

Workshop Manual León 2013 ➤ León ST 2013 ➤

Electrical system

Edition 03.2017



## List of Workshop Manual Repair Groups

## Repair Group

- 00 Technical data
- 27 Starter, current supply, CCS
- 90 Gauges, instruments
- 92 Windscreen wash/wipe system
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Technical information should always be available to the foremen and mechanics, because their careful and constant adherence to the instructions is essential to ensure vehicle road-worthiness and safety. In addition, the normal basic safety precautions for working on motor vehicles must, as a matter of course, be observed.

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## 00 – Technical data

## 1 Safety instructions

(ERL003292; Edition 03.2017)

⇒ "1.1 Safety precautions for work on vehicles with start/stop system", page 1

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

## 1.1 Safety precautions for work on vehicles with start/stop system

Note the following when working on vehicles with start/stop system:



## **WARNING**

Risk of injury due to automatic engine starting in vehicles with a start-stop system.

- ◆ If the Start/Stop system of a vehicle is activated, the engine can start automatically, if required. A message will appear in the dash panel insert.
- When working on the vehicle, make sure that the Start/ Stop system is deactivated (switch off the ignition; then switch the ignition on again, if necessary).

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

Observe following if test and measuring instruments are required during a test drive:



### **WARNING**

Accidents can be caused if the driver is distracted by test equipment or if test equipment is not secured.

Risk of injury if front passenger's airbag is triggered in an accident.

- The use of testers and measuring instruments whilst driving causes a distraction.
- The risk of injuries increases significantly when test and measuring equipment is not secured.
- Always secure test and measuring equipment on the rear seat using a belt and allow a second person on the rear seat to use it.

## 2 Repair notes

⇒ "2.1 Contact corrosion", page 2

⇒ "2.2 Routing and securing wiring", page 2

## 2.1 Contact corrosion

If incorrect attachment units (bolts, nuts, washers, etc.) are used, contact corrosion could occur.

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

In addition, all rubber and plastic parts and all adhesives are made of non-conductive materials.

If there is any doubt about the suitability of parts, a general rule is to use new parts ⇒ Electronic Parts Catalog .

### Note:

- Only use tested genuine parts suitable for aluminium.
- Only use SEAT accessories.
- Damage resulting from contact corrosion is not covered by warranty.

## 2.2 Routing and securing wiring

- Mark lines prior to removal to prevent them from being interchanged and to ensure that they are fitted in their original positions. This applies for fuel, hydraulic and vacuum lines as well as lines for activated charcoal filter system and electrical wiring. Where necessary, make sketches or take photographs.
- Because of the limited space in the engine compartment, it is important to ensure that there is adequate clearance to any moving or hot components to avoid damage to lines and wiring.

#### Battery: 3

⇒ "3.1 Types of batteries", page 3

⇒ "3.2 Battery - general notes", page 3

#### Types of batteries 3.1



Note

All instructions and references for this chapter are found under ⇒ Electrical system, General information; Rep. gr. 27; Battery; Types of Battery.

#### 3.2 Battery - general notes



Note

All instructions and references for this chapter are found under ⇒ Electrical system, General information; Rep. gr. 27; Battery .

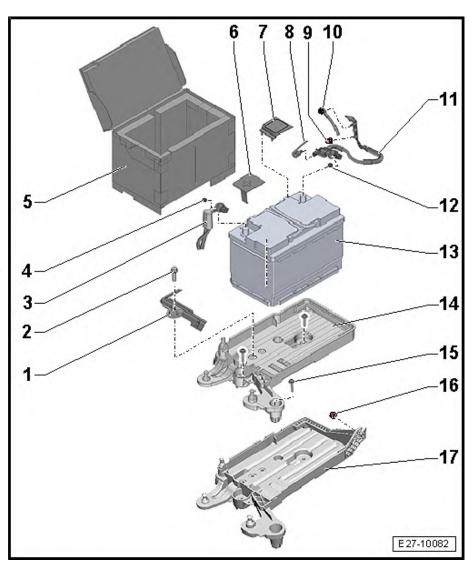
## 27 – Starter, current supply, CCS

## 1 Battery:

- ⇒ "1.1 Assembly overview battery", page 4
- ⇒ "1.2 Battery: removing and installing", page 5
- ⇒ "1.3 Disconnecting and reconnecting battery", page 9
- ⇒ "1.4 Removing and installing battery tray", page 10
- ⇒ "1.5 Checking battery charge", page 12
- ⇒ "1.6 Charging the battery", page 12
- ⇒ "1.7 Removing and installing earth cable with battery monitor control unit J367", page 12
- ⇒ "1.8 Adapting the battery monitor control J367 unit", page 13

## 1.1 Assembly overview - battery

- 1 Retainer
- 2 Screw
  - □ 15 Nm
- 3 Positive wire
  - □ Disconnecting and connecting ⇒ page 9
- 4 Nut
  - □ 6 Nm
- 5 Heat shield
- 6 Cover for positive terminal
- 7 Cover for negative terminal
- 8 Electrical wire
  - ☐ For battery monitor control unit J367-
  - Observe correct sequence when connecting earth cable
     ⇒ page 9
- 9 Nut
  - □ 9 Nm
- 10 Earth wire
  - □ 9 Nm
- 11 Earth wire
  - ☐ With battery monitor control unit J367-
  - Disconnecting and connecting ⇒ page 9
  - Removal and installation ⇒ page 12
- 12 Nut
  - □ 6 Nm





