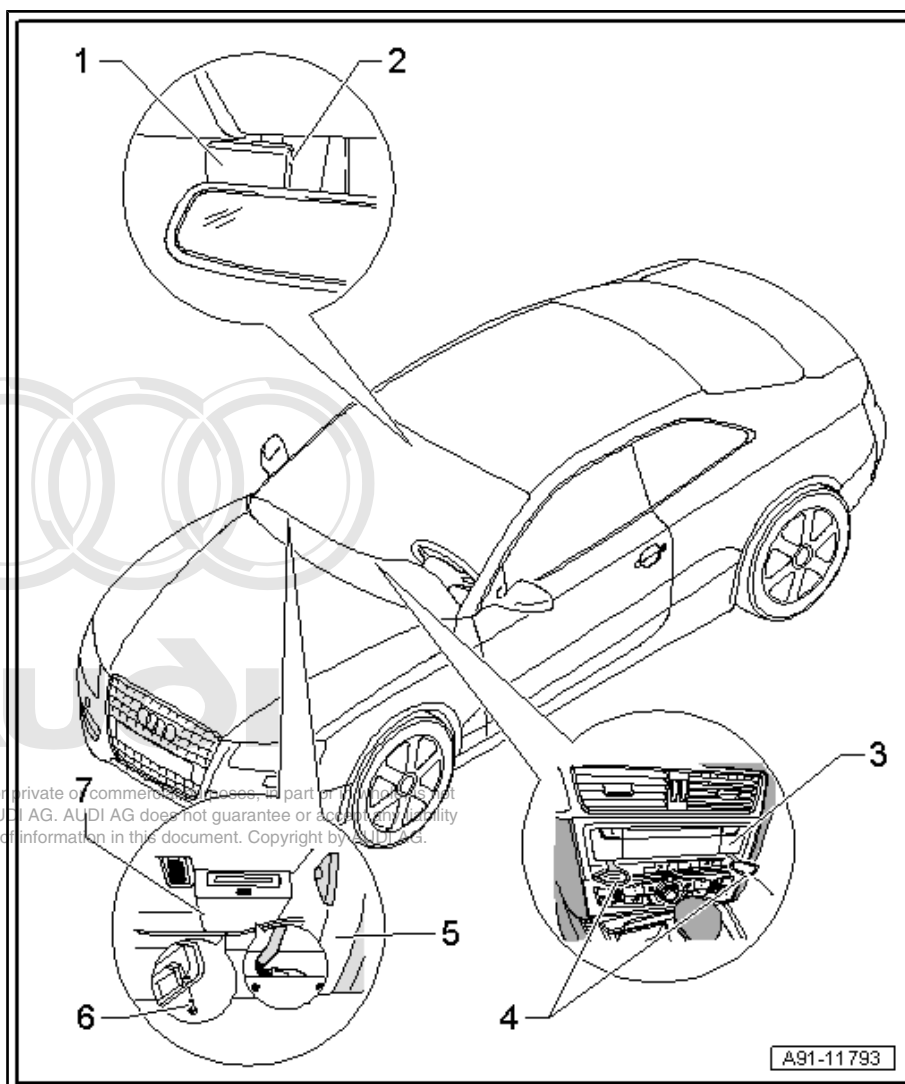
5 - Glove box

6 - Pin

7 - Chip card reader control unit - J676-

- ❑ Pin assignment (from week 45/2008 onwards) ⇒ [page 205](#)
- ❑ Removing and installing
⇒ [page 209](#)

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7.3 Pin assignment

⇒ [“7.3.1 Pin assignment for basic plus navigation system”, page 195](#)

⇒ [“7.3.2 Pin assignment for navigation system, MMI, up to week 44/2008”, page 197](#)

⇒ [“7.3.3 Pin assignment for navigation system, MMI, from week 45/2008 onwards”, page 198](#)

⇒ [“7.3.4 Pin assignment for navigation system, MMI, Japan, up to week 44/2008”, page 200](#)

⇒ [“7.3.5 Pin assignment for navigation system, MMI, Japan, from week 45/2008 onwards”, page 202](#)

⇒ [“7.3.6 Pin assignment for chip card reader control unit J676 , Japan, up to week 44/2008”, page 205](#)

⇒ [“7.3.7 Pin assignment for chip card reader control unit J676 , Japan, from week 45/2008 onwards”, page 205](#)

7.3.1 Pin assignment for basic plus navigation system

Navigation system with CD drive control unit - J401-

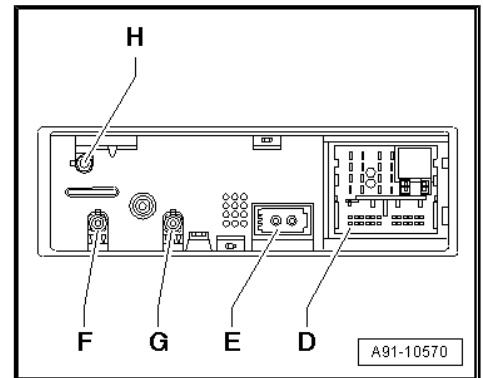
D - Connection block with four multi-pin connectors

E - MOST bus

F - HF (high frequency) connection from aerial amplifier 3 - R112-

G - Connection ZF (intermediate frequency) to aerial amplifier 3 - R112-

H - GPS connection from radio, telephone and navigation system aerial - R52-



Note

Contacts which are not listed are not used.

D - Connection block with four multi-pin connectors

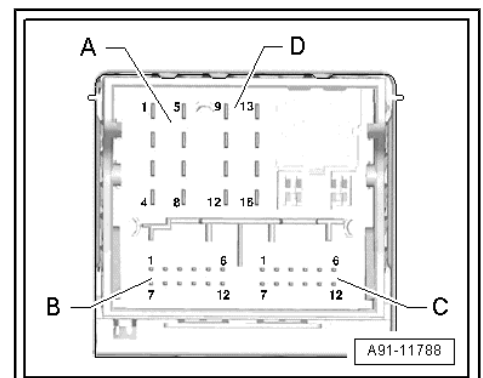
A - Multi-pin connector, 8-pin (T8ab)

1 - Wake Up to multimedia system operating unit - E380-

4 - Res HU to multimedia system operating unit - E380-

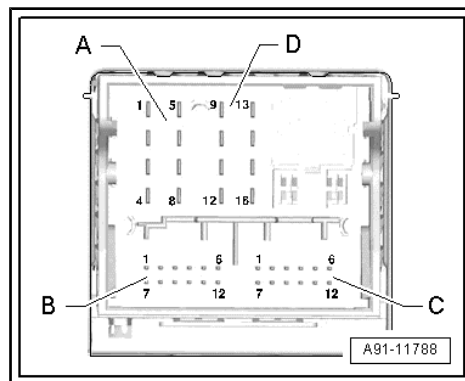
5 - Res BT to multimedia system operating unit - E380-

8 - Earth to display unit for front information display and operating unit control unit - J685-



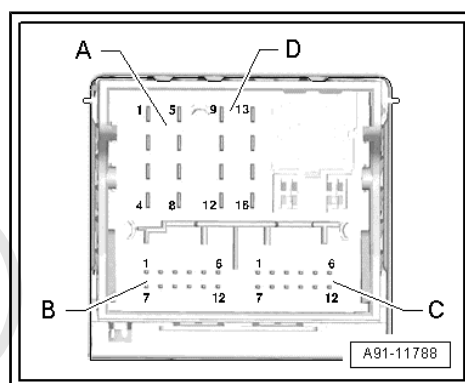
B - Multi-pin connector, 12-pin (T12q)

- 1 - Data to multimedia system operating unit - E380-
- 2 - Not used
- 3 - Data (+) to display unit for front information display and operating unit control unit - J685-
- 4 - Data (-) to display unit for front information display and operating unit control unit - J685-
- 5 - Data from multimedia system operating unit - E380-



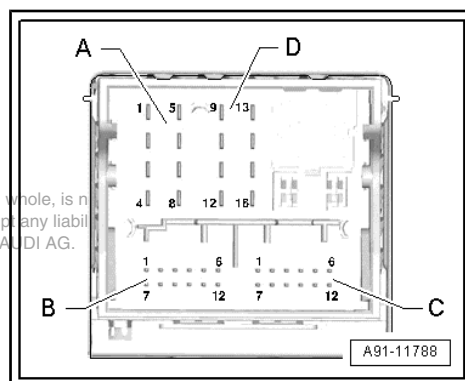
C - Multi-pin connector, 12-pin (T12r)

- 5 - Data (-) from display unit for front information display and operating unit control unit - J685-
- 7 - Earth to multimedia system operating unit - E380-
- 11 - Data (+) from display unit for front information display and operating unit control unit - J685-



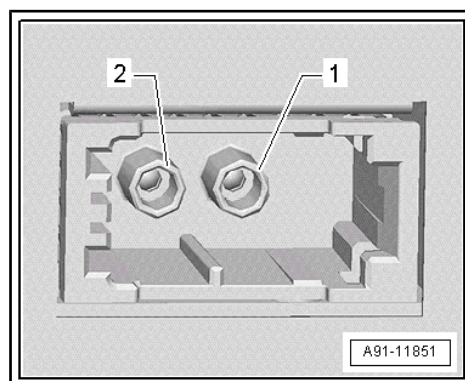
D - Multi-pin connector, 8-pin (T16j)

- 11 - NF mute (low frequency) from pre-fitted components for mobile phone installation
- 12 - Terminal 31
- 13 - Voltage supply to display unit for front information display and operating unit control unit - J685-
- 14 - Open circuit diagnostic lead
- 15 - Terminal 30
- 16 - Voltage supply to multimedia system operating unit - E380-



E - MOST bus

- 1 - Input
- 2 - Output



7.3.2 Pin assignment for navigation system, MMI, up to week 44/2008

Navigation system with CD drive control unit - J401-

A - Multi-pin connector, 8-pin (T8n)

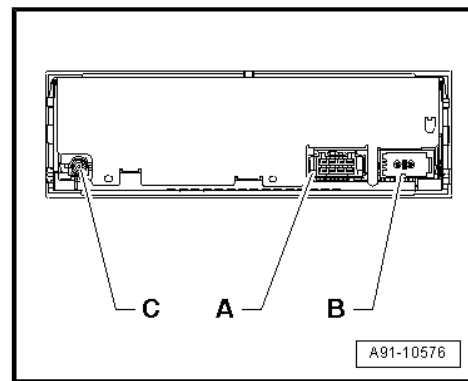
B - MOST bus

C - GPS connection from radio, telephone and navigation system aerial - R52-



Note

Contacts which are not listed are not used.

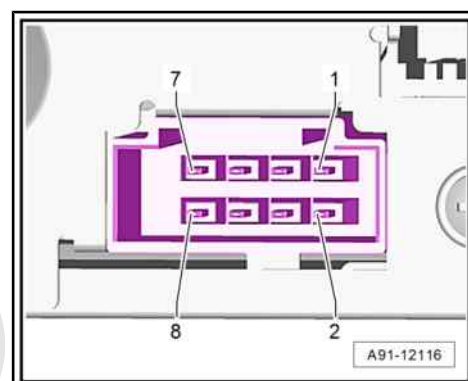


A - Multi-pin connector, 8-pin (T8n)

1 - Terminal 31

2 - Terminal 30

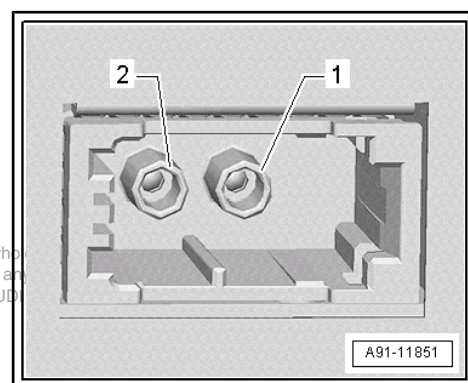
5 - Open circuit diagnostic lead



B - MOST bus

1 - Input

2 - Output

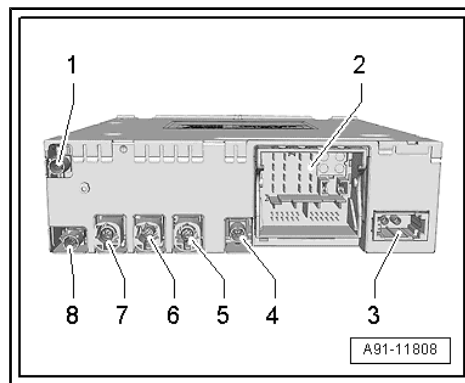


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7.3.3 Pin assignment for navigation system, MMI, from week 45/2008 onwards

Control unit 1 for information electronics - J794-

- 1 - Not used
- 2 - Connection block with four multi-pin connectors
- 3 - MOST bus
- 4 - FBAS input from TV tuner - R78-
- 5 - Multi-pin connector, 4-pin (T4al/T4am) to display unit for front information display and operating unit control unit - J685-
- 6 - Multi-pin connector, 4-pin (T4ap) to connection for external audio sources - R199- / internet access control unit - J666- (from model year 2012 onwards)
- 7 - Not used
- 8 - GPS connection from radio, telephone and navigation system aerial - R52- / roof aerial - R216-



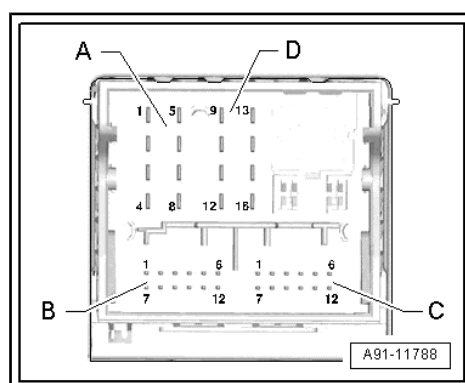
Note

Contacts which are not listed are not used.

2 - Connection block with four multi-pin connectors

A - Multi-pin connector, 8-pin (T8ah)

- 1 - NF mute (low frequency) from pre-fitted components for mobile phone installation
- 2 - Voltage supply to multimedia system operating unit - E380-
- 3 - Wake-up to multimedia system operating unit - E380-
- 4 - Not used
- 5 - Not used
- 6 - Res MU to multimedia system operating unit - E380-
- 7 - Open circuit diagnostic lead



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B - Multi-pin connector, 12-pin, blue (T12x)

Left-hand drive vehicle

2 - Microphone input (+) from microphone unit in front roof module
- R164- (front right microphone - R141-)

3 - Microphone input (-) from microphone unit in front roof module
- R164- (front right microphone - R141-)

5 - FBAS wire (-) from reversing camera system control unit -
J772-

11 - FBAS wire (+) from reversing camera system control unit -
J772-

Right-hand drive vehicle

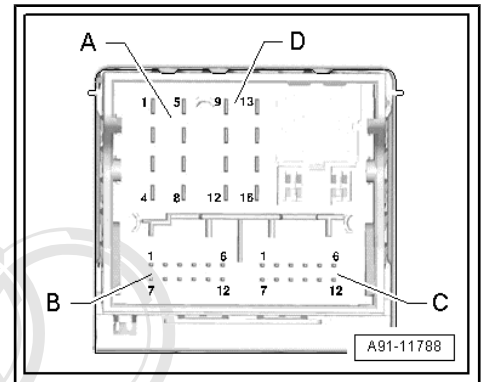
2 - Microphone input (+) from microphone unit in front roof module
- R164- (front left microphone - R140-)

3 - Microphone input (-) from microphone unit in front roof module
- R164- (front left microphone - R140-)

5 - FBAS wire (-) from reversing camera system control unit -
J772-

11 - FBAS wire (+) from reversing camera system control unit -
J772-

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C - Multi-pin connector, 12-pin (T12y)

All pins are connected to the connection for external audio sources - R199- .

1 - NF in, earth (low frequency)

2 - NF in, right-side (low frequency)

3 - USB (+5 V) - not with internet access control unit - J666-
(from model year 2012 onwards)

4 - USB (earth)

5 - Not used

6 - Detect - not with internet access control unit - J666- (from
model year 2012 onwards)

7 - NF in, left-side (low frequency)

8 - NF in, screen earth (low frequency)

9 - FBAS wire (+)

10 - FBAS wire (-)

11 - iPod data

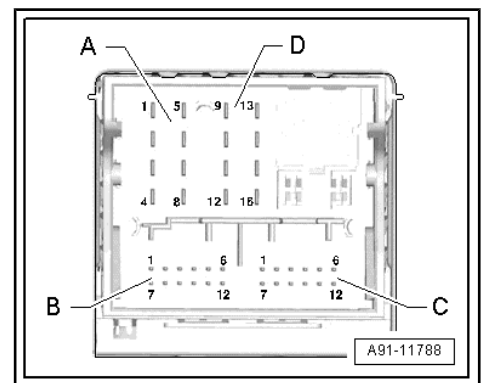
12 - iPod data

The following pins are also connected to the internet access control unit - J666- (from model year 2012 onwards).

3 - USB (+5 V)

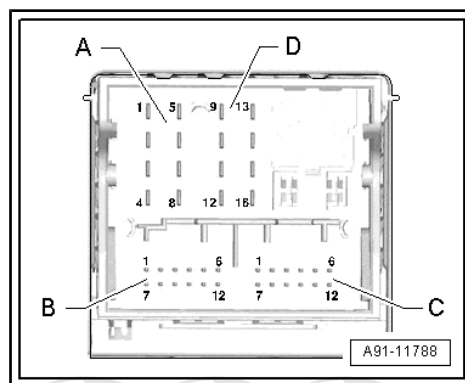
4 - USB (earth)

6 - Detect



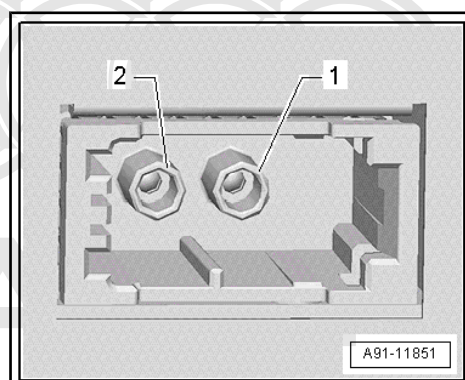
D - Multi-pin connector, 8-pin, black (T16q)

- 10 - Data from multimedia system operating unit - E380-
- 11 - Data to multimedia system operating unit - E380-
- 12 - Terminal 31
- 14 - Res BT from multimedia system operating unit - E380-
- 15 - Terminal 30
- 16 - Earth to multimedia system operating unit - E380-



3 - MOST bus

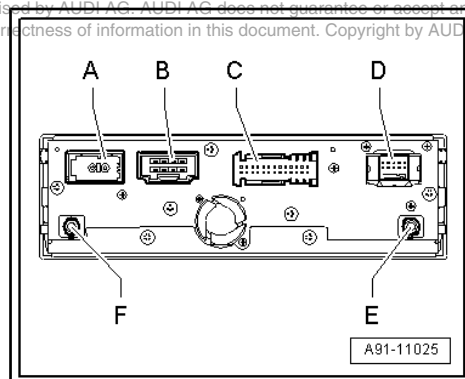
- 1 - Input
- 2 - Output



7.3.4 Pin assignment for navigation system, MMI, Japan, up to week 44/2008

Navigation system with CD drive control unit - J401-

- A - MOST bus
- B - Multi-pin connector, 8-pin
- C - Multi-pin connector, 26-pin (T26) to chip card reader control unit - J676- / telephone transmitter and receiver unit - R36-
- D - Multi-pin connector, 10-pin (LVDS wire) to control unit for front display and information control panel - J523-
- E - GPS connection from radio, telephone and navigation system aerial - R52-
- F - VICS connection from aerial amplifier 2 - R111-

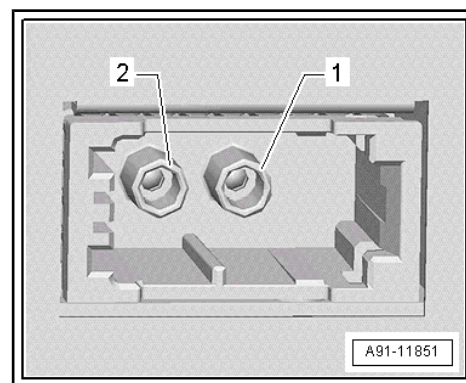


Note

Contacts which are not listed are not used.

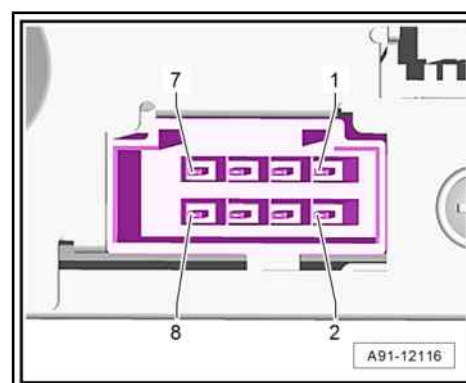
A - MOST bus

- 1 - Input
- 2 - Output



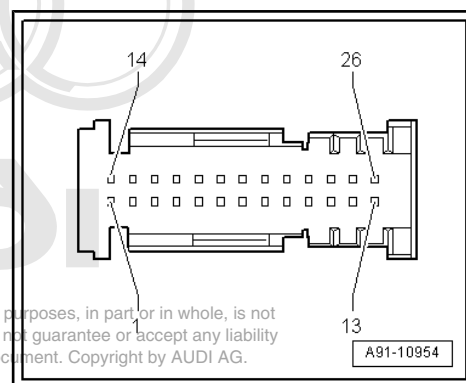
B - Multi-pin connector, 8-pin

- 1 - Terminal 31
- 2 - Terminal 30
- 3 - Not used
- 4 - Speed signal from ABS control unit with EDL - J104-
- 5 - Open circuit diagnostic lead
- 6 - Not used
- 7 - Microphone input (-) from microphone unit in front roof module - R164- (telephone microphone - R38-) (up to model year 2007)
- 8 - Microphone input (+) from microphone unit in front roof module - R164- (telephone microphone - R38-) (up to model year 2007)



C - Multi-pin connector, 26-pin (T26)

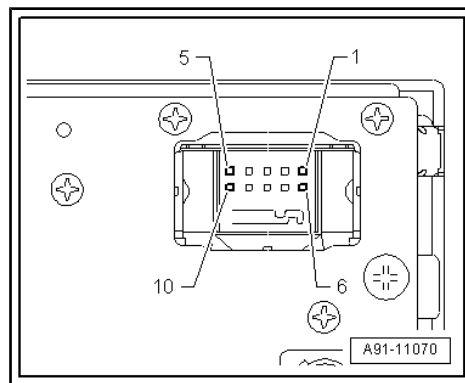
- 5 - Data to telephone transmitter and receiver unit - R36-
- 6 - Terminal 31 (screen earth) to telephone transmitter and receiver unit - R36-
- 7 - Switch-on signal from telephone transmitter and receiver unit - R36-
- 8 - Data ETC to chip card reader control unit - J676-
- 10 - Data VICS from chip card reader control unit - J676-
- 11 - Data VICS to chip card reader control unit - J676-
- 13 - Switch-on signal from chip card reader control unit - J676- / traffic data aerial - R173-
- 18 - Data from telephone transmitter and receiver unit - R36-
- 20 - Terminal 31 (screen earth) to chip card reader control unit - J676-
- 21 - Data ETC from chip card reader control unit - J676-
- 24 - Terminal 31 (screen earth) to chip card reader control unit - J676-



Multi-pin connector, 10-pin

All pins are connected to the control unit for front display and information control panel - J523- .

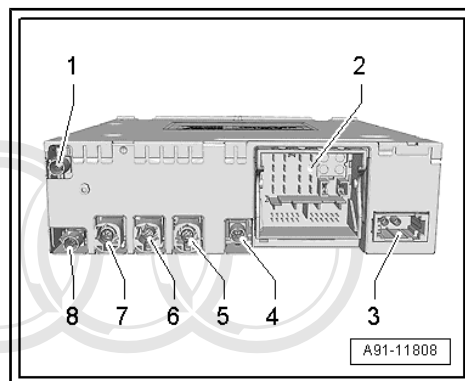
- 1 - Tx2 (+)
- 2 - Tx2 (-)
- 3 - LV-Diag
- 4 - Tx1 (+)
- 5 - Tx1 (-)
- 6 - CLK (+)
- 7 - CLK (-)
- 8 - Earth
- 9 - Tx0 (+)
- 10 - Tx0 (-)



7.3.5 Pin assignment for navigation system, MMI, Japan, from week 45/2008 onwards

Control unit 1 for information electronics - J794-

- 1 - Not used
- 2 - Connection block with four multi-pin connectors
- 3 - MOST bus
- 4 - FBAS input from TV tuner - R78-
- 5 - Multi-pin connector, 4-pin (T4am) to display unit for front information display and operating unit control unit - J685-
- 6 - Multi-pin connector, 4-pin (T4ap) to connection for external audio sources - R199- / internet access control unit - J666- (from model year 2012 onwards)
- 7 - Not used
- 8 - GPS connection from radio, telephone and navigation system aerial - R52- / roof aerial - R216-



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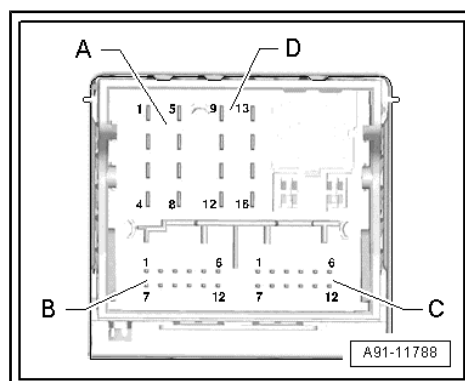
Note

Contacts which are not listed are not used.

2 - Connection block with four multi-pin connectors

A - Multi-pin connector, 8-pin (T8ah)

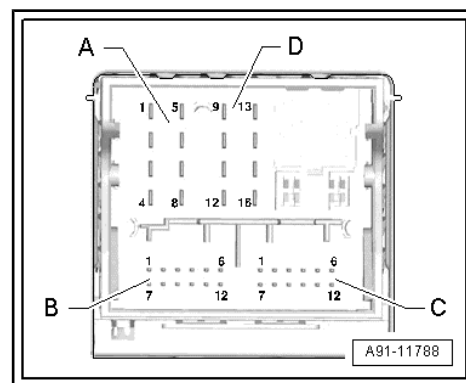
- 1 - Not used
- 2 - Voltage supply to multimedia system operating unit - E380-
- 3 - Wake-up to multimedia system operating unit - E380-
- 4 - Not used
- 5 - Switch-on signal from chip card reader control unit - J676-
- 6 - Res MU to multimedia system operating unit - E380-
- 7 - Open circuit diagnostic lead



B - Multi-pin connector, 12-pin (T12x)

Left-hand drive vehicle

- 1 - Not used
- 2 - Microphone input (+) from microphone unit in front roof module - R164- (front right microphone - R141-)
- 3 - Microphone input (-) from microphone unit in front roof module - R164- (front right microphone - R141-)
- 4 - Data VICS to chip card reader control unit - J676-
- 5 - FBAS wire (-) from reversing camera system control unit - J772-
- 6 - Data ETC to chip card reader control unit - J676-
- 7 - Not used
- 8 - Microphone input (+) from microphone unit in front roof module - R164- (front left microphone - R140-)
- 9 - Microphone input (-) from microphone unit in front roof module - R164- (front left microphone - R140-)
- 10 - Data VICS from chip card reader control unit - J676-
- 11 - FBAS wire (+) from reversing camera system control unit - J772-
- 12 - Data ETC from chip card reader control unit - J676-



Right-hand drive vehicle

- 1 - Not used
- 2 - Microphone input (+) from microphone unit in front roof module - R164- (front left microphone - R140-)
- 3 - Microphone input (-) from microphone unit in front roof module - R164- (front left microphone - R140-)
- 4 - Data VICS to chip card reader control unit - J676-
- 5 - FBAS wire (-) from reversing camera system control unit - J772-
- 6 - Data ETC to chip card reader control unit - J676-
- 7 - Not used
- 8 - Microphone input (+) from microphone unit in front roof module - R164- (front right microphone - R141-)
- 9 - Microphone input (-) from microphone unit in front roof module - R164- (front right microphone - R141-)
- 10 - Data VICS from chip card reader control unit - J676-
- 11 - FBAS wire (+) from reversing camera system control unit - J772-
- 12 - Data ETC from chip card reader control unit - J676-

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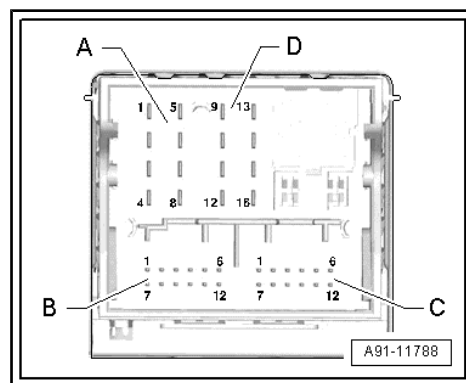
C - Multi-pin connector, 12-pin (T12y)

All pins are connected to the connection for external audio sources - R199- .

