Installation instructions

AUDI A6 (F2) 2018 ►
AUDI A7 (F2) 2018 ►
Electrics set for fixed/mechanically removable towing bracket

for package number 4K0.055.204
Audi Genuine Accessories

Edition 01

Contents

Printed in Germany

EN

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1 General notes

Please read and take note of these WARNING, Caution and Note descriptions before carrying out maintenance or repair work.

> ***WARNING***
>
> ***Text with this symbol contains information concerning your safety and indicates potential accident and injury risks.***

Caution

Text with this symbol indicates the risk of damage to your vehicle.

Note

Text with this symbol contains additional information.

Caution

Towing mode places increased demands on the cooling system. Please check whether your vehicle is installed with the required fan capacity for use at full towing capacity with your Audi Partner.

If this is not installed, make sure you adopt a gentle driving style (see vehicle wallet). You can also ask your Audi partner if it is possible to retrofit your vehicle with a fan.

Special tools are required for assembly. Improper installation can cause damage to the vehicle or the add-on parts.

- ***The cooling system must be adapted to the vehicle operating conditions*** ⇒ **Page 23*****.***

Special tools are required for assembly. Improper installation can cause damage to the vehicle or the add-on parts.

> ***WARNING***
>
> **For safety reasons, the towing bracket must only be fitted by skilled personnel – risk of accident!**

AUDI AG shall not accept responsibility in the event of failure to comply with these installation instructions.

2 Safety instructions for pyrotechnical, electrical and mechanical components of the restraint system

2.1 General safety instructions

Pyrotechnical components comprise:

- Airbag units
- Belt tensioners
- Belt force limiters
- Battery disconnecting elements

General

- Testing, installation and maintenance tasks must only be carried out by trained personnel.
- There are no replacement intervals for airbag units.
- Do not check using circuit tester, voltmeter, or ohmmeter under any circumstances.
- Pyrotechnic components must only be checked when installed and using ⇒ vehicle diagnostic testers that have been approved by the manufacturer.
- When working on pyrotechnic components and the airbag control unit -J234-, the battery earth wire must be disconnected when the IGNITION is SWITCHED ON. The battery negative terminal must subsequently be covered.
- You must wait ten seconds after the battery -A- has been disconnected.
- The battery -A- must be connected when the IGNITION is SWITCHED ON. There must not be anybody inside the vehicle during this process. Exception: vehicles with battery -A- located in the vehicle interior. Do not sit within the airbag and seat belt deployment range.
- Observe the appropriate steps after connecting the battery⇒ Page 22.
- Before performing any work on pyrotechnic components in the restraint system, e.g. before disconnecting the electrical connector, the mechanic carrying out the task must discharge any static electricity. Electrostatic discharging can be performed by touching earthed metal parts, e.g. by briefly touching the door striker plate.
- Wash hands after touching ignited pyrotechnical components of the restraint system.
- Pyrotechnical components must neither be opened nor repaired. New parts must always be used (risk of injury).
- Pyrotechnic components that have fallen onto a hard surface or that show any sign of damage must not be installed.

- Pyrotechnic components must be installed immediately after they are removed from the transport container.
- If work is interrupted, the pyrotechnic component must be returned to the transport container.
- Pyrotechnic components must not be left unattended.
- When connecting the pyrotechnic components in the restraint system, only the person performing the work may be inside the vehicle.
- Pyrotechnic components must not be treated with grease, cleaning agents or similar products.
- If the fabric becomes contaminated with substances such as oil, grease, paint, colour or solvents, the airbag unit must be replaced.
- In addition, pyrotechnic components must not be exposed to temperatures above 100 °C, even for short periods.

2.2 Storing, transporting and disposing of airbag, belt tensioner and battery disconnector units (pyrotechnic components)

- Storage is subject to the applicable national legislation.
- Transportation is subject to national and international laws governing packaging, naming, labelling and accompanying documentation.
- Pyrotechnic components that have not been ignited must be returned in the original packaging for appropriate recycling in line with the applicable national legislation! Contact your importer if you have any questions.
- Only pyrotechnic components that have been completely ignited may be disposed of as industrial waste.

> ⚠ ***WARNING***
>
> ***This does not apply to belt tensioners that work according to the Wankel tensioner principle. Tensioners of this kind should be handled in the same way as pyrotechnic components that have not been ignited (e.g. airbags).***
>
> ***Background: For belt tensioners that work according to the Wankel tensioner principle, it is not possible to use workshop tools to check whether all ignition stages have completed.***

3 Safety notes on the towing bracket – Fitting and operation

The towing bracket is intended for towing trailers fitted with a tow ball and for operating carriers suitable for mounting to the coupling ball.

Nationally applicable regulations must be adhered to in EU and non-EU countries.

Use is only permitted under favourable road conditions and must be adapted to road conditions. Improper use is prohibited.

3.1 Safety notes on assembly

⚠ ***WARNING***

For safety reasons, the towing bracket must only be fitted by skilled personnel – risk of accident!

- ***If replacement parts are required, these must only be installed by skilled personnel and to undamaged genuine parts – risk of accident!***
- ***Installation must be in line with AUDI AG/Volkswagen AG guidelines – risk of accident!***
- ***Modification of the towing bracket is prohibited. This will invalidate the type approval – risk of accident and legal implications!***
- ***Use of the mounting points approved as standard by the vehicle manufacturer is mandatory – risk of accident!***

3.2 Safety notes on operation

⚠ ***WARNING***

Vehicle handling is affected by the use of towing mode; increased driver awareness is required – risk of accident!

- ***Read the notes in the "Towing mode" chapter of the ⇒ Owner's Manual – risk of accident!***
- ***If you are using trailer stabilisers, the coupling ball must be free from grease. Read and observe the notes in the relevant Owner's Manuals – risk of accident!***

The diameter of the ball coupling must be checked at regular intervals.

- ***For safety reasons, use of the towing bracket must be discontinued if the diameter reaches 49 mm at any point. If this situation occurs, contact a qualified workshop – risk of accident!***

For safety reasons, you are advised to swivel the ball rod inwards when not in use – risk of accident!

4 Overview of components

4.1 Overview of electrical system components

1 - Onboard supply retrofit wiring harness

2 - PE bag

- ❑ 1x

Note

Attached to the onboard supply wiring harness.

