Workshop Manual

Audi A5 2016 ➤
Audi A5 Cabriolet 2017 ➤
Audi A5 Sportback 2017 ➤

Electrical system

Edition 12.2018

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List of Workshop Manual Repair Groups

Repair Group

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27 - Starter, current supply, CCS
90 - Gauges, instruments
92 - Windscreen wash/wipe system
94 - Lights, bulbs, switches - exterior
96 - Lights, bulbs, switches - interior
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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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00 – Technical data

1 Safety precautions

(ARL006082; Edition 12.2018)

⇒ “1.1 Safety precautions when working on vehicles with start/stop system”, page 1

⇒ “1.2 Safety precautions when using testers and measuring instruments during a road test”, page 1

⇒ “1.3 Safety precautions when handling gas discharge bulbs”, page 1

1.1 Safety precautions when working on vehicles with start/stop system

Risk of injury - engine may start unexpectedly

The engine can start unexpectedly if the vehicle's start/stop system is activated. A message in the instrument cluster indicates whether the start/stop system is activated.

– To deactivate the start/stop system, switch off the ignition.

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1.2 Safety precautions when using testers and measuring instruments during a road test

Risk of injury if test equipment is not secured

If an accident occurs and the front passenger's airbag is triggered, test equipment which is not secured adequately may be catapulted through the vehicle with potentially serious consequences.

– Secure test equipment on the rear seat with a belt.

Or:

– Have a second person operate the test equipment on the rear seat.

1.3 Safety precautions when handling gas discharge bulbs

Risk of injury due to electric shock

When the headlights are switched on, the components of the gas discharge headlights marked with yellow high-voltage warning symbols are under high voltage. Touching the components may cause an electric shock.

– Never touch the components of the gas discharge headlights marked with yellow high-voltage warning symbols when the headlights are switched on.

– When performing work, switch off the ignition and all electrical equipment and store the ignition key outside the vehicle.

– Do not flash the headlights.

Risk of injury from burns, UV radiation, glare and explosion of gas discharge headlights

- Only operate gas discharge bulb in headlight housing.
- Do not look into the light beam.
- Avoid contact with the glass part of exploded bulbs.
- Wear safety goggles and protective gloves to remove and install gas discharge bulb.

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2 Repair notes

⇒ “2.1 Rules for cleanliness”, page 3

⇒ “2.2 General notes”, page 3

⇒ “2.3 Contact corrosion”, page 3

⇒ “2.4 ESD (electrostatic discharge) workplace”, page 3

⇒ “2.5 Routing and attaching lines and wiring”, page 4

2.1 Rules for cleanliness

Even small quantities of dirt can lead to defects. Therefore it is important to observe the following rules for cleanliness when performing work:

- Carefully clean all connections/service apertures and surrounding areas before disconnecting/opening/releasing.
- Seal off open pipes and connections immediately with clean plugs, e.g. from engine bung set - VAS 6122- .
- Place removed parts on a clean surface and cover them. Use only lint-free cloths.
- Carefully cover or seal open components if repairs cannot be carried out immediately.
- Only install clean components; replacement parts should only be unpacked immediately prior to installation. Do not use parts that have been stored without their packaging (e.g. in toolboxes).
- Do not work with compressed air when the system is open.
- Protect unplugged electrical connectors against dirt and moisture and make sure connections are dry when attaching.

2.2 General notes

- For the applicable current flow diagrams, refer to ⇒ Current flow diagrams, Electrical fault finding and Fitting locations.

2.3 Contact corrosion

Contact corrosion can occur if unsuitable fasteners (bolts, nuts, washers, etc.) are used.

For this reason, only fasteners with a special surface coating are fitted.

Furthermore, rubber components or plastic components and adhesives are made of non-conductive material.

Always fit new components if you are not sure that the old components are suitable ⇒ Electronic parts catalogue .

Please note:

- We recommend the use of genuine replacement parts only; they have been tested and are compatible with aluminium.
- We recommend using Audi Genuine Accessories.
- Damage caused by contact corrosion is not covered by warranty.

2.4 ESD (electrostatic discharge) workplace

- Requirement for cleanliness: Make sure no particles enter the headlight housing, in particular no metallic or otherwise conductive material.

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- When working on the open headlight, ensure that no oil, grease, silicone or other material comes into contact with parts of the headlight. These materials can evaporate and build up a film inside the headlight.
- Do NOT touch the electronic printed circuit boards with bare hands, as this can cause migration.
- Electrostatic discharge (ESD) protection: The requirements according to DIN 613-40-5-1 must always be met when handling electronic equipment.
- Do not re-use electronic equipment (i.e. components, assemblies) which has been dropped.
- ESD (electrostatic discharge) workplace -VAS 6613- ⇒ Electrical system; General information; Rep. gr. 97 ; ESD (electrostatic discharge) workplace VAS 6613 .

2.5 Routing and attaching lines and wiring

- To prevent mix-ups and to ensure that all components are reinstalled in their original installation positions, mark components such as fuel lines, hydraulic lines, vacuum lines, activated charcoal filter system or electrical wiring before removing them. Where necessary, make sketches or take photographs.
- Because of the limited space in the engine compartment, it is important to ensure that there is adequate clearance to any moving or hot components to avoid damage to lines and wiring.

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3 Battery

⇒ “3.1 Battery - general notes”, page 5

⇒ “3.2 Battery types”, page 5

3.1 Battery - general notes

⇒ Electrical system; General information; Rep. gr. 27 ; Battery

3.2 Battery types

⇒ Electrical system; General information; Rep. gr. 27 ; Battery

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27 – Starter, current supply, CCS

1 Battery

⇒ “1.1 Exploded view - battery”, page 6

⇒ “1.2 Disconnecting and connecting battery”, page 15

⇒ “1.3 Removing and installing earth cable with battery monitor control unit J367 ”, page 20

⇒ “1.4 Removing and installing battery”, page 23

⇒ “1.5 Removing and installing protective housing”, page 39

⇒ “1.6 Removing and installing battery tray”, page 42

⇒ “1.7 Inspection and classification of second battery A1 ”, page 43

⇒ “1.8 Inspecting and classifying battery, 48 V A6 ”, page 44

⇒ “1.9 Charging battery”, page 46

⇒ “1.10 Removing and installing battery cut-off relay/battery isolation igniter”, page 47

1.1 Exploded view - battery

⇒ “1.1.1 Exploded view - battery A in luggage compartment (0K0)”, page 6

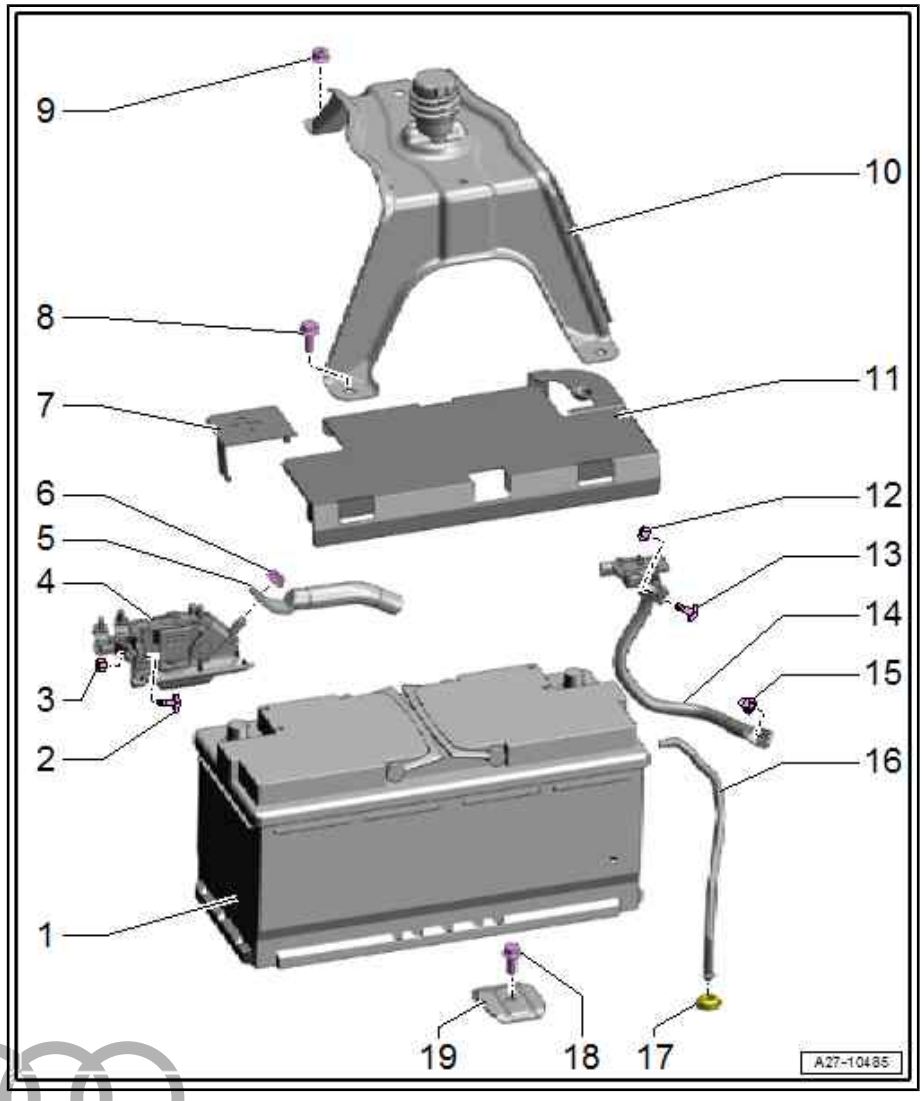
⇒ “1.1.2 Exploded view - battery A in engine compartment (0K2)”, page 8

⇒ “1.1.3 Exploded view - battery A and second battery A1 in luggage compartment (0K4 + VH0)”, page 10

⇒ “1.1.4 Exploded view - battery A and battery, 48 V A6 in luggage compartment (0K4 + VH2)”, page 12

1.1.1 Exploded view - battery - A- in luggage compartment (0K0)

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1 - Battery - A-

- ❑ Checking ⇒ Electrical system; General information; Rep. gr. 27 ; Checking battery
- ❑ Removing and installing ⇒ page 23

2 - Bolt

3 - Nut

- ❑ 6 Nm

4 - Main fuse holder

- ❑ Exploded view ⇒ page 283
- ❑ Disconnecting and connecting ⇒ page 15

5 - Positive wire

6 - Nut

- ❑ 18 Nm

7 - Cover for positive terminal

8 - Bolt

- ❑ 2x
- ❑ 18 Nm

9 - Nut

- ❑ 2x
- ❑ 18 Nm

10 - Retaining bracket

- ❑ For cover for tool kit

11 - Battery cover

12 - Nut

- ❑ 6 Nm

13 - Bolt

14 - Earth cable

- ❑ With battery monitor control unit - J367-
- ❑ Disconnecting and connecting ⇒ page 15
- ❑ Removing and installing ⇒ page 20

15 - Nut

- ❑ 20 Nm

16 - Hose for central gas venting system

17 - Grommet

- ❑ For hose for central gas venting system

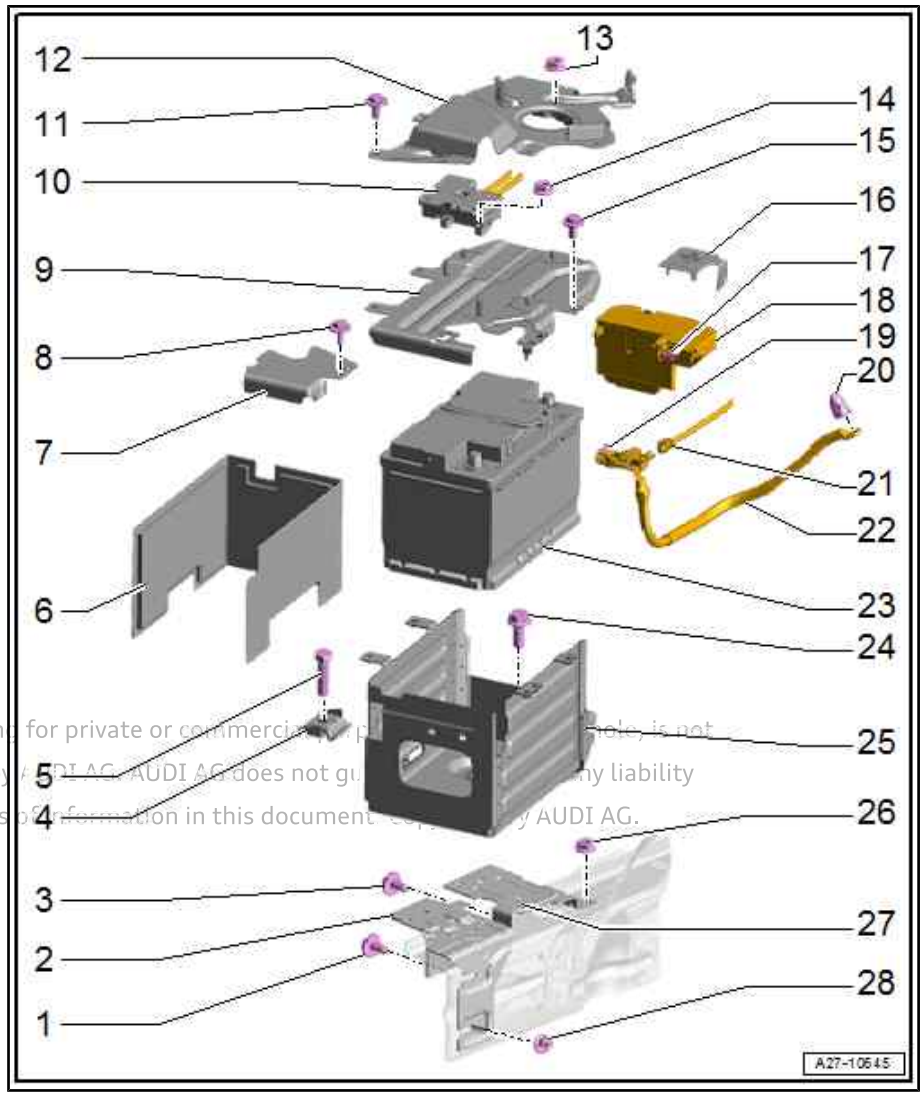
18 - Bolt

- ❑ 18 Nm

19 - Retaining bracket

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1.1.2 Exploded view - battery - A- in engine compartment (0K2)



1 - Bolt
- ❑ 8 Nm

2 - Mounting (front)
- ❑ For battery tray

3 - Bolt
- ❑ 8 Nm

4 - Retainer plate

5 - Bolt
- ❑ 18 Nm

6 - Heat insulation sleeve

7 - Lid
- ❑ For earth cable

8 - Bolt
- ❑ 2x
- ❑ 9 Nm

9 - Lid
- ❑ For battery tray

10 - Terminal 30 wiring junction 3 - TV28-
- ❑ Exploded view ⇒ page 276

11 - Bolt
- ❑ 2x
- ❑ Tightening torque ⇒ Engine; Rep. gr. 24 ; Engine control unit; Exploded view - engine control unit

12 - Mounting
- ❑ For engine control unit

13 - Nut
- ❑ 3x
- ❑ Tightening torque ⇒ Engine; Rep. gr. 24 ; Engine control unit; Exploded view - engine control unit

14 - Nut
- ❑ 2x
- ❑ Tightening torque ⇒ page 276

15 - Bolt
- ❑ 9 Nm

16 - Cover for positive terminal

17 - Nut
- ❑ 5 Nm

18 - Main fuse holder
- ❑ Exploded view ⇒ page 283
- ❑ Disconnecting and connecting ⇒ page 26

Audi A5 2016 ➤ , Audi A5 Cabriolet 2017 ➤ , Audi A5 Sportback 2017 ➤ Electrical system - Edition 12.2018
1.1.2 Exploded view - battery - A- in engine compartment (0K2)
1 - Bolt
❑ 8 Nm
2 - Mounting (front)
❑ For battery tray
3 - Bolt
❑ 8 Nm
4 - Retainer plate
5 - Bolt
❑ 18 Nm
6 - Heat insulation sleeve
7 - Lid
❑ For earth cable
8 - Bolt
❑ 2x
❑ 9 Nm
9 - Lid
❑ For battery tray
10 - Terminal 30 wiring junction 3 - TV28-
❑ Exploded view ⇒ page 276
11 - Bolt
❑ 2x
❑ Tightening torque ⇒ Engine; Rep. gr. 24 ; Engine control unit; Exploded view - engine control unit
12 - Mounting
❑ For engine control unit
13 - Nut
❑ 3x
❑ Tightening torque ⇒ Engine; Rep. gr. 24 ; Engine control unit; Exploded view - engine control unit
14 - Nut
❑ 2x
❑ Tightening torque ⇒ page 276
15 - Bolt
❑ 9 Nm
16 - Cover for positive terminal
17 - Nut
❑ 5 Nm
18 - Main fuse holder
❑ Exploded view ⇒ page 283
❑ Disconnecting and connecting ⇒ page 26
Audi A5 2016 ➤ , Audi A5 Cabriolet 2017 ➤ , Audi A5 Sportback 2017 ➤ Electrical system - Edition 12.2018
1.1.2 Exploded view - battery - A- in engine compartment (0K2)
1 - Bolt
❑ 8 Nm
2 - Mounting (front)
❑ For battery tray
3 - Bolt
❑ 8 Nm
4 - Retainer plate
5 - Bolt
❑ 18 Nm
6 - Heat insulation sleeve
7 - Lid
❑ For earth cable
8 - Bolt
❑ 2x
❑ 9 Nm
9 - Lid
❑ For battery tray
10 - Terminal 30 wiring junction 3 - TV28-
❑ Exploded view ⇒ page 276
11 - Bolt
❑ 2x
❑ Tightening torque ⇒ Engine; Rep. gr. 24 ; Engine control unit; Exploded view - engine control unit
12 - Mounting
❑ For engine control unit
13 - Nut
❑ 3x
❑ Tightening torque ⇒ Engine; Rep. gr. 24 ; Engine control unit; Exploded view - engine control unit
14 - Nut
❑ 2x
❑ Tightening torque ⇒ page 276
15 - Bolt
❑ 9 Nm
16 - Cover for positive terminal
17 - Nut
❑ 5 Nm
18 - Main fuse holder
❑ Exploded view ⇒ page 283
❑ Disconnecting and connecting ⇒ page 26

19 - Nut

- ❑ 6 Nm

20 - Nut

- ❑ 20 Nm

21 - Electrical wire

- ❑ For battery monitor control unit - J367-
- ❑ Observe correct sequence when connecting earth cable ⇒ page 17

22 - Earth cable

- ❑ With battery monitor control unit - J367-
- ❑ Disconnecting and connecting ⇒ page 16
- ❑ Removing and installing ⇒ page 21

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23 - Battery - A-

- ❑ Checking ⇒ Electrical system; General information; Rep. gr. 27 ; Checking battery
- ❑ Removing and installing ⇒ page 26

24 - Bolt

- ❑ 4x
- ❑ Tightening torques and sequence ⇒ page 9

25 - Battery tray

- ❑ Removing and installing ⇒ page 42

26 - Nut

- ❑ 2x
- ❑ 20 Nm

27 - Mounting (rear)

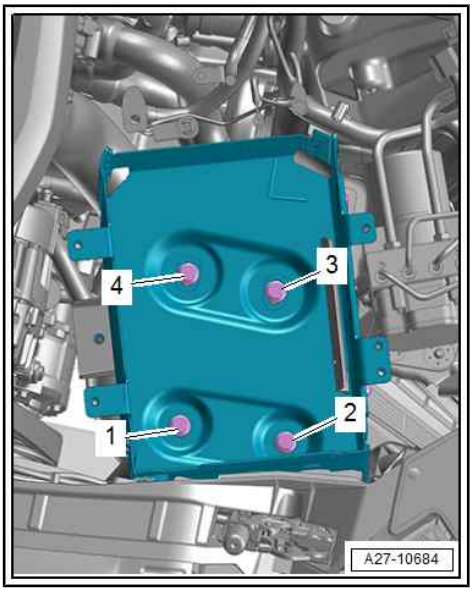
- ❑ For battery tray

28 - Nut

- ❑ 2x
- ❑ 8 Nm

Battery tray - tightening torque and tightening sequence (0K2)

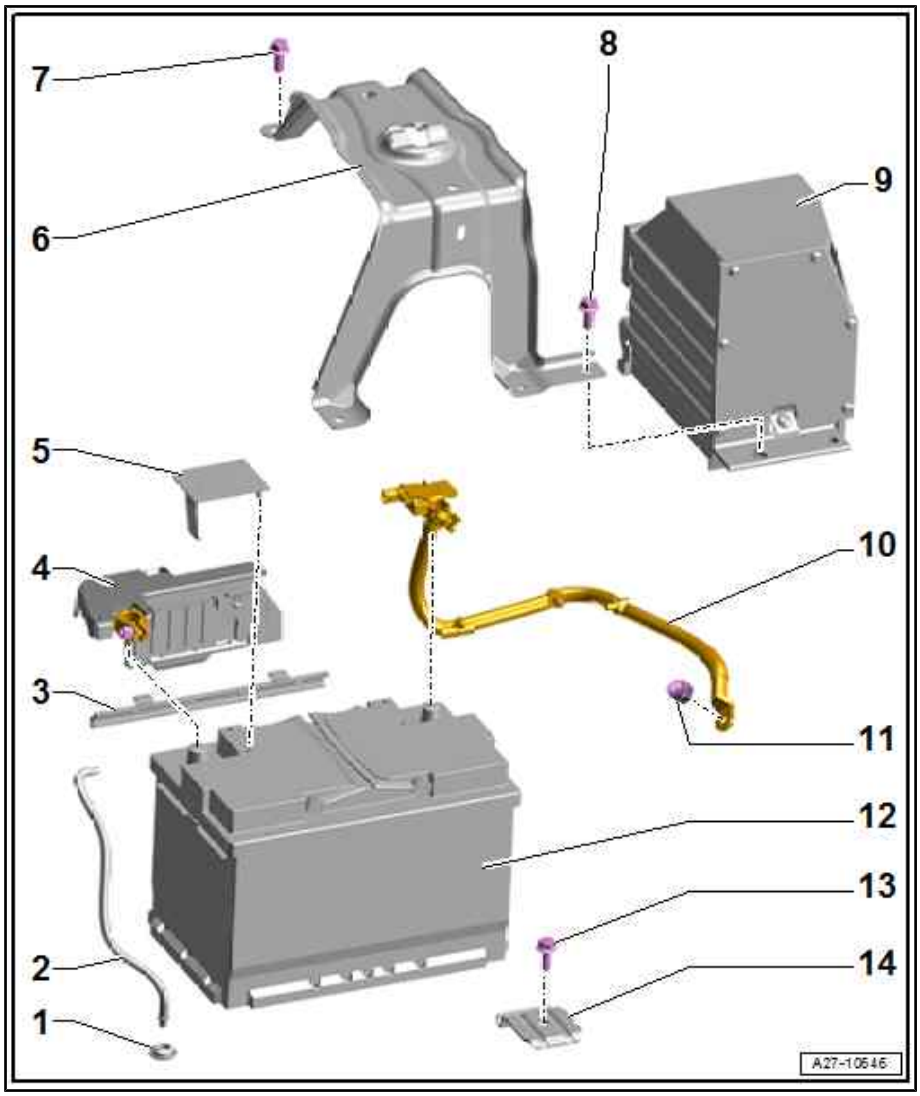
– Tighten bolts to 18 Nm in the sequence -1 … 4-.



1.1.3 Exploded view - battery - A- and second battery - A1- in luggage compartment (0K4 + VH0)

- Battery - A- ⇒ page 10
- Second battery - A1- ⇒ page 11

Battery - A-



1 - Grommet
- For hose for central gas venting system

2 - Hose for central gas venting system

3 - Stop for battery base strip

4 - Main fuse holder
- Exploded view ⇒ page 283
- Disconnecting and connecting ⇒ page 17
- Nut: 5 Nm

5 - Cover for positive terminal

6 - Retaining bracket
- For cover for tool kit

7 - Bolt
- 2x
- 20 Nm

8 - Bolt
- 2x
- 20 Nm

9 - Protective housing
- For second battery - A1-
- Exploded view ⇒ page 11

10 - Earth cable
- With battery monitor control unit - J367-
- Disconnecting and connecting ⇒ page 17
- Removing and installing ⇒ page 22
- Nut: 5 Nm

11 - Nut
- 18 Nm

12 - Battery - A-
- Checking ⇒ Electrical system; General information; Rep. gr. 27 ; Checking battery
- Removing and installing ⇒ page 30

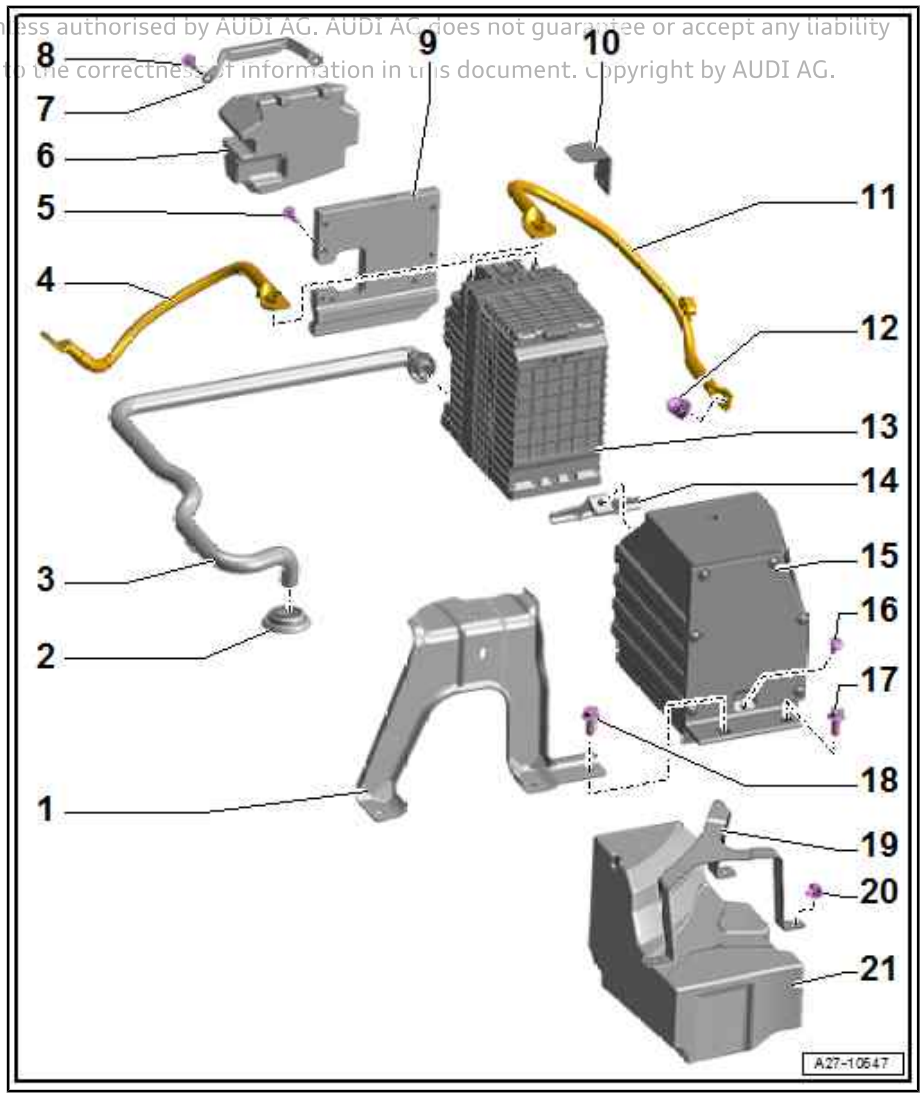
13 - Bolt
- 18 Nm

14 - Retaining bracket

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Second battery - A1-

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1 - Retaining bracket
- ❑ For cover for tool kit

2 - Grommet
- ❑ For pressure equalisation hose

3 - Pressure equalisation hose

4 - Positive wire
- ❑ Disconnecting and connecting ⇒ page 30
- ❑ Nut: 18 Nm

5 - Bolt
- ❑ 3x
- ❑ 4 Nm

6 - Crash pad (front)

7 - Retaining bracket

8 - Bolt
- ❑ 2x
- ❑ 4 Nm

9 - Cover plate

10 - Cap for positive cable

11 - Earth cable
- ❑ Disconnecting and connecting ⇒ page 17
- ❑ Nut: 18 Nm

12 - Nut
- ❑ 18 Nm

13 - Second battery - A1-
- ❑ Lithium-ion battery
- ❑ Checking that system is de-energised ⇒ page 18
- ❑ Removing and installing ⇒ page 35

14 - Retaining bracket

15 - Protective housing
- ❑ For second battery - A1-
- ❑ Removing and installing ⇒ page 39

16 - Bolt
- ❑ 8 Nm

17 - Bolt
- ❑ 20 Nm

18 - Bolt
- ❑ Tightening torque ⇒ page 10

19 - Retaining bracket

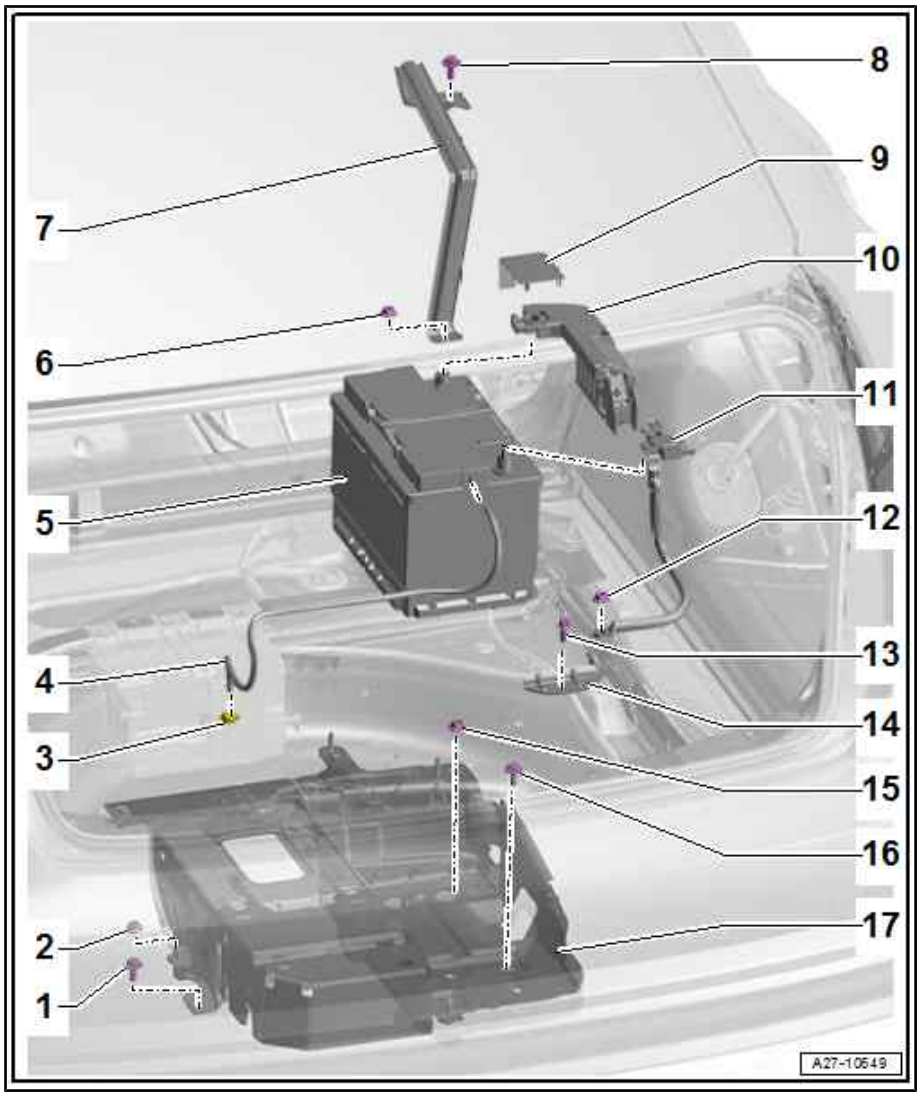
20 - Nut
- ❑ 3x
- ❑ 4 Nm

21 - Crash pad (rear)

1.1.4 Exploded view - battery - A- and battery, 48 V - A6- in luggage compartment (0K4 + VH2)

- Battery - A- ⇒ page 12
- Battery, 48 V - A6- ⇒ page 13

Battery - A-



1 - Bolt
- ❑ 2x
- ❑ 18 Nm

2 - Nut
- ❑ 2x
- ❑ 18 Nm

3 - Grommet
- ❑ For hose for central gas venting system

4 - Hose for central gas venting system

5 - Battery - A-
- ❑ Checking ⇒ Electrical system; General information; Rep. gr. 27 ; Checking battery
- ❑ Removing and installing ⇒ page 30

6 - Nut
- ❑ 18 Nm

7 - Retaining bracket

8 - Bolt
- ❑ 18 Nm

9 - Cover for positive terminal

10 - Main fuse holder
- ❑ In luggage compartment, at battery
- ❑ Disconnecting and connecting ⇒ page 17
- ❑ Nut: 5 Nm

11 - Earth cable
- ❑ With battery monitor control unit - J367-
- ❑ Disconnecting and connecting ⇒ page 17
- ❑ Removing and installing ⇒ page 22
- ❑ Nut: 5 Nm

12 - Nut
- ❑ 18 Nm

13 - Bolt
- ❑ 18 Nm

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14 - Retaining bracket

15 - Nut

- ❑ 2x
- ❑ 18 Nm

16 - Bolt

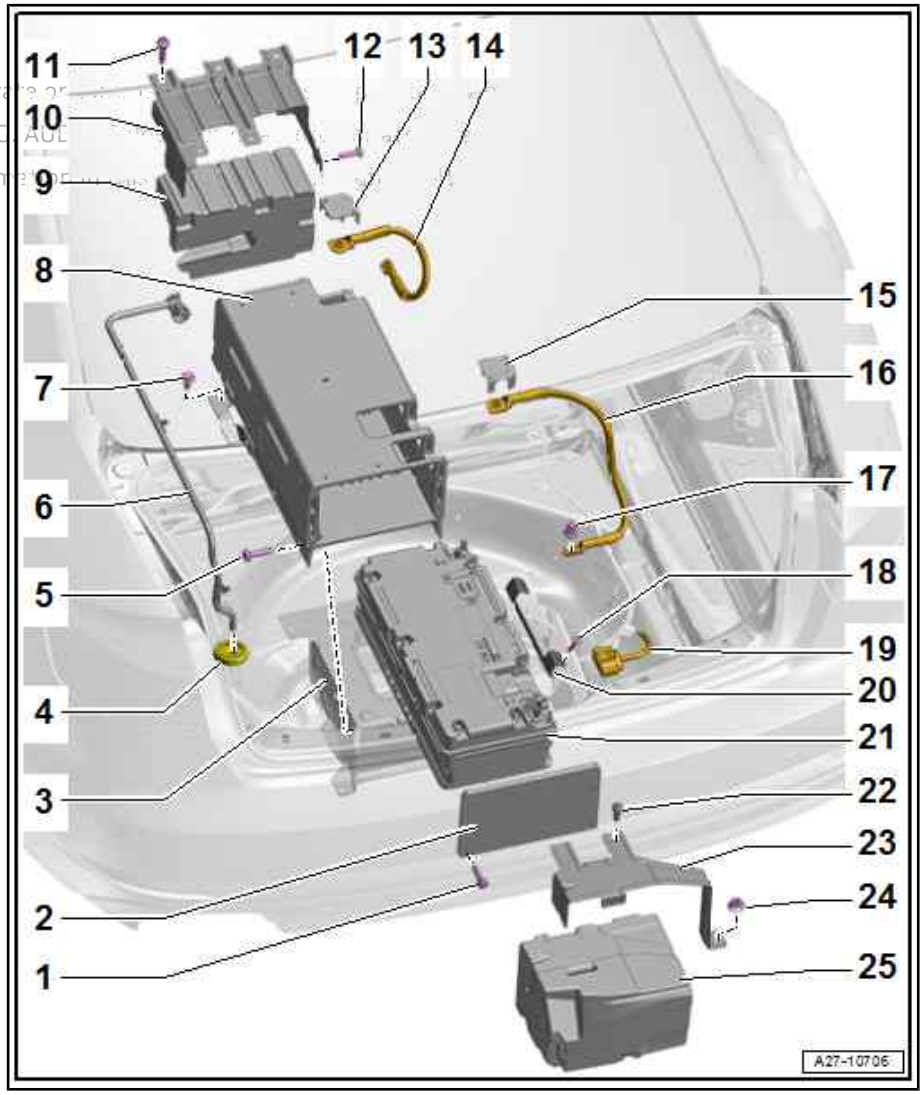
- ❑ 2x
- ❑ 18 Nm

17 - Battery tray

- ❑ Different versions ⇒ Electronic parts catalogue
- ❑ Removing and installing ⇒ page 42

Battery, 48 V - A6-

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1 - Bolt

- ❑ 5x
- ❑ 12 Nm

2 - Cover plate

3 - Battery tray

- ❑ Different versions ⇒ Electronic parts catalogue
- ❑ Removing and installing ⇒ page 42

4 - Grommet

5 - Bolt

- ❑ 6x
- ❑ Tightening torques and sequence ⇒ page 14

6 - Pressure equalisation hose

7 - Bolt

- ❑ 2x
- ❑ Tightening torques and sequence ⇒ page 14

8 - Protective housing

- ❑ Removing and installing ⇒ page 41

9 - Crash pad (front)

10 - Retaining bracket

11 - Bolt

- ❑ 3x
- ❑ 8 Nm

12 - Bolt

- ❑ 4x
- ❑ 8 Nm

13 - Cap for positive cable

14 - Positive cable

- ❑ 18 Nm

15 - Cap for earth cable

16 - Earth cable

- ❑ De-energising high-voltage system ⇒ page 19
- ❑ 18 Nm

17 - Nut

- ❑ 20 Nm

18 - Bolt

- ❑ 2x
- ❑ 8 Nm

19 - Electrical connector

20 - Retaining bracket

21 - Battery, 48 V - A6-

- ❑ Removing and installing ⇒ page 37

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22 - Bolt

- ❑ 2x
- ❑ 8 Nm

23 - Retaining bracket

24 - Nut

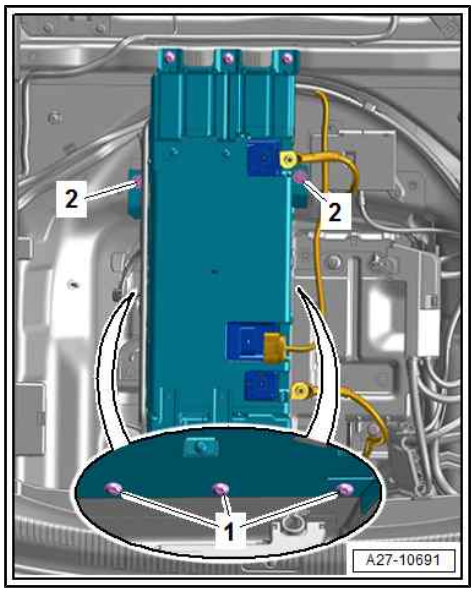
- ❑ 20 Nm

25 - Crash pad (rear)

Removing and installing protective housing for battery, 48 V - A6- - tightening torque and sequence

– Tighten bolts in sequence shown:

Bolts	Tightening torque
-1-	20 Nm
-2-	20 Nm



1.2 Disconnecting and connecting battery

⇒ “1.2.1 Disconnecting and connecting battery A (0K0)”, page 15

⇒ “1.2.2 Disconnecting and connecting battery A (0K2)”, page 16

⇒ “1.2.3 Disconnecting and connecting battery A (0K4 + VH0)”, page 17

⇒ “1.2.4 Disconnecting and connecting battery A (0K4 + VH2)”, page 18

⇒ “1.2.5 De-energising 48 Volt system”, page 19

⇒ “1.2.6 Re-energising 48 Volt system”, page 20

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1.2.1 Disconnecting and connecting battery -A- (0K0)

- After switching off the ignition, wait until the reducing agent has been fully drawn back before performing additional work on the SCR system.

Disconnecting

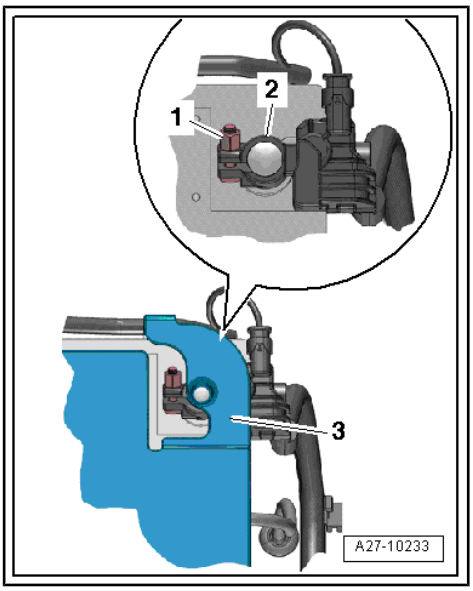
– Switch off ignition.

– Lift luggage compartment floor panel.

– If fitted, take out spare wheel and mounting for vehicle tool kit.

– Open cover -3- on negative battery terminal.

– Slacken off nut -1- several turns and disconnect battery clamp -2- of earth cable from battery terminal.

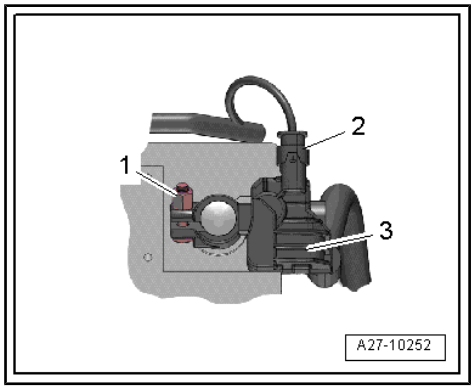


Connecting

– Unplug electrical connector -2- at battery monitor control unit - J367- -item 3-.

– When connecting battery, attach battery clamp of earth cable to negative battery terminal “–” by hand and tighten nut -1-.

– Reconnect connector at battery monitor control unit - J367- .



The following measures are required after re-connecting the battery:

- Activate automatic open/close function of electric window regulators ⇒ Owner's Manual for the vehicle .
- Interrogate event memories of all control units and erase “Low voltage” entry ⇒ Vehicle diagnostic tester.

Note:

After reconnecting the voltage supply, it is possible that the ESP warning lamp will not go out until the vehicle has been driven several metres.

Tightening torques

- ⇒ “1.1.1 Exploded view - battery A in luggage compartment (0K0)”, page 6

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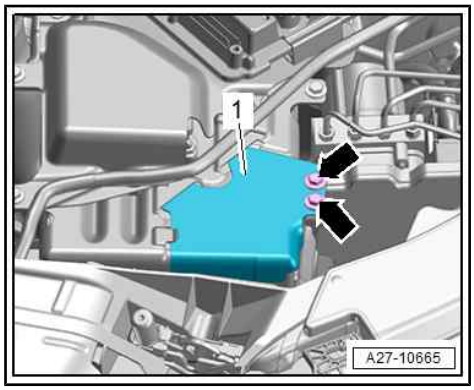
1.2.2 Disconnecting and connecting battery - A- (0K2)

Disconnecting

– Switch off ignition.

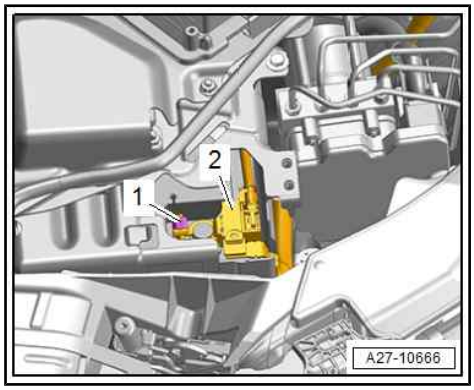
– Remove bolts -arrows-.

– Take cover -1- off to the side.

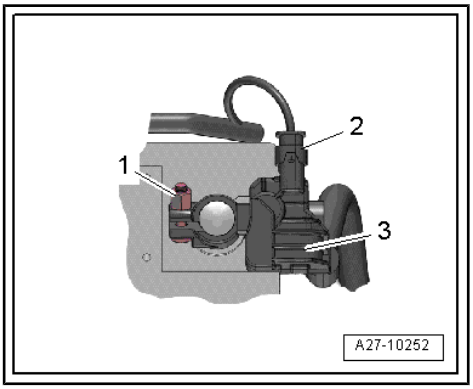


– Slacken off nut -1- several turns and disconnect battery clamp -2- of earth cable from battery terminal.

– Put cover on battery negative terminal.



Connecting



– Unplug electrical connector -2- at battery monitor control unit - J367- -item 3-.
– When connecting battery, attach battery clamp of earth cable to negative battery terminal “–” by hand and tighten nut -1-.
– Reconnect connector at battery monitor control unit - J367- .

The following measures are required after re-connecting the battery:

- Activate automatic open/close function of electric window regulators ⇒ Owner's Manual for the vehicle .
- Interrogate event memories of all control units and erase “Low voltage” entry ⇒ Vehicle diagnostic tester.

Note:

After reconnecting the voltage supply, it is possible that the ESP warning lamp will not go out until the vehicle has been driven several metres.

Tightening torques

- ⇒ “1.1.2 Exploded view - battery A in engine compartment (0K2)”, page 8

1.2.3 Disconnecting and connecting battery - A- (0K4 + VH0)

Special tools and workshop equipment required

- Hand-held multimeter - V.A.G 1526 E-



Disconnecting

– Switch off ignition.
– Lift luggage compartment floor panel.
– Take out spare wheel (if present).

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– Unplug electrical connector -3- at second battery - A1- ; this opens the contacts in the second battery - A1- which de-energises it.

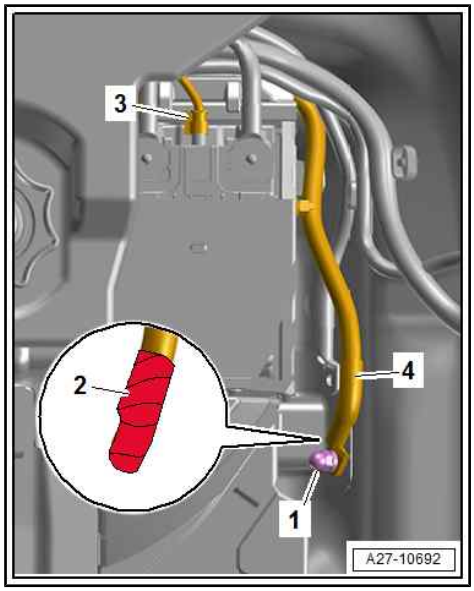
– Remove nut -1- and move earth cable -4- of battery - A- clear at stud.

NOTICE

Risk of short circuit (earth cable)

– Insulate earth cable.

– Immediately wrap earth cable in insulating tape -2- so that short circuits cannot occur and move it to the side.



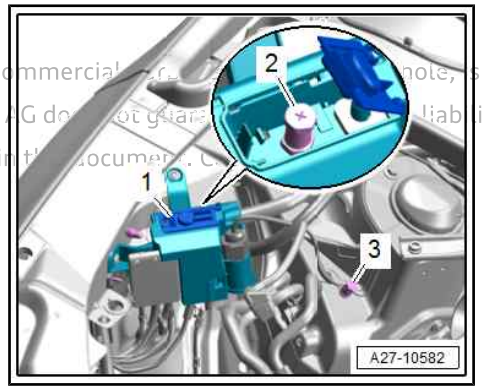
Check that system is de-energised by applying multimeter at jump-start connections in engine compartment:

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– Release catch and open cover -1-.

– Using hand-held multimeter - V.A.G 1526 E- , measure voltage between remote positive terminal -2- and remote earth terminal -3-.

• Display on multimeter = 0 volts



Connecting

– Secure earth cable -4- to vehicle body.

– Plug in electrical connector -3- at second battery - A1- .

The following measures are required after re-connecting the battery:

♦ Activate automatic open/close function of electric window regulators ⇒ Owner's Manual for the vehicle .

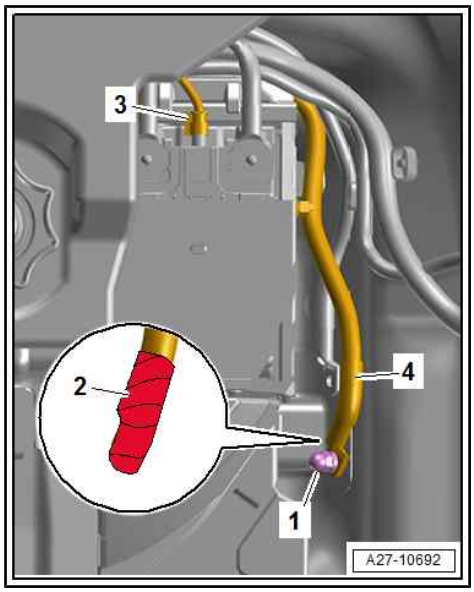
♦ Interrogate event memories of all control units and erase “Low voltage” entry ⇒ Vehicle diagnostic tester.

Note:

After reconnecting the voltage supply, it is possible that the ESP warning lamp will not go out until the vehicle has been driven several metres.

Tightening torques

♦ ⇒ “1.1.3 Exploded view - battery A and second battery A1 in luggage compartment (0K4 + VH0)”, page 10



1.2.4 Disconnecting and connecting battery - A- (0K4 + VH2)

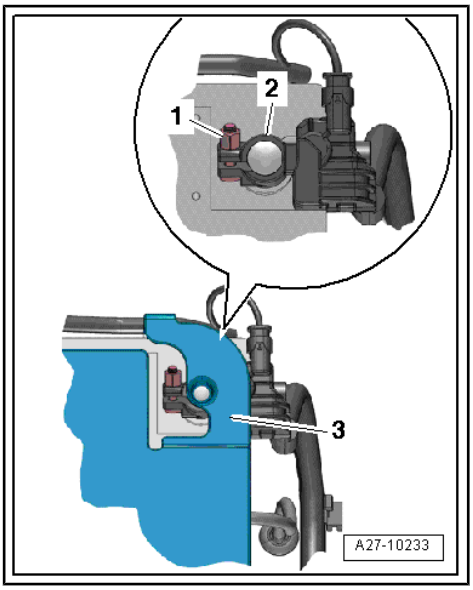
• The 12 Volt system is supported by the 48 Volt system via the voltage converter (48 V/12 V) - A7- . As a result, the 12 Volt system is only de-energised when the 48 Volt system has previously been de-energised.

- After switching off the ignition, wait until the reducing agent has been fully drawn back before performing additional work on the SCR system.

Disconnecting

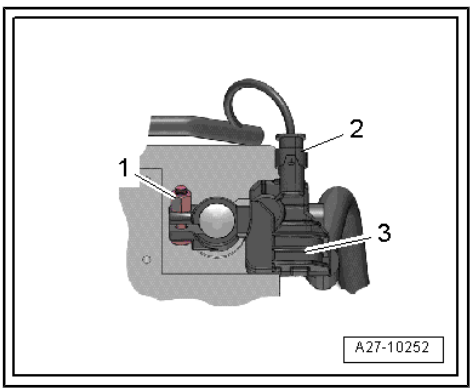
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– De-energise 48 Volt system ⇒ page 19 .
– Switch off ignition.
– Lift luggage compartment floor panel.
– If fitted, take out spare wheel and mounting for vehicle tool kit.
– Open cover -3- on negative battery terminal.
– Slacken off nut -1- several turns and disconnect battery clamp -2- of earth cable from battery terminal.



Connecting

– Unplug electrical connector -2- at battery monitor control unit - J367- -item 3-.
– When connecting battery, attach battery clamp of earth cable to negative battery terminal “–” by hand and tighten nut -1-.
– Reconnect connector at battery monitor control unit - J367- .
– Re-energise 48 Volt system ⇒ page 20 .



The following measures are required after re-connecting the battery:

- Activate automatic open/close function of electric window regulators ⇒ Owner's Manual for the vehicle .
- Interrogate event memories of all control units and erase “Low voltage” entry ⇒ Vehicle diagnostic tester.

Note:

After reconnecting the voltage supply, it is possible that the ESP warning lamp will not go out until the vehicle has been driven several metres.

Tightening torques

- ⇒ “1.1.4 Exploded view - battery A and battery, 48 V A6 in luggage compartment (0K4 + VH2)”, page 12

1.2.5 De-energising 48 Volt system

- Vehicle diagnostic tester is used to de-energise 48 Volt system.

Special tools and workshop equipment required

♦ Vehicle diagnostic tester

De-energising the system

The 48 Volt system must be de-energised in `Diagnosis` mode of ⇒ Vehicle diagnostic tester and ONLY by this method.

– Connect vehicle diagnostic tester .

– Select `Diagnosis` mode and start this mode.

– Select `Special functions` tab.

– Select `48V electrical system` folder.

– Select `Deenergisation of 48 V electrical system` in folder.

– Start the program selected and follow the instructions on the display of the vehicle diagnostic tester.

1.2.6 Re-energising 48 Volt system

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Special tools and workshop equipment required

♦ Vehicle diagnostic tester

Procedure

The 48 Volt system must be re-energised in `Diagnosis` mode of ⇒ Vehicle diagnostic tester and ONLY by this method.

– Connect vehicle diagnostic tester .

– Select `Diagnosis` mode and start this mode.

– Select `Special functions` tab.

– Select `48V electrical system` folder.

– Select `Reenergisation of 48 V electrical system` in folder.

– Start the program selected and follow the instructions on the display of the vehicle diagnostic tester.

1.3 Removing and installing earth cable with battery monitor control unit - J367-

⇒ “1.3.1 Removing and installing earth cable with battery monitor control unit J367 (0K0, 0K4 + VH2)”, page 20

⇒ “1.3.2 Removing and installing earth cable with battery monitor control unit J367 (0K2)”, page 21

⇒ “1.3.3 Removing and installing earth cable with battery monitor control unit J367 (0K4 + VH0)”, page 22

1.3.1 Removing and installing earth cable with battery monitor control unit - J367- (0K0, 0K4 + VH2)

Removing

– Depending on equipment version (0K4 + VH2): De-energise 48 Volt system ⇒ page 19 .

– Switch off ignition.

– Lift luggage compartment floor.

Coupé, Sportback:

– If fitted, take out spare wheel and mounting for vehicle tool kit.

Cabriolet:

– Take out compartment for windbreak.

– Remove lock carrier trim ⇒ General body repairs, interior; Rep. gr. 70 ; Luggage compartment trim panels; Removing and installing lock carrier trim .

– Take out mounting box for vehicle jack.

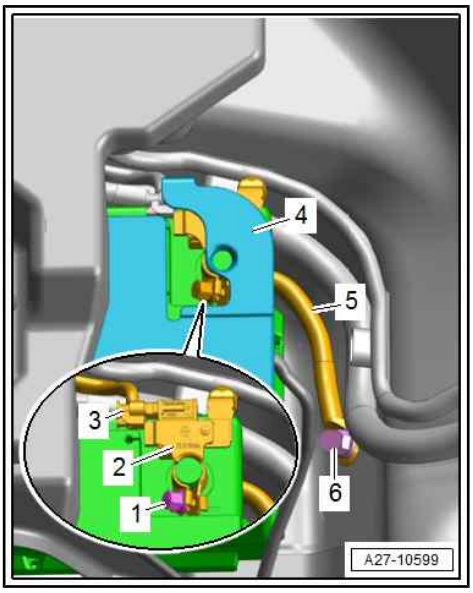
All versions (continued):

– Open cover -4- on negative battery terminal.

– Slacken off nut -1- several turns and disconnect battery clamp of earth cable from battery terminal.

– Unplug electrical connector -3-.

– Remove nut -6- and detach earth cable -5- with battery monitor control unit - J367- -item 2-.



Installing

Installation is carried out in reverse order; note the following:

– Connect battery. Steps required ⇒ page 16 .

– Depending on equipment version (0K4 + VH2): Re-energise 48 Volt system ⇒ page 20 .

Tightening torques

♦ ⇒ “1.1.1 Exploded view - battery A in luggage compartment (0K0)”, page 6

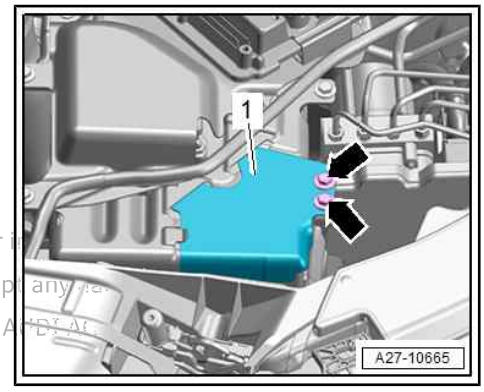
1.3.2 Removing and installing earth cable with battery monitor control unit - J367- (0K2)

Removing

– Switch off ignition.

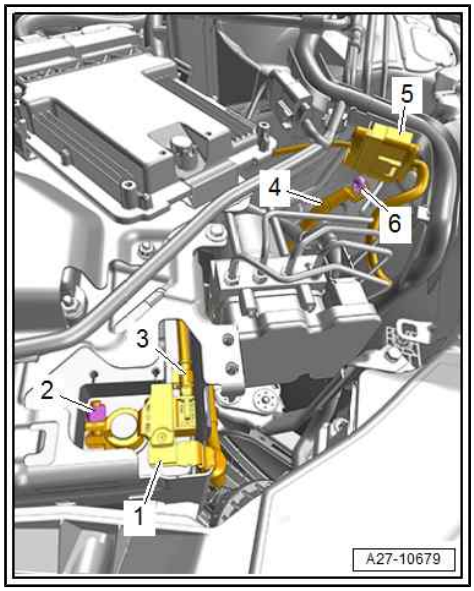
– Remove bolts -arrows-.

– Take cover -1- off to the side.



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– Slacken off nut -2- several turns and disconnect battery clamp of earth cable from negative battery terminal.
– Unplug electrical connector -3-.
– Move electrical connector -5- clear.
– Remove nut -6- and detach earth cable -4- with battery monitor control unit - J367- -item 1-.
– Guide earth cable out towards front.



Installing

Installation is carried out in reverse order; note the following:

– Connect battery. Steps required ⇒ page 17 .

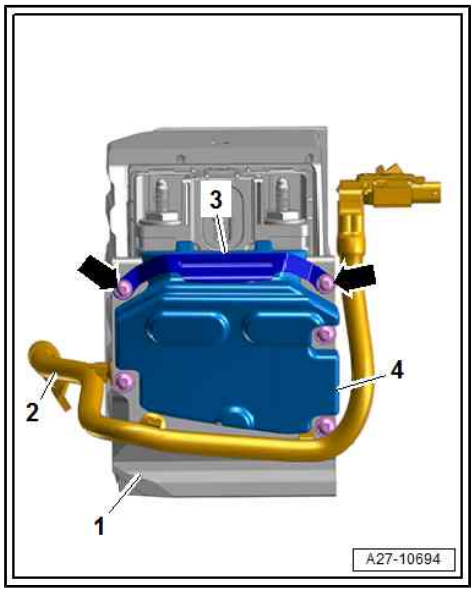
Tightening torques

♦ ⇒ “1.1.2 Exploded view - battery A in engine compartment (0K2)”, page 8

1.3.3 Removing and installing earth cable with battery monitor control unit - J367- (0K4 + VH0)

Removing

– Remove second battery - A1- ⇒ page 35 .
– Remove bolts -arrows-.
– Detach crash pad (front) -4- with retaining bracket -3-.
– Move earth cable -2- with battery monitor control unit - J367- clear at protective housing -1-.



Installing

Installation is carried out in reverse sequence.

Tightening torques

♦ ⇒ “1.1.3 Exploded view - battery A and second battery A1 in luggage compartment (0K4 + VH0)”, page 10

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1.4 Removing and installing battery

⇒ “1.4.1 Removing and installing battery A in luggage compartment”, page 23

⇒ “1.4.2 Removing and installing battery A (0K2)”, page 26

⇒ “1.4.3 Removing and installing battery A (0K4 + VH0)”, page 30

⇒ “1.4.4 Removing and installing battery A (0K4 + VH2)”, page 32

⇒ “1.4.5 Removing and installing second battery A1 (0K4 + VH0)”, page 35

⇒ “1.4.6 Removing and installing battery, 48 V A6 (0K4 + VH2)”, page 37

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1.4.1 Removing and installing battery - A- in luggage compartment

- After switching off the ignition, wait until the reducing agent has been fully drawn back before performing additional work on the SCR system.

Removing

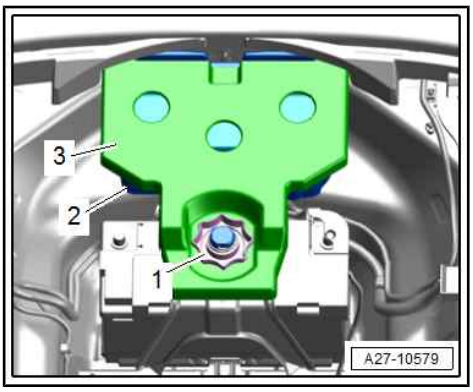
– Switch off ignition.

– Lift luggage compartment floor.

Coupé, Sportback:

– If fitted, take out spare wheel and mounting for vehicle tool kit.

– Remove nut -1- and detach cover -3- with mounting for vehicle tool kit -2-.



Sportback:

– If fitted, remove subwoofer ⇒ Communication; Rep. gr. 91 ; Sound system; Removing and installing subwoofer - R211- .

Cabriolet:

– Take out compartment for windbreak.

– Remove lock carrier trim ⇒ General body repairs, interior; Rep. gr. 70 ; Luggage compartment trim panels; Removing and installing lock carrier trim .

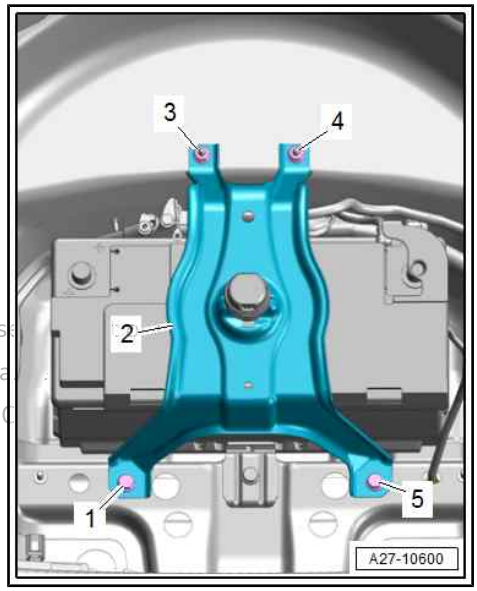
– Take out mounting box for vehicle jack.

– Move hydraulic unit for convertible roof operation slightly to one side.

All versions (continued):

– Remove nuts -3, 4- and bolts -1, 5-.

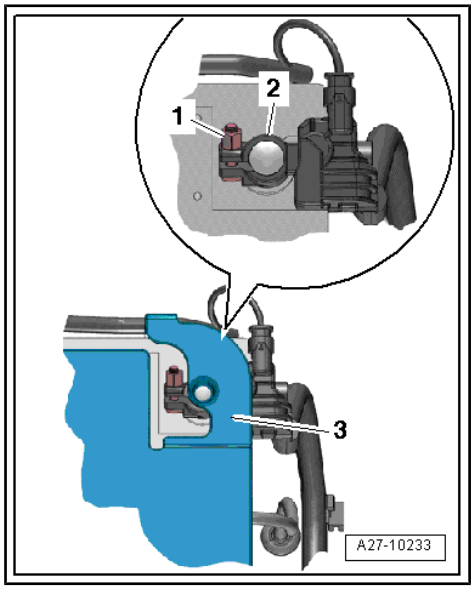
– Remove retaining bracket -2-.



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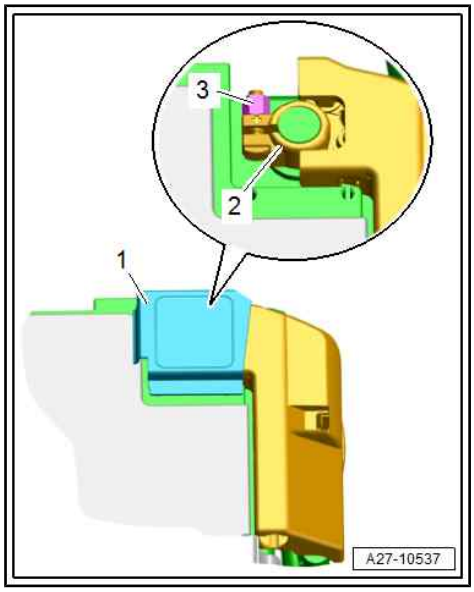
– Open cover -3- on negative battery terminal.

– Slacken off nut -1- several turns and disconnect battery clamp -2- of earth cable from battery terminal.

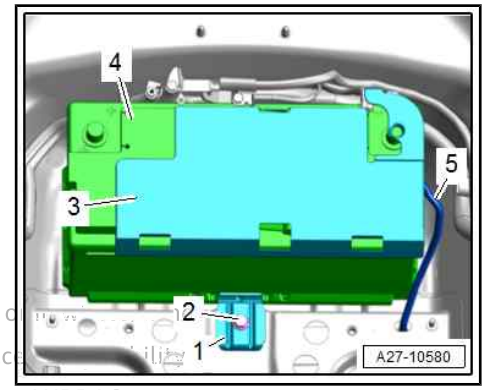


– Open cover -1- on positive battery terminal.

– Slacken off nut -3- several turns and disconnect battery clamp -2- of positive cable from battery terminal.



– Remove bolt -2-.
– Detach battery retainer plate -1-.
– Detach battery cover -3-.
– Pull off hose -5- for central gas venting system.
– Lift battery -4- out of luggage compartment.



• When disposing of used batteries, observe the required disposal procedures for batteries and sulphuric acid ⇒ Electrical system; General information; Rep. gr. 27 ; Battery .

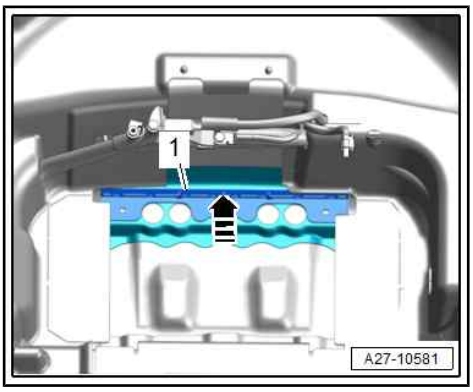
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Installing

Note:

Batteries from the Audi parts range feature a base strip adapter for matching to different retainer flanges. The battery operating instructions give details of when and how to use the base strip adapter.

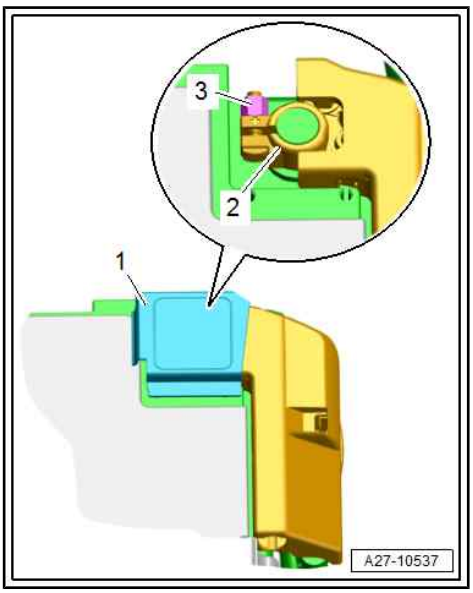
– Slide battery into retaining bracket -1- as far as stop -arrow-, ensuring that battery base strip engages in retaining bracket.



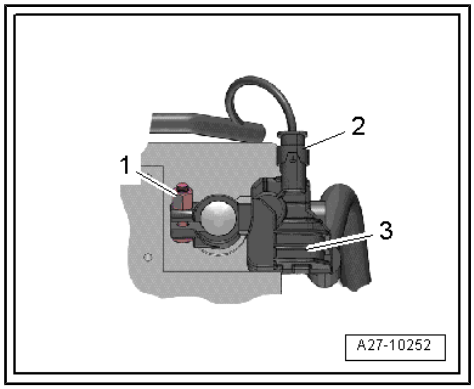
• It should no longer be possible to move the battery.
– Fit hose for central gas venting system.

Perform remaining installation steps in reverse sequence; observe the following:

– Connect up battery in the following sequence with ignition and electrical equipment switched off:
– First connect battery clamp -2- of positive cable by hand to positive battery terminal “+” and tighten nut -3-.
– Close cover -1- over positive battery terminal.



– Unplug electrical connector -2- at battery monitor control unit - J367- -item 3-.
– Attach battery clamp of earth cable to negative battery terminal “–” by hand and tighten nut -1-.
– Reconnect connector at battery monitor control unit - J367- .
– Check that battery is firmly secured after installing.
– If the battery is renewed, the new battery must be adapted.



Procedure

– Connect vehicle diagnostic tester .
– Select `Diagnosis` mode and begin diagnosis.
– Select `Test plan` tab.
– Choose `Select own test` and select following options one after the other:

♦ Body
♦ Electrical system
♦ 0001 - Self-diagnosis compatible systems
♦ 0019 - Data bus diagnostic interface - J533
♦ 0019 - Data bus diagnostic interface, functions
♦ 0019 - Adaption
♦ 0019 - Adapt battery

– Start the program selected and follow the instructions on the display of the vehicle diagnostic tester.

The following measures are required after re-connecting the battery:

♦ Activate automatic open/close function of electric window regulators ⇒ Owner's Manual .
♦ Interrogate event memories of all control units and erase “Low voltage” entry ⇒ vehicle diagnostic tester .

Note:

After reconnecting the voltage supply, it is possible that the ESP warning lamp will not go out until the vehicle has been driven several metres.

Tightening torques

♦ ⇒ “1.1.1 Exploded view - battery A in luggage compartment (0K0)”, page 6

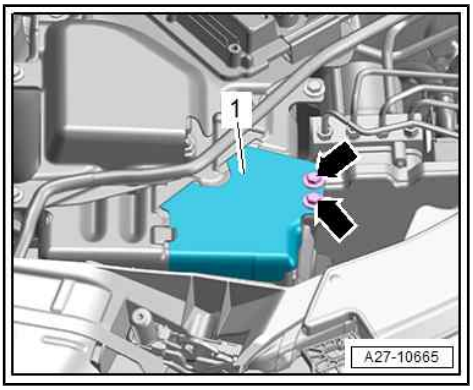
1.4.2 Removing and installing battery - A- (0K2)

Removing

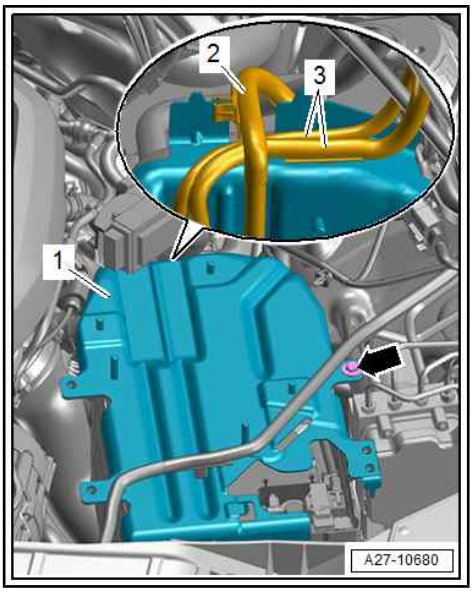
– Switch off ignition.
– Remove wiring junction 3 for terminal 30 and move to side with wiring connected ⇒ page 289 .

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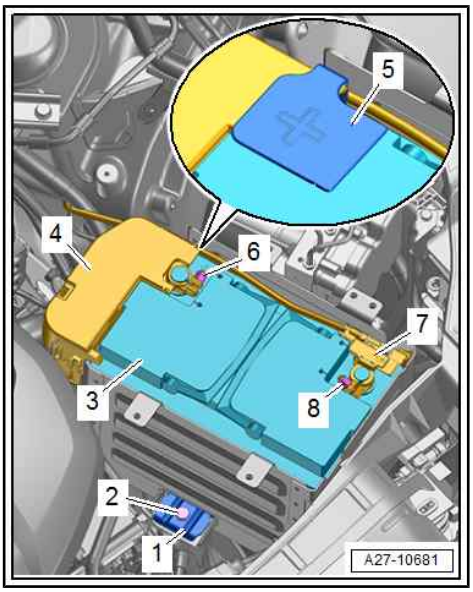
– Remove bolts -arrows-.
– Take cover -1- off to the side.



– Move wiring harnesses -2, 3- clear.
– Remove bolt -arrow-.
– Detach cover -1-.



– Slacken off nut -8- several turns and disconnect battery clamp -7- of earth cable from negative battery terminal.
– Open cover -5- on positive battery terminal.
– Slacken off nut -6- several turns and disconnect battery clamp -4- of positive cable from positive battery terminal.
– Remove bolt -2- on battery retainer plate -1-.
– Lift battery -3- out of battery tray.
• When disposing of used batteries, observe the required disposal procedures for batteries and sulphuric acid ⇒ Electrical system; General information; Rep. gr. 27 ; Battery .



Installing

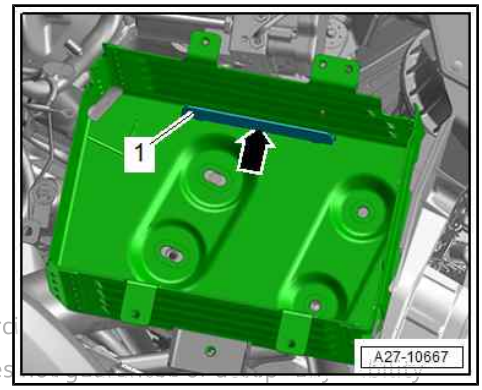
Note:

Batteries from the Audi parts range feature a base strip adapter for matching to different retainer flanges. The battery operating instructions give details of when and how to use the base strip adapter.

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– Slide battery into retaining bracket -1- as far as stop -arrow-, ensuring that battery base strip engages in retaining bracket.

• It should no longer be possible to move the battery.



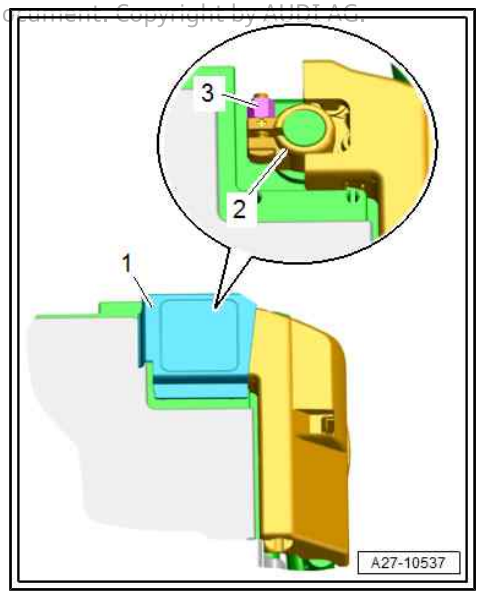
Perform remaining installation steps in reverse sequence; observe the following:

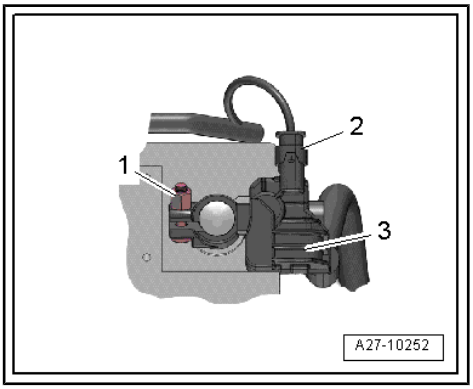
– Connect up battery in the following sequence with ignition and electrical equipment switched off:

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– First connect battery clamp -2- of positive cable by hand to positive battery terminal “+” and tighten nut -3-.

– Close cover -1- over positive battery terminal.





– Unplug electrical connector -2- at battery monitor control unit - J367- -item 3-.
– Attach battery clamp of earth cable to negative battery terminal “–” by hand and tighten nut -1-.
– Reconnect connector at battery monitor control unit - J367- .
– Check that battery is firmly secured after installing.
– If the battery is renewed, the new battery must be adapted.

Procedure

– Connect vehicle diagnostic tester .
– Select `Diagnosis` mode and begin diagnosis.
– Select `Test plan` tab.
– Choose `Select own test` and select following options one after the other:

♦ Body
♦ Electrical system
♦ 0001 - Self-diagnosis compatible systems
♦ 0019 - Data bus diagnostic interface - J533
♦ 0019 - Data bus diagnostic interface, functions
♦ 0019 - Adaption
♦ 0019 - Adapt battery

– Start the program selected and follow the instructions on the display of the vehicle diagnostic tester.

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The following measures are required after re-connecting the battery:

♦ Activate automatic open/close function of electric window regulators ⇒ Owner's Manual .
♦ Interrogate event memories of all control units and erase “Low voltage” entry ⇒ vehicle diagnostic tester .

Note:

After reconnecting the voltage supply, it is possible that the ESP warning lamp will not go out until the vehicle has been driven several metres.

Tightening torques

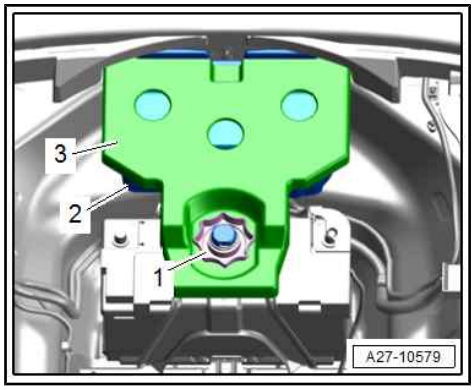
♦ ⇒ “1.1.2 Exploded view - battery A in engine compartment (0K2)”, page 8

1.4.3 Removing and installing battery - A- (0K4 + VH0)

Removing

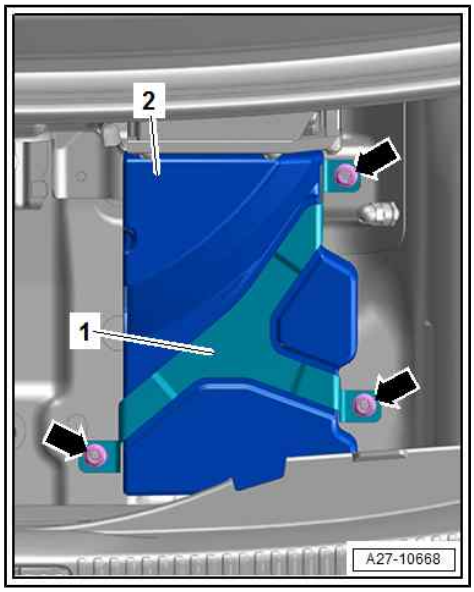
– Remove nut -1- and detach cover -3- with mounting for vehicle tool kit -2-.

– Sportback: If fitted, remove subwoofer ⇒ Communication; Rep. gr. 91 ; Sound system; Removing and installing sub-woofer - R211- .



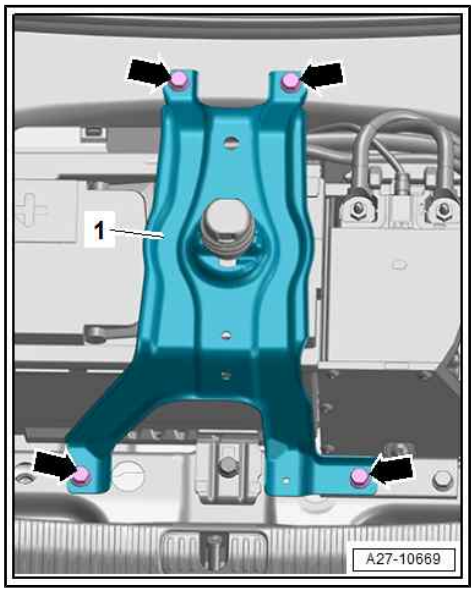
– Remove nuts -arrows-.

– Detach crash pad (rear) -2- with retaining bracket -1-.



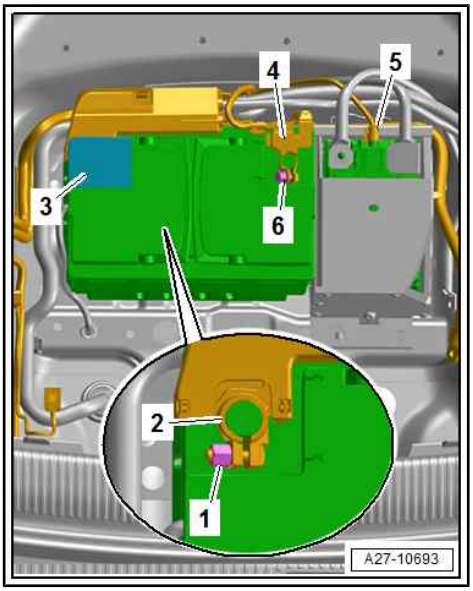
– Remove bolts -arrows-.

– Remove retaining bracket -1-.

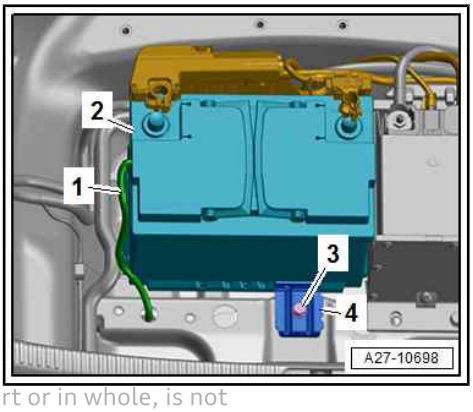


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– Slacken off nut -6- several turns and disconnect battery clamp -4- of earth cable from battery terminal.
– Unplug electrical connector -5-.
– Check that system is de-energised by applying multimeter at jump-start connections in engine compartment ⇒ page 18 .
– Open cover -3- on positive battery terminal.
– Slacken off nut -1- several turns and disconnect battery clamp -2- of positive cable from battery terminal.



– Remove bolt -3-.
– Detach battery retainer plate -4-.
– Pull off hose -1- for central gas venting system.
– Lift battery -2- out of luggage compartment.
• When disposing of used batteries, observe the required disposal procedures for batteries and sulphuric acid ⇒ Electrical system; General information; Rep. gr. 27 ; Battery .



Installing

Note:

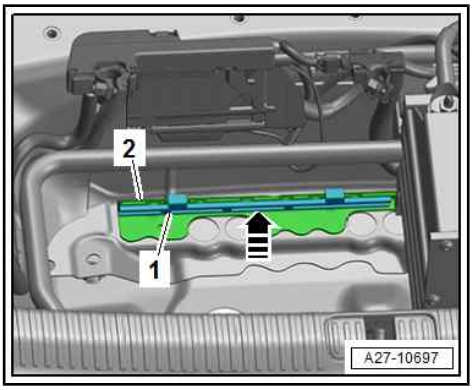
Batteries from the Audi parts range feature a base strip adapter for matching to different retainer flanges. The battery operating instructions give details of when and how to use the base strip adapter.

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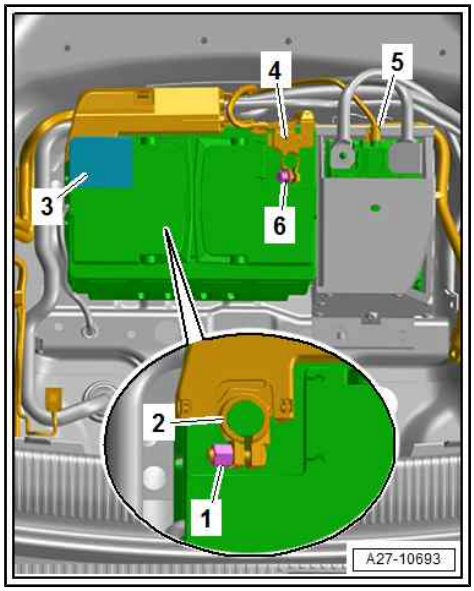
– Check that stop for battery base strip -1- is inserted at retaining bracket -2-.
– Slide battery into retaining bracket as far as stop -arrow-, ensuring that battery base strip engages in retaining bracket.
• It should no longer be possible to move the battery.
– Fit hose for central gas venting system.

Perform remaining installation steps in reverse sequence; observe the following:

– Connect up battery in the following sequence with ignition and electrical equipment switched off:



– First connect battery clamp -2- of positive cable by hand to positive battery terminal “+” and tighten nut -1-.
– Close cover -3- over positive battery terminal.
– Plug in electrical connector -5- at second battery - A1- .
– When connecting battery, attach battery clamp -4- of earth cable to negative battery terminal “–” by hand and tighten nut -6-.
– Check that battery is firmly secured after installing.
– If the battery is renewed, the new battery must be adapted.



Procedure

– Connect vehicle diagnostic tester .
– Select `Diagnosis` mode and begin diagnosis.
– Select `Test plan` tab.
– Choose `Select own test` and select following options one after the other:

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- Body
- Electrical system
- 0001 - Self-diagnosis compatible systems
- 0019 - Data bus diagnostic interface - J533
- 0019 - Data bus diagnostic interface, functions
- 0019 - Adaption
- 0019 - Adapt battery

– Start the program selected and follow the instructions on the display of the vehicle diagnostic tester.

The following measures are required after re-connecting the battery:

- Activate automatic open/close function of electric window regulators ⇒ Owner's Manual .
- Interrogate event memories of all control units and erase “Low voltage” entry ⇒ vehicle diagnostic tester .

Note:

After reconnecting the voltage supply, it is possible that the ESP warning lamp will not go out until the vehicle has been driven several metres.

Tightening torques

- ⇒ “1.1.3 Exploded view - battery A and second battery A1 in luggage compartment (0K4 + VH0)”, page 10

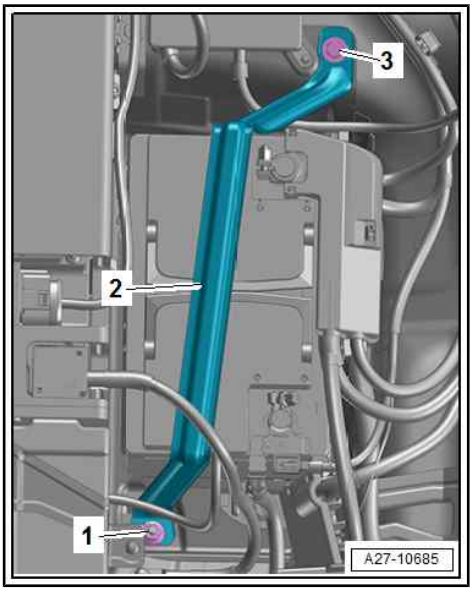
1.4.4 Removing and installing battery - A- (0K4 + VH2)

- After switching off the ignition, wait until the reducing agent has been fully drawn back before performing additional work on the SCR system.

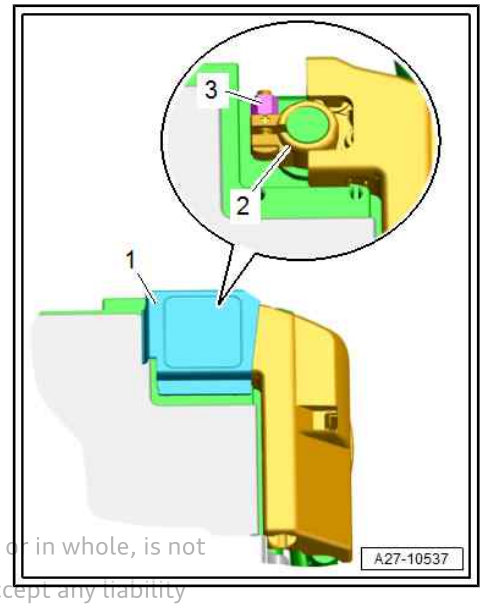
Removing

– Disconnect battery
⇒ “1.2.4 Disconnecting and connecting battery A (0K4 + VH2)”, page 18 .

– Remove nut -1- and bolt -3-.
– Remove retaining bracket -2-.



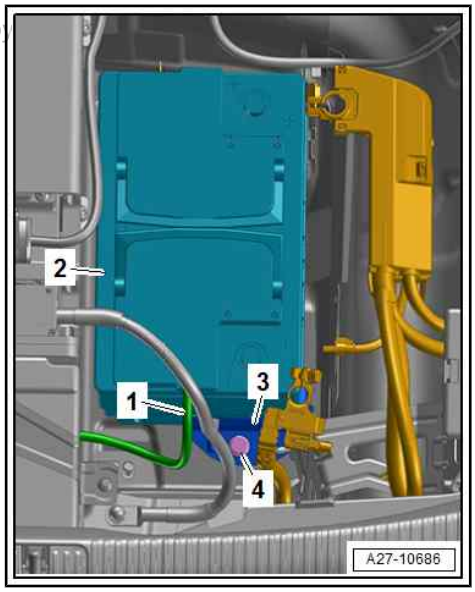
– Open cover -1- on positive battery terminal.
– Slacken off nut -3- several turns and disconnect battery clamp -2- of positive cable from battery terminal.



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– Pull off hose -1- for central gas venting system.
– Remove bolt -4-.
– Detach battery retainer plate -3-.
– Lift battery -2- out of luggage compartment.

• When disposing of used batteries, observe the required disposal procedures for batteries and sulphuric acid ⇒ Electrical system; General information; Rep. gr. 27 ; Battery .



Installing

Installation is carried out in reverse order; note the following:

Note:

Batteries from the Audi parts range feature a base strip adapter for matching to different retainer flanges. The battery operating instructions give details of when and how to use the base strip adapter.

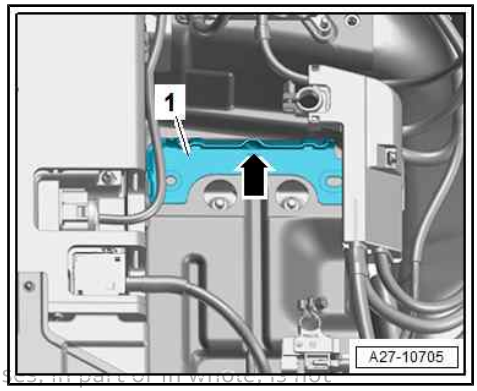
– Slide battery into retaining bracket -1- as far as stop, ensuring that battery base strip engages in retaining bracket -arrow-.

• It should no longer be possible to move the battery.

– Fit hose for central gas venting system.

Perform remaining installation steps in reverse sequence; observe the following:

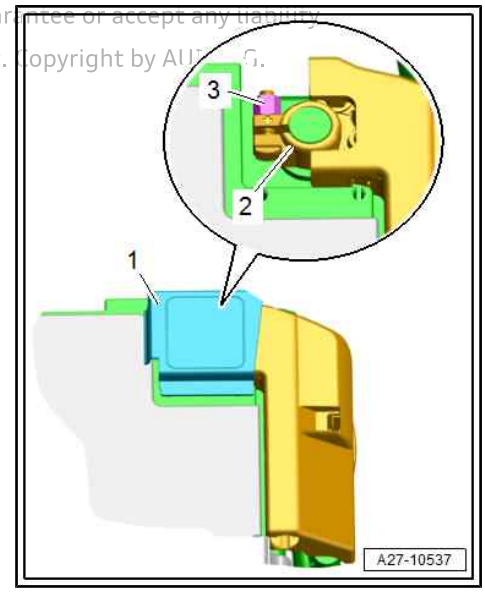
– Connect up battery in the following sequence with ignition and electrical equipment switched off:



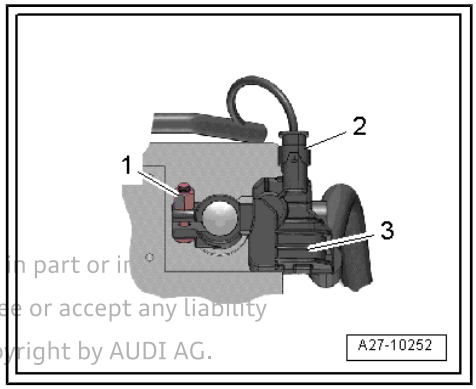
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– First connect battery clamp -2- of positive cable by hand to positive battery terminal “+” and tighten nut -3-.

– Close cover -1- over positive battery terminal.



– Unplug electrical connector -2- at battery monitor control unit - J367- -item 3-.
– Attach battery clamp of earth cable to negative battery terminal “–” by hand and tighten nut -1-.
– Reconnect connector at battery monitor control unit - J367- .
– Check that battery is firmly secured after installing.
– Re-energise 48 Volt system ⇒ page 20 .
– If the battery is renewed, the new battery must be adapted.



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Procedure

– Connect vehicle diagnostic tester .
– Select `Diagnosis` mode and begin diagnosis.
– Select `Test plan` tab.
– Choose `Select own test` and select following options one after the other:

♦ Body
♦ Electrical system
♦ 12V vehicle electrical system
♦ A - battery
♦ A - Adapt battery (12V)

– Start the program selected and follow the instructions on the display of the vehicle diagnostic tester.

The following measures are required after re-connecting the battery:

♦ Activate automatic open/close function of electric window regulators ⇒ Owner's Manual .
♦ Interrogate event memories of all control units and erase “Low voltage” entry ⇒ vehicle diagnostic tester .

Note:

After reconnecting the voltage supply, it is possible that the ESP warning lamp will not go out until the vehicle has been driven several metres.

Tightening torques

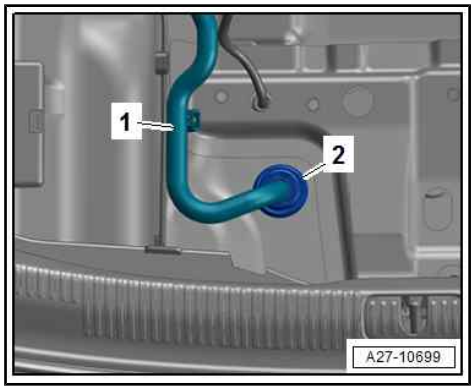
♦ ⇒ “1.1.4 Exploded view - battery A and battery, 48 V A6 in luggage compartment (0K4 + VH2)”, page 12

1.4.5 Removing and installing second battery - A1- (0K4 + VH0)

Removing

– Inspect and classify second battery - A1- ⇒ page 43 .
– Remove battery - A- ⇒ page 30 .

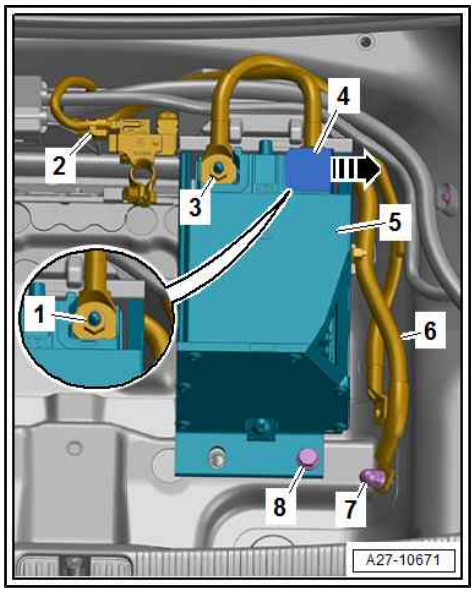
– Pull pressure equalisation hose -1- out of grommet -2-.



– Disengage catch -arrow-.
– Detach cap -4- over “+” terminal.
– Remove nuts -1, 3- and disconnect battery clamps from battery terminals.
– Unplug electrical connector -2-.
– Remove nut -7- and move earth cable -6- clear at stud.
– Remove bolt -8-.
– Lift second battery - A1- -5- with pressure equalisation hose and earth cable out of luggage compartment.

If renewing second battery - A1- :

♦ Remove protective housing ⇒ page 39 .



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Installing

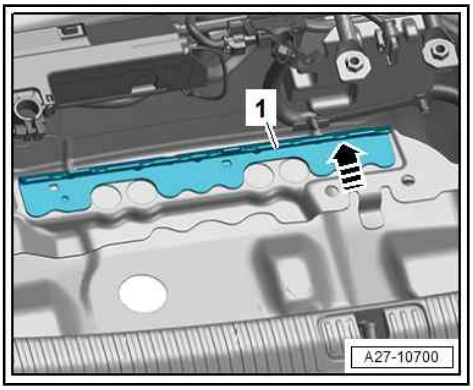
Installation is carried out in reverse order; note the following:

– Slide protective housing with second battery - A1- into retaining bracket -1- as far as stop -arrow- so that base strip engages in retaining bracket.

• It should no longer be possible to move the protective housing.

– Check that protective housing is firmly seated after installing.

– If second battery - A1- has been renewed, new second battery - A1- must be adapted.



Procedure

– Connect vehicle diagnostic tester .

– Select `Diagnosis` mode and begin diagnosis.

– Select `Test plan` tab.

– Choose `Select own test` and select following options one after the other:

♦ Systems with diagnostic capability

♦ 0080 - Battery regulator auxiliary accumulator 1 -A1 (12V Li-ion)

♦ 0080 - Battery regulator auxiliary accumulator 1 (12V Li-ion), features

♦ 0080 - Replace control unit, A1 - second battery

– Start the program selected and follow the instructions on the display of the vehicle diagnostic tester.

Tightening torques

♦ ⇒ “1.1.3 Exploded view - battery A and second battery A1 in luggage compartment (0K4 + VH0)”, page 10

1.4.6 Removing and installing battery, 48 V - A6- (0K4 + VH2)

Removing

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– Remove frame for loading aid ⇒ General body repairs, interior; Rep. gr. 70 ; Luggage compartment trim panels; Removing and installing frame for loading aid .

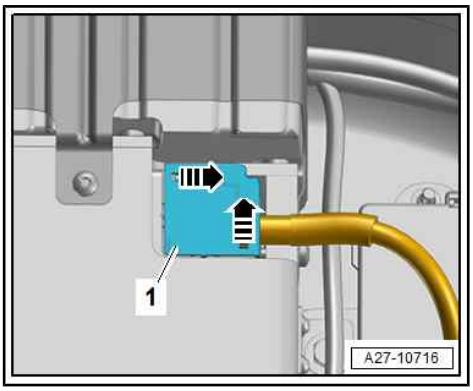
– If fitted, remove subwoofer ⇒ Communication; Rep. gr. 91 ; Sound system; Removing and installing subwoofer - R211- .

– Inspect and classify battery, 48 V - A6- ⇒ page 44 .

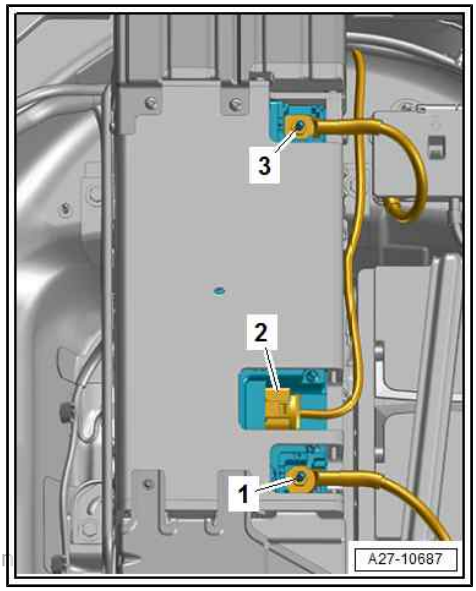
– Remove battery - A- ⇒ page 32 .

– Release fasteners -arrows-.

– Detach cap -1- over “+”- and “–” terminals.

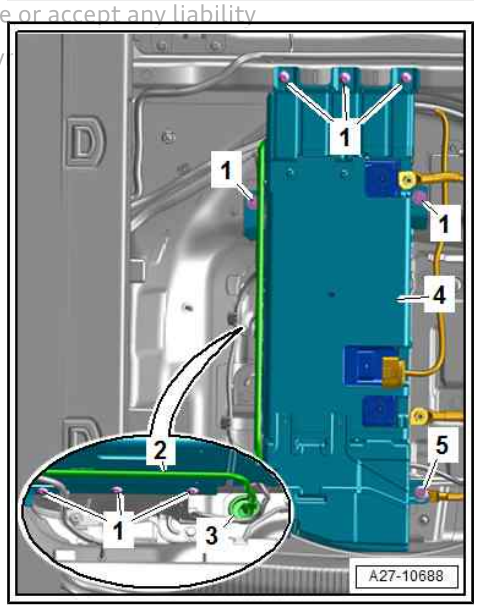


– Unplug electrical connector -2-.
– Remove nuts -1, 3- and disconnect battery clamps from battery terminals.



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– Pull pressure equalisation hose -2- out of grommet -3-.
– Remove bolts -1- and nut -5-.
– Lift battery -4- out.
– Remove battery, 48 V - A6- from protective housing ⇒ page 41 .



Installing

Installation is carried out in reverse order; note the following:

– Connect up battery in the following sequence with ignition and electrical equipment switched off:

– First attach battery clamp of positive cable -3- by hand to positive battery terminal “+” and tighten nut.

– Attach battery clamp of earth cable -1- to negative battery terminal “–” by hand and tighten nut.

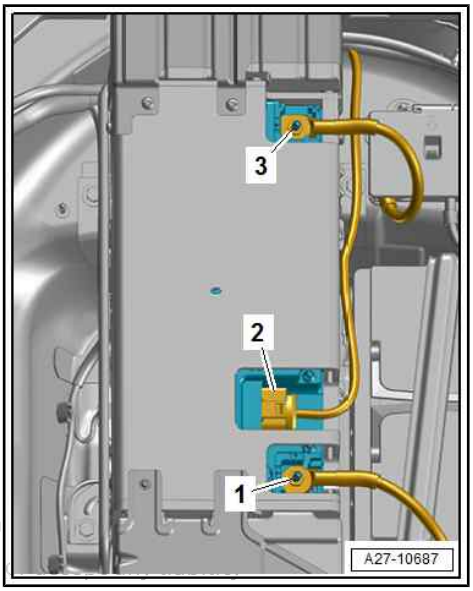
– Press caps on until they engage audibly.

– Plug in electrical connector -2-.

– Check that battery is firmly secured after installing.

– Install battery - A- ⇒ page 32 .

– If battery, 48 V - A6- has been renewed, new battery, 48 V - A6- must be adapted.



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Procedure

– Connect vehicle diagnostic tester .

– Select `Diagnosis` mode and begin diagnosis.

– Select `Test plan` tab.

– Choose `Select own test` and select following options one after the other:

♦ Systems with diagnostic capability

♦ 0021 - Battery management 48V -A6

♦ 0021 - Battery management 48V, functions

♦ 0021 - Replace control unit (battery, 48 V - A6-)

– Start the program selected and follow the instructions on the display of the vehicle diagnostic tester.

Tightening torques

♦ ⇒ Fig. ““Removing and installing protective housing for battery, 48 V -A6- - tightening torque and sequence”“ , page 14

♦ ⇒ “1.1.4 Exploded view - battery A and battery, 48 V A6 in luggage compartment (0K4 + VH2)”, page 12

1.5 Removing and installing protective housing

⇒ “1.5.1 Removing and installing protective housing for second battery A1 (0K4 + VH0)”, page 39

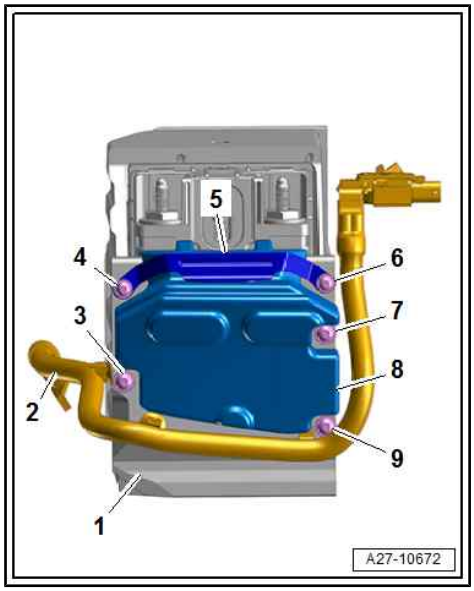
⇒ “1.5.2 Removing and installing protective housing for battery, 48 V A6 (0K4 + VH2)”, page 41

1.5.1 Removing and installing protective housing for second battery - A1- (0K4 + VH0)

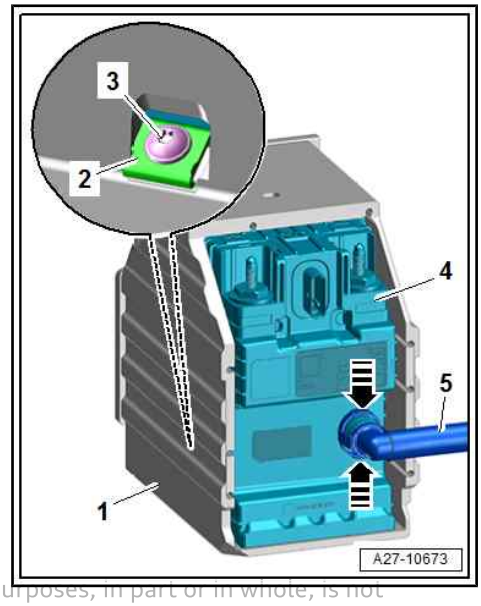
Removing

– Remove second battery - A1- ⇒ page 35 .

– Remove bolts -4, 6-.
– Detach crash pad (front) -8- with retaining bracket -5-.
– Move earth cable -2- with battery monitor control unit - J367- clear at protective housing.
– Remove bolts -3, 7, 9-.
– Detach cover plate -1-.



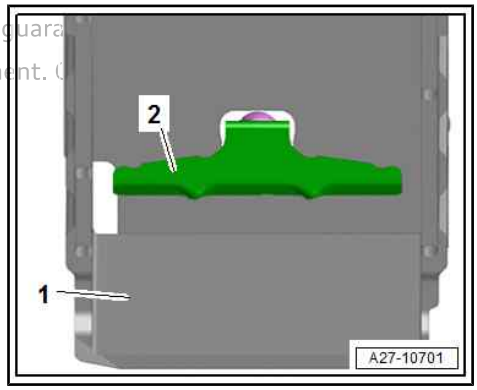
– Press fasteners on both sides -arrows- and detach pressure equalisation hose -5-.
– Loosen bolt -3- for retaining bracket -2- by four turns.
– Take second battery - A1- -4- out of housing -1-.
• When disposing of used batteries, observe the required disposal procedures for batteries ⇒ Electrical system; General information; Rep. gr. 27 ; Battery .



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Installing

– Insert second battery - A1- in housing -1- and slide it onto unfastened retaining bracket -2- as far as stop.
• It should still be possible to move the second battery - A1- .
– Fit housing cover.
– Tighten bolt for retaining bracket.
– Slide on pressure equalisation hose until it engages audibly. Check that pressure equalisation hose is seated securely by pulling at it.



Perform remaining installation steps in reverse sequence; observe the following:

– If necessary, adapt new second battery - A1- ⇒ page 35 .

Tightening torques

♦ ⇒ “1.1.3 Exploded view - battery A and second battery A1 in luggage compartment (0K4 + VH0)”, page 10

1.5.2 Removing and installing protective housing for battery, 48 V - A6- (0K4 + VH2)

Removing

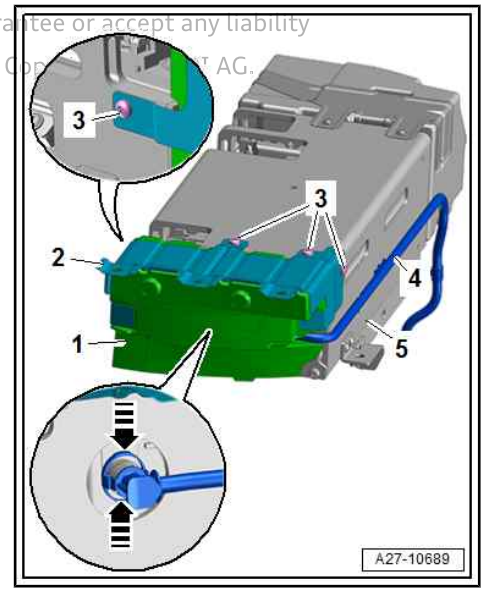
– Remove battery, 48 V - A6- ⇒ page 37 .

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– Remove bolts -3-.

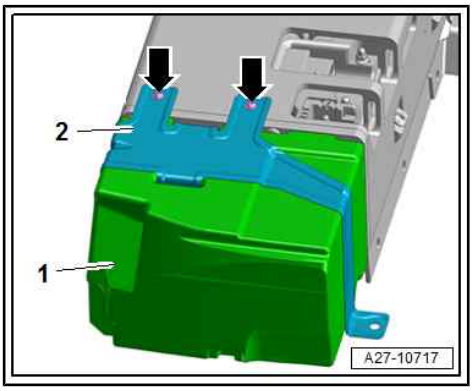
– Detach crash pad (front) -1- with retaining bracket -2-.

– Detach pressure equalisation hose -4-; to do so, press fasteners on both sides -arrows- and move hose clear at protective housing -5-.



– Remove bolts -arrows-.

– Detach crash pad (rear) -1- with retaining bracket -2-.



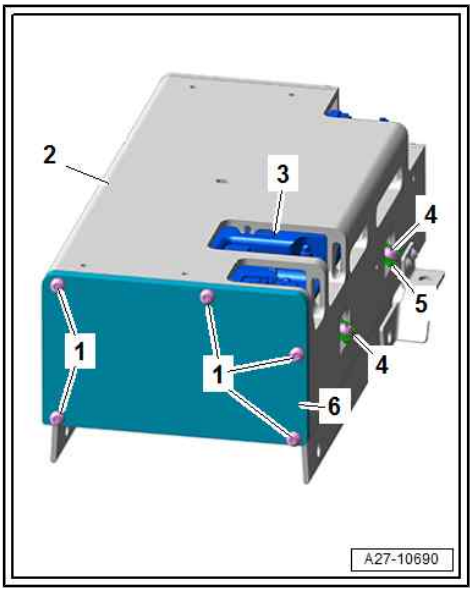
– Remove bolts -1-.

– Detach cover plate -6-.

– Loosen bolts -4- for retaining bracket -5- by four turns.

– Take battery, 48V - A6- -item 3- out of protective housing -2-.

• When disposing of used batteries, observe the required disposal procedures for batteries ⇒ Electrical system; General information; Rep. gr. 27 ; Battery .



Installing

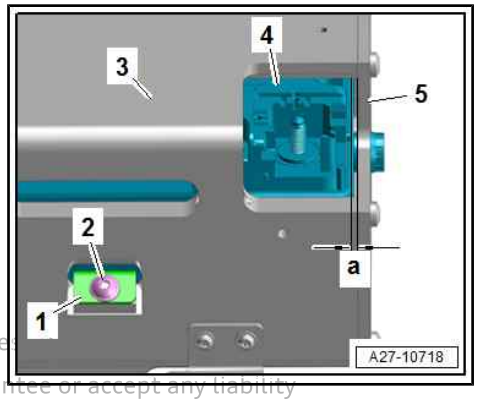
– Fit battery, 48 V - A6- -item 4- in protective housing -3-, ensuring that distance to edge of housing -5- = dimension -a-.

• Dimension -a- = 2 mm

– Tighten bolts -2- for retaining bracket -1-.

– Fit housing cover.

– Slide on pressure equalisation hose until it engages audibly. Check that pressure equalisation hose is seated securely by pulling at it.



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Perform remaining installation steps in reverse sequence; observe the following:

– If necessary, adapt new battery, 48 V - A6- ⇒ page 37 .

Tightening torques

◆ ⇒ Fig. ""Removing and installing protective housing for battery, 48 V -A6- - tightening torque and sequence"" , page 14

◆ ⇒ "1.1.4 Exploded view - battery A and battery, 48 V A6 in luggage compartment (0K4 + VH2)", page 12

1.6 Removing and installing battery tray

⇒ "1.6.1 Removing and installing battery tray (0K2)", page 42

⇒ "1.6.2 Removing and installing battery tray (0K4 + VH2)", page 42

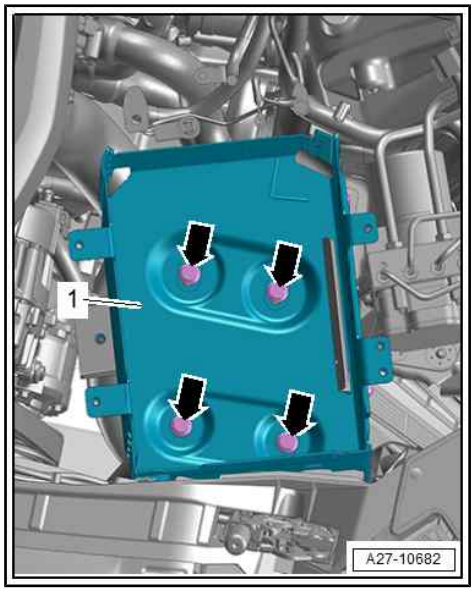
1.6.1 Removing and installing battery tray (0K2)

Removing

– Remove battery - A- ⇒ page 26 .

– Remove bolts -arrows-.

– Take out battery tray -1-.



Installing

Installation is carried out in reverse sequence.

