

Workshop Manual

Rapid NH 2013 >

Rapid NH 2014 >

Electrical system

Edition 02.2018



List of Workshop Manual Repair Groups

Repair Group

- 00 - Technical data
- 27 - Starter, current supply, CCS
- 90 - Gauges, instruments
- 91 - Radio, telephone, navigation
- 92 - Windscreen wash/wipe system
- 94 - Lights, bulbs, switches - exterior
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- 97 - Wiring

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 instructions

(SRL001176; Edition 02.2018)

⇒ [“1.1 Safety precautions when working on vehicles with a start/stop system”, page 1](#)

⇒ [“1.2 Safety precautions during road tests in which testing and measuring equipment is used”, page 1](#)

⇒ [“1.3 Use and safety instructions for gas discharge lamps”, page 1](#)

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

When working on vehicles with start/stop system, please observe the following:



Caution

Risk of injury from automatic engine start.

- ◆ *On vehicles with activated start-stop system (recognizable by a message in the dash panel insert) there is a risk that the engine can start automatically.*
- ◆ *It is therefore necessary to ensure that the start-stop system is deactivated when carrying out work on the vehicle (switch ignition off, if required switch ignition on again).*

1.2 Safety precautions during road tests in which testing and measuring equipment is used

Note the following if testers and measuring instruments are used during road tests:



WARNING

There is a risk of accident from insufficient securing of testers and measuring instruments.

There is a hazard from the release of the passenger airbag in the event of an accident.

- *Drivers operating testing and measuring equipment while driving can lead to an accident.*
- *Increased risk of accident due to unsecured test and measuring devices.*

Always secure the testing and measuring equipment with a belt on the rear seat and have a second person operate them there.

1.3 Use and safety instructions for gas discharge lamps

All other notes and comments to this chapter can be found in the Workshop Manual “Electrical System- General Notes” ⇒ Electrical System- General Notes; Rep. gr. 94 Chapter “94”. If a note



cannot be accessed, open the Workshop Manual "Electrical System - General Notes" manually in "ELSA".

2 Repair instructions

⇒ ["2.1 Contact corrosion", page 3](#)

⇒ ["2.2 Cable routing and securing", page 3](#)

2.1 Contact corrosion

The use of unsuitable connection elements (screws, nuts, washers, etc.) causes contact corrosion.

This is why only connection elements with a special surface coatings are fitted.

Therefore, the rubber or plastic parts and the adhesives are made from electrically non-conductive materials.

In case of doubt regarding the re-use of certain parts, the use of new parts is recommended.



WARNING

- ◆ *It is recommended to use only original connection material as well as spare parts which are tested and compatible with aluminium, see ⇒ Electronic Catalogue of Original Parts "ETKA".*
- ◆ *It is recommended to use only Škoda accessories.*
- ◆ *Any damage resulting from contact corrosion is not covered by the terms of the warranty.*

2.2 Cable routing and securing



Caution

Risk of damage to cables, risk of fire and failure of onboard electrical system!

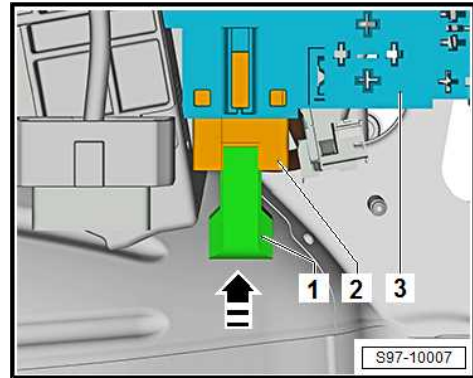
- ◆ *To rule out mix ups and ensure the original fitting position, mark the lines before disassembly. This includes lines for fuel, hydraulics, underpressure, activated charcoal filter, or electric cables. Make photos or sketches where necessary.*
- ◆ *To prevent damage to lines, sufficient clearance from all moving or hot components must be ensured in the engine compartment due to its cramped construction.*
- ◆ *All plug connections must be locked using catches, if necessary with special securing clips, to prevent them disconnecting unintentionally. When connecting, the catches must engage audibly; for plug connections with catch, lock the plug connection by pushing in the catch. If necessary, check it is locked correctly by pulling gently on the plug connection.*

Example of a connector catch with special securing clip -1-.

Primary voltage supply in the relay and fuse carrier under the dash panel:

**Note**

After inserting the plug up to the stop -2- to terminal 30+ on the relay and fuse carrier -3-, secure the plug connection by pushing the securing clip -1- in -direction of arrow- up to the stop!



3 Battery

⇒ [“3.1 Warning instructions and safety precautions when working on the battery”, page 5](#)

⇒ [“3.2 Battery types”, page 5](#)

3.1 Warning instructions and safety precautions when working on the battery

All the notes and comments for this chapter can be found in the Workshop Manual ⇒ Electrical System - General notes; Rep. gr. 27 . If a note cannot be accessed, open the Workshop Manual “Electrical System - General Notes” manually in “ELSA”, Section “27”.

3.2 Battery types



WARNING

When working on the battery wear proper protection and observe safety precautions (see “Electrical System - General notes” ⇒ Electrical System - General notes; Rep. gr. 27 Section “27”). If a note cannot be accessed, open the Workshop Manual “Electrical System - General Notes” manually in “ELSA”.

Batteries with a magic eye and plugs covered in adhesive tape are factory-installed in all vehicles (except vehicles with start-stop system).

In vehicles with start/stop system, (depending on types of engines see ⇒ Electronic Catalogue of Original Parts “ETKA”), a fleece battery (AGM) or a battery with magic eye with EFB technology (Enhanced Flooded Battery) is installed.

Description of the function, test and maintenance of the previous batteries see “Electrical System – General notes” ⇒ Electrical System – General notes; Rep. gr. 27 . If a note cannot be accessed, open the Workshop Manual “Electrical System - General Notes” manually in “ELSA”.



27 – Starter, current supply, CCS

1 Battery

- ⇒ [“1.1 Assembly overview - battery”, page 6](#)
- ⇒ [“1.2 Summary of components - battery isolation”, page 10](#)
- ⇒ [“1.3 Disconnecting and reconnecting battery”, page 10](#)
- ⇒ [“1.4 Checking battery”, page 13](#)
- ⇒ [“1.5 Charging battery”, page 13](#)
- ⇒ [“1.6 Removing and installing battery”, page 13](#)
- ⇒ [“1.7 Removing and installing earth lead with battery monitoring control unit J367”, page 17](#)
- ⇒ [“1.8 Removing and installing battery isolation”, page 18](#)
- ⇒ [“1.9 Battery parameterisation”, page 19](#)
- ⇒ [“1.10 Removing and installing battery tray”, page 19](#)



WARNING

When working on the battery wear proper protection and observe safety precautions (see ⇒ [Electrical System - General notes; Rep. gr. 27](#)). If a note cannot be accessed, open the Workshop Manual “[Electrical System - General Notes](#)” manually in “[ELSA](#)”, Chapter “27”.

1.1 Assembly overview - battery

- ⇒ [“1.1.1 Summary of components - battery in engine compartment”, page 6](#)
- ⇒ [“1.1.2 Summary of components - battery in luggage compartment”, page 8](#)

1.1.1 Summary of components - battery in engine compartment

1 - Collar

2 - Nut

- 6 Nm

3 - Battery-cable terminal

- Earth cable
- Disconnecting and connecting the battery
⇒ [“1.3 Disconnecting and reconnecting battery”, page 10](#)

4 - Cap

5 - Earth cable

- Removing and installing
⇒ [“1.7.1 Removing and installing earth lead with battery monitoring control unit J367 - battery in engine compartment”, page 17](#)

On vehicles with start-stop system:

- with battery monitoring control unit - J367-
- Battery parameterisation
⇒ [“1.9 Battery parameterisation”, page 19](#)

6 - Electrical plug connection

On vehicles with start-stop system:

- Battery monitor control unit - J367-
- Follow the steps for disconnecting and connecting the battery ⇒ [“1.3 Disconnecting and reconnecting battery”, page 10](#)

7 - Nut

- 15 Nm

8 - Battery

- Removing and installing ⇒ [“1.6 Removing and installing battery”, page 13](#)
- Disconnecting and reconnecting ⇒ [“1.3 Disconnecting and reconnecting battery”, page 10](#)
- Check ⇒ [“1.4 Checking battery”, page 13](#)
- Charge ⇒ [“1.5 Charging battery”, page 13](#)

9 - Screw

- 15 Nm

10 - Battery carrier

- Removing and installing
⇒ [“1.10.1 Removing and installing the battery tray in the engine compartment”, page 19](#)

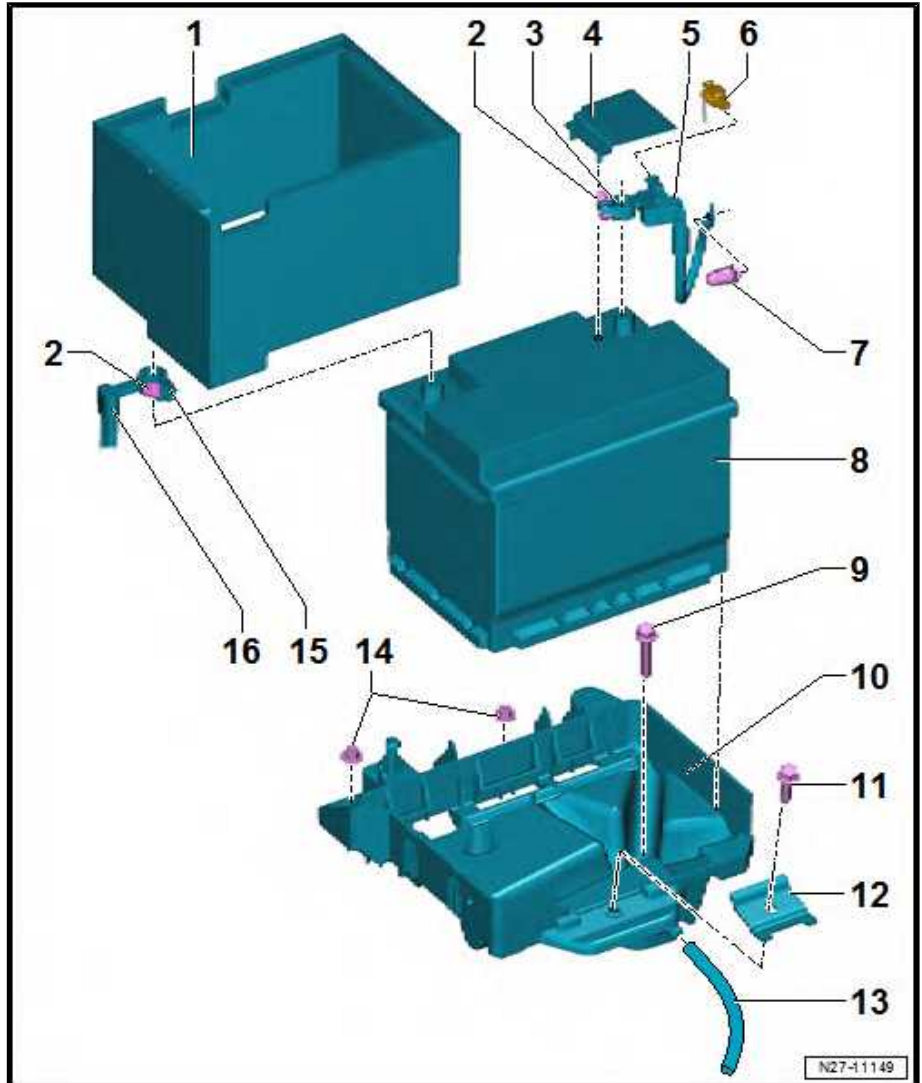
11 - Screw

- 20 Nm

12 - Retaining clip

13 - Water drain hose

- not fitted to all battery trays
- When installing, guide the hose without kinking it



N27-11149

14 - Nut

- 15 Nm

15 - Battery-cable terminal

- for plus terminal
- Disconnecting and connecting the battery ⇒ [“1.3 Disconnecting and reconnecting battery”, page 10](#)

16 - Plus terminal

1.1.2 Summary of components - battery in luggage compartment

1 - Retaining clip

2 - Bolts

- 4 pieces
- 18 Nm

3 - Cover

- for negative pole

4 - Protective collar

5 - Fuse holder A - SA-

- Disconnecting and re-connecting
⇒ [“1.3 Disconnecting and reconnecting battery”, page 10](#)
- with battery isolation
- Removing and installing battery isolation
⇒ [“1.8 Removing and installing battery isolation”, page 18](#)

6 - Screw

7 - Nut

- 6 Nm

8 - Earth cable

- with battery monitoring control unit - J367-
- Disconnecting and re-connecting
⇒ [“1.3 Disconnecting and reconnecting battery”, page 10](#)
- Removing and installing
⇒ [“1.7.2 Removing and installing earth lead with battery monitoring control unit J367 - battery in luggage compartment”, page 17](#)

9 - Screw

10 - Nut

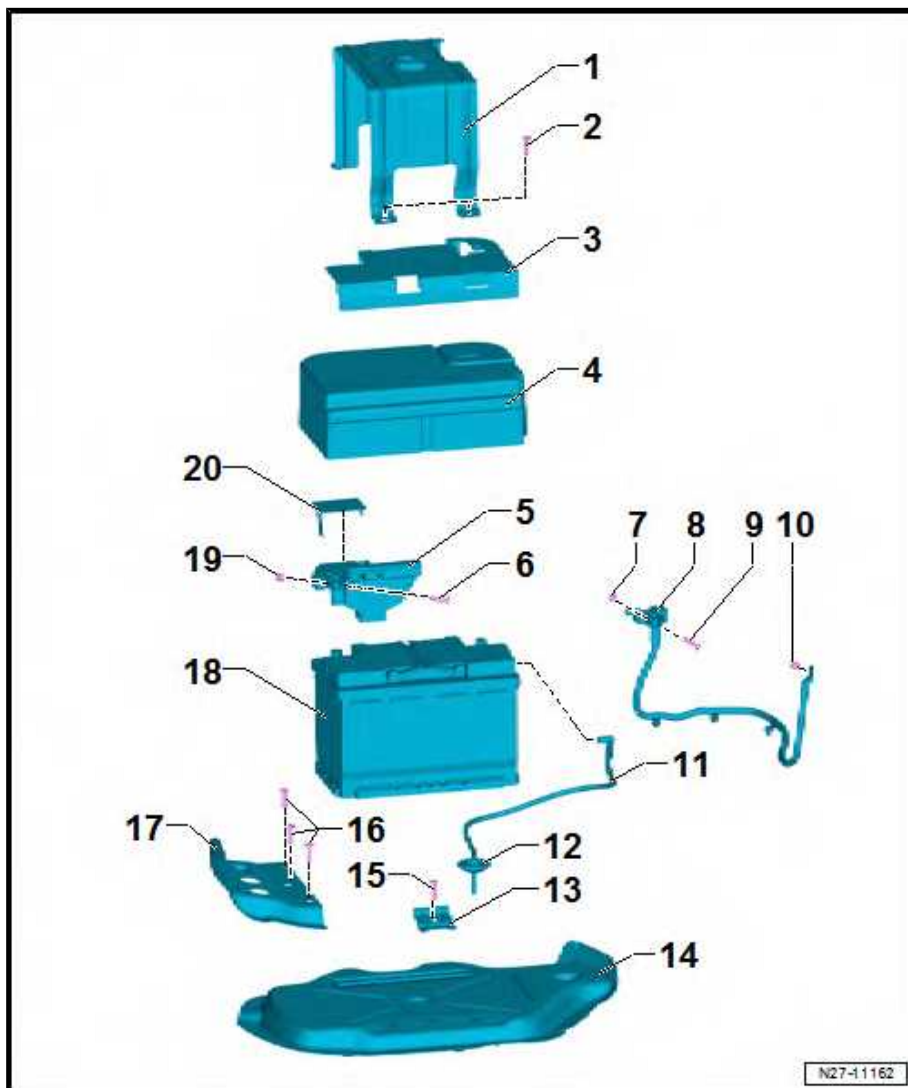
- 20 Nm

11 - Hose

- for central degassing

12 - Washer

- of the hose for central degassing





13 - Adjustment link

14 - Battery carrier

- glued into the spare wheel well
- Removing and installing
⇒ ["1.10.2 Removing and installing the battery tray in the luggage compartment", page 20](#)

15 - Screw

- 18 Nm

16 - Bolts

- 3 pieces
- 18 Nm

17 - Battery carrier

- glued into the spare wheel well

18 - Battery - A-

19 - Nut

- 6 Nm

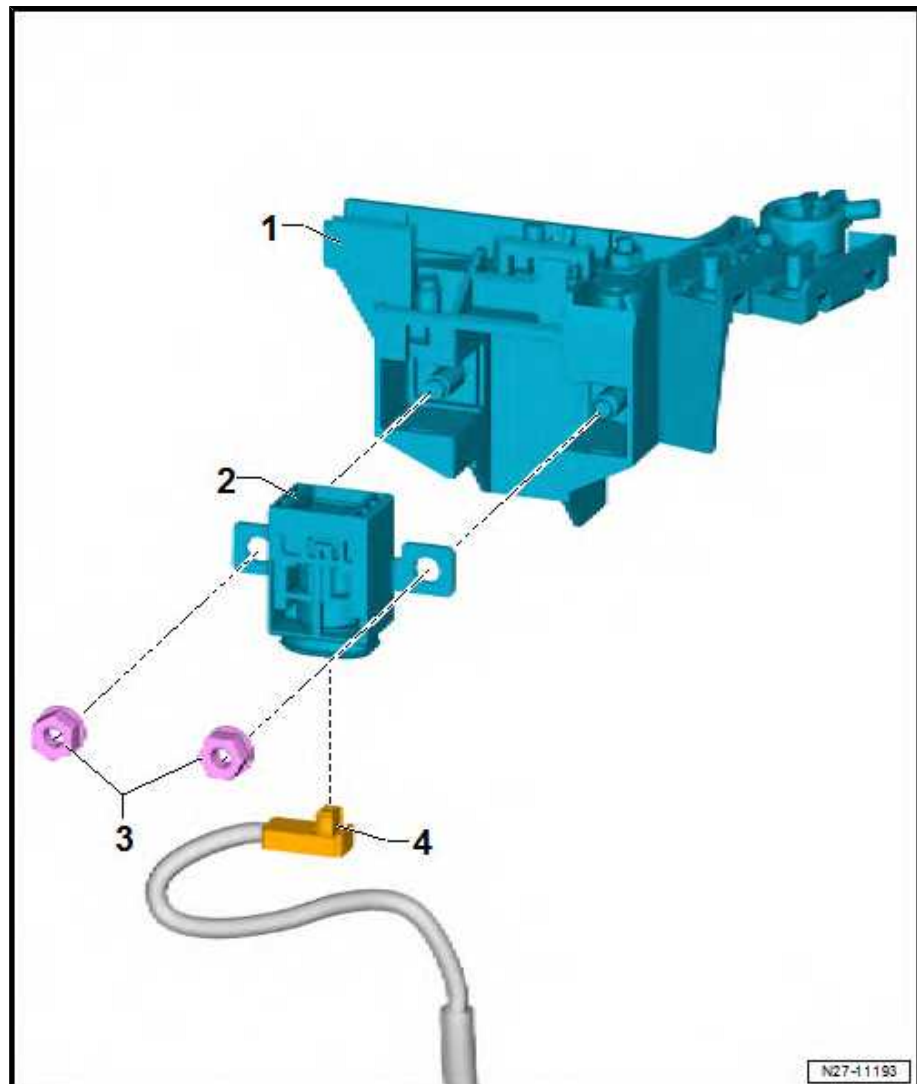
20 - Cover

- for positive pole



1.2 Summary of components - battery isolation

- 1 - Fuse holder A - SA-
- 2 - Battery isolation
- 3 - Nut
 - 10 Nm
- 4 - Connector



1.3 Disconnecting and reconnecting battery

⇒ ["1.3.1 Disconnect battery", page 10](#)

⇒ ["1.3.2 Reconnecting battery", page 11](#)

1.3.1 Disconnect battery



WARNING

Observe the battery handling instructions as well as the warning instructions and safety precautions for lead acid batteries
 ⇒ ["3.1 Warning instructions and safety precautions when working on the battery", page 5](#).

- Switch off all electrical components and take out the ignition key.

Battery in engine compartment:

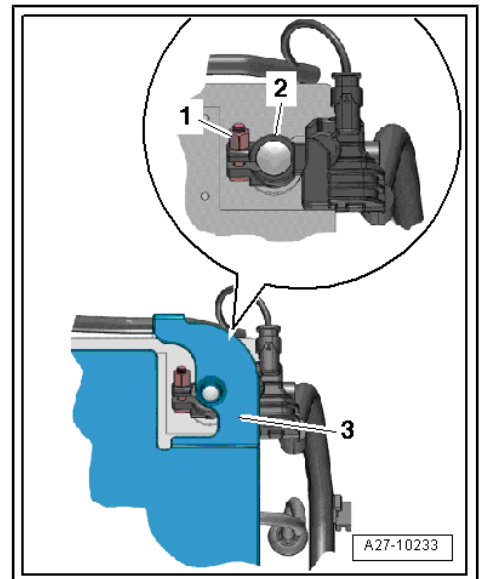
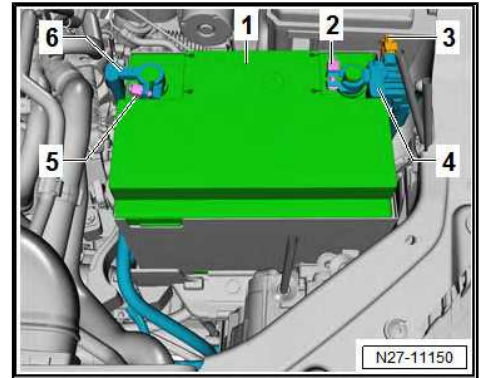
- Loosen nut -2- and disconnect pole terminal -4- from the negative terminal of the battery.

i Note

If both terminals are disconnected, only then disconnect pole terminal (-) from battery earth.

Battery in luggage compartment:

- Raise the luggage compartment floor and attach it to the body.
- Open the cover -3- above the negative terminal of the battery.
- Loosen nut -1- and disconnect pole terminal -2- from the negative terminal of the battery.



1.3.2 Reconnecting battery



WARNING

Please observe the following additional instructions after working on the airbag system or on the belt tighteners or the safety belts:

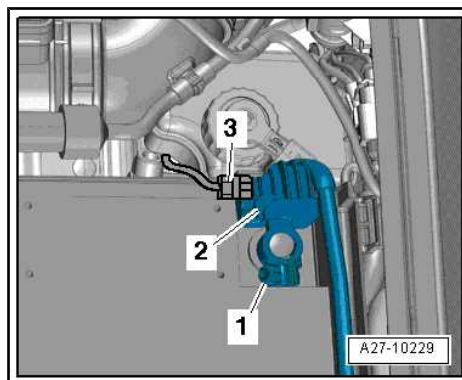
- ◆ *Switch on the ignition before connecting the battery.*
- ◆ *Nobody should be in the vehicle when the battery is being connected.*

i Note

- ◆ Neither grease nor oil the battery terminals.
- ◆ The battery pole terminals must only be fitted by hand without using any force in order to avoid damaging the battery housing.
- ◆ Install the battery pole terminals in such a way that the battery pole with the terminal is on the same level or protrudes.
- ◆ If both terminals are disconnected, only then disconnect the battery positive pole terminal (+).
- ◆ After connecting the battery and switching on the ignition, the warning light for the stability program TCS/ESP and the warning light for the power-assisted steering remain lit. The warning lights go out automatically after driving a few metres forward. Thereby the steering angle sender - G85- is activated again.

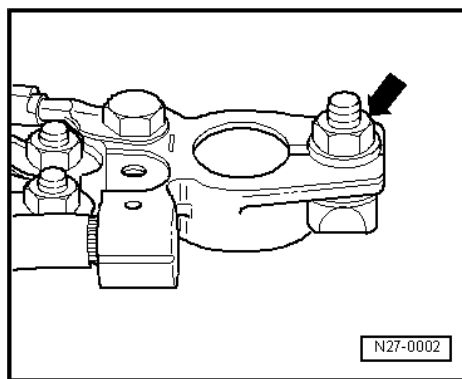
Vehicles with battery monitoring control unit - J367- (with start-stop system)

- Disconnect the plug -3- from the control unit -2- before connecting to the battery.
- Fit pole terminal (-) with control unit onto the “-” pol of the battery and tighten the fixing nut -1-.
- Fit the plug -3- again onto the control unit.



Vehicles without battery monitoring control unit - J367-

- Fit pole terminal of the earth line onto the battery negative terminal and tighten the nut -arrow-.



Continued for all vehicles:

When the battery is reconnected, perform the following operations depending on the vehicle equipment:

- ◆ Set clock.
- ◆ Check the power windows ⇒ Maintenance ; Booklet Rapid .
- ◆ Code radio/navigation with anti-theft coding (not valid for radio systems/navigation systems mounted at factory, see ⇒ [“1.2 Electronic anti-theft coding”, page 60](#)).
- ◆ Connect the ⇒ Vehicle diagnostic tester, query the event memory and delete any event memory entries.

Tightening torques

All types of pole terminals	6 Nm
-----------------------------	------

1.4 Checking battery

All the notes and comments for this chapter can be found in the Workshop Manual ⇒ Electrical System - General notes; Rep. gr. 27 . If a note cannot be accessed, open the Workshop Manual "Electrical System - General Notes" manually in "ELSA", Section "27".

1.5 Charging battery

All the notes and comments for this chapter can be found in the Workshop Manual ⇒ Electrical System - General notes; Rep. gr. 27 . If a note cannot be accessed, open the Workshop Manual "Electrical System - General Notes" manually in "ELSA", Section "27".

1.6 Removing and installing battery

⇒ ["1.6.1 Removing and installing the battery in the engine compartment", page 13](#)

⇒ ["1.6.2 Removing and installing the battery in the luggage compartment", page 15](#)

1.6.1 Removing and installing the battery in the engine compartment

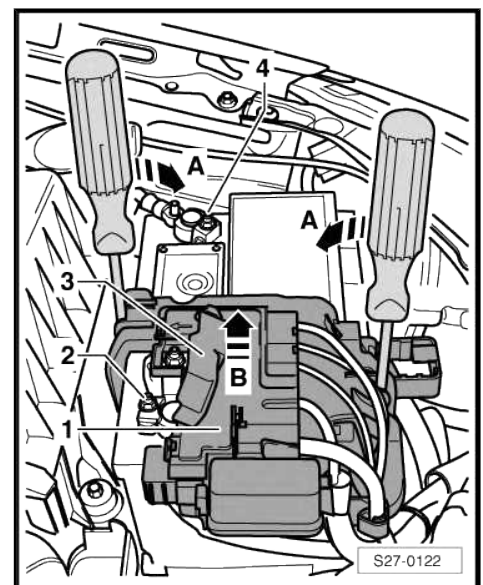


WARNING

Observe the battery handling instructions as well as the warning instructions and safety precautions for lead acid batteries
⇒ ["3.1 Warning instructions and safety precautions when working on the battery", page 5](#) .

Removing

- Disconnect the battery earth strap -4-
⇒ ["1.3 Disconnecting and reconnecting battery", page 10](#) .
- Fold open the cover -3- and slacken the nut of the positive terminal -2-.
- Slightly press down the catches one after the other using a screwdriver, then release by tilting the screwdriver in direction of arrow -A- and fold the fuse box with the positive terminal -1- to the side in direction of arrow -B-.



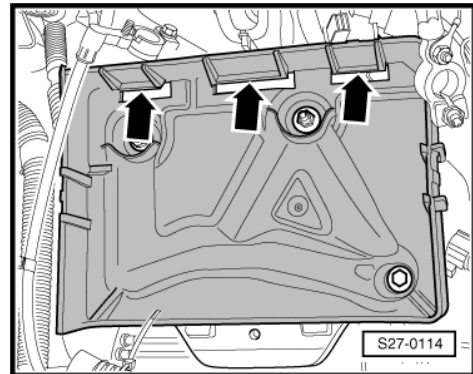
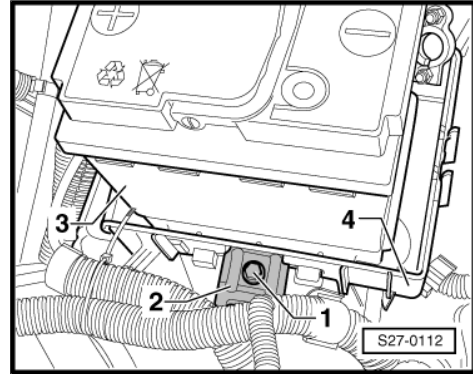


- Unscrew bolt -1-.
- Remove mounting bracket -2-.
- Take battery -3- out of battery tray -4-.

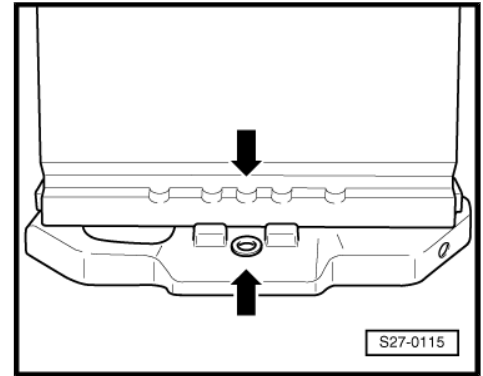
Installing

Installation is performed in the reverse order, pay attention to the following points:

- Insert battery in such a way that the rear battery foot strip catches below the pegs of the battery tray -arrows-.



- The battery is properly installed when the middle recess of the front battery foot strip is aligned at the bottom with the bore in the battery tray -arrows-.
- For batteries with hose for the central degassing, make sure that the hose is not disconnected. Only then can the battery degasify.
- For batteries without hose for the central degassing, make sure that the opening on the battery lid is not clogged.
- Check that the battery is sitting firmly after installation.



Caution

There are certain dangers if the battery is incorrectly mounted or mounted loosely:

- ◆ *Shortened service life due to damage from vibration (danger of explosion)*
- ◆ *Damage to the grid plates of the battery.*
- ◆ *Damage to battery housing by securing bracket (possibility of acid leaking, with high consequential costs)*
- ◆ *Poor crash safety*

- Lay the positive cable between the battery tray and the battery.

Tightening torques

Battery-earth strap to battery terminal	6 Nm
Positive cable to battery terminal	6 Nm
Additional cable to battery positive terminal	6 Nm
Nuts for attaching the fuses and the connection cables in the fuse box	6 Nm
Mounting bracket for battery	20 Nm

1.6.2 Removing and installing the battery in the luggage compartment



WARNING

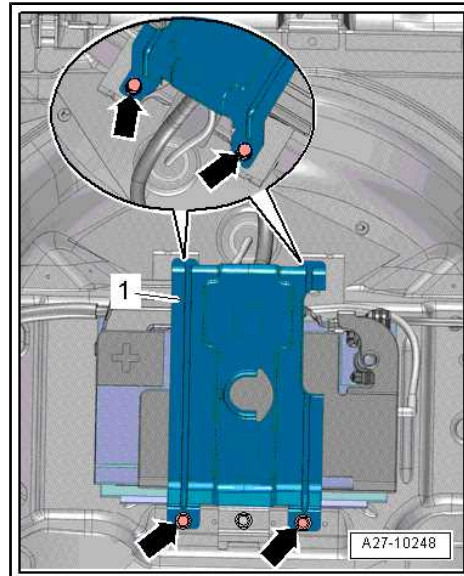
Observe the battery handling instructions as well as the warning instructions and safety precautions for lead acid batteries ⇒ "3.1 Warning instructions and safety precautions when working on the battery", page 5 .

Removing

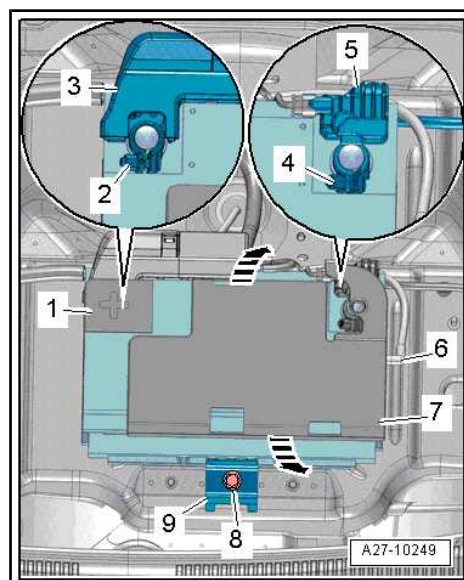
- Switch off the ignition and all electrical consumers!
- Raise the luggage compartment floor and attach it to the body.
- Remove boxes with tool kit and vehicle equipment.



- Unscrew the screws -arrows- and remove the retaining clip -1-.



- Detach and remove cover -7- for battery negative terminal -arrows-.
- Loosen nut -2- and disconnect pole terminal -5- from the negative terminal of the battery.
- Remove the positive terminal cover -1-.
- Loosen nut -4- and disconnect pole terminal -3- with fuse holder from the battery positive terminal.
- Disconnect hose -6- for central degassing.
- Unscrew screw -8- and remove securing bracket -9-.
- If present, remove battery's protective cover.
- Remove battery from the luggage compartment.



Installing

Installation is performed in the reverse order, pay attention to the following points:

- For batteries with hose for the central degassing, make sure that the hose is not disconnected. Only then can the battery degasify.
- Check that the battery is sitting firmly after installation.



Caution

There are certain dangers if the battery is incorrectly mounted or mounted loosely:

- ◆ *Shortened service life due to damage from vibration (danger of explosion)*
- ◆ *Damage to the grid plates of the battery.*
- ◆ *Damage to battery housing by securing bracket (possibility of acid leaking, with high consequential costs)*
- ◆ *Poor crash safety*

1.7 Removing and installing earth lead with battery monitoring control unit - J367-

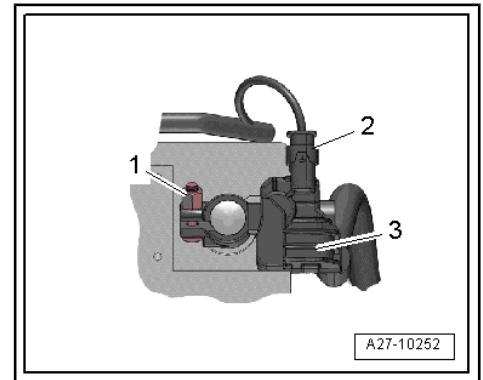
⇒ [“1.7.1 Removing and installing earth lead with battery monitoring control unit J367 - battery in engine compartment”, page 17](#)

⇒ [“1.7.2 Removing and installing earth lead with battery monitoring control unit J367 - battery in luggage compartment”, page 17](#)

1.7.1 Removing and installing earth lead with battery monitoring control unit - J367- - battery in engine compartment

Removing

- Switch off all electrical components and take out the ignition key.
- Undo nuts -1- and remove the pole terminal with the control unit -3- from the battery-cable terminal.
- Disconnect connector -2-.



- Unscrew the nuts -2- and remove the earth cable -1- with battery monitoring control unit - J367- .

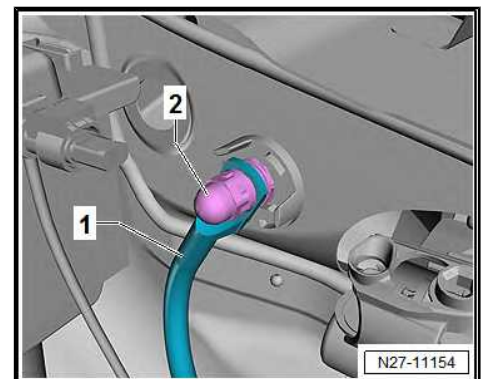
Installing

Installation is performed in the reverse order, pay attention to the following points:

- Follow the work procedure when connecting the battery
⇒ [“1.3 Disconnecting and reconnecting battery”, page 10](#) .
- Adapt the battery monitoring control unit - J367-
⇒ [“1.9 Battery parameterisation”, page 19](#) .

Tightening torques

- ◆ ⇒ [“1.1.1 Summary of components - battery in engine compartment”, page 6](#)



1.7.2 Removing and installing earth lead with battery monitoring control unit - J367- - battery in luggage compartment

Removing



Note

Cable straps should be fastened again in the same place when installing.

- Switch off all electrical components and take out the ignition key.

- Raise the luggage compartment floor and attach it to the body.
- Remove boxes with tool kit and vehicle equipment.
- Open the cover -3- above the negative terminal of the battery.
- Loosen nut and disconnect pole terminal -6- from the negative terminal of the battery.
- Separate electrical plug connection -7-.
- Cut cable straps -1-.
- Install earth lead -arrow-.
- Unscrew the nuts -5- and remove the earth cable -4- with battery monitoring control unit - J367- .

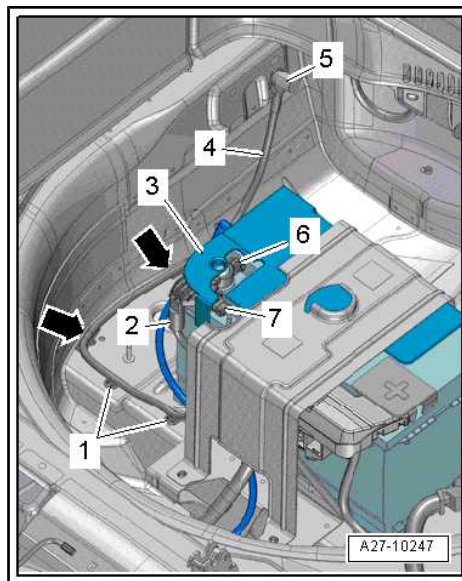
Installing

Installation is performed in the reverse order, pay attention to the following points:

- Connecting battery
⇒ ["1.3 Disconnecting and reconnecting battery"](#), page 10 .

Tightening torques

- ◆ ⇒ ["1.1.2 Summary of components - battery in luggage compartment"](#), page 8



1.8 Removing and installing battery isolation



WARNING

Observe the battery handling instructions as well as the warning instructions and safety precautions for lead acid batteries
⇒ ["3.1 Warning instructions and safety precautions when working on the battery"](#), page 5 .

Removing

- Switch off all electrical components and take out the ignition key.
- Raise the luggage compartment floor and attach it to the body.
- Remove boxes with tool kit and vehicle equipment.
- Disconnect battery
⇒ ["1.3 Disconnecting and reconnecting battery"](#), page 10
- Disconnect plug connection -2-.
- Remove nuts -1- and remove battery isolation-4- from fuse holder A - SA- ..

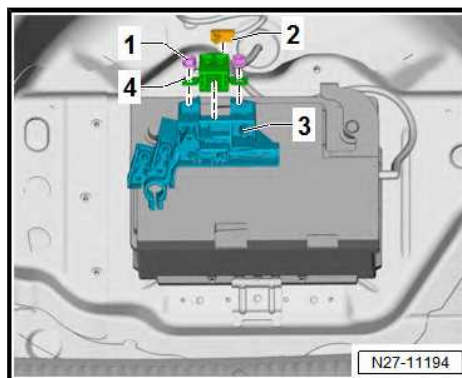
Installing

Installation is performed in the reverse order, pay attention to the following points:

- Connecting battery
⇒ ["1.3 Disconnecting and reconnecting battery"](#), page 10 .

Tightening torques

- ◆ ⇒ ["1.1.2 Summary of components - battery in luggage compartment"](#), page 8
- ◆ ⇒ ["1.2 Summary of components - battery isolation"](#), page 10



1.9 Battery parameterisation

It is performed on vehicles with a start-stop system when replacing the battery with a new one of another type or with higher capacity.

After a new start battery is installed and the battery has been parameterised, the technical data of the new battery are sent to the battery monitoring control unit - J367- .

- ⇒ Vehicle diagnostic tester connect and select the operating mode "Targeted fault-finding".
- Select the "Selected Functions/Components" and subsequently the following menu points using the button "Skip":

Version 1 (older model years):

- ◆ Body
- ◆ Electrical system
- ◆ Diagnostic capable systems
- ◆ Checking battery
- ◆ Battery monitoring function
- ◆ Adaption battery parameterisation

Version 2 (recent model years):

Body

Electrical system

Systems capable of diagnostics

0019 - Data bus diagnostic interface - J533-

0019 - Data bus diagnostic interface - J533- function

19 - Adapt battery

1.10 Removing and installing battery tray

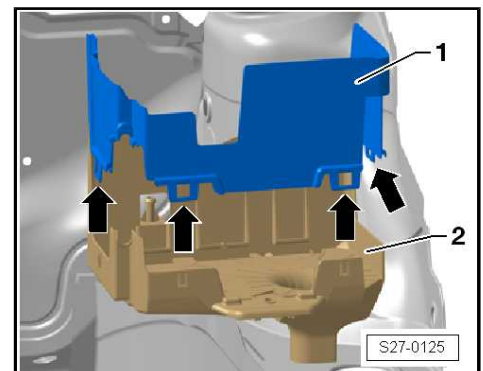
⇒ ["1.10.1 Removing and installing the battery tray in the engine compartment", page 19](#)

⇒ ["1.10.2 Removing and installing the battery tray in the luggage compartment", page 20](#)

1.10.1 Removing and installing the battery tray in the engine compartment

Removing

- Remove the battery
⇒ ["1.6 Removing and installing battery", page 13](#) .
- Vehicles with start-stop system - slacken and remove the cover -1-, if present, by releasing -arrows- from the battery tray -2-.
- Vehicles with the automatic gearbox control unit fitted to the battery tray - remove automatic gearbox control unit ⇒ Gearbox; Rep. gr. 37 .





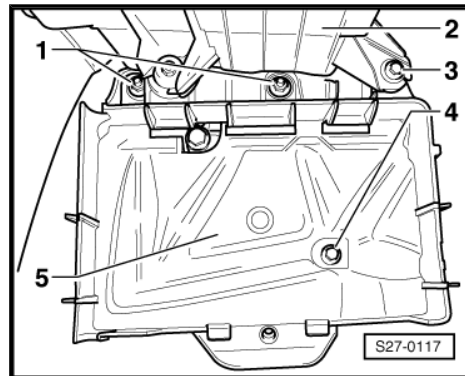
- Unscrew screws -4- -3- and nuts -1-.
- Swivel air filter housing -2- slightly, raise battery tray -5- and detach water drain hose (if present), if necessary remove tray together with water drain hose.

Installing

Installation is carried out in the reverse order.

Tightening torques

Nut, Pos. -1-	16 Nm
Screw, Pos. -3-	10 Nm
Screw, Pos. -4-	16 Nm



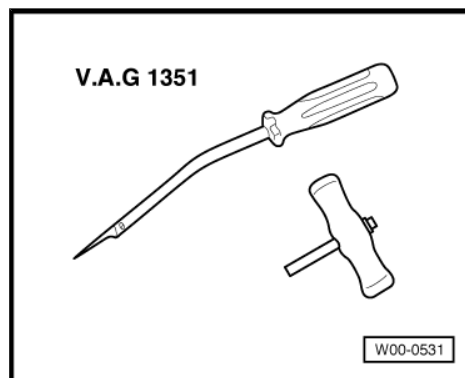
1.10.2 Removing and installing the battery tray in the luggage compartment

Special tools and workshop equipment required

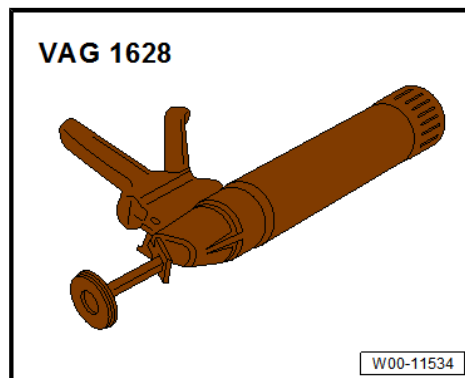
- ◆ Separating device for glued windows - V.A.G 1474 A- or separating device for glued windows - VAS 6452-



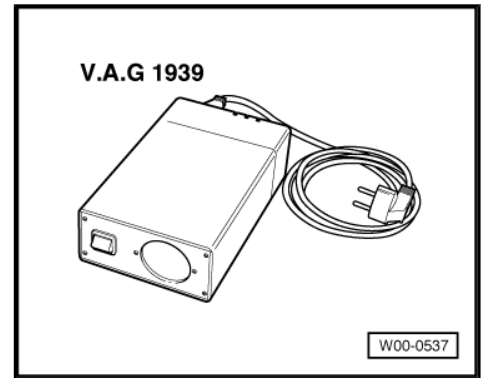
- ◆ Cutting tool - V.A.G 1351-



- ◆ Hand pressure gun - V.A.G 1628-



◆ Cartridge heater - V.A.G 1939-



Removing

- Remove the battery
⇒ ["1.6.2 Removing and installing the battery in the luggage compartment", page 15](#) .
- Pull the cutting thread through the adhesive sealant to the inside using a tool from the window adhesive set.
- Secure the end of the cutting thread with the pull handle - V.A.G 1351/1- to prevent it being pulled out.
- Similarly guide the other end of the cutting thread through the adhesive sealant to the inside, at the edge of the battery tray.
- Attach the mounts to the ends of the cutting thread.
- Press the cutting thread against the battery tray with the wedge while cutting free to ensure clearance to the spare wheel well.
- Cut out the battery tray in stages in this way.

Installing

Installation is performed in the reverse order, pay attention to the following points:



WARNING

Do not prime the adhesive surface and do not treat with cleaning solution. Keep the adhesive surfaces free of dirt or grease.

The activator must not come into contact with paintwork, otherwise there will be paint damage.

Do not prime the adhesive surface you have just cut with activator or treat it with cleaning solution.



- Cut back the remaining material on the spare wheel well using the U-shaped cutting knife, but do not remove completely.



Note

The remaining material serves as holding primer for the newly applied adhesive sealing material. Keep the adhesive surfaces free of dirt or grease.



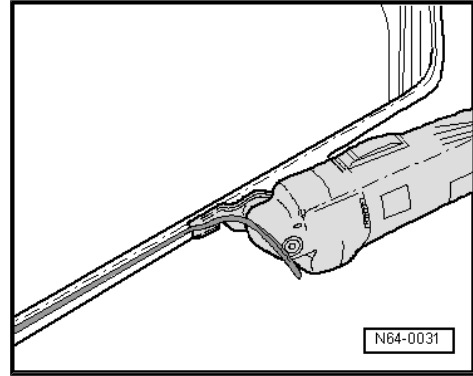
WARNING

Exception: if the bonding is carried out later than one day after cutting back the adhesive bead, the remaining material must be activated with the activator.

The activator is applied evenly in one go with the applicator.

Activator must not come into contact with the paint, as this will damage the paint.

Drying time: approx. 10 min.



- Glue on the battery tray with window pane adhesive ⇒ Electronic Catalogue of Original Parts“ETKA”
- Install the battery
⇒ [“1.6.2 Removing and installing the battery in the luggage compartment”](#), page 15 .

2 Jump start point

⇒ [“2.1 Summary of components - jump start point”, page 23](#)

⇒ [“2.2 Removing and installing jump start point”, page 23](#)

2.1 Summary of components - jump start point

1 - Support

- for jump start point and air filter housing
- Removing and installing
⇒ [“2.2 Removing and installing jump start point”, page 23](#)

2 - Nut

- 2 pieces
- 20 Nm

3 - Plus terminal

4 - Nut

- 20 Nm

5 - Cap

6 - Connecting bar

- for positive cables

7 - Nut

- 10 Nm

8 - Plus terminal

- to E-box

9 - Screw

- 10 Nm

10 - E box

11 - Side panel

12 - Earth tap

- 20 Nm

13 - Cover

for positive tap

14 - Positive tap

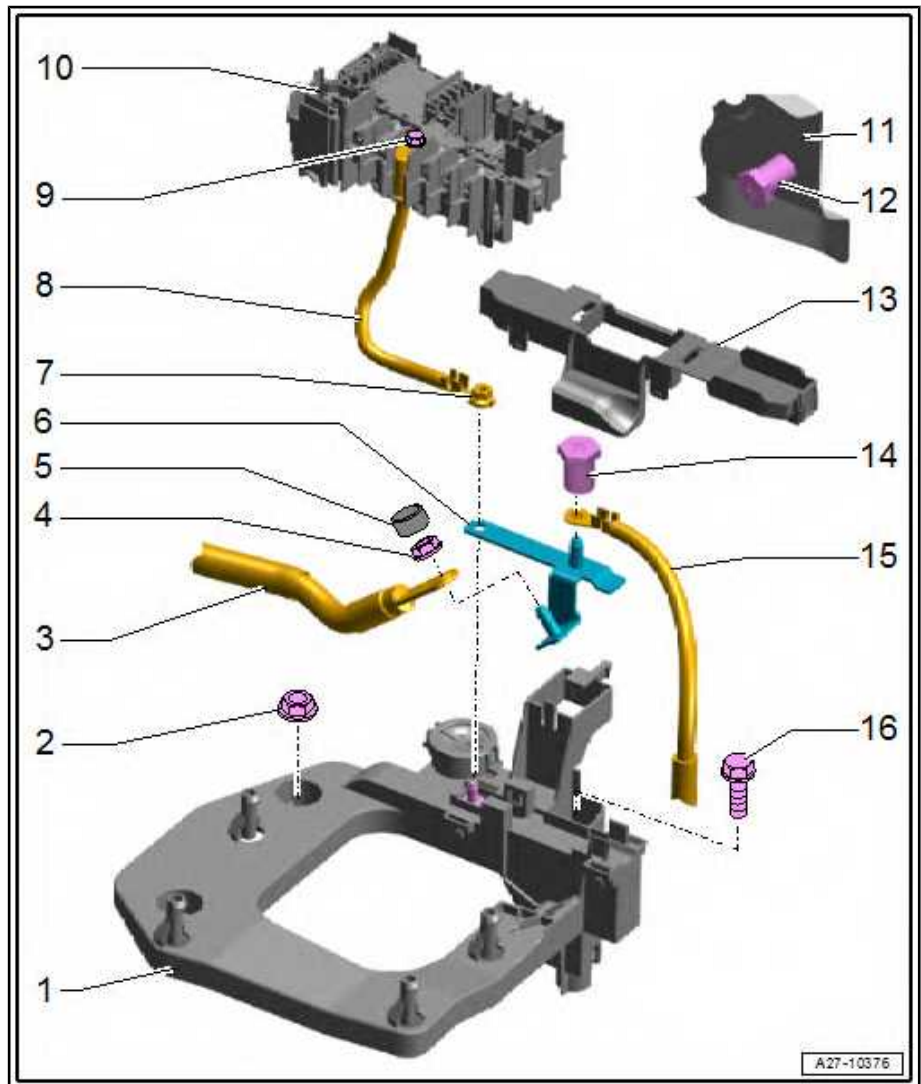
- 20 Nm

15 - Plus terminal

- To starter

16 - Screw

- 20 Nm



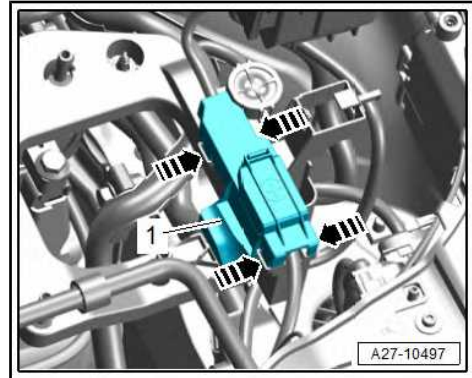
Volkswagen Technical Site: <http://vwts.ru> <http://vwts.info>

2.2 Removing and installing jump start point

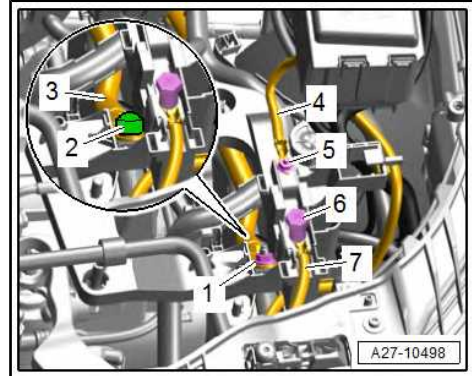
Removing

- Disconnect battery
⇒ [“1.3 Disconnecting and reconnecting battery”, page 10](#) .

- Remove the air filter housing ⇒ Body Work; Rep. gr. 24 .
- Release catches -arrows- and remove cover -1-.



- Unscrew and detach positive tap -6-.
- Disconnect electrical cable -7- and move clear.
- Release cap -2-.
- Unscrew nuts -1- and -5-.
- Disconnect electrical cables -3- and -4- and move clear.



- Unscrew nuts -2-.
- Unscrew bolt -3-.
- Raise mount -1- and disconnect plug connections.
- Move clear the wiring harness and take out mount -1-.

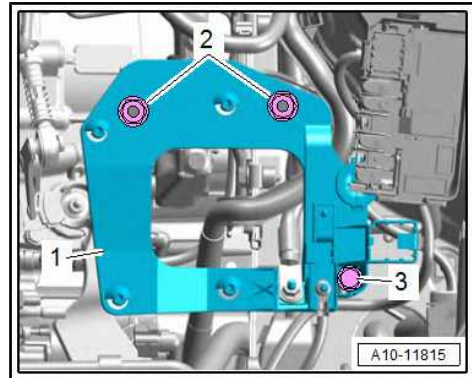
Installing

Installation is performed in the reverse order, pay attention to the following points:

- Connecting battery
⇒ ["1.3 Disconnecting and reconnecting battery", page 10](#) .

Tightening torques

- ◆ ⇒ ["2.1 Summary of components - jump start point", page 23](#)



3 Starter

⇒ [“3.1 Assembly overview: starter”, page 25](#)

⇒ [“3.2 Removing and installing starter”, page 29](#)

⇒ [“3.3 Checking starter”, page 36](#)

3.1 Assembly overview: starter

⇒ [“3.1.1 Assembly overview - starter, vehicles with 5-speed manual gearbox MQ200-5F”, page 25](#)

⇒ [“3.1.2 Assembly overview - starter, vehicles with 5-speed manual gearbox MQ250-5F”, page 26](#)

⇒ [“3.1.3 Assembly overview - starter, vehicles with 6-speed manual gearbox 02U \(MQ200-6F\)”, page 27](#)

⇒ [“3.1.4 Starter, vehicles with 7-speed automatic gearbox 0CW \(DQ200-7F\)”, page 28](#)

3.1.1 Assembly overview - starter, vehicles with 5-speed manual gearbox MQ200-5F

1 - Starter

- Removing and installing
⇒ [“3.2.1 Removing and installing the starter, vehicles with 5-speed manual gearbox \(MQ200-5F\)”, page 29](#)
- Check
⇒ [“3.3 Checking starter”, page 36](#)

2 - Line 30/B+

3 - Nut

- 20 Nm

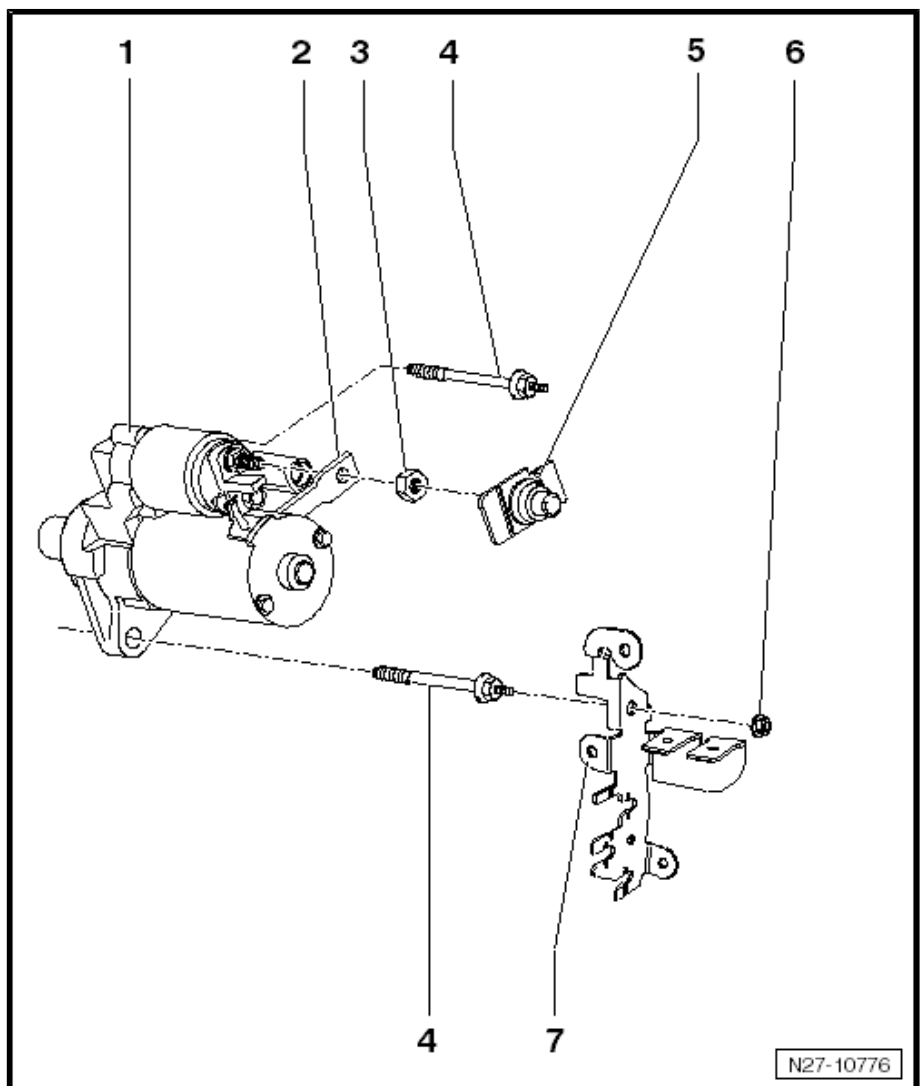
4 - Screw

- 2 pieces
- 80 Nm

5 - Protective cap

6 - Fixing nut for line holder

- 20 Nm



3.1.2 Assembly overview - starter, vehicles with 5-speed manual gearbox MQ250-5F

1 - Starter

- Removing and installing
⇒ [“3.2.2 Removing and installing the starter, vehicles with 5-speed manual gearbox \(MQ250-5F\)”, page 31](#)
- Check
⇒ [“3.3 Checking starter”, page 36](#)

2 - Screw

- 2 pieces
- 80 Nm

3 - Earth cable

- Depends on equipment

4 - Nut

- Depends on equipment
- 20 Nm

5 - Connector

6 - Nut

- 2 pieces
- 20 Nm

7 - Cap

8 - Line 30/B+

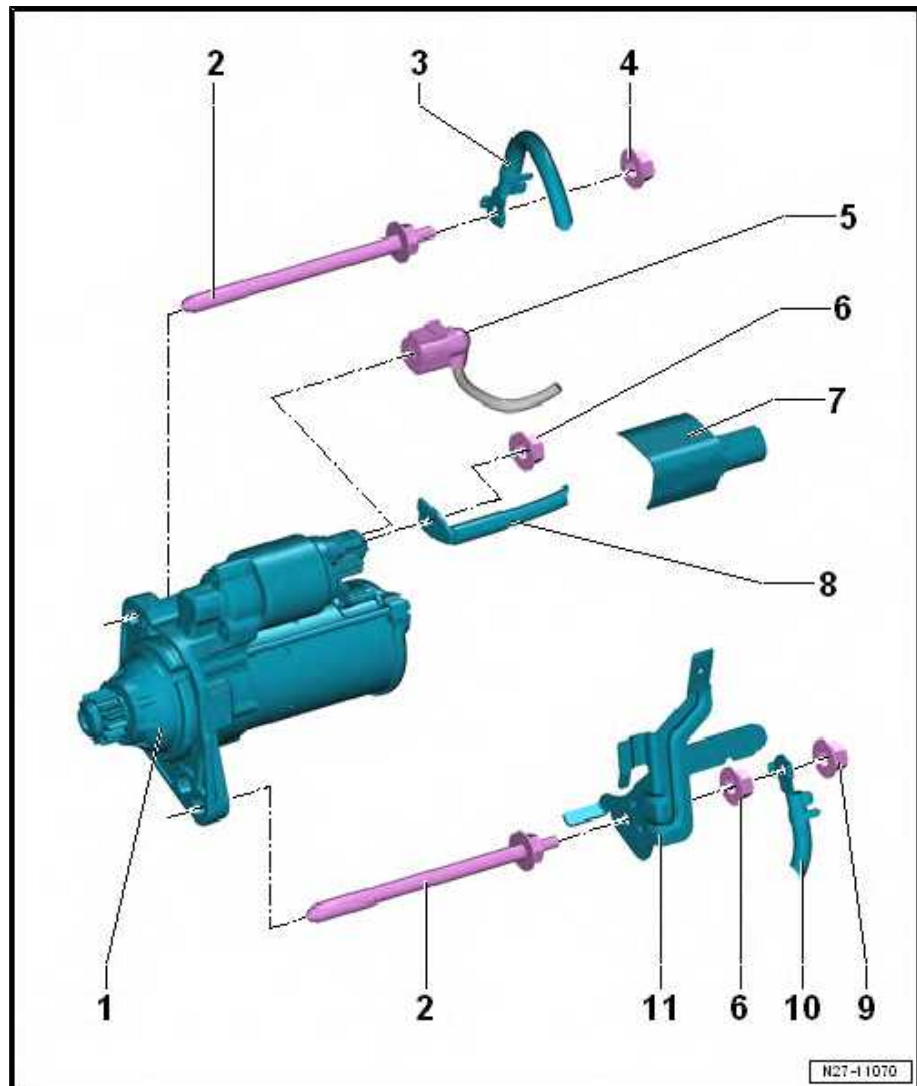
9 - Nut

- Depends on equipment
- 20 Nm

10 - Earth cable

- Depends on equipment

11 - bracket for wire harness



3.1.3 Assembly overview - starter, vehicles with 6-speed manual gearbox 02U (MQ200-6F)

1 - Starter

- Removing and installing
⇒ [“3.2.3 Removing and installing the starter, vehicles with 6-speed manual gearbox \(MQ200-6F\)”, page 33](#)
- Check
⇒ [“3.3 Checking starter”, page 36](#)

2 - Screw

- 2 pieces
- 80 Nm

3 - Connector

4 - Line 30/B+

5 - Nut

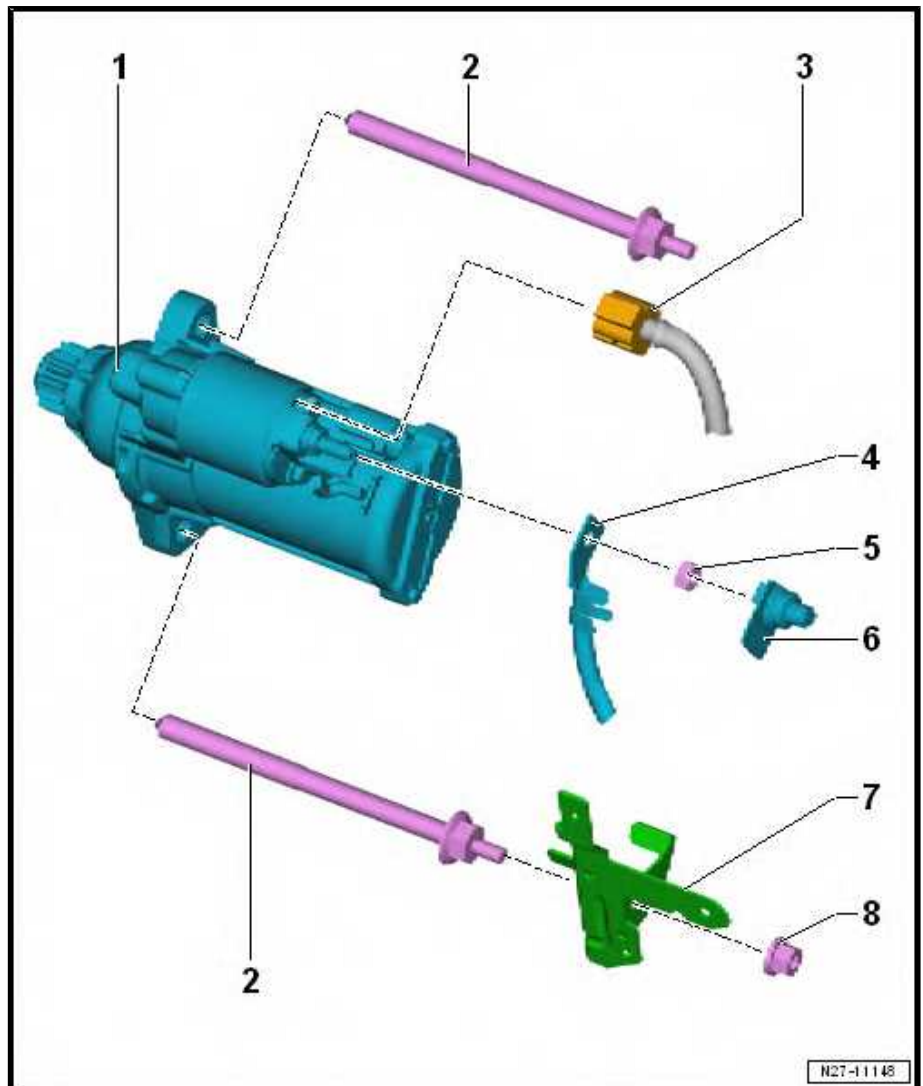
- 20 Nm

6 - Cap

7 - bracket for wire harness

8 - Nut

- 20 Nm





3.1.4 Starter, vehicles with 7-speed automatic gearbox 0CW (DQ200-7F)

1 - Starter

- Removing and installing
⇒ [“3.2.4 Removing and installing the starter - vehicles with automatic gearbox”, page 35](#)
- Check
⇒ [“3.3 Checking starter”, page 36](#)

2 - Screw

- 80 Nm

3 - Earth cable

- Depends on equipment

4 - Nut

- Depends on equipment
- 20 Nm

5 - Connector

6 - Nut

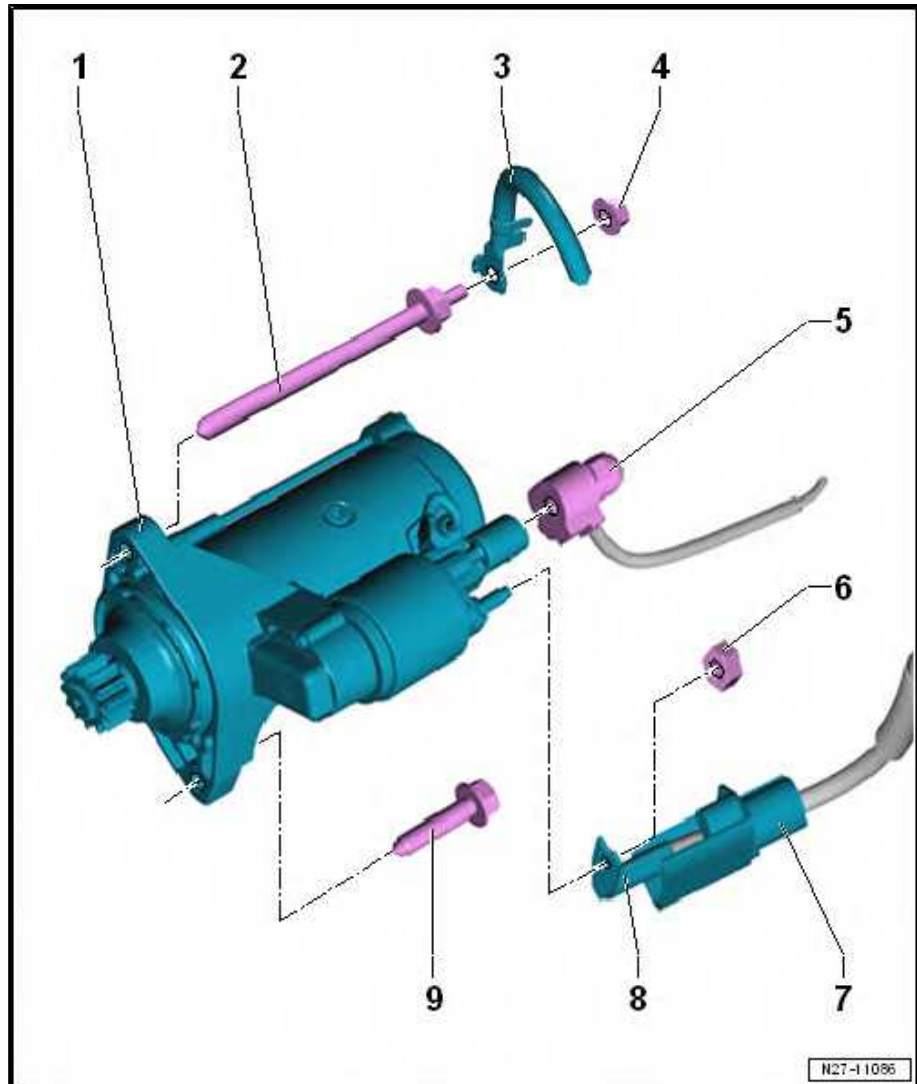
- 20 Nm

7 - Cap

8 - Line 30/B+

9 - Screw

- 80 Nm



3.2 Removing and installing starter

⇒ [“3.2.1 Removing and installing the starter, vehicles with 5-speed manual gearbox \(MQ200-5F\)”, page 29](#)

⇒ [“3.2.2 Removing and installing the starter, vehicles with 5-speed manual gearbox \(MQ250-5F\)”, page 31](#)

⇒ [“3.2.3 Removing and installing the starter, vehicles with 6-speed manual gearbox \(MQ200-6F\)”, page 33](#)

⇒ [“3.2.4 Removing and installing the starter - vehicles with automatic gearbox”, page 35](#)

3.2.1 Removing and installing the starter, vehicles with 5-speed manual gearbox (MQ200-5F)

Note

- ◆ *Due to the higher requirements on the starter when the start/stop system is activated, e.g. in urban traffic/driving, its life has been increased and the ring gear reinforced.*
- ◆ *When carrying out repairs, pay attention to the correct designation of the spare parts (see ⇒ *Electronic Catalogue of Original Parts “ETKA”*). Components adapted to start/stop system are not identified separately and are not or barely different from normal components in their appearance.*

Removing

- Disconnect battery earth strap
⇒ [“1.3 Disconnecting and reconnecting battery”, page 10](#) .
- Engage 5th gear.