Contents

- ❑ Socket housing with 3 compartments (1x), black
- ❑ Socket housing with 3 compartments (1x), white

3 - Retrofit electrical socket wiring harness

- ❑ 1x

4 - Activation document

- ❑ 1x

5 - Safety information sheet

- ❑ 1x

6 - Socket

- ❑ 13-pin
- ❑ 1x

7 - Fitting trailer detector control unit -J345-

- ❑ 1x

8 - Cable ties

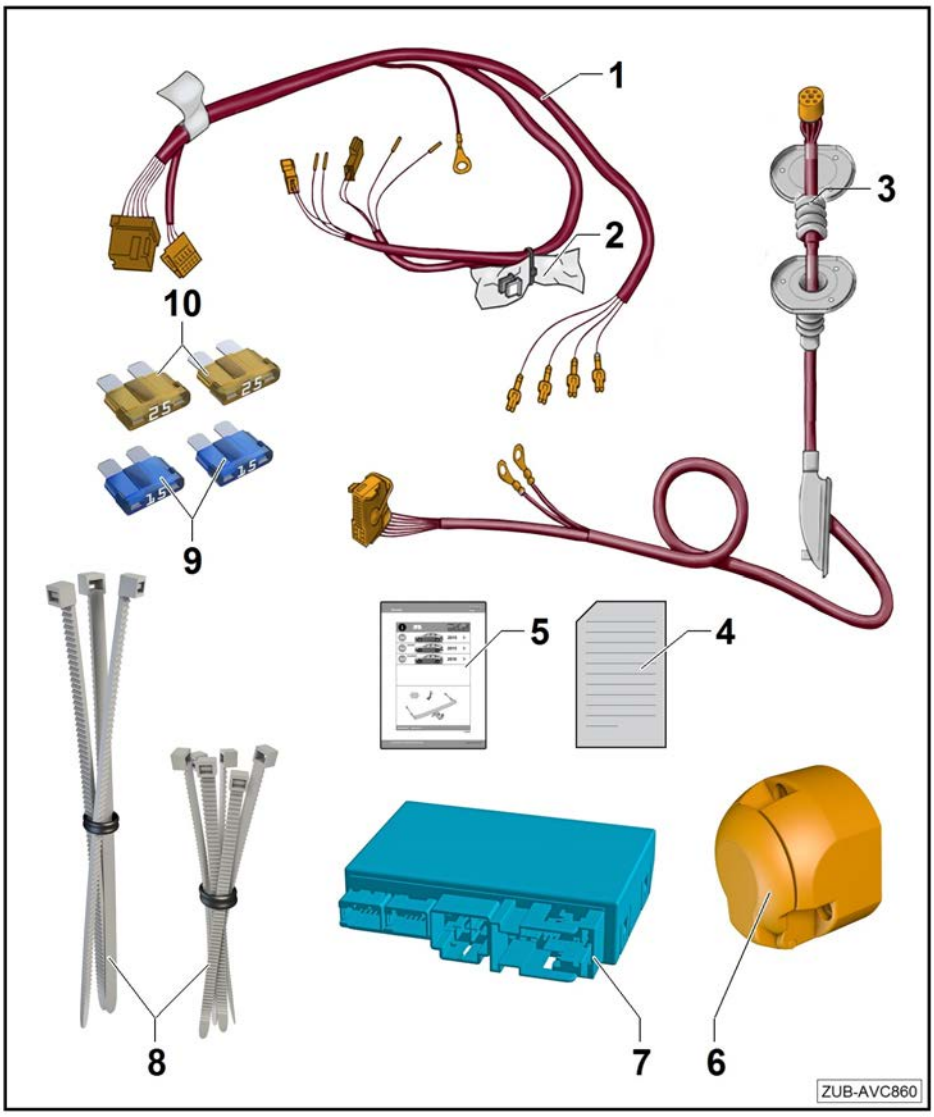
- ❑ 10x

9 - 15 A fuse

- ❑ 2x

10 - 25 A fuse

- ❑ 2x



5 Assembly overview and tightening torques

5.1 Luggage compartment electrical system

1 - Fitting trailer detector control unit -J345-

2 - Earth stud on left in luggage compartment
❑ 9 Nm

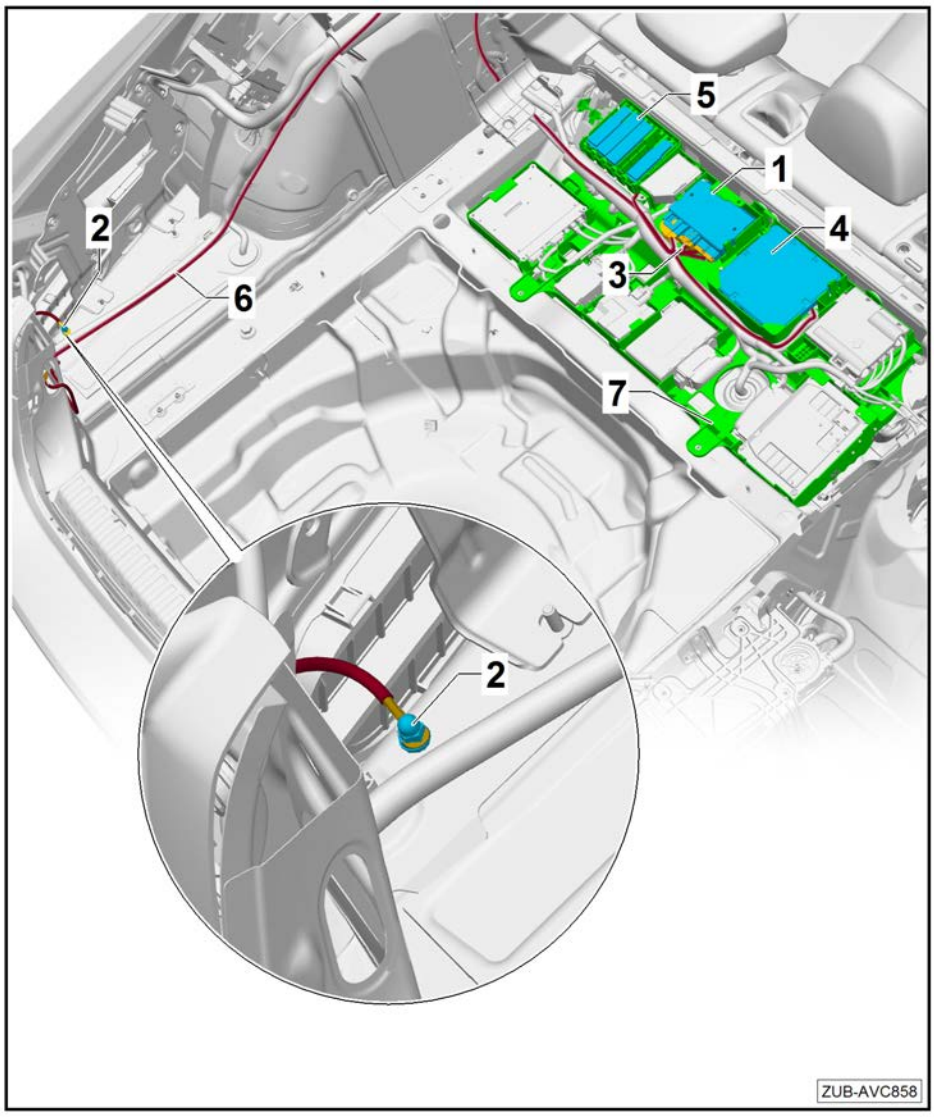
3 - Onboard supply retrofit wiring harness