Tightening torques

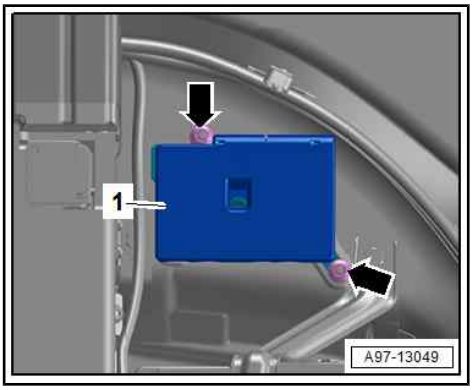
◆ ⇒ Fig. ""Battery tray - tightening torque and tightening sequence (0K2)"" , page 9

1.6.2 Removing and installing battery tray (0K4 + VH2)

Removing

– Remove battery, 48 V - A6- ⇒ page 37 .

– Remove nuts -arrows-.
– Detach wiring junction -TV67- -item 1- and move to side with wiring connected.



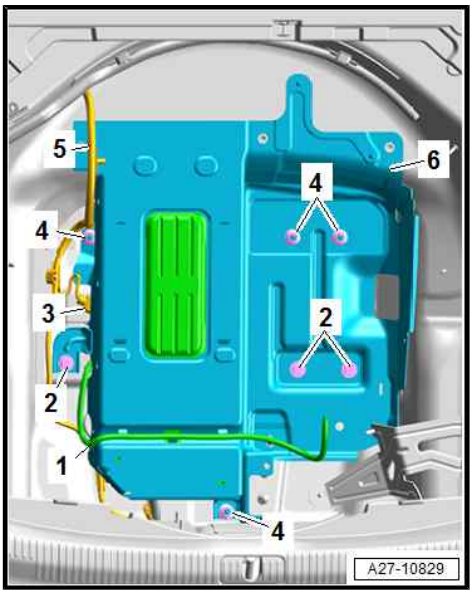
– Unplug electrical connector -3- and move wiring harness -5- clear.
– Move hose -1- for central gas venting system clear.
– Unscrew nuts -4- and bolts -2-.
– Detach battery tray -6-.

Installing

Installation is carried out in reverse sequence.

Tightening torques

- ⇒ “1.1.4 Exploded view - battery A and battery, 48 V A6 in luggage compartment (0K4 + VH2)”, page 12
- ⇒ “1.1.3 Overview of fitting locations - relay carriers, fuse carriers, electronics boxes (engine compartment), 48 V system (0K4 + VH2)”, page 277

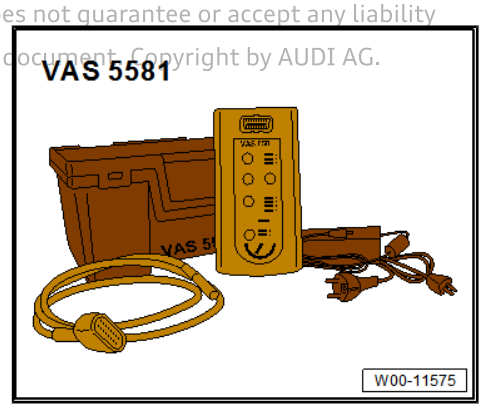


1.7 Inspection and classification of second battery - A1-

Special tools and workshop equipment required

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- Vehicle diagnostic tester
- High-voltage diagnostics box - VAS 5581- (if required)



- Adapter cable - VAS 5581/7- (if required)

Procedure

CAUTION

Risk to health due to toxic dust and liquids.

– Never perform work on lithium-ion batteries in which a short circuit has occurred.

CAUTION

The lithium-ion battery can become extremely hot. This can cause injuries.

Take care not to burn your hands.

– Do not touch the hot battery.

– Wear protective gloves.

Check second battery - A1- for:

- Cracks in housing of second battery - A1-
- Deformation of housing of second battery - A1-
- Temperature-induced discolourations and heat tinting on housing
- Escaping electrolyte
- Damaged contacts
- Presence and legibility of information and warning labels.
- Corrosion damage

– After performing visual check, perform classification of second battery - A1- .

– Connect vehicle diagnostic tester .

With second battery - A1- removed, use high-voltage diagnostics box - VAS 5581- with adapter cable - VAS 5581/7- . CAN bus terminal resistor of high-voltage diagnostics box - VAS 5581- is pre-set to 120 ohms and must not be changed.

– Select `Diagnosis` mode and begin diagnosis.

– Select `Test plan` tab.

– Choose `Select own test` and select following options one after the other:

- Systems with diagnostic capability
- 0080 - Battery regulator auxiliary accumulator 1 -A1 (12V Li-ion)
- 0080 - Battery regulator auxiliary accumulator 1 (12V Li-ion), features
- 0080 - Classification, A1 - second battery

– Start the program selected and follow the instructions on the display of the vehicle diagnostic tester.

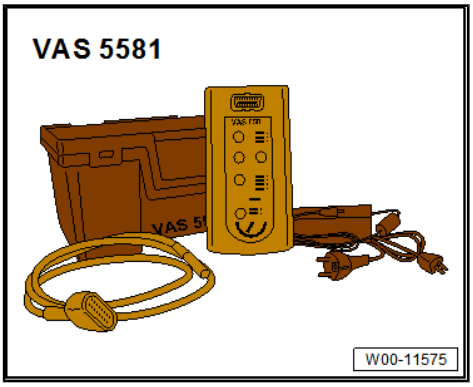
1.8 Inspecting and classifying battery, 48 V - A6-

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Special tools and workshop equipment required

- Vehicle diagnostic tester

- High-voltage diagnostics box - VAS 5581- (if required)



- Adapter cable - VAS 5581/1A- (if required)
- Adapter cable - VAS 5581/1A-2- (if required)

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Procedure

CAUTION

Risk to health due to toxic dust and liquids.

– Never perform work on lithium-ion batteries in which a short circuit has occurred.

CAUTION

The lithium-ion battery can become extremely hot. This can cause injuries.

Take care not to burn your hands.

– Do not touch the hot battery.

– Wear protective gloves.

Check battery, 48 V - A6- for:

- Cracks in housing of battery, 48 V - A6-
- Deformation of housing of battery, 48 V - A6-
- Temperature-induced discolourations and heat tinting on housing
- Escaping electrolyte
- Damaged contacts
- Presence and legibility of information and warning labels.
- Corrosion damage

– After performing visual check, perform a classification of battery, 48 V - A6- .

– Connect vehicle diagnostic tester .

If battery, 48 V - A6- is removed from vehicle, use high-voltage diagnostics box - VAS 5581- with adapter cable - VAS 5581/1A- and adapter cable - VAS 5581/1A-2- . CAN bus terminal resistor of high-voltage diagnostics box - VAS 5581- is pre-set to 120 ohms and must not be changed.

– Select `Diagnosis` mode and begin diagnosis.

– Select `Test plan` tab.

– Choose `Select own test` and select following options one after the other:

- Systems with diagnostic capability
- 0021 - Battery management 48V -A6
- 0021 - Battery management 48V, functions
- 0021 - Classification, battery, 48 V - A6-

– Start the program selected and follow the instructions on the display of the vehicle diagnostic tester.

1.9 Charging battery

⇒ “1.9.1 Charging battery A ”, page 46

⇒ “1.9.2 Charging second battery A1 (0K4 + VH0)”, page 47

⇒ “1.9.3 Charging battery, 48 V A6 (0K4 + VH2)”, page 47

1.9.1 Charging battery - A-

Procedure

CAUTION

Risk of explosion due to a discharged battery with “magic eye”.

Risk of serious injuries.

– If the “magic eye” is colourless or light yellow, do not under any circumstances check it, charge it or attempt a jump start.

– Renew battery.

Note:

Wherever possible, the battery should be installed in the vehicle and connected while it is being charged. Otherwise, the charging current will not be taken into account in the capacity calculation of the battery monitor control unit - J367- .

Before connecting battery charger, it is necessary to perform the following steps:

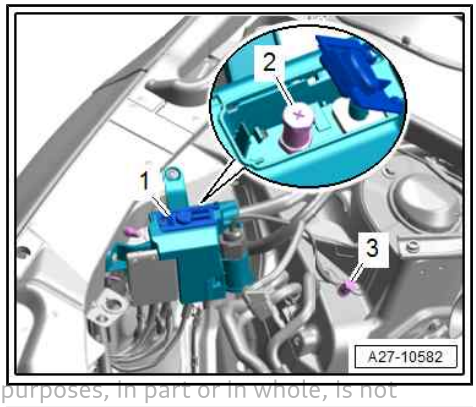
Vehicles with 12 Volt system (VH0):

– Switch off ignition and all electrical equipment.

– Release catch and open cover -1-.

– Connect red clamp “+” of battery charger to remote positive terminal -2- and black clamp “–” to remote earth terminal -3-.

– Plug in mains connector of battery charger and switch on battery charger ⇒ Electrical system; General information; Rep. gr. 27 ; Charging battery .



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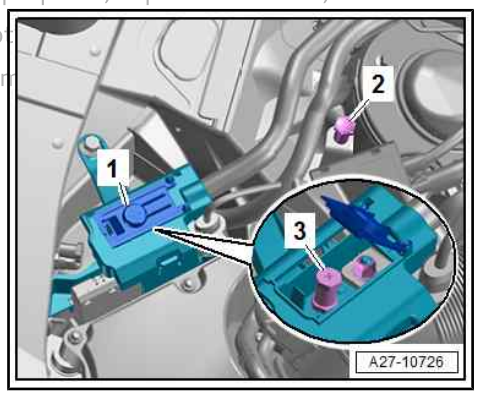
Vehicles with 48 Volt system (VH2):

– Switch off ignition and all electrical equipment.

– Release catch and open cover -1-.

– Connect red clamp “+” of battery charger to remote positive terminal -3- and black clamp “–” to remote earth terminal -2-.

– Plug in mains connector of battery charger and switch on battery charger ⇒ Electrical system; General information; Rep. gr. 27 ; Charging battery .



1.9.2 Charging second battery - A1- (0K4 + VH0)

The second battery - A1- is connected to the battery - A- in parallel. When the battery - A- is charged, the second battery - A1- is also charged. It is not intended for the second battery - A1- to be connected directly to a battery charger.

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- Use a powerful battery charger.

– Charge battery - A- ⇒ page 46 .

1.9.3 Charging battery, 48 V - A6- (0K4 + VH2)

The battery, 48 V - A6- is connected to the battery - A- via the voltage converter, 48 V/12 V - A7- . When the battery - A- is charged, the battery, 48 V - A6- is also charged via the voltage converter, 48 V/12 V - A7- . It is not intended for the battery, 48 V - A6- to be connected directly to a battery charger.

- Use a powerful battery charger.

– Charge battery - A- ⇒ page 46 .

1.10 Removing and installing battery cut-off relay/battery isolation igniter

⇒ “1.10.1 Removing and installing battery cut-off relay/battery isolation igniter”, page 47

⇒ “1.10.2 Removing and installing battery isolation igniter, 48 V N751 ”, page 47

1.10.1 Removing and installing battery cut-off relay/battery isolation igniter

Battery isolation igniter - N253- must be renewed if defective or if it has been triggered.

– Removing and installing battery isolation igniter - N253- ⇒ General body repairs, interior; Rep. gr. 69 ; Battery isolation igniter; Removing and installing battery isolation igniter

1.10.2 Removing and installing battery isolation igniter, 48 V - N751-

The battery isolation igniter, 48 V - N751- is integrated into the battery, 48 V - A6- and cannot be renewed separately in the event of a fault.

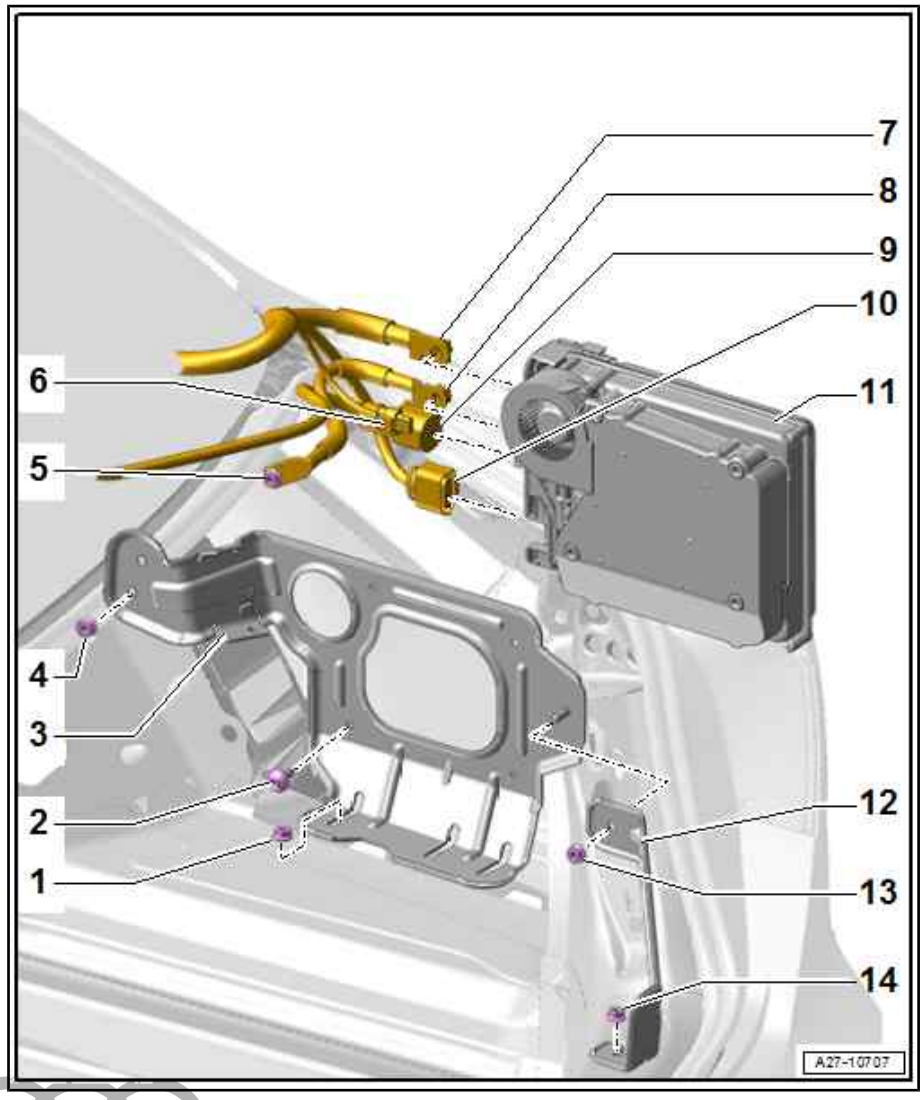
– Renew battery, 48 V - A6- ⇒ page 37 .

2 Voltage converter

⇒ “2.1 Exploded view - voltage converter”, page 48

⇒ “2.2 Removing and installing voltage converter”, page 49

2.1 Exploded view - voltage converter



1 - Nut
- ❑ 3x
- ❑ 3.5 Nm

2 - Bolt
- ❑ 4x
- ❑ 3.5 Nm

3 - Bracket
- ❑ For voltage converter

4 - Nut
- ❑ 2x
- ❑ 3.5 Nm

5 - Nut
- ❑ 9 Nm

6 - Electrical connector

7 - Wire
- ❑ Allocation ⇒ Current flow diagrams, Electrical fault finding and Fitting locations
- ❑ Nut: 20 Nm

8 - Wire
- ❑ Allocation ⇒ Current flow diagrams, Electrical fault finding and Fitting locations
- ❑ Nut: 20 Nm

9 - Electrical connector

10 - Electrical connector

11 - Voltage converter (48 V/12 V) - A7-
- ❑ Removing and installing ⇒ page 49

12 - Bracket
- ❑ For voltage converter

13 - Nut
- ❑ 3.5 Nm

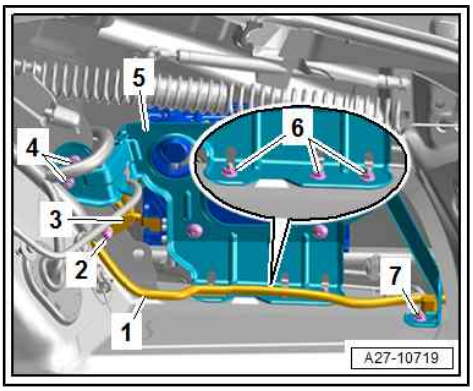
14 - Nut
- ❑ 3.5 Nm

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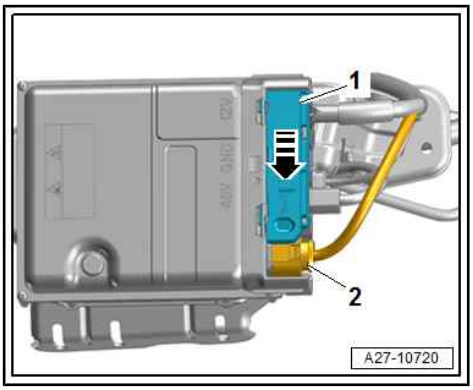
2.2 Removing and installing voltage converter

Removing

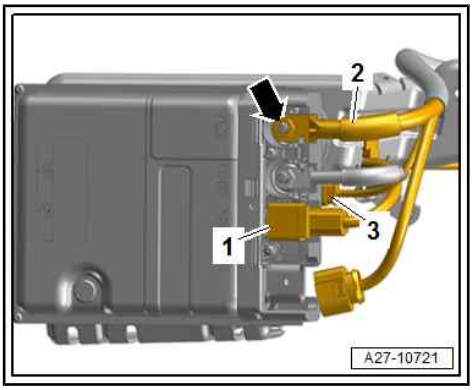
– De-energise 48 Volt system ⇒ page 19 .
– Open cover in luggage compartment side trim (right-side).
– Move wiring harness -1- clear.
– Remove nuts -2, 4, 6, 7-.
– Move electrical wire -3- clear.
– Remove voltage converter -5- with bracket.



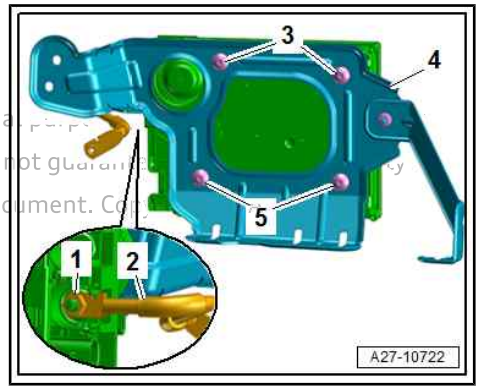
– Unplug electrical connector -2-.
– Slide flap -1- to side -arrow- to release and then open flap.



– Unplug electrical connectors -1, 3-.
– Remove nut -arrow- and move wire -2- clear.
– Remove voltage converter with bracket.



– Remove bolts -3, 5-.
– Detach bracket -4-.
– Unscrew nut -1- and detach wire -2-.



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Installing

Installation is carried out in reverse order; note the following:

– Re-energise 48 Volt system ⇒ page 20 .

Tightening torques

◆ ⇒ “2.1 Exploded view - voltage converter”, page 48

3 Jump-start terminal

⇒ “3.1 Exploded view - jump-start terminal”, page 50

3.1 Exploded view - jump-start terminal

1 - Lid

2 - Suppression filter - C24-

- ❑ Overview of fitting locations ⇒ page 274

3 - Bolt

- ❑ Tightening torque ⇒ Item 10 (page 275)

4 - Terminal 30 wiring junction - TV2-

- ❑ With jump-start terminal
- ❑ Overview of fitting locations ⇒ page 274

5 - Bolt

- ❑ Tightening torque ⇒ Item 10 (page 275)

6 - Remote positive terminal

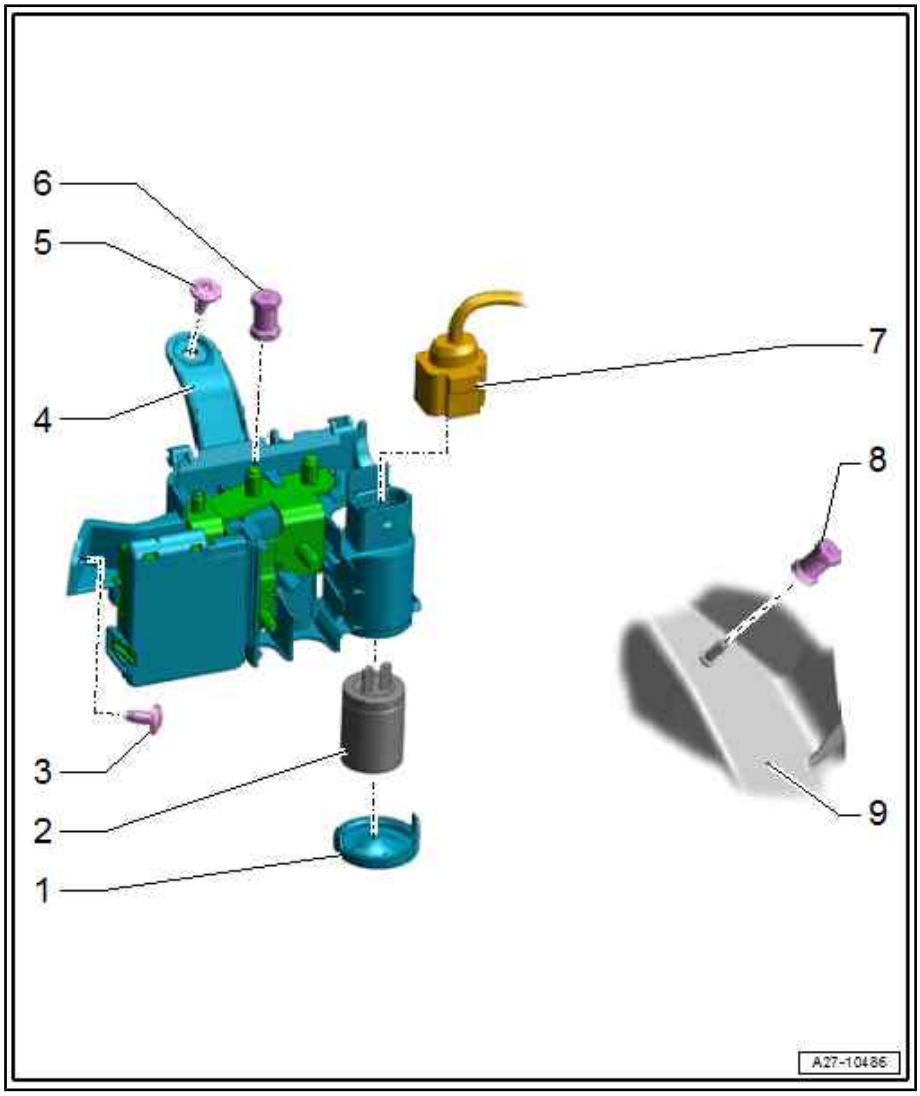
- ❑ 18 Nm

7 - Electrical connector

8 - Remote earth terminal

- ❑ 9 Nm

9 - Suspension turret



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4 Alternator

⇒ “4.1 Exploded view - alternator”, page 51

⇒ “4.2 Removing and installing alternator”, page 56

⇒ “4.3 Checking alternator”, page 67

4.1 Exploded view - alternator

⇒ “4.1.1 Exploded view - alternator C without sliding bushes (0K0)”, page 51

⇒ “4.1.2 Exploded view - alternator C with sliding bushes (0K0)”, page 52

⇒ “4.1.3 Exploded view - starter-alternator C29 , vehicles with 2.0 ltr. TFSI engine (0K4 + VH0)”, page 53

⇒ “4.1.4 Exploded view - starter-alternator C29 , vehicles with 2.0 ltr. TDI engine (0K4 + VH0)”, page 54

⇒ “4.1.5 Exploded view - starter-alternator C29 , vehicles with 3.0 ltr. TDI engine (0K4 + VH2)”, page 55

4.1.1 Exploded view - alternator - C- without sliding bushes (0K0)

1 - Bolt
- ❑ 4x
- ❑ Aluminium bolt
- ❑ Renew after removing
- ❑ 8 Nm +180°

2 - Alternator
- ❑ Removing and installing ⇒ page 56

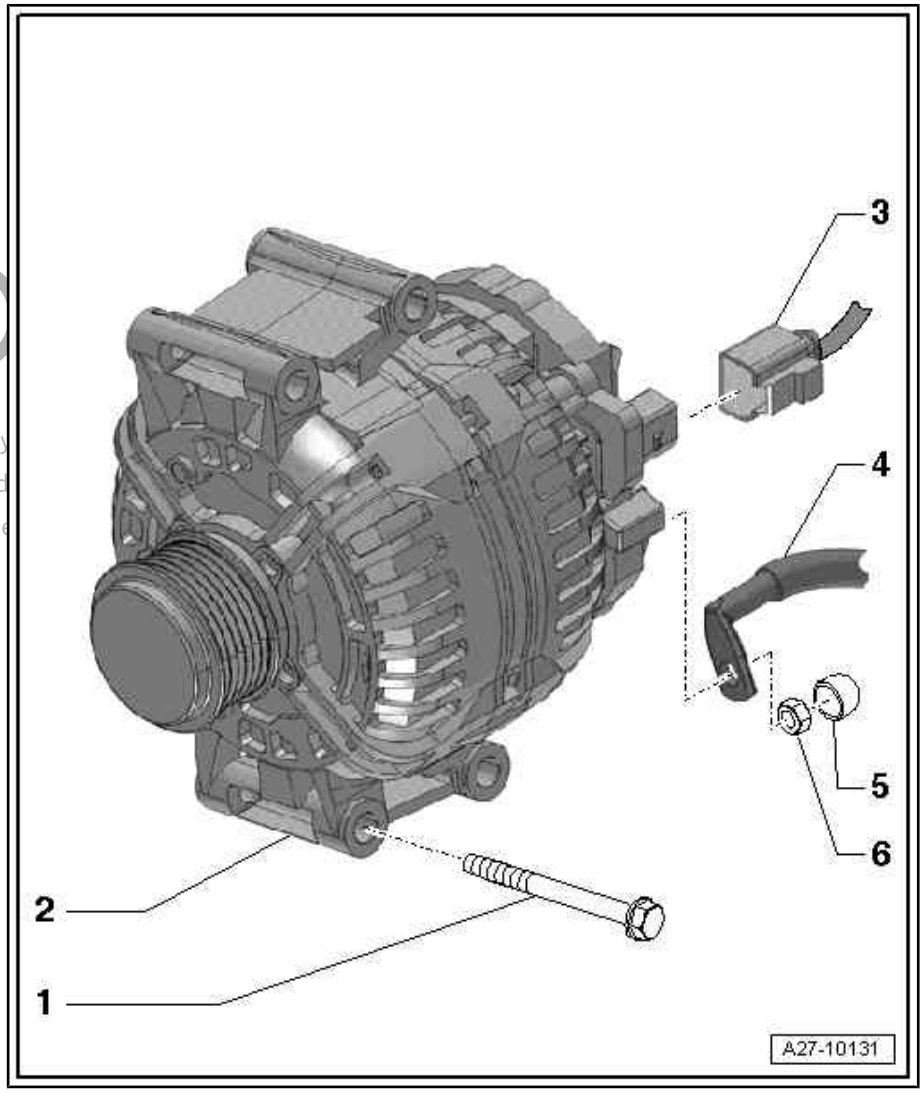
3 - Electrical connector

4 - Terminal 30/B+

5 - Trim cap

6 - Nut
- ❑ 20 Nm

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4.1.2 Exploded view - alternator - C- with sliding bushes (0K0)

1 - Bolts
- ❑ 23 Nm

2 - Alternator
- ❑ Removing and installing ⇒ page 56

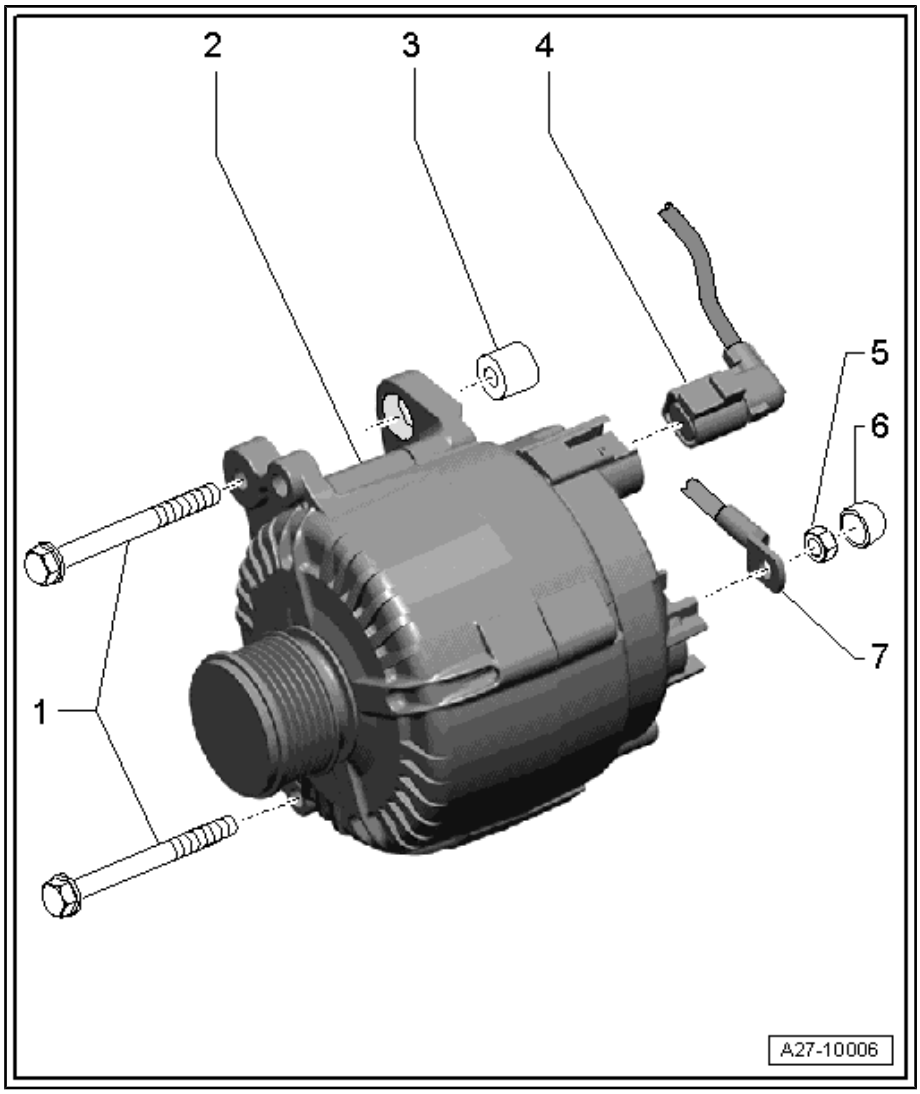
3 - Sliding bush
- ❑ Stiff alternator mount bushes must be freed; otherwise the clamping force of the bush will not be adequate even when the bolts are tightened to the correct torque

4 - Electrical connector

5 - Nut
- ❑ 20 Nm

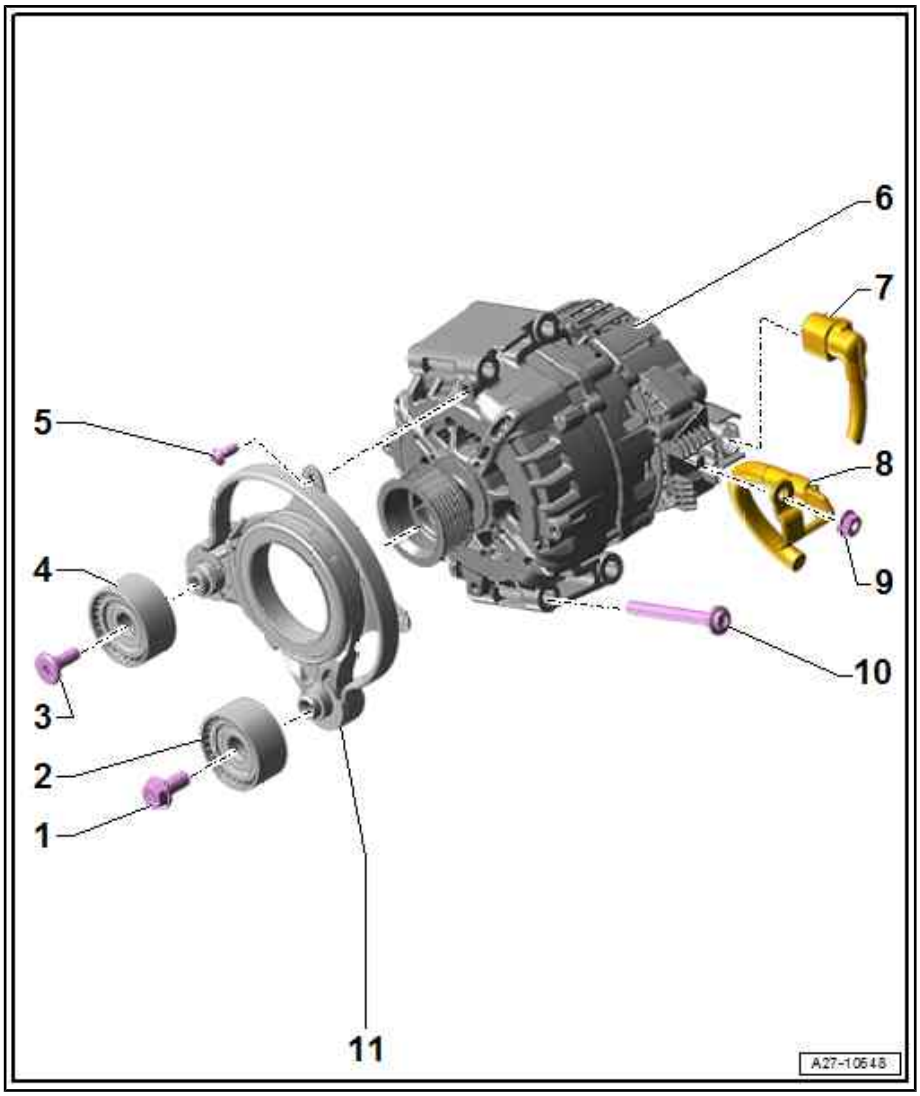
6 - Trim cap

7 - Terminal 30/B+



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4.1.3 Exploded view - starter-alternator - C29- , vehicles with 2.0 ltr. TFSI engine (0K4 + VH0)



1 - Bolt
- ❑ Not available as replacement part

2 - Idler roller
- ❑ Not available as replacement part

3 - Bolt
- ❑ Not available as replacement part

4 - Idler roller
- ❑ Not available as replacement part

5 - Bolt
- ❑ Tightening torque ⇒ Engine; Rep. gr. 13 ; Cylinder block (pulley end); Exploded view - cylinder block (pulley end)

6 - Starter-alternator - C29-
- ❑ Removing and installing ⇒ page 58

7 - Electrical connector

8 - Terminal 30/B+

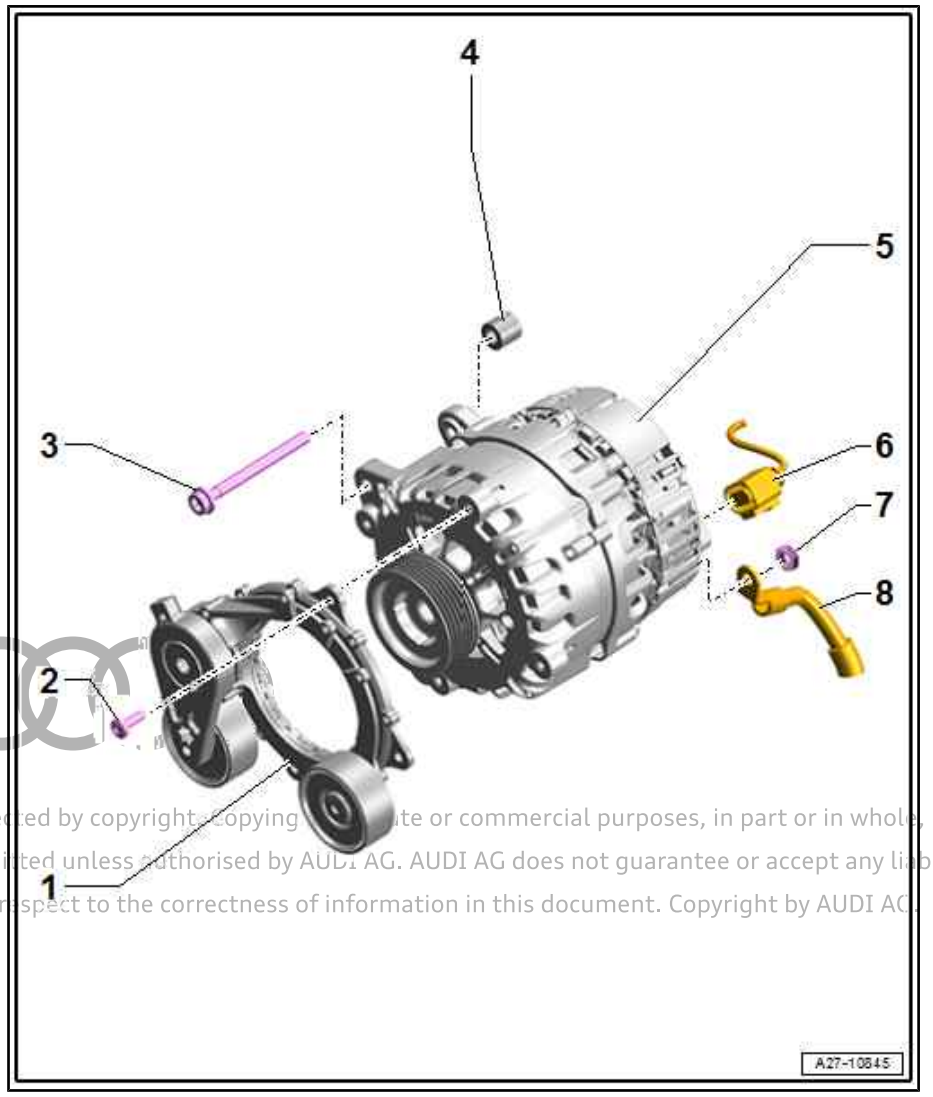
9 - Nut
- ❑ 20 Nm

10 - Bolt
- ❑ 4x
- ❑ Aluminium bolt
- ❑ Renew after removing
- ❑ 8 Nm +180°

11 - Tensioner
- ❑ For starter-alternator - C29-
- ❑ Removing and installing ⇒ Engine; Rep. gr. 13 ; Cylinder block (pulley end); Removing and installing tensioner for poly V-belt

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4.1.4 Exploded view - starter-alternator - C29- , vehicles with 2.0 ltr. TDI engine (0K4 + VH0)



1 - Tensioner

- ❑ For starter-alternator - C29-
- ❑ Removing and installing ⇒ Engine; Rep. gr. 13 ; Cylinder block (pulley end); Removing and installing tensioner for poly V-belt

2 - Bolt

- ❑ Tightening torque ⇒ Engine; Rep. gr. 13 ; Cylinder block (pulley end); Exploded view - cylinder block (pulley end)

3 - Bolt

- ❑ 2x
- ❑ 23 Nm

4 - Sliding bush

- ❑ Stiff alternator mount bushes must be freed; otherwise the clamping force of the bush will not be adequate even when the bolts are tightened to the correct torque

5 - Starter-alternator - C29-

- ❑ Removing and installing ⇒ page 58

6 - Electrical connector

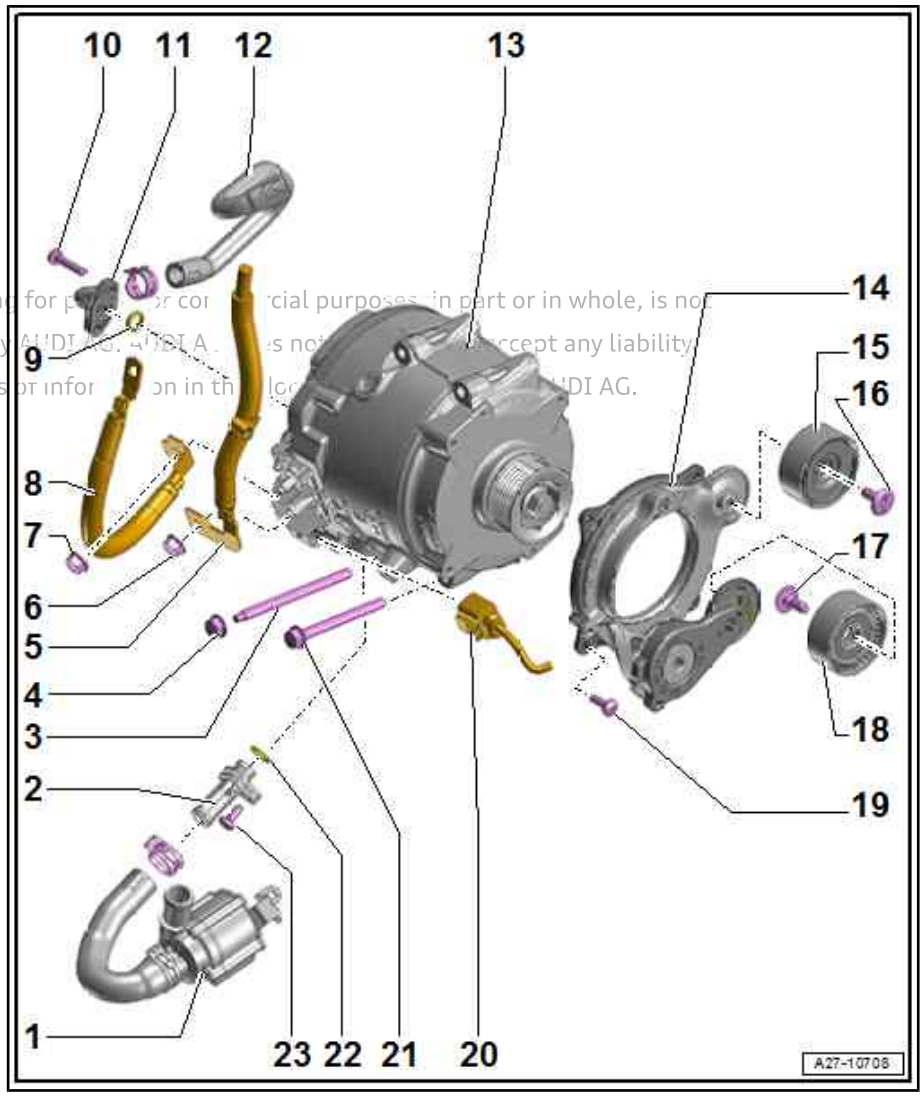
7 - Nut

- ❑ 20 Nm

8 - Terminal 30/B+

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4.1.5 Exploded view - starter-alternator - C29- , vehicles with 3.0 ltr. TDI engine (0K4 + VH2)



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1 - Starter-alternator coolant pump - V621-

- ❑ Removing and installing ⇒ Engine; Rep. gr. 19 ; Coolant pump/thermostat assembly; Removing and installing electric coolant pump

2 - Connection

- ❑ For coolant hose

3 - Threaded pin

- ❑ 2x
- ❑ 9 Nm

4 - Nut

- ❑ 2x
- ❑ 23 Nm

5 - Positive cable

6 - Nut

- ❑ 20 Nm

7 - Nut

- ❑ 20 Nm

8 - Earth cable

9 - O-ring

- ❑ Renew after removing

10 - Bolt

- ❑ 2x
- ❑ 8 Nm

11 - Connection

- ❑ For coolant hose

12 - Coolant hose

13 - Starter-alternator - C29-

- ❑ Removing and installing ⇒ page 65

14 - Tensioner

- ❑ For starter-alternator - C29-
- ❑ Removing and installing ⇒ Engine; Rep. gr. 13 ; Cylinder block (pulley end); Removing and installing tensioner for poly V-belt

15 - Idler roller

- ❑ Not available as replacement part

16 - Bolt

- ❑ Not available as replacement part

17 - Bolt

- ❑ Not available as replacement part

18 - Idler roller

- ❑ Not available as replacement part

19 - Bolt

- ❑ 4x
- ❑ 8 Nm

20 - Electrical connector

21 - Bolt

- ❑ 2x
- ❑ 23 Nm

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22 - O-ring

- ❑ Renew after removing

23 - Bolt

- ❑ 8 Nm

4.2 Removing and installing alternator

⇒ “4.2.1 Removing and installing alternator C - vehicles with 1.4 ltr. TFSI engine (0K0)”, page 56

⇒ “4.2.2 Removing and installing alternator C - vehicles with 1.8/2.0 ltr. TFSI engine (0K0)”, page 57

⇒ “4.2.3 Removing and installing starter-alternator C29 - vehicles with 2.0 ltr. TFSI engine (0K4)”, page 58

⇒ “4.2.4 Removing and installing alternator C - vehicles with 2.9 ltr. TFSI engine (0K0)”, page 59

⇒ “4.2.5 Removing and installing alternator C - vehicles with 3.0 ltr. TFSI engine (0K0)”, page 60

⇒ “4.2.6 Removing and installing alternator C - vehicles with 2.0 ltr. TDI engine (0K0)”, page 61

⇒ “4.2.7 Removing and installing starter-alternator C29 - vehicles with 2.0 ltr. TDI engine (0K4)”, page 62

⇒ “4.2.8 Removing and installing alternator C - vehicles with 3.0 ltr. TDI engine (0K0)”, page 63

⇒ “4.2.9 Removing and installing starter-alternator C29 - vehicles with 3.0 ltr. TDI engine (0K4)”, page 65

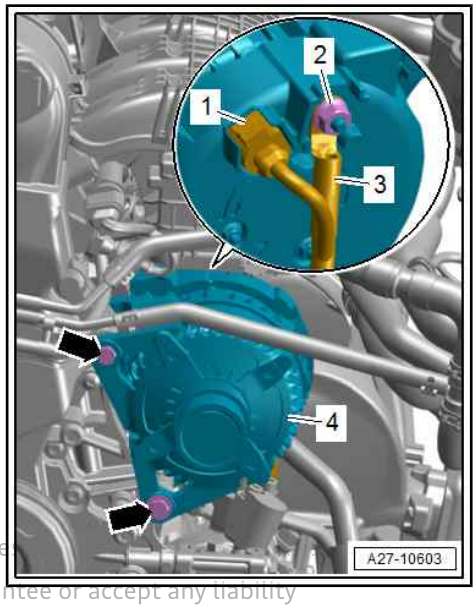
4.2.1 Removing and installing alternator - C- - vehicles with 1.4 ltr. TFSI engine (0K0)

Removing

– Disconnect earth cable from battery with ignition switched off ⇒ page 15 .

– Remove tensioner for poly V-belt ⇒ Engine; Rep. gr. 13 ; Cylinder block (pulley end); Removing and installing tensioner for poly V-belt .

– Unscrew bolts -arrows- approx. six turns.
– Tap carefully on bolt heads with a hammer to release bushes on alternator mountings.
– Remove bolts completely.
– Release alternator -4- from bracket.
– Unplug electrical connector -1-.
– Unscrew nut -2- and detach B+ wire -3-.
– Lift out alternator.



Installing

Installation is carried out in reverse order; note the following:

– To facilitate positioning of alternator, drive back bushes for securing bolts slightly.

• Stiff alternator mount bushes must be freed; otherwise the clamping force of the bush will not be adequate even when the bolts are tightened to the correct torque.

– Connect battery. Steps required ⇒ page 16 .
– Start engine and check that poly V-belt(s) run properly.

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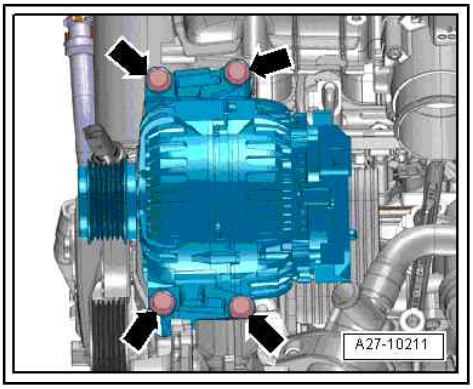
Tightening torques

◆ ⇒ “4.1.2 Exploded view - alternator C with sliding bushes (0K0)”, page 52

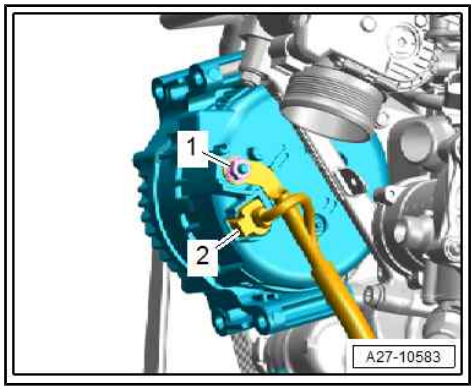
4.2.2 Removing and installing alternator - C- - vehicles with 1.8/2.0 ltr. TFSI engine (0K0)

Removing

– Disconnect earth cable from battery with ignition switched off ⇒ page 15 .
– g-tron vehicles: Remove battery tray ⇒ page 42 .
– Detach poly V-belt from alternator pulley ⇒ Engine; Rep. gr. 13 ; Cylinder block (pulley end); Removing and installing poly V-belt .
– Remove bolts -arrows- and detach alternator to the side.



– Unplug electrical connector -2-.
– Remove nut -1- and move B+ wire clear.
– Lift out alternator.



Installing

Installation is carried out in reverse order; note the following:

• Renew aluminium bolts if removed.
– Connect battery. Steps required ⇒ page 15 .
– Start engine and check that poly V-belt(s) run properly.

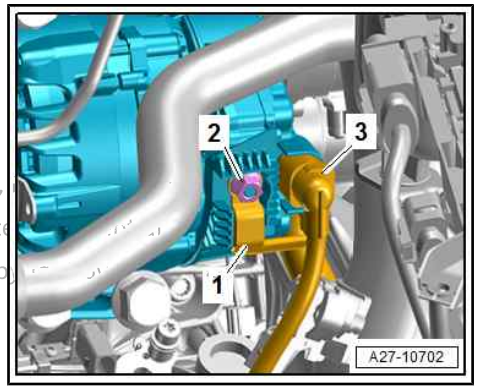
Tightening torques

◆ ⇒ “4.1.1 Exploded view - alternator C without sliding bushes (0K0)”, page 51

4.2.3 Removing and installing starter-alternator - C29- - vehicles with 2.0 ltr. TFSI engine (0K4)

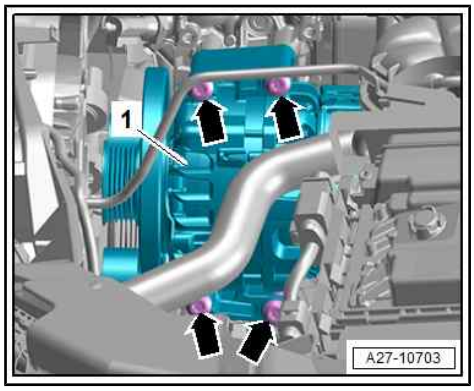
Removing

– Disconnect earth cable from battery with ignition switched off ⇒ page 17 .
– Slacken off poly V-belt and detach from starter-alternator pulley ⇒ Engine; Rep. gr. 13 ; Cylinder block (pulley end); Removing and installing poly V-belt .
– Unplug electrical connector -3-.
– Remove nut -2- and move B+ wire -1- clear.



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– Remove bolts -arrows-.
– Take starter-alternator -1- out upwards.



Installing

Installation is carried out in reverse order; note the following:

– Make sure poly V-belt is properly seated and correctly routed.
– Connect battery. Steps required ⇒ page 18 .
– Start engine and check that poly V-belt(s) run properly.

Tightening torques

◆ ⇒ “4.1.3 Exploded view - starter-alternator C29 , vehicles with 2.0 ltr. TFSI engine (0K4 + VH0)”, page 53

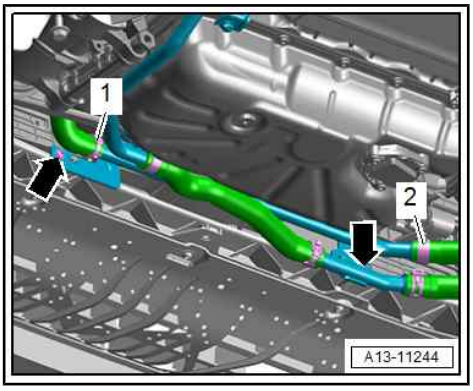
4.2.4 Removing and installing alternator - C- - vehicles with 2.9 ltr. TFSI engine (0K0)

Removing

– Disconnect earth cable from battery with ignition switched off ⇒ page 15 .

– Slacken off poly V-belt and detach from alternator pulley ⇒ Rep. gr. 13 ; Cylinder block (pulley end); Removing and installing poly V-belt .

– Remove bolts -arrows- and push coolant pipes slightly upwards.

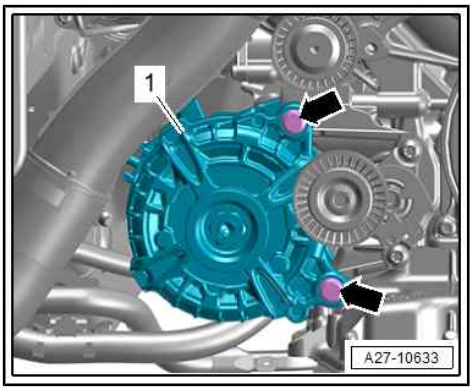


– Unscrew bolts -arrows- for alternator -1- approx. six turns.

– Tap carefully on bolt heads with a hammer to release bushes on alternator mountings.

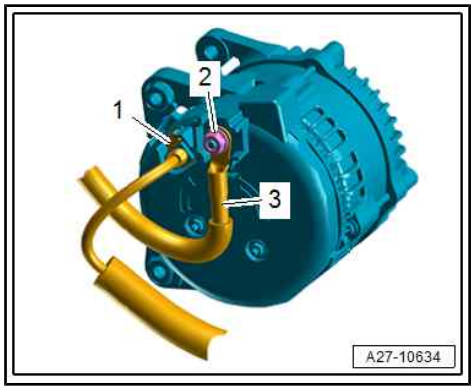
– Remove bolts completely.

– Detach alternator from bracket.



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– Unscrew nut -2- and detach B+ wire -3-.
– Unplug electrical connector -1-.
– Push coolant line to the side and remove alternator downwards.



Installing

Installation is carried out in reverse order; note the following:

– To facilitate positioning of alternator, drive back bushes for securing bolts slightly.
• Stiff alternator mount bushes must be freed; otherwise the clamping force of the bush will not be adequate even when the bolts are tightened to the correct torque.
– Fill up with coolant ⇒ Engine; Rep. gr. 19 ; Cooling system/ coolant; Draining and filling cooling system .
– Connect battery. Steps required ⇒ page 16 .
– Start engine and check that poly V-belt(s) run properly.

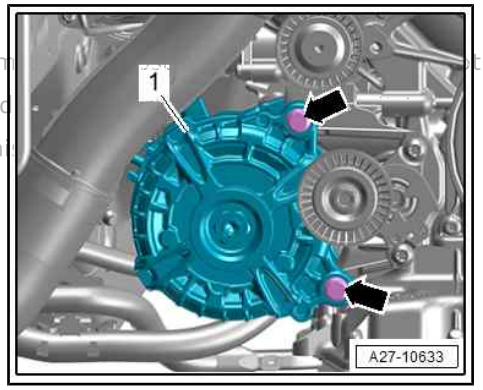
Tightening torques

◆ ⇒ “4.1.2 Exploded view - alternator C with sliding bushes (0K0)”, page 52
◆ ⇒ 6-cylinder direct injection engine (2.9, 3.0 ltr. 4-valve TFSI); Rep. gr. 19 ; Coolant pipes; Exploded view - coolant pipes

4.2.5 Removing and installing alternator - C- - vehicles with 3.0 ltr. TFSI engine (0K0)

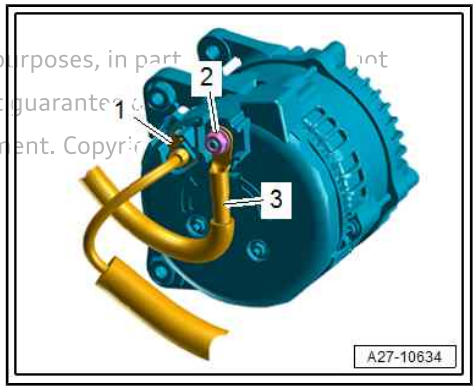
Removing

– Disconnect earth cable from battery with ignition switched off ⇒ page 15 .
– Slacken off poly V-belt and detach from alternator pulley ⇒ Rep. gr. 13 ; Cylinder block (pulley end); Removing and installing poly V-belt .
– Unscrew bolts -arrows- for alternator -1- approx. six turns.
– Tap carefully on bolt heads with a hammer to release bushes on alternator mountings.
– Remove bolts completely.
– Detach alternator from bracket.



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– Unscrew nut -2- and detach B+ wire -3-.
– Unplug electrical connector -1-.
– Push coolant hose slightly to the side and remove alternator towards right.



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Installing

Installation is carried out in reverse order; note the following:

– To facilitate positioning of alternator, drive back bushes for securing bolts slightly.

• Stiff alternator mount bushes must be freed; otherwise the clamping force of the bush will not be adequate even when the bolts are tightened to the correct torque.

– Connect battery. Steps required ⇒ page 16 .
– Start engine and check that poly V-belt(s) run properly.

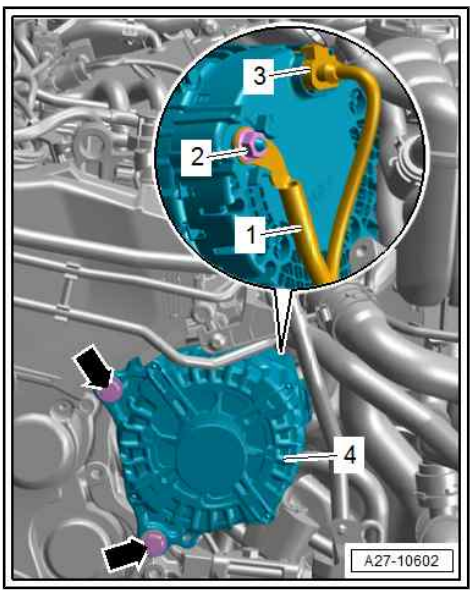
Tightening torques

◆ ⇒ “4.1.2 Exploded view - alternator C with sliding bushes (0K0)”, page 52

4.2.6 Removing and installing alternator - C- - vehicles with 2.0 ltr. TDI engine (0K0)

Removing

– Disconnect earth cable from battery with ignition switched off ⇒ page 15 .
– Remove tensioner for poly V-belt ⇒ Engine; Rep. gr. 13 ; Cylinder block (pulley end); Removing and installing tensioner for poly V-belt .
– Detach air conditioner compressor at bracket and tie up to side ⇒ Heating, air conditioning; Rep. gr. 87 ; Air conditioner compressor; Detaching and attaching air conditioner compressor at bracket .
– Unplug electrical connector -3-.
– Unscrew nut -2- and detach B+ wire -1-.
– Unscrew bolts -arrows- approx. six turns.
– Tap carefully on bolt heads with a hammer to release bushes on alternator mountings.
– Remove bolts completely.
– Remove alternator -4- downwards.



Installing

Installation is carried out in reverse order; note the following:

– To facilitate positioning of alternator, drive back bushes for securing bolts slightly.

• Stiff alternator mount bushes must be freed; otherwise the clamping force of the bush will not be adequate even when the bolts are tightened to the correct torque.

– Connect battery. Steps required ⇒ page 16 .
– Start engine and check that poly V-belt(s) run properly.

Tightening torques

◆ ⇒ “4.1.2 Exploded view - alternator C with sliding bushes (0K0)”, page 52

4.2.7 Removing and installing starter-alternator - C29- - vehicles with 2.0 ltr. TDI engine (0K4)

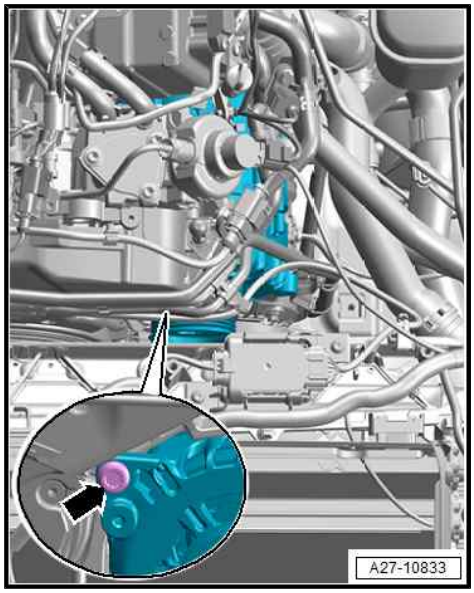
Removing

– Disconnect earth cable from battery with ignition switched off ⇒ page 17 .

– Remove tensioner for poly V-belt ⇒ Servicing; Rep. gr. 13 ; Cylinder block (pulley end); Removing and installing tensioner for poly V-belt .

– Remove bolt -arrow-.

– Detach air conditioner compressor at bracket and tie up to side ⇒ Heating, air conditioning; Rep. gr. 87 ; Air conditioner compressor; Detaching and attaching air conditioner compressor at bracket .



– Unplug electrical connector -5-.

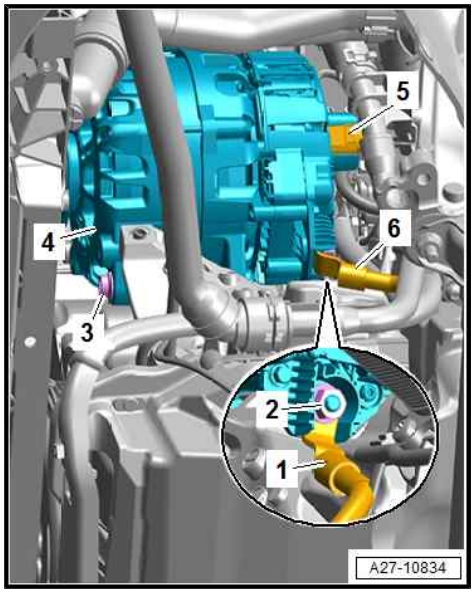
– Move B+ wire -6- clear at engine support.

– Remove bolt -3-.

– Detach starter-alternator -4- from bracket and move it forwards slightly.

– Remove nut -2- and move B+ wire -1- clear.

– Remove starter-alternator downwards and to the side.



Installing

Installation is carried out in reverse order; note the following:

– To facilitate positioning of alternator, drive back bushes for securing bolts slightly.

• Stiff alternator mount bushes must be freed; otherwise the clamping force of the bush will not be adequate even when the bolts are tightened to the correct torque.

– Make sure poly V-belt is properly seated and correctly routed.

– Connect battery. Steps required ⇒ page 18 .

– Start engine and check that poly V-belt(s) run properly.

Tightening torques

◆ ⇒ “4.1.4 Exploded view - starter-alternator C29 , vehicles with 2.0 ltr. TDI engine (0K4 + VH0)”, page 54

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4.2.8 Removing and installing alternator - C- - vehicles with 3.0 ltr. TDI engine (0K0)

Removing

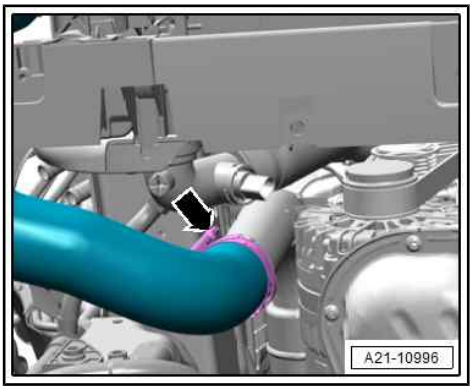
– Disconnect earth cable from battery with ignition switched off ⇒ page 15 .

– Slacken off poly V-belt and detach from alternator pulley ⇒ Engine; Rep. gr. 13 ; Cylinder block (pulley end); Removing and installing poly V-belt .

– Remove closure plate for bumper cover ⇒ General body repairs, exterior; Rep. gr. 63 ; Bumper (front) .

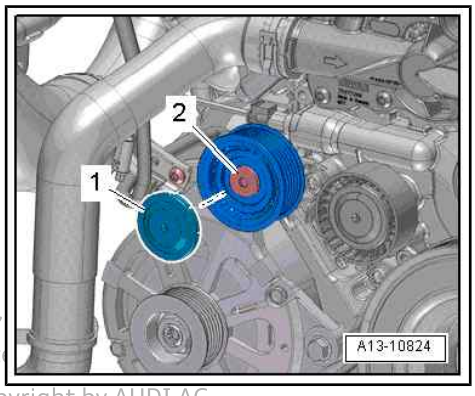
– Equipment version with auxiliary heater: Remove exhaust system ⇒ Auxiliary heater, supplementary heater; Rep. gr. 82 ; Auxiliary/supplementary heater; Removing and installing exhaust system .

– Release hose clip -arrow-, detach air hose from air pipe and press to one side.



– Unclip cover -1-.

– Remove bolt -2- and detach idler roller (right-side).



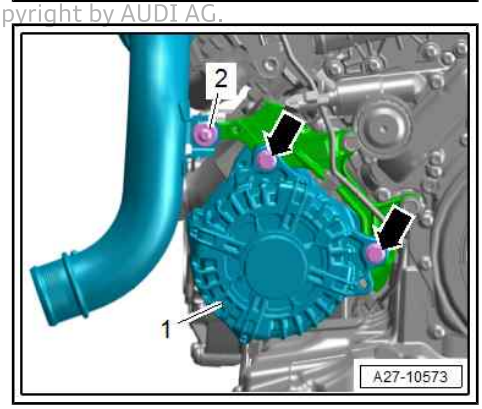
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– Remove bolt -2- for air pipe.

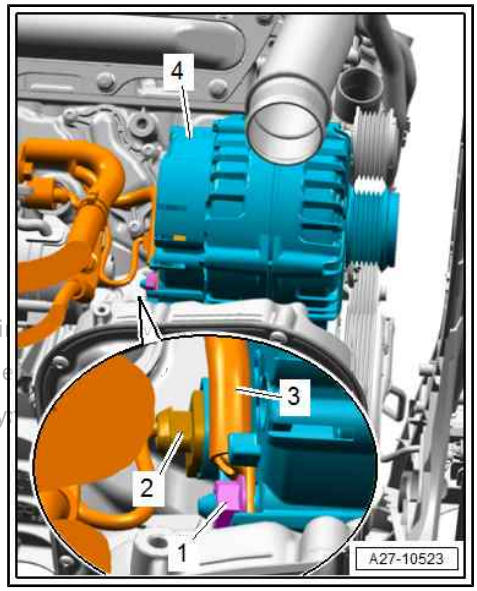
– Unscrew bolts -arrows- for alternator -1- approx. six turns.

– Tap carefully on bolt heads with a hammer to release bushes on alternator mountings.

– Remove bolts completely.

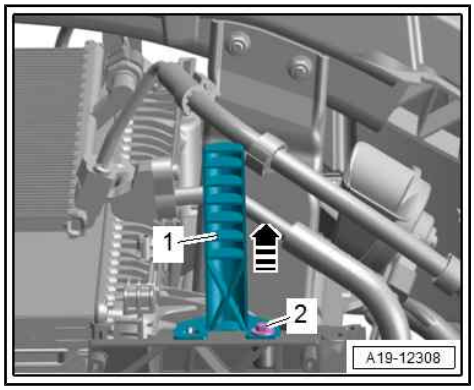


– Detach alternator -4- from bracket.
– Pry off cap, remove nut -1- and detach B+ wire -3-.
– Unplug electrical connector -2-.
– Equipment version with two fans: Remove radiator cowl ⇒ Engine; Rep. gr. 19 ; Radiator/radiator fans; Removing and installing radiator cowl .

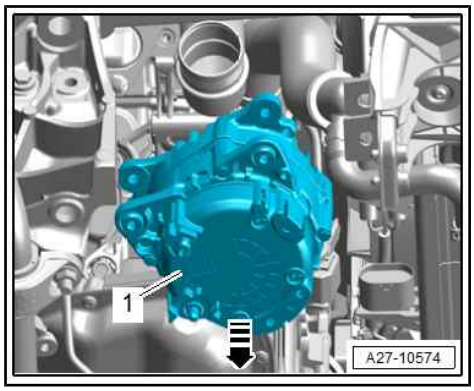


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– Release and detach air duct (bottom) on radiator.
– Remove bolt -2-.
– Press radiator -1- as far as possible towards front -arrow-.



– Take out alternator -1- as shown -arrow-.



Installing

Installation is carried out in reverse order; note the following:

– To facilitate positioning of alternator, drive back bushes for securing bolts slightly.
• Stiff alternator mount bushes must be freed; otherwise the clamping force of the bush will not be adequate even when the bolts are tightened to the correct torque.
– Connect battery. Steps required ⇒ page 16 .
– Start engine and check that poly V-belt(s) run properly.

Tightening torques

♦ ⇒ “4.1.2 Exploded view - alternator C with sliding bushes (0K0)”, page 52
♦ ⇒ Engine; Rep. gr. 19 ; Radiator/radiator fans; Exploded view - radiator/radiator fans
♦ ⇒ Engine; Rep. gr. 13 ; Cylinder block (pulley end); Exploded view - cylinder block (pulley end)

4.2.9 Removing and installing starter-alternator - C29- - vehicles with 3.0 ltr. TDI engine (0K4)

Removing

– Disconnect earth cable from battery with ignition switched off ⇒ page 15 .

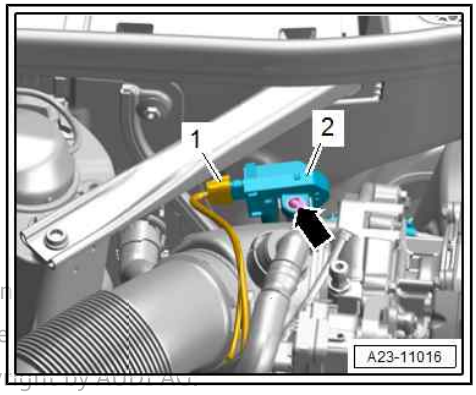
– Remove radiator ⇒ Engine; Rep. gr. 19 ; Radiator/radiator fans; Removing and installing radiator .

– Vehicles with auxiliary heater: Remove exhaust system ⇒ Auxiliary heater, supplementary heater; Rep. gr. 82 ; Auxiliary/supplementary heater; Removing and installing exhaust system .

– Remove bolt -arrow-.

– Unplug electrical connector -1-.

– Move bracket -2- clear with pressure differential sender -G505-.

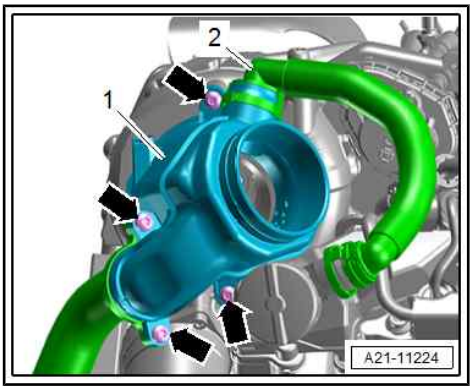


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– Press release tabs on both sides and disconnect crankcase breather hose -2-.

– Unscrew bolts -arrows- and detach intake connecting pipe -1-.

– Release subframe shield and move it to one side ⇒ Running gear, axles, steering; Rep. gr. 40 ; Subframe; Removing and installing subframe shield .

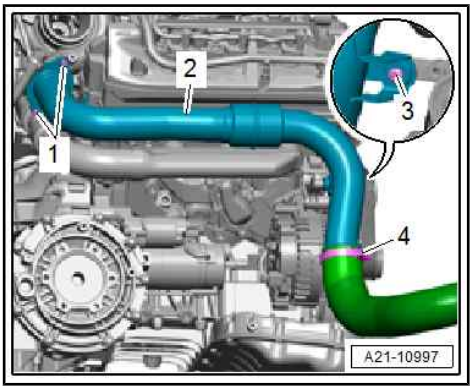


– Release hose clip -4-, detach air hose from air pipe and press to one side.

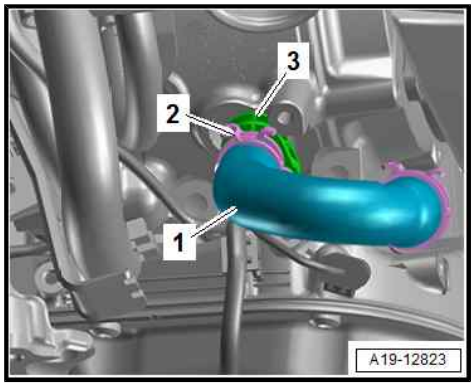
– Remove bolts -1, 6- and pull air pipe off turbocharger -2- (leave in installation position).

– Remove coolant pipes (front) ⇒ Engine; Rep. gr. 19 ; Coolant pipes; Removing and installing coolant pipes .

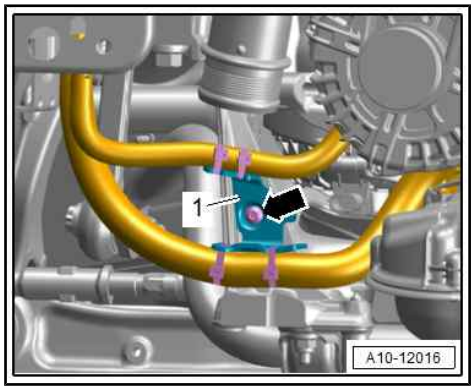
– Remove starter-alternator coolant pump ⇒ Engine; Rep. gr. 19 ; Coolant pump/thermostat assembly; Removing and installing electric coolant pump .



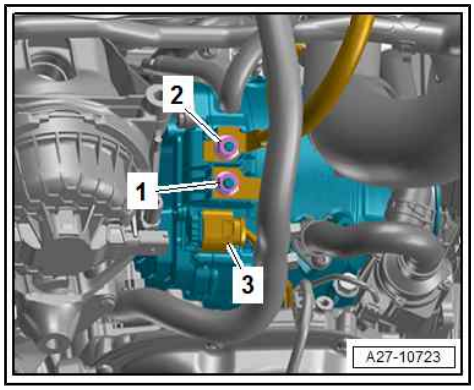
– Release hose clip -2- and detach coolant hose -1- from connection -3-.
– Slacken off poly V-belt and detach from starter-alternator pulley ⇒ Engine; Rep. gr. 13 ; Cylinder block (pulley end); Removing and installing poly V-belt .



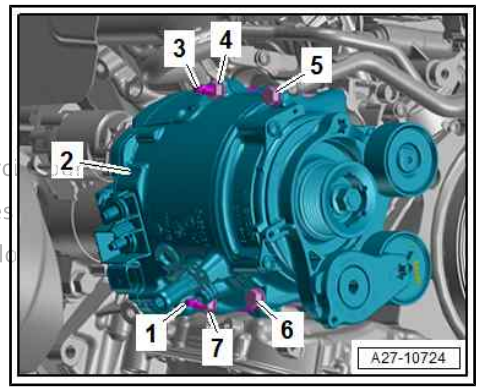
– Unscrew bolt -arrow- and move bracket -1- clear together with electrical wiring.



– Unplug electrical connector -3-.
– Remove nuts -1, 2- and move electrical wiring clear.



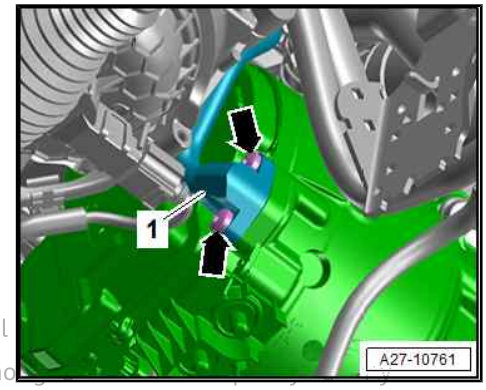
– Remove nuts -4, 7- and bolts -5, 6-.
– Remove threaded pins -1, 3-.
– Move alternator -2- as far as possible towards front.



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– Unscrew bolts -arrows- and remove connection -1-.

– Detach alternator towards front.



Installing

Installation is carried out in reverse order; note the following:

– Connect battery. Steps required ⇒ page 16 .

– Start engine and check that poly V-belt(s) run properly.

Tightening torques

♦ ⇒ “4.1.5 Exploded view - starter-alternator C29 , vehicles with 3.0 ltr. TDI engine (0K4 + VH2)”, page 55

♦ ⇒ Engine; Rep. gr. 21 ; Charge air system; Exploded view - charge air system

♦ ⇒ Engine; Rep. gr. 21 ; Charge air system; Exploded view - hose connections for charge air system

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4.3 Checking alternator

⇒ “4.3.1 Checking alternator C (0K0)”, page 67

⇒ “4.3.2 Checking starter-alternator C29 (0K4 + VH0)”, page 67

⇒ “4.3.3 Checking starter-alternator C29 (0K4 + VH2)”, page 68

4.3.1 Checking alternator - C- (0K0)

Procedure

– Connect vehicle diagnostic tester .

– Select Diagnosis mode and begin diagnosis.

– Select Test plan tab.

– Choose Select own test and select following options one after the other:

♦ 12V vehicle electrical system

♦ C - Alternator, check

– Start the program selected and follow the instructions on the display of the vehicle diagnostic tester.

4.3.2 Checking starter-alternator - C29- (0K4 + VH0)

Procedure

– Connect vehicle diagnostic tester .

– Select Diagnosis mode and begin diagnosis.

– Select Test plan tab.

– Choose Select own test and select following options one after the other:

♦ 12V vehicle electrical system

♦ C29 - Starter alternator - test

– Start the program selected and follow the instructions on the display of the vehicle diagnostic tester.

4.3.3 Checking starter-alternator - C29- (0K4 + VH2)

Procedure

– Connect vehicle diagnostic tester .

– Select `Diagnosis` mode and begin diagnosis.

– Select `Test plan` tab.

– Choose `Select own test` and select following options one after the other:

- Systems with diagnostic capability
- 00CC - Starter alternator -C29
- 00CC - Subsystems, background conditions
- C29 - Starter alternator - test

– Start the program selected and follow the instructions on the display of the vehicle diagnostic tester.

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5 Starter

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⇒ "5.1 Exploded view - starter", page 69
⇒ "5.2 Removing and installing starter", page 70

5.1 Exploded view - starter

1 - Starter

- ❑ Removing and installing ⇒ page 70

2 - Bolt

- ❑ Tightening torque ⇒ Gearbox; Rep. gr. 34 ; Removing and installing gearbox; Tightening torques for gearbox

3 - Spacer sleeve

- ❑ Only on vehicles with 4-cyl. engine

4 - Electrical connector

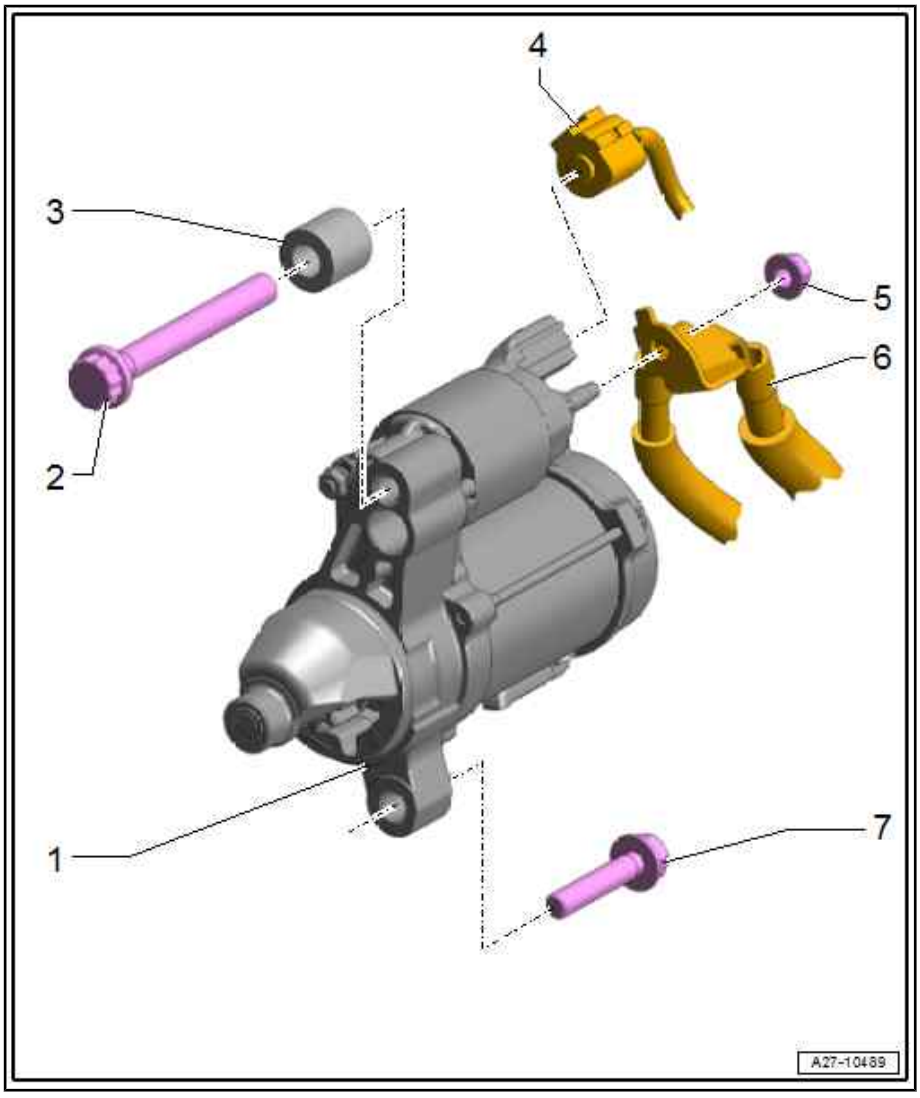
5 - Nut

- ❑ 20 Nm

6 - Terminal B+

7 - Bolt

- ❑ Tightening torque ⇒ Gearbox; Rep. gr. 34 ; Removing and installing gearbox; Tightening torques for gearbox



5.2 Removing and installing starter

⇒ “5.2.1 Removing and installing starter - vehicles with 4-cyl. engine”, page 70

⇒ “5.2.2 Removing and installing starter - vehicles with 2.0 ltr. TDI engine (0K4)”, page 71

⇒ “5.2.3 Removing and installing starter - vehicles with 6-cyl. engine”, page 73

5.2.1 Removing and installing starter - vehicles with 4-cyl. engine

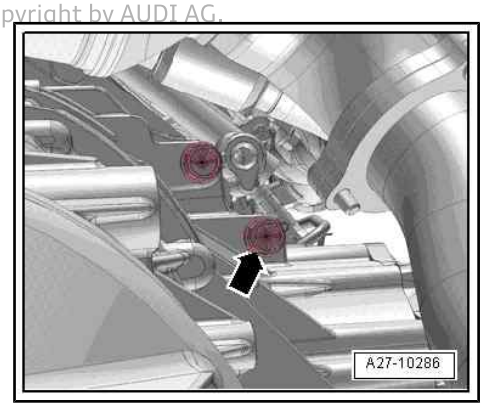
Removing

– Disconnect earth cable from battery with ignition switched off ⇒ page 15 .

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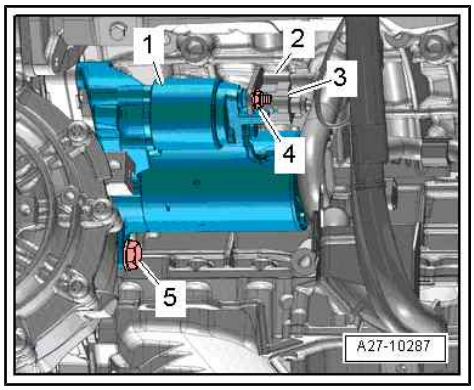
– Remove engine support (right-side) ⇒ Engine; Rep. gr. 13 ; Cylinder block (pulley end); Removing and installing engine support .

– Remove bolt -arrow-.



– Remove bolt -5- and nut -4-.

– Detach starter -item 1-, unplug electrical connector -3- and move B+ wire -2- clear.

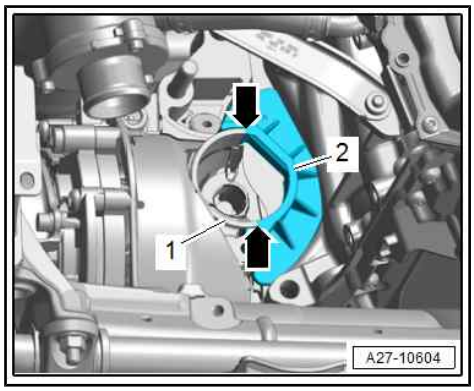


Installing

Installation is carried out in reverse order; note the following:

– Check whether locking part -2- is properly inserted in starter opening before installing starter.

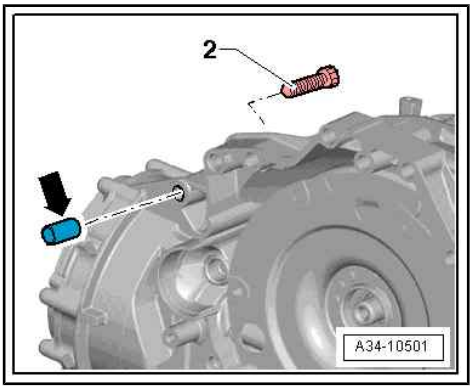
• The locking part must be flush with the starter opening -1- -arrows-.



NOTICE

Risk of damage to starter if incorrectly handled.

- **Only tighten bolt with spacer sleeve between starter and gearbox.**



– Connect battery. Steps required ⇒ page 15 .

Tightening torques

◆ ⇒ “5.1 Exploded view - starter”, page 69

5.2.2 Removing and installing starter - vehicles with 2.0 ltr. TDI engine (0K4)

Removing

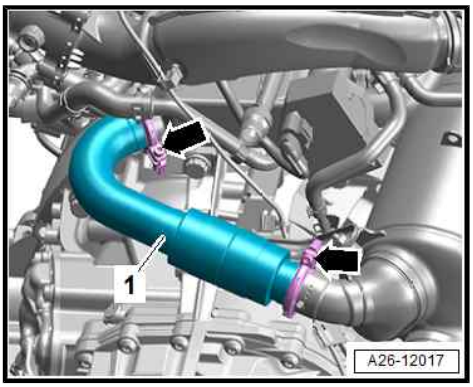
– Disconnect earth cable from battery with ignition switched off ⇒ page 17 .

– Remove engine cover panel ⇒ Engine; Rep. gr. 10 ; Engine cover panel; Removing and installing engine cover panel .

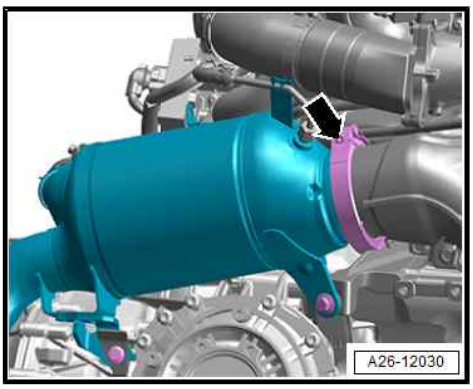
– Remove plenum chamber partition panel ⇒ General body repairs, exterior; Rep. gr. 50 ; Bulkhead; Removing and installing plenum chamber partition panel .

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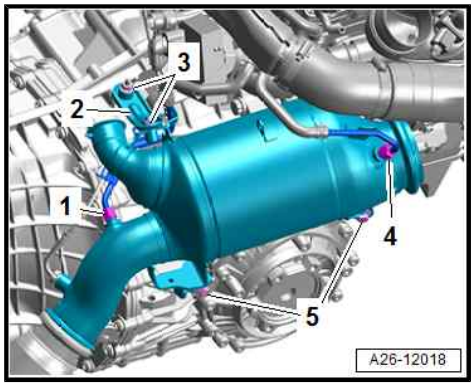
– Release screw-type clips -arrows- and detach exhaust gas recirculation pipe -1-.



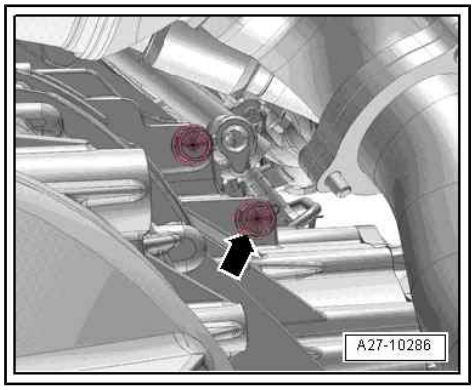
– Release screw-type clip -arrow-.



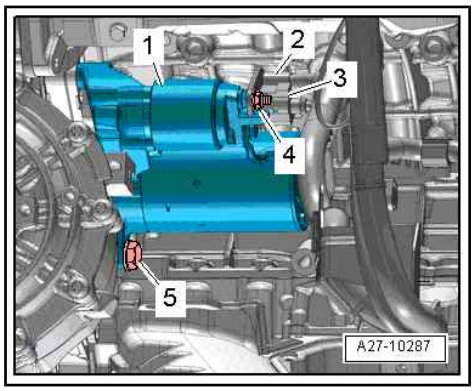
– Unscrew nuts -3- and detach bracket -2-.
– Remove noise insulation ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Exploded view - noise insulation .
– Remove engine support (right-side) ⇒ Engine; Rep. gr. 13 ; Cylinder block (pulley end); Removing and installing engine support .
– Unscrew bolts -5- and move particulate filter to right side.



– Unscrew bolt -arrow- from above.



– Remove bolt -5- and nut -4-.
– Detach starter -item 1-, unplug electrical connector -3- and move B+ wire -2- clear.



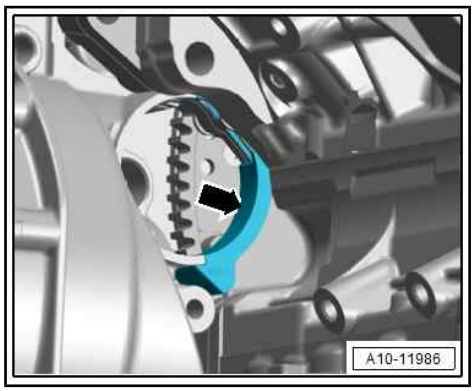
Installing

Installation is carried out in reverse order; note the following:

– Check correct installation position of sealing element -arrow-.

Note:

If it is difficult to fit the starter, use a silicone-free lubricating spray.

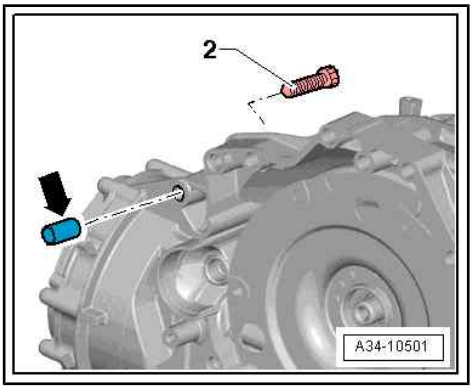


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NOTICE

Risk of damage to starter if incorrectly handled.

- **Only tighten bolt with spacer sleeve between starter and gearbox.**



– Connect battery. Steps required ⇒ page 18 .

Tightening torques

♦ ⇒ “5.1 Exploded view - starter”, page 69

5.2.3 Removing and installing starter - vehicles with 6-cyl. engine

Special tools and workshop equipment required

♦ Cleaning solution - D 009 401 04- (for sealing element - version 2)

Removing

– Disconnect earth cable from battery with ignition switched off ⇒ page 15 .

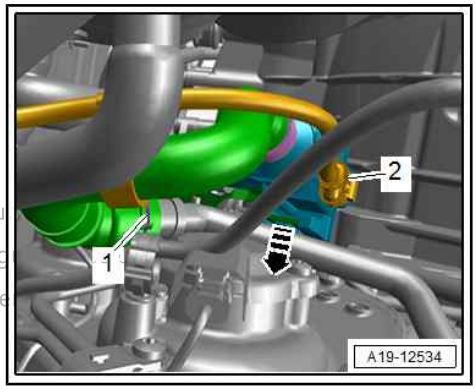
Vehicles with 6-cyl. TDI engine (Gen. I):

– Remove emission control module ⇒ Engine; Rep. gr. 26 ; Emission control system; Removing and installing emission control module .

Vehicles with 6-cyl. TDI engine (Gen. II):

– Release coolant pipes at rear of gearbox and press them to side ⇒ Engine; Rep. gr. 19 ; Coolant pipes; Removing and installing coolant pipes .

Equipment version with coolant circulation pump - V50- :



– Remove engine cover panel ⇒ Engine; Rep. gr. 10 ; Engine cover panel; Removing and installing engine cover panel .

– Release fastener -arrow- and press coolant circulation pump - V50- to one side.

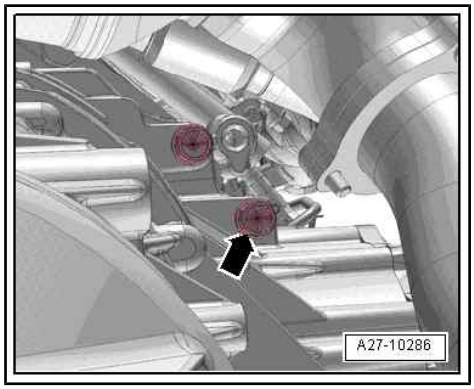
All versions (continued):

– Remove alternator ⇒ “4.2.5 Removing and installing alternator C - vehicles with 3.0 ltr. TFSI engine (0K0)”, page 60 ; ⇒ “4.2.8 Removing and installing alternator C - vehicles with 3.0 ltr. TDI engine (0K0)”, page 63 .

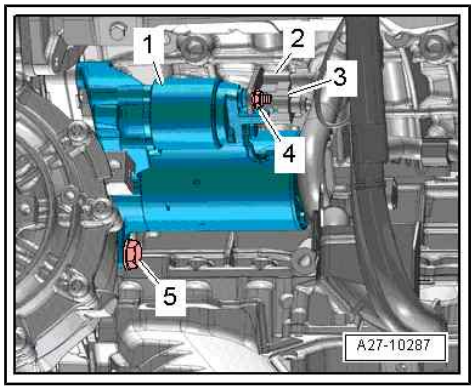
– Remove engine support (right-side) ⇒ Engine; Rep. gr. 13 ; Cylinder block (pulley end); Removing and installing engine support .

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– Remove bolt -arrow-.



– Remove bolt -5- and nut -4-.
– Detach starter -item 1-, unplug electrical connector -3- and move B+ wire -2- clear.

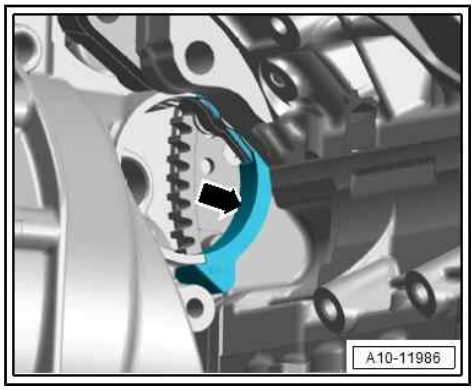


Installing

Installation is carried out in reverse order; note the following:

Sealing element - version 1:

– Check correct installation position of sealing element -arrow-.

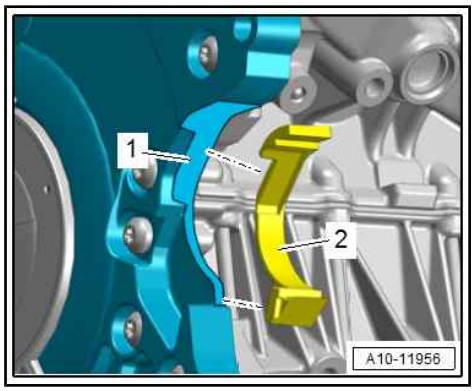


Note:

If it is difficult to fit the starter, use a silicone-free lubricating spray.

Sealing element - version 2:

– Clean contact surface -1- on timing chain cover (bottom) and sealing element -2- with cleaning solution - D 009 401 04- .
– Bond sealing element to timing chain cover (bottom).
– Connect battery. Steps required ⇒ page 16 .



Tightening torques

◆ ⇒ “5.1 Exploded view - starter”, page 69

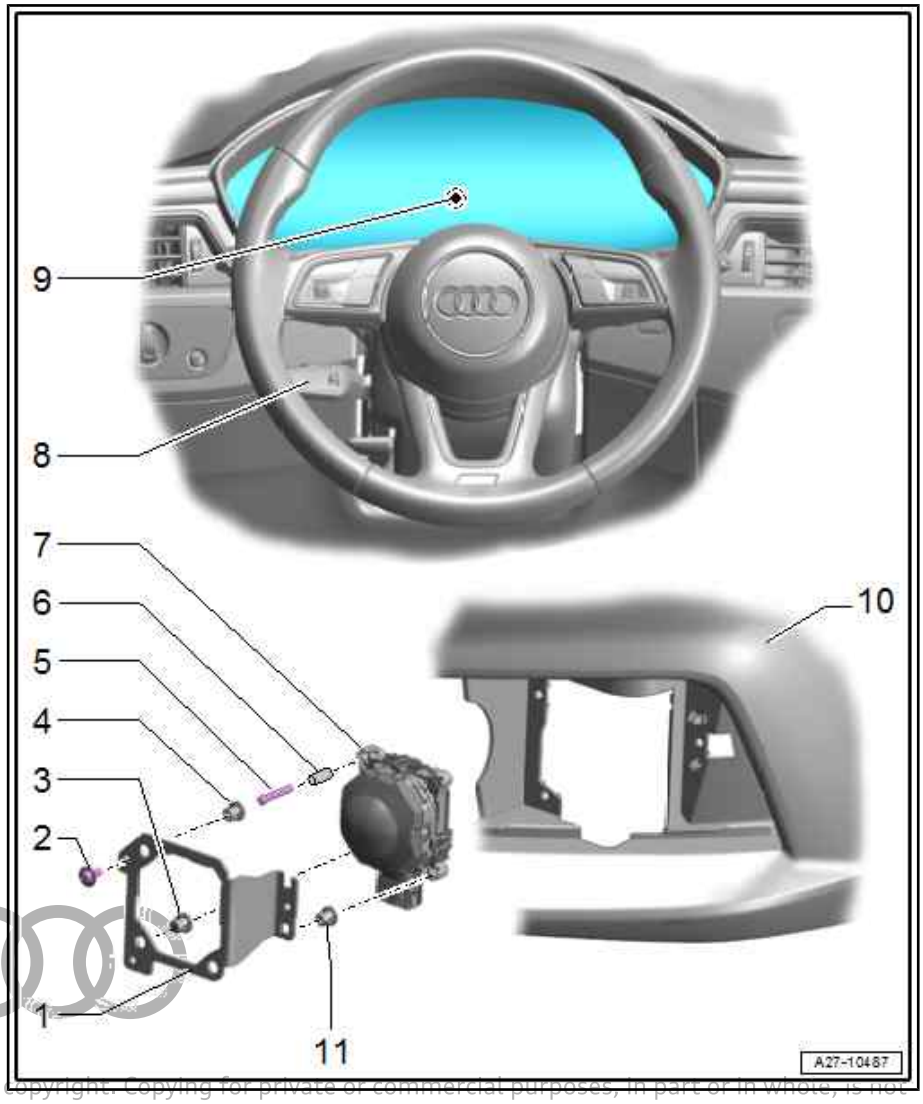
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6 Adaptive cruise control

⇒ “6.1 Overview of fitting locations - adaptive cruise control”, page 75

⇒ “6.2 Removing and installing adaptive cruise control unit”, page 76

6.1 Overview of fitting locations - adaptive cruise control



1 - Bracket

- ❑ Removing and installing ⇒ page 76

2 - Bolt

- ❑ 3x
- ❑ 2.5 Nm

3 - Clip

- ❑ Without opening
- ❑ Cannot be removed without being irreparably damaged
- ❑ Note installation position

4 - Clip

- ❑ With opening
- ❑ Cannot be removed without being irreparably damaged

5 - Stud

- ❑ 3x
- ❑ Note setting dimension ⇒ page 77

6 - Clip

- ❑ 3x
- ❑ Must be renewed if stud was removed
- ❑ Renewing ⇒ page 78

7 - Adaptive cruise control unit

- ♦ Right-side: adaptive cruise control unit - J428-
- ♦ Left-side: control unit 2 for adaptive cruise control - J850-
  - ❑ Removing and installing ⇒ page 76
  - ❑ Adjusting adaptive cruise control system ⇒ Running gear, axles, steering; Rep. gr. 44 ; Adaptive cruise control

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8 - Operating lever for adaptive cruise control

- ❑ Combined as one component with steering column switch module. Cannot be renewed separately
- ❑ Removing and installing ⇒ “11.2 Removing and installing steering column switch module”, page 179

9 - Dash panel insert

- ❑ With control unit in dash panel insert - J285-

10 - Bumper (front)

11 - Clip

- ❑ With opening
- ❑ Cannot be removed without being irreparably damaged

6.2 Removing and installing adaptive cruise control unit

⇒ "6.2.1 Removing and installing adaptive cruise control unit J428 / J850 ", page 76

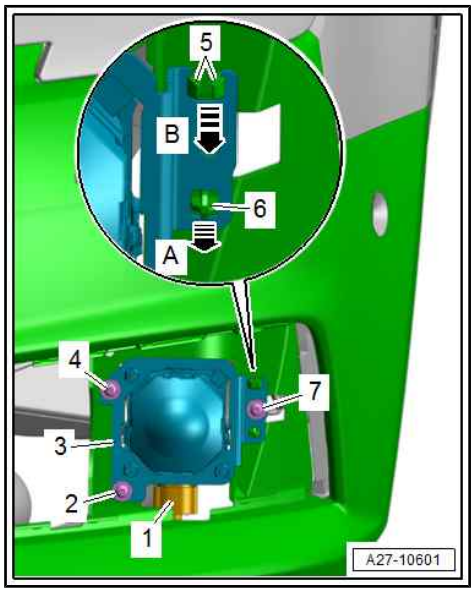
⇒ "6.2.2 Removing and installing bracket for adaptive cruise control unit J428 / J850 ", page 76

⇒ "6.2.3 Renewing clip on adaptive cruise control unit J428 ", page 78

6.2.1 Removing and installing adaptive cruise control unit - J428- / -J850-

If control unit is to be renewed, select the "Replace control unit" function for appropriate control unit in ⇒ Vehicle diagnostic tester.

Removing



- Remove air intake grille ⇒ General body repairs, exterior; Rep. gr. 63 ; Bumper (front) .
- Remove bolts -2, 4, 7-.
- Swivel bracket -3- forwards on underside -arrow A- until guide pin -6- is clear.
- Then pull bracket downwards -arrow B- out of guides -5-.
- Clean and dry the control unit in the area around the electrical connector.
- Unplug electrical connector -1-.
- Detach bracket with adaptive cruise control unit.

Installing

Installation is carried out in reverse order; note the following:

- Check electrical connector for damage, contact corrosion and water ingress and repair if necessary ⇒ Electrical system; General information; Rep. gr. 97 ; Repairing wiring harnesses and connectors .
- Adjust adaptive cruise control system ⇒ Running gear, axles, steering; Rep. gr. 44 ; Adaptive cruise control .

Tightening torques

- ⇒ "6.1 Overview of fitting locations - adaptive cruise control", page 75

6.2.2 Removing and installing bracket for adaptive cruise control unit - J428- / -J850-

Special tools and workshop equipment required

- Digital caliper, 150 mm - VAS 6335-

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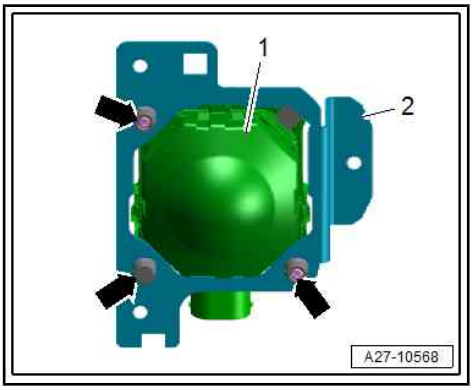
Removing

– Remove adaptive cruise control unit ⇒ page 76 .

– Set control unit down on a soft and clean surface.

– Break off clips -arrows-.

– Remove bracket -2- from adaptive cruise control unit - J428- -item 1-.

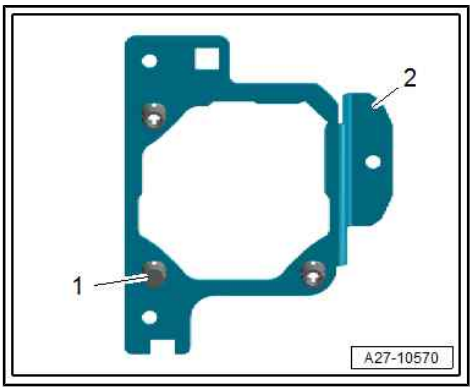


Installing

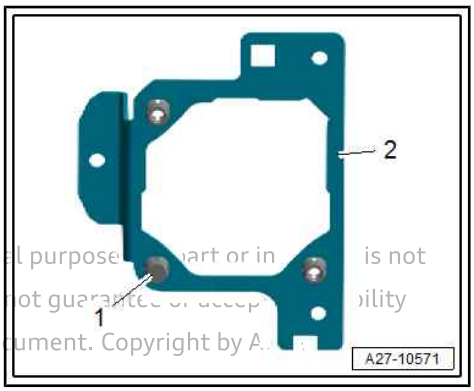
Installation is carried out in reverse order; note the following:

– Insert new clips into bracket until they engage.

– Left side of vehicle: The closed clip -1- must be located on the bottom inner side of the bracket -2-.



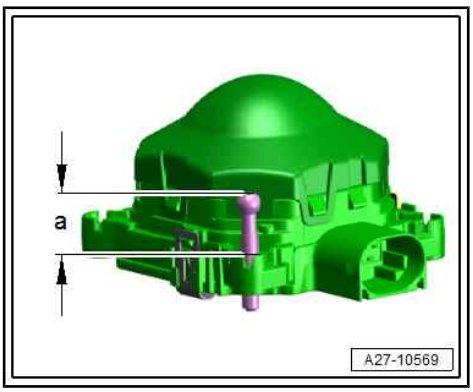
– Right side of vehicle: The closed clip -1- must be located on the bottom outer side of the bracket -2-.



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– Use digital caliper -VAS 6335- to measure dimension -a- on all studs and adjust if necessary.

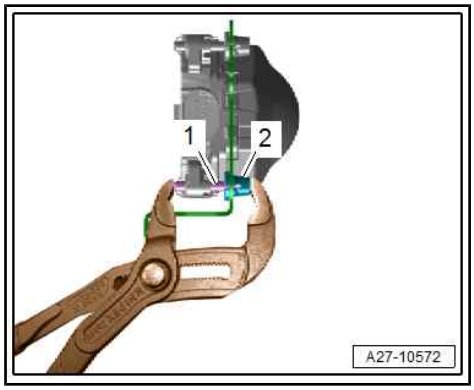
• Dimension -a- = 17.6 mm



– Position bracket on control unit using studs.

• Stud must be correctly aligned with clip.

– Press stud -1- into clip -2- as far as stop, as shown.



6.2.3 Renewing clip on adaptive cruise control unit - J428-

Special tools and workshop equipment required

♦ Digital caliper, 150 mm - VAS 6335-

It is not possible to remove the clips without irreparably damaging them.

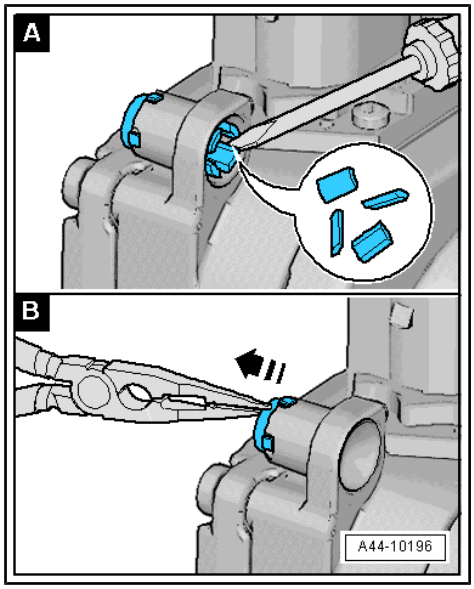
Procedure

• Adaptive cruise control unit - J428- removed from bracket.

– Insert a screwdriver between hook and housing.

– Using the screwdriver, bend each hook outwards towards the centre until it audibly breaks off.

– To avoid broken hooks becoming caught in housing, remove hooks from inside clip with long-nose pliers.



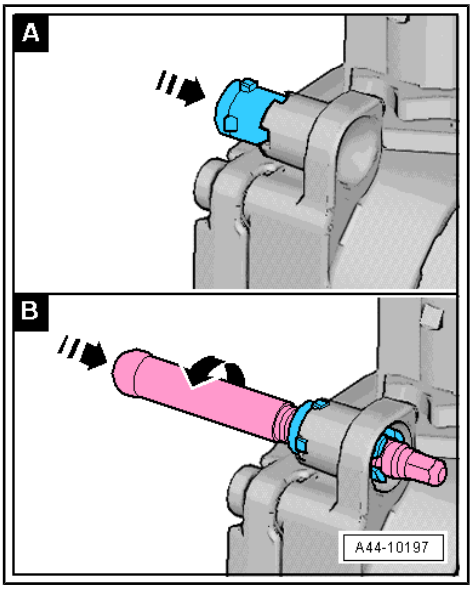
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– Insert new clip into bore in housing as shown and press on by hand until it engages audibly.

• The lugs on the clip must sit correctly in the recesses.

– Insert stud and screw in.

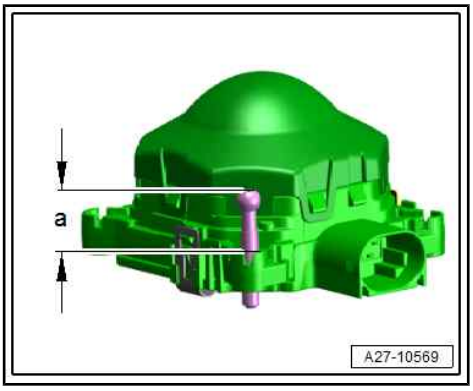
• Stud must be correctly aligned with clip.



– Screw stud into adaptive cruise control unit as far as dimension -a-.

– Use digital caliper, 150 mm - VAS 6335- to measure dimension -a- on all studs and adjust if necessary.