## 13 - Battery:

- ☐ Disconnecting and connecting ⇒ page 9
- □ Removal and installation ⇒ page 5

## 14 - Battery tray version 1

□ Removal and installation ⇒ page 10

### 15 - Screw

- □ 3 piece fastener of battery tray
- □ 9 Nm

### 16 - Nut

□ 9 Nm

## 17 - Battery tray version 2

□ Removal and installation ⇒ page 11

#### 1.2 Battery: removing and installing

## Removing

Switch off ignition and all electrical consumers.

## Vehicles without access and start authorisation system

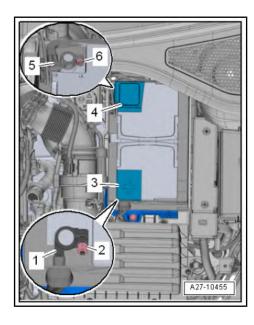
- Remove ignition key, if fitted.

## Vehicles with access and start authorisation system

Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

## Continued for all vehicles

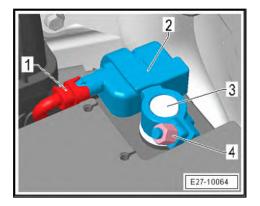
- Open cover in heat insulation sleeve.
- Connect the battery charging device for battery supported operation ⇒ Electrical system, general information,; Rep. gr. 27; Battery; Battery charging.
- Open cover -4- over negative battery terminal.
- Slacken off nut -6- several turns and disconnect battery clamp -5- of earth cable from negative battery terminal.





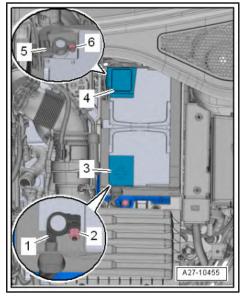
## Vehicles with start / stop system

- Disconnect the connector -1- on the control unit for monitoring the battery J367- -2-.
- Slacken the fixing nut -4- and disconnect the control unit for monitoring the battery J367- -2- from the negative terminal



## Continued for all versions

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





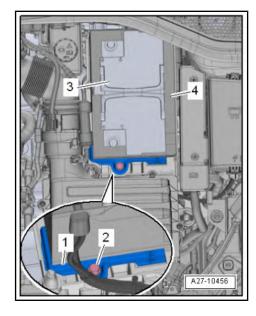
- Pull heat insulation sleeve -4- upwards slightly.
- Remove bolt -2- on battery retainer plate -1-.
- Pull battery -3- out of battery tray and lift out of engine compartment.



## Caution

A loosely fitted battery creates the following dangers:

- Shortened service life due to damage from vibration (danger of explosion)
- The cells in the battery will be damaged if the battery is not secured correctly.
- ◆ Damage to the battery casing through the retainer plate (possible electrolyte leak, high resulting costs).
- ♦ Poor crash safety



## Vehicles with start/stop system

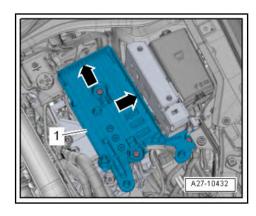


## Note

- Because of their higher deep-cycle resistance, only special batteries are used in vehicles equipped with a Start/Stop system.
- ♦ When renewing the battery, note the correct part designation.
- Batteries intended for use in vehicles with a Start/Stop system are marked "AGM" (Absorbent Glass Mat) or "EFB" (Enhanced Flooded Battery).

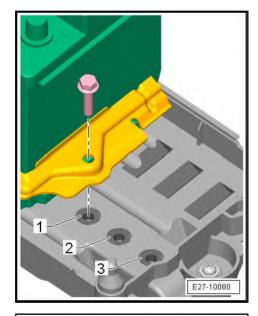
## Installing

 Insert battery in battery tray -1- so that battery base strip makes contact at bottom and side of stop -arrows-.

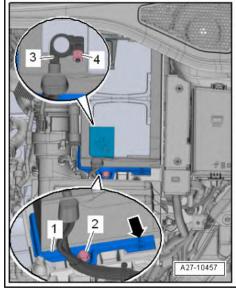




Depending on the battery used in the vehicle, the battery holder is equipped with three securing positions; mount the fixing bar -Position 1, 2 or 3-.



- Place battery retainer plate -1- in position.
- Lug -arrow- on battery retainer plate must engage in recess in battery base strip.
- Tighten bolt -2- for battery retainer plate.
- Connect up battery in the following sequence with ignition and electrical equipment switched off:
- First connect battery clamp -3- of positive cable by hand to positive battery terminal "+" and tighten nut -4-.



 Attach the battery terminal clamp -5- of the earth lead onto the negative "-" terminal of battery by hand and tighten nut -6-.