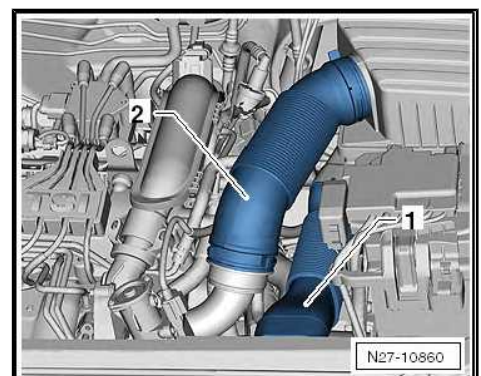
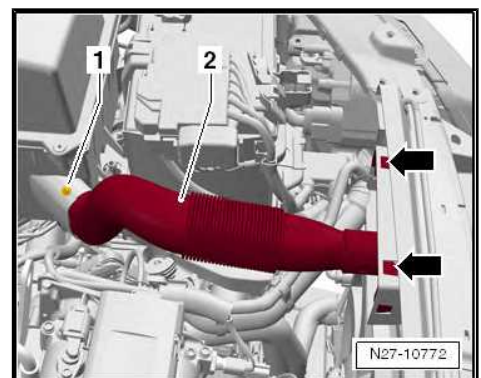
1.2 I and 1.6 MPI engine

- Remove hose -2-.
- Remove screw -1- and release retaining lugs -arrows-.

1.2 TSI engine

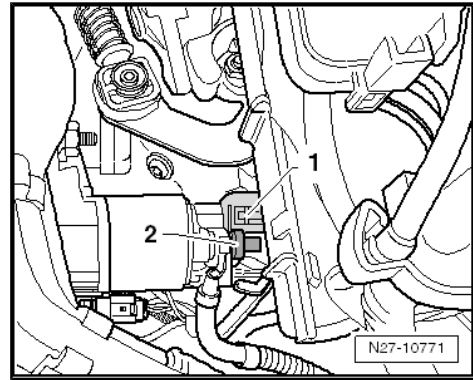
- Remove air exhaust -1- and hose -2-.

Continue for all engines

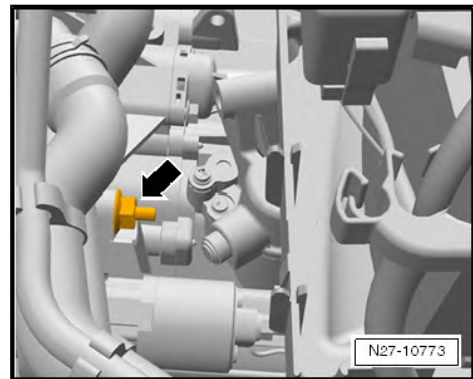




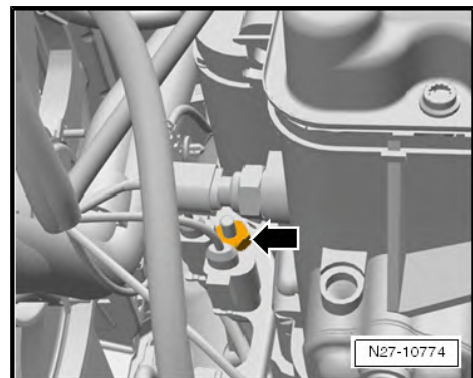
- Unlock and pull off connector -1-.
- Pull off the plastic cap -2-, unscrew nuts, and remove line from terminal 30.



- Unscrew the plug -arrow-.
- Remove noise insulation ⇒ Engine; Rep. gr. 66 .



- Unscrew the nut -arrow- and remove the bracket for the cables.



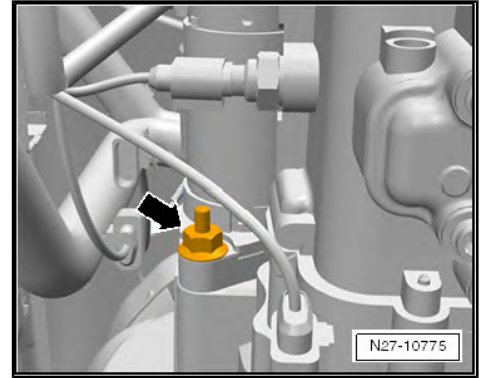
- Unscrew screw -arrow- and take out the starter by moving it downwards.

Installing

Installation is performed in the reverse order, pay attention to the following points:

 **Note**

Always use a new self-locking nut to attach the earth strap and the positive cable (see ⇒ [Electronic Catalogue of Original Parts "ETKA"](#)).



Caution

In an incorrect cable/cable attachment to terminal B+ can cause cable damage, a short-circuit and a vehicle fire.

The cable to terminal B+ must be laid and attached so that it does not come into contact with rotating or moving parts of the assembly (e.g. with the shift mechanism, with rotating parts of the assembly etc.)!

Tightening torques

- ◆ ⇒ ["3.1.1 Assembly overview - starter, vehicles with 5-speed manual gearbox MQ200-5F", page 25](#)

3.2.2 Removing and installing the starter, vehicles with 5-speed manual gearbox (MQ250-5F)

 **Note**

- ◆ *Due to the higher requirements on the starter when the start/stop system is activated, e.g. in urban traffic/driving, its life has been increased and the ring gear reinforced.*
- ◆ *When carrying out repairs, pay attention to the correct designation of the spare parts (see ⇒ [Electronic Catalogue of Original Parts "ETKA"](#)). Components adapted to start/stop system are not identified separately and are not or barely different from normal components in their appearance.*

Removing

- Disconnect battery earth strap
⇒ ["1.3 Disconnecting and reconnecting battery", page 10](#) .

Vehicles with TDI engine:

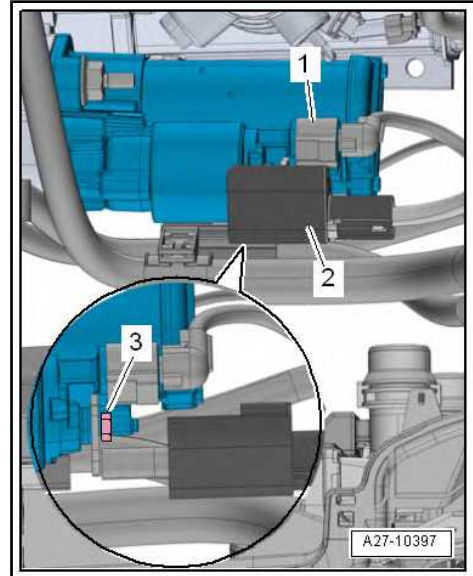
- Remove air filter housing ⇒ Engine; Rep. gr. 23 .

Continued for all engines:

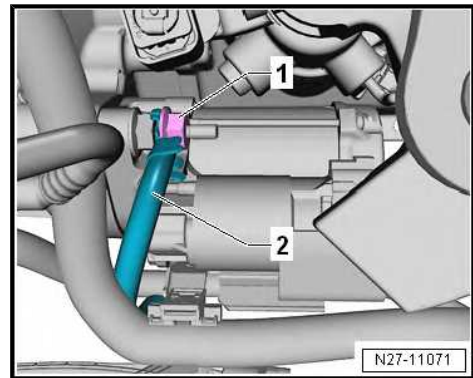
- Remove noise insulation ⇒ Engine; Rep. gr. 66 .



- Disconnect connector -1-.
- Remove protective cap -2-.
- Unscrew nuts -3- and remove line 30/B+.



- Unscrew nuts -1- and remove earth cable -2- (if present).



- Unscrew nuts -4- and remove bracket -1- for wiring harness.
- Unscrew bolts -2- and -5- and remove the starter -3- by moving it downwards.

Installing

Installation is performed in the reverse order, pay attention to the following points:

Note

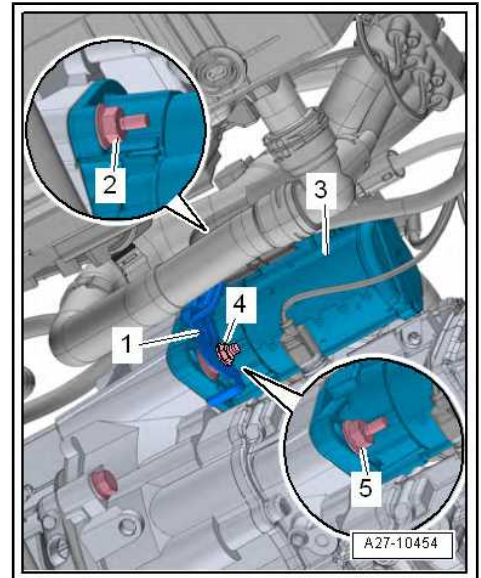
Always use a new self-locking nut to attach the earth strap and the positive cable (see ⇒ *Electronic Catalogue of Original Parts "ETKA"*).



Caution

In an incorrect cable/cable attachment to terminal B+ can cause cable damage, a short-circuit and a vehicle fire.

The cable to terminal B+ must be laid and attached so that it does not come into contact with rotating or moving parts of the assembly (e.g. with the shift mechanism, with rotating parts of the assembly etc.)!



Tightening torques

- ◆ ⇒ ["3.1.2 Assembly overview - starter, vehicles with 5-speed manual gearbox MQ250-5F", page 26](#)

3.2.3 Removing and installing the starter, vehicles with 6-speed manual gearbox (MQ200-6F)

Note

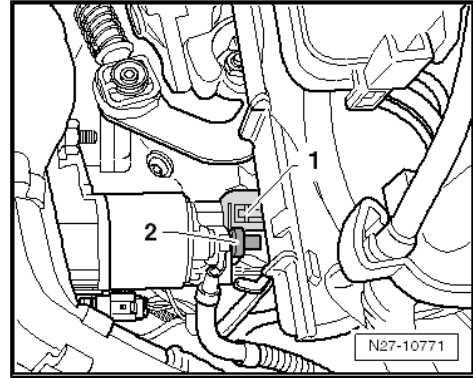
- ◆ *Due to the higher requirements on the starter when the start/stop system is activated, e.g. in urban traffic/driving, its life has been increased and the ring gear reinforced.*
- ◆ *When carrying out repairs, pay attention to the correct designation of the spare parts (see ⇒ *Electronic Catalogue of Original Parts "ETKA"*). Components adapted to start/stop system are not identified separately and are not or barely different from normal components in their appearance.*

Removing

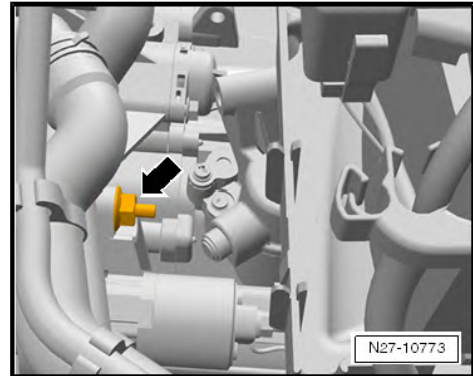
- Disconnect battery earth strap
⇒ ["1.3 Disconnecting and reconnecting battery", page 10](#) .
- Remove noise insulation ⇒ Engine; Rep. gr. 66 .



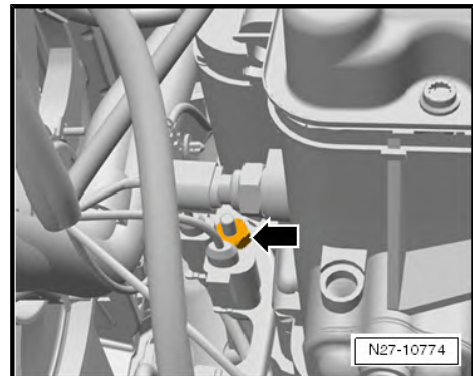
- Disconnect plug connection -1-.
- Unscrew cap -2-, unscrew nuts, and remove line 30/B+.



- Unscrew top screw -arrow-.



- Unscrew nuts -arrow- from the mounting bracket for wire harness.



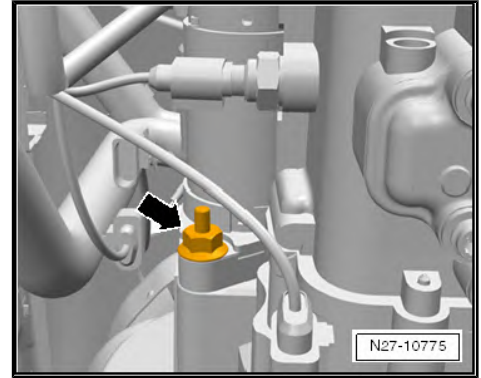
- Screw out bottom fixing screw -arrow- and remove the starter by moving it downwards.

Installing

Installation is performed in the reverse order, pay attention to the following points:

 **Note**

Always use a new self-locking nut to attach the earth strap and the positive cable (see ⇒ [Electronic Catalogue of Original Parts "ETKA"](#)).



 **Caution**

In an incorrect cable/cable attachment to terminal B+ can cause cable damage, a short-circuit and a vehicle fire.

The cable to terminal B+ must be laid and attached so that it does not come into contact with rotating or moving parts of the assembly (e.g. with the shift mechanism, with rotating parts of the assembly etc.)!

Tightening torques

- ◆ ⇒ ["3.1.3 Assembly overview - starter, vehicles with 6-speed manual gearbox 02U \(MQ200-6F\)", page 27](#)

3.2.4 Removing and installing the starter - vehicles with automatic gearbox

 **Note**

- ◆ *Due to the higher requirements on the starter when the start/stop system is activated, e.g. in urban traffic/driving, its life has been increased and the ring gear reinforced.*
- ◆ *When carrying out repairs, pay attention to the correct designation of the spare parts (see ⇒ [Electronic Catalogue of Original Parts "ETKA"](#)). Components adapted to start/stop system are not identified separately and are not or barely different from normal components in their appearance.*

Removing

- Remove battery tray
⇒ ["1.10.1 Removing and installing the battery tray in the engine compartment", page 19](#) .

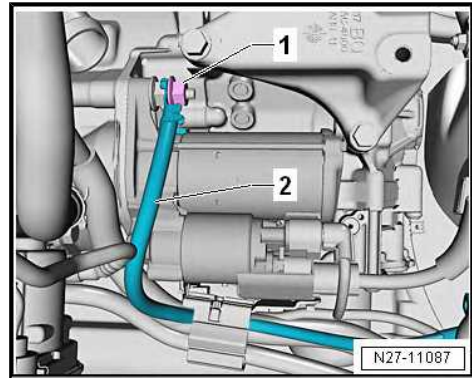
Vehicles with 1.4 I TDI engine:

- Remove air filter housing ⇒ Engine; Rep. gr. 23 .

Continued for all vehicles:



- Unscrew nuts -1- from the top screw and remove the earth points -2- (if present).



- Disconnect plug connection -4-.
- Remove protective cap -5-.
- Unscrew nuts -6- and remove line 30/B+.
- Unscrew bolts -1- and -2- and remove the starter -3- by moving it upwards.

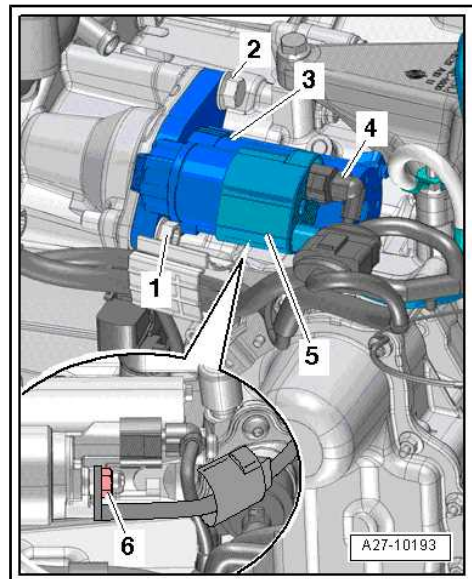
Installing

Installation is performed in the reverse order, pay attention to the following points:



Note

Always use a new self-locking nut to attach the earth strap and the positive cable (see ⇒ *Electronic Catalogue of Original Parts "ETKA"*).



Caution

In an incorrect cable/cable attachment to terminal B+ can cause cable damage, a short-circuit and a vehicle fire.

The cable to terminal B+ must be laid and attached so that it does not come into contact with rotating or moving parts of the assembly (e.g. with the shift mechanism, with rotating parts of the assembly etc.)!

Tightening torques

- ◆ ⇒ ["3.1.4 Starter, vehicles with 7-speed automatic gearbox OCW \(DQ200-7F\)", page 28](#)

3.3 Checking starter

Check starter ⇒ Vehicle diagnostic tester.

4 Alternator

⇒ [“4.1 Removing and installing alternator”, page 37](#)

⇒ [“4.2 Fixing the B+ wire to the AC generator”, page 39](#)

⇒ [“4.3 Checking the carbon brushes of the AC generator”, page 39](#)

⇒ [“4.4 Removing and installing voltage regulator”, page 40](#)

⇒ [“4.5 Removing and installing V-ribbed belt pulley on alternator”, page 41](#)

4.1 Removing and installing alternator



Note

When carrying out repairs, pay attention to the correct designation of the spare parts (see ⇒ [Electronic Catalogue of Original Parts “ETKA”](#)). Components adapted to start/stop system are not identified separately and are not or barely different from normal components in their appearance.

Removing

– Disconnect battery earth strap
⇒ [“1.3 Disconnecting and reconnecting battery”, page 10](#) .

– Remove the V-ribbed belt ⇒ Engine; Rep. gr. 13 .

Vehicles with 1.0/1.2/1.4 TSI and Common Rail engines:

– Remove noise insulation ⇒ Body Work; Rep. gr. 50 .

– If an air conditioning system is installed, remove the AC compressor (do not open the refrigerant circuit) and secure to the side so that the intake hoses are not excessively strained ⇒ Heating, Air Conditioning; Rep. gr. 87 .

– 1.0/1.4;1.6 TSI-CR engine - remove bracket with tensioning pulley ⇒ Engine; Rep. gr. 13 .

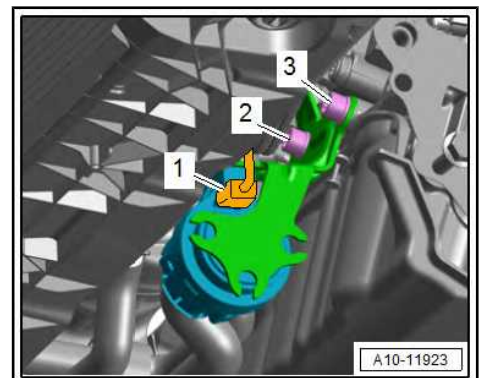
– 1.2 TSI engine - remove guide pulley ⇒ Engine; Rep. gr. 13 .

1.6 TDI-CR engine:

– Unscrew screws -2- and -3- and push charge air cooler pump - V188- to one side.

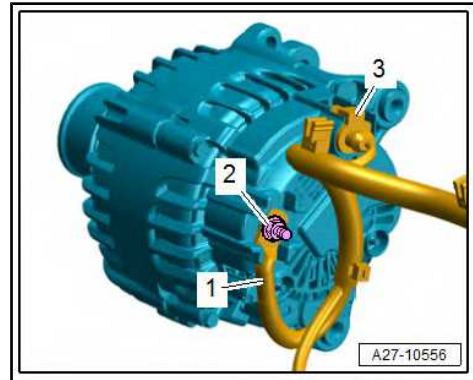
– Remove fan shroud ⇒ Engine; Rep. gr. 19 .

All vehicles:





- Remove the screen cap from the fixing nut of the B+ cable -1-, unscrew the nut -2- and disconnect the electrical cable.
- Disconnect plug connection -3-.
- Unscrew the fixing nut for the cable holder, loosen the cable retaining clip in required and put the cable to the side.



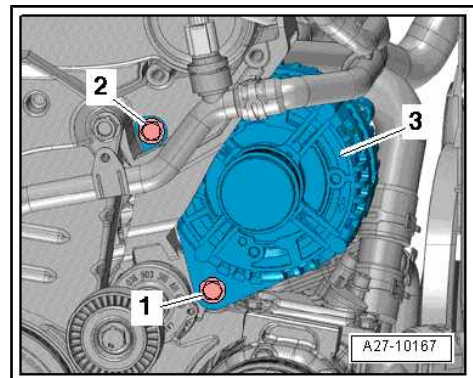
- Remove mounting screws -1- and -2- for generator -3-.
- Vehicles with 1.0/1.2/1.4 TSI and Common Rail engines:
- Remove AC generator downwards.

Other vehicles:

- Remove AC generator upwards.

Installing

Installation is performed in the reverse order, pay attention to the following points:

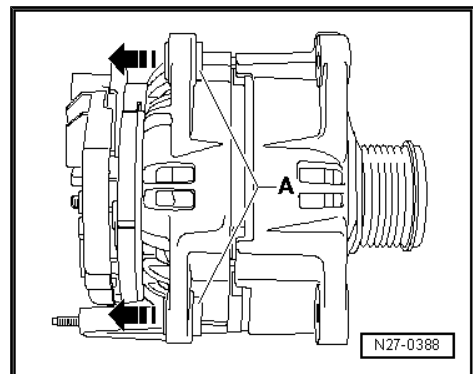


- For easier mounting move the threaded bushes -A- approx. 3 mm -arrows-.



Note

- ◆ *Fix the B+ wire correctly to the AC generator*
⇒ [“4.2 Fixing the B+ wire to the AC generator”, page 39](#).
- ◆ *Pay attention to the work sequence when re-connecting the battery*
⇒ [“1.3 Disconnecting and reconnecting battery”, page 10](#).



Tightening torques

Nut for line holder	3.2 Nm
Fixing screws of the AC generator	23 Nm

4.2 Fixing the B+ wire to the AC generator



Caution

The screw connection for the B+ cable at the generator is identified with B1+!

If the B+ cable is not tightened to the specified tightening torque, this may result in the following risks:

- ◆ *The battery will not charge fully.*
- ◆ *Complete failure of vehicle electronics*
- ◆ *Spark formation may cause a fire*
- ◆ *Damage resulting from overvoltage on electronic components and control units*

The cable to terminal B+ must be laid and attached so that it does not come into contact with rotating or moving parts of the assembly (e.g. with the shift mechanism, with rotating parts of the assembly etc.)!

In an incorrect cable/cable attachment to terminal B+ can cause cable damage, a short-circuit and a vehicle fire.

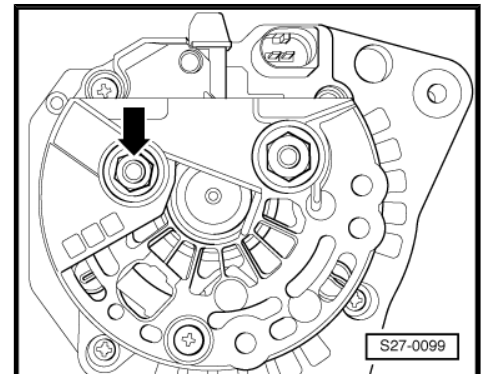


Note

Always use a new self-locking nut for attaching the B+ cable -arrow-, see => Electronic Catalogue of Original Parts "ETKA".

Tightening torques

self-locking nuts for B+ line (-arrow-)	20 Nm
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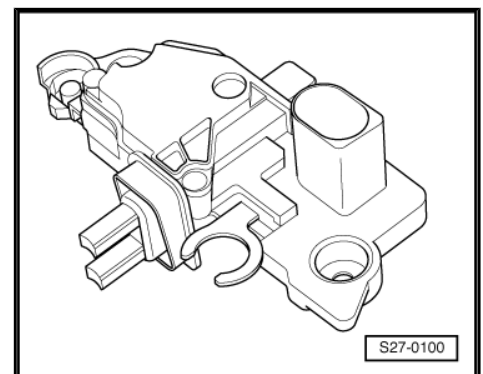


4.3 Checking the carbon brushes of the AC generator

Length of carbon brushes when new = 12 mm

Wear limit = 5 mm

Tolerance of carbon brushes to each other = +1 mm



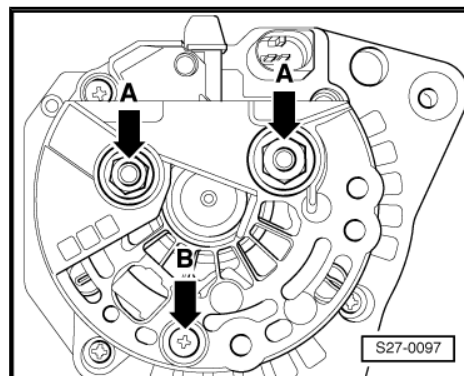
4.4 Removing and installing voltage regulator

⇒ [“4.4.1 Removing and installing the Bosch voltage regulator”, page 40](#)

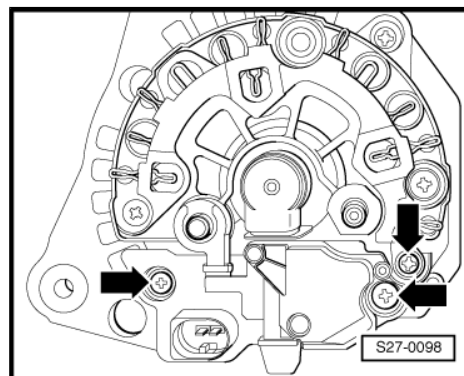
⇒ [“4.4.2 Removing and installing the Valeo voltage regulator”, page 40](#)

4.4.1 Removing and installing the Bosch voltage regulator

- Unscrew the fixing nuts arrows -A- and unscrew and remove the fixing screw arrow -B- of the screen cap.
- Remove cover.

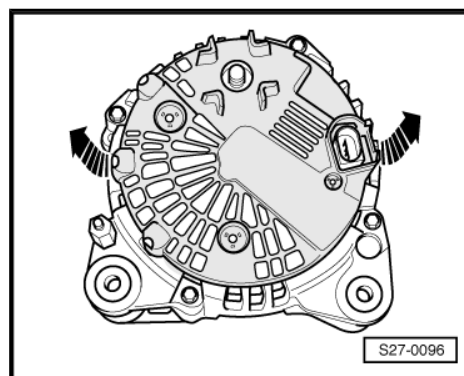


- Unscrew the fixing screws -arrows- of the voltage regulator and remove voltage regulator.
- Installation is carried out in the reverse order.

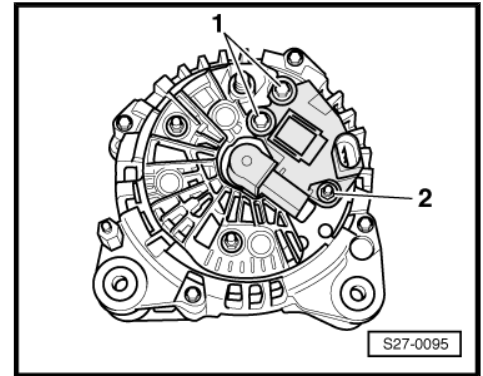


4.4.2 Removing and installing the Valeo voltage regulator

- Press off protective cap on the rear side of the generator -arrows-.



- Release screws -1- and nut -2-.
- Remove voltage regulator.
- Installation is carried out in the reverse order.



4.5 Removing and installing V-ribbed belt pulley on alternator

⇒ [“4.5.1 Removing and installing poly V-belt pulley without free-wheel on alternator”, page 41](#)

⇒ [“4.5.2 Removing and installing the V-ribbed belt pulley with free wheel, manufacturer: Bosch”, page 42](#)

⇒ [“4.5.3 Removing and installing the V-ribbed belt pulley with free wheel, manufacturer: Valeo”, page 43](#)

⇒ [“4.5.4 Removing and installing decoupler pulley”, page 44](#)

4.5.1 Removing and installing poly V-belt pulley without freewheel on alternator

Special tools and workshop equipment required

- ◆ Socket - T30032-

Removing

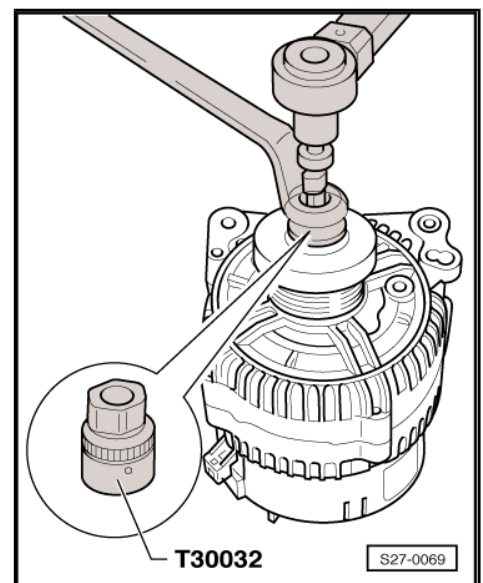
- Remove alternator
⇒ [“4.1 Removing and installing alternator”, page 37](#) .
- Clamp alternator in a vice at securing points.
- Use socket - T30032- to unscrew poly V-belt pulley securing nut from alternator shaft.

Installing

Installation is performed in the reverse order, pay attention to the following points:

Tightening torque

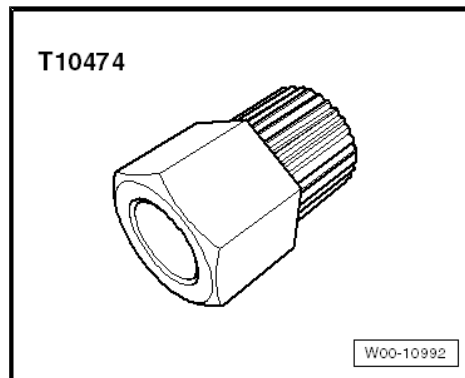
Nuts on V-ribbed belt pulley	65 Nm.
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4.5.2 Removing and installing the V-ribbed belt pulley with free wheel, manufacturer: Bosch

Special tools and workshop equipment required

- ◆ Polygon-head adapter - T10474-



- ◆ Socket drive with 8 mm hexagon socket or TORX T50

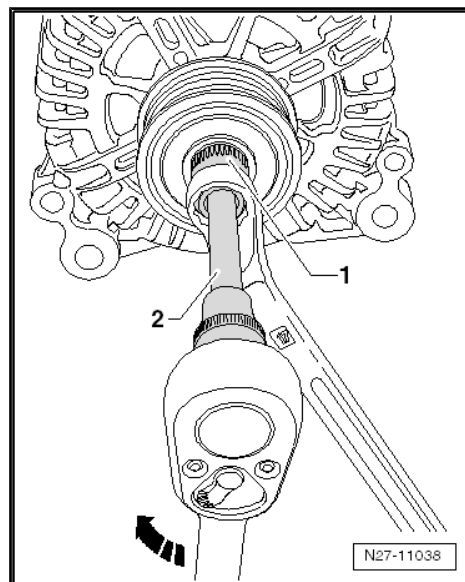
Removing

- Remove alternator
⇒ ["4.1 Removing and installing alternator", page 37](#) .
- Clamp alternator in a vice at securing points.
- Remove protective cap (where there is one) from poly V-belt pulley with freewheel.
- Insert multipoint adapter - T10474- -1- into poly V-belt pulley and fit an open-end spanner (width across flats 17 mm) to it.
- Insert hexagon socket or TORX socket -2- into alternator shaft.
- Turn generator shaft clockwise (left-handed thread) to loosen it, counterholding it with the open-end spanner.
- Hold poly V-belt pulley with freewheel stationary with your hand and turn alternator shaft until poly V-belt pulley with freewheel can be removed.

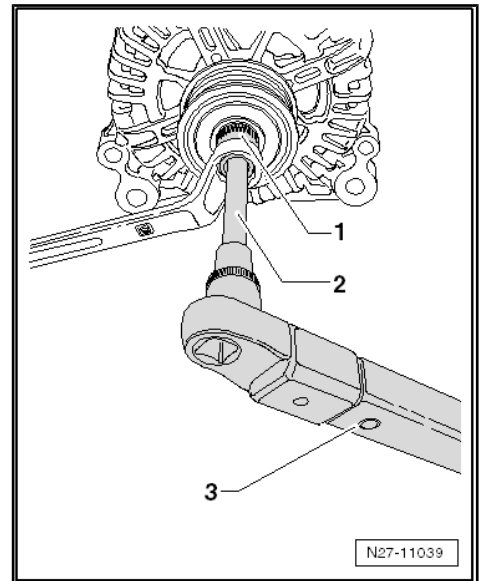
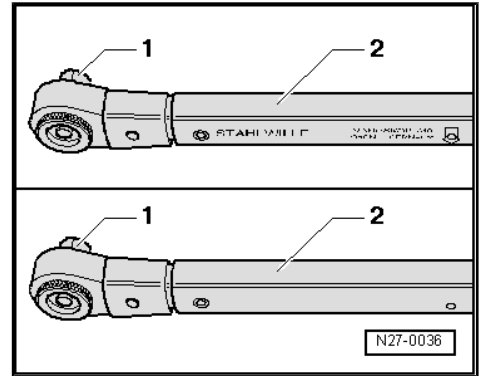
Installing

Installation is performed in the reverse order, pay attention to the following points:

The torque wrench must be modified for assembly of poly V-belt with freewheel as follows:



- Release socket drive -1- and pull off grip -2-.
- Turn torque wrench grip -2- 180° and reinsert socket drive.
- Set turning direction of torque wrench to anti-clockwise at socket drive.
- First screw V-ribbed belt pulley with freewheel onto alternator shaft by hand as far as possible.
- Insert multipoint adapter - T10474- -1- into poly V-belt pulley and fit an open-end spanner (width across flats 17 mm) to it.
- Insert hexagon socket or TORX socket -2- into alternator shaft.
- Turn alternator shaft anti-clockwise using the torque wrench -3- in order to tighten poly V-belt pulley with freewheel.



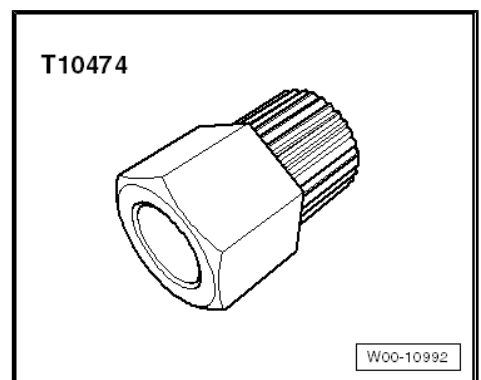
Tightening torque

V-ribbed belt pulley	80 Nm.
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4.5.3 Removing and installing the V-ribbed belt pulley with free wheel, manufacturer: Valeo

Special tools and workshop equipment required

- ◆ Polygon-head adapter - T10474-



- ◆ Socket drive with 8 mm hexagon socket or TORX T50

Removing

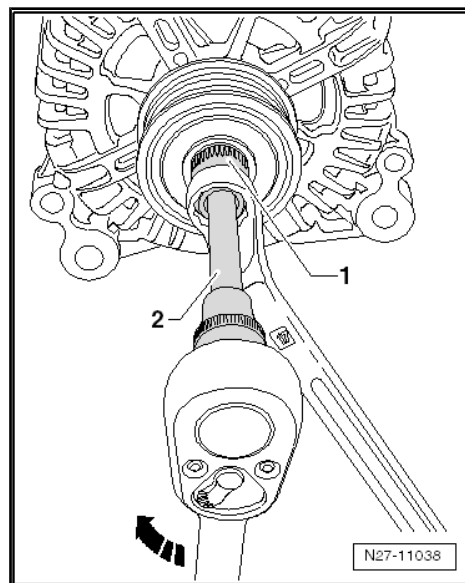
- Remove alternator
⇒ ["4.1 Removing and installing alternator", page 37](#) .
- Clamp alternator in a vice at securing points.
- Remove protective cap (where there is one) from poly V-belt pulley with freewheel.

- Insert multipoint adapter - T10474- -1- into poly V-belt pulley and fit an open-end spanner (width across flats 17 mm) to it.
- Insert hexagon socket or TORX socket -2- into alternator shaft.
- Turn generator shaft clockwise (left-handed thread) to loosen it, counterholding it with the open-end spanner.
- Hold poly V-belt pulley with freewheel stationary with your hand and turn alternator shaft until the poly V-belt pulley can be removed.

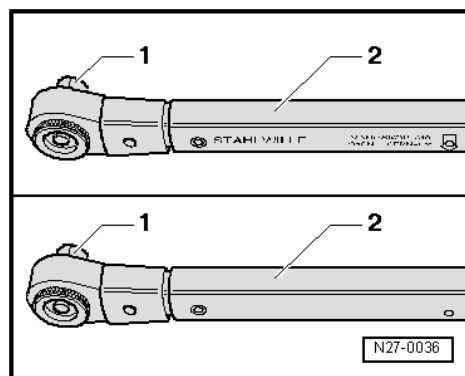
Installing

Installation is performed in the reverse order, pay attention to the following points:

The torque wrench must be modified for assembly of poly V-belt with freewheel as follows:



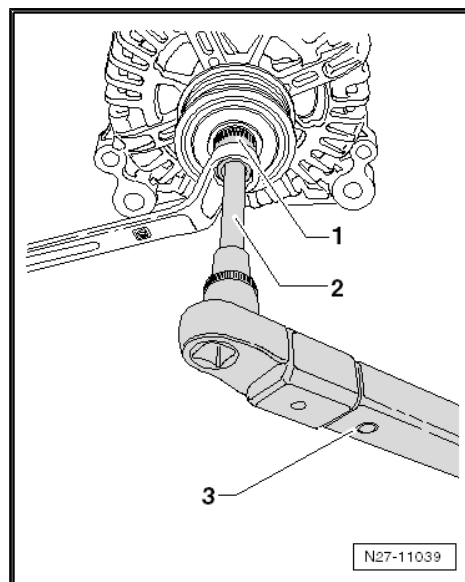
- Release socket drive -1- and pull off grip -2-.
- Turn torque wrench grip -2- 180° and reinsert socket drive.
- Set turning direction of torque wrench to anti-clockwise at socket drive.
- First screw V-ribbed belt pulley with freewheel onto alternator shaft by hand as far as possible.
- Insert multipoint adapter - T10474- -1- into poly V-belt pulley and fit an open-end spanner (width across flats 17 mm) to it.



- Insert hexagon socket or TORX socket -2- into alternator shaft.
- Turn alternator shaft anti-clockwise using the torque wrench -3- in order to tighten poly V-belt pulley with freewheel.

Tightening torque

V-ribbed belt pulley	80 Nm.
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4.5.4 Removing and installing “decoupler pulley”

General description

There are different variants of the decoupler pulley.

Before removing, you must check which removal tool to use to remove the installed decoupler pulley.

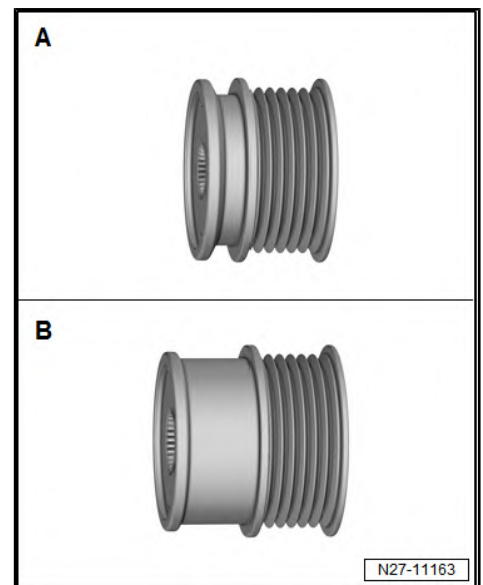
 **Note**

- ◆ *The length of the V-ribbed belt is different, depending on the installed decoupler pulley with freewheel.*
- ◆ *Check the decoupler pulley with freewheel and ensure that the correct poly V-belt is installed.*
- ◆ *For the correct poly V-belt, see the ⇒ [Electronic Catalogue of Original Parts“ETKA”](#).*

Difference between the decouplers

A - Small decoupler pulley with freewheel – use the multipoint adapter - T10474-

B - Large decoupler pulley with freewheel – use the multipoint adapter - MP 1-309 (3400)-



Special tools and workshop equipment required

- ◆ Polygon-head adapter - T10474-
- ◆ Polygon-head adapter - MP 1-309 (3400)-

Removing

- Remove alternator
⇒ [“4.1 Removing and installing alternator”, page 37](#) .
- Clamp alternator in a vice at securing points.
- Remove cap from the poly V-belt pulley.
- Insert multipoint adapter - T10474- -1- or multipoint adapter - MP 1-309 (3400)- into poly V-belt pulley and fit an open-end spanner (width across flats 17 mm) to it.

- Insert hexagon socket or TORX socket -2- into alternator shaft.
- Turn generator shaft clockwise (left-handed thread) to loosen it, counterholding it with the open-end spanner.
- Hold poly V-belt pulley stationary with your hand and turn alternator shaft until the poly V-belt pulley can be removed.

Installing

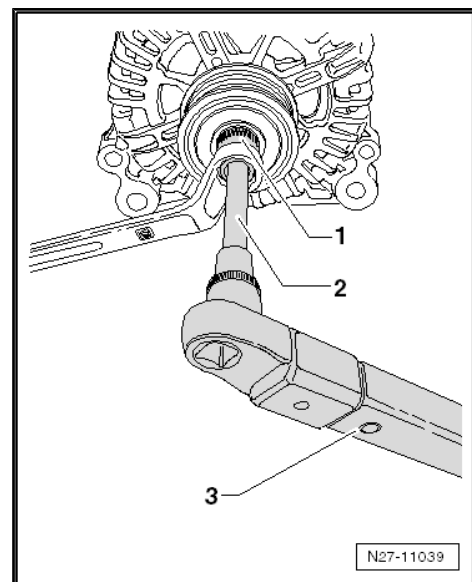
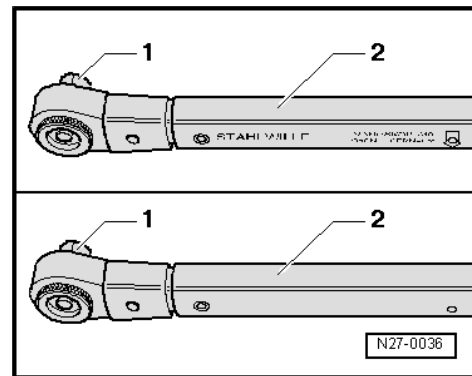
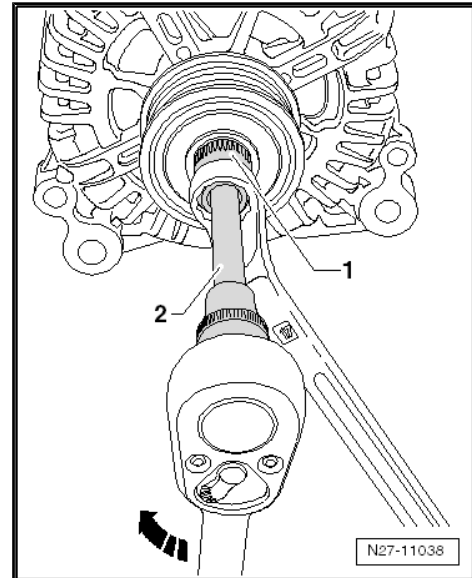
Installation is performed in the reverse order, pay attention to the following points:

The torque wrench must be modified as follows for assembly of the poly V-belt:

- Release socket drive -1- and pull off grip -2-.
- Turn torque wrench grip -2- 180° and reinsert socket drive.
- Set turning direction of torque wrench to anti-clockwise at socket drive.
- First screw poly V-belt pulley onto the alternator shaft by hand as far as possible.
- Insert multipoint adapter - T10474- or multipoint adapter - MP 1-309 (3400)- -1- into the poly V-belt pulley and fit an open-end spanner (width across flats 17 mm) to it.
- Insert hexagon socket or TORX socket -2- into alternator shaft.
- Turn alternator shaft anti-clockwise using the torque wrench -3- in order to tighten the poly V-belt pulley.

Tightening torque

V-ribbed belt pulley	80 Nm.
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5 start-stop system

⇒ [“5.1 Safety precautions for vehicles with start-stop system”, page 47](#)

⇒ [“5.2 General description”, page 47](#)

⇒ [“5.3 Fault recognition and fault display”, page 48](#)

⇒ [“5.4 Battery recharging or starting by external source on vehicles with start-stop system”, page 48](#)

⇒ [“5.5 Replacing the battery on vehicles with start-stop system”, page 48](#)

⇒ [“5.6 Voltage stabiliser J532”, page 49](#)

⇒ [“5.7 Battery monitor control unit J367”, page 49](#)

⇒ [“5.8 Button for start-stop system”, page 50](#)

5.1 Safety precautions for vehicles with start-stop system



Caution

Risk of injury from automatic engine start.

- ◆ *On vehicles with activated start-stop system (recognizable by a message in the dash panel insert) there is a risk that the engine can start automatically.*
- ◆ *It is therefore necessary to ensure that the start-stop system is deactivated when carrying out work on the vehicle (switch ignition off, if required switch ignition on again).*

5.2 General description

The start-stop system is designed to reduce fuel consumption and thus contributes to the reduction of pollutant emissions.

For this purpose the engine automatically switches off during standstill phases of the vehicle and restarts automatically or when operating the clutch pedal.

The system is always automatically activated when the ignition is switched on and can be deactivated with the “start-stop” button in the centre console.

Detailed description of the function as well as conditions for the operation of the start-stop system see:

- ◆ ⇒ Self-study programme No. 86 ; Start-stop system in Škoda vehicles
- ◆ ⇒ Operating instructions Rapid

Connection diagram of the start-stop system ⇒ Current flow diagrams, Electrical fault finding and Fitting locations.

**Note**

- ◆ *The components adapted for the start-stop system are not specifically designated and differ only slightly from the usual components (e.g. starter, generator).*
- ◆ *When carrying out repairs, pay attention to the correct designation of the spare parts see ⇒ *Electronic Catalogue of Original Parts "ETKA"* .*

5.3 Fault recognition and fault display

The start-stop system is implemented in the software of the engine control unit - J623- as a function.

The engine control unit is equipped with self-diagnosis, which facilitates the fault finding.

For fault finding use the ⇒ Vehicle diagnostic tester in the function "Targeted fault finding".

5.4 Battery recharging or starting by external source on vehicles with start-stop system

When recharging or jump start on vehicles with start/stop system, observe the following:

Do not disconnect the earth strap of the battery when recharging.

First of all connect to the positive terminals using the charge or jump leads; then connect to the body mass (do not connect to the negative terminal of the battery).

**Note**

- ◆ *The direct charging (starting aid) of the battery at the negative terminal results in the bypass of the battery monitoring control unit - J367- (then the current flow is not monitored by this control unit).*
- ◆ *The values regarding the battery state, which are stored in the data bus diagnostic interface - J 533- (Gateway), would then no longer correspond to the values of the charged battery.*
- ◆ *This can lead to the failure of the start-stop system.*
- ◆ *Testing and charging the battery ⇒ *Electrical System – General notes; Rep. gr. 27* . If a note cannot be accessed, open the Workshop Manual "*Electrical System - General Notes*" manually in "*ELSA*", Section "*27*".*

5.5 Replacing the battery on vehicles with "start-stop" system

AGM (Absorbent Glass Mat) batteries or batteries with a magic eye with EFB technology (Enhanced Flooded Battery) are installed in vehicles with start-stop system.

When replacing the battery, only install a fleece battery (AGM) or a battery with EFB technology with the same capacity (see ⇒ *Electronic Catalogue of Original Parts "ETKA"*).

When replacing the battery with a new one, another type of battery or a battery of a higher capacity you must set the battery parameters, see ⇒ ["1.9 Battery parameterisation", page 19](#) .

For a description of function, testing and charging individual batteries see ⇒ Electrical System - General notes; Rep. gr. 27 . If a note cannot be accessed, open the Workshop Manual “Electrical System - General Notes” manually in “ELSA”, Section “27”.

5.6 Voltage stabiliser - J532-

The voltage stabilizer - J532- is located under the front passenger seat.

Its task is to stabilise the high voltage drop of the on-board power supply, resulting from the start-stop operation, to 12 volts.

If it becomes apparent that the electrical consumers (such as radio/navigation, telephone, dash panel insert) must be reset at each engine start, while operating the start-stop system, this indicates that the voltage stabilizer is defective.

If the above mentioned electrical consumers fail at the same time, first of all check the fuse of the voltage stabilizer see ⇒ Current flow diagrams, Electrical fault finding and Fitting locations.

A direct entry relating to a malfunction of the voltage stabilizer via ⇒ Vehicle diagnostic tester is not made at present.

Removing

- Switch off the ignition and all electrical consumers!
- Remove front passenger seat ⇒ Body Work; Rep. gr. 72 .

Rapid:

- Remove trim panel at bottom of pillar A, B and C ⇒ Body Work; Rep. gr. 70 .

Spaceback:

- Remove trim panel at bottom of pillar A and B and the sill panel ⇒ Body Work; Rep. gr. 70 .

All vehicles:

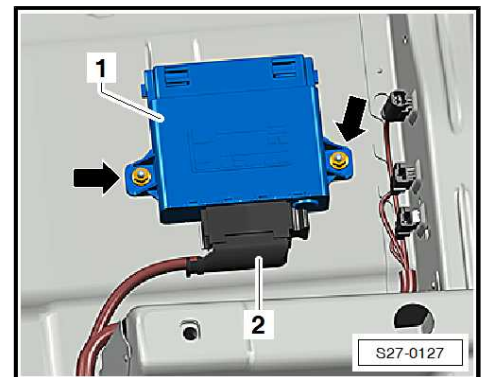
- Lift up the carpet and the damper cover.
- Unscrew screws -arrows-.
- Disconnect the plug -2- and remove the voltage stabiliser -1-.

Installing

Installation is carried out in the reverse order.

Tightening torques

Fixing nut for stabiliser	3 Nm
---------------------------	------



5.7 Battery monitor control unit - J367-

The control unit is located directly at the negative connection terminal of the battery earth strap.

It transmits information on whether the battery has enough electric power for the operation of the start-stop system.

It is connected to the data bus diagnostic interface - J533- (Gateway) via the LIN data bus.

In the event of a failure, an entry is made in the event memory. The start-stop system is switched off.



After replacing the battery monitoring control unit - J367- , perform the adaptation (coding) with ⇒ Vehicle diagnostic tester.

5.8 Button for start-stop system

Removing and installing the button for the start-stop system
⇒ ["2.11 Removing an installing the push-button for tyre pressure inspection", page 212](#) .

6 Front Assistant

⇒ [“6.1 Installation location overview - Front Assistant”, page 51](#)

⇒ [“6.2 Removing and installing front assistant system control unit”, page 52](#)

⇒ [“6.3 Removing and installing the retaining plate of the front assistant system control unit”, page 52](#)

⇒ [“6.4 Calibrating the front assistant system”, page 54](#)

6.1 Installation location overview - Front Assistant

1 - Dash panel insert

- with control unit in dash panel insert - J285-

2 - Nut

- 2 pieces
- 8 Nm

3 - Cover

4 - Connector

5 - Control unit for clearance control - J428-

- Removing and installing
⇒ [“6.2 Removing and installing front assistant system control unit”, page 52](#)
- Calibration
⇒ [“6.4 Calibrating the front assistant system”, page 54](#)

6 - Holder for control unit for clearance control - J428-

- On the new part, the pin bolts -Pos. 8- are pre-configured in the base position

7 - Adjusting screw

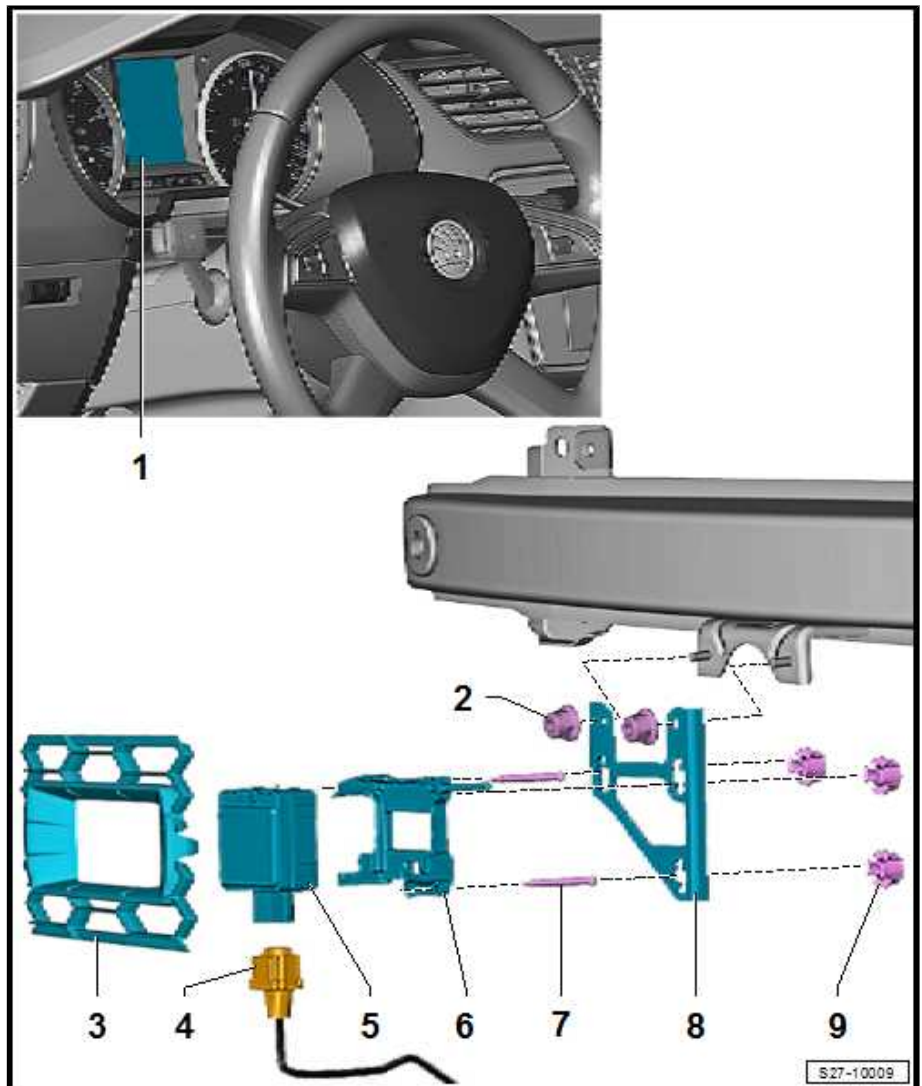
- Adjustment bolts for control unit for clearance control - J428-
- 2 pieces

8 - Retaining plate

- Removing and installing
⇒ [“6.3 Removing and installing the retaining plate of the front assistant system control unit”, page 52](#)

9 - Quick-release fitting

- 3 pieces
- Replace after removal



6.2 Removing and installing front assistant system control unit

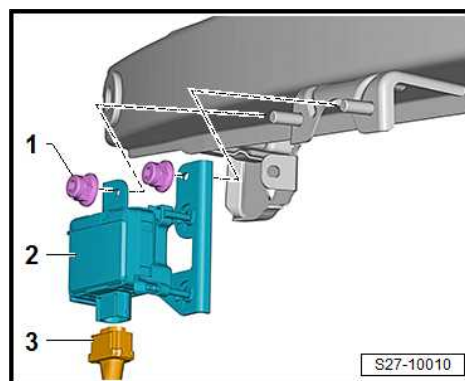


Note

When replacing the control unit for clearance control - J428- , connect ⇒ Vehicle diagnostic tester and, in the operating mode "Targeted fault finding" or "Targeted functions", select the function "Replace relevant control unit".

Removing

- Switch off the ignition and all electrical consumers!
- Remove control unit cover from the grid in the front bumper.
- Unscrew nuts -1- and remove the unit -2- with retaining plate and plug -3-.



- Where necessary, remove locking lugs -arrows A-, tilt out control unit -1- -arrow B- and push out from the holder -3-.
- Disconnect plug connection -2-.

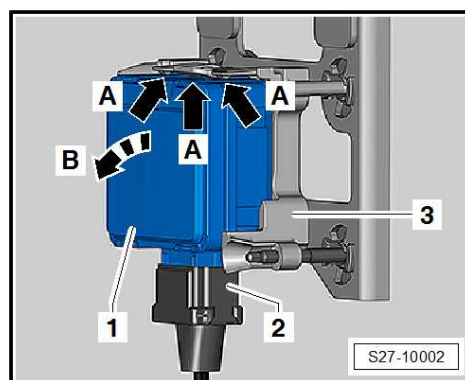
Installing

Installation is performed in the reverse order, pay attention to the following points:

- Calibrate the front assistant system
⇒ ["6.4 Calibrating the front assistant system", page 54](#) .

Tightening torques

- ◆ ⇒ ["6.1 Installation location overview - Front Assistant", page 51](#)



6.3 Removing and installing the retaining plate of the front assistant system control unit

Removing

- Remove clearance control control unit - J428-
⇒ ["6.2 Removing and installing front assistant system control unit", page 52](#) .

- Unlock quick-release fittings -2- by rotating it -arrow-.
- Disconnect quick-release fittings -2- from the adjusting screws -1-.
- Remove retaining plate -3- from the control unit -4-.

Installing

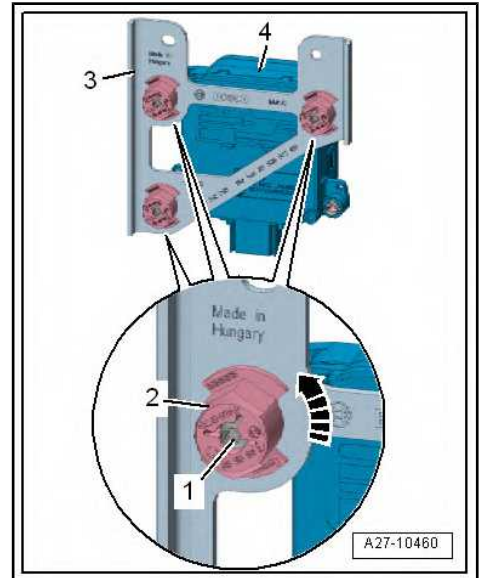
Installation is performed in the reverse order, pay attention to the following points:

- Replace quick-release fittings -2-.



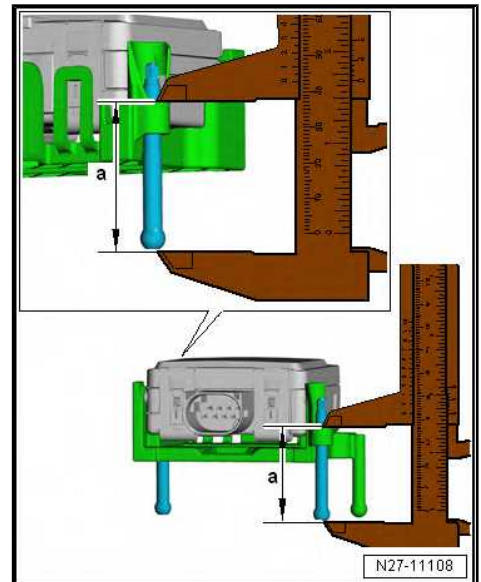
Note

The adjusting screws -1- in the new retaining plate are already pre-adjusted. If necessary, correct the adjustment => [page 53](#) .

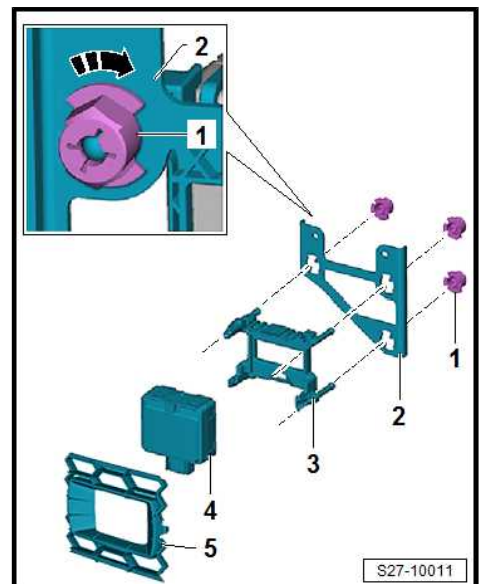


Adjusting the adjusting screws

- Measure the adjustment dimension -a- on all adjusting screws with a calliper gauge and adjust if necessary.
- ◆ Dimension -a- is 40.3 mm ± 0.5mm.



- Push new quick-release fittings -1- onto the adjusting screws on the retaining plate -3-.
- Place the retaining plate -3- with the quick-release fittings onto the bracket -2-.
- Secure the quick-release fittings -2- on the rear side of the bracket -1- by turning to the stop in -direction of arrow-.
- Removing clearance control control unit - J428-
=> ["6.2 Removing and installing front assistant system control unit", page 52](#) .
- Fit cover -5-.
- Calibrate automatic distance control
=> ["6.4 Calibrating the front assistant system", page 54](#) .





6.4 Calibrating the front assistant system

Work procedure to calibrate the front assistant system ⇒ Chassis;
Rep. gr. 44 .

90 – Gauges, instruments

1 Dash panel insert

⇒ [“1.1 General description”, page 55](#)

⇒ [“1.2 The self-diagnostic function of the dash panel insert”, page 56](#)

⇒ [“1.3 Adjust/replace dash panel insert”, page 56](#)

⇒ [“1.4 Removing and installing the dash panel insert”, page 56](#)

⇒ [“1.5 Contact assignment of plug connection on the dash panel insert”, page 57](#)

⇒ [“1.6 Warning lights in the dash panel insert”, page 57](#)

⇒ [“1.7 Service interval display”, page 58](#)

1.1 General description



Note

When handling a fault it is absolutely essential to know the functions, the setting and the operation of the dash panel insert. Detailed description of the function of the dash panel insert, the setting and the operation ⇒ Owner's manual Rapid .

The dash panel insert is supplied in three versions:

Basic design:

The dash panel insert is only fitted with two analogue indicators (speed and rev counter). In-between there is the central display with the following functions:

- ◆ Fuel gauge
- ◆ Clock
- ◆ Total trip counter and trip counter
- ◆ Service intervals

used warning lights and detailed description of the function
⇒ [“1.6 Warning lights in the dash panel insert”, page 57](#) .

Dash panel insert with multifunction display:

Compared to the basic design, this one also has a multifunction display with onboard computer and display for automatic gearbox (vehicles with automatic gearbox). The speed counter and the rev counter have a silver bordering.

Dash panel insert with maxi DOT display:

In this version the dash panel insert also has an analogous coolant temperature and fuel gauge which is located in the lower part of the rev and speed counter. The upper warning light display is replaced by a display with total trip counter and trip counter, clock and service intervals. In the maxi DOT display the following warning lights are replaced by a symbol and text display:

- ◆ Fuel reserve
- ◆ Coolant temperature / deficit
- ◆ Oil pressure / oil level



- ◆ Washwater deficit
- ◆ Door and tailgate warning
- ◆ Diesel particle filter
- ◆ Immobiliser
- ◆ Brake pad wear
- ◆ Automatic gearbox lock

1.2 The self-diagnostic function of the dash panel insert

The dash panel insert is controlled by a microprocessor and features a comprehensive self-diagnosis. If faults occur in the system components, fault codes are stored in the event memory of the dash panel insert.

Perform "self-diagnosis and coding" ⇒ Vehicle diagnostic tester.

1.3 Adjust/replace dash panel insert

⇒ Vehicle diagnostic tester connect on-line (network connection).

If the dash panel insert is replaced, the ⇒ Vehicle diagnostic tester must be connected before removing the original dash panel insert and "replace dash panel insert" must be selected in the guided functions. Thereby the required values for the new dash panel insert must be read into the diagnostic unit from the original dash panel insert. If the original dash panel insert is not available or does not communicate with the diagnostic unit, then proceed according to the information in the ⇒ Vehicle diagnostic tester

After installing the new dash panel insert, adapt all ignition keys and check that the infotainment/radio is functioning.

To check infotainment/radio is functioning or perform adaptation, see ⇒ ["2.3 Electronic anti-theft coding", page 65](#) (up to CW 21.2015) or ⇒ ["3.7 Electronic anti-theft coding", page 79](#) (from CW 22.2015).

1.4 Removing and installing the dash panel insert

Adjust/replace dash panel insert

⇒ Vehicle diagnostic tester connect online.

If the dash panel insert is replaced, the ⇒ Vehicle diagnostic tester must be connected before the removal of the original dash panel insert and must be confirmed in the "Replace control unit" Guided Functions of the applicable control unit. Thereby, the required values are read into the diagnostic unit from the original dash panel insert. If the original dash panel insert is not available or does not communicate with the diagnostic unit, then proceed according to the information in the ⇒ Vehicle diagnostic tester

After fitting the new dash panel insert, adapt all ignition keys.