• Dimension -a- = 17.6 mm



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90 – Gauges, instruments

1 Dash panel insert

⇒ “1.1 Exploded view - dash panel insert”, page 80

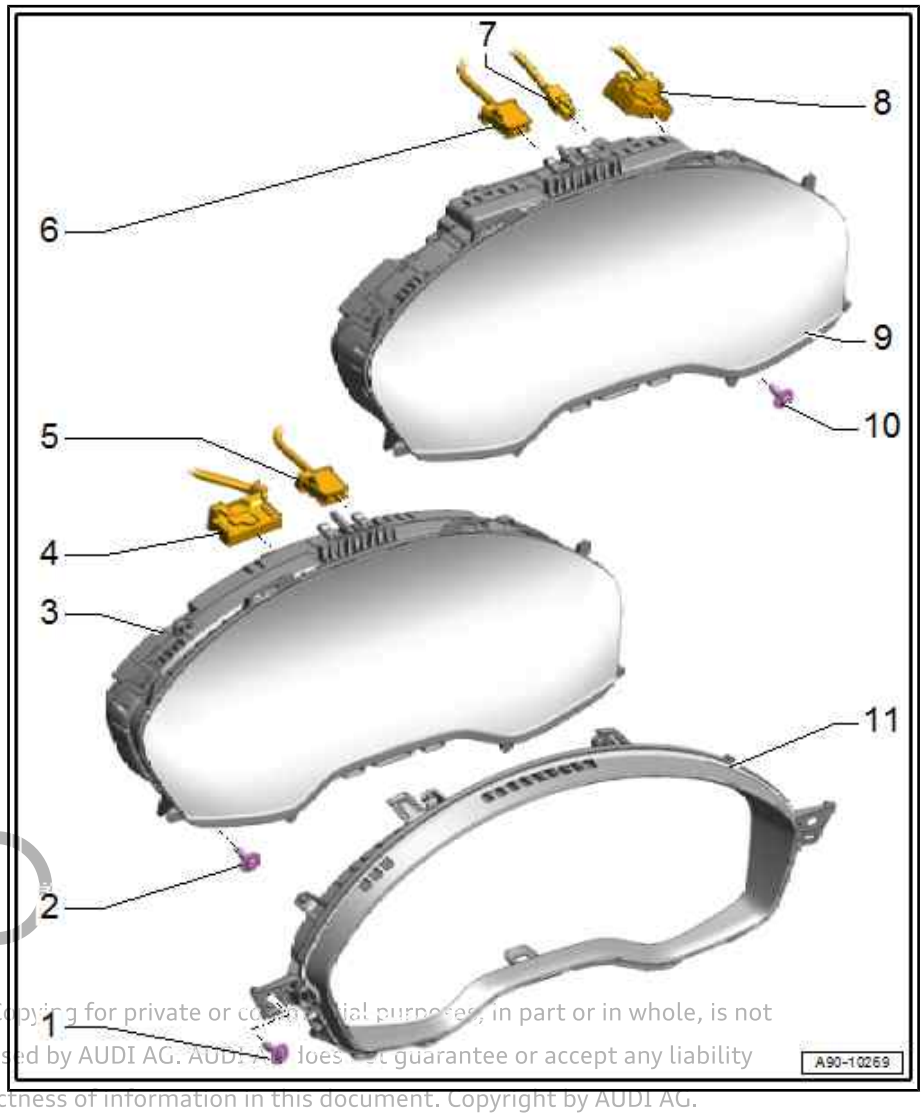
⇒ “1.2 Exploded view - head-up display”, page 81

⇒ “1.3 Removing and installing dash panel insert with control unit in dash panel insert J285 ”, page 82

⇒ “1.4 Removing and installing control unit for head-up display”, page 86

⇒ “1.5 Calibrating control unit for head-up display”, page 90

1.1 Exploded view - dash panel insert



1 - Bolt
- ❑ 3 Nm

2 - Bolt
- ❑ 2x
- ❑ 3 Nm

3 - Dash panel insert - low/midi
- ❑ Different versions ⇒ Electronic parts catalogue
- ❑ With control unit in dash panel insert - J285-
- ❑ Do not dismantle
- ❑ In the event of a defect, the dash panel insert must be renewed
- ❑ Removing and installing ⇒ page 82

4 - Electrical connector
- ❑ For dash panel insert

5 - Connector for fibre optic cable
- ❑ Dash panel insert midi only
- ❑ Cover with protective cap for wiring harness connector - VAS 6223/9-

6 - Connector for fibre optic cable
- ❑ Cover with protective cap for wiring harness connector - VAS 6223/9-

7 - Aerial wire

8 - Electrical connector
- ❑ For dash panel insert

9 - Dash panel insert - high
- ❑ With control unit in dash panel insert - J285-

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- ❑ Do not dismantle
- ❑ In the event of a defect, the dash panel insert must be renewed
- ❑ Removing and installing ⇒ page 84

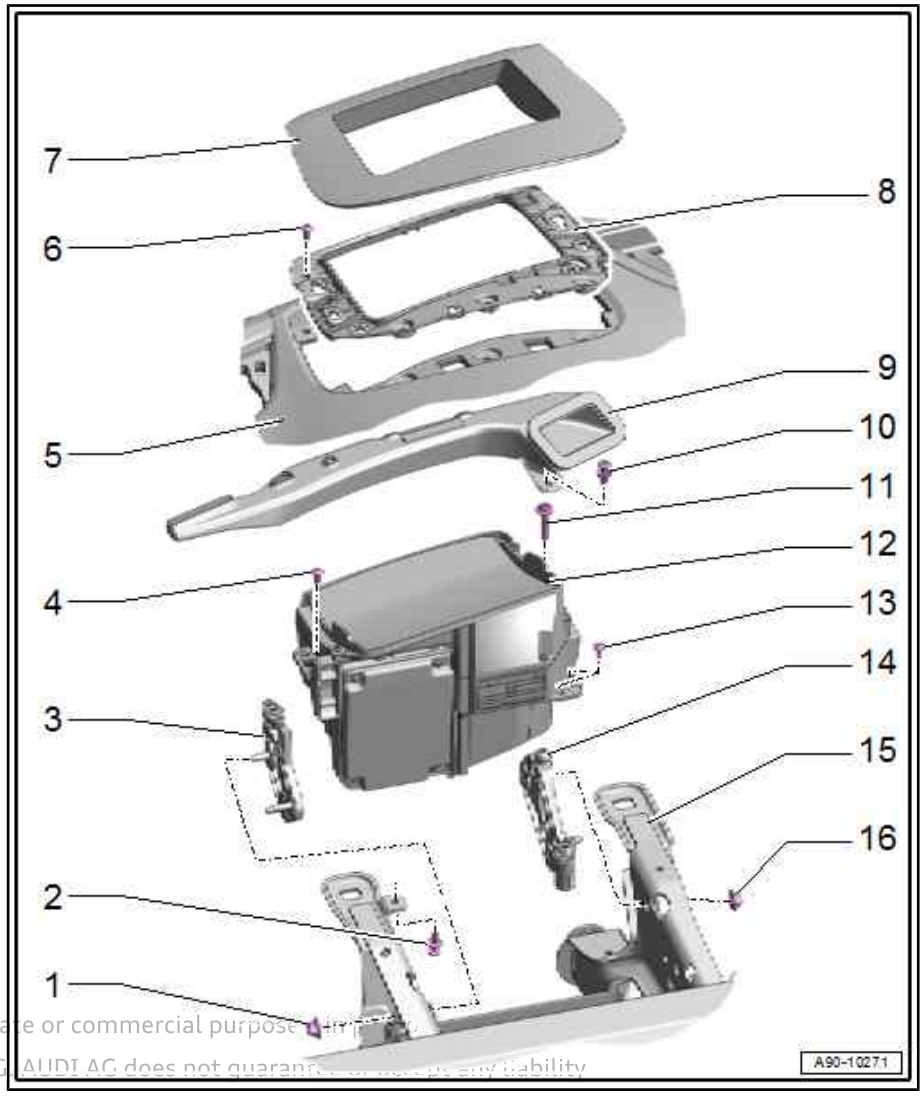
10 - Bolt

- ❑ 2x
- ❑ 3 Nm

11 - Trim for dash panel insert

- ❑ Removing and installing ⇒ General body repairs, interior; Rep. gr. 70 ; Dash panel; Removing and installing trim for dash panel insert

1.2 Exploded view - head-up display



1 - Nut

- ❑ 3x
- ❑ 8 Nm

2 - Spreader rivet

- ❑ For air duct

3 - Outer bracket

- ❑ For control unit for head-up display
- ❑ Removing and installing ⇒ page 88

4 - Bolt

- ❑ Renew after removing
- ❑ 2x
- ❑ Tightening sequence ⇒ page 82

5 - Dash panel

6 - Bolt

- ❑ 5x
- ❑ 1 Nm

7 - Cover (top)

- ❑ Removing and installing ⇒ “1.4.1 Removing and installing control unit for head-up display”, page 86

8 - Mounting frame

- ❑ For cover (top)

9 - Air duct

- ❑ For control unit for head-up display

10 - Spreader rivet

- ❑ For air duct

11 - Bolt

- ❑ Tightening torques and sequence ⇒ page 82

12 - Control unit for head-up display - J898-

- ❑ Removing and installing ⇒ page 86
- ❑ Calibrating ⇒ page 90

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13 - Bolt

- ❑ Renew after removing
- ❑ 2x
- ❑ Tightening torques and sequence ⇒ page 82

14 - Inner bracket

- ❑ For control unit for head-up display
- ❑ Removing and installing ⇒ page 89

15 - Central tube

16 - Nut

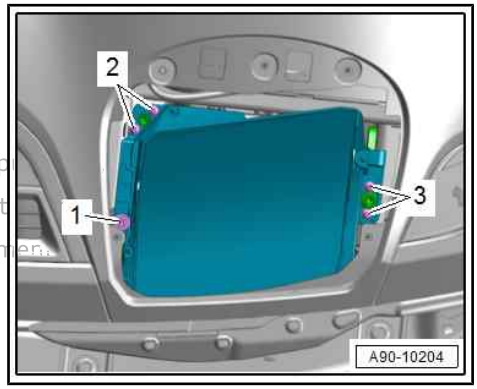
- ❑ 3x
- ❑ 8 Nm

Control unit for head-up display - tightening torque and sequence

– Tighten bolts in sequence shown:

Bolts	Tightening torque
-1-	5.5 Nm
-2, 3-	4 Nm

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1.3 Removing and installing dash panel insert with control unit in dash panel insert - J285-

⇒ “1.3.1 Removing and installing dash panel insert with control unit in dash panel insert J285 - dash panel insert low/midi”, page 82

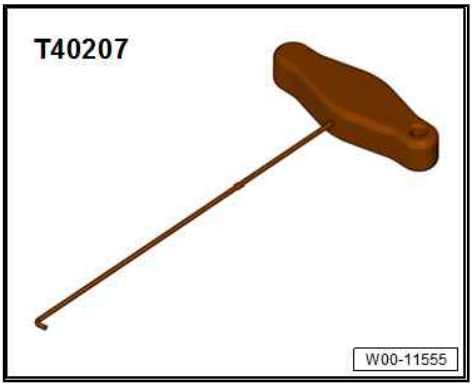
⇒ “1.3.2 Removing and installing dash panel insert with control unit in dash panel insert J285 - dash panel insert high”, page 84

1.3.1 Removing and installing dash panel insert with control unit in dash panel insert - J285- - dash panel insert low/midi

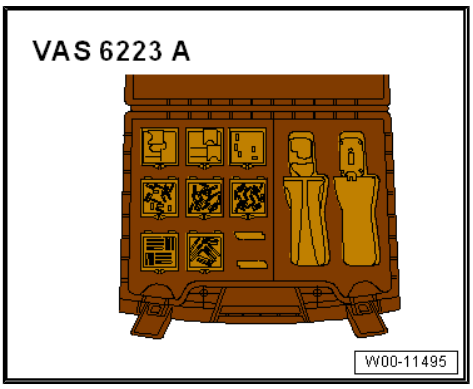
If control unit (dash panel insert) is to be renewed, select the “Replace control unit” function for appropriate control unit in ⇒ Vehicle diagnostic tester.

Special tools and workshop equipment required

- Hook - T40207-



- Protective cap for cable connector - VAS 6223/9- from fibre-optic conductor repair set - VAS 6223A-



Removing

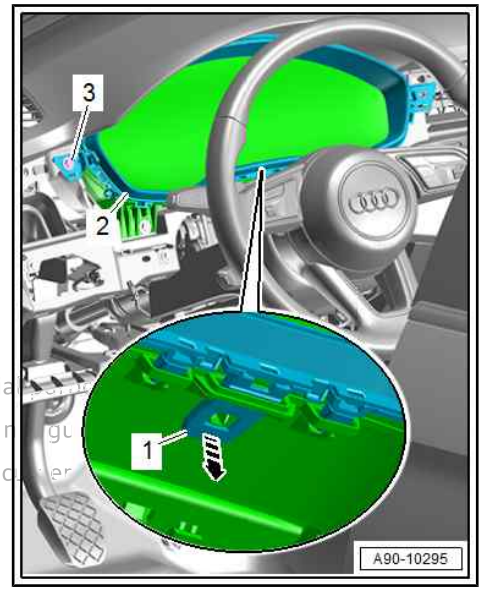
– Move steering wheel down and to rear as far as possible, using full range of steering column adjuster.

– Switch off ignition and store ignition key outside of vehicle.

– Remove dash panel vent (left and right) ⇒ General body repairs, interior; Rep. gr. 70 ; Dash panel; Removing and installing outer dash panel vents .

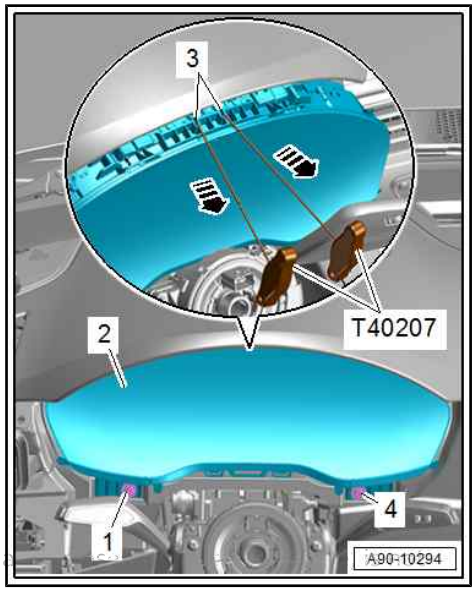
– Remove bolt -3-.

– Release fastener -1- in direction of -arrow- and detach trim for dash panel insert -2-.



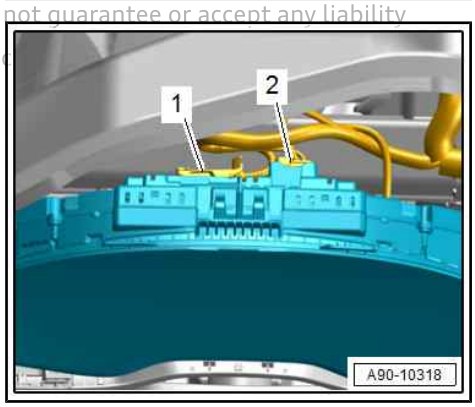
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– Remove bolts -1, 4-.
– Insert hook - T40207- between dash panel and dash panel insert and engage in both openings -3-, as shown.
– Pull dash panel insert -2- out of catch -arrows- using hook - T40207- and swivel towards rear.



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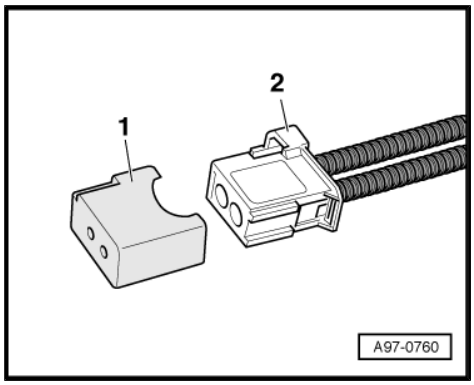
– Unplug electrical connector -1-.
– Dash panel insert midi: Unplug connector -2- for fibre optic cable.



– Seal open connector plug -2- of fibre optic cable with protective cap for cable connector - VAS 6223/9- -item 1-.

Note:

Protective cap prevents contamination of or mechanical damage to end face of fibre optic cable which would impair light transmission.



– Take out dash panel insert towards front passenger side between steering wheel and dash panel.

Installing

Installation is carried out in reverse sequence.

Tightening torques

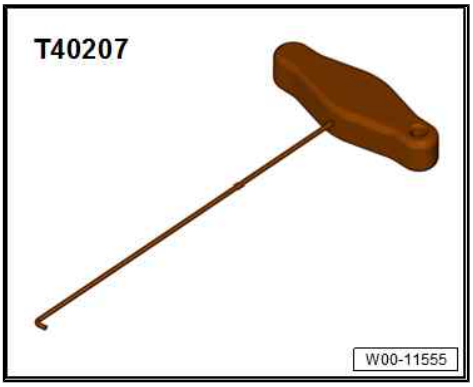
♦ ⇒ “1.1 Exploded view - dash panel insert”, page 80

1.3.2 Removing and installing dash panel insert with control unit in dash panel insert - J285- - dash panel insert high

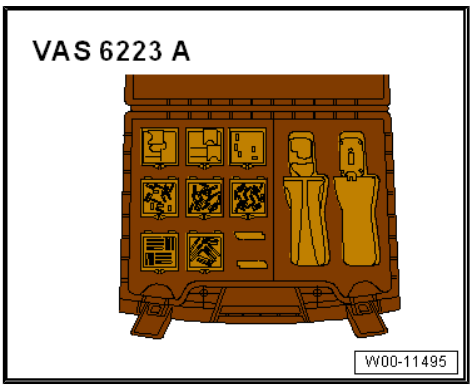
If control unit (dash panel insert) is to be renewed, select the “Replace control unit” function for appropriate control unit in ⇒ Vehicle diagnostic tester.

Special tools and workshop equipment required

♦ Hook - T40207- (2x)



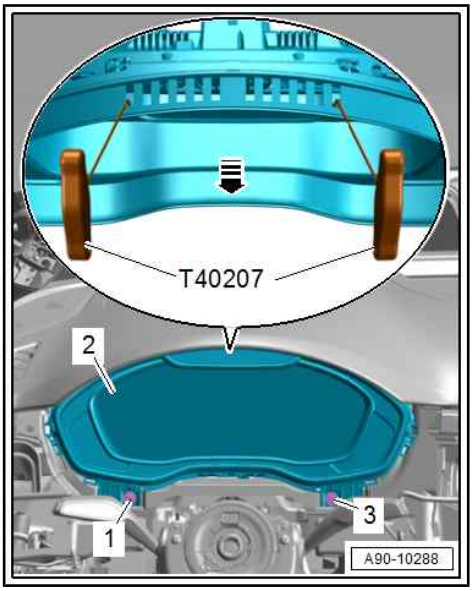
♦ Protective cap for cable connector - VAS 6223/9- from fibre-optic conductor repair set - VAS 6223A-



Removing

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– Move steering wheel down and to rear as far as possible, using full range of steering column adjuster.
– Switch off ignition and store ignition key outside of vehicle.
– Remove dash panel vent (left and right) ⇒ General body repairs, interior; Rep. gr. 70 ; Dash panel; Removing and installing outer dash panel vents .
– Remove bolts -1, 3-.
– Insert both hooks - T40207- between dash panel and dash panel insert and engage as shown at outer breather openings.
– Using both hooks - T40207- , carefully pull dash panel insert -2- out of catch -arrow- and swivel towards rear.

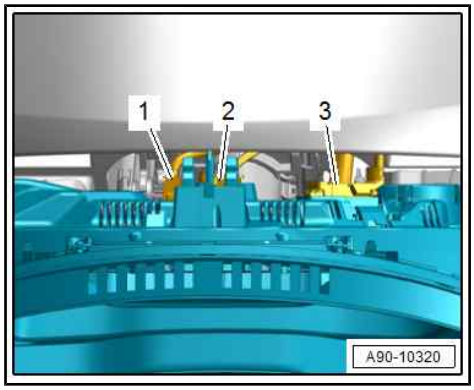


– Unplug connectors:

1 - For aerial

2 - For fibre optic cable

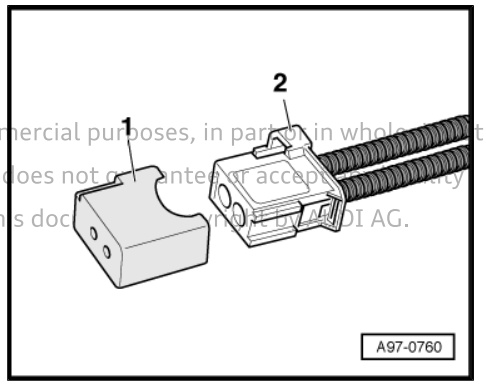
3 - For dash panel insert



– Seal open connector plug -2- of fibre optic cable with protective cap for cable connector - VAS 6223/9- -item 1-.

Note:

Protective cap prevents contamination of or mechanical damage to end face of fibre optic cable which would impair light transmission.



– Take out dash panel insert towards front passenger side between steering wheel and dash panel.

Installing

Installation is carried out in reverse sequence.

Tightening torques

♦ ⇒ “1.1 Exploded view - dash panel insert”, page 80

1.4 Removing and installing control unit for head-up display

⇒ “1.4.1 Removing and installing control unit for head-up display”, page 86

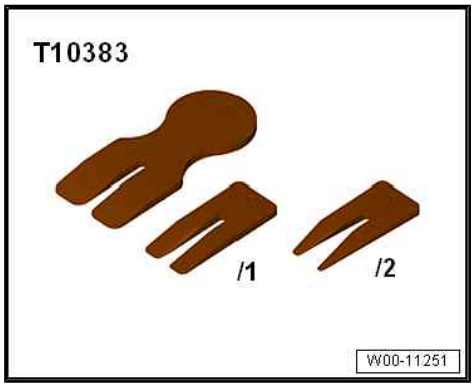
⇒ “1.4.2 Removing and installing outer bracket”, page 88

⇒ “1.4.3 Removing and installing inner bracket”, page 89

1.4.1 Removing and installing control unit for head-up display

Special tools and workshop equipment required

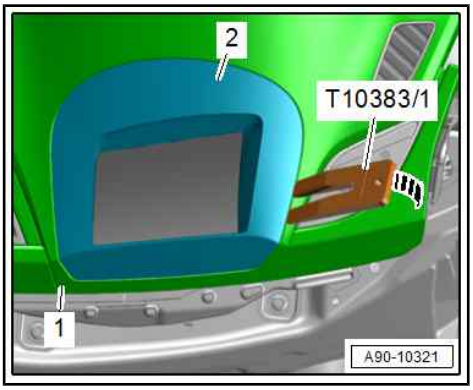
♦ Wedges - T10383-



Removing

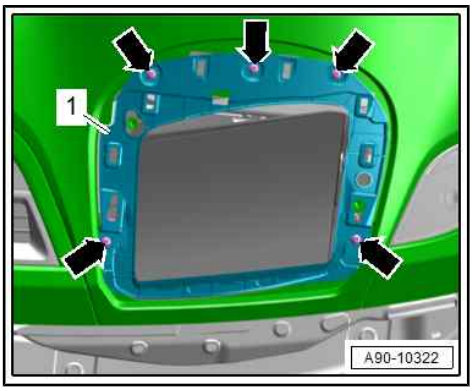
– Remove windscreen ⇒ General body repairs, exterior; Rep. gr. 64 ; Windscreen; Removing and installing windscreen .

– Pry cover (top) -2- off dash panel -1- using wedge - T10383- -arrow-.



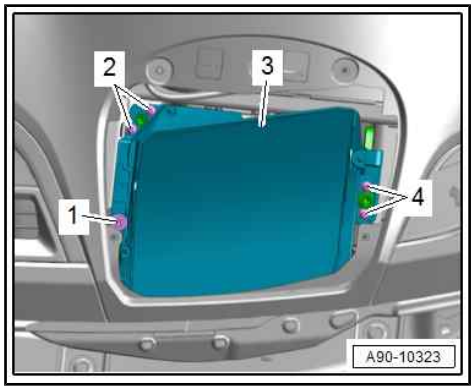
– Remove bolts -arrows-.

– Detach retaining frame -1-.



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– Cover control unit -3- with a soft cloth.



NOTICE

Risk of irreparable damage to control unit for head-up display.

- **Only remove bolts from control unit as indicated.**
- **Never remove bolts for upper section of housing.**

– Remove bolts -1, 2, 4-.

– Lift out control unit slightly and unplug electrical connector.

– Detach control unit.

Installing

Installation is carried out in reverse order; note the following:

NOTICE

Risk of irreparable damage to control unit for head-up display.

- **If a control unit is dropped, it must not be reused.**
- **Never press on upper section of housing when fitting control unit.**

– Fit control unit and tighten bolts.

– Locate windscreen in position and secure temporarily, but do not bond in glass.

– Switch on ignition and check function of control unit.

• A number should be visible on the windscreen.

– Calibrate control unit for head-up display ⇒ page 90 .

Tightening torques

◆ ⇒ Fig. ““Control unit for head-up display - tightening torque and sequence”“ , page 82

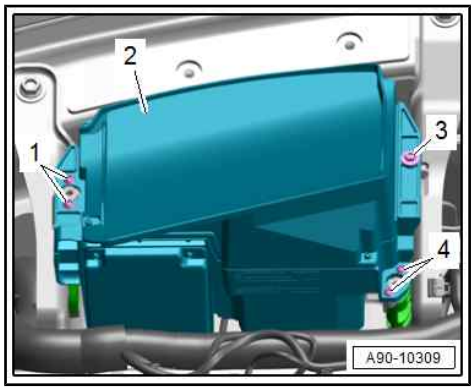
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1.4.2 Removing and installing outer bracket

Removing

– Remove dash panel ⇒ General body repairs, interior; Rep. gr. 70 ; Dash panel; Removing and installing dash panel .

– Cover control unit -2- with a soft cloth.



NOTICE

Risk of irreparable damage to control unit for head-up display.

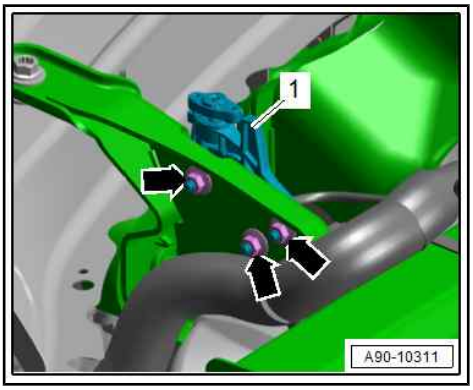
- **Only remove bolts from control unit as indicated.**
- **Never remove bolts for upper section of housing.**

– Remove bolts -1, 3, 4-.

– Lift out control unit slightly and unplug electrical connector.

– Detach control unit.

– Remove nuts -arrows-.
– Detach bracket -1-.



Installing

Installation is carried out in reverse order; note the following:

NOTICE

Risk of irreparable damage to control unit for head-up display.

– If a control unit is dropped, it must not be reused.
– Never press on upper section of housing when fitting control unit.

– Check function of control unit.
• A number should be visible on the windscreen.
– Calibrate control unit for head-up display ⇒ page 90 .

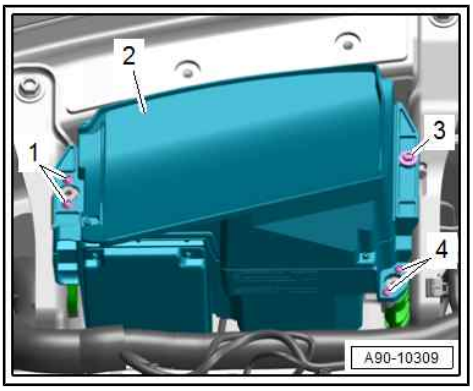
Tightening torques

◆ ⇒ “1.2 Exploded view - head-up display”, page 81
◆ ⇒ Fig. ““Control unit for head-up display - tightening torque and sequence”“ , page 82

1.4.3 Removing and installing inner bracket

Removing

– Remove dash panel ⇒ General body repairs, interior; Rep. gr. 70 ; Dash panel; Removing and installing dash panel .
– Cover control unit -2- with a soft cloth.



NOTICE

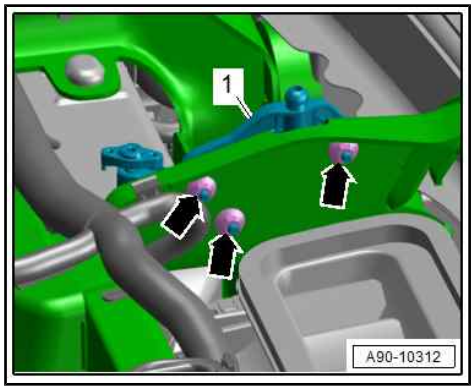
Risk of irreparable damage to control unit for head-up display.

– Only remove bolts from control unit as indicated.
– Never remove bolts for upper section of housing.

– Remove bolts -1, 3, 4-.
– Lift out control unit slightly and unplug electrical connector.
– Detach control unit.
– Remove air duct ⇒ Heating, air conditioning; Rep. gr. 87 ; Air duct system; Exploded view - routing of air flow and air distribution in passenger compartment .

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– Move wiring harness clear.
– Remove nuts -arrows-.
– Detach bracket -1-.



Installing

Installation is carried out in reverse order; note the following:

NOTICE

Risk of irreparable damage to control unit for head-up display.

– If a control unit is dropped, it must not be reused.
– Never press on upper section of housing when fitting control unit.

– Check function of control unit.
• A number should be visible on the windscreen.
– Calibrate control unit for head-up display ⇒ page 90 .

Tightening torques

◆ ⇒ “1.2 Exploded view - head-up display”, page 81
◆ ⇒ Fig. ““Control unit for head-up display - tightening torque and sequence”“ , page 82

1.5 Calibrating control unit for head-up display

Special tools and workshop equipment required

◆ Vehicle diagnostic tester
◆ Calibration board for head-up display - VAS 721 007- for Coupé, Sportback
◆ Calibration board for head-up display - VAS 721 013- for Cabriolet

Requirements

– The control unit for head-up display must be calibrated in the following situations:
• If the control unit for head-up display - J898- has been renewed.
• If the windscreen has been removed and installed.
• If the event memory contains the entry “no or incorrect basic setting/adaption”.

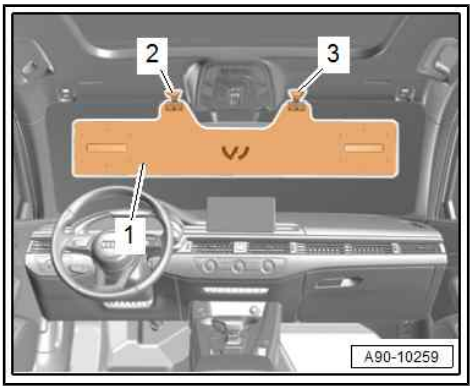
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Preparations

– Vehicle must be standing on a smooth and level surface.
– Apply parking brake – the vehicle must not be moved while the calibration procedure is being performed.

– Fold down and disengage sun visors on both sides and swivel round to side windows.

– Attach calibration board for head-up display -1- to centre brackets -2, 3- for sun visors.



Performing calibration

• Vehicle diagnostic tester is connected.

– Select `Diagnosis` mode and start this mode.

– Select `Test plan` tab.

– Choose `Select own test` and select following options one after the other:

♦ Body

♦ Electrical system

♦ 01 - Self-diagnosis compatible systems

♦ 82 - Control unit for head-up display -J898-

♦ 82 - Control unit for head-up display, functions

♦ 82 - Calibration of head-up display

– Start the program selected and follow the instructions on the display of the vehicle diagnostic tester.

– After completing calibration of control unit for head-up display, exit “Calibration”, switch off ignition and unplug diagnostic connector.

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2 Horn

⇒ “2.1 Exploded view - horn”, page 92

⇒ “2.2 Removing and installing treble horn H2 / bass horn H7 ”, page 92

2.1 Exploded view - horn

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1 - Mounting (right-side)
- ❑ For impact bar

2 - Bass horn - H7-
- ❑ Removing and installing ⇒ page 92

3 - Nut
- ❑ 11 Nm

4 - Bracket
- ❑ For horn (right-side)
- ❑ Removing and installing ⇒ page 93

5 - Nut
- ❑ 8 Nm

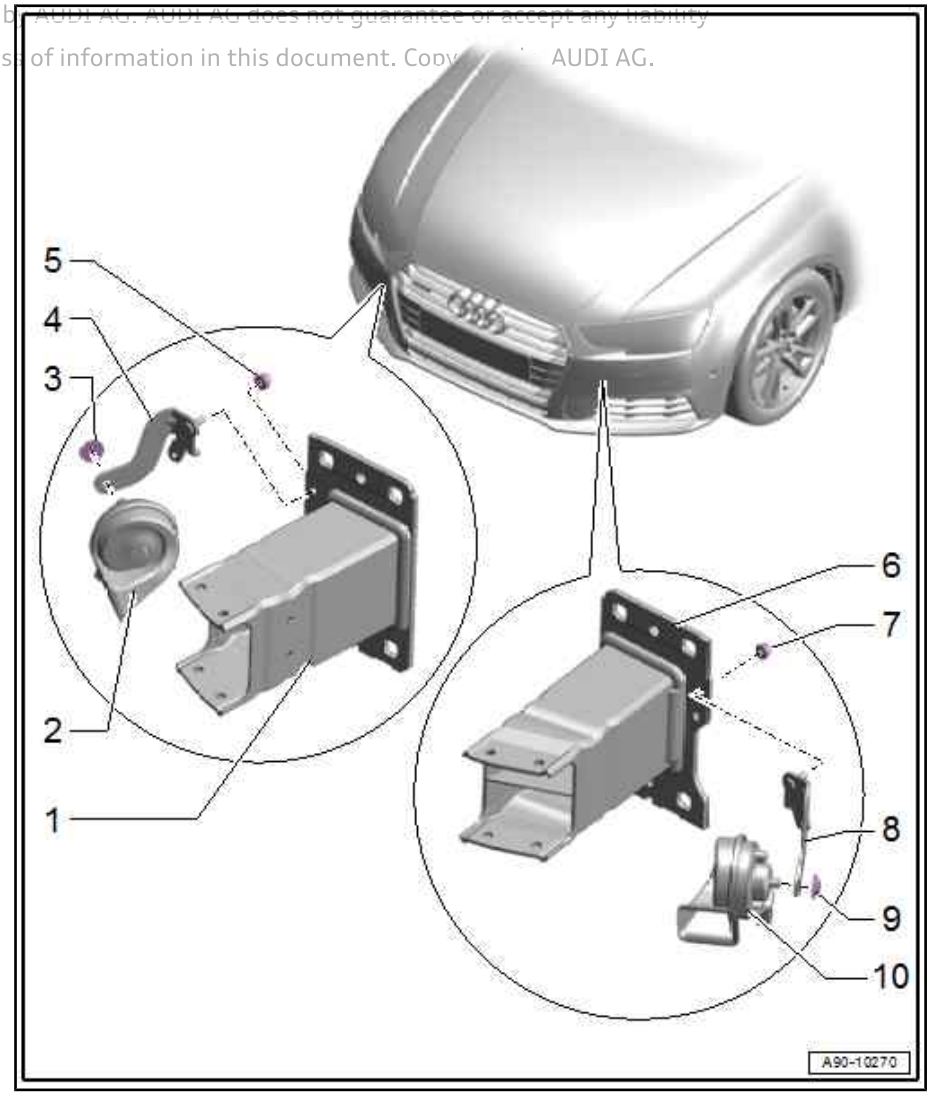
6 - Mounting (left-side)
- ❑ For impact bar

7 - Nut
- ❑ 8 Nm

8 - Bracket
- ❑ For horn (left-side)
- ❑ Removing and installing ⇒ page 93

9 - Nut
- ❑ 11 Nm

10 - Treble horn - H2-
- ❑ Removing and installing ⇒ page 92



2.2 Removing and installing treble horn - H2- / bass horn - H7-

⇒ “2.2.1 Removing and installing treble horn H2 / bass horn H7 ”, page 92

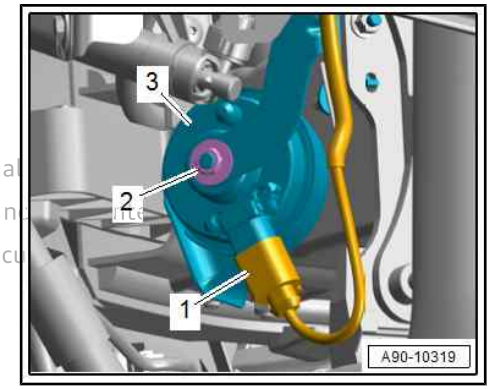
⇒ “2.2.2 Removing and installing brackets for horns”, page 93

2.2.1 Removing and installing treble horn - H2- / bass horn - H7-

Removing

– Remove air intake grille ⇒ General body repairs, exterior; Rep. gr. 63 ; Bumper (front) .

– RS 5: Remove bumper cover ⇒ General body repairs, exterior; Rep. gr. 63 ; Bumper (front); Removing and installing bumper cover .
– Unplug electrical connector -1-.
– Unscrew nut -2- and detach horn -3-.



Installing

Installation is carried out in reverse sequence.

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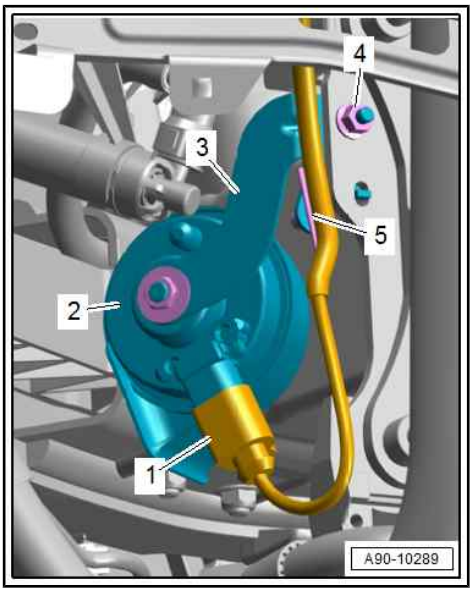
Tightening torques

◆ ⇒ “2.1 Exploded view - horn”, page 92

2.2.2 Removing and installing brackets for horns

Removing

– Detach front section of wheel housing liner and push to one side ⇒ General body repairs, exterior; Rep. gr. 66 ; Wheel housing liners; Removing and installing wheel housing liner (front) .
– RS 5: Remove bumper cover ⇒ General body repairs, exterior; Rep. gr. 63 ; Bumper (front); Removing and installing bumper cover .
– Unplug electrical connector -1- and move wiring harness -5- clear.
– Unscrew nut -4-.
– Detach horn -2- with bracket -3-.



Installing

Installation is carried out in reverse sequence.

Tightening torques

◆ ⇒ “2.1 Exploded view - horn”, page 92

92 – Windscreen wash/wipe system

1 Windscreen wiper system

⇒ “1.1 Overview of fitting locations - windscreen wiper system”, page 94

⇒ “1.2 Exploded view - windscreen wiper system”, page 95

⇒ “1.3 Moving windscreen wipers to service position”, page 96

⇒ “1.4 Removing and installing wiper blade”, page 97

⇒ “1.5 Removing and installing wiper arms”, page 97

⇒ “1.6 Adjusting wiper arms”, page 99

⇒ “1.7 Removing and installing wiper motor V ”, page 100

⇒ “1.8 Removing and installing rain and light sensor”, page 100

1.1 Overview of fitting locations - windscreen wiper system

1 - Headlight washer jet

- ❑ Exploded view ⇒ page 110

2 - Washer fluid reservoir

- ❑ Exploded view ⇒ page 105

3 - Washer jet

- ❑ Exploded view ⇒ page 105

4 - Grommet

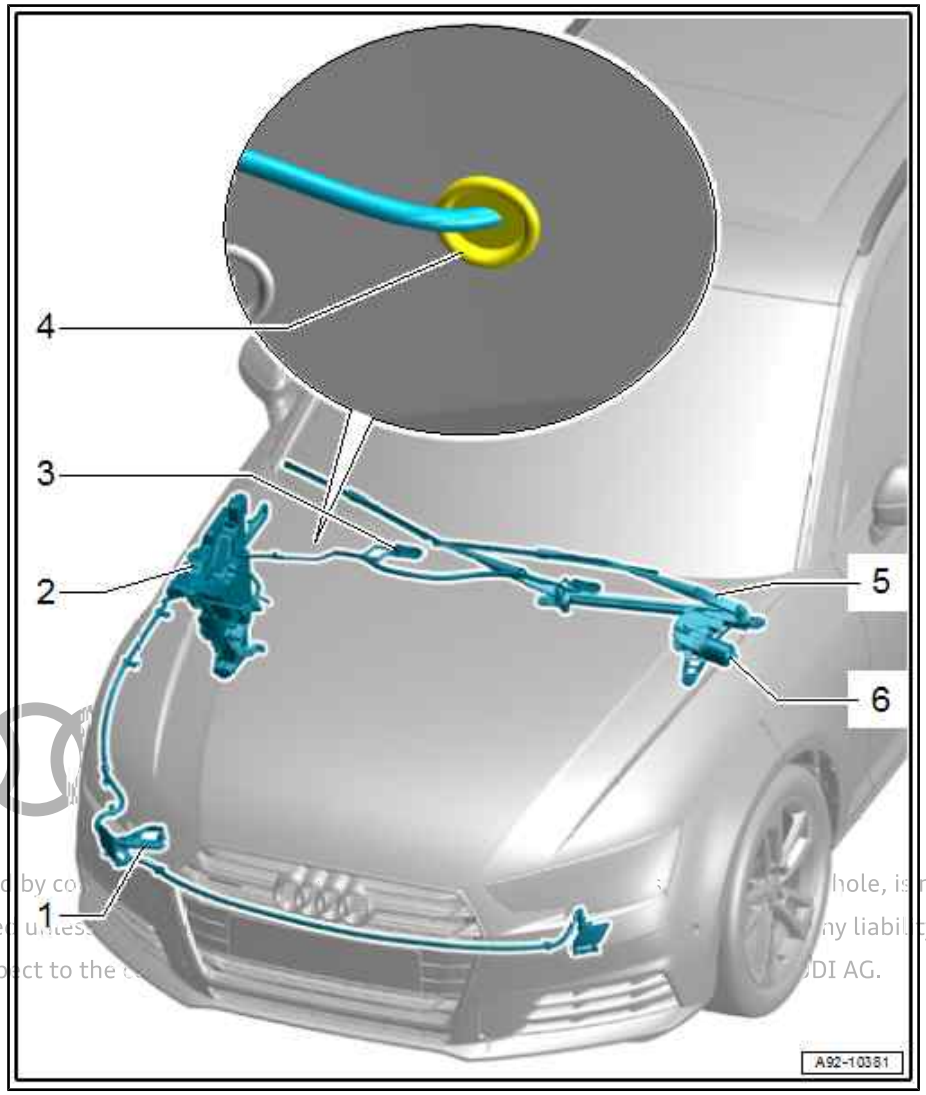
- ❑ For washer fluid hose in bonnet

5 - Wiper arm

- ❑ Exploded view ⇒ page 95

6 - Wiper motor - V-

- ❑ With wiper motor control unit - J400-
- ❑ Exploded view ⇒ page 95



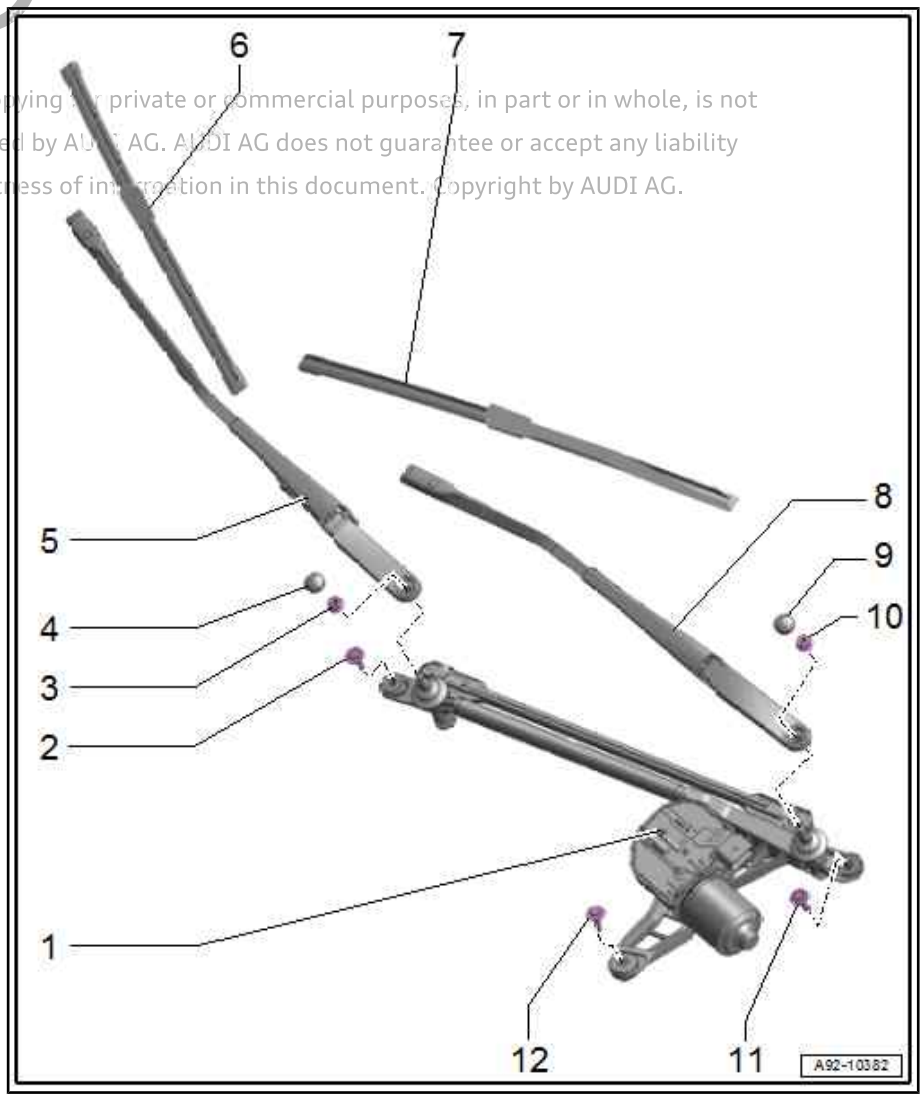
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1.2 Exploded view - windscreen wiper system

⇒ "1.2.1 Exploded view - windscreen wiper system", page 95

⇒ "1.2.2 Exploded view - windscreen wiper system, rain and light sensor", page 96

1.2.1 Exploded view - windscreen wiper system



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1 - Wiper motor - V-

- With wiper motor control unit - J400-
- Removing and installing ⇒ page 100

2 - Bolt

- Tightening sequence ⇒ page 96

3 - Nut

- 22 Nm

4 - Trim cap

5 - Wiper arm, passenger side (LHD)

- Different length ⇒ Electronic parts catalogue
- Removing and installing ⇒ page 97
- Adjusting ⇒ page 99

6 - Wiper blade, passenger side (LHD)

- Different length ⇒ Electronic parts catalogue
- Renewing ⇒ page 97

7 - Wiper blade, driver side (LHD)

- Different length ⇒ Electronic parts catalogue
- Renewing ⇒ page 97

8 - Wiper arm, driver side (LHD)

- Different length ⇒ Electronic parts catalogue
- Removing and installing ⇒ page 97
- Adjusting ⇒ page 99

9 - Trim cap

10 - Nut

- 22 Nm

11 - Bolt

- Tightening torque and tightening sequence ⇒ page 96

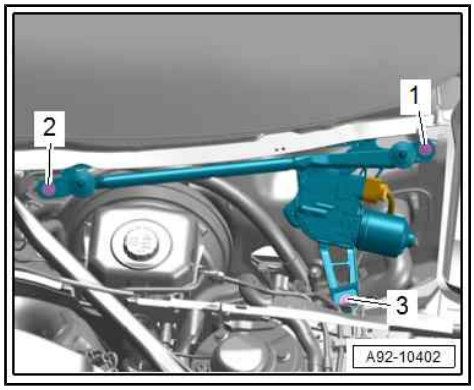
12 - Bolt

- Tightening torque and tightening sequence ⇒ page 96

Wiper motor - tightening torque and tightening sequence

– Tighten bolts in stages in the sequence shown:

Stage	Bolts	Tightening torque
1.	-1 … 3-	Screw in by hand until contact is made
2.	-1 … 3-	8 Nm



1.2.2 Exploded view - windscreen wiper system, rain and light sensor

1 - Silicone pad

- ❑ Renew after removing

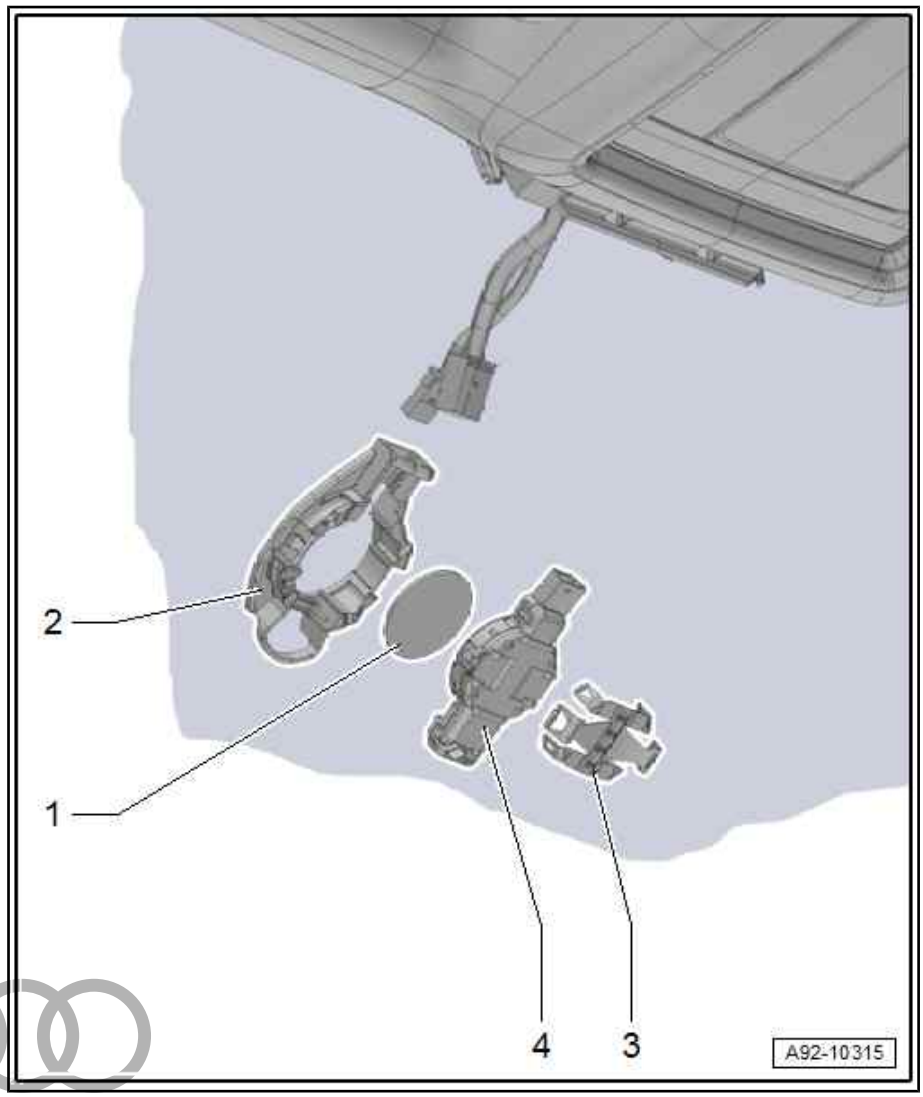
2 - Retainer

- ❑ For rain and light sensor - G397-
- ❑ Bonded to windscreen

3 - Clip

4 - Rain and light sensor - G397-

- ❑ Depending on equipment version: with sunlight penetration photosensor - G107- , humidity sender - G355-
- ❑ Different versions; for allocation refer to ⇒ Electronic parts catalogue
- ❑ Removing and installing ⇒ page 100
- ❑ Renewing ⇒ page 103



1.3 Moving windscreen wipers to service position

- The bonnet must be completely closed if the wiper motor needs to be run during repair work (the voltage supply to the wiper motor is cut off when the bonnet is open).

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– At sub-zero temperatures, first check that the wiper blades are not frozen onto the glass.
– Briefly switch ignition on and off again.
– Operate “touch wipe” function within 10 seconds.

• The wipers will run to the “service position”.

NOTICE

The bonnet can be damaged if the wipers are allowed to run back to the park position.

– Never move the vehicle when the wiper arms are lifted up off the windscreen.

Note:

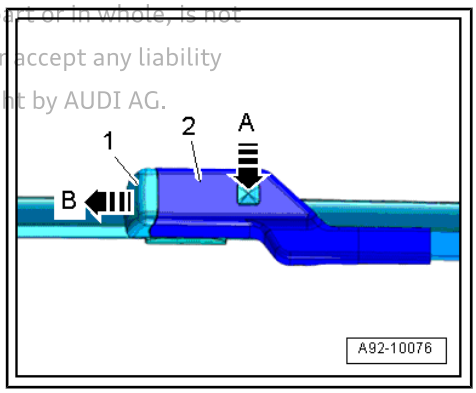
The wipers run back to the park position when road speed exceeds 6 km/h or when the wiper switch is operated.

1.4 Removing and installing wiper blade

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Removing

– Move windscreen wipers to service position ⇒ page 96.
– Lift wiper arm off windscreen.
– Press retaining clip -arrow A- and slide wiper blade -1- off wiper arm -2- -arrow B-.
– Detach wiper blade.

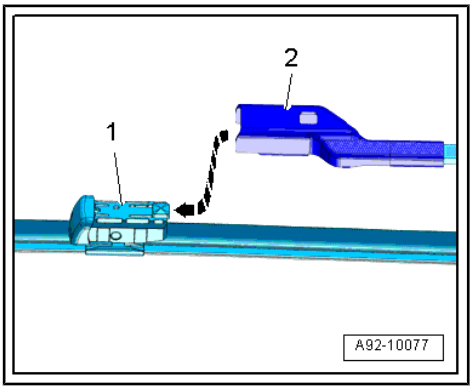


Installing

Installation is carried out in reverse order; note the following:

• Please note that the wiper blades for the driver's and passenger's sides are of different lengths.

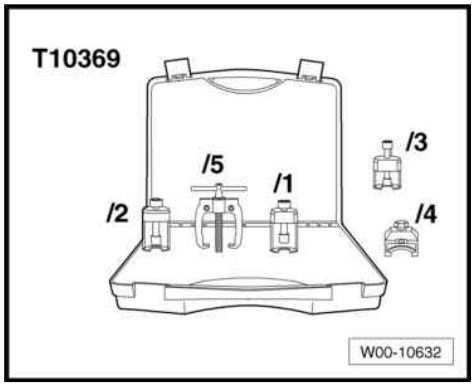
– Guide wiper blade -1- into wiper arm -2- in parallel position -arrow-. Make sure that retaining clip on wiper blade engages audibly in wiper arm when fitting wiper blade.
– The wipers will run back from the “service position” when the wiper switch is operated or when road speed exceeds 6 km/h.



1.5 Removing and installing wiper arms

Special tools and workshop equipment required

♦ Tool kit for wiper arms - T10369-

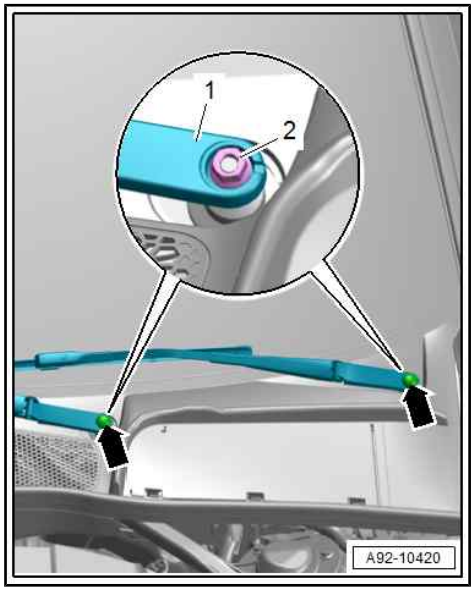


Removing

- To avoid damage, only release windscreen wiper shafts with puller - T10369/1- .
- The bonnet must be closed if the windscreen wiper motor has to be run during this procedure; otherwise there will be no power supply to the motor and it will not run.

– Pry trim caps -arrows- off wiper arms -1- with a screwdriver.

– Slacken nuts -2- a few turns.

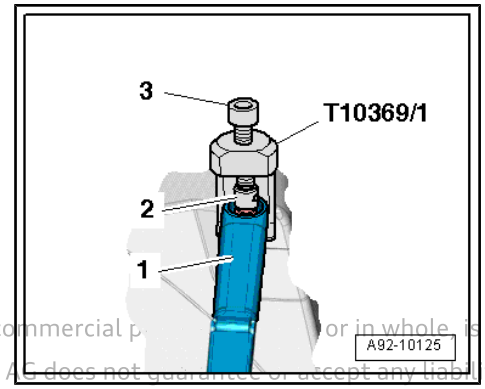


– Apply puller - T10369/1- at wiper arm -1- as shown.

– Apply thrust piece -2- at wiper shaft.

– Turn bolt -3- clockwise until wiper arm is clear of wiper shaft.

– Remove nuts and detach wiper arms.



Installing

Installation is carried out in reverse order; note the following:

- Please note that the wiper blades for the driver's and passenger's sides are of different lengths.

– Adjust wiper arms ⇒ page 99.

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1.6 Adjusting wiper arms

Procedure

Note:

The bonnet must be completely closed if the wiper motor needs to be run during repair work (the voltage supply to the wiper motor is cut off when the bonnet is open).

– Remove wiper arms ⇒ page 97 .

– Switch on ignition.

– Actuate “touch wipe” function and allow wiper motor to move to end position.

Note:

- Every 2nd time the wiper motor is switched off, it moves the wiper arms slightly past the end position, which ensures that the lip of the wiper blade is tipped the other way.
- The wiper motor moves the wiper arms down beyond their end position and then back up slightly to do this. Do not adjust the wiper crank while the wiper arms are in this raised position.
- Instead, carry out adjustment or checks only after the wiper motor has moved the wiper arms directly to their normal park position (not raised); if necessary let wipers carry out another “touch wipe”.

– Switch off ignition.

– Fit wiper arm with wiper blade attached to wiper shaft.

– Align tips of wiper blades -2- with plenum chamber cover -1- at bottom edge of windscreen -3-:

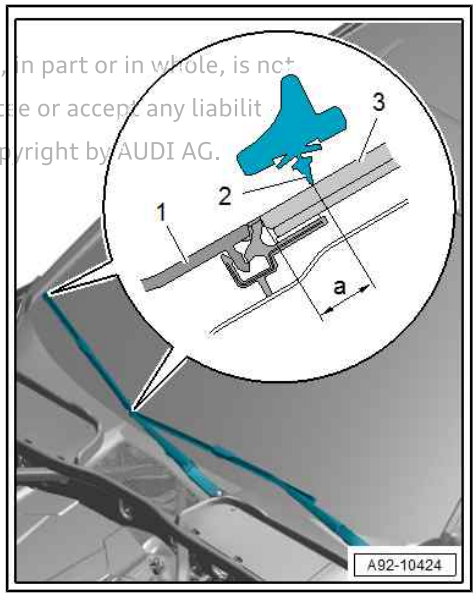
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Coupé, Sportback

Side	Setting dimension -a- in mm
Driver side	25 +10
Passenger side	21 +10

Cabriolet

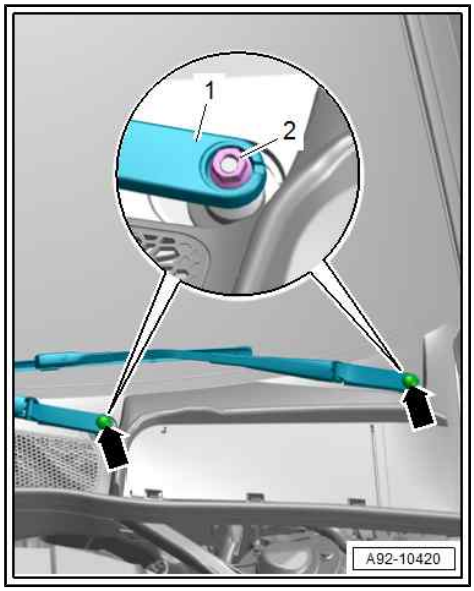
Side	Setting dimension -a- in mm
Driver side	31 +10)
Passenger side	18 +10



– Tighten nuts -2- for wiper arms -1-.
– Switch on ignition.
– Actuate “touch wipe” function and allow wiper arms to move to end position.
– Switch off ignition.
– Check setting of wiper arms again and correct if necessary.
– Press trim caps -arrows- onto wiper arms.

Tightening torques

♦ ⇒ “1.2.1 Exploded view - windscreen wiper system”, page 95

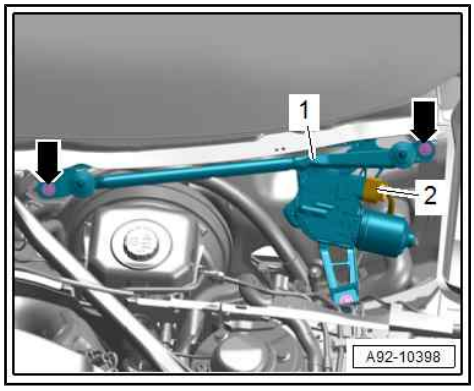


1.7 Removing and installing wiper motor - V-

If control unit is to be renewed, select the “Replace control unit” function for appropriate control unit in ⇒ Vehicle diagnostic tester.

Removing

– Remove wiper arms ⇒ page 97 .
– Remove plenum chamber cover ⇒ General body repairs, exterior; Rep. gr. 50 ; Bulkhead; Removing and installing plenum chamber cover .
– Unplug electrical connector -2-.
– Remove bolts -arrows-.
– Take wiper frame -1- with linkage and wiper motor out of plenum chamber.



Installing

Installation is carried out in reverse order; note the following:

– Fit wiper motor with wiper frame in vehicle.
– Tighten bolts ⇒ page 96 .
– Adjust wiper arms ⇒ page 99 .

Tightening torques

♦ ⇒ Fig. ““Wiper motor - tightening torque and tightening sequence”“ , page 96

1.8 Removing and installing rain and light sensor

⇒ “1.8.1 Removing and installing rain and light sensor G397 ”, page 100

⇒ “1.8.2 Renewing rain and light sensor G397 ”, page 103

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1.8.1 Removing and installing rain and light sensor - G397-

Special tools and workshop equipment required

♦ Cleaning solution - D 009 401 04-

Removing

– Switch off ignition and store ignition key outside of vehicle.

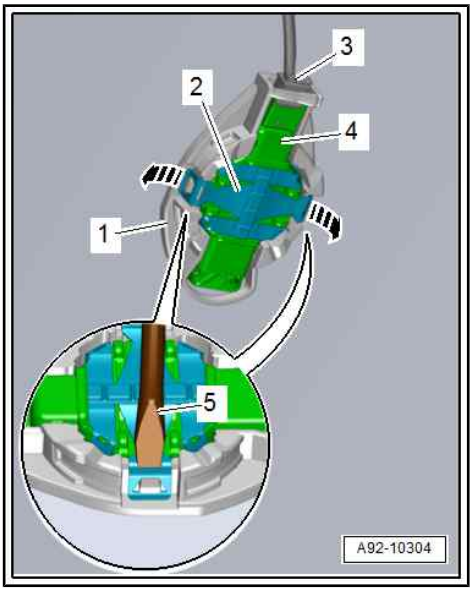
– Remove interior mirror ⇒ General body repairs, interior; Rep. gr. 68 ; Interior mirror; Removing and installing interior mirror .

– Unplug electrical connector -3-.

– Insert a narrow screwdriver -5- into opening and release catches of retaining clip -2- -arrows-, as shown in illustration.

– Wait one minute to allow silicone pad to loosen enough so that it can be removed without leaving residue.

– Loosen rain and light sensor - G397- -4- by turning it back and forth and take it out of mounting -1-.



NOTICE

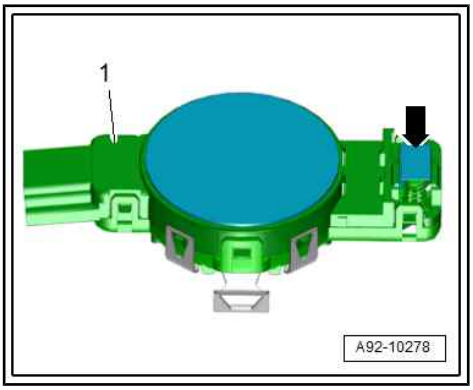
Risk of damage to humidity sensor if incorrectly handled.

– Proceed with great care when removing and installing rain and light sensor.

– Rain and light sensor must be renewed if humidity sensor -arrow- is damaged.

– Clean bonding surface on windscreen with cleaning fluid - D 009 401 04- .

• Any silicone residue must be removed completely.



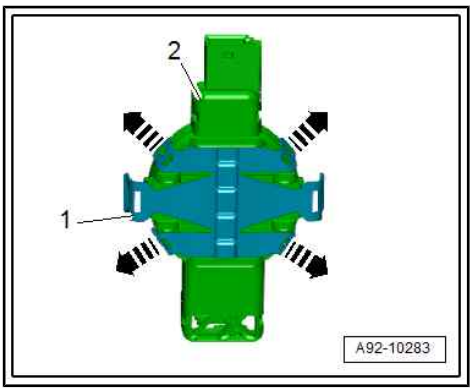
Installing

Installation is carried out in reverse order; note the following:

• Renew silicone pad and retaining clip.

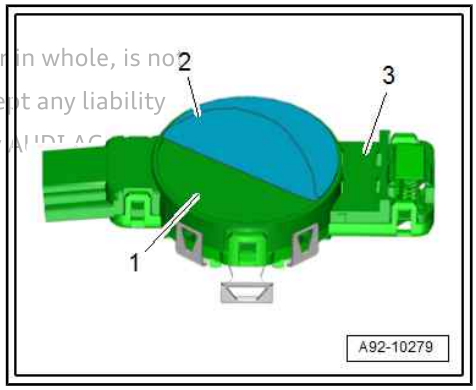
– Release catches on old retaining clip -1- -arrows- and detach it from sensor -2-.

– Press on new retaining clip until it engages audibly.



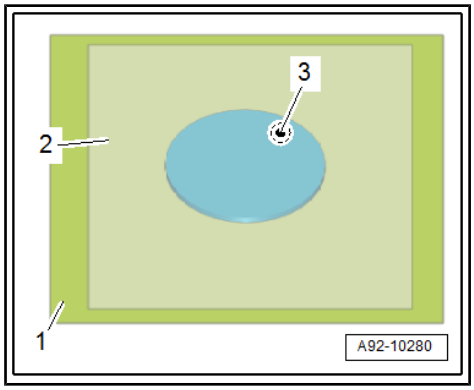
– Remove silicone pad -2- from sensor -3-, ensuring that no residue remains.

– Clean bonding surface -1- on sensor with a lint-free cloth.

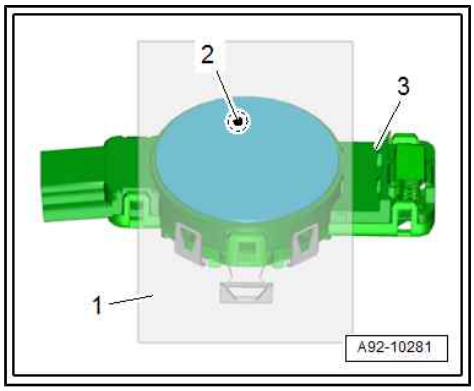


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– Remove silicone paper -1- from silicone pad -3-.
– Transparent protective film -2- remains on silicone pad to assist with installation.



– Using transparent protective film -1- to help you, position silicone pad -2- on sensor -3- so that it is centred.
– Press silicone pad onto sensor through protective film, ensuring that no air bubbles are present.

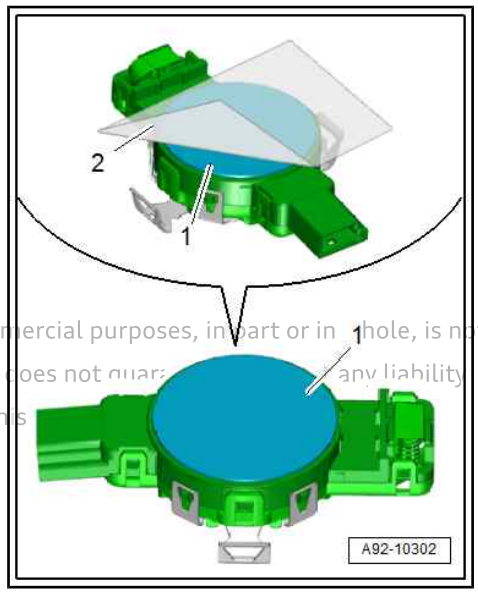


– Remove protective film -2- from silicone pad -1-.
– Apply a small amount of cleaning fluid - D 009 401 04- to silicone pad.

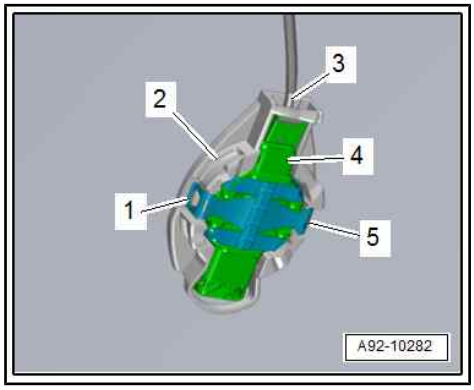
Note:

To prevent the silicone pad from becoming dirty, do not remove the protective film until just before fitting the pad.

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– Insert sensor -4- into mounting -2-.
• In order to function correctly, rain and light sensor - G397- must be clear and there must be no air bubbles between it and the windscreen.
– Press on retaining clips -1, 5- until they engage audibly.
– Plug in electrical connector -3-.

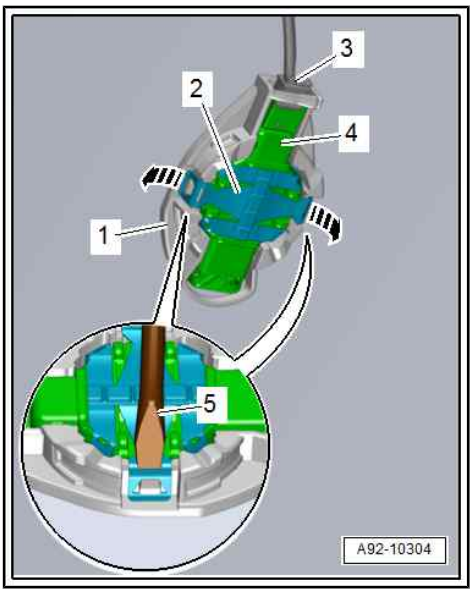


1.8.2 Renewing rain and light sensor - G397-

Special tools and workshop equipment required

- Cleaning solution - D 009 401 04-

Removing



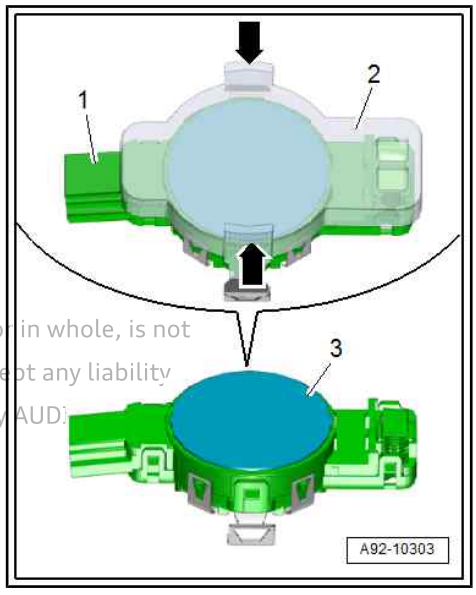
– Switch off ignition and store ignition key outside of vehicle.
– Remove interior mirror ⇒ General body repairs, interior; Rep. gr. 68 ; Interior mirror; Removing and installing interior mirror .
– Unplug electrical connector -3-.
– Insert a narrow screwdriver -5- into opening and release catches of retaining clip -2- -arrows-, as shown in illustration.
– Wait one minute to allow silicone pad to loosen enough so that it can be removed without leaving residue.
– Loosen rain and light sensor - G397- -4- by turning it back and forth and take it out of mounting -1-.
– Clean bonding surface on windscreen with cleaning fluid - D 009 401 04- .
• Any silicone residue must be removed completely.

Installing

Installation is carried out in reverse order; note the following:

NOTICE

Risk of damage to humidity sensor if incorrectly handled.



– Press tabs -arrows- on protective cover -2- together gently and detach from sensor -1-.

Note:

To prevent the silicone pad from becoming dirty, do not remove the protective cover until just before fitting the pad.

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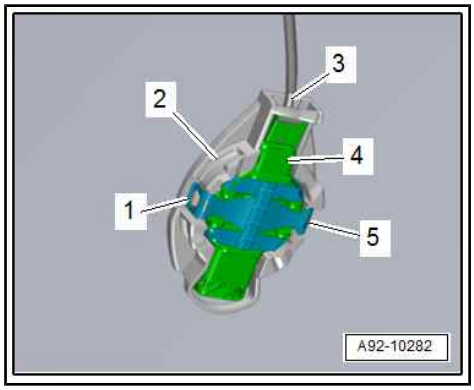
– Insert sensor -4- into mounting -2-.

• In order to function correctly, rain and light sensor - G397- must be clear and there must be no air bubbles between it and the windscreen.

– Press on retaining clips -1, 5- until they engage audibly.

– Plug in electrical connector -3-.

– The rain and light sensor must be coded if it is renewed ⇒ Vehicle diagnostic tester.



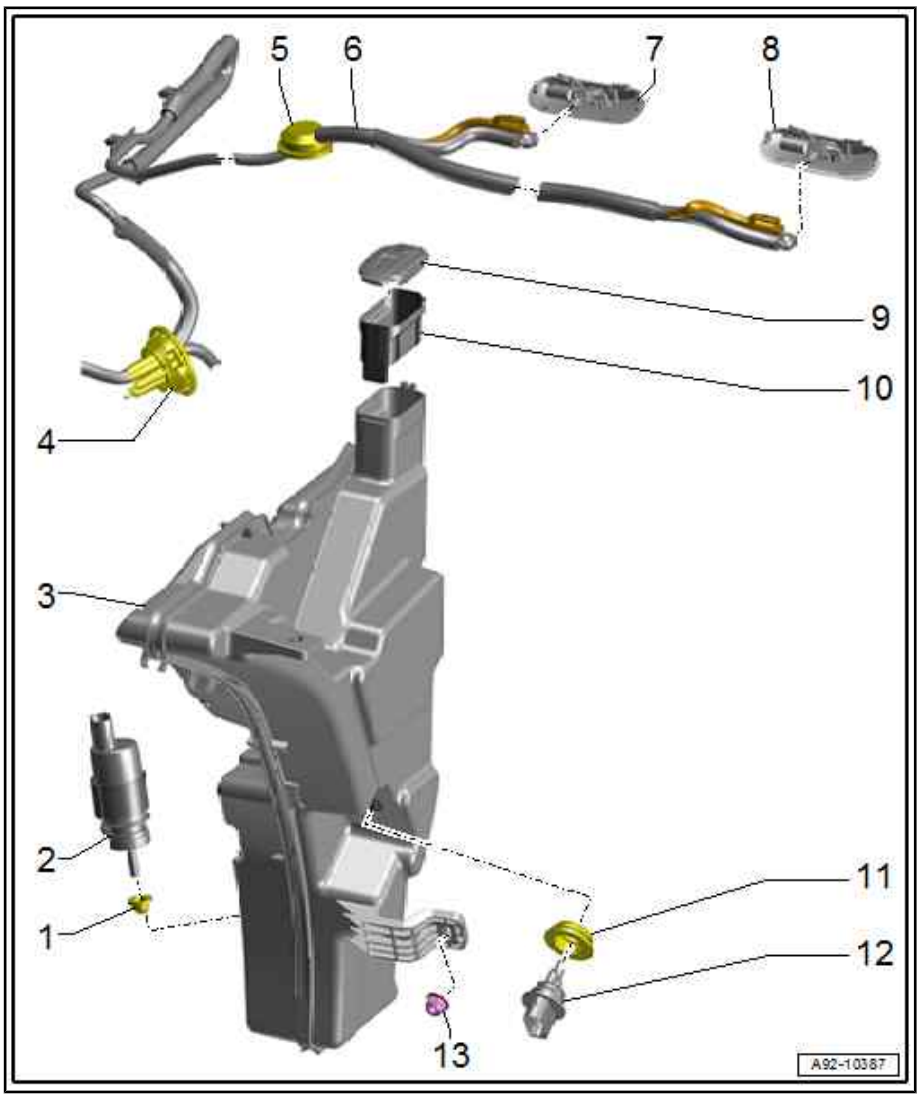
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2 Windscreen washer system

⇒ “2.1 Exploded view - windscreen washer system”, page 105
⇒ “2.2 Removing and installing washer fluid reservoir”, page 106
⇒ “2.3 Removing and installing windscreen washer fluid level sender”, page 107
⇒ “2.4 Removing and installing washer pump”, page 108
⇒ “2.5 Removing and installing washer jets”, page 108
⇒ “2.6 Adjusting washer jets”, page 108

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2.1 Exploded view - windscreen washer system



1 - Sealing grommet
- ❑ Renew if damaged

2 - Washer pump - V5-
- ❑ For windscreen and rear window washer system
- ❑ Removing and installing ⇒ page 108

3 - Washer fluid reservoir
- ❑ For windscreen/rear window washer system and headlight washer system
- ❑ Removing and installing ⇒ page 106

4 - Grommet
- ❑ For washer fluid hose/ wiring harness in body

5 - Grommet
- ❑ For washer fluid hose in bonnet

6 - Washer fluid hose
- ❑ To washer jets

7 - Right washer jet
- ❑ With right washer jet heater element - Z21-
- ❑ Removing and installing ⇒ page 108
- ❑ Adjusting ⇒ page 108

8 - Left washer jet
- ❑ With left washer jet heater element - Z20-
- ❑ Removing and installing ⇒ page 108
- ❑ Adjusting ⇒ page 108

9 - Filler cap
- ❑ For filler neck

10 - Strainer

11 - Sealing grommet

- ❑ Renew if damaged

12 - Windscreen washer fluid level sender - G33-

- ❑ Removing and installing ⇒ page 107

13 - Nut

- ❑ 2x
- ❑ 8 Nm

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2.2 Removing and installing washer fluid reservoir

Special tools and workshop equipment required

- ◆ Drip tray

Removing

– Detach cap for filler neck.

• Front wheel removed ⇒ Running gear, axles, steering; Rep. gr. 44 ; Wheels, tyres .

– Remove wheel housing liner (front right) ⇒ General body repairs, exterior; Rep. gr. 66 ; Wheel housing liners; Removing and installing wheel housing liner (front) .

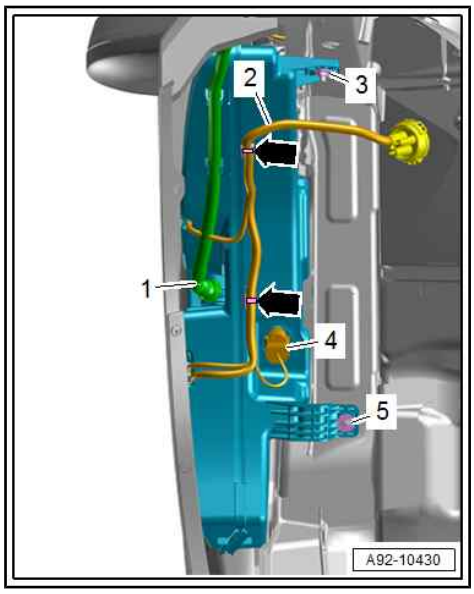
– Move wiring harness -2- clear -arrows-.

– Unplug electrical connector -4-.

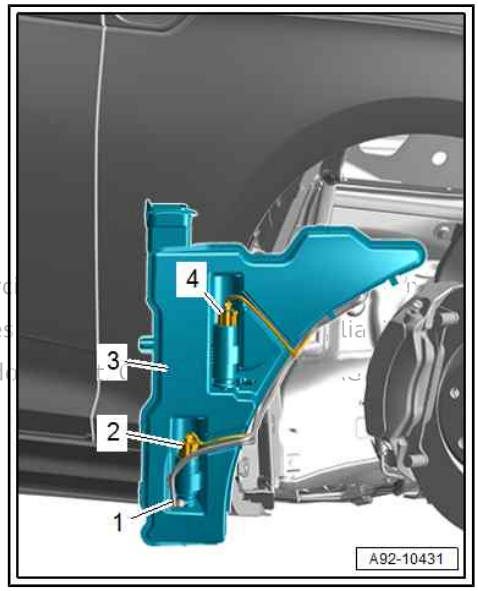
– Remove nuts -3, 5-.

– Place drip tray under washer fluid reservoir.

– Detach hose -1- from headlight washer system pump - V11- .



– Swivel washer fluid reservoir -3- out at bottom towards front.
– Unplug electrical connectors -2, 4-.
– Detach washer fluid hose -1- from washer pump.
– Detach washer fluid reservoir.



Installing

Installation is carried out in reverse sequence.

Tightening torques

♦ ⇒ “2.1 Exploded view - windscreen washer system”, page 105

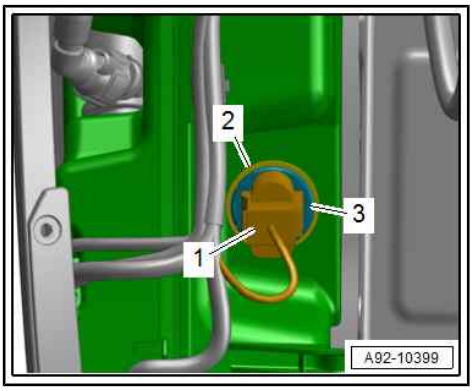
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2.3 Removing and installing windscreen washer fluid level sender

Special tools and workshop equipment required

♦ Drip tray

Removing



• Front wheel removed ⇒ Running gear, axles, steering; Rep. gr. 44 ; Wheels, tyres .
– Remove wheel housing liner (front right) ⇒ General body repairs, exterior; Rep. gr. 66 ; Wheel housing liners; Removing and installing wheel housing liner (front) .
– Unplug electrical connector -1-.
– Place drip tray under washer fluid reservoir.
– Pull windscreen washer fluid level sender -3- out of washer fluid reservoir.

Installing

Installation is carried out in reverse order; note the following:

– Check sealing grommet -2- for damage.

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2.4 Removing and installing washer pump

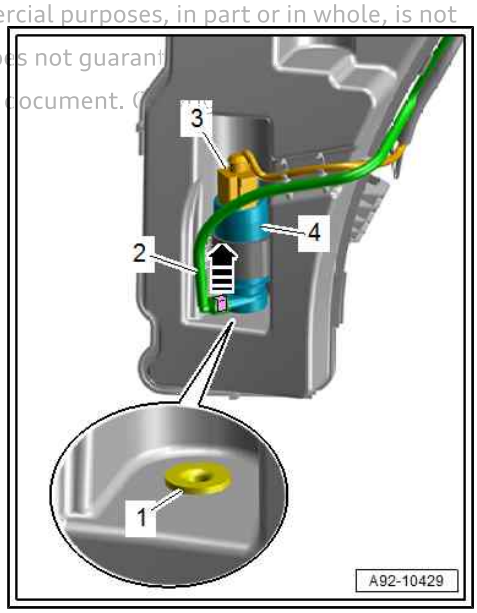
Removing

– Remove washer fluid reservoir as far as is necessary to access washer pump ⇒ page 106 .

– Unplug electrical connector -3-.

– Release retaining clip -arrow- and pull washer fluid hose -2- off washer pump -4-.

– Lift washer pump out of washer fluid reservoir.



Installing

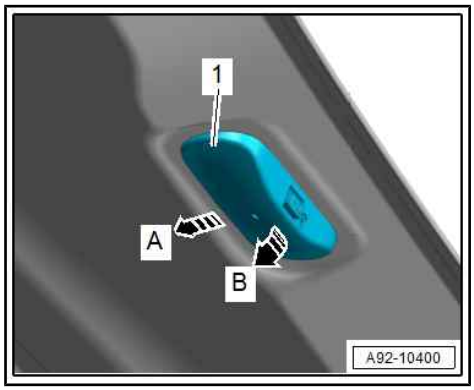
Installation is carried out in reverse order; note the following:

– Check sealing grommet -1- for damage.

2.5 Removing and installing washer jets

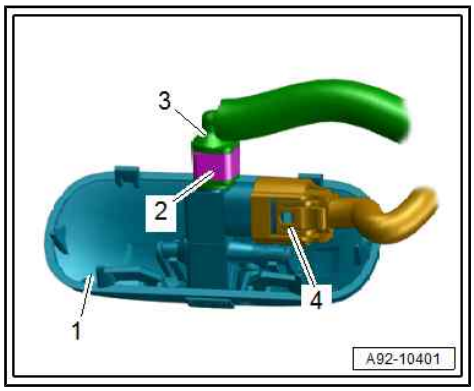
Removing

– Press washer jet -1- in direction of -arrow A- and then unclip it from bonnet -arrow B-.



– Release retaining clip -2- and pull washer fluid hose -3- off washer jet -1- for windscreen washer system.

– If fitted, unplug electrical connector -4-.



Installing

Installation is carried out in reverse order; note the following:

– When fitting washer fluid hose, make sure that retaining clip engages audibly in connection on washer fluid hose.

2.6 Adjusting washer jets

– Adjust washer jets for windscreen washer system ⇒ Maintenance ; Booklet 820 ; Maintenance; Windscreen washer system: checking spray pattern and adjusting if necessary .

– If spray pattern does not match specifications, clean the contaminated washer jet.

Cleaning washer jet:

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Risk of damage to washer jets if incorrectly handled.

– Do NOT use any tools or implements to clean the washer jets.

– Remove washer jet ⇒ page 108 .

– Rinse washer jet with clean water in opposite direction to normal flow.

– To remove any remaining obstructions, blow out with compressed air only (in opposite direction to normal flow).

– If spray pattern still does not match specifications, renew washer jet.

3 Headlight washer system

⇒ “3.1 Exploded view - headlight washer system”, page 110

⇒ “3.2 Removing and installing headlight washer system pump V11 ”, page 111

⇒ “3.3 Removing and installing washer jets”, page 111

⇒ “3.4 Adjusting washer jets”, page 113

3.1 Exploded view - headlight washer system

1 - Fluid hose
- ❑ To left washer jet

2 - Fluid distributor hose
- ❑ To washer jets

3 - Fluid hose
- ❑ From headlight washer system pump

4 - Headlight washer system pump - V11-
- ❑ Removing and installing ⇒ page 111

5 - Sealing grommet
- ❑ Renew if damaged

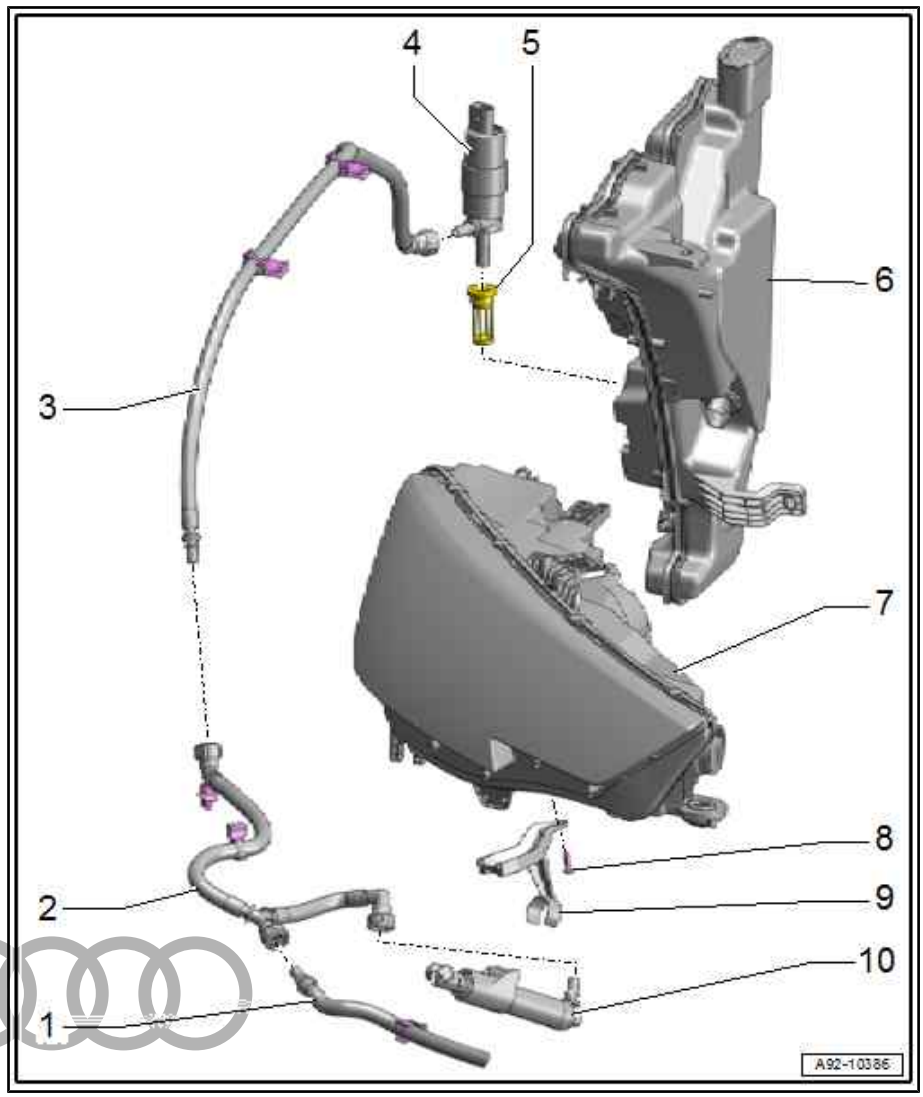
6 - Washer fluid reservoir
- ❑ Removing and installing ⇒ page 106

7 - Headlight housing

8 - Bolt
- ❑ 1.5 Nm

9 - Bracket
- ❑ For washer jet
- ❑ Removing and installing ⇒ page 112

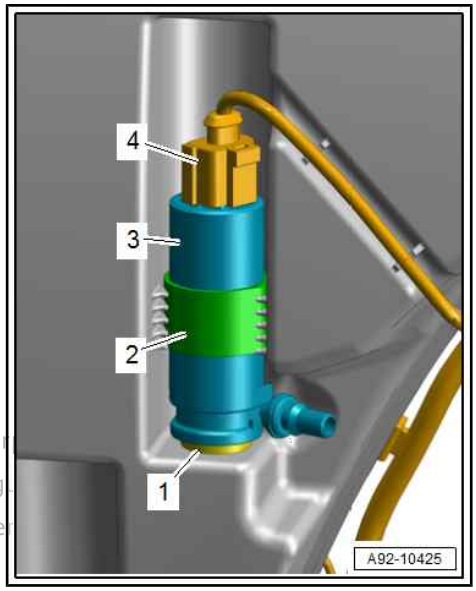
10 - Washer jet
- ❑ Removing and installing ⇒ page 111



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3.2 Removing and installing headlight washer system pump - V11-

Removing



– Remove washer fluid reservoir as far as is necessary to access headlight washer system pump ⇒ page 106 .
– Unplug electrical connector -4-.
– Pull headlight washer system pump -3- out of washer fluid reservoir.

Installing

Installation is carried out in reverse order; note the following:

– Check sealing grommet -1- for damage.
– If a new pump is being installed, insulation -2- must be fitted around it to prevent rattling noises.

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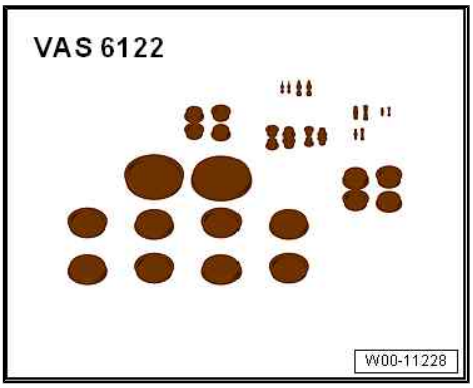
3.3 Removing and installing washer jets

⇒ “3.3.1 Removing and installing washer jets”, page 111

⇒ “3.3.2 Removing and installing bracket for washer jet”, page 112

3.3.1 Removing and installing washer jets

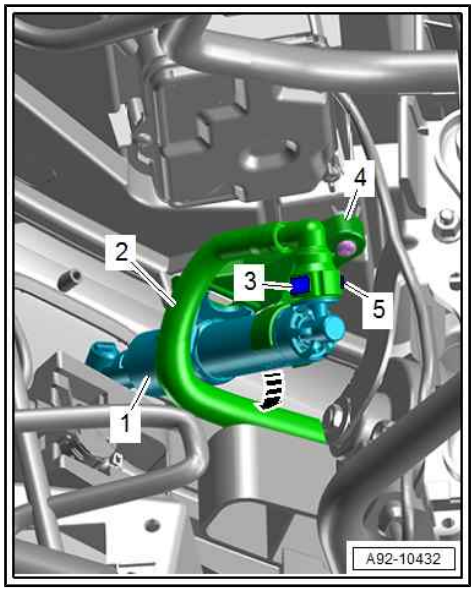
Special tools and workshop equipment required



♦ Engine bung set - VAS 6122-

Removing

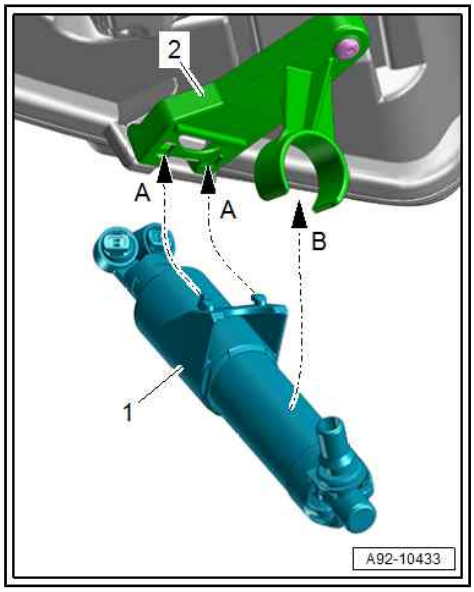
- Remove air intake grille ⇒ General body repairs, exterior; Rep. gr. 63 ; Bumper (front) .
- RS 5: Remove bumper cover ⇒ General body repairs, exterior; Rep. gr. 63 ; Bumper (front); Removing and installing bumper cover .
- Place drip tray underneath.
- Swivel washer jet -1- out of mounting on bracket -4- -arrow- and detach.
- Disconnect washer fluid hose -2-; to do so, press release tabs -3, 5-.
- Seal off hose connector with clean plug from engine bung set - VAS 6122- .



Installing

Installation is carried out in reverse order; note the following:

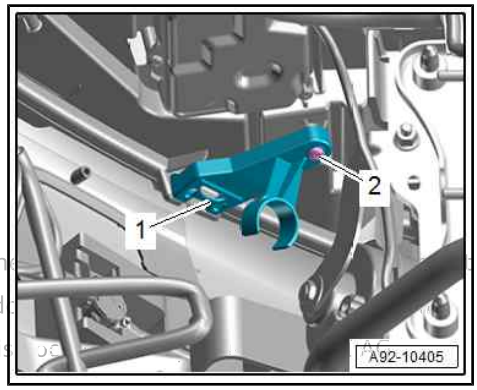
- Insert retaining pins in mountings on bracket -2- -arrows A-, then press washer jet -1- into mounting on bracket -arrow B-.



3.3.2 Removing and installing bracket for washer jet

Removing

- Remove washer jet and place to side with fluid hose connected ⇒ page 111 .
- Remove bolt -2-.
- Detach bracket -1-.



Installing

Installation is carried out in reverse sequence.

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Tightening torques

- ⇒ “3.1 Exploded view - headlight washer system”, page 110

3.4 Adjusting washer jets

Note

The washer jets are pre-set at the factory and do not have to be adjusted following installation.

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94 – Lights, bulbs, switches - exterior

1 Headlights

⇒ “1.1 Exploded view - headlights”, page 114

⇒ “1.2 Removing and installing headlights”, page 120

⇒ “1.3 Adjusting headlights”, page 122

⇒ “1.4 Calibrating headlights”, page 134

⇒ “1.5 Removing and installing front turn signal bulb M5 / M7 ”, page 144

⇒ “1.6 Removing and installing fog light bulb L22 / L23 ”, page 145

⇒ “1.7 Removing and installing gas discharge bulb L13 / L14 ”, page 146

⇒ “1.8 Removing and installing output module for headlight”, page 147

⇒ “1.9 Adapting headlights for driving on the left side of the road”, page 151

⇒ “1.10 Adapting headlights for driving on the right side of the road”, page 151

1.1 Exploded view - headlights

⇒ “1.1.1 Exploded view - headlights, headlight mounting”, page 114

⇒ “1.1.2 Exploded view - headlights, gas discharge headlight”, page 116

⇒ “1.1.3 Exploded view - LED headlight”, page 118

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1.1.1 Exploded view - headlights, headlight mounting

1 - Speed nut

2 - Bracket

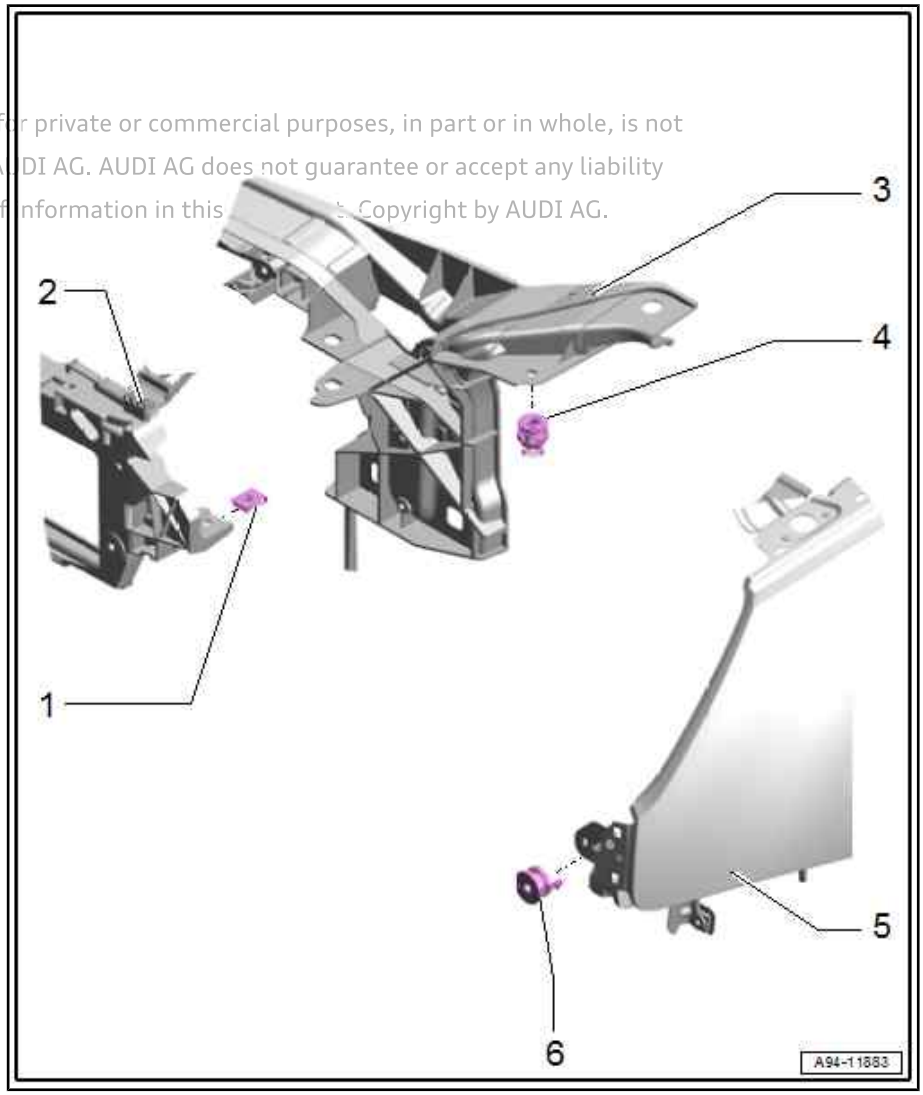
3 - Lock carrier
- ❑ For mounting headlight

4 - Adjuster
- ❑ To adjust headlight housing to body contour

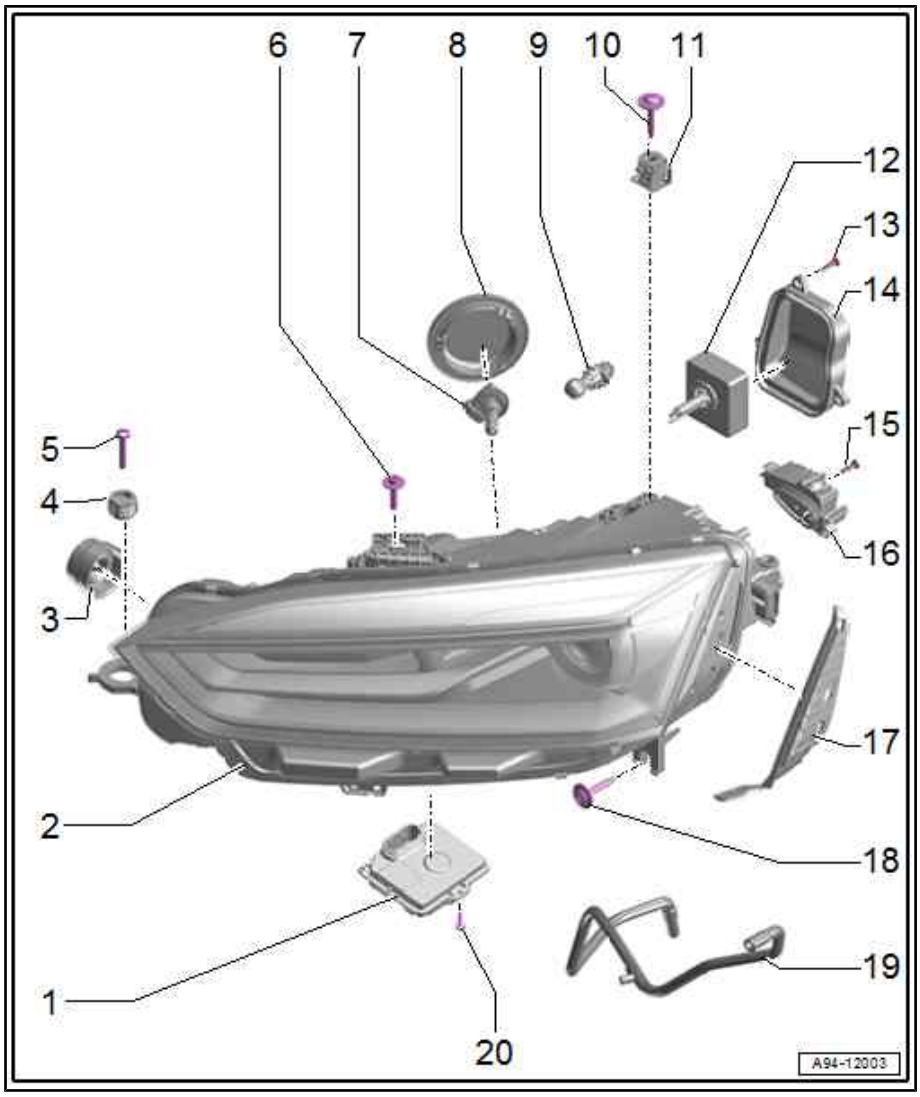
5 - Wing

6 - Adjuster
- ❑ To adjust headlight housing to body contour

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1.1.2 Exploded view - headlights, gas discharge headlight



1 - Light control unit

- ♦ Left light control unit - J1018-
- ♦ Right light control unit - J1023-
  - ❑ Removing and installing ⇒ page 150

2 - Headlights

- ♦ Front left headlight - MX1-
- ♦ Front right headlight - MX2-
  - ❑ With the following integrated components:
- ♦ Left headlight range control motor - V48- , not fitted on NAR vehicles
- ♦ Right headlight range control motor - V49- , not fitted on NAR vehicles
- ♦ Left dip beam screen motor - V294-
- ♦ Right dip beam screen motor - V295-
- ♦ Temperature sender 1 for left headlight - G702-
- ♦ Temperature sender 1 for right headlight - G704-
- ♦ Current coding resistor 1 for left headlight - N639-
- ♦ Current coding resistor 1 for right headlight - N665-
  - ❑ The components cannot be renewed separately
  - ❑ If a component is defective, renew headlight
  - ❑ Removing and installing ⇒ page 120

3 - Filter membrane

- ❑ Removing and installing ⇒ page 122

4 - Adjuster nut

- ❑ For adjusting height of headlight

5 - Bolt

- ❑ 6 Nm

6 - Bolt

- ❑ 6 Nm

7 - Bulb

- ❑ All-weather light
- ♦ Left fog light bulb - L22-
- ♦ Right fog light bulb - L23-
  - ❑ Renewing bulbs ⇒ page 145

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8 - Housing cover

9 - Front turn signal bulb

- ♦ Front left turn signal bulb - M5-
- ♦ Front right turn signal bulb - M7-
  - ❑ 12 V, 24 W
  - ❑ Renewing bulbs ⇒ page 144

10 - Bolt

- ❑ 6 Nm

11 - Adjuster

- ❑ To adjust headlight housing to body contour

12 - Gas discharge bulb

- ♦ Left gas discharge (xenon) bulb - L13-
- ♦ Right gas discharge (xenon) bulb - L14-
  - ❑ Removing and installing ⇒ page 146

13 - Bolt

- ❑ 3x
- ❑ 1.5 Nm

14 - Housing cover

15 - Bolt

- ❑ 3x
- ❑ 1.5 Nm

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16 - LED module for daytime running light and side light

- ♦ Left LED module for daytime running light and side light - L176-
- ♦ Right LED module for daytime running light and side light - L177-
  - ❑ Removing and installing ⇒ page 152

17 - Sealing frame

- ❑ Removing and installing ⇒ page 122

18 - Bolt

- ❑ 6 Nm

19 - Breather hose

- ❑ For headlight

20 - Bolt

- ❑ 3x
- ❑ 1.5 Nm

1.1.3 Exploded view - LED headlight

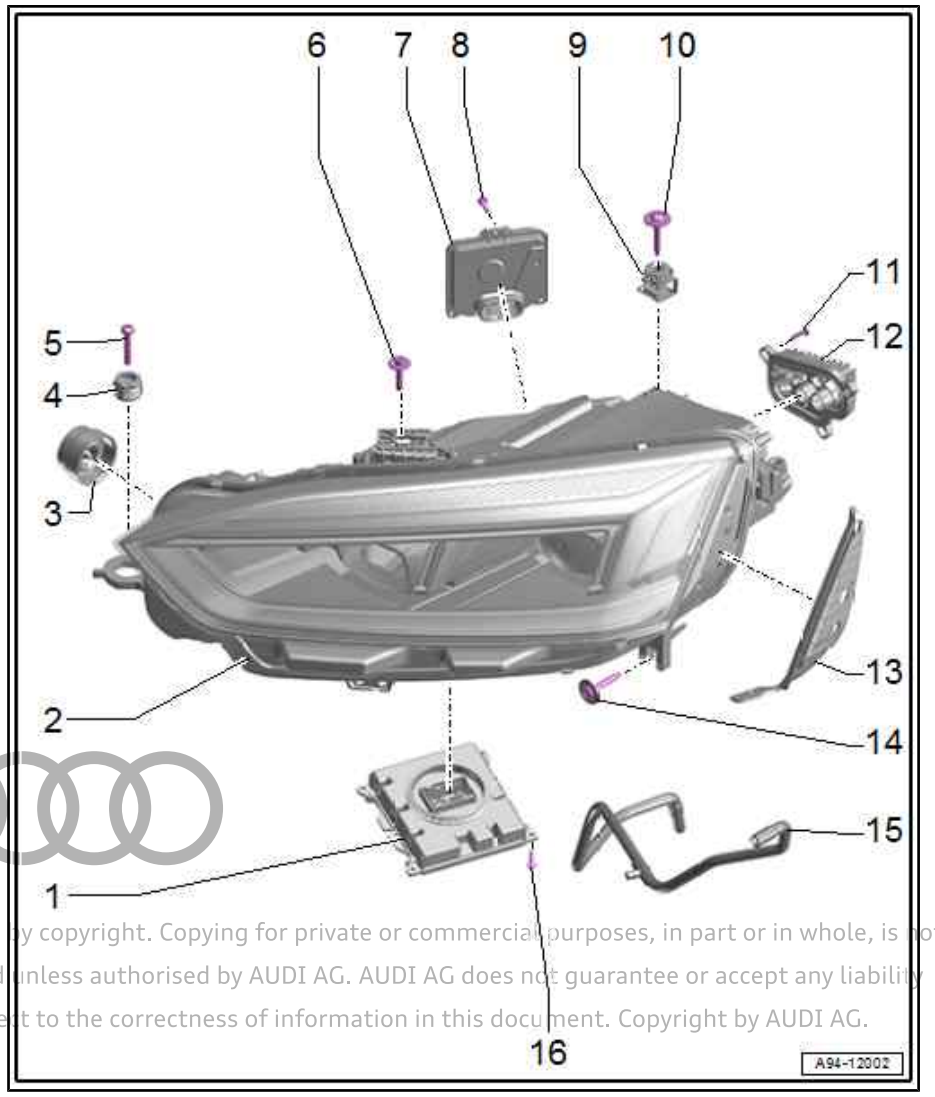
1 - Output module 1 for LED headlight

- ❑ Different versions ⇒ Electronic parts catalogue
- ❑ For dipped beam, static cornering light, main beam, matrix main beam

- ♦ Output module 1 for left LED headlight - A31-
- ♦ Output module 1 for right LED headlight - A27-
  - ❑ Removing and installing ⇒ page 147

2 - Headlights

- ♦ Front left headlight - MX1-
- ♦ Front right headlight - MX2-
  - ❑ With the following integrated components:
- ♦ Front left turn signal bulb - M5- , LED version
- ♦ Front right turn signal bulb - M7- , LED version
- ♦ Left headlight dipped beam bulb - M29- , LED version
- ♦ Right headlight dipped beam bulb - M31- , LED version
- ♦ Left headlight main beam bulb - M30- , LED version
- ♦ Right headlight main beam bulb - M32- , LED version



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- ♦ Temperature sender 1 for left headlight - G702-
- ♦ Temperature sender 1 for right headlight - G704-
- ♦ Temperature sender 2 for left headlight - G703-
- ♦ Temperature sender 2 for right headlight - G705-
- ♦ Temperature sender 3 for left headlight - G832-
- ♦ Temperature sender 3 for right headlight - G833-
- ♦ Temperature sender 4 for left headlight - G872-
- ♦ Temperature sender 4 for right headlight - G874-
- ♦ Temperature sender 5 for left headlight - G873-
- ♦ Temperature sender 5 for right headlight - G875-
- ♦ Current coding resistor 1 for left headlight - N639-
- ♦ Current coding resistor 1 for right headlight - N665-
- ♦ Current coding resistor 2 for left headlight - N663-
- ♦ Current coding resistor 2 for right headlight - N666-

- Current coding resistor 3 for left headlight - N664-
- Current coding resistor 3 for right headlight - N667-
- Current coding resistor 4 for left headlight - N690-
- Current coding resistor 4 for right headlight - N691-
- Current coding resistor 5 for left headlight - N692- , not matrix LED headlights
- Current coding resistor 5 for right headlight - N693- , not matrix LED headlights
- Left headlight range control motor - V48-
- Right headlight range control motor - V49-
- Output module for left matrix headlight - A44- , matrix LED headlights only
- Output module for right matrix headlight - A45- , matrix LED headlights only
- Output module for left headlight additional functions - A47- , matrix LED headlights only
- Output module for right headlight additional functions - A46- , matrix LED headlights only
- Left headlight fan - V407- , matrix LED headlights only
- Right headlight fan - V408- , matrix LED headlights only

❑ The components cannot be renewed separately
❑ If a component is defective, renew headlight
❑ Removing and installing ⇒ page 120

3 - Filter membrane

❑ Removing and installing ⇒ page 122

4 - Adjuster nut

❑ For adjusting height of headlight

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5 - Bolt

❑ 6 Nm

6 - Bolt

❑ 6 Nm

7 - Light control unit

❑ For daytime running light, turn signal, headlight range control

- Left light control unit - J1018-
- Right light control unit - J1023-

❑ Removing and installing ⇒ page 151

8 - Bolt

❑ 3x
❑ 1.5 Nm

9 - Adjuster

❑ To adjust headlight housing to body contour

10 - Bolt

❑ 6 Nm

11 - Bolt

❑ 3x
❑ 1.5 Nm

12 - LED module for daytime running light and side light

- Left LED module for daytime running light and side light - L176-
- Right LED module for daytime running light and side light - L177-

❑ Removing and installing ⇒ page 153

13 - Sealing frame

- ❑ Removing and installing ⇒ page 122

14 - Bolt

- ❑ 6 Nm

15 - Breather hose

- ❑ For headlight

16 - Bolt

- ❑ 4x
- ❑ 1.5 Nm

1.2 Removing and installing headlights

⇒ “1.2.1 Removing and installing headlights”, page 120

⇒ “1.2.2 Removing and installing filter membrane”, page 122

⇒ “1.2.3 Removing and installing sealing frame”, page 122

1.2.1 Removing and installing headlights

Removing

– Turn light switch to position “0”.

– Switch off the ignition and all electrical equipment and store the ignition key outside the vehicle.

– Remove bumper cover ⇒ General body repairs, exterior; Rep. gr. 63 ; Bumper (front); Removing and installing bumper cover .

– Remove bumper cover mounting ⇒ General body repairs, exterior; Rep. gr. 63 ; Bumper (front) .

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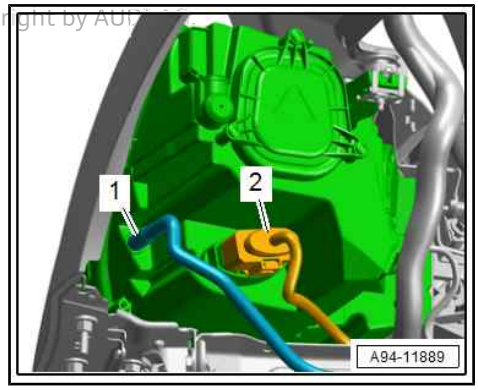
– Remove washer jet for headlight washer system and place to side with fluid hose connected ⇒ page 111 .

CAUTION

High voltage! Danger to life!

When the headlights are switched on, the components of the gas discharge headlights marked with yellow high-voltage warning symbols are under high voltage. Touching the components may cause an electric shock.

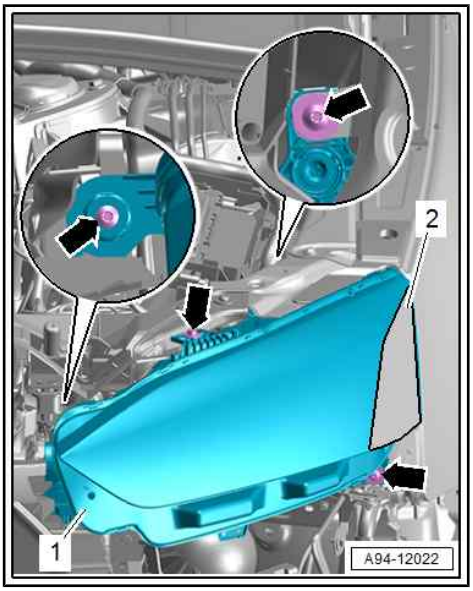
- **Never touch the components of the gas discharge headlights marked with yellow high-voltage warning symbols when the headlights are switched on.**
- **When performing work, switch off the ignition and all electrical equipment and store the ignition key outside the vehicle.**
- **Do not flash the headlights.**



– Unplug electrical connector -2-.

– Disconnect breather hose -1-.