4 - Convenience system central control unit -J393-

5 - Relay and fuse holder -SJ- in the centre of the luggage compartment

6 - Retrofit wiring harness, socket

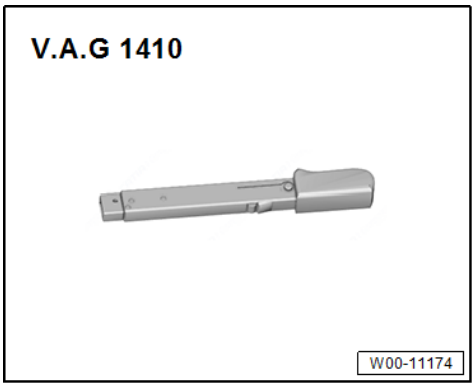
7 - Bracket for trailer detector control unit -J345-



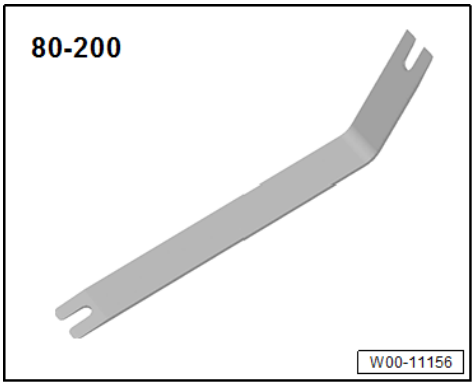
6 Preparations

Required special tools, testing instruments, measuring instruments and auxiliary devices

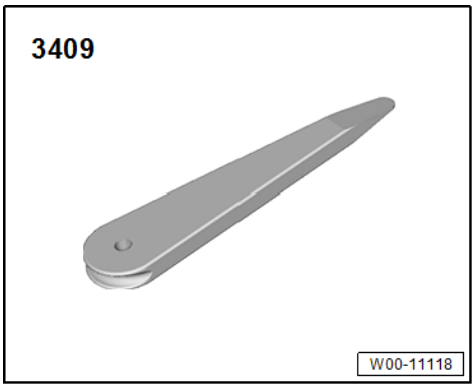
- Torque wrench -V.A.G 1410-



- Removal lever -80 - 200-



- Wedge -3409-



6.1 Disconnecting the battery

– Disconnect the battery.⇒Electrical system; Rep. gr. 27; Battery; Disconnecting and connecting the battery

⚠ ***WARNING***

- ***Always make sure that the vehicle's electrical system is protected by disconnecting the battery before performing work on the electrical system.***
- ***Only unscrew the battery negative terminal (-) of the battery.***
- ***The battery positive terminal (+) of the battery must only be unscrewed once the battery has been removed from the vehicle.***

6.2 Removing the luggage compartment floor cover

– Workshop Manual ⇒Trims, insulation; Rep. gr. 70; Luggage compartment floor cover

6.3 Removing the left-hand luggage compartment side trim

– Workshop Manual ⇒Trims, insulation; Rep. gr. 70; Luggage compartment side trim

6.4 Removing the retaining plate with the digital sound package -J525- control unit

Only on vehicles with digital sound packages

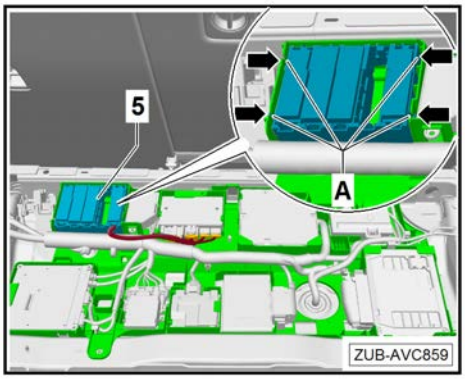
– Workshop Manual ⇒Communication; Rep. gr. 91; Removing and installing the digital sound package control unit

6.5 Detaching the relay and fuse holder -SJ-

Only on vehicles without PR number "1D8" (preparation for towing bracket)

– Unlock retaining clips -A- and pull the relay and fuse holder -SJ- -5- upwards.

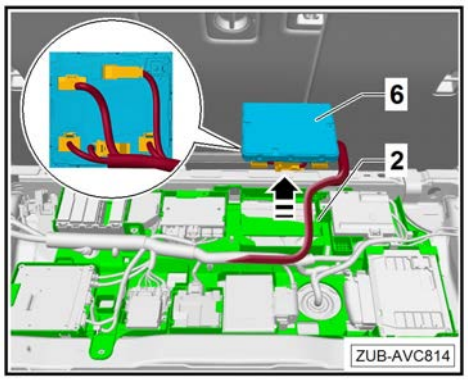
– Put the relay and fuse holder -1- to the side – the electrical wiring remains connected.



6.6 Remove the convenience system central control unit -J393-

Only on vehicles without PR number "1D8" (preparation for towing bracket)

– Remove the convenience system central control unit -J393- -1- upwards from the holder -2- and put to one side. The electrical wiring remains connected.



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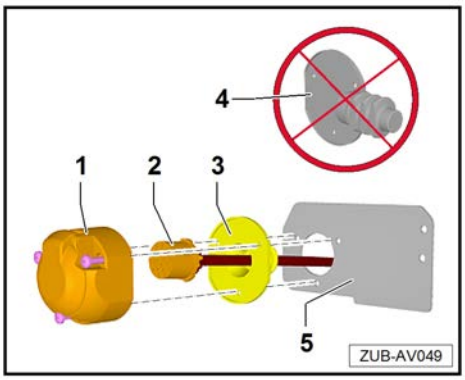
7 Installing the trailer socket

7.1 Mounting the socket on the socket holder

Variant with open socket holder

Carefully disconnect and remove the socket seal -4- for lateral wiring routing from the socket retrofit wiring harness. In this instance, socket seal -4- for lateral wiring routing will no longer be required.



Caution

Do not damage the insulating sleeve on the wiring harness.

– Guide the socket retrofit wiring harness through the opening in the socket holder -5-.

– Insert the socket retrofit wiring harness contact insert -2- into the straight socket housing -1-.

– Push the socket seal -3- onto the straight socket housing -1- making sure it is correctly positioned on the sealing surfaces.

– Mount straight socket housing -1- on socket holder -5-.

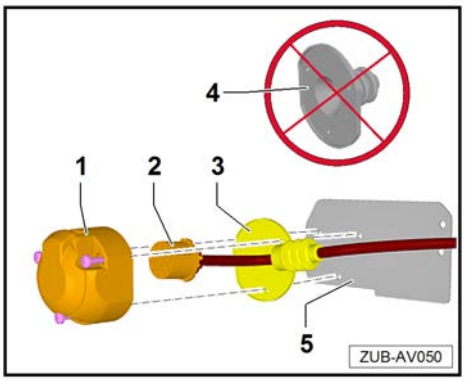
Variant with closed socket holder

– Detach the plastic indicated by the perforated marking on the side of the socket housing.