- 1 - NF in, earth (low frequency)
- 2 - NF in, right-side (low frequency)
- 3 - USB (+5 V) - not with internet access control unit - J666- (from model year 2012 onwards)
- 4 - USB (earth)
- 5 - Not used
- 6 - Detect - not with internet access control unit - J666- (from model year 2012 onwards)
- 7 - NF in, left-side (low frequency)
- 8 - NF in, screen earth (low frequency)
- 9 - FBAS wire (+)
- 10 - FBAS wire (-)
- 11 - iPod data
- 12 - iPod data

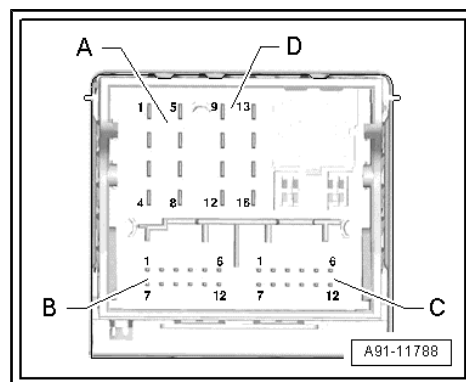
The following pins are also connected to the internet access control unit - J666- (from model year 2012 onwards).

- 3 - USB (+5 V)
- 4 - USB (earth)
- 6 - Detect



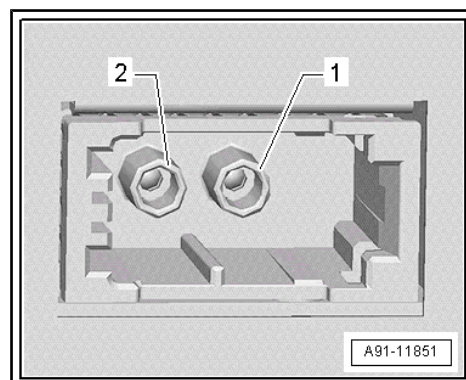
D - Multi-pin connector, 8-pin (T16q)

- 10 - Data from multimedia system operating unit - E380-
- 11 - Data to multimedia system operating unit - E380-
- 12 - Terminal 31
- 14 - Res BT from multimedia system operating unit - E380-
- 15 - Terminal 30
- 16 - Earth to multimedia system operating unit - E380-



3 - MOST bus

- 1 - Input
- 2 - Output



7.3.6 Pin assignment for chip card reader control unit - J676- , Japan, up to week 44/2008



Note

Contacts which are not listed are not used.

Multi-pin connector, 32-pin

1-16 - To traffic data aerial - R173-

17 - Data VICS to navigation system with CD drive control unit - J401-

18 - Terminal 31 (screen earth) to navigation system with CD drive control unit - J401-

19 - Data VICS from navigation system with CD drive control unit - J401-

21 - Switch-on signal to navigation system with CD drive control unit - J401-

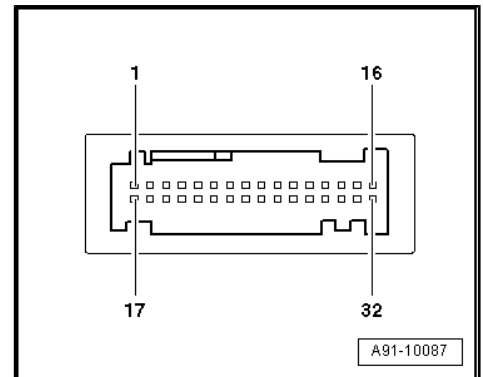
22 - Terminal 30

23 - Data ETC to navigation system with CD drive control unit - J401-

24 - Terminal 31 (screen earth) to navigation system with CD drive control unit - J401-

25 - Data ETC from navigation system with CD drive control unit - J401-

28 - Terminal 31



7.3.7 Pin assignment for chip card reader control unit - J676- , Japan, from week 45/2008 onwards

Chip card reader control unit - J676-



Note

Contacts which are not listed are not used.

Multi-pin connector, 32-pin

1-16 - To traffic data aerial - R173-

17 - Data VICS to control unit 1 for information electronics - J794-

19 - Data VICS from control unit 1 for information electronics - J794-

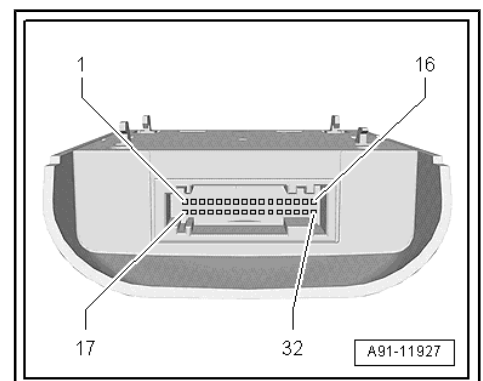
21 - Switch-on signal to control unit 1 for information electronics - J794-

22 - Terminal 30

23 - Data ETC to control unit 1 for information electronics - J794-

25 - Data ETC from control unit 1 for information electronics - J794-

28 - Terminal 31



7.4 Removing and installing control unit for navigation system

⇒ "7.4.1 Removing and installing navigation system with CD drive control unit J401 , basic plus", page 206

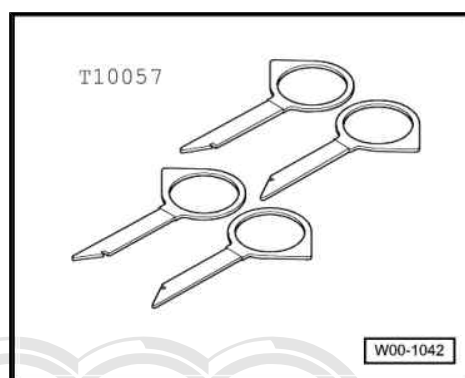
⇒ "7.4.2 Removing and installing navigation system with CD drive control unit J401 , MMI, up to week 44/2008", page 207

7.4.1 Removing and installing navigation system with CD drive control unit - J401- , basic plus

The navigation system with CD drive control unit - J401- is located in the glove box.

Special tools and workshop equipment required

- ◆ Radio release tool - T10057-



- ◆ Protective cap for cable connector - VAS 6223/9-



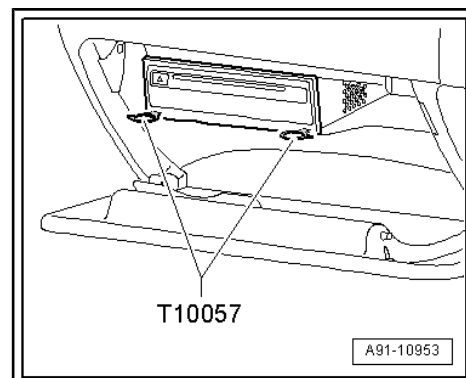
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- Switch off all electrical equipment.
- Remove ignition key.
- When renewing control unit, select "Replacement" function for appropriate control unit in "Guided Fault Finding".

To do so, use ⇒ **Vehicle diagnostic tester.**

Removing

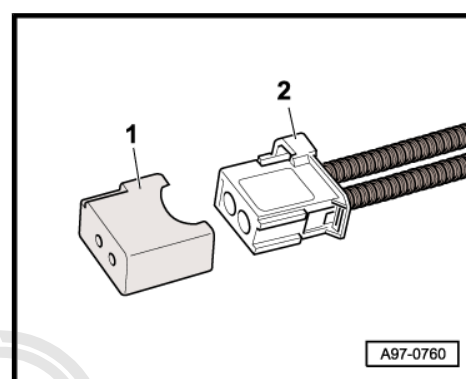
- Insert two radio release tools - T10057- into release slots on navigation system with CD drive control unit - J401- until they engage. Pointed ends of tool grips must face outwards.
- Pull navigation system with CD drive control unit - J401- out of mounting frame.
- Release and unplug all connectors at navigation system with CD drive control unit - J401- .



- Fit protective cap for cable connector - VAS 6223/9- -1- onto MOST bus connector -2-.
- Press release tabs on navigation system with CD drive control unit - J401- and remove radio release tool - T10057- .

Installing

- Plug in connectors.
- Insert navigation system with CD drive control unit - J401- into mounting frame until it engages.



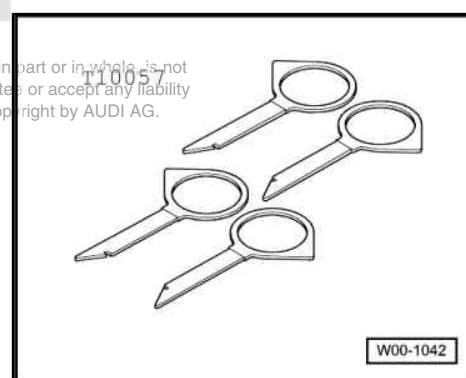
7.4.2 Removing and installing navigation system with CD drive control unit - J401- , MMI, up to week 44/2008

Navigation system with CD drive control unit - J401- is located behind luggage compartment side trim (left-side) in infotainment rack.

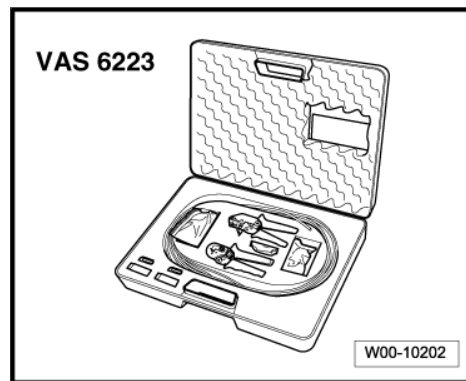
Special tools and workshop equipment required

- ◆ Radio release tool - T10057-

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◆ Protective cap for cable connector - VAS 6223/9-

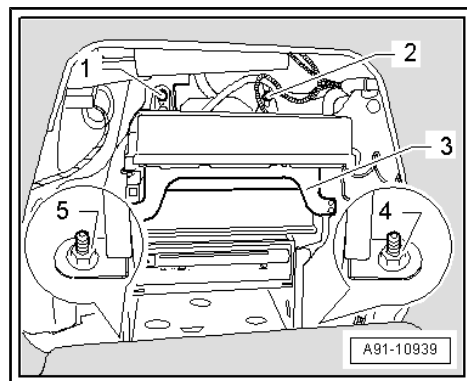


- Switch off all electrical equipment.
- Remove ignition key.
- When renewing control unit, select “Replacement” function for appropriate control unit in “Guided Fault Finding”.

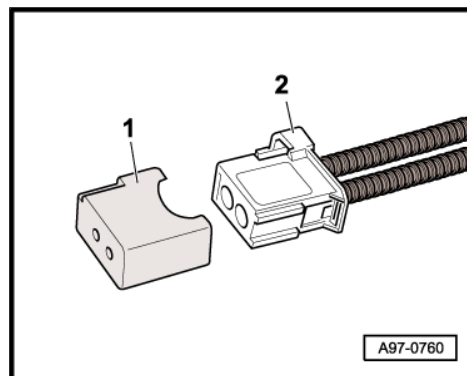
To do so, use ⇒ **Vehicle diagnostic tester.**

Removing

- Open left-side luggage compartment storage area.
- Unscrew nuts -1-, -2-, -4- and -5- on infotainment rack -3-.
- Pivot rack into luggage compartment until connectors at navigation system with CD drive control unit - J401- are accessible.
- Release and unplug connector at MOST bus.



- Fit protective cap for cable connector - VAS 6223/9- -1- onto MOST bus connector -2-.
- Release and unplug remaining connectors at navigation system with CD drive control unit - J401- .

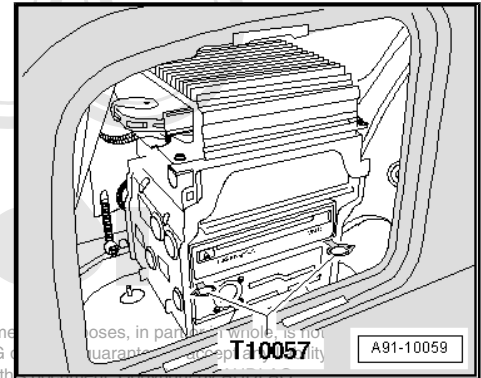


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- Insert two radio release tools - T10057- into release slots on navigation system with CD drive control unit - J401- until they engage. Pointed ends of tool grips must face outwards.
- Pull the navigation system with CD drive control unit - J401- out of the rack.
- Press release tabs on navigation system with CD drive control unit - J401- and remove radio release tool - T10057-.

Installing

- Insert navigation system with CD drive control unit - J401- into mounting frame until it engages.
- Install in reverse sequence of removal.



Tightening torques

- ◆ ⇒ [“7.2.1 Overview of fitting locations - navigation system, up to week 44/2008”, page 191](#)
- ◆ ⇒ [“7.2.3 Overview of fitting locations - navigation system, Japan, up to week 44/2008”, page 193](#)

7.5 Removing and installing chip card reader control unit

The chip card reader control unit - J676- is inserted at the glove box lining.

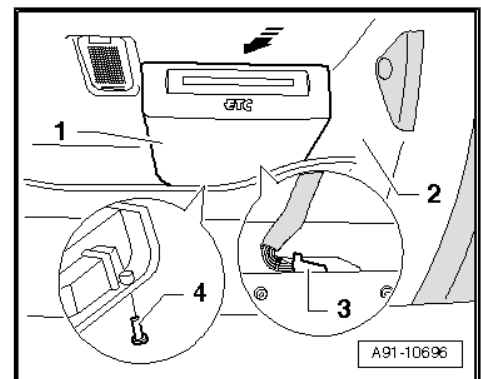
- Switch off all electrical equipment.
- Remove ignition key.

Removing

- Open glove box.
- Remove chip card.
- Slide chip card reader control unit - J676- -1- towards rear in direction of arrow until it can be detached from lining -2-.
- Pull out retaining clip -4-.
- Release and unplug connector -3- at chip card reader control unit - J676- -1-.

Installing

- Install in reverse sequence of removal.
- Make sure all retaining tabs of chip card reader control unit - J676- engage in lining.



8 TV system

⇒ ["8.1 Layout - TV system", page 210](#)

⇒ ["8.2 Overview of fitting locations - TV system", page 216](#)

⇒ ["8.3 Pin assignment", page 220](#)

⇒ ["8.4 Removing and installing TV tuner", page 226](#)

⇒ ["8.5 Removing and installing TV card reader", page 231](#)

8.1 Layout - TV system

⇒ ["8.1.1 Layout - TV system", page 210](#)

⇒ ["8.1.2 Layout - TV system \(Japan\)", page 213](#)

8.1.1 Layout - TV system

The TV system is part of the MMI infotainment system.

The TV tuner - R78- is connected to the other components of the infotainment system via the MOST bus. The multimedia system operating unit - E380- is used for operation.

A so-called "hybrid" tuner is fitted for receiving analogue and digital TV channels.

Up to week 44/2008



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1 - Display unit for front information display and operating unit control unit - J685- in dash panel (centre)

2 - Control unit for front display and information control panel - J523- behind dash panel

3 - Multimedia system operating unit - E380- in centre console

4 - Data bus diagnostic interface - J533- behind glove box (left-side)

5 - CD changer - R41- in dash panel

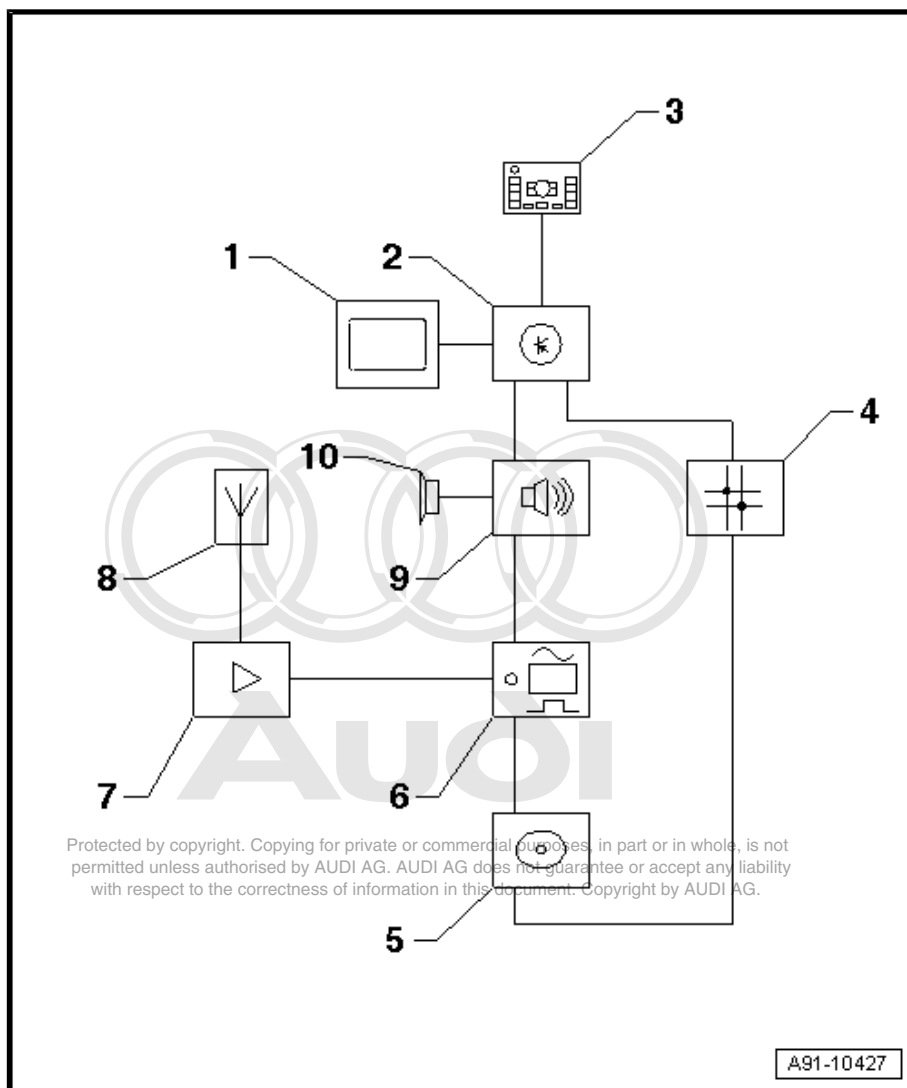
6 - TV tuner - R78- behind luggage compartment side trim (left-side)

7 - Aerial amplifier

8 - Window aerials

9 - Digital sound package control unit - J525- behind luggage compartment side trim (left-side)

10 - Sound systems



From week 45/2008 onwards, Coupé

1 - Display unit for front information display and operating unit control unit - J685- in dash panel (centre)

2 - Control unit 1 for information electronics - J794- in dash panel

3 - Multimedia system operating unit - E380- in centre console

4 - Data bus diagnostic interface - J533- behind glove box (left-side)

5 - CD changer - R41- in glove box

6 - TV tuner - R78- behind luggage compartment side trim (left-side)

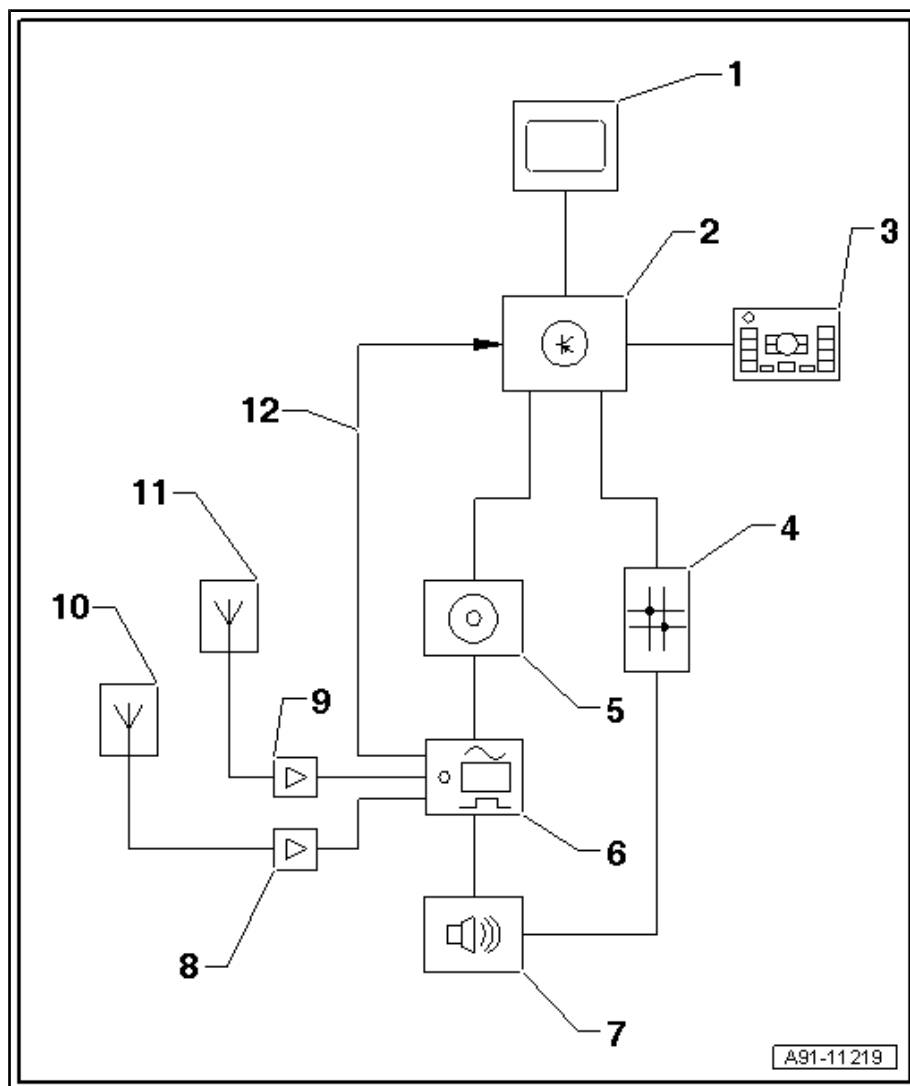
7 - Digital sound package control unit - J525- behind luggage compartment side trim (left-side)

8 - Aerial amplifier 2 - R111-

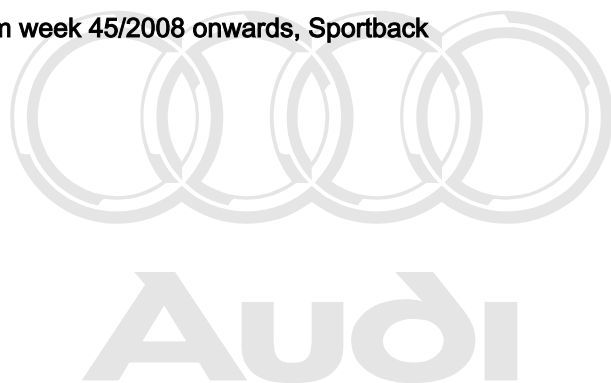
9 - Aerial amplifier 3 - R112-

10 - TV aerial 3 - R57-

11 - TV aerial 1 - R55- / TV aerial 2 - R56-



From week 45/2008 onwards, Sportback



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1 - Display unit for front information display and operating unit control unit - J685- in dash panel (centre)

2 - Control unit 1 for information electronics - J794- in dash panel

3 - Multimedia system operating unit - E380- in centre console

4 - Data bus diagnostic interface - J533- behind glove box (left-side)

5 - CD changer - R41- in glove box

6 - TV tuner - R78- behind luggage compartment side trim (left-side)

7 - Digital sound package control unit - J525- behind luggage compartment side trim (left-side)

8 - Aerial amplifier - R24- behind rear lid trim (top left)

9 - Aerial amplifier 3 - R112- behind rear lid trim (top right)

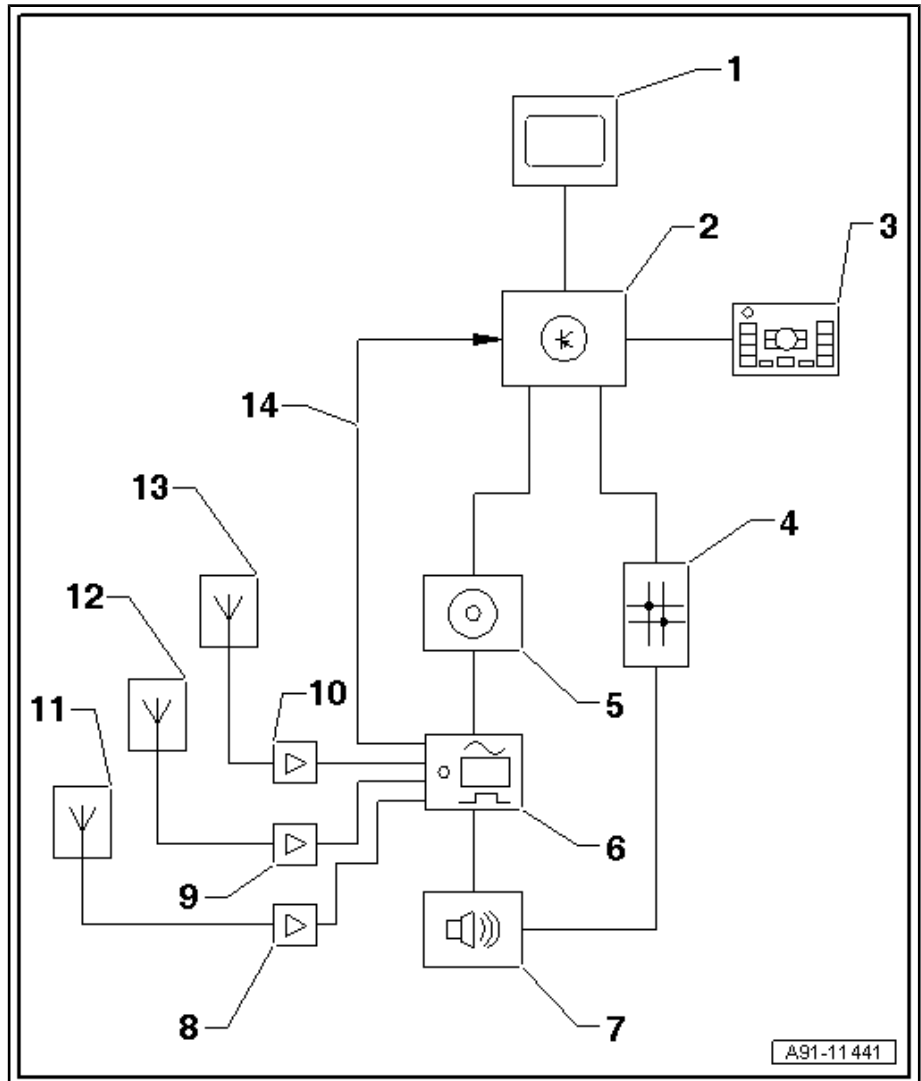
10 - Aerial amplifier 4 - R113- behind rear lid trim (bottom right)

11 - TV aerial 1 - R55-

12 - TV aerial 2 - R56-

13 - TV aerial 3 - R57-

14 - FBAS wire to control unit 1 for information electronics - J794-



A DVD drive is fitted in the control unit 1 for information electronics - J794- ; this can be used to play DVDs.

Fault finding is performed via the "Guided Fault Finding" ⇒ Vehicle diagnostic tester.

8.1.2 Layout - TV system (Japan)

The TV system is part of the MMI infotainment system.

The TV tuner - R78- is connected to the other components of the infotainment system via the MOST bus. The multimedia system operating unit - E380- is used for operation.

A so-called "hybrid" tuner is fitted for receiving analogue and digital TV channels.

A TV card reader - R204- for receiving pay-TV channels is connected to the TV tuner - R78-. From model year 2012 onwards, the TV card reader - R204- is no longer included in the TV tuner - R78- (DTV).