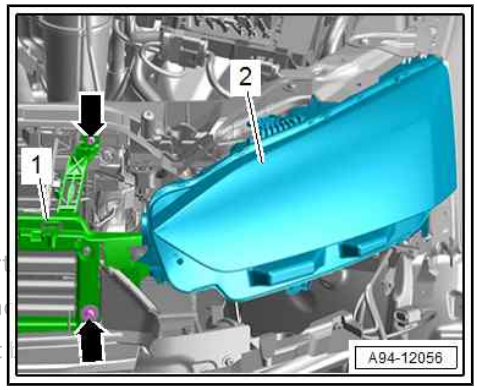
– Mask headlight -1- in area of wing with adhesive tape -2-, as shown in illustration.
– Remove bolts -arrows-.



– Remove bolts -arrows-.
– Pull bracket -1- for bumper cover forwards as far as possible and, at the same time, take out headlight -2-.

Note:

If bracket for bumper cover cannot be removed as described, impact bar must be removed ⇒ General body repairs, exterior; Rep. gr. 63 ; Bumper (front); Removing and installing impact bar .

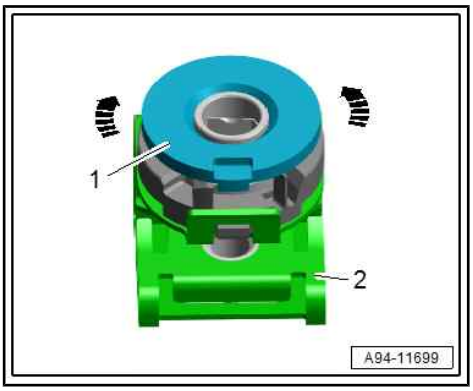


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Installing

Installation is carried out in reverse order; note the following:

– Check all adjuster elements -2- on headlight. It must be possible to turn adjuster nut -1- to do this -arrows-.
– Screw down adjuster nuts as far as they will go, but do not tighten.
– Align headlight at edge of wing.
• Headlight must be flush with edge of wing.



Note:

When the bolt is tightened, the adjuster nut of the adjuster element automatically rotates against the mounting point of the headlight housing and fixes it in place.

– Adjust headlights ⇒ page 122 .

Tightening torques

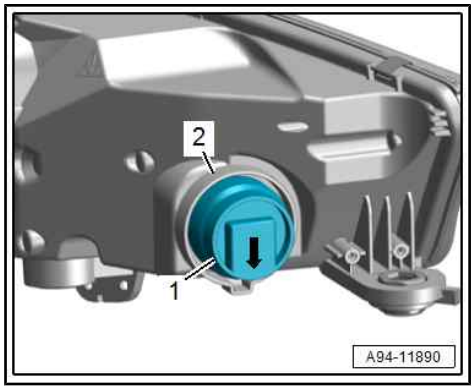
♦ ⇒ “1.1 Exploded view - headlights”, page 114

1.2.2 Removing and installing filter membrane

Removing

– Remove headlight ⇒ page 120 .

– Detach filter membrane -1- from headlight housing -2-.

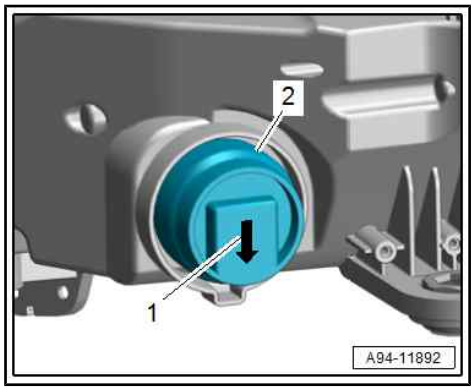


Installing

Installation is carried out in reverse order; note the following:

– The arrow -1- on the filter membrane -2- must point downwards.

• Press filter membrane onto headlight housing as far as stop.



1.2.3 Removing and installing sealing frame

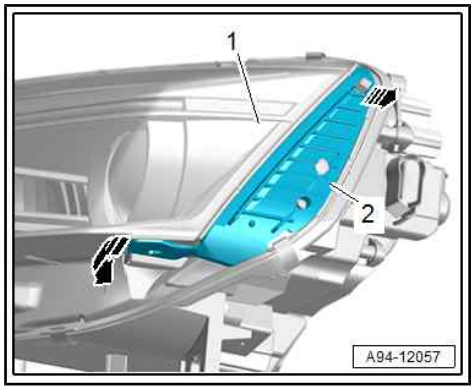
Removing

– Remove headlight housing ⇒ page 120 .

– Unfasten sealing frame -2- at top and bottom of headlight housing -1- -arrows- and remove.

Installing

Installation is carried out in reverse sequence.



1.3 Adjusting headlights

⇒ “1.3.1 General information on adjusting headlights”, page 122

⇒ “1.3.2 Adjusting gas discharge headlights”, page 123

⇒ “1.3.3 Adjusting LED headlights”, page 125

⇒ “1.3.4 Adjusting gas discharge headlights - NAR vehicles”, page 128

⇒ “1.3.5 Adjusting LED headlights - NAR vehicles”, page 131

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1.3.1 General information on adjusting headlights

♦ The following checking and adjustment procedures apply to all countries.

♦ However, national legislation and guidelines for individual countries must be adhered to.

1.3.2 Adjusting gas discharge headlights

Requirements for checking and adjusting

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- Tyre pressure OK.
- Headlight lenses must be clean and dry.
- Headlight lenses must not be damaged.
- Reflectors and bulbs OK.
- Vehicle correctly loaded.

Vehicle loading: driver's seat occupied, otherwise vehicle unloaded (unladen weight).

- One person or 75 kg.

The unladen weight is the weight of the vehicle ready for operation with full fuel tank including the weight of all equipment normally carried.

- Fuel tank: at least 90% full.
- Equipment: e.g. spare wheel, tools, jack, fire extinguisher etc.

If the fuel tank is not at least 90 % full, put in additional weight as follows:

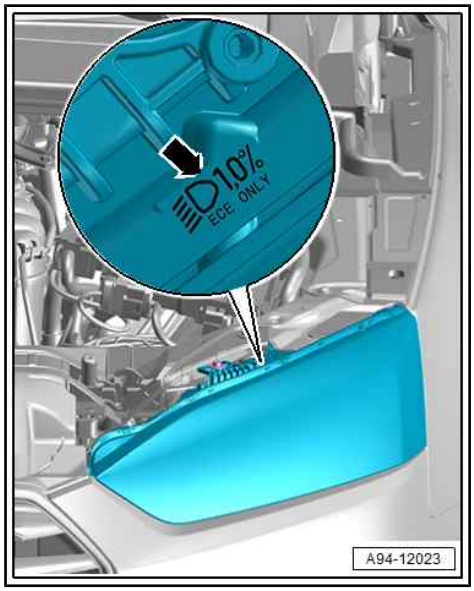
– Read off fuel tank level at fuel gauge in dash panel insert, compare with the following table and, if necessary, place additional weight in luggage compartment.

Fuel gauge	Additional weight in kg				
	4-cyl. TFSI	4-cyl. TDI		6-cyl. TDI	quattro®
		Fuel tank			
		40 ltr.	**54 ltr.**		
1/4	33	30	40	40	44
1/2	23	20	27	27	29
3/4	12	10	14	14	14
Full	0	0	0	0	0
Example: If fuel tank is half full, place an additional weight of 27 kg into luggage compartment.					

Note:

Use canisters filled with water as additional weight (a 5 litre canister filled with water weighs approx. 5 kg).

- Roll vehicle several metres or depress front and rear springs fully several times so that springs settle correctly.
- Release electromechanical parking brake to relieve any load on suspension.
- Vehicle and headlight adjustment unit must be on a level surface.
- Vehicle and headlight adjustment unit must be aligned correctly with each other. To achieve this, place headlight adjustment unit the specified distance in front of the vehicle (centrally) and align it with the front of the vehicle ⇒ Operating instructions for headlight adjustment unit .
- Move the headlight adjustment unit in front of the appropriate headlight and check alignment again.
- Dip setting must be set on headlight adjustment unit ⇒ Operating instructions for headlight adjustment unit .
- Dip setting -arrow- is marked on top edge of headlight -1- in “%” for ECE countries.



Note:

The percentage value is for a range of 10 m. Example: Converting a dip setting of 1.0% = 10 cm.

Preparations

– Turn light switch to “dipped beam” position – not to “Auto” position.

– Close doors and rear lid and keep them closed during the entire checking and adjusting procedure.

Procedure

– Connect vehicle diagnostic tester .

– Select `Diagnosis` mode and start this mode.

– Select `Test plan` tab.

– Choose `Select own test` and select following options one after the other:

♦ Body

♦ Electrical system

♦ 01 - Self-diagnosis compatible systems

♦ 09 - Electronic central electrics J519

♦ 09 - Onboard supply control unit, functions

♦ 09 - Basic setting for headlights

Note:

With this programme the headlights return to the basic setting.

– Start the program selected and follow the instructions on the display of the vehicle diagnostic tester.

You will be instructed to perform headlight adjustment while running through the programme ⇒ Operating instructions for headlight adjustment unit .

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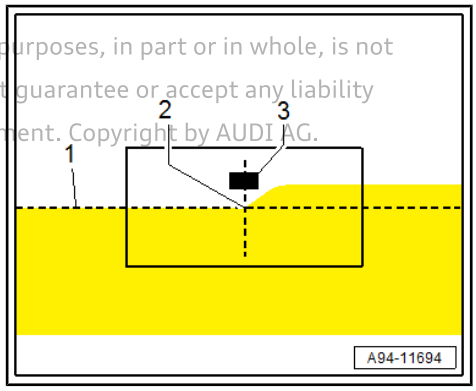
Headlight adjustment

Note:

The illustration and the following description refer to analogue headlight adjustment units. Please refer to the operating instructions for digital headlight adjustment units such as headlight adjustment unit - VAS 5209B- or headlight adjustment unit - VAS 621001- ⇒ Operating instructions of headlight adjustment unit .

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- The horizontal light-dark border should coincide with the setting line -1- of the test surface on the headlight adjustment unit.
- The break-away point -2- between the horizontal section of the light-dark border on the left and the rising section on the right should coincide with the vertical line running through the central point -3-. The bright spot in the centre of the beam should be to the right of the vertical line.
- If dipped beams have been adjusted correctly the centre point of the main beam should lie on central point -3-.

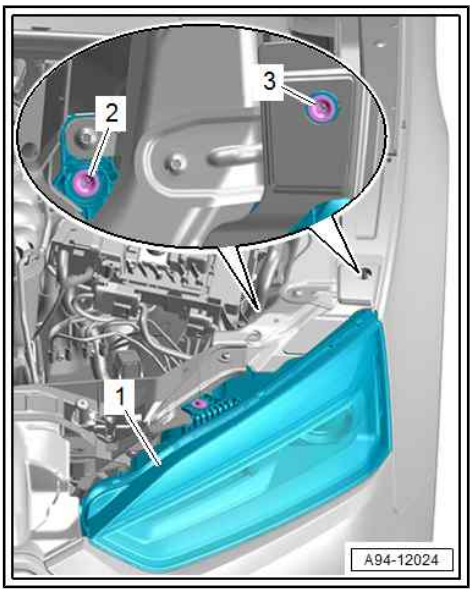


– Before adjusting height of headlight -1-, use adjuster screw -2- to position light-dark border below setting line.
– Then adjust light-dark border to setting line from below.
– Turn adjuster screw -3- for lateral adjustment.

Note:

The arrangement of the adjuster screws on the right headlight is symmetrically opposite.

– After completing headlight adjustment, end “Basic setting”, switch off ignition and unplug diagnostic connector.



1.3.3 Adjusting LED headlights

Requirements for checking and adjusting

- Tyre pressure OK.
- Headlight lenses must be clean and dry.
- Headlight lenses must not be damaged.
- Reflectors and bulbs OK.
- Vehicle correctly loaded.
- Vehicles with matrix LED headlights: Only use headlight adjustment unit - VAS 5209B- or headlight adjustment unit - VAS 621 001- to adjust headlights as matrix LED headlights will need to be calibrated after headlights have been adjusted ⇒ page 134 .

Vehicle loading: driver's seat occupied, otherwise vehicle unloaded (unladen weight).

- One person or 75 kg.

The unladen weight is the weight of the vehicle ready for operation with full fuel tank including the weight of all equipment normally carried.

- Fuel tank: at least 90% full.
- Equipment: e.g. spare wheel, tools, jack, fire extinguisher etc.

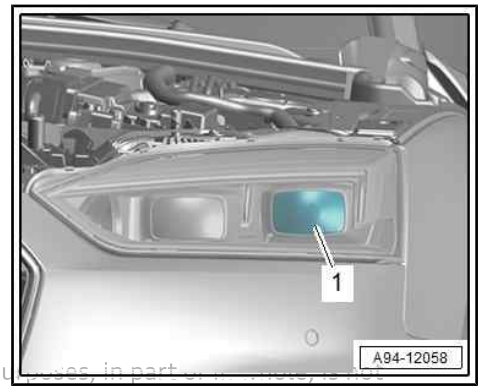
If the fuel tank is not at least 90 % full, put in additional weight as follows:

– Read off fuel tank level at fuel gauge in dash panel insert, compare with the following table and, if necessary, place additional weight in luggage compartment.

Fuel gauge	Additional weight in kg				
	4-cyl. TFSI	4-cyl. TDI		6-cyl. TDI	quattro®
		Fuel tank			
		40 ltr.	**54 ltr.**		
1/4	33	30	40	40	44
1/2	23	20	27	27	29
3/4	12	10	14	14	14
Full	0	0	0	0	0
Example: If fuel tank is half full, place an additional weight of 27 kg into luggage compartment.					

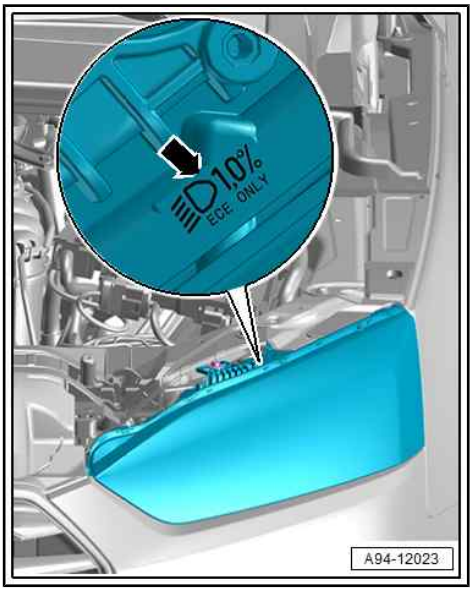
Note:

Use canisters filled with water as additional weight (a 5 litre canister filled with water weighs approx. 5 kg).



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- Allow headlight to cool down to ambient temperature – with bonnet open, check by touching housing cover on back of headlight with your hand.
- Roll vehicle several metres or depress front and rear springs fully several times so that springs settle correctly.
- Release electromechanical parking brake to relieve any load on suspension.
- Vehicle and headlight adjustment unit must be on a level surface.
- Vehicle and headlight adjustment unit must be aligned correctly with each other. To achieve this, place headlight adjustment unit 100 mm in front of the vehicle (centrally) and align it with the front of the vehicle ⇒ Operating instructions for headlight adjustment unit .
- Move the headlight adjustment unit in front of the appropriate headlight and check alignment again.
- Headlight adjustment unit must be centrally aligned with marked reflector segment -1-.
- Dip setting must be set on headlight adjustment unit ⇒ Operating instructions for headlight adjustment unit .
- Dip setting -arrow- is marked on top edge of headlight -1- in “%” for ECE countries.



Note:

The percentage value is for a range of 10 m. Example: Converting a dip setting of 1.0% = 10 cm.

Preparations

– Turn light switch to “dipped beam” position – not to “Auto” position.

– Close all doors and the rear lid and keep them closed during the complete checking and adjusting procedure.

Procedure

– Connect vehicle diagnostic tester .

– Select `Diagnosis` mode and begin diagnosis.

– Select `Test plan` tab.

– Choose `Select own test` and select following options one after the other:

♦ Body

♦ Electrical system

♦ 01 - Self-diagnosis compatible systems

♦ 09 - Electronic central electrics J519

♦ 09 - Onboard supply control unit, functions

♦ 09 - Basic setting for headlights

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Note:

With this programme the headlights return to the basic setting.

– Start the program selected and follow the instructions on the display of the vehicle diagnostic tester.

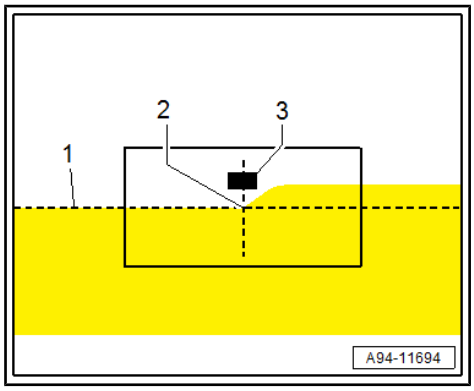
You will be instructed to perform headlight adjustment while running through the programme ⇒ Operating instructions for headlight adjustment unit .

Headlight adjustment

Note:

The illustration and the following description refer to analogue headlight adjustment units. Please refer to the operating instructions for digital headlight adjustment units such as headlight adjustment unit - VAS 5209B- or headlight adjustment unit - VAS 621001- ⇒ Operating instructions of headlight adjustment unit .

- The horizontal light-dark border should coincide with the setting line -1- of the test surface on the headlight adjustment unit.
- The break-away point -2- between the horizontal section of the light-dark border on the left and the rising section on the right should coincide with the vertical line running through the central point -3-. The bright spot in the centre of the beam should be to the right of the vertical line.
- If dipped beams have been adjusted correctly the centre point of the main beam should lie on central point -3-.

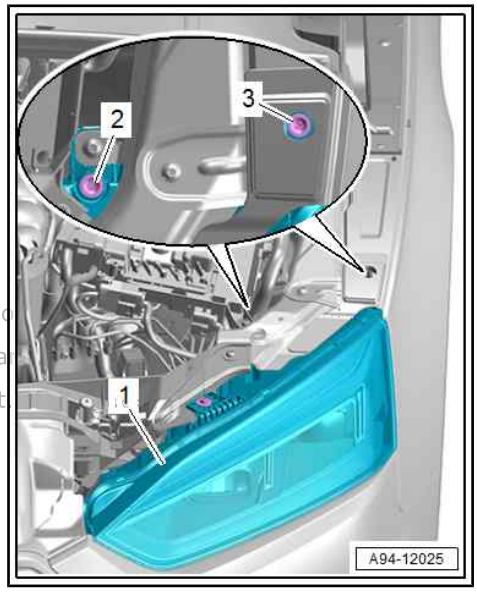


– Before adjusting height of headlight -1-, use adjuster screw -2- to position light-dark border below setting line.
– Then adjust light-dark border to setting line from below.
– Turn adjuster screw -3- for lateral adjustment.

Note:

The arrangement of the adjuster screws on the right headlight is symmetrically opposite.

– After completing headlight adjustment, end “Basic setting”, switch off ignition and unplug diagnostic connector.



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1.3.4 Adjusting gas discharge headlights - NAR vehicles

Requirements for checking and adjusting

- Tyre pressure OK.
- Headlight lenses must be clean and dry.
- Headlight lenses must not be damaged.
- Reflectors and bulbs OK.
- Vehicle correctly loaded.

Vehicle loading: driver's seat occupied, otherwise vehicle unloaded (unladen weight).

- One person or 75 kg.

The unladen weight is the weight of the vehicle ready for operation with full fuel tank including the weight of all equipment normally carried.

- Fuel tank: at least 90% full.
- Equipment: e.g. spare wheel, tools, jack, fire extinguisher etc.

If the fuel tank is not at least 90 % full, put in additional weight as follows:

– Read off fuel tank level at fuel gauge in dash panel insert, compare with the following table and, if necessary, place additional weight in luggage compartment.

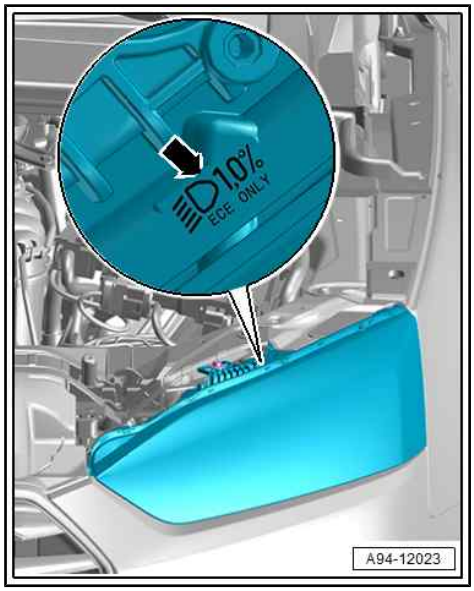
Fuel gauge	Additional weight in kg				
	4-cyl. TFSI	4-cyl. TDI		6-cyl. TDI	quattro®
		Fuel tank			
		40 ltr.	**54 ltr.**		
1/4	33	30	40	40	44
1/2	23	20	27	27	29
3/4	12	10	14	14	14
Full	0	0	0	0	0
Example: If fuel tank is half full, place an additional weight of 27 kg into luggage compartment.					

Note:

Use canisters filled with water as additional weight (a 5 litre canister filled with water weighs approx. 5 kg).

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- Roll vehicle several metres or depress front and rear springs fully several times so that springs settle correctly.
- Release electromechanical parking brake to relieve any load on suspension.
- Vehicle and headlight adjustment unit must be on a level surface.
- Vehicle and headlight adjustment unit must be aligned correctly with each other. To achieve this, place headlight adjustment unit the specified distance in front of the vehicle (centrally) and align it with the front of the vehicle ⇒ Operating instructions for headlight adjustment unit .
- Move the headlight adjustment unit in front of the appropriate headlight and check alignment again.
- Dip setting must be set on headlight adjustment unit ⇒ Operating instructions for headlight adjustment unit .
- Dip setting -arrow- is marked on top edge of headlight -1- in “%” for ECE countries.
- The dip setting specification for “VOR” headlights is usually 0.0 % for NAR vehicles.



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Preparations

– Turn light switch to “dipped beam” position – not to “Auto” position.

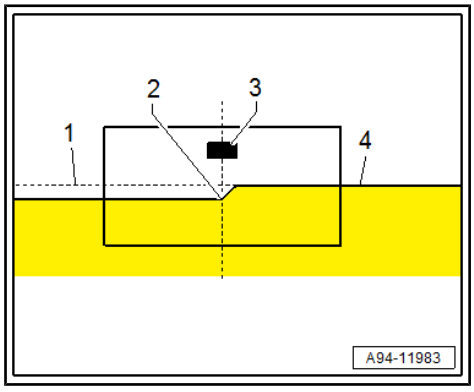
– Close doors and rear lid and keep them closed during the entire checking and adjusting procedure.

Headlight adjustment

Note:

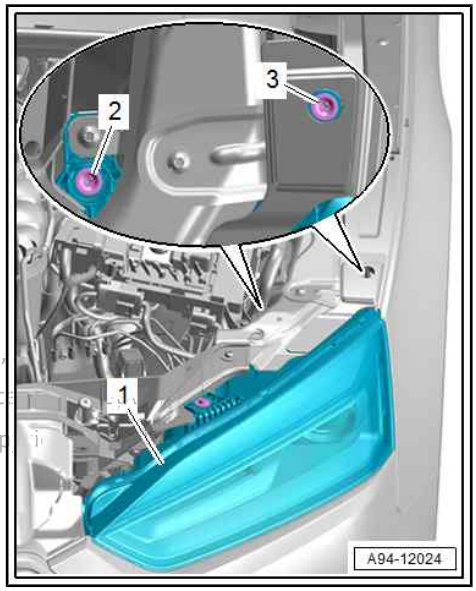
The illustration and the following description refer to analogue headlight adjustment units. Please refer to the operating instructions for digital headlight adjustment units such as headlight adjustment unit - VAS 5209B- or headlight adjustment unit - VAS 621001- ⇒ Operating instructions of headlight adjustment unit .

- Horizontal light-dark border -4- must coincide with setting line -1- of test surface on headlight adjustment unit.
- Starting from this position, turn lateral adjuster screw until lower break-away point -2- is exactly in centre position - vertical through central point -3-.



– Before adjusting height of headlight -1-, use adjuster screw -2- to position light-dark border below setting line.
– Then adjust light-dark border to setting line from below.
– Turn adjuster screw -3- for lateral adjustment.

• Lateral adjuster screw must be secured with a plug after adjustment. For plug, refer to ⇒ Electronic parts catalogue .



Note:

The arrangement of the adjuster screws on the right headlight is symmetrically opposite.

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1.3.5 Adjusting LED headlights - NAR vehicles

Requirements for checking and adjusting

• Tyre pressure OK.
• Headlight lenses must be clean and dry.
• Headlight lenses must not be damaged.
• Reflectors and bulbs OK.
• Vehicle correctly loaded.

Vehicle loading: driver's seat occupied, otherwise vehicle unloaded (unladen weight).

• One person or 75 kg.

The unladen weight is the weight of the vehicle ready for operation with full fuel tank including the weight of all equipment normally carried.

• Fuel tank: at least 90% full.
• Equipment: e.g. spare wheel, tools, jack, fire extinguisher etc.

If the fuel tank is not at least 90 % full, put in additional weight as follows:

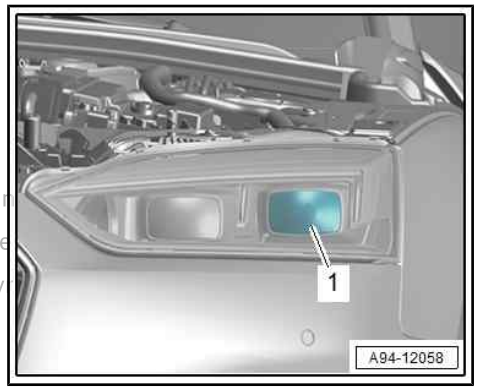
– Read off fuel tank level at fuel gauge in dash panel insert, compare with the following table and, if necessary, place additional weight in luggage compartment.

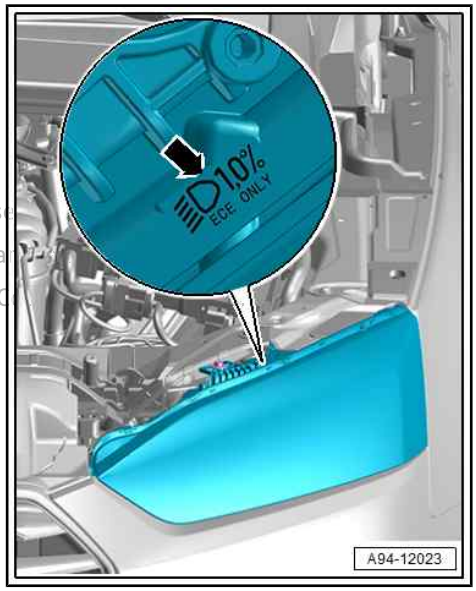
Fuel gauge	Additional weight in kg				
	4-cyl. TFSI	4-cyl. TDI		6-cyl. TDI	quattro®
		Fuel tank			
		40 ltr.	**54 ltr.**		
1/4	33	30	40	40	44
1/2	23	20	27	27	29
3/4	12	10	14	14	14
Full	0	0	0	0	0
Example: If fuel tank is half full, place an additional weight of 27 kg into luggage compartment.					

Note:

Use canisters filled with water as additional weight (a 5 litre canister filled with water weighs approx. 5 kg).

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- Allow headlight to cool down to ambient temperature – with bonnet open, check by touching housing cover on back of headlight with your hand.
- Roll vehicle several metres or depress front and rear springs fully several times so that springs settle correctly.
- Release electromechanical parking brake to relieve any load on suspension.
- Vehicle and headlight adjustment unit must be on a level surface.
- Vehicle and headlight adjustment unit must be aligned correctly with each other. To achieve this, place headlight adjustment unit 100 mm in front of the vehicle (centrally) and align it with the front of the vehicle ⇒ Operating instructions for headlight adjustment unit .
- Move the headlight adjustment unit in front of the appropriate headlight and check alignment again.
- Headlight adjustment unit must be centrally aligned with marked reflector segment -1-.
- Dip setting must be set on headlight adjustment unit ⇒ Operating instructions for headlight adjustment unit .
- Dip setting -arrow- is marked on top edge of headlight -1- in “%” for ECE countries.
- The dip setting specification for “VOR” headlights is usually 0.0 % for NAR vehicles.

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Preparations

– Turn light switch to “dipped beam” position – not to “Auto” position.

– Close all doors and the rear lid and keep them closed during the complete checking and adjusting procedure.

Procedure

– Connect vehicle diagnostic tester .

– Select `Diagnosis` mode and begin diagnosis.

– Select `Test plan` tab.

– Choose `Select own test` and select following options one after the other:

♦ Body

♦ Electrical system

♦ 01 - Self-diagnosis compatible systems

♦ 09 - Electronic central electrics J519

♦ 09 - Onboard supply control unit, functions

♦ 09 - Basic setting for headlights

Note:

With this programme the headlights return to the basic setting.

– Start the program selected and follow the instructions on the display of the vehicle diagnostic tester.

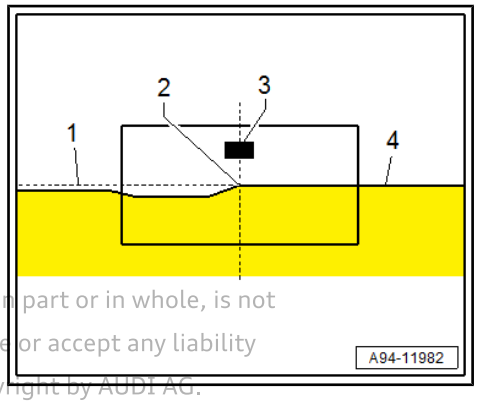
You will be instructed to perform headlight adjustment while running through the programme ⇒ Operating instructions for headlight adjustment unit .

Headlight adjustment

Note:

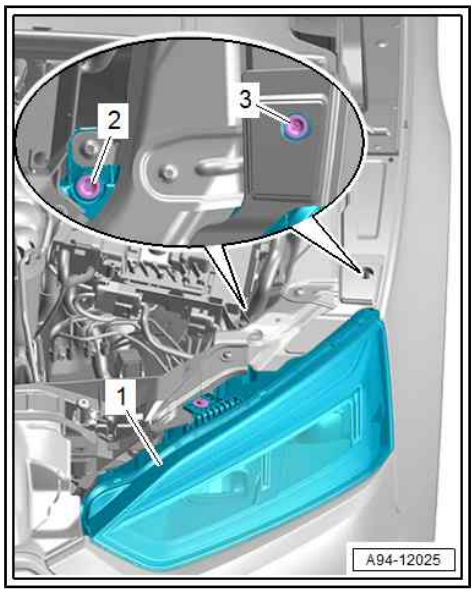
The illustration and the following description refer to analogue headlight adjustment units. Please refer to the operating instructions for digital headlight adjustment units such as headlight adjustment unit - VAS 5209B- or headlight adjustment unit - VAS 621001- ⇒ Operating instructions of headlight adjustment unit .

- Horizontal light-dark border -4- must coincide with setting line -1- of test surface on headlight adjustment unit.
- Starting from this position, turn lateral adjuster screw until upper break-away point -2- is exactly in centre position - vertical through central point -3-.



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– Before adjusting height of headlight -1-, use adjuster screw -2- to position light-dark border below setting line.
– Then adjust light-dark border to setting line from below.
– Turn adjuster screw -3- for lateral adjustment.



Note:

The arrangement of the adjuster screws on the right headlight is symmetrically opposite.

– After completing headlight adjustment, end “Basic setting”, switch off ignition and unplug diagnostic connector.

1.4 Calibrating headlights

- Calibration only needs to be performed for matrix LED headlights.

⇒ “1.4.1 Calibrating matrix LED headlights with headlight adjustment unit VAS 5209B ”, page 134

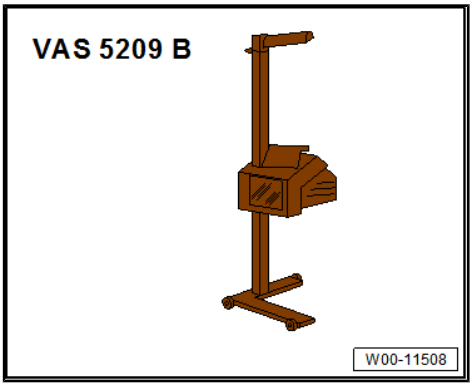
⇒ “1.4.2 Calibrating matrix LED headlights with headlight adjustment unit VAS 621 001 ”, page 139

1.4.1 Calibrating matrix LED headlights with headlight adjustment unit - VAS 5209B-

– The matrix LED headlights are calibrated with the vehicle diagnostic tester ⇒ Vehicle diagnostic tester.
– The dipped headlights are adjusted first in this procedure. Afterwards the matrix main beam function is calibrated.

Special tools and workshop equipment required

♦ Headlight adjustment unit - VAS 5209B-



Note:

The software version of the headlight adjustment unit - VAS 5209B- must be V 0.80 or above to calibrate the matrix main beam function.

The matrix headlights must be calibrated:

- If the position of the headlights has been adjusted (i.e. if they have been removed/installed or if securing bolts have been loosened).
- If the headlights have been adjusted.
- If the front camera for driver assist systems - R242- has been renewed.
- Running gear control unit - J775- has been re-calibrated or renewed.
- If onboard supply control unit - J519- has been renewed.
- If rear left vehicle level sender - G76- , rear right vehicle level sender - G77- , front left vehicle level sender - G78- or front right vehicle level sender - G289- have been renewed.
- If there is an entry in the event memory indicating that the matrix headlights are not calibrated.
- If output module 1 for left LED headlight - A31- / output module 1 for right LED headlight - A27- has been renewed.

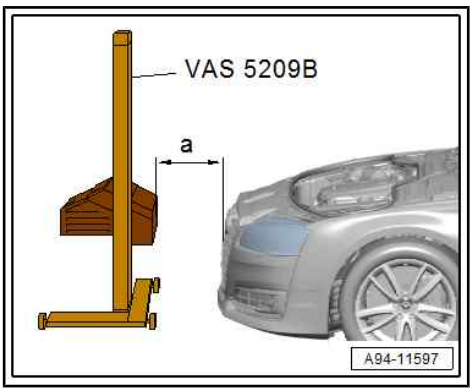
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Requirements:

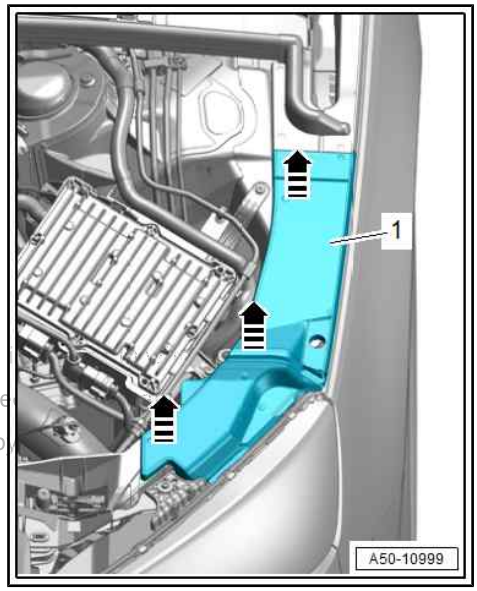
- Observe requirements for checking and adjusting ⇒ page 122 .

Procedure

– Align -VAS 5209B- with centre of vehicle at a distance of -a- = 100 mm ⇒ Operating instructions of -VAS 5209B- .

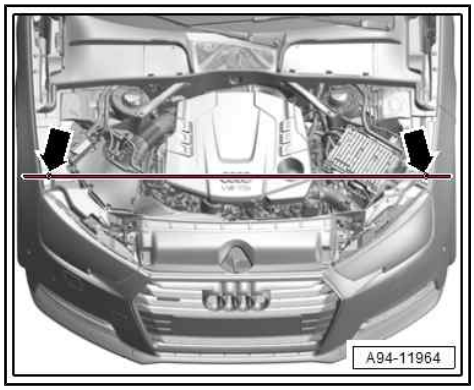


– If fitted, pry off cover -1- -arrows-.



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– Ensure that -VAS 5209B- is parallel with transverse axis of vehicle. To do so, adjust laser beam of -VAS 5209B- so it hits securing bolts for wing at front left and front right -arrows-.



– Move -VAS 5209B- in front of left headlight and perform parallel check again.

• To avoid dazzling other road users, ensure that the headlight adjustment unit is aligned properly.

Performing calibration

⇒ Vehicle diagnostic tester must be connected.

– Select `Diagnosis` mode and start this mode.

– Select `Test plan` tab.

– Choose `Select own test` and select following options one after the other:

♦ Vehicle functionality

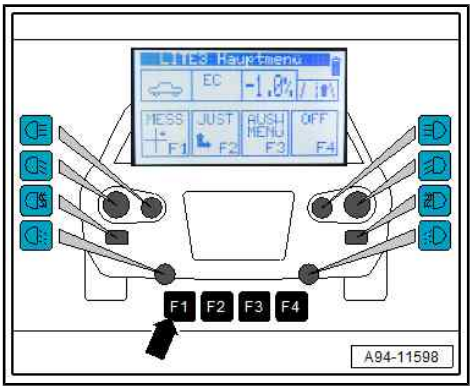
♦ 09 - Basic setting for headlights

Start the program selected and follow the instructions on the display of the vehicle diagnostic tester. The dipped headlights must be adjusted first in this procedure ⇒ page 122 .

During the program, you will be prompted to determine/read off the angle of the inner edge of the segment in the left headlight in the headlight adjustment unit and to enter this into the tester.

– Align light collector lens centrally with reference segment of headlight.

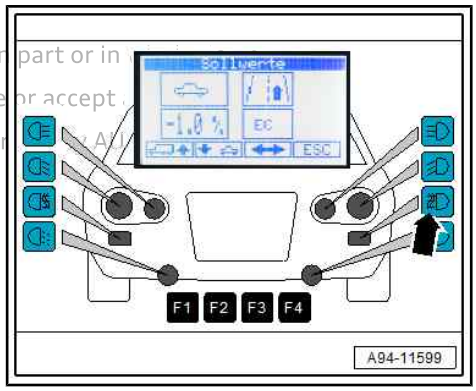
– Press the “F1” button -arrow- in the main menu of the -VAS 5209B- to measure the angle.



Indicated on display:

– Press and hold left fog light button -arrow- for at least 3 seconds.

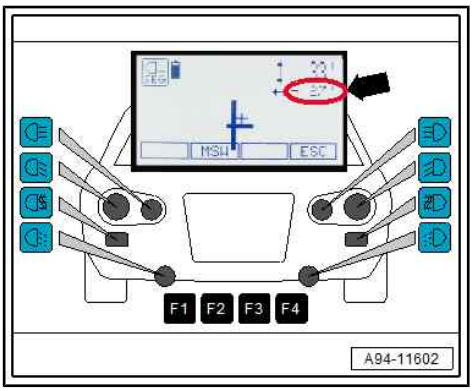
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Indicated on display:

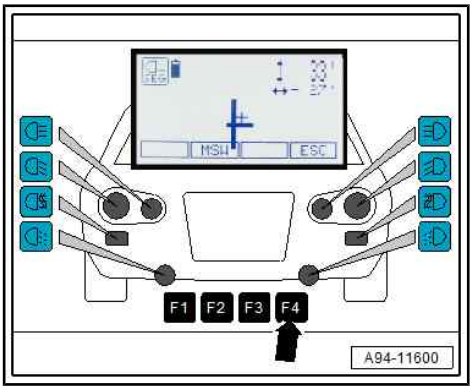
- Angles of inner reference segment edge are displayed.

– Enter angle -arrow- of inner edge of reference segment in vehicle diagnostic tester . If necessary, note "+/-" sign.

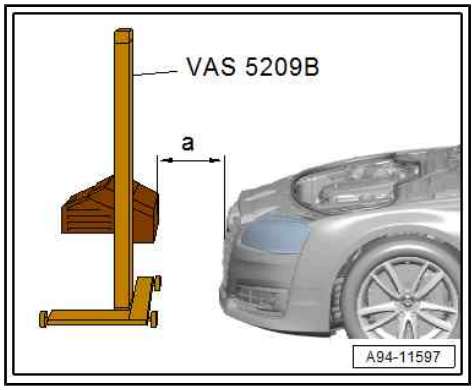


– Press “F4” button -arrow- on -VAS 5209B- .

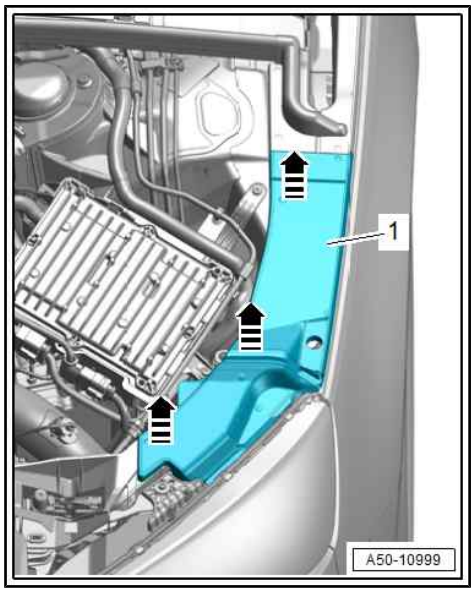
During the program, you will be prompted to determine/read off the angle of the inner edge of the segment in the right headlight in the headlight adjustment unit and to enter this into the tester.



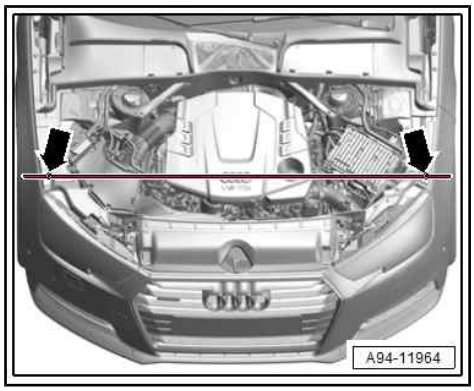
– Align -VAS 5209 B- with centre of vehicle at a distance of -a- = 100 mm ⇒ Operating instructions of -VAS 5209B- .



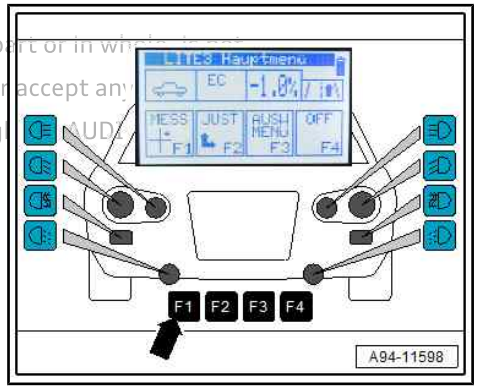
– If fitted, pry off cover -1- -arrows-.



– Ensure that -VAS 5209 B- is parallel with transverse axis of vehicle. To do so, adjust laser beam of -VAS 5209 B- so it hits securing bolts for wing at front left and front right -arrows-.
– Move -VAS 5209 B- in front of right headlight and perform parallel check again.
– Align light collector lens centrally with reference segment of headlight.



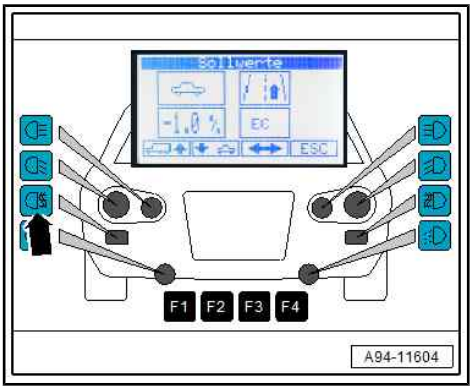
– Press the “F1” button -arrow- in the main menu of the -VAS 5209 B- to measure the angle.



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Indicated on display:

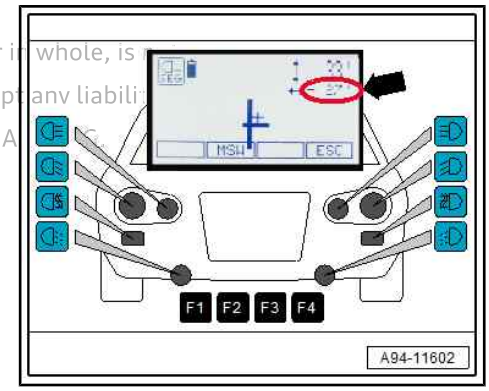
– Press and hold right fog light button -arrow- for at least 3 seconds.



Indicated on display:

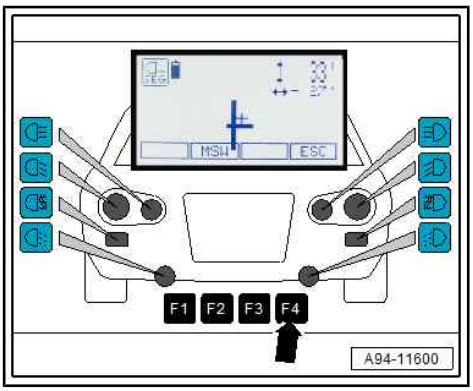
- Angles of inner reference segment edge are displayed.

– Enter angle -arrow- of inner edge of reference segment in vehicle diagnostic tester. If necessary, note "+/-" sign.



– Press “F4” button -arrow- on -VAS 5209 B- .

– After completing calibration, read out event memory and deal with any faults that are present.



1.4.2 Calibrating matrix LED headlights with headlight adjustment unit - VAS 621 001-

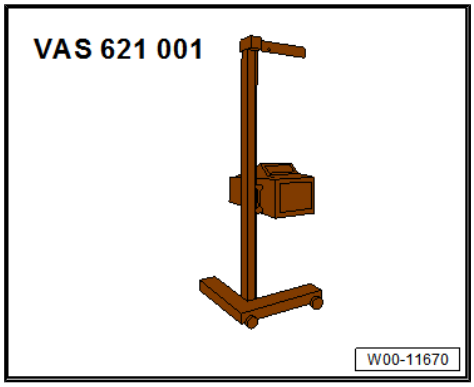
– The matrix LED headlights are calibrated with the vehicle diagnostic tester ⇒ Vehicle diagnostic tester.

– The dipped headlights are adjusted first in this procedure. Afterwards the matrix main beam function is calibrated.

Special tools and workshop equipment required

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♦ Headlight adjustment unit - VAS 621 001- with software version 1.04.004 and above



The matrix headlights must be calibrated:

- If the position of the headlights has been adjusted (i.e. if they have been removed/installed or if securing bolts have been loosened).
- If the headlights have been adjusted.
- If the front camera for driver assist systems - R242- has been renewed.
- Running gear control unit - J775- has been re-calibrated or renewed.
- If onboard supply control unit - J519- has been renewed.
- If rear left vehicle level sender - G76- , rear right vehicle level sender - G77- , front left vehicle level sender - G78- or front right vehicle level sender - G289- have been renewed.
- If there is an entry in the event memory indicating that the matrix headlights are not calibrated.
- If output module 1 for left LED headlight - A31- / output module 1 for right LED headlight - A27- has been renewed.

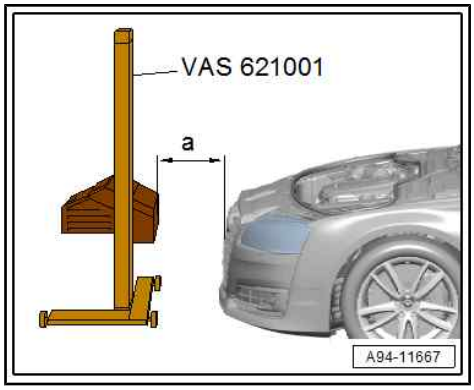
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Requirements:

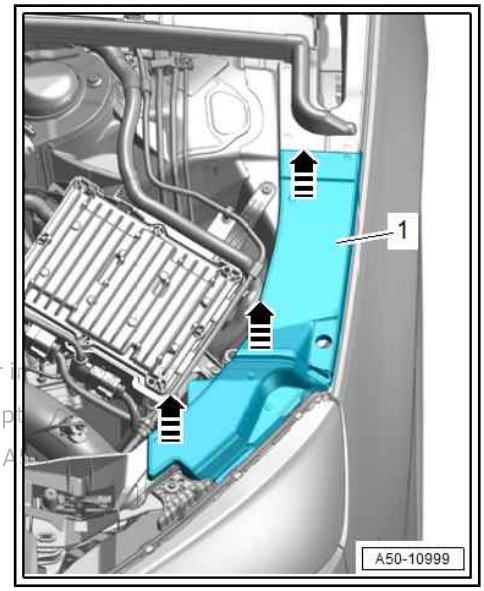
- Observe requirements for checking and adjusting ⇒ page 122 .

Procedure

– Align -VAS 621 001- with centre of vehicle at a distance of -a- = 100 mm ⇒ Operating instructions of -VAS 621 001- .

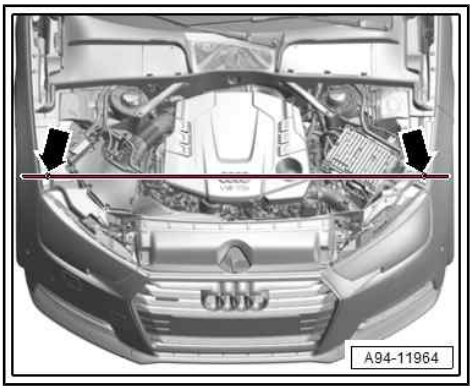


– If fitted, pry off cover -1- -arrows-.



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– Ensure that -VAS 621 001- is parallel with transverse axis of vehicle. To do so, adjust laser beam of -VAS 621 001- so it hits securing bolts for wing at front left and front right -arrows-.



– Move -VAS 621 001- in front of left headlight and perform parallel check again.

• To avoid dazzling other road users, ensure that the headlight adjustment unit is aligned properly.

Performing calibration

⇒ Vehicle diagnostic tester must be connected.

– Select `Diagnosis` mode and start this mode.

– Select `Test plan` tab.

– Choose `Select own test` and select following options one after the other:

♦ Vehicle functionality

♦ 09 - Basic setting for headlights

Start the program selected and follow the instructions on the display of the vehicle diagnostic tester. The dipped headlights must be adjusted first in this procedure ⇒ page 122 .

During the program, you will be prompted to determine/read off the angle of the inner edge of the segment in the left headlight in the headlight adjustment unit and to enter this into the tester.

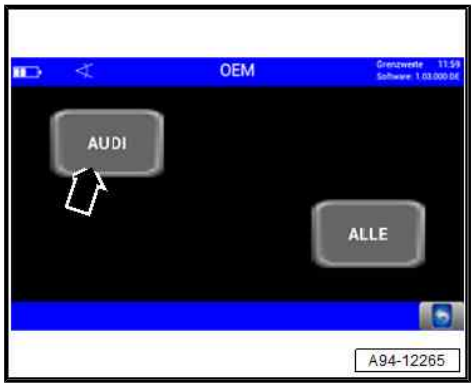
– Align light collector lens centrally with reference segment of headlight.

– Press “OEM” button -arrow- in main menu of -VAS 621001- to start measurement procedure.



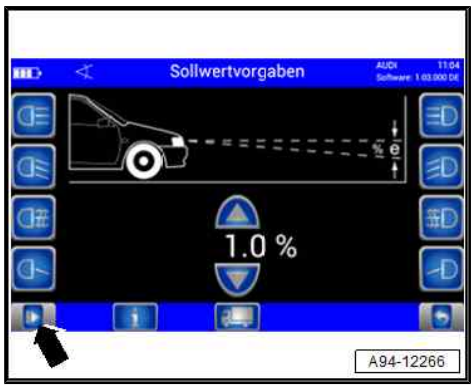
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– Select “AUDI” -arrow-.



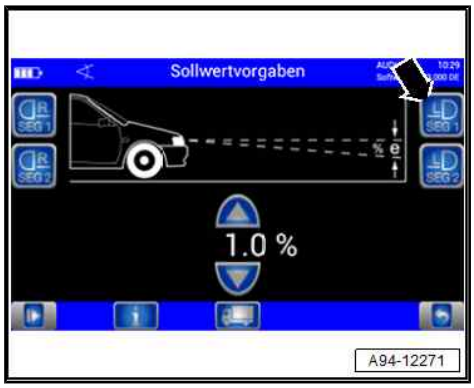
Indicated on display:

– Press button -arrow- and wait for a moment until light measurement is active.



Indicated on display:

– Press button -arrow-.
– Wait for a moment until light measurement has been performed.

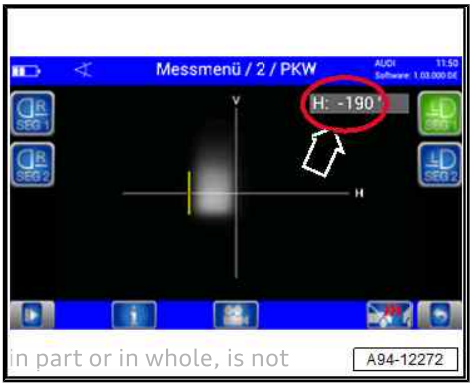


Indicated on display:

- Angle of inner reference segment edge is displayed.

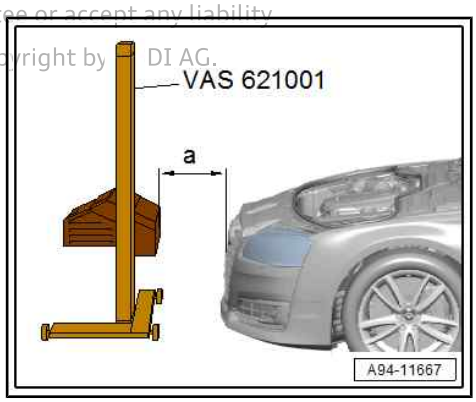
– Enter angle -arrow- of inner edge of reference segment in vehicle diagnostic tester . If necessary, note "+/-" sign.

During the program, you will be prompted to determine/read off the angle of the inner edge of the segment in the right headlight in the headlight adjustment unit and to enter this into the tester.

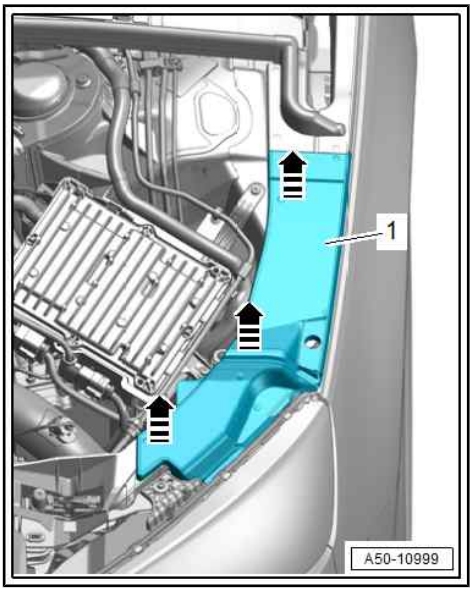


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– Align -VAS 621001- with centre of vehicle at a distance of -a- = 100 mm ⇒ Operating instructions of -VAS 621 001-.



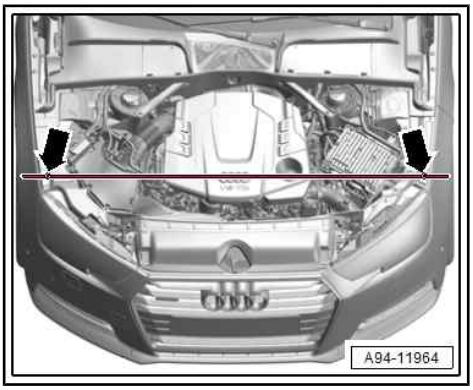
– If fitted, pry off cover -1- -arrows-.



– Ensure that -VAS 621 001- is parallel with transverse axis of vehicle. To do so, adjust laser beam of -VAS 621 001- so it hits securing bolts for wing at front left and front right -arrows-.

– Move -VAS 621001- in front of right headlight and perform parallel check again.

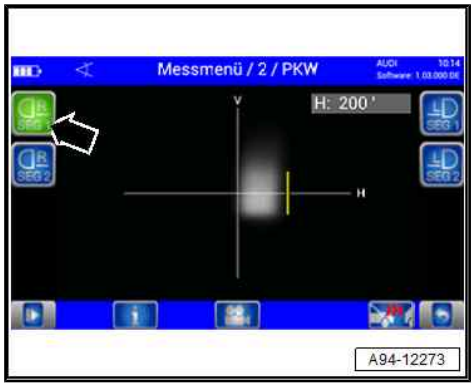
– Align light collector lens centrally with reference segment of headlight.



Indicated on display:

– Press button -arrow-.

– Wait for a moment until light measurement has been performed.

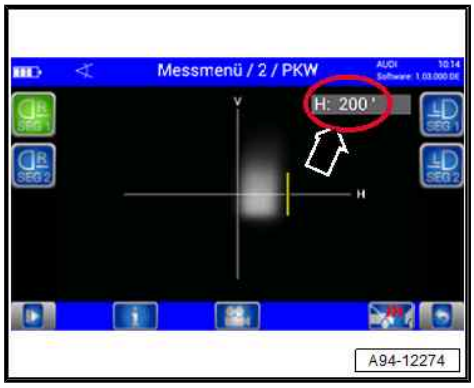


Indicated on display:

• Angle of inner reference segment edge is displayed.

– Enter angle -arrow- of inner edge of reference segment in vehicle diagnostic tester . If necessary, note "+/-" sign.

– After completing calibration, read out event memory and deal with any faults that are present.



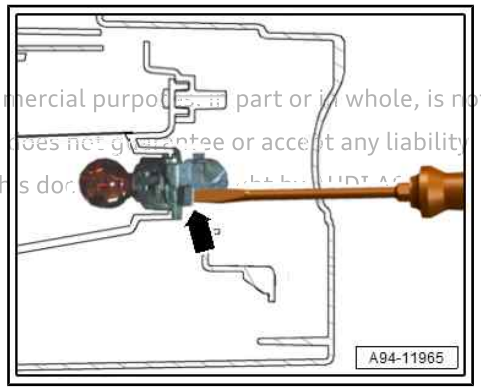
1.5 Removing and installing front turn signal bulb -M5- / -M7-

Installation position:

• Actuator -arrow- points downwards.

– The actuator should be vertical when the bulb holder is locked.

– Turn bulb holder 45° anti-clockwise to release.



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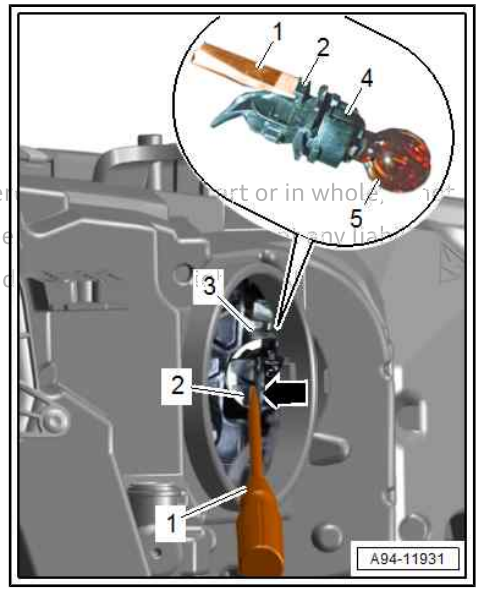
Removing

– Remove fog light bulb ⇒ page 145 .

– Place screwdriver -1- on actuator -2- of bulb holder for turn signal -arrow- and release holder anti-clockwise.

– Pull bulb holder -4- out of housing -3-.

– Pull bulb -5- out of bulb holder.



Installing

Installation is carried out in reverse order; note the following:

– Fit new bulb; do not touch glass part of bulb with bare hands.

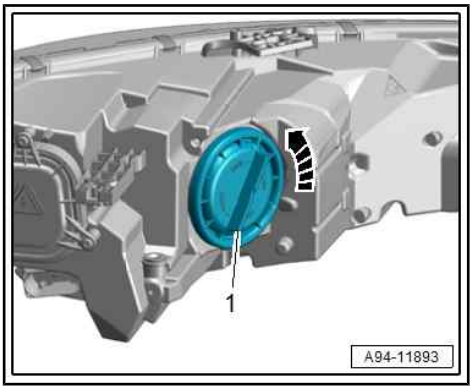
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1.6 Removing and installing fog light bulb - L22- / -L23-

Removing

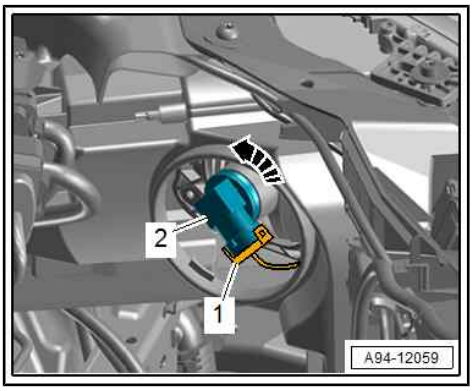
– Right side of vehicle: Remove air cleaner housing ⇒ Engine; Rep. gr. 23 ; Air cleaner; Removing and installing air cleaner housing /⇒ Engine; Rep. gr. 24 ; Air cleaner; Removing and installing air cleaner housing .

– Turn housing cover -1- anti-clockwise -arrow- and detach from headlight housing.



– Turn bulb holder -2- anti-clockwise -arrow- and pull it out of housing.

– Unplug electrical connector -1-.



Installing

Installation is carried out in reverse order; note the following:

– Insert new bulb in bulb holder, taking care not to touch glass part of bulb with bare hands.

– Close housing cover (turn clockwise).

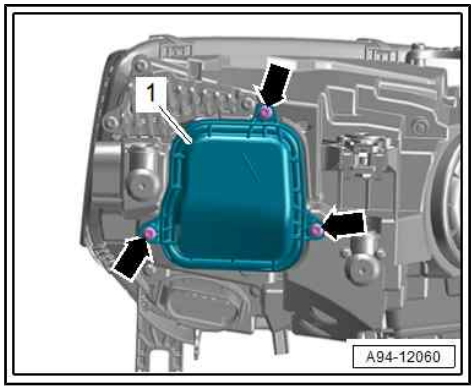
1.7 Removing and installing gas discharge bulb -L13- / -L14-

Removing

– Remove front wheel housing liner ⇒ General body repairs, exterior; Rep. gr. 66 ; Wheel housing liners; Removing and installing wheel housing liner (front) .

– Remove bolts -arrows-.

– Detach housing cover -1-.

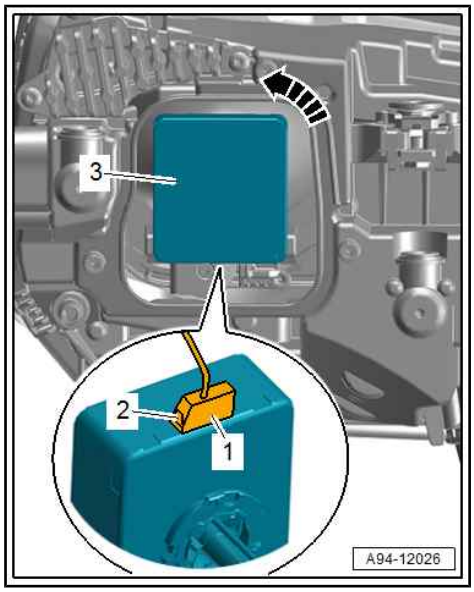


CAUTION

High voltage! Danger to life!

When the headlights are switched on, the components of the gas discharge headlights marked with yellow high-voltage warning symbols are under high voltage. Touching the components may cause an electric shock.

- **Never touch the components of the gas discharge headlights marked with yellow high-voltage warning symbols when the headlights are switched on.**
- **When performing work, switch off the ignition and all electrical equipment and store the ignition key outside the vehicle.**
- **Do not flash the headlights.**



– Turn gas discharge bulb -3- anti-clockwise -arrow- and take out of housing.

– Press release tab -2- to unplug electrical connector -1-.

Installing

Installation is carried out in reverse order; note the following:

– Fit new gas discharge bulb in housing; do not touch glass part of bulb with bare hands.

• Installation position: The electrical connection faces downwards.

Tightening torques

◆ ⇒ “1.1.2 Exploded view - headlights, gas discharge headlight”, page 116

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1.8 Removing and installing output module for headlight

⇒ “1.8.1 Removing and installing output module 1 for LED headlight A27 / A31 ”, page 147

⇒ “1.8.2 Removing and installing output module 1 for LED headlight A27 / A31 - RS 5”, page 147

⇒ “1.8.3 Removing and installing light control unit J1018 / J1023 - gas discharge headlights”, page 150

⇒ “1.8.4 Removing and installing light control unit J1018 / J1023 - LED headlights”, page 151

1.8.1 Removing and installing output module 1 for LED headlight -A27- / -A31-

Removing

– Vehicles with auxiliary heater (right side of vehicle): Remove front bumper cover ⇒ General body repairs, exterior; Rep. gr. 63 ; Bumper (front); Removing and installing bumper cover .

– Remove front wheel spoiler ⇒ General body repairs, exterior; Rep. gr. 66 ; Wheel housing liners; Exploded view - wheel housing liner (front) .

– Remove front wheel housing liner (left-side) ⇒ General body repairs, exterior; Rep. gr. 66 ; Wheel housing liners; Removing and installing wheel housing liner (front) .

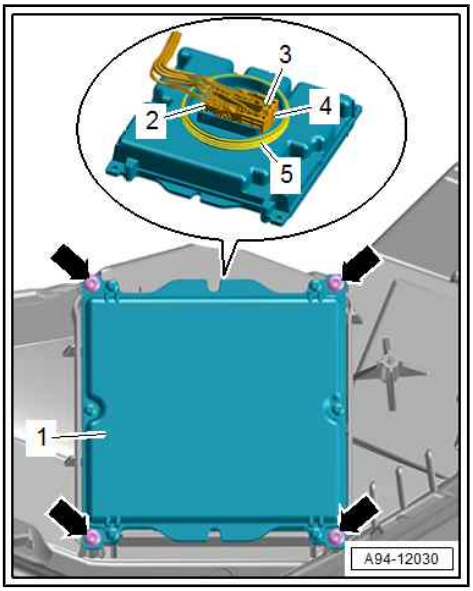
– Remove washer jet for headlight washer system and place to side with fluid hose connected ⇒ page 111 .

– Remove bolts -arrows-.

– Pull off output module -1-.

– Unplug electrical connector -2-.

– Unplug electrical connector by pressing catch -3- and swivelling retainer -4- upwards.



Installing

Installation is carried out in reverse order; note the following:

– Check seal -5- for damage.

Tightening torques

◆ ⇒ “1.1.3 Exploded view - LED headlight”, page 118

1.8.2 Removing and installing output module 1 for LED headlight -A27- / -A31- - RS 5

Special tools and workshop equipment required

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♦ Assembly tool - T10118-



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Removing

– Remove front bumper cover ⇒ General body repairs, exterior; Rep. gr. 63 ; Bumper (front); Removing and installing bumper cover .

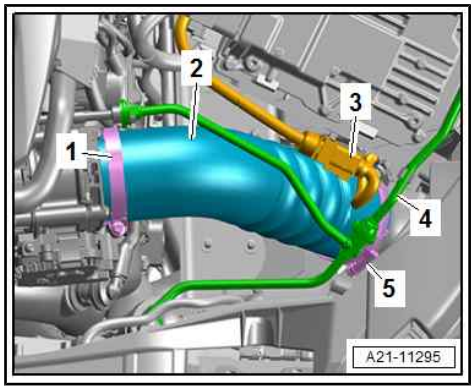
– Remove washer jet for headlight washer system and place to side with fluid hose connected ⇒ page 111 .

Left side of vehicle:

– Detach electrical connector -3- from bracket and move clear to side.

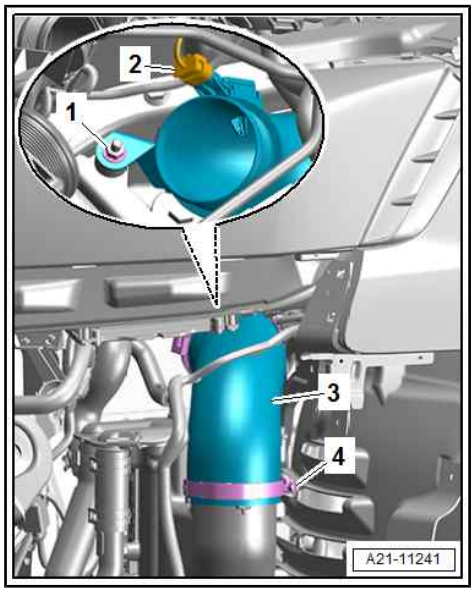
– Move coolant line -4- clear.

– Release hose clips -1, 5- and detach air hose -2-.

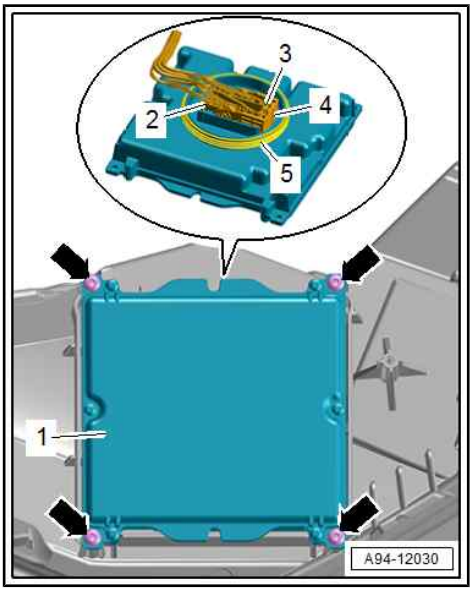


– Unscrew nut -1-.

– Unplug electrical connector -2-.

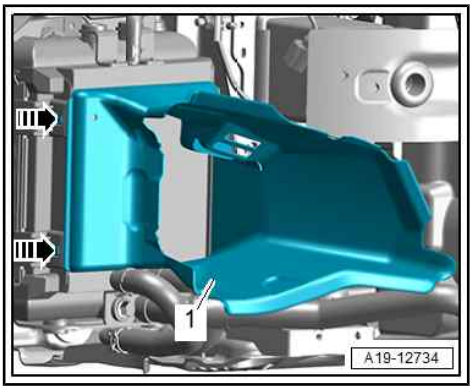


– Release hose clip -4- and lift out air hose -3-.
– Remove bolts -arrows-.
– Pull off output module -1-.
– Unplug electrical connector -2-.
– Unplug electrical connector by pressing catch -3- and swivelling retainer -4- upwards.

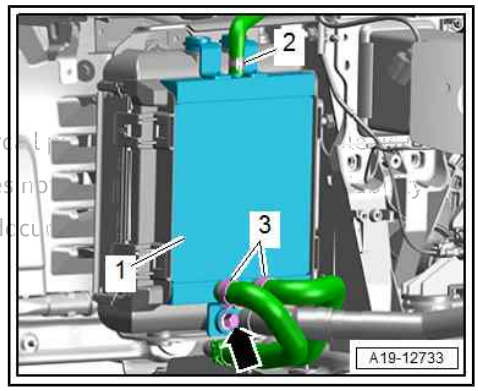


Right side of vehicle:

– Release fasteners -arrows- on both sides and detach air guide -1-.

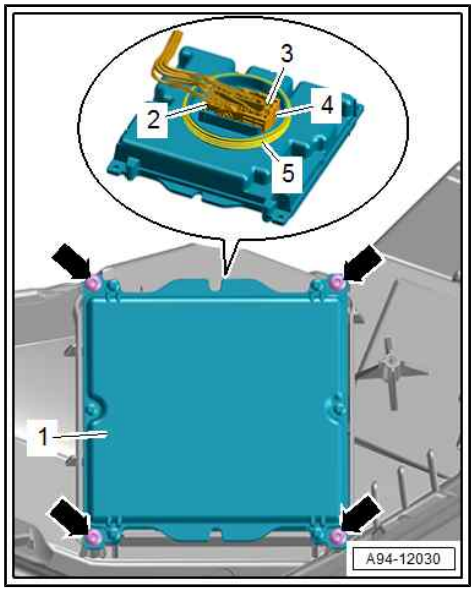


– Remove bolt -arrow-.
– Disengage radiator -1- towards front and then upwards, and push it to the side with coolant hoses -2, 3- connected.
– Remove horn ⇨ page 92.



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– Remove bolts -arrows-.
– Pull off output module -1-.
– Unplug electrical connector -2-.
– Unplug electrical connector by pressing catch -3- with assembly tool - T10118- and swivelling retainer -4- upwards.
– Take out output module towards front.



Installing

Installation is carried out in reverse order; note the following:

• After removing, renew bolts tightened with specified tightening angle.
– Check seal -5- for damage.

Tightening torques

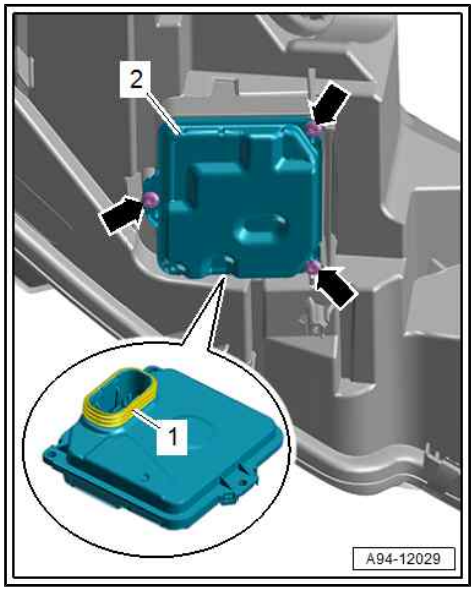
◆ ⇒ “1.1.3 Exploded view - LED headlight”, page 118

1.8.3 Removing and installing light control unit -J1018- / -J1023- - gas discharge headlights

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Removing

– Vehicles with auxiliary heater (right side of vehicle): Remove front bumper cover ⇒ General body repairs, exterior; Rep. gr. 63 ; Bumper (front); Removing and installing bumper cover .
– Remove front wheel spoiler ⇒ General body repairs, exterior; Rep. gr. 66 ; Wheel housing liners; Exploded view - wheel housing liner (front) .
– Remove bolts -arrows-.
– Pull off output module -2-.



Installing

Installation is carried out in reverse order; note the following:

– Check seal -1- for damage.

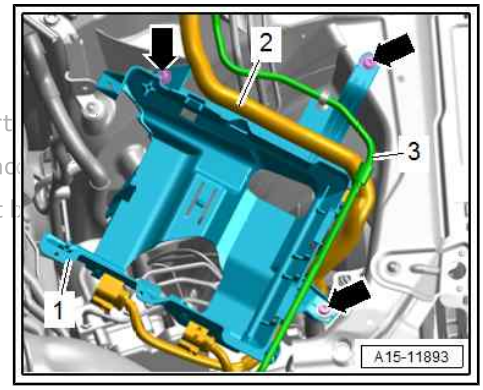
Tightening torques

◆ ⇒ “1.1.2 Exploded view - headlights, gas discharge headlight”, page 116

1.8.4 Removing and installing light control unit -J1018- / -J1023- - LED headlights

Removing

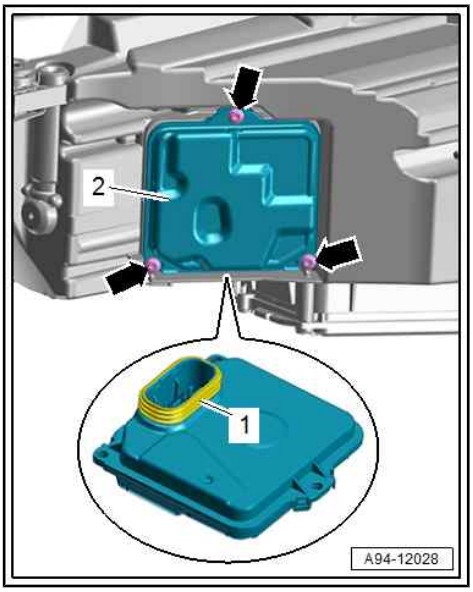
– Vehicles with 6-cylinder engine, left side of vehicle: Detach engine control unit - J623- from bracket and place to one side ⇒ Engine; Rep. gr. 23 ; Engine control unit; Removing and installing engine control unit - J623- , or ⇒ Engine; Rep. gr. 24 ; Engine control unit; Removing and installing engine control unit - J623- .



– Move coolant line -3- and electrical wiring harness -2- clear.

– Remove bolts -arrows- and detach bracket -1- for engine control unit.

– Right side of vehicle: Remove air cleaner housing ⇒ Engine; Rep. gr. 23 ; Air cleaner; Removing and installing air cleaner housing /⇒ Engine; Rep. gr. 24 ; Air cleaner; Removing and installing air cleaner housing .



– Remove bolts -arrows-.

– Pull off output module -2-.

Installing

Installation is carried out in reverse order; note the following:

– Check seal -1- for damage.

Tightening torques

◆ ⇒ “1.1.3 Exploded view - LED headlight”, page 118

1.9 Adapting headlights for driving on the left side of the road

No adjustments need to be made to the headlights when travelling in countries where the vehicle is driven on the other side of the road.

1.10 Adapting headlights for driving on the right side of the road

No adjustments need to be made to the headlights when travelling in countries where the vehicle is driven on the other side of the road.

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2 Daytime running lights

⇒ “2.1 Removing and installing LED module for daytime running light and side light L176 / L177 ”, page 152

2.1 Removing and installing LED module for daytime running light and side light - L176- / -L177-

⇒ “2.1.1 Removing and installing LED module for daytime running light and side light L176 / L177 - gas discharge headlights”, page 152

⇒ “2.1.2 Removing and installing LED module for daytime running light and side light L176 / L177 - LED headlights”, page 153

2.1.1 Removing and installing LED module for daytime running light and side light - L176- / -L177- - gas discharge headlights

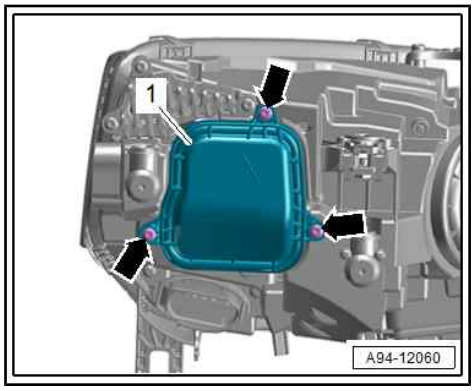
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Removing

– Remove front wheel housing liner ⇒ General body repairs, exterior; Rep. gr. 66 ; Wheel housing liners; Removing and installing wheel housing liner (front) .

– Remove bolts -arrows-.

– Detach housing cover -1-.



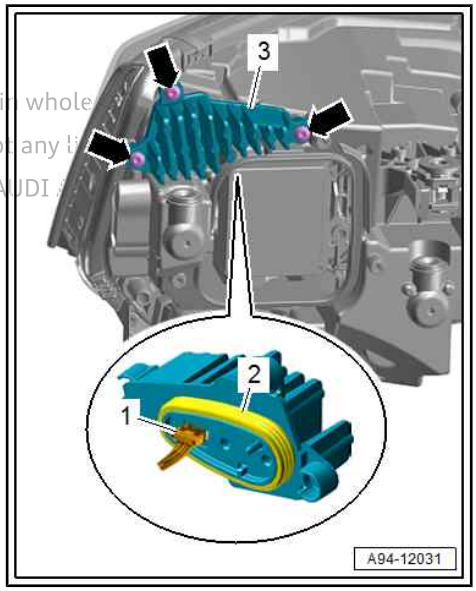
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CAUTION

High voltage! Danger to life!

When the headlights are switched on, the components of the gas discharge headlights marked with yellow high-voltage warning symbols are under high voltage. Touching the components may cause an electric shock.

- **Never touch the components of the gas discharge headlights marked with yellow high-voltage warning symbols when the headlights are switched on.**
- **When performing work, switch off the ignition and all electrical equipment and store the ignition key outside the vehicle.**
- **Do not flash the headlights.**



- Remove bolts -arrows-.
- Detach LED module -3- from headlight housing.
- Unplug electrical connector -1-.

Installing

Installation is carried out in reverse order; note the following:

- Check seal -2- for damage.

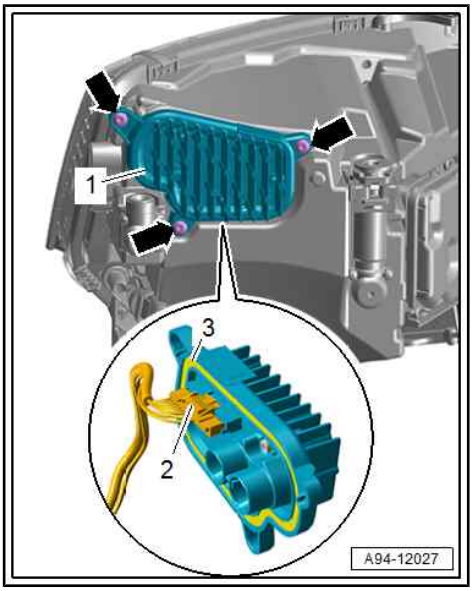
Tightening torques

◆ ⇒ “1.1.2 Exploded view - headlights, gas discharge headlight”, page 116

2.1.2 Removing and installing LED module for daytime running light and side light - L176- / -L177- - LED headlights

Removing

- Remove front wheel housing liner ⇒ General body repairs, exterior; Rep. gr. 66 ; Wheel housing liners; Removing and installing wheel housing liner (front) .



- Remove bolts -arrows-.
- Detach LED module -1- from headlight housing.
- Press release tab to unplug electrical connector -2-.

Installing

Installation is carried out in reverse order; note the following:

- Check seal -3- for damage.

Tightening torques

◆ ⇒ “1.1.3 Exploded view - LED headlight”, page 118

3 Side marker lights

⇒ “3.1 Overview - side marker lights”, page 154

3.1 Overview - side marker lights

1 - Tail light cluster

- ❑ With:

♦ Rear left side marker bulb - M37-

♦ Rear right side marker bulb - M38-

- ❑ Removing and installing ⇒ page 162

2 - Headlight housing

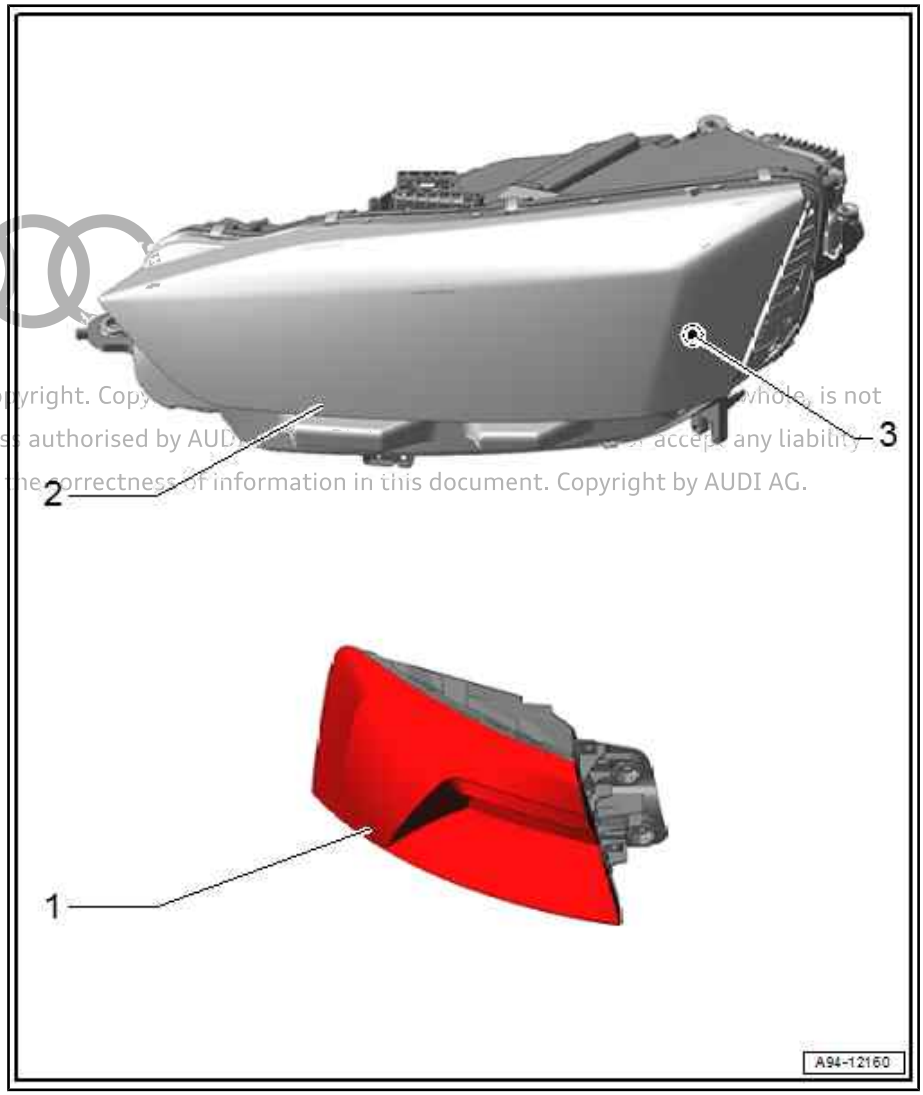
- ❑ Removing and installing ⇒ page 120

3 - Front side marker bulb

♦ Front left side marker bulb - M33-

♦ Front right side marker bulb - M34-

- ❑ Cannot be renewed separately
- ❑ If defective, renew headlight housing



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4 Lights in exterior mirror

⇒ "4.1 Exploded view - lights in exterior mirror", page 155

⇒ "4.2 Removing and installing turn signal", page 156

4.1 Exploded view - lights in exterior mirror

1 - Mirror trim

2 - Bolt

- ❑ 2x
- ❑ 0.9 Nm

3 - Turn signal in exterior mirror

- ♦ Driver side exterior mirror turn signal bulb - L131-
- ♦ Front passenger side exterior mirror turn signal bulb - L132-
  - ❑ Removing and installing ⇒ page 156

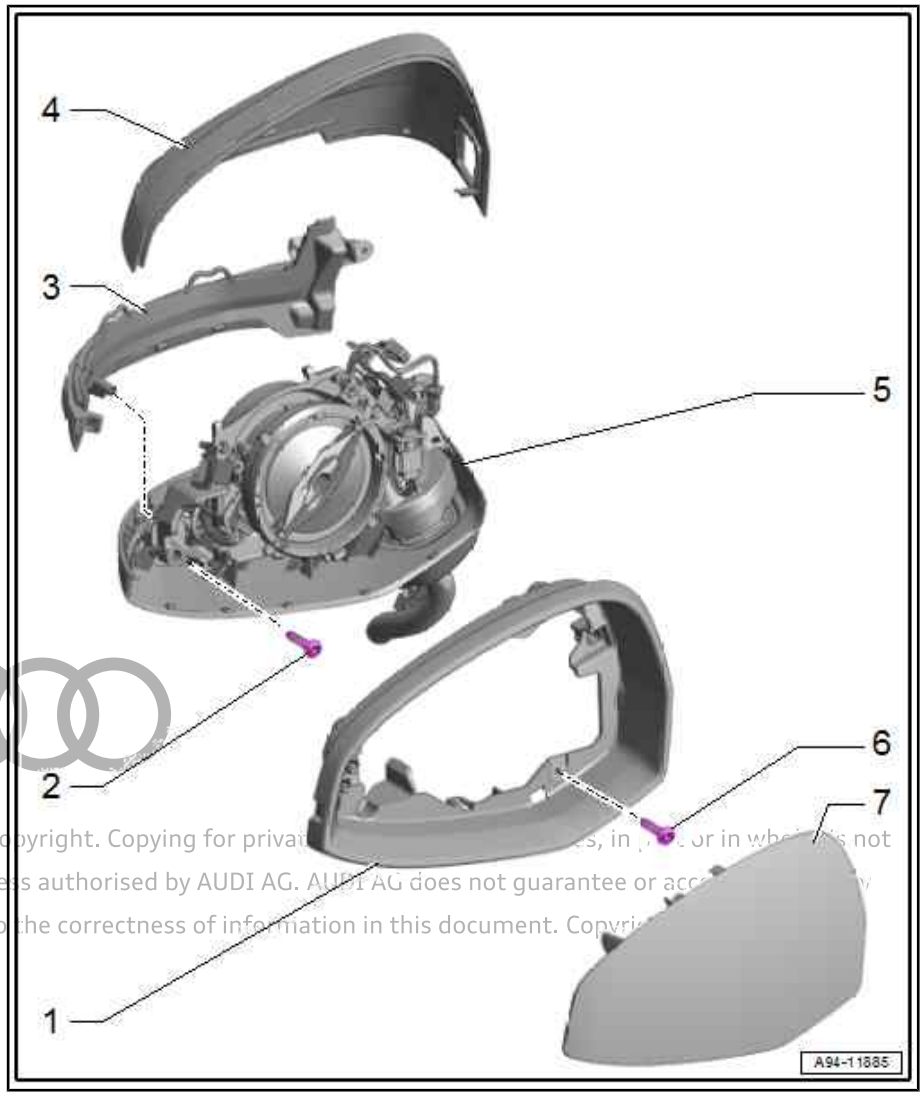
4 - Cover for mirror

5 - Exterior mirror

6 - Bolt

- ❑ Tightening torque ⇒ General body repairs, exterior; Rep. gr. 66 ; Exterior mirrors; Exploded view - exterior mirror

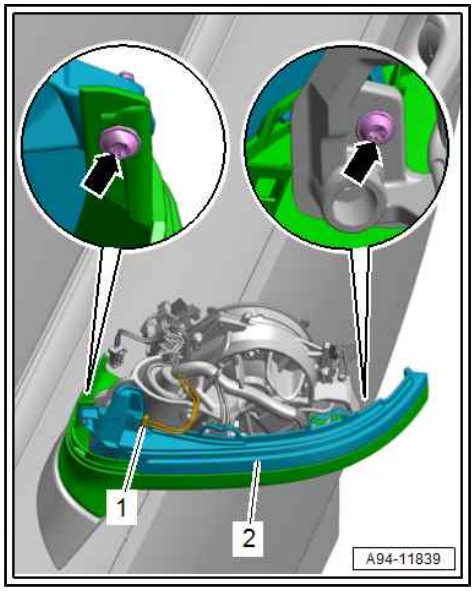
7 - Mirror glass



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4.2 Removing and installing turn signal

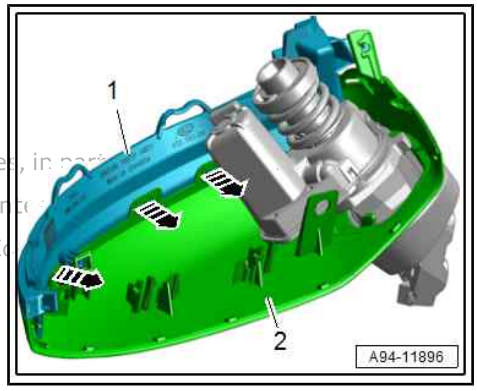
Removing



– Remove cover for mirror ⇒ General body repairs, exterior; Rep. gr. 66 ; Exterior mirrors; Removing and installing cover for mirror .

– Unplug electrical connector -1- for turn signal -2-.

– Remove bolts -arrows-.



– Release catches -arrows- and detach turn signal -1- from exterior mirror -2-.

Installing

Installation is carried out in reverse order; note the following:

- Entire turn signal in exterior mirror must be renewed as a complete unit if an LED is defective.

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Tightening torques

◆ ⇒ “4.1 Exploded view - lights in exterior mirror”, page 155

5 Lights in exterior door handle

⇒ “5.1 Exploded view - lights in exterior door handle”, page 157

⇒ “5.2 Removing and installing exterior door handle illumination bulb”, page 157

5.1 Exploded view - lights in exterior door handle

1 - Trim for exterior door handle

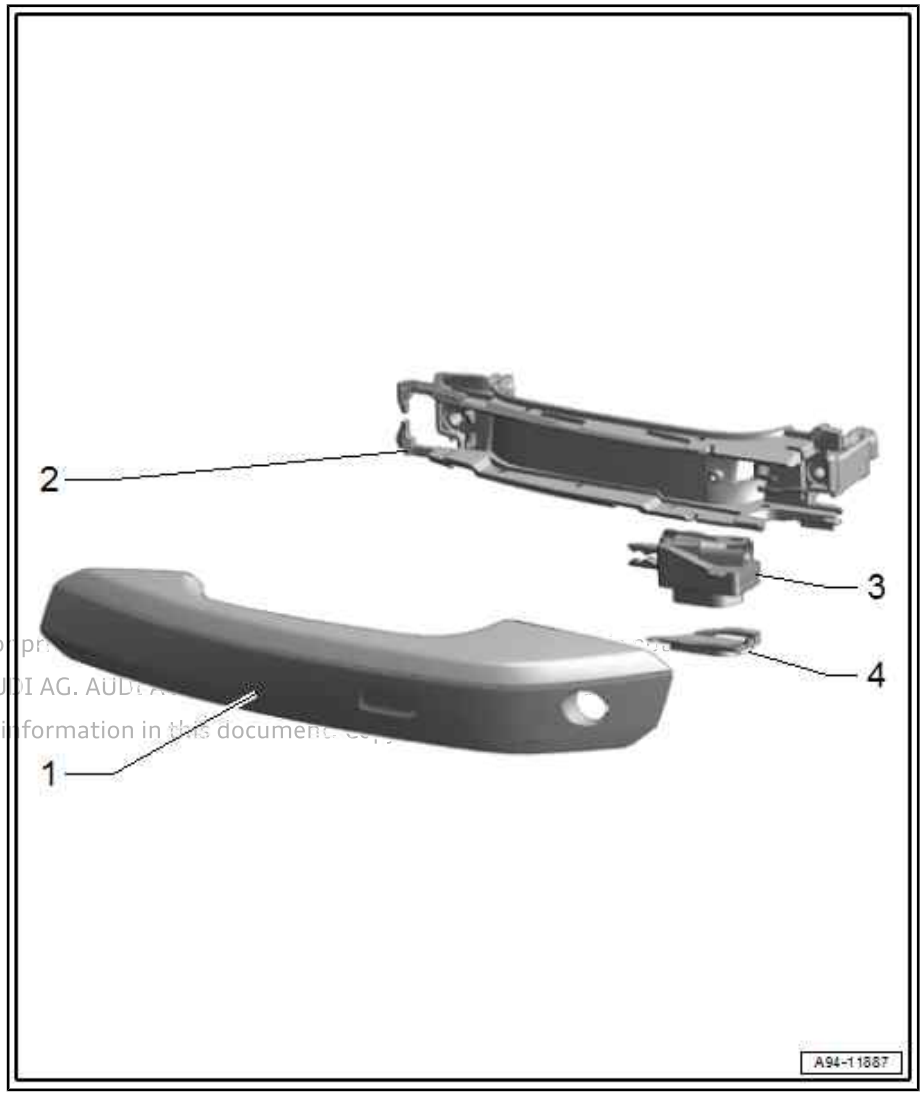
2 - Exterior door handle

3 - Exterior door handle illumination bulb

- ❑ Front exterior door handle
- ♦ Front left exterior door handle illumination bulb - L162-
- ♦ Front right exterior door handle illumination bulb - L163-
  - ❑ Removing and installing ⇒ page 157
  - ❑ Rear exterior door handle
- ♦ Rear left exterior door handle illumination bulb - L168-
- ♦ Rear right exterior door handle illumination bulb - L169-

4 - Lens

- ❑ For exterior door handle illumination bulb



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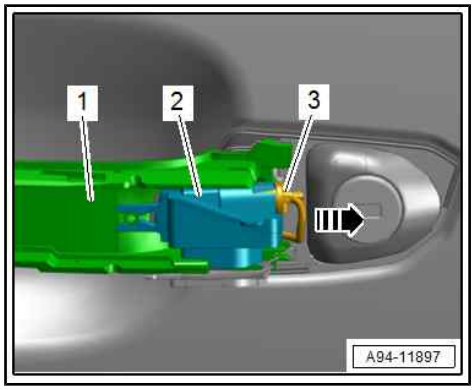
5.2 Removing and installing exterior door handle illumination bulb

Removing

– Front door: Remove trim for exterior door handle ⇒ General body repairs, exterior; Rep. gr. 57 ; Door components; Exploded view - door handle and door lock .

– Rear door: Remove trim for exterior door handle ⇒ General body repairs, exterior; Rep. gr. 58 ; Door components; Exploded view - door handle and door lock .

– Press bulb -2- off exterior door handle -1- -arrow- and detach.
– Unplug electrical connector -3-.



Installing

Installation is carried out in reverse order; note the following:

- Entire exterior door handle illumination bulb must be renewed if LED is defective.

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6 Lights in sill panel trim

⇒ “6.1 Overview - entry lights”, page 159

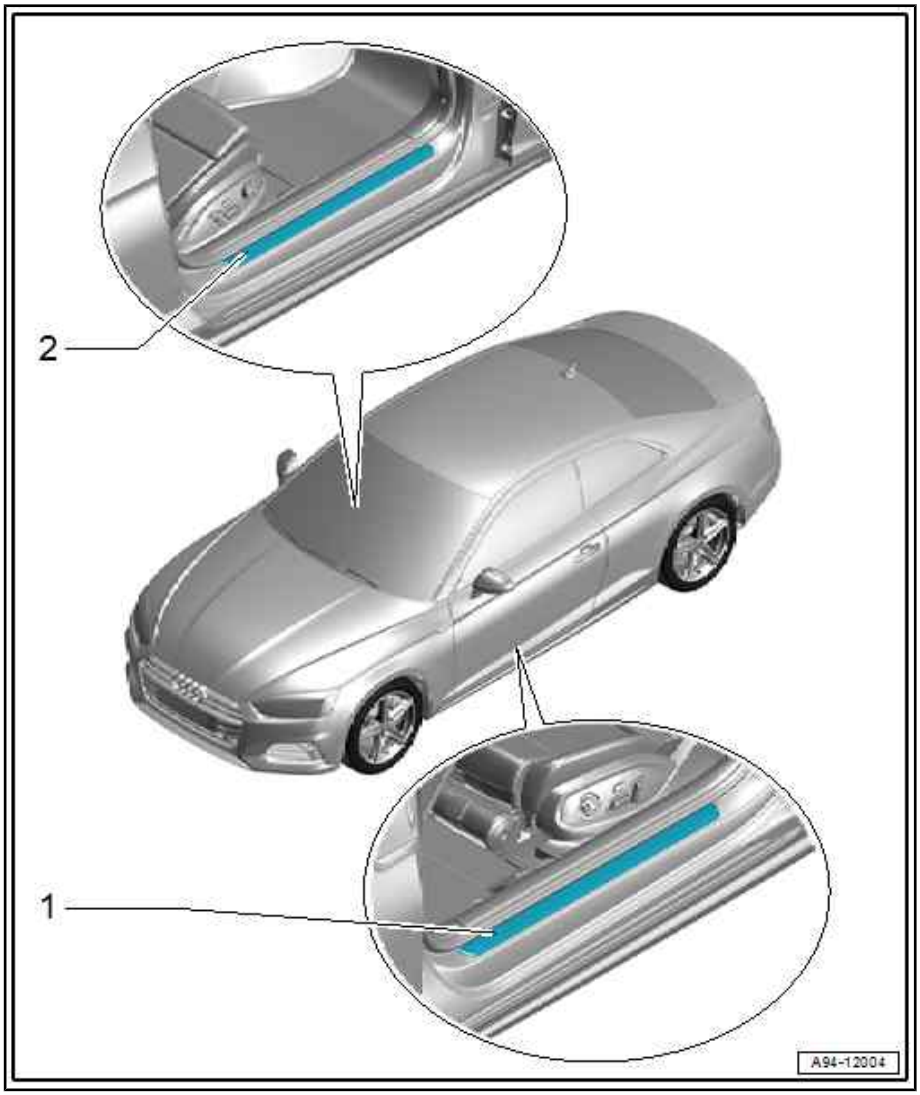
6.1 Overview - entry lights

1 - Light for sill panel moulding background lighting, driver side - W102-

- ❑ Integrated in sill panel trim; cannot be renewed separately if defective
- ❑ Renewing sill panel trim ⇒ General body repairs, exterior; Rep. gr. 66 ; Strips / trim panels / extensions; Removing and installing sill panel trim

2 - Light for sill panel moulding background lighting, front passenger side - W103-

- ❑ Integrated in sill panel trim; cannot be renewed separately if defective
- ❑ Renewing sill panel trim ⇒ General body repairs, exterior; Rep. gr. 66 ; Strips / trim panels / extensions; Removing and installing sill panel trim



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7 Tail light cluster

⇒ “7.1 Exploded view - tail light cluster on body”, page 160

⇒ “7.2 Exploded view - tail light cluster on rear lid”, page 161

⇒ “7.3 Removing and installing tail light cluster”, page 162

⇒ “7.4 Removing and installing tail light cluster on rear lid”, page 162

⇒ “7.5 Correcting installation position of tail light cluster”, page 165

7.1 Exploded view - tail light cluster on body

1 - Tail light cluster

- Left tail light - MX3-
- Right tail light - MX4-
  - ❑ Removing and installing ⇒ page 162

2 - Clip nut

3 - Cover

- ❑ For tail light cluster
- ❑ Removing and installing ⇒ “7.4 Removing and installing tail light cluster on rear lid”, page 162

4 - Adjuster nut

- ❑ Adjusting ⇒ page 165

5 - Bolt

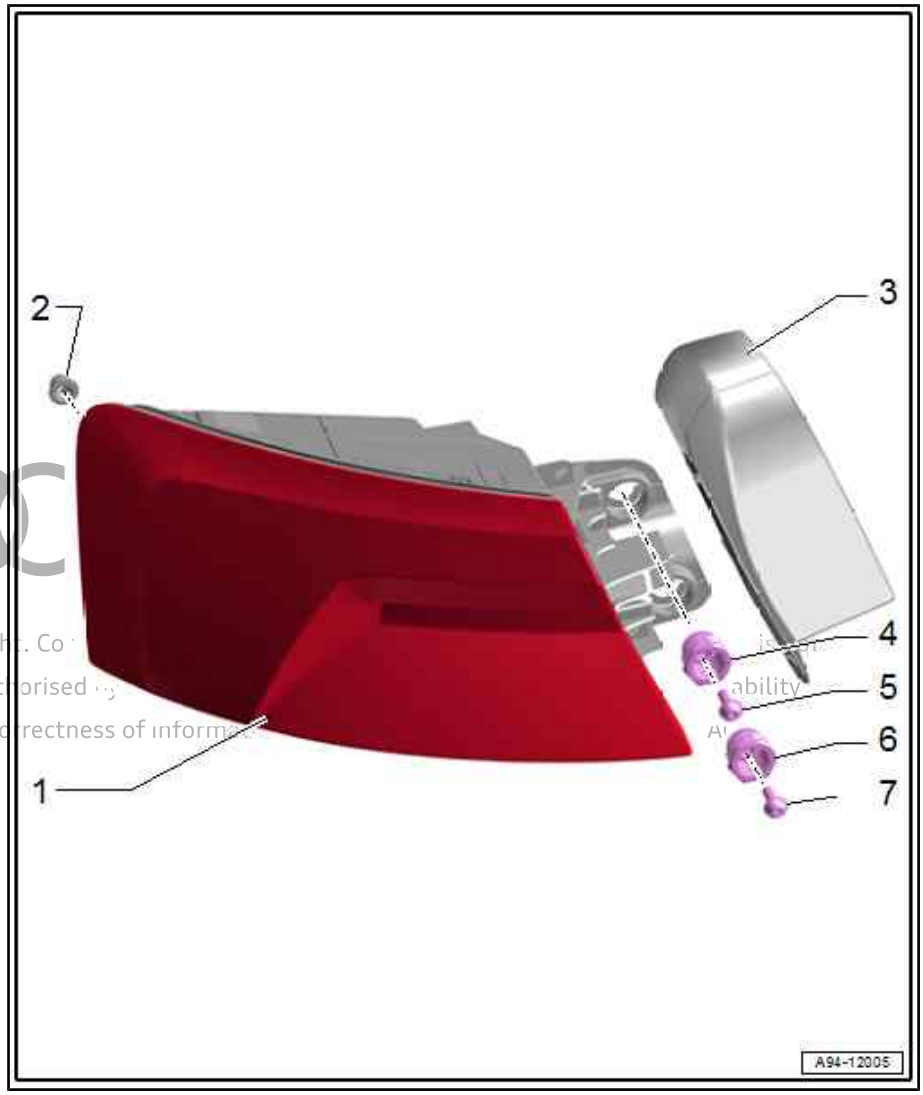
- ❑ 4 Nm

6 - Adjuster nut

- ❑ Adjusting ⇒ page 165

7 - Bolt

- ❑ 4 Nm



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7.2 Exploded view - tail light cluster on rear lid

1 - Cover

- ❑ For tail light cluster

2 - Seal

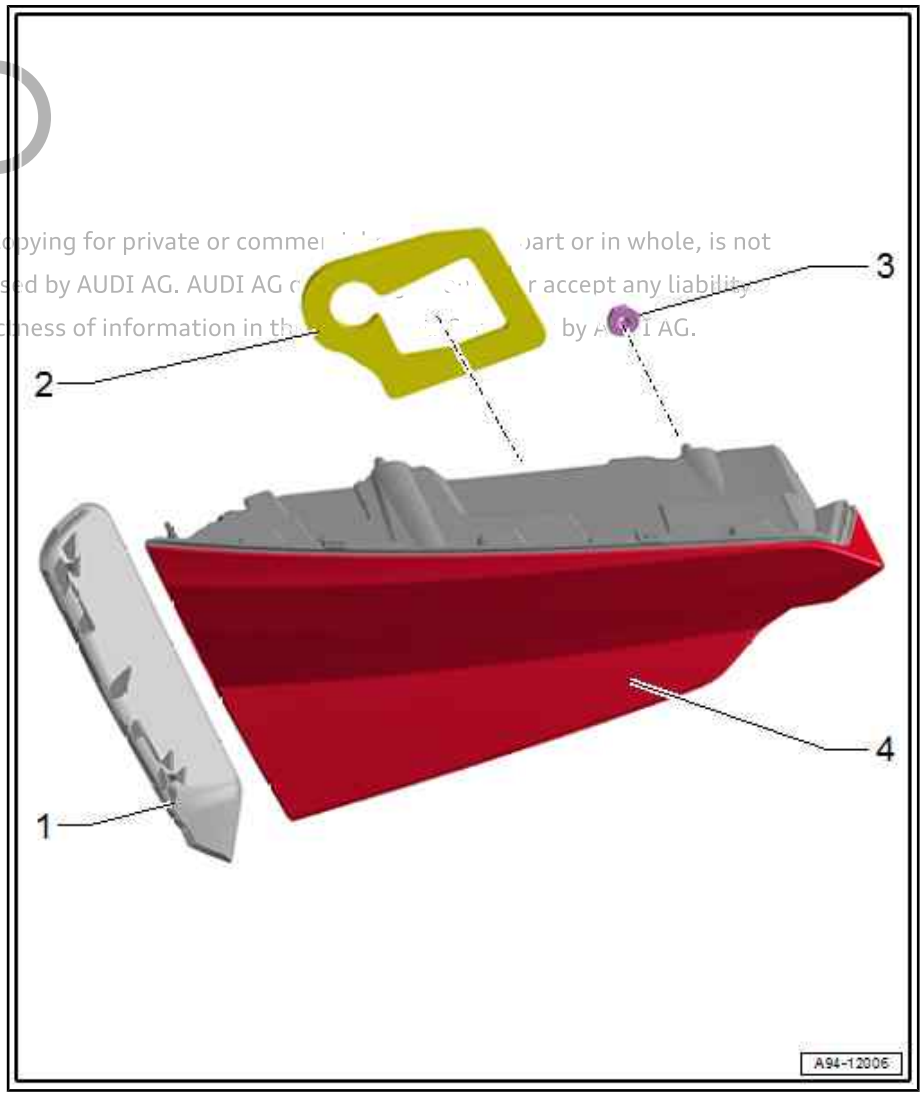
- ❑ Renew if damaged

3 - Nut

- ❑ 3x
- ❑ Tightening torques ⇒ page 161

4 - Tail light cluster

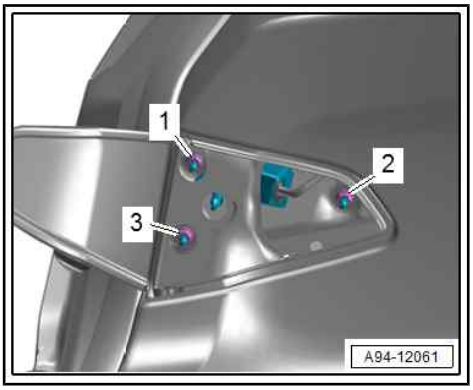
- ♦ Left tail light 2 - MX5-
- ♦ Right tail light 2 - MX6-
  - ❑ Removing and installing ⇒ page 162
  - ❑ Adjusting ⇒ page 165



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Tail light cluster - tightening torque and tightening sequence

– Tighten nuts for tail light cluster to 4 Nm in the sequence -1, 2, 3-.

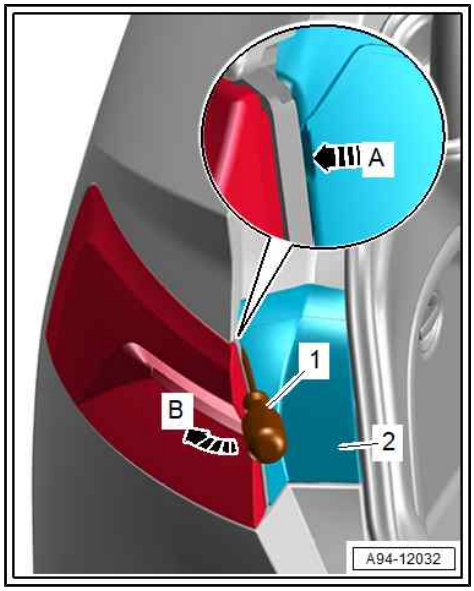


7.3 Removing and installing tail light cluster

Removing

– Turn light switch to position “0”.

– Apply screwdriver -1- at opening -arrow A-, pry cover -2- off tail light cluster -arrow B- and remove.

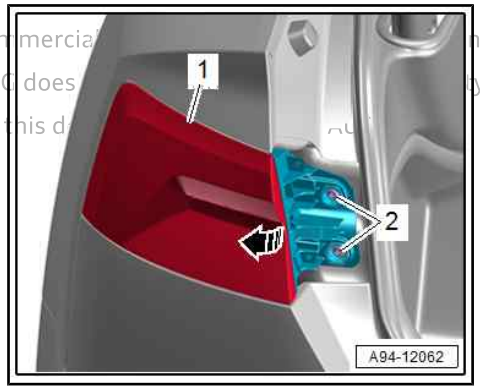


– Remove bolts -2-.

– Pull tail light cluster -1- out of clip nut -arrow-.

– Unplug electrical connector.

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Installing

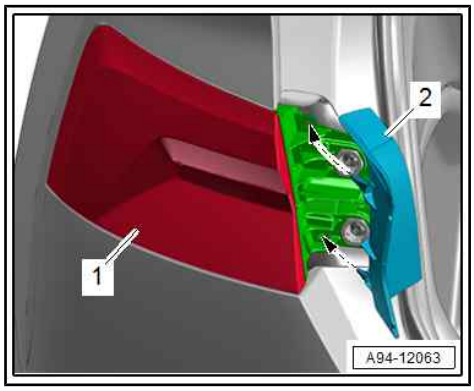
Installation is carried out in reverse order; note the following:

• The cover must be renewed if damaged.

– Fit centring pin of cover -2- in mounting of tail light cluster -1- -arrows-.

– Press cover onto tail light cluster.

• Retaining tabs must engage audibly on tail light cluster.



Tightening torques

◆ ⇒ “7.1 Exploded view - tail light cluster on body”, page 160

7.4 Removing and installing tail light cluster on rear lid

Special tools and workshop equipment required

♦ Removal wedge - 3409-

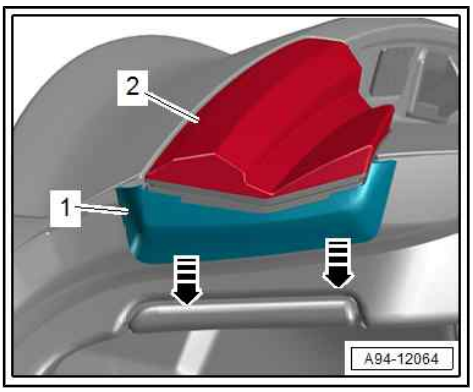


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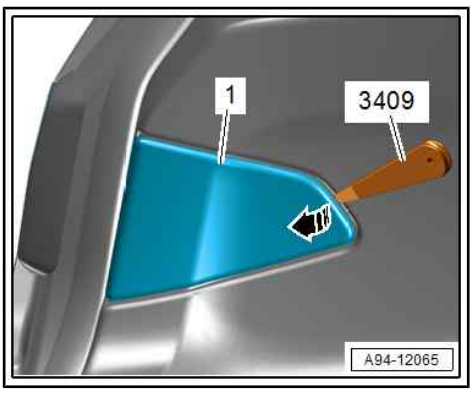
Removing

– Turn light switch to position “0”.