Note

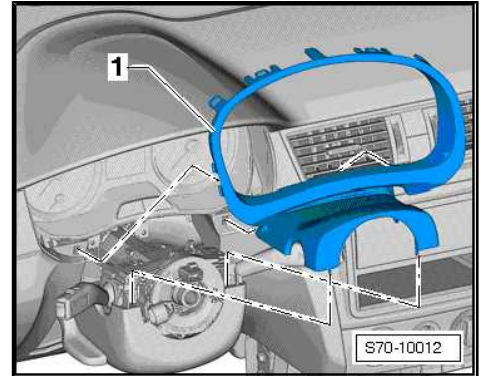
Vehicles with interface for access and start system (keyless start authorisation) - when teaching the keys according to the instructions in the ⇒ Vehicle diagnostic tester process.

Special tools and workshop equipment required

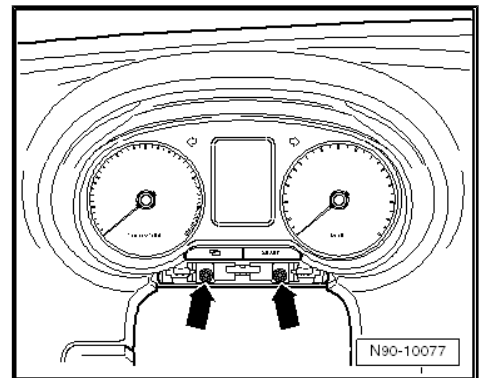
- ◆ Assembly device - T10389- or -3370-

Removing

- Pull steering wheel out fully and lock it in its lowest position.
- Remove panel protection shield with top steering column cover -1-.



- Unscrew screws -arrows-.
- With assembly tool - T10389- or -3370- slide the panel out of the mounting opening. When pushing out, push the panel towards the steering column.



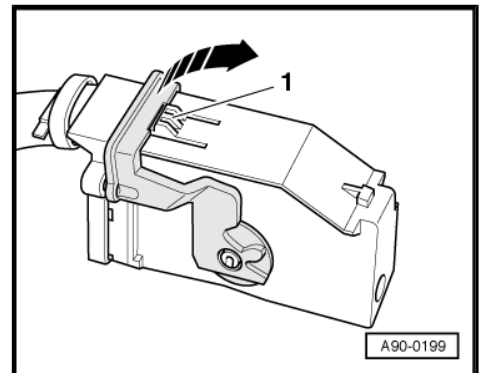
- Press the catch -1- and disconnect the connector by tilting out the clamp -arrow-.

Installing

Installation is performed in the reverse order, pay attention to the following points.

Tightening torques

Fixing screws for dash panel insert	1.5 Nm
-------------------------------------	--------



1.5 Contact assignment of plug connection on the dash panel insert

The contact assignment of the plug connections on the dash panel insert can be found under ⇒ Current flow diagrams, Electrical fault finding and Fitting locations.

1.6 Warning lights in the dash panel insert

Detailed description of the function of the warning lights can be found in the ⇒ Owner's manual Rapid .

**Note**

- ◆ *The dash panel insert must not be disassembled.*
- ◆ *All warning lights are designed as LEDs. The dash panel insert must be replaced if a warning/indicator light breaks down.*
- ◆ *The assignment of the warning lights depends upon the vehicle equipment, the country and the engine versions.*

1.7 Service interval display

Operation

The electronic control of the service interval display consists of:

- ◆ a time counter
- ◆ two distance counters

The electronic control evaluates the contents of the counters so that the customer is informed after a defined period of time has elapsed or after a defined distance has been reached by the service interval display that a service is required (depending on what comes first).

Reset service interval display ⇒ Maintenance ; Booklet Rapid .



2 Cruise control system (CCS)

The engine control unit controls the function of the CC on vehicles which have a cruise control.

Apart from the CCS control switch in the left steering-column switch there are no additional components of the CCS.

CCS connection can be found in ⇒ Current flow diagrams, Electrical fault finding and Fitting locations.



91 – Radio, telephone, navigation

1 Radio - installed up to CW 21.2015

⇒ [“1.1 General Instructions”, page 60](#)

⇒ [“1.2 Electronic anti-theft coding”, page 60](#)

⇒ [“1.3 Summary of components - radio”, page 61](#)

⇒ [“1.4 Removing and installing a radio”, page 62](#)

⇒ [“1.5 Plug connections on the radio”, page 64](#)

⇒ [“1.6 Self-diagnostic function of radio system”, page 64](#)

1.1 General Instructions



Note

- ◆ *When retrofitting equipment, carrying out repair work or fault finding ⇒ Installation Instructions for the radio and ⇒ Current flow diagrams, Electrical fault finding and Fitting locations.*
- ◆ *Detailed assembly information, e.g. detaching and attaching trim panels ⇒ Body Work; Rep. gr. 70 .*
- ◆ *Additional information ⇒ Operating Instruction of the radio .*

1.2 Electronic anti-theft coding

The radio system is equipped with Convenience electronic anti-theft lock, which operates in combination with the dash panel insert.

The radio systems are protected with an anti-theft code.

For radio systems mounted at the factory the safety code is only entered in the respective vehicle when it is initial setup. The safety code does no longer have to be re-entered when subsequently disconnecting and re-connecting the battery or when removing and re-installing the radio system in the same vehicle. If the radio system is installed in another vehicle or the dash panel insert is replaced, the safety code must be entered again.

The radio systems in the vehicles are locked at the factory before delivery to the dealers.

Before the vehicle is handed over to the customer, the anti-theft code of the radio must be deactivated by entering a safety code.

The safety code can be read via the online connection with ⇒ Vehicle diagnostic tester (network connection).

The user must have a valid authorisation for the use of a programme to determine the radio coding.

Additional information ⇒ Operating Instruction of the radio .

i Note

- ◆ If an incorrect safety code is entered, it can be corrected immediately at the next attempt. If an incorrect safety code is entered once again, the radio is blocked for 1 hour.
- ◆ After one hour has elapsed, during which the radio as well as the ignition must remain switched on (the time which has elapsed since the lock was activated is shown in the display of the radio), the procedure for deactivating the electronic anti-theft coding can be repeated (always two attempts, then locked for one hour).

1.3 Summary of components - radio

i Note

The number and the design of the components depend on the vehicle equipment and on the model year.

1 - Multi-functional steering wheel

- Description, removing and installing
⇒ [“6 Multi-functional steering wheel”](#), page 94

2 - Radio

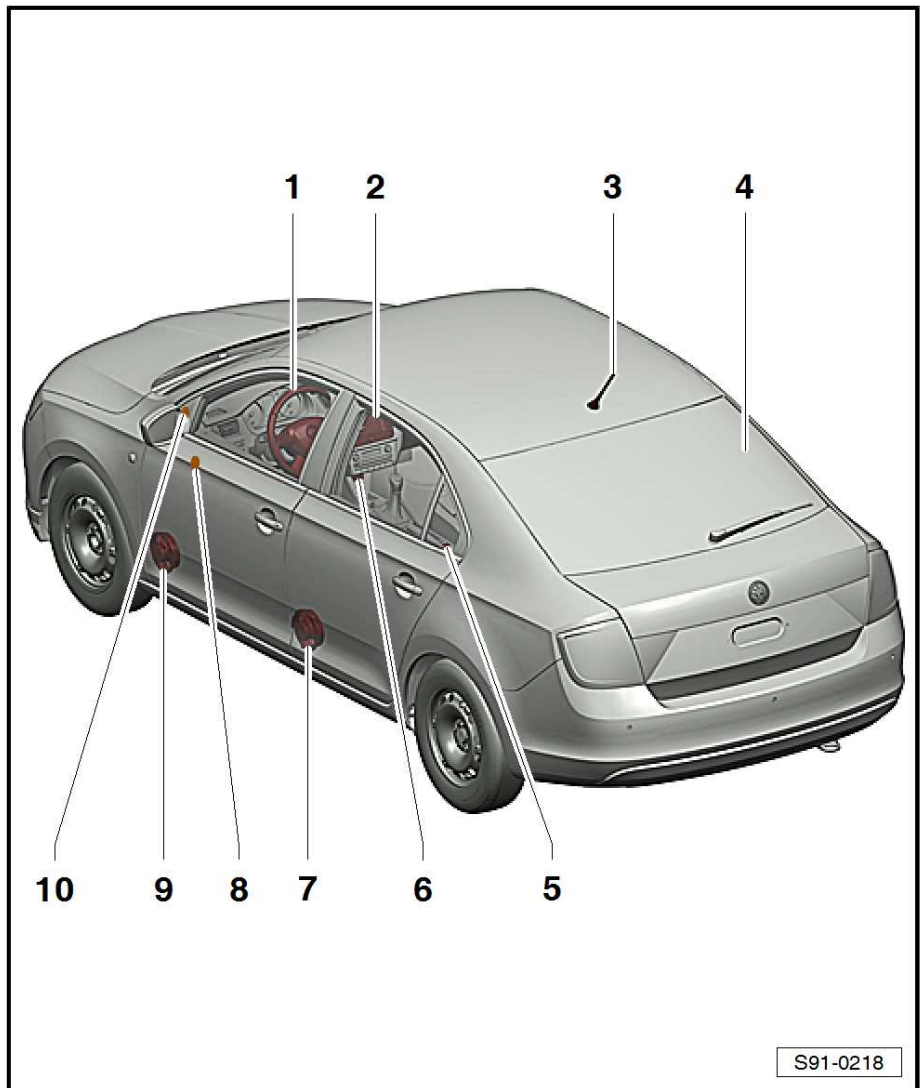
- installed in centre console
- Removing and installing
⇒ [“1.4 Removing and installing a radio”](#), page 62
- Plug connections on the radio
⇒ [“1.5 Plug connections on the radio”](#), page 64

3 - Roof aerial

- AM / FM and DAB receivers
- with aerial amplifier
- Removing and installing
⇒ [“4 Replacing aerials, aerial modules and aerial cables”](#), page 82

4 - Rear window aerial - R130-

- FM2 reception
- Spaceback type with panoramic roof also has:
 - ◆ a panoramic roof aerial - AM/FM receiver
 - ◆ a side window aerial rear left - DAB receiver
- Removing and installing ⇒ Body Work; Rep. gr. 64



S91-0218

5 - Connection for external audio sources AUX-IN - R199-

- is independently located in the centre console next to the handbrake
 - Removing and installing
⇒ [“7.3 Removing and installing connection for external audio sources R199 \(AUX-IN, USB\) ”, page 97](#)
- Vehicles with multimedia socket (MEDIA-IN) - located under the heating/air conditioning control next to the USB input
 - Removing and installing ⇒ [“7 Multimedia socket MEDIA-IN”, page 96](#)

6 - Multimedia socket MEDIA-IN (USB, AUX-IN)

- Removing and installing ⇒ [“7 Multimedia socket MEDIA-IN”, page 96](#)

7 - Rear full-range speaker

- Removing and installing
⇒ [“8.1 Removing and installing front bass speaker and rear full-range speaker”, page 99](#)

8 - Front treble speaker

- Vehicles with manual adjustment of exterior mirrors
- Removing and installing
⇒ [“8.2.2 Remove and install the speaker built into the internal door cover”, page 99](#)

9 - Front bass speaker

- Removing and installing
⇒ [“8.1 Removing and installing front bass speaker and rear full-range speaker”, page 99](#)

10 - Front treble speaker

- Vehicles with electrically adjustable exterior mirrors
- Removing and installing
⇒ [“8.2.1 Removing and installing the speaker inside the outside mirror cover”, page 99](#)

1.4 Removing and installing a radio



Note

- ◆ *Before removing, take out any data media in the unit ⇒ Radio Operating Instructions .*
- ◆ *The procedure for the installation work is the same on radios “Blues” and “Swing”.*

Removing



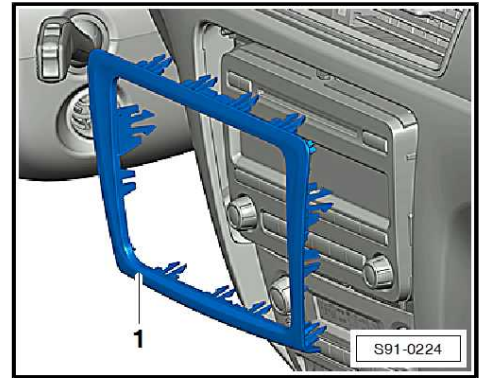
Caution

When using the lever tool, mask points where the lever tool is applied using commercially available adhesive tape.

- Switch off the radio, all electrical components and take out the ignition key.

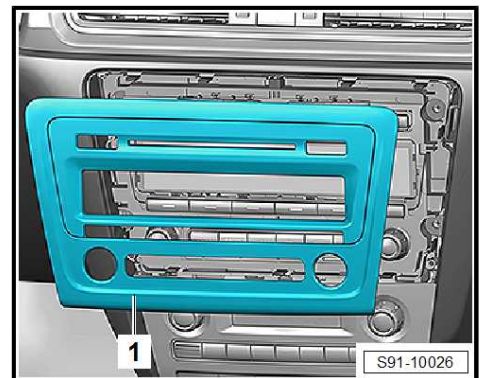
“Blues” and “Swing” radios, installed up to CW 31.2013:

- Using the removal wedge - 3409- carefully prise off the frame -1-.



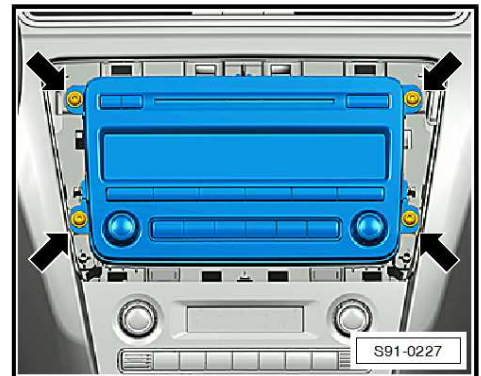
“Swing” radio installed as of CW 32.2013

- Carefully prise off top cover for radio -1- with the removal wedge - 3409- .

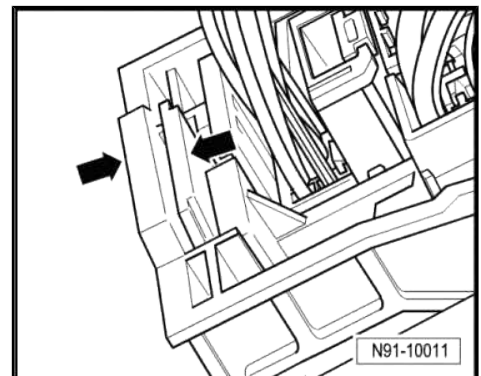


Continued for all vehicles:

- Unscrew the screws -arrows- and pull the radio out of the dash panel.

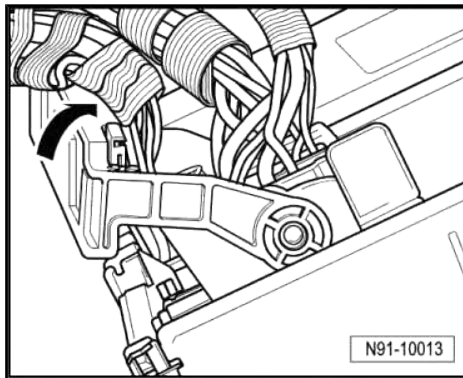


- Compress plug catch -arrows-.

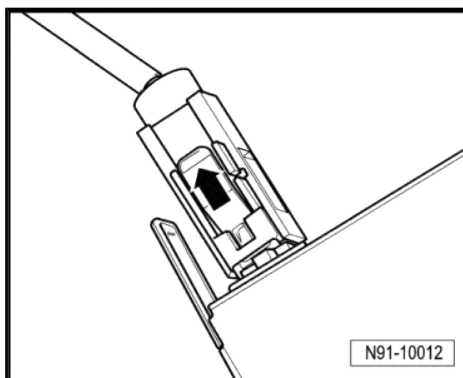




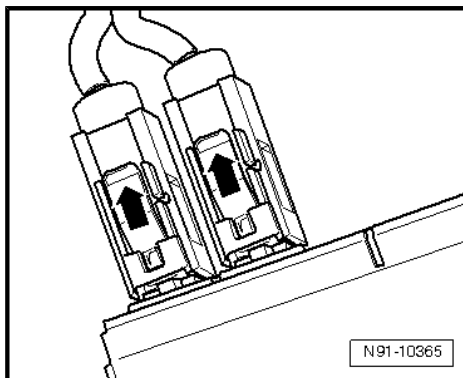
- Open catch clamp -arrow- and disconnect plug.



- Radio Blues - release plug of antenna socket -arrow- and disconnect.



- Radio Swing - release plug of antenna socket -arrows- and disconnect.



Installing

Installation is performed in the reverse order, pay attention to the following points:



Note

When pushing the radio in, do not in any circumstances press on the display or operating buttons. The radio may be damaged.

- If the radio has been replaced, perform initial setup (see ⇒ ["1.2 Electronic anti-theft coding", page 60](#)).

Tightening torques

Fixing screws for radio	1.5 Nm
-------------------------	--------

1.5 Plug connections on the radio

The current pin assignment can be found in ⇒ Current flow diagrams, Electrical fault finding and Fitting locations, depending on type and model year.

1.6 Self-diagnostic function of radio system

Carry out "self-diagnosis" with the ⇒ Vehicle diagnostic tester in the function "Targeted fault finding".

2 Amundsen+ navigation system - installed up to CW 21.2015

⇒ [“2.1 General description”, page 65](#)

⇒ [“2.2 General Instructions”, page 65](#)

⇒ [“2.3 Electronic anti-theft coding”, page 65](#)

⇒ [“2.4 Overall view of the navigation system”, page 66](#)

⇒ [“2.5 Removing and installing the navigation system”, page 68](#)

⇒ [“2.6 Plug connections on the navigation system”, page 69](#)

⇒ [“2.7 Aerial for GPS signal reception”, page 69](#)

⇒ [“2.8 Diagnosis of the navigation system”, page 69](#)

2.1 General description

The navigation system Amundsen+ combines the functions of the radio unit with the CD changer and the navigation system.

The double DIN housing of the system contains:

- ◆ an RDS radio
- ◆ Control unit for traffic information for the reception of traffic information
- ◆ Colour display
- ◆ a navigation system with GPS satellite receiver
- ◆ CD drive for navigation system, audio discs playable
- ◆ a Bluetooth module is integrated in the navigation system Amundsen+ which fulfils the function of the GSM II mobile phone pre-installation (the control unit for the mobile phone operating electronics - J412- is no longer fitted).

2.2 General Instructions



Note

- ◆ *When retrofitting equipment, carrying out repair work or fault finding ⇒ Current flow diagrams, Electrical fault finding and Fitting locations and ⇒ Installation instruction for navigation system .*
- ◆ *Detailed assembly information, e.g. detaching and attaching trim panels ⇒ Body Work; Rep. gr. 70 .*
- ◆ *Additional information ⇒ Operating instruction of the navigation system .*

2.3 Electronic anti-theft coding

The navigation system is equipped with Convenience electronic anti-theft lock, which operates in combination with the dash panel insert.

The navigation system is protected against theft with a safety code.

For navigation systems mounted at the factory, the safety code is only entered in the respective vehicle when it is initial setup. The safety code does no longer have to be re-entered when subsequently disconnecting and re-connecting the battery or when removing and re-installing the navigation system in the same ve-



hicle. If the navigation system is installed in another vehicle or the dash panel insert is replaced, the safety code must be entered again.

The navigation systems in the vehicles are locked at the factory before delivery to the dealers.

Before the vehicle is handed over to the customer, the anti-theft code of the navigation system must be deactivated by entering a safety code.

The safety code can be read via the online connection with ⇒ Vehicle diagnostic tester (network connection).

The user must have a valid authorisation for the use of a programme to determine the coding of the navigation system.

Additional information ⇒ Operating instruction of the navigation system .



Note

- ◆ *If an incorrect safety code is entered, it can be corrected immediately at the next attempt. If an incorrect safety code is entered once again, the navigation system is blocked for 1 hour.*
- ◆ *After one hour has elapsed, during which the navigation system as well as the ignition must remain switched on (the time which has elapsed since the lock was activated is shown in the display of the navigation system), the procedure for deactivating the electronic anti-theft coding can be repeated (always two attempts, then locked for one hour).*

2.4 Overall view of the navigation system



Note

The number and the design of the components depend on the vehicle equipment.

1 - Aerial for GPS signal reception

- Spaceback type only
- Removing and installing
⇒ [“4.3 Removing and installing the GPS aerial”, page 87](#)

2 - Multi-functional steering wheel

- Description, removing and installing
⇒ [“6 Multi-functional steering wheel”, page 94](#)

3 - Navigation system

- installed in the centre console
- Removing and installing
⇒ [“2.5 Removing and installing the navigation system”, page 68](#)
- Plug connections on the navigation system
⇒ [“2.6 Plug connections on the navigation system”, page 69](#)

4 - Roof aerial

- for the receiver:
- ◆ GPS - not valid for the Spaceback type
- ◆ AM/FM and DAB
- ◆ GSM - equipment with ERA Glonass (Russia, Belarus)
 - with aerial amplifier
 - Removing and installing ⇒ [“4 Replacing aerials, aerial modules and aerial cables”, page 82](#)

5 - Rear window aerial - R130-

- FM2 reception
- Spaceback type with panoramic roof also has:
 - ◆ a panoramic roof aerial - AM/FM receiver
 - ◆ a side window aerial rear left - DAB receiver
 - Removing and installing ⇒ Body Work; Rep. gr. 64

6 - Multimedia socket MEDIA-IN (USB, AUX-IN)

- Removing and installing ⇒ [“7 Multimedia socket MEDIA-IN”, page 96](#)

7 - Rear full-range speaker

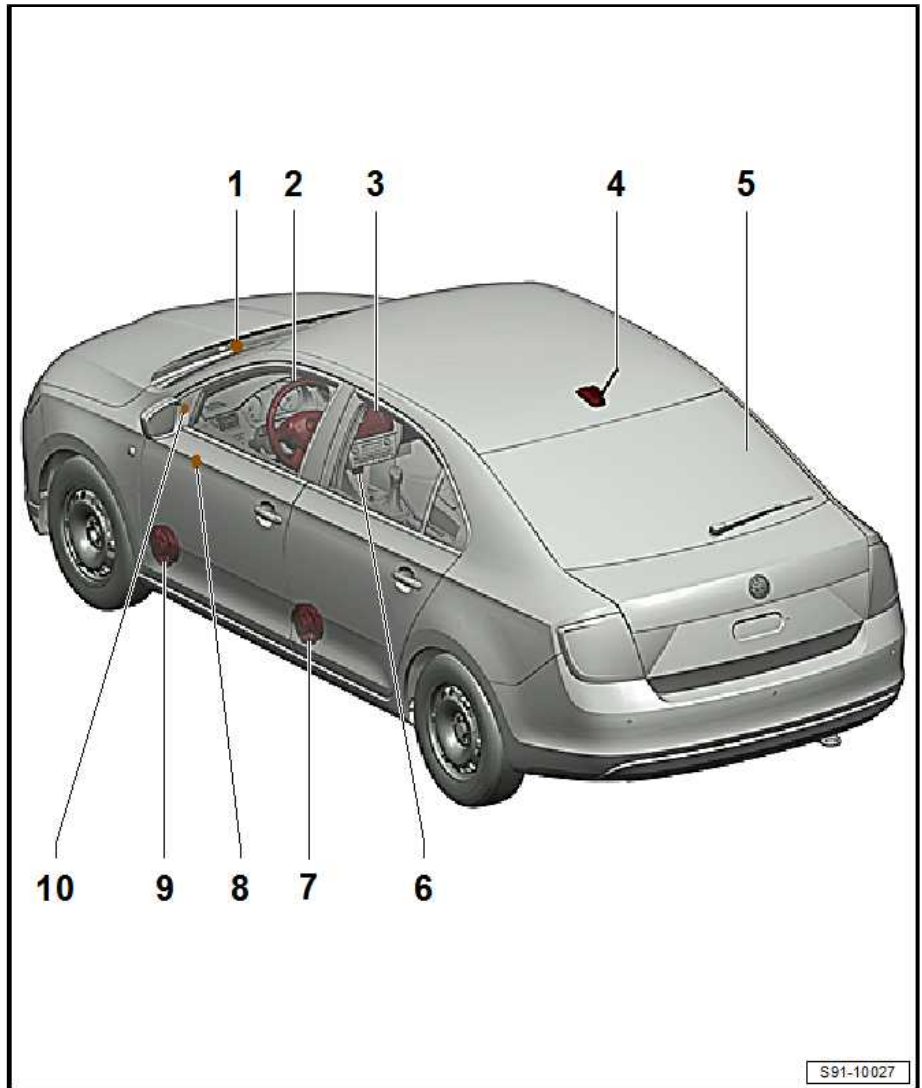
- Removing and installing
⇒ [“8.1 Removing and installing front bass speaker and rear full-range speaker”, page 99](#)

8 - Front treble speaker

- Vehicles with manual adjustment of exterior mirrors
- Removing and installing ⇒ [“8.2 Removing and installing the front treble speaker”, page 99](#)

9 - Front bass speaker

- Removing and installing
⇒ [“8.1 Removing and installing front bass speaker and rear full-range speaker”, page 99](#)





10 - Front treble speaker

- Vehicles with electrically adjustable exterior mirrors
- Removing and installing ⇒ [“8.2 Removing and installing the front treble speaker”, page 99](#)

2.5 Removing and installing the navigation system

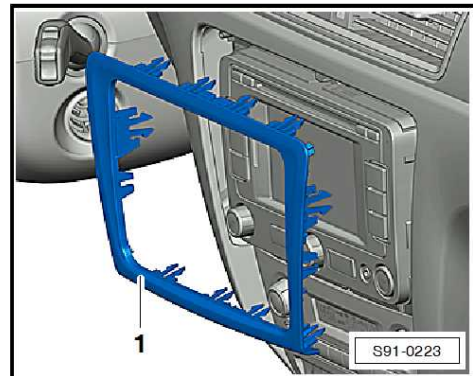


Note

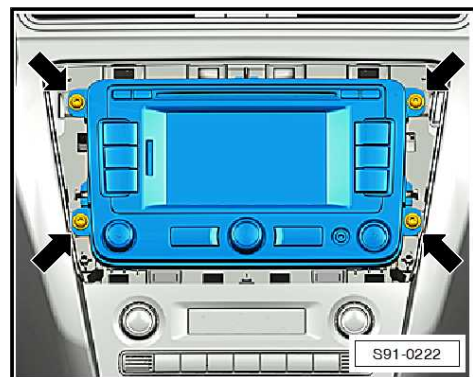
The part number for the complete navigation system is indicated on a sticker on the housing of the navigation system.

Removing

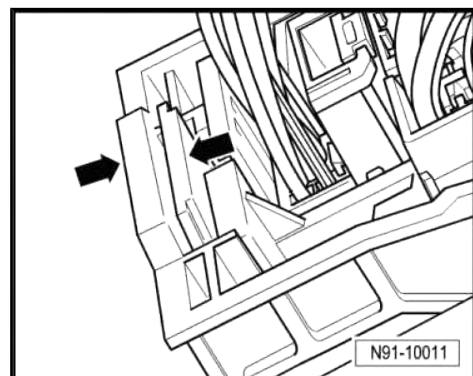
- Switch off the radio, all electrical components and take out the ignition key.
- Carefully unlock the cover frame -1- of the navigation menu with the removal wedge - 3409- .



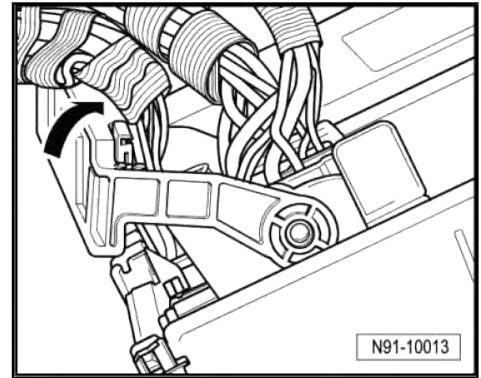
- Unscrew screws -arrows-.
- Pull the navigation system out of the dash panel.



- Compress plug catch -arrows-.



- Open catch clamp -arrow- and disconnect plug.



- Release plug of antenna socket -arrows- and disconnect.

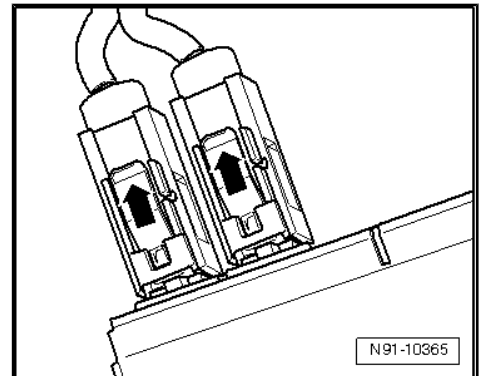
Installing

Installation is performed in the reverse order, pay attention to the following points:



Note

When inserting into the dash panel on no account press on the display or on the buttons otherwise the navigation system may be damaged.



If the navigation system was replaced:

- Enter the safety code
⇒ [“2.3 Electronic anti-theft coding”, page 65](#) and code the navigation ⇒ Vehicle diagnostic tester.

Tightening torques

Fixing screws for navigation system	1.5 Nm
-------------------------------------	--------

2.6 Plug connections on the navigation system

The current pin assignment can be found in ⇒ Current flow diagrams, Electrical fault finding and Fitting locations, depending on type and model year.

2.7 Aerial for GPS signal reception

Removing and installing
⇒ [“4 Replacing aerials, aerial modules and aerial cables”, page 82](#) .

2.8 Diagnosis of the navigation system

Carry out diagnosis with the ⇒ Vehicle diagnostic tester in the function “Targeted Fault Finding”.



3 Infotainment system - installed as of CW 22.2015

⇒ [“3.1 Infotainment system - general notes”, page 70](#)

⇒ [“3.2 Summary of components - Infotainment system”, page 70](#)

⇒ [“3.3 Installation – Infotainment system”, page 72](#)

⇒ [“3.4 Removing and installing the Infotainment display/control unit”, page 74](#)

⇒ [“3.5 Remove and install infotainment display unit”, page 77](#)

⇒ [“3.6 Removing and installing the infotainment control unit”, page 78](#)

⇒ [“3.7 Electronic anti-theft coding”, page 79](#)

⇒ [“3.8 Basic \(Blues\) infotainment - initial setup, self-diagnosis”, page 80](#)

3.1 Infotainment system - general notes

Infotainment system - installed as of model year 2016 (as of CW 22.2015)

- ◆ Infotainment system = Multimedia information system (MIB – modular infotainment kit).
- ◆ It enables the driver to access the vehicle setting, assistance systems and comfort functions via a single system.

Further information and description of function:

- ⇒ Operating instructions Rapid
- ⇒ Owner's manual – Infotainment

3.2 Summary of components - Infotainment system



Note

The number and the design of the components depend on the vehicle equipment and on the model year.

1 - Aerial for GPS signal reception

On vehicles for Russia and Belarus with the ERA Glonass system and on vehicles without DAB (digital radio receiver), the GPS aerial is on the roof (does not apply to the Spaceback model with panoramic sunroof)

- Removing and installing ⇒ [“4.2 Removing and installing roof aerial”](#), page 85

On other vehicles, the aerial is under the dash panel (does not apply to vehicles for Russia with heated windscreen)

- Removing and installing ⇒ [“4.3 Removing and installing the GPS aerial”](#), page 87

2 - Multi-functional steering wheel

- Description, removing and installing ⇒ [“6 Multi-functional steering wheel”](#), page 94

3 - Infotainment display unit (Bolero, Amundsen)/display and control unit (Blues, Swing)

- Removing and installing (Blues, Swing equipment) ⇒ [“3.4 Removing and installing the Infotainment display/control unit”](#), page 74
- Removing and installing (Bolero, Amundsen equipment) ⇒ [“3.5 Remove and install infotainment display unit”](#), page 77

4 - Infotainment control unit

- Bolero, Amundsen equipment
- Removing and installing ⇒ [“3.6 Removing and installing the infotainment control unit”](#), page 78

5 - Roof aerial

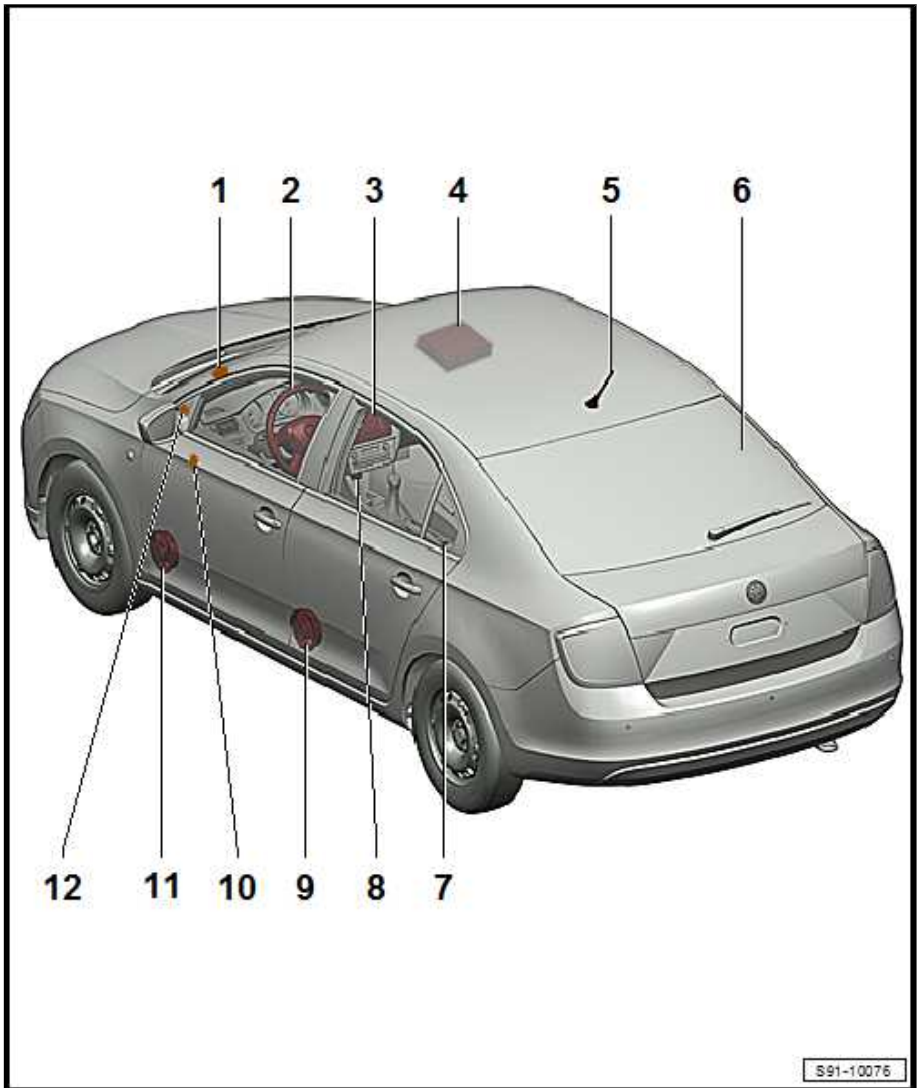
- Depending on equipment and country version – AM/FM, DAB, GSM, GPS reception
- with aerial amplifier
- Removing and installing ⇒ [“4 Replacing aerials, aerial modules and aerial cables”](#), page 82

6 - Rear window aerial - R130-

- FM2 reception
- Spaceback type with panoramic roof also has:
 - ◆ a panoramic roof aerial - AM/FM receiver
 - ◆ a side window aerial rear left - DAB receiver
- Removing and installing ⇒ Body Work; Rep. gr. 64

7 - Connection for external audio sources AUX-IN - R199-

- is independently located in the centre console next to the handbrake



- Removing and installing
 ⇒ [“7.3 Removing and installing connection for external audio sources R199 \(AUX-IN, USB\)”, page 97](#)

8 - Multimedia socket MEDIA-IN (USB, AUX-IN)

- Removing and installing ⇒ [“7 Multimedia socket MEDIA-IN”, page 96](#)

9 - Rear full-range speaker

- Removing and installing
 ⇒ [“8.1 Removing and installing front bass speaker and rear full-range speaker”, page 99](#)

10 - Front treble speaker

- Vehicles with manual adjustment of exterior mirrors
- Removing and installing ⇒ [“8.2 Removing and installing the front treble speaker”, page 99](#)

11 - Front bass speaker

- Removing and installing
 ⇒ [“8.1 Removing and installing front bass speaker and rear full-range speaker”, page 99](#)

12 - Front treble speaker

- Vehicles with electrically adjustable exterior mirrors
- Removing and installing ⇒ [“8.2 Removing and installing the front treble speaker”, page 99](#)

3.3 Installation – Infotainment system

⇒ [“3.3.1 Basic infotainment equipment BASIC”, page 72](#)

⇒ [“3.3.2 Mid-range infotainment equipment ENTRY”, page 73](#)

⇒ [“3.3.3 Maximum infotainment equipment STANDARD”, page 74](#)

3.3.1 Basic infotainment equipment “BASIC”

“Blues” installation

Basic type:

- ◆ round display
- ◆ Radio RDS AM/FM
- ◆ SD card slot
- ◆ External media inputs – sockets AUX-IN, USB
- ◆ Passive CAN bus – without component protection
- ◆ 4 x 20 W

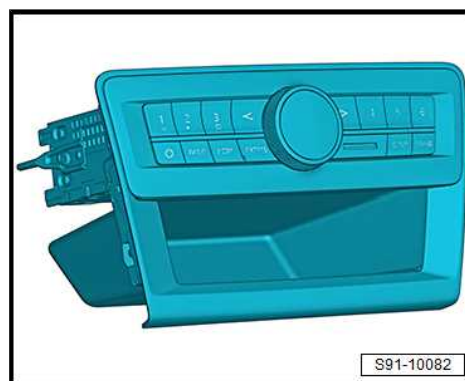
Optional extension:

- ◆ Control option via the multifunction steering wheel

Removing and installing

⇒ [“3.4 Removing and installing the Infotainment display/control unit”, page 74](#)

⇒ [“3.8 Basic \(Blues\) infotainment - initial setup, self-diagnosis”, page 80](#)



3.3.2 Mid-range infotainment equipment “ENTRY”

Set “Swing”

Display and control unit form a single unit

Basic type:

- ◆ 5" colour touchscreen
- ◆ Radio RDS AM/FM
- ◆ SD card slot
- ◆ External media inputs – sockets AUX-IN, USB
- ◆ Vehicle comfort functions displays and settings
- ◆ Phone service
- ◆ i-Pod

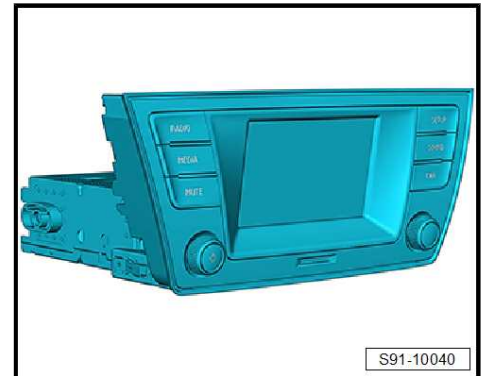
Optional extension:

- ◆ Control option via the multifunction steering wheel
- ◆ DAB (digital reception – Entry Plus)
- ◆ Bluetooth
- ◆ Škoda Surround

Removing and installing

⇒ [“3.4 Removing and installing the Infotainment display/control unit”, page 74](#)

⇒ [“3.7 Electronic anti-theft coding”, page 79](#)



3.3.3 Maximum infotainment equipment "STANDARD"

Bolero, Amundsen installation

- 1 - Infotainment display unit
- 2 - Infotainment control unit

Basic type:

- ◆ 6.5" capacitive touchscreen
- ◆ Radio RDS AM/FM
- ◆ SD card slot
- ◆ External media inputs – sockets AUX-IN, USB
- ◆ Vehicle comfort functions displays and settings
- ◆ Bluetooth
- ◆ Telephone + text message display
- ◆ i-Pod
- ◆ Mirror link

Optional extension:

- ◆ Control option via the multifunction steering wheel
- ◆ DAB (digital receiver)
- ◆ Škoda Surround

Amundsen

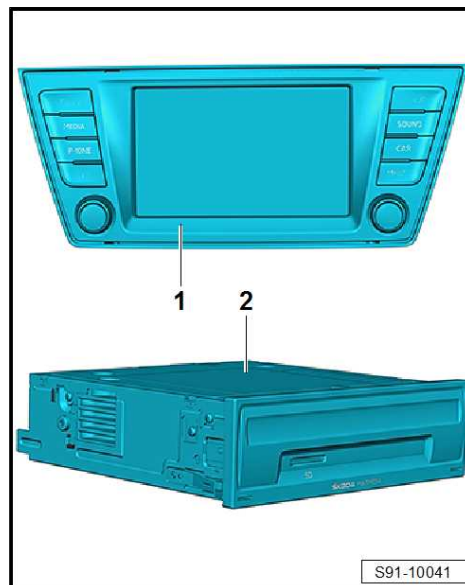
Functions such as Bolero, plus:

- ◆ 2 x SD card slot
- ◆ Navigation with 2D and 2.5D display (bird's eye view)

Removing and installing infotainment:

- ◆ Display units
⇒ ["3.5 Remove and install infotainment display unit", page 77](#)
- ◆ Control units
⇒ ["3.6 Removing and installing the infotainment control unit", page 78](#)

⇒ ["3.7 Electronic anti-theft coding", page 79](#)



3.4 Removing and installing the Infotainment display/control unit

- ◆ Basic infotainment set (Blues) and Entry set (Swing)



Note

Before removing, take out any data media in the unit ⇒ Infotainment Operating Instructions .

Removing

- Switch off infotainment and all electrical components and remove the ignition key.

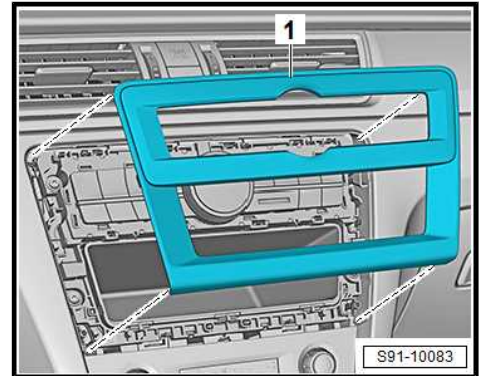


Caution

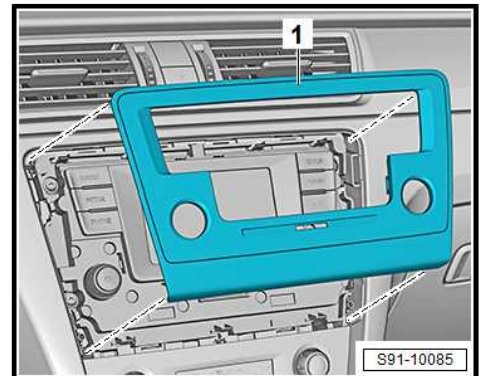
When using the lever tool, mask points where the lever tool is applied using commercially available adhesive tape.

- Carefully prise off top cover for infotainment -1- with the removal wedge - 3409- (start from bottom edge of the cover.

Blues:

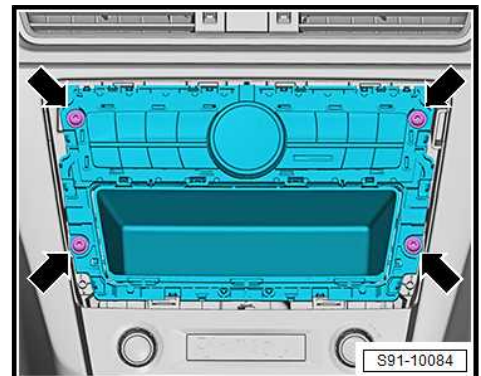


Swing:

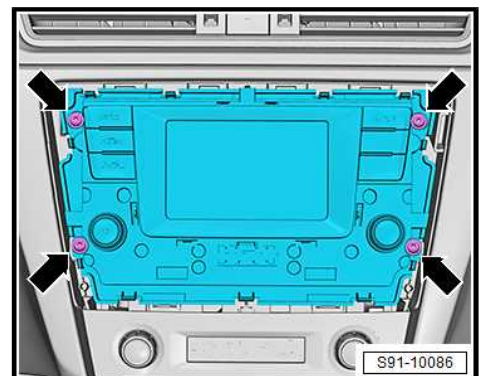


- Unscrew the screws -arrows- and pull the infotainment control unit out of the dash panel.

Blues:



Swing up to CW 21/2017:

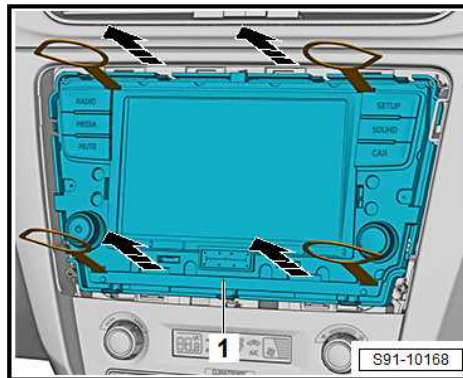




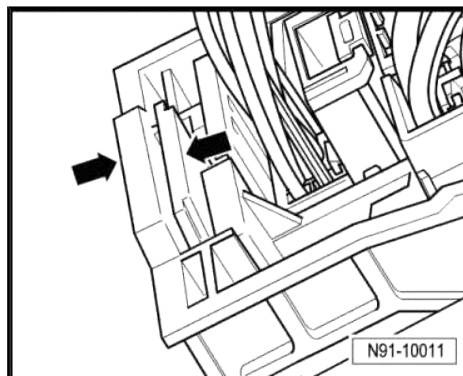
Spring as of CW 22.2017:

- Insert unlocking tools into the openings in the display unit -see fig.- until there is an audible click.
- Pull on the release tools -arrows- to remove the display unit -1-.

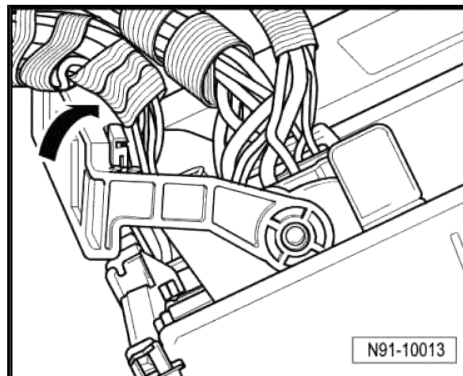
All radios:



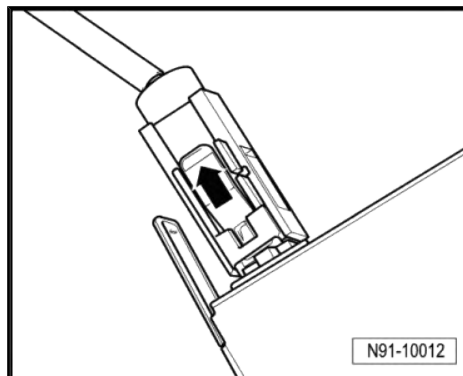
- Compress plug catch -arrows-.



- Open catch clamp -arrow- and disconnect plug.



- Blues infotainment - unlock plug of antenna socket -arrow- and disconnect.



- Swing infotainment - unlock plug of antenna sockets -arrows- and disconnect.

Installing

Installation is performed in the reverse order, pay attention to the following points:

Note

When pushing the navigation system in, do not under any circumstances press on the display or buttons. This may damage the unit.

- If the infotainment control unit has been replaced, perform initial setup.
- ◆ Swing infotainment control unit
⇒ [“3.7 Electronic anti-theft coding”, page 79](#)
- ◆ Blues infotainment control unit
⇒ [“3.8 Basic \(Blues\) infotainment - initial setup, self-diagnosis”, page 80](#)

Tightening torques

Fixing screw for infotainment control unit	1.5 Nm
--	--------

3.5 Remove and install infotainment display unit

- ◆ Standard infotainment set (Bolero and Amundsen)

Removing

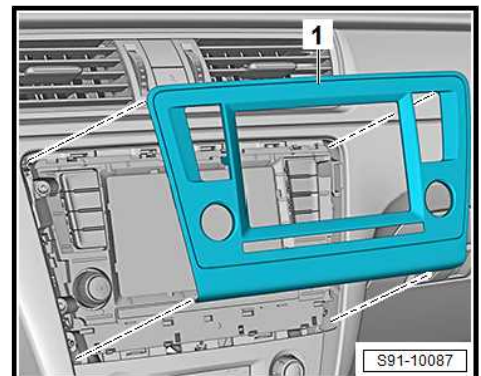
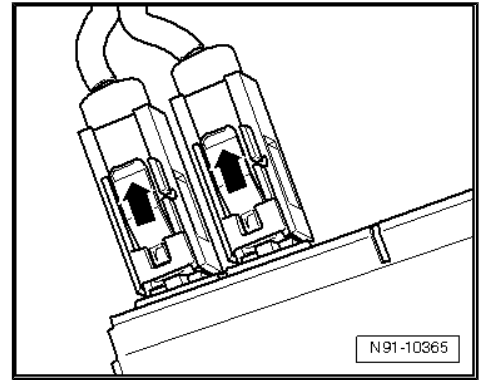
- Switch off infotainment and all electrical components and remove the ignition key.



Caution

When using the lever tool, mask points where the lever tool is applied using commercially available adhesive tape.

- Carefully prise off top cover for infotainment -1- with the removal wedge - 3409- (start from bottom edge of the cover.





- Unscrew screws -arrows-.
- Remove the display unit from the dash panel.
- Release connector and pull it off.

Installing

Installation is performed in the reverse order, pay attention to the following points:



Note

When inserting into the dash panel, do not press on the display or on the operating button, otherwise the display unit may be damaged.

When replacing, connect the ⇒ Vehicle diagnostic tester, retrieve the fault memory and delete if necessary.

Tightening torques

Fixing screws for display unit	1.5 Nm
--------------------------------	--------

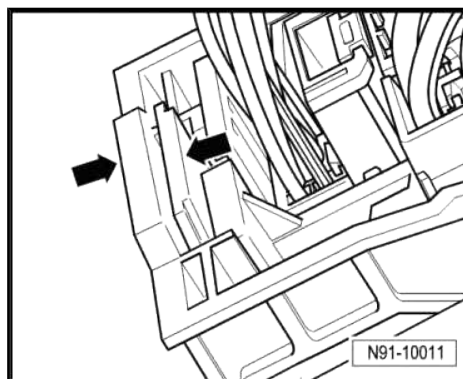
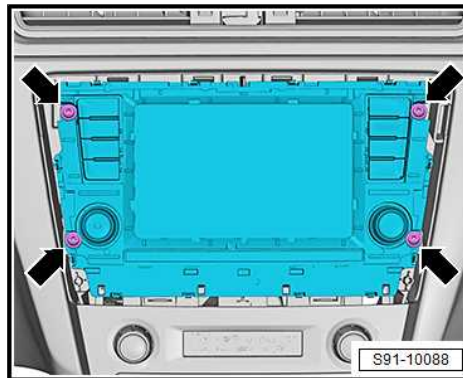
3.6 Removing and installing the infotainment control unit

Special tools and workshop equipment required

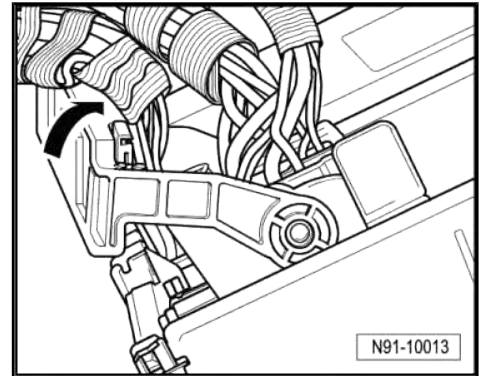
- ◆ Extractor - T10057-

Removing

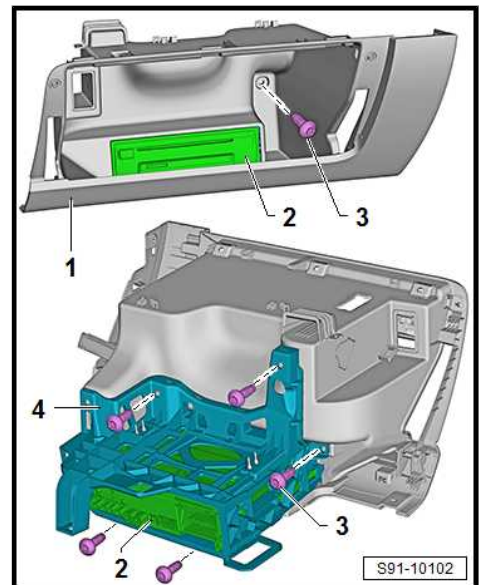
- Remove the data storage device that is still in the Infotainment control unit ⇒ Infotainment operating manual .
- Switch off the ignition and all electrical consumers!
- Remove the storage tray from the dash panel on the front passenger side and let it hang there considering the connected cable lengths ⇒ Body Work - Assembly work; Rep. gr. 70 .
- Compress plug catch -arrows-.



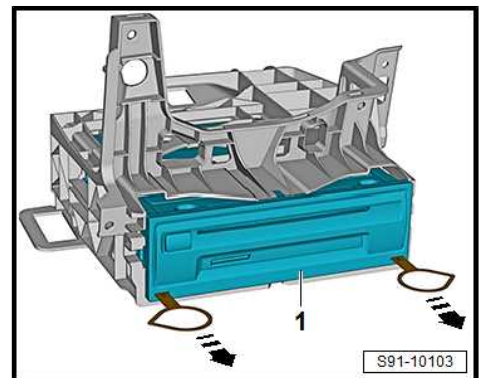
- Open catch clamp -arrow- and disconnect plug.
- Release and pull off other plug connections.



- Unscrew bolts -3-.
- Remove bracket -4- with unit -2- from the storage tray -1-.



- Insert the release tools - T10057- into the bores of the unit, until they click audibly into place.
- Remove unit -1- from the bracket by pulling on the release tools arrows -arrows-.
- Loosen the release tools by pressing on the clips and remove them from unit.



Installing

Installation is performed in the reverse order, pay attention to the following points:

When replacing, couple the Infotainment control unit (see ⇒ [“3.7 Electronic anti-theft coding”, page 79](#)).

Tightening torques

Tighten the screws -3- for attaching the infotainment control unit	1.5 Nm
--	--------

3.7 Electronic anti-theft coding



Note

The following does not apply to the “Basic” (Blues) infotainment equipment.



The Infotainment display/control unit is equipped with an electronic comfort anti-theft coding, which operates in combination with the dash panel insert.

The Infotainment display/control unit must be coupled with an appropriate vehicle using the ⇒ Vehicle diagnostic tester. The security code is no longer entered.

The Infotainment display/control unit, which is installed at the factory, is coupled only when it is used for the first time with the corresponding vehicle. If the battery is disconnected and then reconnected or if the Infotainment display/control unit is removed from a vehicle and then re-installed in the same vehicle, coupling with the corresponding vehicle is no longer valid.

If the dash panel insert is replaced, the Infotainment display/control unit must be coupled with the relevant vehicle once again.

The user must have a valid authorisation to use a programme for coupling the Infotainment display/control unit.

Additional information ⇒ Infotainment operating manual .

3.8 “Basic” (Blues) infotainment - initial setup, self-diagnosis

Valid for Blues radio installed as of CW 22.2015.

1. Commissioning

Phase 1A:

- If the unit is in transport mode (it has never been switched on), press the button to switch the unit on (on/off).

Result of phase 1A:

The unit switches to “select number of speakers” mode (2-4 speakers).

Phase 1B:

- If the unit has already been switched on, press the button to switch on the unit (on/off) and then briefly press the **RADIO**, **SETUP** and **EXTRAS** buttons simultaneously.

Result of phase 1B:

The unit switches to “select number of speakers” mode (2-4 speakers).

Phase 2:

- To select the number of speakers installed in the vehicle, press the **◀** button (only front speakers, x2 bass + x2 treble loudspeakers) or the **▶** button (x2 bass at front + x2 treble loudspeaker and x2 wide band loudspeakers at rear).



Note

The number of installed loudspeakers can be determined from the vehicle identification number (VIN code) in the ELSA vehicle data.

Result of phase 2:

“Diagnosis OK” or “Not OK” is displayed on the unit's display.

Diagnosis OK:

Activation has been successful and the unit can be operated by pressing the **▶** button or after a time limit (approx. 10 sec) for station tuning, see ⇒ BASIC infotainment operating instructions .



Not OK:

To be operated, all the system components must be connected to the unit.

If the unit identifies that one of the components listed below is not connected, "Not OK" and the abbreviation for the component that the unit has not recognised is shown on the display (max. eight components, depending on equipment):

LF - Front left speaker

RF - Front right speaker

LR - Rear left speaker


RR - Rear right speaker

A1 - Primary aerial

A2 - Secondary aerial

USB - USB connection

AUX - Connection for external audio sources (AUX)

The unit is then switched off by pressing the  button or after a period of time (approx. 10 sec).

Once the indicated components have been connected, repeat the procedure from phase 1B.


2. Service mode



For information only:

Phase 1:

- Press the button to turn on the unit (on/off).

Phase 2:

- Press the  button for approximately 5 seconds.

In service mode, you can navigate by using the  and  buttons to view three items of information.

Part NO - Number of the unit

HW - Hardware

SW - Software



4 Replacing aerials, aerial modules and aerial cables

- ⇒ [“4.1 Summary of components, Rapid”, page 82](#)
- ⇒ [“4.2 Removing and installing roof aerial”, page 85](#)
- ⇒ [“4.3 Removing and installing the GPS aerial”, page 87](#)
- ⇒ [“4.4 Removing and installing the GSM aerial”, page 88](#)
- ⇒ [“4.5 Rear or side window aerial \(Spaceback\)”, page 89](#)
- ⇒ [“4.6 Panoramic roof aerial”, page 89](#)
- ⇒ [“4.7 Aerial module R254 for rear window aerial”, page 89](#)
- ⇒ [“4.8 Aerial module for rear left side window aerial”, page 90](#)
- ⇒ [“4.9 Aerial module for panoramic roof aerial”, page 90](#)
- ⇒ [“4.10 Replacing aerial cables”, page 91](#)

4.1 Summary of components, Rapid

- ⇒ [“4.1.1 Summary of components - antennas, Rapid”, page 82](#)
- ⇒ [“4.1.2 Overview of components - Antennas, Spaceback”, page 84](#)

4.1.1 Summary of components - antennas, Rapid

1 - GPS aerial - R50-

On vehicles for Russia and Belarus with the ERA Glonass system and on vehicles without DAB (digital radio receiver), the GPS aerial is on the roof

On other vehicles, the aerial is under the dash panel (does not apply to vehicles for Russia with heated windscreen)

- Removing and installing
⇒ [“4.3 Removing and installing the GPS aerial”, page 87](#)

2 - Rear window antenna 1 - R130-

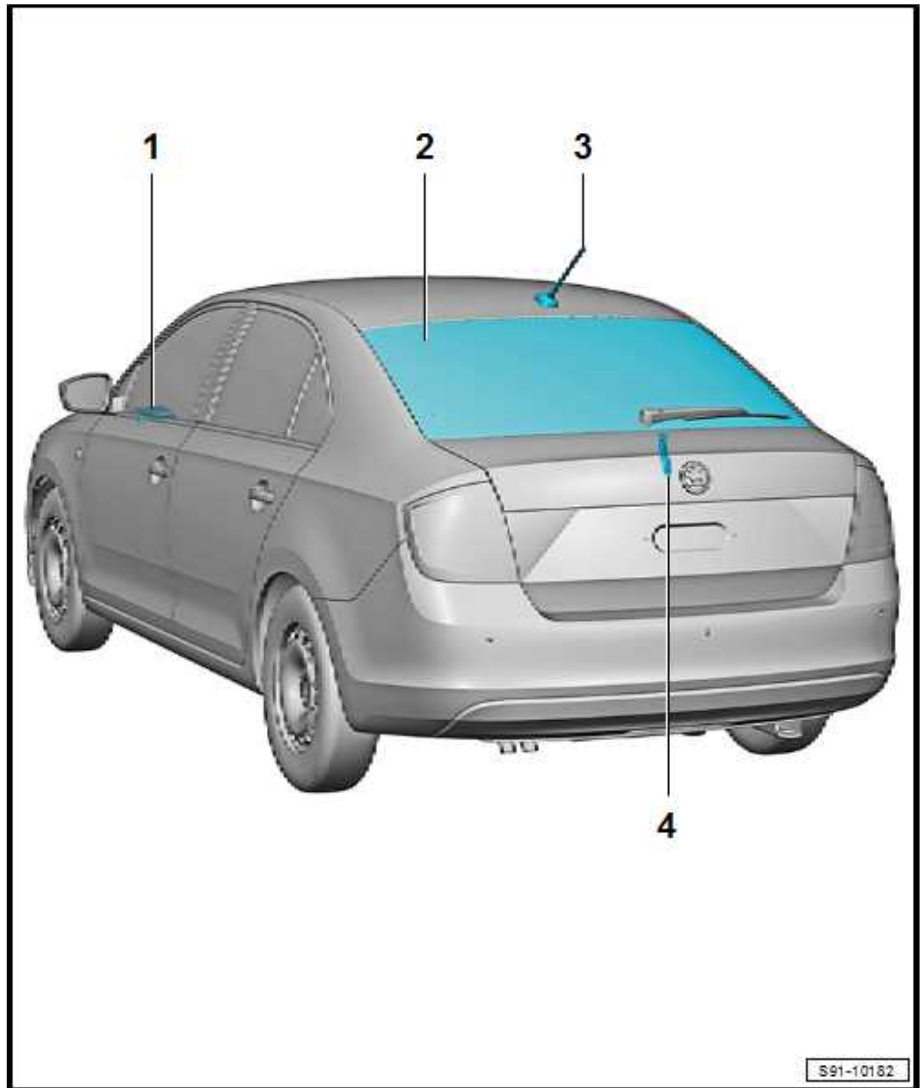
- FM2 reception
- Removing and installing
⇒ Body Work; Rep. gr. 64

3 - Roof aerial - R216-

- Depending on equipment and country version – AM/FM, DAB, GSM, GPS reception
- with aerial amplifier
- Removing and installing
⇒ [“4.2 Removing and installing roof aerial”, page 85](#)

4 - Aerial module - R254- for rear window aerial

- Removing and installing
⇒ [“4.7 Aerial module R254 for rear window aerial”, page 89](#)



4.1.2 Overview of components - Antennas, Spaceback

1 - GPS aerial - R50-

On vehicles for Russia and Belarus with the ERA Glonass system and on vehicles without DAB (digital radio receiver), the GPS aerial is on the roof (does not apply to vehicles with panoramic sunroof)

On other vehicles, the aerial is under the dash panel (does not apply to vehicles for Russia with heated windscreen)

- Removing and installing ⇒ [“4.3 Removing and installing the GPS aerial”, page 87](#)

2 - Antenna module - R11- integrated in the panoramic roof

- Applies to vehicles with a panoramic roof
- Removing and installing ⇒ Body Work; Rep. gr. 64

3 - Antenna module - R108- for panoramic roof aerial

- Removing and installing ⇒ [“4.9 Aerial module for panoramic roof aerial”, page 90](#)

4 - Roof aerial - R216-

- Depending on equipment and country version – AM/FM, DAB, GSM, GPS reception
- with aerial amplifier
- Removing and installing ⇒ [“4.2 Removing and installing roof aerial”, page 85](#)

5 - Aerial module - R254- for rear window aerial

- Removing and installing ⇒ [“4.7 Aerial module R254 for rear window aerial”, page 89](#)

6 - Rear window antenna 1 - R130-

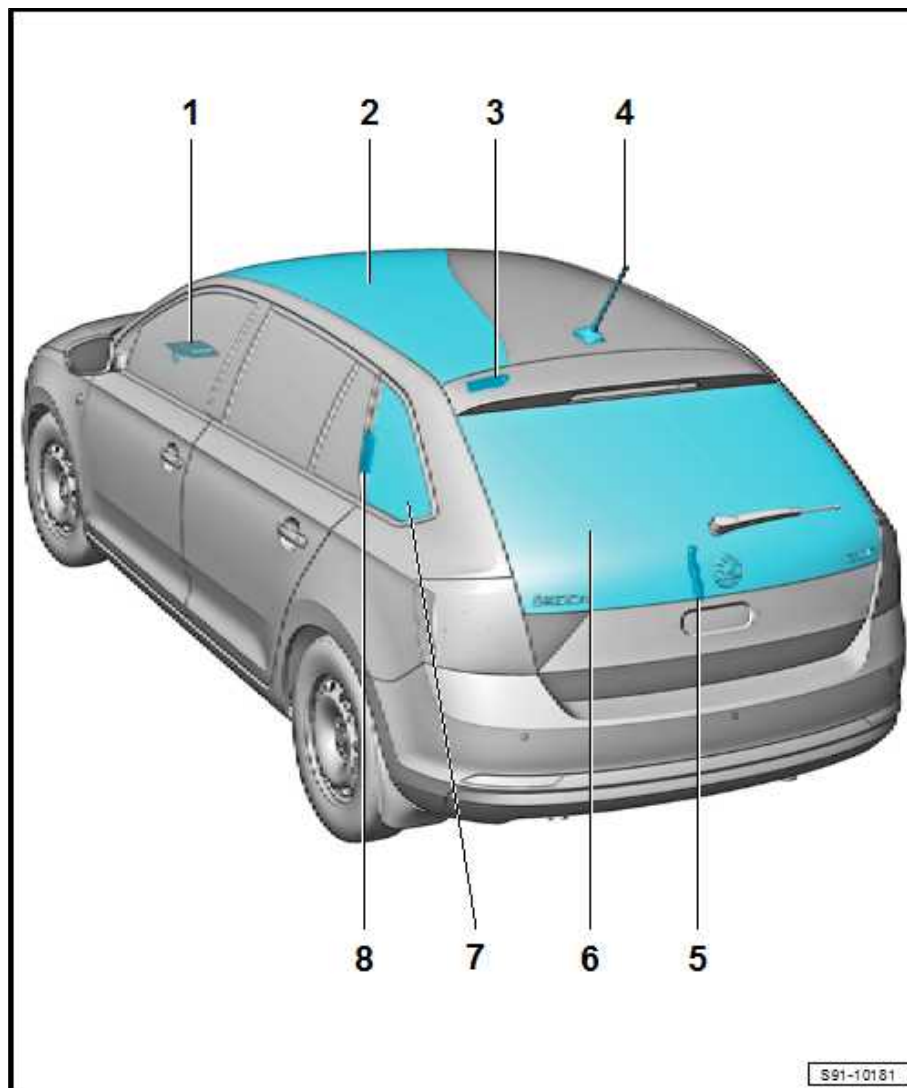
- FM2 reception
- Removing and installing ⇒ Body Work; Rep. gr. 64

7 - Digital radio antenna - R183-

- in the left side window

8 - Left aerial module - R108-

- Removing and installing ⇒ [“4.8 Aerial module for rear left side window aerial”, page 90](#)



4.2 Removing and installing roof aerial

⇒ [“4.2.1 Removing and installing the roof aerial for radio up to CW 21.2015”, page 85](#)

⇒ [“4.2.2 Removing and installing the roof aerial for radio and navigation up to CW 21.2015”, page 86](#)

⇒ [“4.2.3 Removing and installing the roof aerial as of CW 22.2015”, page 87](#)

4.2.1 Removing and installing the roof aerial for radio up to CW 21.2015



Note

Before installing the radio aerial, switch off all electrical consumers and take out the ignition key.