Up to week 44/2008

1 - Display unit for front information display and operating unit control unit - J685- in dash panel (centre)

2 - Control unit for front display and information control panel - J523- behind dash panel

3 - Multimedia system operating unit - E380- in centre console

4 - Data bus diagnostic interface - J533- behind glove box (left-side)

5 - CD changer - R41- in dash panel

6 - TV card reader - R204- behind luggage compartment side trim (left-side)

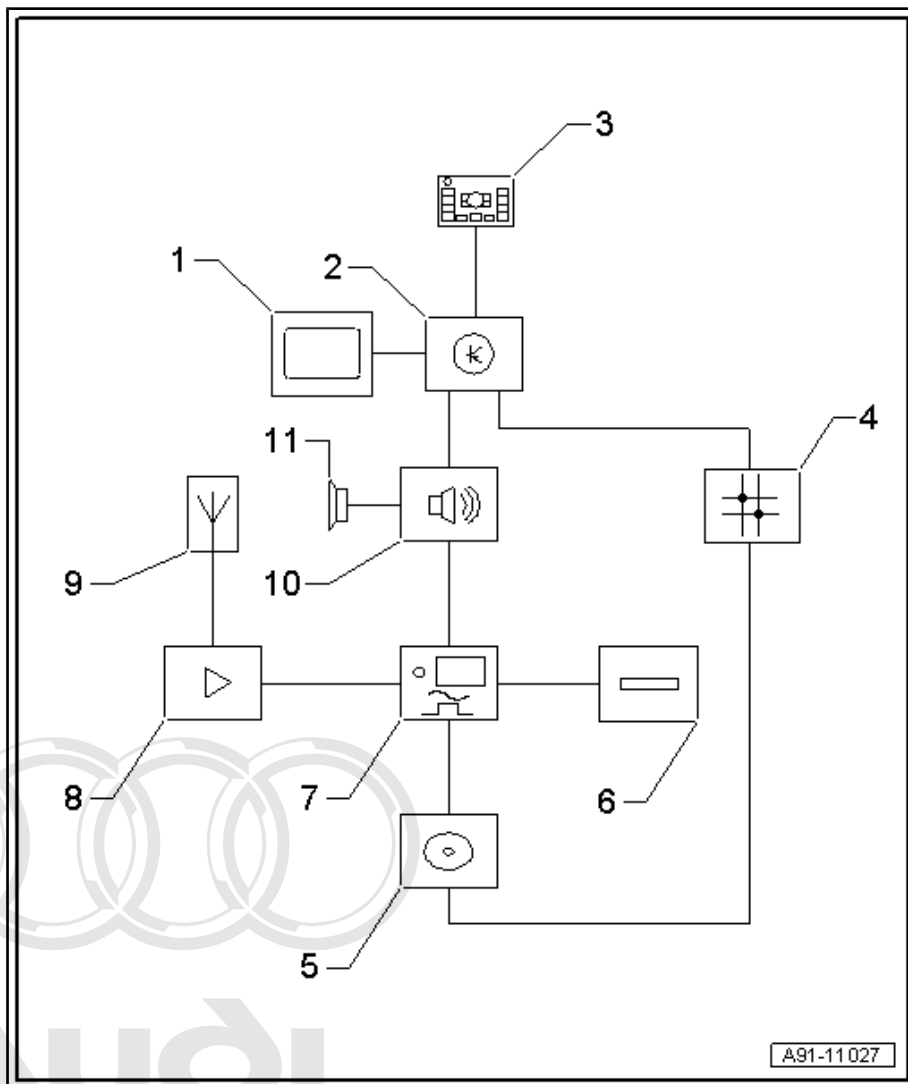
7 - TV tuner - R78- behind luggage compartment side trim (left-side)

8 - Aerial amplifier

9 - Window aeralis

10 - Digital sound package control unit - J525- behind luggage compartment side trim (left-side)

11 - Sound systems



From week 45/2008 onwards

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1 - Display unit for front information display and operating unit control unit - J685- in dash panel (centre)

2 - Control unit 1 for information electronics - J794- in dash panel

3 - Multimedia system operating unit - E380- in centre console

4 - Data bus diagnostic interface - J533- behind glove box (left-side)

5 - Digital sound package control unit - J525- behind luggage compartment side trim (left-side)

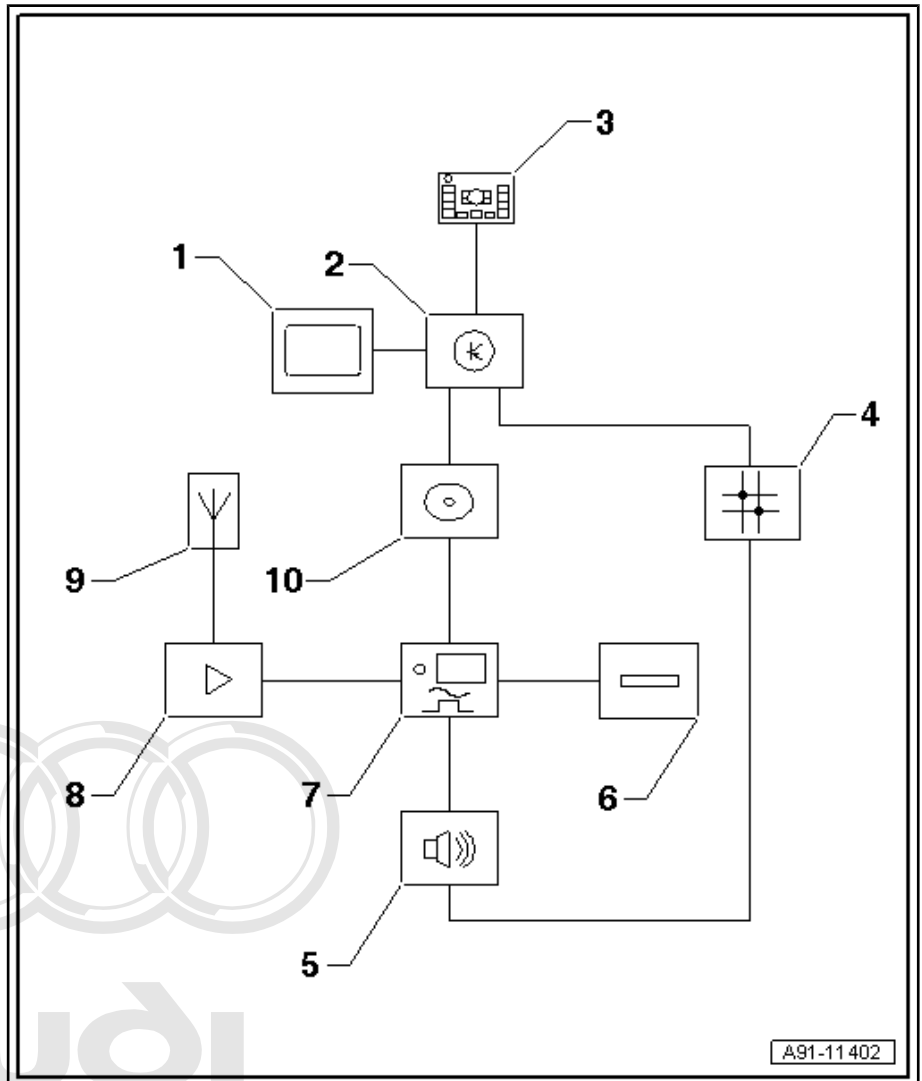
6 - TV card reader - R204- behind luggage compartment side trim (left-side)

7 - TV tuner - R78- behind luggage compartment side trim (left-side)

8 - Aerial amplifier

9 - Window aerials

10 - CD changer - R41- in glove box



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From week 45/2008 onwards a DVD drive is fitted in the control unit 1 for information electronics - J794- which can be used to play DVDs.

Fault finding is performed via the "Guided Fault Finding" ⇒ Vehicle diagnostic tester.

8.2 Overview of fitting locations - TV system

⇒ ["8.2.1 Overview of fitting locations - TV system, up to week 44/2008", page 216](#)

⇒ ["8.2.2 Overview of fitting locations - TV system, from week 45/2008 onwards", page 217](#)

⇒ ["8.2.3 Overview of fitting locations - TV system, Japan, up to week 44/2008", page 218](#)

⇒ ["8.2.4 Overview of fitting locations - TV system, Japan, from week 45/2008 onwards", page 219](#)

8.2.1 Overview of fitting locations - TV system, up to week 44/2008

1 - Nut

- ☐ 5 Nm

2 - Nut

- ☐ 5 Nm

3 - Nut

- ☐ 5 Nm

4 - Nut

- ☐ 5 Nm

5 - Infotainment rack

6 - Bolt

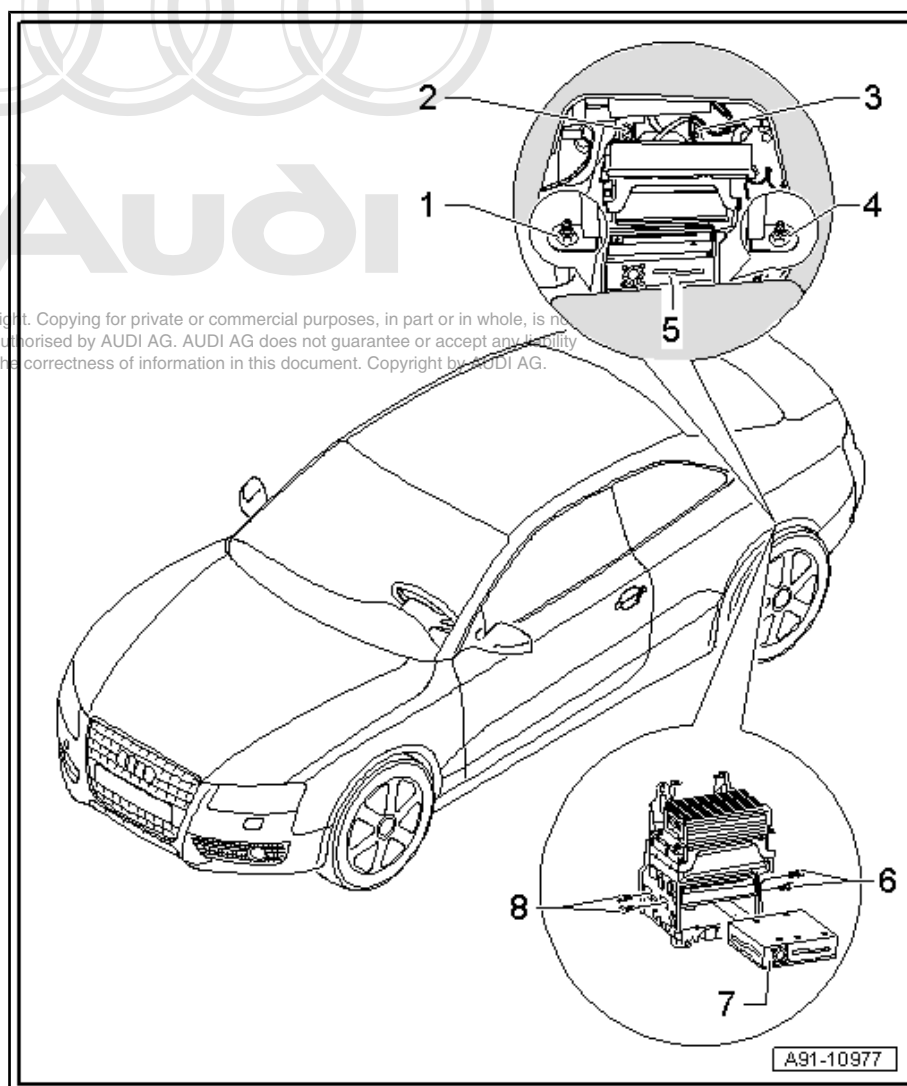
- ☐ 2 Nm

7 - TV tuner - R78-

- ☐ Pin assignment (hybrid)
⇒ [page 220](#)
- ☐ Removing and installing
(up to week 44/2008)
⇒ [page 226](#)

8 - Bolt

- ☐ 2 Nm



8.2.2 Overview of fitting locations - TV system, from week 45/2008 onwards

1 - Nut

- 3.5 Nm

2 - Bracket

3 - Bolt

- 3.5 Nm

4 - Bolt

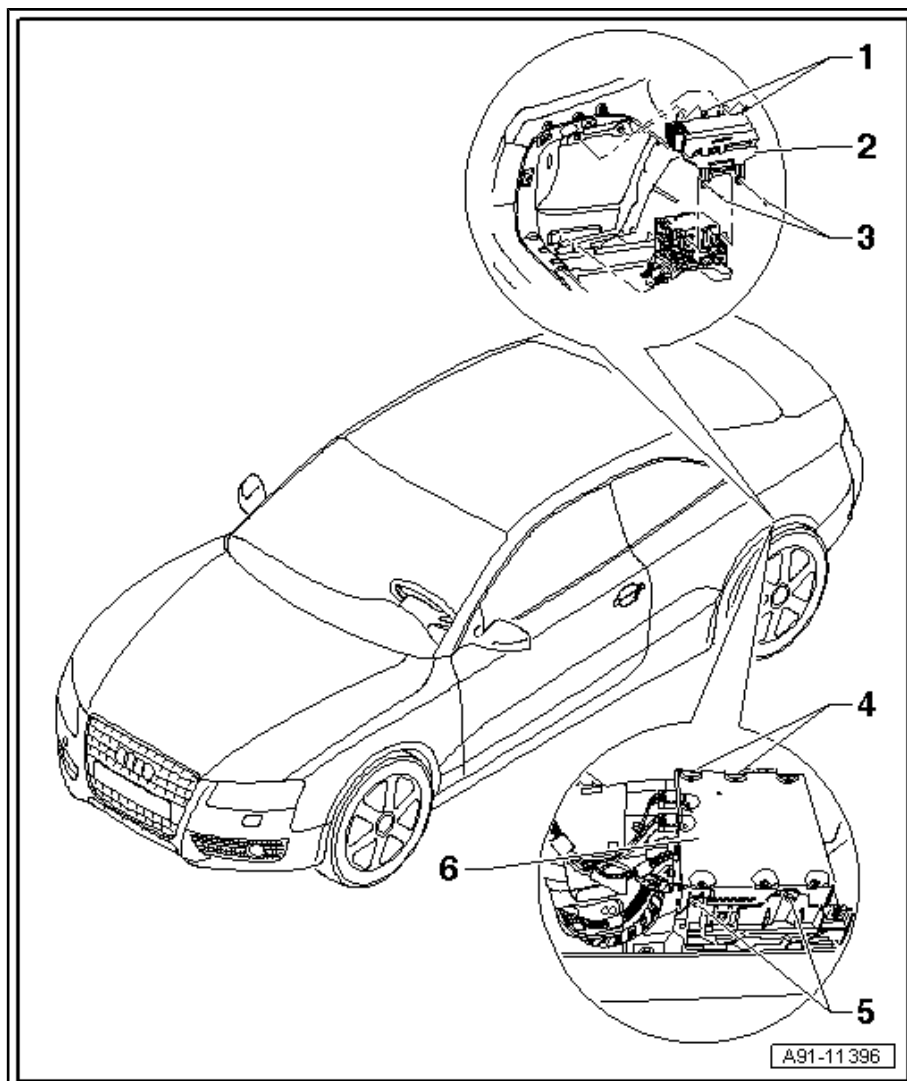
- 2 Nm

5 - Bolt

- 2 Nm

6 - TV tuner - R78-

- Pin assignment (hybrid)
⇒ [page 220](#)
- Pin assignment (DTV)
⇒ [page 222](#)
- Removing and installing
(from week 45/2008 onwards) ⇒ [page 227](#)
- Removing and installing
(from model year 2012 onwards) ⇒ [page 229](#)



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8.2.3 Overview of fitting locations - TV system, Japan, up to week 44/2008

1 - Nut

- ☐ 5 Nm

2 - Nut

- ☐ 5 Nm

3 - Nut

- ☐ 5 Nm

4 - Nut

- ☐ 5 Nm

5 - Infotainment rack

6 - Bolt

- ☐ 4.5 Nm

7 - TV card reader - R204-

- ☐ Removing and installing
(up to week 44/2008)
⇒ [page 231](#)

8 - Bolt

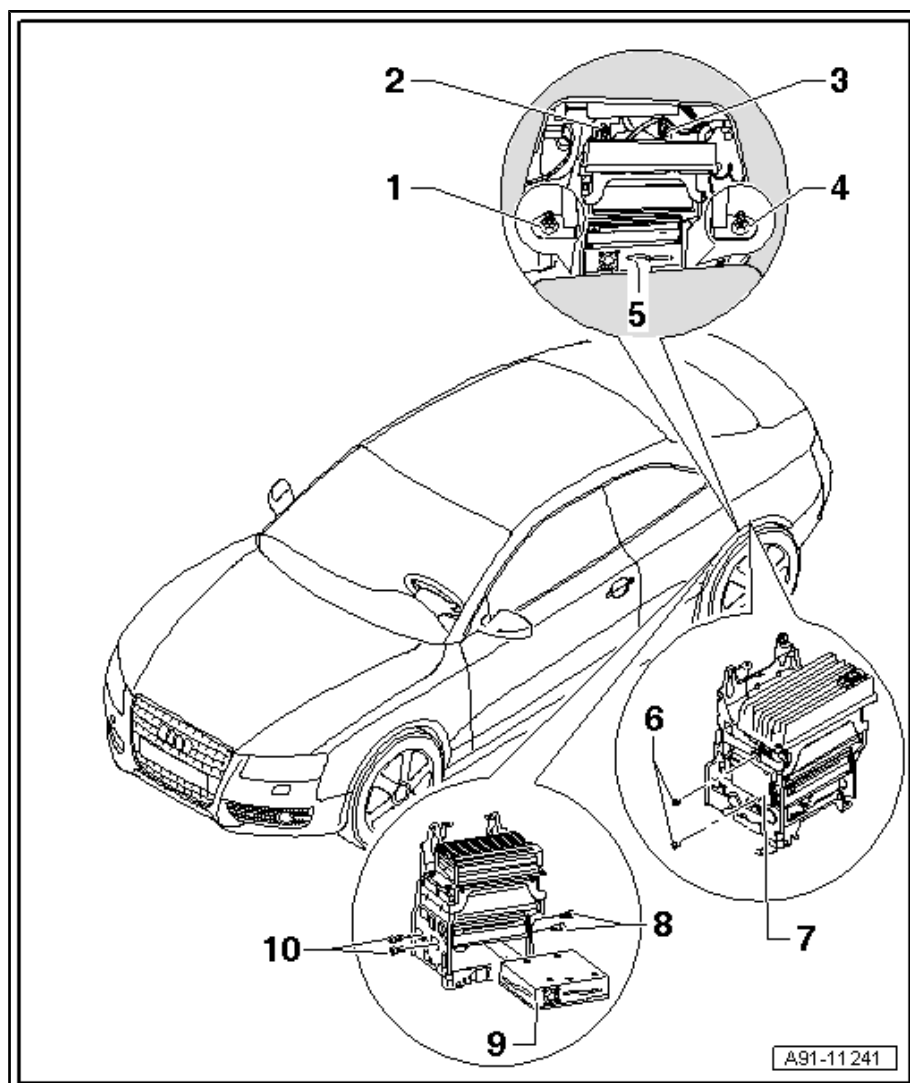
- ☐ 2 Nm

9 - TV tuner - R78-

- ☐ Pin assignment
⇒ [page 223](#)
- ☐ Removing and installing
(up to week 44/2008)
⇒ [page 226](#)

10 - Bolt

- ☐ 2 Nm



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8.2.4 Overview of fitting locations - TV system, Japan, from week 45/2008 onwards

1 - Nut

- ☐ 3.5 Nm

2 - Bracket

3 - Bolt

- ☐ 3.5 Nm

4 - Bracket

5 - TV card reader - R204-

- ☐ Removing and installing
(from week 45/2008 onwards) ⇒ [page 231](#)

6 - Bolt

- ☐ 2 Nm

7 - TV tuner - R78-

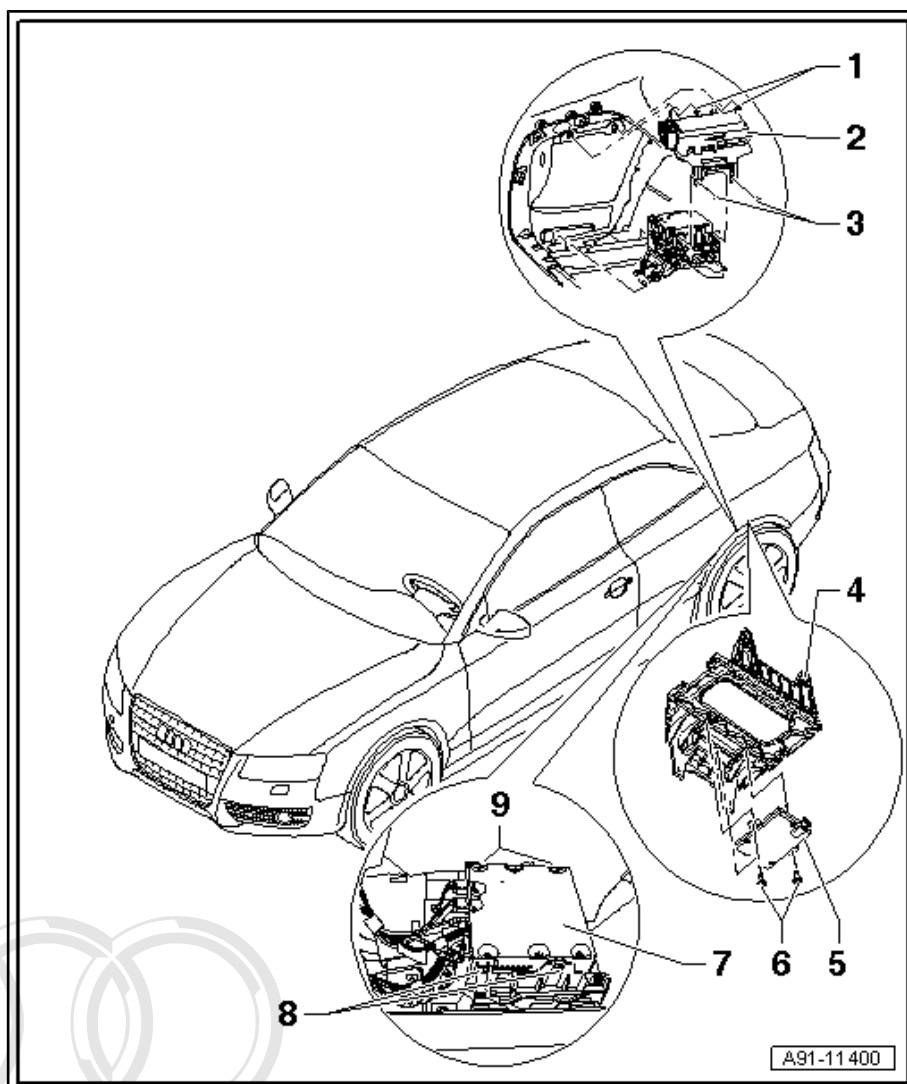
- ☐ Pin assignment (hybrid)
⇒ [page 223](#)
- ☐ Pin assignment (DTV)
⇒ [page 225](#)
- ☐ Removing and installing
(from week 45/2008 onwards) ⇒ [page 227](#)
- ☐ Removing and installing
(from model year 2012 onwards) ⇒ [page 229](#)

8 - Bolt

- ☐ 2 Nm

9 - Bolt

- ☐ 2 Nm



8.3 Pin assignment

⇒ [“8.3.1 Pin assignment for TV tuner R78 \(hybrid\)”, page 220](#)

⇒ [“8.3.2 Pin assignment for digital TV tuner, from model year 2012 onwards”, page 222](#)

⇒ [“8.3.3 Connectors for TV tuner R78 , Japan”, page 223](#)

⇒ [“8.3.4 Pin assignment for digital TV tuner, Japan, from model year 2012 onwards”, page 225](#)

8.3.1 Pin assignment for TV tuner - R78- (hybrid)

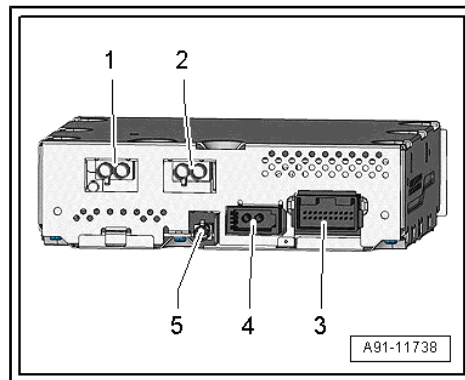
TV tuner - R78-

Coupé

- 1 - Connection TV1/TV2 from aerial amplifier 3 - R112-
- 2 - Connection TV3 from aerial amplifier 2 - R111-
- 3 - Multi-pin connector, 20-pin (T20c)
- 4 - MOST bus
- 5 - FBAS output to control unit for front display and information control panel - J523- / reversing camera system control unit - J772- / control unit 1 for information electronics - J794-

Sportback

- 1 - Connection TV1/TV2 from aerial amplifier - R24- / aerial amplifier 3 - R112-
- 2 - Connection TV3 from aerial amplifier 4 - R113-
- 3 - Multi-pin connector, 20-pin (T20c)
- 4 - MOST bus
- 5 - FBAS output to control unit for front display and information control panel - J523- / reversing camera system control unit - J772- / control unit 1 for information electronics - J794-



Note

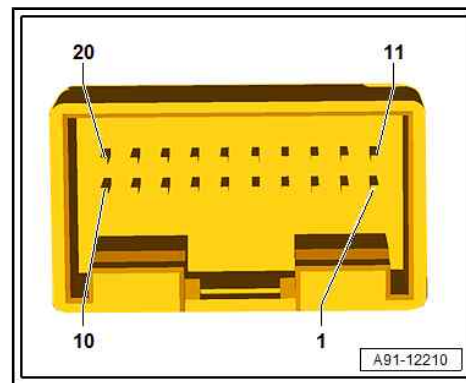
Contacts which are not listed are not used.



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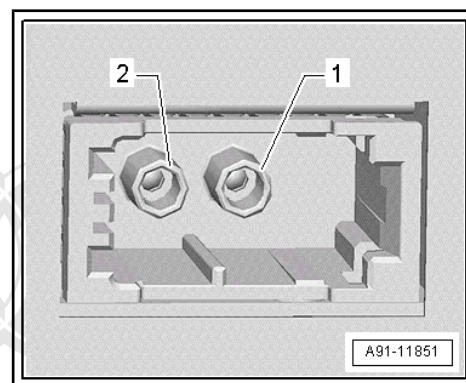
3 - Multi-pin connector, 20-pin (T20c)

- 1 - Terminal 30
- 2 - Terminal 31
- 3 - Open circuit diagnostic lead
- 4 - Screen earth
- 5 - Video out (Rear Seat Entertainment system)
- 6 - Screen earth
- 7 - Audio out L (Rear Seat Entertainment system)
- 8 - Audio out R (Rear Seat Entertainment system)
- 9 - Screen earth
- 10 - Audio in L
- 11 - Audio in R
- 12 - Video in
- 13 - Screen earth
- 14 - Screen earth
- 15 - Screen earth
- 16 - Audio in L
- 17 - Audio in R
- 18 - Video in
- 19 - Screen earth
- 20 - I/D PIN



4 - MOST bus

- 1 - Input
- 2 - Output



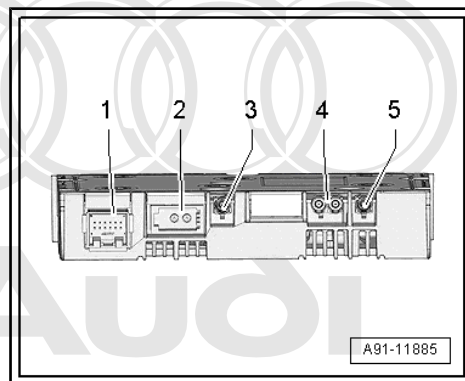
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8.3.2 Pin assignment for digital TV tuner, from model year 2012 onwards

TV tuner - R78-

Coupé

- 1 - Multi-pin connector, 12-pin
- 2 - MOST bus
- 3 - FBAS output to control unit 1 for information electronics - J794-
- 4 - Connection TV2/TV3 from aerial amplifier 3 - R112- / aerial amplifier 2 - R111-
- 5 - Connection TV1 from aerial amplifier 3 - R112-



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Sportback

- 1 - Multi-pin connector, 12-pin
- 2 - MOST bus
- 3 - FBAS output to control unit 1 for information electronics - J794-
- 4 - Connection TV2/TV3 from aerial amplifier 3 - R112- / aerial amplifier 4 - R113-
- 5 - Connection TV1 from aerial amplifier - R24-

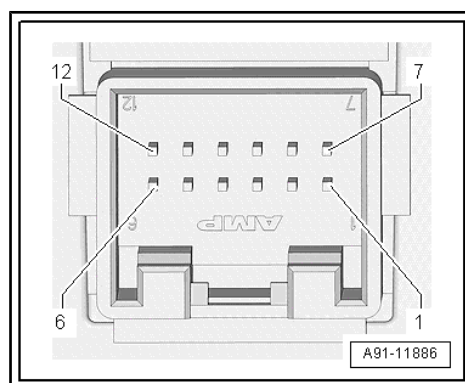


Note

Contacts which are not listed are not used.