The following measures must be carried out after re-connecting battery:

- Activate the automatic open / close function of electric window lifters ⇒ Vehicle instructions manual.
- Connecting vehicle diagnosis tester .
- ◆ Call up and delete the event memory ⇒ Vehicle diagnostic tester.

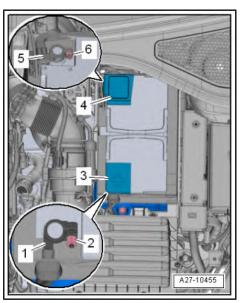


## Note

After re-connecting the power supply, the ESP warning lamp may not go out until the vehicle has been driven a few metres.

## **Specified torques**

♦ "1.1 Assembly overview - battery", page 4





## 1.3 Disconnecting and reconnecting battery



## Caution

Observe the following instructions and precautions on safety when working on pyrotechnic components:

♦ When working on pyrotechnical components (such as the airbag, belt tensioner), the battery must be disconnected in a different manner as described below if the ignition is on ⇒ Rep. gr. 00; Safety note: safety measures for work with pyrotechnical components.

## Special tools and workshop equipment required

♦ Torque wrenches - V.A.G 1783-



## Disconnecting



## Note

- ♦ By disconnecting the earth strap (power interrupted), safety is guaranteed while working on the electrical system.
- The battery positive only needs to be disconnected if the battery is to be removed.
- ♦ The earth strap must not be disconnected from the bodywork.

## Removing

Switch off ignition and all electrical consumers.

## Vehicles without access and start authorisation system

- Remove ignition key, if fitted.

## Vehicles with access and start authorisation system

 Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

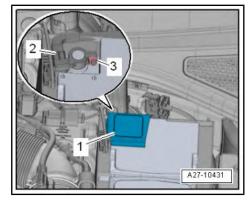
## Continued for all vehicles

Open the cover of the battery cover.



- Open cover -1- over negative battery terminal.
- Slacken off nut -3- several turns and disconnect battery clamp -2- of earth cable from battery terminal.

## Vehicles with start / stop system



- Disconnect the connector -1- on the control unit for monitoring the battery - J367- -2-.
- Slacken the fixing nut -4- and disconnect the control unit for monitoring the battery - J367- -2- from the negative terminal

## Connecting

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

- Activate the automatic open / close function of electric window lifters ⇒ Vehicle instructions manual.
- Connecting vehicle diagnosis tester.
- Call up and delete the event memory ⇒ Vehicle diagnostic tester.



## Note

After re-connecting the power supply, the ESP warning lamp may not go out until the vehicle has been driven a few metres.

## **Specified torques**

♦ "1.1 Assembly overview - battery", page 4

#### 1.4 Removing and installing battery tray

⇒ "1.4.1 Removing and installing the battery support, Version 1", page 10

⇒ "1.4.2 Removing and installing the battery support, Version 2", <u>page 11</u>

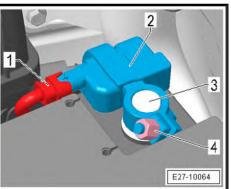
## 1.4.1 Removing and installing the battery support, Version 1

## Removing

Remove battery <u>⇒ page 5</u>.

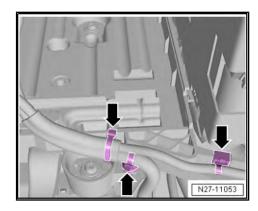
Remove air filter housing Engine.

- Engine 2.0 I TDI CR
- Engine 1.6 I TDI CR
- Remove air filter housing ⇒ Rep. gr. 23; Air filter; Removing and installing air filter housing.
- Engine 1.8 I TSI





- Remove air filter housing ⇒ Rep. gr. 24; Air filter; Removing and installing air filter housing
- Lay wiring harness on battery tray -arrows- to one side.

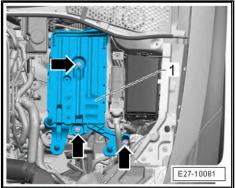


- Unscrew bolts -arrows-.
- Take out battery tray -1-.

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

## Specified torques

♦ ± "1.1 Assembly overview - battery", page 4



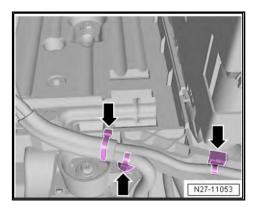
## Removing and installing the battery sup-1.4.2 port, Version 2

## Removing

Remove battery ⇒ page 5.

Remove air filter housing Engine.

- ◆ Engine 2.0 I TDI CR
- ♦ Engine 1.6 I TDI CR
- Remove air filter housing ⇒ Rep. gr. 23; Air filter; Removing and installing air filter housing.
- Engine 1.8 I TSI
- Remove air filter housing ⇒ Rep. gr. 24; Air filter; Removing and installing air filter housing.
- Lay wiring harness on battery tray -arrows- to one side.



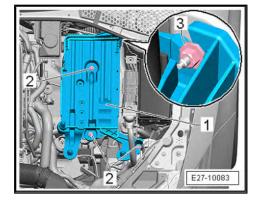


- Remove bolts -2-.
- Remove nut -3-.
- Take out battery tray -1-.