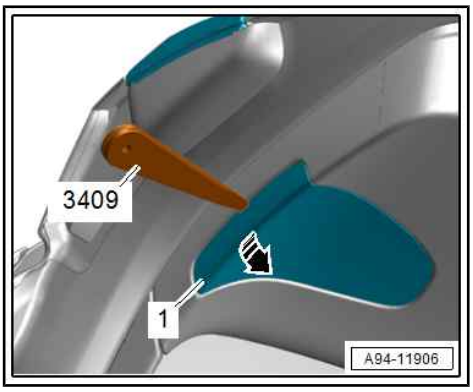
– Detach cover -1- from tail light cluster -2- -arrows-.



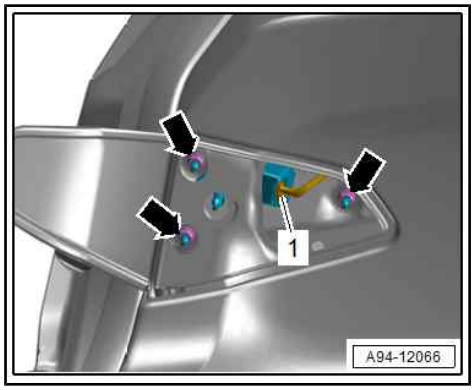
– Coupé, Cabriolet: Release cover -1- from retaining clips -arrow- using removal wedge - 3409- and fold to side.



– Sportback: Lever off cover -1- with removal wedge - 3409- -arrow-.



– Unplug electrical connector -1-.
– Remove nuts -arrows-.
– Detach tail light cluster.



Installing

Installation is carried out in reverse order; note the following:

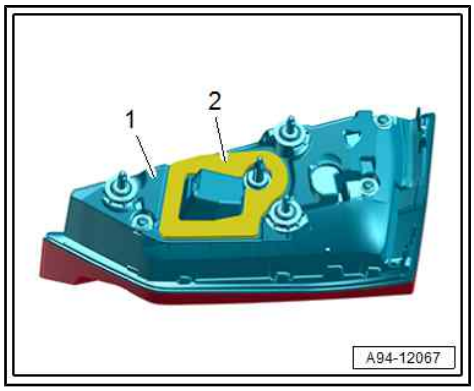
– Check self-adhesive seal -2- on tail light cluster -1- for damage.

• Renew seal if it is damaged or does not bond properly.

Note:

Water can enter the passenger compartment if the seal is damaged or not bonded on properly.

– Fit tail light cluster and tighten nuts.
– Fit cover on tail light cluster and then press it on.



Tightening torques

◆ ⇒ Fig. ““Tail light cluster - tightening torque and tightening sequence”“ , page 161

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7.5 Correcting installation position of tail light cluster

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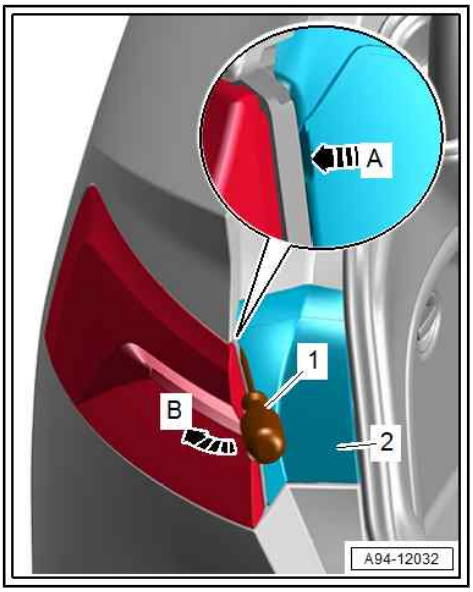
⇒ “7.5.1 Aligning tail light cluster on body with body contour”, page 165

⇒ “7.5.2 Aligning tail light cluster on rear lid with body contour”, page 165

7.5.1 Aligning tail light cluster on body with body contour

Adjustment in direction of travel

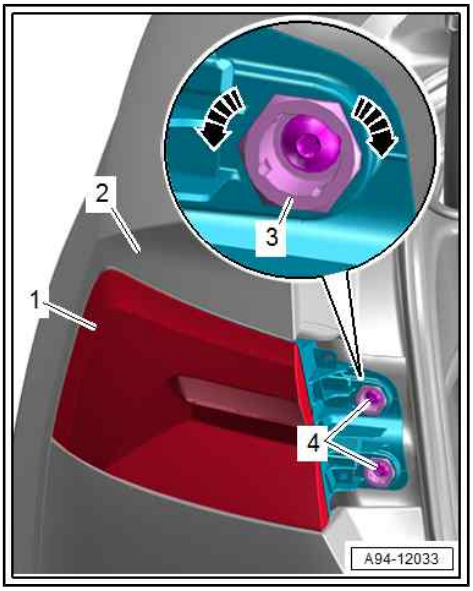
– Apply screwdriver -1- at opening -arrow A-, pry cover -2- off tail light cluster -arrow B- and remove.



– Remove bolts -4-.

– Gradually screw adjuster nuts -3- in/out -arrows-.

• Tail light cluster -1- must be flush with body contour -2-.



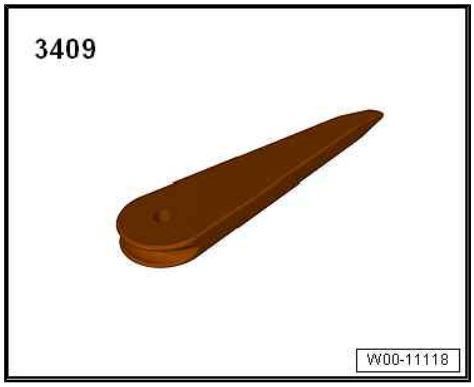
Tightening torques

♦ ⇒ “7.1 Exploded view - tail light cluster on body”, page 160

7.5.2 Aligning tail light cluster on rear lid with body contour

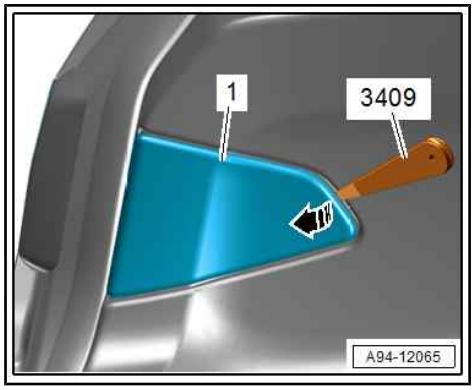
Special tools and workshop equipment required

♦ Removal wedge - 3409-

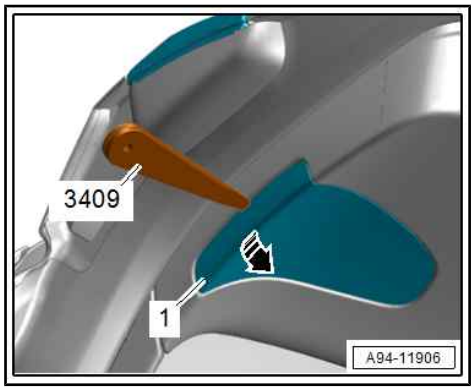


Procedure

– Coupé, Cabriolet: Release cover -1- from retaining clips -arrow- using removal wedge - 3409- and fold to side.



– Sportback: Lever off cover -1- with removal wedge - 3409- -arrow-.



– Unscrew nuts -arrows-.

Adjustment in direction of travel:

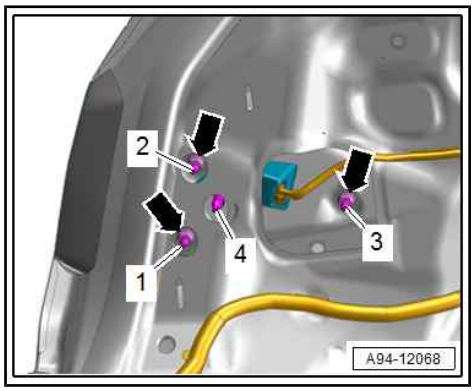
– Gradually screw adjuster screws -1, 2, 3- in/out.

• Tail light cluster must be flush with body contour.

Longitudinal adjustment:

– Gradually screw adjuster screw -4- in/out.

• Tail light cluster must be flush with body contour.



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8 High-level brake light

⇒ “8.1 Exploded view - high-level brake light”, page 167

⇒ “8.2 Removing and installing high-level brake light bulb”, page 168

8.1 Exploded view - high-level brake light

1 - Clip nut

- ❑ 2x

2 - High-level brake light

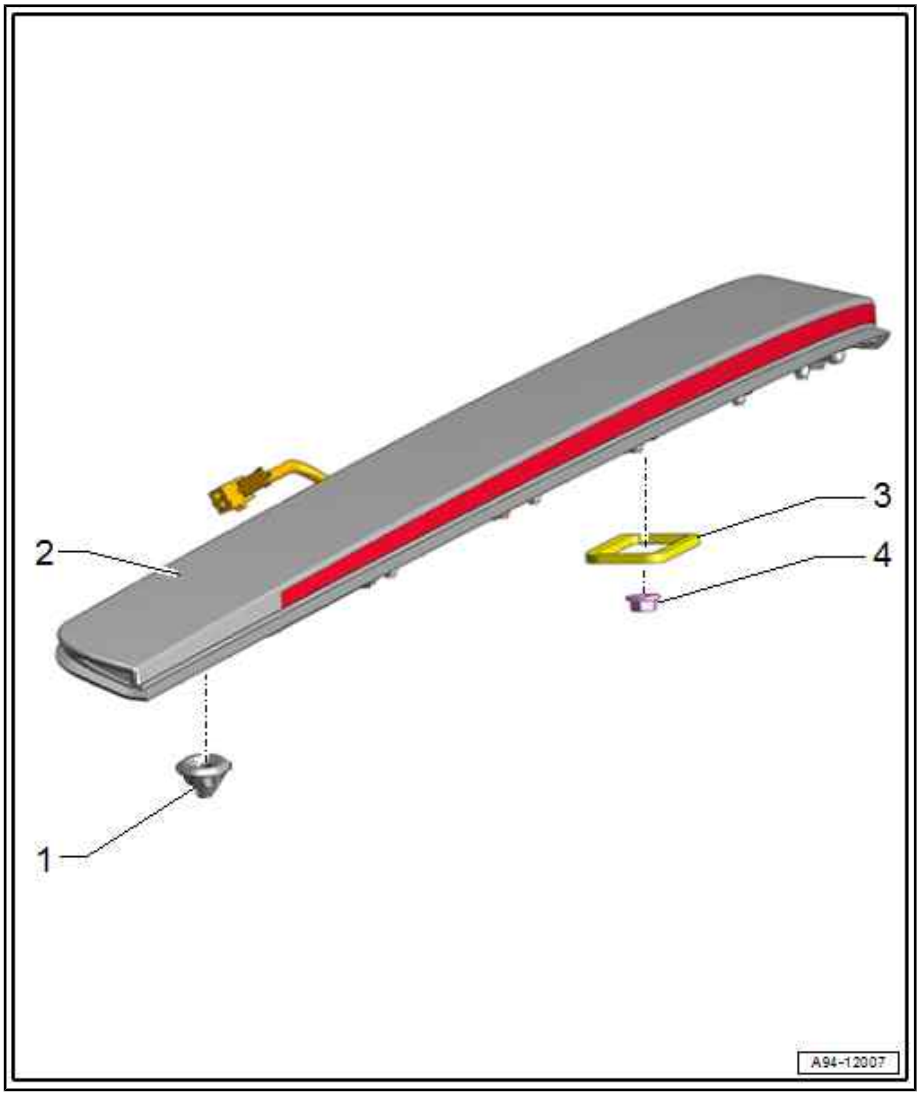
- ❑ High-level brake light bulb - M25-
- ❑ Coupé: Removing and installing ⇒ page 168
- ❑ Sportback: Removing and installing ⇒ page 169
- ❑ Cabriolet: Removing and installing ⇒ page 171

3 - Seal

- ❑ 5x
- ❑ Renew after removing

4 - Nut

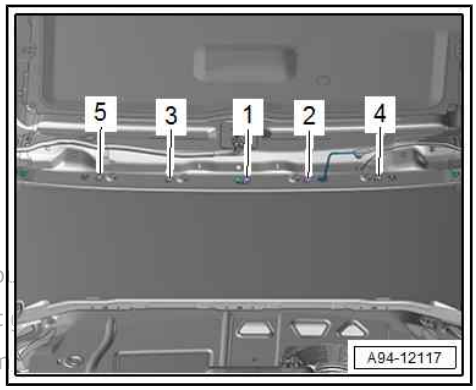
- ❑ 5x
- ❑ Tightening sequence ⇒ page 167



High-level brake light bulb - tightening torque and tightening sequence

– Tighten nuts in sequence -1 ... 5-.

- ♦ Coupé: 3 Nm
- ♦ Sportback: 2.5 Nm



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8.2 Removing and installing high-level brake light bulb

⇒ “8.2.1 Removing and installing high-level brake light bulb - Coupé”, page 168

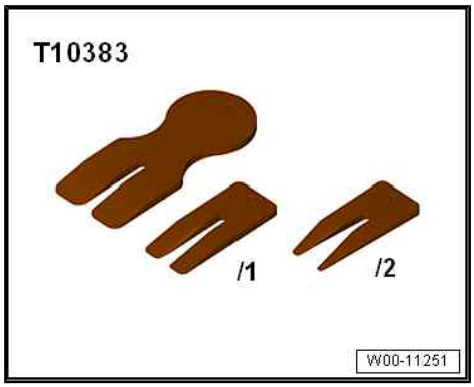
⇒ “8.2.2 Removing and installing high-level brake light bulb - Sportback”, page 169

⇒ “8.2.3 Removing and installing high-level brake light bulb - Cabriolet”, page 171

8.2.1 Removing and installing high-level brake light bulb - Coupé

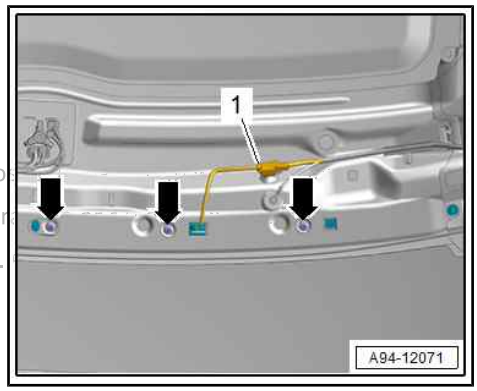
Special tools and workshop equipment required

- Wedges - T10383-



- Cleaning solution - D 009 401 04-

Removing



– Remove moulded headliner ⇒ General body repairs, interior; Rep. gr. 70 ; Roof trim panels; Removing and installing moulded headliner .

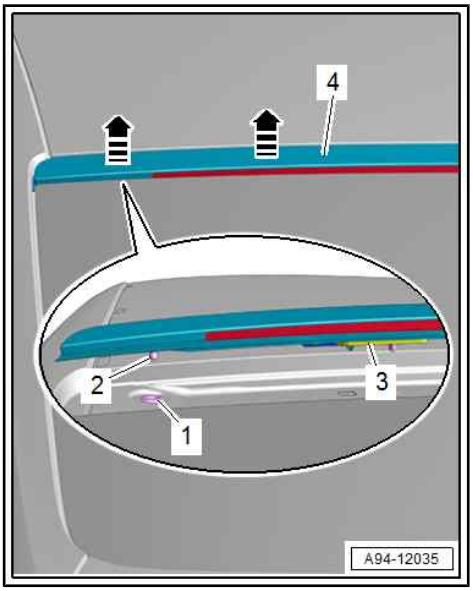
– Release retaining tab and unplug electrical connector -1-.

– Remove nuts -arrows-.

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– Lever retaining pins -2- off clip nuts -1- at outer sides using wedge -T10383/1- .

– Pry lamp -4- for high-level brake light off body using wedge -T10383/1- . This will release seals -3- from their adhesive bonds.



Installing

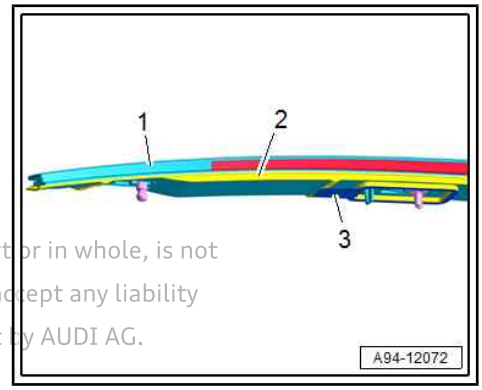
Installation is carried out in reverse order; note the following:

- Entire high-level brake light must be renewed if LED is defective.
- Renew seals.
- The vehicle and the high-level brake light must be at room temperature.
- The bonding surfaces must be free of dirt and grease.

– Completely remove any residual adhesive.

– Clean bonding surface with cleaning solution - D 009 401 04- .

– Peel protective film off seal and press onto high-level brake light -1-.



- A second mechanic is required for the following step.

– Fit high-level brake light with the help of a second mechanic.

– Peel protective film -3- off seal and fit high-level brake light into outer clip nuts.

– Use wedge -T10383/1- to slide sealing lip -2- beneath rear window.

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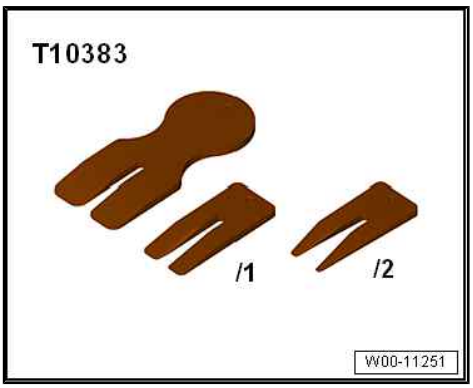
Tightening torques

♦ ⇒ Fig. ""High-level brake light bulb - tightening torque and tightening sequence"" , page 167

8.2.2 Removing and installing high-level brake light bulb - Sportback

Special tools and workshop equipment required

♦ Wedges - T10383-



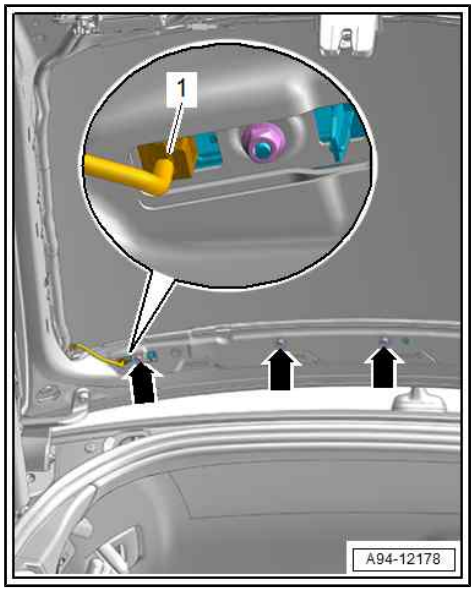
♦ Cleaning solution - D 009 401 04-

Removing

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

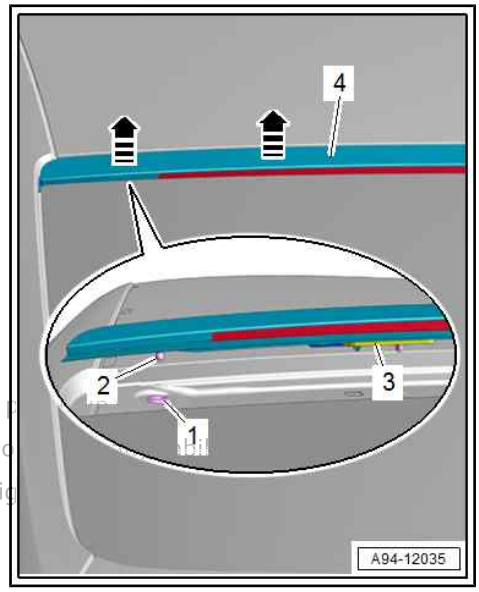
– Unplug electrical connector -1-.

– Remove nuts -arrows-.



– Lever retaining pins -2- off clip nuts -1- at outer sides using wedge -T10383/1- .

– Pry lamp -4- for high-level brake light off body using wedge -T10383/1- . This will release seals -3- from their adhesive bonds.



Installing

Installation is carried out in reverse order; note the following:

- Entire high-level brake light must be renewed if LED is defective.
- Renew seals.
- The vehicle and the high-level brake light must be at room temperature.
- The bonding surfaces must be free of dirt and grease.

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– Completely remove any residual adhesive.

– Clean bonding surface with cleaning solution - D 009 401 04- .

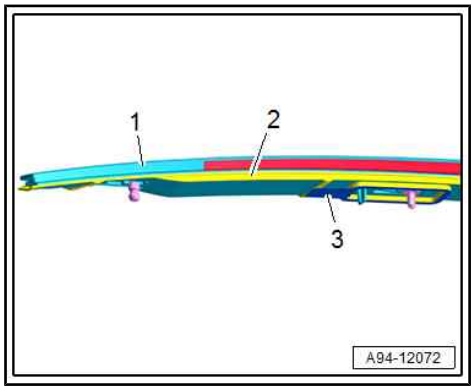
– Peel protective film off seal and press onto high-level brake light -1-.

- A second mechanic is required for the following step.

– Fit high-level brake light with the help of a second mechanic.

– Peel protective film -3- off seal and fit high-level brake light into outer clip nuts.

– Use wedge -T10383/1- to slide sealing lip -2- beneath rear window.



Tightening torques

◆ ⇒ Fig. ""High-level brake light bulb - tightening torque and tightening sequence"" , page 167

8.2.3 Removing and installing high-level brake light bulb - Cabriolet

The high-level brake light is integrated in the trim strip for the convertible roof compartment lid and cannot be renewed separately if defective.

Removing

– Remove trim strip for convertible roof compartment lid ⇒ General body repairs, exterior; Rep. gr. 55 ; Convertible roof compartment lid; Exploded view - convertible roof compartment lid .

Installing

Installation is carried out in reverse sequence.

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9 Number plate light

⇒ “9.1 Removing and installing number plate light X4 / X5 ”, page 172

9.1 Removing and installing number plate light -X4- / -X5-

⇒ “9.1.1 Removing and installing number plate light X4 / X5 - Coupé, Sportback”, page 172
⇒ “9.1.2 Removing and installing number plate light X4 / X5 - Cabriolet”, page 172

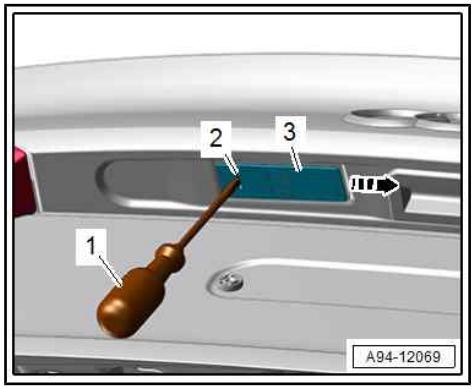
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9.1.1 Removing and installing number plate light -X4- / -X5- - Coupé, Sportback

Removing

– Turn light switch to position “0”.

– Take number plate light -3- out of rear lid; to do so apply a screwdriver -1- at slot -2- and push in direction of -arrow-.



Installing

Installation is carried out in reverse order; note the following:

- If the LED is defective, the number plate light must be completely renewed.

– Insert number plate light in opening and engage on opposite side.

9.1.2 Removing and installing number plate light -X4- / -X5- - Cabriolet

Number plate light -X4- / -X5- is integrated in handle trim. It cannot be renewed separately if defective.

– Renew handle trim ⇒ General body repairs, exterior; Rep. gr. 55 ; Rear lid; Exploded view - rear lid .

10 Entry and start authorisation

⇒ “10.1 Overview of fitting locations - entry and start authorisation system”, page 173

⇒ “10.2 Overview of fitting locations - keyless entry system”, page 174

⇒ “10.3 Exploded view - exterior door handle for keyless entry system”, page 175

⇒ “10.4 Removing and installing front exterior door handle switches”, page 175

⇒ “10.5 Removing and installing rear exterior door handle switches”, page 176

⇒ “10.6 Removing and installing aerial for entry and start system”, page 177

10.1 Overview of fitting locations - entry and start authorisation system

1 - Entry and start authorisation button - E408-

- ❑ Removing and installing ⇒ page 235

2 - Ignition key

3 - Interior aerial 1 for entry and start system - R138-

- ❑ With emergency transponder coil
- ❑ Overview of fitting locations ⇒ page 174

4 - Luggage compartment aerial for entry and start system - R137-

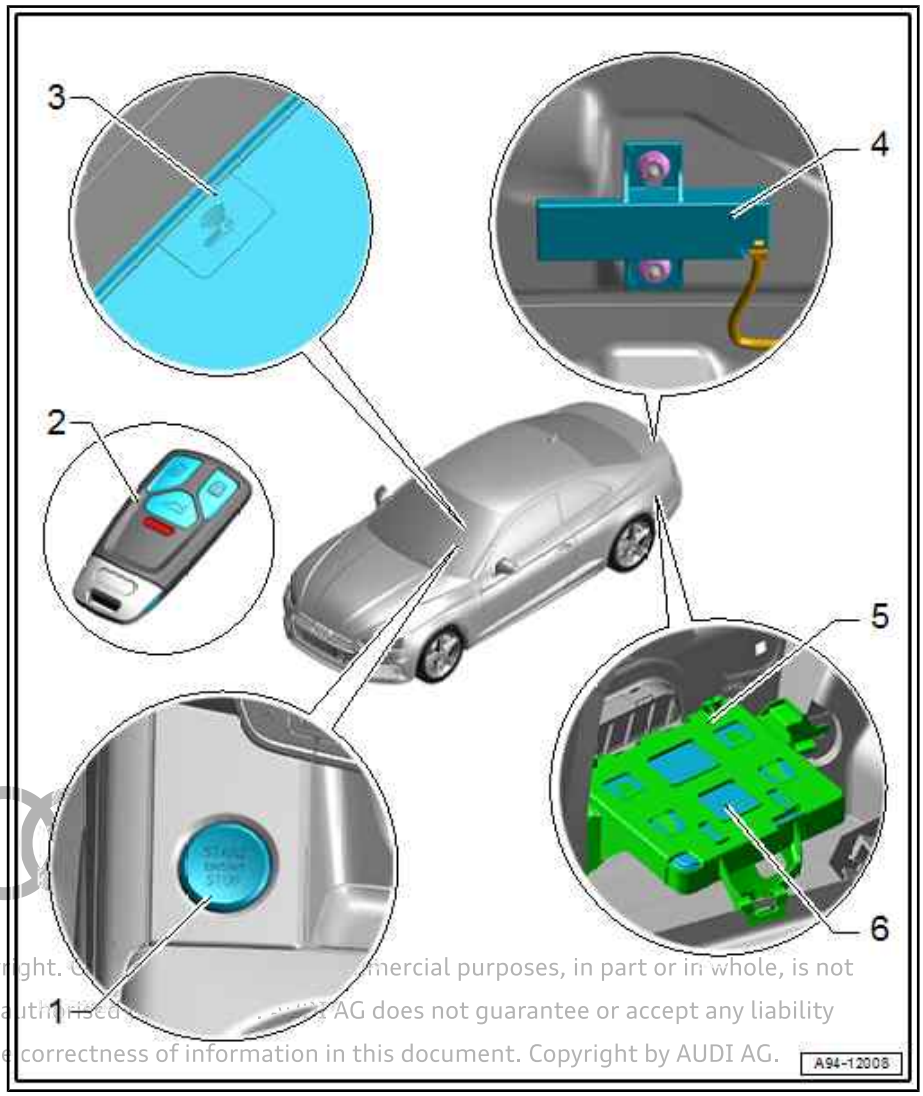
- ❑ Overview of fitting locations ⇒ page 174

5 - Mounting

- ❑ For convenience system central control unit

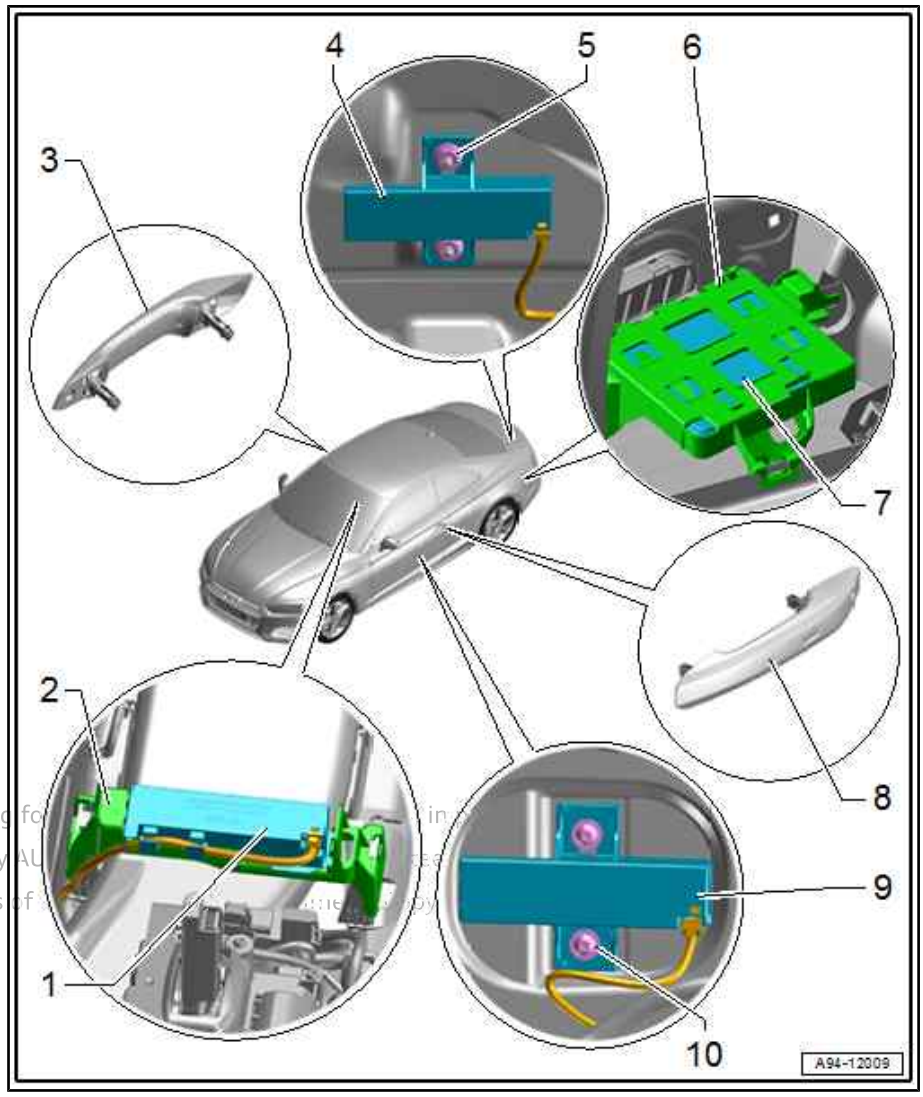
6 - Convenience system central control unit - J393-

- ❑ Removing and installing ⇒ General body repairs, exterior; Rep. gr. 57 ; Central locking system; Removing and installing convenience system central control unit - J393-



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10.2 Overview of fitting locations - keyless entry system



1 - Interior aerial 1 for entry and start authorisation - R138-

- ❑ Removing and installing ⇒ page 177

2 - Bracket

- ❑ For interior aerial 1 for entry and start authorisation - R138-

3 - Front passenger's exterior door handle

- ❑ Exploded view ⇒ page 175

4 - Luggage compartment aerial for entry and start system - R137-

- ❑ Removing and installing ⇒ page 177

5 - Nut

- ❑ 2x
- ❑ 2 Nm

6 - Bracket

- ❑ For convenience system central control unit

7 - Convenience system central control unit - J393-

- ❑ Removing and installing ⇒ General body repairs, exterior; Rep. gr. 57 ; Central locking system; Removing and installing convenience system central control unit - J393-

8 - Driver's exterior door handle

- ❑ Exploded view ⇒ page 175

9 - Left aerial for entry and start authorisation - R200-

- ♦ Fitting location on Coupé: on left door
- ♦ Fitting location on Sportback: on rear left door
- ❑ Removing and installing ⇒ page 178

10 - Bolt

- ❑ 2x
- ❑ 1.5 Nm

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10.3 Exploded view - exterior door handle for keyless entry system

1 - Mounting bracket

2 - Anti-theft cover

- ❑ For door lock

3 - Door lock

4 - Exterior door handle

5 - Lock cylinder

- ❑ Only on driver side

6 - Contact sensor for exterior door handle

Front door:

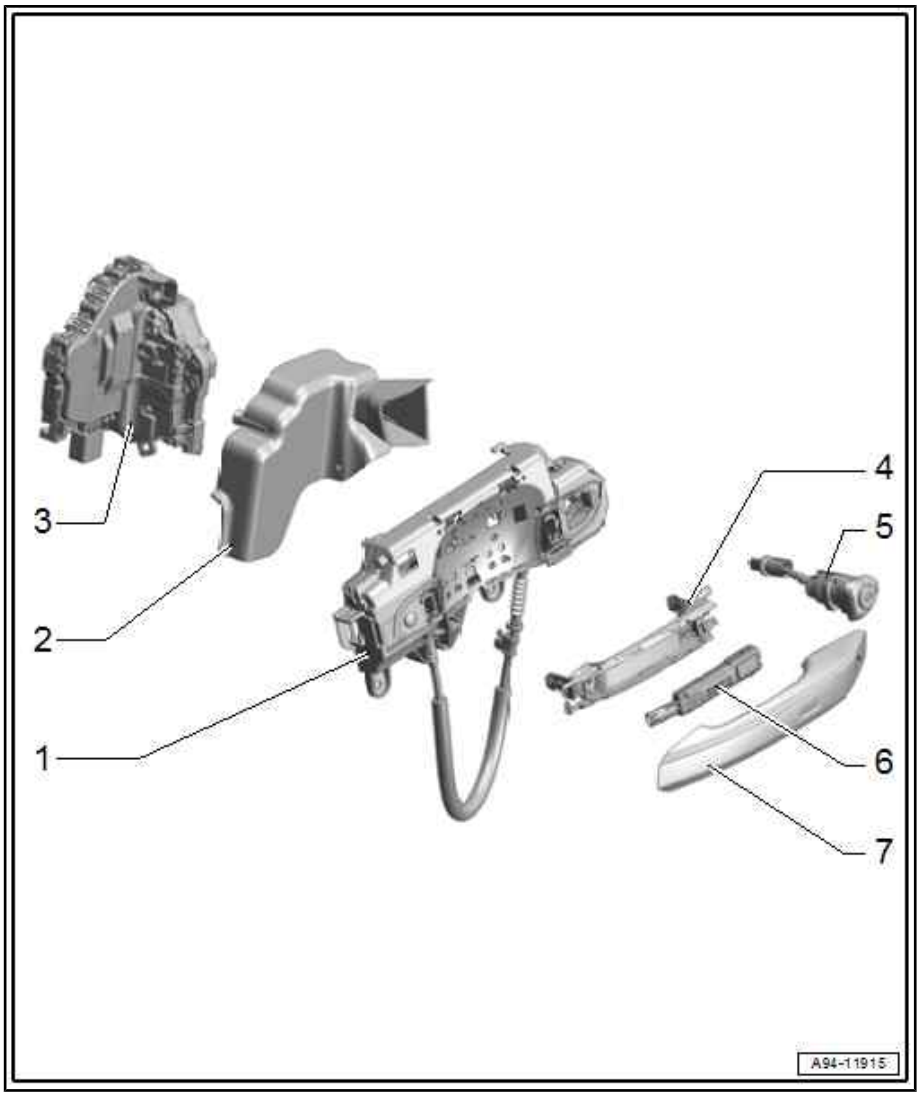
- ❑ Driver exterior door handle contact sensor - G415- , front passenger exterior door handle contact sensor - G416-
- ❑ Removing and installing ⇒ page 175
- ❑ Press on until it engages audibly

Rear door:

- ❑ Contact sensor for rear left exterior door handle - G417- , contact sensor for rear right exterior door handle - G418-
- ❑ Removing and installing ⇒ page 176
- ❑ Press on until it engages audibly

7 - Trim

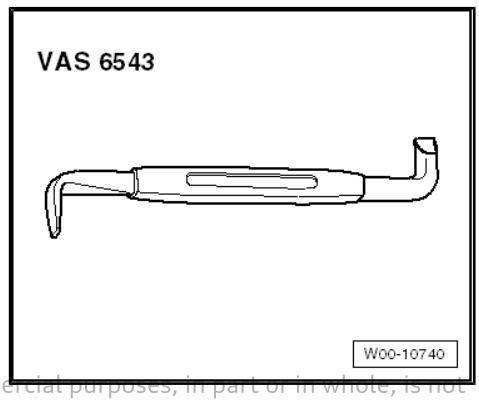
- ❑ For exterior door handle



10.4 Removing and installing front exterior door handle switches

Special tools and workshop equipment required

- ♦ Angled screwdriver - VAS 6543-



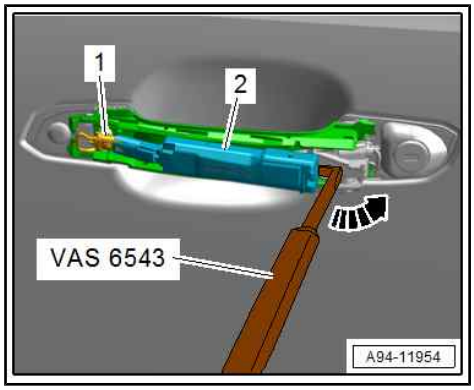
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Removing

– Remove trim for exterior door handle ⇒ General body repairs, exterior; Rep. gr. 57 ; Door components; Exploded view - door handle and door lock .

– Using an angle driver, press contact sensor for exterior door handle -2- out of catch and detach.

– Unplug electrical connector -1-.



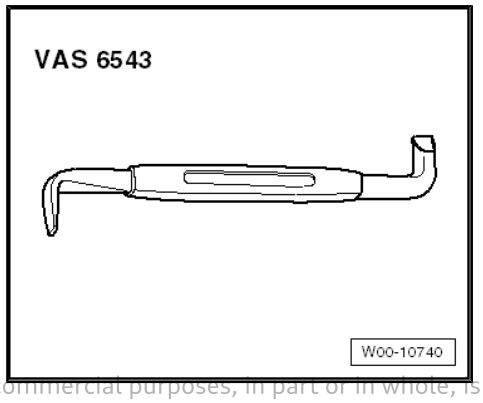
Installing

Installation is carried out in reverse sequence.

10.5 Removing and installing rear exterior door handle switches

Special tools and workshop equipment required

♦ Angled screwdriver - VAS 6543-



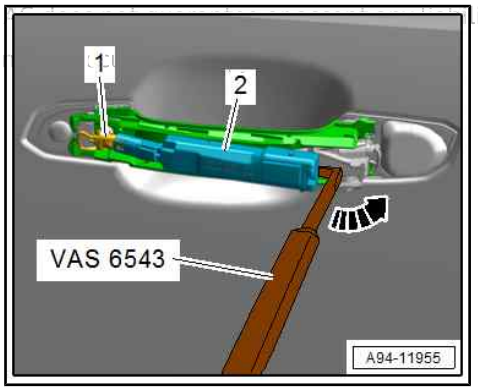
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Removing

– Remove trim for exterior door handle ⇒ General body repairs, exterior; Rep. gr. 58 ; Door components; Exploded view - door handle and door lock .

– Using an angle driver, press contact sensor for exterior door handle -2- out of catch and detach.

– Unplug electrical connector -1-.



Installing

Installation is carried out in reverse sequence.

10.6 Removing and installing aerial for entry and start system

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⇒ “10.6.1 Removing and installing interior aerial 1 for entry and start authorisation R138 ”, page 177

⇒ “10.6.2 Removing and installing luggage compartment aerial for entry and start system R137 ”, page 177

⇒ “10.6.3 Removing and installing aerial for entry and start authorisation R200 ”, page 178

10.6.1 Removing and installing interior aerial 1 for entry and start authorisation - R138-

Removing

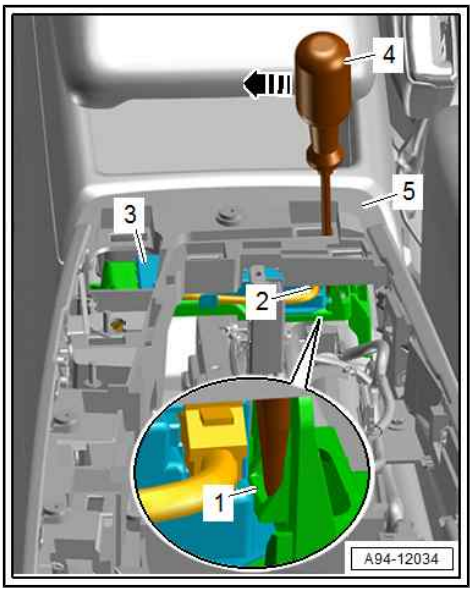
– Remove centre console insert ⇒ General body repairs, interior; Rep. gr. 68 ; Centre console; Removing and installing centre console insert .

– Using a screwdriver -4-, release fastener -1- -arrow- via opening in centre console -5- and remove aerial -3- from mounting.

– Unplug electrical connector -2- and move wiring harness clear.

Installing

Installation is carried out in reverse sequence.



10.6.2 Removing and installing luggage compartment aerial for entry and start system - R137-

Removing

– Lift luggage compartment floor.

Coupé, Sportback:

– If fitted, take out spare wheel and mounting for jack.

– If fitted, press spare wheel well lining slightly to side.

– 48 Volt system: Remove battery tray ⇒ page 42 .

Cabriolet:

– Take out compartment for windbreak.

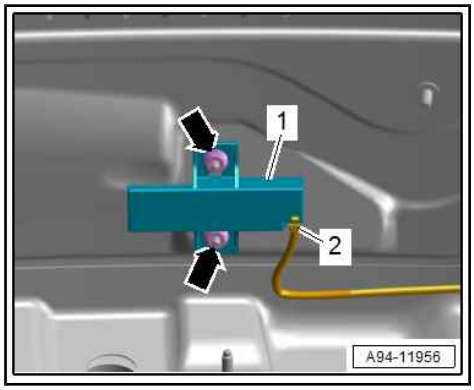
– Remove lock carrier trim ⇒ General body repairs, interior; Rep. gr. 70 ; Luggage compartment trim panels; Removing and installing lock carrier trim .

– Take out mounting box for vehicle jack.

All versions (continued):

– Unscrew nuts -arrows- and detach aerial -1-.

– Unplug electrical connector -2-.



Installing

Installation is carried out in reverse sequence.

Tightening torques

◆ ⇒ “10.2 Overview of fitting locations - keyless entry system”, page 174

10.6.3 Removing and installing aerial for entry and start authorisation -R200-

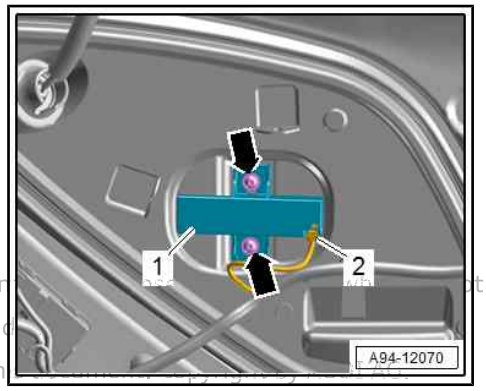
Removing

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

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

– Remove bolts -arrows- and detach aerial -1-.

– Unplug electrical connector -2-.



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Installing

Installation is carried out in reverse sequence.

Tightening torques

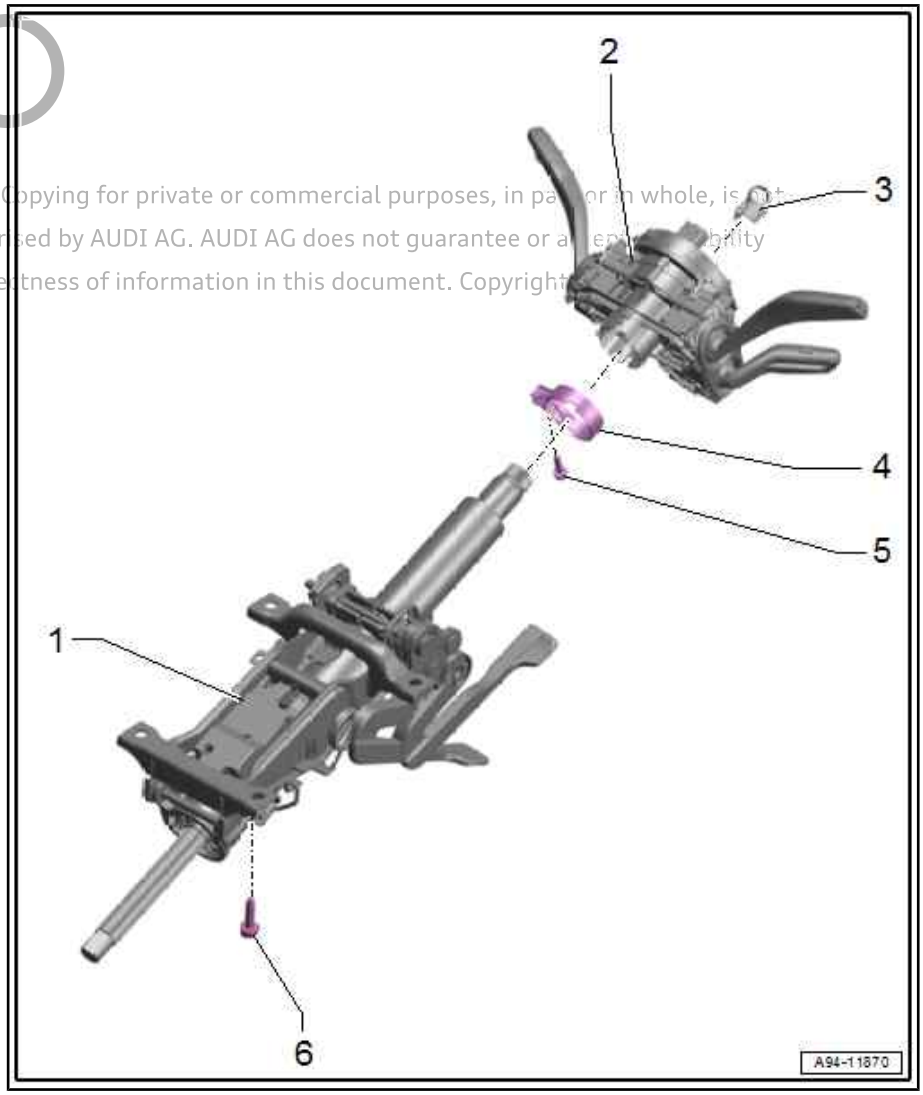
◆ ⇒ “10.2 Overview of fitting locations - keyless entry system”, page 174

11 Steering column switch module

⇒ “11.1 Exploded view - steering column switch module”, page 179

⇒ “11.2 Removing and installing steering column switch module”, page 179

11.1 Exploded view - steering column switch module



1 - Steering column

2 - Steering column switch module

- ❑ With the following integrated components:
- ♦ Turn signal switch - E2-
- ♦ Intermittent wiper switch - E22-
- ♦ Cruise control system switch - E45-
- ♦ Steering column electronics control unit - J527-
- ♦ Airbag coil connector and return ring with slip ring - F138-
  - ❑ The components cannot be renewed separately
  - ❑ If a component is defective, renew switch module
  - ❑ Removing and installing ⇒ page 179

3 - Transport protection

- ❑ Remove before installing steering wheel

4 - Clamping ring

5 - Bolt

- ❑ 4 Nm

6 - Bolt

- ❑ Tightening torque ⇒ Running gear, axles, steering; Rep. gr. 48 ; Steering column; Exploded view - steering column

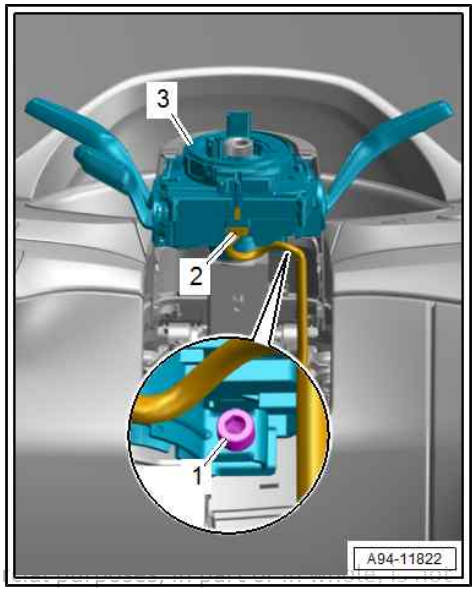
11.2 Removing and installing steering column switch module

If control unit is to be renewed, select the “Replace control unit” function for appropriate control unit in ⇒ Vehicle diagnostic tester.

Removing

– Remove steering wheel ⇒ Running gear, axles, steering; Rep. gr. 48 ; Steering wheel; Removing and installing steering wheel .

– Remove steering column trim ⇒ General body repairs, interior; Rep. gr. 68 ; Storage compartments/covers/trim panels; Exploded view - steering column trim .
– Remove bolt -1-.
– Unplug electrical connector -2-.
– Detach steering column switch module -3-.



Installing

Installation is carried out in reverse sequence.

Tightening torques

◆ ⇒ “11.1 Exploded view - steering column switch module”, page 179

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12 Parking aid

⇒ “12.1 Overview - parking aid”, page 181

⇒ “12.2 Removing and installing front parking aid warning buzzer H22 ”, page 183

⇒ “12.3 Removing and installing rear parking aid warning buzzer H15 ”, page 183

⇒ “12.4 Removing and installing front parking aid senders”, page 185

⇒ “12.5 Removing and installing rear parking aid senders”, page 186

12.1 Overview - parking aid

⇒ “12.1.1 Overview - parking aid (front)”, page 181

⇒ “12.1.2 Overview - parking aid (rear)”, page 182

12.1.1 Overview - parking aid (front)

1 - Front centre right parking aid sender - G253-

- ❑ Removing and installing ⇒ page 185

2 - Front right parking aid sender - G252-

- ❑ Removing and installing ⇒ page 185

3 - Parking aid button - E266-

- ❑ Removing and installing ⇒ “2.9 Removing and installing switches in dash panel”, page 229

4 - Front parking aid warning buzzer - H22-

- ❑ Removing and installing ⇒ page 183

5 - Cover (bottom), driver side

6 - Bracket

- ❑ For onboard supply control unit

7 - Onboard supply control unit - J519-

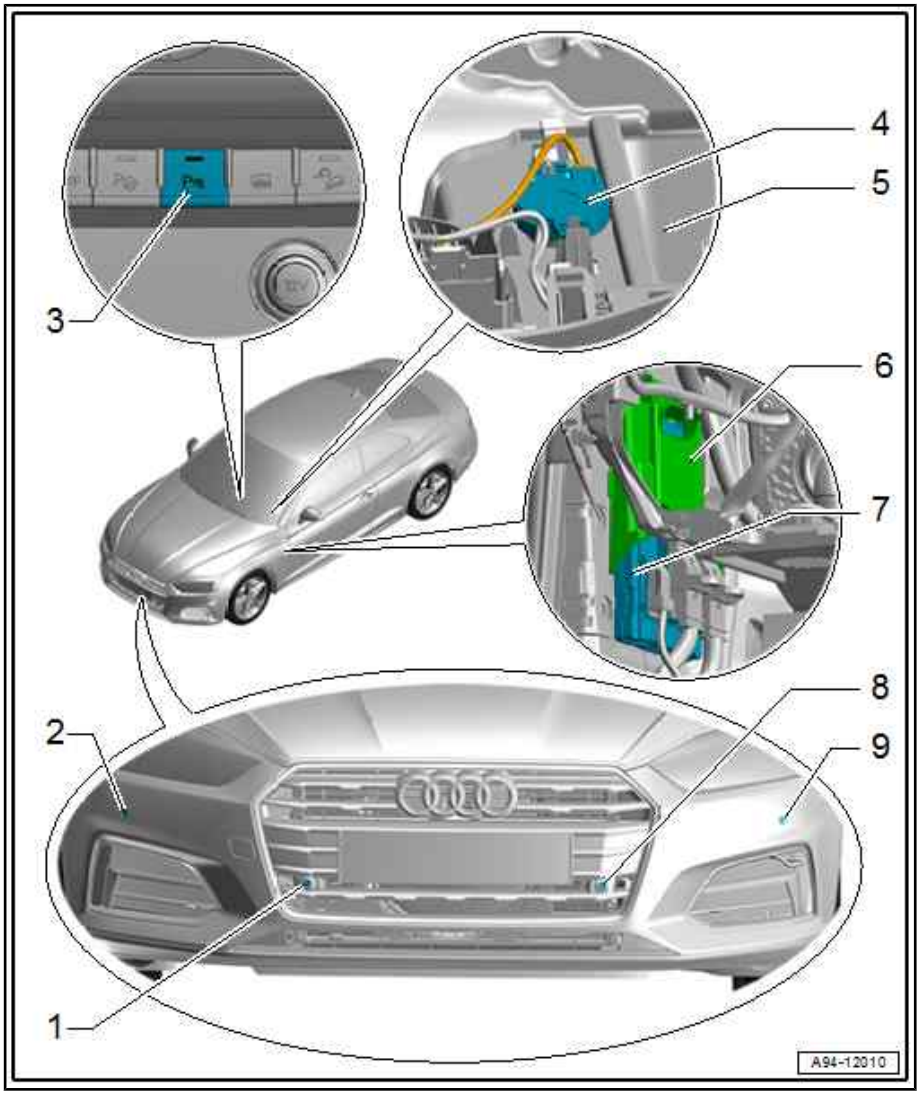
- ❑ Overview of fitting locations ⇒ page 301

8 - Front centre left parking aid sender - G254-

- ❑ Removing and installing ⇒ page 185

9 - Front left parking aid sender - G255-

- ❑ Removing and installing ⇒ page 185



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12.1.2 Overview - parking aid (rear)

1 - Rear centre left parking aid sender - G204-

- ❑ Removing and installing ⇒ page 186

2 - Rear left parking aid sender - G203-

- ❑ Removing and installing ⇒ page 186

3 - Onboard supply control unit - J519-

- ❑ Overview of fitting locations ⇒ page 301

4 - Bracket

- ❑ For onboard supply control unit

5 - Belt guide

- ❑ Rear right

6 - Rear parking aid warning buzzer - H15-

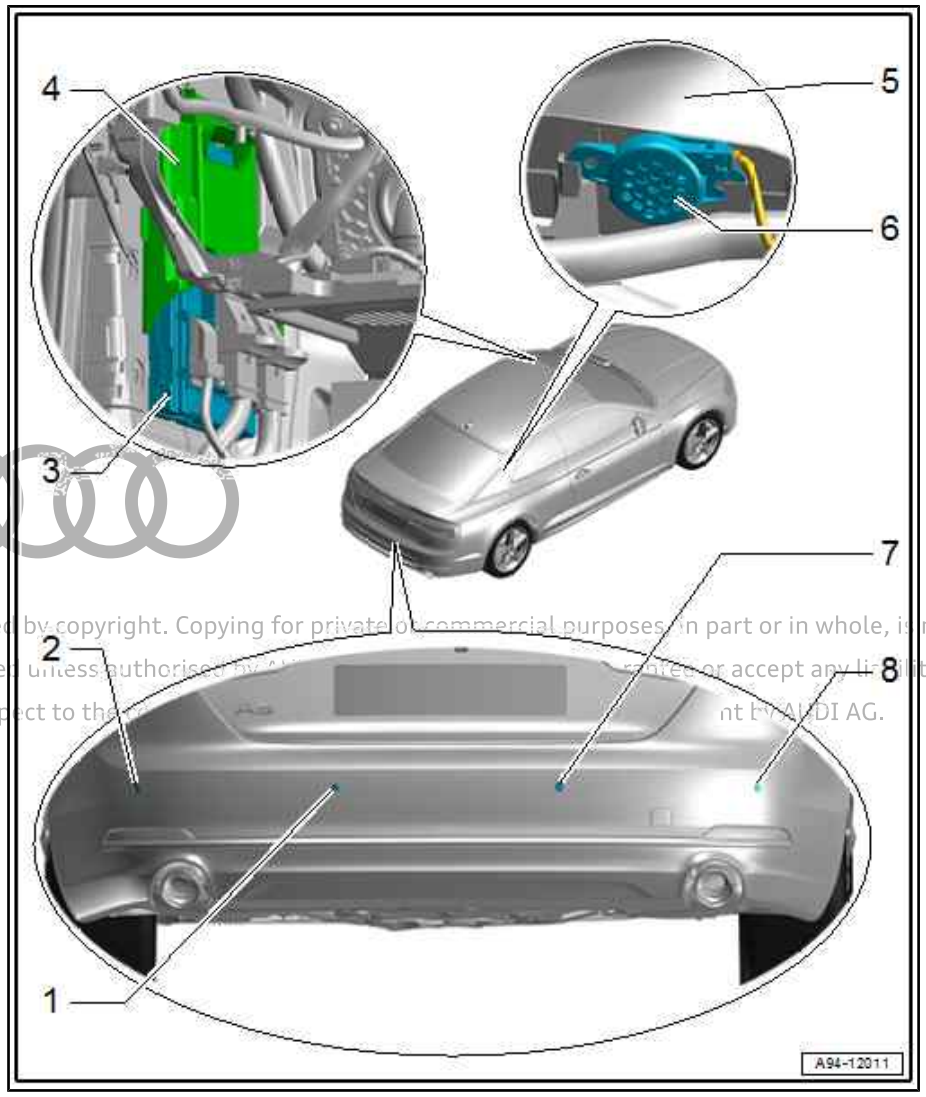
- ❑ Not fitted from model year 2019 onwards; from then on only front parking aid warning buzzer - H22- is installed for all parking aid versions (7X1, 7X2, 7X5)
- ❑ Removing and installing ⇒ page 183

7 - Rear centre right parking aid sender - G205-

- ❑ Removing and installing ⇒ page 186

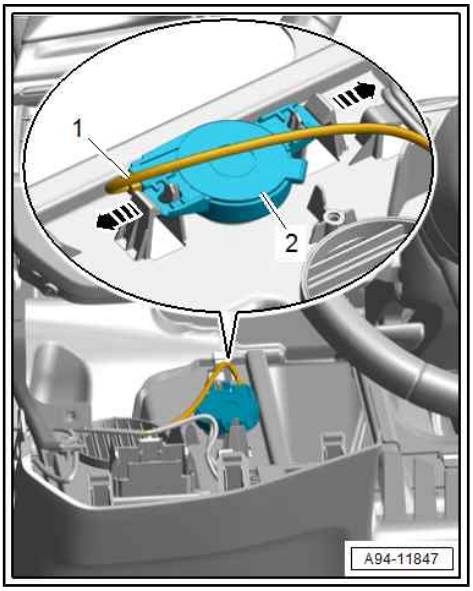
8 - Rear right parking aid sender - G206-

- ❑ Removing and installing ⇒ page 186



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12.2 Removing and installing front parking aid warning buzzer - H22-



Removing

– Remove dash panel cover (driver side) ⇒ General body repairs, interior; Rep. gr. 68 ; Storage compartments/covers/trim panels; Removing and installing dash panel cover (driver side) .

– Disengage catches -arrows-.

– Detach front parking aid warning buzzer -2-.

– Unplug electrical connector -1-.

Installing

Installation is carried out in reverse sequence.

12.3 Removing and installing rear parking aid warning buzzer - H15-

⇒ “12.3.1 Removing and installing rear parking aid warning buzzer H15 - Coupé, Sportback”, page 183

⇒ “12.3.2 Removing and installing rear parking aid warning buzzer H15 - Cabriolet”, page 184

12.3.1 Removing and installing rear parking aid warning buzzer - H15- - Coupé, Sportback

Note

Rear parking aid warning buzzer - H15- is no longer fitted from model year 2019 onwards; from then on only front parking aid warning buzzer - H22- is installed for all parking aid versions (7X1, 7X2, 7X5).

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Removing

Coupé:

– Remove C-pillar trim (right-side) ⇒ General body repairs, interior; Rep. gr. 70 ; Passenger compartment trim panels; Removing and installing C-pillar trim .

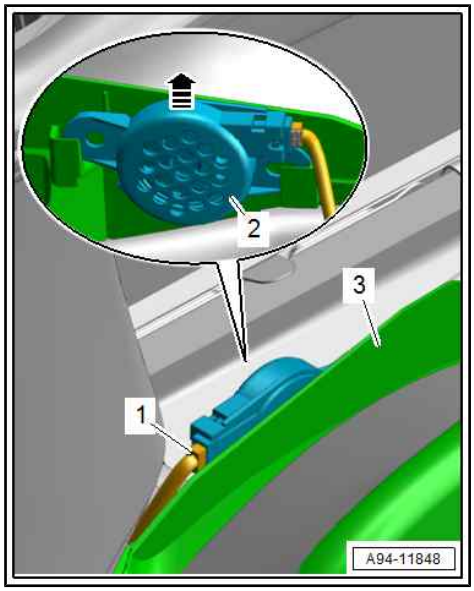
– Unplug electrical connector -1-.

Sportback:

– Remove belt guide (rear) ⇒ General body repairs, interior; Rep. gr. 69 ; Seat belts; Removing and installing belt guide (rear) .

All vehicles (continued):

– Swivel rear parking aid warning buzzer -2- out of mounting in belt guide -3- -arrow-.



Installing

Installation is carried out in reverse sequence.

12.3.2 Removing and installing rear parking aid warning buzzer - H15- - Cabriolet

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Read parking aid warning buzzer - H15- is no longer fitted from model year 2019 onwards; from then on only front parking aid warning buzzer - H22- is installed for all parking aid versions (7X1, 7X2, 7X5).

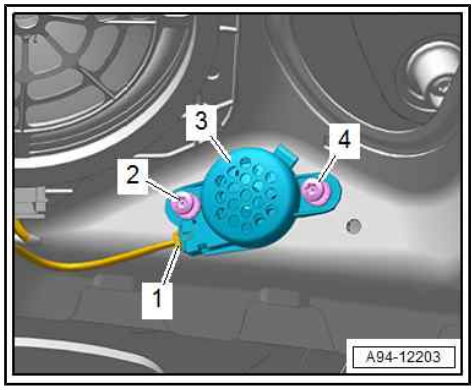
Removing

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

– Remove bolts -2, 4-.

– Detach rear parking aid warning buzzer -3- with fastener.

– Unplug electrical connector -1-.



Installing

Installation is carried out in reverse sequence.

12.4 Removing and installing front parking aid senders

⇒ "12.4.1 Removing and installing front parking aid senders - Coupé, Cabriolet", page 185

⇒ "12.4.2 Removing and installing front parking aid senders - Sportback", page 185

12.4.1 Removing and installing front parking aid senders - Coupé, Cabriolet

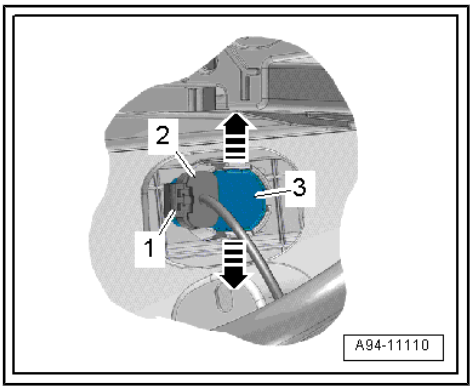
Removing

Outer senders:

– Remove air intake grille ⇒ General body repairs, exterior; Rep. gr. 63 ; Bumper (front) .

– Press both fasteners apart -arrows- and at the same time press sender -3- from outside to inside.

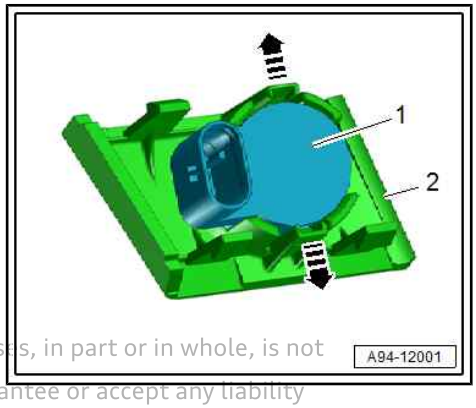
– Unplug electrical connector -2- by sliding locking element -1- to rear and pressing down release catch.



Inner senders:

– Remove mounting bracket for front parking aid sender ⇒ General body repairs, exterior; Rep. gr. 66 ; Radiator grille/front trim panel; Removing and installing radiator grille .

– Press both fasteners apart -arrows- and at the same time take sender -1- out of mounting -2-.



Installing

Installation is carried out in reverse sequence.

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12.4.2 Removing and installing front parking aid senders - Sportback

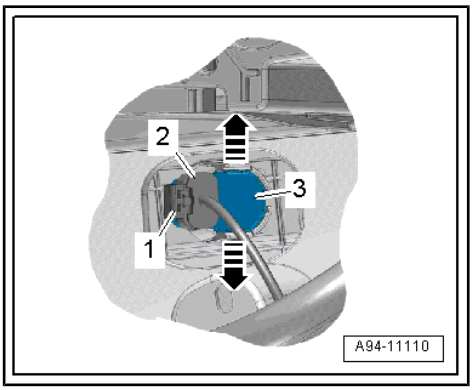
Removing

Outer senders:

– Remove front wheel spoiler ⇒ General body repairs, exterior; Rep. gr. 66 ; Wheel housing liners; Exploded view - wheel housing liner (front) .

– Press both fasteners apart -arrows- and at the same time press sender -3- from outside to inside.

– Unplug electrical connector -2- by sliding locking element -1- to rear and pressing down release catch.



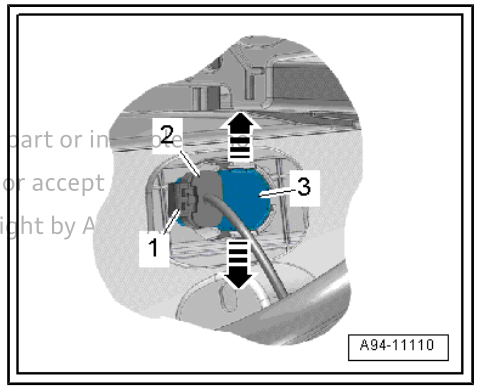
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Inner senders:

– Remove bumper cover ⇒ General body repairs, exterior; Rep. gr. 63 ; Bumper (front); Removing and installing bumper cover .

– Press both fasteners apart -arrows- and at the same time press sender -3- from outside to inside.

– Unplug electrical connector -2- by sliding locking element -1- to rear and pressing down release catch.



Installing

Installation is carried out in reverse sequence.

12.5 Removing and installing rear parking aid senders

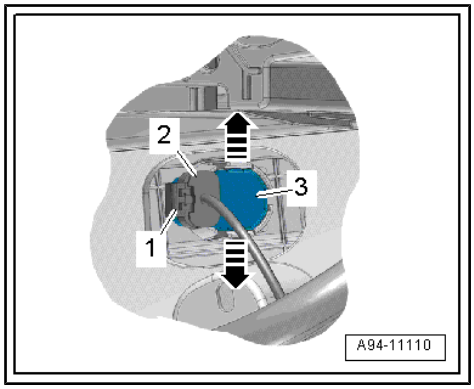
Removing

Outer senders:

– Vehicles with TDI engine and/or LTE aerial: Remove rear bumper cover ⇒ General body repairs, exterior; Rep. gr. 63 ; Bumper (rear); Removing and installing bumper cover .

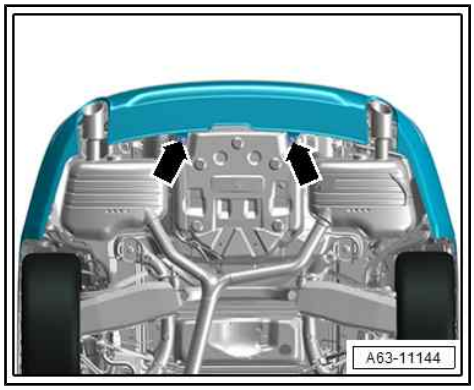
– Reach behind bumper cover and press both retaining tabs apart -arrows-; at the same time press out sender -3- from outside to inside.

– Unplug electrical connector -2- by sliding locking element -1- to rear and pressing down release catch.



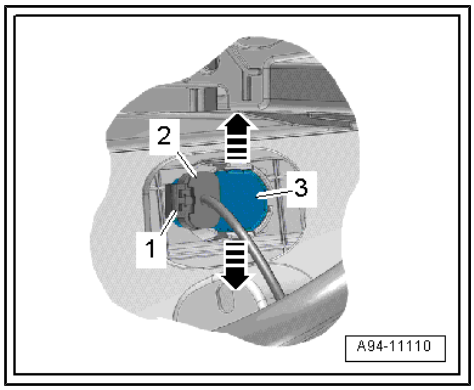
Inner senders:

– Remove nuts -arrows- on bottom section of bumper cover.



– Press both retaining tabs apart -arrows- and at the same time press out sender -3- from outside to inside.

– Unplug electrical connector -2- by sliding locking element -1- to rear and pressing down release catch.



Installing

Installation is carried out in reverse order; note the following:

- Versions with lane change assist: If bumper cover has been removed, lane change assist must be calibrated ⇒ page 251 .

Tightening torques

♦ ⇒ General body repairs, exterior; Rep. gr. 63 ; Bumper (rear); Exploded view - bumper cover

13 Park assist steering

⇒ “13.1 Overview - park assist steering”, page 187

⇒ “13.2 Removing and installing front sender”, page 188

⇒ “13.3 Removing and installing rear sender”, page 188

13.1 Overview - park assist steering

1 - Front left sender for park assist steering on left side of vehicle - G568-

- ❑ Removing and installing ⇒ page 188

2 - Front right sender for park assist steering on right side of vehicle - G569-

- ❑ Removing and installing ⇒ page 188

3 - Park assist steering button - E581-

- ❑ Removing and installing ⇒ “2.9 Removing and installing switches in dash panel”, page 229

4 - Rear right park assist steering sender - G717-

- ❑ Removing and installing ⇒ page 188

5 - Rear left park assist steering sender - G716-

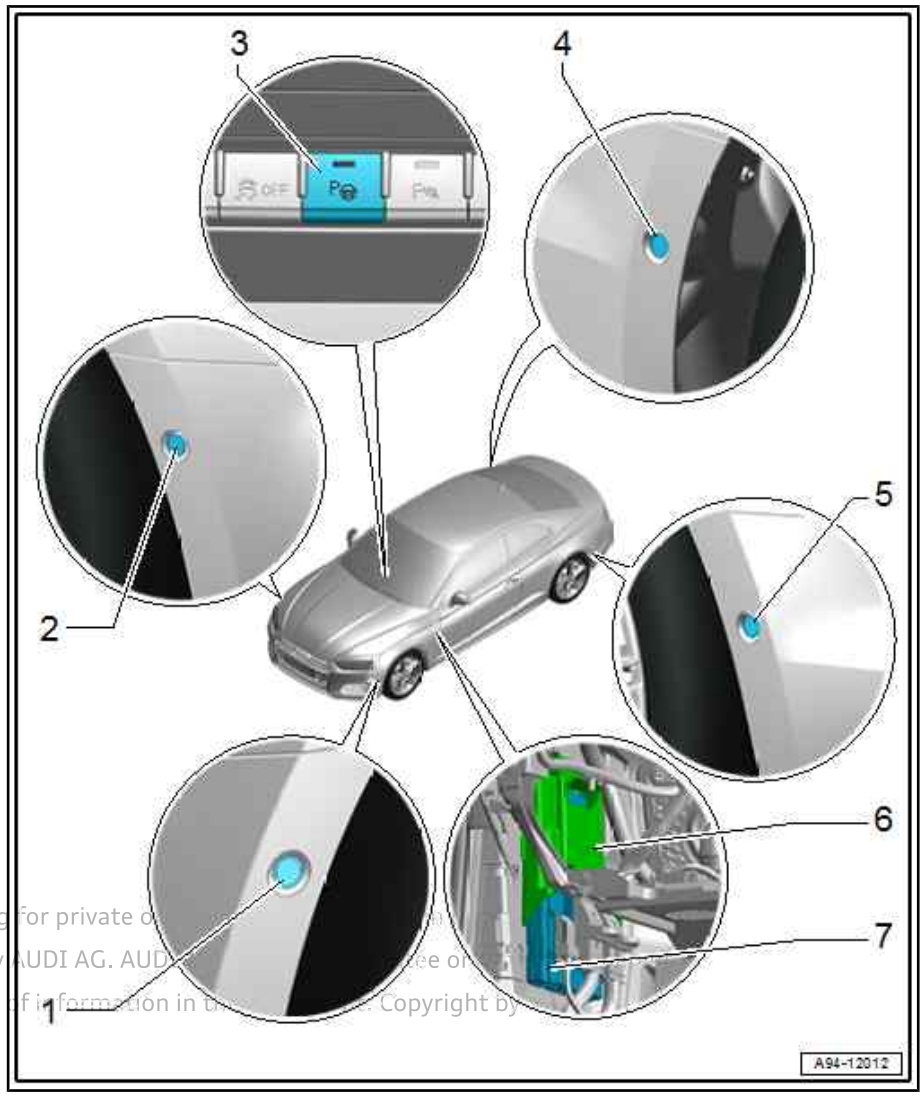
- ❑ Removing and installing ⇒ page 188

6 - Bracket

- ❑ For onboard supply control unit

7 - Onboard supply control unit - J519-

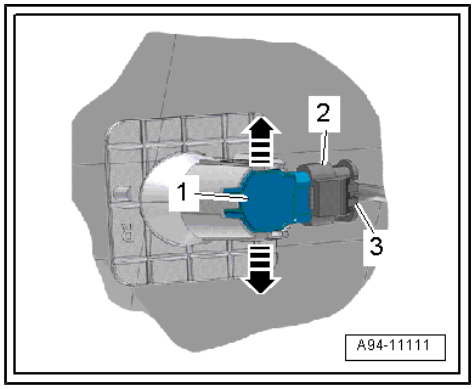
- ❑ Overview of fitting locations ⇒ page 301



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13.2 Removing and installing front sender

Removing



– Detach front section of wheel housing liner and push to one side ⇒ General body repairs, exterior; Rep. gr. 66 ; Wheel housing liners; Removing and installing wheel housing liner (front) .
– Press both fasteners apart -arrows- and at the same time press sender -1- from outside to inside.
– Unplug electrical connector -2- by sliding locking element -3- to rear and pressing down release catch.

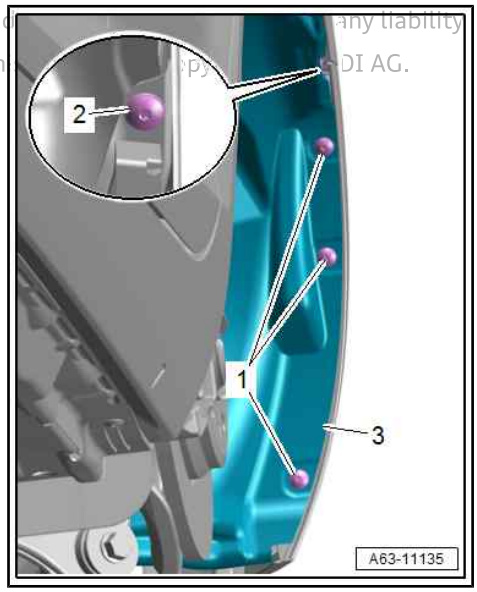
Installing

Installation is carried out in reverse sequence.

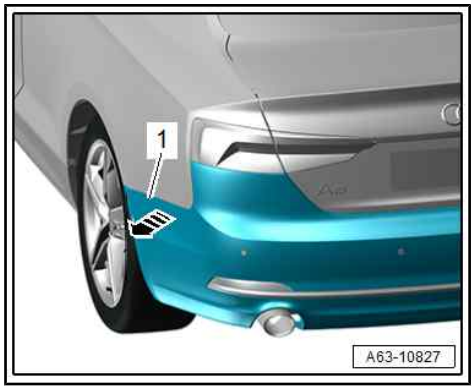
13.3 Removing and installing rear sender

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Removing

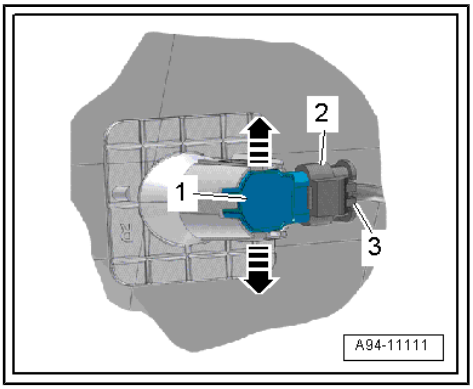


– Remove bolts -1-.
– Press wheel housing liner -3- to the side.
– Remove bolt -2-.



– Disengage side section -1- outwards from side panel -arrow- until rear sender is accessible.

– Press both retaining tabs apart -arrows- and at the same time press out sender -1- from outside to inside.
– Unplug electrical connector -2- by sliding locking element -3- to rear and pressing down release catch.



Installing

Installation is carried out in reverse sequence.

Tightening torques

- ⇒ General body repairs, exterior; Rep. gr. 63 ; Bumper (rear); Exploded view - bumper cover
- ⇒ General body repairs, exterior; Rep. gr. 66 ; Wheel housing liners; Exploded view - wheel housing liner (rear)

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96 – Lights, bulbs, switches - interior



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1 Lights

⇒ “1.1 Overview of fitting locations - lights in dash panel”, page 192

⇒ “1.2 Overview of fitting locations - lights in front doors”, page 193

⇒ “1.3 Overview of fitting locations - lights in rear doors”, page 194

⇒ “1.4 Overview of fitting locations - background lighting in doors”, page 195

⇒ “1.5 Overview of fitting locations - lights in side trim”, page 197

⇒ “1.6 Overview of fitting locations - lights in centre console”, page 198

⇒ “1.7 Overview of fitting locations - lights in luggage compartment”, page 199

⇒ “1.8 Overview of fitting locations - lights in roof trim”, page 200

⇒ “1.9 Removing and installing glove compartment light W6 ”, page 201

⇒ “1.10 Renewing bulb for glove compartment light W6 ”, page 201

⇒ “1.11 Removing and installing front footwell light K268 / K269 ”, page 202

⇒ “1.12 Removing and installing central locking SAFELOCK function warning lamp K133 ”, page 202

⇒ “1.13 Removing and installing light for interior door handle illumination L219 / L220 ”, page 202

⇒ “1.14 Removing and installing entry light W92 / W93 ”, page 203

⇒ “1.15 Removing and installing light for rear interior door handle illumination”, page 203

⇒ “1.16 Removing and installing rear entry light”, page 203

⇒ “1.17 Removing and installing front door ambient lighting bulb L164 / L165 ”, page 204

⇒ “1.18 Removing and installing door storage compartment illumination bulb L160 / L161 ”, page 206

⇒ “1.19 Removing and installing rear door background lighting bulb”, page 207

⇒ “1.20 Removing and installing light for ambient lighting in side trim”, page 209

⇒ “1.21 Removing and installing light for rear door storage compartment illumination L257 / L258 ”, page 211

⇒ “1.22 Removing and installing light for cup holder ambient lighting”, page 212

⇒ “1.23 Removing and installing light for centre console background lighting L193 / L194 ”, page 213

⇒ “1.24 Removing and installing selected range display Y5 ”, page 214

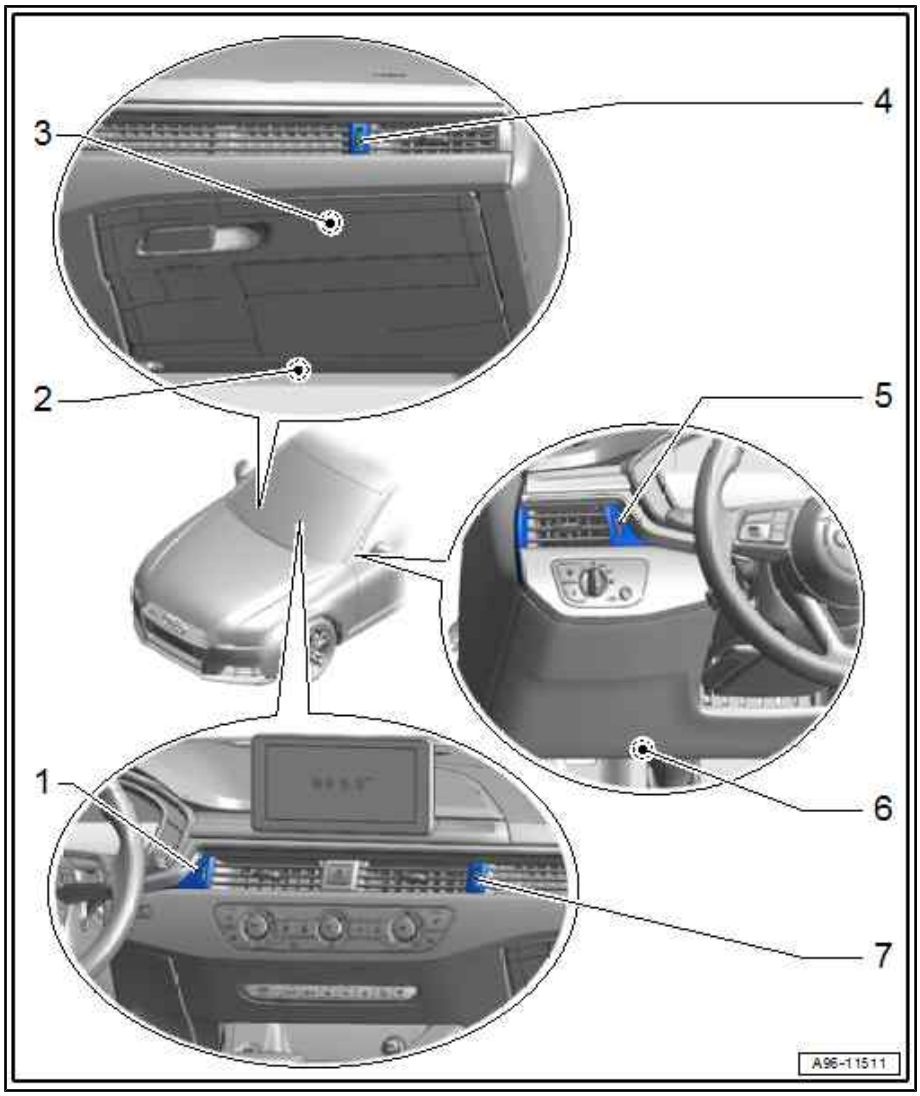
⇒ “1.25 Removing and installing rear footwell light W45 / W46 ”, page 214

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⇒ “1.26 Removing and installing luggage compartment light”, page 215

⇒ “1.27 Removing and installing illuminated vanity mirror W20 / W14 ”, page 216

1.1 Overview of fitting locations - lights in dash panel



1 - Dash panel central vent illumination bulb - L68- (left-side)

- ❑ Cannot be renewed separately if defective
- ❑ Renewing ⇒ General body repairs, interior; Rep. gr. 70 ; Dash panel; Removing and installing outer dash panel vents

2 - Front left footwell light - K268-

- ❑ Removing and installing ⇒ page 202

3 - Glove compartment light - W6-

- ❑ 12 V, 5 W
- ❑ Removing and installing ⇒ page 201

4 - Dash panel right vent illumination bulb - L69-

- ❑ Cannot be renewed separately if defective
- ❑ Renewing ⇒ General body repairs, interior; Rep. gr. 70 ; Dash panel; Removing and installing outer dash panel vents

5 - Dash panel left vent illumination bulb - L67-

- ❑ Cannot be renewed separately if defective
- ❑ Renewing ⇒ General body repairs, interior; Rep. gr. 70 ; Dash panel; Removing and installing outer dash panel vents

6 - Front right footwell light - K269-

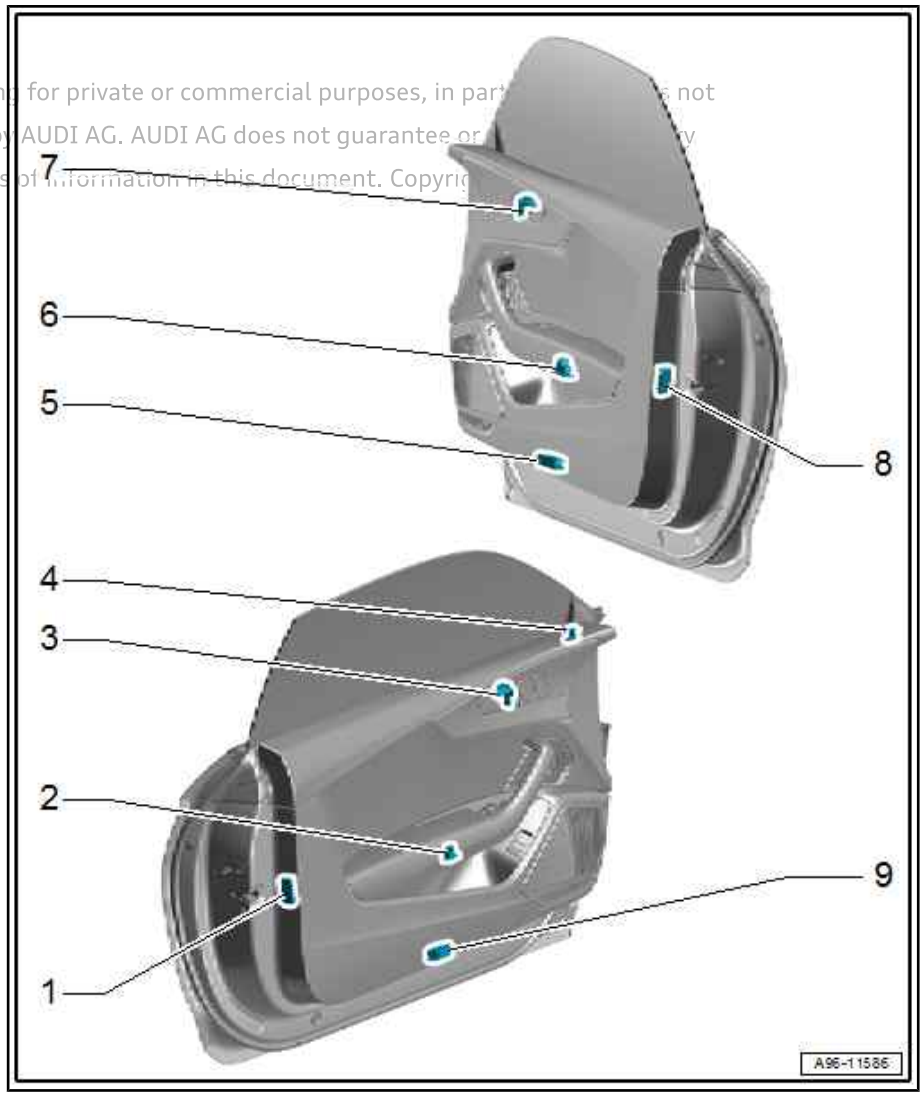
- ❑ Removing and installing ⇒ page 202

7 - Dash panel central vent illumination bulb - L68- (right-side)

- ❑ Cannot be renewed separately if defective
- ❑ Renewing ⇒ General body repairs, interior; Rep. gr. 70 ; Dash panel; Removing and installing outer dash panel vents

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1.2 Overview of fitting locations - lights in front doors



1 - Exit warning reflector (driver side)

2 - Driver door storage compartment illumination bulb - L160-

- ❑ Removing and installing ⇒ page 206

3 - Light for driver side interior door handle illumination - L219-

- ❑ Removing and installing ⇒ page 202

4 - Central locking SAFELOCK function warning lamp - K133-

- ❑ Removing and installing ⇒ page 202

5 - Passenger side entry light - W93-

- ❑ Removing and installing ⇒ page 203

6 - Front passenger door storage compartment illumination bulb - L161-

- ❑ Removing and installing ⇒ page 206

7 - Light for passenger side interior door handle illumination - L220-

- ❑ Removing and installing ⇒ page 202

8 - Exit warning reflector (passenger side)

9 - Driver side entry light - W92-

- ❑ Removing and installing ⇒ page 203

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1.3 Overview of fitting locations - lights in rear doors

1 - Exit warning reflector (driver side)

2 - Exit warning reflector (passenger side)

3 - Rear passenger side entry light - W84-

- ❑ Removing and installing ⇒ page 203

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4 - Light for rear right door storage compartment illumination - L258-

- ❑ Removing and installing ⇒ page 211

5 - Light for rear passenger side interior door handle illumination - L222-

- ❑ Removing and installing ⇒ page 203

6 - Light for rear driver side interior door handle illumination - L221-

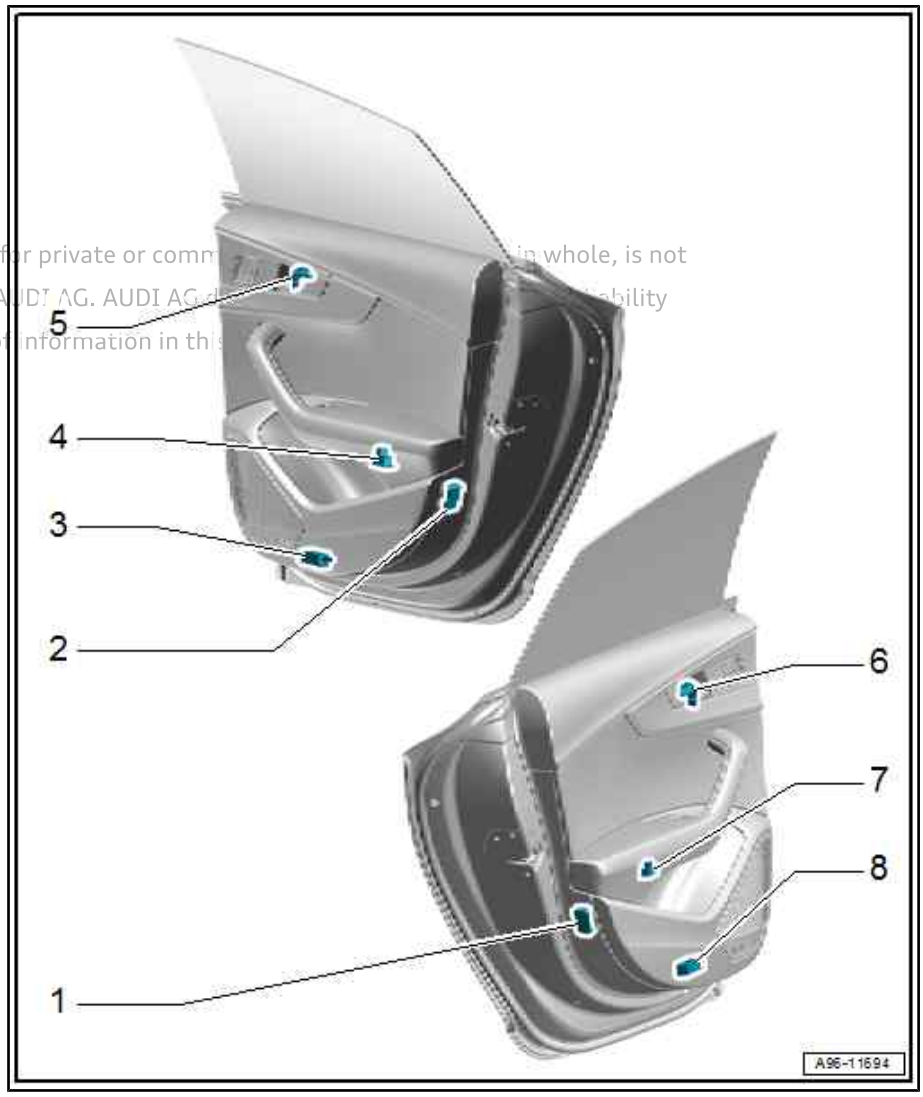
- ❑ Removing and installing ⇒ page 203

7 - Light for rear left door storage compartment illumination - L257-

- ❑ Removing and installing ⇒ page 211

8 - Rear driver side entry light - W83-

- ❑ Removing and installing ⇒ page 203

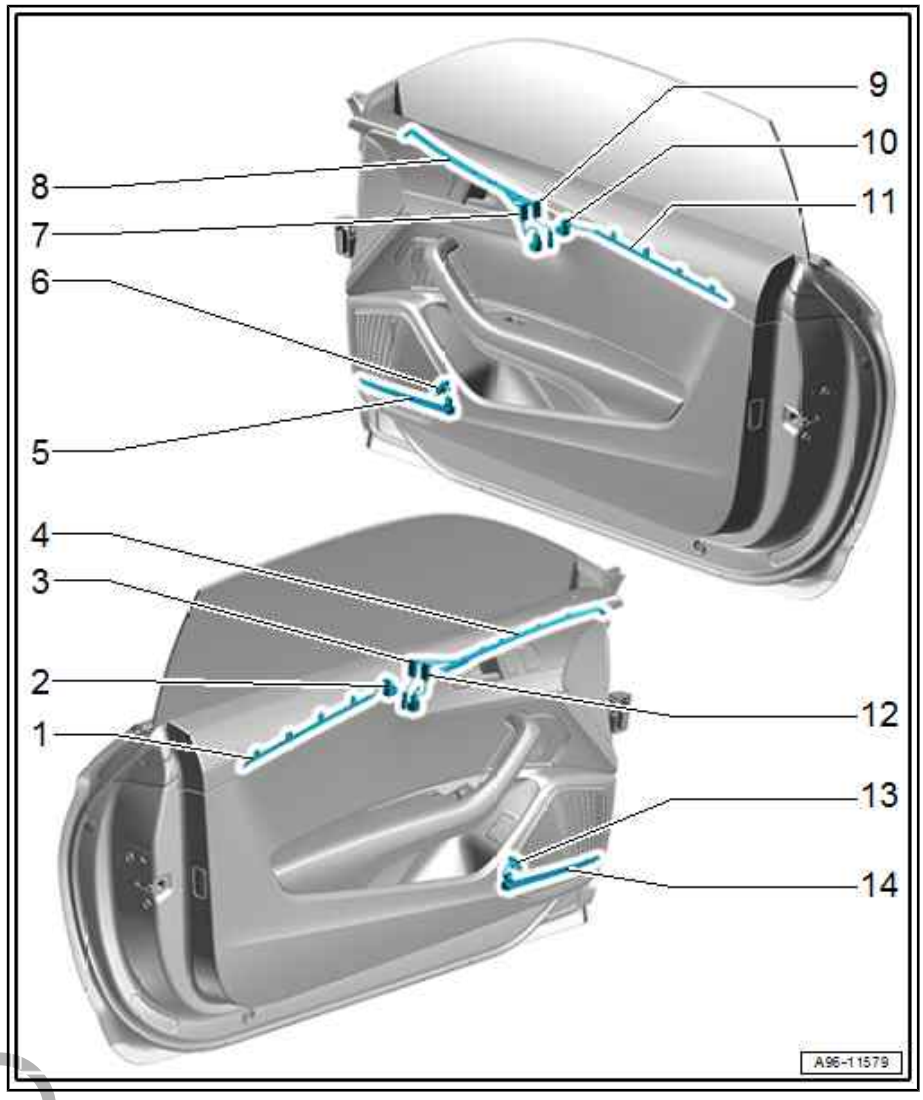


1.4 Overview of fitting locations - background lighting in doors

⇒ “1.4.1 Overview of fitting locations - background lighting in front doors”, page 195

⇒ “1.4.2 Overview of fitting locations - background lighting in rear doors”, page 196

1.4.1 Overview of fitting locations - background lighting in front doors



1 - Light conductor for driver side door background lighting

- ❑ Removing and installing ⇒ page 205

2 - Light for driver door background lighting - W86- (QQ1)

Light 1 for front left door background lighting - L199- (QQ2)

- ❑ Removing and installing ⇒ page 204

3 - Exit warning lamp, driver side - W111-

- ❑ Removing and installing ⇒ page 204

4 - Light conductor for door contour lighting/exit warning lamp

- ❑ Cannot be renewed separately. Renewing trim panel for interior door handle ⇒ General body repairs, interior; Rep. gr. 70 ; Door trim (front); Exploded view - door trim (front)

5 - Light conductor for passenger side door loudspeaker trim

- ❑ Cannot be renewed separately. Renewing passenger side door loudspeaker trim ⇒ General body repairs, interior; Rep. gr. 70 ; Door trim (front); Exploded view - door trim (front)

6 - Light for passenger side door loudspeaker trim - L224-

- ❑ Removing and installing ⇒ page 206

7 - Light for front right door contour lighting - L252-

- ❑ Removing and installing ⇒ page 205

8 - Light conductor for door contour lighting/exit warning lamp

- ❑ Cannot be renewed separately. Renewing trim panel for interior door handle ⇒ General body repairs, interior; Rep. gr. 70 ; Door trim (front); Exploded view - door trim (front)

9 - Exit warning lamp, front passenger side - W112-

- ❑ Removing and installing ⇒ page 204

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10 - Light for passenger door background lighting - W87- (QQ1)

Light 1 for front right door background lighting - L200- (QQ2)

- ❑ Removing and installing ⇒ page 204

11 - Light conductor for passenger door background lighting

- ❑ Removing and installing ⇒ page 205

12 - Light for front left door contour lighting - L251-

- ❑ Removing and installing ⇒ page 205

13 - Light for driver side door loudspeaker trim - L223-

- ❑ Removing and installing ⇒ page 206

14 - Light conductor for driver side door loudspeaker trim

- ❑ Cannot be renewed separately. Renewing passenger side door loudspeaker trim ⇒ General body repairs, interior; Rep. gr. 70 ; Door trim (front); Exploded view - door trim (front)

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1.4.2 Overview of fitting locations - background lighting in rear doors

1 - Light conductor for background lighting

- ❑ Removing and installing ⇒ page 209

2 - Light for rear door background lighting, driver side - W88- (QQ1)

Light 1 for rear left door background lighting - L201- (QQ2)

- ❑ Removing and installing ⇒ page 207

3 - Rear exit warning lamp, driver side - W113-

- ❑ Removing and installing ⇒ page 208

4 - Light conductor for background lighting

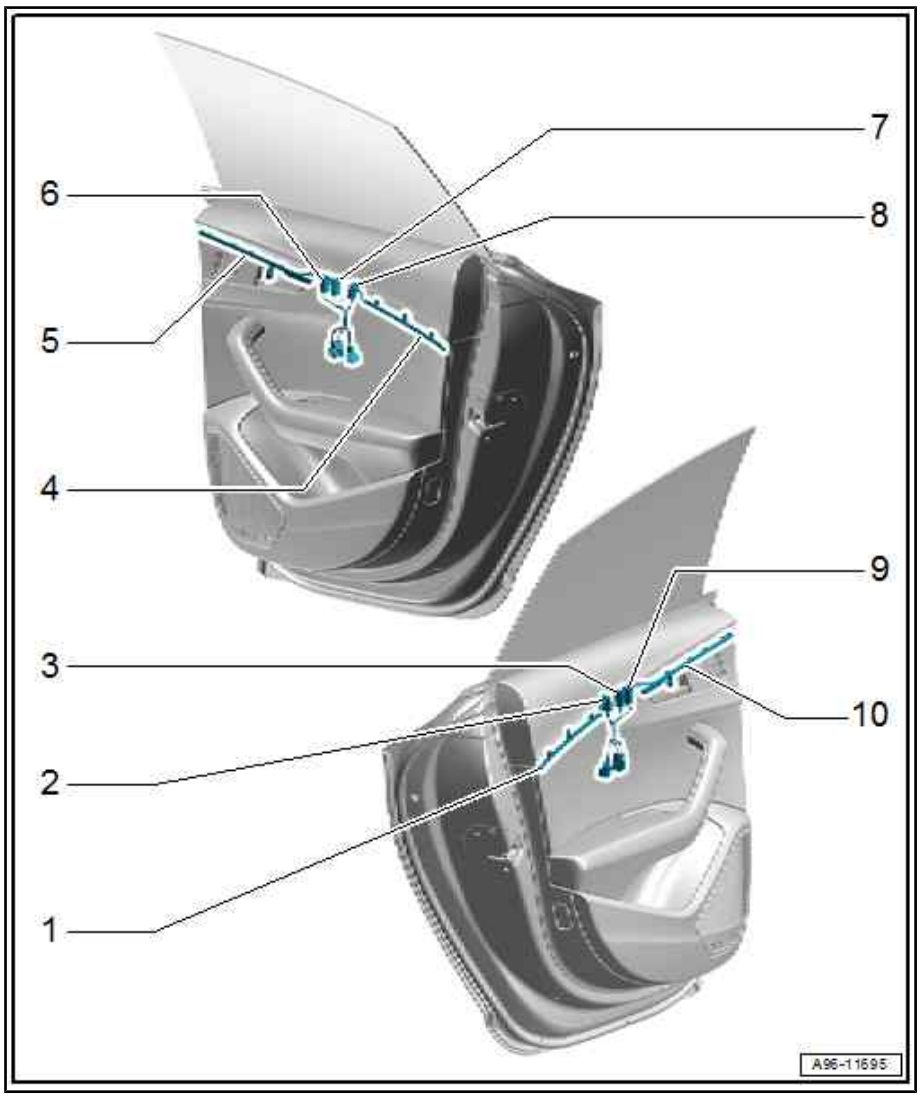
- ❑ Removing and installing ⇒ page 209

5 - Light conductor for door contour lighting/exit warning lamp

- ❑ Cannot be renewed separately. Renewing trim panel for interior door handle ⇒ General body repairs, interior; Rep. gr. 70 ; Door trim (rear); Exploded view - door trim (rear)

6 - Light for rear right door contour lighting - L254-

- ❑ Removing and installing ⇒ page 208



7 - Rear exit warning lamp, passenger side - W114-

- ❑ Removing and installing ⇒ page 208

8 - Light for rear door background lighting, passenger side - W89- (QQ1)

Light 1 for rear right door background lighting - L202- (QQ2)

- ❑ Removing and installing ⇒ page 207

9 - Light for rear left door contour lighting - L253-

- ❑ Removing and installing ⇒ page 208

10 - Light conductor for door contour lighting/exit warning lamp

- ❑ Cannot be renewed separately. Renewing trim panel for interior door handle ⇒ General body repairs, interior; Rep. gr. 70 ; Door trim (rear); Exploded view - door trim (rear)

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1.5 Overview of fitting locations - lights in side trim

1 - Light for rear left door storage compartment illumination - L257- in side trim

- ❑ Removing and installing ⇒ page 211

2 - Light conductor for ambient lighting in side trim (left-side)

- ❑ Removing and installing ⇒ page 210

3 - Light 1 for rear left door background lighting - L201- in side trim

- ❑ Removing and installing ⇒ page 209

4 - Light for rear right door storage compartment illumination - L258- in side trim

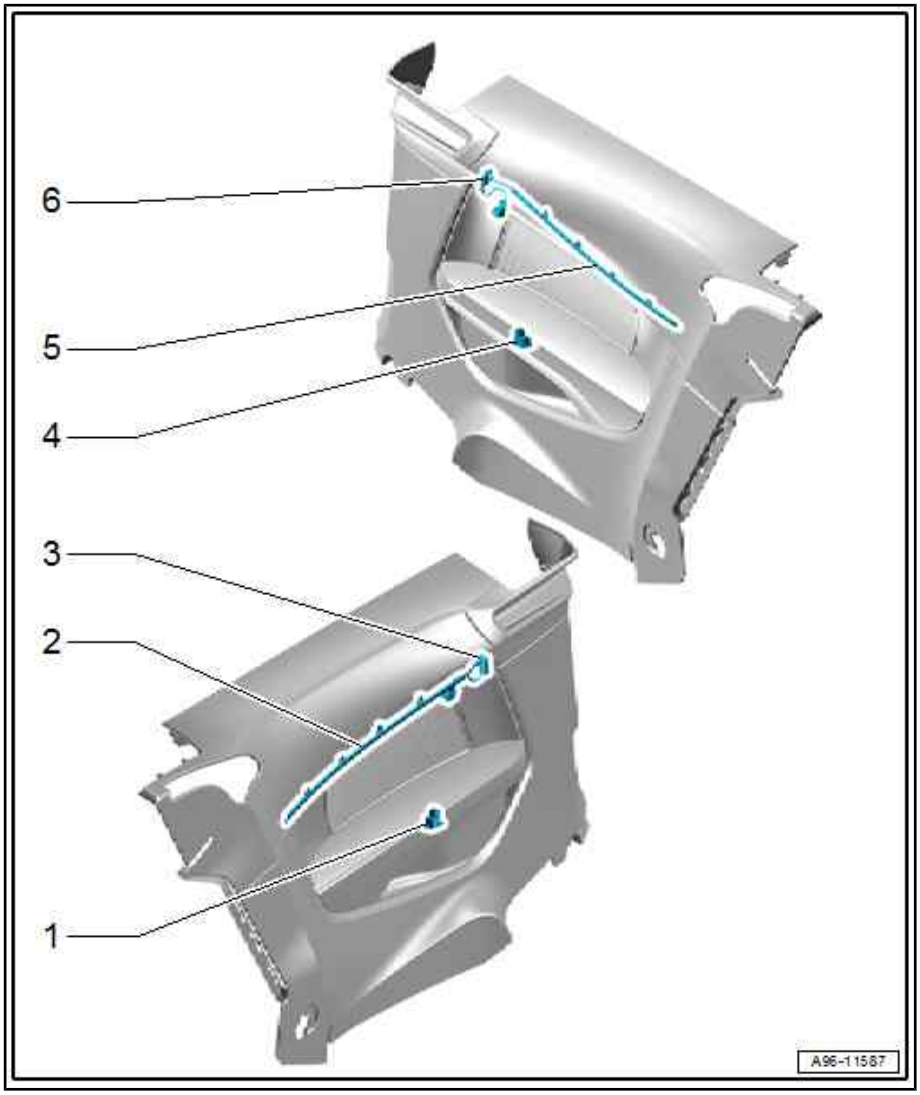
- ❑ Removing and installing ⇒ page 211

5 - Light conductor for ambient lighting in side trim (right-side)

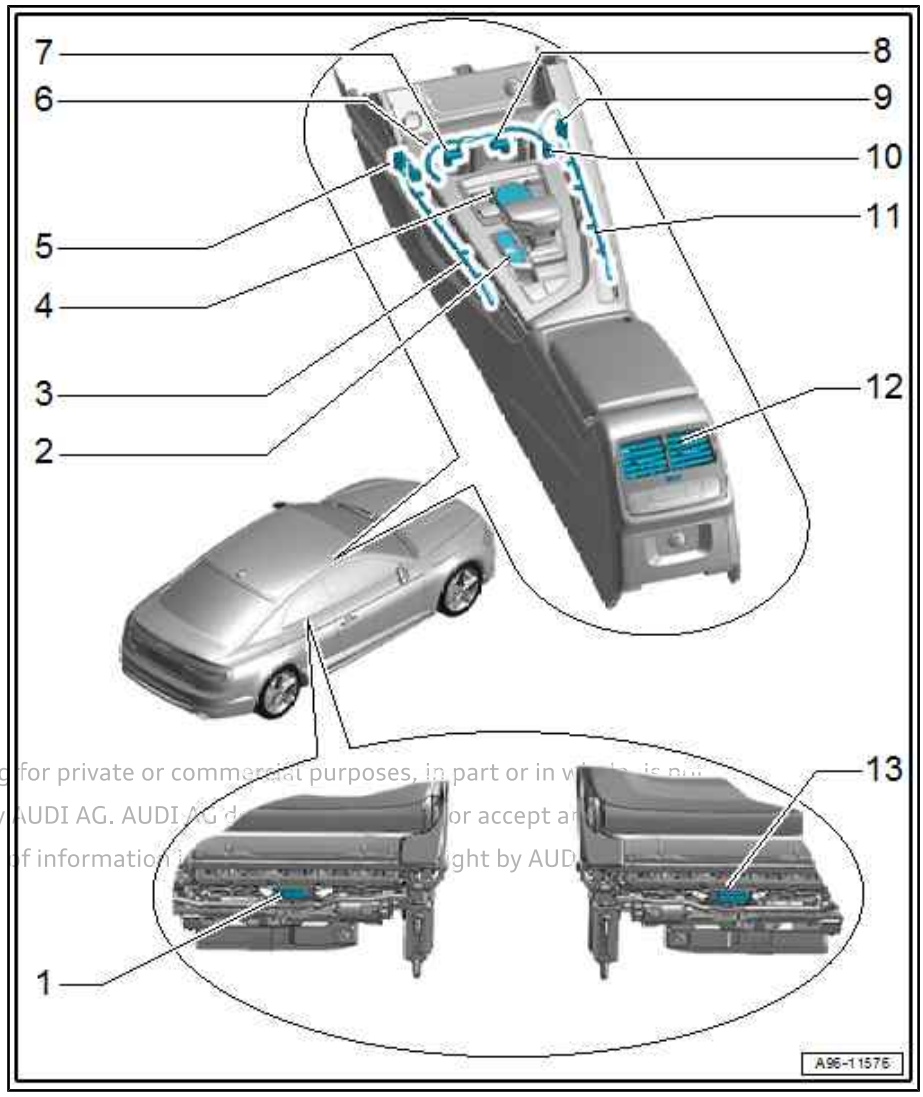
- ❑ Removing and installing ⇒ page 210

6 - Light 1 for rear right door background lighting - L202- in side trim

- ❑ Removing and installing ⇒ page 209



1.6 Overview of fitting locations - lights in centre console



1 - Rear left footwell light - W45-

- ❑ Removing and installing ⇒ page 214

2 - Selected range display - Y5-

- ❑ Removing and installing ⇒ page 214

3 - Light conductor for ambient lighting

- ❑ Removing and installing ⇒ page 213

4 - Light 1 for contour lighting of multimedia system operating unit - L233-

- ❑ If LED is defective, multimedia system operating unit must be renewed

5 - Light 1 for front centre console background lighting - L193-

- ❑ Removing and installing ⇒ page 213

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6 - Light conductor for light for cup holder ambient lighting

- ❑ Removing and installing ⇒ page 212

7 - Light 2 for cup holder ambient lighting - L246-

- ❑ Removing and installing ⇒ page 212

8 - Light for cup holder ambient lighting - L232-

- ❑ Removing and installing ⇒ page 212

9 - Light 2 for front centre console background lighting - L194-

- ❑ Removing and installing ⇒ page 213

10 - Light conductor for light for cup holder ambient lighting

- ❑ Removing and installing ⇒ page 212

11 - Light conductor for ambient lighting

- ❑ Removing and installing ⇒ page 213

12 - Rear vent illumination bulb - L216-

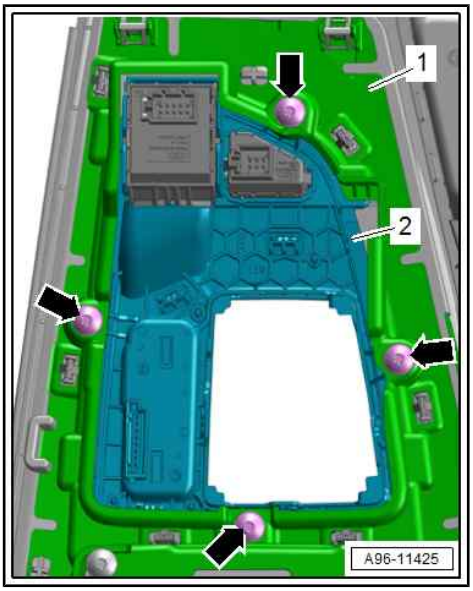
- ❑ Cannot be renewed separately if defective
- ❑ Renewing ⇒ General body repairs, interior; Rep. gr. 68 ; Centre console; Exploded view - centre console

13 - Rear right footwell light - W46-

- ❑ Removing and installing ⇒ page 214

Tightening torque for selected range display - Y5-

– Tighten bolts -arrows- to 1.1 Nm.