Note

Observe the correct installation direction for the socket retrofit wiring harness.

– Carefully disconnect and remove the socket seal -4- for straight wiring routing from the socket retrofit wiring harness. In this instance, socket seal -4- for straight wiring routing will no longer be required.



Caution

Do not damage the insulating sleeve on the wiring harness.

– Insert the socket retrofit wiring harness contact insert -2- into the lateral socket housing -1-.

– Push the socket seal -3- onto the straight socket housing -1- making sure it is correctly positioned on the sealing surfaces.

– Mount lateral socket housing -1- on the socket holder -5-.

8 Electrical connection

8.1 Overview of the onboard supply retrofit wiring harness/socket retrofit wiring harness

Note

Applies to vehicles with and without the preparation for towing bracket.

1 - Fitting trailer detector control unit -J345-

2 - Earth stud

- ❑ Luggage compartment, left

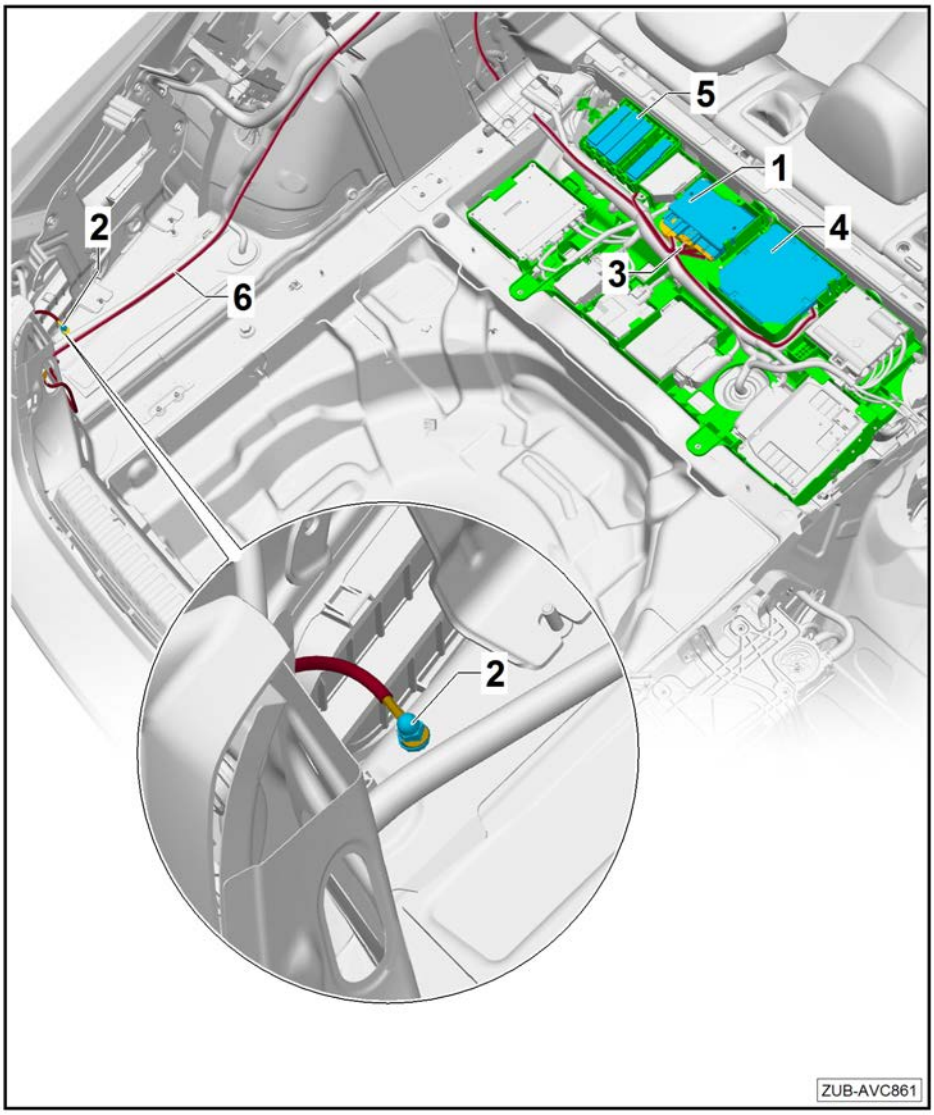
3 - Onboard supply wiring harness

- ❑ On the vehicle

4 - Convenience system central control unit -J393-

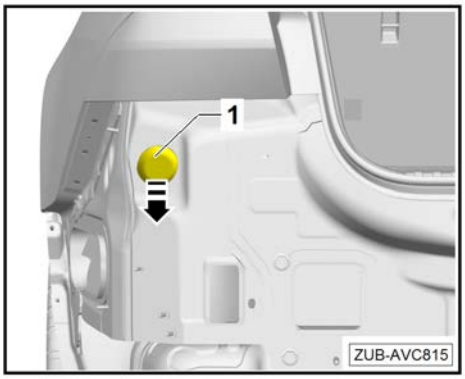
5 - Relay and fuse holder -SJ- in the centre of the luggage compartment

6 - Retrofit electrical socket wiring harness

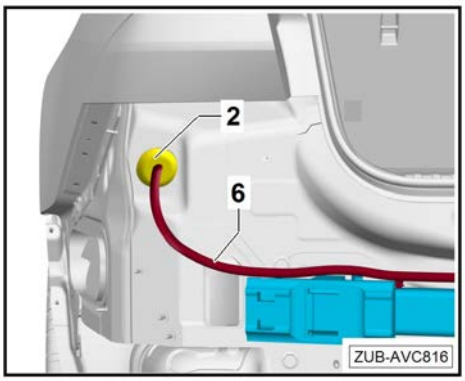


8.2 Routing and connecting the socket retrofit wiring harness

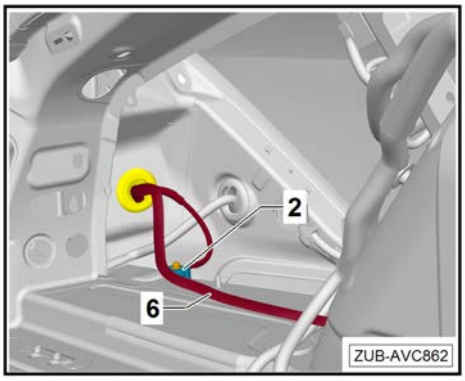
– Remove sealing cap -1- from the bottom opening in the body -in the direction of the arrow-.



– Feed the socket retrofit wiring harness -6- through the opening in the body and insert the grommet -2-.



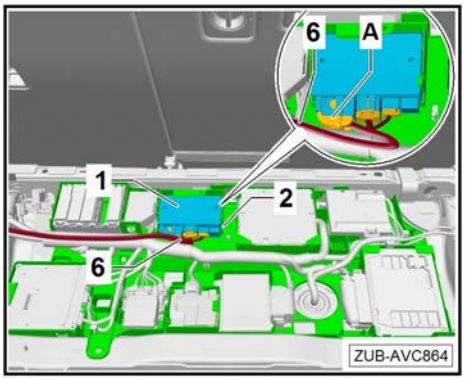
– Lay the socket retrofit wiring harness -6- along the standard wiring harness to the trailer detector control unit -J345-.
– Secure the free earth wires of the retrofit wiring harness -6- to the earth point -2-.