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

## **Specified torques**

⇒ "1.1 Assembly overview - battery", page 4



#### 1.5 Checking battery charge

Check the battery  $\Rightarrow$  Electrical system, General information; Rep. gr. 27; Check battery.

The battery - A- is monitored in the self-diagnosis function by the data bus diagnostic interface - J533- in "Guided Fault Finding" ⇒ Vehicle diagnostic tester mode.

#### 1.6 Charging the battery

Charge the battery  $\Rightarrow$  Electrical system, General information; Rep. gr. 27; Charge battery .

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

## Special tools and workshop equipment required

♦ Torque wrenches - VAG 1331-



## Removing

Switch off ignition and all electrical consumers.

## Vehicles without access and start authorisation system

- Remove ignition key, if fitted.

## Vehicles with access and start authorisation system

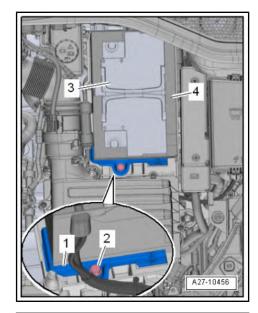
Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

## Continued for all vehicles

Open cover in heat insulation sleeve.



- Remove bolt -2- on battery retainer plate -1-.
- Remove battery -3- from the bracket and push forwards.



- Open cover -1- over negative battery terminal.
- Unplug the electrical connector -5-.
- Slacken off nut -7- several turns and disconnect battery clamp of earth cable from negative battery terminal.
- Unbolt earth wire -3-.
- Remove nut -2- and detach earth cable -4- with battery monitor control unit - J367- -6-.

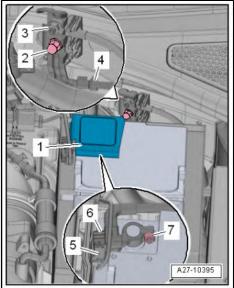
Installation is carried out in the reverse sequence; note the following:

## Specified torques

♦ ± "1.1 Assembly overview - battery", page 4

## 1.8 Adapting the battery monitor control -J367- unit

- Connect vehicle diagnostic tester ⇒ page 282.
- Adapt the battery monitor control J367- ⇒ Vehicle diagnostic testerunit.



## 2 Alternator

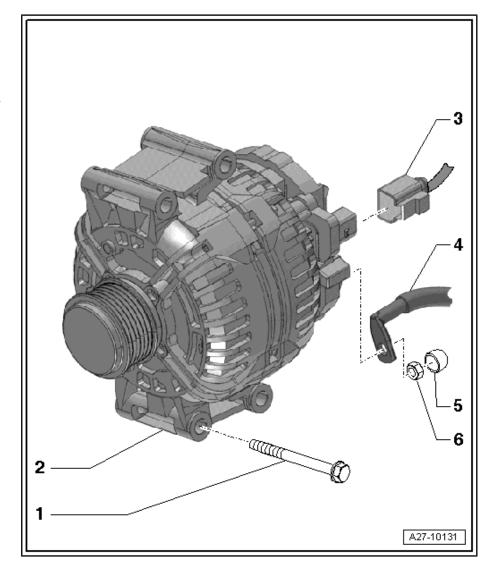
- ⇒ "2.1 Assembly overview alternator", page 14
- ⇒ "2.2 Removing and installing the alternator", page 15
- ⇒ "2.3 Checking alternator", page 23
- ⇒ "2.4 Alternator: repairs", page 24
- ⇒ "2.5 Removing and installing poly V-belt pulley .", page 26
- ⇒ "2.6 Removing and installing voltage regulator", page 31

## 2.1 Assembly overview - alternator

- ⇒ "2.1.1 Assembly overview: Alternator without sliding bushes", page 14
- ⇒ "2.1.2 Assembly overview: Alternator with sliding bushes", page 15

## 2.1.1 Assembly overview: Alternator without sliding bushes

- 1 Screw
  - ☐ 4 units.
  - □ 23 Nm
- 2 Alternator
  - □ Removal and installation ⇒ page 15
  - □ repairs ⇒ page 31
- 3 Electric connector
- 4 Terminal 30/B+
- 5 Cover
- 6 Nut
  - □ 20 Nm



#### 2.1.2 Assembly overview: Alternator with sliding bushes

## 1 - Alternator

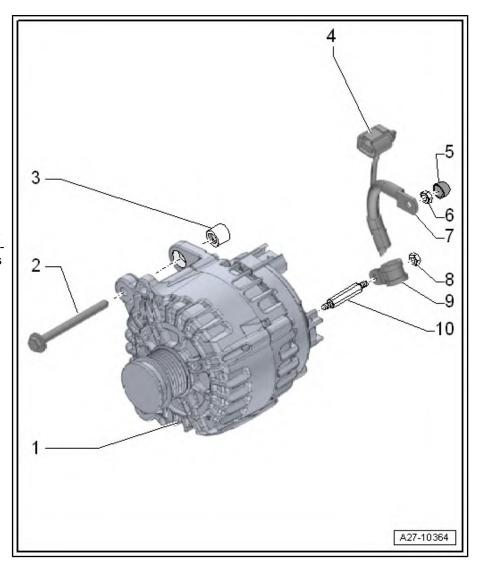
- ☐ Removal and installation <u>⇒ page 15</u>
- □ repairs ⇒ page 31