1.7 Overview of fitting locations - lights in luggage compartment

1 - Rear lid light - W51- - Sportback

- ❑ Removing and installing ⇒ page 216

2 - Left luggage compartment light - W18- - Sportback

- ❑ In luggage compartment side trim (left-side)
- ❑ Removing and installing ⇒ page 215

3 - Left luggage compartment light - W18- - Coupé, Cabriolet

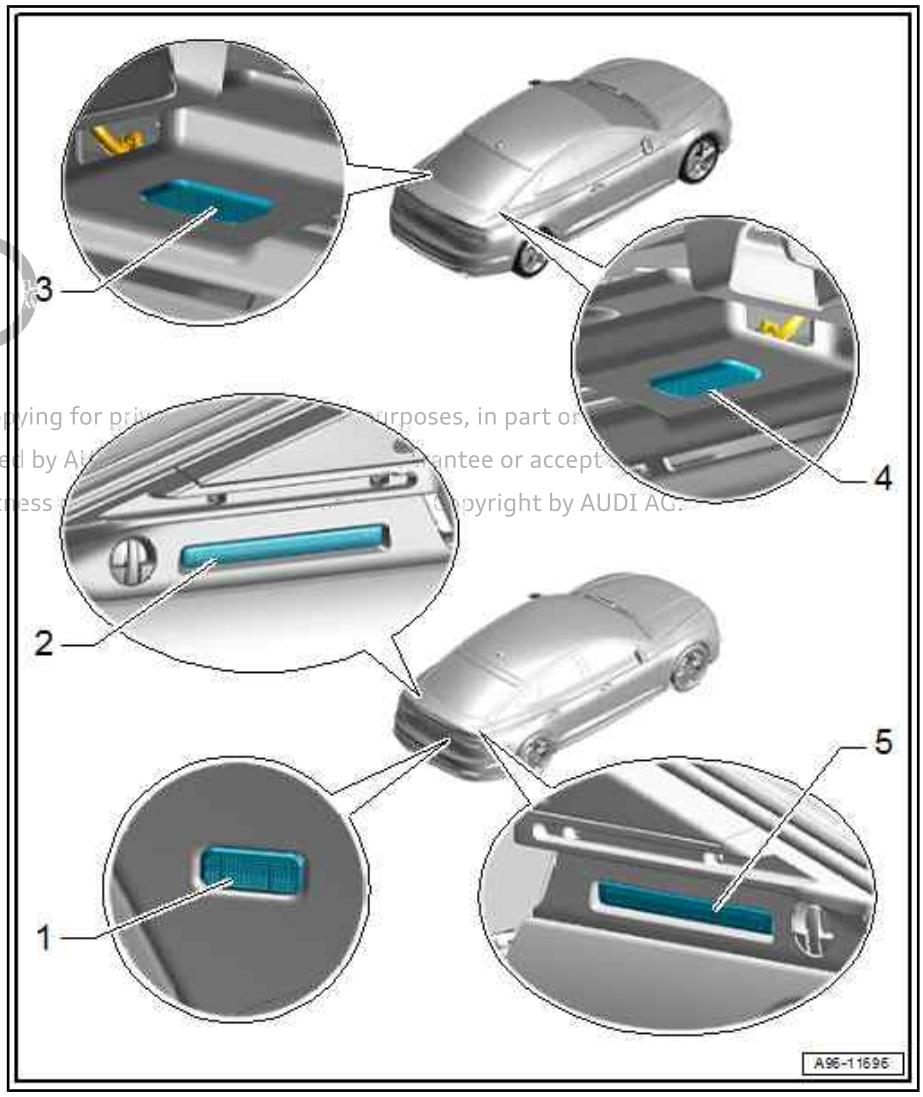
- ❑ In luggage compartment side trim (left-side)
- ❑ 12 V, 5 W
- ❑ Removing and installing ⇒ page 215

4 - Right luggage compartment light - W35- - Coupé, Cabriolet

- ❑ In luggage compartment side trim (right-side)
- ❑ Removing and installing ⇒ page 215

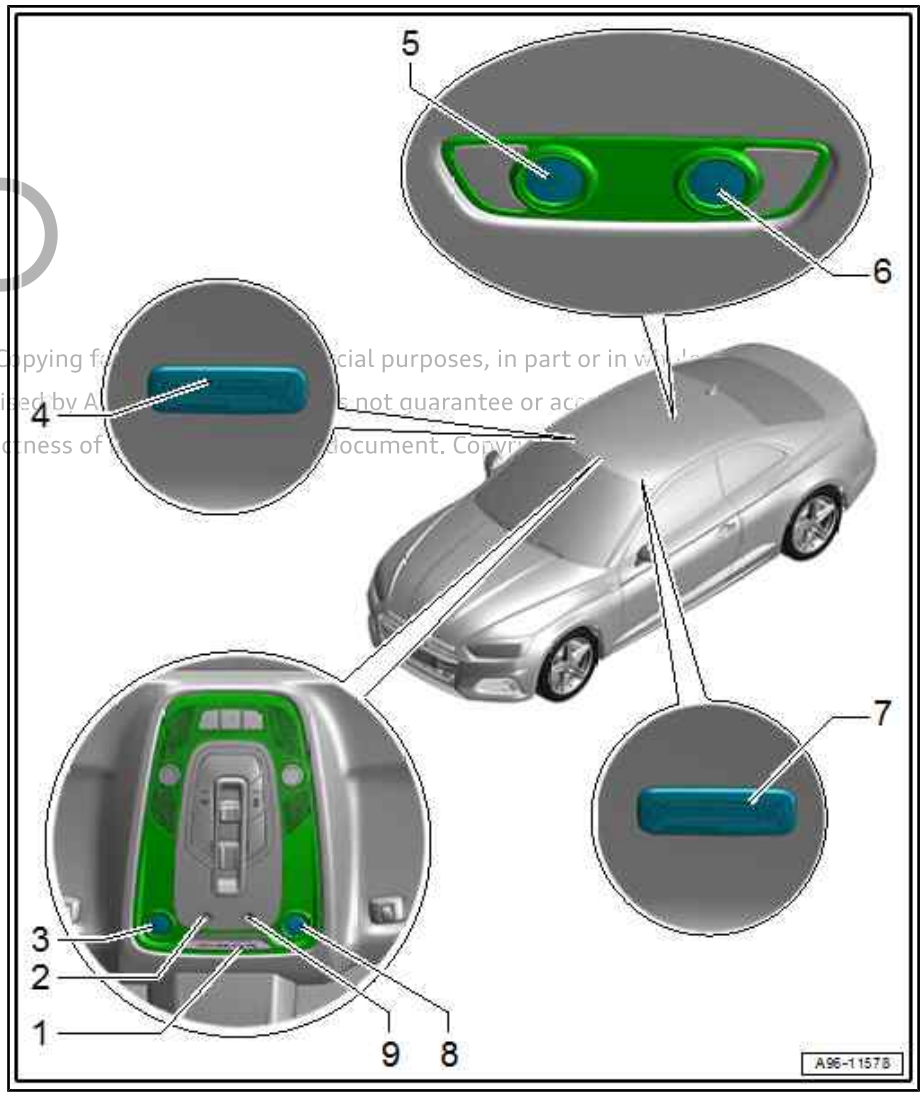
5 - Right luggage compartment light - W35- - Sportback

- ❑ In luggage compartment side trim (right-side)
- ❑ Removing and installing ⇒ page 215



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1.8 Overview of fitting locations - lights in roof trim



1 - Warning lamp for airbag deactivated on front passenger side - K145-

- If warning lamp is defective, front roof module - WX3- must be renewed ⇒ page 240
- Exploded view - front roof module - WX3- ⇒ page 228

2 - Background lighting

- If LED is defective, front roof module - WX3- must be renewed ⇒ page 240
- Exploded view - front roof module - WX3- ⇒ page 228

3 - Front interior light/driver side reading light

- Front left reading light - W65-
- If LED is defective, front roof module - WX3- must be renewed ⇒ page 240
- Exploded view - front roof module - WX3- ⇒ page 228

4 - Front passenger side illuminated vanity mirror - W14-

- Removing and installing ⇒ page 216

5 - Rear left reading light - W11-

- If LED is defective, rear interior light - WX2- must be renewed ⇒ page 244

6 - Rear right reading light - W12-

- If LED is defective, rear interior light - WX2- must be renewed ⇒ page 244

7 - Driver side illuminated vanity mirror - W20-

- Removing and installing ⇒ page 216

8 - Front interior light/front passenger side reading light

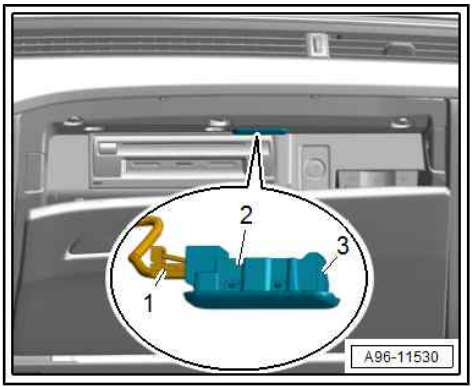
- Front right reading light - W66-
- If LED is defective, front roof module - WX3- must be renewed ⇒ page 240
- Exploded view - front roof module - WX3- ⇒ page 228

9 - Background lighting

- If LED is defective, front roof module - WX3- must be renewed ⇒ page 240
- Exploded view - front roof module - WX3- ⇒ page 228

1.9 Removing and installing glove compartment light - W6-

Removing



– Turn light switch to position “0”.
– Use a flat screwdriver to press in catch -3- and pry out glove compartment light -2-.
– Unplug electrical connector -1-.

Note:

If the glove compartment light cannot be removed as described, the glove box must be removed ⇒ General body repairs, interior; Rep. gr. 68 ; Storage compartments/covers/trim panels; Removing and installing glove box .

Installing

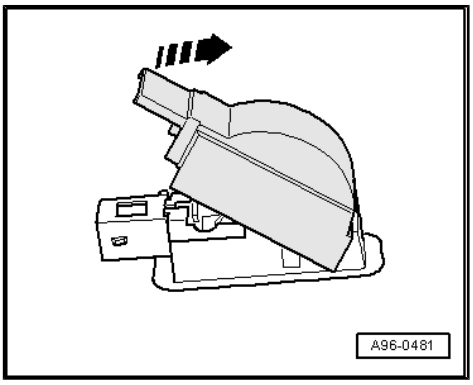
Installation is carried out in reverse order; note the following:

– Insert glove compartment light in opening and engage on opposite side.

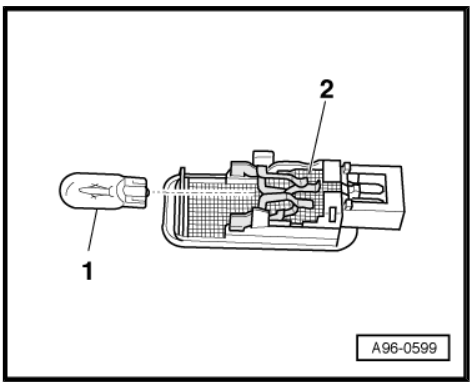
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1.10 Renewing bulb for glove compartment light - W6-

Removing



– Remove glove compartment light ⇒ page 201 .
– Carefully prise off cover over bulb -arrow-.

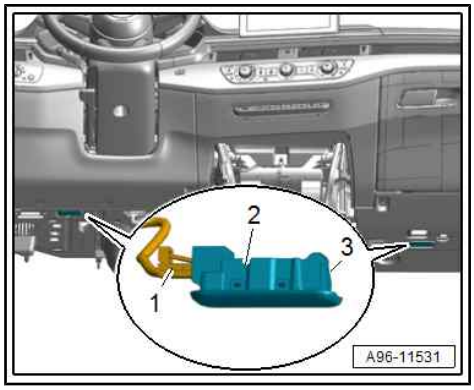


– Remove bulb -1- from bulb holder -2- on reverse side of glove compartment light.

Installing

Installation is carried out in reverse sequence.

1.11 Removing and installing front footwell light -K268- / -K269-



Removing

– Use a flat screwdriver to press in retaining tab -3- and pry out footwell light -2-.

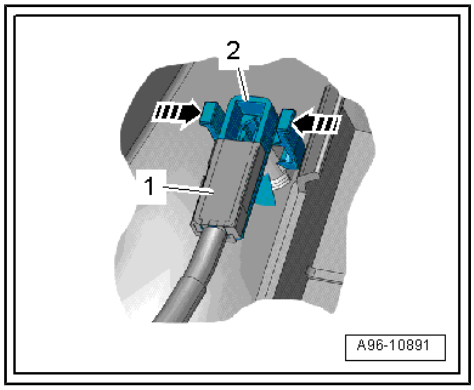
– Unplug electrical connector -1-.

Installing

Installation is carried out in reverse order; note the following:

• If the LED is defective, the complete footwell light must be renewed.

1.12 Removing and installing central locking SAFELOCK function warning lamp - K133-



Removing

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

– Release retaining clips -arrows-.

– Remove LED -1- from door trim -2- downwards.

Installing

Installation is carried out in reverse order; note the following:

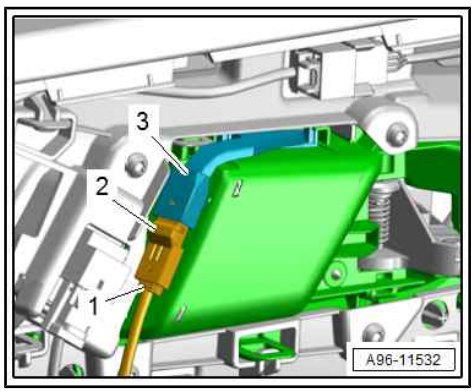
Note:

The new central locking SAFELOCK function warning lamp - K133- must be connected to the door trim wiring harness.

– Cut through electrical wiring and re-connect with new wiring for central locking SAFELOCK function warning lamp - K133- ⇒ Electrical system; General information; Rep. gr. 97 ; Repairing wiring harnesses and connectors; Repairing wiring harnesses .

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1.13 Removing and installing light for interior door handle illumination -L219- / -L220-



Removing

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

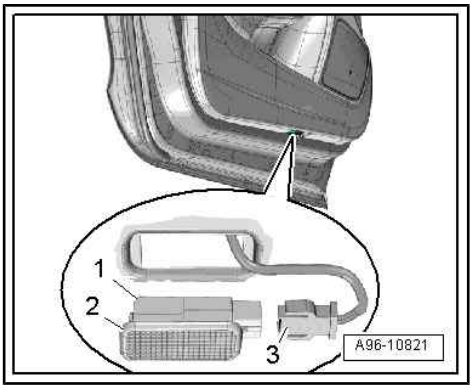
– Pull bulb holder -2- out of light conductor -3-.

– Unplug electrical connector -1-.

Installing

Installation is carried out in reverse sequence.

1.14 Removing and installing entry light - W92- / -W93-



Removing

– Use flat screwdriver to press in retaining tab -1- and pry out entry light -2-.

– Unplug electrical connector -3-.

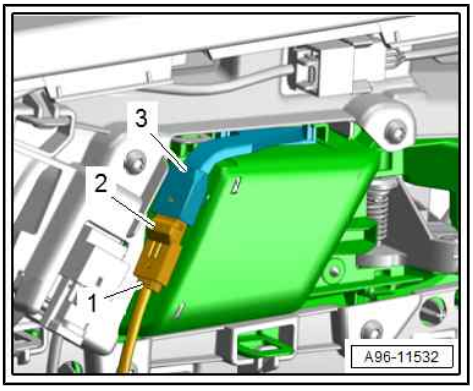
Installing

Installation is carried out in reverse order; note the following:

- If the LED is defective, the complete entry light must be renewed.

– Insert entry light in opening and engage on opposite side.

1.15 Removing and installing light for rear interior door handle illumination



Removing

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

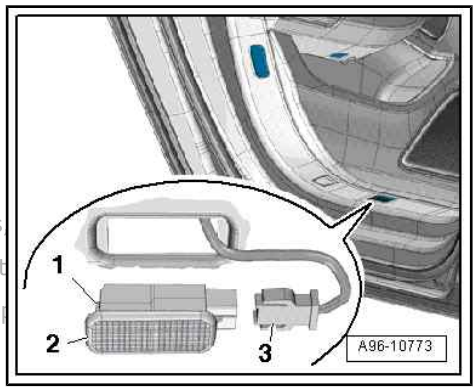
– Pull bulb holder -2- out of light conductor -3-.

– Unplug electrical connector -1-.

Installing

Installation is carried out in reverse sequence.

1.16 Removing and installing rear entry light



Removing

– Use flat screwdriver to press in retaining tab -1- and pry out entry light -2-.

– Unplug electrical connector -3-.

Installing

Installation is carried out in reverse order; note the following:

- If the LED is defective, the complete entry light must be renewed.

– Insert entry light in opening and engage on opposite side.

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1.17 Removing and installing front door ambient lighting bulb -L164- / -L165-

⇒ “1.17.1 Removing and installing light for door background lighting W86 / W87 , light 1 for front door background lighting L199 / L200 ”, page 204

⇒ “1.17.2 Removing and installing exit warning lamp W111 / W112 ”, page 204

⇒ “1.17.3 Removing and installing light for driver side door contour lighting L251 / L252 ”, page 205

⇒ “1.17.4 Removing and installing light conductor for front door ambient lighting”, page 205

⇒ “1.17.5 Removing and installing light for door loudspeaker trim L223 / L224 ”, page 206

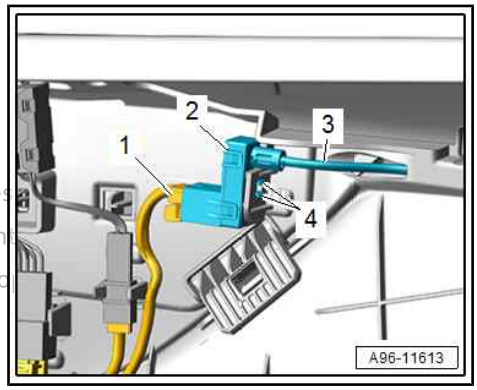
1.17.1 Removing and installing light for door background lighting -W86- / -W87- , light 1 for front door background lighting -L199- / -L200-

Removing

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

– Unplug electrical connector -1-.

– Release catches -4- and detach light -2- from light conductor -3-.



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Installing

Installation is carried out in reverse sequence.

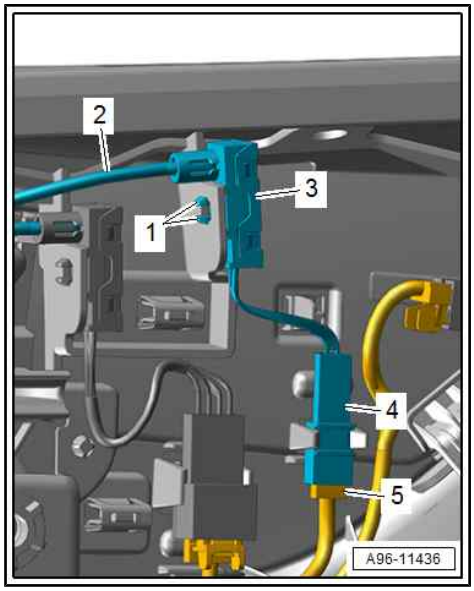
1.17.2 Removing and installing exit warning lamp -W111- / -W112-

Removing

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

– Unplug electrical connector -5- and move connector -4- clear.

– Release catches -1- and detach light -3- from light conductor -2-.



Installing

Installation is carried out in reverse sequence.

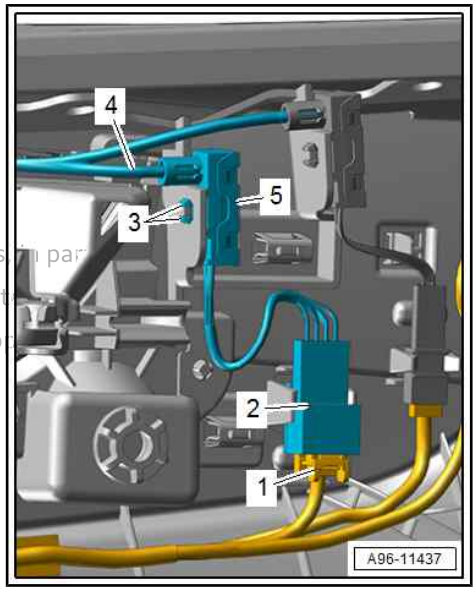
1.17.3 Removing and installing light for driver side door contour lighting -L251- / -L252-

Removing

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

– Unplug electrical connector -1- and move connector -2- clear.

– Release catches -3- and detach light -5- from light conductor -4-.



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Installing

Installation is carried out in reverse sequence.

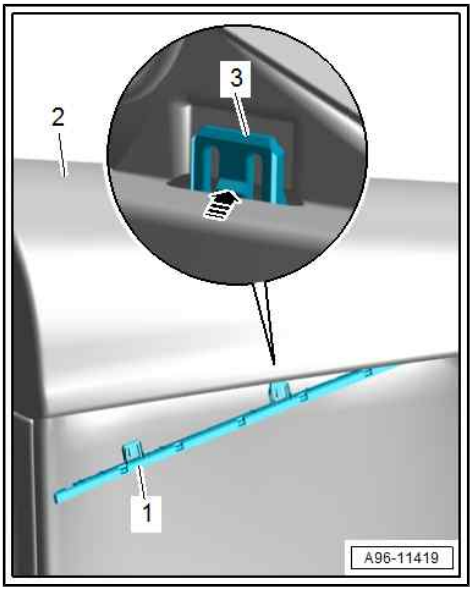
1.17.4 Removing and installing light conductor for front door ambient lighting

Removing

– Remove light for front door contour lighting ⇒ page 204 .

– Release all catches -3- -arrow-.

– Beginning in centre, pull light conductor -1- downwards out of door trim -2-, as shown in illustration.

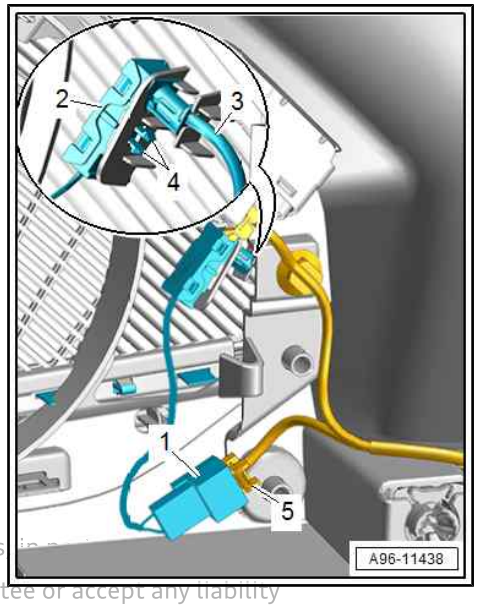


Installing

Installation is carried out in reverse sequence.

1.17.5 Removing and installing light for door loudspeaker trim -L223- / -L224-

Removing



– Remove door trim (front) ⇒ General body repairs, interior; Rep. gr. 70 ; Door trim (front); Removing and installing door trim (front) .
– Unplug electrical connector -5- and move connector -1- clear.
– Release catches -4- and detach light -2- from light conductor -3-.

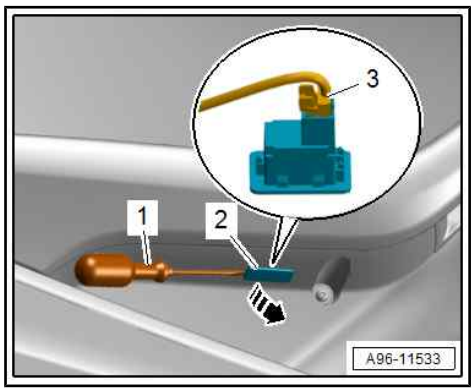
Installing

Installation is carried out in reverse sequence.

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1.18 Removing and installing door storage compartment illumination bulb -L160- / -L161-

Removing



– Pry bulb -2- out of door trim using a small screwdriver -1- -arrow-.
– Unplug electrical connector -3-.

Installing

Installation is carried out in reverse sequence.

1.19 Removing and installing rear door background lighting bulb

⇒ “1.19.1 Removing and installing light for rear door background lighting W88 / W89 , light 1 for rear door background lighting L201 / L202 ”, page 207

⇒ “1.19.2 Removing and installing light for rear door contour lighting L253 / L254 ”, page 208

⇒ “1.19.3 Removing and installing rear exit warning lamp W113 / W114 ”, page 208

⇒ “1.19.4 Removing and installing light conductor for rear door ambient lighting”, page 209

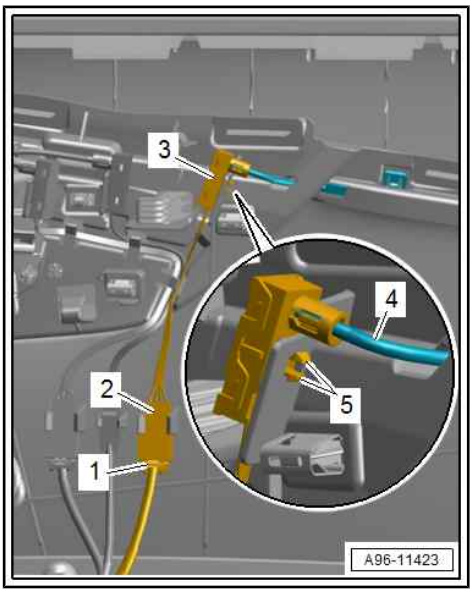
1.19.1 Removing and installing light for rear door background lighting -W88- / -W89- , light 1 for rear door background lighting -L201- / -L202-

Removing

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

– Unplug electrical connector -1- and move connector -2- clear.

– Release catches -5- and detach light -3- from light conductor -4-.



Installing

Installation is carried out in reverse sequence.

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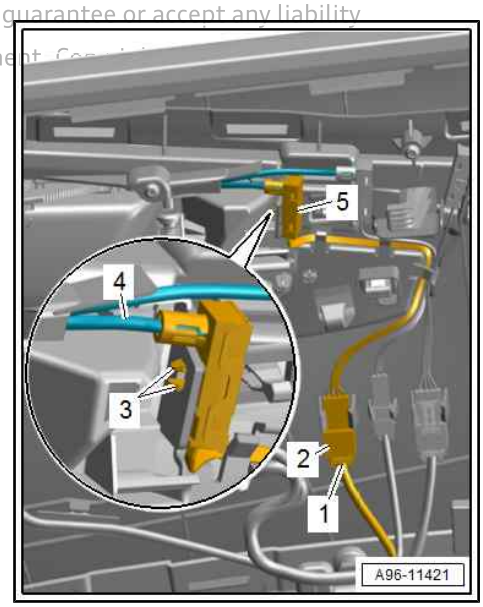
1.19.2 Removing and installing light for rear door contour lighting -L253- / -L254-

Removing

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

– Unplug electrical connector -1- and move connector -2- clear.

– Release catches -3- and detach light -5- from light conductor -4-.



Installing

Installation is carried out in reverse sequence.

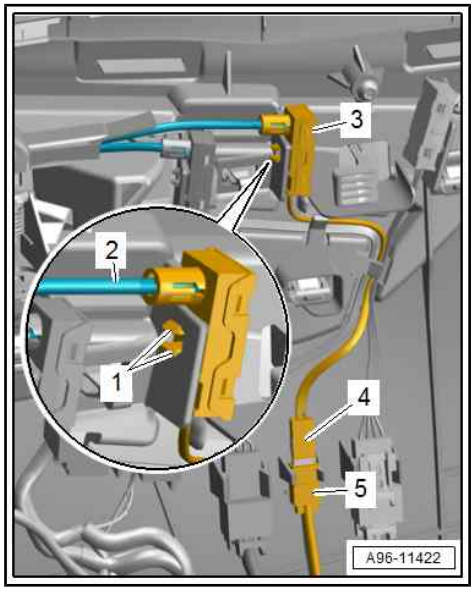
1.19.3 Removing and installing rear exit warning lamp -W113- / -W114-

Removing

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

– Unplug electrical connector -5- and move connector -4- clear.

– Release catches -1- and detach light -3- from light conductor -2-.



Installing

Installation is carried out in reverse sequence.

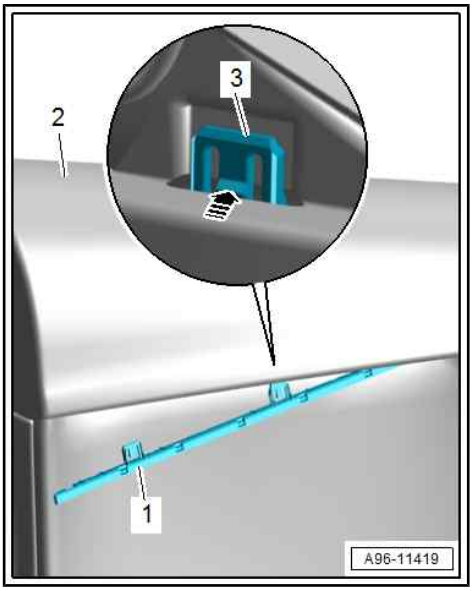
1.19.4 Removing and installing light conductor for rear door ambient lighting

Removing

– Remove light for rear door contour lighting ⇒ page 207 .

– Release all catches -3- -arrow-.

– Beginning in centre, pull light conductor -1- downwards out of door trim -2-, as shown in illustration.



Installing

Installation is carried out in reverse sequence.

1.20 Removing and installing light for ambient lighting in side trim

⇒ “1.20.1 Removing and installing light 1 for rear left door background lighting L201 / light 1 for rear right door background lighting L202 in side trim - Coupé”, page 209

⇒ “1.20.2 Removing and installing light 1 for rear left door background lighting L201 / light 1 for rear right door background lighting L202 in side trim - Cabriolet”, page 209

⇒ “1.20.3 Removing and installing light conductor for light for ambient lighting in side trim - Coupé”, page 210

⇒ “1.20.4 Removing and installing light conductor for light for ambient lighting in side trim - Cabriolet”, page 210

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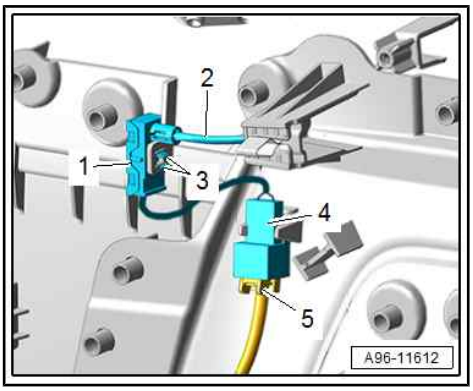
1.20.1 Removing and installing light 1 for rear left door background lighting - L201- / light 1 for rear right door background lighting - L202- in side trim - Coupé

Removing

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

– Unplug electrical connector -5- and move connector -4- clear.

– Release catches -3- and detach light -1- from light conductor -2-.



Installing

Installation is carried out in reverse sequence.

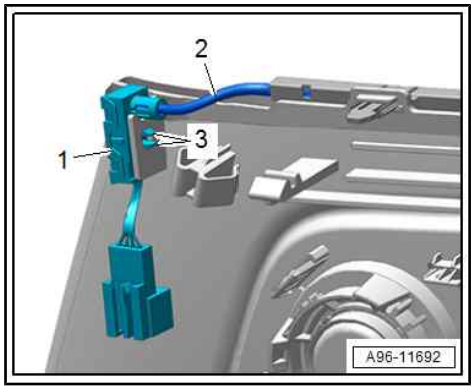
1.20.2 Removing and installing light 1 for rear left door background lighting - L201- /

light 1 for rear right door background lighting - L202- in side trim - Cabriolet

Removing

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

– Release catches -3- and detach light -1- from light conductor -2-.



Installing

Installation is carried out in reverse sequence.

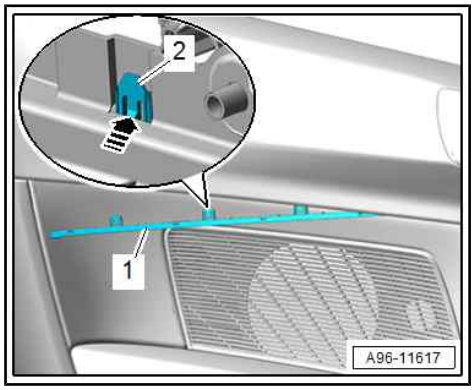
1.20.3 Removing and installing light conductor for light for ambient lighting in side trim - Coupé

Removing

– Remove light for ambient lighting in side trim ⇒ page 209 .

– Release all catches -2- -arrow-.

– Beginning in centre, pull light conductor -1- downwards out of side trim, as shown in illustration.



Installing

Installation is carried out in reverse sequence.

1.20.4 Removing and installing light conductor for light for ambient lighting in side trim - Cabriolet

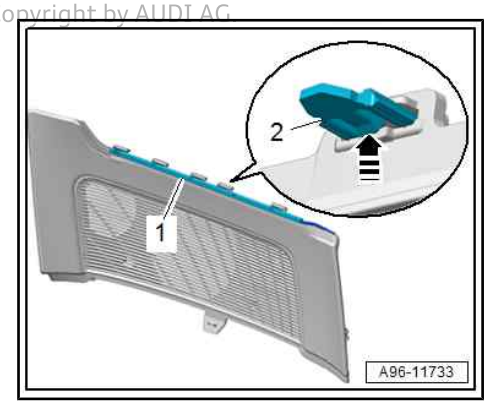
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Removing

– Remove light for ambient lighting in side trim ⇒ page 209 .

– Release all catches -2- -arrow-.

– Pull light conductor -1- out of mountings.



Installing

Installation is carried out in reverse sequence.

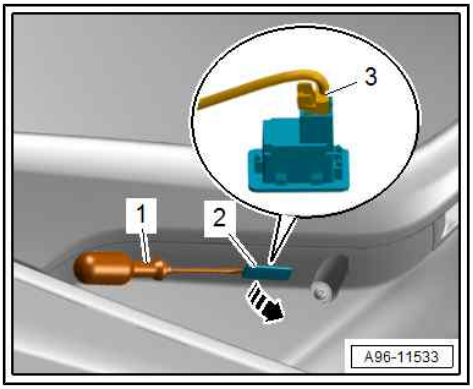
1.21 Removing and installing light for rear door storage compartment illumination - L257- / -L258-

⇒ “1.21.1 Removing and installing light for rear door storage compartment illumination L257 / L258 in door”, page 211

⇒ “1.21.2 Removing and installing light for rear door storage compartment illumination L258 / L257 in side trim”, page 211

1.21.1 Removing and installing light for rear door storage compartment illumination - L257- / -L258- in door

Removing



– Pry bulb -2- out of door trim using a small screwdriver -1- -arrow-.

– Unplug electrical connector -3-.

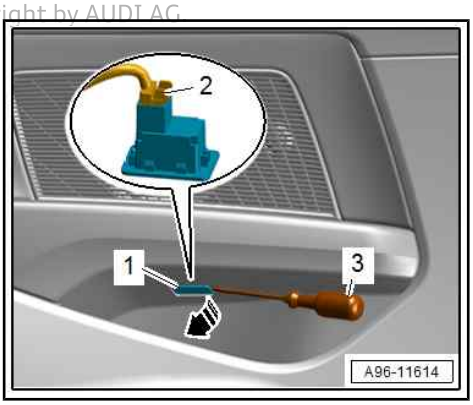
Installing

Installation is carried out in reverse sequence.

1.21.2 Removing and installing light for rear door storage compartment illumination - L258- / -L257- in side trim

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Removing



– Pry light -1- out of door trim using a small screwdriver -3- -arrow-.

– Unplug electrical connector -2-.

Installing

Installation is carried out in reverse sequence.

1.22 Removing and installing light for cup holder ambient lighting

⇒ “1.22.1 Removing and installing light for cup holder ambient lighting L232 / L246 ”, page 212

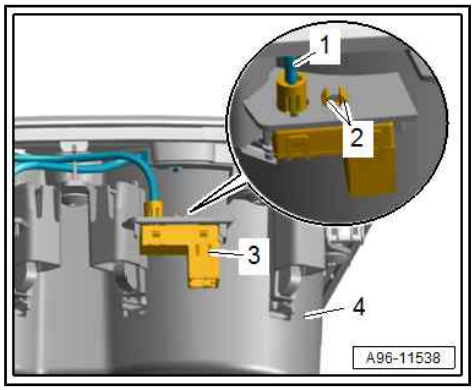
⇒ “1.22.2 Removing and installing light conductor for cup holder ambient lighting”, page 212

1.22.1 Removing and installing light for cup holder ambient lighting -L232- / -L246-

Removing

– Remove centre console insert ⇒ General body repairs, interior; Rep. gr. 68 ; Centre console; Removing and installing centre console insert .

– Release catches -2- and detach light -3- from light conductor -1-.



Installing

Installation is carried out in reverse sequence.

1.22.2 Removing and installing light conductor for cup holder ambient lighting

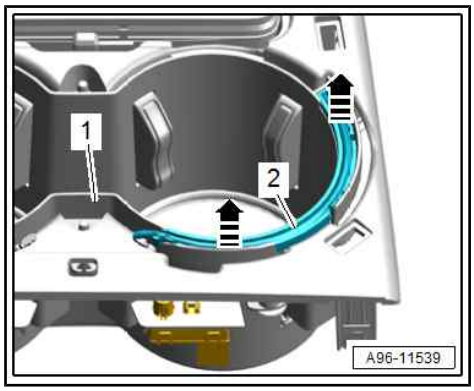
Removing

– Remove light for cup holder ambient lighting ⇒ page 212 .

– Remove trim panel for centre console insert ⇒ General body repairs, interior; Rep. gr. 68 ; Centre console; Removing and installing trim panel for centre console .

– Press light conductor -2- carefully out of fasteners -arrows-.

– Guide light conductor out of cup holder -1-.



Installing

Installation is carried out in reverse sequence.

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1.23 Removing and installing light for centre console background lighting -L193- / -L194-

⇒ “1.23.1 Removing and installing light for centre console background lighting L193 / L194 ”, page 213

⇒ “1.23.2 Removing and installing light conductor for centre console background lighting L193 / L194 ”, page 213

1.23.1 Removing and installing light for centre console background lighting -L193- / -L194-

Removing

– Remove trim panel for centre console ⇒ General body repairs, interior; Rep. gr. 68 ; Centre console; Removing and installing trim panel for centre console .

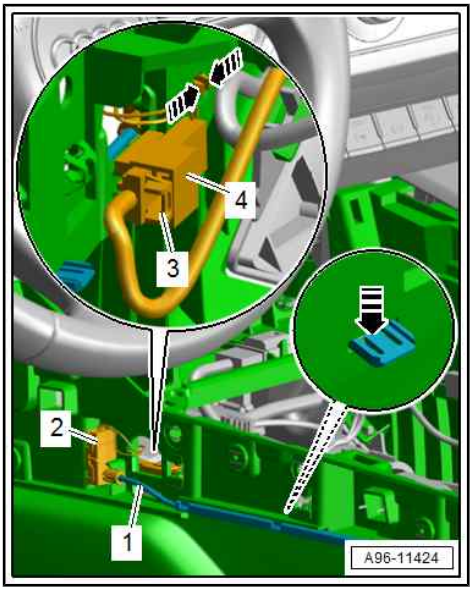
– Unplug electrical connector -4- and move connector -3- clear.

– Release catches -arrows- and pull light -2- off slightly with light conductor -1-.

– Detach light conductor from light.

Installing

Installation is carried out in reverse sequence.



1.23.2 Removing and installing light conductor for centre console background lighting -L193- / -L194-

Removing

– Remove trim panel for centre console ⇒ General body repairs, interior; Rep. gr. 68 ; Centre console; Removing and installing trim panel for centre console .

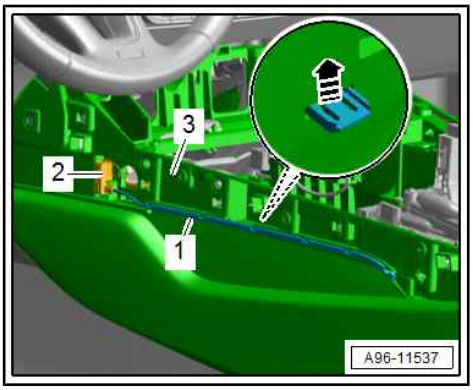
– Disengage catches -arrow-.

– Detach light conductor -1- from centre console -3-.

– Detach light conductor from light -2-.

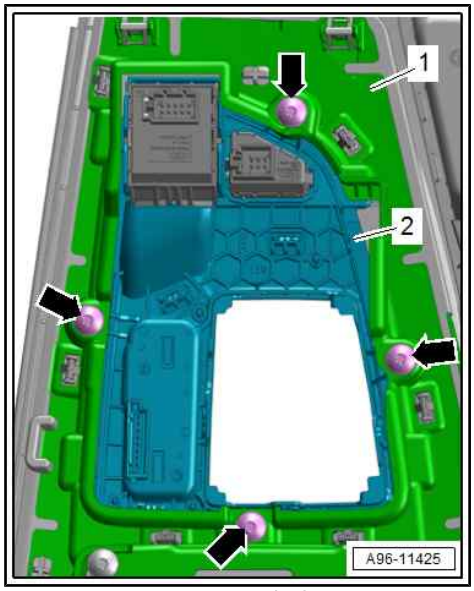
Installing

Installation is carried out in reverse sequence.



1.24 Removing and installing selected range display - Y5-

Removing



– Remove trim for centre console insert ⇒ General body repairs, interior; Rep. gr. 68 ; Centre console; Removing and installing trim for operating and display unit .
– Remove bolts -arrows-.
– Detach selected range display -2- from centre console insert -1-.
– Remove electromechanical parking brake button/auto-hold button ⇒ page 236 .

Installing

Installation is carried out in reverse sequence.

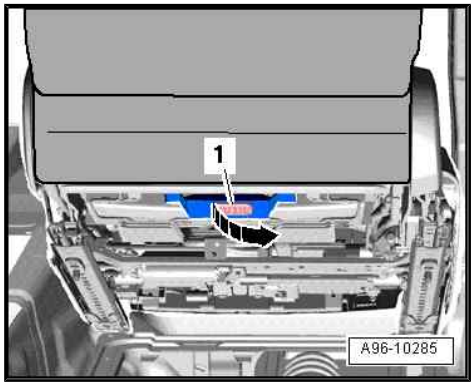
Tightening torques

- ⇒ Fig. ““Tightening torque for selected range display -Y5- ”“ , page 199

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1.25 Removing and installing rear footwell light -W45- / -W46-

Removing



– Use flat screwdriver to carefully pry out bulb -1- at recess -arrow-.
– Unplug electrical connector.

Installing

Installation is carried out in reverse order; note the following:

- If the LED is defective, the complete footwell light must be renewed.

– Insert footwell light in opening and engage on opposite side.

1.26 Removing and installing luggage compartment light

⇒ “1.26.1 Removing and installing luggage compartment light W18 / W35 - Coupé, Cabriolet”, page 215

⇒ “1.26.2 Removing and installing luggage compartment light W18 / W35 - Sportback”, page 215

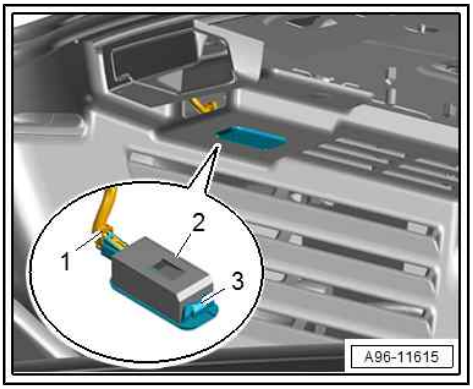
⇒ “1.26.3 Removing and installing rear lid light W51 - Sportback”, page 216

1.26.1 Removing and installing luggage compartment light -W18- / -W35- - Coupé, Cabriolet

Removing

– Use flat screwdriver to press in retainer tab -3- and pry out luggage compartment light -2-. (Illustration shows Coupé.)

– Unplug electrical connector -1-.



Installing

Installation is carried out in reverse order; note the following:

– Insert luggage compartment light in opening and engage on opposite side.

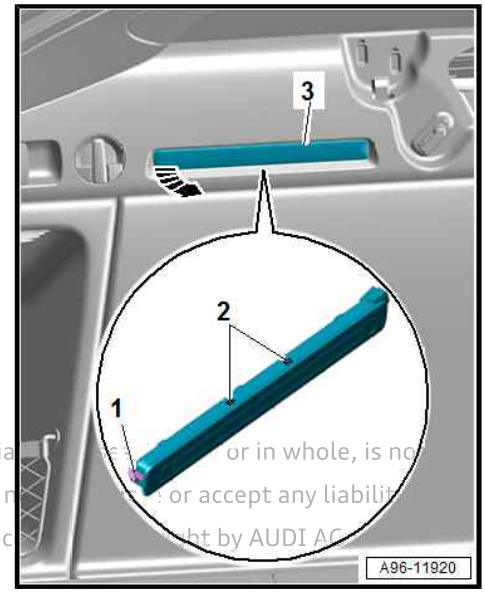
1.26.2 Removing and installing luggage compartment light -W18- / -W35- - Sportback

Removing

– Release catch -1-.

– Swivel luggage compartment light -3- out of mounting -arrow- to disengage retaining tabs -2- at top and bottom.

– Unplug electrical connector.



Installing

Installation is carried out in reverse order; note the following:

– Insert luggage compartment light in opening and engage on opposite side.

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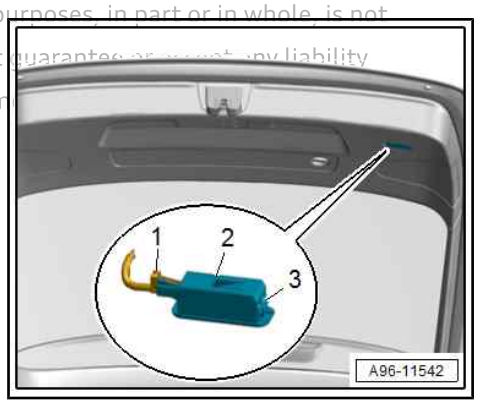
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1.26.3 Removing and installing rear lid light - W51- - Sportback

Removing

– Use flat screwdriver to press in retainer tab -3- and pry out rear lid light -2-.

– Unplug electrical connector -1-.



Installing

Installation is carried out in reverse order; note the following:

– Insert rear lid light in opening and engage on opposite side.

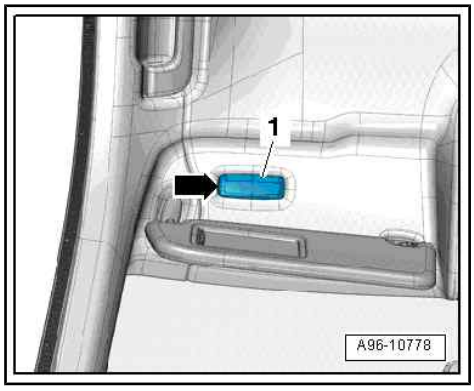
1.27 Removing and installing illuminated vanity mirror -W20- / -W14-

Removing

– Swivel sun visor forwards.

– Use flat screwdriver to carefully pry out vanity mirror light -1- at recess -arrow-.

– Unplug electrical connector.



Installing

Installation is carried out in reverse order; note the following:

• The vanity mirror light must be renewed as a complete unit if LED is defective.

– Insert vanity mirror light in opening and engage on opposite side.



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2 Controls

⇒ “2.1 Overview of fitting locations - controls in dash panel”, page 219

⇒ “2.2 Overview of fitting locations - controls in front doors”, page 221

⇒ “2.3 Overview of fitting locations - controls in rear doors”, page 222

⇒ “2.4 Overview of fitting locations - controls in centre console”, page 223

⇒ “2.5 Overview of fitting locations - controls in luggage compartment”, page 224

⇒ “2.6 Overview of fitting locations - controls in roof trim”, page 226

⇒ “2.7 Exploded view - front roof module WX3 ”, page 228

⇒ “2.8 Removing and installing light switch E1 ”, page 229

⇒ “2.9 Removing and installing switches in dash panel”, page 229

⇒ “2.10 Removing and installing hazard warning lights button E229 ”, page 230

⇒ “2.11 Removing and installing valet parking button E536 ”, page 230

⇒ “2.12 Removing and installing glove compartment light switch E26 ”, page 231

⇒ “2.13 Removing and installing mirror adjustment switch E43 / E168 ”, page 231

⇒ “2.14 Removing and installing operating unit for window regulator in driver door E512 ”, page 232

⇒ “2.15 Removing and installing window regulator switch in front passenger door E107 ”, page 232

⇒ “2.16 Removing and installing driver side interior locking button for central locking system E308 ”, page 232

⇒ “2.17 Removing and installing operating unit for memory settings E464 / E465 ”, page 233

⇒ “2.18 Removing and installing rear lid remote release button E233 ”, page 233

⇒ “2.19 Removing and installing button for deactivating interior monitoring and vehicle inclination sensor E616 ”, page 234

⇒ “2.20 Removing and installing rear window regulator button in rear door”, page 234

⇒ “2.21 Removing and installing rear interior locking switch E273 / E274 ”, page 235

⇒ “2.22 Removing and installing entry and start authorisation button E408 ”, page 235

⇒ “2.23 Removing and installing electromechanical parking brake button E538 / auto-hold button E540 ”, page 236

⇒ “2.24 Removing and installing convertible roof actuation button E137 ”, page 237

⇒ “2.25 Removing and installing electric hinged tow coupling attachment button E474 ”, page 237

⇒ “2.26 Removing and installing button for convertible roof box operation E896 ”, page 238

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⇒ “2.27 Removing and installing rear lid handle release button E234 ”, page 238

⇒ “2.28 Removing and installing button to close rear lid in luggage compartment E406 ”, page 239

⇒ “2.29 Removing and installing rear lid warning buzzer H32 ”, page 240

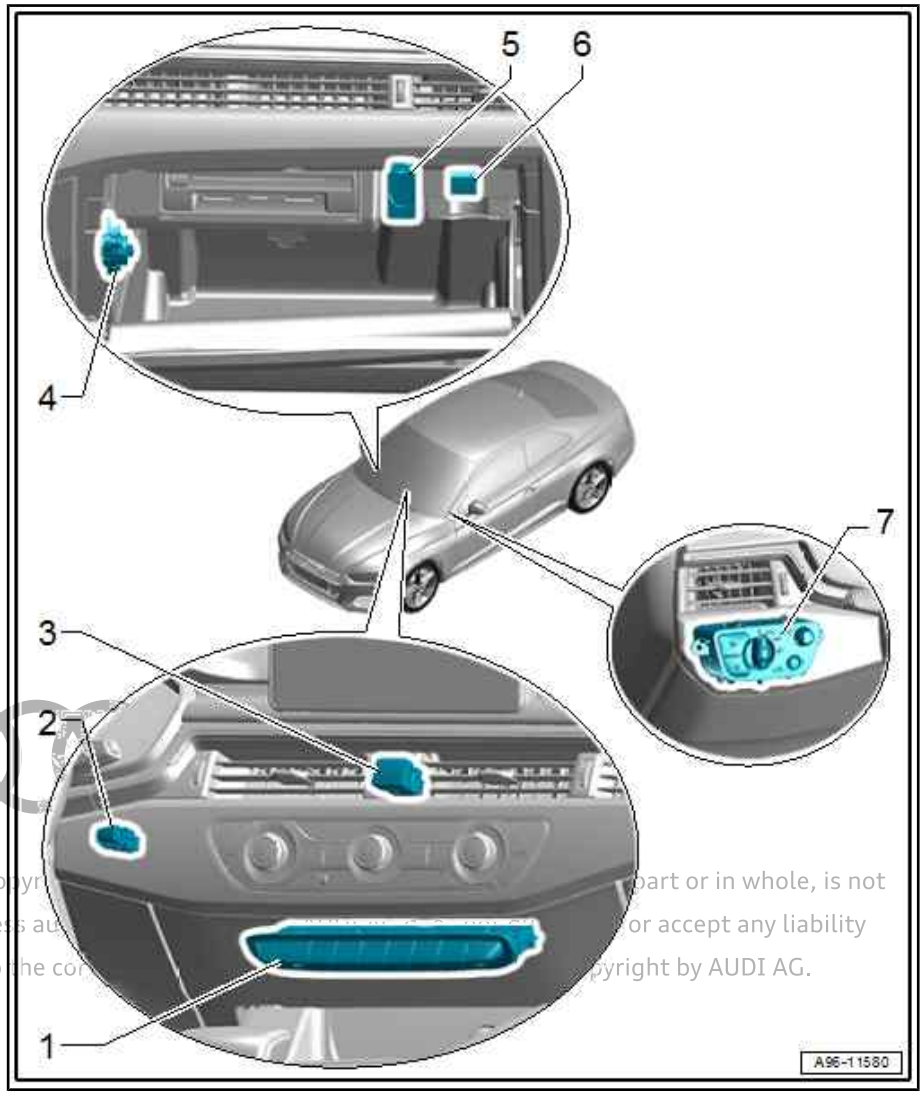
⇒ “2.30 Removing and installing sunroof button E325 ”, page 240

⇒ “2.31 Removing and installing interior light/reading light (front)”, page 240

⇒ “2.32 Removing and installing interior light/reading light (rear)”, page 244

⇒ “2.33 Removing and installing garage door operating unit E284 ”, page 245

2.1 Overview of fitting locations - controls in dash panel



1 - Centre switch module in dash panel - EX22-

- ❑ With the following integrated components:

- ♦ Button for TCS and electronic stabilisation program - E256-
- ♦ Parking aid button - E266-
- ♦ Open and close button for front display - E462-
- ♦ Park assist steering button - E581-
- ♦ Driving mode selection button with driving mode selection button - E735- / driving mode selection button 2 - E797-
- ♦ Start/stop operation button - E693-

- ❑ Components cannot be renewed separately if defective
- ❑ Removing and installing ⇒ page 229

2 - Dash panel insert operating button - E493-

- ❑ Removing and installing ⇒ page 230

3 - Hazard warning lights button - E229-

- ❑ Removing and installing ⇒ page 230

4 - Glove compartment light switch - E26-

- ❑ Removing and installing ⇒ page 231

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5 - Key operated switch to deactivate airbag on front passenger side - E224-

- ❑ Exploded view ⇒ General body repairs, interior; Rep. gr. 69 ; Airbag (front passenger side); Exploded view - airbag (front passenger side)

6 - Valet parking button - E536-

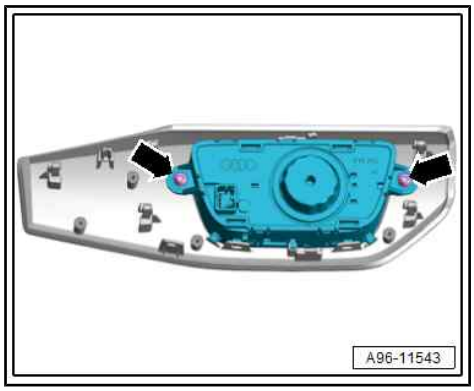
- ❑ Removing and installing ⇒ page 230

7 - Light switch - E1-

- ❑ With switch and instrument illumination regulator, rear fog light button
- ❑ Removing and installing ⇒ page 229

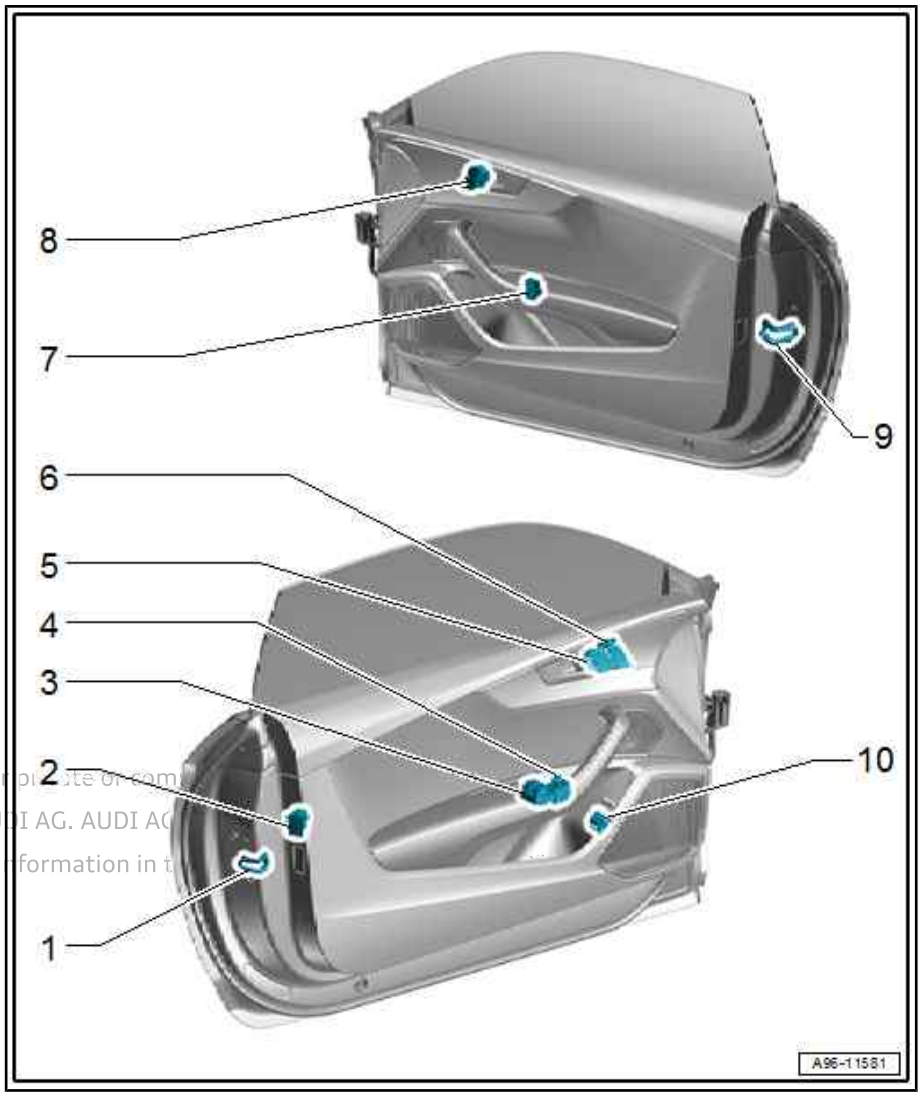
Tightening torque for light switch - E1-

– Tighten bolts -arrows- to 1.5 Nm.



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2.2 Overview of fitting locations - controls in front doors



1 - Driver door contact switch - F2-

- ❑ Integrated in door lock. Cannot be renewed separately if defective
- ❑ Renew door lock ⇒ General body repairs, exterior; Rep. gr. 57 ; Door components; Removing and installing door lock

2 - Button for deactivating interior monitoring and vehicle inclination sensor - E616-

- ❑ Removing and installing ⇒ page 234

3 - Operating unit for window regulator in driver door - E512-

- ❑ Coupé: With the following integrated components:
  - ♦ Front driver side window regulator button - E710-
  - ♦ Front passenger side window regulator button, in driver door - E715-
- ❑ Sportback, Cabriolet: With the following integrated components:
  - ♦ Front driver side window regulator button - E710-
  - ♦ Front passenger side window regulator button, in driver door - E715-
  - ♦ Rear driver side window regulator button, in driver door - E712-
  - ♦ Rear passenger side window regulator button, in driver door - E714-
  - ♦ Central switch for window regulators in driver door - E189- (Cabriolet only)
    - ❑ The components cannot be renewed separately
    - ❑ If defective, renew operating unit
    - ❑ Removing and installing ⇒ page 232

4 - Mirror adjustment switch - E43- with mirror adjustment changeover switch - E48-

- ❑ Removing and installing ⇒ page 231

5 - Driver side interior locking button for central locking system - E308-

- ❑ Removing and installing ⇒ page 232

6 - Driver operating unit for memory settings - E464-

- ❑ Removing and installing ⇒ page 233

7 - Front passenger side window regulator button - E716-

- ❑ Removing and installing ⇒ page 232

8 - Front passenger side interior locking button for central locking system - E309-

- ❑ Removing and installing ⇒ page 232

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9 - Front passenger door contact switch - F3-

- ❑ Integrated in door lock. Cannot be renewed separately if defective
- ❑ Renew door lock ⇒ General body repairs, exterior; Rep. gr. 57 ; Door components; Removing and installing door lock

10 - Rear lid remote release button - E233-

- ❑ Removing and installing ⇒ page 233

2.3 Overview of fitting locations - controls in rear doors

1 - Rear door contact switch, driver side - F505-

- ❑ Integrated in door lock. Cannot be renewed separately if defective
- ❑ Renew door lock ⇒ General body repairs, exterior; Rep. gr. 58 ; Door components; Removing and installing door lock

2 - Rear passenger side window regulator button - E713-

- ❑ Removing and installing ⇒ page 234

3 - Rear passenger side interior locking button for central locking system - E718-

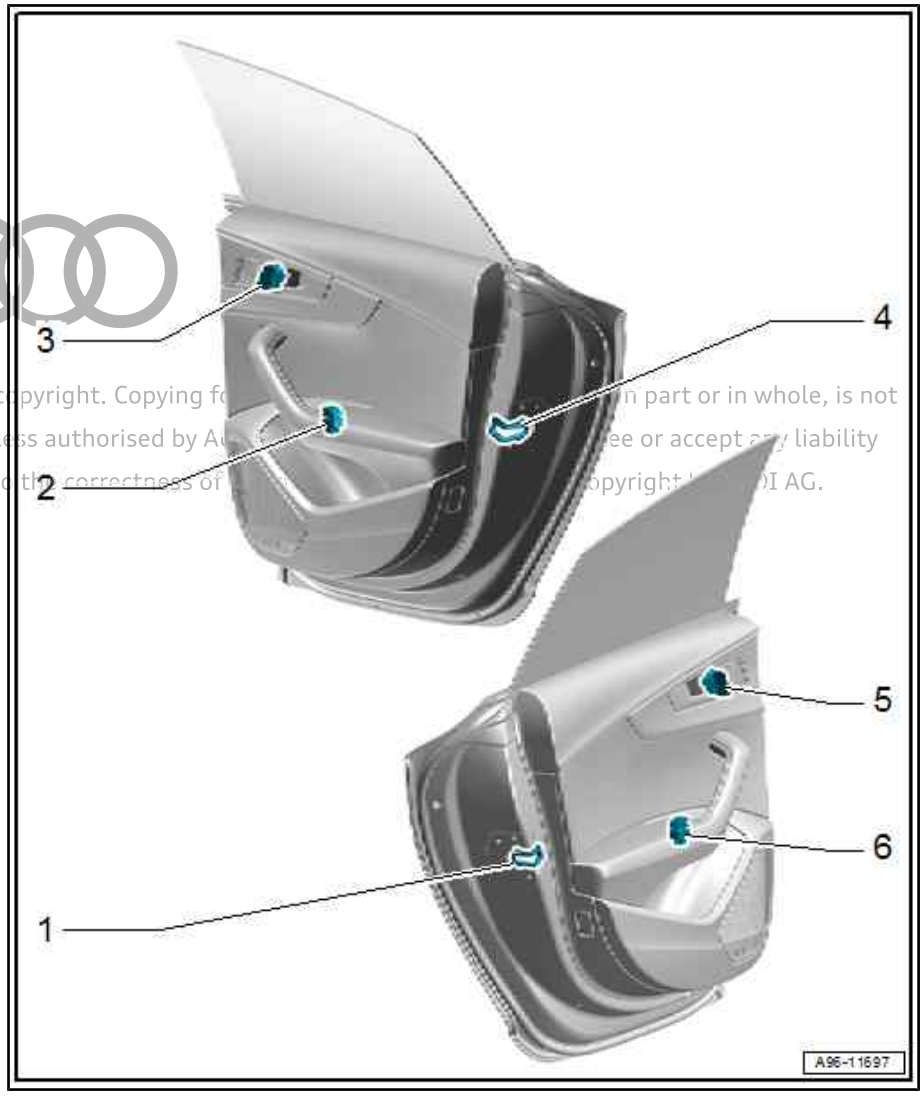
- ❑ Removing and installing ⇒ page 235

4 - Rear door contact switch, passenger side - F506-

- ❑ Integrated in door lock. Cannot be renewed separately if defective
- ❑ Renew door lock ⇒ General body repairs, exterior; Rep. gr. 58 ; Door components; Removing and installing door lock

5 - Rear driver side interior locking button for central locking system - E717-

- ❑ Removing and installing ⇒ page 235

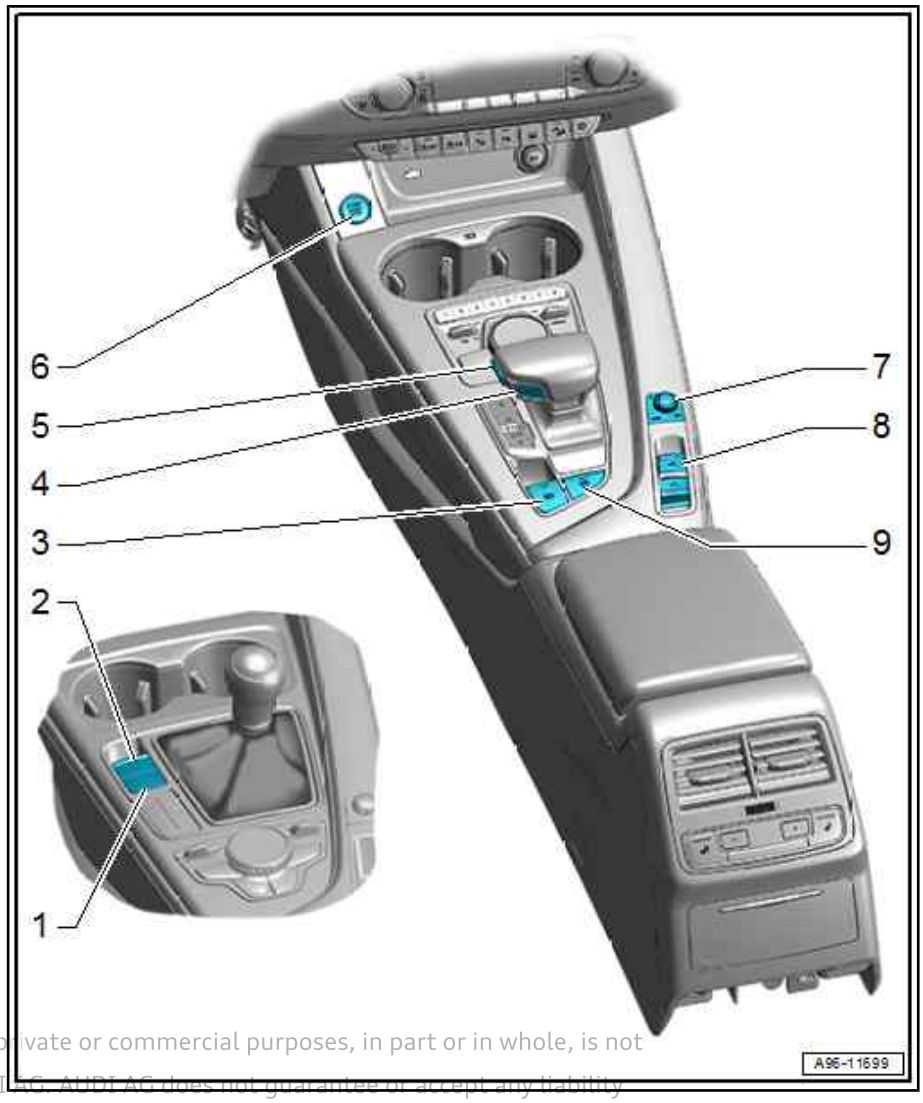


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6 - Rear driver side window regulator button - E711-

- ❑ Removing and installing ⇒ page 234

2.4 Overview of fitting locations - controls in centre console



1 - Auto-hold button - E540- - manual gearbox

- ❑ Removing and installing ⇒ page 236

2 - Electromechanical parking brake button - E538- - manual gearbox

- ❑ Removing and installing ⇒ page 236

3 - Electromechanical parking brake button - E538- - automatic gearbox

- ❑ Removing and installing ⇒ page 236

4 - Parking lock button - E816-

- ❑ Integrated in selector lever handle Cannot be renewed separately if defective
- ❑ Renewing selector lever handle ⇒ Gearbox; Rep. gr. 37 ; Selector mechanism; Removing and installing selector lever handle

5 - Button for selector lever release - E681-

- ❑ Integrated in selector lever handle Cannot be renewed separately if defective
- ❑ Renewing selector lever handle ⇒ Gearbox; Rep. gr. 37 ; Selector mechanism; Removing and installing selector lever handle

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6 - Entry and start authorisation button - E408-

- ❑ Removing and installing ⇒ page 235

7 - Driver side volume regulator - E67-

- ❑ Removing and installing ⇒ Communication; Rep. gr. 91 ; Sound system; Overview of fitting locations - sound system

8 - Convertible roof actuation button - E137-

- ❑ Removing and installing ⇒ page 237

9 - Auto-hold button - E540- - automatic gearbox

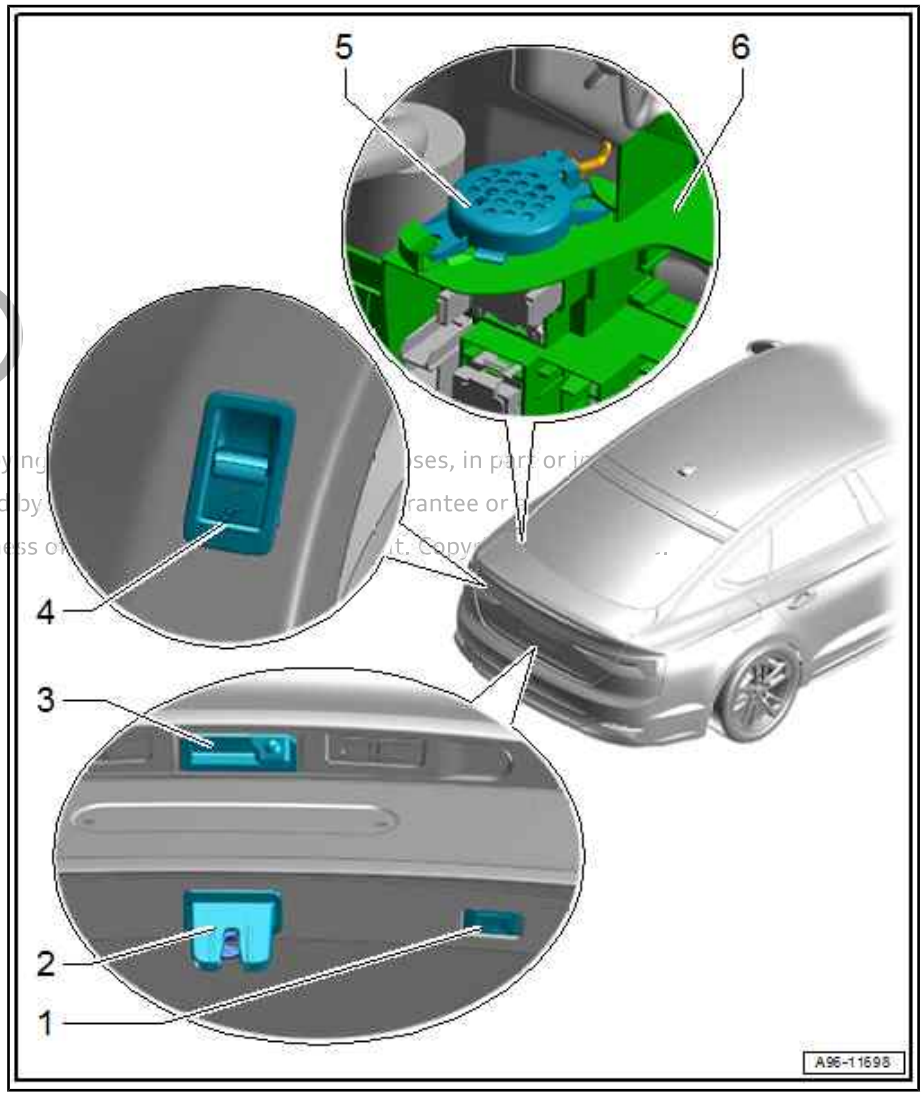
- ❑ Removing and installing ⇒ page 236

2.5 Overview of fitting locations - controls in luggage compartment

⇒ “2.5.1 Overview of fitting locations - controls in luggage compartment, Coupé, Sportback”, page 224

⇒ “2.5.2 Overview of fitting locations - controls in luggage compartment, Cabriolet”, page 225

2.5.1 Overview of fitting locations - controls in luggage compartment, Coupé, Sportback



1 - Button to close rear lid in luggage compartment - E406-

- ❑ Version with locking button in rear lid - E806-
- ❑ Removing and installing ⇒ page 239

2 - Rear lid contact switch

- ❑ Integrated in rear lid lock. Cannot be renewed separately if defective
- ❑ Renewing rear lid lock ⇒ General body repairs, exterior; Rep. gr. 55 ; Rear lid; Removing and installing rear lid lock

3 - Rear lid handle release button - E234-

- ❑ Removing and installing ⇒ page 238

4 - Electric hinged tow coupling attachment button - E474-

- ❑ Removing and installing ⇒ page 237

5 - Rear lid warning buzzer - H32-

- ❑ Warning buzzer is activated when rear lid is closed using rear lid remote release button in front door
- ❑ Removing and installing ⇒ page 240

6 - Relay and fuse carrier 2 - SR2-

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2.5.2 Overview of fitting locations - controls in luggage compartment, Cabriolet

1 - Rear lid contact switch

- ❑ Integrated in rear lid lock. Cannot be renewed separately if defective
- ❑ Renewing rear lid lock ⇒ General body repairs, exterior; Rep. gr. 55 ; Rear lid; Removing and installing rear lid lock

2 - Rear lid handle release button - E234-

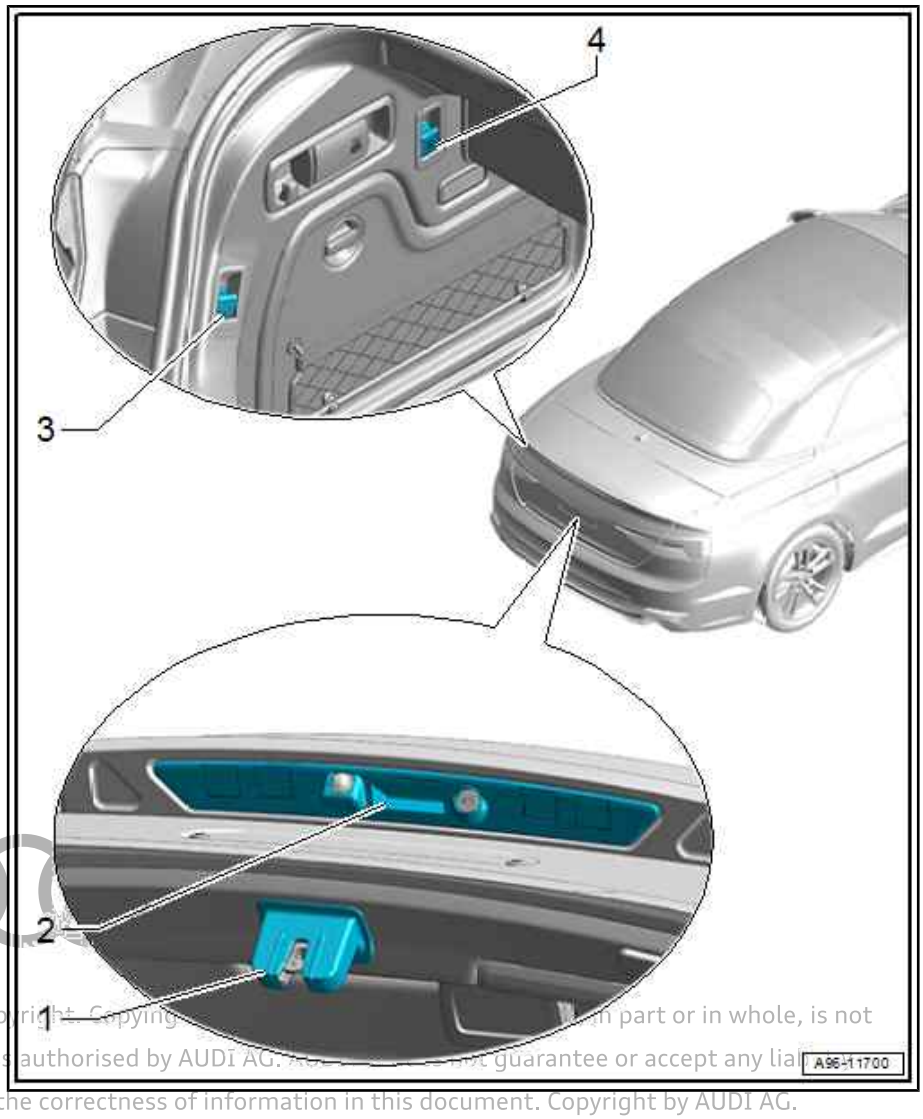
- ❑ Removing and installing ⇒ General body repairs, exterior; Rep. gr. 55 ; Rear lid; Removing and installing actuator

3 - Electric hinged tow coupling attachment button - E474-

- ❑ Removing and installing ⇒ page 237

4 - Button for convertible roof box operation - E896-

- ❑ Removing and installing ⇒ page 238



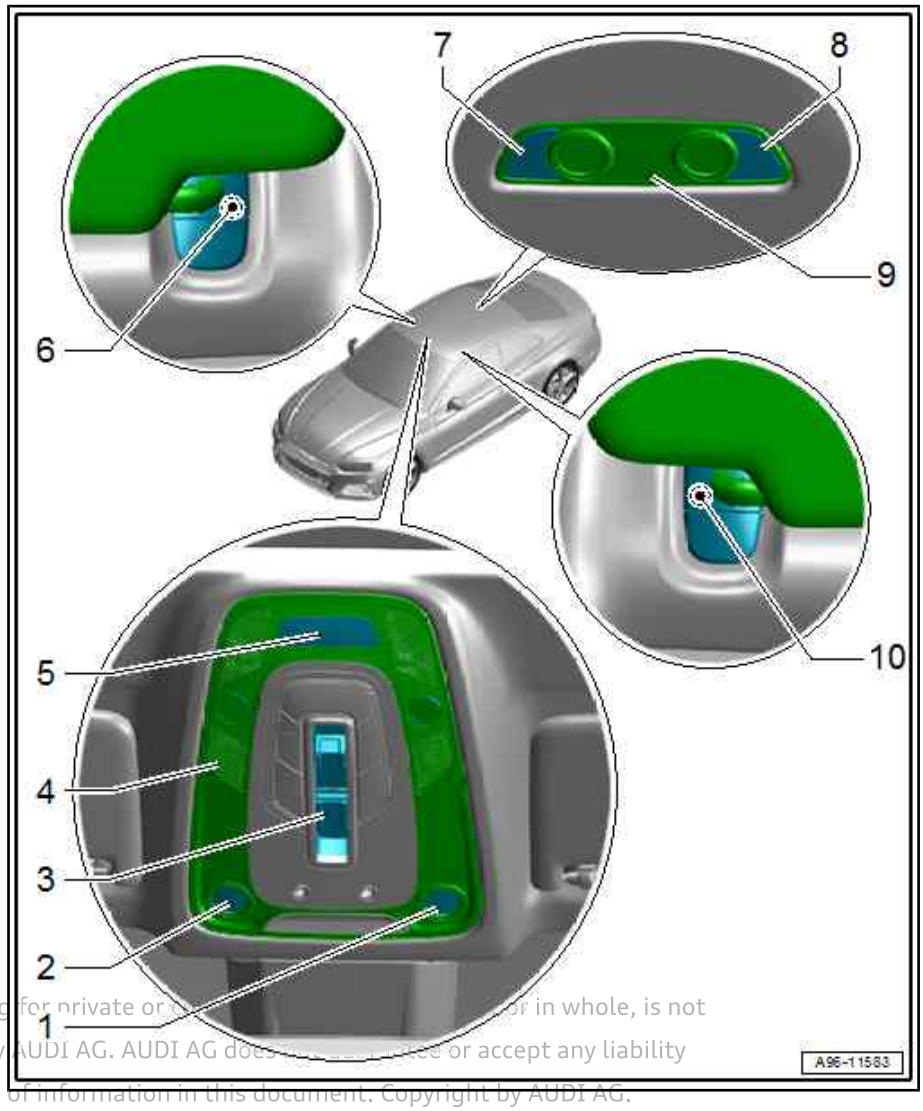
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2.6 Overview of fitting locations - controls in roof trim

⇒ “2.6.1 Overview of fitting locations - controls in roof trim, Coupé, Sportback”, page 226

⇒ “2.6.2 Overview of fitting locations - controls in roof trim, Cabriolet”, page 227

2.6.1 Overview of fitting locations - controls in roof trim, Coupé, Sportback



1 - Front passenger side reading light button - E458-

- ❑ Integrated in front roof module - WX3-

2 - Driver side reading light button - E457-

- ❑ Integrated in front roof module - WX3-

3 - Sunroof button - E325- with button 1 for roof roller blind - E584-

- ❑ Exploded view ⇒ page 228

4 - Front roof module - WX3-

- ❑ Exploded view ⇒ page 228
- ❑ Removing and installing ⇒ page 240

5 - Garage door operating unit - E284-

- ❑ Exploded view ⇒ page 228

6 - Front passenger vanity mirror contact switch - F148-

- ❑ Integrated into swivel mounting for sun visor. Cannot be renewed separately if defective
- ❑ Renewing sun visor ⇒ General body repairs, interior; Rep. gr. 68 ; Equipment; Removing and installing sun visor

7 - Rear right reading light switch - E455-

8 - Rear left reading light switch - E454-

9 - Rear interior light

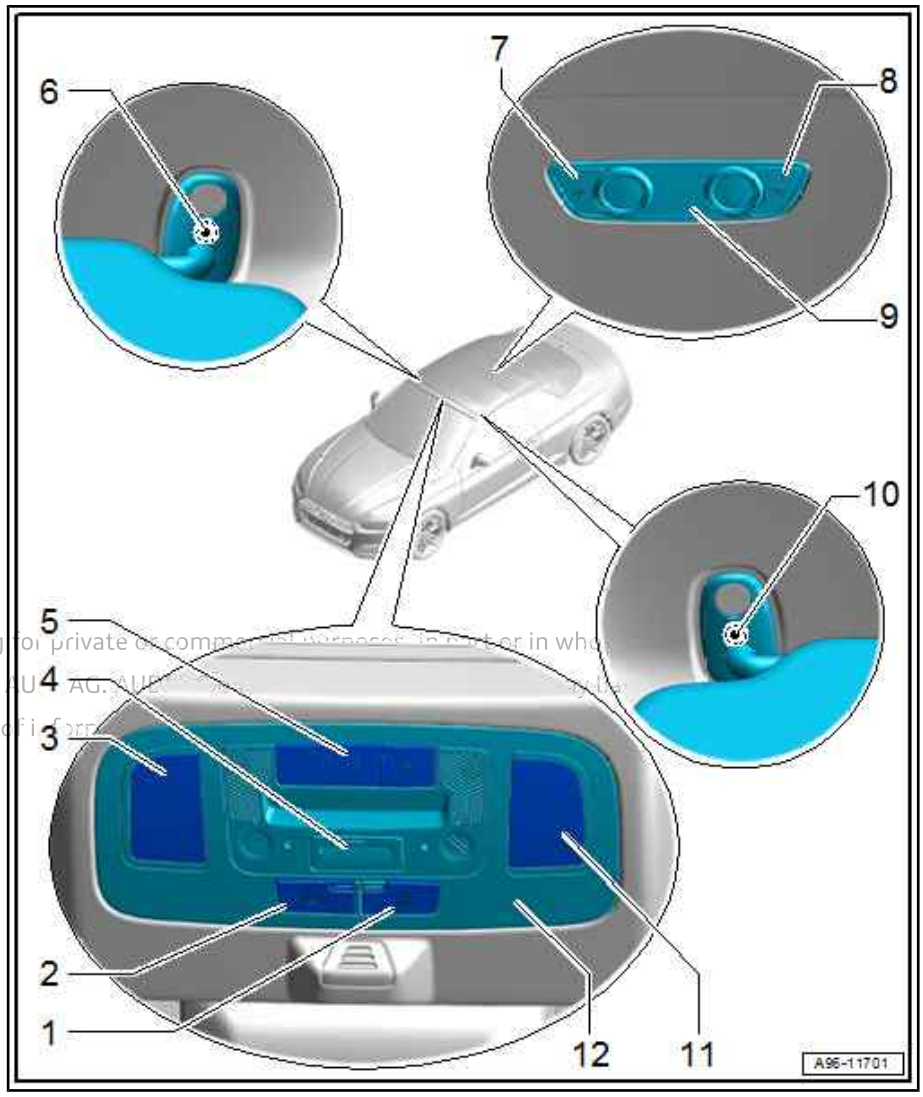
- ❑ Removing and installing ⇒ page 244

10 - Driver vanity mirror contact switch - F147-

- ❑ Integrated in swivel mounting for sun visor; cannot be renewed separately if defective
- ❑ Renewing sun visor ⇒ General body repairs, interior; Rep. gr. 68 ; Equipment; Removing and installing sun visor

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2.6.2 Overview of fitting locations - controls in roof trim, Cabriolet



1 - Emergency assistance call button - E276-

- ❑ Integrated in front roof module - WX3-

2 - Breakdown help button - E275-

- ❑ Integrated in front roof module - WX3-

3 - Front left reading light button - E633-

- ❑ Integrated in front roof module - WX3-

4 - Front interior light button - E326-

- ❑ Integrated in front roof module - WX3-

5 - Garage door operating unit - E284-

- ❑ Removing and installing ⇒ page 245

6 - Front passenger vanity mirror contact switch - F148-

- ❑ Integrated into swivel mounting for sun visor. Cannot be renewed separately if defective
- ❑ Renewing sun visor ⇒ General body repairs, interior; Rep. gr. 68 ; Equipment; Removing and installing sun visor

7 - Rear right reading light switch - E455-

8 - Rear left reading light switch - E454-

9 - Rear interior light

- ❑ Removing and installing ⇒ page 244

10 - Driver vanity mirror contact switch - F147-

- ❑ Integrated into swivel mounting for sun visor. Cannot be renewed separately if defective
- ❑ Renewing sun visor ⇒ General body repairs, interior; Rep. gr. 68 ; Equipment; Removing and installing sun visor

11 - Front right reading light button - E634-

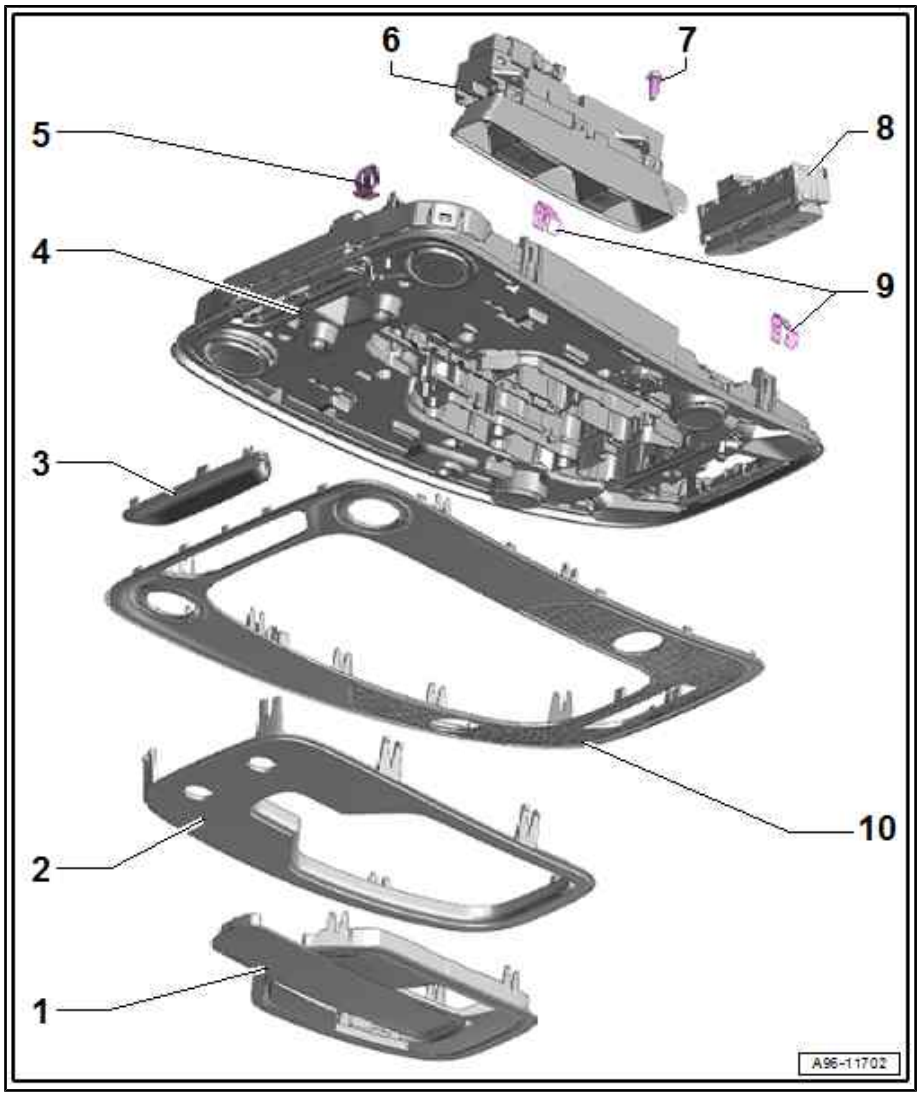
- ❑ Integrated in front roof module - WX3-

12 - Front roof module - WX3-

- ❑ Removing and installing ⇒ page 244

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2.7 Exploded view - front roof module - WX3-



1 - Button trim

2 - Inner trim

3 - Trim

- ❑ For warning lamp for airbag deactivated on front passenger side - K145-
- ❑ If warning lamp is defective, front roof module - WX3- must be renewed ⇒ page 240

4 - Front roof module - WX3-

- ❑ Removing and installing ⇒ page 240

5 - Retaining clip

- ❑ Renew if damaged

6 - Sunroof button - E325- with button 1 for roof roller blind - E584-

- ❑ Removing and installing ⇒ page 240

7 - Bolt

- ❑ 0.65 Nm

8 - Garage door operating unit - E284-

- ❑ Removing and installing ⇒ page 245

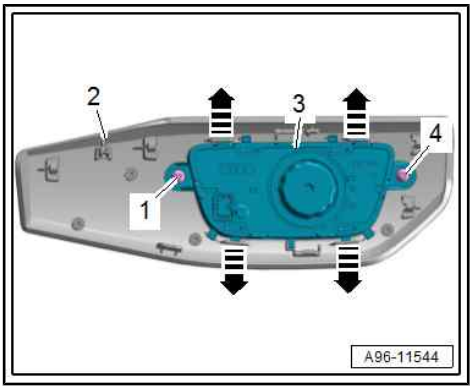
9 - Retaining clip

- ❑ Renew roof module after removing this component
- ❑ 4x

10 - Outer trim

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2.8 Removing and installing light switch - E1-



Removing

– Turn light switch to position “0”.

– Remove trim for light switch ⇒ General body repairs, interior; Rep. gr. 70 ; Dash panel; Removing and installing trim for light switch .

– If fitted, remove bolts -1, 4-.

– Disengage catches -arrows-.

– Detach light switch -3- from light switch trim -2-.

Installing

Installation is carried out in reverse sequence.

Tightening torques

• ⇒ Fig. ““Tightening torque for light switch -E1- ”“ , page 220

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2.9 Removing and installing switches in dash panel

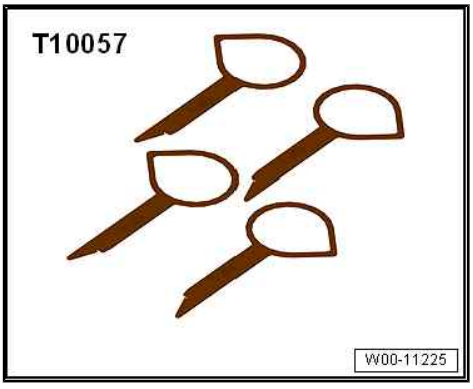
⇒ “2.9.1 Removing and installing switches in dash panel - centre switch module in dash panel EX22 ”, page 229

⇒ “2.9.2 Removing and installing switches in dash panel - dash panel insert operating buttons E493 ”, page 230

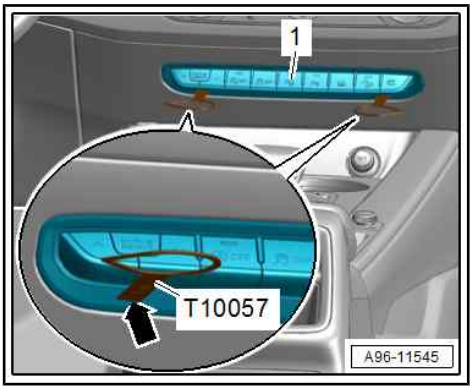
2.9.1 Removing and installing switches in dash panel - centre switch module in dash panel - EX22-

Special tools and workshop equipment required

♦ Radio release tool - T10057-



Removing



– Release retaining tabs by inserting release tool -T10057- into recesses -arrow- on both sides.

– Pull out and detach switch panel -1-.

– Unplug electrical connector.

Installing

Installation is carried out in reverse order; note the following:

– Press switch panel on until it engages audibly.

• All six rubber buffers must be in installation position.

2.9.2 Removing and installing switches in dash panel - dash panel insert operating buttons - E493-

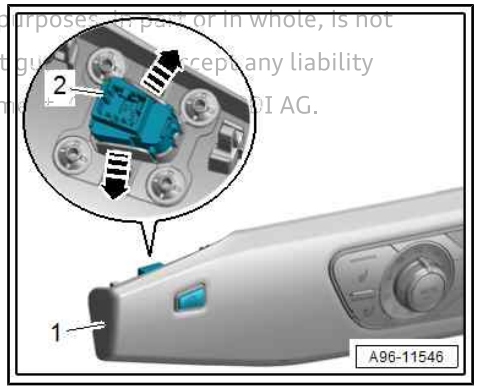
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Removing

– Remove trim for dash panel insert ⇒ General body repairs, interior; Rep. gr. 70 ; Dash panel; Exploded view - dash panel .

– Disengage catches -arrows-.

– Take button -2- out of mounting -1-.



Installing

Installation is carried out in reverse sequence.

2.10 Removing and installing hazard warning lights button - E229-

Removing

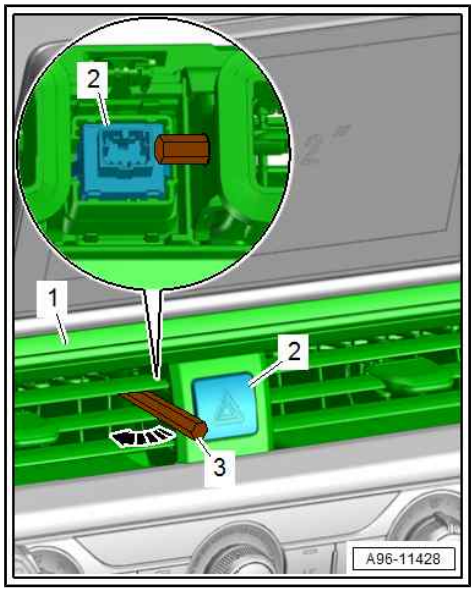
Note:

There is a hole in the wide air outlet on both sides of the hazard warning lights button.

– Carefully guide 4 mm hexagon key -3- between louvres of wide air outlet -1- into hole and fit on hazard warning lights button -2- as shown.

– Press hazard warning lights button out of mounting -arrow-.

– Unplug electrical connector.



Installing

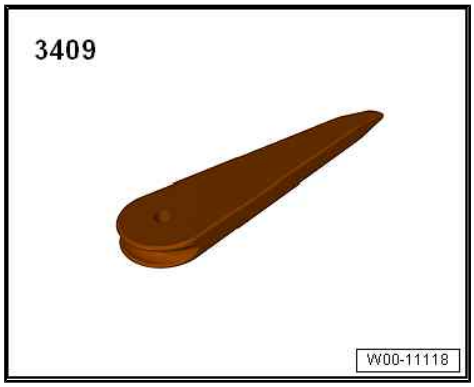
Installation is carried out in reverse order; note the following:

– Press hazard warning lights button in until it engages audibly.

2.11 Removing and installing valet parking button - E536-

Special tools and workshop equipment required

♦ Removal wedge - 3409-



Removing

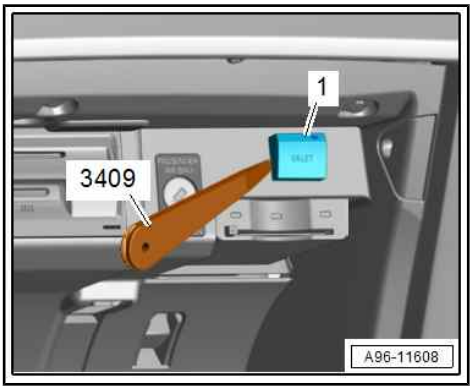
– Pry off valet parking button -1- using removal wedge - 3409- .

– Unplug electrical connector and detach valet parking button.

Installing

Installation is carried out in reverse order; note the following:

– Insert valet parking button in opening and press on so that it engages audibly.



2.12 Removing and installing glove compartment light switch - E26-

Removing

– Remove glove box ⇒ General body repairs, interior; Rep. gr. 68 ; Storage compartments/covers/trim panels; Removing and installing glove box .

– Unplug electrical connector -2-.

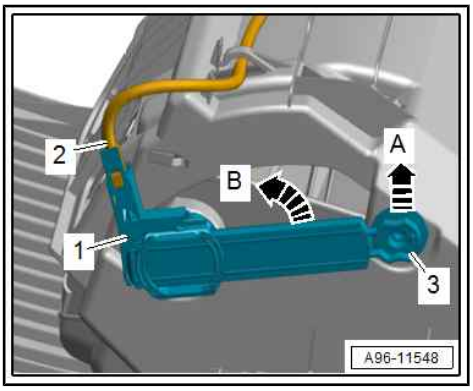
– Press actuating arm -3- out of locking mechanism -arrow A-.

– Release switch -1- in anti-clockwise direction -arrow B- and detach.

Installing

Installation is carried out in reverse order; note the following:

– Fit switch and press actuating arm on until it engages audibly.



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2.13 Removing and installing mirror adjustment switch -E43- / -E168-

Removing

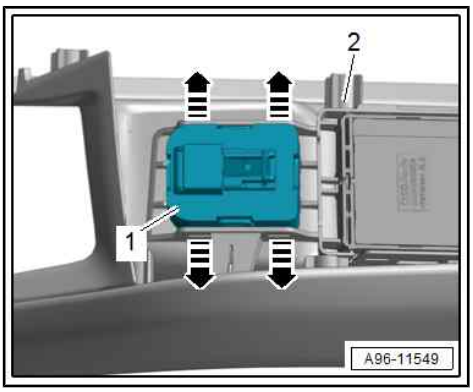
– Remove door puller (front) ⇒ General body repairs, interior; Rep. gr. 70 ; Door trim (front); Removing and installing door puller (front) .

– Carefully release catches -arrows- using a small screwdriver.

– Press mirror adjustment switch -1- out of mounting -2-.

Installing

Installation is carried out in reverse sequence.



2.14 Removing and installing operating unit for window regulator in driver door - E512-

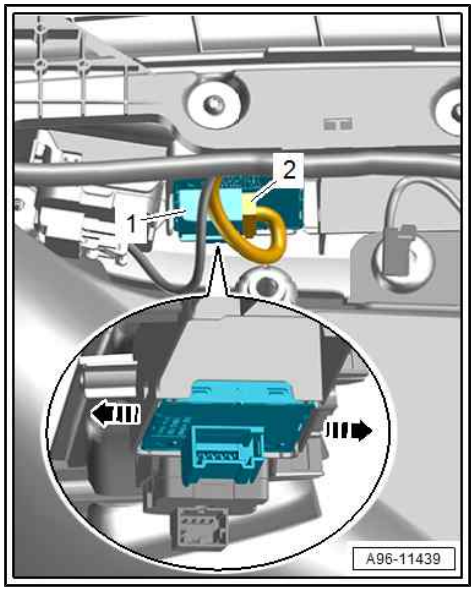
Removing

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

– Lift tabs -arrows- and disengage catches.

– Press window regulator switch -1- out of mounting.

– Unplug electrical connector -2-.



Installing

Installation is carried out in reverse sequence.

2.15 Removing and installing window regulator switch in front passenger door - E107-

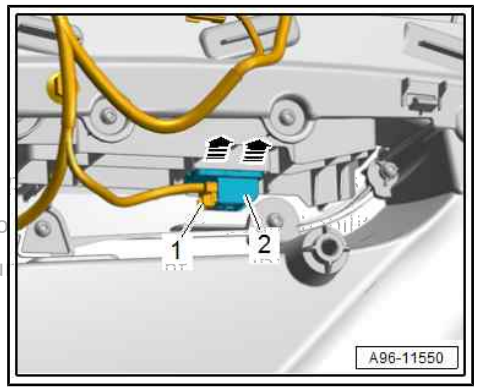
Removing

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

– Carefully release catches -arrows- using a small screwdriver.

– Press window regulator switch -2- out of switch mounting.

– Unplug electrical connector -1-.



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Installing

Installation is carried out in reverse sequence.

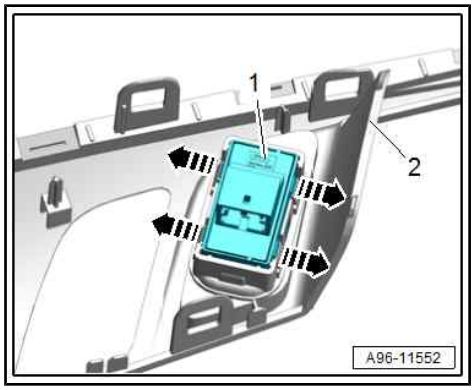
2.16 Removing and installing driver side interior locking button for central locking system - E308-

Removing

– Remove trim panel for interior door handle ⇒ General body repairs, interior; Rep. gr. 70 ; Door trim (front); Exploded view - door trim (front) .

– Disengage catches -arrows-.

– Take button -1- out of mounting -2-.



Installing

Installation is carried out in reverse sequence.

2.17 Removing and installing operating unit for memory settings -E464- / -E465-

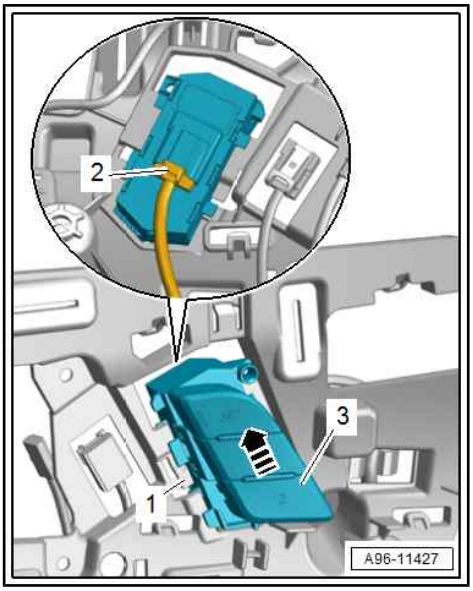
Removing

– Remove trim panel for interior door handle ⇒ General body repairs, interior; Rep. gr. 70 ; Door trim (front); Exploded view - door trim (front) .

– Unplug electrical connector -2-.

– Press retaining tab -1- slightly to the rear and at the same time push operating unit -3- out of mounting in direction of -arrow-.

– Detach operating unit.

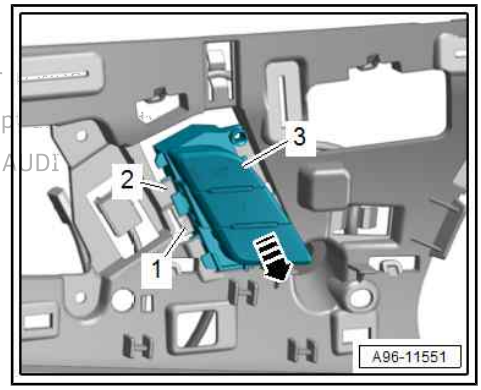


Installing

Installation is carried out in reverse order; note the following:

– Plug in electrical connector.

– Fit operating unit -3- on mounting -2- and push downwards -arrow- until retaining tab -1- engages audibly.



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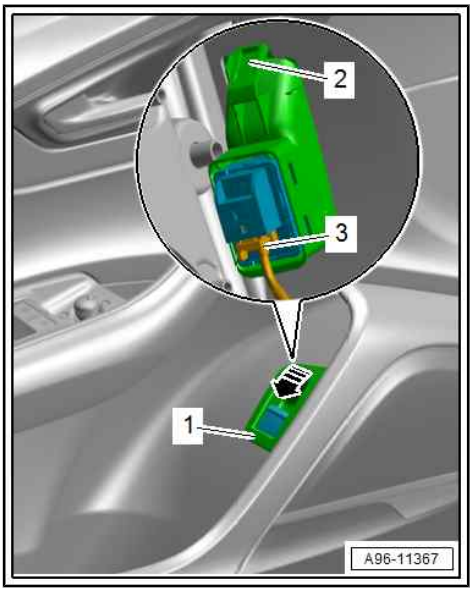
2.18 Removing and installing rear lid remote release button - E233-

Removing

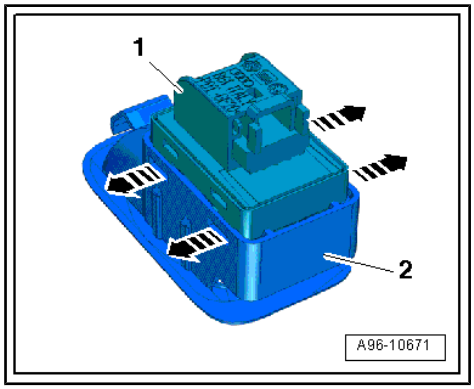
– Remove door trim (front) ⇒ General body repairs, interior; Rep. gr. 70 ; Door trim (front); Removing and installing door trim (front) .

– Unplug electrical connector -3-.

– Release retaining clip -2- and press trim panel -1- with switch out of door trim -arrow-.



– Carefully release retaining hooks -arrows- using a small screwdriver.
– Take button -1- out of trim panel -2- towards rear.



Installing

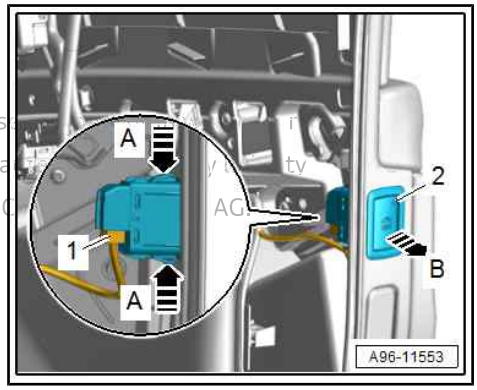
Installation is carried out in reverse order; note the following:

– Press trim panel with switch into mounting until retaining hooks engage.

2.19 Removing and installing button for de-activating interior monitoring and vehicle inclination sensor - E616-

Removing

– Remove door trim (front) ⇒ General body repairs, interior; Rep. gr. 70 ; Door trim (front); Removing and installing door trim (front) .
– Unplug electrical connector -1-.
– Disengage catches -arrows A-.
– Take button -2- out of mounting -arrow B-.



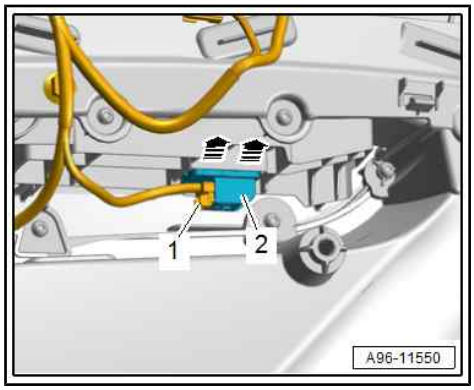
Installing

Installation is carried out in reverse sequence.

2.20 Removing and installing rear window regulator button in rear door

Removing

– Remove door trim (rear) ⇒ General body repairs, interior; Rep. gr. 70 ; Door trim (rear); Removing and installing door trim (rear) .
– Carefully release catches -arrows- using a small screwdriver.
– Press button -2- out of mounting.
– Unplug electrical connector -1-.

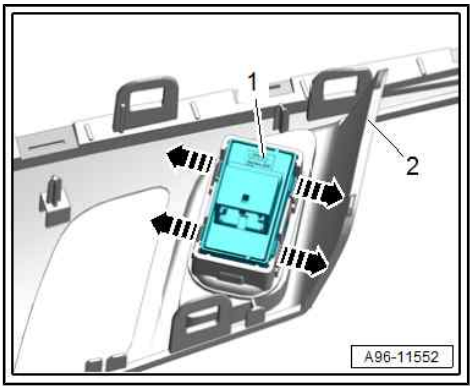


Installing

Installation is carried out in reverse sequence.

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2.21 Removing and installing rear interior locking switch -E273- / -E274-



Removing

– Remove trim panel for interior door handle ⇒ General body repairs, interior; Rep. gr. 70 ; Door trim (rear); Exploded view - door trim (rear) .

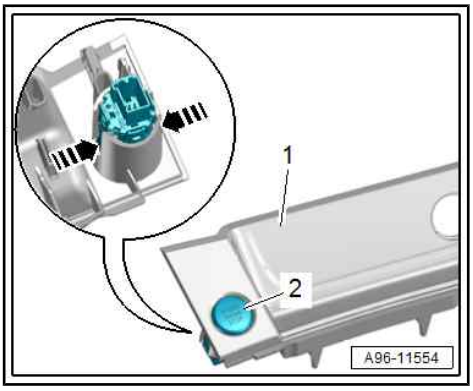
– Disengage catches -arrows-.

– Take interior locking switch -1- out of mounting -2-.

Installing

Installation is carried out in reverse sequence.

2.22 Removing and installing entry and start authorisation button - E408-



Removing

– Remove centre console storage box (front) ⇒ General body repairs, interior; Rep. gr. 68 ; Centre console; Exploded view - centre console .

– Disengage catches -arrows-.

– Press button -2- out of mounting in trim -1- for centre console.

Installing

Installation is carried out in reverse sequence.

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2.23 Removing and installing electromechanical parking brake button - E538- / auto-hold button - E540-

⇒ “2.23.1 Removing and installing electromechanical parking brake button E538 / auto-hold button E540 - manual gearbox”, page 236

⇒ “2.23.2 Removing and installing electromechanical parking brake button E538 / auto-hold button E540 - automatic gearbox”, page 236

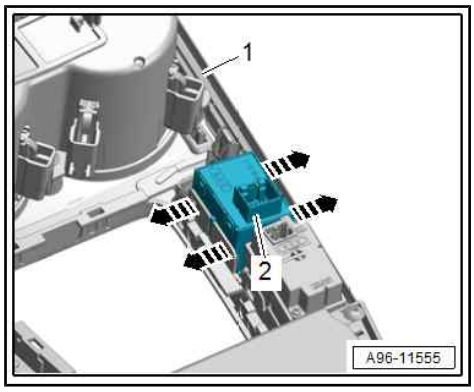
2.23.1 Removing and installing electromechanical parking brake button - E538- / auto-hold button - E540- - manual gearbox

Removing

– Remove centre console insert ⇒ General body repairs, interior; Rep. gr. 68 ; Centre console; Removing and installing centre console insert .

– Carefully release catches -arrows- using a small screwdriver.

– Press button -2- out of centre console insert -1-.



Installing

Installation is carried out in reverse sequence.

2.23.2 Removing and installing electromechanical parking brake button - E538- / auto-hold button - E540- - automatic gearbox

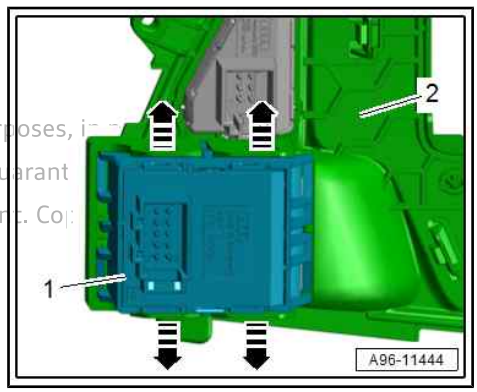
Removing

– Remove centre console insert ⇒ General body repairs, interior; Rep. gr. 68 ; Centre console; Removing and installing trim for operating and display unit .

Electromechanical parking brake button - E538- :

– Carefully release catches -arrows- using a small screwdriver.

– Press button -1- out of selected range display -2-.



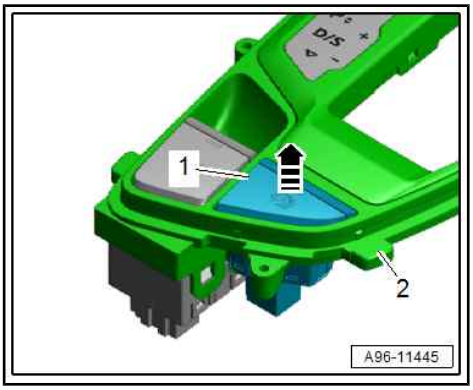
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Auto-hold button - E540- :

– Press button -1- out of selected range display -2- -arrow-.

Installing

Installation is carried out in reverse sequence.



2.24 Removing and installing convertible roof actuation button - E137-

Removing

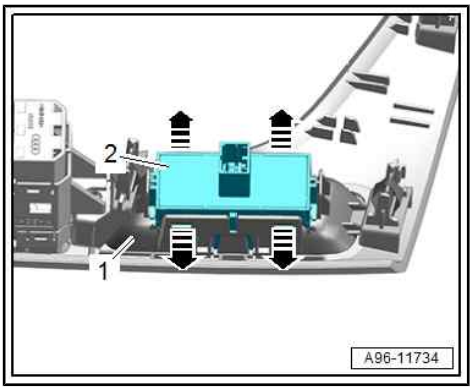
– Remove trim panel for centre console ⇒ General body repairs, interior; Rep. gr. 68 ; Centre console; Removing and installing trim panel for centre console .

– Carefully release catches -arrows- using a small screwdriver.

– Press button -2- out of trim -1-.

Installing

Installation is carried out in reverse sequence.



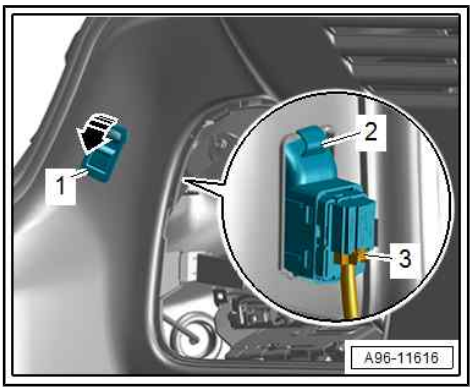
2.25 Removing and installing electric hinged tow coupling attachment button - E474-

Removing

– Pull off luggage compartment side trim until electric hinged tow coupling attachment button is accessible ⇒ General body repairs, interior; Rep. gr. 70 ; Luggage compartment trim panels; Removing and installing luggage compartment side trim .

– Release retaining clip -2- and press trim panel -1- with switch out of luggage compartment side trim -arrow-.

– Unplug electrical connector -3-.