1 - Aerial rod

2 - Aerial base with integrated amplifier

□ to remove and install:

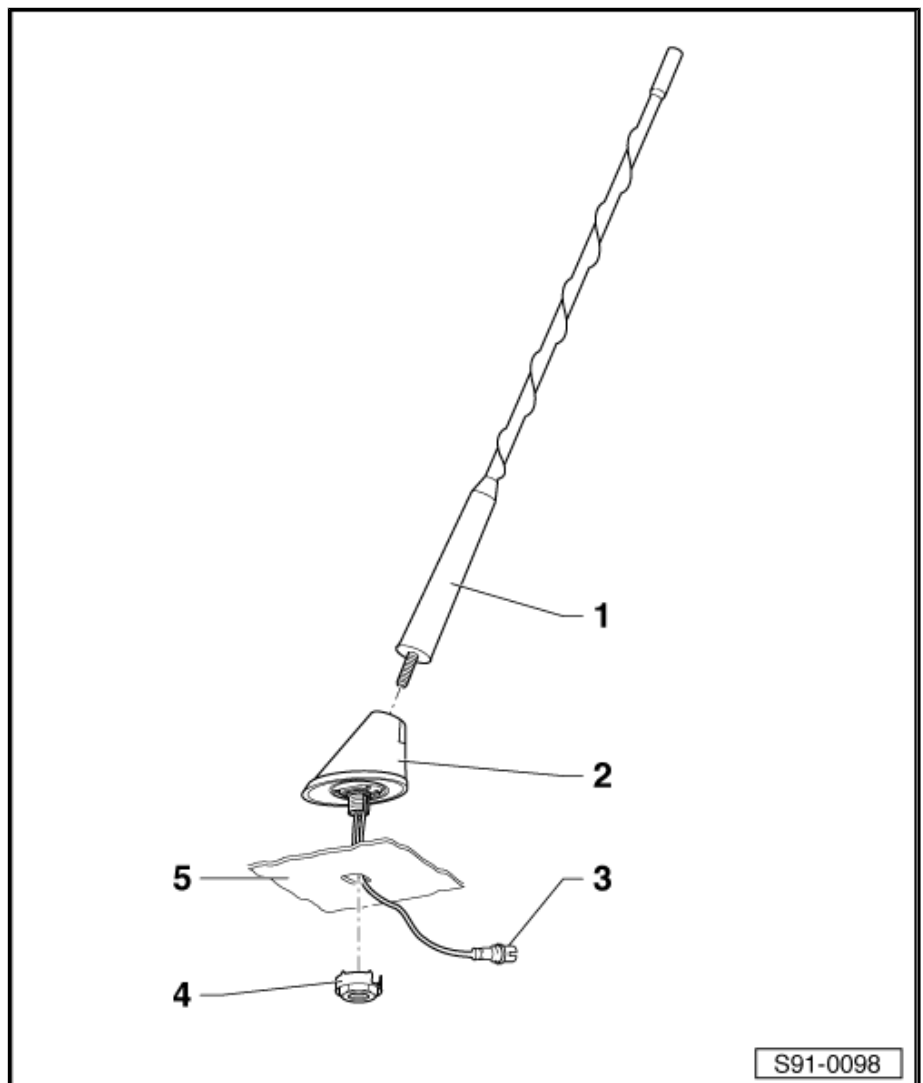
- ◆ Detach the moulded headliner up to the A-pillars and carefully unhook the rear section downwards. For vehicles with panoramic sunroof, lower the moulded headliner completely ⇒ Body Work; Rep. gr. 70 .

3 - Connection for the antenna cable going to the radio

4 - Hexagon nut with serrated washer

- 6 Nm
- hexagonal nut is connected to serrated washer by a plastic ring
- apply contact grease on the inside of roof in the area of the serrated washer

5 - Roof





4.2.2 Removing and installing the roof aerial for radio and navigation up to CW 21.2015



Note

- ◆ The number of connections of the aerial base depends on the vehicle equipment.
- ◆ Before installing the radio aerial, switch off all electrical consumers and take out the ignition key.

1 - Aerial rod

- can be removed

2 - Aerial base with integrated amplifier

- to remove and install:

- ◆ Detach the moulded headliner up to the A-pillars and carefully unhook the rear section downwards. For vehicles with panoramic sunroof, lower the moulded headliner completely ⇒ Body Work; Rep. gr. 70 .

3 - Hexagon nut with serrated washer

- 6 Nm
- hexagonal nut is connected to serrated washer by a plastic ring
- apply contact grease on the inside of roof in the area of the serrated washer

4 - Aerial cable to radio

- White plug

5 - Aerial cable to telephone

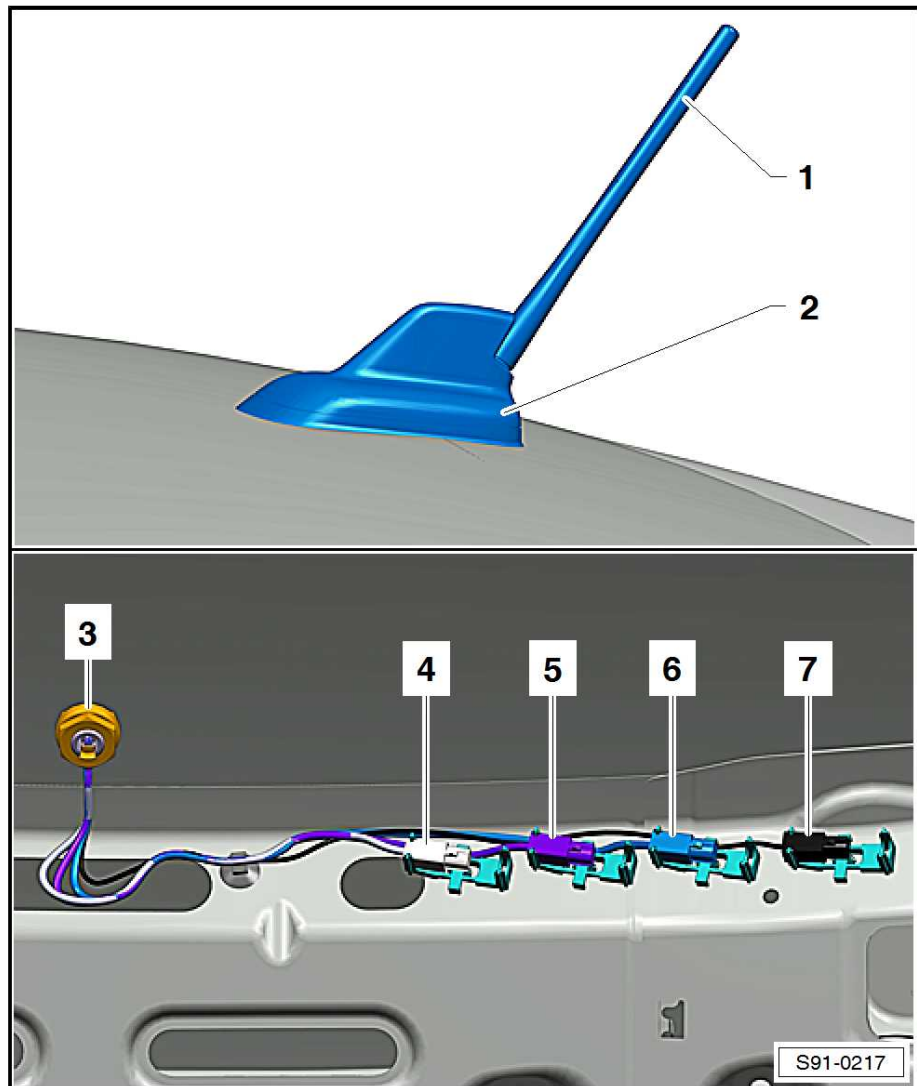
- Lilac plug
- not assigned

6 - Aerial cable to navigation

- Blue plug

7 - Aerial cable to radio

- black plug
- Reception of digital programme



4.2.3 Removing and installing the roof aerial as of CW 22.2015

i Note

- ◆ *The number of connections of the aerial base depends on the vehicle equipment.*
- ◆ *Before installing the radio aerial, switch off all electrical consumers and take out the ignition key.*

Removing

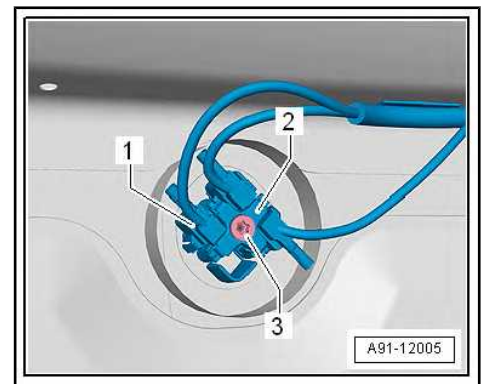
- Detach the moulded headliner up to the A-pillars and carefully unhook the rear section downwards. For vehicles with panoramic sunroof, lower the moulded headliner completely ⇒ Body Work; Rep. gr. 70 .
- Release and pull off the connector -1- on the aerial cables.
- Unscrew bolt -3-.
- Open holding clamp -2- and remove the aerial.

Installing

- Put aerial in position and press down the holding clamp -2- until it clicks into place.
- Tighten fixing screw.
- Further installation occurs in reverse order.

Tightening torques

Fixing screw for aerial, Pos. -3-	6 Nm
-----------------------------------	------



4.3 Removing and installing the GPS aerial

i Note

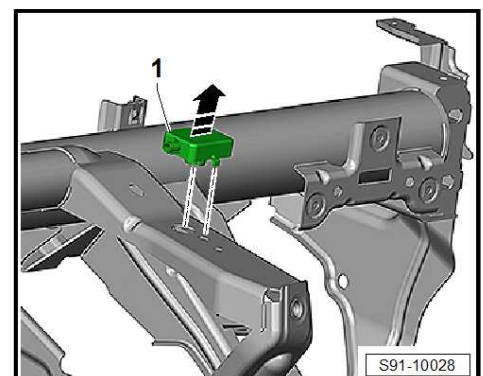
- ◆ *Applies to the Spaceback model and all vehicles equipped with navigation system from CW 22/2015, except vehicles with the ERA Glonass system (Russia and Belarus – GPS aerial on the roof, except the Spaceback model with panoramic sunroof).*
- ◆ *The GPS aerial is located on the dash panel cross member behind the dash panel insert.*

Removing

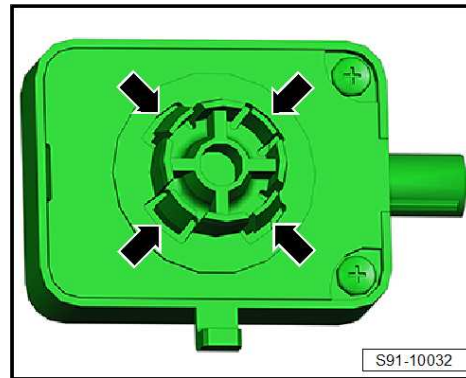
- Removing the dash panel ⇒ Body Work; Rep. gr. 70 .

Version 1:

- Push aerial -1- from underneath off the mount on the dash panel cross member -arrow-.

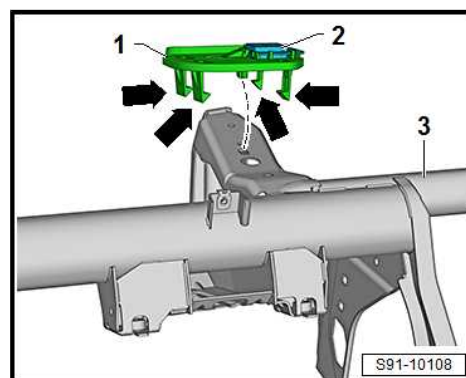


- When pressing out the aerial, press the retaining tabs -arrows-.
- Unlock and remove the aerial connection.



Version 2:

- Release and remove the GPS aerial -2- with bracket -1- out of the retaining tab -arrows-.

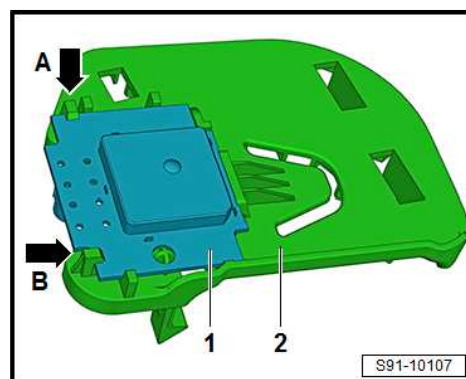


- Release GPS aerial -1- from the retaining tabs, arrows -A- and -B- and take out of the bracket -2-.
- Unlock and remove the aerial connection.

Installing

Installation is performed in the reverse order, pay attention to the following points:

- The aerial lug/bracket, see illustration, locks the correct position.



4.4 Removing and installing the GSM aerial



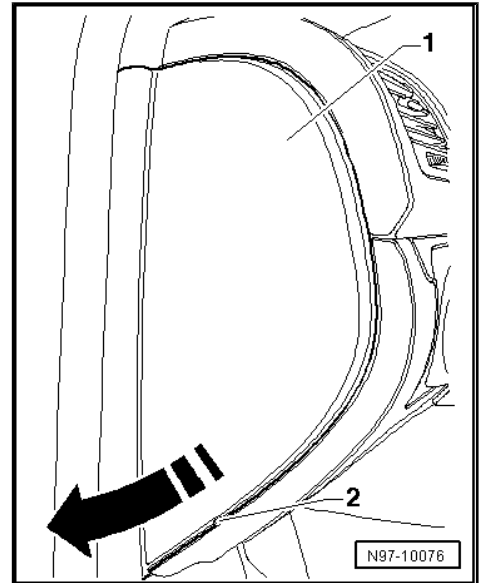
Note

Applies to the Spaceback model; on the Sedan model, the GSM aerial is on the roof.

The GSM aerial is located on the bracket of the control unit for emergency call module and communication unit - J949- behind the dash panel on the driver's side.

- Switch off the ignition and all electrical consumers!
- Place the ignition key outside the vehicle to avoid accidentally turning on the ignition.
- Remove the side vent from the dash panel on the driver's side
⇒ Heating, Air Conditioning; Rep. gr. 80 .

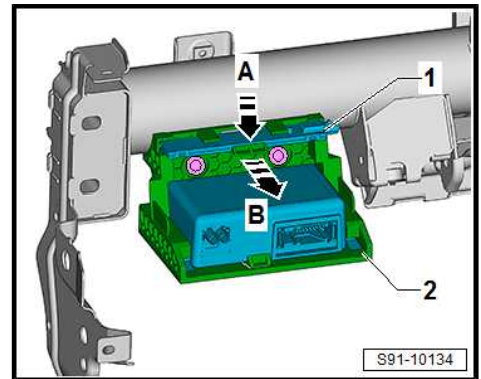
- Remove the side cover on the dash panel -1- on the driver's side in -direction of arrow-.
- Remove the light switch
⇒ ["2.1 Removing and installing light switch", page 207](#) and the headlight range control adjuster
⇒ ["2.2 Removing and installing the headlight range control adjuster", page 207](#) .



- Push off the retaining tab in direction of arrow -A- and then slide the aerial -1- out of the bracket -2- in direction of arrow -B-.
- Unlock and remove the aerial connection.

Installing

Installation is carried out in the reverse order.



4.5 Rear or side window aerial (Spaceback)

The aerial cannot be replaced separately, in the event of a fault, the rear- side window must be replaced ⇒ Body Work; Rep. gr. 64 .

There are frequency filters for the frequency modulation on the supply cables for the rear window heating, which are component parts of the wiring harness and can not be replaced separately.

4.6 Panoramic roof aerial

The aerial cannot be replaced separately, in the event of a fault, the panoramic roof must be replaced ⇒ Body Work; Rep. gr. 64 .

4.7 Aerial module - R254- for rear window aerial

Located next to the rear window wiper motor.

Removing

- Remove the cover for the rear wiper motor.

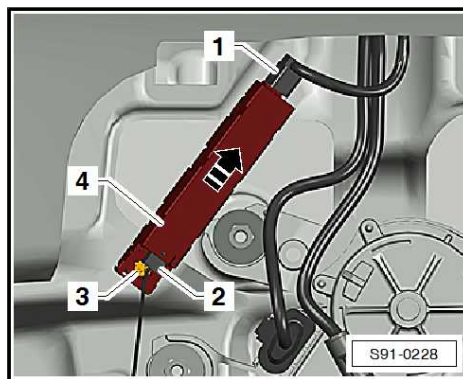
- Unlock and disconnect connectors -1- and -2-.
- Unscrew the screw -3-, but not fully.
- Undo screw with clip -3- out of the bearing, move aerial module -4- -arrow- and remove.

Installing

Installation is performed in the reverse order, pay attention to the following points:

Tightening torques

Fixing screw for aerial module, Pos. -3-	2 Nm
--	------



4.8 Aerial module for rear left side window aerial

For Spaceback type only.

Removing

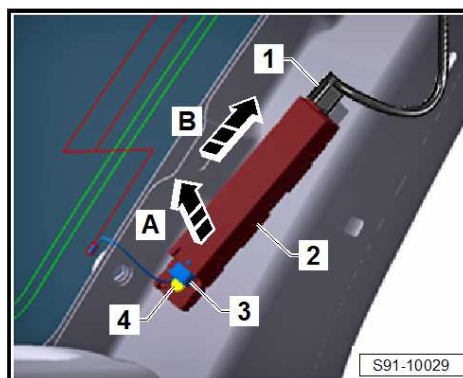
- Switch off the ignition and all electrical consumers!
- Remove top left C pillar trim panel ➔ Body Work; Rep. gr. 70 .
- Unlock and disconnect connectors -1- and -3-.
- Unscrew the screw -4-, but not fully.
- Remove the screw and clip -4- from the mounting in direction of arrow -A-; slide out and remove the aerial module -2- in direction of arrow -B-.

Installing

Installation is performed in the reverse order, pay attention to the following points:

Tightening torques

Fixing screw for aerial module, Pos. -4-	2 Nm
--	------



4.9 Aerial module for panoramic roof aerial

The aerial is located underneath the rear left headlining.

Removing

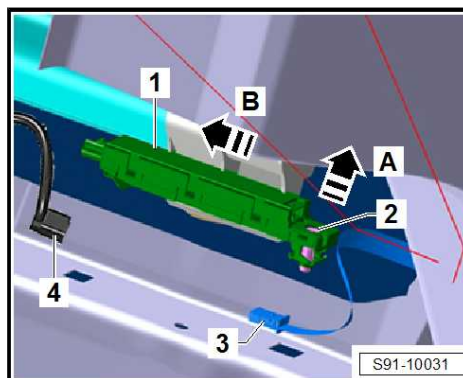
- Switch off the ignition and all electrical consumers!
- Unhook headlining ➔ Body Work; Rep. gr. 70 .
- Unlock and disconnect connectors -3- and -4-.
- Unscrew the screw -2-, but not fully.
- Remove the screw and clip -2- from the mounting in direction of arrow -A-; slide out and remove the aerial module -1- in direction of arrow -B-.

Installing

Installation is performed in the reverse order, pay attention to the following points:

Tightening torques

Fixing screw for aerial module, Pos. -2-	2 Nm
--	------



4.10 Replacing aerial cables



Note

- ◆ *Aerial cables cannot be repaired Replace damaged aerial cables with a new original part, see ⇒ Electronic Catalogue of Original Parts“ETKA” ; Accessories; sub-group 35.*
 - ◆ *Do not crimp aerial cable or bend excessively! The minimum bending radius must not be less than 50 mm.*
 - Cut off aerial connection from the defective cable.
- The remainder of the defective cable remains in the vehicle.
- Lay new aerial cable close to the original cable and attach.
 - Perform a functional test.

5 Telephone system

⇒ [“5.1 Mobile phone pre-installation”, page 92](#)

⇒ [“5.2 Removing and installing the control unit for the mobile phone operating electronics J412”, page 92](#)

⇒ [“5.3 Removing and installing the microphone for the telephone R38”, page 93](#)

5.1 Mobile phone pre-installation

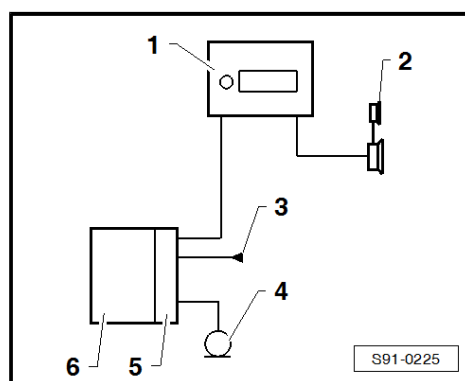
Further information and description of function:

- ◆ ⇒ Operating instructions Rapid
- ◆ ⇒ Self-study programme No. 81 ; Bluetooth in Škoda vehicles

Mobile phone pre-installation (universal)

Valid for vehicles manufactured up to CW 21.2015

- 1 - Radio
- 2 - Door speakers
- 3 - Voltage supply for telephone system
- 4 - Microphone for the telephone - R38- , in the interior light
- 5 - 54-pin connector on the control unit for the mobile phone operating electronics - J412- (transmission/receiver unit)
- 6 - Control unit for mobile phone operating electronics - J412- (transmission/receiver unit)



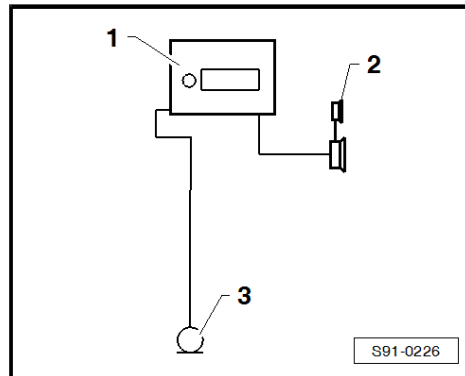
Mobile phone pre-installation (universal) on vehicles with the Amundsen+ navigation system and vehicles with mobile phone pre-installation manufactured as of CW 22.2015



Note

A Bluetooth module is integrated in the navigation system Amundsen+ which fulfils the function of the GSM II mobile phone pre-installation (the control unit for the mobile phone operating electronics - J412- that is located under the right front seat is no longer fitted)

- 1 - Navigation system/infotainment
- 2 - Door speakers
- 3 - Microphone for the telephone - R38- , in the interior light



5.2 Removing and installing the control unit for the mobile phone operating electronics - J412-

Installed up to CW 21.2015. As of CW 22.2015, mobile phone pre-installation is integrated into the infotainment control unit (see ⇒ [“3.3 Installation – Infotainment system”, page 72](#)).

The control unit is located below the right front seat under the floor covering.

Removing

- Switch off the ignition and all electrical consumers!
- Remove front passenger seat ⇒ Body Work; Rep. gr. 72 .

- Remove trim panel at bottom of pillar A and B ⇒ Body Work; Rep. gr. 70 .
- Raise floor covering.
- Unlock by tilting out the clamp and disconnect the plug connection.
- Unscrew the nuts -arrows-.
- Remove control unit -1-.

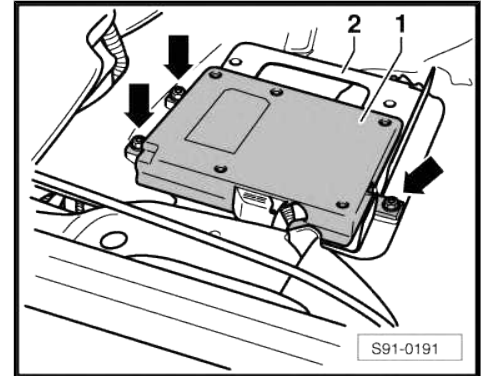
Installing

Installation is performed in the reverse order, pay attention to the following points:

- When replacing, code the new control unit after the installation ⇒ Vehicle diagnostic tester.

Tightening torques

Fixing nuts for control unit for the mobile phone operating electronics - J412-	2 Nm
---	------



5.3 Removing and installing the microphone for the telephone - R38-

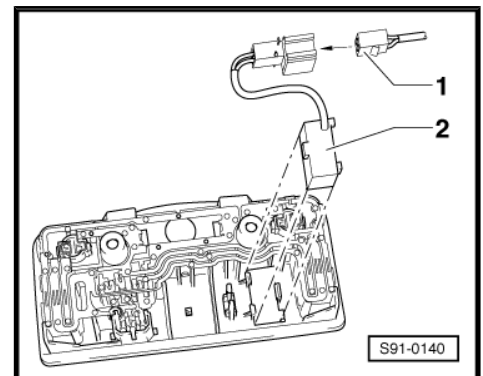
The microphone is located in the interior light.

Removing

- Switch off the ignition and all electrical consumers!
- Remove interior light
⇒ ["1.1 Removing and installing the front interior light", page 201](#) .
- Disconnect the plug connection -1- and release the microphone -2- from the catches in the interior light.

Installing

Installation is carried out in the reverse order.





6 Multi-functional steering wheel

⇒ [“6.1 Multi-functional steering wheel - general instructions”, page 94](#)

⇒ [“6.2 Removing and installing switch unit for operating the radio and phone/infotainment”, page 94](#)

⇒ [“6.3 Diagnosis of the multi-functional steering wheel”, page 95](#)

6.1 Multi-functional steering wheel - general instructions



Note

- ◆ *When handling a fault, it is absolutely essential to know the function and operation of the multi-functional steering wheel.*
- ◆ *Additional information and description of function ⇒ Owner's manual Rapid .*

The multi-functional steering wheel contains (depending upon equipment) the following components:

- ◆ Multifunction buttons in the steering wheel on the left - E440- and right -E441- for the operation of the Infotainment
- ◆ Multifunctional steering wheel control unit - J453- , integrated in the left front switch unit

The multi-functional steering wheel control unit - J453- communicates via the LIN databus with the vehicle voltage control unit - J519- .

6.2 Removing and installing switch unit for operating the radio and phone/infotainment

The assembly work is identical for both switch units.

Removing

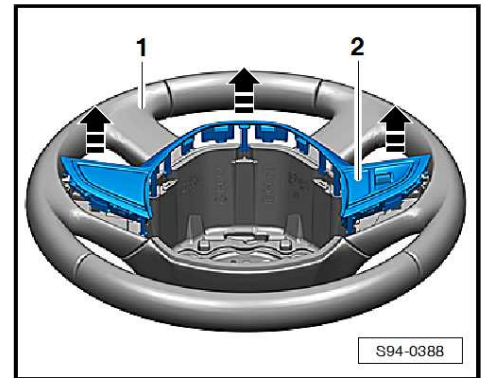


Caution

When using the lever tool, mask points where the lever tool is applied using commercially available adhesive tape.

- Disconnect battery earth strap
⇒ [“1.3 Disconnecting and reconnecting battery”, page 10](#) .
- Remove the airbag unit in the steering wheel ⇒ Body Work; Rep. gr. 69 .
- Disconnect plug.

- Carefully lever the plate with switch units -2- out of the steering wheel -1- using the removal wedge - 3409- -arrows-.
- Disconnect plug.



- Unscrew bolts -3-.
- When removing the units -1- and -2-, carefully detach the connecting cable from the bearing -arrows-.

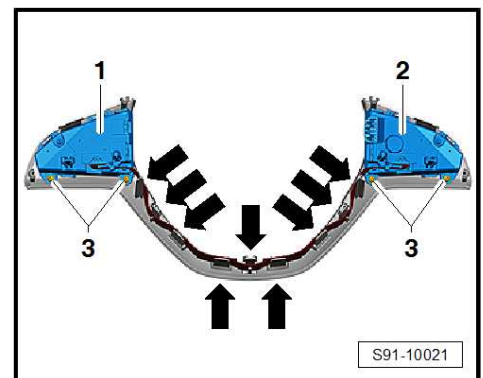
Installing

Installation is performed in the reverse order, pay attention to the following points:



Note

- ◆ Route connection cable for modules correctly in the line in the plate -arrows-.
 - ◆ Before the airbag is installed, it must be checked if all the wiring is properly pressed back into the guiding grooves in the steering wheel foam. Wiring which protrudes can be damaged by the backside parts of the airbag.
 - ◆ Follow the work procedure when connecting the battery ⇒ ["1.3 Disconnecting and reconnecting battery", page 10](#) .
- If the switch unit has been replaced by an integrated control unit, coding must be performed with ⇒ Vehicle diagnostic tester.



Tightening torques

Mounting screws for switch unit	0.4 Nm
---------------------------------	--------

6.3 Diagnosis of the multi-functional steering wheel

The multi-functional steering wheel is capable of conducting a self-diagnosis. Carry out "self-diagnosis" with the ⇒ Vehicle diagnostic tester in the function "Targeted fault finding".

7 Multimedia socket MEDIA-IN

⇒ ["7.1 General description", page 96](#)

⇒ ["7.2 Removing and installing the control unit for multimedia system J650", page 96](#)

⇒ ["7.3 Removing and installing connection for external audio sources R199 \(AUX-IN, USB\)", page 97](#)

⇒ ["7.4 Removing and installing the rear USB charging module", page 98](#)

7.1 General description

This is designed to connect the audio signal from the external stereo systems and to play back music from these systems via the radio/navigation installed ex works.

The MEDIA-IN multimedia socket includes the AUX-IN and (depending on equipment) USB inputs.

Until CW 21.2015, the control unit for multimedia system - J650- is part of the MEDIA-IN multimedia socket; thereafter, it is no longer installed.

Description of function ⇒ Operating instructions of the radio/navigation/infotainment system .

Contact assignment of plug connection and current flow diagram
⇒ Current flow diagrams, Electrical fault finding and Fitting locations.

7.2 Removing and installing the control unit for multimedia system - J650-

Installed up to CW 21.2015.

The control unit for multimedia system - J650- is located below the glove compartment/front passenger's side.

Removing

- Switch off the ignition and all electrical consumers!
- Remove the storage compartment in the dash panel on the front passenger side ⇒ Body Work; Rep. gr. 70 .
- Disconnect plug connection -4-.
- Unscrew screw -1- and release the unit with the bracket -3- from the retaining tabs -arrows-.
- Disconnect plug connection -2-.
- Remove the unit with the bracket from the vehicle or push it out of the bracket.

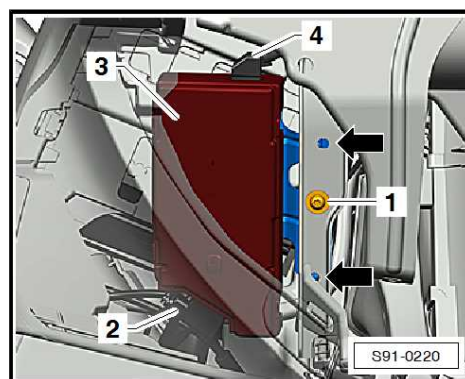
Installing

Installation is performed in the reverse order, pay attention to the following points:

- When replacing the control unit, it must be checked or coded with ⇒ Vehicle diagnostic tester

Tightening torques

Fixing screws for control unit for multimedia system - J650-	4 Nm
--	------



7.3 Removing and installing connection for external audio sources - R199- (AUX-IN, USB)

⇒ [“7.3.1 Removing and installing connection for external audio sources R199 \(AUX-IN, USB\) under the heating”, page 97](#)

⇒ [“7.3.2 Removing and installing the connection for external audio sources R199 \(AUX-IN\) in centre console next to the handbrake”, page 98](#)

7.3.1 Removing and installing connection for external audio sources - R199- (AUX-IN, USB) under the heating

Removing

- Switch off the ignition and all electrical consumers!

Vehicles up to CW 21.2015:

- Remove the storage compartment in the dash panel on the front passenger side ⇒ Body Work; Rep. gr. 70 .
- Disconnect plug -2- from control unit for multimedia system - J650- .

All vehicles:

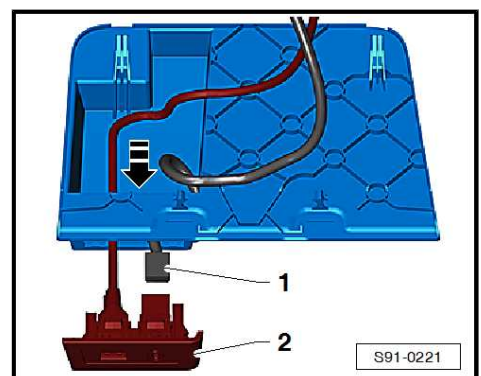
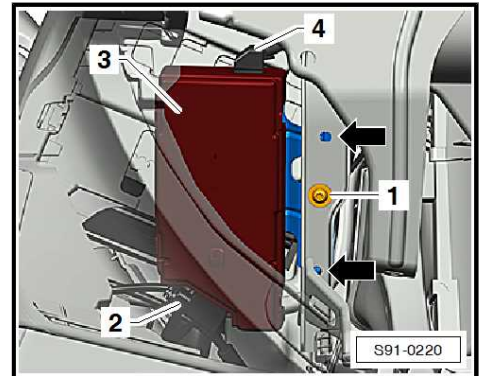


Caution

When using the lever tool, mask points where the lever tool is applied using commercially available adhesive tape.

- Lever off the cover -1- using the disassembly wedge - 3409- -arrow-.

- Release the MEDIA-IN multimedia socket (USB and AUX-IN) -2- from the retaining tabs and push it out -arrow-.
- Disconnect plug connection -1-.



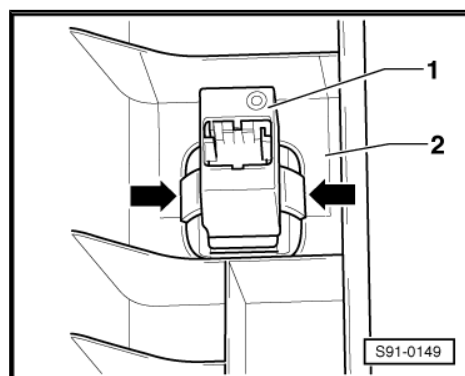
7.3.2 Removing and installing the connection for external audio sources - R199- (AUX-IN) in centre console next to the handbrake

Removing

- Switch off the radio, all electrical components and take out the ignition key.
- Remove the centre console between driver and front passenger => Body Work; Rep. gr. 68 .
- Disconnect plug.
- Press together the retaining tabs -arrows- and push connection for external audio sources -1- out of the centre console -2-.

Installing

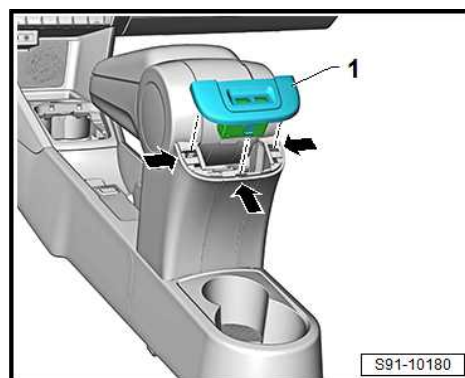
Installation is carried out in the reverse order.



7.4 Removing and installing the rear USB charging module

Removing

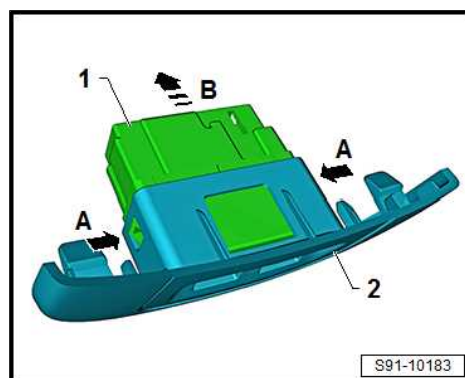
- Disassemble the panel with USB connectors -1- with the disassembly wedge from the rear support in the center console -arrows-.



- Detach USB charging module -1- from the panel detents arrows -A- -2- in the direction of the arrow -B-

Installing

Installation is carried out in the reverse order.



8 Loudspeaker arrangement

⇒ [“8.1 Removing and installing front bass speaker and rear full-range speaker”, page 99](#)

⇒ [“8.2 Removing and installing the front treble speaker”, page 99](#)

8.1 Removing and installing front bass speaker and rear full-range speaker

Removing

- Switch off the ignition and all electrical consumers!
- Remove the door trim panel from which the loudspeaker is removed ⇒ Body Work; Rep. gr. 70 .
- Disconnect socket connector at the loudspeaker.
- Use a suitable drill to drill open the rivets -arrows- and take out the faulty speaker.



Note

- ◆ *It is important to remove all the drill swarf from the door since it can otherwise lead to corrosion.*
- ◆ *Any damage to the paintwork which is caused by drilling out the rivets must be repaired immediately by a specialist.*

Installing

Installation is carried out in the reverse order.

- Attach the new speaker with matching blind rivets.

8.2 Removing and installing the front treble speaker

⇒ [“8.2.1 Removing and installing the speaker inside the outside mirror cover”, page 99](#)

⇒ [“8.2.2 Remove and install the speaker built into the internal door cover”, page 99](#)

8.2.1 Removing and installing the speaker inside the outside mirror cover

Applies to vehicles with electrically adjustable exterior mirrors.

In the event of a fault, the internal mirror cover must be replaced ⇒ Body Work; Rep. gr. 70 .

8.2.2 Remove and install the speaker built into the internal door cover

Applies to vehicles with manually adjustable exterior mirrors.

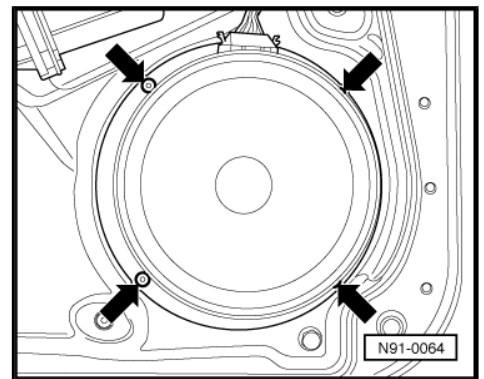
Removing

Vehicles without preparation for screwing in a new loudspeaker:

In the event of a fault, replace the internal door cover or the cover for the internal door control ⇒ Body Work; Rep. gr. 70 .

Vehicles with preparation for screwing in a new speaker:

- Remove the front door panel ⇒ Body Work; Rep. gr. 70 .





- Carefully drill out the heads of the plastic rivets -1- with a suitable drill and remove the speaker -2-.
- Remove remains of the plastic rivets (cut off, grind down).

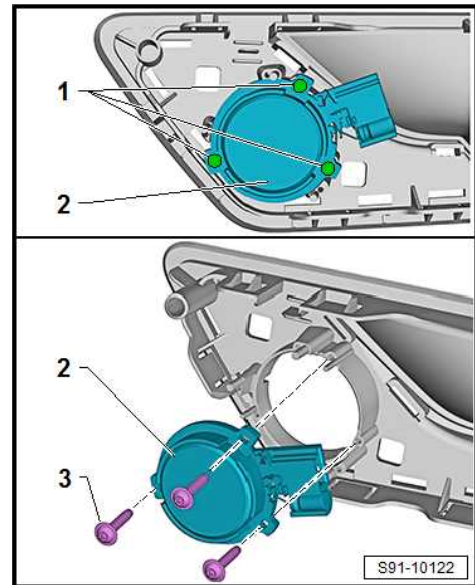
Installing

Installation is performed in the reverse order, pay attention to the following points:

- Secure new speaker -2- with screws -3- (see => Electronic Catalogue of Original Parts "ETKA").

Tightening torques

Component	Nm
Fixing screws for speakers	0.5 Nm



9 SmartLink system

⇒ **"9.1 SmartLink system - general instructions", page 101**

9.1 SmartLink system - general instructions

- ◆ The SmartLink system transmits the communication between the vehicle's infotainment system and a connected communication device (mobile/tablet) belong to the customer.
- ◆ As of week 22/2017, the SmartLink system is replaced by the SmartLink+ system. This renders the control unit for wireless data transmission - J1070- obsolete that was previously installed under the seat. Your functions are integrated in the Control unit for information electronics 1 - J794- .
- ◆ Using this system, the software applications installed in the communications equipment (such as navigation, web radio, weather), can be displayed and controlled in the infotainment display.
- ◆ The SmartLink system is part of the maximum infotainment equipment (Bolero, Amundsen) and has no other separately installed parts.
- ◆ You can find a detailed description of functions, operation as well as connection up to KW 21/2017 in the ⇒ Bolero / Amundsen Infotainment instruction manual , from KW 22/2017 in the ⇒ Rapid Owner's Manual , "infotainment" chapter.

The SmartLink function supports the following types of connection

- ◆ Android Auto
- ◆ Apple CarPlay
- ◆ MirrorLink



Caution

For correct communication with the SmartLink system, the customer's communications device (mobile phone/tablet) and the installed software applications must function correctly.

Not every mobile/tablet is compatible within the scope of the SmartLink system.

For details of mobile/tablet compatibility, and the available applications, visit the ŠKODA website.

ŠKODA AUTO a.s. assumes no responsibility for any problems due to incompatibility or improper function of cell phones/tablets or the applications installed on them

10 SmartGate system

⇒ ["10.1 SmartGate system - general notes", page 102](#)

⇒ ["10.2 SmartGate system - check the correct function", page 103](#)

⇒ ["10.3 Removing and installing the control unit for wireless data transfer J1070 \(SmartGate\)", page 104](#)

⇒ ["10.4 Set the parameters for the WLAN connection", page 105](#)

⇒ ["10.5 Update firmware", page 106](#)

10.1 SmartGate system - general notes

SmartGate system

- ◆ As of week 22/2017, the SmartGate system is replaced by the SmartLink system,
⇒ ["9.1 SmartLink system - general instructions", page 101](#) .
- ◆ The SmartGate system offers the possibility to access the driving data via the wireless WLAN connection.
- ◆ This is one-way communication of the connected communications of the customer's equipment (e.g., mobile phone, tablet, laptop) with the control unit for the SmartGate system.
- ◆ The driving data received can then be processed (depending on the application used and installed on the communications equipment).
- ◆ The WLAN range is limited to the interior of the vehicle.
- ◆ The control unit for wireless data transfer - J1070- located under the driver's seat is part of the system.
- ◆ For a detailed description of the functions, operations and connection, see the ⇒ Rapid Owner's Manual .



Caution

Correct communication within the scope of the SmartGate system relies on the customer's communications equipment (e.g., mobile phone/tablet) functioning correctly, and on the software applications being installed.

Not every cell phone/tablet is compatible within the scope of the SmartGate system.

For details of mobile phone/tablet compatibility, and the available applications, visit the ŠKODA website (www.skoda-auto.com).

ŠKODA AUTO a.s. assumes no responsibility for any problems due to incompatibility or improper function of cell phones/tablets or the applications installed on them

10.2 SmartGate system - check the correct function



Caution

Correct communication within the scope of the SmartGate system relies on the communications equipment (e.g., mobile/tablet) functioning correctly, and on the software applications being installed.

Not every cell phone/tablet is compatible within the scope of the SmartGate system.

For details of mobile phone/tablet compatibility, and the available applications, visit the ŠKODA website (www.skoda-auto.com).

ŠKODA AUTO a.s. assumes no responsibility for any problems due to incompatibility or improper function of cell phones/tablets or the applications installed on them

For a detailed description of the functions, operations and connection, see the ⇒ Rapid Owner's Manual .

The correct function of the SmartGate system is verified by the device itself.

To check it is working correctly, you can use, e.g., ⇒ Vehicle diagnostic tester mobiles, tablets, and laptops, referred to as "communication devices" below.

For the connection, ask the customer for the PIN code (password) for the SmartGate system.

Connecting with a WLAN device

Requirements:

- ◆ Switch on Wi-Fi on the communications equipment to be connected
- ◆ Switch on the ignition

Open a connection to SmartGate (login to a WLAN network)

- ◆ Search for available WLAN connections on the connected communications equipment - SmartGate identifies the connected communications device as SmartGate_...
- ◆ The last six symbols of the vehicle identification number (VIN code) are displayed at the position....
- ◆ Enter the password supplied by the customer, for the initial connection, enter the 17 digits of the vehicle identification number (VIN) (in uppercase).



Note

- ◆ *If no PIN code (password) is available, then switch off the ignition and, if necessary, disconnect the battery earth strap or the connector on the SmartGate unit for approx. 30 seconds.*
- ◆ *After re-connecting the battery earth strap, switch on the ignition and enter the vehicle identification number (in uppercase) as the PIN code.*
- ◆ *Up to four communications devices can be connected to the SmartGate system at the same time.*

Connection problems

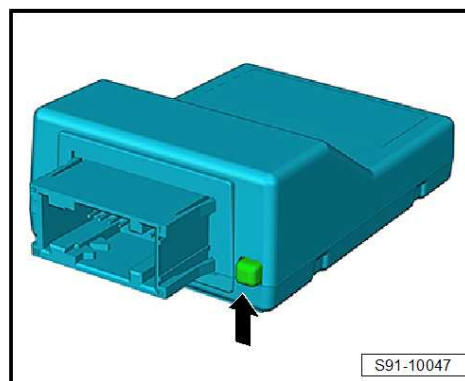
If the connection fails, then check the following points:

- ◆ Are the conditions for a successful connection fulfilled?
- ◆ Does SmartGate show up in the list of available WLAN networks?
- ◆ Was password required for validating the connection entered correctly?
- ◆ Is the communications equipment to be connected possibly still connected to another WLAN network?

If the above mentioned points are okay, and the connection still fails, then check the state of the LED display on the control unit for wireless data transfer - J1070- (SmartGate) located under the driver's seat.

If the LED display -arrow- on the control unit:

- ◆ is unlit or lit red, the device is not OK, check the electrical wiring as per ⇒ Current flow diagrams, Electrical fault finding and Fitting locations; if needed, replace the SmartGate control unit
- ◆ red flashing - this is a self-test, wait for the test to complete (on initial activation)
- ◆ lit green – the device is OK, no user is connected
- ◆ green flashing - the device is OK, at least one user is connected and the SmartGate application is active on the connected communication device (if you connect without an active application - the LED display is lit green)
- ◆ flashing red and green - the device is OK; and still in production mode (indicates production mode, for example in Production, where multiple vehicles with SmartGate exist at one location)
- ◆ orange (red and green at the same time) – the device is in upgrade mode, wait for this mode to complete



Disconnecting

The connection to SmartGate can be disconnected in one of the following ways:

- ◆ by disconnecting the connection to SmartGate on the connected communications device
- ◆ by disabling WLAN on the connected communications device
- ◆ by switching off the ignition and removing the ignition key for more than 5 s (for vehicles with an ignition starter switch, by switching off the ignition and opening the driver door)

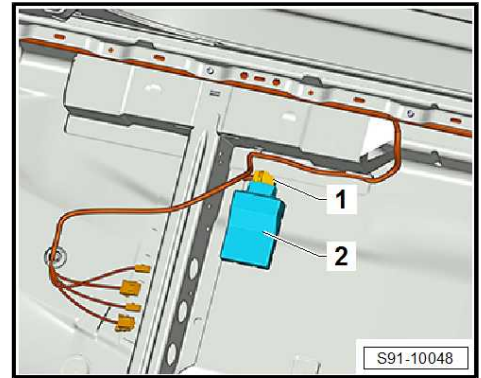
10.3 Removing and installing the control unit for wireless data transfer - J1070- (SmartGate)

Removing

The control unit for wireless data transfer - J1070- (SmartGate) is attached under the driver's seat to the floor covering by a Velcro fastener.

- Move the driver's seat as far back and up as possible.

- Remove control unit -2- from the Velcro fastener and, taking the lengths of the connected cables into consideration, remove the unit.
- Disconnect plug connection -1-.

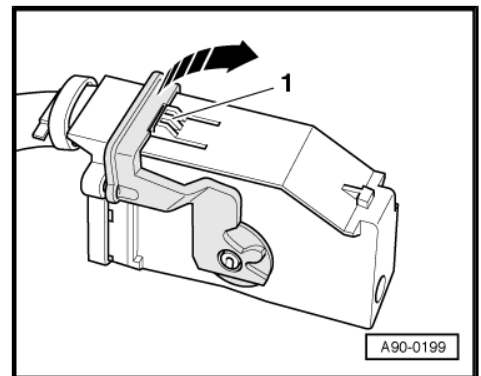


- To pull off the connector, press the latch -1-, and release the connector by tilting out the bar -arrow-.

Installing

Installation is performed in the reverse order, pay attention to the following points:

- Fit the unit control close to the seat cross-member on the level surface of the floor covering (see figure)
- The electrical wiring loom for the control unit must not be under tension.
- Press the control unit securely onto the floor covering.
- Do the following when replacing the control unit:
 - ◆ Update firmware ⇒ ["10.5 Update firmware", page 106](#)
 - ◆ Check functionality ⇒ ["10.2 SmartGate system - check the correct function", page 103](#)



10.4 Set the parameters for the WLAN connection

Some properties of the WLAN connection can be changed and configured using the connected communications device (e.g., ⇒ Vehicle diagnostic tester, mobile phone, tablet, laptop).

After fulfilling the conditions for a successful connection, enter the address »HTTP://192.168.123.1/index.html« in the web browser of the connected communications device. You will see a menu for setting the parameters for the SmartGate WLAN connection.

Configuration options:

- ◆ SSID
- ◆ Chanel (1 to 10) – manual setting of the connection channel
- ◆ Security – setting the security level for the connection
 - Open – unencrypted connection, no password entry required on the device to be connected; the connection is set up automatically
 - WPA or WPA2 – encrypted connection
- ◆ WPA/WPA2 key - password input
- ◆ Transmitting power in % - sets the signal strength in percent
- ◆ DHCP (lease time) - time for which the IP address remains valid
- ◆ Web interface: port - web interface



If you change the connection encryption from unsecured (open) to secured WPA or WPA2, you must enter a password on the communications equipment to be connected.

If no PIN code (password) is available, then switch off the ignition and, if necessary, disconnect the battery earth strap or the connector on the SmartGate unit for approx. 30 seconds. The SmartGate is reset to the factory default settings and transmission encryption is set to WPA2.

After re-connecting the battery earth strap, switch on the ignition and enter the vehicle identification number (in uppercase) as the PIN code.

10.5 Update firmware

To update the SmartGate firmware, you can use, e.g., ⇒ Vehicle diagnostic tester mobile phones, tablets, laptops; referred to as communications devices in the following.



Caution

Correct communication within the scope of the SmartGate system relies on the communications device functioning correctly, and on the software applications being installed.

Not every cell phone/tablet is compatible within the scope of the SmartGate system.

For details of mobile phone/tablet compatibility, and the available applications, visit the ŠKODA website (www.skoda-auto.com).

The firmware update function is not available in the Internet Explorer web browser version 9 and older.

Update data from the ŠKODA website are needed for the firmware update.

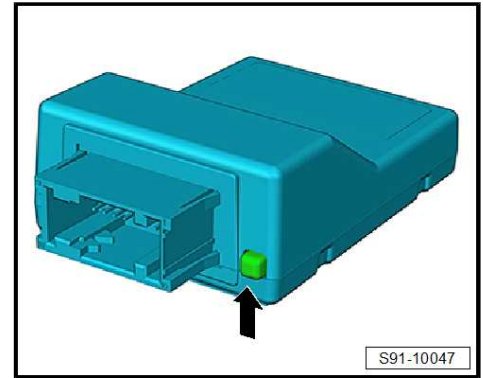
During the entire upgrade process, make sure that the ignition is on, or the engine is running (avoid starting the engine during the upgrade procedure).

Update procedure:

- Download the update data for SmartGate from the ŠKODA website; save them on the communications device (one file).
- Switch on WLAN on the communications device.
- Switch on the ignition and start the engine.
- Connect the communications device with SmartGate.
- Open the web browser on the communications device, and enter the address »HTTP://192.168.123.1/index.html«.
- At the bottom of the SmartGate menu that appears, select the firmware upgrade menu item.
- Select the update data stored on the communications device.
- Pressing “start update” copies the update data to SmartGate (copying takes about 5 min).
- After downloading the data and confirming “perform update”, the update starts (the update process takes approx. 2 min).
- After completing firmware update, the SmartGate is restarted.

i Note

- ◆ During the update process, the LED display on the control unit for control unit for wireless data transfer - J1070- -arrow- lights up orange (red and green at the same time).
- ◆ After completing the update and restarting the SmartGate, the LED display -arrow- lights up/flashes green (see [⇒ page 104](#)).





11 Mobile services online

⇒ [“11.1 General Instructions”, page 108](#)

⇒ [“11.2 Installation location overview - mobile online services”, page 108](#)

⇒ [“11.3 Removing and installing control unit for emergency call module and communication unit J949”, page 110](#)

⇒ [“11.4 Removing and installing emergency call button E276”, page 111](#)

⇒ [“11.5 Removing and installing speaker for emergency call module R335”, page 111](#)

⇒ [“11.6 Replacing battery for control unit for emergency call module and communication unit J949”, page 111](#)

⇒ [“11.7 Replacing, adapting and activating control unit for emergency call module and communication unit J949”, page 112](#)

⇒ [“11.8 Checking that the components and communication of the ERA Glonass system are functioning”, page 114](#)

11.1 General Instructions

The functions for mobile services online are integrated into the control unit for emergency call module and communication unit - J949- .

When handling a fault it is absolutely essential to know the functions of the mobile services online.

Further information and description of function ⇒ Owner's manual Rapid .

Fault finding is performed using ⇒ Vehicle diagnostic tester.

11.2 Installation location overview - mobile online services

1 - Control unit for emergency call module and communication unit - J949-

- ❑ Removing and installing
⇒ [“11.3 Removing and installing control unit for emergency call module and communication unit J949”](#), page 110
- ❑ Replace, adjust and activate
⇒ [“11.7 Replacing, adapting and activating control unit for emergency call module and communication unit J949”](#), page 112

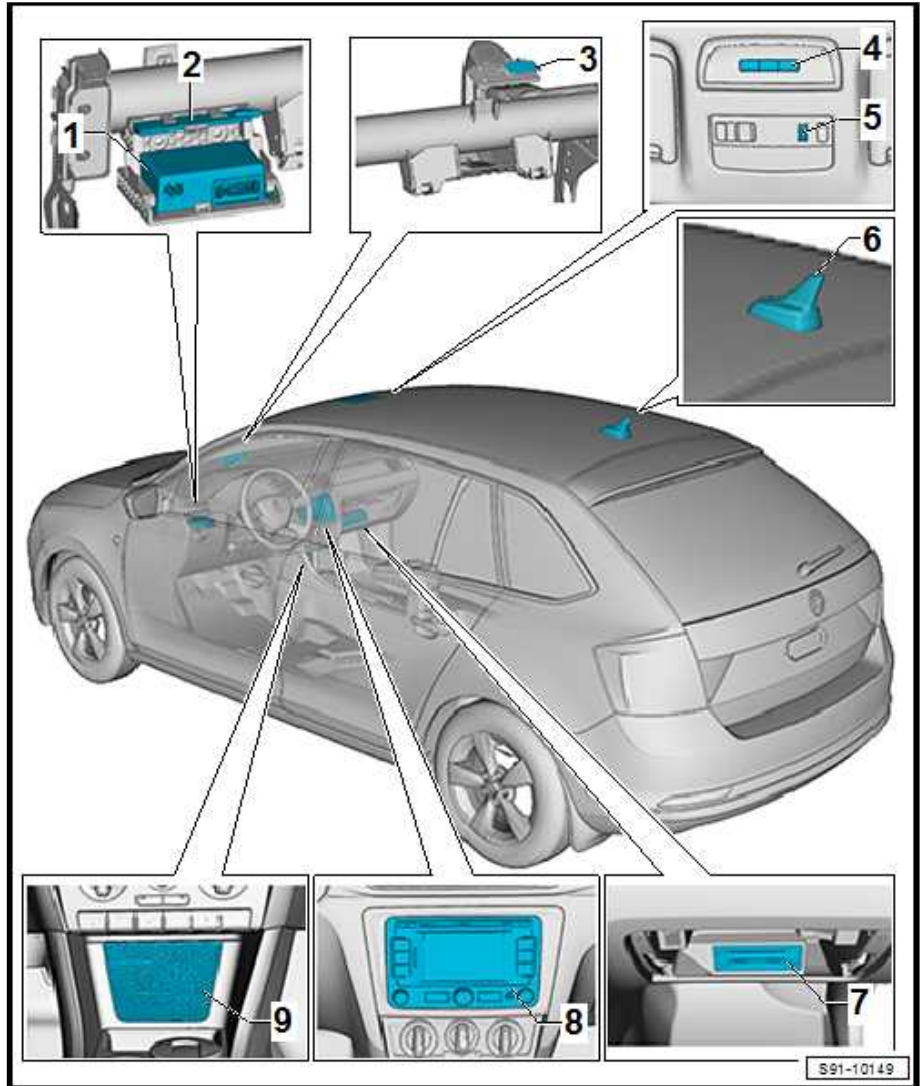
2 - GSM aerial

On vehicles without DAB aerial (digital radio receiver) and on vehicles for Russia and Belarus, the GPS aerial is on the roof (does not apply to the Spaceback model with panoramic sunroof)

- ❑ Removing and installing
⇒ [“4.2 Removing and installing roof aerial”](#), page 85

On vehicles with panoramic sunroof, with DAB aerial (digital radio receiver), the aerial is under the dash panel

- ❑ Removing and installing
⇒ [“4.4 Removing and installing the GSM aerial”](#), page 88



Volkswagen Technical Site: <http://vwts.ru> <http://vwts.info>

3 - GPS aerial

On vehicles for Russia and Belarus and on vehicles without DAB (digital radio receiver), the aerial is on the roof (does not apply to the Spaceback model with panoramic sunroof)

- ❑ Removing and installing ⇒ [“4.2 Removing and installing roof aerial”](#), page 85

On other vehicles, the aerial is under the dash panel

- ❑ Removing and installing ⇒ [“4.3 Removing and installing the GPS aerial”](#), page 87

4 - Emergency call button - E276-

- ❑ Removing and installing ⇒ [“11.4 Removing and installing emergency call button E276”](#), page 111

5 - Telephone microphone - R38-

- ❑ in the front interior light
- ❑ Removing and installing
⇒ [“5.3 Removing and installing the microphone for the telephone R38”](#), page 93

6 - Roof aerial

- ❑ Removing and installing ⇒ [“4.2 Removing and installing roof aerial”](#), page 85

7 - Control unit for IT 1 - J794-

- ❑ Removing and installing ⇒ [“3.6 Removing and installing the infotainment control unit”](#), page 78

8 - Display unit for control unit of the display and operating unit, front information - J685-

- ❑ In the centre of the dash panel



- ❑ Removing and installing ⇒ [“3.5 Remove and install infotainment display unit”, page 77](#)

9 - Speaker for emergency call module - R335-

- ❑ Removing and installing
⇒ [“11.5 Removing and installing speaker for emergency call module R335”, page 111](#)

11.3 Removing and installing control unit for emergency call module and communication unit - J949-

The control unit for emergency call module and communication unit - J949- is behind the dash panel on the driver's side.

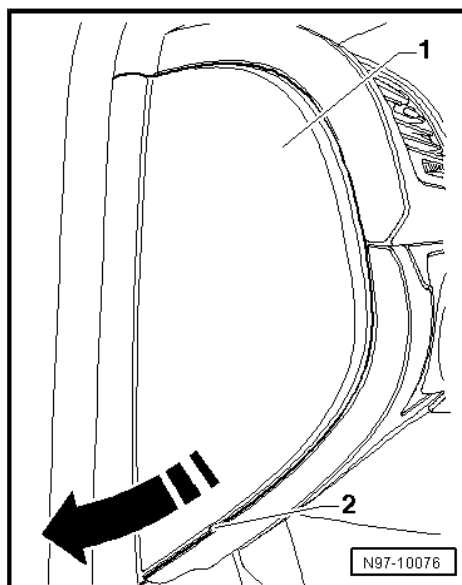


Note

For replacement, follow
⇒ [“11.7 Replacing, adapting and activating control unit for emergency call module and communication unit J949”, page 112](#).

Removing

- Switch off the ignition and all electrical consumers!
- Place the ignition key outside the vehicle to avoid accidentally turning on the ignition.
- Remove the side vent from the dash panel on the driver's side
⇒ Heating, Air Conditioning; Rep. gr. 80 .
- Remove the side cover on the dash panel -1- on the driver's side in -direction of arrow-.
- Remove the light switch
⇒ [“2.1 Removing and installing light switch”, page 207](#) and the headlight range control adjuster
⇒ [“2.2 Removing and installing the headlight range control adjuster”, page 207](#) .
- Unlock and disconnect the plug of the control unit for emergency call module and communication unit - J949- .

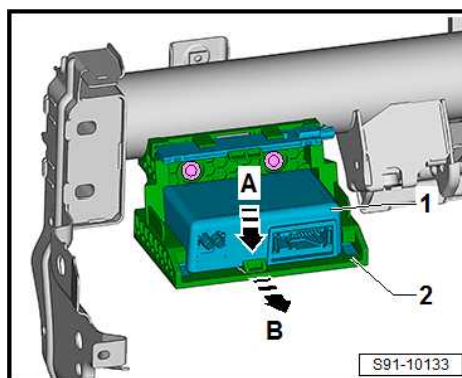


- Push the retaining tab in direction of arrow -A- and then slide the control unit for emergency call module and communication unit - J949- -1- out of the bracket -2- in direction of arrow -B-.

Installing

Installation is performed in the reverse order, pay attention to the following points:

- Slide the control unit into the bracket up to the stop until the retaining tab locks into place, arrow -A-.



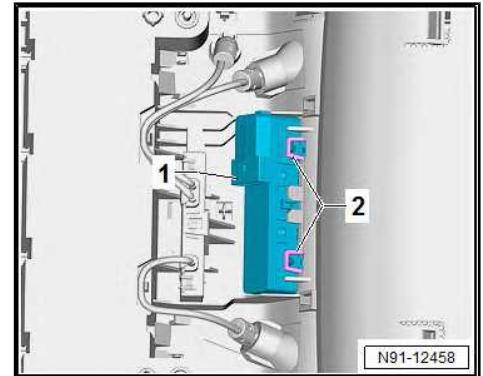
11.4 Removing and installing emergency call button - E276-

Removing

- Removing the storage compartment in the headliner ⇒ Body Work; Rep. gr. 68 .
- Use a small screwdriver to release the retaining clips -2- on both sides and remove the emergency call button - E276- Pos. -1-.

Installing

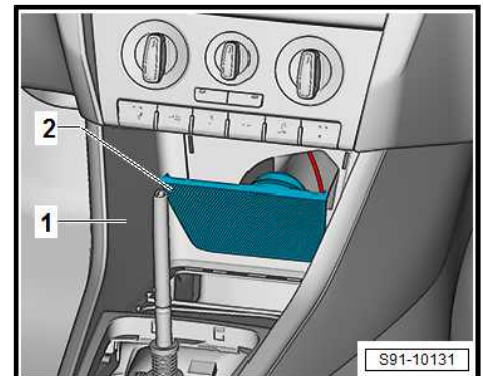
Installation is carried out in the reverse order.



11.5 Removing and installing speaker for emergency call module - R335-

Removing

- Unclip cover with speaker -2- out of the centre console -1- using the disassembly wedge and remove it, taking into account the length of the connected cable.
- Release connector and pull it off.



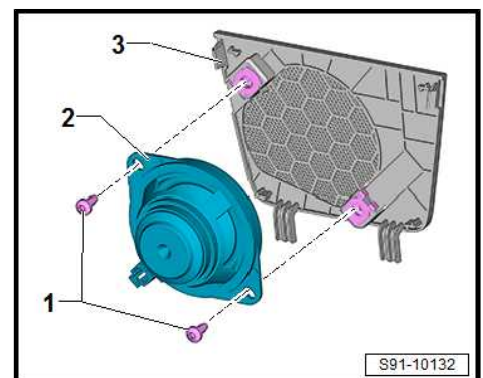
- Unscrew screws -1- and detach speaker for emergency call module - R335- -2- from the cover -3-.

Installing

Installation is carried out in the reverse order.

Tightening torques

Fixing screws for speakers	1.5 Nm
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11.6 Replacing battery for control unit for emergency call module and communication unit - J949-

- Remove the control unit for emergency call module and communication unit - J949- .
⇒ ["11.3 Removing and installing control unit for emergency call module and communication unit J949", page 110](#)



- Unscrew the screw on the control unit from below and remove the battery cover.
- Replace the battery and re-install the control unit.

11.7 Replacing, adapting and activating control unit for emergency call module and communication unit - J949-

⇒ [“11.7.1 Replacing, adapting and activating control unit for emergency call module and communication unit J949 , vehicles for EU countries except Russia and Belarus”, page 112](#)

⇒ [“11.7.2 Replacing, adapting and activating control unit for emergency call module and communication unit J949 , vehicles for Russia and Belarus”, page 113](#)

11.7.1 Replacing, adapting and activating control unit for emergency call module and communication unit - J949- , vehicles for EU countries except Russia and Belarus

- Data for “targeted fault-finding” in ⇒ Vehicle diagnostic tester current

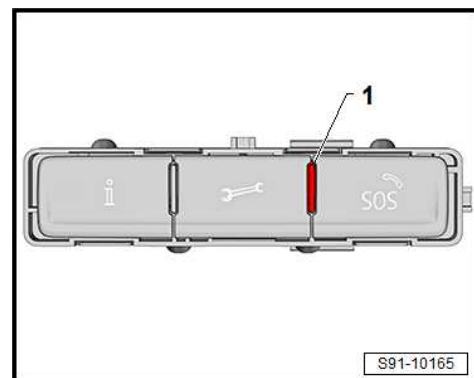
Procedure when replacing:

- In Targeted fault finding or Targeted functions operating mode for the control unit for emergency call module and communication unit - J949- , select the Commissioning/replace function (address 0075) ⇒ Vehicle diagnostic tester.
- Follow the instructions on the ⇒ Vehicle diagnostic tester (includes the steps: coding, parameterisation, adaptation to immobiliser).
- In Targeted fault finding or Targeted functions operating mode for the control unit for emergency call module and communication unit - J949- , select the Activate function ⇒ Vehicle diagnostic tester.
- Exit Targeted fault-finding or Targeted functions.
- Remove ignition key (for vehicles with interface for entry and start system, switch off ignition and open the driver's door for at least 5 seconds).
- Disconnect ⇒ Vehicle diagnostic tester.
- Drive the vehicle out of the workshop to ensure GPS and GSM signal reception (the GSM and GPS signal strength can be read in the measured value block).
- Switch on the ignition and leave switched on for at least 10 minutes, but do not connect the vehicle diagnosis tester .

The status LED -1- is lit red after ignition is switched on.

When successfully activated after the communication profile has been downloaded, the colour of the status LED -2- changes from red to green as you wait.

- Checking the functions of the Škoda Connect services (see ⇒ Rapid Owner's Manual). If they are not active, restart the infotainment unit (press the switch-on button/virtual switch-on button on the display unit for approx. 15 seconds until the infotainment unit restarts).