### 2 - Screw

- 2 units.
- □ 23 Nm

## 3 - Sliding bush

- 2 units.
- Ensure that bushes slide freely, as the clamping pressure of a stiff bush will be insufficient even when the correct tightening torque is applied
- 4 Electric connector
- 5 Cap
- 6 Nut
  - □ 20 Nm
- 7 Terminal 30/B+
- 8 Nut
  - □ 3.2 Nm
- 9 Clamp
- 10 Threaded pins



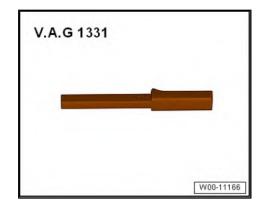
#### 2.2 Removing and installing the alternator

- ⇒ "2.2.1 Removing and installing alternator vehicles with 1.0 I FSI engine", page 15
- "2.2.2 Removing and installing alternator, vehicles with 1.2 I and 1.4 I TSI engines", page 17
- ⇒ "2.2.3 Removing and installing alternator, vehicles with 1.6 I MPI engine", page 19
- "2.2.4 Removing and installing alternator, vehicles with 1.8 I and 2.0 I TSI engines", page 20
- ⇒ "2.2.5 Removing and installing alternator, vehicles with 1.6 I and 2.0 I TDI engines", page 22

## 2.2.1 Removing and installing alternator - vehicles with 1.0 I FSI engine

Special tools and workshop equipment required

♦ Torque wrenches - V.A.G 1331-



Torque wrenches - V.A.G 1783-



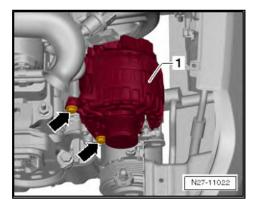
## Removing

- With the ignition switched off, disconnect battery earth cable
   ⇒ page 9 .
- Remove the tensioning element for the Poly-V belt ⇒ Rep. gr. 13; Cylinder block, Pulley end; Tensioning element for the Poly-V belt: Removing and installing.
- Remove the lower engine noise insulation ⇒ General body repairs, exterior; Rep. gr. 66; Noise insulation; removing and installing the noise insulation.
- Unscrew bolts -arrows-.



## Note

- ♦ If alternator -1- is stuck in the bracket, screw bolts -arrowsback in by 2 turns.
- ♦ Carefully tap on the screw heads with the flat side of a hammer. In doing so, loosen the bushes of the alternator fasteners.





- Pry off the cap -2- of the 30/B+ wire -4-.
- Unscrew nut.
- Remove 30/B+ cable -4-.
- Remove alternator -1- with connector -3- from bracket.
- Pull out the plug -3-.
- Remove alternator -1- downwards and to the right.

Install in reverse order to dismantling, noting the following.

 To facilitate positioning of alternator, slide bushes of alternator mounting slightly towards back.



## Note

Ensure that bushes of alternator mounting slide freely and are not to tight (loosen, if necessary); otherwise clamping force of sliding bushes is too low even if specified torque is applied.

- Connect the battery ⇒ page 4.
- Always start engine and check belt running after completing work.

## **Specified torques**

⇒ "2.1.2 Assembly overview: Alternator with sliding bushes", page 15

## 2.2.2 Removing and installing alternator, vehicles with 1.2 I and 1.4 I TSI engines

Torque wrenches - VAG 1331-

## Removing

- With the ignition switched off, disconnect battery earth cable
   ⇒ page 9.
- Remove the tensioning element for the Poly-V belt ⇒ Rep. gr. 13; Cylinder block, Pulley end; Tensioning element for the Poly-V belt: Removing and installing.
- Remove the lower engine noise insulation ⇒ General body repairs, exterior; Rep. gr. 66; Noise insulation; removing and installing the noise insulation.

## Vehicles with air conditioner

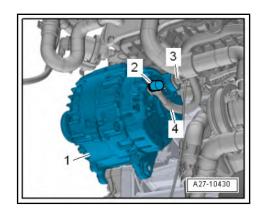


### Caution

Risk of damage to air conditioner compressor, refrigerant lines and refrigerant hoses:

- ♦ Do not stretch, kink or bend refrigerant pipes and hoses.
- Remove air conditioner compressor at bracket 

   Heating, air conditioning; Rep. gr. 87; Air conditioner compressor; Detaching and attaching air conditioner compressor at bracket.
- Secure air conditioner compressor to lock carrier so that refrigerant lines are not under tension.







### Continued for all vehicles

Unscrew bolts -arrows-.



## Note

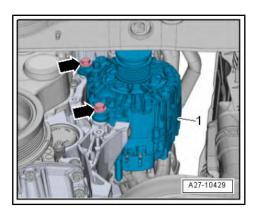
- If alternator sticks in bracket, screw bolts back in again down to the last 2 turns.
- Tap carefully on bolt heads with flat side of hammer to release threaded bushes of alternator mountings.
- Remove alternator -1- from mounting with electrical wiring still connected.
- Unplug the electrical connector -3-.
- Remove the cap -2-, by levering.
- Unscrew nut and remove terminal 30/B+ -4-.
- Remove alternator -1- downwards and to the right.