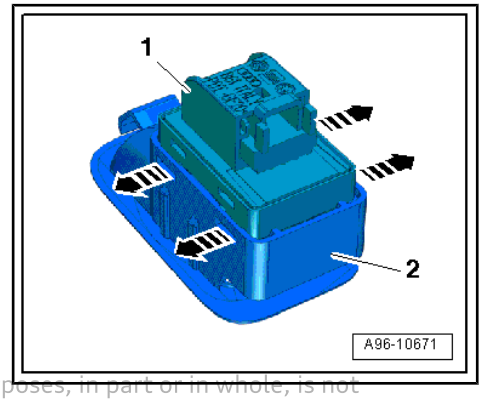
– Carefully release retaining hooks -arrows- using a small screwdriver.

– Take switch -1- out of trim panel -2- towards rear.

Installing

Installation is carried out in reverse order; note the following:

– Press trim panel with switch into mounting until retaining hooks engage.



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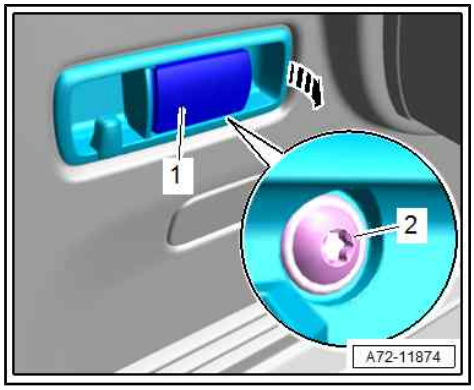
2.26 Removing and installing button for convertible roof box operation - E896-

Removing

– Pull lever -1- and release rear seat backrest.

– While still pulling lever, remove bolt -2-.

– Prise out backrest release mechanism -arrow- and let it hang down with Bowden cable attached.



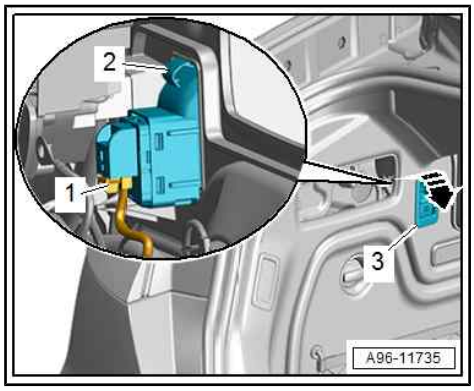
– Reach through opening and release retaining clip -2-.

– Press trim -3- with button out of luggage compartment side trim -arrow-.

– Unplug electrical connector -1-.

Note:

If the button cannot be removed as described, the luggage compartment side trim must be removed ⇒ General body repairs, interior; Rep. gr. 70 ; Luggage compartment trim panels; Removing and installing luggage compartment side trim .



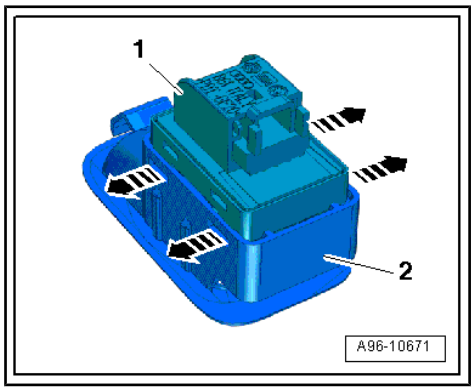
– Carefully release retaining hooks -arrows- using a small screwdriver.

– Take switch -1- out of trim panel -2- towards rear.

Installing

Installation is carried out in reverse order; note the following:

– Press trim panel with switch into mounting until retaining hooks engage.



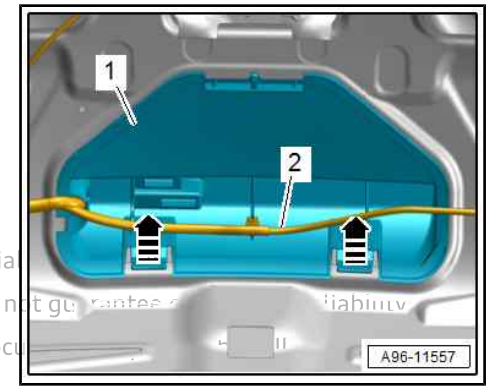
2.27 Removing and installing rear lid handle release button - E234-

Removing

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

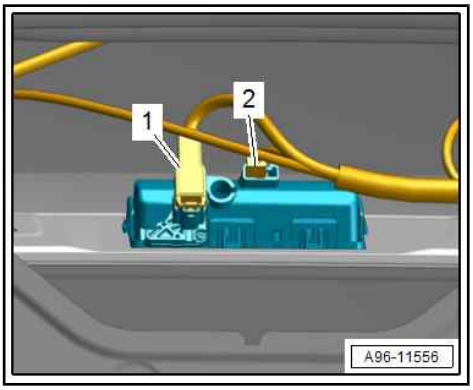
– Move electrical wiring harness -2- clear.

– Release fasteners -arrows- and detach cover -1-.

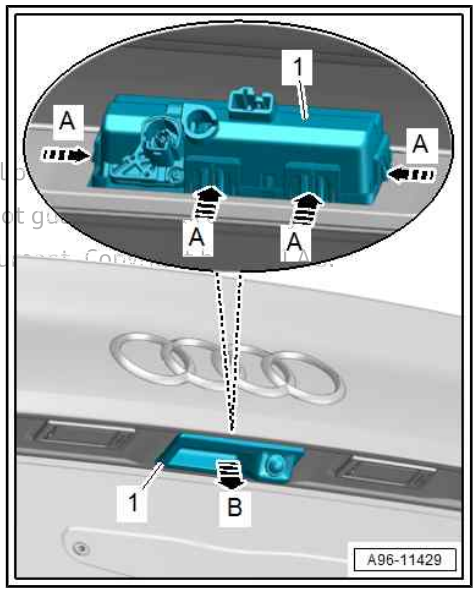


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– Unplug electrical connector -1-.
– If fitted, disconnect aerial wire -2-.



– Release side retaining tabs -arrows A- and press out button -1- outwards -arrow B-.



Installing

Installation is carried out in reverse order; note the following:

– On vehicles with reversing camera, reversing camera - R189- must be re-calibrated ⇒ Communication; Rep. gr. 91 ; Reversing camera system; Calibrating reversing camera system .

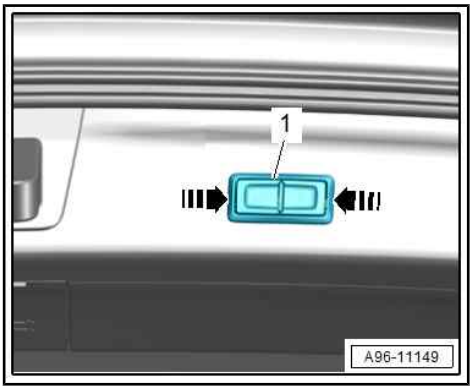
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2.28 Removing and installing button to close rear lid in luggage compartment - E406-

• Depending on the equipment version, the locking button in rear lid - E406- is integrated in the button to close rear lid in luggage compartment - E806- . In the event of a fault, the complete switch panel must be renewed.

Removing

– Release retaining clips on button -1- -arrows-.
– Take button out of rear lid trim.
– Unplug electrical connector.



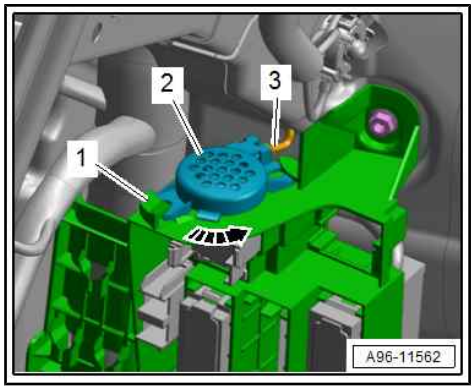
Note:

If the button cannot be removed as described, the rear lid trim (bottom) must be removed ⇒ General body repairs, interior; Rep. gr. 70 ; Luggage compartment trim panels; Removing and installing rear lid trim (bottom) .

Installing

Installation is carried out in reverse sequence.

2.29 Removing and installing rear lid warning buzzer - H32-



Removing

– Open cover for luggage compartment side trim (left-side).

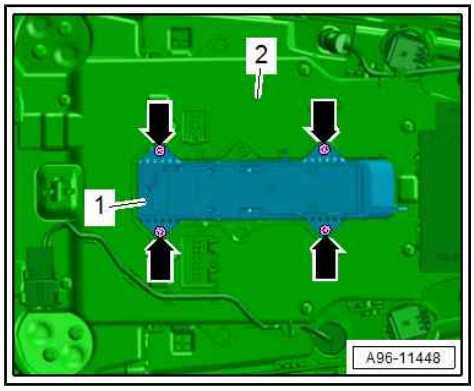
– Swivel warning buzzer -2- out of mounting -1- -arrow- and detach.

– Unplug electrical connector -3-.

Installing

Installation is carried out in reverse sequence.

2.30 Removing and installing sunroof button - E325-



Removing

– Remove interior light/reading light (front) ⇒ page 240 .

– Remove bolts -arrows-.

– Take button -1- out of interior light/reading light (front) -2-.

Installing

Installation is carried out in reverse sequence.

Tightening torques

♦ ⇒ “2.7 Exploded view - front roof module WX3 ”, page 228

2.31 Removing and installing interior light/ reading light (front)

⇒ “2.31.1 Removing and installing interior light/reading light (front) - Coupé, Sportback without sliding panoramic sunroof”, page 240

⇒ “2.31.2 Removing and installing interior light/reading light (front) - Coupé, Sportback with sliding panoramic sunroof”, page 242

⇒ “2.31.3 Removing and installing interior light/reading light (front) - Cabriolet”, page 244

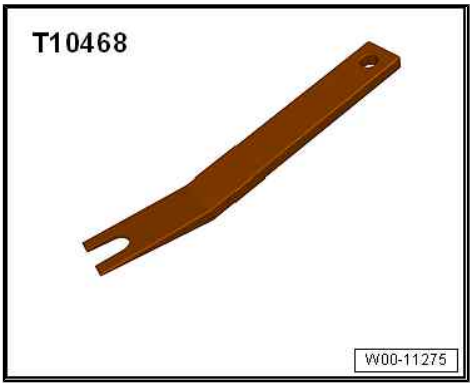
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2.31.1 Removing and installing interior light/ reading light (front) - Coupé, Sportback without sliding panoramic sunroof

Special tools and workshop equipment required

♦ Suction cup - VAS 6788-

♦ Lever - T10468-

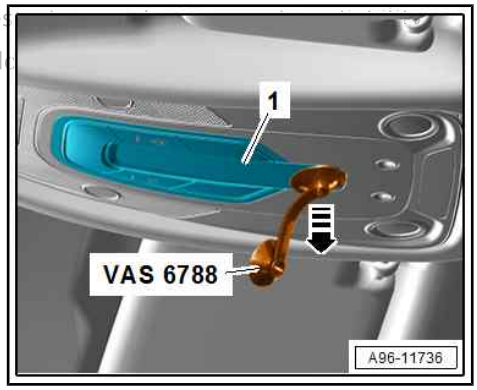


♦ 2x plastic paint scrapers (commercially available)

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Removing

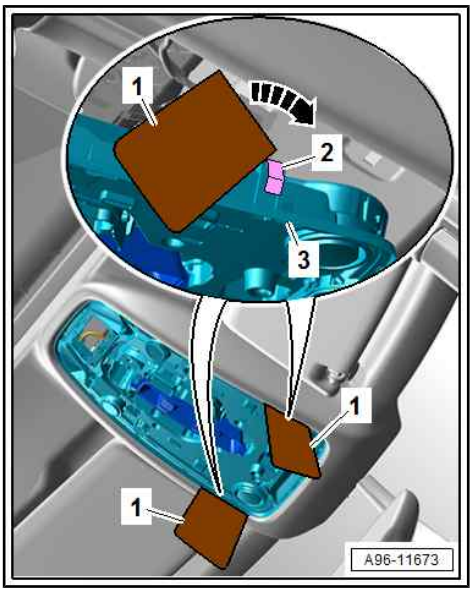
– Secure suction cup - VAS 6788- to button trim and pull trim off downwards.



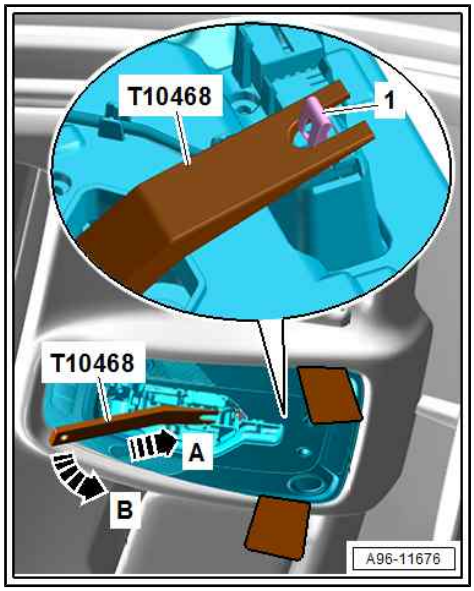
– Place one plastic paint scraper -1- on each side between roof module -3- and moulded headliner in vicinity of retaining clips (side) -2- and turn them -arrow- so that they slide over retaining clips from above.

• Retaining clip must be pressed towards roof module and must no longer engage in moulded headliner.

• Exploded view - front roof module - WX3- ⇒ page 228



– Press lever - T10468- into recess in roof module -arrow A- until forked end of lever encloses retaining clip -1-.
– Raise roof module -arrow B- and take it out of moulded headliner opening towards front.
– Unplug electrical connectors and move wiring harness clear.



Installing

Installation is carried out in reverse order; note the following:

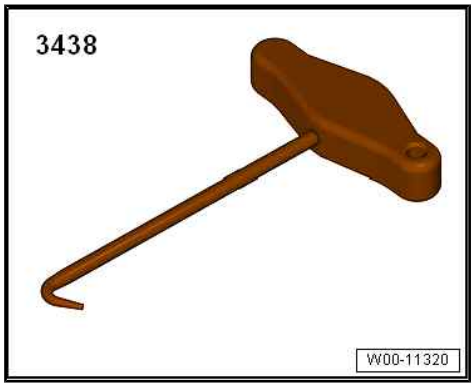
- Renew the four retaining clips (side).
- If LED is defective, roof module must be fully renewed.

– First insert roof module at rear, and then press it upwards at front until it engages audibly in retaining clip.

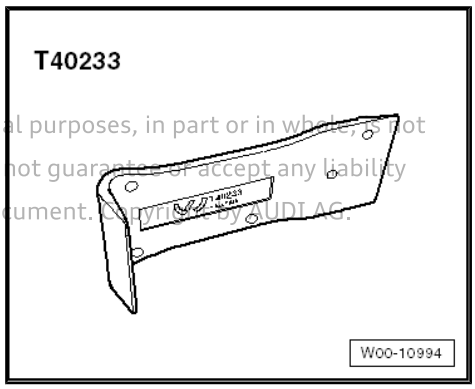
2.31.2 Removing and installing interior light/ reading light (front) - Coupé, Sportback with sliding panoramic sunroof

Special tools and workshop equipment required

♦ Hook - 3438-



♦ Removal wedge - T40233-



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♦ 2x plastic paint scrapers (commercially available)

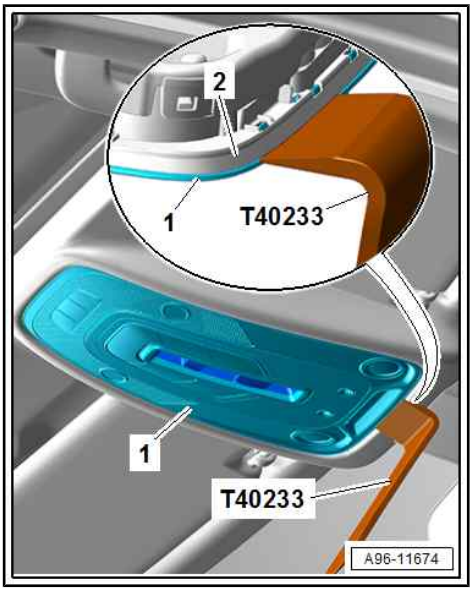
Removing

– Release fasteners all around outside of trim by inserting removal wedge - T40233- into gap between outer trim -1- and roof module housing -2-, starting at front.

– Detach outer trim.

– Carefully detach inner trim and button trim vertically downwards from interior light.

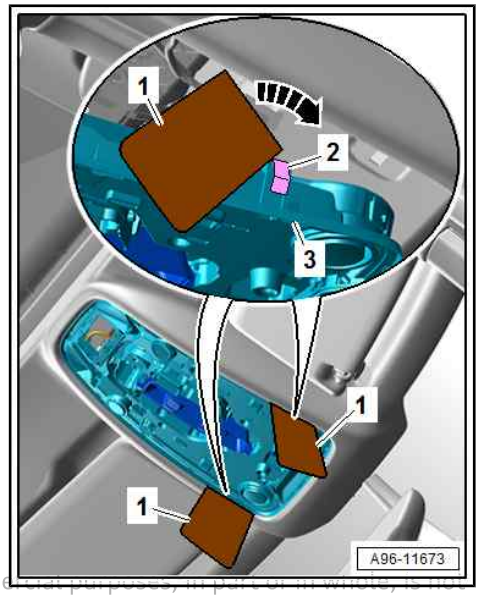
Exploded view - front roof module - WX3- ⇒ page 228



– Place one plastic paint scraper -1- on each side between roof module -3- and moulded headliner in vicinity of retaining clips (side) -2- and turn them -arrow- so that they slide over retaining clips from above.

• Retaining clip must be pressed towards roof module and must no longer engage in moulded headliner.

• Exploded view - front roof module - WX3- ⇒ page 228



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– Engage hook - 3438- in hole in front of roof module and abruptly but carefully pull it vertically downwards -arrow-.

– Take roof module out of moulded headliner opening towards front.

– Unplug electrical connectors and move wiring harness clear.

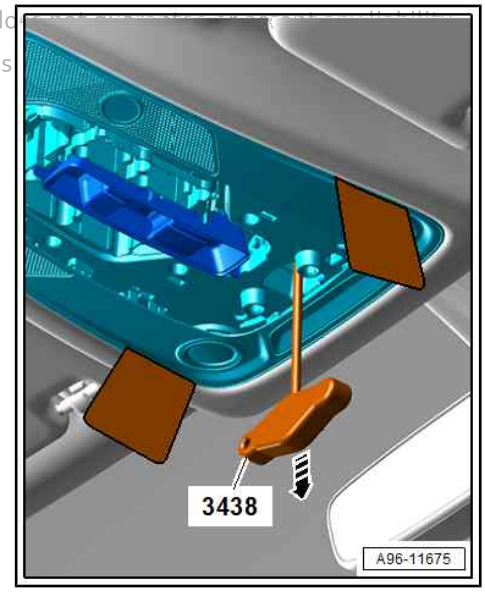
Installing

Installation is carried out in reverse order; note the following:

• Renew the four retaining clips (side).

• If LED is defective, roof module must be fully renewed.

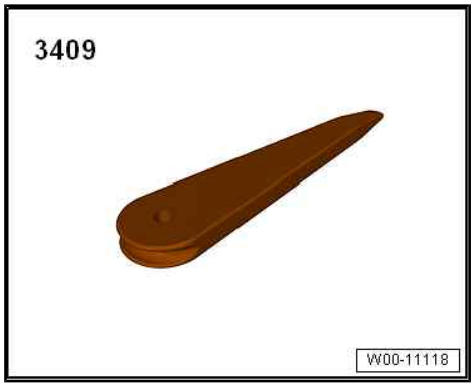
– First insert roof module at rear, and then press it upwards at front until it engages audibly in retaining clip.



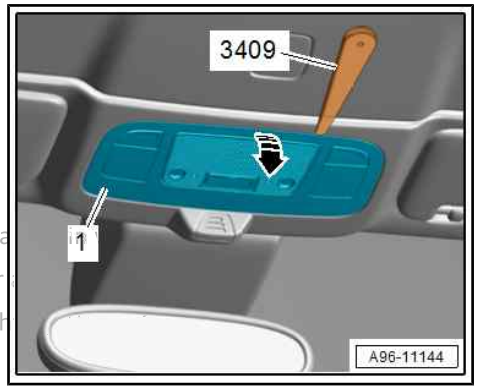
2.31.3 Removing and installing interior light/ reading light (front) - Cabriolet

Special tools and workshop equipment required

- Removal wedge - 3409-



Removing



– Pry roof module -1- out of opening in headliner using removal wedge - 3409- .
– Unplug electrical connectors.

Installing

Installation is carried out in reverse order; note the following:

- If LED is defective, entire front roof module - WX3- must be renewed.

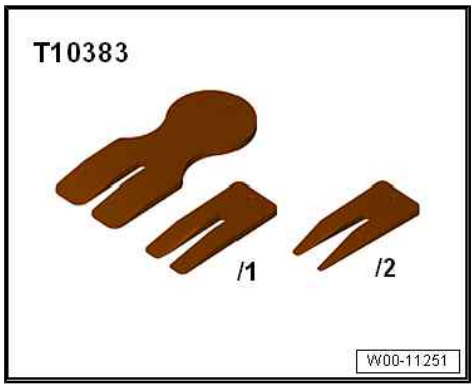
– Insert roof module in opening in headliner and press on so that it engages audibly.

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2.32 Removing and installing interior light/ reading light (rear)

Special tools and workshop equipment required

- Wedges - T10383-



Removing

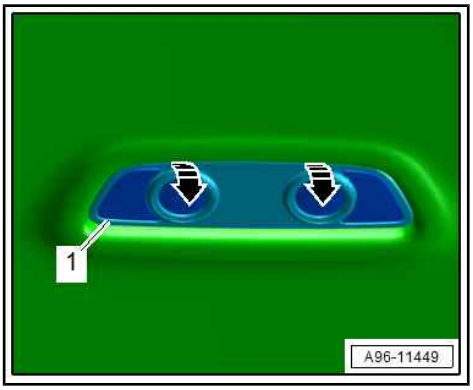
– Carefully pry interior light/reading light -1- out of opening in headliner -arrows- using wedge -T10383/1- .

– Unplug electrical connector.

Installing

Installation is carried out in reverse order; note the following:

– Insert interior light/reading light in opening in headliner and clip into place.



2.33 Removing and installing garage door operating unit - E284-

⇒ "2.33.1 Removing and installing garage door operating unit E284 - Coupé, Sportback", page 245

⇒ "2.33.2 Removing and installing garage door operating unit E284 - Cabriolet", page 245

2.33.1 Removing and installing garage door operating unit - E284- - Coupé, Sportback

Removing

– Remove interior light/reading light (front) ⇒ page 240 .

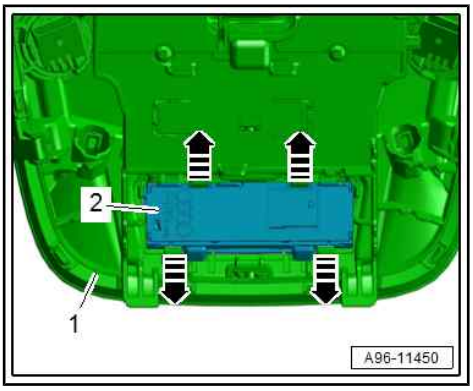
– If fitted, remove anti-theft alarm sensor - G578- ⇒ page 248 .

– Carefully press retainers aside -arrows-.

– Take operating unit -2- out of interior light/reading light (front) -1-.

Installing

Installation is carried out in reverse sequence.



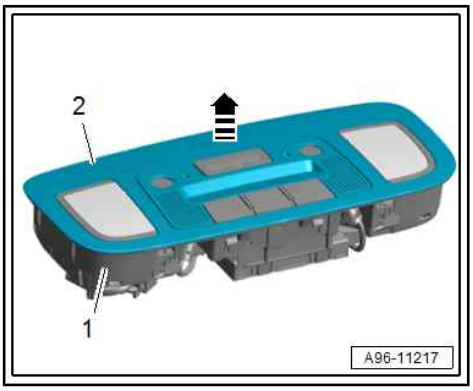
2.33.2 Removing and installing garage door operating unit - E284- - Cabriolet

Removing

– Remove interior light/reading light (front) ⇒ page 244 .

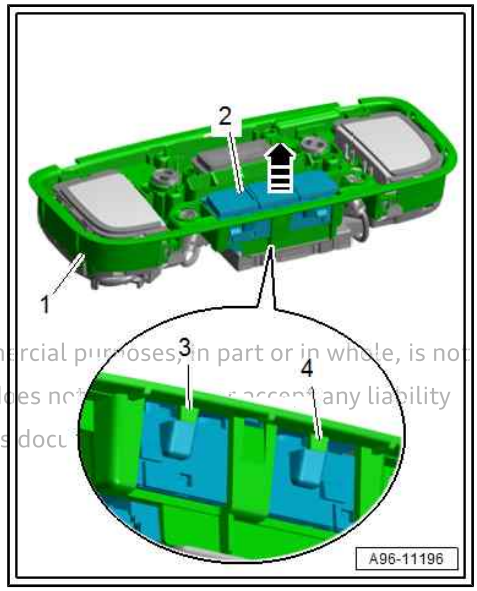
– If fitted, remove anti-theft alarm sensor - G578- ⇒ page 249 .

– Carefully prise lens -2- off interior light -1- -arrow-.



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– Release catches -3, 4-.
– Take operating unit -2- out of interior light/reading light (front) -1- -arrow-.



Installing

Installation is carried out in reverse sequence.

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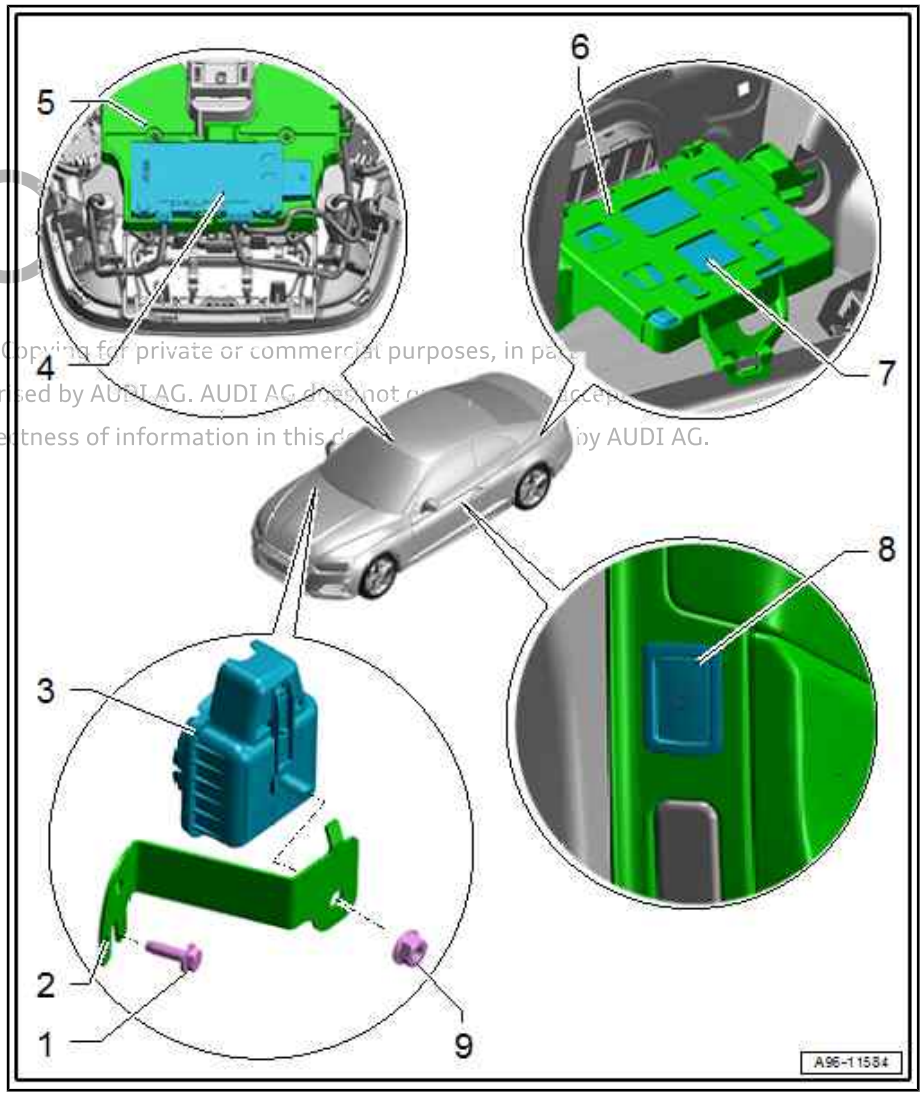
3 Anti-theft alarm system

⇒ “3.1 Overview - interior monitoring”, page 247

⇒ “3.2 Removing and installing alarm horn H12 ”, page 248

⇒ “3.3 Removing and installing anti-theft alarm sensor G578 ”, page 248

3.1 Overview - interior monitoring



1 - Bolt

- ❑ 8 Nm

2 - Bracket

- ❑ For alarm horn - H12-

3 - Alarm horn - H12-

- ❑ Removing and installing ⇒ page 248

4 - Anti-theft alarm sensor - G578-

- ❑ With individual sensors for interior monitoring
- ❑ Removing and installing ⇒ page 248

5 - Front roof module - WX3-

- ❑ Different versions ⇒ Electronic parts catalogue

6 - Bracket

- ❑ For convenience system central control unit

7 - Convenience system central control unit - J393-

- ❑ Removing and installing ⇒ General body repairs, exterior; Rep. gr. 57 ; Central locking system; Removing and installing convenience system central control unit - J393-

8 - Button for deactivating interior monitoring and vehicle inclination sensor - E616-

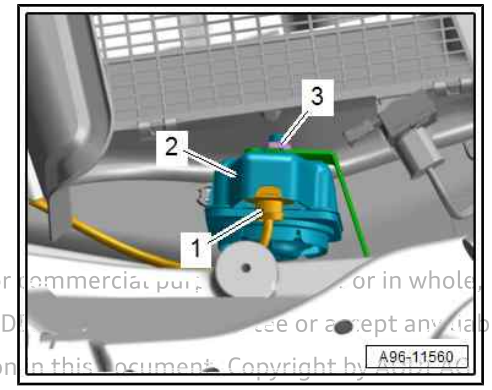
- ❑ Overview of fitting locations ⇒ page 221

9 - Nut

- ❑ 7 Nm

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3.2 Removing and installing alarm horn - H12-



Removing

– Remove plenum chamber cover ⇒ General body repairs, exterior; Rep. gr. 50 ; Bulkhead; Removing and installing plenum chamber cover .

– Unscrew nut -3-.

– Lift out alarm horn -2-.

– Unplug electrical connector -1-.

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Installing

Installation is carried out in reverse sequence.

Tightening torques

◆ ⇒ “3.1 Overview - interior monitoring”, page 247

3.3 Removing and installing anti-theft alarm sensor - G578-

⇒ “3.3.1 Removing and installing anti-theft alarm sensor G578 - Coupé, Sportback”, page 248

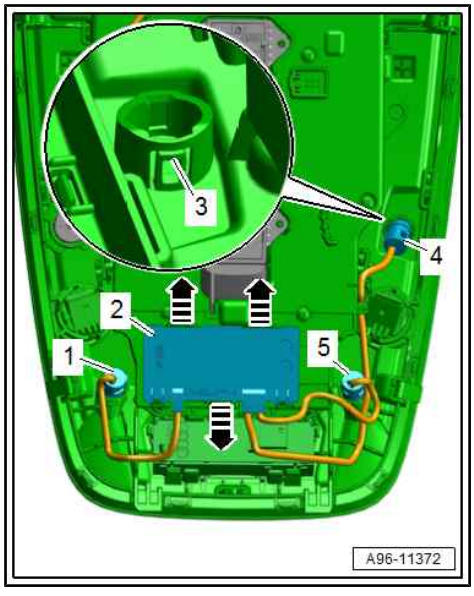
⇒ “3.3.2 Removing and installing anti-theft alarm sensor G578 - Cabriolet”, page 249

3.3.1 Removing and installing anti-theft alarm sensor - G578- - Coupé, Sportback

If the anti-theft alarm sensor - G578- is renewed, it must be re-calibrated ⇒ Vehicle diagnostic tester.

Removing

- Outer trim, inner trim and button trim for interior light/reading light (front) must be removed in order to remove anti-theft alarm sensor - G578- .
- These steps are described in the procedure for removing the interior light/reading light (front) on vehicles with sliding panoramic sunroof; therefore reference is made to this section for all vehicles.



– Remove interior light/reading light (front) (Coupé, Sportback with sliding panoramic sunroof ⇒ page 242).

– Release retainers -arrows- and remove anti-theft alarm sensor -2- from interior light/reading light.

– Release catch -3- and remove individual sensors -1, 4, 5- for interior monitoring from interior light/reading light. Catch -3- is released from back of interior light/reading light for sensor -4- and from front of interior light/reading light for sensors -1 and 5-.

– Move electrical wiring clear.

– Detach anti-theft alarm sensor -2-.

Installing

Installation is carried out in reverse sequence.

3.3.2 Removing and installing anti-theft alarm sensor - G578- - Cabriolet

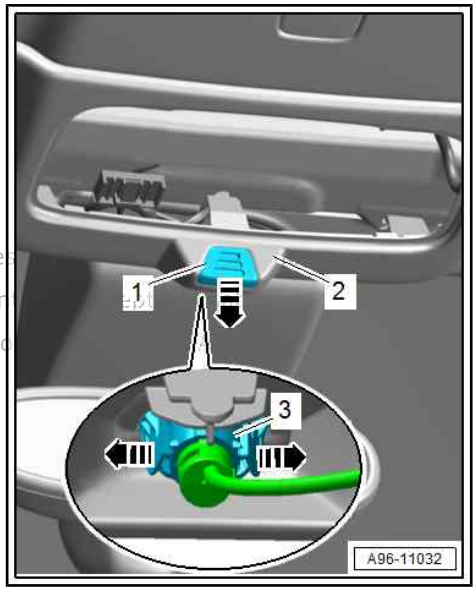
Removing

– Remove interior light/reading light (front) ⇒ page 244 .

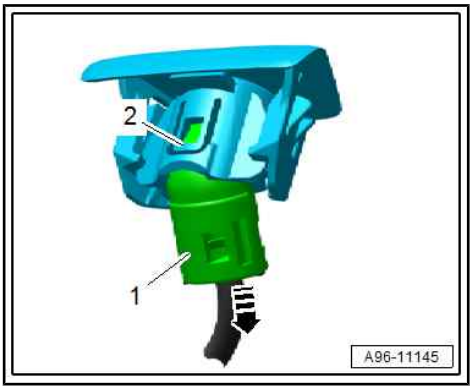
– Carefully press trim panel -1- out through opening on windscreen frame trim -2-.

– Release catches -arrows- and pull out mounting -3- for individual sensor.

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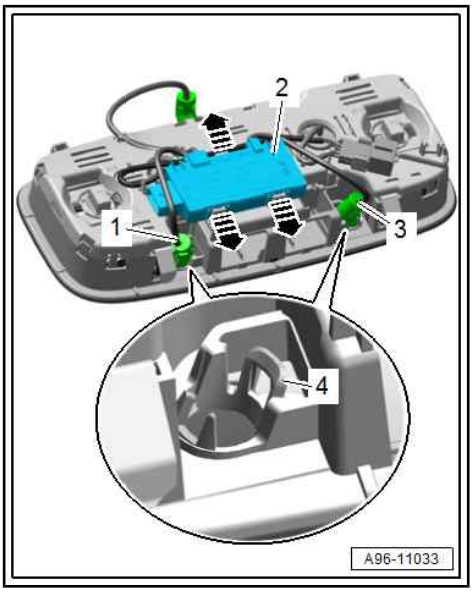
– Release catch -2- and pull individual sensor -1- out of mounting -2- -arrow-.



– Release retaining clips -arrows- and remove anti-theft alarm sensor -2- from interior light/reading light.

– Release catch -4- and remove individual sensors -1, 3- for interior monitoring from interior light/reading light.

– Detach anti-theft alarm sensor.



Installing

Installation is carried out in reverse order; note the following:

– Press trim panel for individual sensor into lower windscreen frame trim until it engages properly.

– Insert individual sensor into mounting.

– Press mounting into trim panel until it engages properly.

4 Lane change assist

⇒ “4.1 Overview - lane change assist”, page 250

⇒ “4.2 Removing and installing lane change assist warning lamp in exterior mirror K233 / K234 ”, page 251

⇒ “4.3 Removing and installing lane change assist control unit J769 / J770 ”, page 251

⇒ “4.4 Calibrating lane change assist”, page 251

4.1 Overview - lane change assist

1 - Lane change assist warning lamp in driver side exterior mirror - K233-

- ❑ Removing and installing ⇒ page 251

2 - Lane change assist warning lamp in front passenger side exterior mirror - K234-

- ❑ Removing and installing ⇒ page 251

3 - Bolt

- ❑ 3x
- ❑ 2 Nm

4 - Bracket

- ❑ For lane change assist control unit

5 - Lane change assist control unit - J769-

- ❑ Removing and installing ⇒ page 251
- ❑ Calibrating ⇒ page 251

6 - Bracket

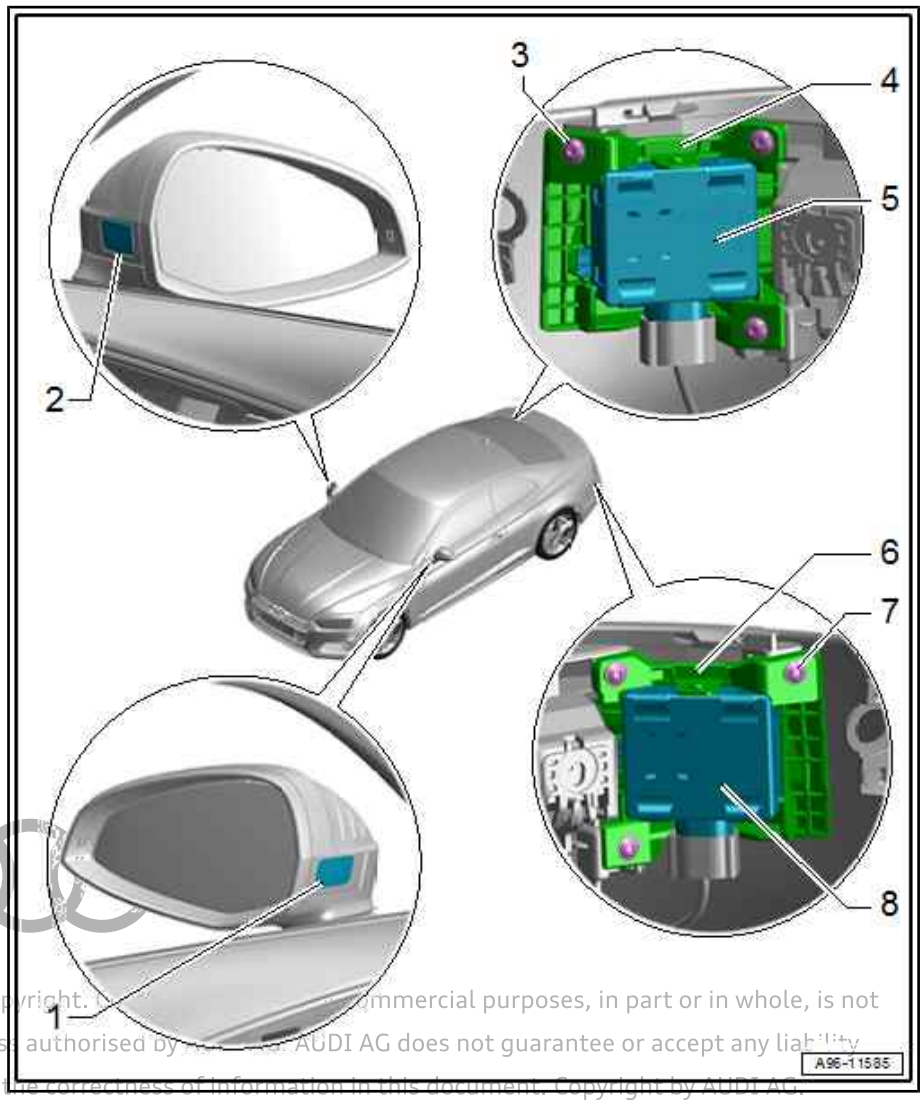
- ❑ For lane change assist control unit

7 - Bolt

- ❑ 3x
- ❑ 2 Nm

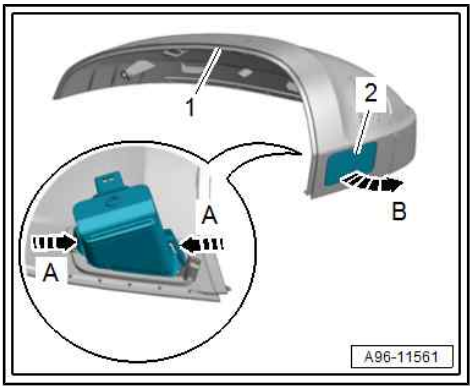
8 - Lane change assist control unit 2 - J770-

- ❑ Removing and installing ⇒ page 251
- ❑ Calibrating ⇒ page 251



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4.2 Removing and installing lane change assist warning lamp in exterior mirror - K233- / -K234-



Removing

– Remove cover for mirror ⇒ General body repairs, exterior; Rep. gr. 66 ; Exterior mirrors; Removing and installing cover for mirror .

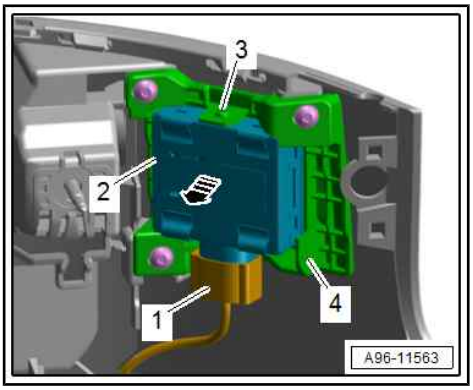
– Release retainers -arrows A- and press warning lamp -2- out of cover for mirror -1- -arrow B-.

Installing

Installation is carried out in reverse order; note the following:

- Warning lamp for lane change assist in exterior mirror must be replaced completely with a new unit if an LED is defective.

4.3 Removing and installing lane change assist control unit -J769- / -J770-



Removing

– Remove rear bumper cover ⇒ General body repairs, exterior; Rep. gr. 63 ; Bumper (rear); Removing and installing bumper cover .

– Release catch -3- and swivel out control unit -2- -arrow-.

– Disengage control unit from mounting (bottom) -4- and detach.

– Unplug electrical connector -1-.

Installing

Installation is carried out in reverse order; note the following:

– Calibrate lane change assist control unit -J769- / -J770- ⇒ page 251.

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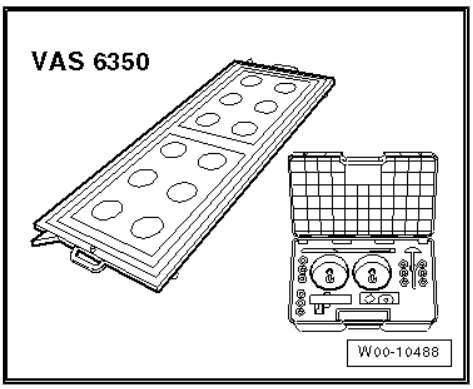
4.4 Calibrating lane change assist

- If a software update is required, this must be performed prior to the calibration.

Special tools and workshop equipment required

♦ Vehicle diagnostic tester

♦ Calibration unit - VAS 6350-

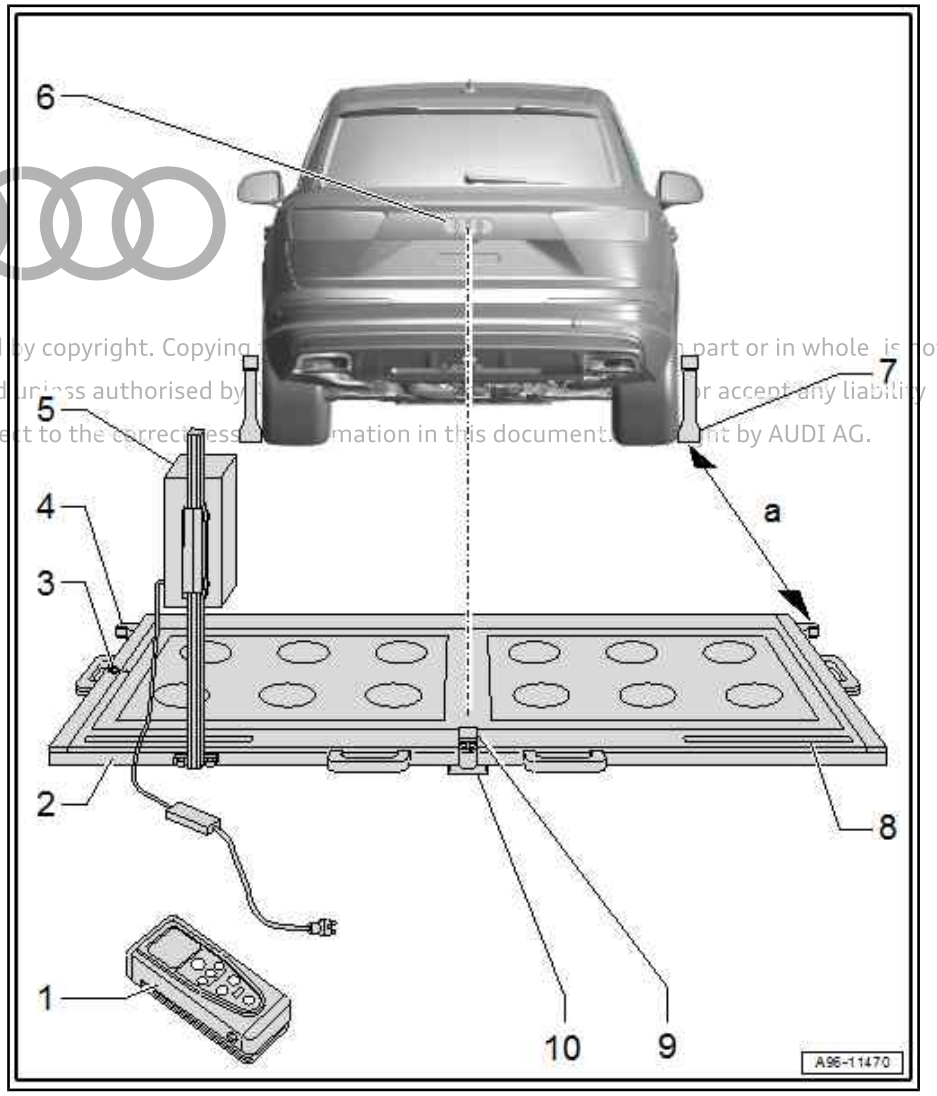


Requirements

– The lane change assist control unit -J769- / -J770- must be calibrated in the following situations (⇒ Vehicle diagnostic tester):

- If lane change assist control unit - J769- or lane change assist control unit 2 - J770- has been renewed.
- If the rear bumper cover has been damaged, for instance when parking the car.
- If the rear bumper cover has been removed and installed.
- If bolts securing the bumper have been loosened.
- If the event memory contains the entry “no or incorrect basic setting/adaption”.

Test equipment layout



1 - Spacing laser -VAS 6350/2-

- ❑ For distance measurement
- ❑ For use refer to ⇒ Operating instructions for calibration unit - VAS 6350-

2 - Calibration unit - VAS 6350-

3 - Spirit level

- ❑ On calibration unit - VAS 6350-
- ❑ For checking horizontal position of calibration unit - VAS 6350-

4 - Locating bracket

- ❑ For mounting spacing laser -VAS 6350/2- for distance measurement
- ❑ Distance to wheel centre mountings -VAS 6350/1- on rear wheels: dimension -a- = 1700 ± 2 mm

5 - Calibration unit for lane change assist -VAS 6350/4-

- ❑ Is moved from one side of measuring field to other during calibration
- ❑ Voltage supply must be connected to bottom left of calibration unit (in direction of travel)

6 - Logo

- ❑ Laser pointer is aligned with centre of logo

7 - Wheel centre mounting - VAS 6350/1-

- ❑ With wheel bolt adapter and measuring paddle

8 - Measuring scale

- ❑ For positioning the calibration unit for lane change assist -VAS 6350/4-

9 - Linear laser - VAS 6350/3-

- ❑ With laser protection goggles
- ❑ On calibration unit - VAS 6350-
- ❑ Switching on and off ⇒ Operating instructions for calibration unit - VAS 6350-

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10 - Plastic foot

- ❑ 3x
- ❑ Adjustable, for aligning horizontal position of calibration unit - VAS 6350-

Preparations

– Vehicle must be standing on a smooth and level surface.

– On vehicles with air suspension, select “normal level” (MMI setting: auto or comfort).

– Apply parking brake – the vehicle must not be moved while the calibration procedure is being performed.

– Make sure steering wheel is at centre position with wheels pointing straight ahead.

– Connect vehicle diagnostic tester ⇒ Vehicle diagnostic tester.

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Note:

If a fault message appears on the display, refer to ⇒ Operating instructions for vehicle diagnostic tester .

– Switch on ignition.

– Remove any stickers with metal film from the bumper cover.

– Fit three suitable wheel bolt adapters onto each wheel centre mounting - VAS 6350/1- .

– Fit measuring paddle onto each of the wheel centre mountings -VAS 6350/1- and secure each paddle with lock nut.

– Fit wheel centre mountings - VAS 6350/1- onto wheel bolts on both rear wheels.

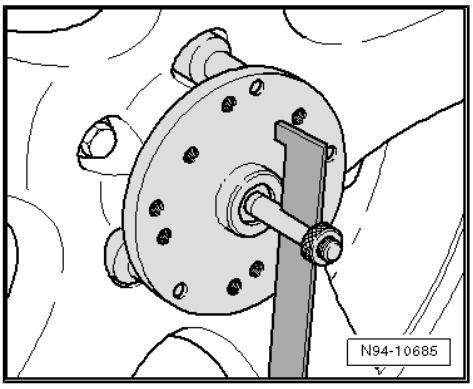
• Centre of rotation of wheel centre mounting must align with centre of rotation of wheel.

– When fitting the wheel centre mountings - VAS 6350/1- onto the wheels, make sure that the “anti-theft wheel bolts” do not come into contact with the wheel centre mounting.

– Use lock nuts to adjust measuring paddles so that they are free to move just slightly above the ground.

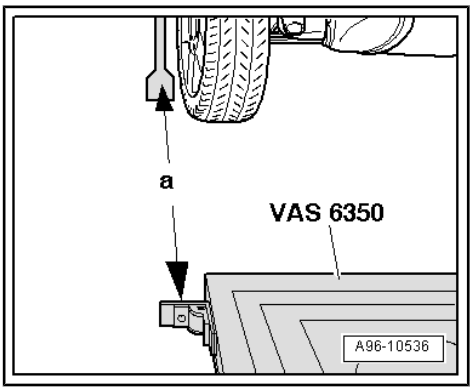
• Measuring paddles must move freely.

• Measuring paddle must be in an upright position.

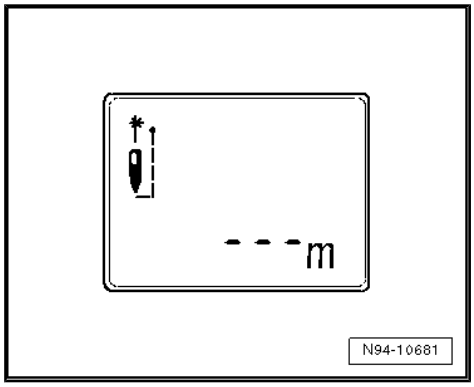


– Position the calibration unit - VAS 6350- at a distance of -a- from rear wheels.

• Dimension -a- = 1700 mm



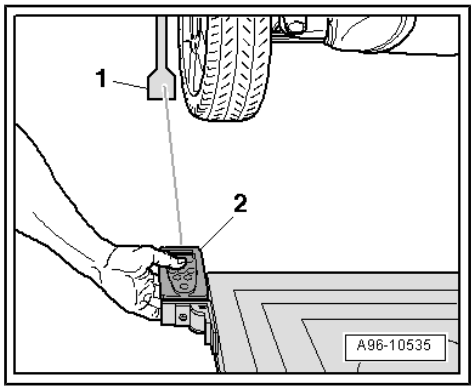
– Switch on spacing laser -VAS 6350/2- by pressing ON button.



Display on -VAS 6350/2- :

- "- - - m"
- The laser is switched on simultaneously.

– To measure distance, hold spacing laser -VAS 6350/2- -item 2- flush with locating bracket (left-side) as shown in illustration.



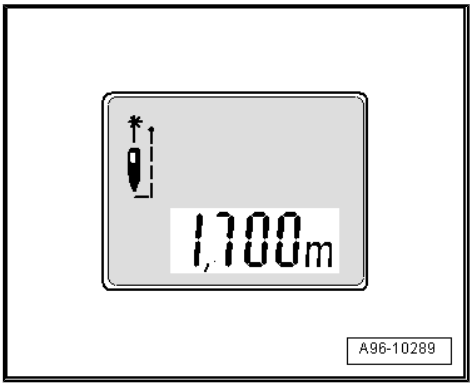
- Spacing laser -VAS 6350/2- must be steady and flush with locating bracket.

– Make sure that laser beam for distance measurement hits lower (larger) part of measuring paddle -1-.

If this is not the case, adjust height of measuring paddles using lock nuts on wheel centre mountings - VAS 6350/1- .

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– Press ON button briefly to measure distance.



Display on -VAS 6350/2- :

- “1.700 m” (specification: 1,700 ± 2 mm).

– Repeat measurement from locating bracket (right-side) to rear right wheel.

- Measured distance value must be identical on both sides.

If the two measured values are not identical, re-align calibration unit - VAS 6350- .

Performing calibration

Vehicle diagnostic tester is connected.

– Select Diagnosis mode and start this mode.

– Select Test plan tab.

– Choose Select own test and select following options one after the other:

- Body
- Electrical system
- 01 - Self-diagnosis compatible systems
- CF - Lane change assist control unit 2, -J770
- CF - Lane change assist control unit 2, functions
- CF - Calibration

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– Start the program selected and follow the instructions on the display of the vehicle diagnostic tester.

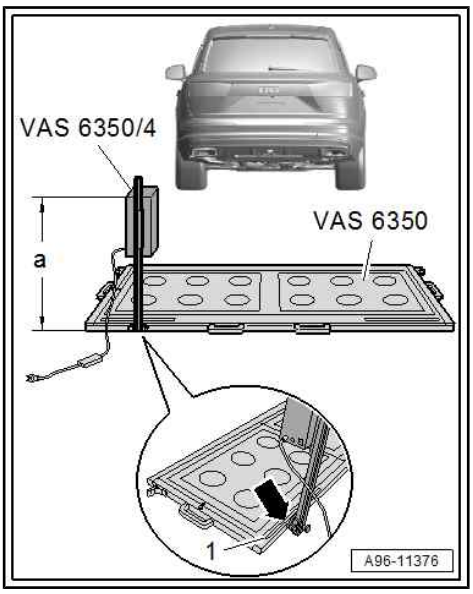
Note:

- The system will now inform you which lane change assist version is fitted in the vehicle (version: SWA 3.0).
- This information for setting the calibration unit is important for the work sequence to be followed and to avoid malfunctions.

– Secure calibration unit for lane change assist -VAS 6350/4- to mounting bracket (rear left) on calibration unit - VAS 6350- .

- Voltage supply must be connected to bottom left of calibration unit (in direction of travel)

Dimension -a- (measured between top edge of calibration unit and ground).



Model	A5 Coupé/Sportback/Cabriolet
Setting dimension in mm Dimension -a-	800

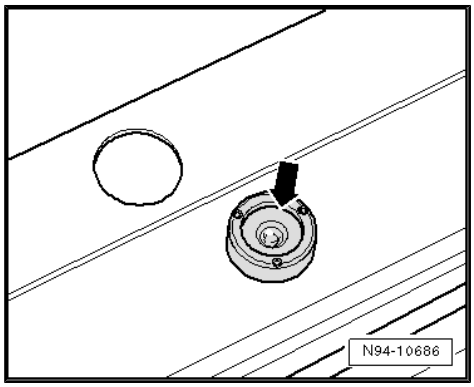
– Pointer at base of calibration unit for lane change assist -VAS 6350/4- must align with setting dimension on graduated scale -1- at measuring field -arrow-.

Model	A5 Coupé/Sportback/Cabriolet
Setting dimension (left-side) in mm read off from measuring scale -1-	716

– Connect calibration unit for lane change assist -VAS 6350/4- up to voltage supply.

– Align calibration unit - VAS 6350- horizontally by turning plastic feet.

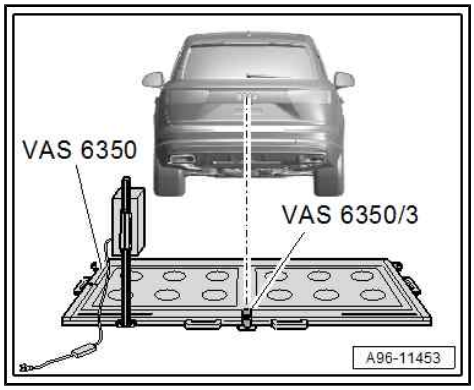
• Check spirit level on calibration unit - VAS 6350- -arrow-.



– Switch on linear laser - VAS 6350/3- on calibration unit - VAS 6350- .

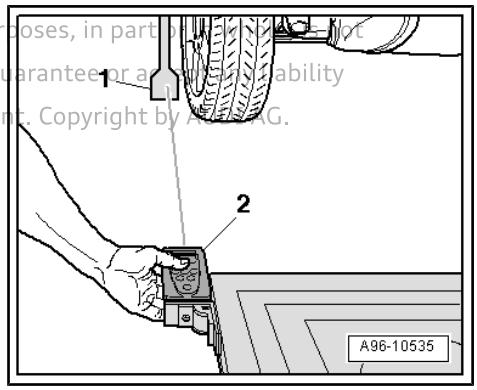
– Put on laser protection goggles.

– Align calibration unit - VAS 6350- so that beam from linear laser - VAS 6350/3- hits centre of logo on rear lid.



– Again check distance (left and right) between locating brackets of calibration unit - VAS 6350- and measuring paddles -1- on wheel mountings.

• Specification: 1,700 ± 2 mm



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Calibration procedure

Please adhere to the following rules during the calibration procedure:

• There must not be any metallic reflectors (e.g. tool trolleys, metal cabinets) within 2 metres of the calibration unit.

• Vehicle doors must not be opened or closed.

• No-one must sit in vehicle.

• Do not allow any person to walk between vehicle and calibration unit for lane change assist -VAS 6350/4- .

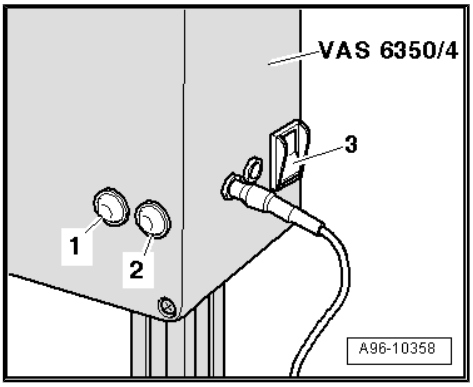
Procedure

– Switch on calibration unit for lane change assist -VAS 6350/4- with power switch -3-.

• The green LED -1- must light up.

– If red LED -2- lights up, check calibration unit for lane change assist -VAS 6350/4- .

– Continue to follow the instructions on the display of the vehicle diagnostic tester.

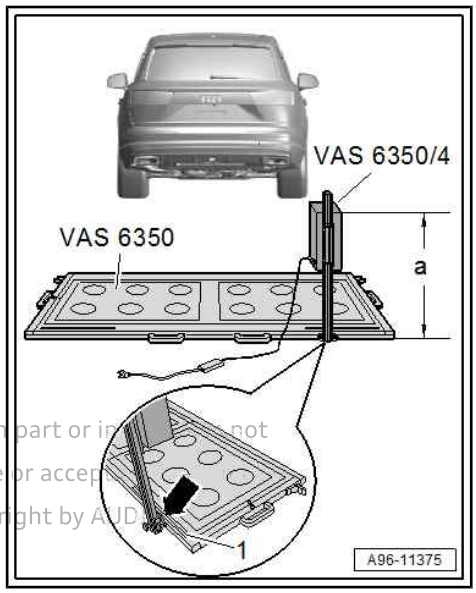


During the program, you are prompted to move the calibration unit for lane change assist -VAS 6350/4- from the left to the right side of the calibration platform - VAS 6350- .

– Switch off calibration unit for lane change assist -VAS 6350/4- and move calibration unit.

• Voltage supply must be connected to bottom left of calibration unit (in direction of travel)

Dimension -a- (measured between top edge of calibration unit and ground).



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Model	A5 Coupé/Sportback/Cabriolet
Setting dimension in mm Dimension -a-	800

– Pointer at base of calibration unit for lane change assist -VAS 6350/4- must align with setting dimension on graduated scale -1- at measuring field -arrow-.

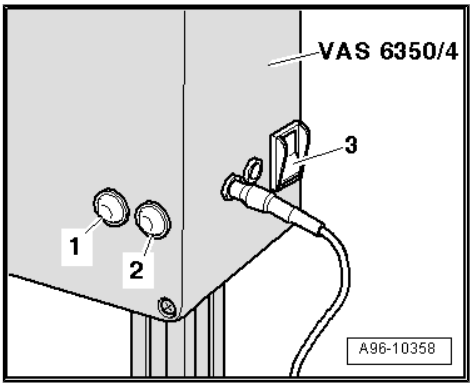
Model	A5 Coupé/Sportback/Cabriolet
Setting dimension (right-side) in mm read off from measuring scale -1-	716

– Switch on calibration unit for lane change assist -VAS 6350/4- with power switch -3-.

• The green LED -1- must light up.

– Continue to follow the instructions on the display of the vehicle diagnostic tester.

– After completing calibration of lane change assist, end “Calibration”, switch off ignition and unplug diagnostic connector.



5 Front camera for driver assist systems

⇒ “5.1 Overview of fitting locations - front camera for driver assist systems”, page 258

⇒ “5.2 Removing and installing front camera for driver assist systems”, page 259

5.1 Overview of fitting locations - front camera for driver assist systems

1 - Cover

2 - Front camera for driver assist systems - R242-

- ❑ Removing and installing ⇒ page 259
- ❑ Renewing ⇒ page 261

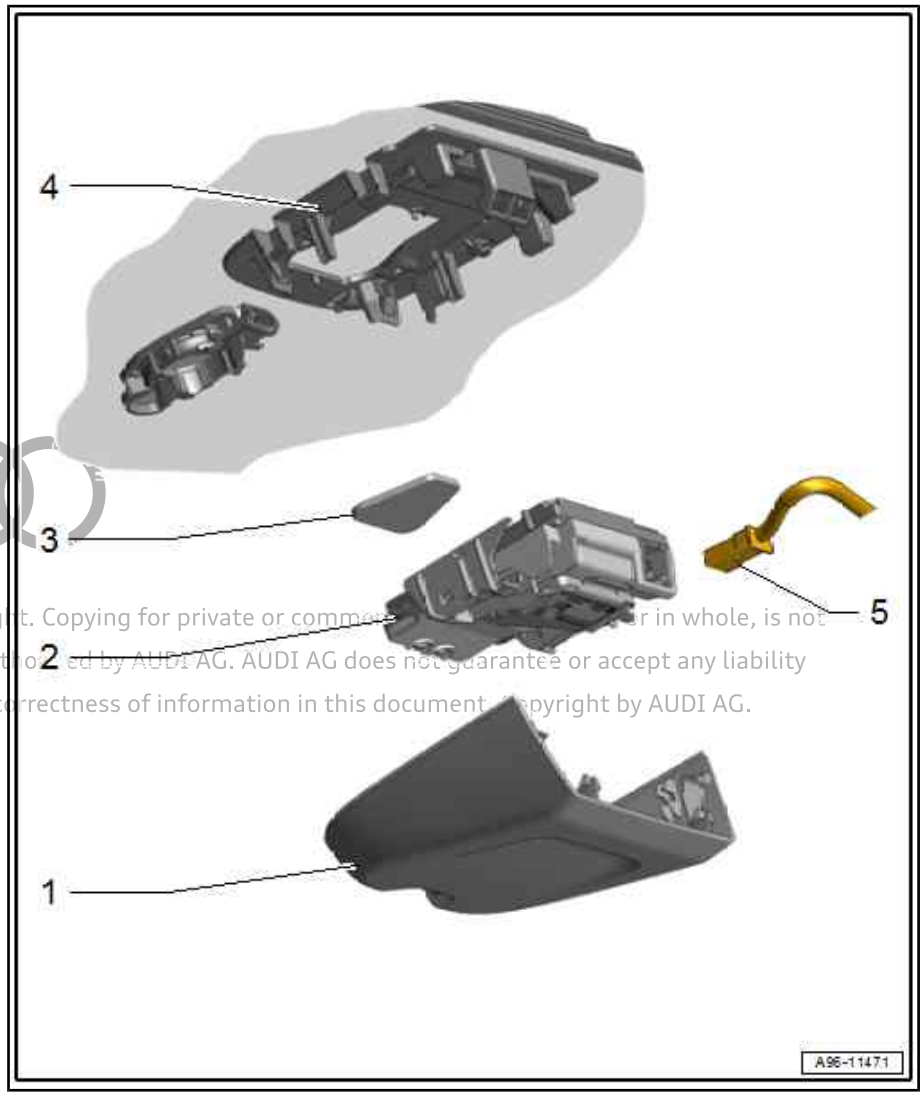
3 - Silicone pad

- ❑ Renew after removing

4 - Retainer

- ❑ Cannot be removed from windscreen

5 - Electrical connector



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5.2 Removing and installing front camera for driver assist systems

⇒ "5.2.1 Removing and installing front camera for driver assist systems", page 259

⇒ "5.2.2 Renewing front camera for driver assist systems", page 261

5.2.1 Removing and installing front camera for driver assist systems

Special tools and workshop equipment required

♦ Cleaning solution - D 009 401 04-

Removing

– Remove interior mirror ⇒ General body repairs, interior; Rep. gr. 68 ; Interior mirror; Removing and installing interior mirror .

Coupé, Sportback:

– Remove interior light/reading light (front) ⇒ page 240 .

– Remove centre bracket for sun visor ⇒ General body repairs, interior; Rep. gr. 68 ; Equipment; Removing and installing centre bracket for sun visor .

All versions (continued):

– Unplug electrical connector.

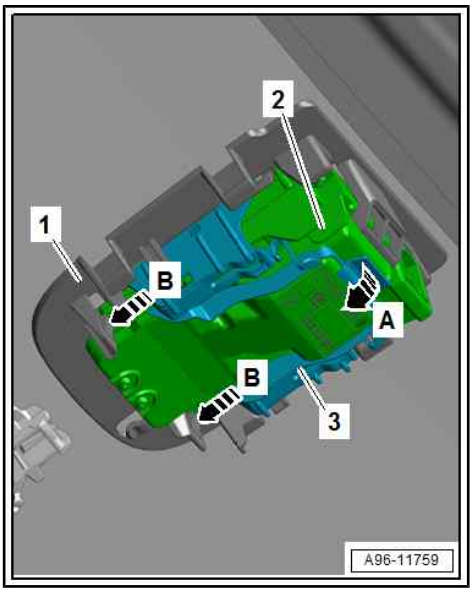
– Release retaining clip -3- and swivel it down -arrow A-. Release fasteners -arrows B-.

– Wait one minute to allow silicone pad to loosen enough so that it can be removed without leaving residue.

– Detach front camera for driver assists system -2- from mounting -1-.

– Clean bonding surface on windscreen with cleaning fluid - D 009 401 04- .

• Any silicone residue must be removed completely.



Installing

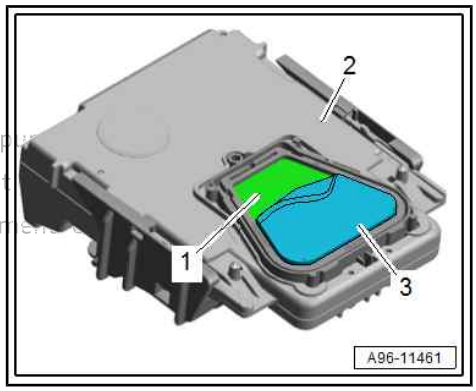
Installation is carried out in reverse order; note the following:

• Renew silicone pad.

• The camera's area of vision on the inside of the windscreen must not be obstructed by condensation or dirt.

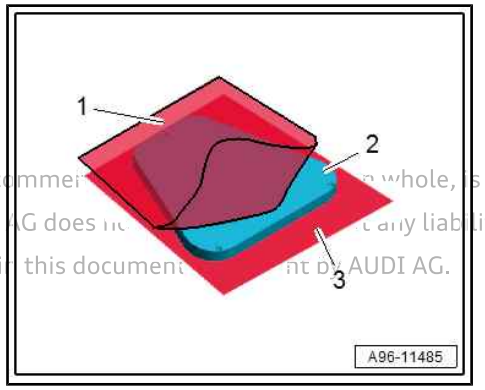
– Remove silicone pad -3- from front camera -2-, ensuring that no residue remains.

– Clean bonding surface -1- on front camera with a lint-free cloth. Take care not to damage bonding surface -1- and plastic frame, and do not move them out of position.



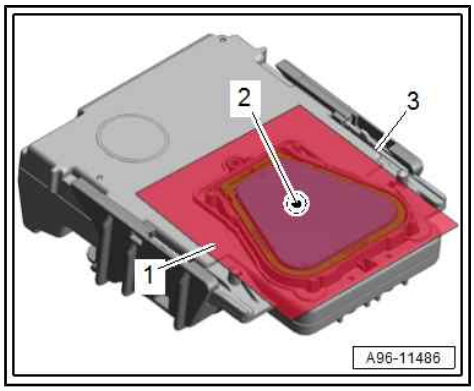
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– Remove protective film -1- from silicone pad -2-.
– A transparent protective film -3- remains on silicone pad to assist with installation.



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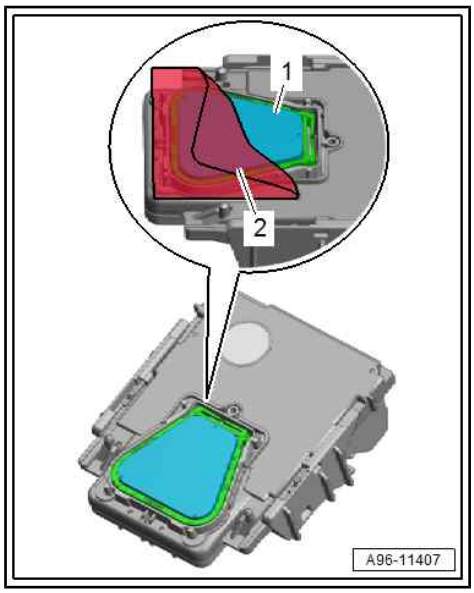
– Using transparent protective film -1- to help you, position silicone pad -2- on front camera -3- so that it is centred.
– Press silicone pad onto front camera through protective film, ensuring that no air bubbles are present.
• Air bubbles disappear after a few minutes - do not attempt to press them down.



– Remove protective film -2- from silicone pad -1-.

Note:

To prevent the silicone pad from becoming dirty, do not remove the protective film until just before fitting the pad.

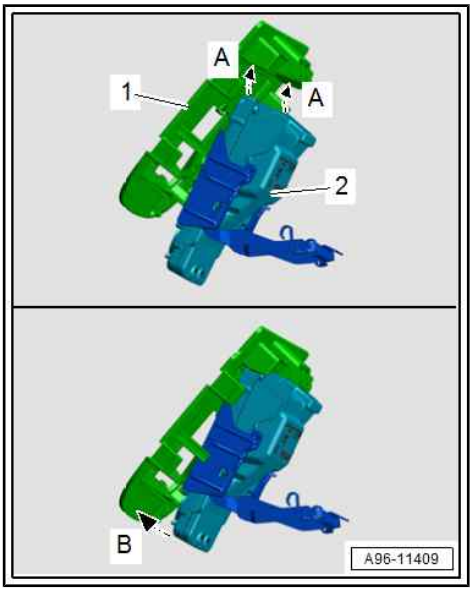


– Plug in electrical connector.
– Fit front camera -2- in bracket -1- -arrows A-.
– Gently press front camera onto bracket -arrow B-.

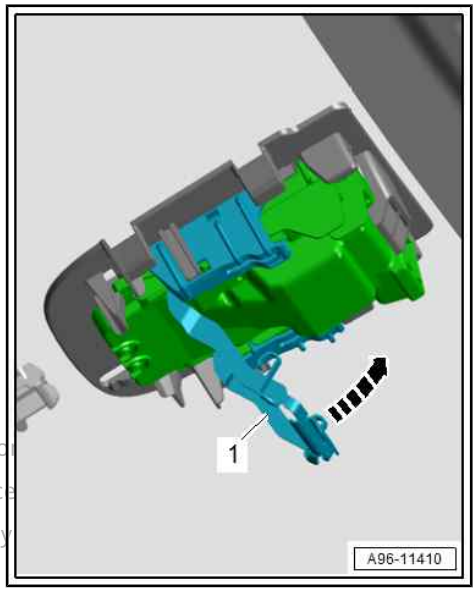
Note:

If some air bubbles remain when the silicone pad is pressed on, they will be pressed out by the pressure generated when the front camera is pressed onto the windscreen and secured. The silicone pad is designed such that any air bubbles are diffused through the silicone pad.

– Press front camera against windscreen and close retaining clip -1- in direction of -arrow-.



– Make sure that all four slider surfaces engage in bracket.
• To avoid driver assist system malfunctions, there must be no dirt or air bubbles between the front camera for driver assist systems and the windscreen.
– Calibrate front camera for driver assist systems ⇒ Running gear, axles, steering; Rep. gr. 44 ; Front camera for driver assist systems; Calibrating front camera for driver assist systems .



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5.2.2 Renewing front camera for driver assist systems

If control unit is to be renewed, select the “Replace control unit” function for appropriate control unit in ⇒ Vehicle diagnostic tester.

Special tools and workshop equipment required

♦ Cleaning solution - D 009 401 04-

Removing

– Remove interior mirror ⇒ General body repairs, interior; Rep. gr. 68 ; Interior mirror; Removing and installing interior mirror .

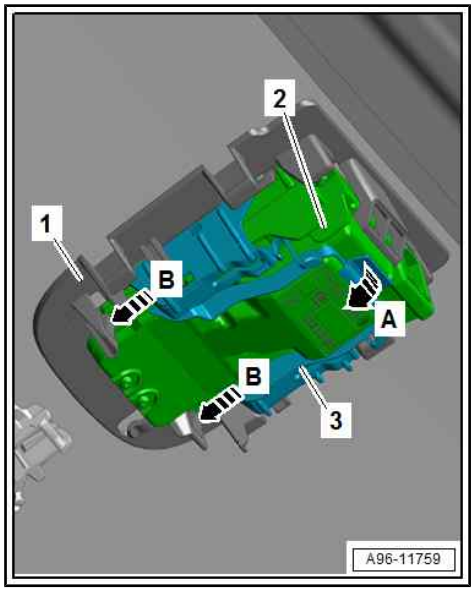
Coupé, Sportback:

– Remove interior light/reading light (front) ⇒ page 240 .
– Remove centre bracket for sun visor ⇒ General body repairs, interior; Rep. gr. 68 ; Equipment; Removing and installing centre bracket for sun visor .

All versions (continued):

– Unplug electrical connector.

– Release retaining clip -3- and swivel it down -arrow A-. Release fasteners -arrows B-.
– Wait one minute to allow silicone pad to loosen enough so that it can be removed without leaving residue.
– Detach front camera for driver assists system -2- from mounting -1-.
– Clean bonding surface on windscreen with cleaning fluid - D 009 401 04- .
• Any silicone residue must be removed completely.



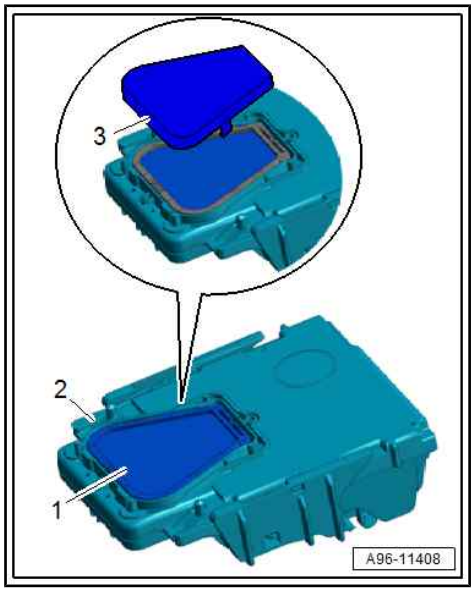
Installing

Installation is carried out in reverse order; note the following:

• The camera's area of vision on the inside of the windscreen must not be obstructed by condensation or dirt.
– Release fastener and pull protective cap -3- off front camera -2-.

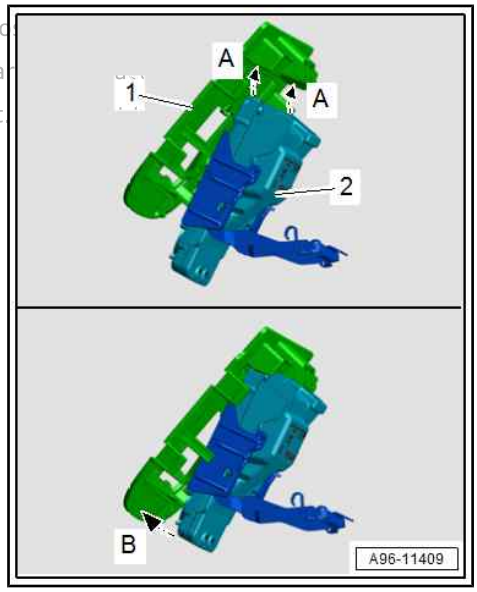
Note:

To prevent the silicone pad from becoming dirty, do not remove the protective cover until just before fitting the pad.



– Plug in electrical connector.
– Fit front camera -2- in bracket -1- -arrows A-.
– Gently press front camera onto bracket -arrow B-.

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Note:

If some air bubbles remain when the silicone pad is pressed on, they will be pressed out by the pressure generated when the front camera is pressed onto the windscreen and secured. The silicone pad is designed such that any air bubbles are diffused through the silicone pad.

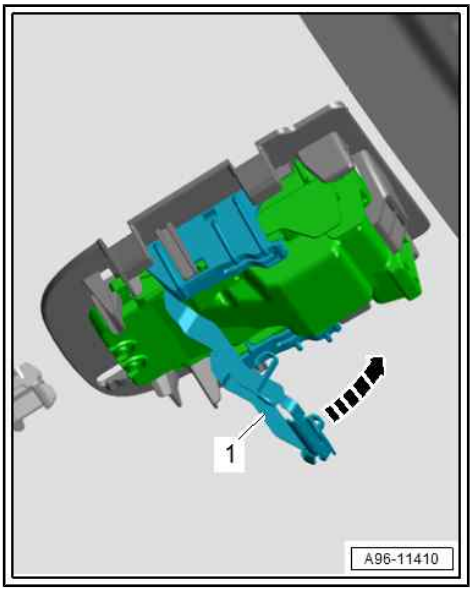
– Press front camera against windscreen and close retaining clip -1- in direction of -arrow-.

– Make sure that all four slider surfaces engage in bracket.

• To avoid driver assist system malfunctions, there must be no dirt or air bubbles between the front camera for driver assist systems and the windscreen.

– Calibrate front camera for driver assist systems ⇒ Running gear, axles, steering; Rep. gr. 44 ; Front camera for driver assist systems; Calibrating front camera for driver assist systems .

– Calibrate matrix LED headlights
⇒ “1.4 Calibrating headlights”, page 134 .



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6 Towing bracket

⇒ “6.1 Trailer socket”, page 264

6.1 Trailer socket

⇒ Electrical system; General information; Rep. gr. 96 ; Towing bracket

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7 Cigarette lighter, socket

⇒ “7.1 Exploded view - cigarette lighter, 12 V socket”, page 265

⇒ “7.2 Removing and installing cigarette lighter U1 ”, page 266

⇒ “7.3 Removing and installing cigarette lighter illumination bulb L28 ”, page 268

⇒ “7.4 Removing and installing socket illumination bulb L42 ”, page 268

⇒ “7.5 Removing and installing 12 V socket U5 ”, page 268

⇒ “7.6 Removing and installing 12 V socket 2 U18 / 12 V socket 3 U19 ”, page 270

⇒ “7.7 Removing and installing 12 V socket 4 U20 / 12 V socket 5 U26 ”, page 272

⇒ “7.8 Renewing 12 V socket 4 U20 / 12 V socket 5 U26 ”, page 272

7.1 Exploded view - cigarette lighter, 12 V socket

1 - Folding socket compartment

- ❑ Different versions
- ❑ Equipment version with 12 V socket 2 - U18- and 12 V socket 3 - U19-

2 - Trim for socket

- ❑ Different versions
- ❑ Equipment version with 12 V socket 2 - U18- and 12 V socket 3 - U19-

3 - Centre console storage box

- ❑ Equipment version with 12 V socket 2 - U18- and 12 V socket 3 - U19-

4 - Cigarette lighter illumination bulb - L28-

- ❑ For cigarette lighter - U1-
- ❑ Removing and installing ⇒ page 268

5 - Cigarette lighter - U1-

- ❑ Removing and installing ⇒ page 266

6 - Cigarette lighter

7 - Storage compartment (front)

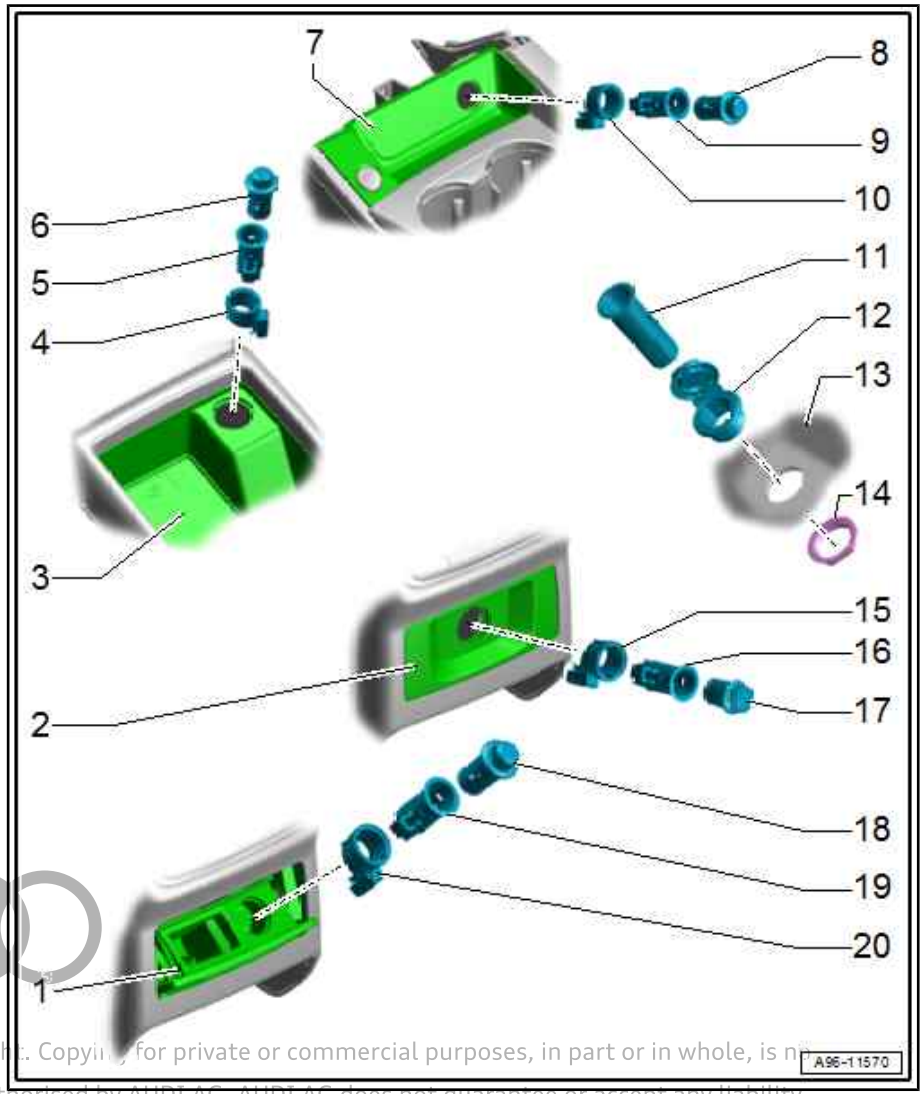
8 - Dummy cover

9 - 12 V socket - U5-

- ❑ Removing and installing ⇒ page 268

10 - Socket illumination bulb - L42-

- ❑ For 12 V socket - U5-
- ❑ Removing and installing ⇒ page 268



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11 - 12 V socket

- ❑ Different versions
- ❑ Saloon: 12 V socket 5 - U26- , Avant: 12 V socket 4 - U20-
- ❑ Removing and installing ⇒ page 272
- ❑ Renewing ⇒ page 272

12 - Mounting with cover

- ❑ For 12 V socket 5 - U26- / 12 V socket 4 - U20-

13 - Cover for luggage compartment side trim

14 - Nut

- ❑ 2 Nm

15 - Socket illumination bulb - L42-

- ❑ For 12 V socket 3 - U19-
- ❑ Removing and installing ⇒ page 268

16 - 12 V socket 3 - U19-

- ❑ Depending on vehicle equipment
- ❑ Removing and installing ⇒ page 270

17 - Dummy cover

18 - Cigarette lighter

19 - 12 V socket 2 - U18-

- ❑ Removing and installing ⇒ page 270

20 - Socket illumination bulb - L42-

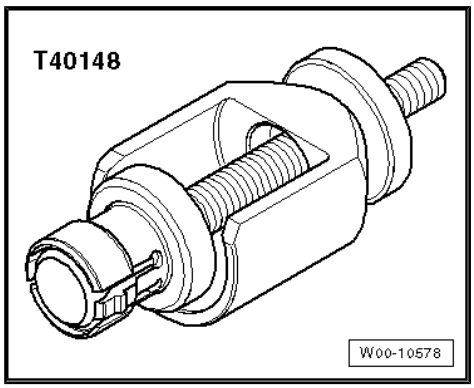
- ❑ For 12 V socket 3 - U19-
- ❑ Removing and installing ⇒ page 268

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7.2 Removing and installing cigarette lighter - U1-

Special tools and workshop equipment required

- ♦ Release tool - T40148-

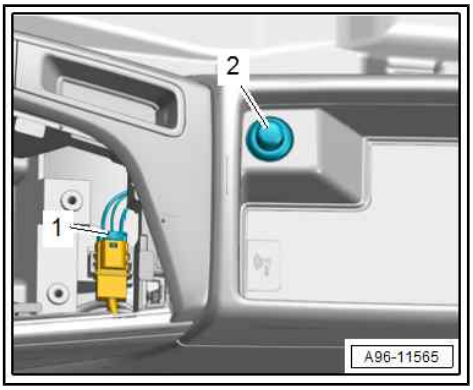


Removing

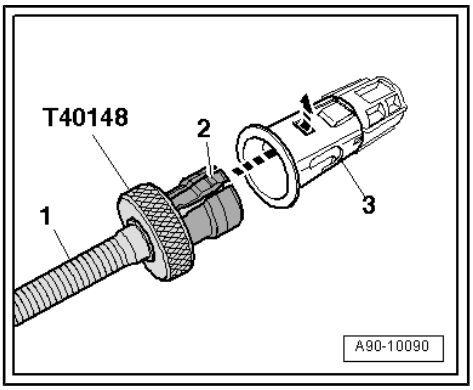
– Remove interior aerial 1 for entry and start authorisation and move to side with electrical wiring connected ⇒ page 177 .

– Unplug electrical connector -1-.

– Pull out lighter -2-.

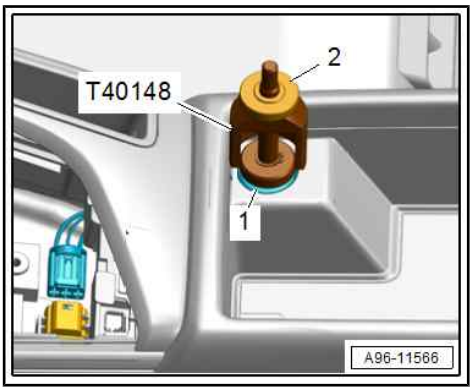


– Release tabs -2- on puller -T40148- must engage in recesses in cigarette lighter -3- -arrow-; for this purpose, push threaded rod -1- downwards as far as stop.



– Insert puller - T40148- into cigarette lighter -1- as far as stop.

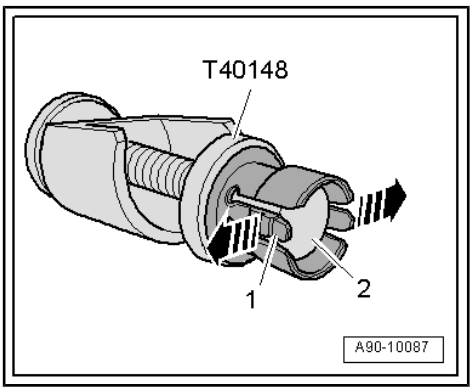
– Turn knurled wheel -2- on puller - T40148- clockwise as far as stop.



• The piston -2- moves upwards and the release tabs -1- on puller - T40148- spread apart -arrows-.

– Use puller - T40148- to pull cigarette lighter out of illuminated ring with socket illumination bulb - L42- .

– Guide out electrical wire through mounting.



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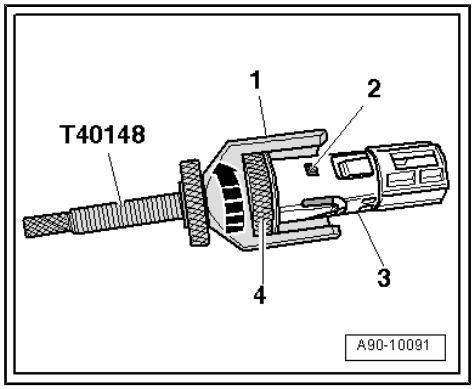
Installing

Installation is carried out in reverse order; note the following:

CAUTION

Risk of injury. Cigarette lighter may shoot out of the socket after being heated.

- **Check retaining tabs on socket.**
- **After removing socket, carefully press retaining springs back together.**

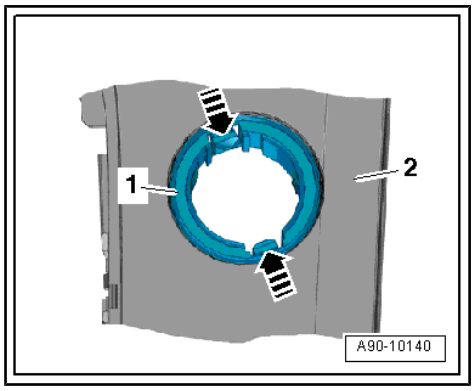


- Detach support -1- from puller - T40148- .
- Push piston downwards and hold in this position.
- Turn knurled wheel -4- on puller - T40148- anti-clockwise -arrow-; this will open release tabs -2- on cigarette lighter -3- and puller - T40148- can be removed.

7.3 Removing and installing cigarette lighter illumination bulb - L28-

Removing

- Remove cigarette lighter ⇒ page 266 .
- Disengage catches -arrows-.
- Take illuminated ring -1- with cigarette lighter illumination bulb - L28- out of trim panel -2-.



Installing

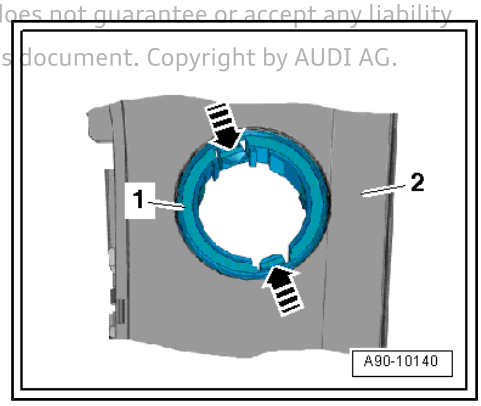
Installation is carried out in reverse sequence.

7.4 Removing and installing socket illumination bulb - L42-

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Removing

- Remove cigarette lighter ⇒ page 265 .
- Disengage catches -arrows-.
- Take illuminated ring -1- with cigarette lighter illumination bulb - L28- out of trim panel -2-.



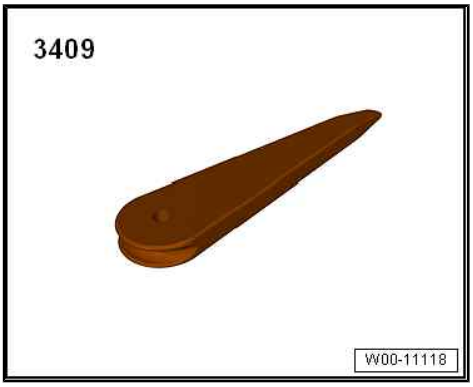
Installing

Installation is carried out in reverse sequence.

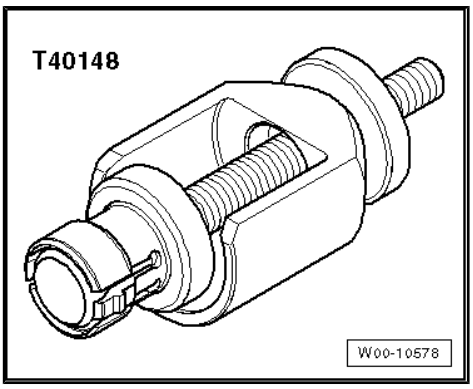
7.5 Removing and installing 12 V socket - U5-

Special tools and workshop equipment required

♦ Removal wedge - 3409-



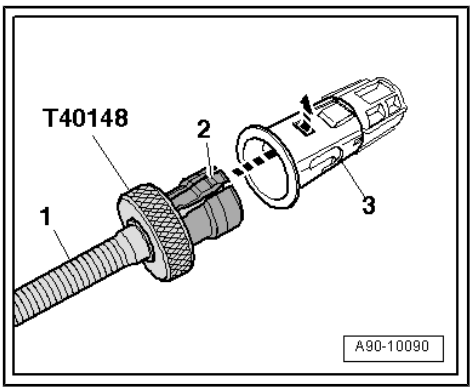
♦ Release tool - T40148-



Removing

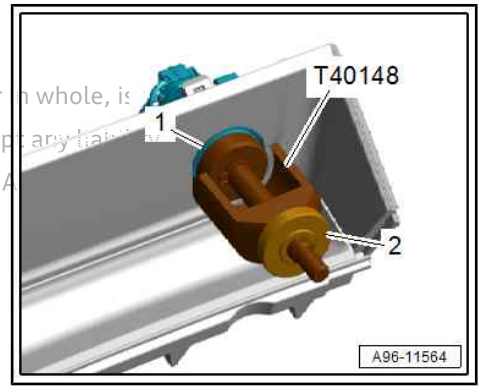
– Remove storage compartment (front) ⇒ General body repairs, interior; Rep. gr. 68 ; Centre console; Removing and installing centre console storage compartment (front) .

– Release tabs -2- on puller -T40148- must engage in recesses in cigarette lighter -3- -arrow-; for this purpose, push threaded rod -1- downwards as far as stop.



– Insert puller - T40148- into cigarette lighter -1- as far as stop.

– Turn knurled wheel -2- on puller - T40148- clockwise as far as stop.

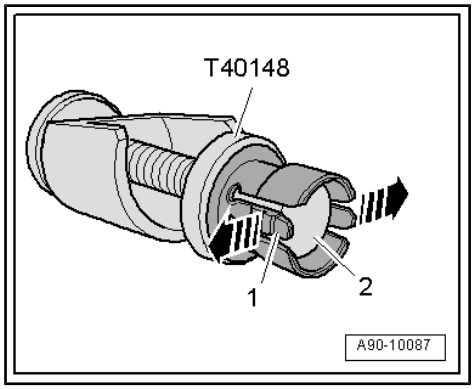


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- The piston -2- moves upwards and the release tabs -1- on puller - T40148- spread apart -arrows-.

– Use puller - T40148- to pull cigarette lighter out of illuminated ring with cigarette lighter illumination bulb - L28- .

– Guide out electrical wire through mounting.



Installing

Installation is carried out in reverse order; note the following:

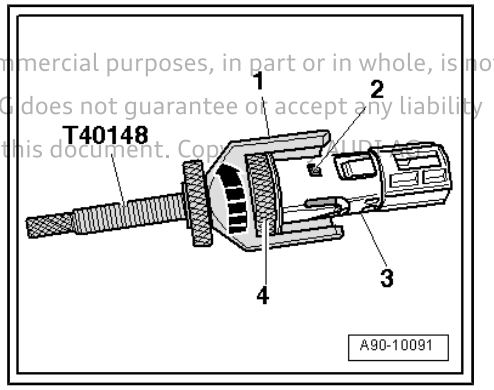
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CAUTION

Risk of injury. Cigarette lighter may shoot out of the socket after being heated.

– Check retaining tabs on socket.

– After removing socket, carefully press retaining springs back together.



– Detach support -1- from puller - T40148- .

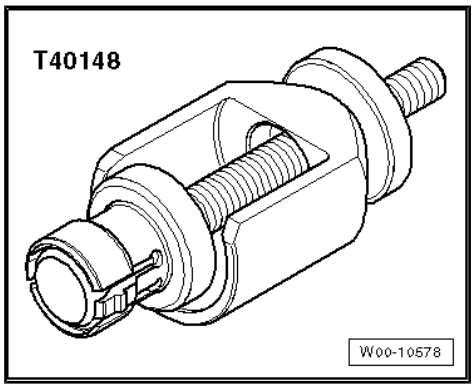
– Push piston downwards and hold in this position.

– Turn knurled wheel -4- on puller - T40148- anti-clockwise -arrow-; this will open release tabs -2- on cigarette lighter -3- and puller - T40148- can be removed.

7.6 Removing and installing 12 V socket 2 - U18- / 12 V socket 3 - U19-

Special tools and workshop equipment required

♦ Release tool - T40148-



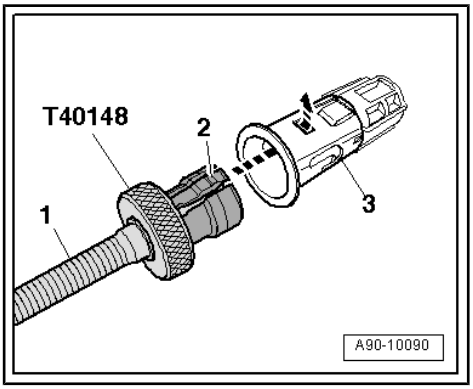
Removing

– Remove centre console trim (rear) ⇒ General body repairs, interior; Rep. gr. 68 ; Centre console; Removing and installing centre console trim (rear) .

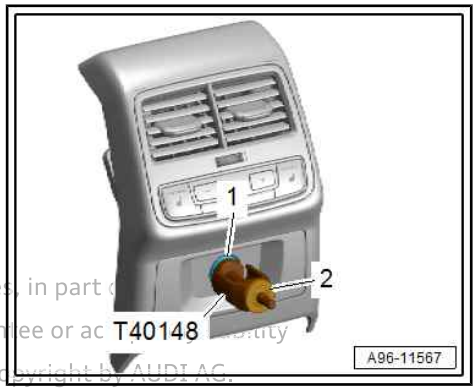
– Socket trim: Detach dummy cover.

– Hinged compartment for socket: Open hinged compartment and pull out lighter.

– Release tabs -2- on puller -T40148- must engage in recesses in cigarette lighter -3- -arrow-; for this purpose, push threaded rod -1- downwards as far as stop.

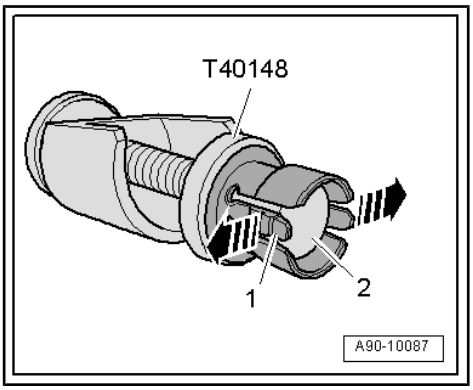


– Insert puller - T40148- into cigarette lighter -1- as far as stop.
– Turn knurled wheel -2- on puller - T40148- clockwise as far as stop.



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• The piston -2- moves upwards and the release tabs -1- on puller - T40148- spread apart -arrows-.
– Use puller - T40148- to pull cigarette lighter out of illuminated ring with socket illumination bulb - L42- .
– Guide out electrical wire through mounting.



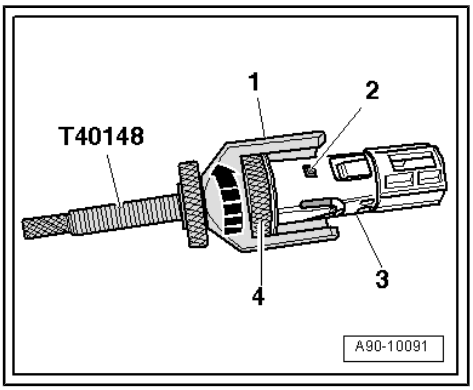
Installing

Installation is carried out in reverse order; note the following:

CAUTION

Risk of injury. Cigarette lighter may shoot out of the socket after being heated.

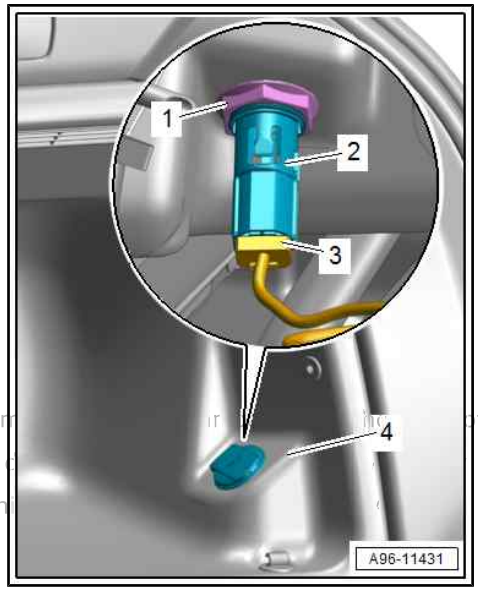
– Check retaining tabs on socket.
– After removing socket, carefully press retaining springs back together.



– Detach support -1- from puller - T40148- .
– Push piston downwards and hold in this position.
– Turn knurled wheel -4- on puller - T40148- anti-clockwise -arrow-; this will open release tabs -2- on cigarette lighter -3- and puller - T40148- can be removed.

7.7 Removing and installing 12 V socket 4 - U20- / 12 V socket 5 - U26-

Removing



– Open cover -4- in luggage compartment side trim.
– Unplug electrical connector -3-.
– Unscrew nut -1-.
– Remove 12 V socket -2- from cover of luggage compartment side trim.

Installing

Installation is carried out in reverse sequence.

Tightening torques

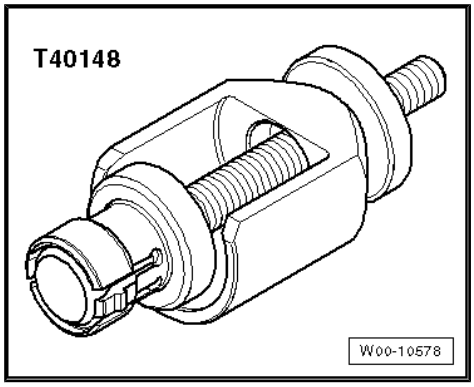
♦ ⇒ “7.1 Exploded view - cigarette lighter, 12 V socket”, page 265

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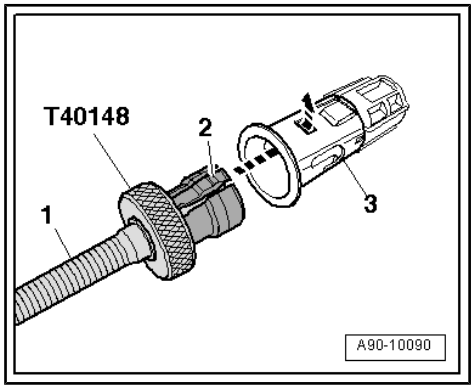
7.8 Renewing 12 V socket 4 - U20- / 12 V socket 5 - U26-

Special tools and workshop equipment required

♦ Release tool - T40148-



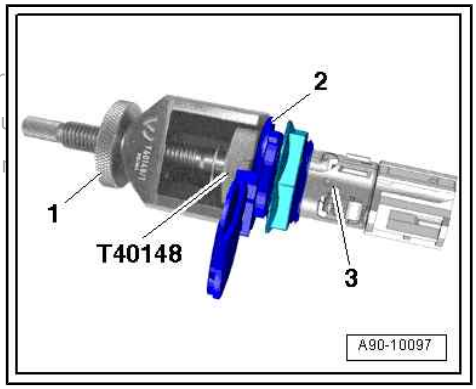
Removing



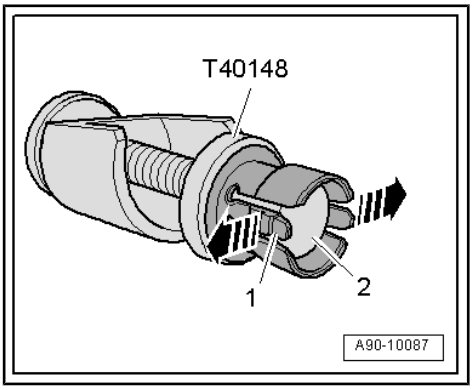
– Release tabs -2- on puller -T40148- must engage in recesses in 12 V socket -3- -arrow-; for this purpose, push threaded rod -1- downwards as far as stop.

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– Open cover of mounting -2- and hold in this position.
– Insert puller - T40148- into 12 V socket -3- as far as stop.
– Turn knurled wheel -1- on puller - T40148- clockwise as far as stop.



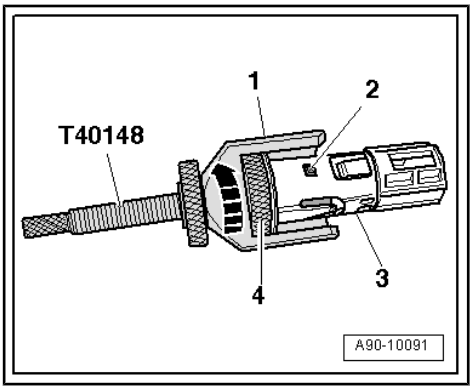
• The piston -2- moves upwards and the release tabs -1- on puller - T40148- spread apart -arrows-.
– Remove 12 V socket from cover of luggage compartment side trim.
– Unplug electrical connector.



Installing

Installation is carried out in reverse order; note the following:

– Detach support -1- from puller - T40148- .
– Push piston downwards and hold in this position.
– Turn knurled wheel -4- on puller - T40148- anti-clockwise -arrow-; this will open release tabs -2- on 12 V socket -3- and puller - T40148- can be removed.