– Plug in the connection cable for the socket -6- to the trailer detector control unit -J345- -1- with connector -A- until it clicks into place.
– Insert the trailer detector control unit -J345- -1- into the mounted control unit bracket -2- and snap into place.

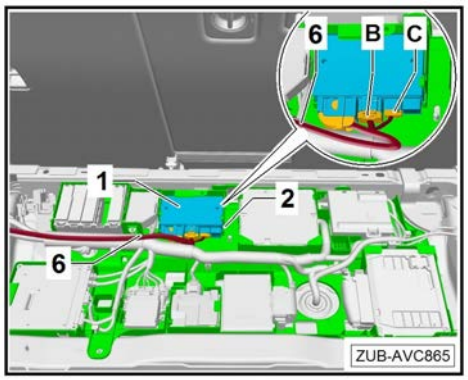
Note

Make sure the socket retrofit wiring harness moves freely.



8.3 Connecting the retrofit wiring harness CAN bus and brake light signal/terminal 15

– Plug in the retrofit wiring harness for the CAN bus and brake light signal/terminal 15 on the trailer detector control unit -J345- -1- with the connectors -B and C- until it clicks into place.



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8.4 Connecting the retrofit wiring harness CAN bus and brake light signal/ terminal 15 to the convenience system central control unit -J393-

8.4.1 Pin assignment on the convenience system central control unit -J393-

1 - Convenience system central control unit -J393-

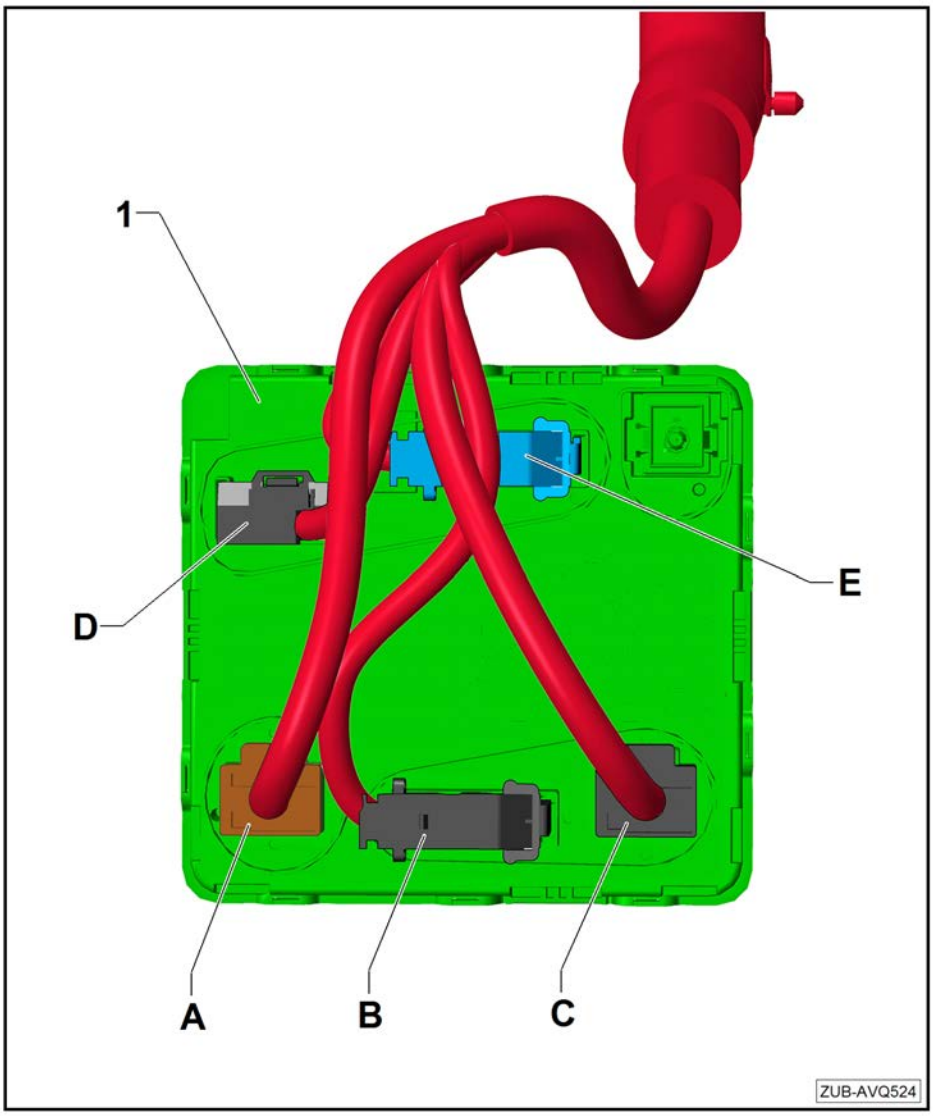
A - 17-pin connector, brown

B - 32-pin connector, black

C - 17-pin connector, black

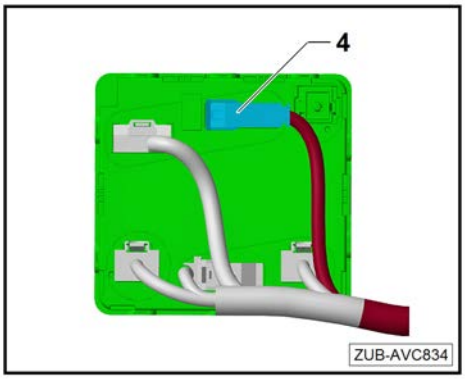
D - 20-pin connector, black

E - 32-pin connector, blue

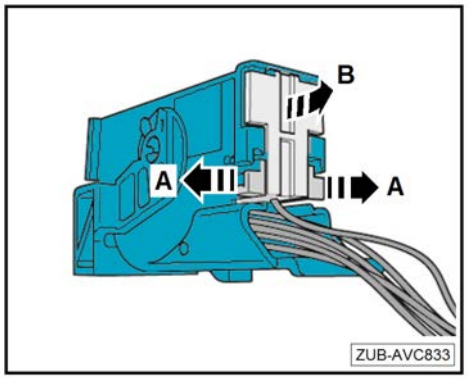


8.4.2 Integrating the CAN bus

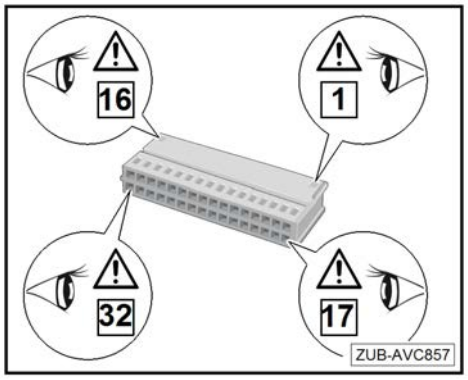
– Release the blue connector -4- from the convenience system central control unit -J393- and disconnect.