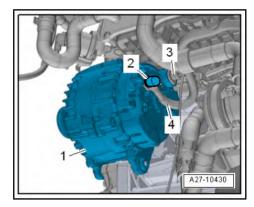


## Caution

Make sure that air conditioner compressor and refrigerant pipes and hoses are not damaged.

Do not stretch, kink or bend refrigerant pipes and hoses.





## Installing

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

 To facilitate the positioning of the alternator drive bushes for fixing screws back a bit.

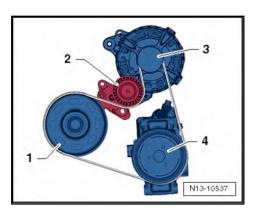


## Note

If the alternator attachment sockets are difficult to move then this must be corrected otherwise the tightening force of the socket is weak despite being tightened to the correct torque.

- Install the poly V-belt as depicted in the illustration:
- 1 Vibration damper
- 2 Tensioner for poly V-belt
- 3 Alternator
- 4 Air conditioning compressor
- Connect battery. Steps required ⇒ page 10.
- Start engine and check that belt runs properly.

## Specified torques





## 2.2.3 Removing and installing alternator, vehicles with 1.6 I MPI engine

## Special tools and workshop equipment required

♦ Torque wrenches - V.A.G 1331-



## Removing

- Disconnect battery A- ⇒ page 4.
- Remove poly V-belts ⇒ Rep. gr. 13; Cylinder block on pulley side; Removing and installing poly V-belts.
- Remove the tensioning element for the Poly-V belt ⇒ Rep. gr. 13; Cylinder block, Pulley end; Tensioning element for the Poly-V belt: Removing and installing.

## Vehicles with air conditioner



## Caution

Risk of damage to air conditioner compressor, refrigerant lines and refrigerant hoses:

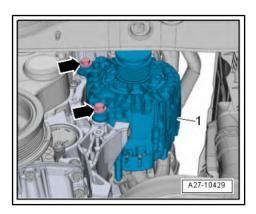
- ♦ Do not stretch, kink or bend refrigerant pipes and hoses.
- Remove air conditioner compressor at bracket > Heating, air conditioning; Rep. gr. 87; Air conditioner compressor; Detaching and attaching air conditioner compressor at bracket.
- Secure air conditioner compressor to lock carrier so that refrigerant lines are not under tension.

## Continued for all vehicles

Unscrew bolts -arrows-.

If alternator - C- -1- sticks in bracket, screw bolts back in again down to the last 2 turns.

Carefully tap on the screw heads with the flat side of a hammer. In doing so, loosen the bushes of the alternator fasteners.





- Remove alternator C- -1- from bracket with electrical wiring still connected.
- Release connector -3- and unplug.
- Remove the cap -2-, by levering.
- Unscrew nut and remove terminal 30/B+ -4-.
- Remove alternator C- -1- downwards to the right.

Install in reverse order to dismantling, noting the following.

To facilitate positioning of alternator - C-, slide bushes of alternator mounting slightly towards back.

Ensure that bushes of alternator mounting slide freely and are not to tight (loosen, if necessary); otherwise clamping force of sliding bushes is too low even if specified torque is applied.

- Connect battery A- ⇒ page 4.
- Always start engine and check belt running after completing work.

## **Specified torques**

⇒ "2.1.2 Assembly overview: Alternator with sliding bushes", page 15

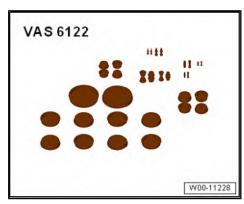
## 2.2.4 Removing and installing alternator, vehicles with 1.8 I and 2.0 I TSI engines

## Special tools and workshop equipment required

♦ Torque wrenches - VAG 1331-

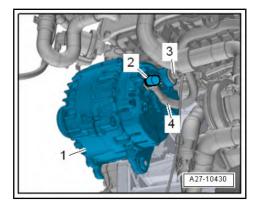


♦ Engine bung set - VAS 6122-



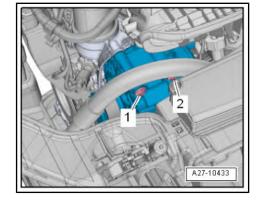
## Removing

With the ignition switched off, disconnect battery earth cable
 ⇒ page 9.





- Unscrew the attachment bolts -1- and -2- of the generator (alternator).
- Remove the lower engine noise insulation ⇒ General body repairs, exterior; Rep. gr. 66; Noise insulation; removing and installing the noise insulation.

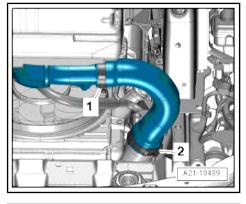


- Loosen hose clip -1-.



## Note

Item -2- can be disregarded.