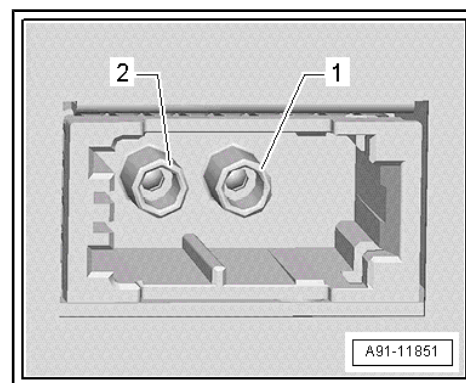
1 - Multi-pin connector, 12-pin

- 1 - Terminal 30
- 2 - Terminal 31
- 3 - Open circuit diagnostic lead
- 4 - Screen earth
- 5 - Video out (Rear Seat Entertainment system)
- 6 - Screen earth
- 7 - Audio out L (Rear Seat Entertainment system)
- 8 - Audio out R (Rear Seat Entertainment system)
- 9 - Screen earth
- 10 - Audio in L
- 11 - Audio in R
- 12 - Video in



2 - MOST bus

- 1 - Input
- 2 - Output

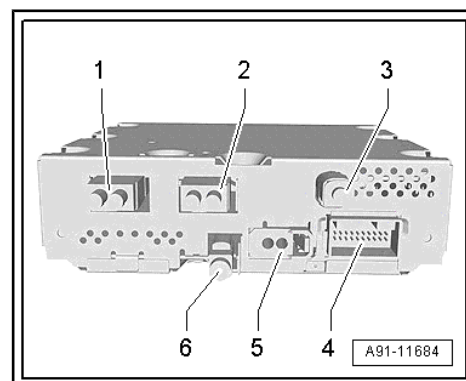


8.3.3 Connectors for TV tuner - R78- , Japan

TV tuner - R78-

Coupé

- 1 - Connection TV1/TV2 from aerial amplifier 3 - R112-
- 2 - Connection TV3 from aerial amplifier 2 - R111-
- 3 - Connection TV card reader - R204-
- 4 - Multi-pin connector, 20-pin (T20c)
- 5 - MOST bus
- 6 - FBAS output to control unit for front display and information control panel - J523- / reversing camera system control unit - J772- / control unit 1 for information electronics - J794-



Sportback

- 1 - Connection TV1/TV2 from aerial amplifier - R24- / aerial amplifier 3 - R112-
- 2 - Connection TV3 from aerial amplifier 4 - R113-
- 3 - Connection TV card reader - R204-
- 4 - Multi-pin connector, 20-pin (T20c)
- 5 - MOST bus
- 6 - FBAS output to control unit for front display and information control panel - J523- / reversing camera system control unit - J772- / control unit 1 for information electronics - J794-



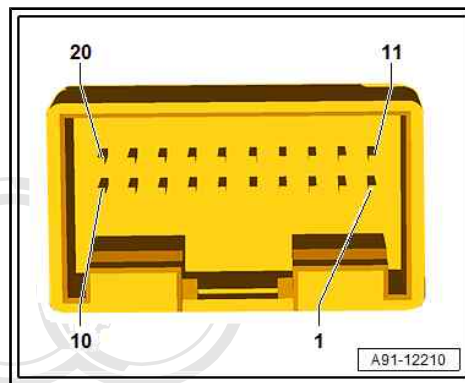
Note

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4 - Multi-pin connector, 20-pin (T20c)

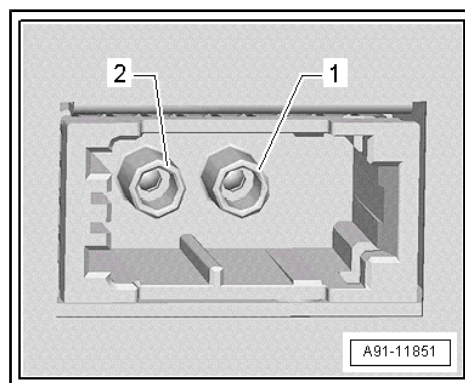
- 1 - Terminal 30
- 2 - Terminal 31
- 3 - Open circuit diagnostic lead
- 4 - Screen earth
- 5 - Video out (Rear Seat Entertainment system)
- 6 - Screen earth
- 7 - Audio out L (Rear Seat Entertainment system)
- 8 - Audio out R (Rear Seat Entertainment system)
- 9 - Screen earth
- 10 - Audio in L
- 11 - Audio in R
- 12 - Video in
- 13 - Screen earth
- 14 - Screen earth
- 15 - Screen earth
- 16 - Audio in L
- 17 - Audio in R
- 18 - Video in
- 19 - Screen earth
- 20 - I/D PIN



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5 - MOST bus

- 1 - Input
- 2 - Output



8.3.4 Pin assignment for digital TV tuner, Japan, from model year 2012 onwards

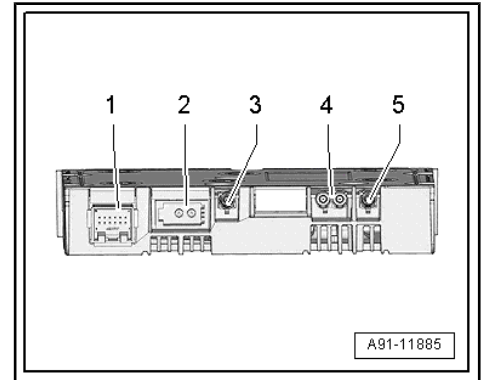
TV tuner - R78-

Coupé

- 1 - Multi-pin connector, 12-pin
- 2 - MOST bus
- 3 - FBAS output to control unit 1 for information electronics - J794-
- 4 - Connection TV2/TV3 from aerial amplifier 3 - R112- / aerial amplifier 2 - R111-
- 5 - Connection TV1 from aerial amplifier 3 - R112-

Sportback

- 1 - Multi-pin connector, 12-pin
- 2 - MOST bus
- 3 - FBAS output to control unit 1 for information electronics - J794-
- 4 - Connection TV2/TV3 from aerial amplifier 3 - R112- / aerial amplifier 4 - R113-
- 5 - Connection TV1 from aerial amplifier - R24-

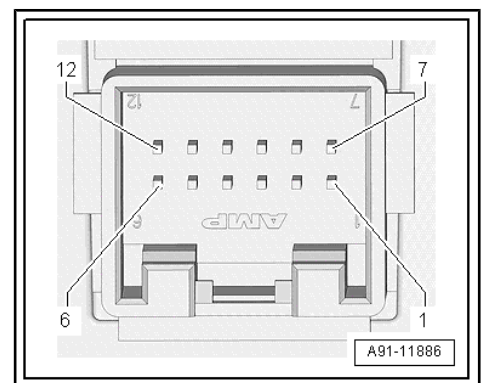


Note

Contacts which are not listed are not used.

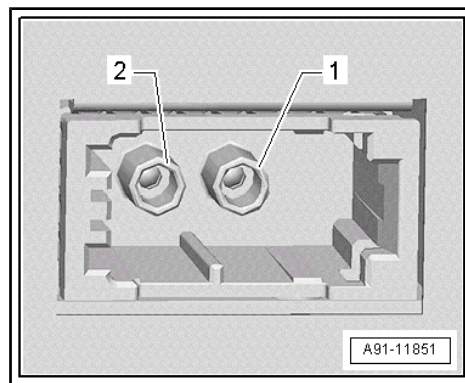
1 - Multi-pin connector, 12-pin

- 1 - Terminal 30
- 2 - Terminal 31
- 3 - Open circuit diagnostic lead
- 4 - Screen earth
- 5 - Video out (Rear Seat Entertainment system)
- 6 - Screen earth
- 7 - Audio out L (Rear Seat Entertainment system)
- 8 - Audio out R (Rear Seat Entertainment system)
- 9 - Screen earth
- 10 - Audio in L
- 11 - Audio in R
- 12 - Video in



2 - MOST bus

- 1 - Input
- 2 - Output



8.4 Removing and installing TV tuner

⇒ ["8.4.1 Removing and installing TV tuner R78 , up to week 44/2008", page 226](#)

⇒ ["8.4.2 Removing and installing TV tuner R78 , from week 45/2008 onwards", page 227](#)

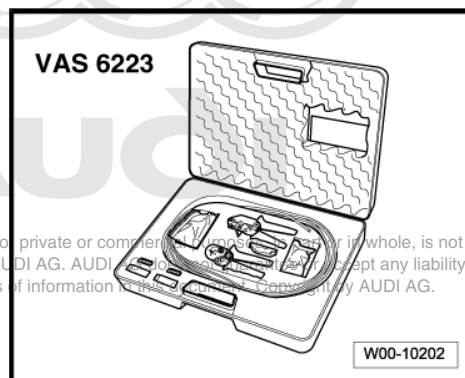
⇒ ["8.4.3 Removing and installing TV tuner R78 , from model year 2012 onwards", page 229](#)

8.4.1 Removing and installing TV tuner - R78- , up to week 44/2008

TV tuner - R78- is located behind luggage compartment side trim (left-side) in infotainment rack.

Special tools and workshop equipment required

- ◆ Protective cap for cable connector - VAS 6223/9-



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- When renewing control unit, select "Replacement" function for appropriate control unit in "Guided Fault Finding".

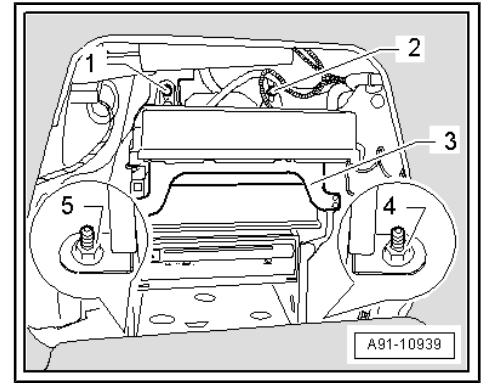
To do so, use ⇒ Vehicle diagnostic tester.

- Switch off all electrical equipment.
- Remove ignition key.

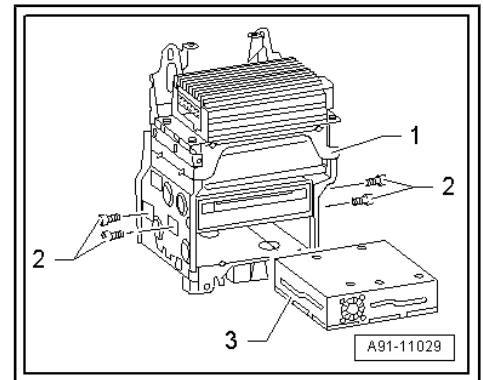
Removing

- Open left-side luggage compartment storage area.

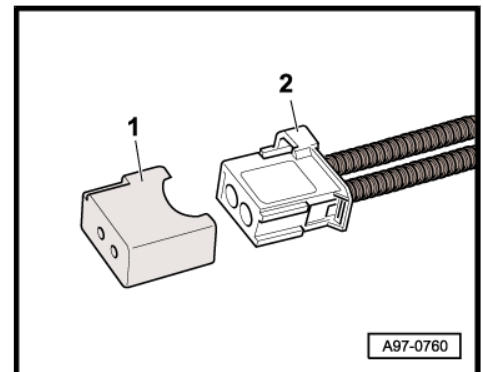
- Unscrew nuts -1-, -2-, -4- and -5- on infotainment rack -3-.



- Pivot the rack in the luggage compartment until the securing bolts for the TV tuner - R78- -3- are accessible.
- Release and unplug all connectors on TV tuner - R78- .



- Fit protective cap for cable connector - VAS 6223/9- -1- onto MOST bus connector -2-.



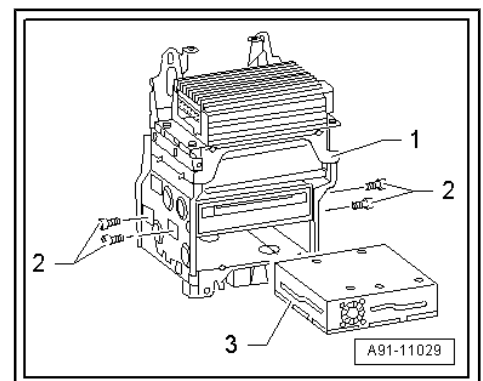
- Remove bolts -2-.
- Remove TV tuner - R78- -3- from rack -1-.

Installing

- Install in reverse sequence of removal.

Tightening torques

- ◆ ⇒ [“8.2.1 Overview of fitting locations - TV system, up to week 44/2008”, page 216](#)
- ◆ ⇒ [“8.2.3 Overview of fitting locations - TV system, Japan, up to week 44/2008”, page 218](#)

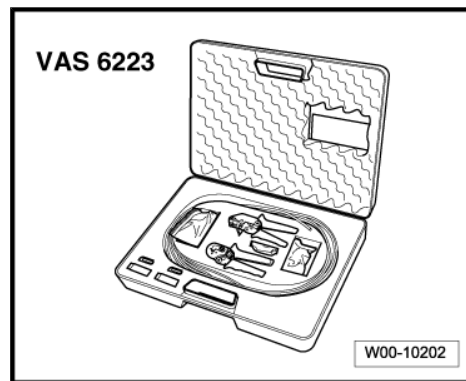


8.4.2 Removing and installing TV tuner - R78- , from week 45/2008 onwards

TV tuner - R78- is located behind luggage compartment side trim (left-side) in infotainment rack.

Special tools and workshop equipment required

◆ Protective cap for cable connector - VAS 6223/9-



- When renewing control unit, select “Replacement” function for appropriate control unit in “Guided Fault Finding”.

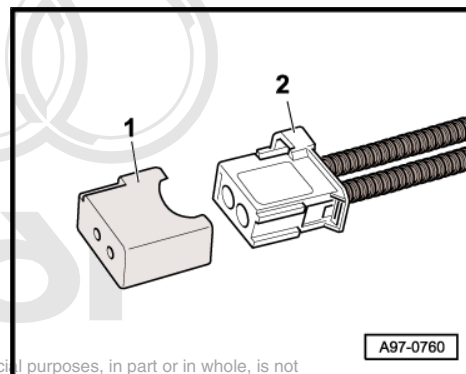
To do so, use ⇒ Vehicle diagnostic tester.

- Switch off all electrical equipment.
- Remove ignition key.

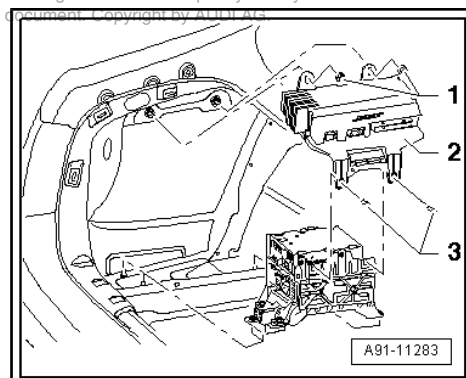
Removing

First remove digital sound package control unit - J525- together with bracket, if fitted.

- Open left-side luggage compartment storage area.
- Release and unplug connectors at digital sound package control unit - J525- .
- Fit protective cap for cable connector - VAS 6223/9- -1- onto MOST bus connector -2-.

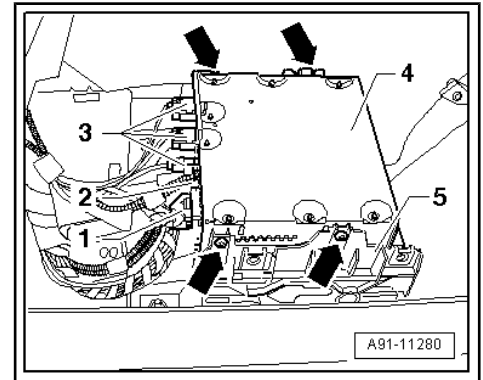


- Unscrew nuts -1- and bolts -3- from bracket -2- and lift bracket with digital sound package control unit - J525- -2- into luggage compartment.

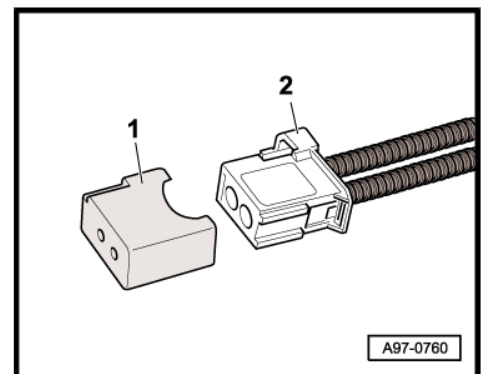


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- Release and unplug connectors -1-, -2- and -3- at TV tuner - R78- -4-.



- Fit protective cap for cable connector - VAS 6223/9- -1- onto MOST bus connector -2-.



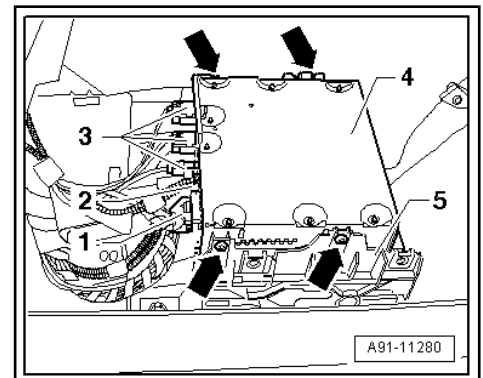
- Unscrew bolts -arrows- at TV tuner - R78- -4-.
- Remove TV tuner - R78- -4- from rack -5-.

Installing

- Install in reverse sequence of removal.

Tightening torques

- ◆ ⇒ [“8.2.2 Overview of fitting locations - TV system, from week 45/2008 onwards”, page 217](#)
- ◆ ⇒ [“8.2.4 Overview of fitting locations - TV system, Japan, from week 45/2008 onwards”, page 219](#)

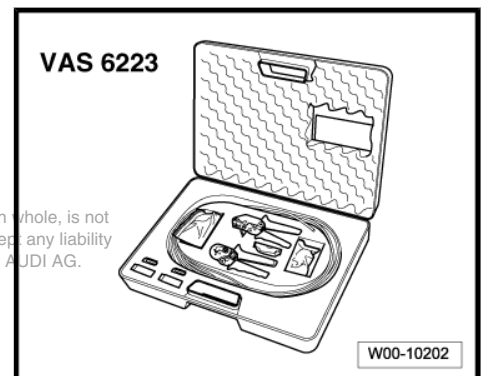


8.4.3 Removing and installing TV tuner - R78- , from model year 2012 onwards

TV tuner - R78- is located behind luggage compartment side trim (left-side) in infotainment rack.

Special tools and workshop equipment required

- ◆ Protective cap for cable connector - VAS 6223/9-



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- When renewing control unit, select “Replacement” function for appropriate control unit in “Guided Fault Finding”.

To do so, use ⇒ Vehicle diagnostic tester.

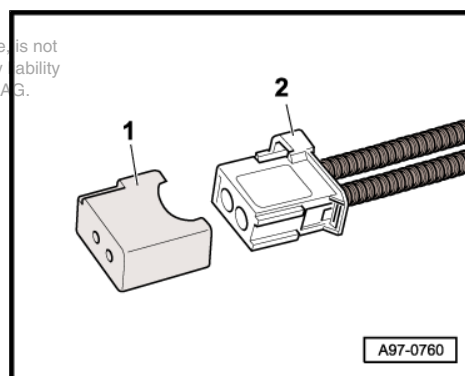
- Switch off all electrical equipment.
- Remove ignition key.

Removing

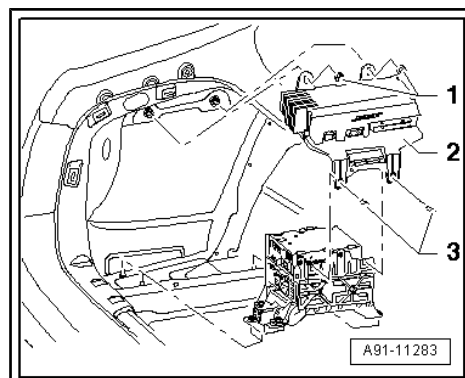
First remove digital sound package control unit - J525- together with bracket, if fitted.

- Open left-side luggage compartment storage area.
- Release and unplug connectors at digital sound package control unit - J525- .
- Fit protective cap for cable connector - VAS 6223/9- -1- onto MOST bus connector -2- .

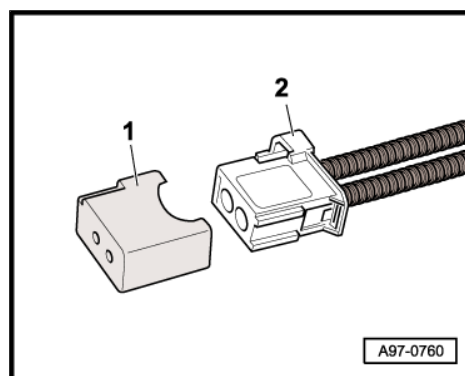
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- Unscrew nuts -1- and bolts -3- from bracket -2- and lift bracket with digital sound package control unit - J525- -2- into luggage compartment.
- Release and unplug connectors on TV tuner - R78- .



- Fit protective cap for cable connector - VAS 6223/9- -1- onto MOST bus connector -2- .



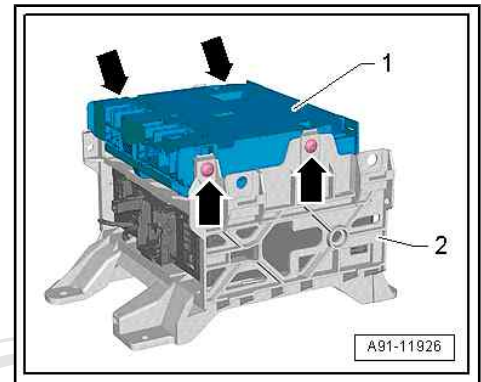
- Unscrew bolts -arrows- at TV tuner - R78- -1-.
- Remove the TV tuner - R78- -1- from the rack -2-.

Installing

- Install in reverse sequence of removal.

Tightening torques

- ◆ ⇒ [“8.2.2 Overview of fitting locations - TV system, from week 45/2008 onwards”, page 217](#)
- ◆ ⇒ [“8.2.4 Overview of fitting locations - TV system, Japan, from week 45/2008 onwards”, page 219](#)



8.5 Removing and installing TV card reader

⇒ [“8.5.1 Removing and installing TV card reader R204 , up to week 44/2008”, page 231](#)

⇒ [“8.5.2 Removing and installing TV card reader R204 , from week 45/2008 onwards”, page 231](#)

8.5.1 Removing and installing TV card reader - R204- , up to week 44/2008

The TV card reader - R204- is located behind the luggage compartment side trim (left-side) on the infotainment rack.

- Switch off all electrical equipment.
- Remove ignition key.

Removing

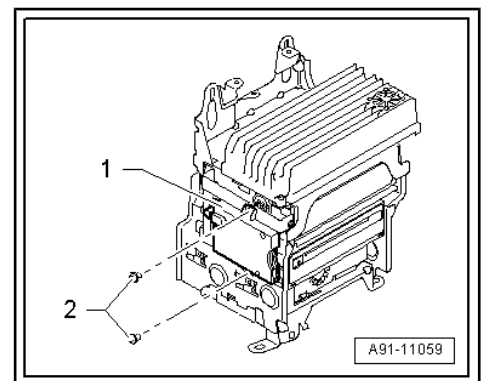
- Open left-side luggage compartment storage area.
- Remove SIM card from TV card reader - R204- .
- Remove bolts -2-.
- Remove TV card reader - R204- -1- from rack and unplug connector at TV card reader - R204- -1-.

Installing

- Install in reverse sequence of removal.

Tightening torques

- ◆ ⇒ [“8.2.3 Overview of fitting locations - TV system, Japan, up to week 44/2008”, page 218](#)



8.5.2 Removing and installing TV card reader - R204- , from week 45/2008 onwards

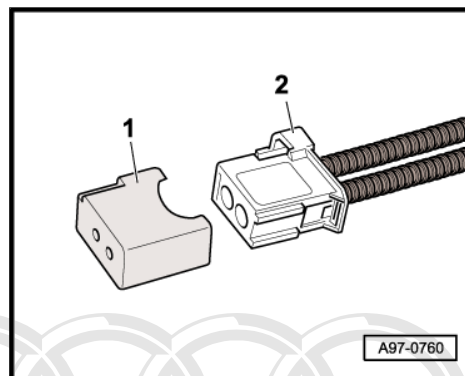
The TV card reader - R204- is located behind the luggage compartment side trim (left-side) on the infotainment rack.

- Switch off all electrical equipment.
- Remove ignition key.

Removing

- Open left-side luggage compartment storage area.
- Remove SIM card from TV card reader - R204- .
- Release and unplug connectors at digital sound package control unit - J525- .

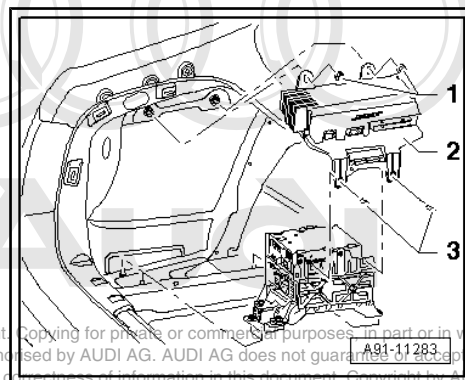
- Fit protective cap for cable connector - VAS 6223/9- -1- onto MOST bus connector -2-.



- Unscrew nuts -1- and bolts -3- from bracket -2- and lift bracket with digital sound package control unit - J525- -2- into luggage compartment.

- Release and unplug connector at TV card reader - R204- .

TV card reader - R204- is secured to bottom of bracket for digital sound package control unit - J525- .



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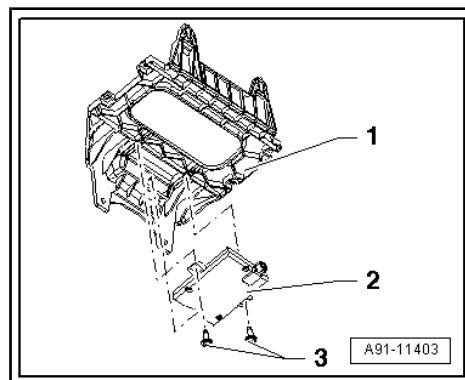
- Unscrew bolts -3- at TV card reader - R204- -2- and detach it from bracket -1-.

Installing

- Install in reverse sequence of removal.

Tightening torques

- ♦ ⇒ [“8.2.4 Overview of fitting locations - TV system, Japan, from week 45/2008 onwards”, page 219](#)



9 Reversing camera system

⇒ [“9.1 Layout - reversing camera system”, page 233](#)

⇒ [“9.2 Overview of fitting locations - reversing camera system”, page 236](#)

⇒ [“9.3 Removing and installing reversing camera R189 ”, page 236](#)

⇒ [“9.4 Calibrating reversing camera system”, page 238](#)

⇒ [“9.5 Removing and installing reversing camera system control unit J772 ”, page 243](#)

⇒ [“9.6 Connectors on reversing camera system control unit J772 ”, page 244](#)

9.1 Layout - reversing camera system

The reversing camera system provides assistance to the driver when driving the vehicle backwards; the information about the prevailing traffic conditions behind the vehicle is supplied to the driver via the display unit for front information display and operating unit control unit - J685- .

The system will be switched on as soon as reverse gear is engaged. The system can be activated manually by operating the parking aid button - E266- in the centre console (optional).

The reversing camera system consists of the following components:

- ◆ Reversing camera - R189-
- ◆ Reversing camera system control unit - J772-
- ◆ Control unit for front display and information control panel - J523-
- ◆ Steering wheel with steering angle sender - G85-

As an option, other control units may also be installed.