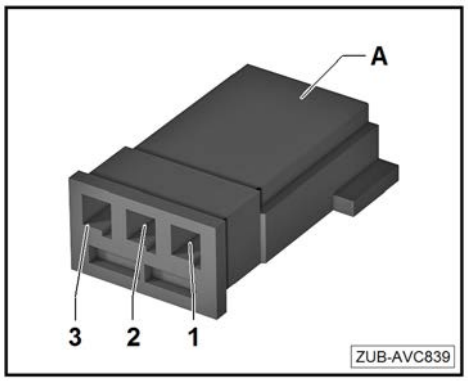
– Release the catches on the blue connector housing -in the direction of arrow A- and pull the connector block out of the connector housing -in the direction of arrow B-.



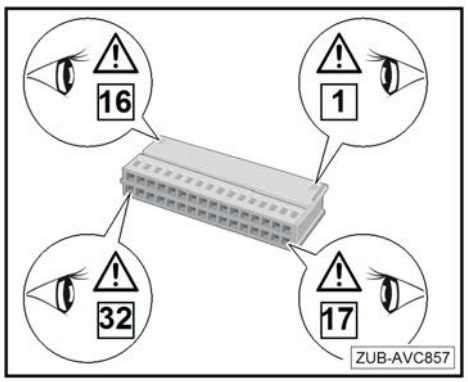
– Unpin contact from compartment -1- of the connector block.
– Unpin contact from compartment -2- of the connector block.



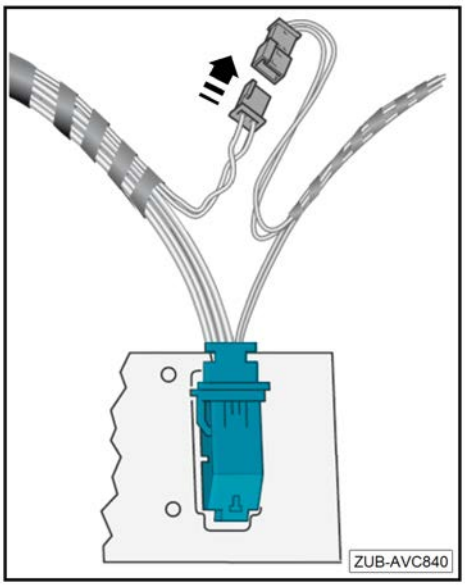
– Pin contact 1 of the connector block into compartment -1- of the included black socket housing -A- (3 chambers).
– Pin contact 2 of the connector block into compartment -3- of the included black socket housing -A- (3 chambers).



– Pin the corresponding contacts of the onboard supply retrofit wiring harness (Y-wires) into the compartments on the connector block.
– Pin the -orange/brown- wire of the retrofit wiring harness into compartment -1- of the connector block (CAN bus Low).
– Pin the -orange/green- wire of the retrofit wiring harness into compartment -2- of the connector block (CAN bus High).
– Insert the connector block into the blue connector housing and click into place.

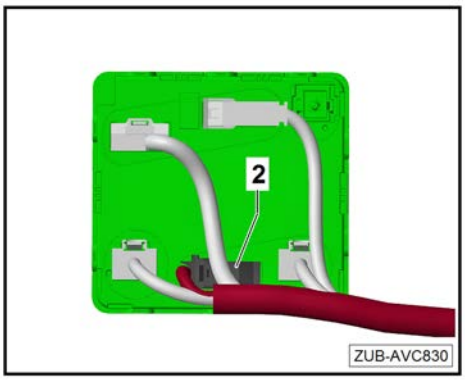


– Connect the socket housing (black) with the corresponding black connector on the onboard supply retrofit wiring harness -arrow-.
– Connect the blue connector to the convenience system central control unit -J393- and lock.

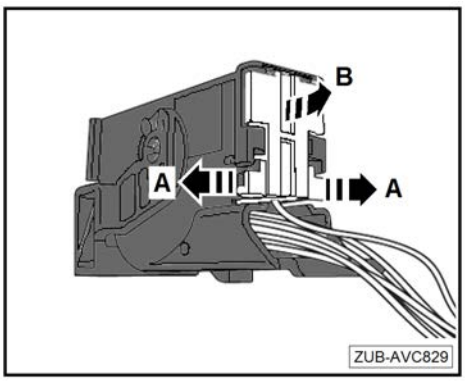


8.4.3 Connecting the brake light signal/terminal 15

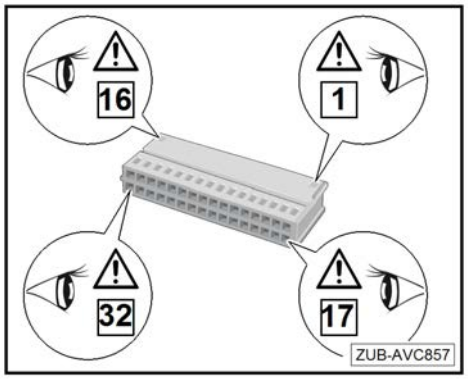
– Release and disconnect the black -2- 32-pin connector from the convenience system central control unit -J393-.



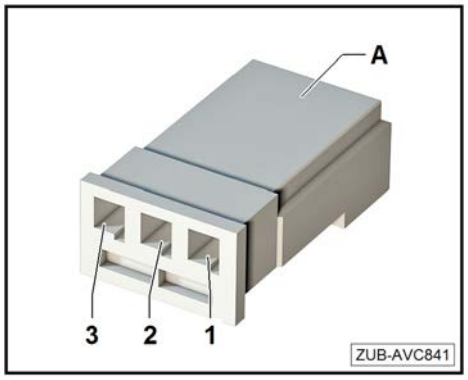
– Release the catches on the black connector housing -in the direction of arrow A- and pull the connector block out of the connector housing -in the direction of arrow B-.



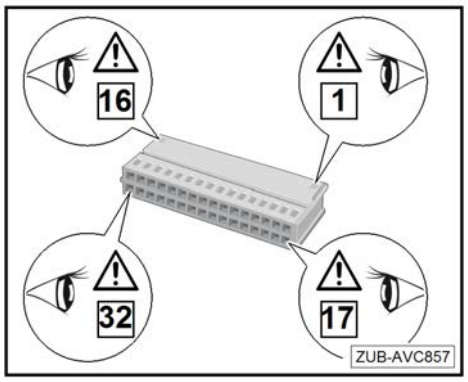
– Unpin contact from compartment -12- of the connector block.
– Unpin contact from compartment -17- of the connector block.