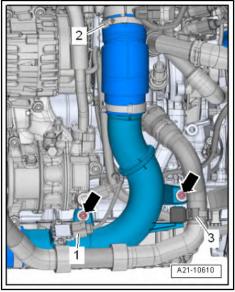
- Move clear coolant hose -3-.
- Release hose clip -2-.
- Unscrew bolts -arrows-.
- Pull out the plug -1-.
- Remove the air pipe.
- Seal open lines and connections with suitable plugs from engine bung set - VAS 6122- .
- Remove the tensioning element for the Poly-V belt ⇒ Rep. gr. 13; Cylinder block, Pulley end; Poly-V belt: Removing and installing.



## Caution

Risk of damage to air conditioner compressor, refrigerant lines and refrigerant hoses:

- ♦ Do not stretch, kink or bend refrigerant pipes and hoses.
- Remove air conditioner compressor at bracket ⇒ Heating, air conditioning; Rep. gr. 87; Air conditioner compressor; Detaching and attaching air conditioner compressor at bracket.
- Secure air conditioner compressor to lock carrier so that refrigerant lines are not under tension.



- Uncover the electrical wiring line -Arrow-.
- Unscrew screws -5- and -6- and more alternator C- -4- for-
- Pull out the plug -3-.
- Remove the cap -2-, by levering.
- Unscrew nut and remove terminal 30/B+ -1-.



## Caution

Risk of damage to air conditioner compressor, refrigerant lines and refrigerant hoses:

- Do not stretch, kink or bend refrigerant pipes and hoses.
- Remove alternator C- -4- downwards to the right.



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

- Install the poly V-belt as depicted in the illustration:
- 1 -Vibration damper
- 2 -Tensioner for poly V-belt
- 3 -Alternator
- Air conditioning compressor
- Connect battery A- ⇒ page 4.
- Always start engine and check belt running after completing work.

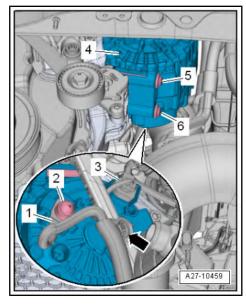
## **Specified torques**

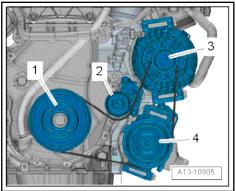
⇒ "2.1.1 Assembly overview: Alternator without sliding bushes", page 14

## 2.2.5 Removing and installing alternator, vehicles with 1.6 I and 2.0 I TDI engines

## Removing

- With the ignition switched off, disconnect battery earth cable <u>⇒ page 9</u> .
- Remove the tensioning element for the Poly-V belt ⇒ Rep. gr. 13; Cylinder block, Pulley end; Tensioning element for the Poly-V belt: Removing and installing.
- Remove the lower engine noise insulation ⇒ General body repairs, exterior; Rep. gr. 66; Noise insulation; removing and installing the noise insulation.
- Remove air conditioner compressor at bracket ⇒ Heating, air conditioning; Rep. gr. 87; Air conditioner compressor; Detaching and attaching air conditioner compressor at bracket.
- Secure air conditioner compressor to lock carrier so that refrigerant lines are not under tension.







Unscrew bolts -arrows-.



## Note

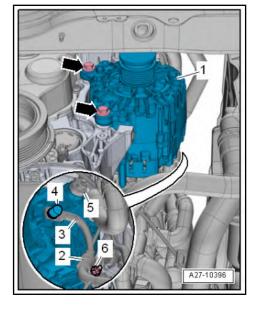
- If alternator sticks in bracket, screw bolts back in again down to the last 2 turns.
- Tap carefully on bolt heads with flat side of hammer to release threaded bushes of alternator mountings.
- Remove alternator -1- from mounting with electrical wiring still connected.
- Unplug the electrical connector -5-.
- Remove the cap -4-, by levering.
- Unscrew nut and remove terminal 30/B+ -3-.
- Unscrew nut -6- and pull off clamp -2-.
- Remove alternator downwards and to the right.



### Caution

Make sure that air conditioner compressor and refrigerant pipes and hoses are not damaged.

♦ Do not stretch, kink or bend refrigerant pipes and hoses.



## Installing

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

To facilitate the positioning of the alternator drive bushes for fixing screws back a bit.



## Note

If the alternator attachment sockets are difficult to move then this must be corrected otherwise the tightening force of the socket is weak despite being tightened to the correct torque.

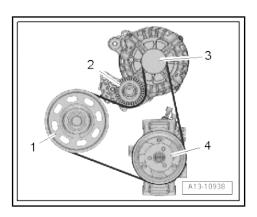
- Install the poly V-belt as depicted in the illustration:
- Vibration damper
- 2 -Tensioning roller
- 3 -Alternator
- 4 Air conditioning compressor
- Connect battery. Steps required ⇒ page 10.
- Start engine and check that belt runs properly.

## **Specified torques**

⇒ "2.1.2 Assembly overview: Alternator with sliding bushes", <u>page 15</u>

#### 2.3 Checking alternator

Checking alternator - C- ⇒ Vehicle diagnostic tester.