Up to week 44/2008

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1 - Data bus diagnostic interface - J533- behind glove box (left-side)

2 - Display unit for front information display and operating unit control unit - J685- in dash panel (centre)

3 - Control unit for front display and information control panel - J523- behind dash panel

4 - Multimedia system operating unit - E380- in centre console

5 - FBAS wire to control unit for front display and information control panel - J523-

6 - FBAS wire from TV tuner - R78-

7 - FBAS wire from reversing camera - R189-

8 - Reversing camera - R189- in rear lid

9 - Reversing camera system control unit - J772- behind luggage compartment side trim (right-side)

10 - TV tuner - R78- behind luggage compartment side trim (left-side)

11 - CAN bus (convenience)

12 - MOST bus

13 - Parking aid control unit - J446- behind luggage compartment side trim (right-side)

14 - Onboard supply control unit - J519- behind dash panel trim (driver's side)

15 - Convenience system central control unit - J393- behind luggage compartment side trim (right-side)

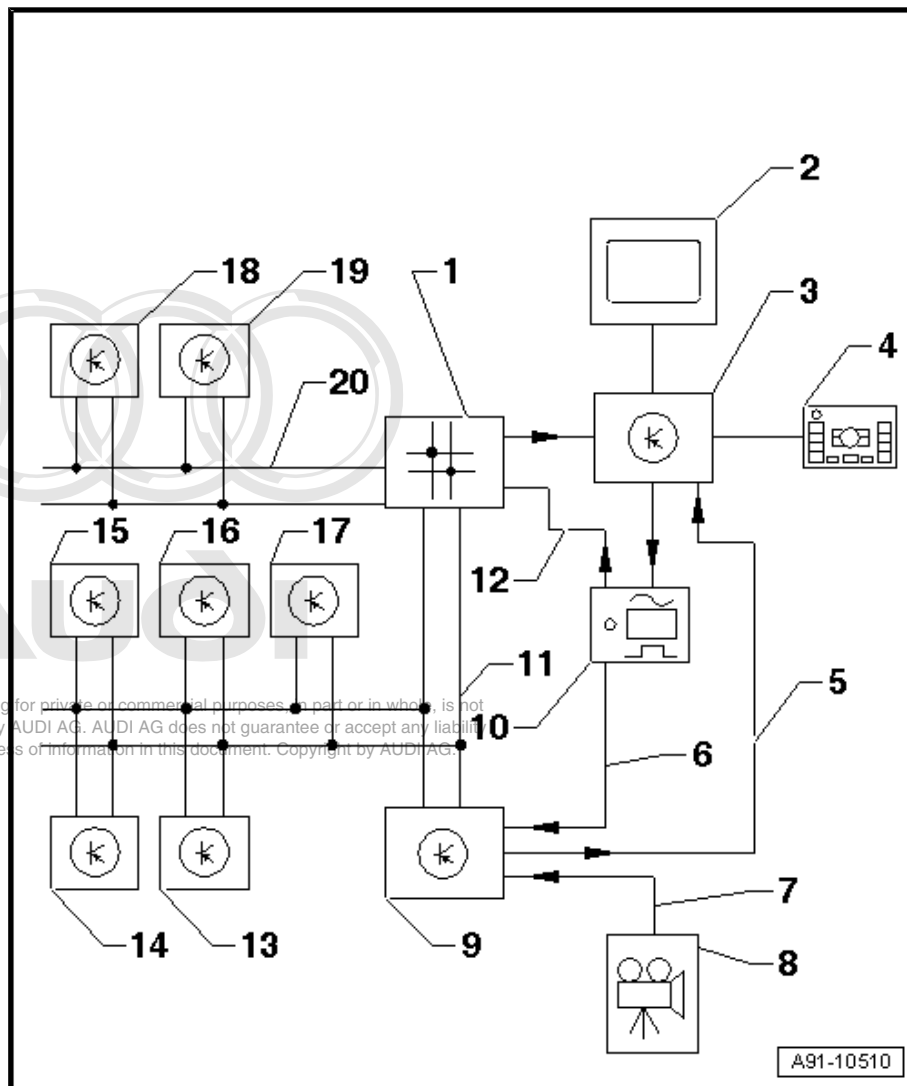
16 - Trailer detector control unit - J345- behind luggage compartment side trim (right-side)

17 - Climatronic control unit - J255- in dash panel

18 - ABS control unit - J104- in engine compartment

19 - Steering angle sender - G85- on steering column at steering column electronics control unit - J527-

20 - CAN bus (drive train)



From week 45/2008 onwards

1 - Data bus diagnostic interface - J533- behind glove box (left-side)

2 - Display unit for front information display and operating unit control unit - J685- in dash panel (centre)

3 - Control unit 1 for information electronics - J794- in dash panel

4 - Multimedia system operating unit - E380- in centre console

5 - FBAS wire from reversing camera system control unit - J772-

6 - FBAS wire from reversing camera - R189-

7 - Reversing camera - R189- in rear lid

8 - Reversing camera system control unit - J772- behind luggage compartment side trim (right-side)

9 - CAN bus (convenience)

10 - MOST bus

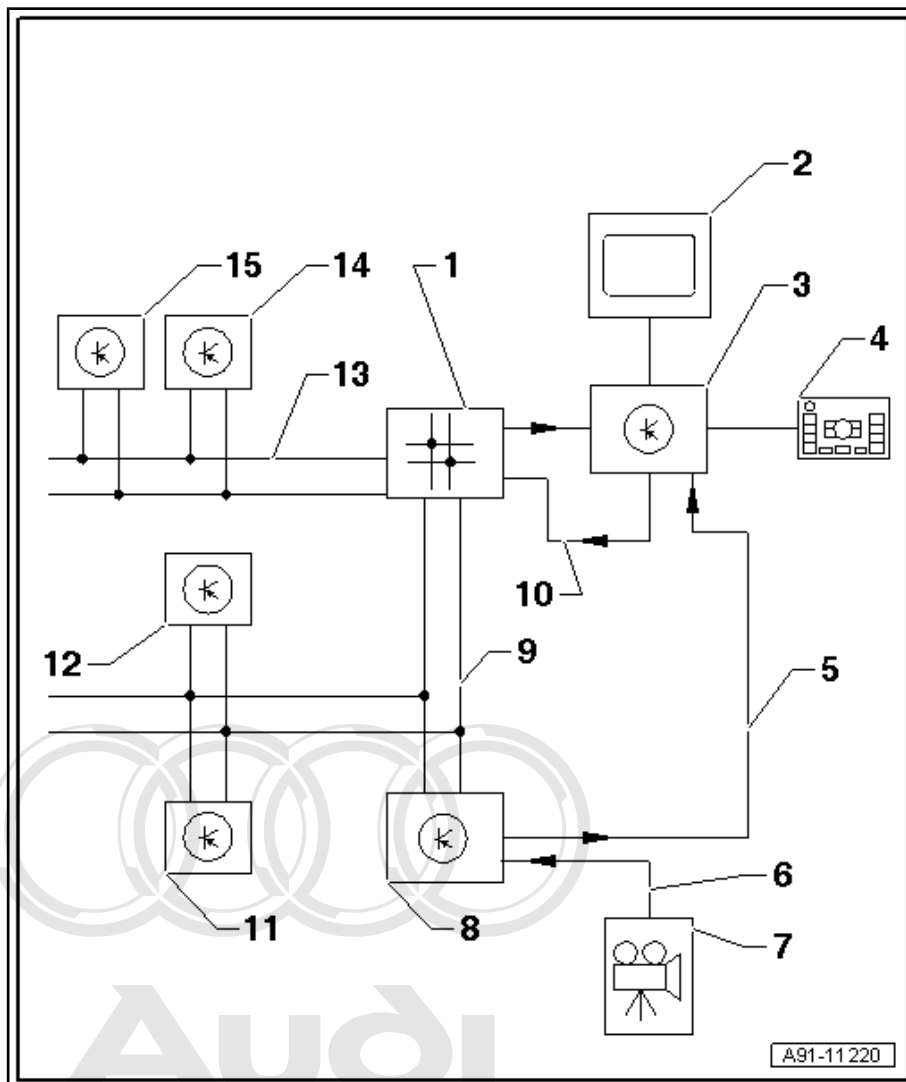
11 - Parking aid control unit - J446- behind luggage compartment side trim (right-side)

12 - Trailer detector control unit - J345- behind luggage compartment side trim (right-side)

13 - CAN bus (drive train)

14 - ABS control unit - J104- in engine compartment

15 - Steering angle sender - G85- on steering column at steering column electronics control unit - J527-



Do not fit an additional number plate on vehicles equipped with reversing camera system as this will impair the function of the reversing camera system.

Fault finding is performed via the "Guided Fault Finding" ➔ Vehicle diagnostic tester.

9.2 Overview of fitting locations - reversing camera system

1 - Bolt

- ☐ 2 Nm

2 - Reversing camera system control unit - J772-

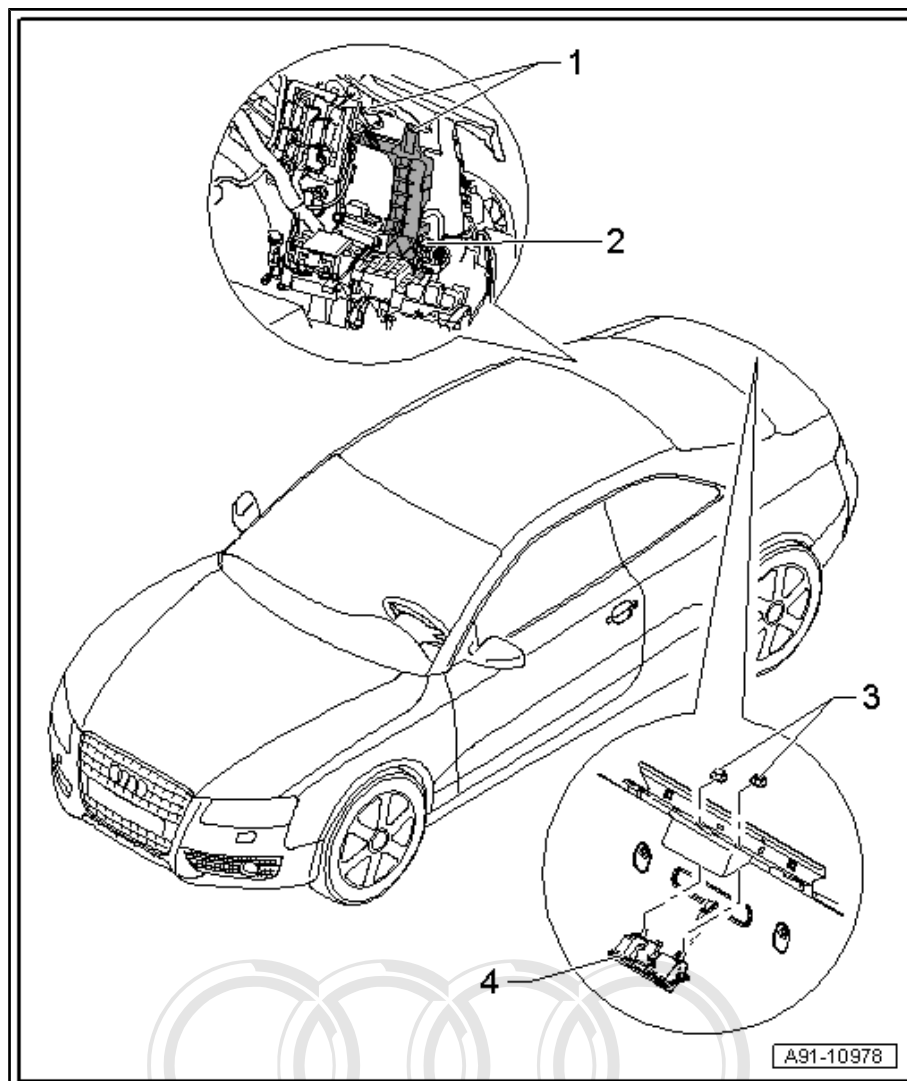
- ☐ Pin assignment
⇒ [page 244](#)
- ☐ Removing and installing
⇒ [page 243](#)
- ☐ Removing and installing
(RS 5) ⇒ [page 243](#)
- ☐ Calibration ⇒ [page 238](#)

3 - Nut

- ☐ 8 Nm

4 - Reversing camera - R189-

- ☐ Removing and installing
(Coupé) ⇒ [page 236](#)
- ☐ Removing and installing
(Sportback)
⇒ [page 237](#)
- ☐ Calibration ⇒ [page 238](#)



9.3 Removing and installing reversing camera - R189-

⇒ ["9.3.1 Removing and installing reversing camera R189 , Coupé", page 236](#)

⇒ ["9.3.2 Removing and installing reversing camera R189 , Sportback", page 237](#)

9.3.1 Removing and installing reversing camera - R189- , Coupé

The reversing camera - R189- is installed in the handle in the rear lid.

- Switch off all electrical equipment.
- Remove ignition key.

Removing

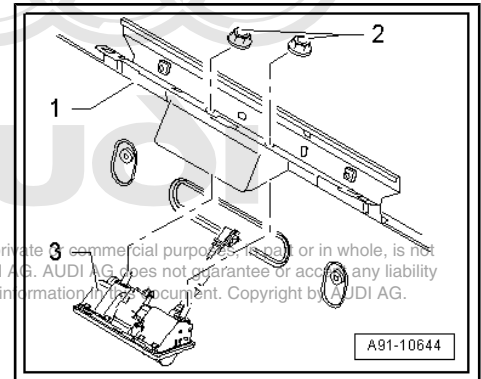
The reversing camera - R189- is equipped with a trailing cable. The connectors to the vehicle wiring harness are located in the rear lid.

- Remove rear lid trim ⇒ General body repairs, interior; Rep. gr. 70 ; Luggage compartment trim panels; Removing and installing rear lid trim (bottom) .
- Unscrew nuts -2-.

Reversing camera - R189- is permanently fitted in handle -3-.

- Pull handle -3- together with reversing camera - R189- out of rear lid.

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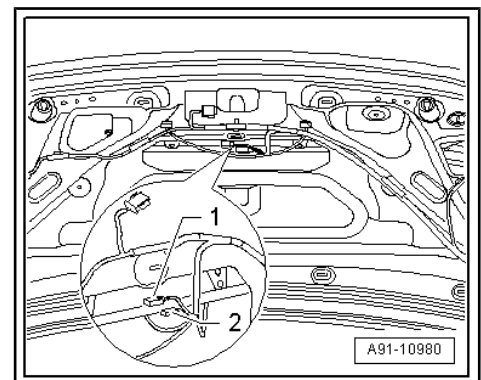
- Unplug connectors -1- and -2- in rear lid and remove handle.

Installing

- Install in reverse sequence of removal.
- Close rear lid.
- Perform calibration ⇒ [page 238](#) .

Tightening torques

- ◆ ⇒ [“9.2 Overview of fitting locations - reversing camera system”, page 236](#)



9.3.2 Removing and installing reversing camera - R189- , Sportback

Reversing camera - R189- is installed in rear lid in handle and is permanently fitted in handle.

When renewing the reversing camera - R189- the handle must also be renewed.

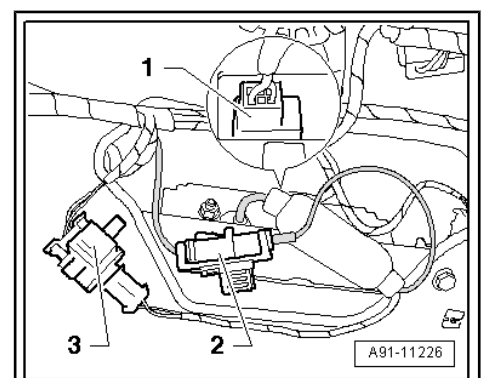
- Switch off all electrical equipment.
- Remove ignition key.

Removing

The reversing camera - R189- is equipped with a trailing cable. The connectors to the vehicle wiring harness are located in the rear lid.

- Remove rear lid trim ⇒ General body repairs, interior; Rep. gr. 70 ; Luggage compartment trim panels; Removing and installing rear lid trim (bottom) .
- Unplug connectors -1-, -2- and -3- in rear lid and on handle.

Reversing camera - R189- is permanently fitted in handle -4-.



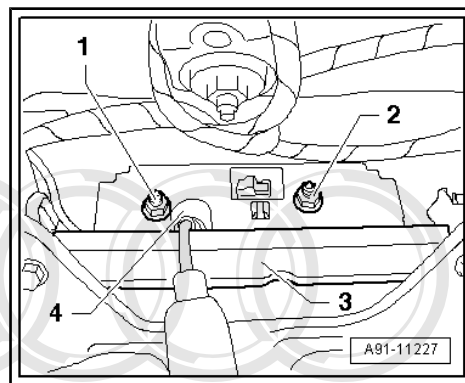
- Unscrew nuts -1- and -2-.
- Pull handle -4- together with reversing camera - R189- out of mounting -3- in rear lid.

Installing

- Install in reverse sequence of removal.
- Close rear lid.
- Perform calibration ⇒ [page 238](#) .

Tightening torques

- ◆ ⇒ ["9.2 Overview of fitting locations - reversing camera system", page 236](#)



9.4 Calibrating reversing camera system

⇒ ["9.4.1 Setting up and aligning calibration unit VAS 6350/4 ", page 238](#)

⇒ ["9.4.2 Calibrating reversing camera R189 ", page 240](#)

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9.4.1 Setting up and aligning calibration unit - VAS 6350/4-

After performing service work on the vehicle it may be necessary to re-calibrate the reversing camera system. This is required after:

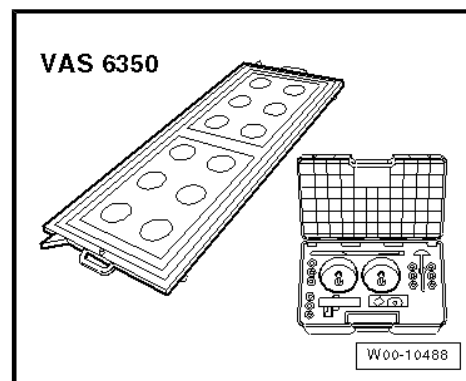
- ◆ Removing and installing reversing camera - R189-
- ◆ Renewing reversing camera system control unit - J772-
- ◆ Performing accident repair work on rear lid
- ◆ Wheel alignment
- ◆ Performing repair work on rear axle

Requirements for calibration

- ◆ Camera lens must be clean.
- ◆ Vehicle must be positioned on a firm and even surface.
- ◆ There must be sufficient space around the vehicle.
- ◆ Parking brake must be activated.
- ◆ Steering wheel must be in centre position, wheels must be straight.
- ◆ All doors and the rear lid must be closed.
- ◆ There must not be anyone inside the vehicle.
- ◆ Vehicle must not be loaded (unladen weight).
- ◆ Switch on ignition before every calibration.

Special tools and workshop equipment required

◆ Calibration unit - VAS 6350-



◆ ⇒ Vehicle diagnostic tester

The calibration unit - VAS 6350- consists of the following items:

- ◆ Wheel centre mounting - VAS 6350/1-
- ◆ Spacing laser - VAS 6350/2-
- ◆ Linear laser - VAS 6350/3-
- ◆ Calibration unit - VAS 6350/4-

Overview of calibration equipment - VAS 6350- when set up

1 - Wheel centre mounting - VAS 6350/1-

2 - Wheel centre mounting - VAS 6350/1-

3 - Locating bracket (right-side)

- ☐ Mounting for spacing laser - VAS 6350/2-

4 - Plastic foot

- ☐ Three on underside of calibration unit - VAS 6350/4-
- ☐ Adjustable, for aligning horizontal position of calibration unit - VAS 6350/4-

5 - Linear laser - VAS 6350/3-

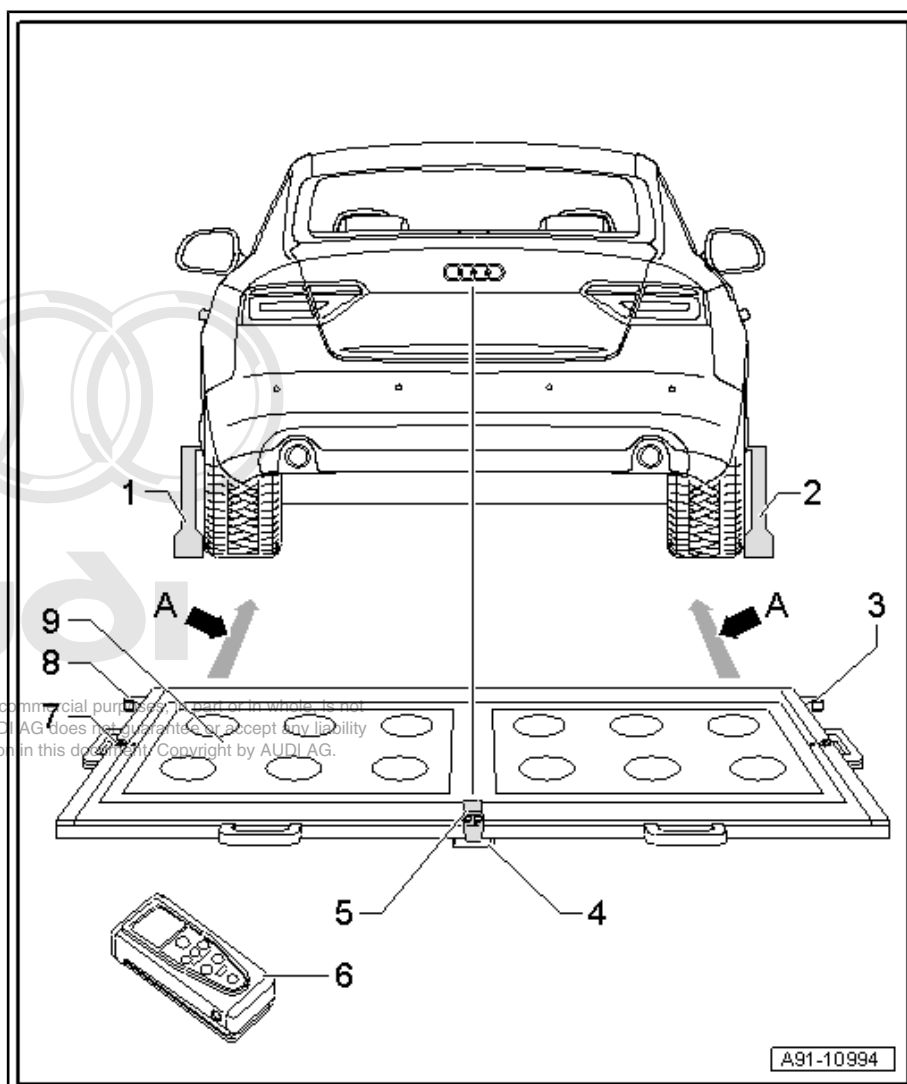
- ☐ On calibration unit - VAS 6350/4-
- ☐ Switching on and off ⇒ Owner's Manual

6 - Spacing laser - VAS 6350/2-

- ☐ Operating instructions ⇒ Owner's Manual

7 - Spirit level on calibration platform

- ☐ On calibration unit - VAS 6350/4-
- ☐ For checking horizontal position



8 - Locating bracket (left-side)

- ❑ Mounting for spacing laser - VAS 6350/2-

9 - Calibration unit - VAS 6350/4-

- ❑ -Dimension A- = 1.47 m - 1.90 m between locating brackets of calibration unit - VAS 6350/4- and wheel centre mountings - VAS 6350/1-

Aligning calibration unit - VAS 6350/4-

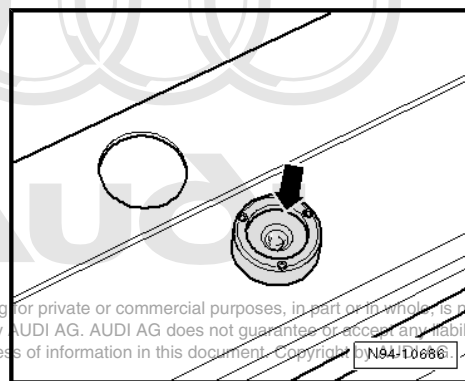
- Position calibration unit - VAS 6350/4- behind vehicle at a distance of 1.47 m - 1.90 m from rear wheels; refer to -dimension A- in overview ➔ [page 239](#) .
- Move calibration unit - VAS 6350/4- to a horizontal position.
- To do so, turn plastic feet beneath calibration unit - VAS 6350/4- to make air bubble in spirit level move exactly to centre of display -arrow-.



WARNING

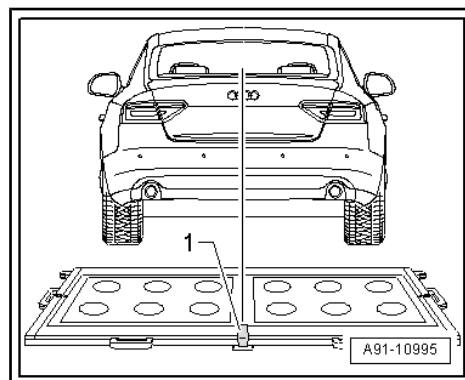
Make sure no light is reflected on calibration unit - VAS 6350/4- .

Reflected light impairs the view of the reversing camera - R189- and therefore it may be impossible to perform calibration.



- Switch on linear laser - VAS 6350/3- -1- on calibration unit - VAS 6350/4- and align entire calibration unit - VAS 6350/4- so that laser beam hits centre of Audi rings on rear of vehicle.
- Check whether Audi rings are in the centre on rear of vehicle; readjust laser beam accordingly.

Continue by calibrating reversing camera - R189- ➔ [page 240](#) .



9.4.2 Calibrating reversing camera - R189-

- Ensure requirements are met ➔ [page 238](#) .
- Connect ➔ Vehicle diagnostic tester.

Fit wheel centre mounting - VAS 6350/1- :

- Check the bolt hole circle pattern on the wheels.
- Prepare wheel centre mountings - VAS 6350/1- as required.
- To do so, secure three wheel bolt adapters to each wheel centre mounting - VAS 6350/1- to match the hole circle.
- Position paddles on both wheel centre mountings - VAS 6350/1- and secure each paddle with clamping bolt.
- Fit wheel centre mountings - VAS 6350/1- onto wheel bolts on rear wheels.

The wheel centre mountings - VAS 6350/1- are kept in position by the O-rings in the adapters.

 Note

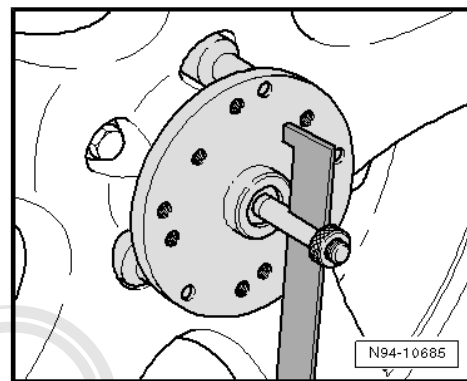
When fitting the wheel centre mountings - VAS 6350/1- onto the wheels, make sure that they are not mounted on any "anti-theft" wheel bolts that might be installed.

- Using clamping bolts, adjust paddles so that they are free to move just slightly above the ground. Make sure the paddles can move freely.
- Set up and align calibration unit - VAS 6350/4- ➔ [page 238](#) .

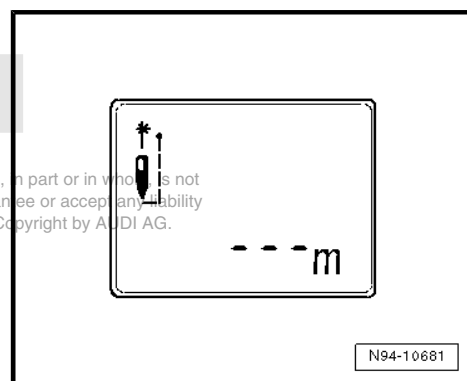
Measuring gap:

- Switch on the spacing laser - VAS 6350/2- with the  button.

The following display appears and the spacing laser - VAS 6350/2- will be switched on.



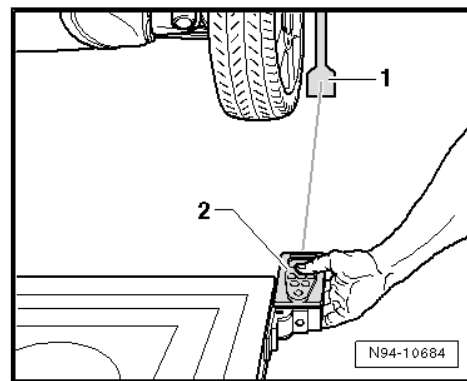
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- Hold spacing laser - VAS 6350/2- -2- on one side of calibration unit - VAS 6350/4- so that it is flush at bracket. Spacing laser - VAS 6350/2- -2- must make firm contact with bracket.
- Make sure that laser beam from spacing laser - VAS 6350/2- -2- hits lower, larger part of paddle -1-.

If this is not the case, position of paddles must be corrected accordingly using clamping bolts on wheel centre mounting - VAS 6350/1- .

- Hold spacing laser - VAS 6350/2- in locating bracket on calibration unit - VAS 6350/4- with one hand while laser beam is visible on paddle.
- Briefly operate the  button to measure distance.