11.7.2 Replacing, adapting and activating control unit for emergency call module and communication unit - J949- , vehicles for Russia and Belarus

- Data for “targeted fault-finding” in ⇒ Vehicle diagnostic tester current

Procedure when replacing:

- In **Targeted fault finding** or **Targeted functions** operating mode for the control unit for emergency call module and communication unit - J949- , select the **Transfer/re-place** function (address 0075) ⇒ Vehicle diagnostic tester.
- Follow the instructions on the ⇒ Vehicle diagnostic tester (includes the steps: coding, parameterisation, adaptation to immobiliser).
- In **Targeted fault finding** or **Targeted functions** operating mode for the control unit for emergency call module and communication unit - J949- , select the **Activate** function ⇒ Vehicle diagnostic tester.
- Exit **Targeted fault-finding** or **Targeted functions**.
- Remove ignition key (for vehicles with interface for entry and start system, switch off ignition and open the driver's door for at least 5 seconds).
- Disconnect ⇒ Vehicle diagnostic tester.
- Drive the vehicle out of the workshop to ensure GPS and GSM signal reception (the GSM and GPS signal strength can be read in the measured value block).
- Switch on ignition.

The status LED -2- is lit red after ignition is switched on.

When successfully activated after the communication profile has been downloaded (this may take up to 15 minutes or even longer, depending on GPS and GSM signal strength), the colour of the status LED -2- changes from red to green.

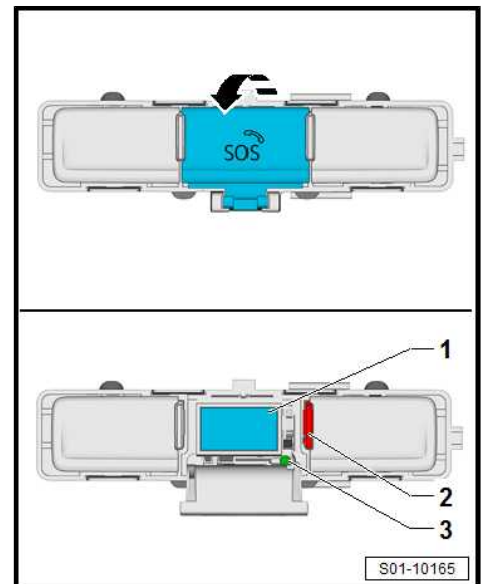
If the status LED -2- is green, the ERA Glonass system is activated.

Each time the ignition key is disconnect and the ignition is then switched on, the status LED lights up red and then, after approx. 5 seconds, switches to green.



Caution

After successful activation, connect the ⇒ Vehicle diagnostic tester and read out the SIM ID number in the SIM card block using the “Measured value blocks” (address 0075 - read measured values) of the control unit for emergency call module and communication unit - J949- . You must record this number (nine digits) on the customer order. The customer should then be informed that he/she must notify the road traffic authority that the control unit for emergency call module and communication unit - J949- has been replaced and provide the authority with the above SIM ID number to be entered in the vehicle database.



11.8 Checking that the components and communication of the ERA Glonass system are functioning

Note

- ◆ Applies to vehicles for Russia and Belarus.
- ◆ You can check that the individual components are working and the ERA Glonass system is communicating with the ⇒ Vehicle diagnostic tester or by performing the system self-test.
- ◆ To run the function test for the components and communication, the ERA Glonass system must be activated.
- ◆ The ERA Glonass system is activated for the first time after switching off transport mode (see ⇒ Maintenance ; Booklet Rapid).

The self-test checks the following:

- ◆ OCU control unit, SW integrity and realtime
- ◆ GNSS (GPS) aerial
- ◆ GSM aerial
- ◆ Microphone
- ◆ Loudspeaker
- ◆ Connection of the unit with other components (BUS communication, airbag)
- ◆ Connection of HMI components
- ◆ Button in headliner
- ◆ Condition of the emergency battery

Self-test of the components and communication of the ERA Glonass system

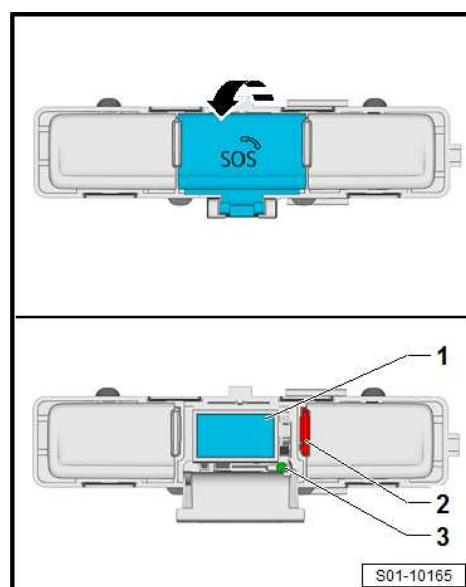
- Switch on ignition.
 - Swivel out the cap cover for the SOS button -arrow- and press the button -2- for approx. 3 seconds with a thin object (e.g. a pin).
- 1 - Emergency call button
 - 2 - LED warning light
 - 3 - Button for test start
- Pressing the button -2- activates the voice prompts for the test sequence. The individual steps are confirmed by pressing the button -1-.
 - Also follow the voice prompts.

A voice prompt confirms if the test sequence has been completed successfully.

Evaluate the test before switch off the ignition.

The test result is indicated by the type of flashing signals from the warning light -3-.

- After the ignition is switched off, the ERA Glonass system is reactivated and the warning light lights up green for a short period (the warning light may light up green even if a fault has been identified).





Evaluating the test:

Step	Tested component/communication	Determined state	LED warning light flashes
0	ERA Glonass system	No fault detected	green
1	Vehicle identification number	Vehicle identification number empty/ no configuration	x1 green, x1 red
2	Microphone	Microphone not working	x1 green, x2 red
3	Loudspeaker	Speaker not working	x1 green, x3 red
4	Button in headliner	Button not working	x1 green, x4 red
5	Airbag/crash sensors	No signal	x1 green, x5 red
6	Main GSM aerial	No signal	x1 green, x6 red
7	Reserve GSM aerial (if fitted)	No signal	x1 green, x7 red
8	GNSS (GPS) aerial	No signal	x1 green, x8 red
9	Mute signal	Line interruption	x1 green, x9 red
10	IVS internal error	Internal IVS/SIM card/NAD not functioning correctly	x1 green, x10 red
11	Emergency battery (see ⇒ "11.6 Replacing battery for control unit for emergency call module and communication unit J949", page 111)	Battery weak/defective	x1 green, x11 red
12	Ignition	Failure/interruption of ignition	x1 green, x12 red

92 – Windscreen wash/wipe system

1 Windscreen washer system

⇒ “1.1 Removing and installing washer fluid reservoir, washer fluid pumps and sensor for washer fluid level”, page 116

⇒ “1.2 Removing and installing the spray nozzles for windscreen washer system”, page 117

⇒ “1.3 Repairing washer fluid lines”, page 117

1.1 Removing and installing washer fluid reservoir, washer fluid pumps and sensor for washer fluid level

Removing

- Switch off the ignition and all electrical consumers!
- Slacken the front part of the right wheelhouse liner ⇒ Body Work; Rep. gr. 66 .
- Release plug from the washer fluid pumps for windscreen -6-, for headlight -9- and from sensor for washer fluid level -1-.
- To unlock, turn the locking clip on the hose connections -3- (black marking - front windscreen washer), -5- (white marking - rear windscreen washer) and disconnect the connections from the washer fluid pump -4-. Collect the flowing out washer fluid in a suitable vessel.
- To unlock press the securing clamp and pull off hose with coupling -8- from the washer fluid pump for headlight -7-.
- If necessary slide the washer fluid pumps out of the washer fluid reservoir to the top (turn the washer fluid pump for headlight -7- approx. 90° before sliding out) and remove the sensor for the washer fluid level -1-.
- Remove front bumper ⇒ Body Work; Rep. gr. 63 .
- Remove cap from reservoir supports.
- Push the reservoir support -4- out of the holder -3-.
- Push out the clamp -5- -arrow-.
- Unscrew nut -1- and remove reservoir -2-.

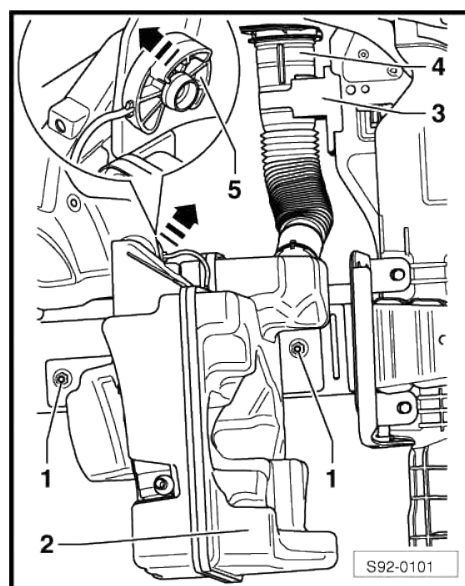
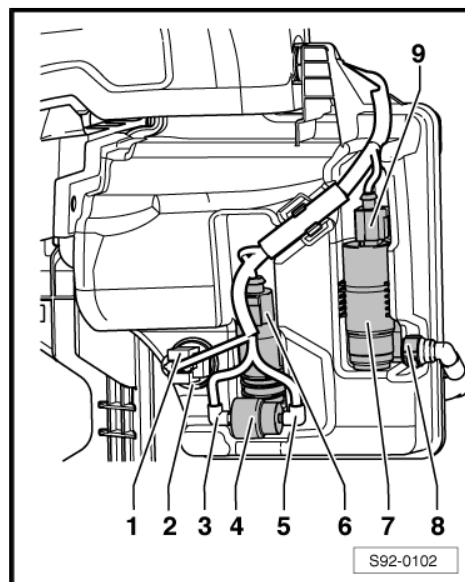
Installing

Installation is performed in the reverse order, pay attention to the following points:

- Hoses with angled pieces must click audibly into the connections on the washer fluid pumps.

Tightening torques

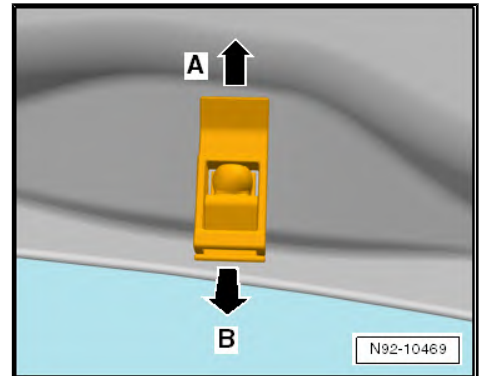
Fixing nuts for reservoir	8 Nm
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1.2 Removing and installing the spray nozzles for windscreen washer system

Removing

- Press the nozzle upwards in direction of arrow -A- and unhook from the front flap in direction of arrow -B-.

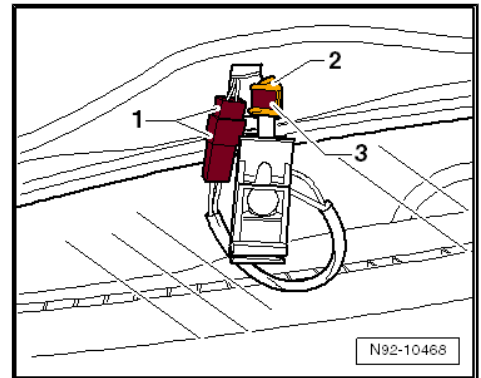


- Unlock by pulling out the locking clip -3- and detach the hose connection -2- from the spray nozzle.
- Disconnect the plug connection -1- of the heated nozzles.

Installing

Installation is performed in the reverse order, pay attention to the following points:

- Adjust the spray nozzles ⇒ Maintenance ; Booklet Rapid .



1.3 Repairing washer fluid lines

All the notes and comments for this chapter can be found in the Workshop Manual ⇒ Electrical System - General notes; Rep. gr. 92 . If a note cannot be accessed, open the Workshop Manual "Electrical System - General Notes" manually in "ELSA", Section "92".

2 Windscreen wiper and washer system

⇒ [“2.1 Removing and installing the wiper arms with wiper blades and setting their final setting”, page 118](#)

⇒ [“2.2 Removing and installing wiper motor with linkage”, page 119](#)

⇒ [“2.3 Removing and installing windscreen wiper motor from linkage”, page 120](#)

⇒ [“2.4 Removing and installing sensor for rain and light detection G397 , vehicles up to CW 21.2015”, page 121](#)

⇒ [“2.5 Removing and installing sensor for rain and light detection G397 , vehicles from CW 22.2015”, page 123](#)

⇒ [“2.6 Repairing sensor for rain and light detection G397 , vehicles from CW 22.2015”, page 125](#)

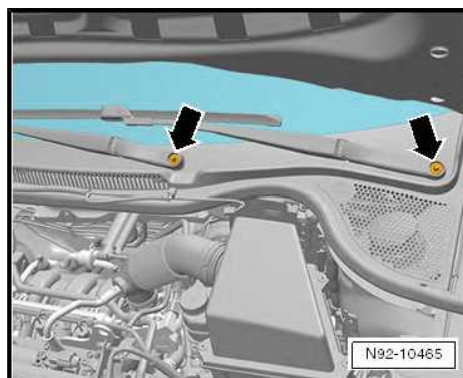
2.1 Removing and installing the wiper arms with wiper blades and setting their final setting

Special tools and workshop equipment required

- ◆ Extractor for wiper arms - T10369/1-

Removing

- Use a screwdriver to lever off the two caps for nuts on the wiper arms.
- Unscrew the nuts -arrows-.

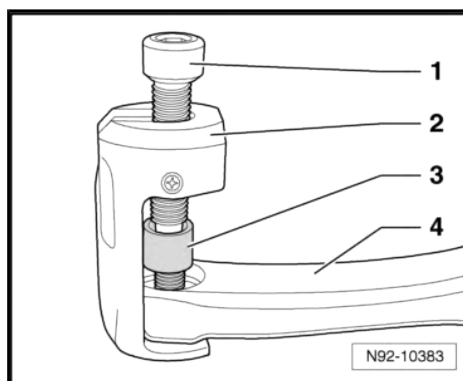


- Push the extractor for wiper arms - T10369/1- , Pos. -2-, onto the arm, as shown in the illustration.

Note

To release the windscreen wiper arms, always use the thrust piece -3- in order to avoid damage to the thread of the wiper motor shaft.

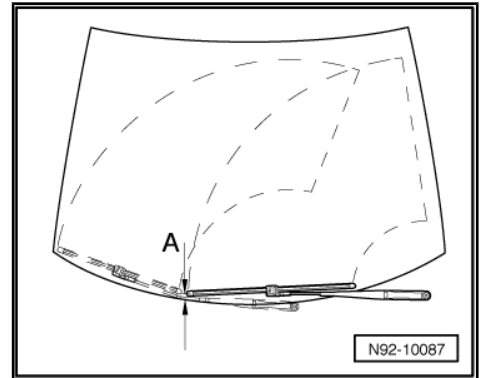
- Release the wiper arm -4- from the shaft by turning the pressure screw -1-.



Installing

- Switch wiper motor on and off and run until it is in park position.
- Position the wiper arms (shorter wiper arm on the driver's side) so that:

On the driver's side, there must be a distance -A- of 28^{+1}_{-3} mm between the upper lip of the wiper blade and the upper edge of the plenum chamber cover.

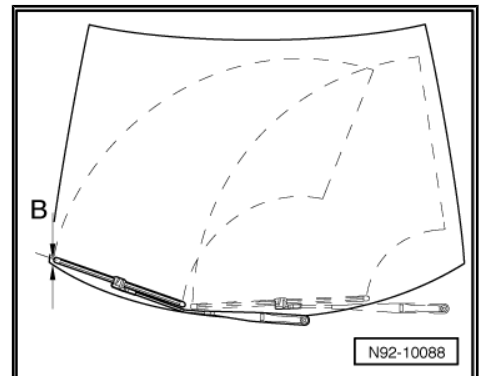


On the front passenger side, there must be a distance -B- of 27 ± 2 mm between the upper lip of the wiper blade and the upper edge of the plenum chamber cover.

- Slightly tighten fixing nuts.
- Operate the flick wipe, if necessary align wiper arms once again and tighten the securing nuts.

Tightening torques

Fixing nut for wiper arms	21 Nm
---------------------------	-------



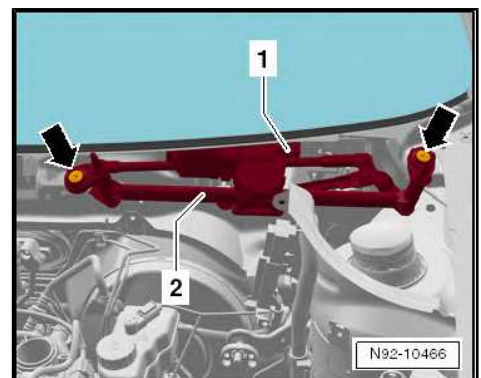
2.2 Removing and installing wiper motor with linkage

Removing

- Switch off the ignition and all electrical consumers!
- Remove wiper arms with wiper blades
⇒ ["2.1 Removing and installing the wiper arms with wiper blades and setting their final setting", page 118](#) .
- Remove the plenum chamber cover ⇒ Body Work; Rep. gr. 66 .
- Remove bulkhead ⇒ Body work; Rep. gr. 50 .
- Unscrew securing bolts -arrows-.
- Unplug connector -1- at wiper motor.
- Push the wiper motor with the linkage -2- towards the engine and remove.

Installing

Installation is performed in the reverse order, pay attention to the following points:

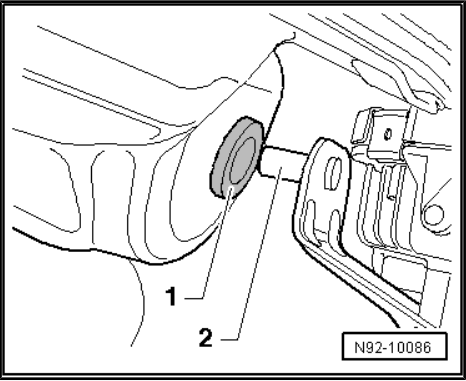




- When installing, insert the rig pin -2- into the rubber bearing -1-.

Tightening torques

Fixing screws for wiper motor with linkage	7 Nm
--	------



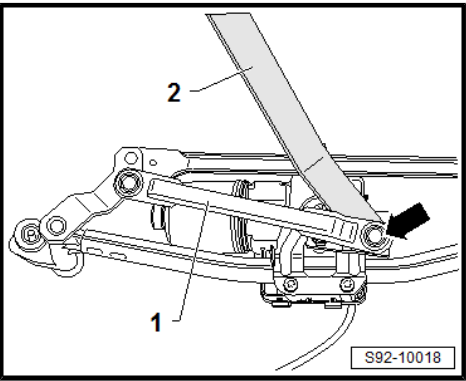
2.3 Removing and installing windscreen wiper motor from linkage

Special tools and workshop equipment required

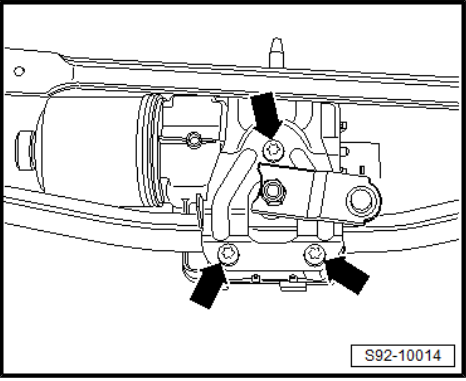
- ◆ Disassembly tool for door panel - T10236-

Removing

- Removing wiper motor with linkage
⇒ ["2.2 Removing and installing wiper motor with linkage", page 119](#).
- Use a removal tool -2- to lever off the rod -1- from joint holder -arrow-.



- Unscrew fixing screws -arrows- and remove the wiper motor with control unit from the mounting frame.



Installing



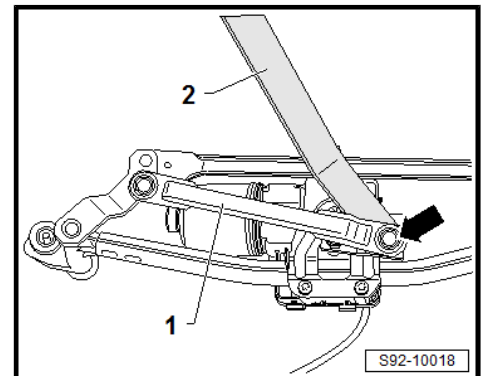
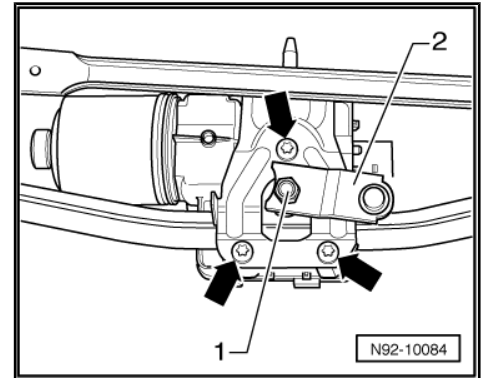
Note

Lever -2- is attached to the motor shaft -1- and cannot be disassembled. The lever position is not configured.

- Press rod -1- onto the joint holder -arrow-.

Tightening torques

Fixing screws for wiper motor	8 Nm
Fixing nuts for crank on wiper motor	18 Nm



2.4 Removing and installing sensor for rain and light detection - G397- , vehicles up to CW 21.2015

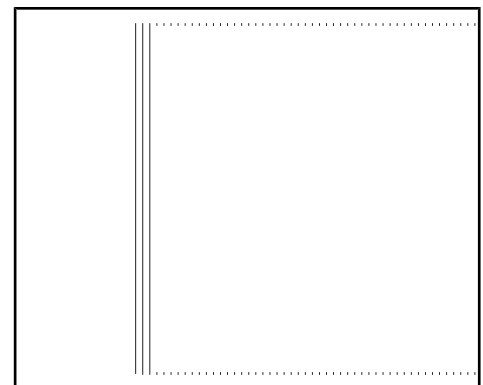


Caution

If the sensor for rain and light detection - G397- is removed from the retaining plate on the windscreen (e.g. when changing the windscreen), it can be subsequently installed again. Store the removed sensor dust-free until it is installed again and make sure that the silicone coupling cushion does not get dirty.

Removing

- Switch off all electrical components and take out the ignition key.
- Removing interior rear-view mirror ⇒ Body Work; Rep. gr. 68 .
- Disconnect plug -1- from sensor -2-.





- Lever the sensor -1- carefully and slowly from the retaining plate -2- at the recess -3- using a suitable cross-head screw-driver.



Note

When removing, make sure to lever off the complete sensor and not only the upper shell of the sensor.

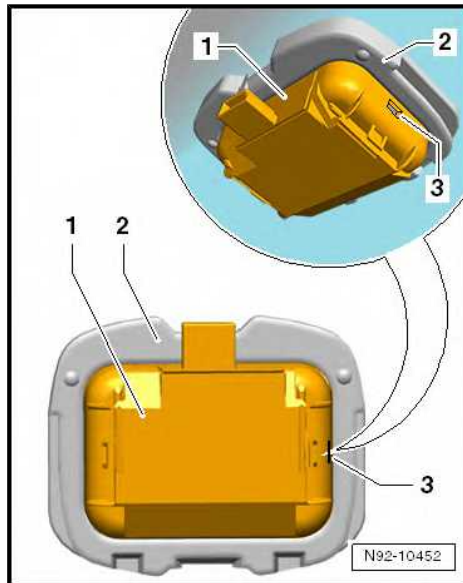
Installing

Installation is performed in the reverse order, pay attention to the following points:



Caution

- ◆ *Thoroughly clean the windscreen inside the retaining plate with e.g. isopropyl (technical alcohol).*
- ◆ *The surface (coupling cushion) of the sensor must not get dirty or damaged when installing. A sensor with a damaged coupling cushion must be replaced.*



Note

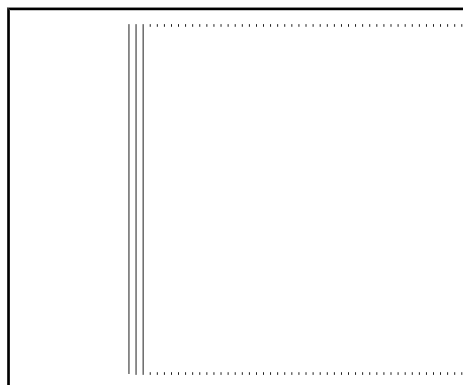
If the surface (coupling cushion) of the sensor is dirty, it can be cleaned, if necessary, by sticking on one or several adhesive tapes and then pulling them off again.

- If necessary, remove the protective cap of the new sensor.
- Insert the sensor -1- into the retaining plate on the windscreen -2- and press firmly.



Note

- ◆ *Even after correct installation of the sensor, smaller air bubbles can be present initially between the windscreen and the coupling cushion. The contact surface must be free of bubbles after approx. 10 minutes.*
- ◆ *When replacing, the new sensor must be coded with the ⇒ Vehicle diagnostic tester.*



2.5 Removing and installing sensor for rain and light detection - G397- , vehicles from CW 22.2015



Caution

Do not touch the optical unit of the sensor. It could become damaged.

Store the undamaged removed sensor dust-free until it is installed again and make sure that it does not get dirty.

*If damage occurs to the coupling cushion during sensor removal, the sensor must be repaired
⇒ ["2.6 Repairing sensor for rain and light detection G397 , vehicles from CW 22.2015", page 125](#) .*

Removing



Note

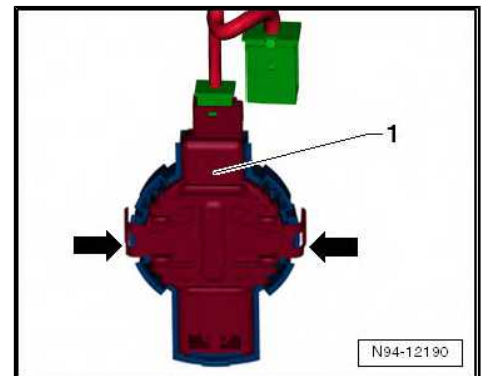
To facilitate removal, turn the mirror as necessary.

- Switch off the ignition and all electrical consumers!
- Removing interior rear-view mirror ⇒ Body Work; Rep. gr. 68 .
- Release retaining clip -1- -arrow-.



Note

Observe a waiting time of at least 1 minute after releasing the retaining clip. This allows the silicone layer to expand so that it will not be damaged while it is being removed.





- Carefully lever the sensor for rain and light detection - G397- Pos. -2- out of the retaining frame from above starting from the front windscreen.
- Unlock and pull off connector -1-.

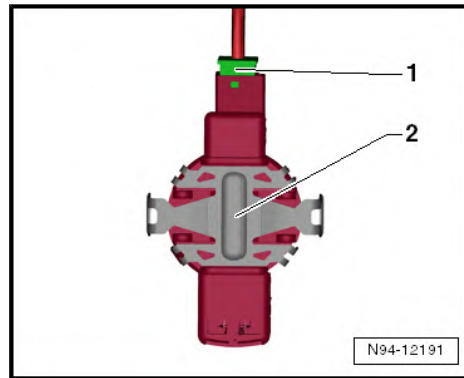
Installing

Installation is performed in the reverse order, pay attention to the following points:



Caution

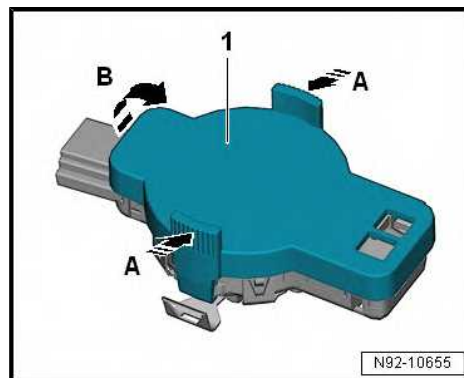
- ◆ *Thoroughly clean the windscreen inside the retaining plate with e.g. isopropyl (technical alcohol). No original coupling cushion residues may remain on the pane.*
- ◆ *There are several versions of the sensors (up to three functions depending on equipment, sensor for rain and light detection and humidity). Ensure that the correct component is used for replacement, see ➔ Electronic Catalogue of Original Parts "ETKA".*
- ◆ *The surface (coupling cushion) of the sensor must not get dirty or damaged when installing. If damaged, repair the sensor (see ➔ "2.6 Repairing sensor for rain and light detection G397, vehicles from CW 22.2015", page 125).*



Note

If the surface (coupling cushion) of the sensor is dirty, it can be cleaned, if necessary, by sticking on one or several adhesive tapes and then pulling them off again.

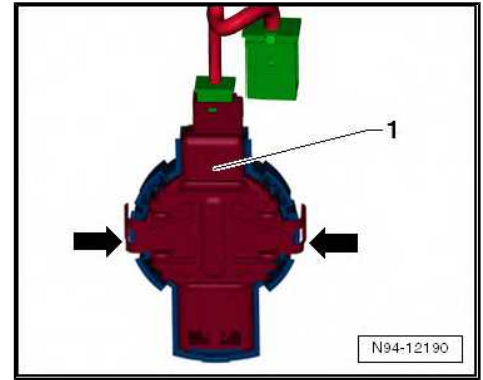
- If a new sensor is installed, press the grips in -direction of arrow A- and remove the protective cap -1- in -direction of arrow B-.
- Mount plug.
- Insert the sensor into the retaining frame on the windscreen.



- Press retaining clip -1- on until the catches -arrows- audibly click into place.

i Note

- ◆ *Even after correct installation of the sensor, smaller air bubbles can be present initially between the windscreen and the coupling cushion. The contact surface must be free of bubbles after approx. 10 minutes.*
 - ◆ *If the contact surface is not free of bubbles after 10 minutes, the sensor must be removed and re-installed.*
 - ◆ *Air bubbles between the windscreen and the coupling cushion cause sensor malfunctions.*
- When replacing, the new sensor must be coded with the ⇒ Vehicle diagnostic tester.



2.6 Repairing sensor for rain and light detection - G397- , vehicles from CW 22.2015

⇒ [“2.6.1 Repairing the sensor for rain and light detection G397 - TRW manufacturer”, page 125](#)

⇒ [“2.6.2 Repairing the rain and light detector sensor G397 , Valeo manufacturer”, page 126](#)

2.6.1 Repairing the sensor for rain and light detection - G397- - TRW manufacturer

There are different bushings for the rain sensor from different manufacturers.

The sensor bushing with optical unit is also supplied with retaining clips as a spare part. These must be removed for vehicles that do not require retaining clips.

Work procedure:

- Remove the sensor
⇒ [“2.5 Removing and installing sensor for rain and light detection G397 , vehicles from CW 22.2015”, page 123](#) .



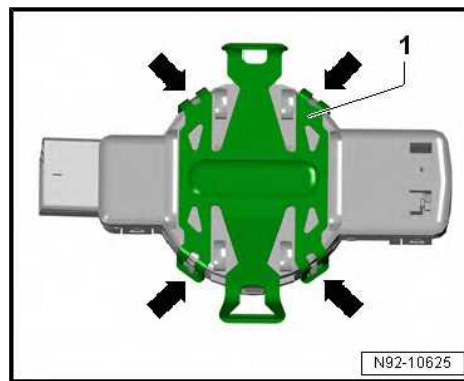
Caution

Risk of damaging the sensor for rain and light detection electronics.

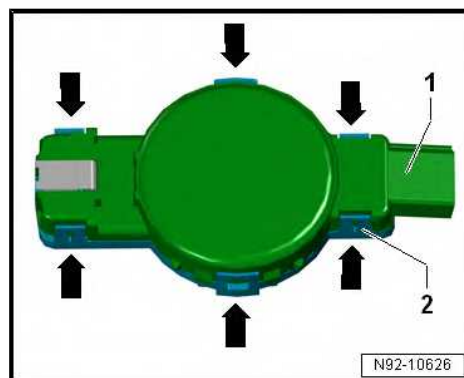
- ◆ *When disconnecting the sleeve parts, do not insert the screwdriver until the electronics of the sensor for rain and light detection.*
- ◆ *Do not touch the electronics of the sensor for rain and light detection.*



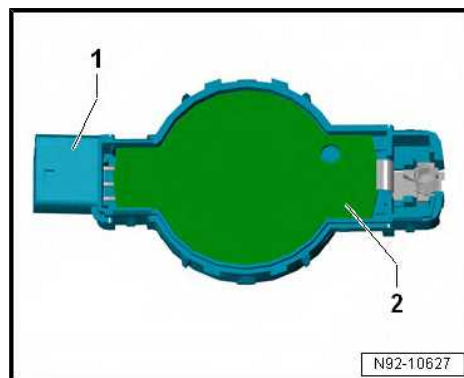
- Undo retaining tabs -arrows- with a suitable screwdriver and remove clamps -1-.



- Disconnect the upper part of the sleeve with an optical unit -1- by unlocking the retaining lugs -arrows- from the bottom part -2-.



- Remove sensor for rain and light detection electronics -2- from the old upper part -1- and insert into the new part.
- Lock the upper part of the sleeve with the optical unit and the protective cap to the bottom part of the sleeve.
- Install the sensor for rain and light detection
⇒ [“2.5 Removing and installing sensor for rain and light detection G397 , vehicles from CW 22.2015” , page 123 .](#)



2.6.2 Repairing the rain and light detector sensor - G397- , Valeo manufacturer



Note

- ◆ *There are various bushings for the Rain and light detector sensor - G397- from different manufacturers.*
- ◆ *The sensor bushing with optical unit is also supplied with retaining clips as a spare part. These must be removed for vehicles that do not require retaining clips.*

Work procedure

- Remove the sensor
⇒ [“2.5 Removing and installing sensor for rain and light detection G397 , vehicles from CW 22.2015” , page 123 .](#)

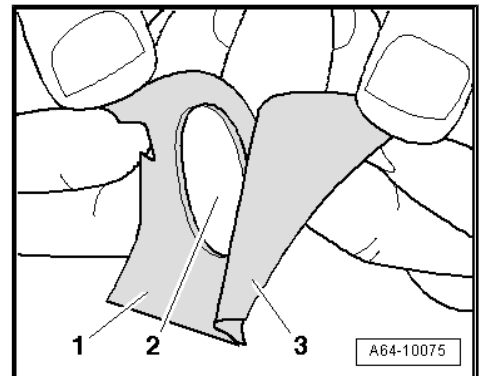
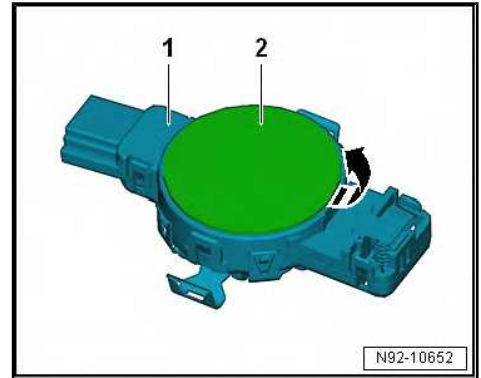
- Carefully remove the silicone cushion -2- or the residues from the sensor -1-.



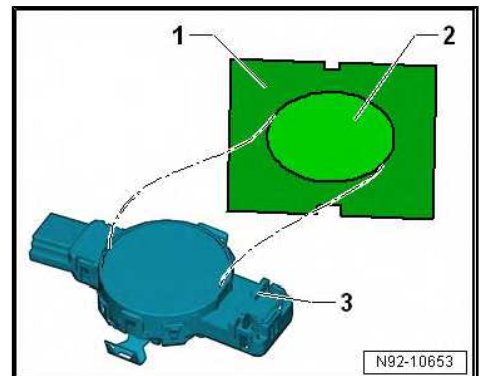
Caution

The surface of the sensor must be completely free of foil residues.

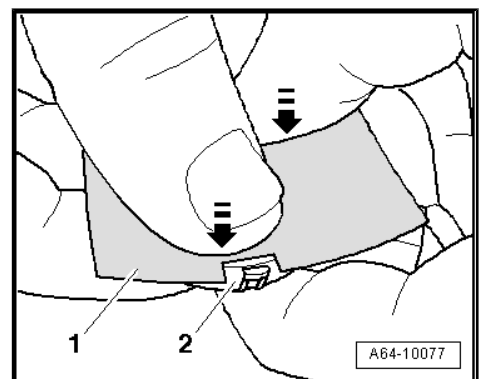
- Clean the sensor surface with cleaning solution.
- Remove the silicone paper -3- from the cushion -2-.
- Transparent protective foil -1- stays on the cushion -2- to begin with as assembly film.



- Attach cushion -2- with the protective foil -1- on the sensor -3-.

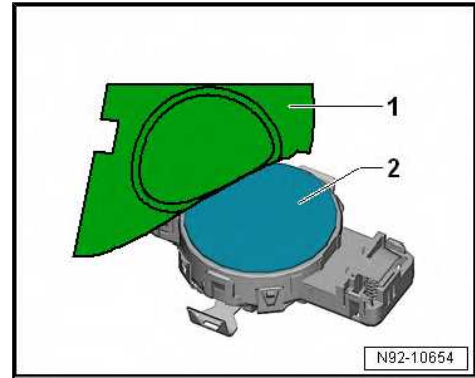


- Press the cushion onto the sensor -2- through the transparent foil -1-, so that there are no bubbles between the foil and sensor.





- Carefully pull the transparent protective foil -1- off the cushion -2-.
- Install the Rain and light detector sensor - G397-
⇒ ["2.5 Removing and installing sensor for rain and light detection G397 , vehicles from CW 22.2015", page 123](#) .



3 Rear window wiper and washer system

⇒ [“3.1 Removing and installing the wiper arm with wiper blade and setting its final setting”, page 129](#)

⇒ [“3.2 Removing and installing windscreen wiper motor”, page 130](#)

⇒ [“3.3 Replacing and adjusting the spray nozzle.”, page 131](#)

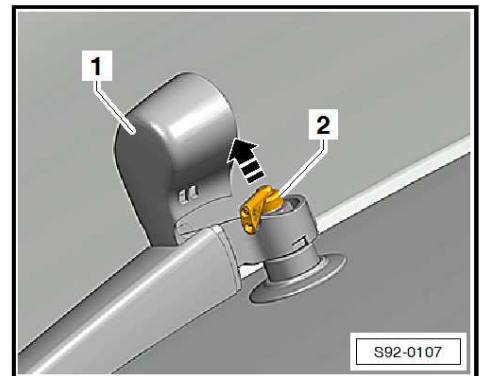
3.1 Removing and installing the wiper arm with wiper blade and setting its final setting

Special tools and workshop equipment required

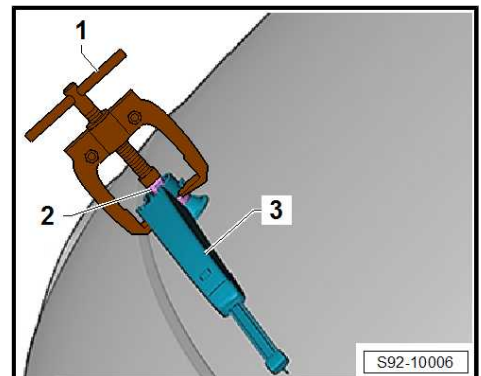
- ◆ Extractor for wiper arms - T10369/1-

Removing

- Unclip the cap -1- from the retaining tabs and fold down.
- Carefully push out the nozzle -2- -arrow- (not valid for Space-back type).
- Release the fixing nut by one turn.



- Place an M6 nut -2- on the fixing nut (does not apply to Space-back model).
- Using a standard commercially available small two-arm extractor -1-, undo the wiper arm -3- from the shaft.
- Unscrew nut and remove wiper arm.

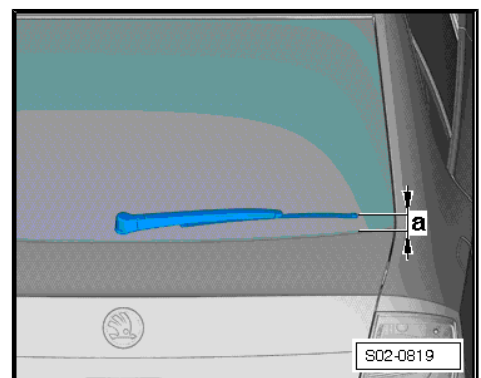


Installing

- When the ignition is switched on, switch wiper motor on and off and run until it is in park position.
- Position wiper arm with wiper blade and loosely secure with nuts.
- Set final position of wiper arm in accordance with the figure.

The value -a- is:

Rapid 42±2 mm



Rapid Spaceback

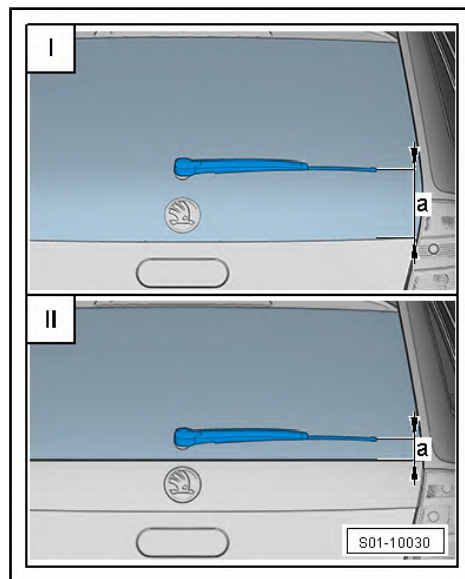
Version -I- 183±2 mm

Version -II- 52±2 mm

- Tighten the fixing nuts.
- Perform a functional and setting check.

Tightening torques

Fixing nuts for wiper arms	12 Nm
----------------------------	-------



3.2 Removing and installing windscreen wiper motor

Removing

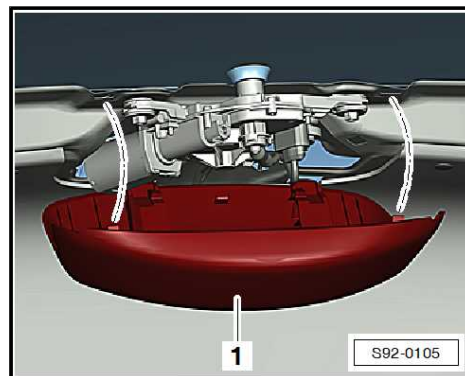
- Switch off the ignition and all electrical consumers!
- Remove wiper arm with wiper blade
⇒ [“3.1 Removing and installing the wiper arm with wiper blade and setting its final setting”, page 129](#) .

Rapid:

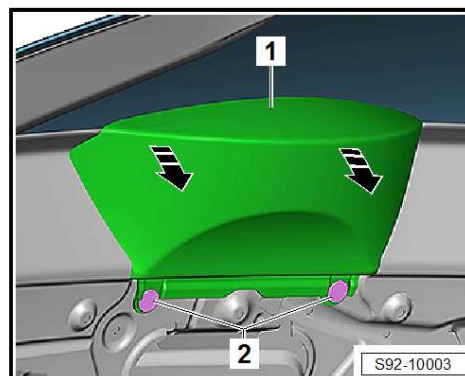
- Lever the cover -1- out of the catches and remove.

Rapid Spaceback:

- Remove the tailgate trim panel.



- Remove rivets -2-, unclip cover -1- -arrows- and remove.



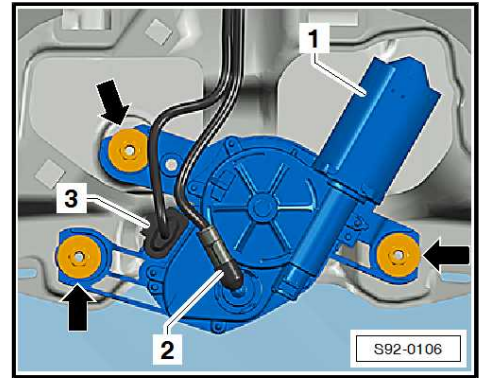
All vehicles:

- Unplug connector -3- at wiper motor.
- To unlock, turn the locking clip at the hose connection and detach hose -2- for spray nozzle.
- Unscrew nuts -arrows- and remove wiper motor -1-.

Installing

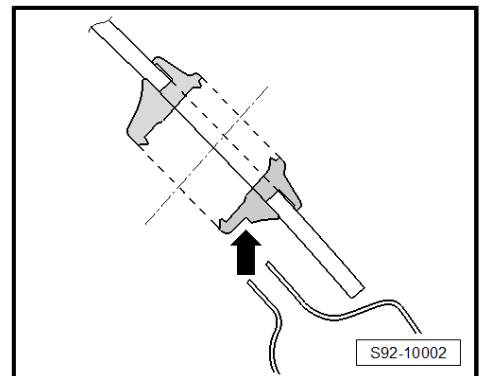
Installation is performed in the reverse order, pay attention to the following points:

- Take fitting position of implementation into account:



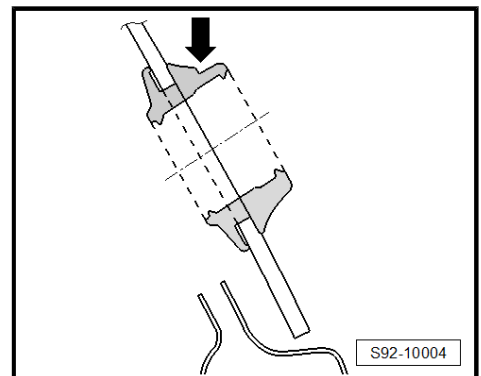
Rapid:

- Recess in the rear window implementation -arrow- is located at the bottom, from the inside.



Rapid Spaceback:

- The recess in the rear window implementation -arrow- is located at the top, from the outside.
- Set end position of wiper arm with wiper blade
⇒ [“3.1 Removing and installing the wiper arm with wiper blade and setting its final setting”, page 129](#) .



Tightening torques

Fixing nuts for wiper arms	7 Nm
----------------------------	------

3.3 Replacing and adjusting the spray nozzle.

⇒ [“3.3.1 Replacing and adjusting the spray nozzle - Rapid”, page 131](#)

⇒ [“3.3.2 Replacing and adjusting the spray nozzle - Rapid Spaceback”, page 132](#)

3.3.1 Replacing and adjusting the spray nozzle - Rapid



Note

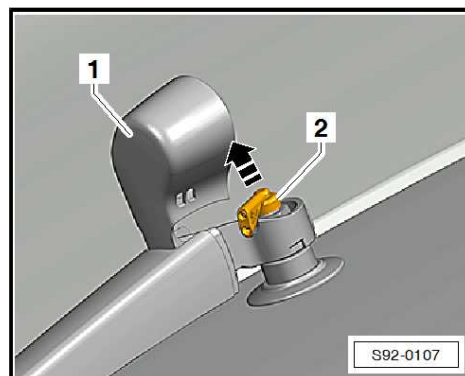
If the spray field is uneven due to impurities within the spray nozzle, remove the spray nozzle and clean it with water against the spraying direction. Purging the nozzle with compressed air against the spraying direction is then permitted. Do not use any objects for cleaning spray jets!

Remove nozzle

- Unclip the cap -1- from the retaining tabs and fold down.
- Carefully push out the nozzle -2- -arrow-.

Installing

- Run wiper until it is in park position, insert the spray nozzle in the correct position in the wiper motor shaft and subsequently adjust ⇒ Maintenance ; Booklet Rapid .



3.3.2 Replacing and adjusting the spray nozzle - Rapid Spaceback



Note

If the spray field is uneven due to impurities within the spray nozzle, remove the spray nozzle and clean it with water against the spraying direction. Purging the nozzle with compressed air against the spraying direction is then permitted. Do not use any objects for cleaning spray jets!

Remove nozzle

- Remove lamp for high level brake light
⇒ [“7.1.2 Removing and installing the high level brake light - Rapid Spaceback”, page 167](#) .
- Unlock the latches -arrows- and remove the spray nozzle -1- out of the light towards the rear.

Installing

Installation is performed in the reverse order, pay attention to the following points:

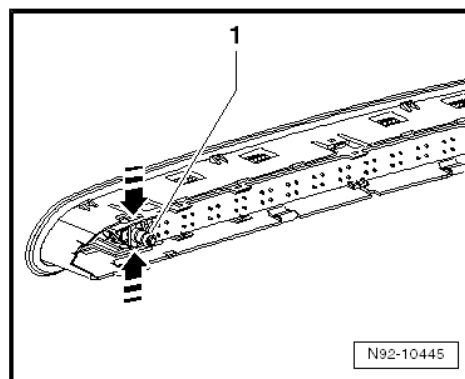
- Press the nozzle into the assembly opening until it audibly locks into place.

Check proper operation after installing.



Note

The nozzle is not configured. If the spray field is uneven due to impurities within the spray nozzle, remove the spray nozzle and clean it with water against the spraying direction. Purging the nozzle with compressed air against the spraying direction is then permitted. Do not use any objects for cleaning spray jets!



4 Headlamp cleaning system

Summary of components - components of the headlight washing system ⇒ Electronic Catalogue of Original Parts“ETKA” .

⇒ [“4.1 Removing and installing headlight cleaning system pump V11”](#), page 133

⇒ [“4.2 Removing and installing the lift cylinder for spray nozzles of headlight”](#), page 133

⇒ [“4.3 Bleed the headlamp cleaning system”](#), page 133

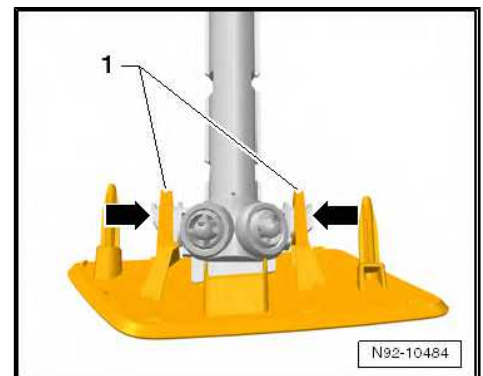
4.1 Removing and installing headlight cleaning system pump - V11-

The removal and installation of the pump is described in ⇒ [“1 Windscreen washer system”](#), page 116 .

After installing the pump bleed the headlamp cleaning system ⇒ [“4.3 Bleed the headlamp cleaning system”](#), page 133 .

4.2 Removing and installing the lift cylinder for spray nozzles of headlight

- Pull the spray nozzles with cover slightly out of the bumper by uniformly gripping on both sides of the cover, then grip the spray nozzles and pull out up to the stop.
- Unclip the cover -1- from the bearing -arrows-.
- Remove front bumper ⇒ Body Work; Rep. gr. 63 .

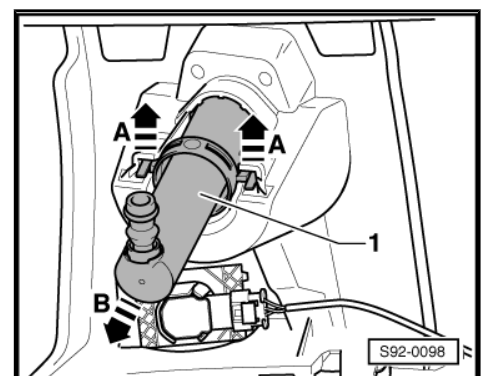


- Press off the catches arrows -A- using a small screwdriver and push the lift cylinder -1- out of the bumper arrow -B-.

Installing

Installation is performed in the reverse order, pay attention to the following points:

- Push the lift cylinder into the brackets in the bumper until it clicks audibly into place.
- Hoses with angled pieces must click audibly into the connections on the lift cylinders for spray nozzles.
- Install bumper.
- After completing the assembly work bleed the headlamp cleaning system ⇒ [“4.3 Bleed the headlamp cleaning system”](#), page 133 .



4.3 Bleed the headlamp cleaning system

After installation or for initial setup, the headlamp cleaning system must be bled to guarantee a perfect operation.

- Fill washer fluid reservoir and headlight washer reservoir.



- Start engine.
- Switch on headlight.
- Operate headlamp cleaning system several times (3 -5 pulses for an operating duration of each 3 s).
- If necessary repeat this bleeding procedure until a perfect functioning of the lift cylinders for headlamp cleaning system and for spray nozzles is achieved.



94 – Lights, bulbs, switches - exterior

1 Headlights – halogen headlights

⇒ [“1.1 Summary of components, halogen headlight”, page 135](#)

⇒ [“1.2 Removing and installing headlight”, page 138](#)

⇒ [“1.3 Replacing light bulbs in headlights”, page 139](#)

⇒ [“1.4 Removing and installing headlight range control motor”, page 143](#)

⇒ [“1.5 Replace headlight fixing brackets”, page 144](#)

⇒ [“1.6 Removing and installing LED module”, page 144](#)

⇒ [“1.7 Change headlight for right-hand and/or left-hand traffic”, page 145](#)

⇒ [“1.8 Setting the headlight beam”, page 146](#)

1.1 Summary of components, halogen headlight

⇒ [“1.1.1 Summary of components, halogen headlights up to CW 21/2017”, page 135](#)

⇒ [“1.1.2 Summary of components - halogen headlights mounted up to CW 22/2017”, page 137](#)

1.1.1 Summary of components, halogen headlights up to CW 21/2017



1 - Headlight housing

- Removing and installing
⇒ [“1.2 Removing and installing headlight”, page 138](#)
- Adjust
⇒ [“1.8 Setting the headlight beam”, page 146](#)
- Replace attachment brackets
⇒ [“1.5 Replace headlight fixing brackets”, page 144](#)
- Change headlights for right-hand and/or left-hand traffic
⇒ [“1.7 Change headlight for right-hand and/or left-hand traffic”, page 145](#)

2 - Light bulb for low beam light

- H7
- Replace
⇒ [“1.3.1 Replacing H7 bulb for low beam light”, page 139](#)

3 - Rubber cap

4 - Headlight range control motor

- Removing and installing
⇒ [“1.4 Removing and installing headlight range control motor”, page 143](#)

5 - Plastic cap

6 - Rubber cap

7 - Light bulb for daylight driving light and main beam

- H15
- Replace ⇒ [“1.3.2 Replacing H15 bulb for daylight driving light and main beam”, page 140](#)

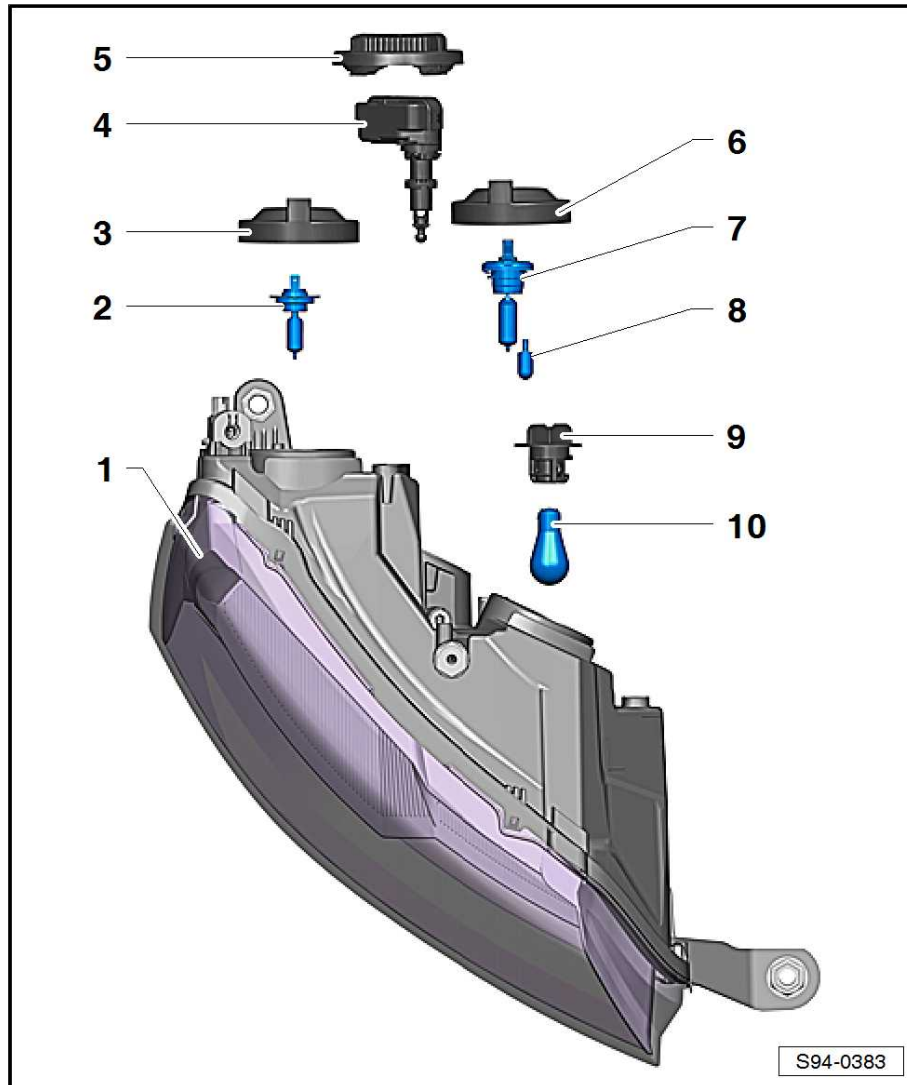
8 - Light bulb for the parking light

- W5W
- Replace ⇒ [“1.3.4 Replacing W5W bulb for parking light”, page 142](#)

9 - Clamping device

10 - Light bulb for the turn signal light

- PY21W
- Replace ⇒ [“1.3.5 Replacing PY21W bulb for turn signal light”, page 143](#)



1.1.2 Summary of components - halogen headlights mounted up to CW 22/2017

1 - Bolts

- 1.5 Nm

2 - Cover

3 - LED module

- Controls the daytime running light and parking light function
- Removing and installing ⇒ ["1.6 Removing and installing LED module"](#), page 144

4 - Bolts

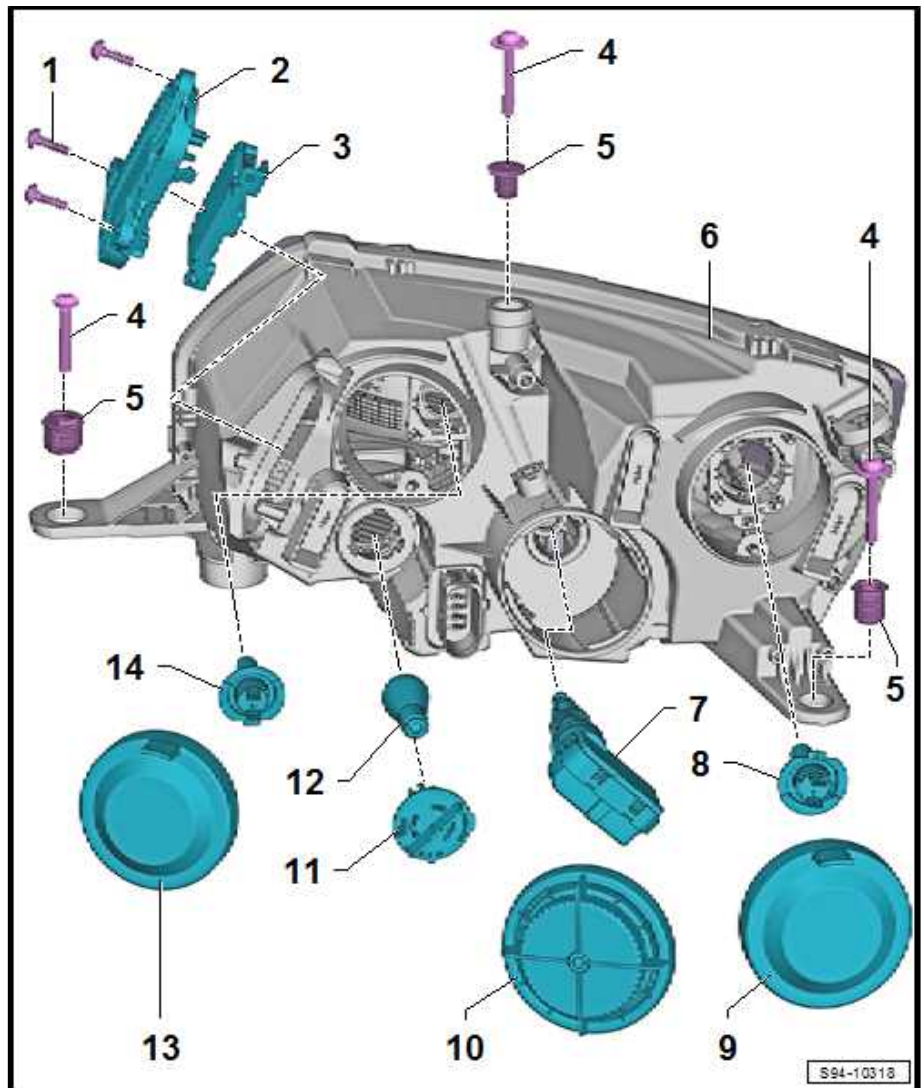
- 3.5 Nm

5 - Hollow screw

- Adjusting element for exact position adjustment of the headlight in the body

6 - Headlight housing

- Removing and installing ⇒ ["1.2 Removing and installing headlight"](#), page 138
- Adjust ⇒ ["1.8 Setting the headlight beam"](#), page 146
- Replace attachment brackets ⇒ ["1.5 Replace headlight fixing brackets"](#), page 144
- No headlight adjustment for right or left traffic



7 - Headlight range control motor

- Removing and installing ⇒ ["1.4 Removing and installing headlight range control motor"](#), page 143

8 - Light bulb for low beam light

- H7
- Replace ⇒ ["1.3.1 Replacing H7 bulb for low beam light"](#), page 139

9 - Rubber cap

10 - Plastic cap

11 - Lamp socket for the turn signal light

12 - Light bulb for the turn signal light

- PY21W
- Replace ⇒ ["1.3.5 Replacing PY21W bulb for turn signal light"](#), page 143

13 - Rubber cap

14 - Light bulb for main beam

- H7
- Replace ⇒ ["1.3.3 Replacing bulb for main beam H7"](#), page 141



1.2 Removing and installing headlight

Removing

i Note

- ◆ *The procedure for removal and installing illustrates the left headlight as an example. The procedure for removal and installing is identical for the right headlight.*
- ◆ *For an easier fitting of the headlight, mark its position in a suitable manner (e.g. with marker, adhesive tape) before slackening the screws.*

- Switch off the ignition and all electrical consumers!
- Remove front bumper => Body Work; Rep. gr. 63 .
- Unscrew screws -arrows-.
- Disconnect plug and remove headlight -1-.

Installing

Installation is performed in the reverse order, pay attention to the following points:

- Align the headlight according to the contours of the vehicle body (maintain the gap size => Body Repairs; Rep. gr. 00) and loosely tighten with screws.
- Install bumper.

- By turning -arrows- the setting elements -A-, the headlight is moved and thereby fitted to the surrounding body parts.
- Subsequently tighten the fixing screws -B- and then the screw -C-.

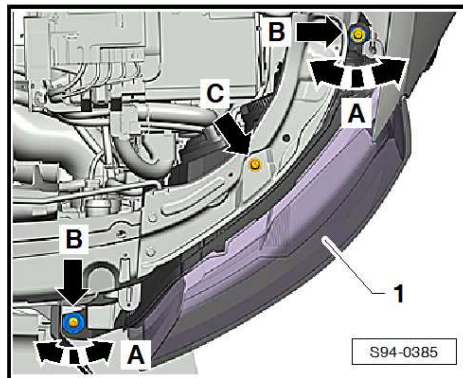
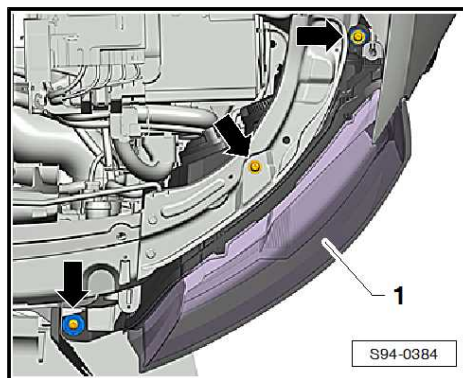
i Note

The setting element is aligned automatically when tightening the screw -C-.

- Set up the headlight
=> ["1.8 Setting the headlight beam", page 146](#) .

Tightening torques

Headlight fixing screws	3.5 Nm
-------------------------	--------



1.3 Replacing light bulbs in headlights

⇒ [“1.3.1 Replacing H7 bulb for low beam light”, page 139](#)

⇒ [“1.3.2 Replacing H15 bulb for daylight driving light and main beam”, page 140](#)

⇒ [“1.3.3 Replacing bulb for main beam H7 ”, page 141](#)

⇒ [“1.3.4 Replacing W5W bulb for parking light”, page 142](#)

⇒ [“1.3.5 Replacing PY21W bulb for turn signal light”, page 143](#)

1.3.1 Replacing “H7” bulb for low beam light



WARNING

These H7 bulbs are pressurised and can explode when changing the bulb - risk of injury! Wear gloves and safety spectacles when changing the lamps.

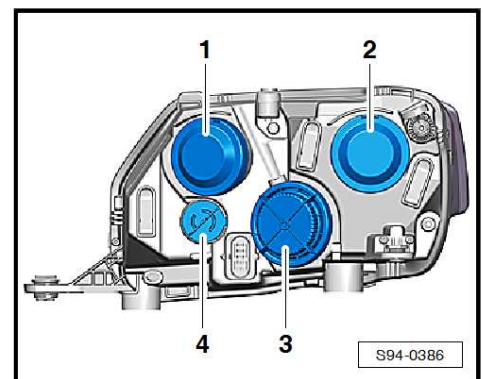


Note

- ◆ *Do not touch the glass when changing the light bulb. The remaining finger print would evaporate through the heat of the switched on bulb and condense on the reflector, which impairs the luminosity of the headlight.*
- ◆ *When installing the rubber cap, pay attention to the correct fitting. Water ingress destroys the headlight.*
- ◆ *Switch off the ignition and all electrical components before changing the bulb.*
- ◆ *On vehicles with diesel engines, the fuel filter and its holder must be removed and placed to the side in order to facilitate an easier access to the right bulb. Do not separate the hoses.*
- ◆ *The cover in the wheelhouse liner can also be removed in order to facilitate an easier access to the bulb.*

Removing

- Remove rubber cap for headlight -2-.

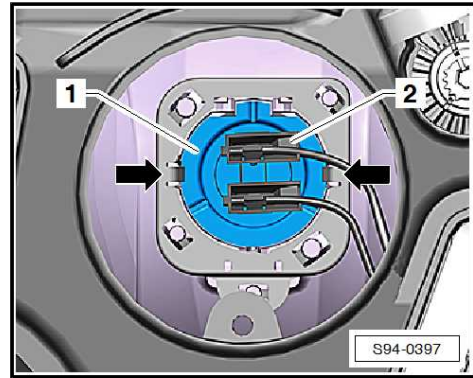




- Release and remove the bulb -1- from the catches by pendular movement and pulling force -arrows-.
- Disconnect plug connection -2-.

Installing

Installation is carried out in the reverse order.



1.3.2 Replacing “H15” bulb for daylight driving light and main beam



WARNING

These H15 bulbs are pressurised and can explode when changing the bulb - risk of injury! Wear gloves and safety spectacles when changing the lamps.

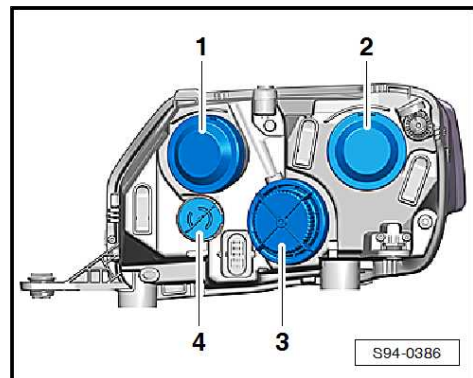


Note

- ◆ *Do not touch the glass when changing the light bulb. The remaining finger print would evaporate through the heat of the switched on bulb and condense on the reflector, which impairs the luminosity of the headlight.*
- ◆ *When installing the rubber cap, pay attention to the correct fitting. Water ingress destroys the headlight.*
- ◆ *Switch off the ignition and all electrical components before changing the bulb.*

Removing

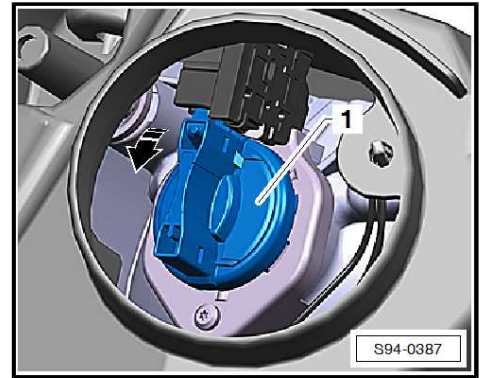
- Left side - remove the battery to get better access to the bulb ⇒ [“1.6 Removing and installing battery”, page 13](#) .
- Remove rubber cap for headlight -1-.