97 – Wiring

1 Relay carriers, fuse carriers, electronics boxes

⇒ “1.1 Overview of fitting locations - relay carriers, fuse carriers, electronics boxes”, page 274

⇒ “1.2 Exploded view - main fuse holder”, page 283

⇒ “1.3 Removing and installing relay and fuse carrier (front left)”, page 284

⇒ “1.4 Removing and installing suppression filter C24 ”, page 286

⇒ “1.5 Removing and installing wiring junction”, page 286

⇒ “1.6 Removing and installing fuse holder C SC ”, page 293

⇒ “1.7 Removing and installing relay and fuse holders in luggage compartment (left-side)”, page 294

⇒ “1.8 Removing and installing main fuse holder on battery”, page 297

1.1 Overview of fitting locations - relay carriers, fuse carriers, electronics boxes

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⇒ “1.1.1 Overview of fitting locations - relay carriers, fuse carriers, electronics boxes (engine compartment)”, page 274

⇒ “1.1.2 Overview of fitting locations - relay carriers, fuse carriers, electronics boxes (engine compartment), g-tron”, page 276

⇒ “1.1.3 Overview of fitting locations - relay carriers, fuse carriers, electronics boxes (engine compartment), 48 V system (0K4 + VH2)”, page 277

⇒ “1.1.4 Overview of fitting locations - relay carriers, fuse carriers, electronics boxes (left footwell)”, page 278

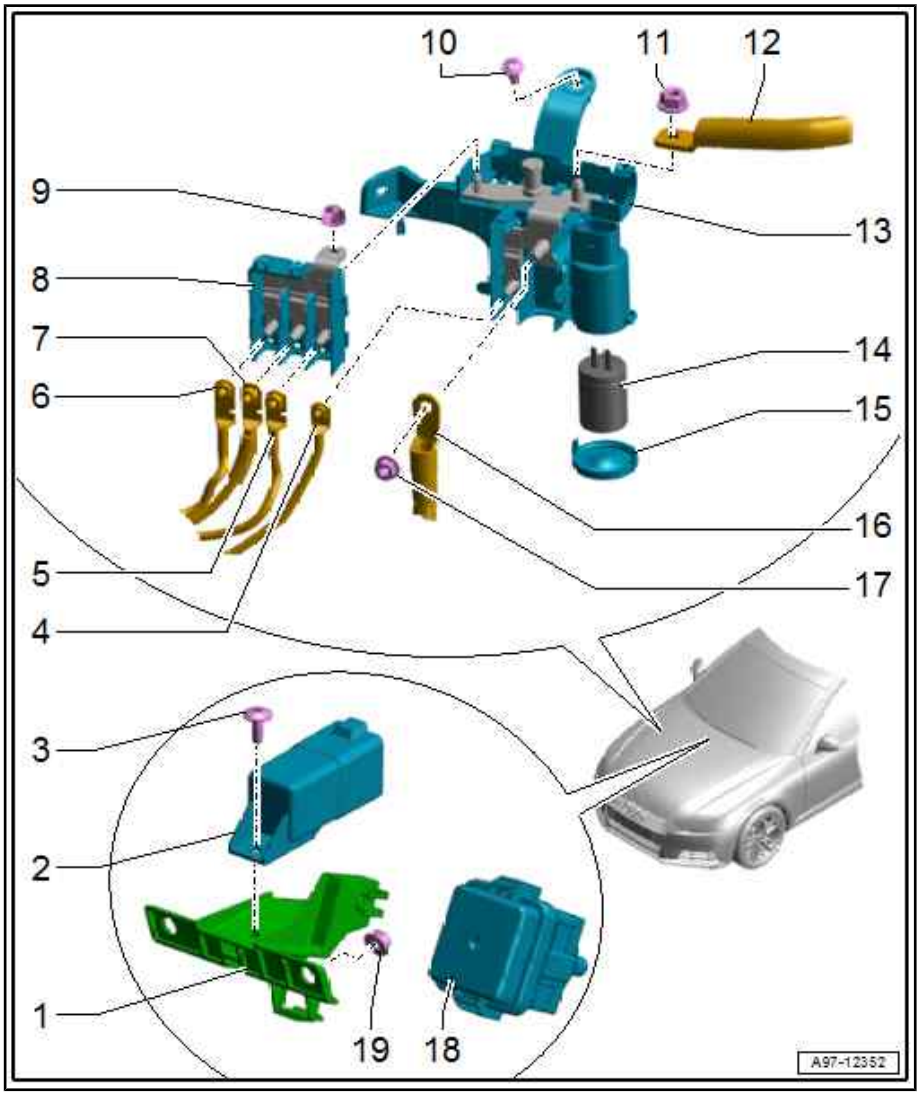
⇒ “1.1.5 Overview of fitting locations - relay carriers, fuse carriers, electronics boxes (right footwell)”, page 279

⇒ “1.1.6 Overview of fitting locations - relay carriers, fuse carriers, electronics boxes (luggage compartment), Coupé, Sportback”, page 280

⇒ “1.1.7 Overview of fitting locations - relay carriers, fuse carriers, electronics boxes (luggage compartment), Cabriolet”, page 281

⇒ “1.1.8 Overview of fitting locations - relay carriers, fuse carriers, electronics boxes (luggage compartment), 48 V system (0K4 + VH2)”, page 282

1.1.1 Overview of fitting locations - relay carriers, fuse carriers, electronics boxes (engine compartment)



1 - Bracket

- For control units

2 - Automatic glow period control unit - J179-

3 - Bolt

- 2.5 Nm

4 - Wire

- Allocation ⇒ Current flow diagrams, Electrical fault finding and Fitting locations
- Tightening torque: 7.5 Nm

5 - Wire

- Allocation ⇒ Current flow diagrams, Electrical fault finding and Fitting locations
- Tightening torque: 7.5 Nm

6 - Wire

- Allocation ⇒ Current flow diagrams, Electrical fault finding and Fitting locations
- Tightening torque: 7.5 Nm

7 - Wire

- Allocation ⇒ Current flow diagrams, Electrical fault finding and Fitting locations
- Tightening torque: 7.5 Nm

8 - Terminal 30 wiring junction 2 - TV22-

- Removing and installing ⇒ page 289

9 - Nut

- 7.5 Nm

10 - Bolt

- 2x
- 3 Nm

11 - Nut

- 18 Nm

12 - Positive wire

- From battery

13 - Terminal 30 wiring junction - TV2-

- Removing and installing ⇒ page 288

14 - Suppression filter - C24-

- Removing and installing ⇒ page 286

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15 - Cover

16 - Positive wire

- To starter, alternator

17 - Nut

- 20 Nm

18 - Relay and fuse carrier 3 - SR3-

- Allocation ⇒ Current flow diagrams, Electrical fault finding and Fitting locations

19 - Nut

- 2x
- 2.5 Nm

1.1.2 Overview of fitting locations - relay carriers, fuse carriers, electronics boxes (engine compartment), g-tron

1 - Battery

2 - Main fuse holder

- Exploded view ⇒ page 283

3 - Wire

- Allocation ⇒ Current flow diagrams, Electrical fault finding and Fitting locations

4 - Lid

- For battery tray

5 - Terminal 30 wiring junction 3 - TV28-

- Removing and installing ⇒ page 289

6 - Wire

- Allocation ⇒ Current flow diagrams, Electrical fault finding and Fitting locations
- Tightening torque: 5 Nm

7 - Wire

- Allocation ⇒ Current flow diagrams, Electrical fault finding and Fitting locations
- Tightening torque: 5 Nm

8 - Nut

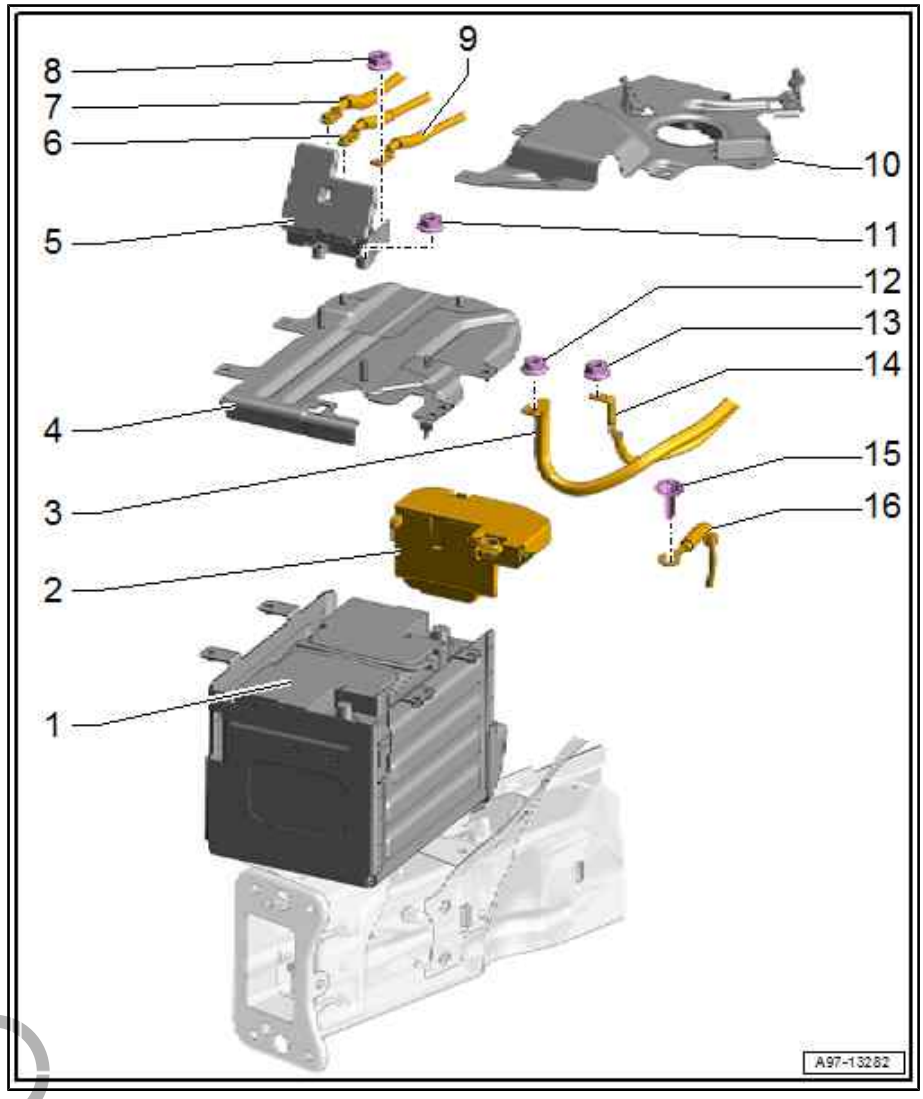
- 18 Nm

9 - Wire

- Allocation ⇒ Current flow diagrams, Electrical fault finding and Fitting locations

10 - Mounting

- For engine control unit



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11 - Nut
- ❑ 2x
- ❑ 3.5 Nm

12 - Nut
- ❑ 5 Nm

13 - Nut
- ❑ 7.5 Nm

14 - Wire
- ❑ Allocation ⇒ Current flow diagrams, Electrical fault finding and Fitting locations

15 - Bolt
- ❑ 5 Nm

16 - Wire
- ❑ Allocation ⇒ Current flow diagrams, Electrical fault finding and Fitting locations

1.1.3 Overview of fitting locations - relay carriers, fuse carriers, electronics boxes (engine compartment), 48 V system (0K4 + VH2)

1 - Bolt
- ❑ 7.5 Nm

2 - Terminal 40 wiring junction - TV66-
- ❑ Removing and installing ⇒ page 290

3 - Bolt
- ❑ 7.5 Nm

4 - Electrical wire
- ❑ To terminal 40 wiring junction 2 - TV67-

5 - Nut
- ❑ 20 Nm

6 - Positive wire
- ❑ To control unit for electric compressor - J1123-
- ❑ Nut: 9 Nm

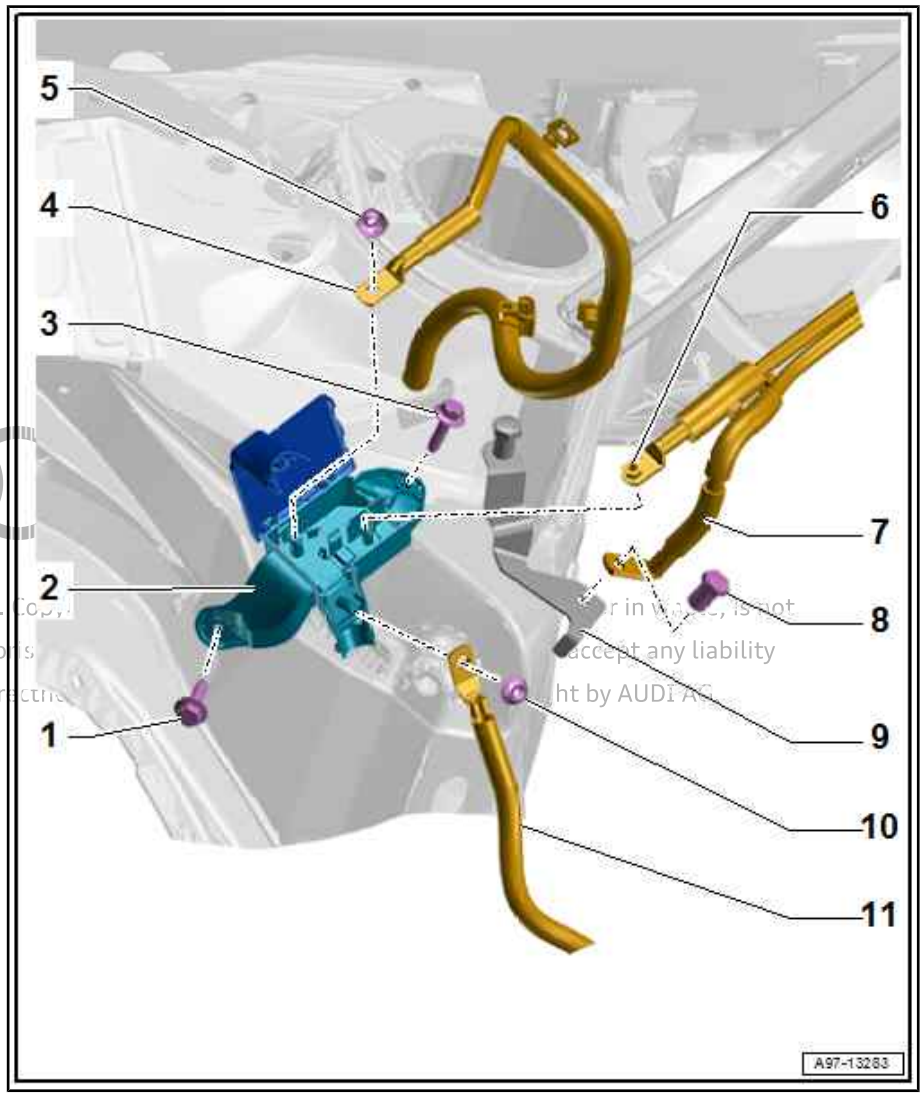
7 - Earth wire
- ❑ To control unit for electric compressor - J1123-

8 - Remote earth terminal
- ❑ 20 Nm

9 - Remote earth terminal

10 - Nut
- ❑ 18 Nm

11 - Positive wire
- ❑ To alternator



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1.1.4 Overview of fitting locations - relay carriers, fuse carriers, electronics boxes (left footwell)

1 - Relay mounting

- ❑ Allocation ⇒ Current flow diagrams, Electrical fault finding and Fitting locations

2 - Connectors

- ❑ Allocation ⇒ Current flow diagrams, Electrical fault finding and Fitting locations

3 - Relay and fuse carrier 1 - SR1-

- ❑ Removing and installing ⇒ page 284

4 - Mounting

- ❑ For fuse holder C
- ❑ Removing and installing ⇒ page 293

5 - Fuse holder C - SC-

- ❑ Removing and installing ⇒ page 293

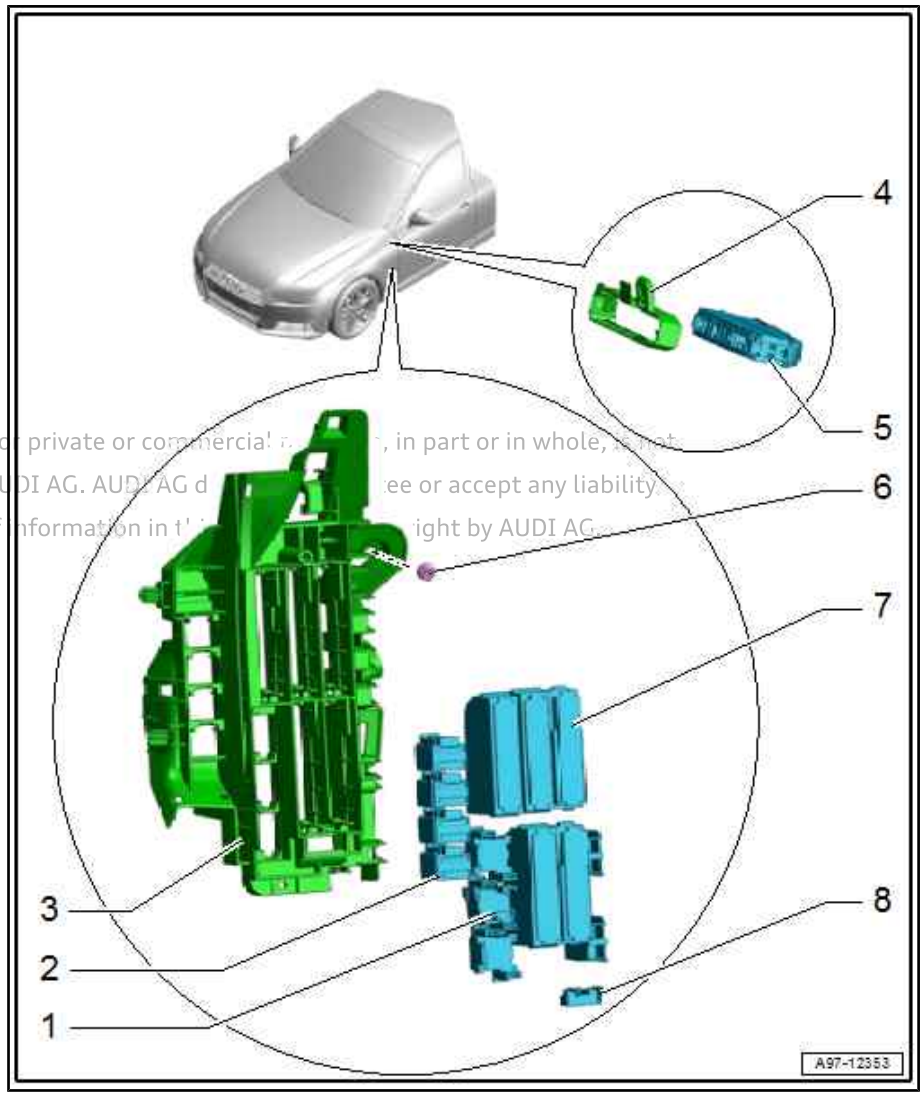
6 - Nut

- ❑ 2x
- ❑ 3 Nm

7 - Fuse holder

- ❑ Allocation ⇒ Current flow diagrams, Electrical fault finding and Fitting locations

8 - Additional fuse holder



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1.1.5 Overview of fitting locations - relay carriers, fuse carriers, electronics boxes (right footwell)

1 - Wire

- ❑ Allocation ⇒ Current flow diagrams, Electrical fault finding and Fitting locations
- ❑ Tightening torque: 7.5 Nm

2 - Wire

- ❑ Allocation ⇒ Current flow diagrams, Electrical fault finding and Fitting locations
- ❑ Tightening torque: 7.5 Nm

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3 - Relay mounting

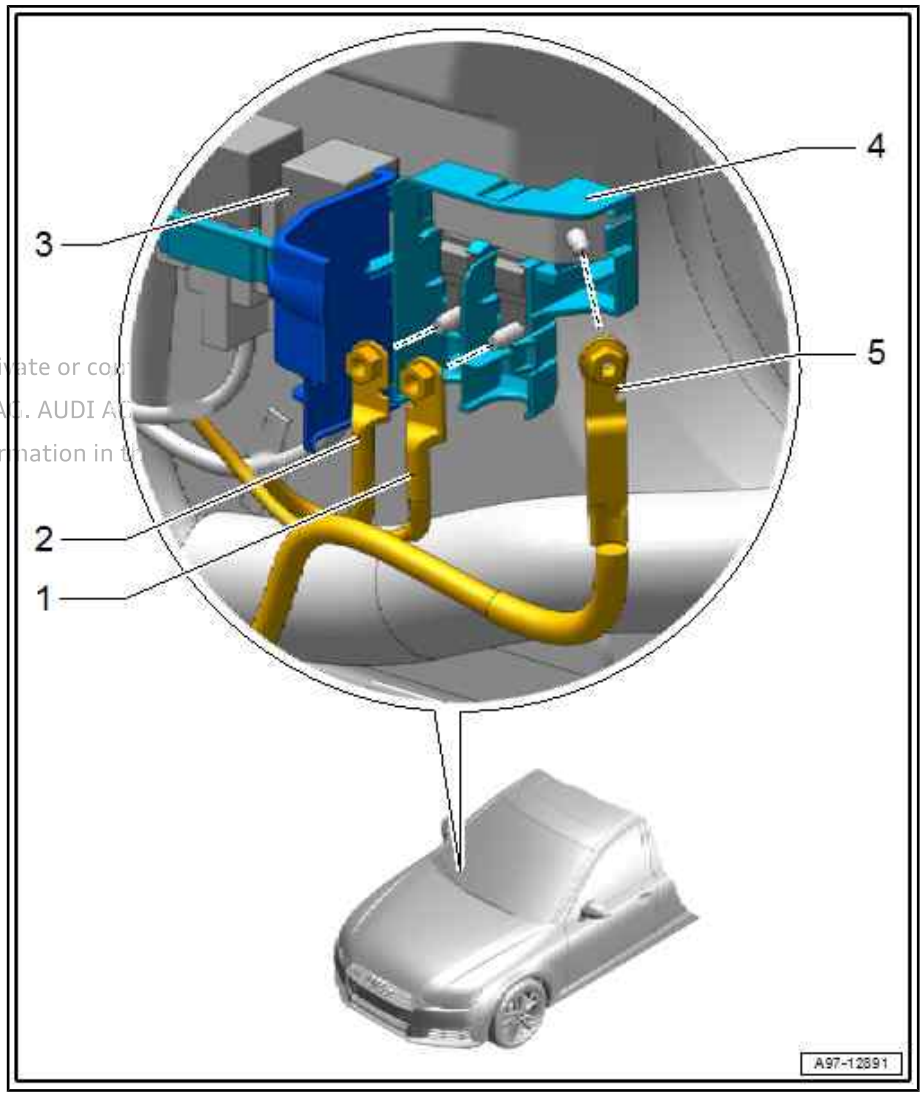
- ❑ Allocation ⇒ Current flow diagrams, Electrical fault finding and Fitting locations

4 - Relay and fuse carrier 4 - SR4-

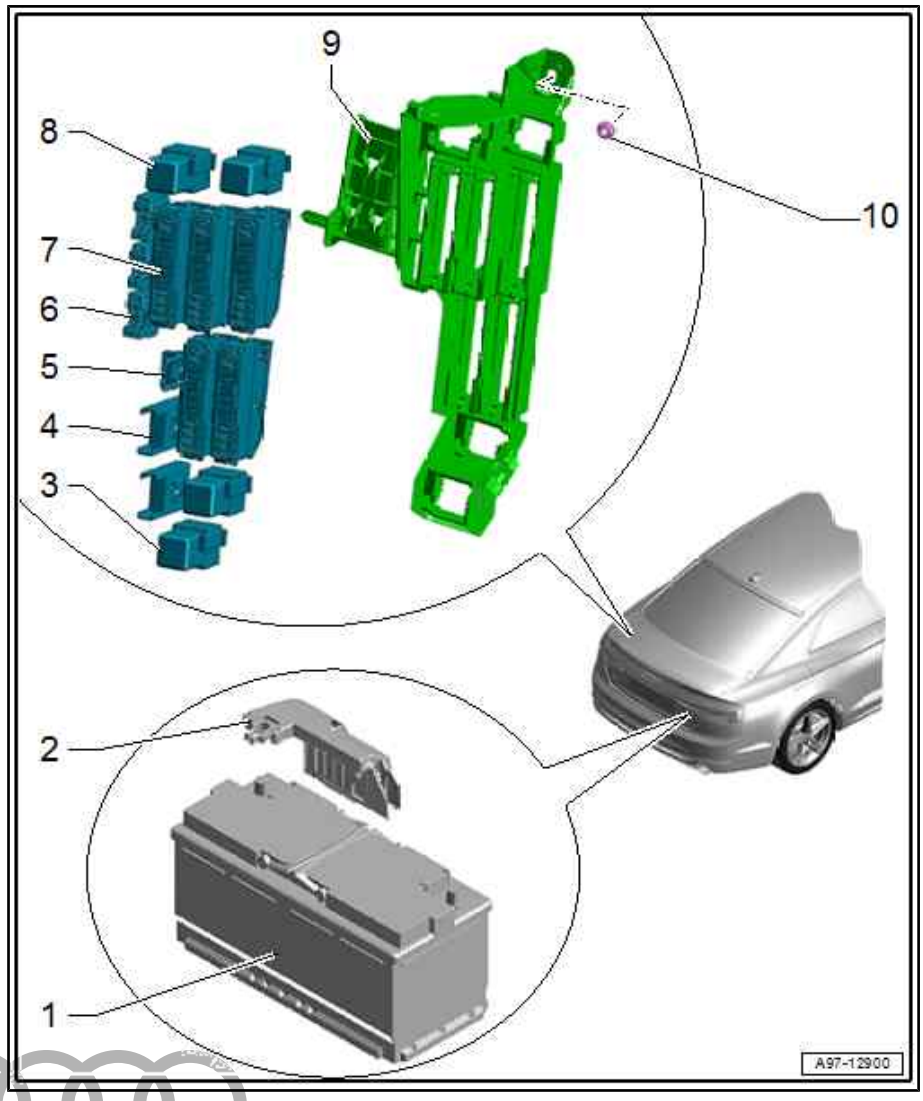
- ❑ Removing and installing ⇒ page 286

5 - Positive wire

- ❑ From battery
- ❑ Tightening torque: 7.5 Nm



1.1.6 Overview of fitting locations - relay carriers, fuse carriers, electronics boxes (luggage compartment), Coupé, Sportback



1 - Battery

2 - Main fuse holder

- ❑ Exploded view ⇒ page 283

3 - Relay mounting

- ❑ Allocation ⇒ Current flow diagrams, Electrical fault finding and Fitting locations

4 - Additional fuse holder

- ❑ Allocation ⇒ Current flow diagrams, Electrical fault finding and Fitting locations

5 - Additional fuse holder

- ❑ Allocation ⇒ Current flow diagrams, Electrical fault finding and Fitting locations

6 - Fuse carrier

- ❑ Allocation ⇒ Current flow diagrams, Electrical fault finding and Fitting locations

7 - Fuse carrier

- ❑ Allocation ⇒ Current flow diagrams, Electrical fault finding and Fitting locations

8 - Relay mounting

- ❑ Allocation ⇒ Current flow diagrams, Electrical fault finding and Fitting locations

9 - Relay and fuse carrier 2 - SR2-

- ❑ Removing and installing ⇒ page 294

10 - Nut

- ❑ 3 Nm

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1.1.7 Overview of fitting locations - relay carriers, fuse carriers, electronics boxes (luggage compartment), Cabriolet

1 - Battery

2 - Main fuse holder

- ❑ Exploded view ⇒ page 283

3 - Fuse carrier

- ❑ Allocation ⇒ Current flow diagrams, Electrical fault finding and Fitting locations

4 - Additional fuse holder

- ❑ Allocation ⇒ Current flow diagrams, Electrical fault finding and Fitting locations

5 - Relay mounting

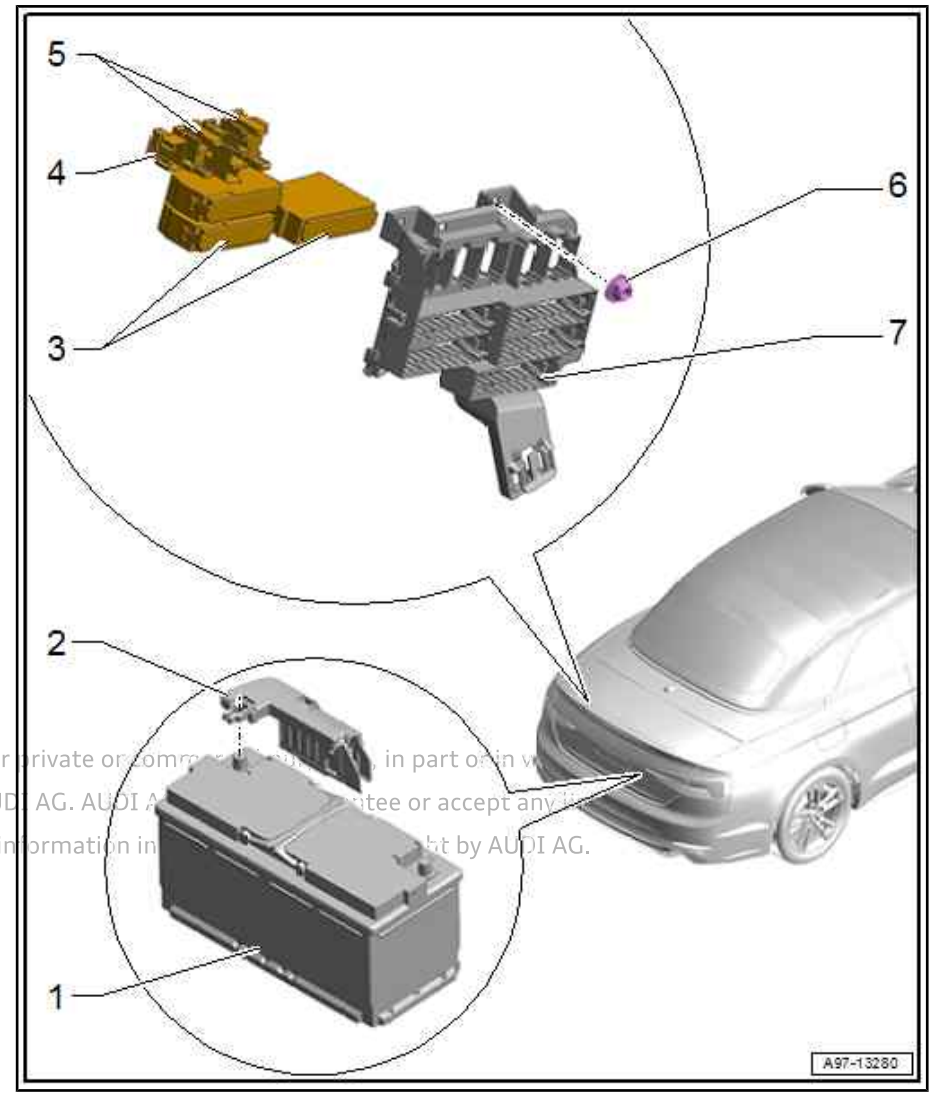
- ❑ Allocation ⇒ Current flow diagrams, Electrical fault finding and Fitting locations

6 - Nut

- ❑ 2x
- ❑ 3 Nm

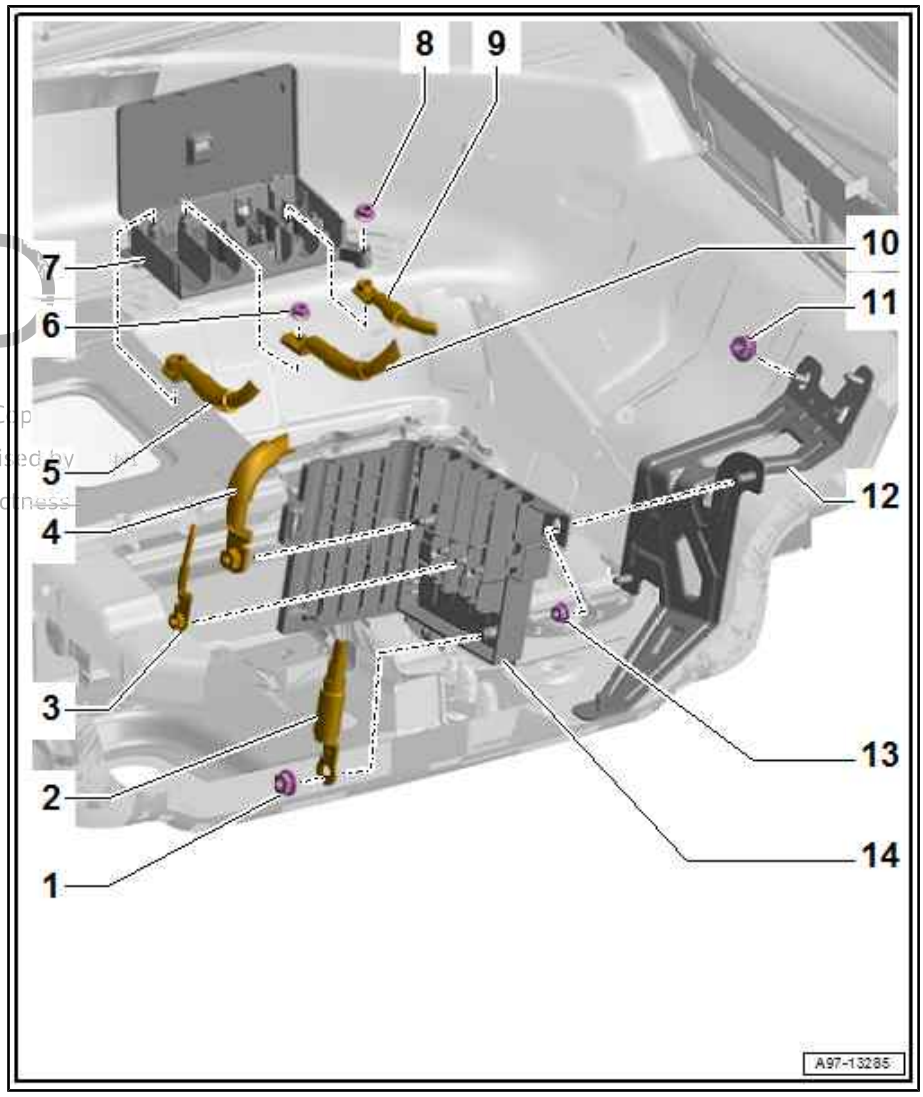
7 - Relay and fuse carrier 2 - SR2-

- ❑ Removing and installing ⇒ page 295



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1.1.8 Overview of fitting locations - relay carriers, fuse carriers, electronics boxes (luggage compartment), 48 V system (0K4 + VH2)



1 - Nut
- ❑ 18 Nm

2 - Positive wire
- ❑ To main fuse holder

3 - Wire
- ❑ Allocation ⇒ Current flow diagrams, Electrical fault finding and Fitting locations
- ❑ Tightening torque: 7.5 Nm

4 - Wire
- ❑ Allocation ⇒ Current flow diagrams, Electrical fault finding and Fitting locations
- ❑ Tightening torque: 18 Nm

5 - Positive wire
- ❑ To battery, 48 V - A6-
- ❑ Tightening torque: 20 Nm

6 - Nut
- ❑ 20 Nm

7 - Terminal 40 wiring junction 2 - TV67-
- ❑ Removing and installing ⇒ page 291

8 - Nut
- ❑ 2x
- ❑ 3.5 Nm

9 - Wire
- ❑ Allocation ⇒ Current flow diagrams, Electrical fault finding and Fitting locations
- ❑ Tightening torque: 9 Nm

10 - Wire
- ❑ Allocation ⇒ Current flow diagrams, Electrical fault finding and Fitting locations

11 - Nut
- ❑ 3x
- ❑ 3.5 Nm

12 - Mounting bracket
- ❑ For 12 Volt wiring junction

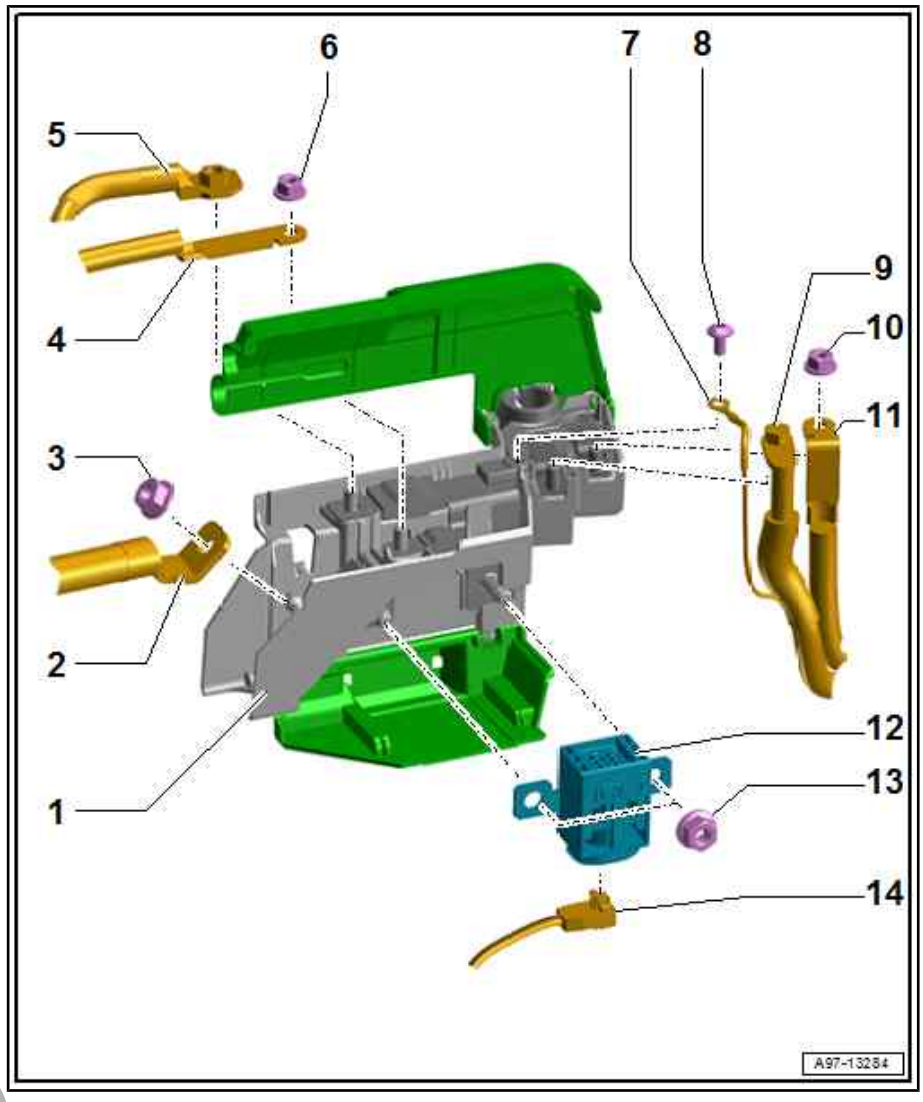
13 - Nut
- ❑ 2x
- ❑ 3.5 Nm

14 - 12 Volt wiring junction
- ❑ Version ⇒ Electronic parts catalogue

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❑ Removing and installing ⇒ page 292

1.2 Exploded view - main fuse holder



1 - Main fuse holder

❑ On battery

❑ Removing and installing ⇒ page 297

2 - Wire

❑ Allocation ⇒ Current flow diagrams, Electrical fault finding and Fitting locations

3 - Nut

❑ 18 Nm

4 - Wire

❑ Allocation ⇒ Current flow diagrams, Electrical fault finding and Fitting locations

5 - Wire

❑ Allocation ⇒ Current flow diagrams, Electrical fault finding and Fitting locations

❑ Tightening torque: 7.5 Nm

6 - Nut

❑ 7.5 Nm

7 - Wire

❑ Allocation ⇒ Current flow diagrams, Electrical fault finding and Fitting locations

8 - Bolt

❑ 3.5 Nm

9 - Wire

❑ Allocation ⇒ Current flow diagrams, Electrical fault finding and Fitting locations

❑ Tightening torque: 7.5 Nm

10 - Nut

❑ 7.5 Nm

11 - Wire

❑ Allocation ⇒ Current flow diagrams, Electrical fault finding and Fitting locations

12 - Battery isolation igniter - N253-

❑ Removing and installing ⇒ General body repairs, interior; Rep. gr. 69 ; Battery isolation igniter; Removing and installing battery isolation igniter

13 - Nut

❑ Renew after removing

❑ 2x

❑ Tightening torque ⇒ General body repairs, interior; Rep. gr. 69 ; Battery isolation igniter; Exploded view - battery isolation igniter

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14 - Electrical connector

- ❑ For battery isolation igniter - N253-

1.3 Removing and installing relay and fuse carrier (front left)

⇒ "1.3.1 Removing and installing relay and fuse carrier 1 SR1 ", page 284

⇒ "1.3.2 Removing and installing fuse carrier", page 285

1.3.1 Removing and installing relay and fuse carrier 1 - SR1-

Removing

– Remove cover (bottom) on driver side ⇒ General body repairs, interior; Rep. gr. 68 ; Storage compartments/covers/trim panels; Removing and installing dash panel cover (driver side) .

– Remove sill panel trim (front left) ⇒ General body repairs, interior; Rep. gr. 70 ; Passenger compartment trim panels; Removing and installing sill panel trim .

– Disconnect earth cable from battery with ignition switched off ⇒ page 15 .

– Fold floor covering to side as far as possible in area of relay and fuse carrier 1.

– Unplug electrical connectors -2, 3-.

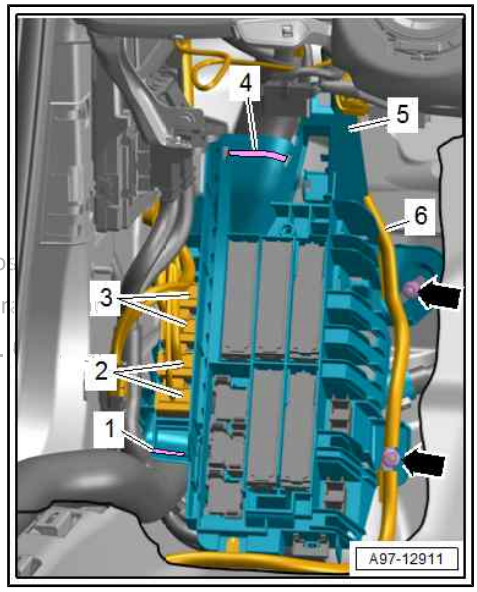
– Cut through cable ties -1, 4-.

– Move electrical wiring harness -6- clear.

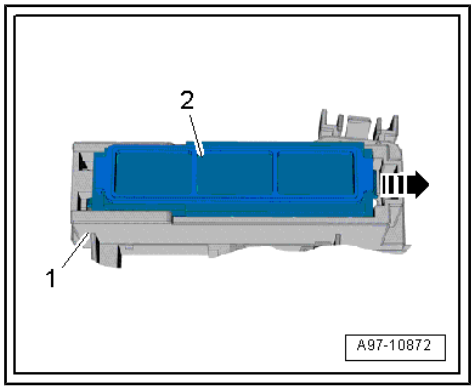
– Remove nuts -arrows-.

– Detach relay and fuse carrier 1 -item 5- from studs and pull it off body towards inside.

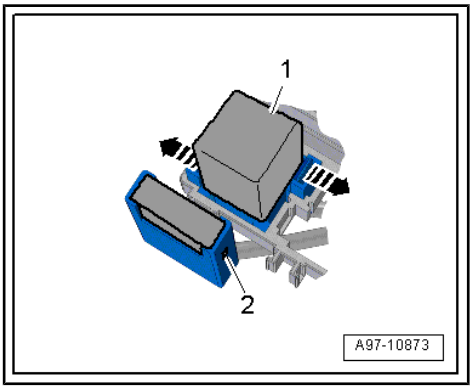
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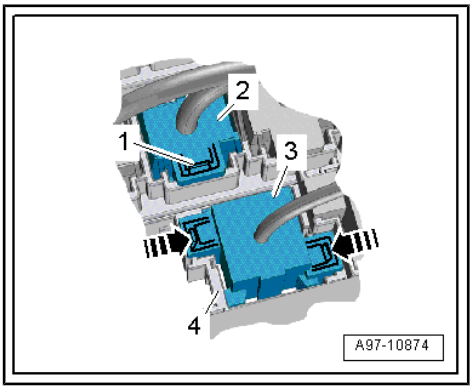
– Release retaining clip -arrow-, press out fuse holder -item 2- towards rear and disengage from relay and fuse carrier 1 -item 1-.



– Release retaining clip and press off additional fuse holder -2-.
– Release retaining clips -arrows- and pull relay -1- and control units out of relay carriers.



– Release retaining clips -arrows- and press relay carrier -3- towards rear out of retainer -4-.
– Release retaining clip -1- and press connector contact -2- out of retainer.
– Detach relay and fuse carrier 1.



Installing

Installation is carried out in reverse order; note the following:

– Connect battery. Steps required ⇒ page 15 .

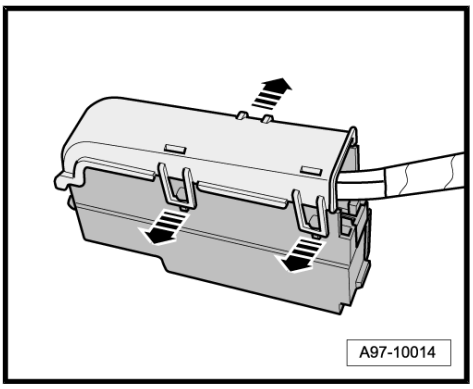
Tightening torques

◆ ⇒ “1.1.4 Overview of fitting locations - relay carriers, fuse carriers, electronics boxes (left footwell)”, page 278

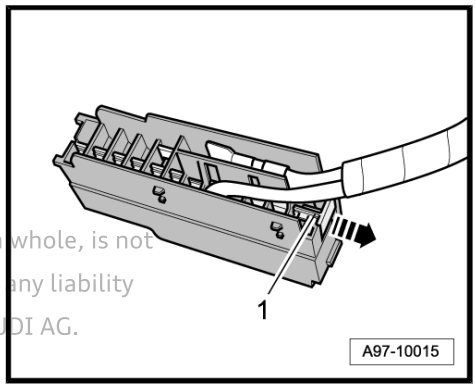
1.3.2 Removing and installing fuse carrier

Removing

– Remove relay and fuse carrier 1 ⇒ page 284 .
– Release captive fastener and pull it off fuse carrier.
– Remove fuses from fuse carrier.
– Release retaining clips -arrows- and detach cover for fuse carrier.



– Detach retaining strip -1- for connectors -arrow- and take connectors out of socket.



Installing

Installation is carried out in reverse sequence.

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1.4 Removing and installing suppression filter - C24-

Removing

– Remove terminal 30 wiring junction ⇒ page 288 .

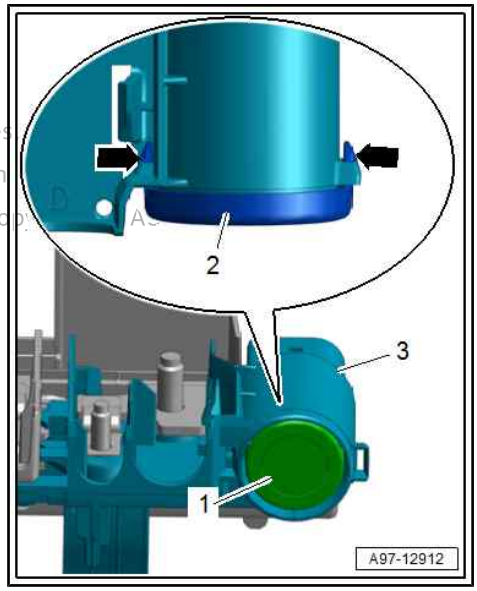
– Release catches -arrows- and detach cover -2-.

– Push suppression filter -1- out of housing -3- and detach filter.

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Installing

Installation is carried out in reverse sequence.



1.5 Removing and installing wiring junction

⇒ “1.5.1 Removing and installing relay and fuse carrier 4 SR4 ”, page 286

⇒ “1.5.2 Removing and installing terminal 30 wiring junction TV2 ”, page 288

⇒ “1.5.3 Terminal 30 wiring junction 2 TV22 ”, page 289

⇒ “1.5.4 Removing and installing terminal 30 wiring junction 3 TV28 ”, page 289

⇒ “1.5.5 Removing and installing terminal 40 wiring junction TV66 ”, page 290

⇒ “1.5.6 Removing and installing terminal 40 wiring junction 2 TV67 ”, page 291

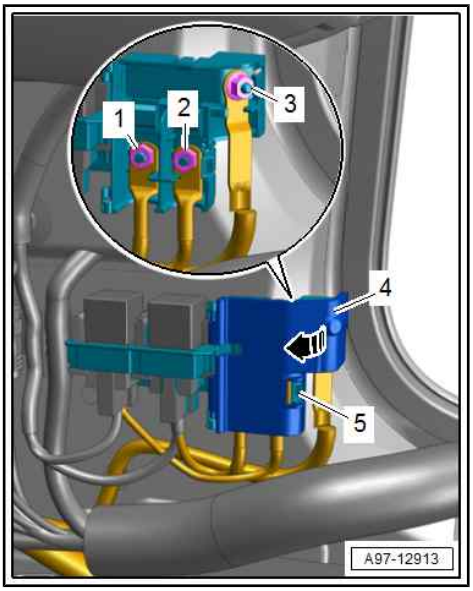
⇒ “1.5.7 Removing and installing 12 V wiring junction (luggage compartment)”, page 292

1.5.1 Removing and installing relay and fuse carrier 4 - SR4-

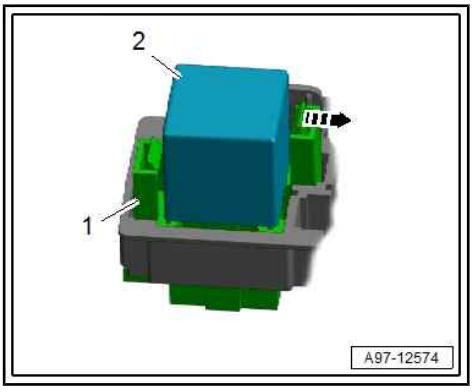
Removing

– Remove sill panel trim (front right) ⇒ General body repairs, interior; Rep. gr. 70 ; Passenger compartment trim panels; Removing and installing sill panel trim .

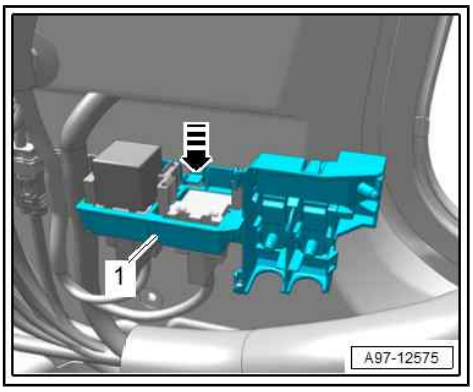
– Disconnect earth cable from battery with ignition switched off ⇒ page 15 .
– Press floor covering in front footwell to side as far as possible.
– Release catch -5- and open cover -4- -arrow-.
– Unscrew nuts -1, 2, 3- and move electrical wiring clear.



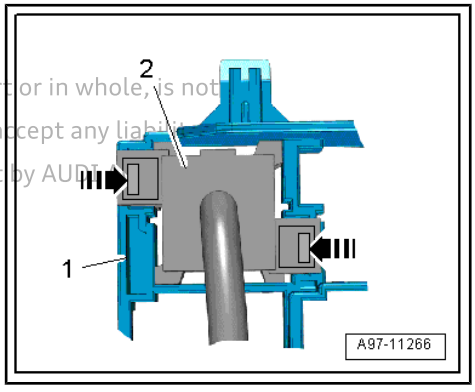
– Release retaining clip -arrow- and pull relay -2- out of mounting -1-.



– Release catch -arrow- and detach wiring junction -1-.



– Release retaining clips -arrows- and press relay carrier -2- towards rear out of retainer -1-.



Installing

Installation is carried out in reverse order; note the following:

– Connect battery. Steps required ⇒ page 15 .

Tightening torques

◆ ⇒ “1.1.5 Overview of fitting locations - relay carriers, fuse carriers, electronics boxes (right footwell)”, page 279

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1.5.2 Removing and installing terminal 30 wiring junction - TV2-

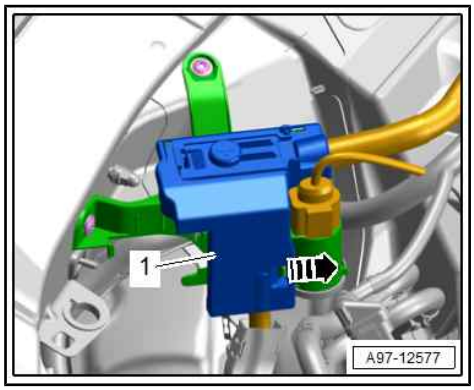
Removing

– Disconnect earth cable from battery with ignition switched off ⇒ page 15 .

– Remove air cleaner housing ⇒ Engine; Rep. gr. 23 ; Air cleaner; Removing and installing air cleaner housing or ⇒ Engine; Rep. gr. 24 ; Air cleaner; Removing and installing air cleaner housing .

– Disengage catch -arrow-.

– Open cover -1-.



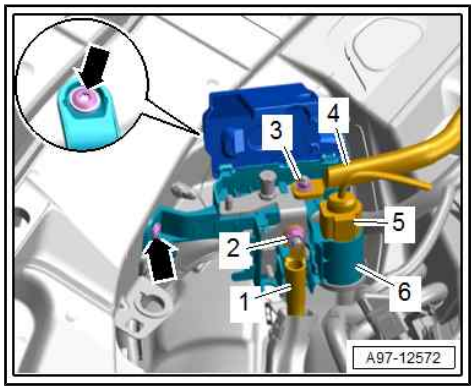
– If fitted, remove wiring junction 2 for terminal 30 and move to side with wiring connected ⇒ page 289 .

– Unplug electrical connector -5-.

– Unscrew nuts -2, 3- and move electrical wiring -1, 4- clear.

– Remove bolts -arrows-.

– Remove wiring junction -6-.



Installing

Installation is carried out in reverse order; note the following:

– Connect battery. Steps required ⇒ page 15 .

Tightening torques

◆ ⇒ "1.1.1 Overview of fitting locations - relay carriers, fuse carriers, electronics boxes (engine compartment)", page 274

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1.5.3 Terminal 30 wiring junction 2 - TV22-

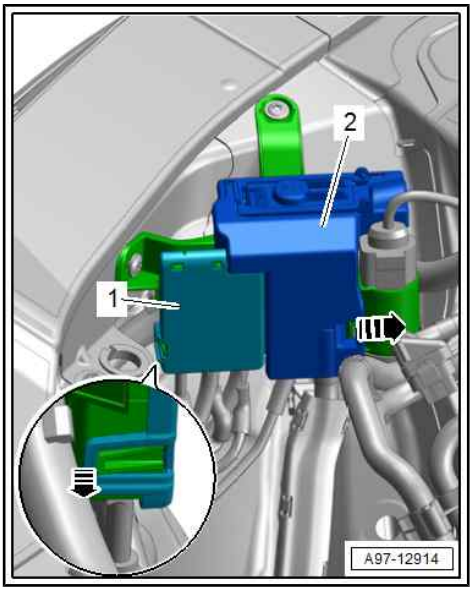
Removing

– Disconnect earth cable from battery with ignition switched off ⇒ page 15 .

– Remove air cleaner housing ⇒ Engine; Rep. gr. 23 ; Air cleaner; Removing and installing air cleaner housing or ⇒ Engine; Rep. gr. 24 ; Air cleaner; Removing and installing air cleaner housing .

– Disengage catches -arrows-.

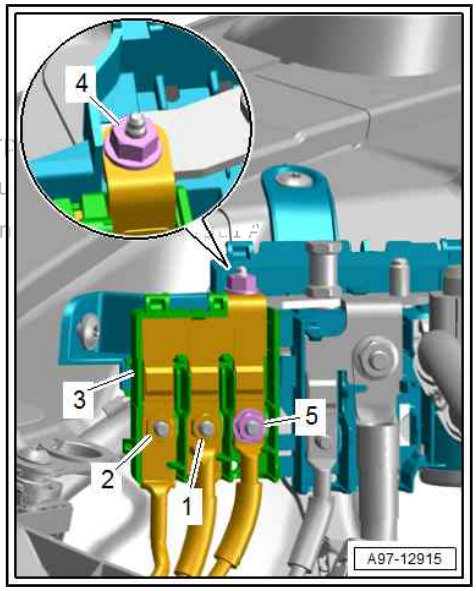
– Open covers in the order -2, 1-.



– Unbolt electrical wiring -1, 2, 5- and move clear.

– Unscrew nut -4-.

– Lift off wiring junction -3-.



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Installing

Installation is carried out in reverse order; note the following:

– Connect battery. Steps required ⇒ page 15 .

Tightening torques

◆ ⇒ “1.1.1 Overview of fitting locations - relay carriers, fuse carriers, electronics boxes (engine compartment)”, page 274

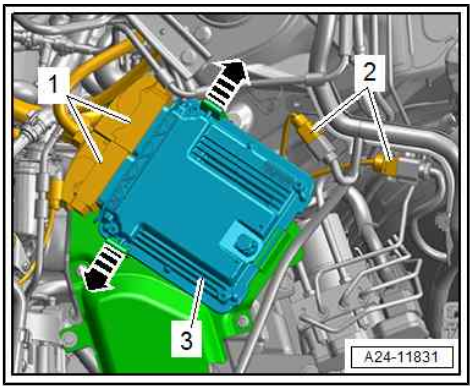
1.5.4 Removing and installing terminal 30 wiring junction 3 - TV28-

Removing

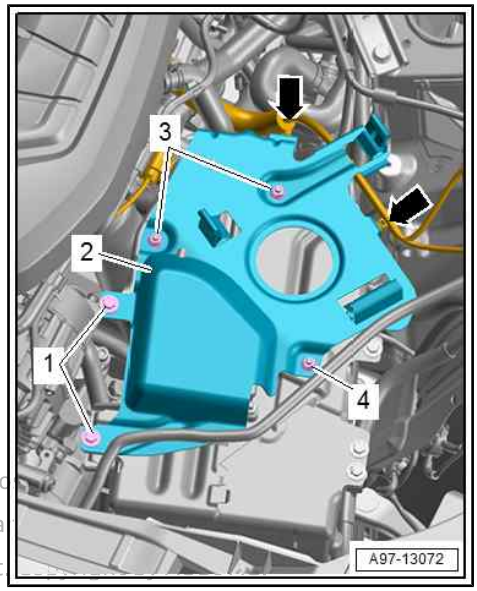
– Disconnect earth cable from battery with ignition switched off ⇒ page 16 .

– Disengage catches -arrows-.

– Detach engine control unit -3- and place it to one side with wires connected -1-.

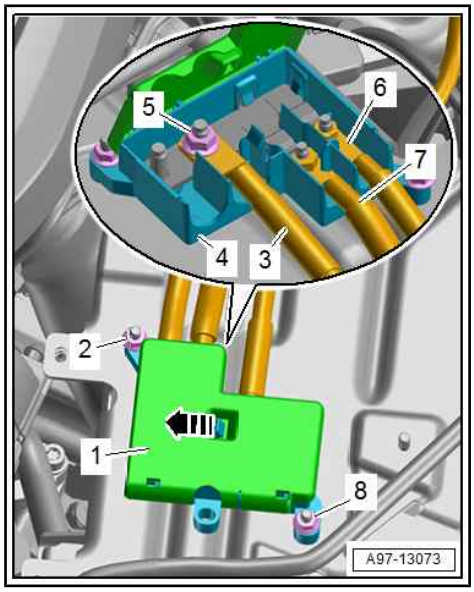


– Move electrical wiring harness clear -arrows-.
– Unscrew nuts -3, 4- and bolts -1-.
– Detach mounting -2- for engine control unit.



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– Release catch -arrow- and open cover -1-.
– Unbolt electrical wiring -6, 7- and move clear.
– Remove nut -5- and move electrical wire -3- clear.
– Remove nuts -2, 8-.
– Remove wiring junction -4-.



Installing

Installation is carried out in reverse order; note the following:

– Connect battery. Steps required ⇒ page 16 .

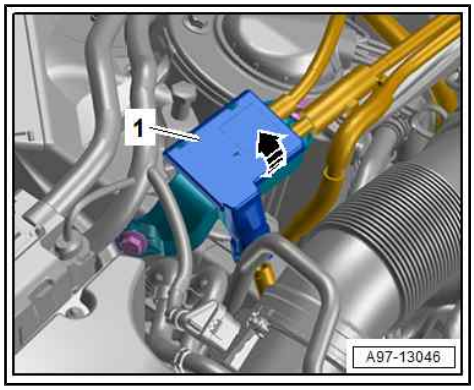
Tightening torques

- ⇒ “1.1.2 Overview of fitting locations - relay carriers, fuse carriers, electronics boxes (engine compartment), g-tron”, page 276
- ⇒ Engine; Rep. gr. 24 ; Engine control unit; Exploded view - engine control unit

1.5.5 Removing and installing terminal 40 wiring junction - TV66-

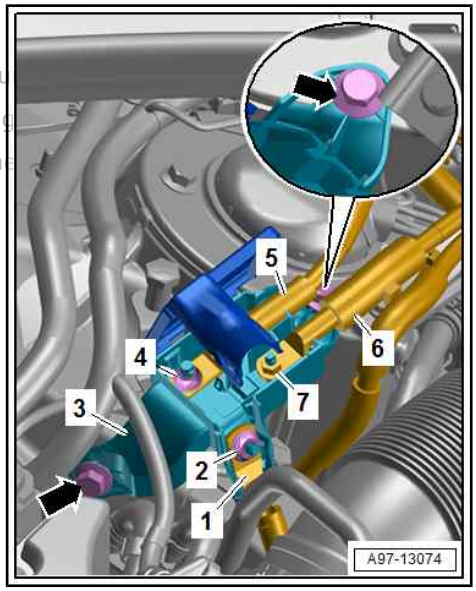
Removing

– De-energise 48 Volt system ⇒ page 19 .
– Release catch and open cover -1- -arrow-.



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– Unscrew nuts -2, 4, 7- and move electrical wiring -1, 5, 6- clear.
– Remove bolts -arrows-.
– Detach wiring junction for 48 Volt system -3-.



Installing

Installation is carried out in reverse order; note the following:

– Re-energise 48 Volt system ⇒ page 20 .

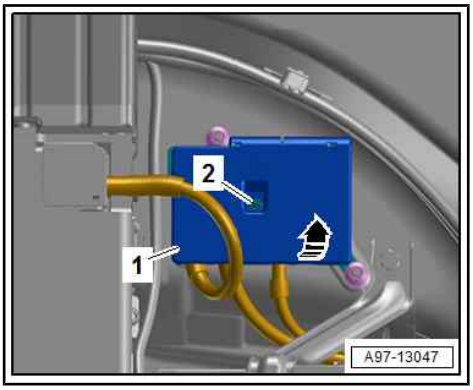
Tightening torques

♦ ⇒ “1.1.3 Overview of fitting locations - relay carriers, fuse carriers, electronics boxes (engine compartment), 48 V system (0K4 + VH2)”, page 277

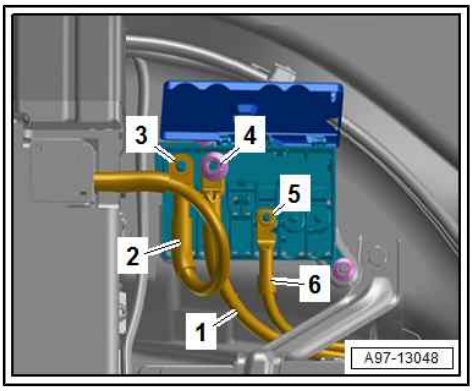
1.5.6 Removing and installing terminal 40 wiring junction 2 - TV67-

Removing

– Disconnect battery ⇒ page 15 .
– Release catch -2- and open cover -1- -arrow-.

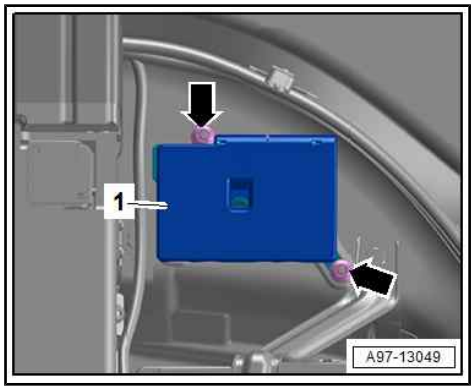


– Unscrew nuts -3, 4, 5- and move electrical wiring -1, 2, 6- clear.



– Remove nuts -arrows-.

– Take out wiring junction -1-.



Installing

Installation is carried out in reverse order; note the following:

– Connect battery. Steps required ⇒ page 16 .

– Re-energise 48 Volt system ⇒ page 20 .

Tightening torques

◆ ⇒ “1.1.8 Overview of fitting locations - relay carriers, fuse carriers, electronics boxes (luggage compartment), 48 V system (0K4 + VH2)”, page 282

1.5.7 Removing and installing 12 V wiring junction (luggage compartment)

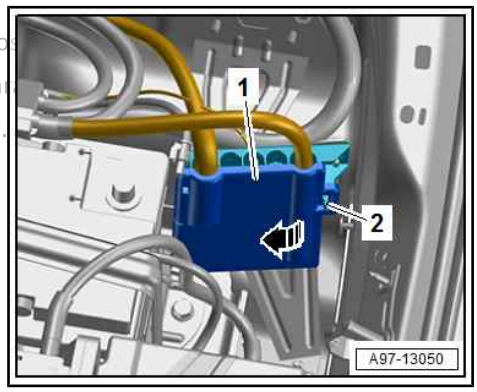
Removing

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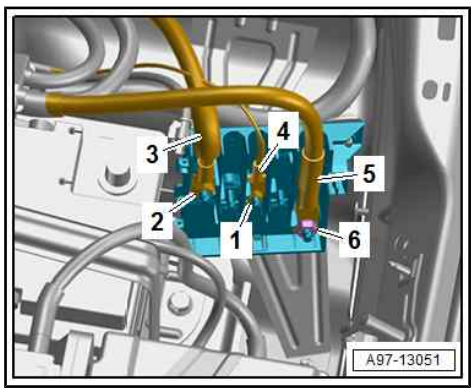
– Disconnect battery ⇒ page 15 .

– Remove lock carrier trim ⇒ General body repairs, interior; Rep. gr. 70 ; Luggage compartment trim panels; Removing and installing lock carrier trim .

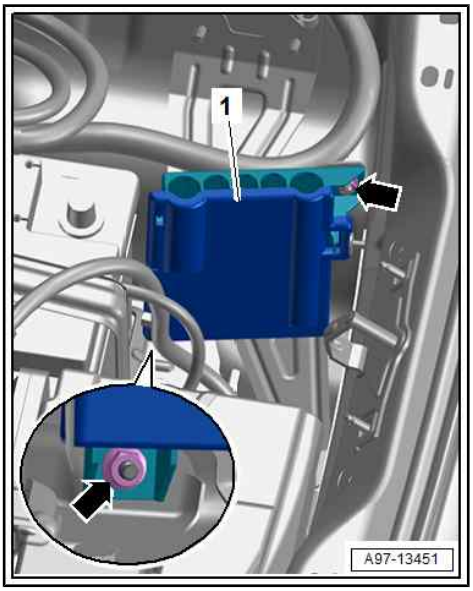
– Release catch -2- and open cover -1- -arrow-.



– Unscrew nuts -1, 2, 6- and move electrical wiring -3, 4, 5- clear.



– Remove nuts -arrows-.
– Take out wiring junction -1-.



Installing

Installation is carried out in reverse order; note the following:

– Connect battery. Steps required ⇒ page 16 .
– Re-energise 48 Volt system ⇒ page 20 .

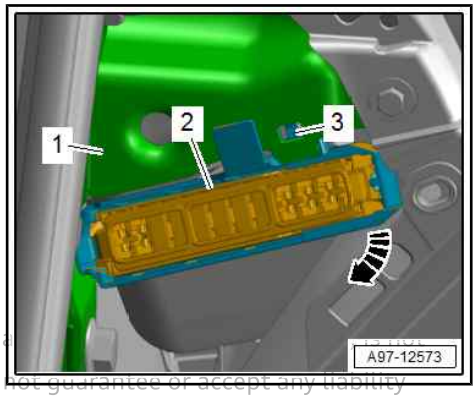
Tightening torques

♦ ⇒ “1.1.8 Overview of fitting locations - relay carriers, fuse carriers, electronics boxes (luggage compartment), 48 V system (0K4 + VH2)”, page 282

1.6 Removing and installing fuse holder C -SC-

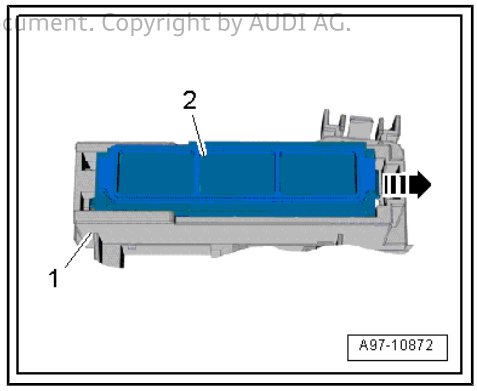
Removing

– Remove dash panel cover (side) on driver's side ⇒ General body repairs, interior; Rep. gr. 70 ; Dash panel; Removing and installing dash panel cover (side) .
– Release retaining clip -3- and swivel out fuse holder C -item 2- on central tube -1- for dash panel -arrow-.



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– Release retaining clip -arrow-, press out fuse holder -item 2- towards rear and disengage from fuse holder C -item 1-.



Installing

Installation is carried out in reverse sequence.

1.7 Removing and installing relay and fuse holders in luggage compartment (left-side)

⇒ “1.7.1 Removing and installing relay and fuse carrier 2 SR2 - Coupé, Sportback”, page 294

⇒ “1.7.2 Removing and installing relay and fuse carrier 2 SR2 - Cabriolet”, page 295

⇒ “1.7.3 Removing and installing fuse carrier in luggage compartment (left-side)”, page 297

1.7.1 Removing and installing relay and fuse carrier 2 - SR2- - Coupé, Sportback

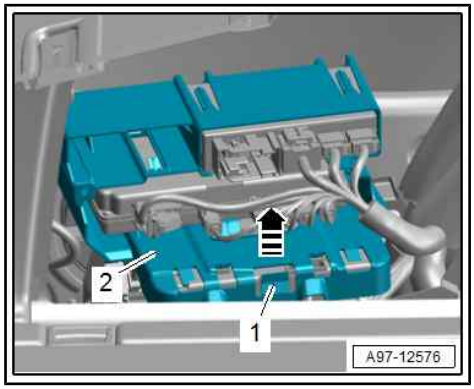
Removing

– Remove fastening rings and unfasten luggage compartment side trim at bottom ⇒ General body repairs, interior; Rep. gr. 70 ; Luggage compartment trim panels; Removing and installing fastening ring .

– Open cover for luggage compartment side trim (left-side).

– Release catch -1-.

– Lift off bracket -2- for control units -arrow-.

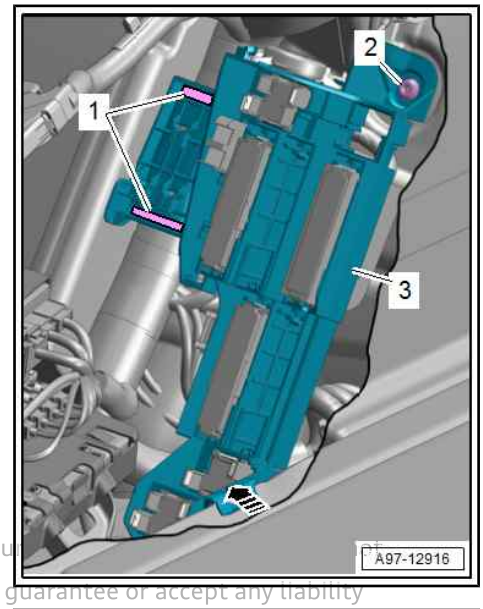


– Cut through cable tie -1-.

– Unscrew nut -2-.

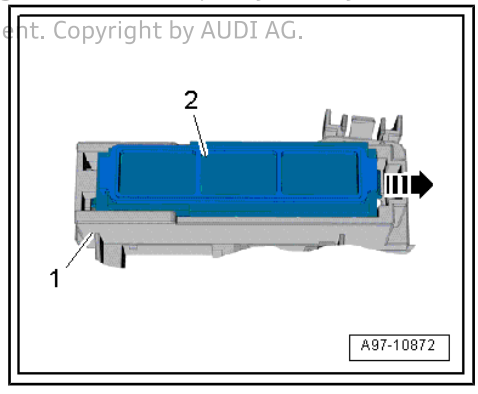
– Disengage catch -arrow-.

– Lift relay and fuse carrier 2 -item 3- and pull off towards rear.

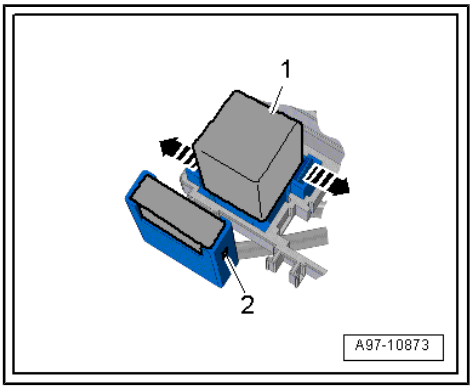


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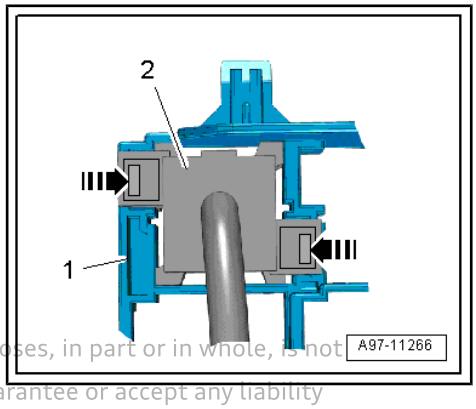
– Release retaining clip in direction of -arrow- and press fuse carrier -2- out of relay and fuse carrier 2 -item 1- towards rear.



– Release retaining clip and press off additional fuse holder -2-.
– Release retaining clips -arrows- and pull relay -1- and control units out of relay carriers.



– Release retaining clips -arrows- and pull relay carrier -2- out of relay and fuse carrier 2 -item 1- towards rear.
– Detach relay and fuse carrier 2.



Installing

Installation is carried out in reverse sequence.

Tightening torques

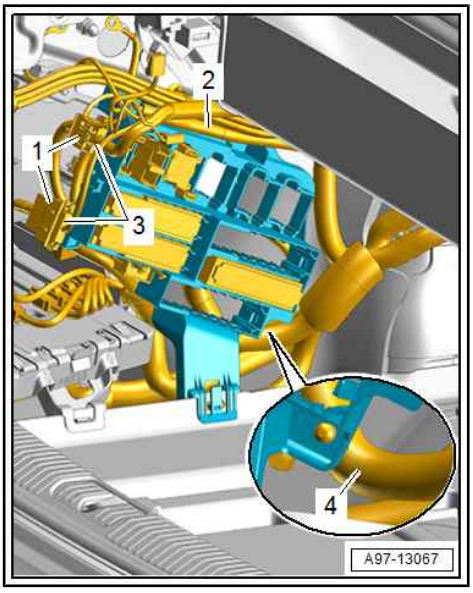
◆ ⇒ “1.1.6 Overview of fitting locations - relay carriers, fuse carriers, electronics boxes (luggage compartment), Coupé, Sportback”, page 280

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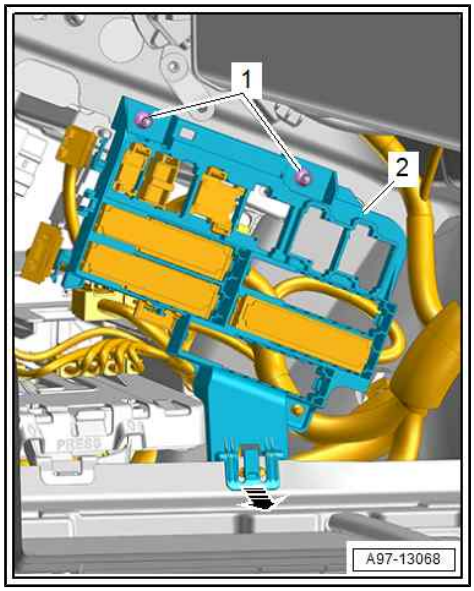
1.7.2 Removing and installing relay and fuse carrier 2 - SR2- - Cabriolet

Removing

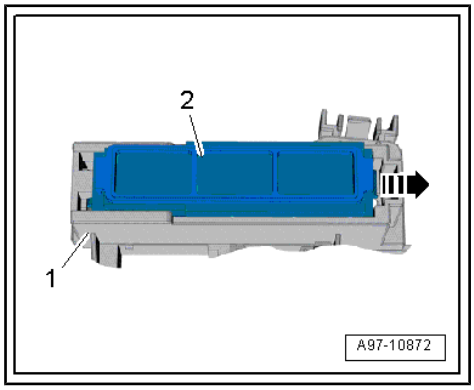
– Remove luggage compartment side trim (left-side) ⇒ General body repairs, interior; Rep. gr. 70 ; Luggage compartment trim panels; Removing and installing luggage compartment side trim .
– Unplug electrical connectors -3-.
– Press catch and move connector -1- clear.
– Move electrical wiring harness -2, 4- clear.



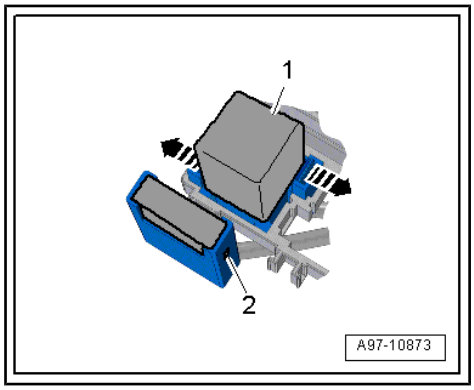
– Remove nuts -1-.
– Pull relay and fuse carrier 2 -item 2- off studs.
– Release catch -arrow- and detach relay and fuse carrier 2 upwards.



– Release retaining clip in direction of -arrow- and press fuse carrier -2- out of relay and fuse carrier 2 -item 1- towards rear.



– Release retaining clip and press off additional fuse holder -2-.
– Release retaining clips -arrows- and pull relay -1- and control units out of relay carriers.



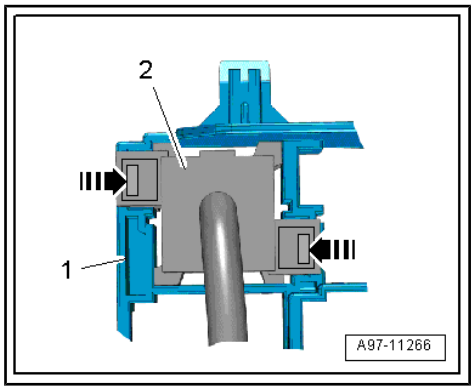
– Release retaining clips -arrows- and pull relay carrier -2- out of relay and fuse carrier 2 -item 1- towards rear.
– Detach relay and fuse carrier 2.

Installing

Installation is carried out in reverse sequence.

Tightening torques

◆ ⇒ “1.1.6 Overview of fitting locations - relay carriers, fuse carriers, electronics boxes (luggage compartment), Coupé, Sportback”, page 280



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1.7.3 Removing and installing fuse carrier in luggage compartment (left-side)

Removing

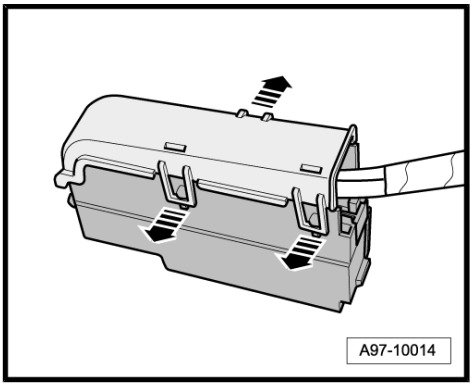
– Disconnect earth cable from battery with ignition switched off ⇒ page 15 .

– Remove relay and fuse carrier 2; relay holders remain clipped in ⇒ page 294 .

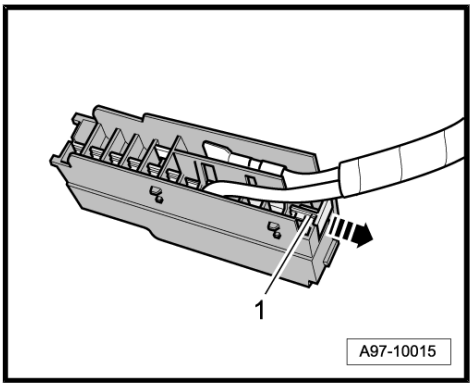
– Release captive fastener and pull it off fuse carrier.

– Remove fuses from fuse carrier.

– Release retaining clips -arrows- and detach cover for fuse carrier.



– Detach retaining strip -1- for connectors -arrow- and take connectors out of socket.



Installing

Installation is carried out in reverse order; note the following:

– Connect battery. Steps required ⇒ page 15 .

1.8 Removing and installing main fuse holder on battery

⇒ “1.8.1 Removing and installing main fuse holder on battery in engine compartment”, page 297

⇒ “1.8.2 Removing and installing main fuse holder on battery in luggage compartment”, page 299

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1.8.1 Removing and installing main fuse holder on battery in engine compartment

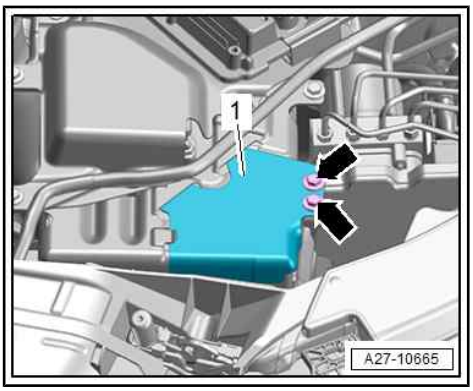
Removing

– Disconnect earth cable from battery with ignition switched off ⇒ page 16 .

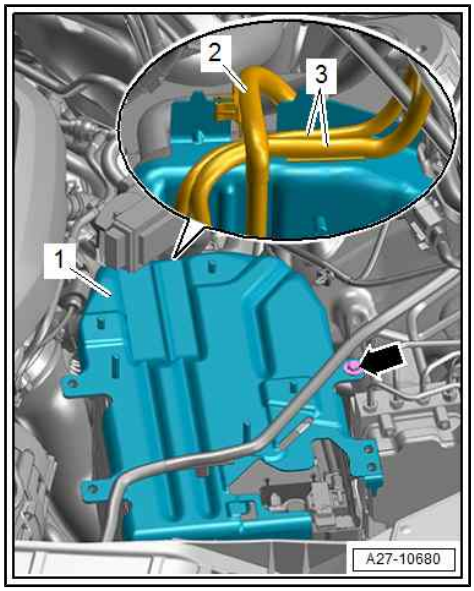
– Remove wiring junction 3 for terminal 30 and move to side with wiring connected ⇒ page 289 .

– Remove bolts -arrows-.

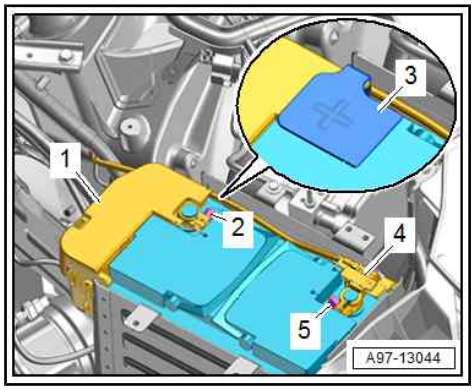
– Take cover -1- off to the side.



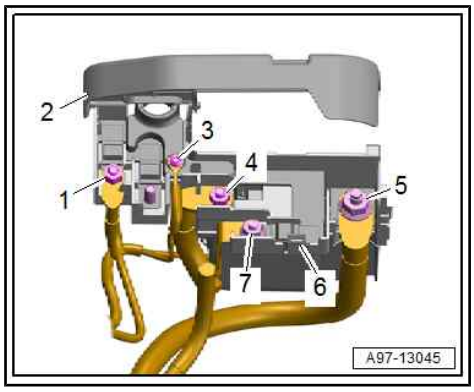
– Move wiring harnesses -2, 3- clear.
– Remove bolt -arrow-.
– Detach cover -1-.



– Slacken off nut -5- several turns and disconnect battery clamp -4- of earth cable from negative battery terminal.
– Open cover -3- on positive battery terminal.
– Slacken off nut -2- several turns and disconnect battery clamp -1- of positive cable from positive battery terminal.

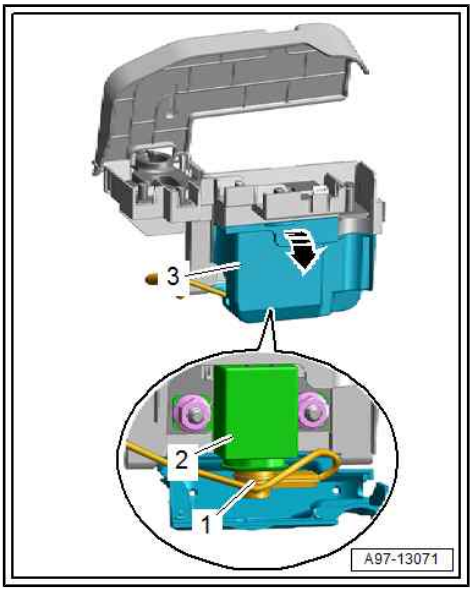


– Release catch -6- and open cover -2- over main fuse holder.
– Unbolt electrical wiring -1, 3, 4, 5, 7- and move clear.



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– Release catch and open cover -3- -arrow-.
– Unplug electrical connector -1- at isolation relay -2-.
– Take out main fuse holder.



Installing

Installation is carried out in reverse order; note the following:

– Connect battery. Steps required ⇒ page 17 .

Tightening torques

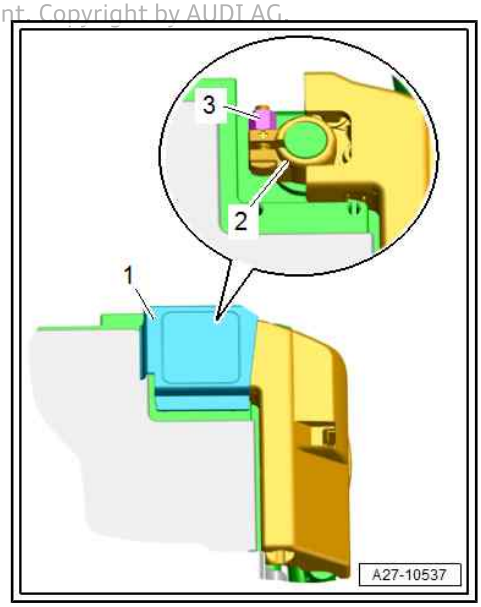
- ⇒ “1.1.2 Overview of fitting locations - relay carriers, fuse carriers, electronics boxes (engine compartment), g-tron”, page 276
- ⇒ “1.2 Exploded view - main fuse holder”, page 283

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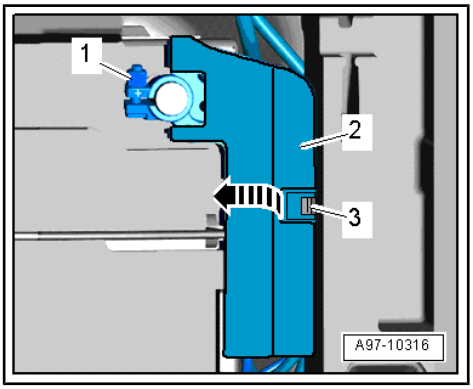
1.8.2 Removing and installing main fuse holder on battery in luggage compartment

Removing

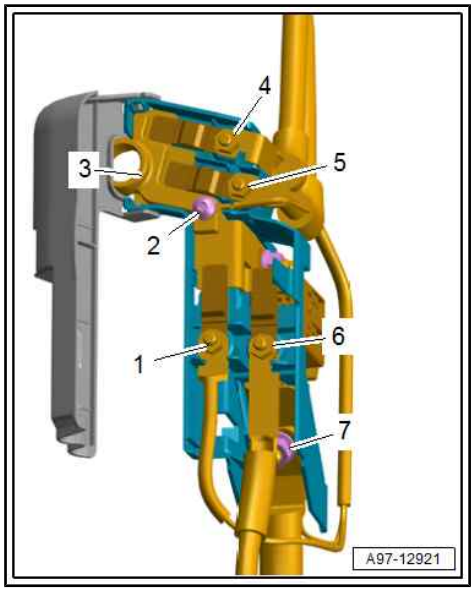
– Disconnect earth cable from battery with ignition switched off ⇒ page 15 .
– Open cover -1- on positive battery terminal.
– Slacken off nut -3- several turns and disconnect battery clamp -2- of positive cable from battery terminal.



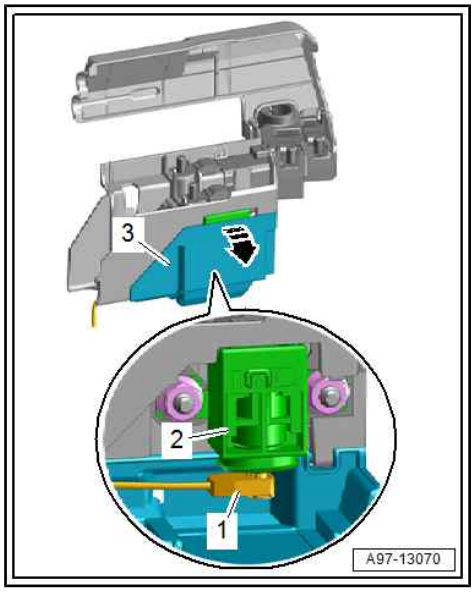
– Release fastener -3- and open cover -2- over main fuse holder -1- -arrow-.



– Unbolt electrical wiring -1, 2, 4, 5, 6, 7- at main fuse holder -3-.



– Release catch and open cover -3- -arrow-.
– Unplug electrical connector -1- at isolation relay -2-.
– Take out main fuse holder.



Installing

Installation is carried out in reverse order; note the following:

– Connect battery. Steps required ⇒ page 15 .

Tightening torques

◆ ⇒ “1.2 Exploded view - main fuse holder”, page 283

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2 Control units

⇒ “2.1 Overview of fitting locations - control units”, page 301

⇒ “2.2 Exploded view - data bus diagnostic interface”, page 302

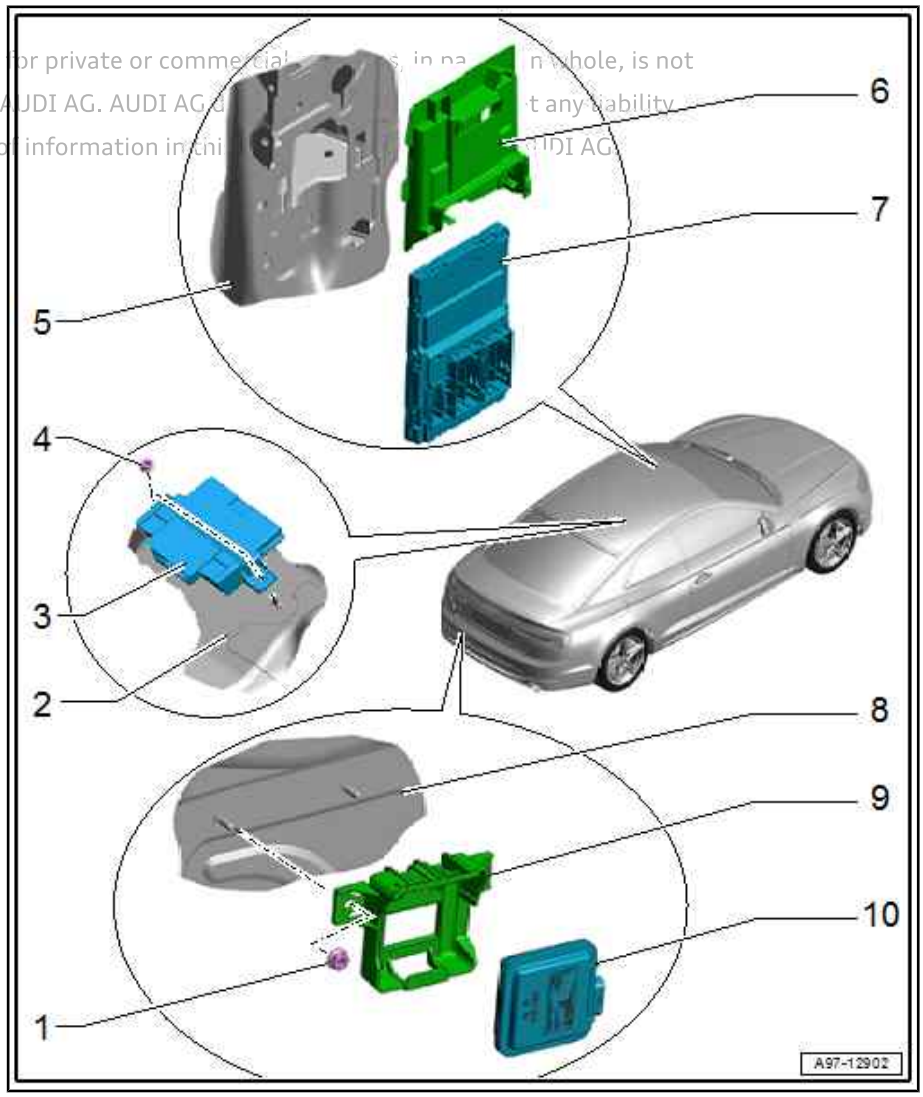
⇒ “2.3 Removing and installing onboard supply control unit J519”, page 303

⇒ “2.4 Removing and installing garage door operation control unit”, page 305

⇒ “2.5 Removing and installing data bus diagnostic interface J533”, page 305

2.1 Overview of fitting locations - control units

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1 - Nut

- ❑ 2x
- ❑ 2 Nm

2 - Body

3 - Data bus diagnostic interface - J533-

- ❑ Different versions ⇒ Electronic parts catalogue
- ❑ Exploded view ⇒ page 302

4 - Nut

- ❑ 2x
- ❑ Tightening torque ⇒ page 302

5 - A-pillar (left-side)

6 - Mounting

- ❑ For onboard supply control unit - J519-
- ❑ Removing and installing ⇒ page 304

7 - Onboard supply control unit - J519-

- ❑ Removing and installing ⇒ page 303

8 - Body

9 - Bracket

- ❑ For garage door operation control unit - J530-

10 - Garage door operation control unit - J530-

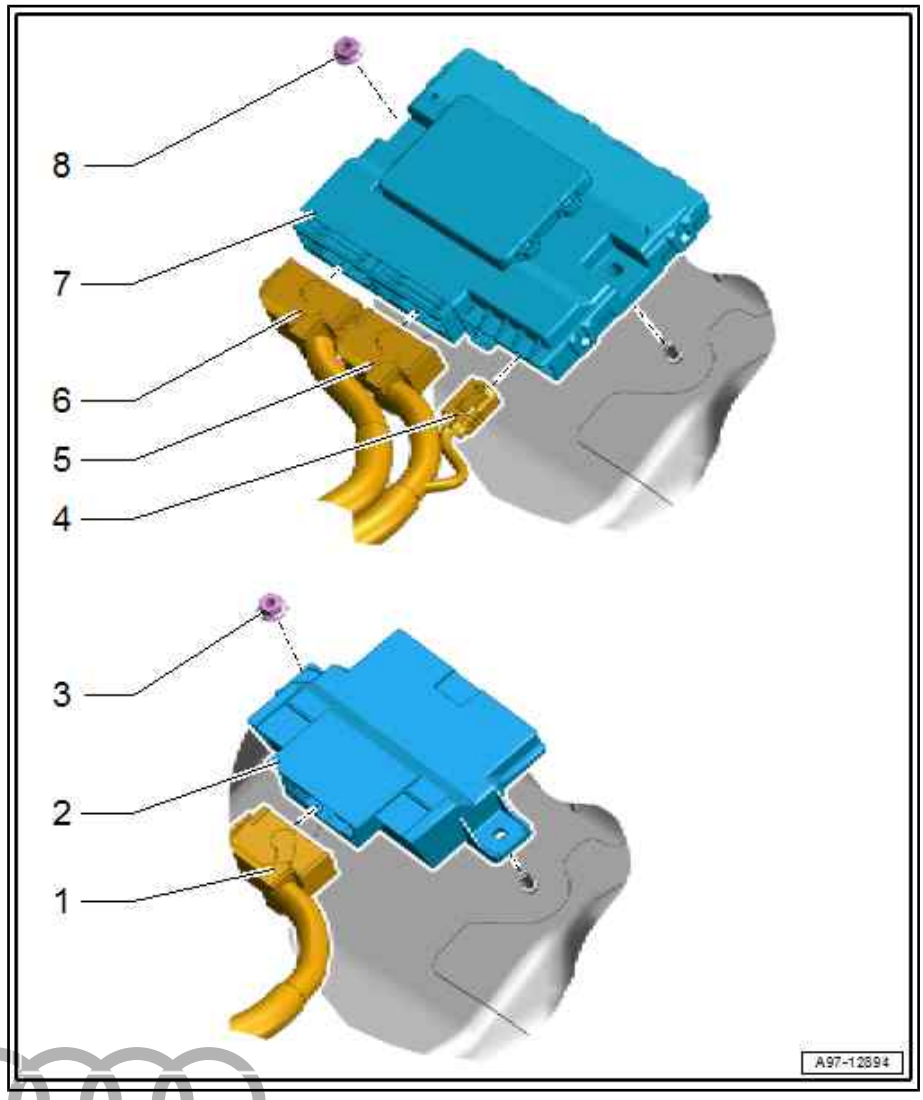
- ❑ Removing and installing ⇒ page 305

2.2 Exploded view - data bus diagnostic interface

⇒ “2.2.1 Exploded view - data bus diagnostic interface, Coupé, Sportback”, page 302

⇒ “2.2.2 Exploded view - data bus diagnostic interface, Cabriolet”, page 303

2.2.1 Exploded view - data bus diagnostic interface, Coupé, Sportback



1 - Electrical connector

- ❑ For data bus diagnostic interface - J533- - Low

2 - Data bus diagnostic interface - J533- - Low

- ❑ Removing and installing ⇒ page 305

3 - Nut

- ❑ 2x
- ❑ 3 Nm

4 - Connector for aerial wire

- ❑ 2x

5 - Electrical connector

- ❑ For data bus diagnostic interface - J533- - High

6 - Electrical connector

- ❑ For data bus diagnostic interface - J533- - High

7 - Data bus diagnostic interface - J533- - High

- ❑ With emergency battery for telematics - A16-
- ❑ Removing and installing emergency battery for telematics - A16- ⇒ Communication; Rep. gr. 91 ; Mobile online services
- ❑ Removing and installing ⇒ page 305

8 - Nut

- ❑ 2x
- ❑ 3 Nm

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2.2.2 Exploded view - data bus diagnostic interface, Cabriolet

1 - Connector for aerial wire

2 - Connector for aerial wire

3 - Data bus diagnostic interface - J533-

- ❑ With emergency battery for telematics - A16-
- ❑ Removing and installing emergency battery for telematics - A16- ⇒ Communication; Rep. gr. 91 ; Mobile online services
- ❑ Removing and installing ⇒ page 306

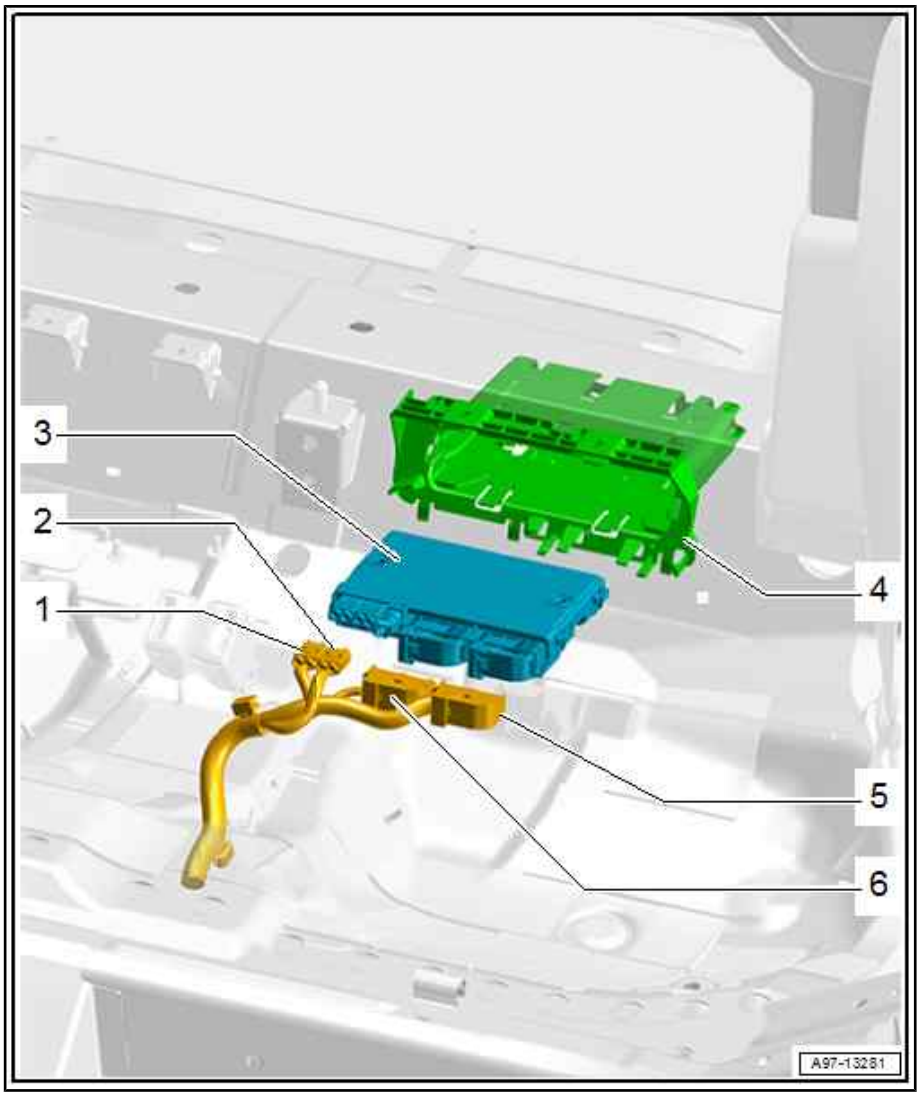
4 - Mounting

5 - Electrical connector

- ❑ For data bus diagnostic interface - J533- - High

6 - Electrical connector

- ❑ For data bus diagnostic interface - J533- - High



2.3 Removing and installing onboard supply control unit - J519-

⇒ “2.3.1 Removing and installing onboard supply control unit J519 ”, page 303

⇒ “2.3.2 Removing and installing mounting for onboard supply control unit J519 ”, page 304

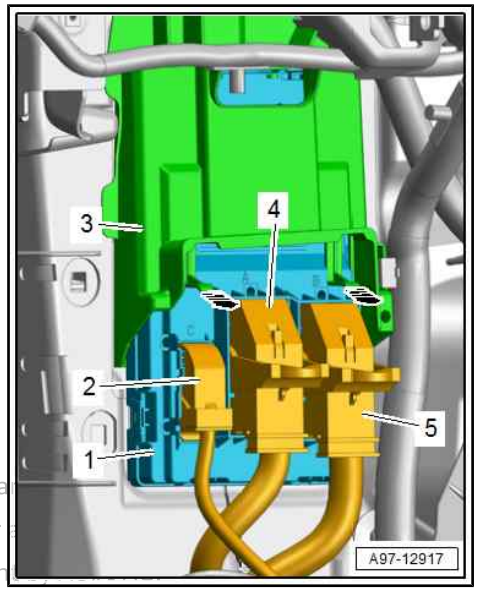
2.3.1 Removing and installing onboard supply control unit - J519-

If control unit is to be renewed, select the “Replace control unit” function for appropriate control unit in ⇒ Vehicle diagnostic tester.

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Removing

– Remove A-pillar trim (bottom) ⇒ General body repairs, interior; Rep. gr. 70 ; Passenger compartment trim panels; Removing and installing A-pillar trim .
– Release catches -arrows- and pull onboard supply control unit -1- downwards slightly.
– Unplug electrical connectors -2, 4, 5-.
– Pull onboard supply control unit out of mounting -3- downwards.



Installing

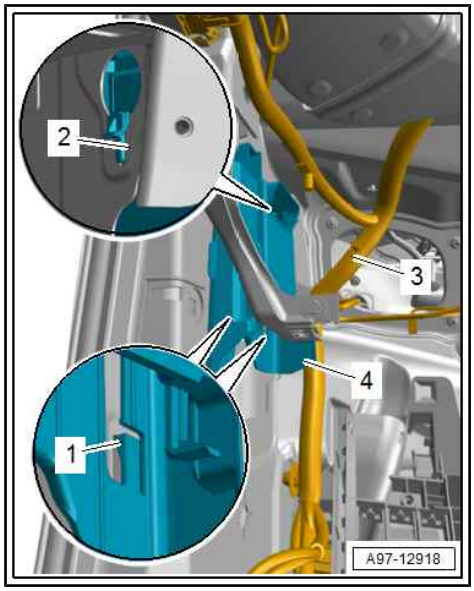
Installation is carried out in reverse sequence.

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2.3.2 Removing and installing mounting for onboard supply control unit - J519-

Removing

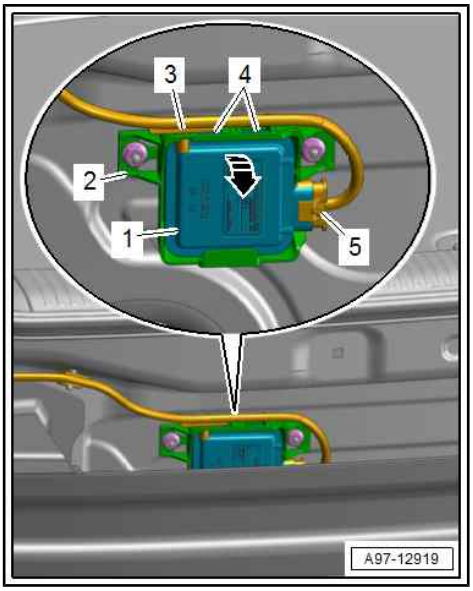
– Remove onboard supply control unit ⇒ page 303 .
– Move wiring harness -3- clear.
– Release catches -1- and push mounting -4- upwards until guides -2- are disengaged.
– Remove mounting downwards.



Installing

Installation is carried out in reverse sequence.

2.4 Removing and installing garage door operation control unit



Removing

- Remove rear bumper cover ⇒ General body repairs, exterior; Rep. gr. 63 ; Bumper (rear); Removing and installing bumper cover .
- Unplug electrical connector -5- and move wiring harness -3- clear.
- Release catches -4-.
- Take control unit -1- out of mounting -2- -arrow-.

Installing

Installation is carried out in reverse order; note the following:

- Versions with lane change assist: If bumper cover has been removed, lane change assist must be calibrated ⇒ page 251 .

2.5 Removing and installing data bus diagnostic interface - J533-

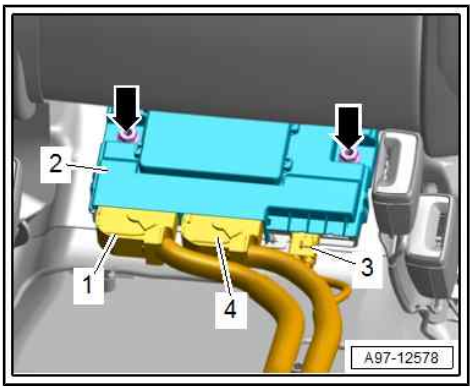
⇒ “2.5.1 Removing and installing data bus diagnostic interface J533 - Coupé, Sportback”, page 305

⇒ “2.5.2 Removing and installing data bus diagnostic interface J533 - Cabriolet”, page 306

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2.5.1 Removing and installing data bus diagnostic interface - J533- - Coupé, Sportback

If control unit is to be renewed, select the “Replace control unit” function for appropriate control unit in ⇒ Vehicle diagnostic tester.



Removing

- Remove seat padding ⇒ General body repairs, interior; Rep. gr. 74 ; Covers and padding on rear seats; Removing and installing cover and padding .
- Unplug electrical connector -1-.
- If fitted, unplug electrical connector -4- and disconnect aerial wire -3-.
- Remove nuts -arrows-.
- Take out data bus diagnostic interface -2-

Installing

Installation is carried out in reverse sequence.

ERA-GLONASS (Russia) only: Check emergency call function ⇒ Maintenance ; Booklet 820 ; Maintenance; ERA-GLONASS: checking emergency call function .

Tightening torques

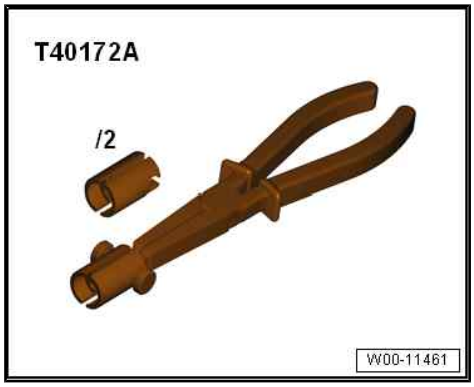
- ⇒ “2.2 Exploded view - data bus diagnostic interface”, page 302

2.5.2 Removing and installing data bus diagnostic interface - J533- - Cabriolet

If control unit is to be renewed, select the “Replace control unit” function for appropriate control unit in ⇒ Vehicle diagnostic tester.

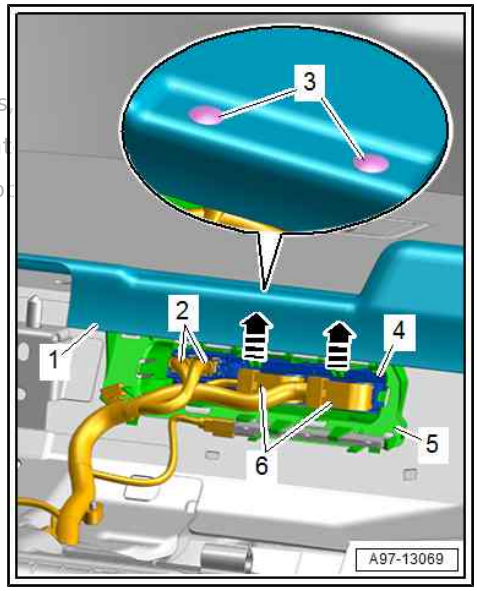
Special tools and workshop equipment required

- Pliers - T40172 A-



Removing

- Remove rear seat backrest ⇒ General body repairs, interior; Rep. gr. 72 ; Rear seats; Removing and installing rear seat backrest .
- Remove fasteners -3- using pliers - T40172 A- .
- Lift luggage compartment floor at front -1- in area of data bus diagnostic interface.
- Unplug electrical connectors -6- and aerial wires -2-.
- Disengage catches -arrows-.
- Remove data bus diagnostic interface -4- from mounting -5-.



Installing

Installation is carried out in reverse sequence.

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3 Connectors

⇒ “3.1 Overview of fitting locations - connectors”, page 307

⇒ “3.2 Unplugging door disconnector”, page 308

⇒ “3.3 Removing and installing connector point at A-pillar (right-side)”, page 308

⇒ “3.4 Repairing electrical wiring harnesses and electrical connectors”, page 308

3.1 Overview of fitting locations - connectors

1 - Door disconnector (front left)

- ❑ Unplugging
  ⇒ page 308

2 - Door disconnector (front right)

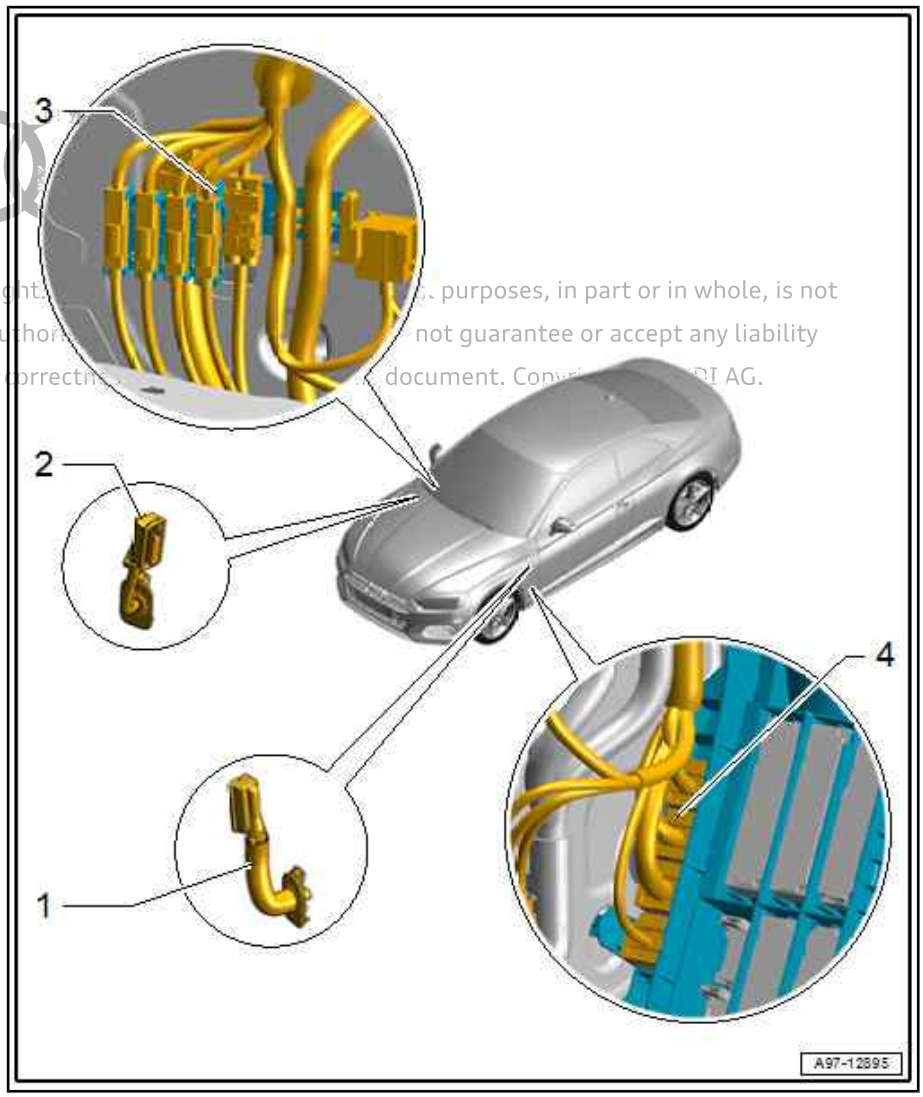
- ❑ Unplugging
  ⇒ page 308

3 - Connector point at A-pillar (right-side)

- ❑ Removing and installing
  ⇒ page 308

4 - Connector point on relay and fuse carrier 1 - SR1-

- ❑ Removing and installing
  ⇒ “1.3.1 Removing and installing relay and fuse carrier 1 SR1 ”, page 284



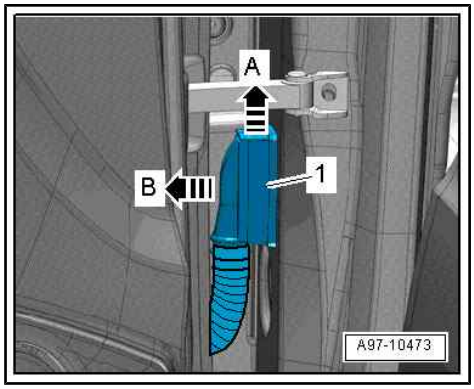
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3.2 Unplugging door disconnector

Procedure

– Open door.

– Release catch in direction of -arrow A- and detach door disconnector -1- towards the outside -arrow B-.



3.3 Removing and installing connector point at A-pillar (right-side)

Removing

– Disconnect earth cable from battery with ignition switched off ⇒ page 15 .

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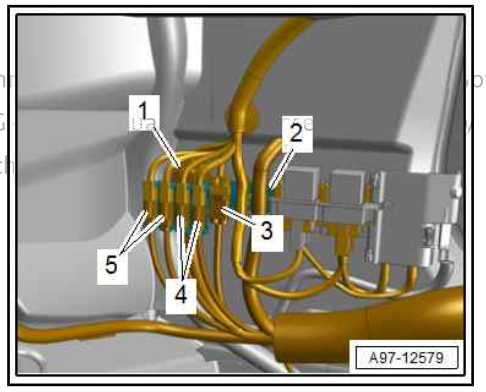
– Remove sill panel trim (front right) ⇒ General body repairs, interior; Rep. gr. 70 ; Passenger compartment trim panels; Removing and installing sill panel trim .

– Fold floor covering to side as far as possible in area of connector point.

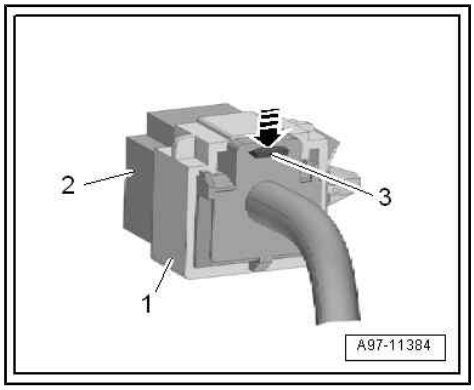
– Unplug electrical connector -1-.

– If fitted, disconnect electrical wire -3- and aerial wires -4, 5- and move them clear.

– Pry connector point -2- out of body.



– Release retaining clip -3- -arrow- and press connector -2- out of retainer -1-.



Installing

Installation is carried out in reverse order; note the following:

– Connect battery. Steps required ⇒ page 15 .

3.4 Repairing electrical wiring harnesses and electrical connectors

⇒ Electrical system; General information; Rep. gr. 97 ; Repairing wiring harnesses and connectors; Repairing wiring harnesses and ⇒ Electrical system; General information; Rep. gr. 97 ; Repairing wiring harnesses and connectors; Repairing connector housings and electrical connectors

4 Releasing and dismantling connector housings

⇒ Electrical system; General information; Rep. gr. 97 ; Repairing wiring harnesses and connectors; Releasing and dismantling connector housings

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5 Cleaning contact surfaces

⇒ Electrical system; General information; Rep. gr. 97 ; Contact surface cleaning set - VAS 6410-

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6 Repairing aerial wires

⇒ Electrical system; General information; Rep. gr. 97 ; Repairing wiring harnesses and connectors; Repairing aerial wires

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7 Fibre optic cables

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⇒ **Electrical system; General information; Rep. gr. 97 ; Repairing wiring harnesses and connectors; Repairing fibre optic cables**

8 Vehicle diagnostic, testing and information systems

⇒ Electrical system; General information; Rep. gr. 97 ; Vehicle diagnostic, testing and information systems

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