Display readout

- Make a note of the displayed value.
- Perform same measuring procedure for rear wheel on other side of calibration unit - VAS 6350/4- .

Measured distance value must be identical on both sides.

If values are not identical:

- Adjust calibration unit - VAS 6350/4- until values on both sides are identical.

When adjusting calibration unit - VAS 6350/4- , make sure that linear laser - VAS 6350/3- on calibration unit - VAS 6350/4- still hits centre of Audi rings and spirit level display also remains in the centre. If necessary, readjust.

Measuring dimension -H-:

- Measure height of calibration unit - VAS 6350/4- : dimension -H- (top edge of platform - floor).

Now enter measured distance value and height in millimetres in
⇒ Vehicle diagnostic tester.

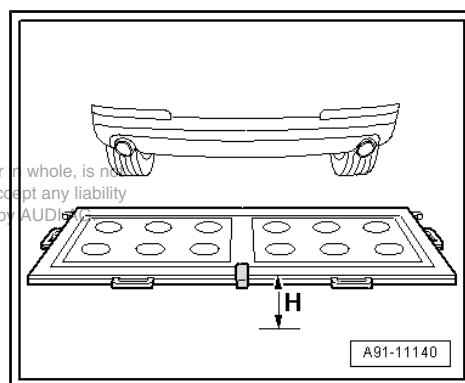
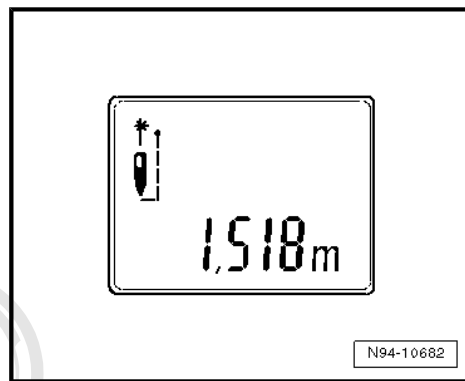
Performing calibration

⇒ Vehicle diagnostic tester is connected.

- Select **Guided Fault Finding** mode.
- In the “Vehicle selection” menu, select the relevant data for the vehicle.
- Using the **Go to** button, select the following menu options in succession:

- ◆ Selecting function/component
- ◆ Body
- ◆ Electrical system
- ◆ 01 - Self-diagnosis compatible systems
- ◆ 6C - Reversing camera system/J772
- ◆ 6C - Reversing camera system control unit, functions
- ◆ 6C - Calibration (Rep. gr. 91)

Further instructions are given by ⇒ Vehicle diagnostic tester during calibration procedure.



WARNING

Make sure no light is reflected on calibration platform.

Reflected light impairs the view of the reversing camera - R189- and therefore it may be impossible to perform calibration.

9.5 Removing and installing reversing camera system control unit - J772-

⇒ [“9.5.1 Removing and installing reversing camera system control unit J772”, page 243](#)

⇒ [“9.5.2 Removing and installing reversing camera system control unit J772, RS 5”, page 243](#)

9.5.1 Removing and installing reversing camera system control unit - J772-

The reversing camera system control unit - J772- is located behind the luggage compartment side trim (right-side).

- When renewing control unit, select “Replacement” function for appropriate control unit in “Guided Fault Finding”.

To do so, use ⇒ Vehicle diagnostic tester.

- Switch off all electrical equipment.
- Remove ignition key.

Removing

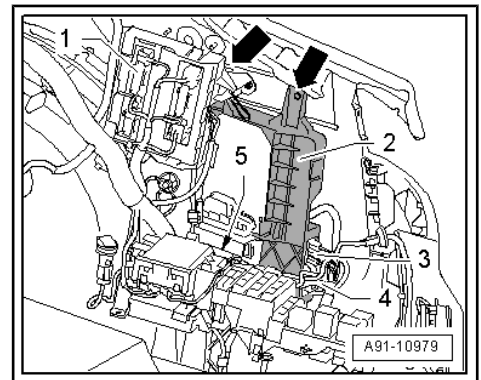
- Open right-side luggage compartment storage area.

The reversing camera system control unit - J772- -3- is wedged in the bracket -2-.

To remove, convenience system central control unit - J393- -1- must be removed first and then bracket -2-.

Do not unplug connectors on convenience system central control unit - J393- .

- Unscrew bolts -arrows- and nut -5-.



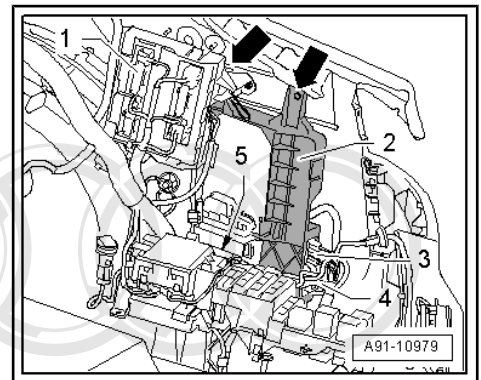
- Remove bracket -2- from storage compartment to unplug connectors -3- and -4-.
- Unclip reversing camera system control unit - J772- from bracket -2- and lift it out.

Installing

- Install in reverse sequence of removal.
- Perform calibration ⇒ [page 238](#) .

Tightening torques

- ◆ ⇒ [“9.2 Overview of fitting locations - reversing camera system”, page 236](#)



9.5.2 Removing and installing reversing camera system control unit - J772- , RS 5

The reversing camera system control unit - J772- is located behind the luggage compartment side trim (right-side).

- When renewing control unit, select “Replacement” function for appropriate control unit in “Guided Fault Finding”.

To do so, use ⇒ Vehicle diagnostic tester.

- Switch off all electrical equipment.

- Remove ignition key.

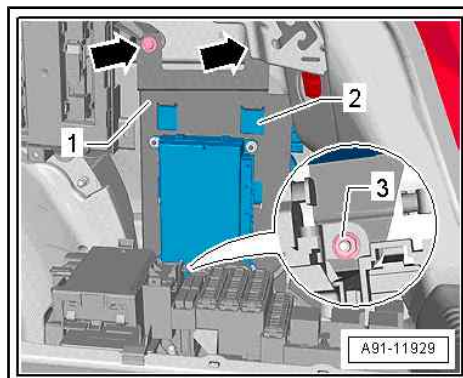
Removing

- Open right-side luggage compartment storage area.

Reversing camera system control unit - J772- -2- is screwed onto bracket -1- at rear.

To remove, bracket -1- must first be removed.

- Unscrew bolts -arrows- and nut -3-.



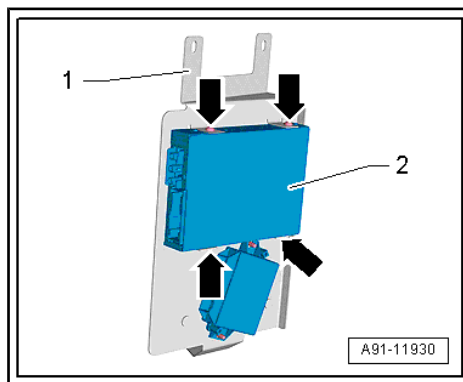
- Remove bracket -1- from storage compartment and unplug connectors on control units.
- Remove bolts -arrows- on reversing camera system control unit - J772- -2- and detach control unit from bracket -1-.

Installing

- Install in reverse sequence of removal.
- Perform calibration.

Tightening torques

- ♦ ⇒ ["9.2 Overview of fitting locations - reversing camera system", page 236](#)



9.6 Connectors on reversing camera system control unit - J772-

Reversing camera system control unit - J772-

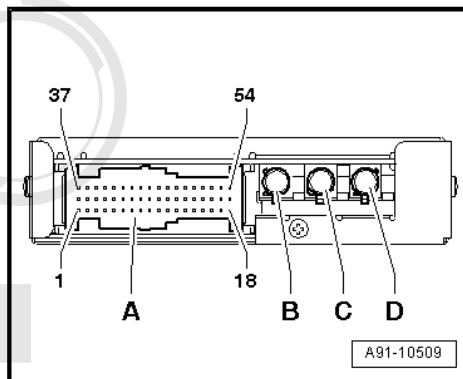
A - Multi-pin connector, 54-pin (T54b)

B - FBAS input from TV tuner - R78- (up to week 44/08)

B - FBAS input not used (from week 45/08 onwards)

C - FBAS output to control unit for front display and information control panel - J523- / control unit 1 for information electronics - J794-

D - FBAS input from reversing camera - R189-



Note

Contacts which are not listed are not used.

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A - Multi-pin connector, 54-pin (T54b)

39 - CAN bus Low (convenience)

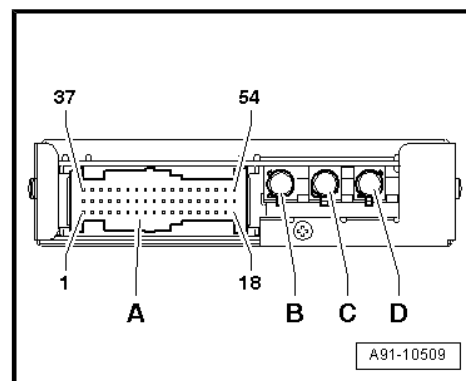
40 - CAN bus High (convenience)

43 - Terminal 30

44 - Terminal 31

47 - Terminal 31 to reversing camera - R189-

48 - Voltage supply for reversing camera - R189-



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10 Multi-function steering wheel

⇒ ["10.1 Layout - multi-function steering wheel", page 246](#)

⇒ ["10.2 Exploded view - multi-function steering wheel", page 246](#)

⇒ ["10.3 Removing and installing multifunction buttons in steering wheel E441 / E440 ", page 249](#)

⇒ ["10.4 Removing and installing tiptronic switches in steering wheel E439 / E438 ", page 255](#)

10.1 Layout - multi-function steering wheel

Buttons are integrated in the steering wheel in order to make the infotainment, telephone and navigation systems easier to use. On vehicles with tiptronic, rocker switches are also fitted on the right and left side of the steering wheel.

The multi-function steering wheel control unit - J453- (under the right-side button) reads out the button information and transfers it to the steering column electronics control unit - J527- via the LIN bus. From the steering column electronics control unit - J527- the information is transferred to the individual components via the CAN bus (convenience) and the data bus diagnostic interface - J533- .

Fault finding is performed via the "Guided Fault Finding" ⇒ Vehicle diagnostic tester.

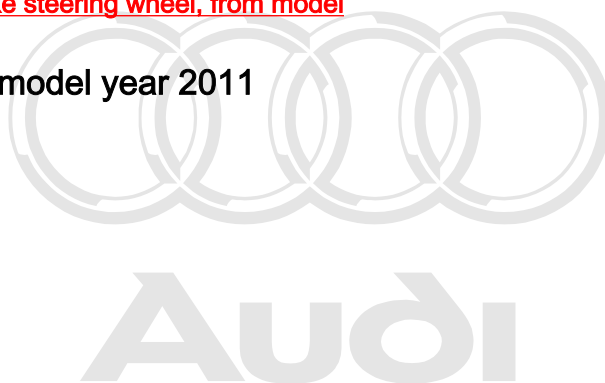
10.2 Exploded view - multi-function steering wheel

⇒ ["10.2.1 Overview, up to model year 2011", page 246](#)

⇒ ["10.2.2 Exploded view of 4-spoke steering wheel, from model year 2012 onwards", page 248](#)

⇒ ["10.2.3 Exploded view of 3-spoke steering wheel, from model year 2012 onwards", page 249](#)

10.2.1 Overview, up to model year 2011

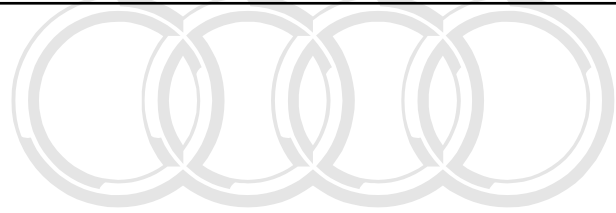
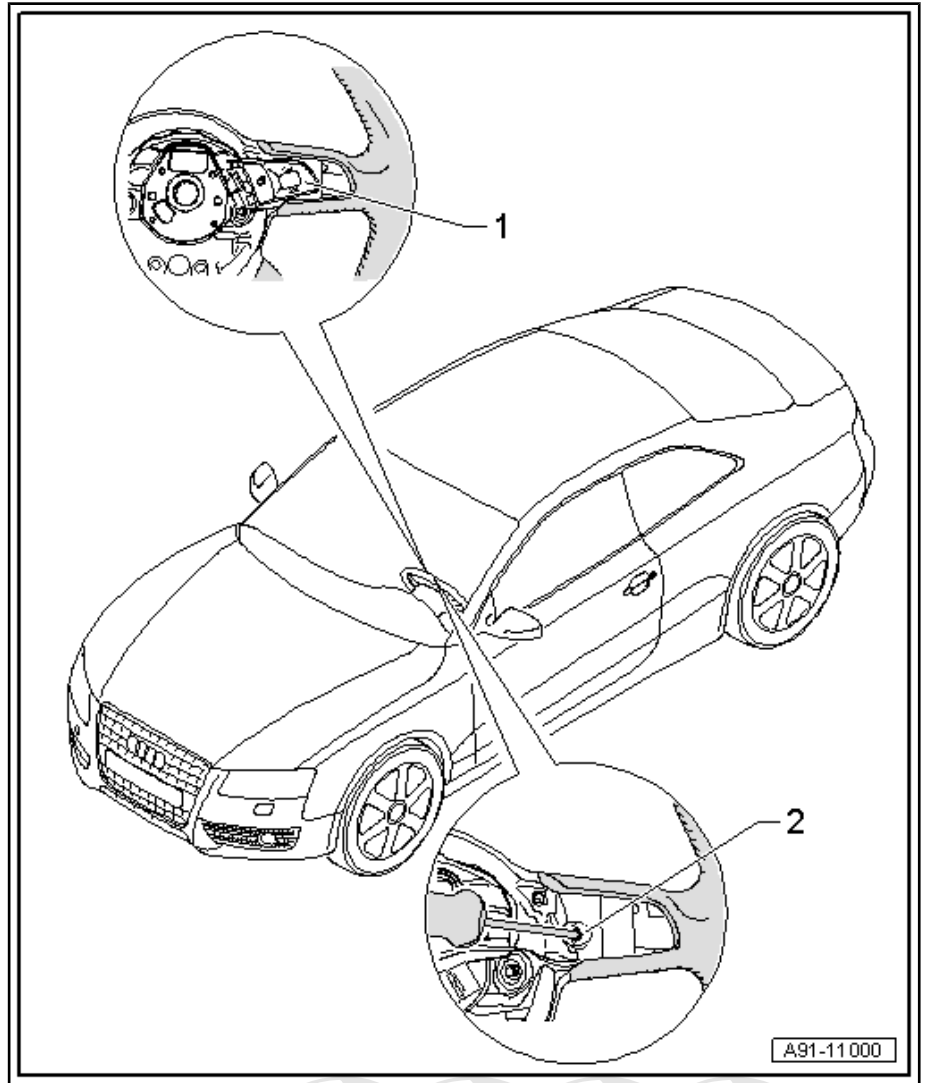


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1 - Multifunction button

2 - Bolt

□ 3 Nm



Audi

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10.2.2 Exploded view of 4-spoke steering wheel, from model year 2012 onwards

1 - Tiptronic switch in steering wheel to shift down - E439-

- ❑ Removing and installing
⇒ [page 256](#)

2 - 4-spoke steering wheel

3 - Tiptronic switch in steering wheel to shift up - E438-

- ❑ Removing and installing
⇒ [page 256](#)

4 - Bolt

- ❑ 1.2 Nm

5 - Multifunction buttons on right in steering wheel - E441-

- ❑ Removing and installing
⇒ [page 250](#)

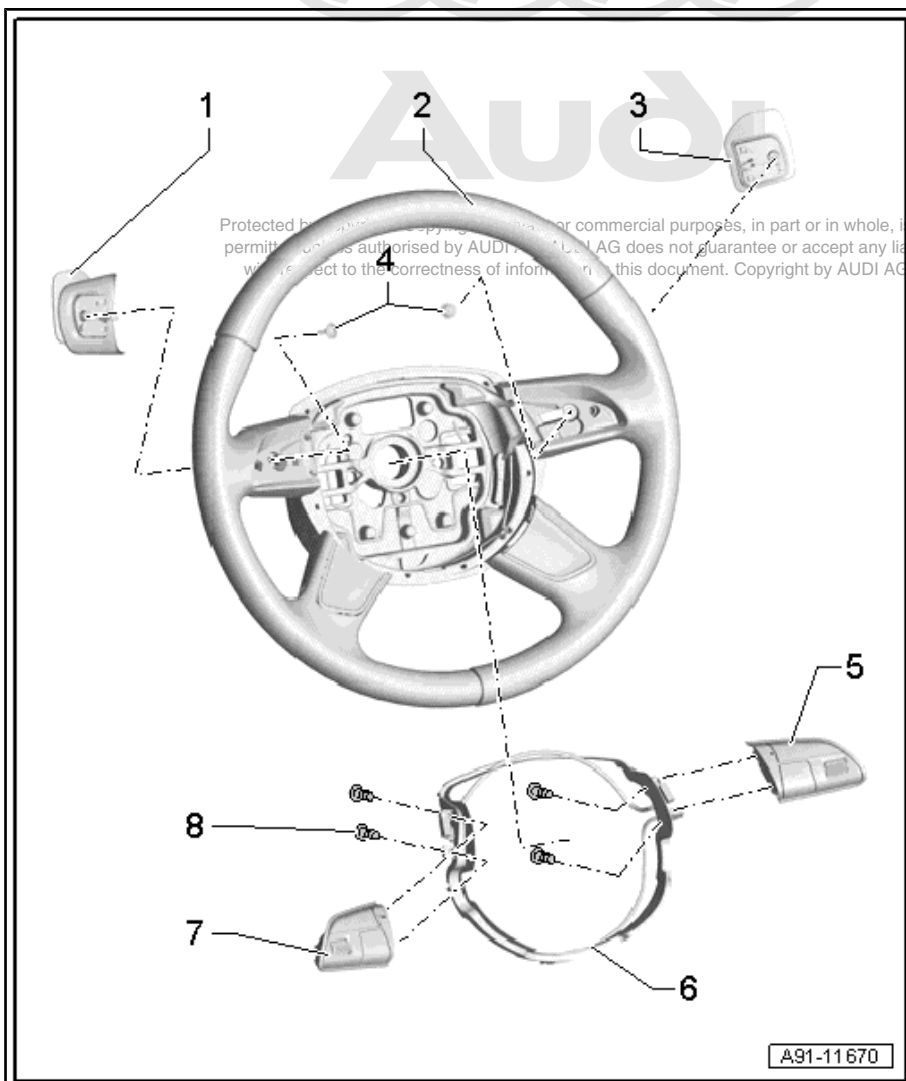
6 - Trim panel

7 - Multifunction buttons on left in steering wheel - E440-

- ❑ Removing and installing
⇒ [page 250](#)

8 - Bolt

- ❑ 1.2 Nm



10.2.3 Exploded view of 3-spoke steering wheel, from model year 2012 onwards

1 - Tiptronic switch in steering wheel to shift down - E439-

- ❑ Removing and installing
⇒ [page 256](#)

2 - 3-spoke steering wheel

3 - Tiptronic switch in steering wheel to shift up - E438-

- ❑ Removing and installing
⇒ [page 256](#)

4 - Bolt

- ❑ 1.2 Nm

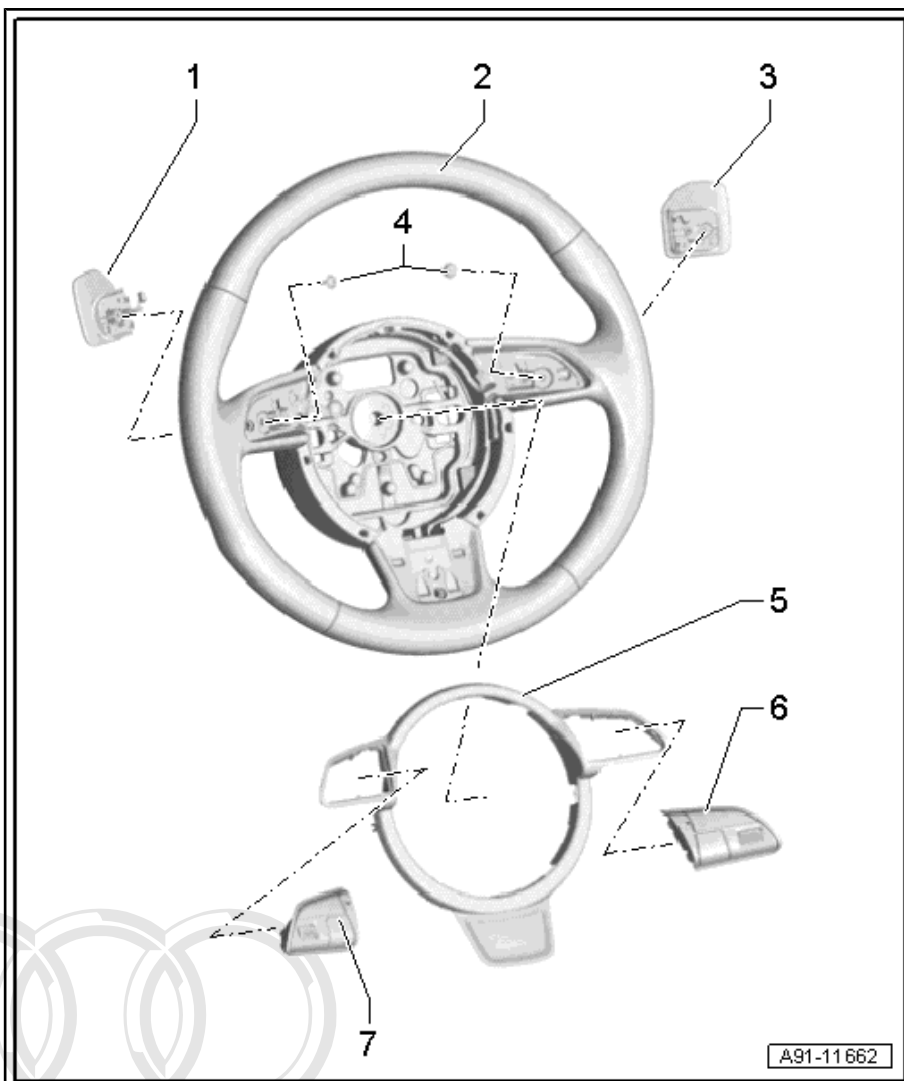
5 - Trim panel

6 - Multifunction buttons on right in steering wheel - E441-

- ❑ Removing and installing
⇒ [page 253](#)

7 - Multifunction buttons on left in steering wheel - E440-

- ❑ Removing and installing
⇒ [page 253](#)



10.3 Removing and installing multifunction buttons in steering wheel -E441- / -E440-

⇒ [“10.3.1 Removing and installing multifunction buttons, up to model year 2011”, page 249](#)

⇒ [“10.3.2 Removing and installing multifunction buttons in 4-spoke steering wheel, from model year 2012 onwards”, page 250](#)

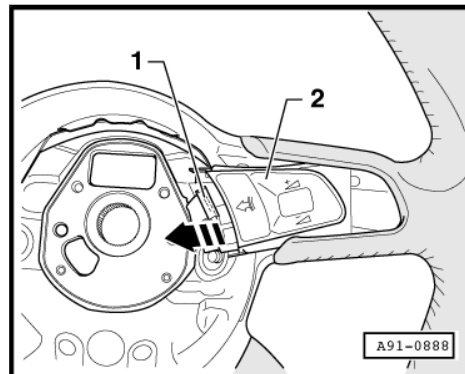
⇒ [“10.3.3 Removing and installing multifunction buttons in 3-spoke steering wheel, from model year 2012 onwards”, page 253](#)

10.3.1 Removing and installing multifunction buttons, up to model year 2011

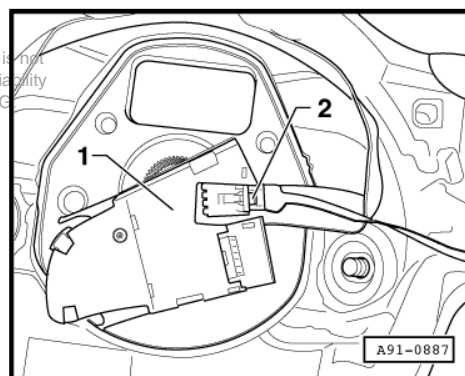
- Switch off all electrical equipment.
- Remove ignition key.

Removing

- Remove driver airbag ⇒ General body repairs, interior; Rep. gr. 69 ; Airbag (driver side); Exploded view of airbag (driver side) .
- Pull trim ring off steering wheel.
- Release and unplug connector -1- at button -2-.
- Push button -2- out of steering wheel in direction of arrow.
- Turn button over.



- Release and unplug connector -2- for tiptronic switch from multifunction button -1- and remove button.



Installing

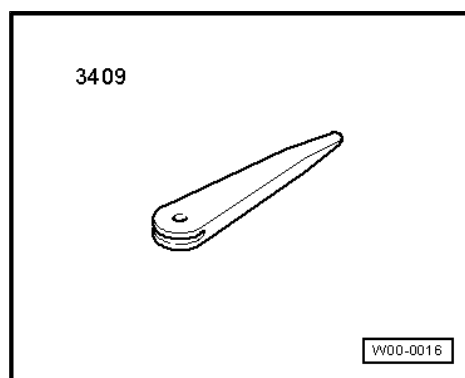
- Install in reverse sequence of removal.

Removal and installation procedures for the left-side multifunction button are the same.

10.3.2 Removing and installing multifunction buttons in 4-spoke steering wheel, from model year 2012 onwards

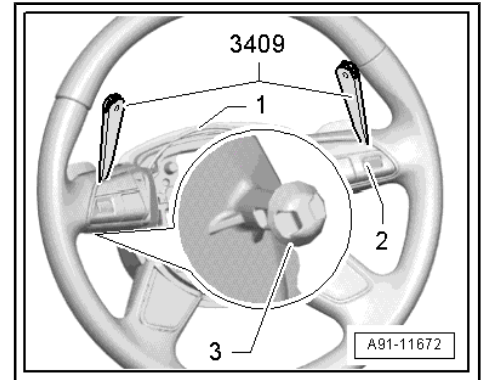
Special tools and workshop equipment required

- ♦ Removal wedge - 3409-



The multifunction buttons -2- are bolted to the trim panel -1-. The trim panel -1- is secured on the steering wheel together with the multifunction buttons -2-. Each multifunction button -2- has an extra retainer -3-.

When removing, make sure to loosen trim panel -1- by hand first (approx. 5 mm) and then disengage retainers -3- for multifunction buttons -2- using removal wedge - 3409- and finally pull off trim panel -1- together with multifunction buttons -2-.

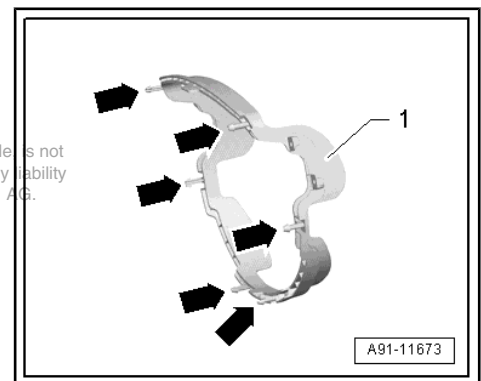


Retainers for trim panel

1 - Trim panel

Arrows - retainers

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Retainer for multifunction buttons

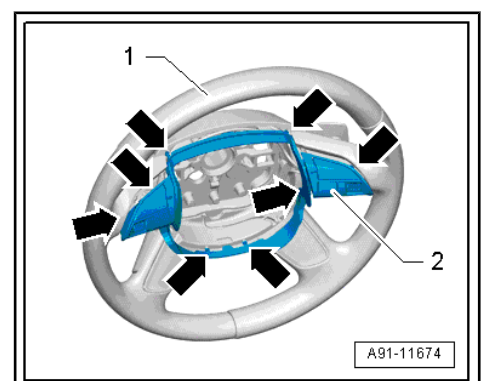
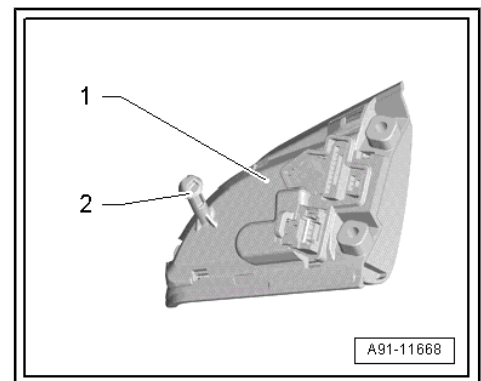
1 - Multifunction button

2 - Retainer

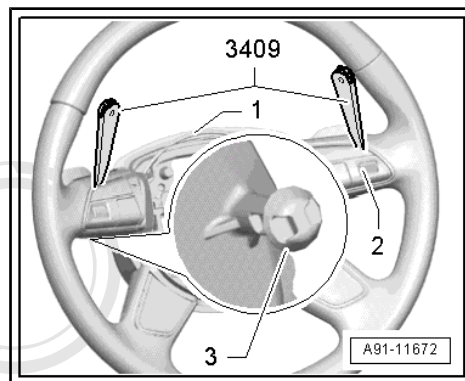
- Switch off all electrical equipment.
- Switch off ignition and take out ignition key.