- Turn the bulb -1- to the left -arrow- and remove from the headlight housing.

Installing

Installation is carried out in the reverse order.



1.3.3 Replacing bulb for main beam “H7”



WARNING

These H7 bulbs are pressurised and can explode when changing the bulb - risk of injury! Wear gloves and safety spectacles when changing the lamps.

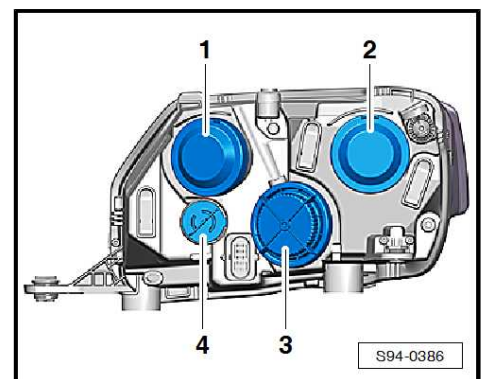


Note

- ◆ *Do not touch the glass when changing the light bulb. The remaining finger print would evaporate through the heat of the switched on bulb and condense on the reflector, which impairs the luminosity of the headlight.*
- ◆ *When installing the rubber cap, pay attention to the correct fitting. Water ingress destroys the headlight.*
- ◆ *Switch off the ignition and all electrical components before changing the bulb.*

Removing

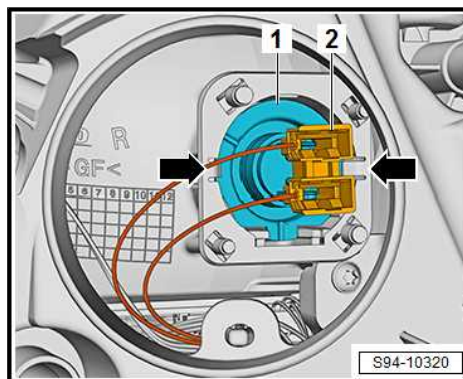
- Remove rubber cap for headlight -1-.



- Release and remove the bulb -1- from the catches by pendular movement and pulling force -arrows-.
- Disconnect plug connection -2-.

Installing

Installation is carried out in the reverse order.



1.3.4 Replacing “W5W” bulb for parking light

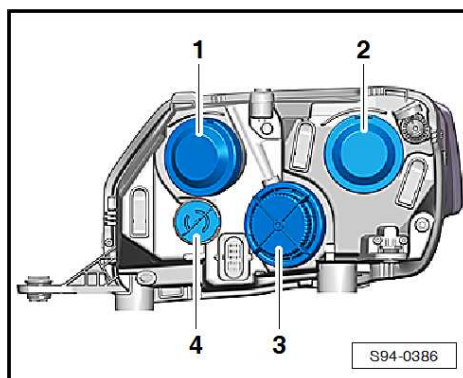


Note

- ◆ Do not touch the glass bulb with bare hands when changing the bulb, use clean material gloves. The remaining finger print would evaporate through the heat of the switched on bulb and condense on the reflector, which impairs the luminosity of the headlight.
- ◆ When installing the rubber cap, pay attention to the correct fitting. Water ingress destroys the headlight.
- ◆ Switch off the ignition and all electrical components before changing the bulb.

Removing

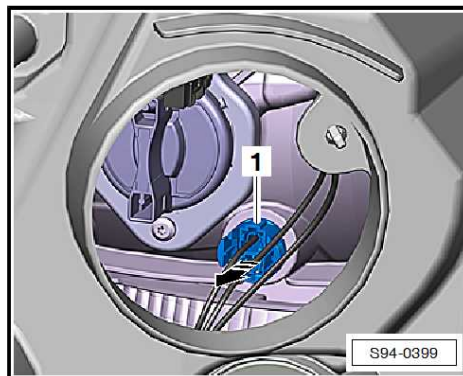
- Remove rubber cap -1-.



- Slacken the bulb holder -1- by pendular movement and pulling force -arrow-.
- Remove the bulb from the socket.

Installing

- After replacing the bulb, press socket fully into the headlight.
- Position rubber cap.



1.3.5 Replacing "PY21W" bulb for turn signal light

Note

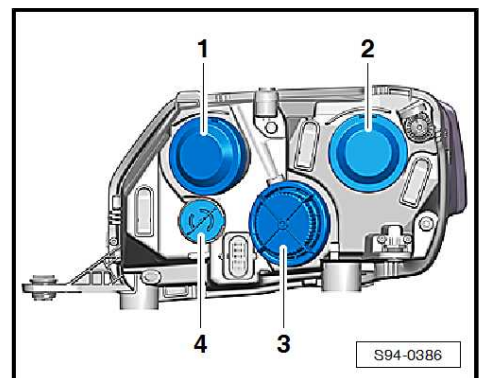
- ◆ *Do not touch the glass bulb with bare hands when changing the bulb, use clean material gloves. The remaining finger print would evaporate through the heat of the switched on bulb and condense on the reflector, which impairs the luminosity of the headlight.*
- ◆ *Switch off the ignition and all electrical components before changing the bulb.*

Removing

- Turn the socket -4- towards the left and remove.
- Replace defective light bulb.

Installing

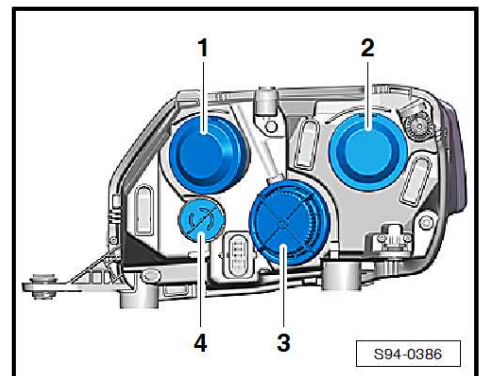
Installation is carried out in the reverse order.



1.4 Removing and installing headlight range control motor

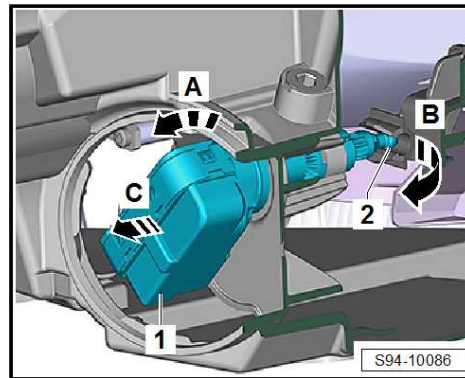
Removing

- Remove headlight with defective control motor
⇒ ["1.2 Removing and installing headlight", page 138](#) .
- Turn the cover to the left -3- and remove, also remove the cover -1- for purposes of presentation.





- Detach the control motor -1- by turning it to the left in direction of arrow -A- (left headlight), or to the right (right headlight).
- Disconnect plug.
- Slide thrust piece -2- out of the support by tilting it out to the side in direction of arrow -B- and remove the control motor -1- in direction of arrow -C-.



Installing

Installation is performed in the reverse order, pay attention to the following points:



Note

When installing the caps, pay attention to the correct fitting. Water ingress destroys the headlight.

- Inspect proper operation.
- Adjust headlight => Maintenance ; Booklet Rapid .

1.5 Replace headlight fixing brackets

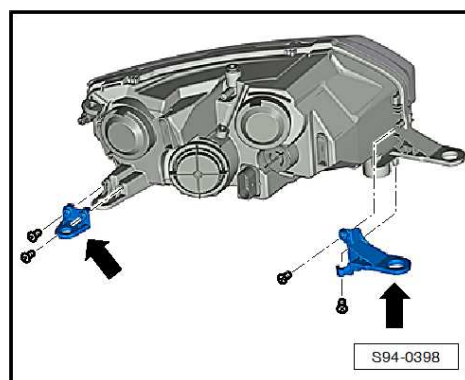
If the outer headlight fixing brackets are broken or damaged, they can be replaced by installing the repair kit. The complete headlight must not be replaced.



Note

- ◆ *Before repairs check if the headlight has no other damage, as the repair would be senseless.*
- ◆ *The replacement brackets can be ordered separately see => Electronic Catalogue of Original Parts "ETKA".*
- ◆ *Before repairs the headlight must be removed.*
- ◆ *After installing the headlight, adjust the headlight => "1.8 Setting the headlight beam", page 146 .*

- Remove the original headlight fixing bracket, in order to install a new fixing bracket from the repair kit -see fig.-.
- Insert a new bracket -arrows- in the correct way and tighten the fixing screws.



Tightening torques

Fixing screws for bracket	1.5 Nm
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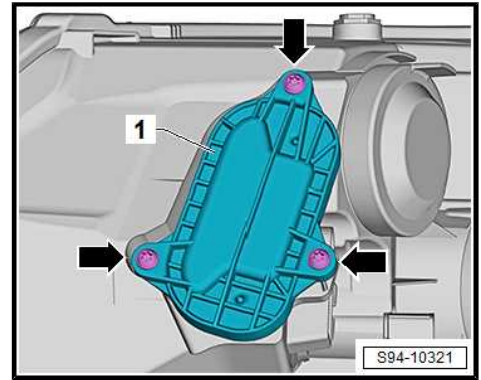
1.6 Removing and installing LED module

Controls the daytime running light and parking light function.

Removing

- Switch off the ignition and all electrical consumers!

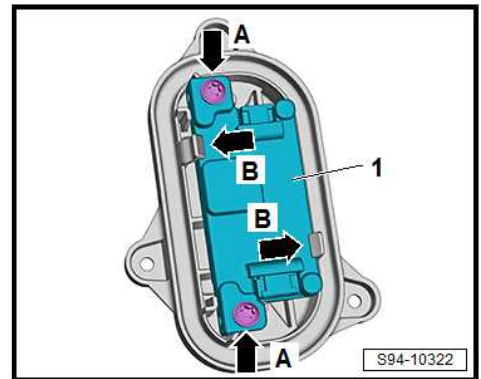
- Remove screws -arrows- and cover with LED module -1- from the headlamp, taking into account the connected cable lengths.
- Release connector and pull it off.



- Unscrew the screws, arrows -A- and LED module -1- From the detents, arrows -B-.

Installing

Installation is carried out in the reverse order.



1.7 Change headlight for right-hand and/or left-hand traffic

The halogen headlights should have self-adhesive foil glued over them when driving in countries which drive on the right or the left thereby preventing blinding of the drivers travelling in the opposite direction.

Note

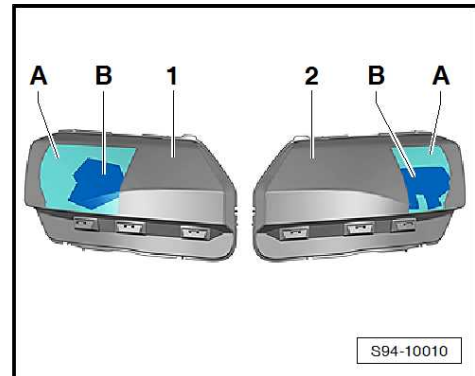
- ◆ For vehicles from CW 22/2017 there is no headlamp adjustment for right and left traffic, see ⇒ [“1.1.2 Summary of components - halogen headlights mounted up to CW 22/2017”, page 137](#) .
 - ◆ The change of the headlights is not suitable for the permanent mode, rather only as a brief “touristic” solution during a temporary journey abroad.
 - ◆ Both headlights must always be changed.
 - ◆ The lenses must be cleared of dirt and de-greased, e.g. with degreased white spirit solution, before sticking the foil.
 - ◆ When cleaning and gluing foils, the lens must remain cold for safety reasons.
 - ◆ The instructions “right” and/or “left” on the protective foils always refer to the front visibility towards the outside.
 - ◆ Ensure that the correct protective foil is chosen, see ⇒ *Electronic Catalogue of Original Parts “ETKA”* .
- Remove the rear protective foil.
 - Place the foil on the headlight in such a way that the lower and outer vertical edge of the auxiliary part of the foil is offset with the bottom edge of the lens and the vertical auxiliary contour on the headlight panes, see Fig.



1 - The headlight on the right

2 - The headlight on the left

Left-hand drive:



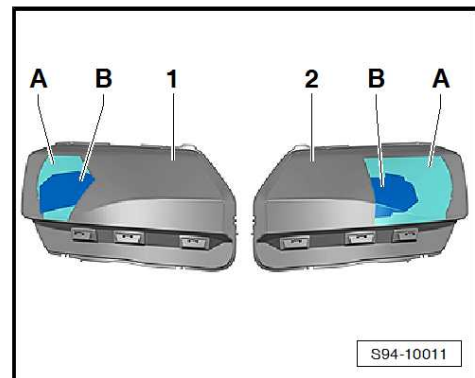
Right-hand drive:

- Forcefully press on the middle area of the foil -B-.
- Carefully pull off the auxiliary part of the foil -A- from the headlight.

Only the non-transparent part of the protective foil remains on the lens -B-.

i Note

Inform the customer about the corresponding notes for removing the residual adhesive after pulling off the protective foil, e.g. textiles soaked in isopropyl alcohol (do not use any aggressive solvent, which can damage the polycarbonate lenses).



1.8 Setting the headlight beam

i Note

Use a headlight beam setting device for setting the headlight beam. The nominal values and the adjustment procedure can be found in the Manual ➔ Maintenance ; Booklet Rapid .



2 Headlights with Xenon discharge lamps

⇒ [“2.1 Summary of components, headlights with Xenon discharge lamps”, page 147](#)

⇒ [“2.2 Removing and installing headlight”, page 150](#)

⇒ [“2.3 Replacing light bulbs and gas discharge lamps”, page 150](#)

⇒ [“2.4 Replace attachment brackets”, page 154](#)

⇒ [“2.5 Removing and installing headlight range control motor”, page 155](#)

⇒ [“2.6 Removing and installing the power output module for headlight”, page 157](#)

⇒ [“2.7 Removing and installing LED module”, page 157](#)

⇒ [“2.8 Change headlight for right-hand and/or left-hand traffic”, page 158](#)

⇒ [“2.9 Setting the headlight beam”, page 159](#)

2.1 Summary of components, headlights with Xenon discharge lamps

⇒ [“2.1.1 Assembly overview, headlights with xenon discharge lamps up to CW 21/2017”, page 147](#)

⇒ [“2.1.2 Assembly overview, headlights with xenon discharge lamps from CW 22/2017”, page 149](#)

2.1.1 Assembly overview, headlights with xenon discharge lamps up to CW 21/2017



1 - Light bulb for the parking light

- W5W BV (blue glass)
- Replace ⇒ [“2.3.3 Replacing the light bulb for the parking light W5W BV \(blue glass\)”, page 152](#)

2 - Rubber cap

3 - Light bulb for daylight driving light and main beam

- H15
- Replace ⇒ [“2.3.2 Replacing H15 bulb for daylight driving light and main beam”, page 151](#)

4 - Cover

5 - Headlight range control motor

- Removing and installing ⇒ [“2.5.1 Removing and installing the control motor for headlamp range control, up to CW 22/2017”, page 155](#)

6 - Gas discharge lamp with integrated ignition coil

- D5S
- Replace ⇒ [“2.3.1 Replacing the D5S gas discharge lamp”, page 150](#)

7 - Cover

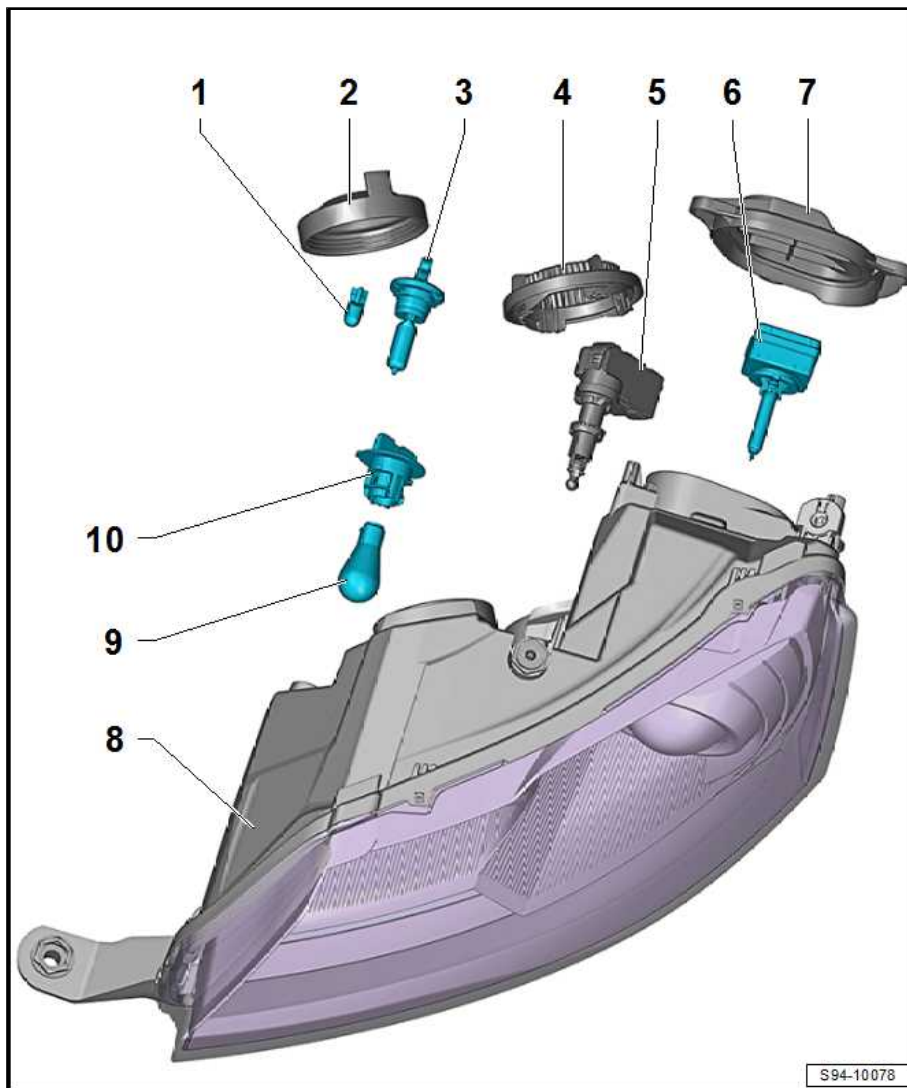
8 - Headlight housing

- Adjust ⇒ [“1.8 Setting the headlight beam”, page 146](#)
- Removing and installing ⇒ [“1.2 Removing and installing headlight”, page 138](#)
- Replace attachment brackets ⇒ [“2.4 Replace attachment brackets”, page 154](#)
- Change headlights for right-hand and/or left-hand traffic ⇒ [“2.8 Change headlight for right-hand and/or left-hand traffic”, page 158](#)

9 - Light bulb for the turn signal light

- PY21W
- Replace ⇒ [“2.3.4 Replacing PY21W bulb for turn signal light”, page 153](#)

10 - Clamping device



2.1.2 Assembly overview, headlights with xenon discharge lamps from CW 22/2017

1 - Bolts

- 3.5 Nm

2 - Hollow screw

- Adjusting element for exact position adjustment of the headlight in the body

3 - Cover for adjustment element

- no spare part

4 - Screw

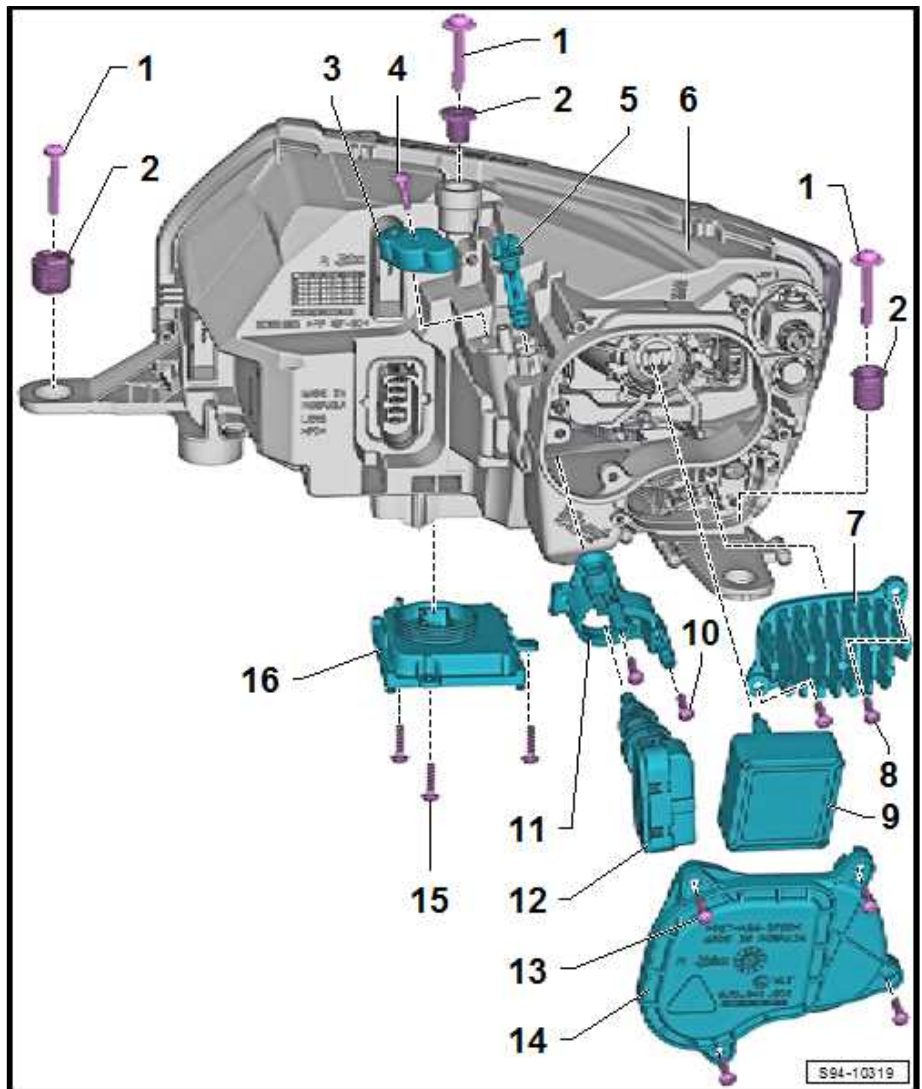
- 1.5 Nm

5 - Setting element

- no spare part

6 - Headlight housing

- Adjust
⇒ ["1.8 Setting the headlight beam", page 146](#)
- Removing and installing
⇒ ["1.2 Removing and installing headlight", page 138](#)
- Replace attachment brackets
⇒ ["2.4 Replace attachment brackets", page 154](#)
- Change headlights for right-hand and/or left-hand traffic
⇒ ["2.8 Change headlight for right-hand and/or left-hand traffic", page 158](#)



Volkswagen Technical Site: <http://vwts.ru> <http://vwts.info>

7 - LED module

- Controls the daytime running light, parking light and flashlight function
- Removing and installing ⇒ ["2.7 Removing and installing LED module", page 157](#)

8 - Bolts

- 1.5 Nm

9 - Gas discharge lamp with integrated ignition coil

- D5S
- Replace ⇒ ["2.3.1 Replacing the D5S gas discharge lamp", page 150](#)

10 - Bolts

- 1.5 Nm

11 - Holder for actuator

12 - Headlight range control motor

- Removing and installing
⇒ ["2.5.2 Removing and installing the control motor for headlamp range control - as of CW 22/2017", page 155](#)

**13 - Bolts**

- 1.5 Nm

14 - Plastic cap**15 - Bolts**

- 1.5 Nm

16 - Power module for headlights

- Removing and installing
⇒ ["2.6 Removing and installing the power output module for headlight", page 157](#)

2.2 Removing and installing headlight

Assembly work is similar to that for halogen headlights
⇒ ["1.2 Removing and installing headlight", page 138](#) .

2.3 Replacing light bulbs and gas discharge lamps

⇒ ["2.3.1 Replacing the D5S gas discharge lamp", page 150](#)

⇒ ["2.3.2 Replacing H15 bulb for daylight driving light and main beam", page 151](#)

⇒ ["2.3.3 Replacing the light bulb for the parking light W5W BV \(blue glass\)", page 152](#)

⇒ ["2.3.4 Replacing PY21W bulb for turn signal light", page 153](#)

2.3.1 Replacing the "D5S" gas discharge lamp**WARNING**

*Observe use and safety instructions for gas discharge lamps
⇒ Electrical System – general notes; Rep. gr. 94 . If a note cannot be accessed, open the Workshop Manual "Electrical System - General Notes" manually in "ELSA", Section "94".*

The D5S discharge lamp is pressurised and can explode when changing the bulb - risk of injury! Wear gloves and safety spectacles when changing the lamps.

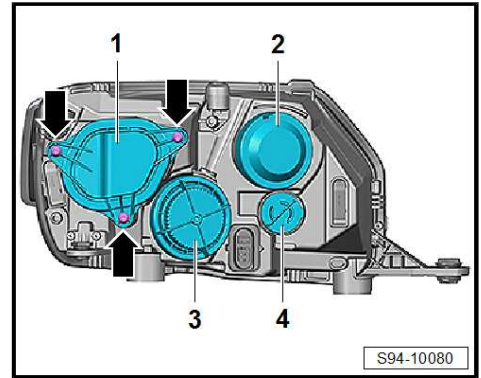
**Note**

- ◆ *Do not touch the glass when changing the light bulb. The remaining finger print would evaporate through the heat of the switched on bulb and condense on the reflector, which impairs the luminosity of the headlight.*
- ◆ *When installing the cover, pay attention to the correct fitting. Water ingress destroys the headlight.*
- ◆ *Switch off the ignition and all electrical components before changing the bulb.*

Removing

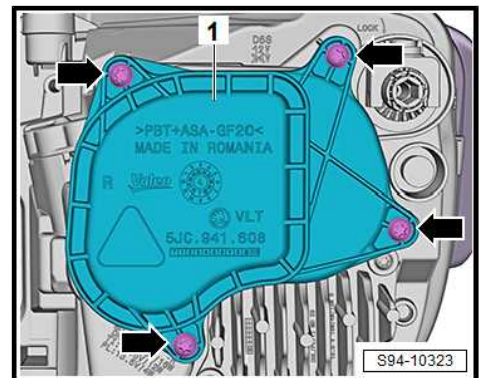
- Remove headlight
⇒ ["1.2 Removing and installing headlight", page 138](#) .
- Unscrew the screws -arrows- and remove the cover -1-.

Variant 1:



Variant 2:

- Release connector and pull it off.



- Turn locking straps -1- in direction of arrow -A-.
- Carefully remove the gas discharge lamp -2- in direction of arrow -B-.

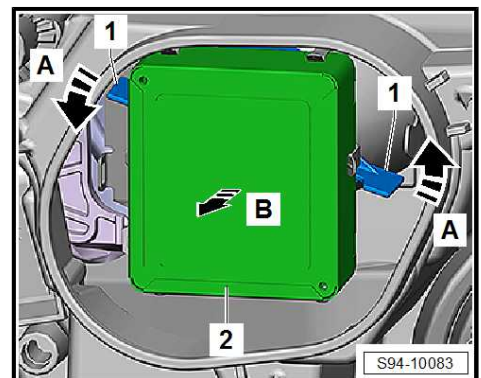
Installing

Installation is performed in the reverse order, pay attention to the following points:

- After the installation adjust the headlight.



Use a headlight beam setting device for setting the headlight beam. The nominal values and the adjustment procedure can be found in the Manual => Maintenance ; Booklet Rapid .



Tightening torques

Fixing screws for gas discharge lamp cover	1.5 Nm
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2.3.2 Replacing "H15" bulb for daylight driving light and main beam



WARNING

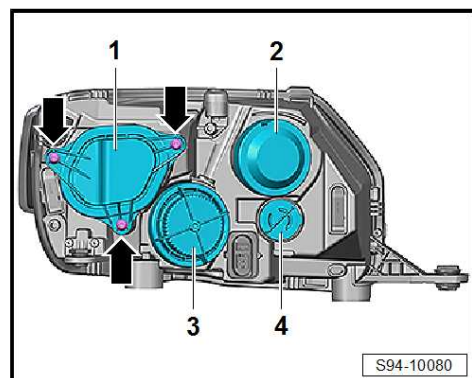
These H15 bulbs are pressurised and can explode when changing the bulb - risk of injury! Wear gloves and safety spectacles when changing the lamps.


Note

- ◆ *Do not touch the glass when changing the light bulb. The remaining finger print would evaporate through the heat of the switched on bulb and condense on the reflector, which impairs the luminosity of the headlight.*
- ◆ *When installing the rubber cap, pay attention to the correct fitting. Water ingress destroys the headlight.*
- ◆ *Switch off the ignition and all electrical components before changing the bulb.*

Removing

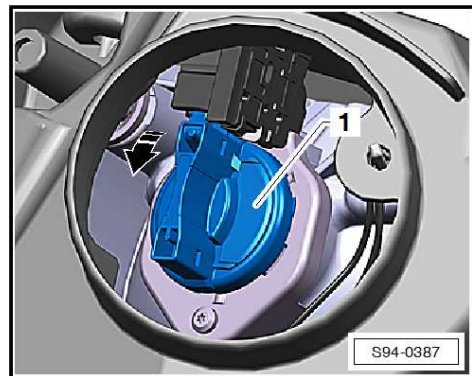
- Left side - remove the battery to get better access to the bulb
 ⇒ ["1.6 Removing and installing battery", page 13](#) .
- Remove rubber cap for headlight -2-.



- Turn the bulb -1- to the left -arrow- and remove from the headlight housing.

Installing

Installation is carried out in the reverse order.



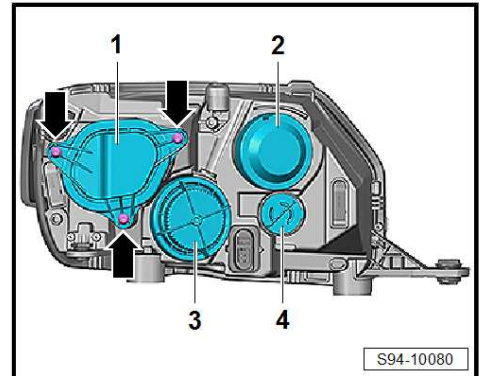
2.3.3 Replacing the light bulb for the parking light "W5W BV" (blue glass)


Note

- ◆ *Do not touch the glass bulb with bare hands when changing the bulb, use clean fabric gloves. The remaining finger print would evaporate through the heat of the switched on bulb and condense on the reflector, which impairs the luminosity of the headlight.*
- ◆ *When installing the rubber cap, pay attention to the correct fitting. Water ingress destroys the headlight.*
- ◆ *Switch off the ignition and all electrical components before changing the bulb.*

Removing

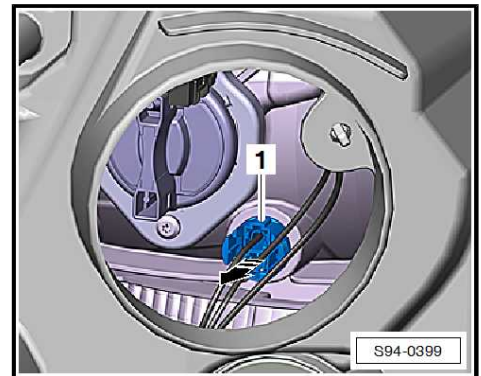
- Remove rubber cap -1-.



- Slacken the bulb holder -1- by pendular movement and pulling force -arrow-.
- Remove the bulb from the socket.

Installing

- After replacing the bulb, press socket fully into the headlight.
- Position rubber cap.



2.3.4 Replacing "PY21W" bulb for turn signal light

Note

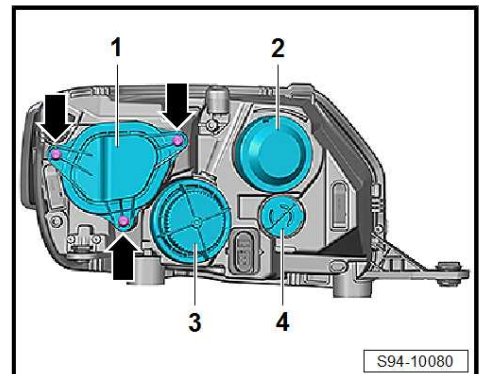
- ◆ *Do not touch the glass bulb with bare hands when changing the bulb, use clean fabric gloves. The remaining finger print would evaporate through the heat of the switched on bulb and condense on the reflector, which impairs the luminosity of the headlight.*
- ◆ *Switch off the ignition and all electrical components before changing the bulb.*

Removing

- Turn the socket -4- towards the left and remove.
- Replace defective light bulb.

Installing

Installation is carried out in the reverse order.



2.4 Replace attachment brackets

If the outer headlight fixing brackets are broken or damaged, they can be replaced by installing the repair kit. The complete headlight must not be replaced.



Note

- ◆ Before repairs check if the headlight has no other damage, as the repair would be senseless.
- ◆ The replacement brackets can be ordered separately see → *Electronic Catalogue of Original Parts "ETKA"*.
- ◆ Before repairs the headlight must be removed.
- ◆ After installing the headlight, adjust the headlight → ["1.8 Setting the headlight beam", page 146](#).

Screw adjusting nut into the new bracket:

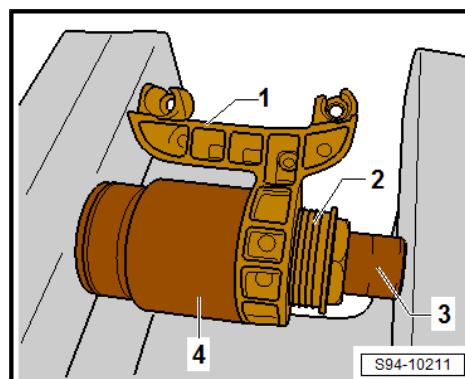
Before attaching to the headlight housing, the adjusting screw -2- must be screwed into the new bracket -1-.

The adjusting screw is designed to tap the thread in the new bracket.

The adjusting screw must be screwed into the bracket exactly straight, otherwise there is a risk that the new bracket will break.

To screw the adjusting screw -2- into the new bracket -1- accurately, use e.g. the vice jaws. (Use e.g. the hex socket -4- from the tool set for support on one side. On the other side, use e.g. a piece of pipe, a washer, or screw etc. Pos. -3-.

Slowly screw the adjusting screw into the new bracket, which slowly tightening the vice jaws (a second mechanic is required for this step).

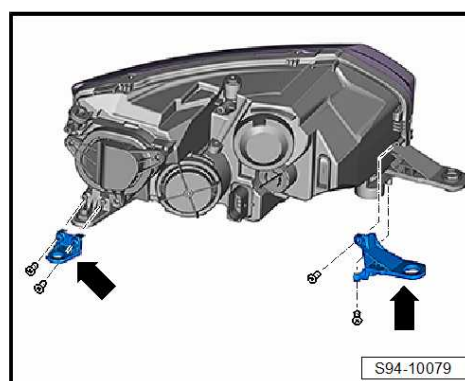


Replace the original bracket with a new bracket:

- Remove the remains of the original crate.
- Change the contact surface (grind off, remove by file) to allow a new bracket to be inserted properly.
- Install a new bracket -arrows- with adjusting screw already tightened flush to the profile and tighten the fixing screws.

Tightening torques

Fixing screws for bracket	1.5 Nm
---------------------------	--------



2.5 Removing and installing headlight range control motor

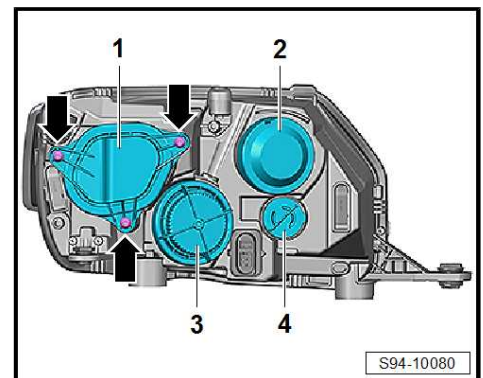
⇒ [“2.5.1 Removing and installing the control motor for headlamp range control, up to CW 22/2017”, page 155](#)

⇒ [“2.5.2 Removing and installing the control motor for headlamp range control - as of CW 22/2017”, page 155](#)

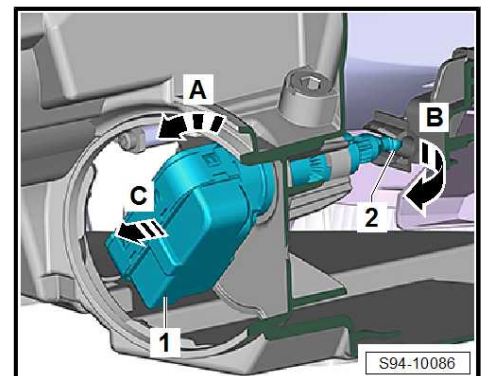
2.5.1 Removing and installing the control motor for headlamp range control, up to CW 22/2017

Removing

- Remove headlight with defective control motor
⇒ [“1.2 Removing and installing headlight”, page 138](#) .
- Turn the cover to the left -3- and remove, also remove the cover -2- for purposes of presentation.



- Detach the control motor -1- by turning it to the left in direction of arrow -A- (left headlight), or to the right (right headlight).
- Disconnect plug.
- Slide thrust piece -2- out of the support by tilting it out to the side in direction of arrow -B- and remove the control motor -1- in direction of arrow -C-.



Installing

Installation is performed in the reverse order, pay attention to the following points:

Note

When installing the caps, pay attention to the correct fitting. Water ingress destroys the headlight.

- Inspect proper operation.
- Adjust headlight ⇒ Maintenance ; Booklet Rapid .

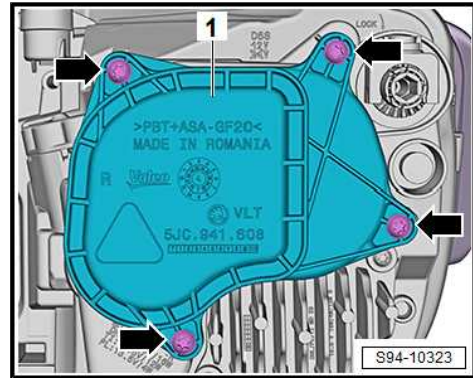
2.5.2 Removing and installing the control motor for headlamp range control - as of CW 22/2017

Removing

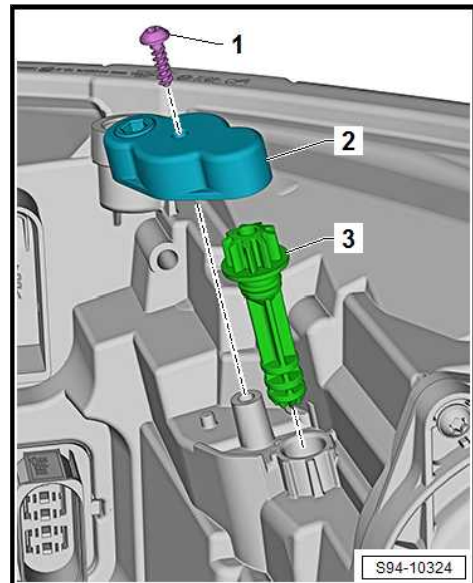
- Remove headlight with defective control motor
⇒ [“1.2 Removing and installing headlight”, page 138](#) .



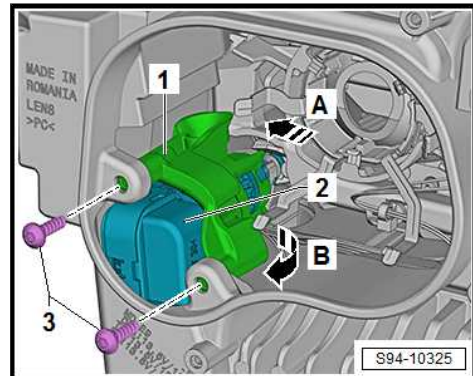
- Unscrew screws -arrows- and remove cover -1-.
- To get better access, remove the gas discharge lamp
⇒ [“2.3.1 Replacing the D5S gas discharge lamp”, page 150](#) .



- Remove the screw -arrow-, cover -3- and the adjusting element -2-.



- Remove screws -arrows- and push the actuator pressure bolt out of the mounting.
- Remove the actuator -1- with holder -2- from the headlight.
- Release connector and pull it off.



- Turn the actuator -2- in the direction of the arrow -A- and in the direction of the arrow -B- Remove from the holder -1-.

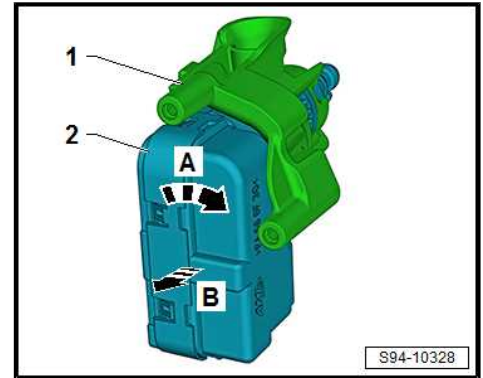
Installing

Installation is performed in the reverse order, pay attention to the following points:

Note

When installing the cover, pay attention to the correct fitting. Water ingress destroys the headlight.

- Inspect proper operation.
- Adjust headlight => Maintenance ; Booklet Rapid .



2.6 Removing and installing the power output module for headlight

Removing

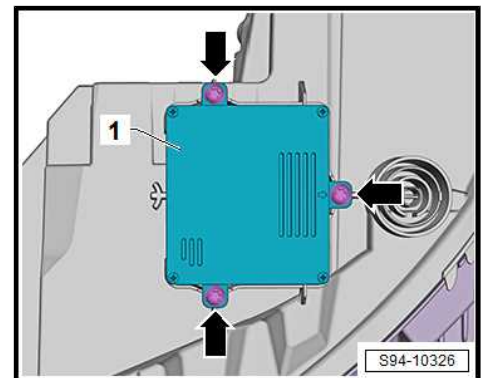
- Remove headlight
=> ["1.2 Removing and installing headlight", page 138](#) .
- Unscrew the screws -arrows- and remove the control unit -1-.

Installing

Installation is performed in the reverse order, pay attention to the following points:

Note

- ◆ *Correctly install the seal when installing the control unit. Water ingress destroys the headlight.*
- ◆ *Check headlights and adjust if necessary => Maintenance ; Booklet Rapid .*



Tightening torques

- ◆ => ["2.1.2 Assembly overview, headlights with xenon discharge lamps from CW 22/2017", page 149](#)

2.7 Removing and installing LED module

Special tools and workshop equipment required

- ◆ ESD workstation - VAS6613-



Caution

Work on the LED module exclusively at an ESD workstation.



ESD workstation - VAS6613- structure

- 1 - Plug adapter for earthing module
- 2 - Earthing module
- 3 - ESD table mat
- 4 - Wrist tape

Removing

- Remove headlight
=> ["1.2 Removing and installing headlight", page 138](#) .

- Unscrew the screws -arrows- and remove the LED module -1-.

Installing

Installation is performed in the reverse order, pay attention to the following points:



Note

Correctly install the seal when installing the control unit. Water ingress destroys the headlight.

Tightening torques

- ◆ => ["2.1.2 Assembly overview, headlights with xenon discharge lamps from CW 22/2017", page 149](#)

2.8 Change headlight for right-hand and/or left-hand traffic

The headlight inner aperture should be switched over when driving in countries which drive on the right or the left thereby preventing blinding of the drivers travelling in the opposite direction.

The change is identical for both headlights.

Work procedure

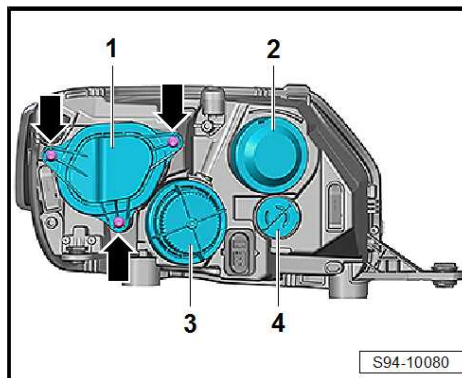
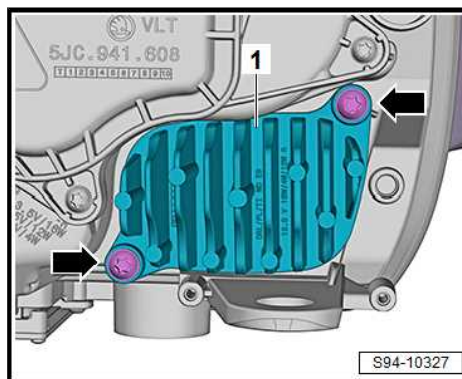
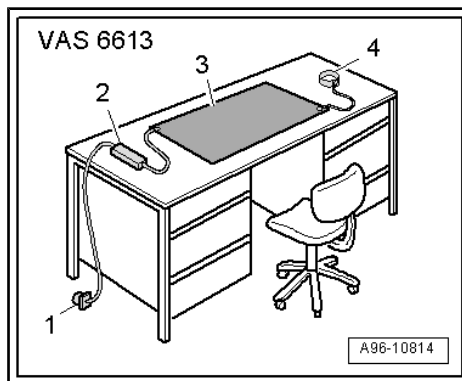
- Switch off the ignition and all electrical consumers!
- Unplug the connector from the headlight.
- Unscrew screws -arrows- and remove the gas discharge lamp cover -1-.



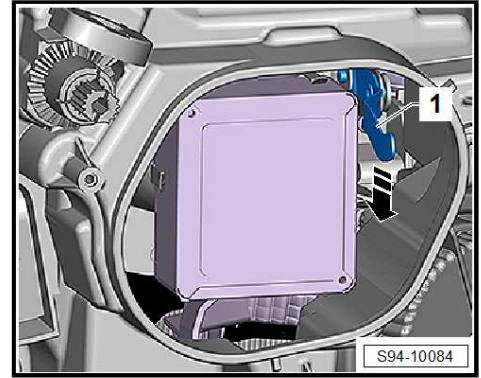
Note

To make access to the screws for the gas discharge lamp cover easier, you can also remove the cap in the wheelhouse liner.

- Push the lever -1- downwards -arrow-.



The headlight on the left:



The headlight on the right:

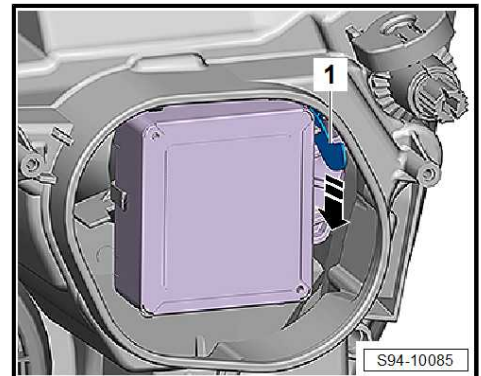
- Reinstall cover for gas discharge lamp.

i Note

When installing the caps, pay attention to the correct fitting. Water ingress destroys the headlight.

Tightening torques

Fixing screws for gas discharge lamp cover	1.5 Nm
--	--------



2.9 Setting the headlight beam

i Note

Use a headlight beam setting device for setting the headlight beam. The nominal values and the adjustment procedure can be found in the Manual => Maintenance ; Booklet Rapid .

3 Side turn signal in the wing

⇒ "3.1 Removing and installing side turn signal in the wing", page 160

3.1 Removing and installing side turn signal in the wing

Removing



Note

The catch peg -arrow- is positioned at the front right or front left of the vehicle.

- Switch off the ignition and all electrical consumers!
- Unscrew 4 screws -4- from wheelhouse liner.
- Press the turn signal light with the hand from inside.
- Pull the housing -1- out of its socket -3-.
- Light bulb -2- can now also be pulled out for replacing.

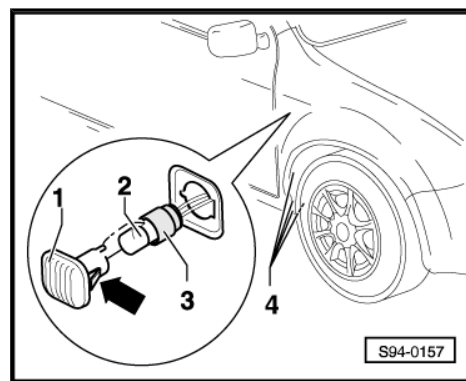
Installing

Installation is carried out in the reverse order.



Note

The housing of the turn signal light -1- must lock in place in the wing.



Tightening torques

Fixing screw for wheelhouse liner	1 Nm
-----------------------------------	------

4 Lights in the exterior mirror

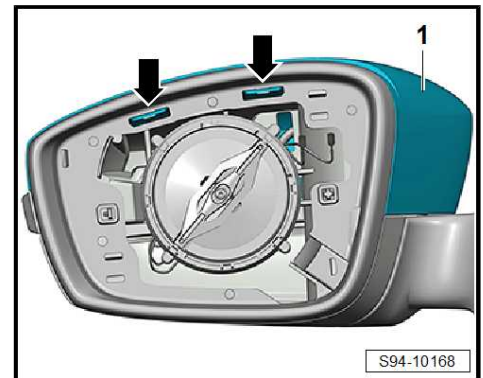
⇒ [“4.1 Removing and installing the turn signal light in the exterior mirror”, page 161](#)

⇒ [“4.2 Removing and installing signal bulb in exterior mirror L131 / L132”, page 161](#)

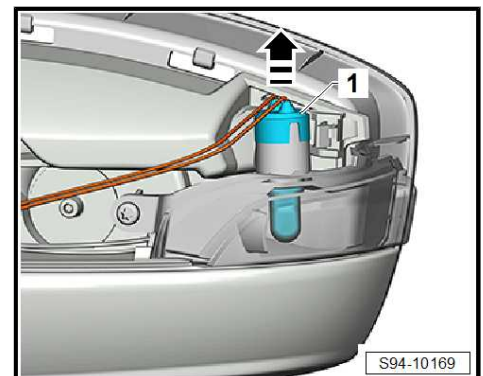
4.1 Removing and installing the turn signal light in the exterior mirror

Removing

- Switch off the ignition and all electrical consumers!
- Remove mirror glass ⇒ Body Work; Rep. gr. 66 .
- Push off catches -arrows-, tilt out the cover -1- a little and remove by moving it upwards.



- Remove socket with bulb -1- -arrow-.

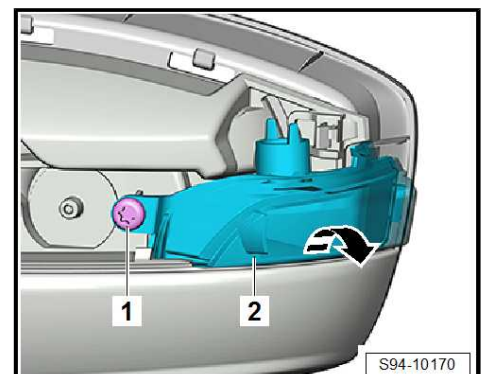


- Unscrew screw -1-, tilt out the turn signal light -2- a little -arrow- and remove.

Installing

Installation is performed in the reverse order, pay attention to the following points:

- Performing functional tests of all functions.



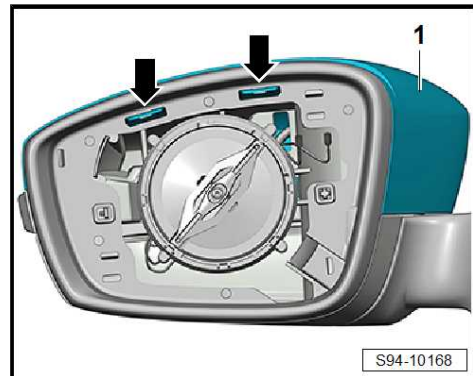
4.2 Removing and installing signal bulb in exterior mirror -L131- / -L132-

- ◆ Bulb WY5W



Removing

- Switch off the ignition and all electrical consumers!
- Remove mirror glass ⇒ Body Work; Rep. gr. 66 .
- Push off catches -arrows-, tilt out the cover -1- a little and remove by moving it upwards.

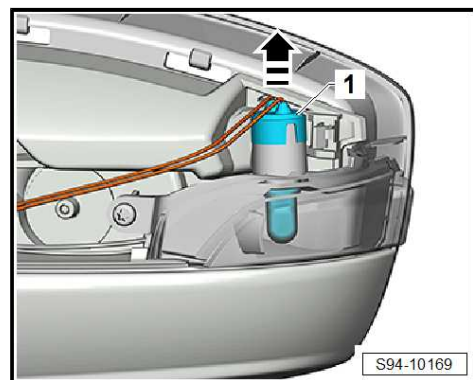


- Remove socket with bulb -1- -arrow-.
- Push off defective light bulb WY5W from the socket and replace.

Installing

Installation is performed in the reverse order, pay attention to the following points:

- Performing functional tests of all functions.



5 Tail lights

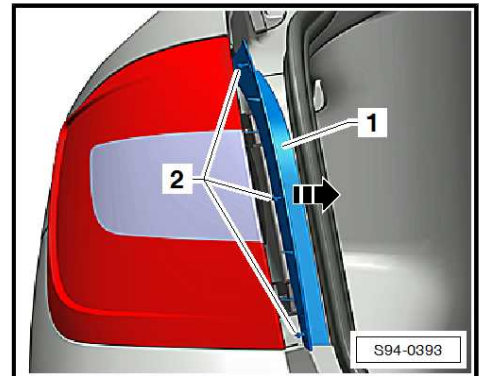
⇒ [“5.1 Removing and installing tail light”, page 163](#)

⇒ [“5.2 Replacing the light bulbs of the tail light”, page 163](#)

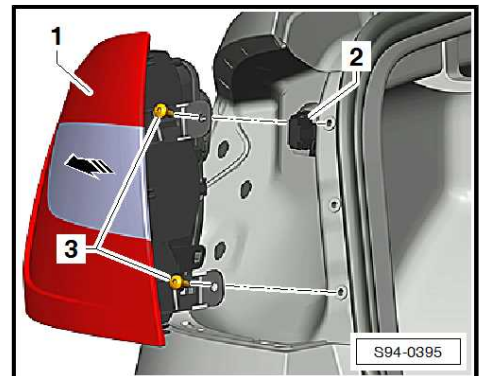
5.1 Removing and installing tail light

Removing

- Switch off the ignition and all electrical consumers!
- Insert the assembly tool - T10389- or a hook for wheel trim caps into the opening of the cover -1-, unclip the cover -arrow- from the catches -2- in sequence and remove.



- Unscrew bolts -3-.
- Take hold of the light -1- and release it carefully from the assembly opening in the installed axle by moving it laterally -arrow-.
- Unlock and pull off connector -2-.



Installing

Installation is performed in the reverse order, pay attention to the following points:



Note

Pay attention to the correct fitting and undamaged seals.



Caution

When inserting the lights into the assembly opening, ensure that the connection wiring loom is inserted into the vehicle cockpit.

Crushed cables between the body and lights causes significant leakage of rainwater and light malfunctions.

Tightening torques

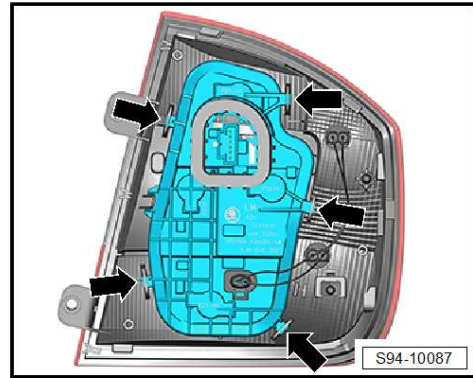
Fixing screws for tail light	2.5 Nm
------------------------------	--------

5.2 Replacing the light bulbs of the tail light

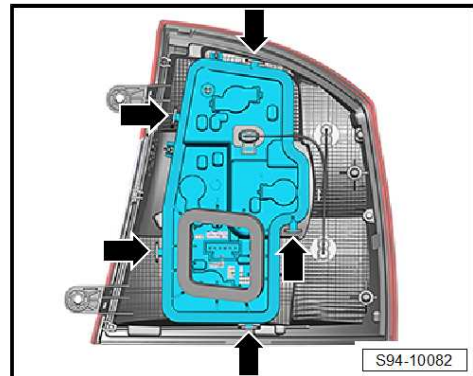
- Remove tail light
⇒ [“5.2 Replacing the light bulbs of the tail light”, page 163](#) .
- Slacken and remove the lamp holder from the retaining tabs -arrows- (not valid when replacing the bulb for the parking light -Pos. 2-, when removing the bulb holder, turn it to the left and take it out).



Rapid:

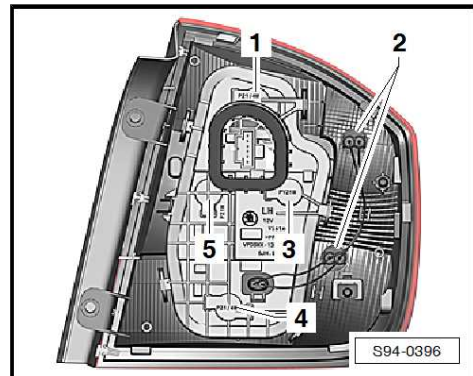


Rapid Spaceback:



– Replace defective light bulb.

- 1 - Brake and parking light - twin filament light bulb P21/4W
- 2 - Parking light - light bulb W3W
- 3 - Turn signal light - light bulb PY21W
- 4 - Fog and parking light - twin filament light bulb P21/4W (fog light only lights up on driver's side)
- 5 - Reversing light - light bulb P21W



6 Registration number lighting

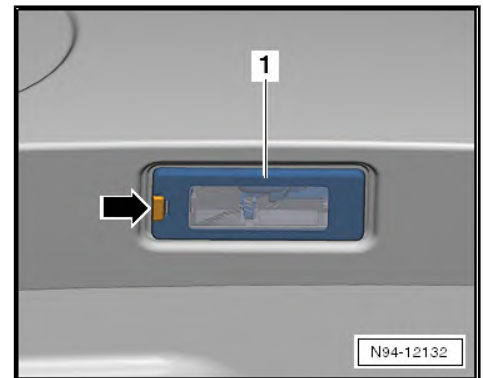
⇒ [“6.1 Removing and installing licence plate carrier”, page 165](#)

⇒ [“6.2 Replacing bulb for the number plate light”, page 165](#)

6.1 Removing and installing licence plate carrier

Removing

- Switch off the ignition and all electrical consumers!
- Use a suitable screwdriver -arrow- to lever the light -1- out of the tailgate.

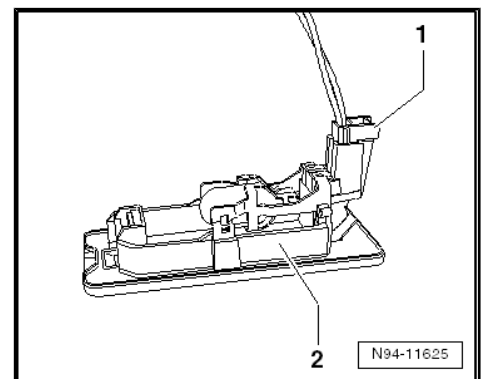


- Disconnect the plug -1- from the light -2-.

Installing

Installation is performed in the reverse order, pay attention to the following points:

- The plug -1- is located on the right vehicle side.
- Perform a functional test.



6.2 Replacing bulb for the number plate light

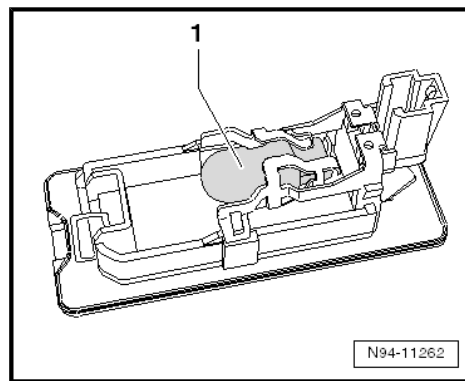


Note

- ◆ *LEDs are used for lighting in the Top scope of equipment.*
- ◆ *LEDs cannot be replaced separately.*
- Switch off the ignition and all electrical consumers!
- Remove number plate light
⇒ [“6.1 Removing and installing licence plate carrier”, page 165](#).



- Replace the defective light bulb -1- (W5W).
- After installing, perform a functional test.



7 Additional brake light

⇒ [“7.1 Removing and installing high level brake light”, page 167](#)

7.1 Removing and installing high level brake light

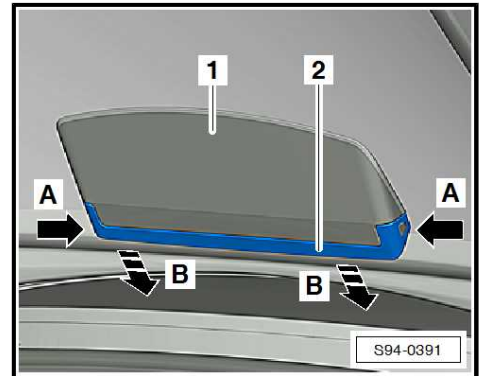
⇒ [“7.1.1 Removing and installing the high level brake light - Rapid”, page 167](#)

⇒ [“7.1.2 Removing and installing the high level brake light - Rapid Spaceback”, page 167](#)

7.1.1 Removing and installing the high level brake light - Rapid

Removing

- Switch off the ignition and all electrical consumers!
- Consecutively press the retaining tabs in direction of arrow -A- and detach the cover -2- from the light housing -1- in direction of arrow -B-.



- Pinch the retaining tabs in the direction of arrow -A- and pull the brake light -1- in the direction of arrow -B- out of the support.
- Separate electrical plug connection -2-.

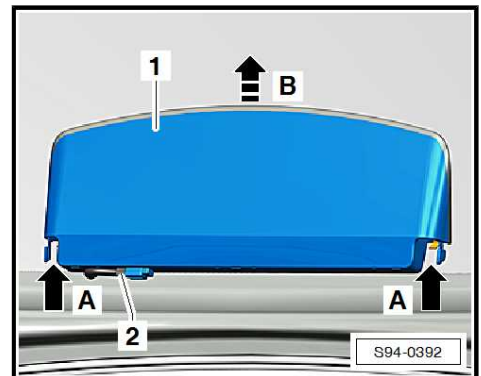
Installing

Installation is carried out in the reverse order.



Note

The light strip is fitted with LEDs, which cannot be replaced individually. In the event of a fault, the brake light must be replaced completely.



7.1.2 Removing and installing the high level brake light - Rapid Spaceback



Caution

When using the lever tool, mask points where the lever tool is applied using commercially available adhesive tape.

Special tools and workshop equipment required

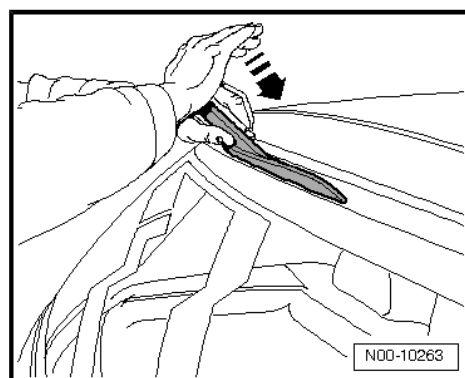
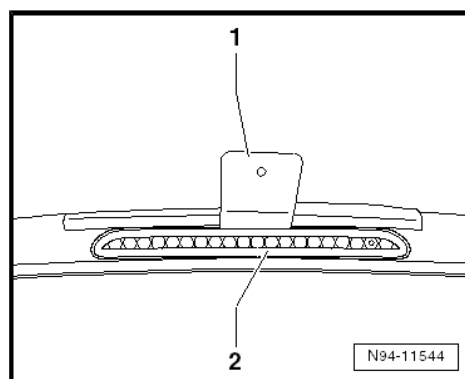
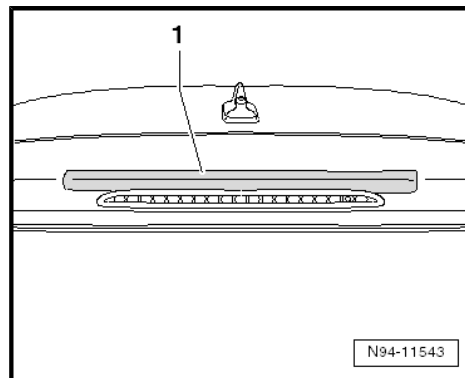
- ◆ Disassembly wedge - T10383- , if necessary, plastic spatula

Removing

- Switch off the ignition and all electrical consumers!
- Attach a strip of commercially available adhesive tape -1- to the area of the rear lid above the bulb for the additional brake light.

- Insert the assembly wedge - T10383- (vehicles with glued spoiler, use plastic spatula) -1- in stages from the top right corner between bulb for additional brake light - M25- -2- and rear lid.

- Release the catches of the bulb for additional brake light - M25- successively by pushing the assembly wedge in direction of travel. Work from right to left.
- Pull light out of tailgate, taking connected wire lengths into account.



- Unlock and disconnect hose connection -1-.
- Unlock and disconnect plug connection -2- and remove light.

Installing

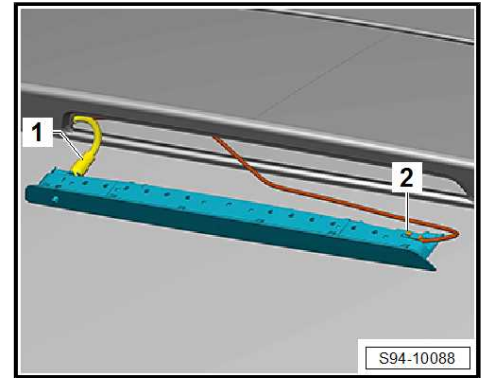
Installation is performed in the reverse order, pay attention to the following points:



Note

When installing the additional brake light bulb - M25-, ensure the seal is seated correctly. Make sure that the seal is undamaged and that no loops are formed.

- Mount plug.
- Connect hose connection for spray jet. Ensure correct locking by pulling slightly on the connection.
- Press lamp for high level brake light, starting from the bottom edge, into the assembly opening until it audibly locks into place.
- Check the function of the lamp for high level brake light - M25- and of the rear window spray nozzle.



8 Fog lights, fog lights with “Corner” function and daylight driving light

⇒ [“8.1 General description, fault recognition and fault display”, page 170](#)

⇒ [“8.2 Removing and installing fog light”, page 170](#)

⇒ [“8.3 Adjusting the fog light”, page 171](#)

⇒ [“8.4 Replacing light bulb for fog light”, page 171](#)

8.1 General description, fault recognition and fault display

General description

Two types of fog lights are installed:

- ◆ Fog lights
- ◆ the fog lights with the static cornering light (Corner)

As of CW 22.2015, the LED module for the daylight driving light is part of the fog light (depending on vehicle equipment) and cannot be changed separately.

Fog lights with the “Corner” function ensure that the surrounding area of the vehicle is better illuminated when turning, parking etc. and are controlled by the onboard supply control unit - J519- .