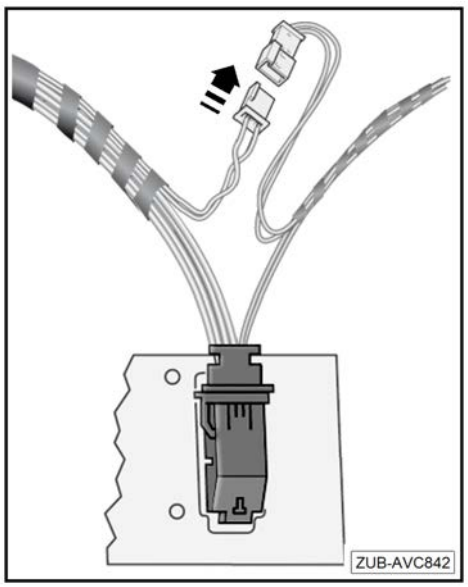
– Pin contact 12 of the connector block into compartment -3- of the included white socket housing -A- (3 chambers).
– Pin contact 17 of the connector block into compartment -1- of the included white socket housing -A- (3 chambers).



– Pin the corresponding contacts of the onboard supply retrofit wiring harness (Y-wires) into the compartments on the connector block.
– Pin the -black/red- wire from the retrofit wiring harness into compartment -12- of the connector block.
– Pin the -black- wire from the retrofit wiring harness into compartment -17- of the connector block.
– Insert the connector block into the black connector housing and click into place.



– Connect the socket housing (white) with the corresponding white connector on the onboard supply retrofit wiring harness -arrow-.
– Connect the black connector to the convenience system central control unit -J393- and lock.



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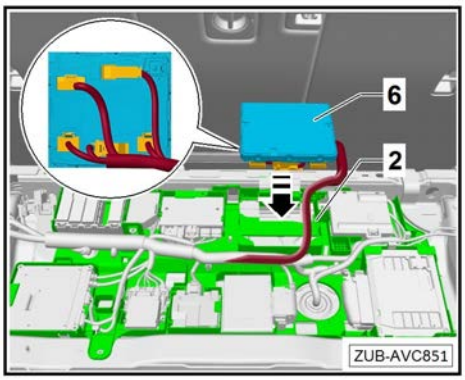
8.4.4 Install the convenience system central control unit -J393- into the holder -2-

– Install the convenience system central control unit -J393- -1- into the holder -2-.



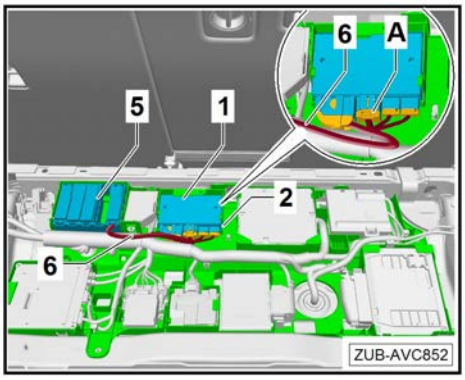
Note

Route electrical wiring in such a way that the original wiring routing is restored.

8.5 Retrofit wiring harness routing, on-board supply

The onboard supply retrofit wiring harness is only installed on vehicles without preparation for towing brackets.

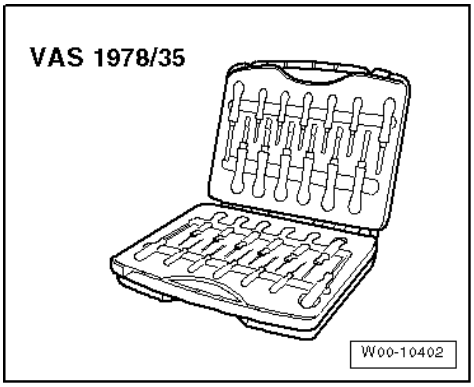
– Lay the onboard supply retrofit wiring harness -6- from the trailer detector control unit -J345- -1- along the vehicle's wiring harness to the relay and fuse holder -SJ- -5- .



8.6 Connecting the onboard supply retrofit wiring harness

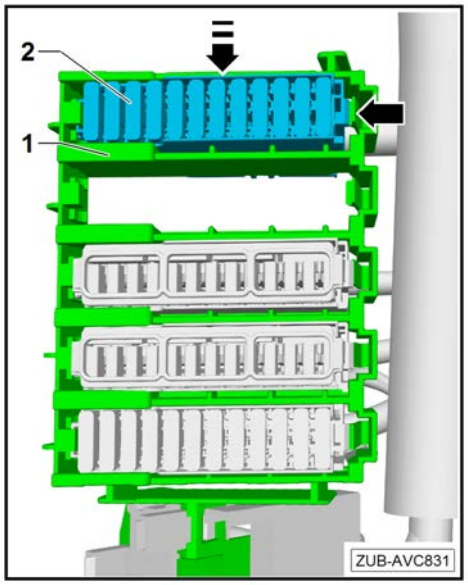
Special tools and workshop equipment required

◆ Set of unpinning tools -VAS 1978/35-

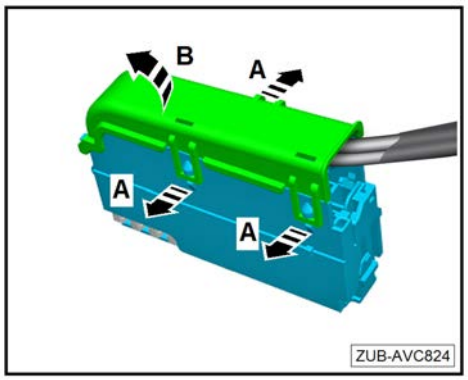


8.7 Establish power supply to the relay and fuse holder -SJ-

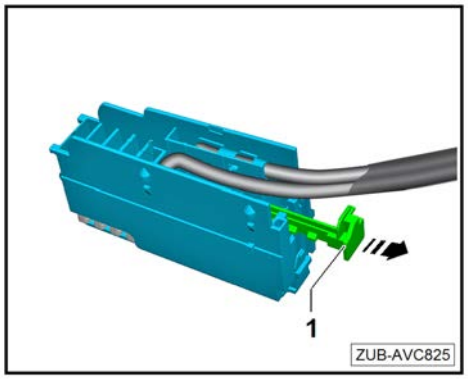
– Release the retaining tab -arrow- and take out fuse carrier B -2- from the relay and fuse holder -SJ- -1- in a downwards direction.



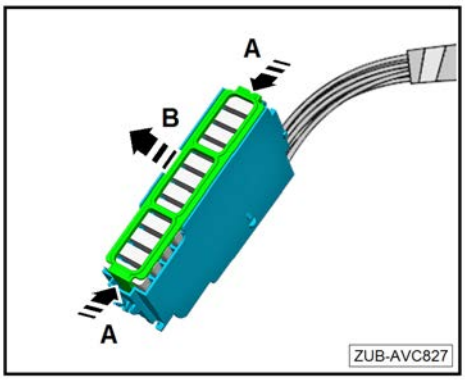
– Release the retaining clips -in the direction of arrow A- and remove the cover from fuse carrier B -in the direction of arrow B-.