Removing

- Remove driver airbag ⇒ General body repairs, interior; Rep. gr. 69 ; Airbag (driver side); Exploded view of airbag (driver side) .
- Take connecting wires out of their guides in steering wheel.
- Slightly loosen trim panel -2- together with multifunction buttons -arrows- by hand and pull it off steering wheel -1- (approx. 5 mm).



- Disengage multifunction buttons -2- in area of retainers -3- using removal wedge - 3409- . Apply removal wedge - 3409- as shown in illustration.

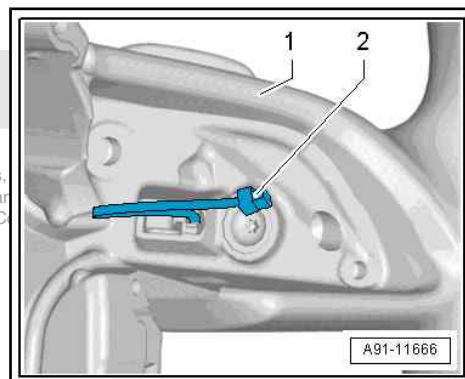


- At the same time, pay attention to connectors leading to tiptronic switches -2-.
- Unplug this connector -2- at multifunction buttons.
- Detach trim panel together with multifunction buttons from steering wheel.

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The multifunction buttons are bolted to the trim panel.

- Unplug connector at multifunction button.

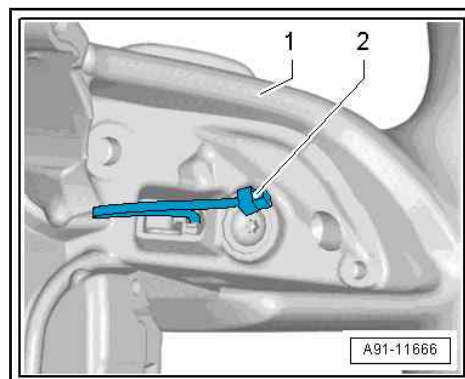
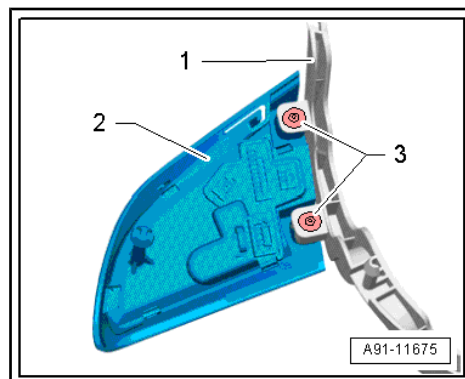


- Remove bolts -3- and press multifunction button -2- out of trim panel -1-.

The additional wiring on the multifunction button (right-side) remains attached to the multifunction button.

Installing

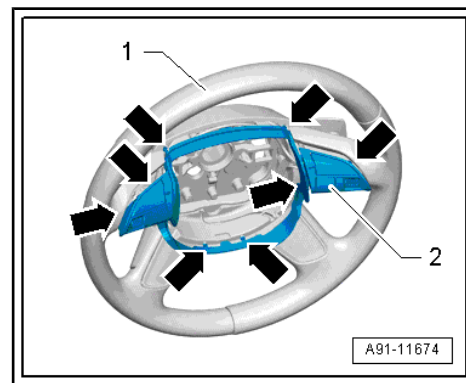
- Installation is performed in reverse sequence, paying attention to the following:
- Position trim panel with multifunction buttons fitted on steering wheel.
- Ensure connecting wiring -2- for tiptronic switches is routed as shown in illustration.
- Route remaining connecting wiring, including connectors, in guides in steering wheel.



- Push trim panel -2- together with multifunction buttons onto steering wheel -1- until they engage properly.
- Then check again that wiring in steering wheel is correctly routed.

Tightening torques

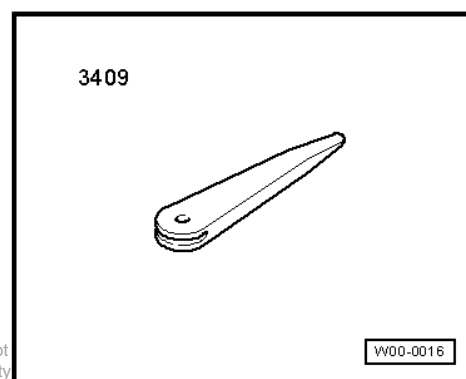
- ◆ ⇒ “10.2.2 Exploded view of 4-spoke steering wheel, from model year 2012 onwards”, page 248



10.3.3 Removing and installing multifunction buttons in 3-spoke steering wheel, from model year 2012 onwards

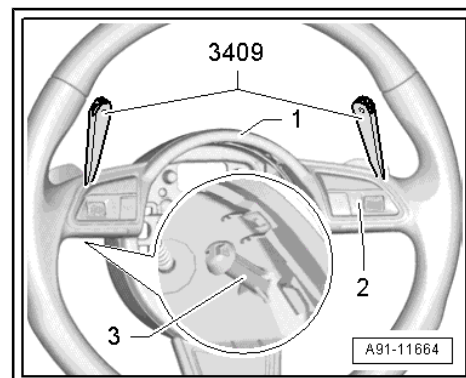
Special tools and workshop equipment required

- ◆ Removal wedge - 3409-



The multifunction buttons -2- are clipped into the trim panel -1-. The trim panel -1- is secured on the steering wheel together with the multifunction buttons -2-. Each multifunction button -2- has an extra retainer -3-.

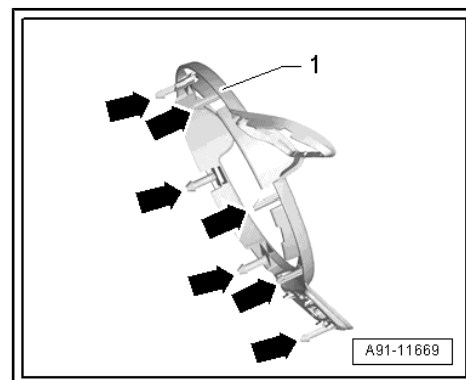
When removing, make sure to loosen trim panel -1- by hand first (approx. 5 mm) and then disengage retainers -3- for multifunction buttons -2- using removal wedge - 3409- and finally pull off trim panel -1- together with multifunction buttons -2-.



Retainers for trim panel

1 - Trim panel

Arrows - retainers



Retainer for multifunction buttons

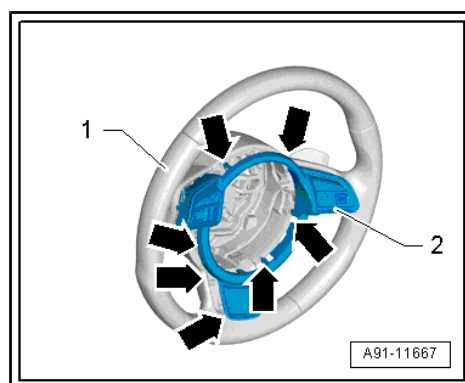
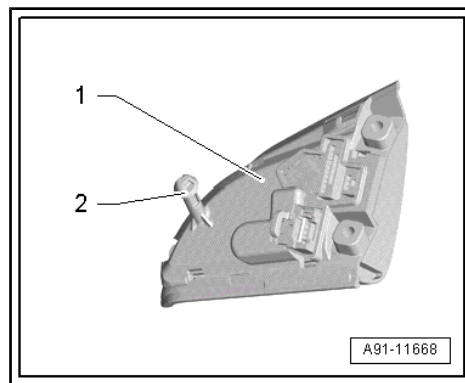
1 - Multifunction button

2 - Retainer

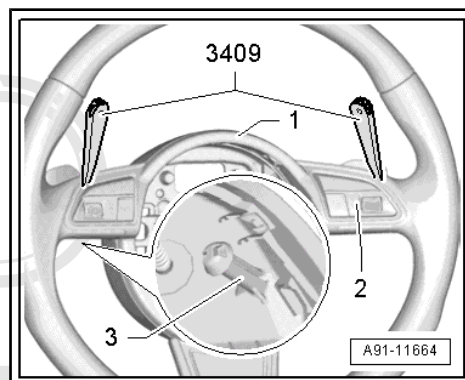
- Switch off all electrical equipment.
- Switch off ignition and take out ignition key.

Removing

- Remove driver airbag ⇒ General body repairs, interior; Rep. gr. 69 ; Airbag (driver side); Exploded view of airbag (driver side) .
- Take connecting wires out of their guides in steering wheel.
- Slightly loosen trim panel -2- together with multifunction buttons -arrows- by hand and pull it off steering wheel -1- (approx. 5 mm).

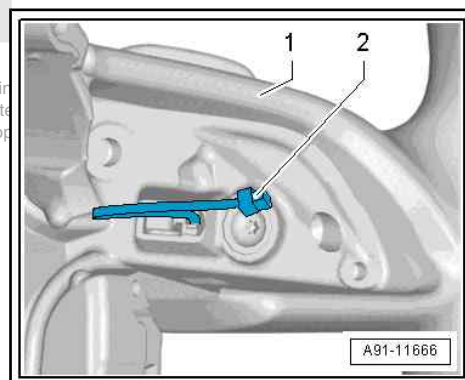


- Disengage multifunction buttons -2- in area of retainers -3- using removal wedge - 3409- . Apply removal wedge - 3409- as shown in illustration.



- At the same time, pay attention to connectors leading to tip-tronic switches -2-.
- Unplug this connector -2- at multifunction buttons.
- Detach trim panel together with multifunction buttons from steering wheel.

The multifunction buttons are clipped into the trim panel.

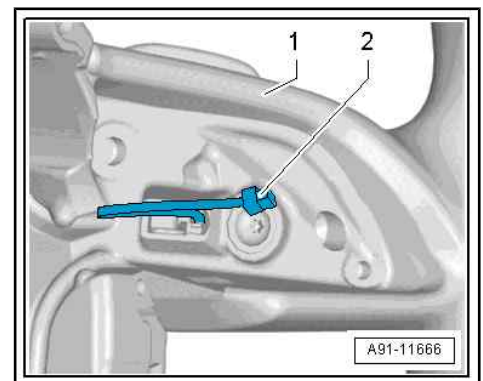
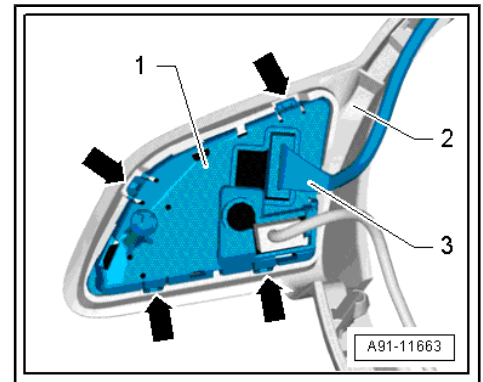


- Unplug connector -3- at multifunction button -1-.
- Release clips -arrows- and press multifunction button -1- out of trim panel -2-.

The additional wiring on the multifunction button (right-side) remains attached to the multifunction button.

Installing

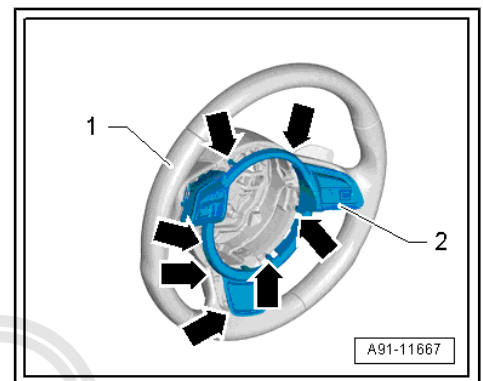
- Installation is performed in reverse sequence, paying attention to the following:
- Position trim panel with multifunction buttons fitted on steering wheel.
- Ensure connecting wiring -2- for tiptronic switches is routed as shown in illustration.
- Route remaining connecting wiring, including connectors, in guides in steering wheel.



- Push trim panel -2- together with multifunction buttons onto steering wheel -1- until they engage properly.
- Then check again that wiring in steering wheel is correctly routed.

Tightening torques

- ◆ ⇒ ["10.2.3 Exploded view of 3-spoke steering wheel, from model year 2012 onwards", page 249](#)



10.4 Removing and installing tiptronic switches in steering wheel -E439- / -E438-

⇒ ["10.4.1 Removing and installing tiptronic switches, up to model year 2011", page 255](#)

⇒ ["10.4.2 Removing and installing tiptronic switches, from model year 2012 onwards", page 256](#)

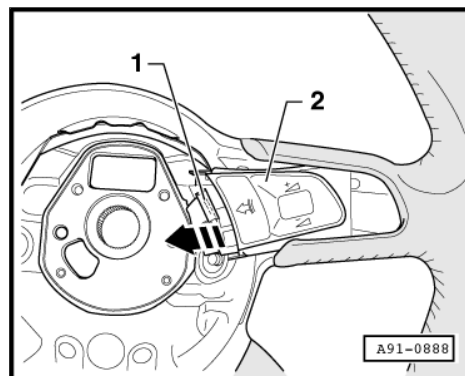
10.4.1 Removing and installing tiptronic switches, up to model year 2011

- Switch off all electrical equipment.
- Remove ignition key.

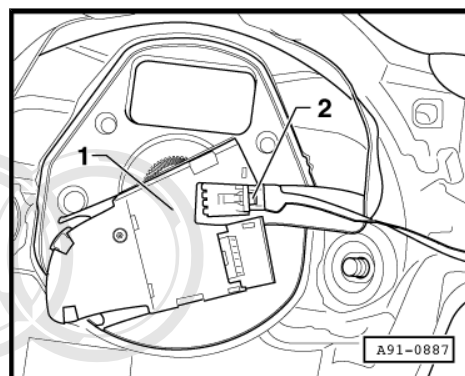
Removing

- Remove driver airbag ⇒ General body repairs, interior; Rep. gr. 69 ; Airbag (driver side); Exploded view of airbag (driver side) .
- Pull trim ring off steering wheel.

- Push multifunction button -2- out of steering wheel in direction of arrow.
- Turn button over.



- Release and unplug connector -2- at multifunction button -1-.



- Unscrew bolt -arrow- and remove tiptronic switch towards rear.

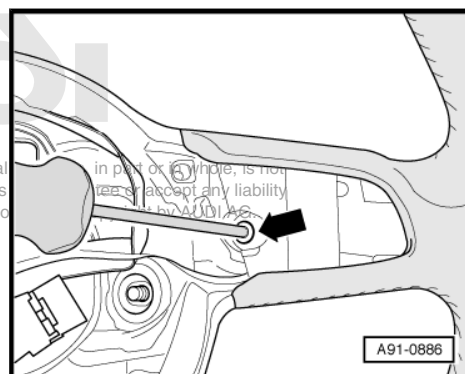
Installing

- Install in reverse sequence of removal.

Removal and installation procedures for the left-side switch are the same.

Tightening torques

- ♦ ⇒ [“10.2.1 Overview, up to model year 2011”, page 246](#)



10.4.2 Removing and installing tiptronic switches, from model year 2012 onwards

- Switch off all electrical equipment.
- Switch off ignition and take out ignition key.

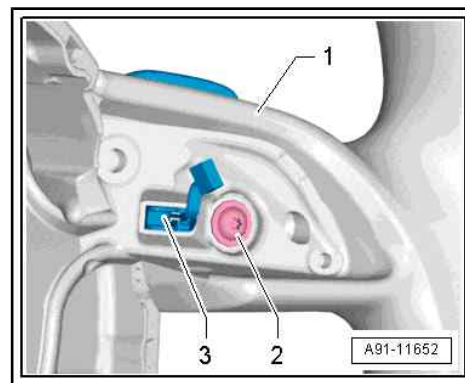
Removing

- Remove trim panel with multifunction buttons (4-spoke steering wheel) ⇒ [page 250](#) , (3-spoke steering wheel) ⇒ [page 253](#) .

- Remove bolt -2- on steering wheel -1- and detach tiptronic switch -3- with connecting wire towards rear.

Installing

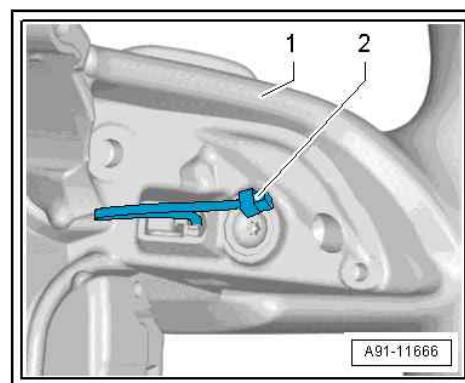
- Installation is performed in reverse sequence.



- Note position of connecting wire -2- to multifunction button.

Tightening torques

- ◆ ⇒ "10.2.2 Exploded view of 4-spoke steering wheel, from model year 2012 onwards", page 248
- ◆ ⇒ "10.2.3 Exploded view of 3-spoke steering wheel, from model year 2012 onwards", page 249



11 Voice control system

⇒ "11.1 Layout - voice control system", page 258

⇒ "11.2 Connector on speech input control unit", page 260

⇒ "11.3 Removing and installing voice control system", page 260

11.1 Layout - voice control system

The voice control system enables voice operation of the telephone, telematics, infotainment and navigation systems.

Functions can be conveniently operated by simple voice commands. The system is activated via the **[talk]** button on the multi-function steering wheel.

1 - Multi-function steering wheel

- ☐ Removing and installing buttons ⇒ page 249

2 - Steering column electronics control unit - J527-

- ☐ On steering column at steering column switch

3 - Data bus diagnostic interface - J533-

- ☐ Behind glove box (left-side)

4 - CD changer - R41-

- ☐ In dash panel

5 - Radio - R-

- ☐ With speech input control unit - J507-
- ☐ Behind luggage compartment side trim (left-side)
- ☐ Pin assignment, speech input control unit - J507- ⇒ page 260

- ☐ Removing and installing speech input control unit - J507- ⇒ page 260

6 - Navigation system with CD drive control unit - J401-

- ☐ Behind luggage compartment side trim (left-side)

7 - Control unit for front display and information control panel - J523-

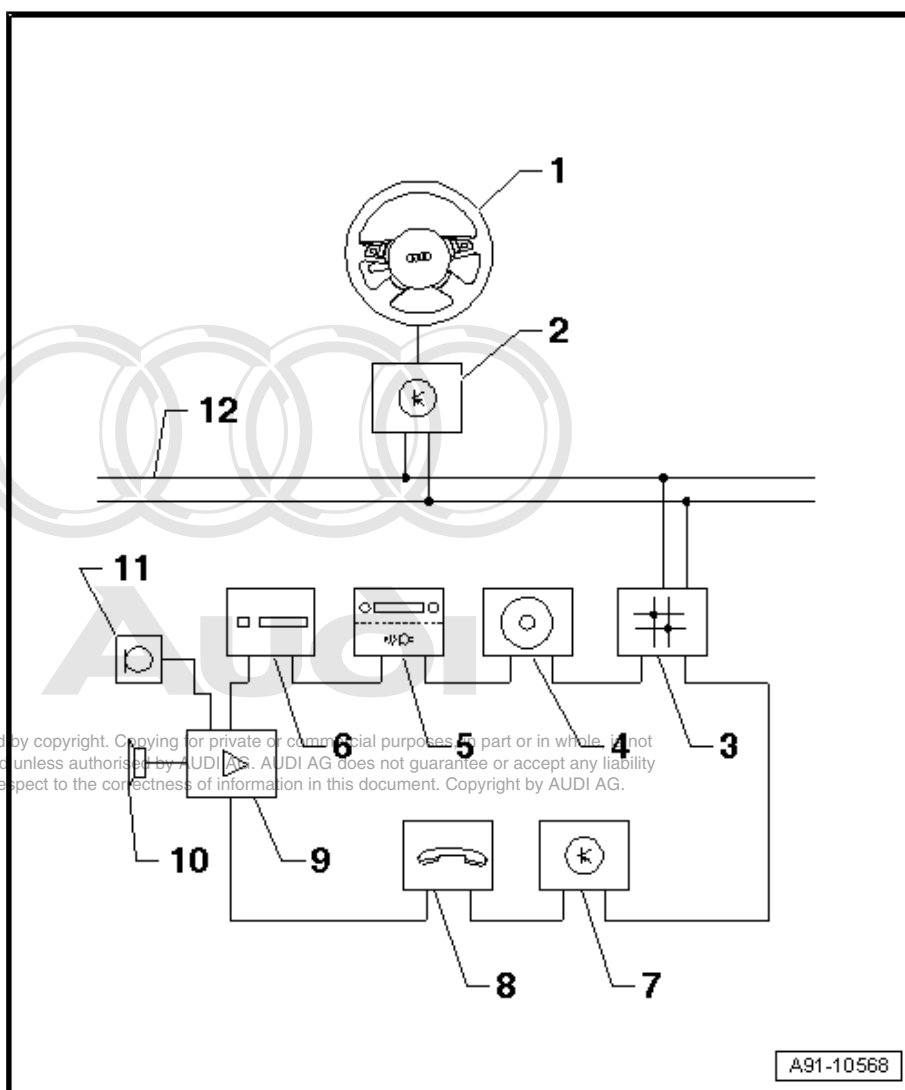
- ☐ Behind dash panel

8 - Telephone transmitter and receiver unit - R36-

- ☐ Beneath front seat (right-side)

9 - Digital sound package control unit - J525-

- ☐ Behind luggage compartment side trim (left-side)



10 - Sound systems

11 - Microphone unit in front roof module - R164-

- ☐ Overview ➤ [page 158](#)

12 - CAN bus (convenience)

From week 45/2008 onwards the voice control system is part of the control unit 1 for information electronics - J794-.

1 - Display unit for front information display and operating unit control unit - J685-

- ☐ In dash panel (centre)

2 - Multimedia system operating unit - E380-

- ☐ In centre console

3 - Control unit 1 for information electronics - J794-

- ☐ In dash panel
- ☐ Pin assignment (from week 45/2008 onwards) ➤ [page 44](#)
- ☐ Removing and installing ➤ [page 35](#)

4 - Data bus diagnostic interface - J533-

- ☐ Behind glove box (left-side)

5 - Steering column electronics control unit - J527-

- ☐ On steering column at steering column switch

6 - Multi-function steering wheel

- ☐ Removing and installing buttons ➤ [page 249](#)

7 - Digital sound package control unit - J525-

- ☐ Behind luggage compartment side trim (left-side)

8 - Radio - R-

- ☐ Behind luggage compartment side trim (left-side)

9 - TV tuner - R78-

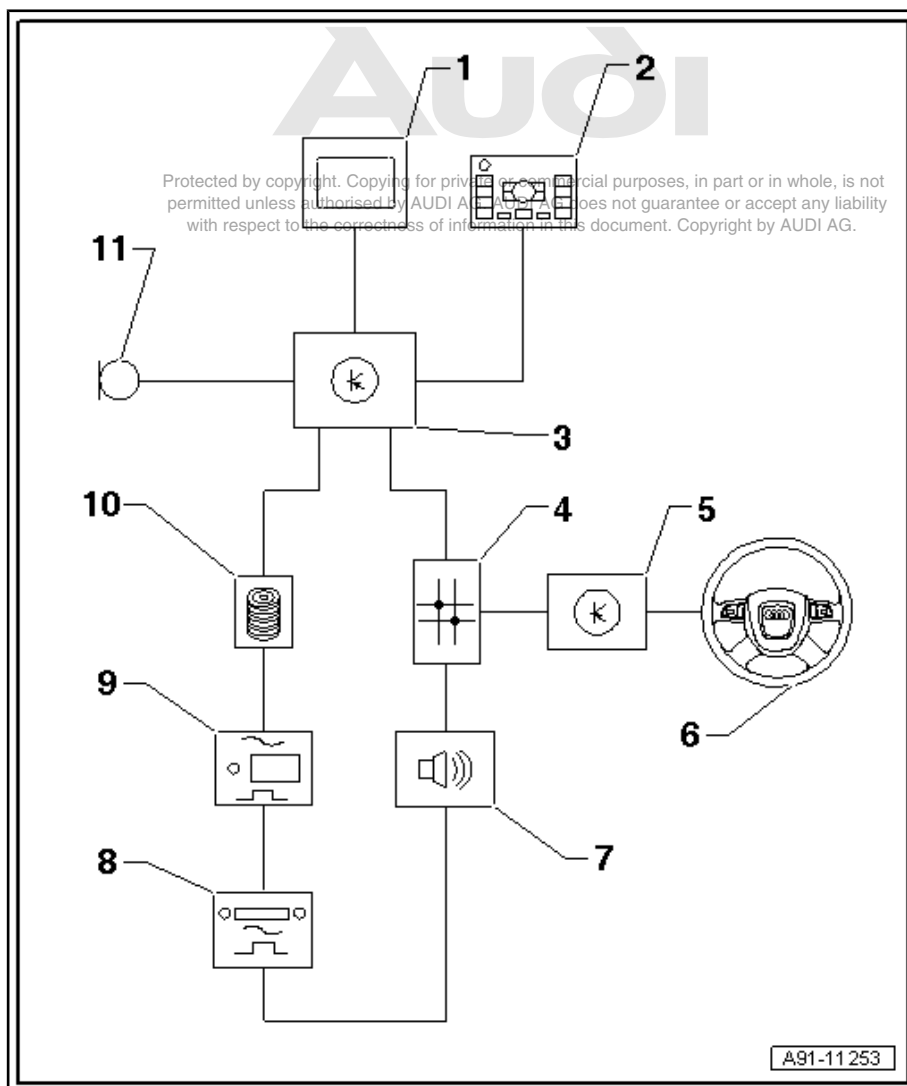
- ☐ Behind luggage compartment side trim (left-side)

10 - CD changer - R41-

- ☐ In glove box

11 - Microphone unit in front roof module - R164-

- ☐ Overview ➤ [page 158](#)



Fault finding is performed via the “Guided Fault Finding” ➤ Vehicle diagnostic tester.

11.2 Connector on speech input control unit

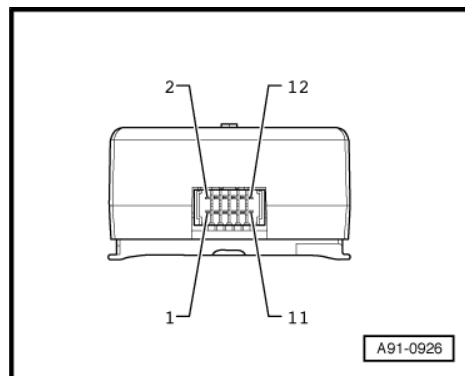


Note

Contacts which are not listed are not used.

Multi-pin connector, 12-pin

- 1 - Not used
- 2 - Not used
- 3 - Status
- 4 - Diagnosis
- 5 - Terminal 30
- 6 - Reset signal
- 7 - Power good
- 8 - Power on
- 9 - Terminal 31
- 10 - MOST out
- 11 - Enable
- 12 - MOST in



11.3 Removing and installing voice control system

⇒ ["11.3.1 Removing and installing speech input control unit J507 , up to week 44/2008", page 260](#)

⇒ ["11.3.2 Removing and installing voice control system, from week 45/2008 onwards", page 261](#)

11.3.1 Removing and installing speech input control unit - J507- , up to week 44/2008

The speech input control unit - J507- is located in the radio - R- (MMI) behind the luggage compartment side trim (left-side).

- Switch off all electrical equipment.
- Remove ignition key.
- When renewing control unit, select "Replacement" function for appropriate control unit in "Guided Fault Finding".

To do so, use ⇒ **Vehicle diagnostic tester.**

Removing

- Remove the radio - R- (MMI) ⇒ [page 108](#) .

- Open radio cover -2- for radio - R- and fold it down -arrow-.
- Carefully pull the speech input control unit - J507- -1- in the direction of the arrow out of the radio - R- .