Further information and description of function ⇒ Owner's manual Rapid .

Fault recognition and fault display

The onboard supply control unit - J 519- is equipped with self-diagnosis, which facilitates fault finding.

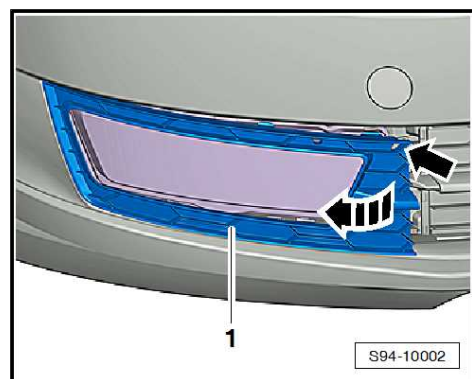
Use the ⇒ Vehicle diagnostic tester in the function “Targeted fault finding” for checking and fault finding of the fog lights with the “Corner” function.

8.2 Removing and installing fog light

Removing

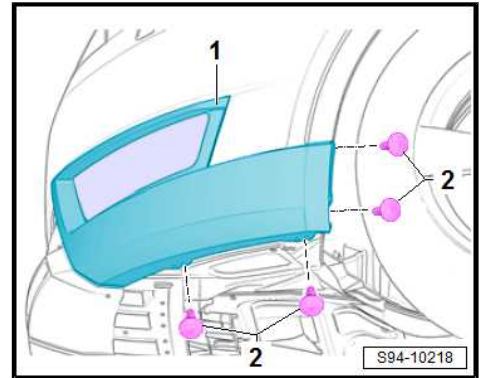
Vehicles without ScoutLine package:

- For example, insert an assembly tool - T10389- or a hook for the wheel trim caps (tool kit) into the opening in the grid -top arrow- and unclip the grids -1- from the catches in sequence and remove.



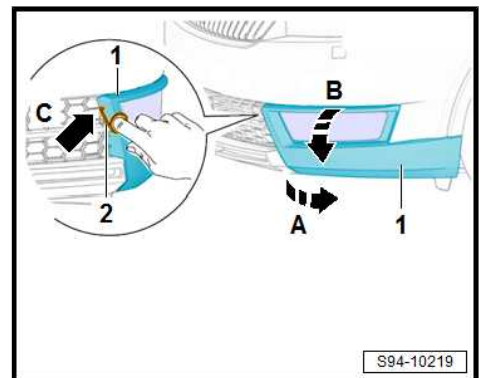
Vehicles fitted with ScoutLine package:

- Unscrew bolts -2-.



- E.g. hook a puller -2- from the tool kit or an assembly tool - T10389- into the opening, arrow -C- in the cover -1-.
- Loosen and remove the cover -1- by pulling on the assembly tool in direction of arrow -A- and -B-.

All vehicles:



- Unscrew screws -arrows-.
- Remove the fog light.
- Disconnect plug.

Installing

Installation is performed in the reverse order, pay attention to the following points:

Tightening torques

Fixing screws for fog light cover	1 Nm
Fixing screws for fog lights	1.5 Nm



8.3 Adjusting the fog light



Note

Use a headlight beam setting device for setting the headlight beam. The nominal values and the adjustment procedure can be found in the Manual => Maintenance ; Booklet Rapid .

8.4 Replacing light bulb for fog light



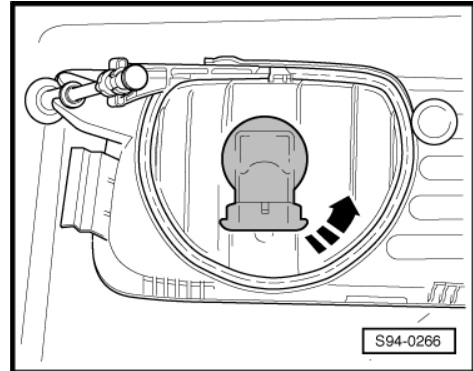
WARNING

These H8 bulbs are pressurised and can explode when changing the bulb - risk of injury! Wear gloves and safety spectacles when changing the lamps.

**Note**

Do not touch the glass when installing the light bulb. Your fingers will leave traces of grease on the glass which then evaporate when the bulb is switched on causing it to cloud.

- Switch off the ignition and all electrical consumers!
- Remove fog light
⇒ ["8.2 Removing and installing fog light", page 170](#) .
- Turn socket with lamp in -direction of arrow- and remove.
- Replace defective light bulb.
- Installation is carried out in the reverse order.



9 Entry and start authorisation

⇒ [“9.1 Installation overview - entry and start authorisation”, page 173](#)

⇒ [“9.2 Install and remove interior aerial 1 for entry and start system R138”, page 174](#)

⇒ [“9.3 Install and remove aerial in luggage compartment for entry and start system R137”, page 175](#)

⇒ [“9.4 Install and remove aerial in rear bumper for entry and start system R136”, page 175](#)

⇒ [“9.5 Control unit for keyless entry authorisation”, page 176](#)

⇒ [“9.6 Connection assignment of the connector on the control unit for keyless entry authorisation”, page 177](#)

9.1 Installation overview - entry and start authorisation

There are two equipment variants of entry and start authorisation (KESY):

- ◆ GO KESY
- ◆ FULL KESY



Note

GO KESY variant - without aerials and sensors in the door handles (Pos. 3 and 9), must be unlocked/locked with the remote control, see ⇒ Rapid Owner's Manual .



1 - Aerial

- under the rear bumper
- Removing and installing
 ⇒ [“9.4 Install and re-
remove aerial in rear
bumper for entry and
start system R136”](#),
 page 175

2 - Aerial

- Aerial in the middle of
the luggage compart-
ment
- Removing and installing
 ⇒ [“9.3 Install and re-
move aerial in luggage
compartment for entry
and start system R137”](#),
 page 175

3 - Aerial and sensors

- in the outer door handle
on the driver's side
- Basic equipment Start
- in the case of a fault, re-
place the complete door
handle ⇒ Body Work;
Rep. gr. 58

4 - Start/stop button - E408-

- Removing and installing
 ⇒ [“2.9 Removing and in-
stalling starter button
E408”](#), page 211

5 - Immobiliser reader coil - D2-

- Removing and installing
 ⇒ [“2.9 Removing and in-
stalling starter button
E408”](#), page 211

6 - Steering lock with control unit for electronic steering column lock - J764- (ESCL)

- Removing and installing ⇒ [“10.5.2 Removing and installing the electronic steering lock”](#), page 186

7 - Interface for entry and start system - J965-

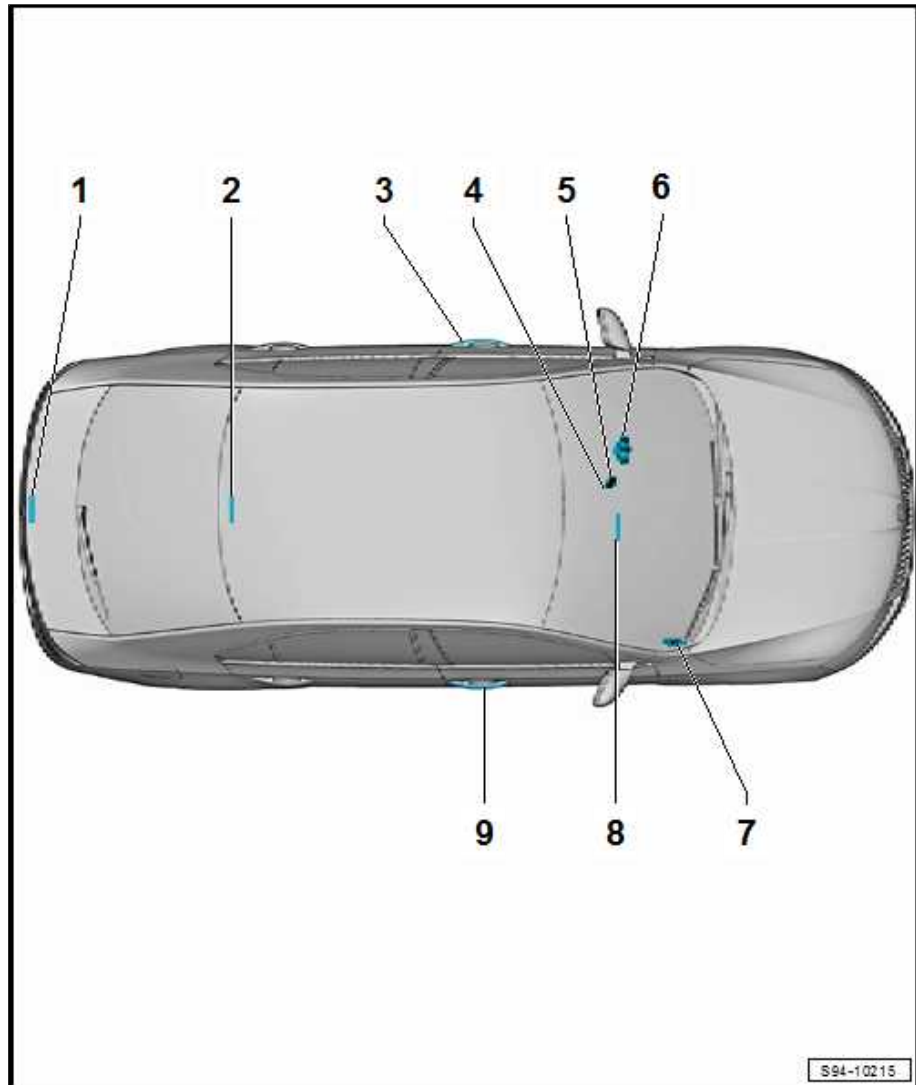
- next to the glove compartment on front passenger side
- Removing and installing ⇒ [“9.5 Control unit for keyless entry authorisation”](#), page 176

8 - Aerial

- under the centre console in the centre
- Removing and installing
 ⇒ [“9.2 Install and remove interior aerial 1 for entry and start system R138”](#), page 174

9 - Aerial and sensors

- in the outer door handle on the front passenger side
- in the case of a fault, replace the complete outer door handle ⇒ Body Work; Rep. gr. 58



9.2 Install and remove interior aerial 1 for entry and start system - R138-

The aerial is glued in place on both sides under the handbrake with adhesive tape underneath the floor covering.

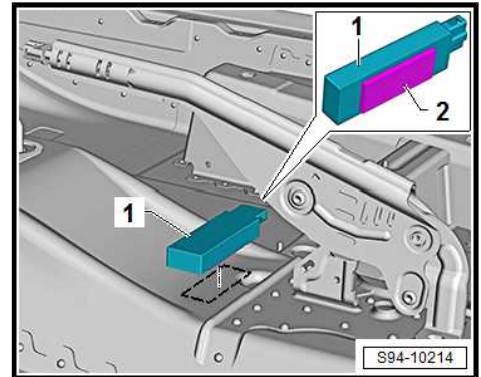
Removing

- Switch off the ignition and all electrical consumers!
- Remove the centre console ⇒ Body Work; Rep. gr. 68 .
- Loosen the antenna -1- with a lever (e.g. -T10236-) or by hand and disconnect the plug.

Installing

- Connect the plug and glue the antenna back to its original installation location with double-sided adhesive tape -2-, see Fig.

Further installation occurs in reverse order.



9.3 Install and remove aerial in luggage compartment for entry and start system - R137-

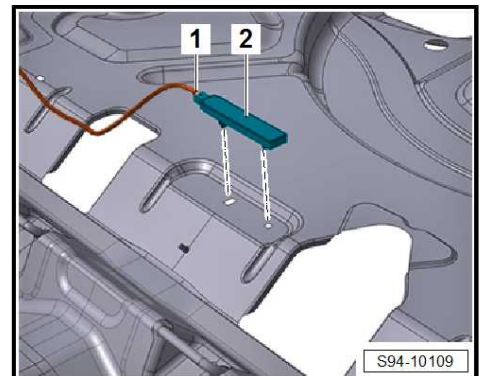
The aerial is located behind the rear seats underneath the floor covering in the middle.

Removing

- Switch off the ignition and all electrical consumers!
- Fold down the rear seats and raise the floor covering in the luggage compartment.
- Remove the connector -1- and carefully pull off the aerial -2- from the bearing in the bodyshell, e.g. with the removal tool for the lining of the door panel -T10236- .

Installing

- Fit connector and press the straddling dowels for aerial into the assembly openings.



9.4 Install and remove aerial in rear bumper for entry and start system - R136-

The aerial can be found on the bodyshell, in the middle under the rear bumper.

Removing

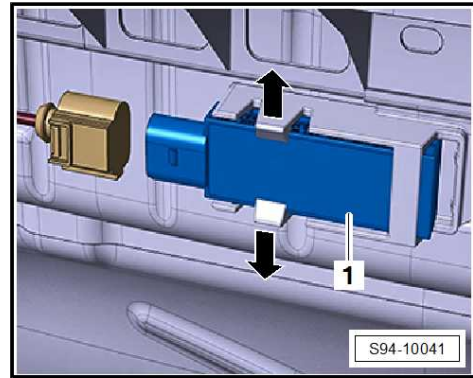
- Switch off the ignition and all electrical consumers!
- Remove rear bumper ⇒ Body Work; Rep. gr. 63 .



- Press off catch pegs -arrows-, tilt aerial -1- up and push it out.
- Disconnect plug.

Installing

Installation is carried out in the reverse order.

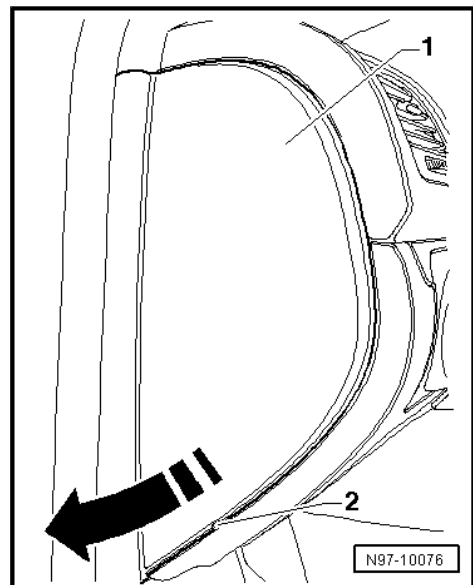


9.5 Control unit for keyless entry authorisation

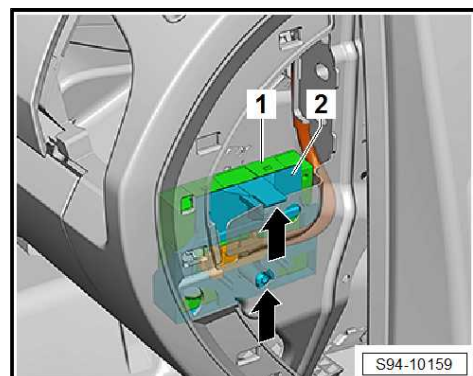
The control unit is located in the storage compartment in the dash panel on the front passenger side.

Removing

- Switch off the ignition and all electrical consumers!
- Remove the side vent from the dash panel on the driver's side => Rep. gr. 87 ; Air guide .
- Remove the side cover on the dash panel -1- on the front passenger side in -direction of arrow-.



- Unclip the unit -1- with mounting bracket -2- -arrows- and, taking into account the connected lines.

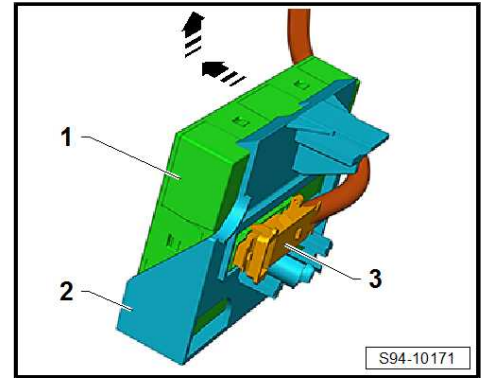


- Disconnect plug connection -3- by unlocking and tilting out the clamp.
- Swivel out the unit -1- and remove from the mounting bracket -2- -arrows-.

Installing

Installation is performed in the reverse order, pay attention to the following points:

- If the control unit has been replaced, code using ⇒ Vehicle diagnostic tester. The ⇒ Vehicle diagnostic tester must be connected and online.
- Test the complete system for proper operation.



9.6 Connection assignment of the connector on the control unit for keyless entry authorisation

The connection assignment for the multi-pin connector can be found in ⇒ Current flow diagrams, Electrical fault finding and Fitting locations.



10 Switch unit on the steering column

⇒ ["10.1 Summary of components - switch unit on the steering column", page 178](#)

⇒ ["10.2 Removing and installing steering column combination switch", page 181](#)

⇒ ["10.3 Removing and installing return ring with slip ring from steering column combination switch", page 184](#)

⇒ ["10.4 Adjusting centre position for return ring with slip ring", page 185](#)

⇒ ["10.5 Removing and installing steering lock housing", page 186](#)

⇒ ["10.6 Removing and installing lock cylinder", page 186](#)

⇒ ["10.7 Removing and installing ignition/starter switch", page 187](#)

⇒ ["10.8 Contact assignment on the ignition starter switch", page 189](#)

⇒ ["10.9 Removing and installing ignition key anti-removal lock solenoid N376 ", page 189](#)

10.1 Summary of components - switch unit on the steering column

⇒ ["10.1.1 Switch unit on the steering column with mechanical steering lock", page 178](#)

⇒ ["10.1.2 Switch unit on the steering column with Control unit for electronic steering column trim panel J764 ", page 180](#)

10.1.1 Switch unit on the steering column with mechanical steering lock

1 - Shear bolt

- for steering lock housing
- 2 pieces

2 - Magnet for ignition key anti-removal lock - N376-

- only on vehicles with automatic gearbox
- Removing and installing ⇒ [“10.9 Removing and installing ignition key anti-removal lock solenoid N376”, page 189](#)

3 - Ignition key

4 - Lock cylinder

- Removing and installing ⇒ [“10.6 Removing and installing lock cylinder”, page 186](#)
- with immobilizer reader coil - D2-

5 - Steering column combination switch - E595-

- Removing and installing ⇒ [“10.2 Removing and installing steering column combination switch”, page 181](#)

6 - Restoring ring with slip ring

- Removing and installing ⇒ [“10.3 Removing and installing return ring with slip ring from steering column combination switch”, page 184](#)

7 - Screw

- 3 pieces
- 1.1 Nm

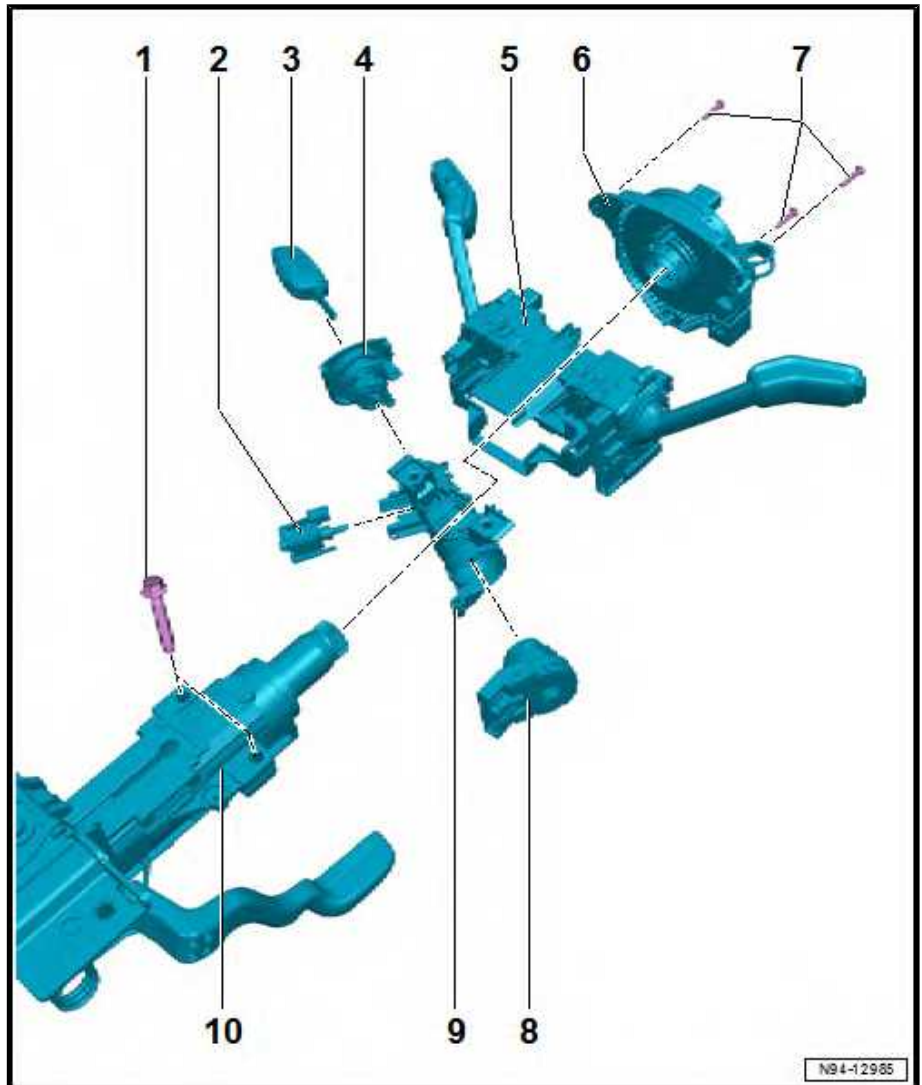
8 - Ignition starter switch - D-

- Removing and installing ⇒ [“10.7 Removing and installing ignition/starter switch”, page 187](#)

9 - Steering lock housing

- Removing and installing ⇒ [“10.5.1 Removing and installing the mechanical steering lock”, page 186](#)

10 - Steering column





10.1.2 Switch unit on the steering column with Control unit for electronic steering column trim panel - J764-

1 - Start/stop button - E408-

- Removing and installing
⇒ [“2.9 Removing and installing starter button E408”, page 211](#)

2 - Ignition key

3 - Immobiliser reader coil - D2-

- Removing and installing
⇒ [“2.9 Removing and installing starter button E408”, page 211](#)

4 - Steering column combination switch - E595-

- Removing and installing
⇒ [“10.2.2 Removing and installing steering column combination switch - installed as of CW 22.2015”, page 182](#)

5 - Restoring ring with slip ring

- Removing and installing
⇒ [“10.3 Removing and installing return ring with slip ring from steering column combination switch”, page 184](#)

6 - Screw

- 3 pieces
- 1.1 Nm

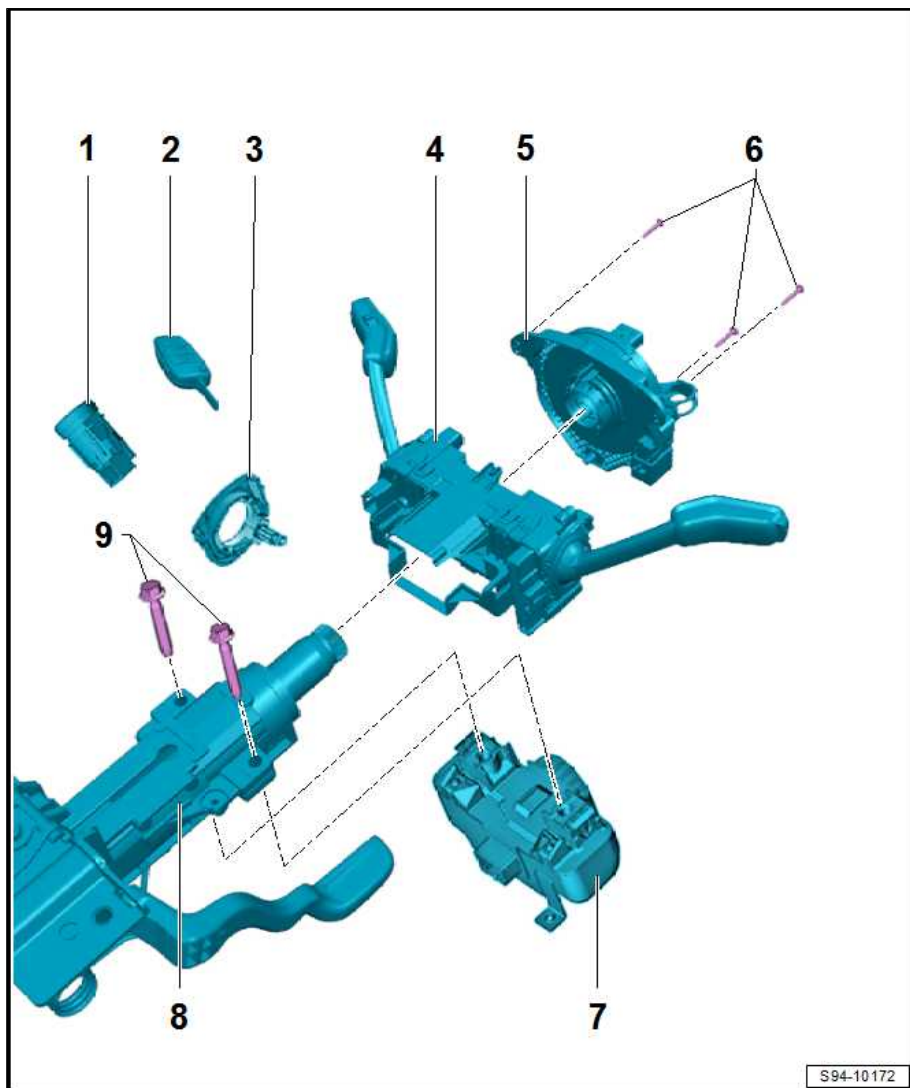
7 - Steering lock with control unit for electronic steering column lock - J764- (ESCL)

- Removing and installing
⇒ [“10.5.2 Removing and installing the electronic steering lock”, page 186](#)

8 - Steering column

9 - Shear bolt

- for steering lock housing
- 2 pieces



10.2 Removing and installing steering column combination switch

⇒ [“10.2.1 Removing and installing steering column combination switch - installed up to CW 21.2015”, page 181](#)

⇒ [“10.2.2 Removing and installing steering column combination switch - installed as of CW 22.2015”, page 182](#)

10.2.1 Removing and installing steering column combination switch - installed up to CW 21.2015

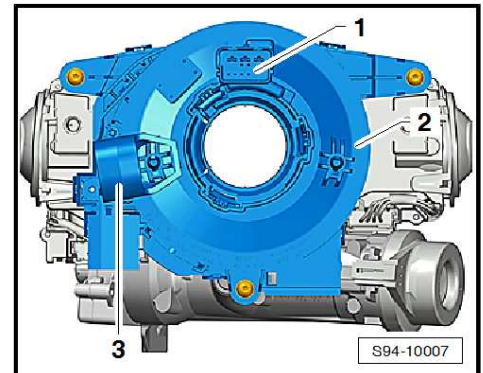
Removing

- Disconnect battery earth strap
⇒ [“1.3 Disconnecting and reconnecting battery”, page 10](#) .
- Remove steering wheel ⇒ Body Work; Rep. gr. 69 .



Note

- ◆ *The steering wheel must be in its central position (wheels in straight ahead position) before removing the steering column.*
- ◆ *There is no positioning pin present on the return ring, which would lock it against inadvertent twisting after removing the steering wheel.*
- Remove top and bottom steering column trim panel; make sure that the return ring -2- is not twisted out of position ⇒ Body Work; Rep. gr. 70 .
- Lock return ring with slip ring with transport lock -3- or with adhesive tape in centre position (connector -1- must be horizontal at top).



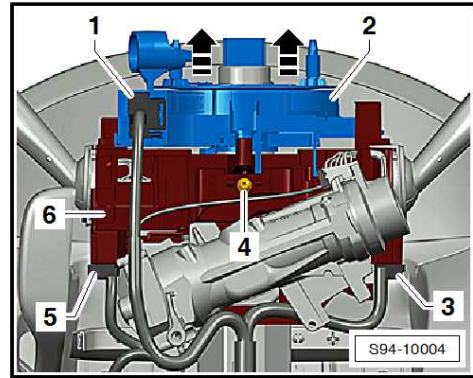


- Unscrew bolt -4-.
- Disconnect plug connections -1-, -3- and -5-.
- Slide combination switch -6- with return ring -2- off the steering column -arrows-.
- If necessary remove return ring -2- with slip ring
⇒ ["10.3 Removing and installing return ring with slip ring from steering column combination switch", page 184](#) .

Installing

Installation is performed in the reverse order, pay attention to the following points:

- When removing, the wheels must be in the straight ahead position.
- Return ring with slip ring must be in the centre position.



Note

In case of doubt that the return ring is in the centre position, set the centre position of the return ring
⇒ ["10.4 Adjusting centre position for return ring with slip ring", page 185](#) .

- Slide on the combination switch until the stop on the steering wheel rod is reached.
- Guide the tensioning screw -4- correctly into the assembly opening.
- Do not forget to remove the adhesive tape or the transport security from the return ring before installing the steering wheel.
- Observe correct mounting sequence of steering wheel and airbag ⇒ Body Work; Rep. gr. 69 .

Tightening torques

Fixing screw for combination switch, Pos. -4-	1 Nm
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10.2.2 Removing and installing steering column combination switch - installed as of CW 22.2015

Removing

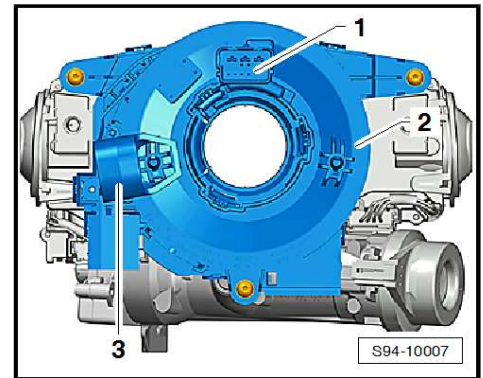
- Disconnect battery earth strap
⇒ ["1.3 Disconnecting and reconnecting battery", page 10](#) .
- Remove steering wheel ⇒ Body Work; Rep. gr. 69 .



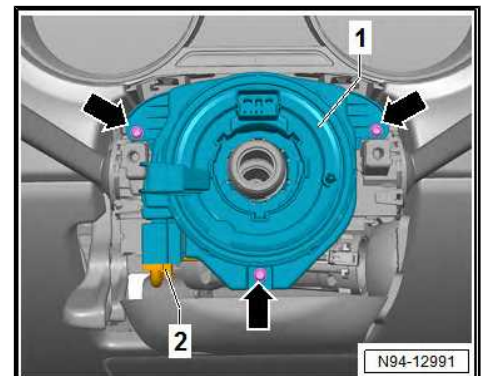
Note

- ◆ *The steering wheel must be in its central position (wheels in straight ahead position) before removing the steering column.*
- ◆ *There is no positioning pin present on the return ring, which would lock it against inadvertent twisting after removing the steering wheel.*

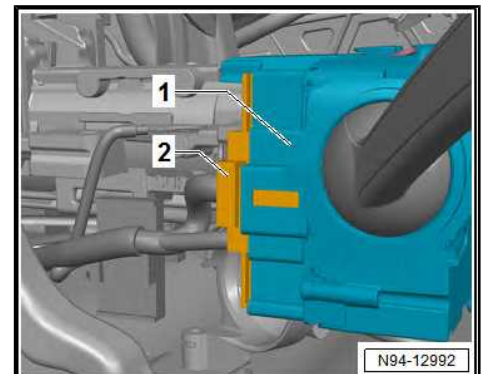
- Remove top and bottom steering column trim panel; make sure that the return ring -2- is not twisted out of position => Body Work; Rep. gr. 70 .
- Lock return ring with slip ring with transport lock -3- or with adhesive tape in centre position (connector -1- must be horizontal at top).



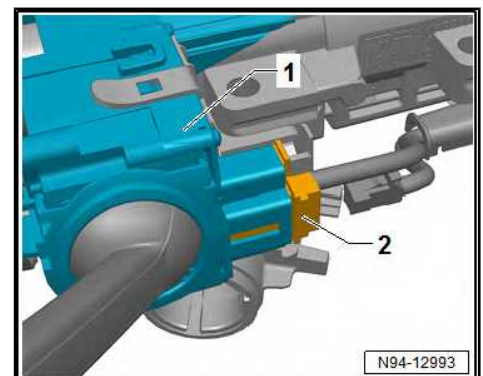
- Unlock and disconnect connector -2- from return ring -1-.



- Release and disconnect connector -2- from switch -1- on left.

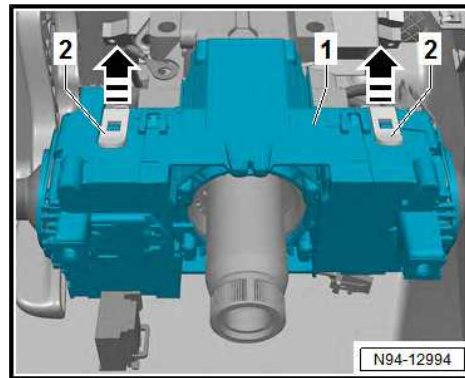


- Release and disconnect connector -2- from switch -1- on right.





- Press off catches -2- in -direction of arrow- and move switch -1- from the steering column slightly.

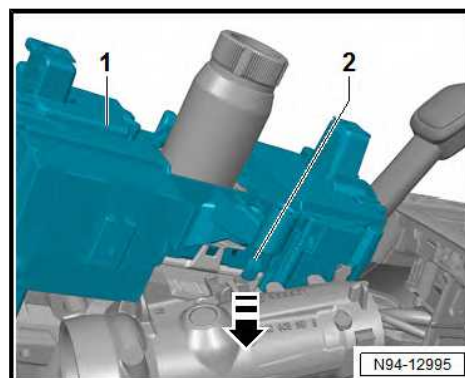


- Press off bottom catch -2- in -direction of arrow- and move out switch -1- from the steering column.

Installing

Installation is performed in the reverse order, pay attention to the following points:

- When removing, the wheels must be in the straight ahead position.
- Return ring with slip ring must be in the centre position.



Note

In case of doubt that the return ring is in the centre position, set the centre position of the return ring

⇒ [“10.4 Adjusting centre position for return ring with slip ring”](#), page 185 .

- Slide on the combination switch until the stop on the steering wheel rod is reached.
- Do not forget to remove the adhesive tape or the transport security from the return ring before installing the steering wheel.
- Observe correct mounting sequence of steering wheel and airbag ⇒ Body Work; Rep. gr. 69 .

10.3 Removing and installing return ring with slip ring from steering column combination switch



Note

- ◆ *Vehicles with ESP and/or with corner light and fog lights with the “corner light” function (static cornering light) are additionally fitted with the steering angle sender - G85- , which is integrated together with the slip ring in one housing. The assembly work is identical for both types of return rings.*
- ◆ *When removing the return ring, the combination switch must not be removed from the steering column.*

Removing

- Disconnect battery earth strap
⇒ [“1.3 Disconnecting and reconnecting battery”](#), page 10 .
- Remove steering wheel ⇒ Body Work; Rep. gr. 69 .

i Note

- ◆ *The steering wheel must be in its central position (wheels in straight ahead position) before removing the steering column.*
- ◆ *There is no positioning pin present on the return ring, which would lock it against inadvertent twisting after removing the steering wheel.*
- Remove top and bottom steering column trim panel; make sure that the return ring -1- is not twisted out of position ⇒ Body Work; Rep. gr. 70 .
- Lock return ring with transport lock -2- or with adhesive tape in centre position.
- Disconnect plug connection -3-.
- Unscrew screws -arrows- and remove return ring -1- from combination switch.

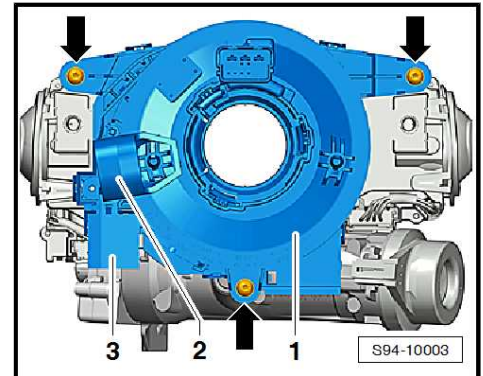
Installing

Installation is performed in the reverse order, pay attention to the following points:

- Move the lever of the turn signal light in Neutral so that the release pin does not break off when installing.
- When replacing return rings with integrated steering angle sender - G85- , perform basic setup with ⇒ Vehicle diagnostic tester.

Tightening torques

Fixing screws for return ring with slip ring (-arrows-).	1 Nm
--	------

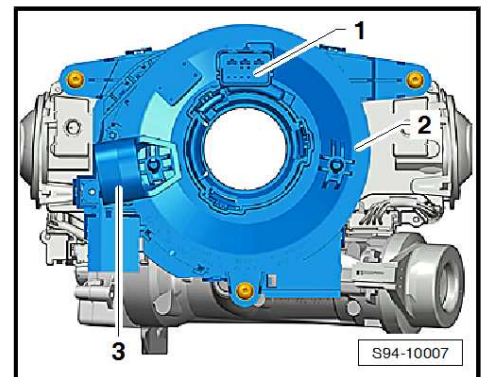


10.4 Adjusting centre position for return ring with slip ring

It is only carried out if there is a doubt about the correct setting of the centre position for the return ring rotor.

Work procedure

- Put the front wheels in straight ahead position.
- Slowly turn the ring rotor -2- manually to the left up to the stop.
- Turn the ring rotor -2- by approx. 2.5 turns to the right so that the connector -1- at the top is in horizontal position (look in the left inspection hole next to the connector in order to check the correct adjustment of the slip ring).
- Install steering wheel ⇒ Body Work; Rep. gr. 69 , if necessary lock ring rotor with transport security -3- or adhesive tape.



10.5 Removing and installing steering lock housing

⇒ [“10.5.1 Removing and installing the mechanical steering lock”, page 186](#)

⇒ [“10.5.2 Removing and installing the electronic steering lock”, page 186](#)

10.5.1 Removing and installing the mechanical steering lock

The instructions for removing and installing the mechanical steering lock can be found under ⇒ Chassis; Rep. gr. 48 .

10.5.2 Removing and installing the electronic steering lock

The instructions for removing and installing the electronic steering lock can be found under ⇒ Chassis; Rep. gr. 48 .

10.6 Removing and installing lock cylinder

Removing



Note

Before the steering wheel is removed from the shaft, the front wheels must be brought into the straight ahead position.

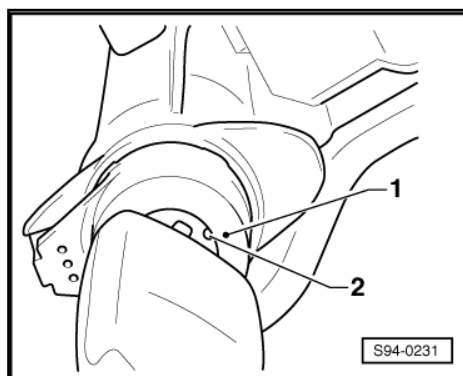
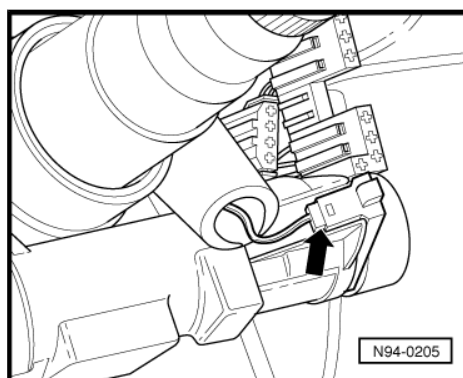
- Disconnect battery earth strap
⇒ [“1.3 Disconnecting and reconnecting battery”, page 10](#) .
- Remove steering wheel ⇒ Body Work; Rep. gr. 69 .
- Removing top and bottom steering column trim ⇒ Body Work; Rep. gr. 70 .
- Carefully disconnect the plug connection -arrow- of the reader coil for the vehicle immobiliser on the lock cylinder.



Note

The reader coil for the vehicle immobiliser is fixed to the lock cylinder and cannot be replaced separately.

- Insert ignition key into lock cylinder and turn in such a way that the marking on the reader coil -1- is opposite the hole in the lock cylinder -2-.
- Insert steel cable (about Ø 1.2 mm) into the hole -2- next to the key.



- Use the steel cable -2- to unlock the securing lever -3- of the lock cylinder -arrow- and pull the lock cylinder with the inserted key out of the steering lock housing.



WARNING

Risk of blocking the steering lock!

The steering lock must not be moved without the lock cylinder, otherwise it would block.



Note

The blocked steering lock must be replaced

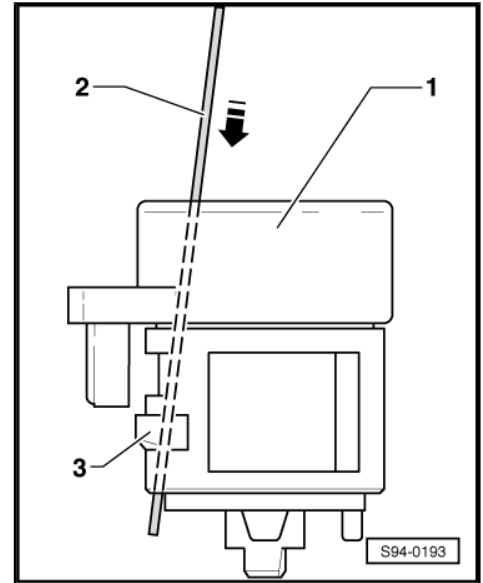
Installing

- Insert ignition key into the lock cylinder, turn and insert steel cable (see removal).
- Insert lock cylinder into the steering lock housing.



Note

- ◆ *Please ensure when inserting the lock cylinder that the connection for the reader coil of the vehicle immobiliser is lying in the guideway for the steering lock housing.*
- ◆ *If the lock cylinder with the reader coil including the key was replaced, adapt immobiliser with ⇒ Vehicle diagnostic tester.*
- Fit the connector together on the reading coil for immobiliser.
- Installing top and bottom steering column trim ⇒ Body Work; Rep. gr. 70 .
- Observe correct mounting sequence of steering wheel and airbag ⇒ Body Work; Rep. gr. 69 .
- Follow the work procedure when connecting the battery ⇒ ["1.3 Disconnecting and reconnecting battery", page 10](#) .



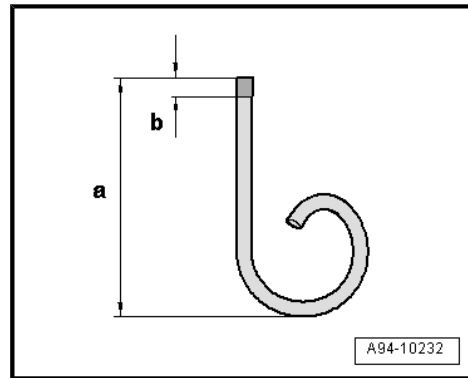
10.7 Removing and installing ignition/starter switch

Two small e.g. watch screwdriver \varnothing 2 mm must be used for removal. Tools must be made from welding / steel wire \varnothing 2 mm as follows:

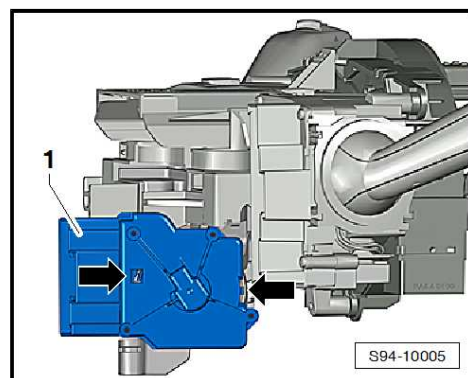
- At one end of a \varnothing 2 mm welded/steel wire, bend a loop and cut to length -a-.
- Dimension -a- = approx. 65 mm
- File the end of the wire hook from one end until sharp.
- Dimension -b- = 5 mm.

Removing

- Disconnect battery earth strap
⇒ ["1.3 Disconnecting and reconnecting battery", page 10](#) .
- Remove steering wheel ⇒ Body Work; Rep. gr. 69 .
- Removing top and bottom steering column trim ⇒ Body Work; Rep. gr. 70 .
- Turn the ignition key in the position Ignition "ON".
- Disconnect plug from ignition starter switch -1-.
- Insert tools / screwdrivers into the holes as follows -arrows-.

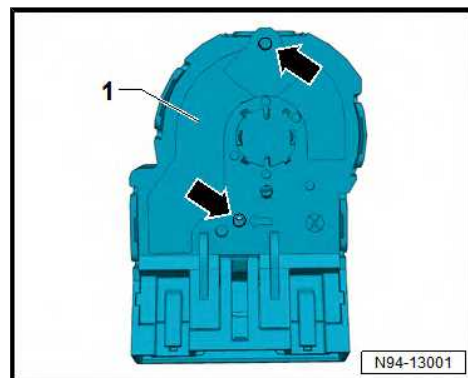


Variant 1:



Variant 2:

Both variants:



i Note

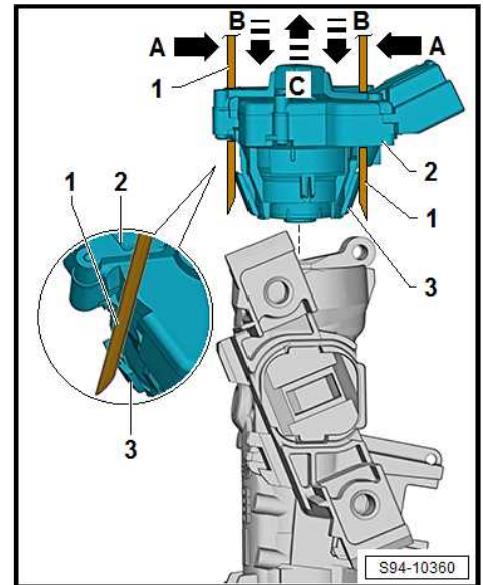
- ◆ The hole on the plug is covered with a sticker that needs to be removed.
- ◆ When inserting the tools / screwdrivers -1- (for tool tips, see fig.), -B- rest lightly on the tools / screwdrivers in the direction of the arrow -A-.
- After inserting the tools / screwdriver -1- until the stop, the locking lugs -3- are unlocked.
- Remove the ignition switch in direction of arrow -C- (tools / screwdrivers must remain plugged in when removing the ignition starter switch).

Installing

Installation is performed in the reverse order, pay attention to the following points:

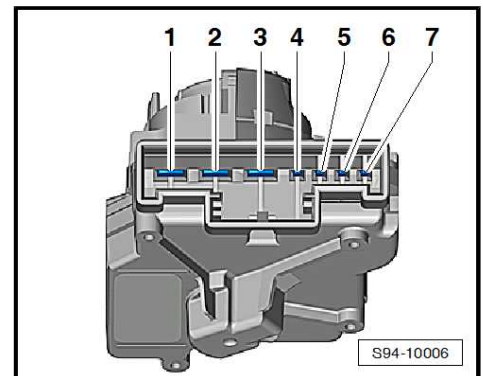
i Note

- ◆ When installing, the ignition starter switch and the lock cylinder must be in the same position, e.g. "Ignition ON".
- ◆ Observe correct mounting sequence of steering wheel and airbag ⇒ Body Work; Rep. gr. 69 .
- Insert ignition starter switch into the steering lock until there is an audible click.
- Follow the work procedure when connecting the battery ⇒ ["1.3 Disconnecting and reconnecting battery", page 10](#) .



10.8 Contact assignment on the ignition starter switch

- 1 - Terminal 15
- 2 - Terminal 30
- 3 - Terminal 50
- 4 - Terminal P - not assigned
- 5 - Terminal 86s
- 6 - Terminal 75
- 7 - Terminal 30



10.9 Removing and installing ignition key anti-removal lock solenoid - N376-

Removing

- Disconnect battery earth strap ⇒ ["1.3 Disconnecting and reconnecting battery", page 10](#) .
- Remove steering wheel ⇒ Body Work; Rep. gr. 68 .



Note

Before the steering wheel is removed from the shaft, the front wheels must be brought into the straight ahead position.

- Removing top and bottom steering column trim ⇒ Body Work; Rep. gr. 68 .



WARNING

Risk of damage to the electronic components caused by electrostatic charge.

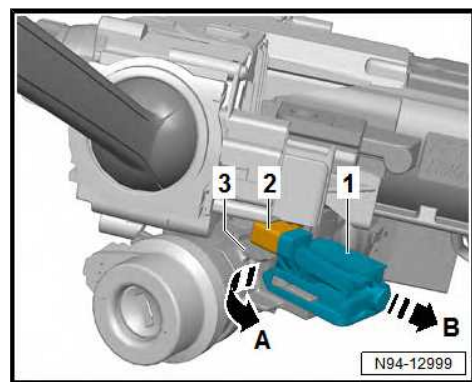
Before removing the connector, the mechanic must discharge himself by briefly making contact with e.g. the door bolts.

- Disconnect plug connection -2-.
- Push off the catch in direction of arrow -A- and remove the ignition key anti-removal lock solenoid -1- in direction of arrow -B- from the steering lock housing -3-.

Installing

Installation is performed in the reverse order, pay attention to the following points:

- Perform a functional test.



11 Parking aid

⇒ [“11.1 Assembly overview - parking aid”, page 191](#)

⇒ [“11.2 Removing and installing the parking aid control unit J446”, page 192](#)

⇒ [“11.3 Removing and installing the rear parking aid warning buzzer H15”, page 193](#)

⇒ [“11.4 Removing and installing the front parking aid warning buzzer H22”, page 193](#)

⇒ [“11.5 Removing and installing rear parking aid senders”, page 194](#)

⇒ [“11.6 Removing and installing front parking aid sender”, page 195](#)

⇒ [“11.7 Parking aid sender holder - assignment, fitting location, gluing procedure, drilling of holes”, page 196](#)

⇒ [“11.8 Self-diagnosis of the parking aid”, page 197](#)

11.1 Assembly overview - parking aid



Note

- ◆ *Summary of details for the components ⇒ Electronic Catalogue of Original Parts “ETKA”.*
- ◆ *Description of the system and the function see ⇒ Owner's manual Rapid.*



1 - Front parking aid warning buzzer - H22-

- to the side of the relay carrier
- Removing and installing ⇒ [“11.4 Removing and installing the front parking aid warning buzzer H22”, page 193](#)

2 - Button for parking aid

- Removing and installing ⇒ [“2.4 Removing and installing switches in centre console of the dash panel”, page 208](#)

3 - Front parking aid sender

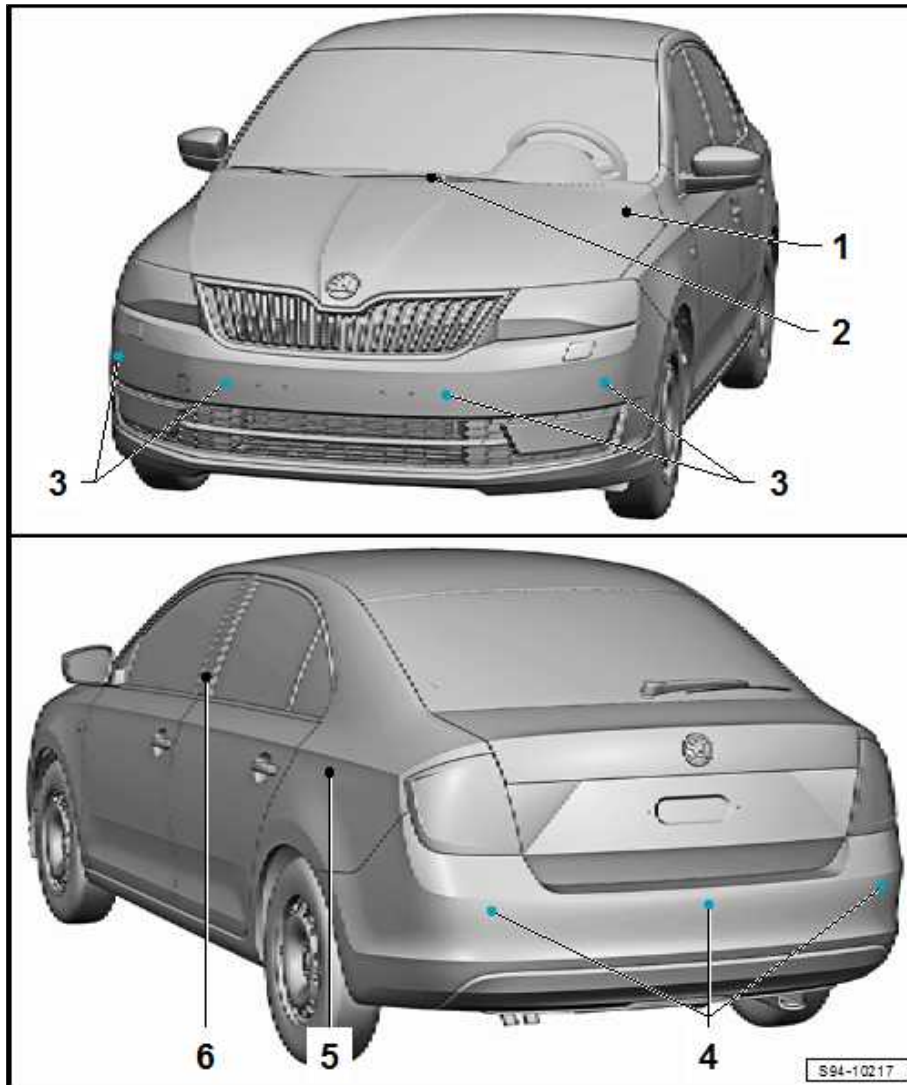
- Removing and installing ⇒ [“11.6 Removing and installing front parking aid sender”, page 195](#)

4 - Rear parking aid sender

- Removing and installing ⇒ [“11.5 Removing and installing rear parking aid senders”, page 194](#)

5 - Control unit for the parking aid - J446-

- under the left side trim panel in luggage compartment
- Removing and installing ⇒ [“11.2 Removing and installing the parking aid control unit J446”, page 192](#)



6 - Rear parking aid warning buzzer - H15-

- under the top trim panel of left B-pillar
- Removing and installing ⇒ [“11.3 Removing and installing the rear parking aid warning buzzer H15”, page 193](#)

11.2 Removing and installing the parking aid control unit - J446-



Note

You can find the contact assignment in ⇒ Current flow diagrams, Electrical fault finding and Fitting locations.

Removing

- Switch off the ignition and all electrical consumers!
- Remove left side trim panel in luggage compartment ⇒ Body Work; Rep. gr. 70 .

- Unscrew nuts -arrows- and take out parking aid control unit -1-.
- Unlock and pull off connector -2-.

Installing

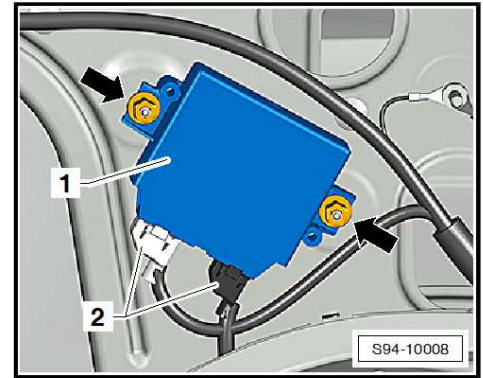
Installation is performed in the reverse order, pay attention to the following points:

If the control unit for the parking aid - J446- is replaced:

- Code the control unit ⇒ Vehicle diagnostic tester.

Tightening torques

Fixing nuts for control unit for the parking aid - J446- (-arrows-)	2 Nm
---	------



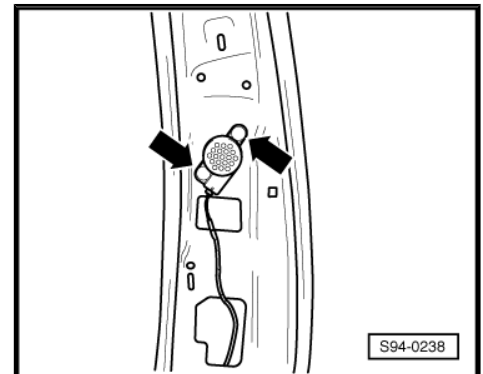
11.3 Removing and installing the rear parking aid warning buzzer - H15-

Removing

- Switch off the ignition and all electrical consumers!
- Remove top B-pillar trim panel on left ⇒ Body Work; Rep. gr. 70 .
- Remove plastic button rivets -arrows-.
- Disconnect plug.

Installing

Installation is carried out in the reverse order.



11.4 Removing and installing the front parking aid warning buzzer - H22-

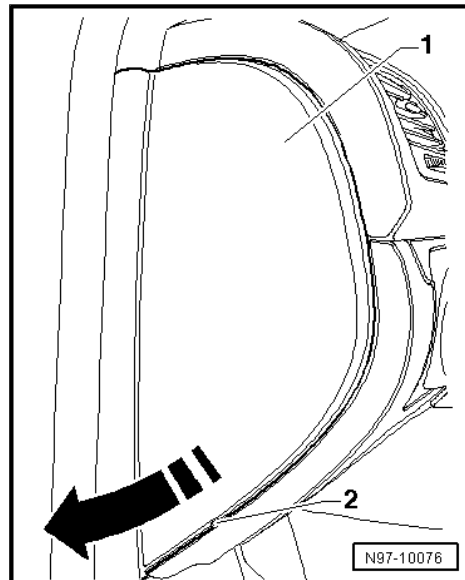
The warning buzzer is located next to the relay carrier.

Removing

- Switch off the ignition and all electrical consumers!
- Remove the side vent from the dash panel on the driver's side ⇒ Heating, Air Conditioning; Rep. gr. 80 .



- Remove the side cover on the dash panel -1- on the driver's side in -direction of arrow-.

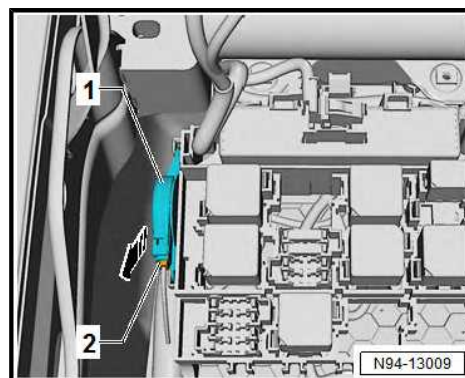


Insert your hand to the side of the dash panel and slide the warning buzzer -1- out of the mounting to the side of the relay carrier -arrow-.

- Disconnect plug connection -2-.

Installing

Installation is carried out in the reverse order.



11.5 Removing and installing rear parking aid senders



Note

- ◆ *The visible area of a new sender must be painted in the colour of the bumper before installing.*
- ◆ *The parking aid senders must only be painted with a max. 100 µm thick layer of paint. Before painting the sender, the rear parts of the sender (terminal connection) must be affixed.*
- ◆ *Only the upper part (visible part) of the sender membrane is painted.*
- ◆ *To make it easier to remove the retaining tabs in direction of arrow -A-, you can use a larger pair of pliers for Seeger rings with bent jaws.*

Removing

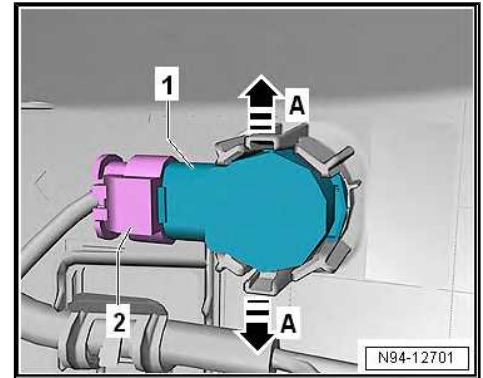
- Switch off the ignition and all electrical consumers!
- Remove rear bumper ⇒ Body Work; Rep. gr. 63 .

- Pull out the retaining lugs on the sender holder in direction of arrow -A-.
- Press out the sender on the outer side of the shock absorber inwards.
- Disconnect plug.

Installing

Installation is performed in the reverse order, pay attention to the following points:

- Press the sender into the holder until the catches click audibly.



11.6 Removing and installing front parking aid sender



Note

- ◆ *Senders fitted in painted areas – the visible area of a new sender must be painted in the colour of the bumper before installing.*
- ◆ *The parking aid senders must only be painted with a max. 100 µm thick layer of paint. Before painting the sender, the rear parts of the sender (terminal connection) must be affixed.*
- ◆ *Only the upper part (visible part) of the sender membrane is painted.*
- ◆ *To make it easier to remove the catches -arrow A- you can use a larger set of circlip pliers with bent jaws.*

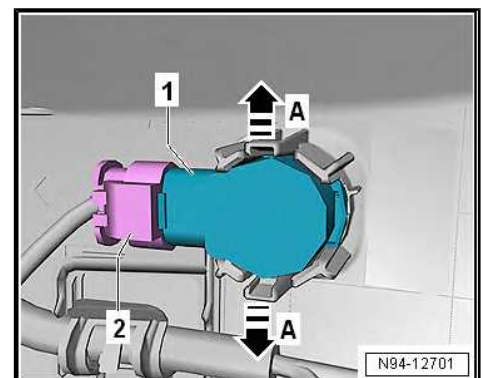
Removing

- Switch off the ignition and all electrical consumers!
- Remove the front sender-bumper attached to the middle of the vehicle ⇒ Body Work; Rep. gr. 63 .
- Remove the sender-fog light installed at the edge of the bumper ⇒ [“8.2 Removing and installing fog light”, page 170](#) .
- Remove retaining lugs arrows -A-.
- Press out the sender -1- on the outer side of the shock absorber inwards.
- Disconnect plug connection -2-.

Installing

Installation is performed in the reverse order, pay attention to the following points:

- Press the sender into the holder until the catches click audibly.



11.7 Parking aid sender holder - assignment, fitting location, gluing procedure, drilling of holes

⇒ [“11.7.1 Assignment of the sender holder”, page 196](#)

⇒ [“11.7.2 Fitting position of the sender holders”, page 196](#)

⇒ [“11.7.3 Gluing procedure of the sender holders”, page 197](#)

⇒ [“11.7.4 Drilling holes for sender holder”, page 197](#)

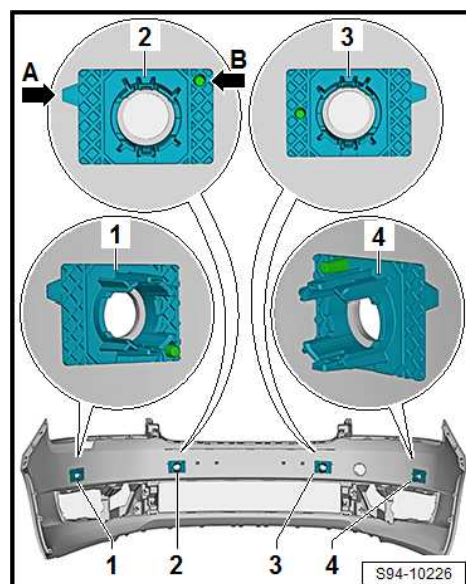
11.7.1 Assignment of the sender holder

The sender holders are different in shape and must be assigned to the relevant fitting location. The inner and outer sender holders are not identical see ⇒ Electronic Catalogue of Original Parts “ETKA” .

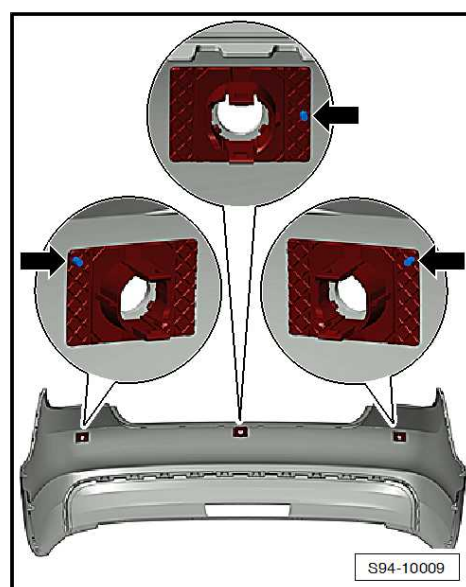
11.7.2 Fitting position of the sender holders

Front bumper:

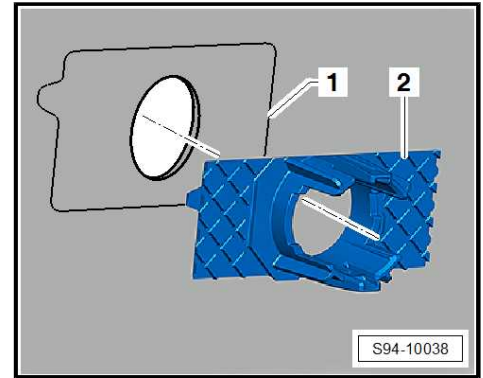
- The correct fitting position is determined by the lug on the holder, arrow -A- and the contour of the holder on the bumper and/or the cylinder lug, arrow -B-.



Rear bumper:



The correct fitting position is determined by the cylinder lug -arrow- on the sender holder and/or the lug on the holder -2- and the contour of the holder on the bumper -1-.

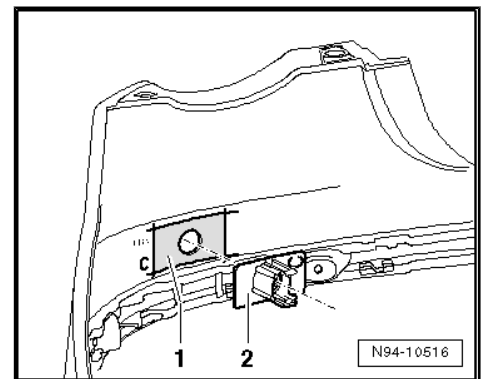


11.7.3 Gluing procedure of the sender holders

- Clean and thoroughly degrease the marked adhesive area -1- with isopropyl (technical alcohol).
- Evenly apply agent to improve adhesion of the plastic (e.g. D 822 150 A1 - see ⇒ Electronic Catalogue of Original Parts "ETKA") in the marked adhesive area -1-.
- Let the activator dry off for approx. 5 min.

Note

- ◆ *Pay attention to the fitting position*
⇒ *"11.7.2 Fitting position of the sender holders", page 196 and the assignment of the sender holders*
⇒ *"11.7.1 Assignment of the sender holder", page 196* .
 - ◆ *A centering pin must be used for precisely centering the holder in the bumper or gluing the holder with inserted parking aid sender on which the decoupling ring (black silicone ring) is placed.*
 - ◆ *The application force and the application time determine the durability of the bonding!*
- Remove the protective foils from both sides of the adhesive tape and press the sender holder -2- into the front bumper for approx. 10 seconds while applying high force.



11.7.4 Drilling holes for sender holder

The procedure for drilling holes in the bumper for the sender holder can be found in the ⇒ Body Work - fitting locations; Rep. gr. 63 .

11.8 Self-diagnosis of the parking aid

The parking aid system is equipped with self-diagnosis. Carry out "self-diagnosis" with the ⇒ Vehicle diagnostic tester in the function "Targeted fault finding".



12 Rear view camera

⇒ ["12.1 General description", page 198](#)

⇒ ["12.2 Summary of components - rear view camera", page 198](#)

⇒ ["12.3 Removing and installing handle with rear view camera", page 199](#)

⇒ ["12.4 Removing and installing the rear view camera spray nozzle", page 200](#)

12.1 General description

The rear view camera helps the driver during the rear view driving. This works by showing the driver an image of the traffic situation behind the vehicle in the radio navigation system monitor.

When the ignition is switched on or the engine is running, the system will switch on by putting the gear into reverse when the radio navigation system is switched off.