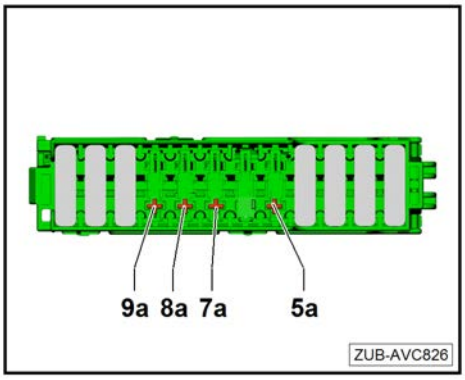
– Pull out the retaining strip -1- for the electrical connectors -in the direction of the arrow-.



– Unlock the retainer from fuse carrier B -2-
-in the direction of arrow A- and remove
-in the direction of arrow B-.



– Plug the onboard supply retrofit wiring harness contacts into fuse positions -5 and 7 to 9- on fuse carrier B -2-.



- Compartment 9a: red wire
- Compartment 8a: red/blue wire
- Compartment 7a: red/green wire
- Compartment 5a: red/black wire

– Insert the electrical connector retaining strip.

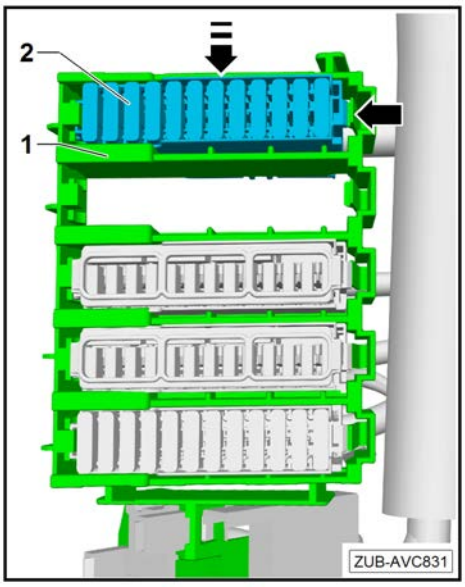
– Connect fuses 5, 7, 8 and 9.

- Fuse 9: 15 A
- Fuse 8: 25 A
- Fuse 7: 15 A
- Fuse 5: 25 A

– Install the retainer on fuse carrier B -2- and lock.

– Install the cover for fuse carrier B -2- and lock.

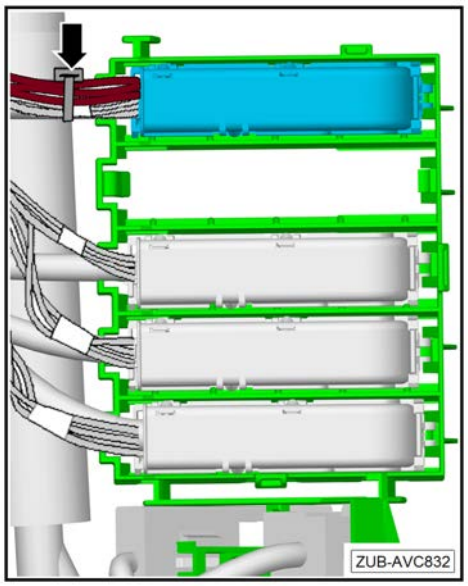
– Insert fuse carrier B -2- into the relay and fuse holder -1- and click into place.



Note

Route electrical wiring in such a way that the original wiring routing is restored.

– Secure the onboard supply retrofit wiring harness to the vehicle's wiring harness using cable ties -arrow-.
– The wires must be secured with cable ties in a manner that prevents slipping or abrasion.
– Reinstall the relay and fuse holder -SJ-.



EN

9 Concluding operations

9.1 Reassembling the vehicle

To install the components, follow the removal steps in reverse order. Observe the “Notes on installation” for the relevant components and the corresponding tightening torques.

> ⚠ ***WARNING***
>
> ***The following information must be observed when working with the lane change assist (Audi side assist):***
>
> - ***If the rear bumper cover is removed and then reinstalled or if any modifications are made to the rear cover, the lane change assist (Audi side assist) must be recalibrated. ⇒Electrical system; Rep. gr. 96; Risk of accident due to malfunction!***

9.2 Connecting the battery

– Connect the battery.⇒Electrical system; Rep. gr. 27; Battery; Disconnecting and connecting the battery

Note

After reconnecting the power supply, the ESP warning light can only extinguish after a few metres have been driven.

9.3 Adjusting the coding

Coding is adjusted using the ⇒ Vehicle diagnostic tester. This must be connected online.

9.4 Commissioning and functional check

– Check that the trailer socket -U10- functions correctly using the trailer socket tester -VAS 5800- or a trailer.

Pin assignment in the trailer socket -U10-.

1 - Terminal LTS (left turn signal)

2 - Terminal RFL (rear fog light)

3 - Terminal 31 (earth) earth for terminals 1–2, 4–8

4 - Terminal RTS (right turn signal)

5 - Terminal 58 R (right tail light)

6 - Terminal 54 (brake light)

7 - Terminal 58 L (left tail light)

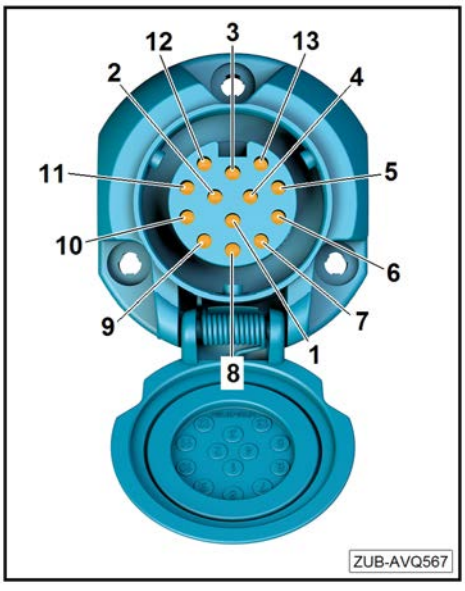
8 - Terminal RVL (reversing light)

9 - Terminal 30 (battery "+") max. current 15 A

10 - Terminal 15 (charging cable) max. current 15 A

11 - Terminal 31 (earth) earth for terminal 10

12 - Not assigned



13 - Terminal 31 (earth) earth for terminal 9

9.5 Adjusting the cooling system

As towing mode puts greater demands on the engine cooling system, the cooling system is upgraded – where technically possible – when the towing bracket is installed in the factory.

The cooling system does not need to be upgraded if it is possible to guarantee that the engine is only permanently put under strain by the following conditions:

- The permissible gross combination weight is underrun
- No high ambient temperatures
- No long, steep inclines
- No high altitude journeys

In any case, the coolant temperature display must be carefully monitored. If the needle in the display moves into the hot area, the speed must be reduced immediately. A cool-down time must also be allowed for if necessary. This involves the allowing the engine to idle for approx. 2 minutes to prevent a build-up of heat.