Installing

- Install in reverse sequence of removal.
- Be sure that the connector between speech input control unit - J507- and radio - R- properly engages in the radio - R- .

Check the function as follows:

- Switch on the radio - R- .
- Briefly press the **[talk]** button on the multi-function steering wheel.

A “BEEP” tone should sound; this indicates that the speech dialogue system is activated.

- Say the command “HELP”.

Since the radio - R- is activated, the speech dialogue system should respond with “Commands for the radio are ...”.

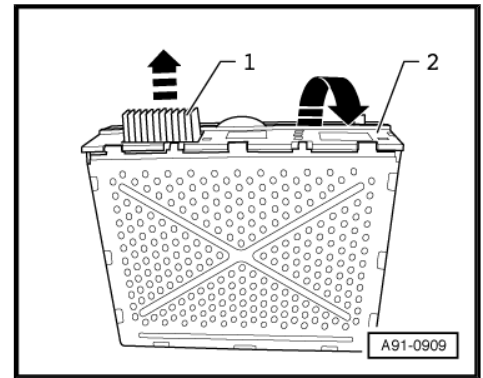
Depending on the equipment, you can switch to other functions:

- If the vehicle is equipped with a telephone, say “TELEPHONE”.

The speech dialogue system switches to the telephone mode.

- Press **[talk]** button for approx. one second.

The speech dialogue system responds with “Cancel” and is deactivated.



11.3.2 Removing and installing voice control system, from week 45/2008 onwards

The speech dialogue system is part of the control unit 1 for information electronics - J794- (MMI) located in the centre console (top) and cannot be renewed separately.

In the event of a defect, the control unit 1 for information electronics - J794- must be renewed.

- Switch off all electrical equipment.
- Remove ignition key.
- When renewing control unit, select “Replacement” function for appropriate control unit in “Guided Fault Finding”.

To do so, use ⇒ Vehicle diagnostic tester.

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Removing

- Remove control unit 1 for information electronics - J794-
⇒ [page 35](#) .

Installing

- Install control unit 1 for information electronics - J794-
⇒ [page 35](#) .

Check the function as follows:

- Switch on the radio - R- .
- Briefly press the **[talk]** button on the multi-function steering wheel.



A "BEEP" tone should sound; this indicates that the speech dialogue system is activated.

- Say the command "HELP".

Since the radio - R- is activated, the speech dialogue system should respond with "Commands for the radio are ...".

Depending on the equipment, you can switch to other functions:

- If the vehicle is equipped with a telephone, say "TELEPHONE".

The speech dialogue system switches to the telephone mode.

- Press **talk** button for approx. one second.

The speech dialogue system responds with "Cancel" and is deactivated.

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12 Connection for external multimedia devices

⇒ ["12.1 Layout - connection for external multimedia devices", page 263](#)

⇒ ["12.2 Connectors on connection for external audio sources", page 264](#)

⇒ ["12.3 Removing and installing connection for external audio sources R199", page 266](#)

12.1 Layout - connection for external multimedia devices

The connection for external audio sources - R199- is available in several versions.

CAN versions

Version with AMI (Audi music interface) is installed in glove box.

Version with AUX IN socket is installed in centre console storage compartment.

These connections for external audio sources - R199- are connected directly to the radio - R- .

Either AMI or AUX IN socket is fitted.

MOST version, MMI (up to week 44/2008)

Version with AMI (Audi music interface) is installed in glove box.

This connection for external audio sources - R199- is connected to the Infotainment system via the MOST bus.

Version with AUX IN socket is installed in centre console storage compartment.

This connection for external audio sources - R199- is connected directly to the digital sound package control unit - J525- .

Either AMI or AUX IN socket is fitted.

MOST version, MMI (from week 45/2008 onwards)

Version with AMI (Audi music interface) is part of control unit 1 for information electronics - J794- .

The interface is located in the glove box.

Version with AUX IN socket is installed in centre console storage compartment.

This connection for external audio sources - R199- is connected directly to the control unit 1 for information electronics - J794- .

Either AMI or AUX IN socket is fitted.

The following external audio sources can be connected to connection for external audio sources - R199- :

- ◆ iPod
- ◆ MP3 player
- ◆ USB stick

Appropriate adapter cables are required ⇒ Owner's Manual .

Fault finding is performed via the "Guided Fault Finding" ⇒ Vehicle diagnostic tester.

12.2 Connectors on connection for external audio sources

⇒ "12.2.1 Pin assignment for AMI, MMI, up to week 44/2008", page 264

⇒ "12.2.2 Pin assignment for connection for external audio sources R199 (interface)", page 265

⇒ "12.2.3 Pin assignment for AMI, CAN", page 265

⇒ "12.2.4 Pin assignment for AUX IN", page 266

12.2.1 Pin assignment for AMI, MMI, up to week 44/2008

Connection for external audio sources - R199-

- 1 - Multi-pin connector, 8-pin (T8aa)
- 2 - MOST bus



Note

Contacts which are not listed are not used.

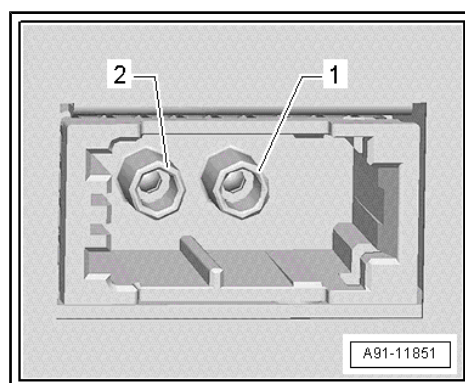
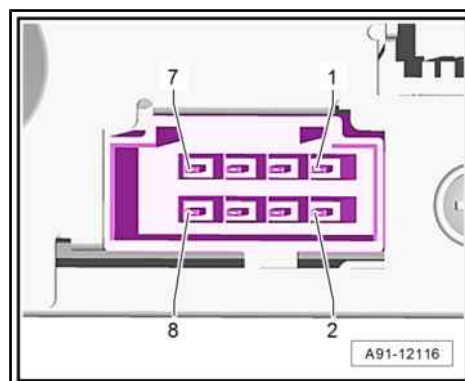
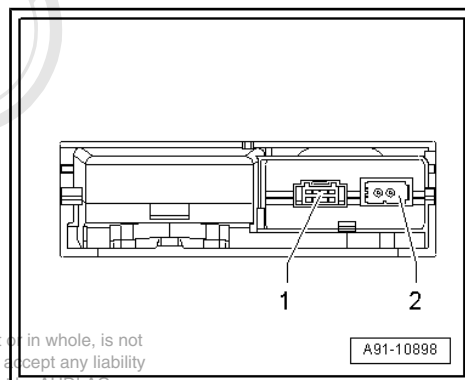
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1 - Multi-pin connector, 8-pin (T8aa)

- 1 - Terminal 31
- 2 - Terminal 30
- 4 - Terminal 31
- 5 - Open circuit diagnostic lead

2 - MOST bus

- 1 - Input
- 2 - Output



12.2.2 Pin assignment for connection for external audio sources - R199- (interface)

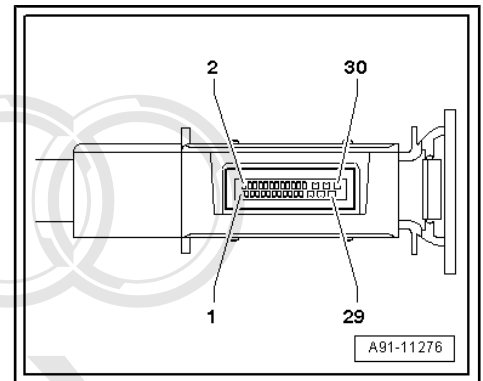
Note

Contacts which are not listed are not used.

Multi-pin connector, 30-pin (T30b)

All pins are connected to the control unit 1 for information electronics - J794- .

- 1 - NF in, left-side (low frequency)
- 2 - NF in, right-side (low frequency)
- 3 - Low frequency earth
- 4 - NF in, screen earth (low frequency)
- 13 - iPod data
- 14 - iPod data
- 16 - iPod detected
- 17 - D (+)
- 18 - D (-)
- 21 - Detect
- 22 - Earth
- 24 - FBAS wire (-)
- 25 - USB (earth)
- 27 - FBAS wire (+)
- 28 - USB (+5 V)



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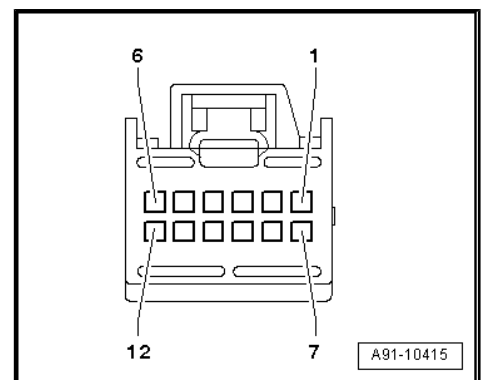
12.2.3 Pin assignment for AMI, CAN

Note

Contacts which are not listed are not used.

Multi-pin connector, 12-pin (T12t)

- 1 - Terminal 31
- 2 - CAN bus Low (infotainment)
- 3 - Not used
- 4 - NF right (low frequency) to radio - R-
- 5 - Not used
- 6 - Not used
- 7 - Terminal 30
- 8 - CAN bus High (infotainment)
- 9 - NF left (low frequency) to radio - R-
- 10 - NF earth (low frequency) to radio - R-



12.2.4 Pin assignment for AUX IN



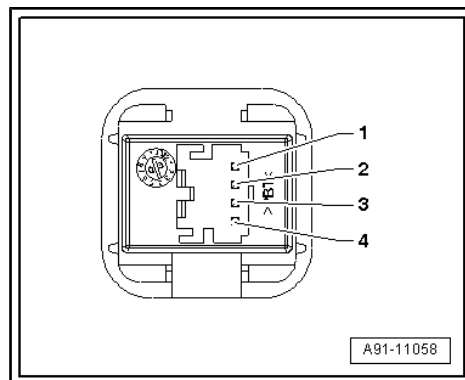
Note

Contacts which are not listed are not used.

Multi-pin connector, 4-pin (T4i) (CAN)

All pins are connected to the radio - R- / digital sound package control unit - J525- .

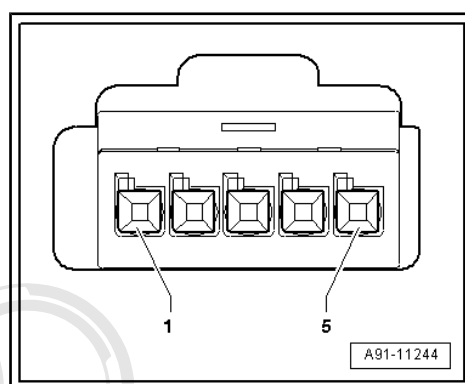
- 1 - Low frequency earth
- 2 - Low frequency, left-side
- 3 - Low frequency, right-side
- 4 - Low frequency earth



Multi-pin connector, 5-pin (T5g) (MMI)

All pins are connected to the control unit 1 for information electronics - J794- .

- 1 - Low frequency earth
- 2 - Low frequency, left-side
- 3 - Low frequency, right-side
- 4 - Screen earth
- 5 - Detect



12.3 Removing and installing connection for external audio sources - R199-

⇒ ["12.3.1 Removing and installing connection for external audio sources R199 , AMI", page 266](#)

⇒ ["12.3.2 Removing and installing connection for external audio sources R199 \(AUX IN\)", page 268](#)

⇒ ["12.3.3 Removing and installing connection for external audio sources R199 \(interface\)", page 268](#)

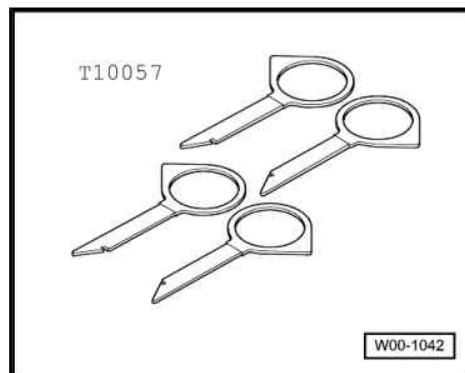
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12.3.1 Removing and installing connection for external audio sources - R199- , AMI

The connection for external audio sources - R199- (AMI) is located in the glove box.

Special tools and workshop equipment required

- ◆ Radio release tool - T10057-



◆ Fibre-optic conductor repair set - VAS 6223-



◆ Protective cap for cable connector - VAS 6223/9-

- Switch off all electrical equipment.
- Remove ignition key.

Removing

- Open glove box.
- Insert two radio release tools - T10057- into release slots on connection for external audio sources - R199- until they engage. Pointed ends of tool grips must face outwards.
- Pull connection for external audio sources - R199- out of mounting frame.
- Release and unplug all connectors at connection for external audio sources - R199- .

Versions with MOST bus

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- Fit protective cap for cable connector - VAS 6223/9- -1- onto MOST bus connector -2-.

All versions

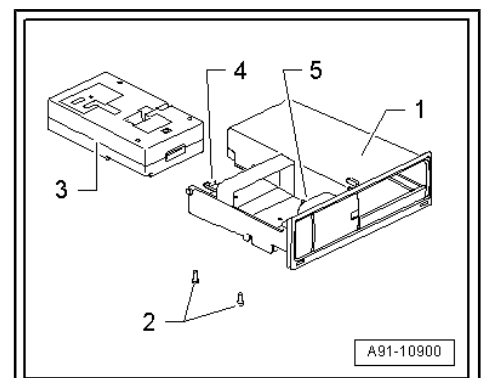
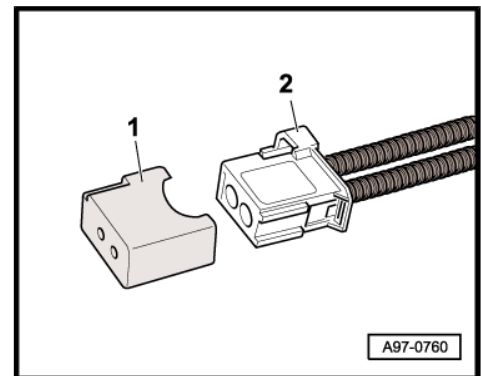
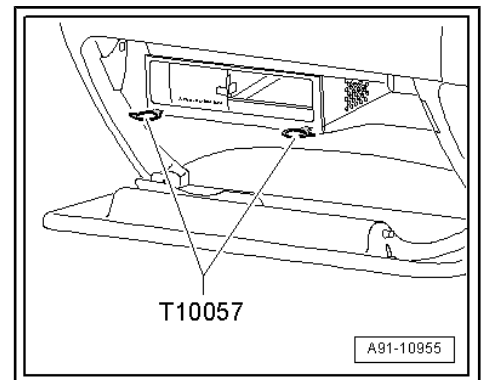
- Press release tabs on connection for external audio sources - R199- and remove radio release tool - T10057- .

Removing internal control unit

- Remove bolts -2- (2 Nm) on underside.
- Push tabs -4- and -5- downwards and upwards and slide control unit out of frame -1- to rear.

Installing

- Plug in all connectors.
- Push connection for external audio sources - R199- into mounting frame until it engages.



12.3.2 Removing and installing connection for external audio sources - R199- (AUX IN)

The connection for external audio sources - R199- (AUX IN) is installed in centre console storage compartment.

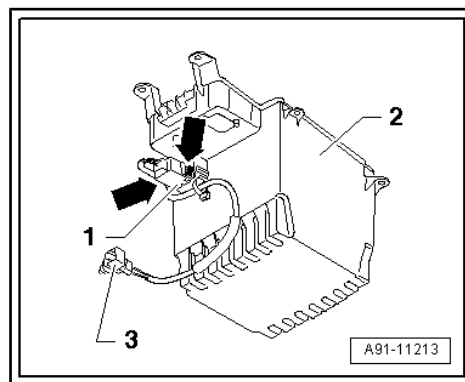
- Switch off all electrical equipment.
- Remove ignition key.

Removing

- Remove storage compartment for centre console ⇒ General body repairs, interior; Rep. gr. 68 ; Centre console; Removing and installing storage compartment for centre console (front) .
- Release and unplug connector -3- at connection for external audio sources - R199- -1-.
- Press together tabs -arrows- on connection for external audio sources - R199- -1- and slide connection for external audio sources - R199- -1- into storage compartment -2-.

Installing

- Install in reverse sequence of removal.



12.3.3 Removing and installing connection for external audio sources - R199- (interface)

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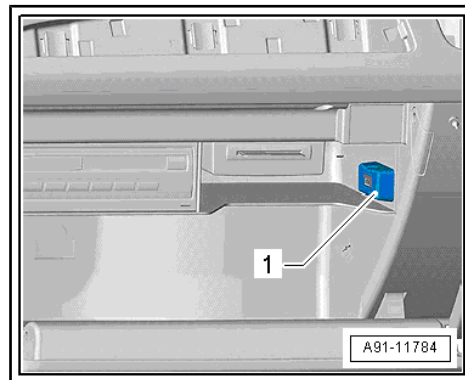
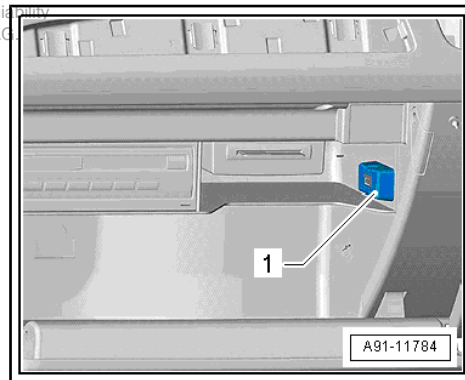
The connection for external audio sources - R199- (interface) -1- is located in the glove box.

- Switch off all electrical equipment.
- Switch off ignition and take out ignition key.

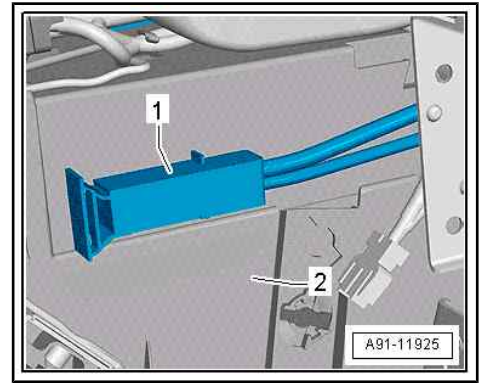
Removing

The wires for the interface are part of the wiring harness and cannot be renewed separately. If defective, an adapter wiring harness must be installed ⇒ ETKA (Electronic parts catalogue) .

- Open glove box.
- Use removal wedge - VAS 3409- to unclip trim panel -1-.



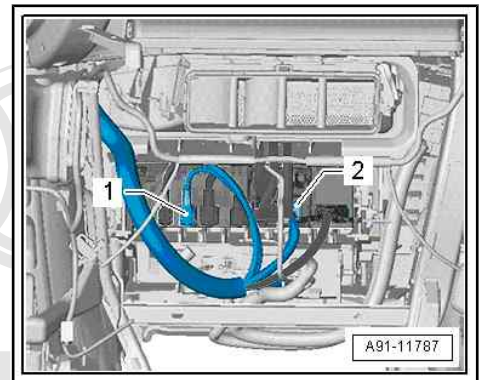
Interface (T30b) -1- is clipped into glove box -2- from rear.



Connectors to interface T4ap -1- and T12y -2- are located at control unit 1 for information electronics - J794- .

Installing

- Install in reverse sequence of removal.



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13 Internet access

⇒ "13.1 Layout - internet access", page 270

⇒ "13.2 Removing and installing internet access control unit J666", page 270

⇒ "13.3 Removing and installing internal battery for internet access control unit J666", page 271

⇒ "13.4 Pin assignment", page 272

13.1 Layout - internet access

The internet access control unit - J666- -1- is located in the glove box -2-.

Internet access control unit - J666- (Audi music interface online) extends connection for external audio sources - R199- (AMI) to include the following additional functions:

- ◆ Recording internet radio stations and podcasts using a home WLAN (WiFi) network and playing them in the vehicle
- ◆ Listening to internet radio stations live while travelling using a USB broadband modem
- ◆ Creating a wireless LAN (WiFi) hotspot (with USB broadband modem)

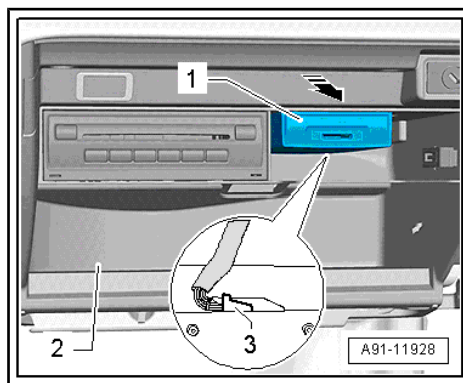
An SD card reader is integrated into internet access control unit - J666- . The SD card is used to configure AMI online at www.audi.com.

The internet access control unit - J666- is installed together with the connection for external audio sources - R199- (interface). The internet access aerial - R266- (WLAN aerial) is bonded to the air duct behind the glove box.

The USB broadband modem is connected to the connection for external audio sources - R199- (interface) via an adapter wire.

Additional information ⇒ Owner's Manual .

Control unit 1 for information electronics - J794- is used for fault finding (event memory).



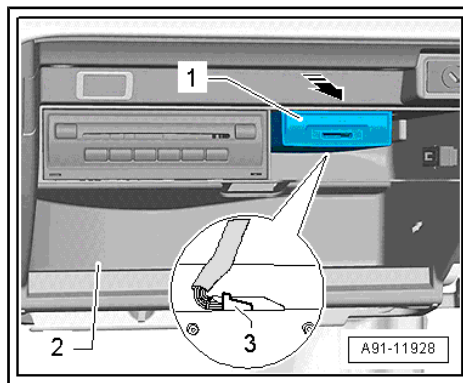
13.2 Removing and installing internet access control unit - J666-

The internet access control unit - J666- -1- is located in the glove box -2-.

- Switch off all electrical equipment.
- Remove ignition key.

Removing

- Open glove box.
-

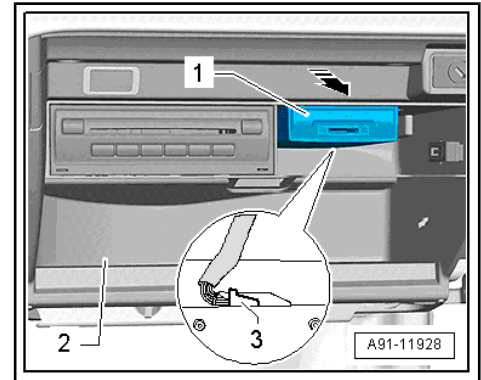


- Slide internet access control unit - J666- -1- towards rear in direction of -arrow- until it can be detached from lining -2-.
- Release and unplug connectors -3- at chip card reader control unit - J676- -1-.

Installing

- Install in reverse sequence of removal.
- Remove protective foil from internal battery.

If internet access control unit - J666- is renewed, the customer will need to re-configure it.



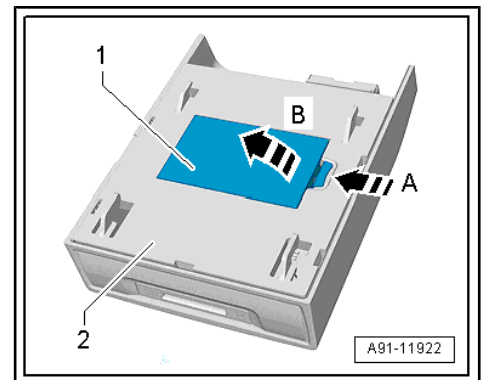
13.3 Removing and installing internal battery for internet access control unit - J666-

A battery is integrated into internet access control unit - J666- . If a battery-related entry is saved into the event memory of the control unit 1 for information electronics - J794- , the battery must be renewed.

- Switch off all electrical equipment.
- Remove ignition key.

Removing

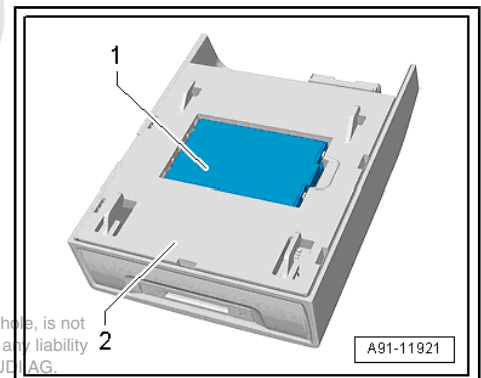
- Remove internet access control unit - J666- ➔ [page 270](#) .
- Press lug -arrow A- on cover -1-, then fold cover -1- upwards in direction of -arrow B- and remove from internet access control unit - J666- -2-.



- Remove battery -1- from internet access control unit - J666- -2-.

Installing

- Install in reverse sequence of removal.



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13.4 Pin assignment

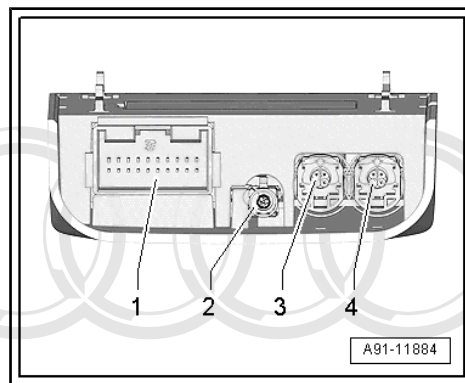
Internet access control unit - J666-

- 1 - Multi-pin connector, 20-pin (T20g)
- 2 - Connection for internet access aerial - R266-
- 3 - Multi-pin connector, 4-pin (T4o) to control unit 1 for information electronics - J794-
- 4 - Multi-pin connector, 4-pin (T4n) to connection for external audio sources - R199- (interface)



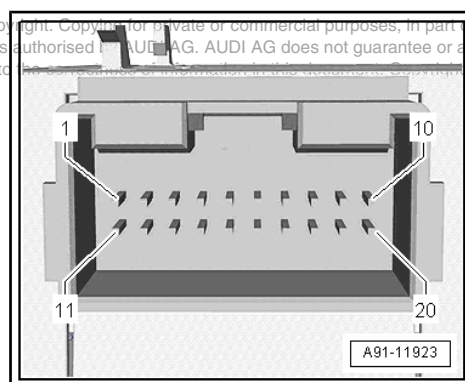
Note

Contacts which are not listed are not used.



1 - Multi-pin connector, 20-pin (T20g)

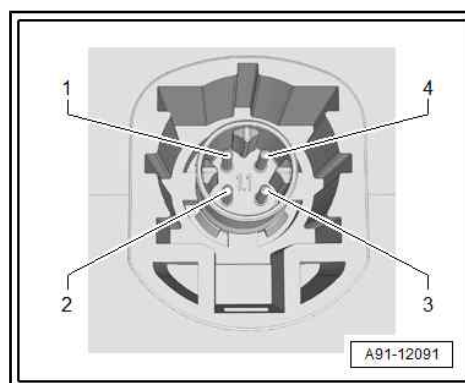
- 1 - USB (+5 V) from control unit 1 for information electronics - J794-
- 2 - USB (earth) from control unit 1 for information electronics - J794-
- 3 - USB (+5 V) to connection for external audio sources - R199- (interface)
- 6 - Terminal 30
- 7 - Terminal 31
- 16 - Detect to connection for external audio sources - R199- (interface)
- 18 - Detect from control unit 1 for information electronics - J794-
- 19 - CAN bus High (instrument cluster)
- 20 - CAN bus Low (instrument cluster)



3 - Multi-pin connector, 4-pin (T4o)

All pins are connected to the control unit 1 for information electronics - J794- .

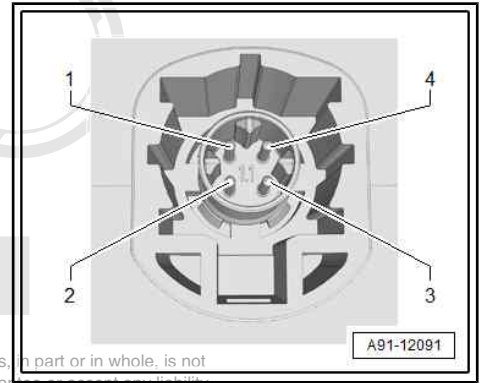
- 1 - D (+)
- 2 - iPod detected
- 3 - D (-)
- 4 - Earth



4 - Multi-pin connector, 4-pin (T4n)

All pins are connected to the connection for external audio sources - R199- (interface).

- 1 - D (+)
- 2 - iPod detected
- 3 - D (-)
- 4 - Earth



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