Note

- ◆ *When handling a fault it is absolutely essential to know the function and operation of the rear view camera.*
- ◆ *Additional information and description of function ⇒ Rapid Owner's Manual .*
- ◆ *Calibration of the rear view camera is not necessary.*
- ◆ *The rear view camera image does not appear on the radio navigation system until after a full system start. Like a computer, the radio navigation system needs a few seconds for the system to start after being switched on.*

The rear view camera consists of the following parts:

- ◆ Rear view camera - R189-
- ◆ Control unit with display unit for radio and navigation system - J503-

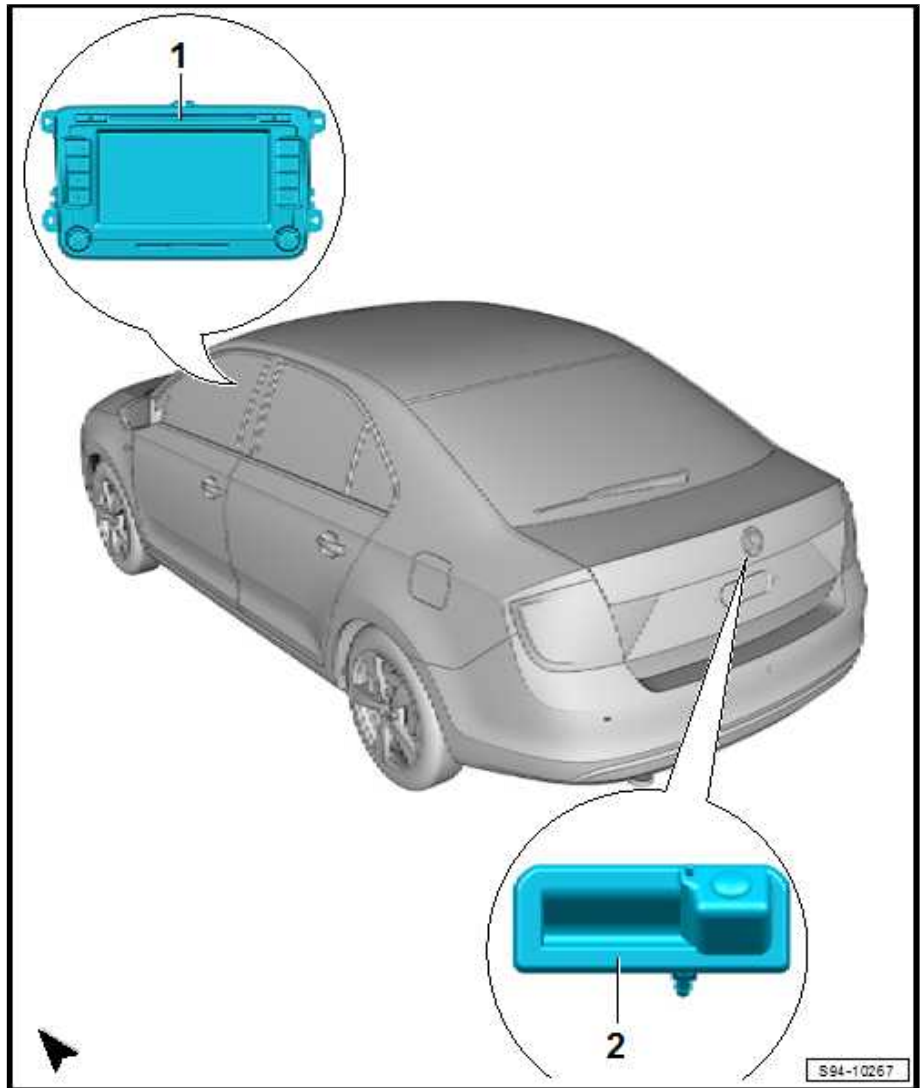
12.2 Summary of components - rear view camera

1 - Control unit with display for radio and navigation system - J503-

- ❑ Removing and installing
⇒ [“3.4 Removing and installing the Infotainment display/control unit”](#), page 74

2 - Rear view camera - R189-

- ❑ firmly connected with the grip strip
- ❑ Removing and installing handle with rear view camera
⇒ [“12.3 Removing and installing handle with rear view camera”](#), page 199
- ❑ Equipped with spray nozzle for camera lens from CW 22.2016
- ❑ Removing and installing spray nozzle
⇒ [“12.4 Removing and installing the rear view camera spray nozzle”](#), page 200



12.3 Removing and installing handle with rear view camera

The rear view camera - R189- is installed in the handle button of the rear lid and is firmly connected to the handle button.

The grip strip must be replaced when replacing the rear view camera.

Removing

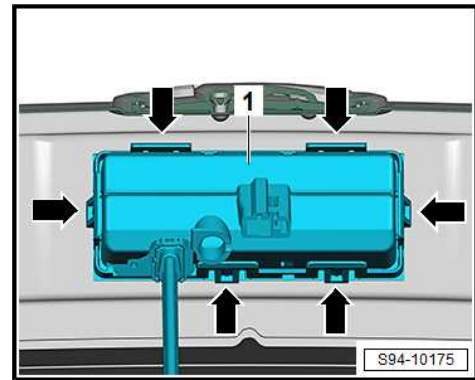
- Switch off the ignition and all electrical consumers!
- Remove the bottom tailgate trim panel ⇒ Body Work; Rep. gr. 70 .
- Disconnect the hose for the spray nozzle of the rear view camera.

- Release the grip with the camera -1- from the catches -arrows- step by step and remove.
- Unlock and disconnect the connector of the rear view camera.

Installing

Installation is performed in the reverse order, pay attention to the following points:

- Press the grip with the camera on the concealed frame step by step (starting from the left side and left rear tab) into the assembly opening until the catch pegs click audibly into place.
- Perform a functional test.



12.4 Removing and installing the rear view camera spray nozzle

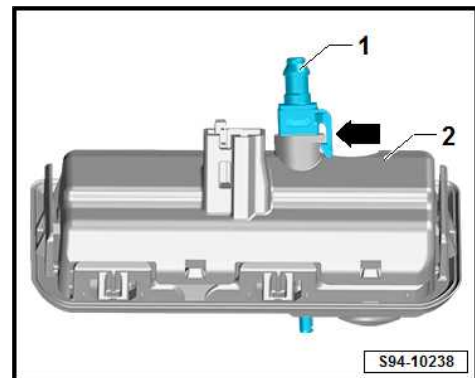
Removing

- Remove rear view camera
=> ["12.3 Removing and installing handle with rear view camera", page 199](#) .
- Unlock spray nozzle -1- -arrow-.
- Pull spray nozzle -1- out of the rear view camera -2-.

Installing

Installation is performed in the reverse order, pay attention to the following points:

- Perform a functional test.



96 – Lights, bulbs, switches - interior

1 Interior lights and warning light for front passenger airbag deactivation

⇒ [“1.1 Removing and installing the front interior light”, page 201](#)

⇒ [“1.2 Removing and installing the rear interior light”, page 202](#)

⇒ [“1.3 Removing and installing the rear interior light on the left and right”, page 203](#)

⇒ [“1.4 Removing and installing glove box light”, page 203](#)

⇒ [“1.5 Removing and installing the light for the storage bag in the front door trim”, page 204](#)

⇒ [“1.6 Removing and installing the front footwell light”, page 204](#)

⇒ [“1.7 Removing and installing the centre console glove compartment light”, page 205](#)

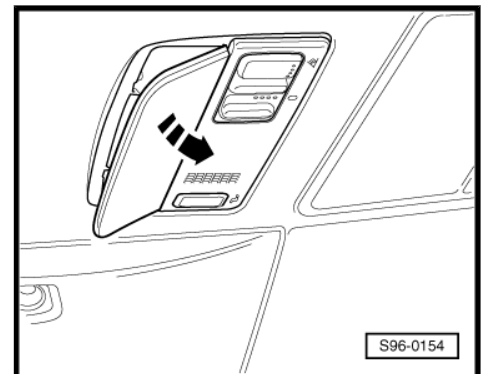
⇒ [“1.8 Removing and installing luggage compartment light”, page 206](#)

⇒ [“1.9 Removing and installing the warning light for front passenger airbag switch-off function”, page 206](#)

1.1 Removing and installing the front interior light

Removing

- Switch off the ignition and all electrical consumers!
- Carefully lower light scattering cover -arrow- and remove.





- Release two screws -1-.
- Remove the interior light downwards and disconnect the connectors.



Note

It is necessary to not remove the interior light to replace the light bulb.

- Light bulb -2- without base W5W.
- Light bulb -3- Soffitte C10W.

Installing

Installation is carried out in the reverse order.

Tightening torques

Fixing screws for interior light	2 Nm
----------------------------------	------

1.2 Removing and installing the rear interior light

Removing



Caution

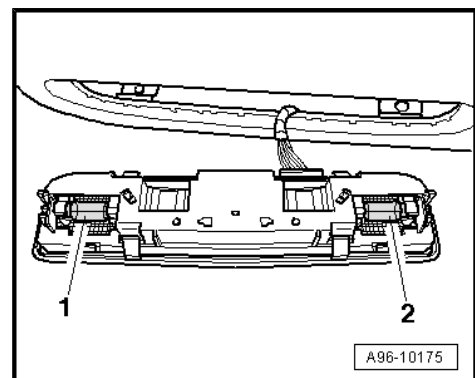
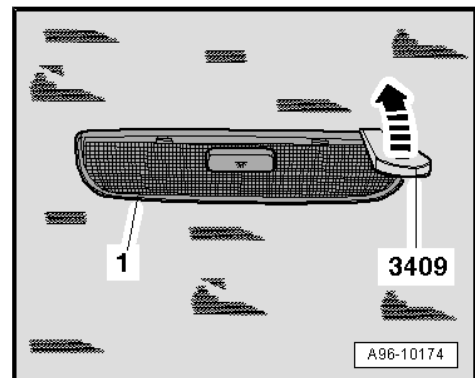
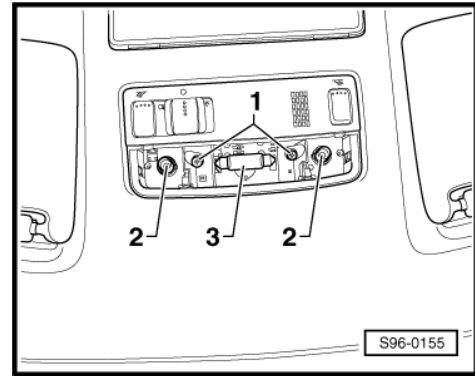
When using the lever tool, mask points where the lever tool is applied using commercially available adhesive tape.

- Switch off the ignition and all electrical consumers!
- Carefully lever out the interior light -1- from the opening in the moulded headliner -arrow- using the removal wedge - 3409- .
- Disconnect plug.

- Remove the light bulb -1- if necessary -2- (Soffitte C6W or C5W) from the clamping sleeve and replace it.

Installing

- Mount the plug and clip the lamp back into the assembly opening.



1.3 Removing and installing the rear interior light on the left and right

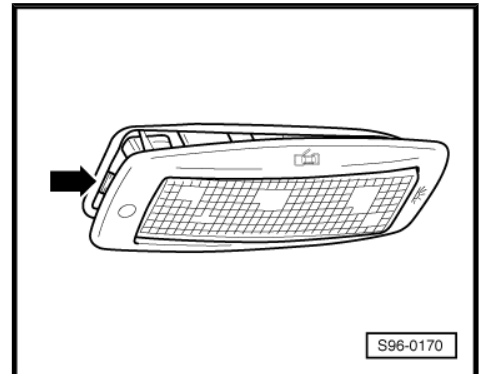
Removing



Caution

When using the lever tool, mask points where the lever tool is applied using commercially available adhesive tape.

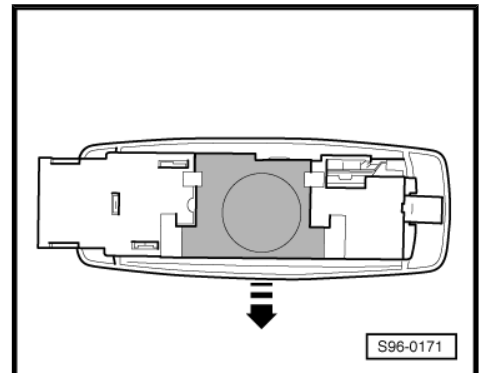
- Switch off the ignition and all electrical consumers!
- Carefully release the catch -arrow- with a small cross-head screwdriver, tilt out the interior light and remove.
- Disconnect plug.



- Push out lens -arrow- and replace light bulb (C5W).

Installing

Installation is carried out in the reverse order.



1.4 Removing and installing glove box light

Removing



Caution

When using the lever tool, mask points where the lever tool is applied using commercially available adhesive tape.

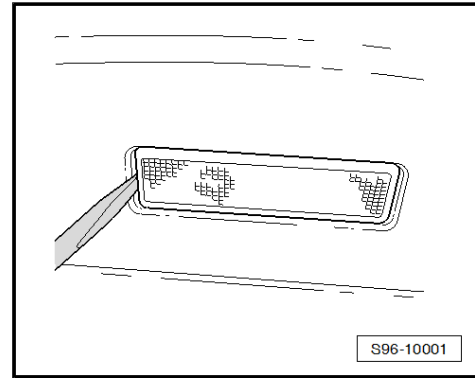
- Switch off the ignition and all electrical consumers!



- Place a cross-head screwdriver under the light scattering cover -arrow- and carefully lever out the lamp.
- Disconnect the plug connection.
- Remove the light bulb W5W and replace it.

Installing

Installation is carried out in the reverse order.



1.5 Removing and installing the light for the storage bag in the front door trim



Note

The lighting is fitted with LEDs, which cannot be replaced separately.

Removing



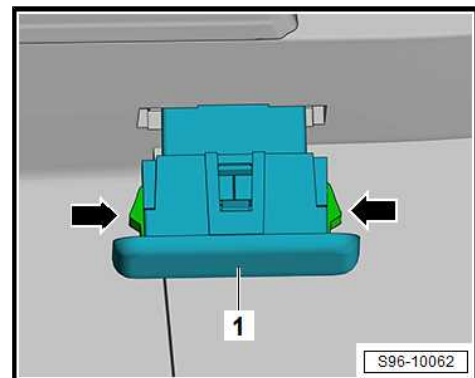
Caution

When using the lever tool, mask points where the lever tool is applied using commercially available adhesive tape.

- Switch off the ignition and all electrical consumers!
- Place a cross-head screwdriver under the lens and carefully loosen light -1- from the clips -arrows- and remove it.
- Disconnect plug.

Installing

Installation is carried out in the reverse order.



1.6 Removing and installing the front footwell light



Note

- ◆ *When removing and installing the footwell lighting on the front passenger side, the work procedure is identical to the one on the driver side.*
- ◆ *The lighting is fitted with LEDs, which cannot be replaced separately.*

Removing



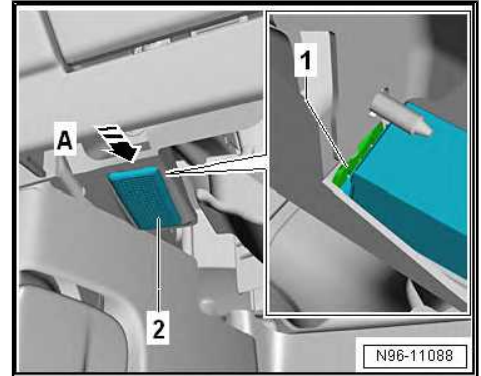
Caution

When using the lever tool, mask points where the lever tool is applied using commercially available adhesive tape.

- Switch off the ignition and all electrical consumers!
- Press the latch -1- with a slotted screwdriver in area of the arrow -A- and carefully release the lamp -2-.
- Disconnect the plug connection.

Installing

Installation is carried out in the reverse order.



1.7 Removing and installing the centre console glove compartment light



Note

The lighting is fitted with LEDs, which cannot be replaced separately.

Removing



Caution

When using the lever tool, mask points where the lever tool is applied using commercially available adhesive tape.

- Switch off the ignition and all electrical consumers!
- Lever off the cover -1- using the disassembly wedge - 3409-arrow-.

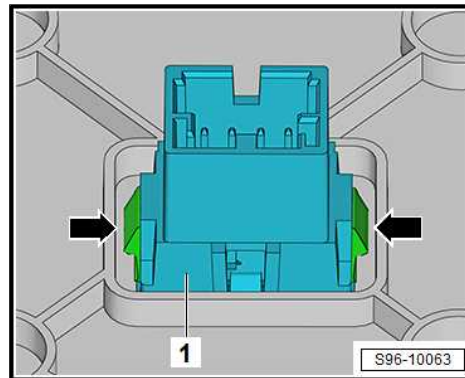




- Loosen light -1- from the clips -arrows- and remove it.

Installing

Installation is carried out in the reverse order.



1.8 Removing and installing luggage compartment light

Removing



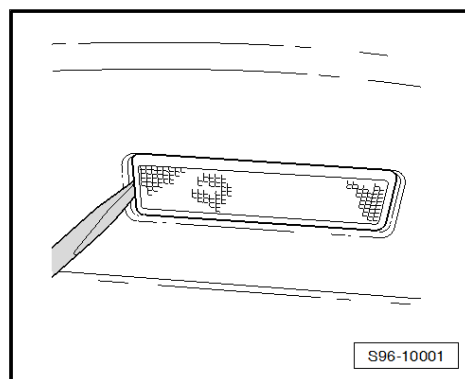
Caution

When using the lever tool, mask points where the lever tool is applied using commercially available adhesive tape.

- Switch off the ignition and all electrical consumers!
- Place a cross-head screwdriver under the lens and carefully lever out the light.
- Disconnect the plug connection.
- Remove the light bulb W5W and replace it.

Installing

Installation is carried out in the reverse order.



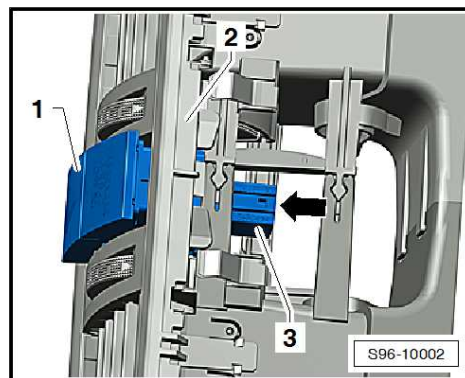
1.9 Removing and installing the warning light for front passenger airbag switch-off function

Removing

- Switch off the ignition and all electrical consumers!
- Remove centre vent -2- ➔ Heating, Air Conditioning; Rep. gr. 80 .
- Disconnect plug connection -3-.
- Press the warning light with the warning light switch -1- out of the centre vents towards the outside -arrow-.

Installing

Installation is carried out in the reverse order.



2 Switches on the dash panel, in the centre console, in the doors and in the roof cover

⇒ [“2.1 Removing and installing light switch”, page 207](#)

⇒ [“2.2 Removing and installing the headlight range control adjuster”, page 207](#)

⇒ [“2.3 Removing and installing the switch for daylight driving light”, page 208](#)

⇒ [“2.4 Removing and installing switches in centre console of the dash panel”, page 208](#)

⇒ [“2.5 Removing and installing the glove box light switch ”, page 209](#)

⇒ [“2.6 Removing and installing hazard warning lights button”, page 209](#)

⇒ [“2.7 Removing and installing the mirror adjustment switch”, page 210](#)

⇒ [“2.8 Removing and installing the switch for the power window lifter”, page 210](#)

⇒ [“2.9 Removing and installing starter button E408 ”, page 211](#)

⇒ [“2.10 Removing and installing the interior monitoring deactivation button as well as the towing protection”, page 212](#)

⇒ [“2.11 Removing an installing the push-button for tyre pressure inspection”, page 212](#)

⇒ [“2.12 Removing and installing the rear seat heating switch”, page 212](#)

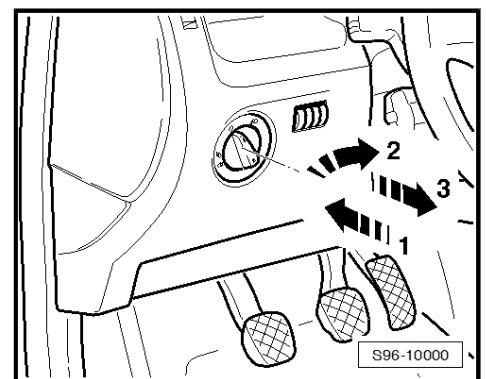
2.1 Removing and installing light switch

Removing

- Switch off the ignition and all electrical consumers!
- Turn the turning handle of the light switch to position “0”.
- Press in the handle of the light switch firmly in direction of arrow -1- and turn to the right in direction of arrow -2-.
- Hold the turning handle of the light switch in this position and pull the light switch out towards you in direction of arrow -3-.
- Disconnect connector at switch.

Installing

- Turn the turning handle of the light switch to position “0”.
- Mount plug.
- Carefully push the light switch into the assembly opening until it audibly locks into place.



2.2 Removing and installing the headlight range control adjuster

Removing

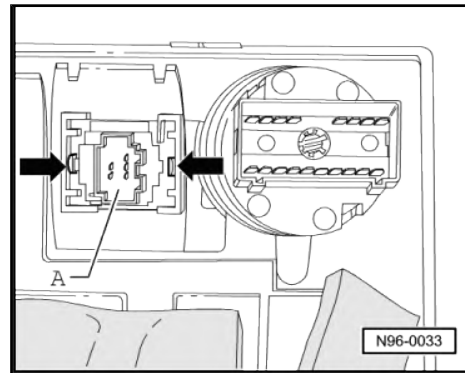
- Switch off the ignition and all electrical consumers!
- Remove the air flow vent from the dash panel on the driver's side ⇒ Heating, Air Conditioning; Rep. gr. 80 .



- Put hand through the assembly opening for the air flow vent, press together the retaining tabs -arrows- and remove the adjuster -A- with installation from the mounting frame.
- Disconnect plug.

Installing

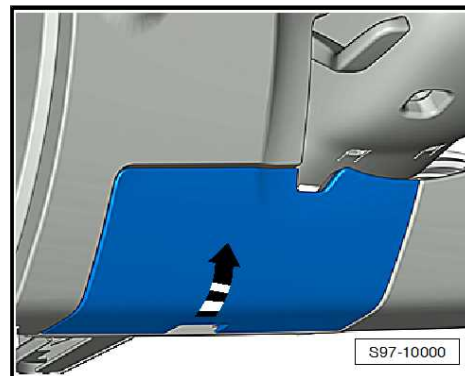
Installation is carried out in the reverse order.



2.3 Removing and installing the switch for daylight driving light

Removing

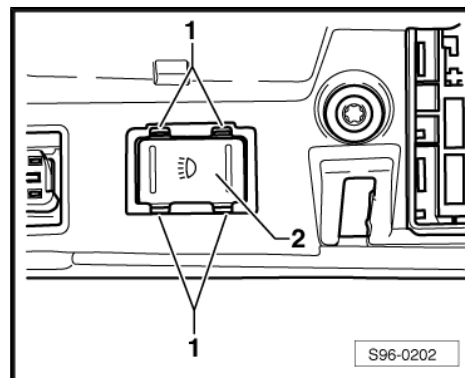
- Switch off the ignition and all electrical consumers!
- Remove the damping trim panel below the dash panel.
- Remove the cover for the fuse carrier below the steering wheel -arrow-.



- Unclip the switch for the daylight driving light using a small screwdriver -2- -1- and press out to the inside of the dash panel.
- Disconnect plug.

Installing

- Mount plug.
- Push the switch into the assembly opening until it audibly locks into place -1-.



2.4 Removing and installing switches in centre console of the dash panel



Note

The switches cannot be exchanged separately. In the event of a fault, replace the complete switch unit.

Removing



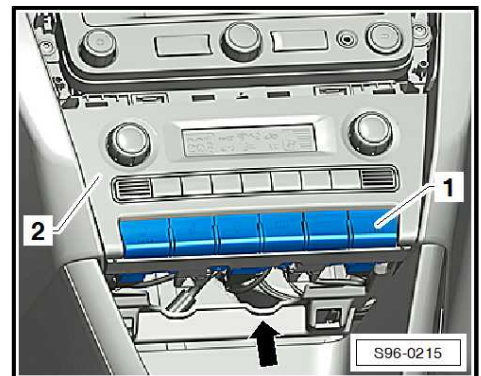
Caution

When using the lever tool, mask points where the lever tool is applied using commercially available adhesive tape.

- Switch off the ignition and all electrical consumers!
- Lever off the cover -1- at the front using the removal wedge -3409- -arrow- and remove.



- Remove heating control or air conditioning system control ⇒ Heating, Air Conditioning; Rep. gr. 80 or ⇒ Heating, Air Conditioning; Rep. gr. 87 ; -Pos. 2- .
- Push the switch unit -1- out of the dash panel from behind -arrow-.
- Disconnect the plug connections.



Installing

Installation is carried out in the reverse order.

2.5 Removing and installing the glove box light switch

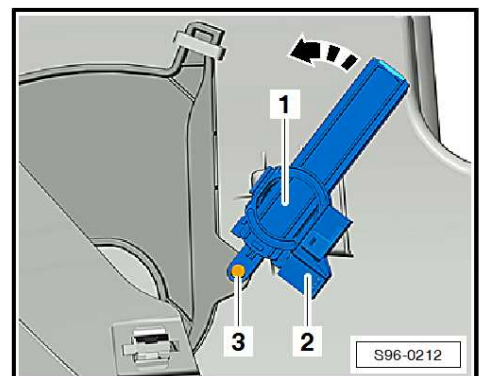
Removing

- Switch off the ignition and all electrical consumers!
- Remove storage compartment on passenger side ⇒ Body Work; Rep. gr. 70 .
- Pull out the bolt -3-.
- Turn stop mechanism -1- by approx. 45° -arrow- and remove.
- If necessary, release the switch -2- from the catch and remove.

Installing

Installation is performed in the reverse order, pay attention to the following points:

- Perform a functional test.



2.6 Removing and installing hazard warning lights button

Removing

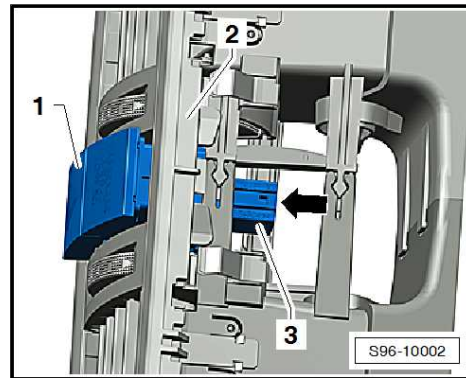
- Switch off the ignition and all electrical consumers!



- Remove centre vent -2- ⇒ Heating, Air Conditioning; Rep. gr. 80 .
- Disconnect the plug connection at switch -3-.
- Press the hazard warning light switch with warning light for airbag switch-off -1- out of the centre vents towards the outside -arrow-.

Installing

Installation is carried out in the reverse order.



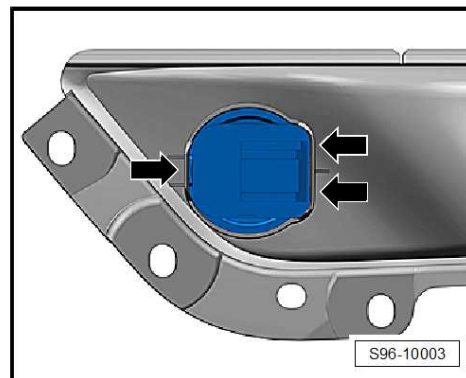
2.7 Removing and installing the mirror adjustment switch

Removing

- Switch off the ignition and all electrical consumers!
- Removing driver door trim panel ⇒ Body Work; Rep. gr. 70 .
- Unplug connector and release switch with a small screwdriver -arrows-.
- Take out switch.

Installing

Installation is carried out in the reverse order.



2.8 Removing and installing the switch for the power window lifter



Note

The removal procedure is identical for all types of switches for power windows.

Removing

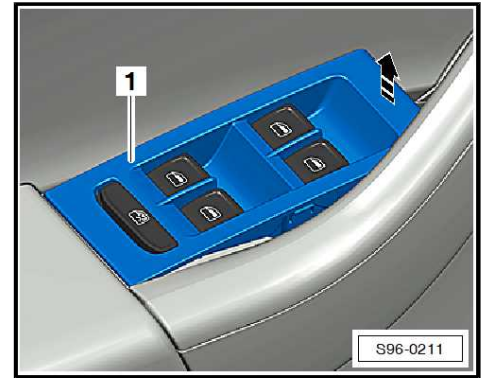


Caution

When using the lever tool, mask points where the lever tool is applied using commercially available adhesive tape.

- Switch off the ignition and all electrical consumers!

- Slightly raise the switch carrier -1- at the front -arrow- using the removal wedge - 3409- and remove.
- Disconnect plug.
- Furthermore the operating switch can be removed by releasing with a small screwdriver and pushing out of the holder -1-.



2.9 Removing and installing starter button - E408-

The button is inserted in the immobilizer reading coil.

The reader coil provides emergency start capability, see ⇒ Rapid Owner's Manual .

Removing

- Disconnect battery earth strap
⇒ ["1.3 Disconnecting and reconnecting battery", page 10](#) .
- Remove the steering wheel ⇒ Chassis; Rep. gr. 48 .



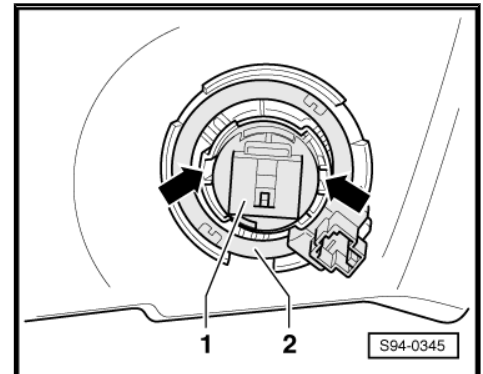
Note

Before the steering wheel is removed from the shaft, the front wheels must be brought into the straight ahead position.

- Removing top and bottom steering column trim ⇒ Body Work; Rep. gr. 68 .
- Disconnect the plug from the button -1- and from the reader coil -2-.
- Insert two small cross-head screwdrivers (e.g watch-and-clock screwdrivers) into the openings -arrows- and press the sheet pegs.
- Grip the bottom part of the button -1- and press it towards the outside from the bottom trim panel for steering column.
- When removing the reader coil -2-, start by removing the button, then carefully unclip the reader coil with the removal wedge - 3409- .

Installing

- If removed, first of all insert the immobiliser reader coil -2- and lock in place.
- Then insert the button -1- into the bottom trim panel and press until the interlocking lugs lock into place.
- Mount plug and install the bottom and top steering column trim panel.



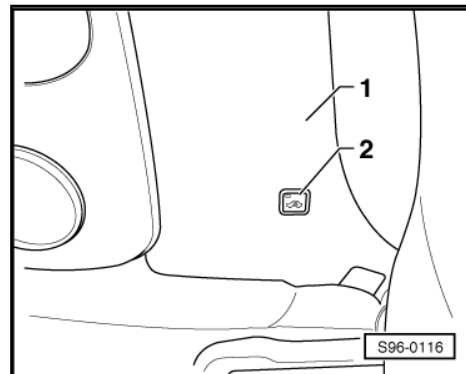
2.10 Removing and installing the interior monitoring deactivation button as well as the towing protection

Removing

- Switch off the ignition and all electrical consumers!
- Remove bottom trim panel of pillar A on front passenger side -1- ⇒ Body Work; Rep. gr. 70 .
- Disconnect connector at switch.
- Press together the lateral retaining tabs and remove the button -2-.

Installing

Installation is carried out in the reverse order.



2.11 Removing and installing the push-button for tyre pressure inspection

Descriptions of functions and additional information ⇒ Operating Instruction Rapid .

Removing



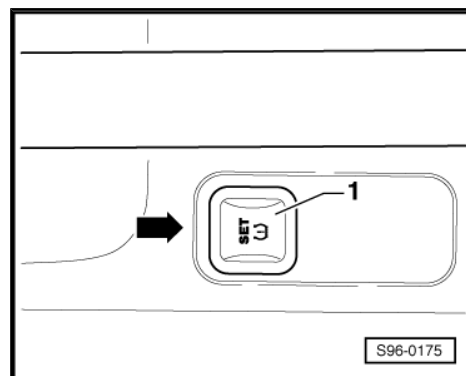
Caution

When using the lever tool, mask points where the lever tool is applied using commercially available adhesive tape.

- Switch off the ignition and all electrical consumers!
- Apply handbrake.
- Using a removal wedge - 3409- or screwdriver, carefully lever out the switch -1- from the centre console -arrow-.
- Disconnect plug.

Installing

Installation is carried out in the reverse order.



2.12 Removing and installing the rear seat heating switch

Removing

- Switch off the ignition and all electrical consumers!



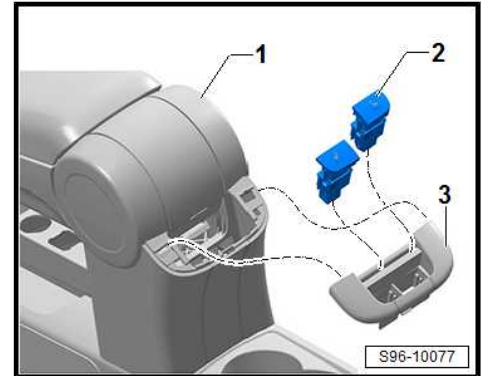
Caution

When using the lever tool, mask points where the lever tool is applied using commercially available adhesive tape.

- Use disassembly wedge - 3409- to unclip the cover -3- together with the switches -2- from the trim of the armrest -1-..
- Remove cover -3-, taking into account the lengths of attached wires.
- Unlock and disconnect plugs of switches -2-.
- Push switches -2- from behind arrow out of the cover -3-.

Installing

Installation is carried out in the reverse order.



3 Horn

⇒ ["3.1 Removing and installing horn", page 214](#)

3.1 Removing and installing horn

Removing

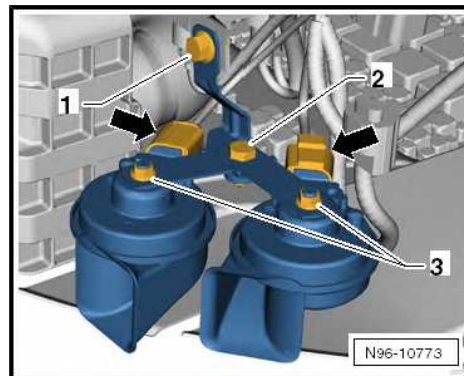
- Switch off the ignition and all electrical consumers!
- Remove noise insulation and front part of left wheelhouse liner
⇒ Body Work; Rep. gr. 66 .
- Unscrew bolt -1-.
- Remove horn or horns, downwards.
- Disconnect the plug connections -arrows-.
- Remove the horns from the holders - unscrew screw -2-.
- If necessary, release the nuts -3- and remove the holder for the horn.

Installing

Installation is carried out in the reverse order.

Tightening torques

Fixing screw for mounting bracket and horns, Pos. -1- and -2-	20 Nm
Nut, Pos. -3-	12 Nm



4 Anti-theft warning system

⇒ [“4.1 General description”, page 215](#)

⇒ [“4.2 Removing and installing the horn H12”, page 215](#)

⇒ [“4.3 Removing and installing interior monitoring sensor G273 and vehicle inclination sender G384”, page 216](#)

⇒ [“4.4 Removing and installing the interior monitoring deactivation button”, page 216](#)

4.1 General description

- ◆ Descriptions of functions and additional information ⇒ Operating Instruction Rapid .
- ◆ The functions of the anti-theft warning system are integrated in the onboard supply control unit - J519- .
- ◆ After starting the anti-theft warning system, the alarm source which is stored in the onboard supply control unit - J519- is output.
- ◆ The anti-theft warning system is equipped with self-diagnosis, which facilitates the fault finding.
- ◆ For fault finding use ⇒ Vehicle diagnostic tester.

4.2 Removing and installing the horn - H12-



Note

The horn - H12- has an emergency battery which cannot be replaced as a separate item.

Removing

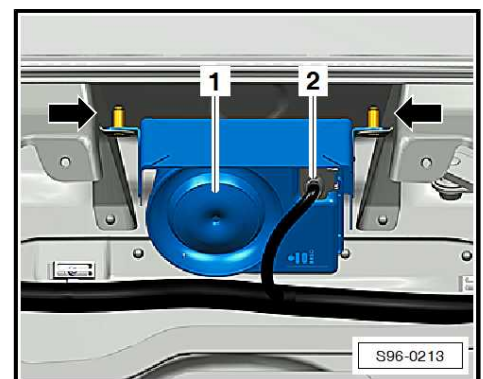
- Switch off the ignition and all electrical consumers!
- Remove the plenum chamber cover ⇒ Body Work; Rep. gr. 66 .
- Remove bulkhead ⇒ Body work; Rep. gr. 50 .
- Disconnect plug connection -2-.
- Bore out fastening rivets -arrows- and remove alarm horn -1-.
- f necessary unscrew nut and remove alarm horn from holder.

Installing



Note

- ◆ *Remove all the drillings.*
- ◆ *Any damage to the paintwork must be repaired immediately by a specialist.*
- Secure the alarm horn with new rivets.
- Further installation occurs in reverse order.



4.3 Removing and installing interior monitoring sensor - G273- and vehicle inclination sender - G384-

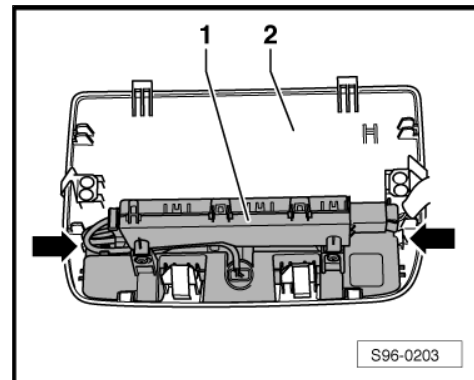
Removing

- Switch off the ignition and all electrical consumers!
- Removing the spectacle storage area from the headliner -2-
⇒ Body Work; Rep. gr. 68 .
- Disconnect plug.
- Completely release sensors -1- from the catches -arrows- and take out.

Installing

Installation is performed in the reverse order, pay attention to the following points:

- After replacing the sender, you must carry out an adjustment (parametrisation) with ⇒ Vehicle diagnostic tester.



4.4 Removing and installing the interior monitoring deactivation button

Remove and install the interior monitoring deactivation button
⇒ [“2.10 Removing and installing the interior monitoring deactivation button as well as the towing protection”, page 212](#) .



5 12V power sockets, cigarette lighter

All the notes and comments for this chapter can be found in the Workshop Manual ⇒ Electrical System - General notes; Rep. gr. 96 . If a note cannot be accessed, open the Workshop Manual "Electrical System - General Notes" manually in "ELSA", Section "96".



6 Immobiliser

⇒ [“6.1 General description”, page 218](#)

⇒ [“6.2 Immobiliser control unit J362”, page 219](#)

⇒ [“6.3 Ignition key”, page 219](#)

⇒ [“6.4 New identity when changing all the components”, page 220](#)

⇒ [“6.5 System test result \(online connection\)”, page 220](#)

6.1 General description

Immobiliser of the fourth generation with on-line connection and Download.

An essential component part of the immobiliser of the fourth generation is a central database, in which all theft-related data of the control units involved are stored. It is not possible to adapt the immobiliser control units without online connection to this database.

- ◆ A PIN code request of the immobiliser components by fax or temporary activation of the components is not possible.
- ◆ All components associated with the immobiliser must be adapted online.
- ◆ All - even re-ordered - ignition keys are already precoded at the factory for a specific vehicle and can only be initialised for this vehicle.
- ◆ When re-ordering ignition keys, the relevant vehicle identification number (VIN code) must be provided.
- ◆ In Škoda vehicles it is no longer possible to adapt the components of other corporate brands.

Other information:

⇒ Self-study programme No. 87 ; Immobilisers in Škoda vehicles

Immobiliser components:

- ◆ Immobiliser control unit - J362-
⇒ [“6.2 Immobiliser control unit J362”, page 219](#)
- ◆ Engine control unit - J623- diesel engines ⇒ Engine; Rep. gr. 23 , or petrol engines ⇒ Engine; Rep. gr. 24
- ◆ Ignition key ⇒ [“6.3 Ignition key”, page 219](#)

New identity when changing all the immobiliser components
⇒ [“6.4 New identity when changing all the components”, page 220](#) .

Functions of the immobiliser control unit - J362- :

- ◆ Communication between all the immobiliser components
- ◆ Encryption of data between the control units involved

Fault recognition and fault display

The immobiliser is equipped with self-diagnosis, which facilitates the fault finding.

For fault finding, use the ⇒ Vehicle diagnostic tester in the mode “Targeted fault finding”.

6.2 Immobiliser control unit - J362-

The immobiliser control unit - J362- is integrated in the dash panel insert. If the control unit is defective, the complete dash panel insert must be replaced.

Adapt immobiliser control unit - J362-

- Connect the ⇒ Vehicle diagnostic tester.
- In the ⇒ Vehicle diagnostic tester, select the operating mode “Targeted fault-finding”.
- Select the “Selected Functions/Components” and subsequently the following menu points using the button “Skip”:
 - ◆ Body
 - ◆ Electrical system
 - ◆ 01 – Self-diagnosable systems
 - ◆ Immobiliser
 - ◆ Operation
 - ◆ Adjust dash panel insert

6.3 Ignition key

All - even re-ordered - ignition keys are already precoded at the factory for a specific vehicle and can only be adapted to this vehicle. When re-ordering ignition keys, the relevant vehicle identification number (VIN code) must be provided and subsequently the new keys must be adapted to the immobiliser control unit - J362- .



Note

Before replacing the lock set or the control units, the function “New identity when changing all the components” must be retrieved.

Adapting and checking the ignition key



Note

If new or additional ignition keys are required, they must be adapted to the immobiliser control unit.

Adapt the ignition key to the immobiliser control unit - J362- or check:

- Connect the ⇒ Vehicle diagnostic tester.
- In the ⇒ Vehicle diagnostic tester, select the operating mode “Targeted fault-finding”.
- Select the “Selected Functions/Components” and subsequently the following menu points using the button “Skip”:
 - ◆ Body
 - ◆ Electrical system
 - ◆ 01 – Self-diagnosable systems
 - ◆ Immobiliser
 - ◆ Operation



- ◆ Adapt and check the ignition key

Remove and install the battery for the radio control key ⇒ Body Work - Assembly work; Rep. gr. 57 .

Remove and install the radio container (transmitter unit for the radio controlled central locking system) of the ignition key ⇒ Body Work; Rep. gr. 57 .



Note

If the radio container is exchanged additionally, it must also be adapted with the ⇒ Vehicle diagnostic tester to the convenience system.

6.4 New identity when changing all the components

All necessary steps required for the new installation of all the immobiliser components are carried out with this programme.

- Connect the ⇒ Vehicle diagnostic tester.
- In the ⇒ Vehicle diagnostic tester, select the operating mode “Targeted fault-finding”.
- Select the “Selected Functions/Components” and subsequently the following menu points using the button “Skip”:
 - ◆ Body
 - ◆ Electrical system
 - ◆ 01 – Self-diagnosable systems
 - ◆ Immobiliser
 - ◆ Operation
 - ◆ New identity

6.5 System test result (online connection)

The following steps are carried out with this test programme:

- ◆ System test for the online connection
- ◆ Verification of user authorisation
- ◆ Test the correct cable connection to the Škoda database

The precondition for this is the online connection (network connection) of the tester.

- Connect the ⇒ Vehicle diagnostic tester.
- In the ⇒ Vehicle diagnostic tester, select the operating mode “Targeted fault-finding”.
- Select the “Selected Functions/Components” and subsequently the following menu points using the button “Skip”:
 - ◆ Body
 - ◆ Electrical system
 - ◆ 01 – Self-diagnosable systems
 - ◆ Immobiliser
 - ◆ Operation
 - ◆ Online system test

97 – Wiring

1 Fuse holder and relay carrier

⇒ [“1.1 Removing and installing fuse holder from dash panel”, page 221](#)

⇒ [“1.2 Removing and installing the E-box in engine compartment”, page 222](#)

⇒ [“1.3 Removing and installing relay and fuse holder behind dash panel on the driver's side”, page 225](#)

⇒ [“1.4 Removing and installing the relay of the relay carrier”, page 226](#)

1.1 Removing and installing fuse holder from dash panel

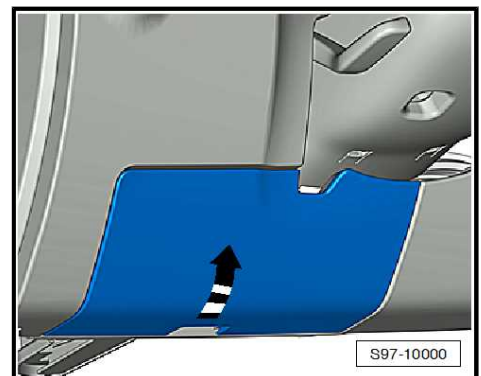


Note

Exact assignment of connections at fuse holder and relay carrier can be found in ⇒ Current flow diagrams, Electrical fault finding and Fitting locations.

Removing

- Disconnect battery earth strap
⇒ [“1.3 Disconnecting and reconnecting battery”, page 10](#) .
- Remove the damper below the dash panel on the driver side
⇒ Body Work; Rep. gr. 70 .
- Open cover of fuse holder -arrow- and remove.



- Unscrew the screws -arrows- and unhook the fuse holder downwards.

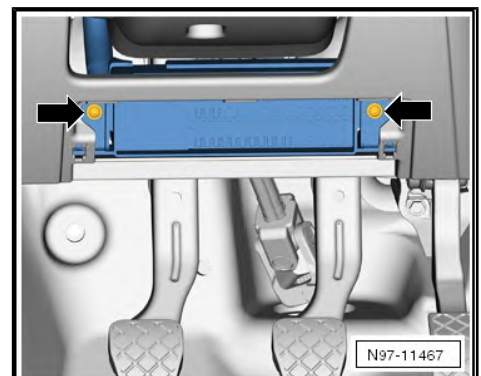
Installing

Installation is performed in the reverse order, pay attention to the following points:

- Pay attention to the work sequence when re-connecting the battery
⇒ [“1.3 Disconnecting and reconnecting battery”, page 10](#) .

Tightening torques

Fixing screws for fuse holder	2.5 Nm
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1.2 Removing and installing the E-box in engine compartment

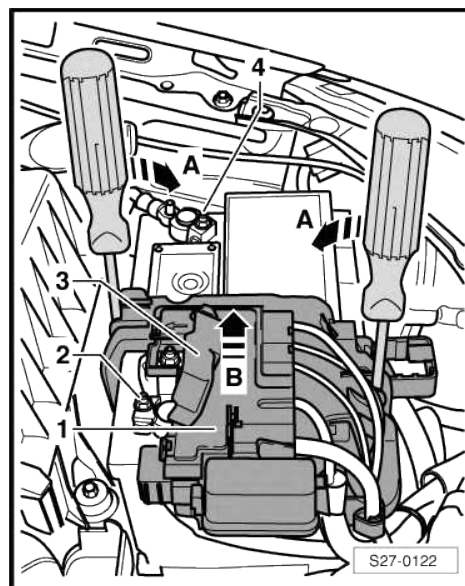
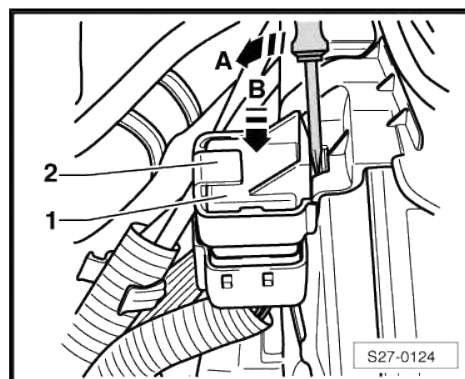
⇒ [“1.2.1 Removing and installing the E-box in engine compartment up to CW 21.2015”, page 222](#)

⇒ [“1.2.2 Removing and installing the E-box in engine compartment as of CW 22.2015”, page 223](#)

1.2.1 Removing and installing the E-box in engine compartment up to CW 21.2015

Removing

- Switch off the ignition and all electrical consumers!
- Vehicles with TDI engines - unlock and remove the retaining tab in direction of arrow -A- with a screwdriver and slide the automatic glow period control unit - J179- Pos. -1- off the support -2- in direction of arrow -B-.
- Disconnect plug.
- Disconnect the battery earth strap -4-
⇒ [“1.3 Disconnecting and reconnecting battery”, page 10](#) .
- Fold open the cover -3- and slacken the nut of the positive terminal -2-.
- Slightly press down the catches one after the other using a screwdriver, then release by tilting the screwdriver in direction of arrow -A- and fold the fuse box with the positive terminal -1- to the side in direction of arrow -B-.



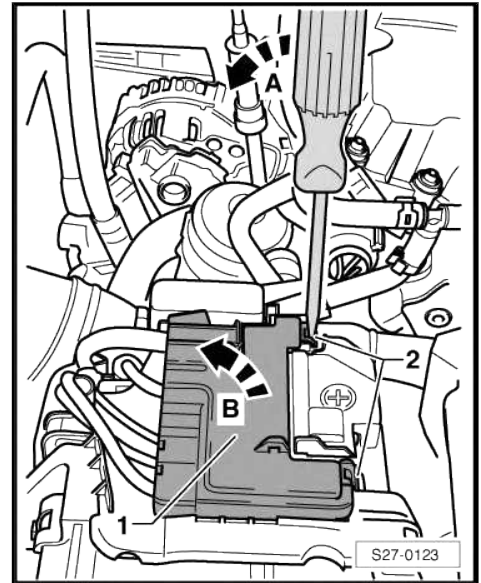
- Successively detach the cover -1- from the catches -2- using a screwdriver, in direction of arrow -A-.
- Swivel out the cover in direction of arrow -B- and remove.
- Unscrew the fixing nuts for the connection cables and remove the fuse box.

Installing

Installation is carried out in the reverse order.

Tightening torques

Fixing nuts for connection cable M 6	6 Nm
Fixing nuts for connection cable M 5	4.5 Nm



1.2.2 Removing and installing the E-box in engine compartment as of CW 22.2015

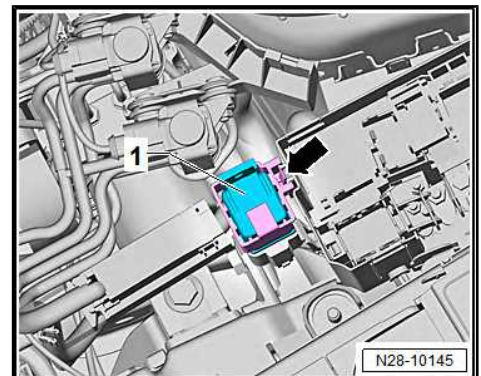
Removing

- Disconnect ground strap from the battery
⇒ ["1.3 Disconnecting and reconnecting battery", page 10](#) .

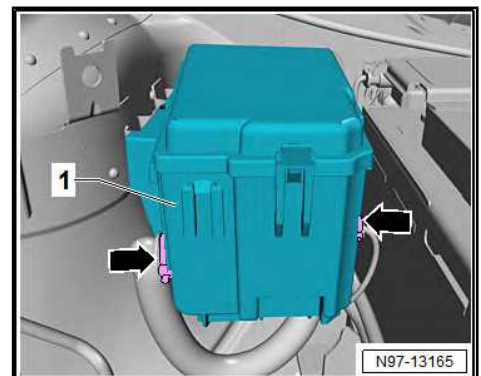
Vehicles with TDI engine:

- Press off catch peg -arrow- and automatic glow period control unit - J179- Pos. -1- upwards out of the e-box.

Continued for all vehicles

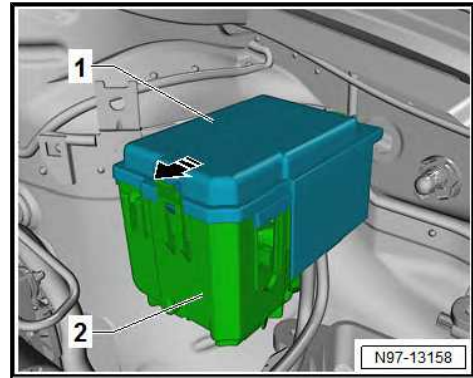


- Disconnect the cable ties -arrows- on the electric cables at the holder -1-.





- Press off catch in -direction of arrow- and remove housing cover -1- at holder -2-.



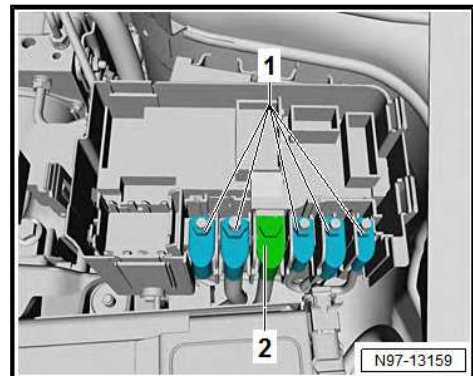
- Mark the position of the electric cables -1-.



Note

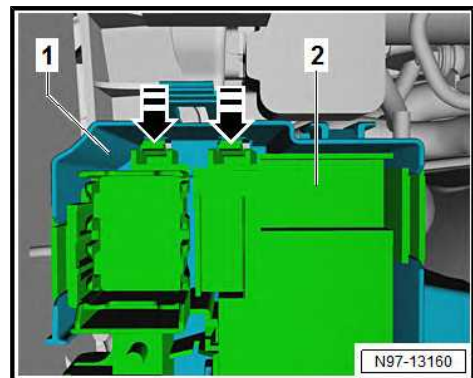
- ◆ *The exact connection assignment of electric cables can be taken from the valid current flow diagram, see => Current flow diagrams, Electrical fault finding and Fitting locations.*
- ◆ *Where necessary, photos should be taken of the connection assignment.*

- Unscrew nuts -1- and screw -2- and remove electric cables.



- Press off latches -arrow- and remove the E-Box -2- from the mounting bracket -1-.

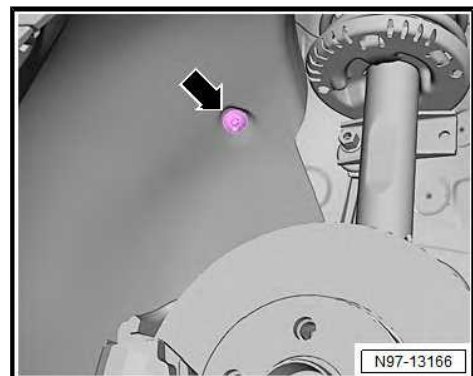
- Mark the position and then disconnect the electrical connectors and lines underneath the e-box.



Note

- ◆ *The exact connection assignment of electric cables can be taken from the valid current flow diagram, see => Current flow diagrams, Electrical fault finding and Fitting locations.*
- ◆ *Where necessary, take photos of the electrical cables.*

- When removing the e-box mounting bracket - undo screw -arrow- in the left wheel arch.



- Undo the latch -arrow- and remove mounting bracket -1- from the bodyshell by moving it upwards.

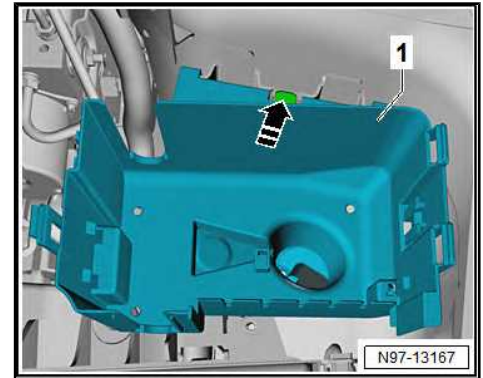
Installing

Installation is performed in the reverse order, pay attention to the following points:

- Latch the e-box mounting bracket on to the bodyshell, e-box in the mounting bracket and e-box housing cover.
- Connecting battery
⇒ ["1.3 Disconnecting and reconnecting battery", page 10](#) .

Tightening torques

M6 nuts of the electric cables to the e-box	6 Nm
M8 screw of the electric cables to the E-box	6 Nm
Screw for holder in left wheel arch	2 Nm



1.3 Removing and installing relay and fuse holder behind dash panel on the driver's side

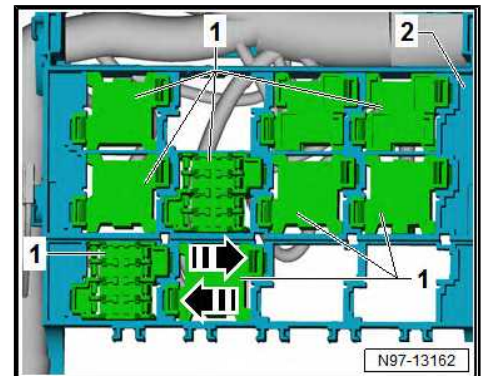
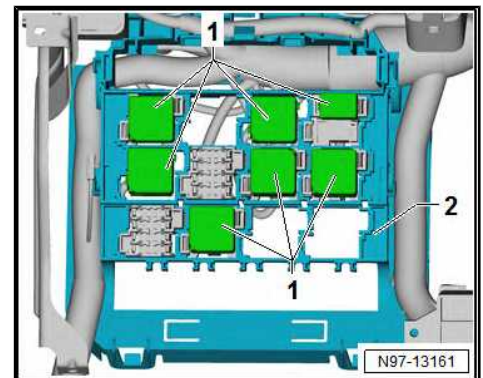
Removing

- Disconnect battery earth strap
⇒ ["1.3 Disconnecting and reconnecting battery", page 10](#) .
- Removing the dash panel ⇒ Body Work; Rep. gr. 70 .
- Remove onboard supply control unit - J519-
⇒ ["2.1.2 Removing and installing the vehicle voltage control unit J519", page 228](#) .
- Take all relays -1- from the relay carrier -2-.

Note

- ◆ *The number of relays depends on the vehicle equipment.*
- ◆ *The exact relay position assignment and relay ⇒ Current flow diagrams, Electrical fault finding and Fitting locations.*
- ◆ *Where necessary, take photos of the relay position assignment and relay.*

- Unlock the catches -arrows- in sequence and remove the connectors -1- from the relay carrier -2-.



- Disconnect the cable ties -arrows- and slacken the thread -2-.
- Unscrew screws -3- and remove relay carrier -1-.

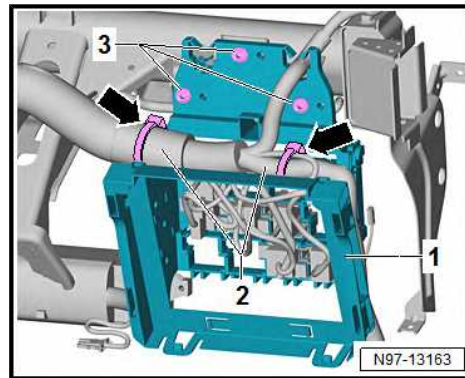
Installing

Installation is performed in the reverse order, pay attention to the following points:

- Insert all connectors into the relay carrier until they engage.
- Secure the electrical cables with cable ties.
- Connecting battery
⇒ ["1.3 Disconnecting and reconnecting battery", page 10](#) .

Tightening torques

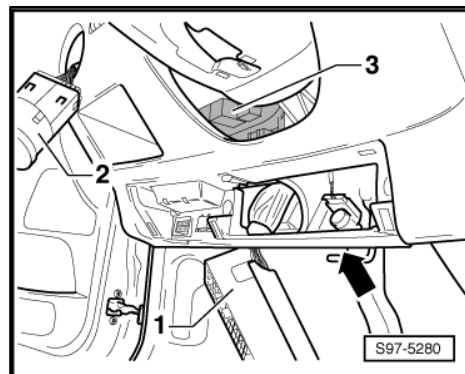
Fixing screws for relay and fuse carrier, Pos. -3-	4.5 Nm
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1.4 Removing and installing the relay of the relay carrier

Removing

- Switch off the ignition and all electrical consumers!
- Remove the damper below the dash panel on the driver side
⇒ Body Work; Rep. gr. 70 .
- Slacken fuse holder -1- from the dash panel and unhook downwards
⇒ ["1.1 Removing and installing fuse holder from dash panel", page 221](#) .
- The dash panel side trim panel ⇒ Body Work; Rep. gr. 70 if necessary light switch -2-
⇒ ["2.1 Removing and installing light switch", page 207](#) and air flow vent on the driver's side can be removed for the purposes of clear presentation of the assignment of the individual relays
⇒ Heating, Air Conditioning; Rep. gr. 80 .
- Put the hand behind the dash panel -arrow- and take the corresponding relay if necessary the fuse out of the relay carrier -3-.



Installing

Installation is carried out in the reverse order.



Note

The number of relays depends on the vehicle equipment.



2 Control units

⇒ [“2.1 Onboard supply control unit J519”, page 227](#)

⇒ [“2.2 Removing and installing data bus diagnostic interface J533”, page 229](#)

2.1 Onboard supply control unit - J519-

⇒ [“2.1.1 General description”, page 227](#)

⇒ [“2.1.2 Removing and installing the vehicle voltage control unit J519”, page 228](#)

2.1.1 General description

The vehicle voltage control unit - J519- depending on the vehicle equipment in the vehicle has the following tasks:

- ◆ Central locking control
- ◆ Anti-theft warning system control
- ◆ Tailgate lock
- ◆ Signal reception of remote control
- ◆ Position display of the central locking system
- ◆ Operating terminal 30
- ◆ Load management intervention
- ◆ Interior lighting control
- ◆ Pre-activation of the fuel pump
- ◆ Actuation of the windscreen wiper, windscreen washer system and periodic wiping
- ◆ Exterior mirror and rear window heater
- ◆ Turn signal light and warning light control
- ◆ Brake light operation
- ◆ Horn
- ◆ Cruise control system (signal conversion to the CAN databus of the drive system)
- ◆ Remote release of the tailgate
- ◆ Switch and instrument lighting
- ◆ Starter interlock
- ◆ Rear fog light and reversing light control (not on all equipment)
- ◆ switches off the electrical consumers at low voltage (load management)
- ◆ Data bus diagnostic interface - J533-

The onboard supply control unit - J519- is equipped with self-diagnosis, which facilitates fault finding.

For fault finding use ⇒ Vehicle diagnostic tester.

2.1.2 Removing and installing the vehicle voltage control unit - J519-

Note

- ◆ *When replacing the vehicle voltage control unit - J519- with integrated data bus diagnostic interface - J533-, the ⇒ Vehicle diagnostic tester must be connected before removing the control unit and the function "Replace control unit" must be selected in the operating mode "Targeted fault finding". Then code the new control unit after the installation see ⇒ Vehicle diagnostic tester.*
- ◆ *The control unit can also be coded via an On-line connection. In this case, the ⇒ Vehicle diagnostic tester must be connected before removing the control unit from the vehicle.*
- ◆ *The connectors can only be connected in one position, they must not be mixed up.*

Removing

The control unit is located below the dash panel on the driver side and behind the relay carrier.

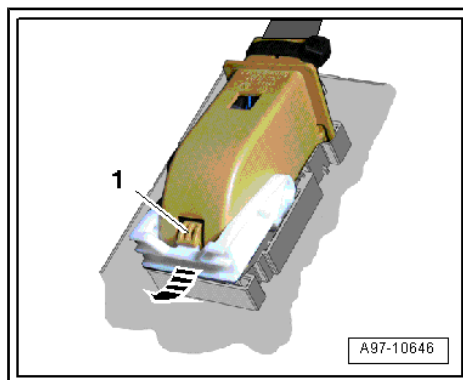
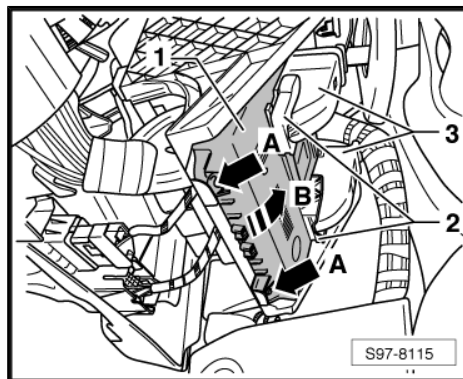
- Disconnect battery earth strap
⇒ ["1.3 Disconnecting and reconnecting battery", page 10](#) .
- If present, remove the damping below the dash panel on the driver side ⇒ Body Work; Rep. gr. 70 .
- Remove "A" pillar trim, bottom left ⇒ Body Work; Rep. gr. 70 .

Vehicles manufactured up to CW 21.2015:

- Unlock and disconnect the plug connections -3- by tilting out the clamps -2-.
- Detach the control unit -1- from the support by releasing the latches in direction of arrow -A-.
- Swivel out the control unit in direction of arrow -B- and remove.

Vehicles manufactured as of CW 22.2015:

- Press the catch -1- and tilt out release lever for connectors in sequence in -direction of arrow-.

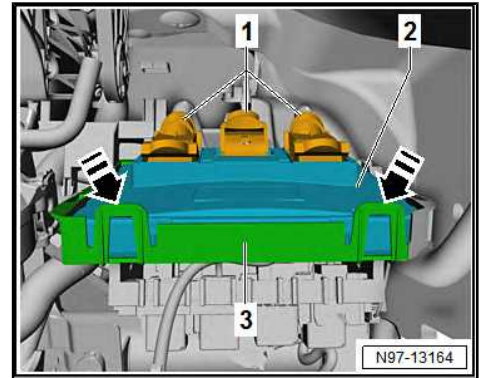


- Disconnect plug connection -1-.
- Press of the catches in -direction of arrow-, tilt the unit -2- out of the mounting bracket -3- and remove downwards.

Installing

Installation is performed in the reverse order, pay attention to the following points:

- Insert the control unit and correctly lock into the holder.
- Pay attention to the work sequence when re-connecting the battery
⇒ ["1.3 Disconnecting and reconnecting battery", page 10](#) .



2.2 Removing and installing data bus diagnostic interface - J533-



Note

- ◆ *The diagnostics Interface for Databus - J533- is integrated in the onboard control unit - J519- and cannot be removed separately.*
- ◆ *In the event of an error, the onboard control unit - J519- must be replaced.*

Removing and installing onboard supply control unit - J519-
⇒ ["2.1.2 Removing and installing the vehicle voltage control unit J519", page 228](#)



3 Vehicle diagnosis, testing and information systems

For the following descriptions, see Workshop Manual ⇒ Electrical System – General notes; Rep. gr. 97 . If a note cannot be accessed, open the Workshop Manual “Electrical System - General Notes” manually in “ELSA”, Section “97”.

- ◆ Use and safety instructions.
- ◆ Connect ⇒ Vehicle diagnostic tester.



4 Wiring harness and plug repair

All the notes and comments for the following chapters can be found in the Workshop Manual ⇒ Electrical System - General notes; Rep. gr. 97 If a note cannot be accessed, open the Workshop Manual "Electrical System - General Notes" manually in "ELSA", Section "97".

- ◆ General instructions for the repair on the vehicle electrics
- ◆ General instructions for wiring harness and plug repair
- ◆ Repair of airbag and belt tensioner cables
- ◆ Repair of CAN bus lines



5 Use contact surface cleaning set - VAS 6410-

All the notes and comments for the following chapters can be found in the Workshop Manual ⇒ Electrical System - General notes; Rep. gr. 97 If a note cannot be accessed, open the Workshop Manual "Electrical System - General Notes" manually in "ELSA", Section "97".

- ◆ Repairing the cable eyes
- ◆ Repairing screwed connections
- ◆ Cleaning the battery pole terminals and battery poles
- ◆ Preserving