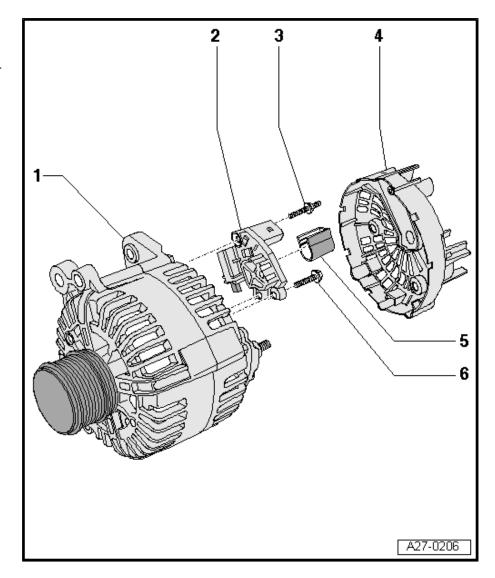


## 2.4 Alternator: repairs

- ⇒ "2.4.1 Assembly overview Valeo alternator", page 24
- ⇒ "2.4.2 Carbon brushes: testing Valeo alternator", page 24
- ⇒ "2.4.3 Carbon brushes: testing Bosch alternator", page 25
- ⇒ "2.4.4 Tightening torques: Alternator", page 25

## 2.4.1 Assembly overview - Valeo alternator

- 1 Alternator
- 2 Voltage regulator
  - □ Removal and installation ⇒ page 32
  - ☐ Checking brushes ⇒ page 24
- 3 Double bolt 2 Nm
- 4 Cover
- 5 Protective cap
- 6 Hexagon bolt 2 Nm

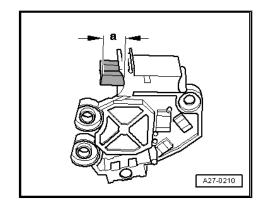


## 2.4.2 Carbon brushes: testing - Valeo alternator

Remove voltage regulator ⇒ page 32.

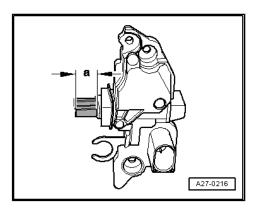


- Check length -a- of brushes.
- Wear limit: 5 mm.



### 2.4.3 Carbon brushes: testing - Bosch alternator

- Remove voltage regulator ⇒ page 31 .
- Check length -a- of brushes.
- Wear limit: 5 mm.



#### Tightening torques: Alternator 2.4.4

Bolted joints	Specified torques	
B+ line on the alternator	M8	16 Nm
Air conduction tube	Engine block	15 Nm
а	Rear bracket	8 Nm
Fasten cables to alternator	M5	3.2 Nm
Voltage regulator to alternator	M4	2 Nm
Protector to alternator	M5	4.5 Nm
Alternator to compact support	M8	20 Nm
Tensioner to compact support	M8	23 Nm
Compact support on the cylinder block	M10	40 Nm
Poly-V belt pulley with free-wheel to alternator	M10	80 Nm
Poly-V belt pulley without free-wheel to alternator	M10	65 Nm

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

## 2.5 Removing and installing poly V-belt pulley .

 $\Rightarrow$  "2.5.1 Removing and installing poly V-belt pulley without freewheel", page 26

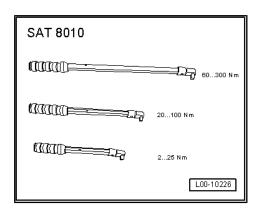
⇒ "2.5.2 Removing and installing poly-V belt pulley with free wheel, manufacturer: Bosch", page 27

⇒ "2.5.3 Removing and installing poly-V belt pulley with free wheel: manufacturer: Valeo", page 29

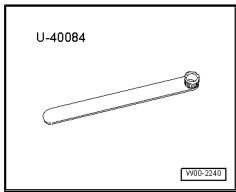
## 2.5.1 Removing and installing poly V-belt pulley without freewheel

## Special tools and workshop equipment required

♦ Torque wrenches - SAT 8010-



♦ Wrench - U 40084-



## Removing

- Remove alternator ⇒ page 15 .
- Place the alternator in a vice at the appropriate points.



Remove the poly-V pulley with the aid of the spanner - U 40084-.

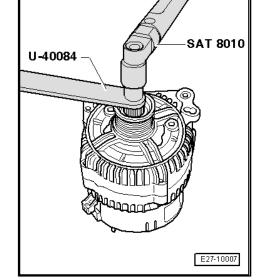
## Installing

Installation is carried out in the reverse sequence; note the fol-



## Caution

- When fitting used poly-V belts, check the direction of rotation marked on the belt before removing them.
- ♦ Ensure, before installing Poly-V belt, that all ancillaries (alternator, air conditioning compressor) are secured tightly.
- When fitting belt, ensure that poly V-belt seats correctly in pulleys!



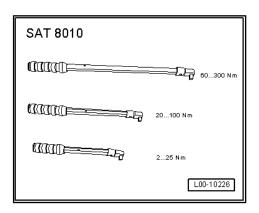
## Specified torques

◆ ⇒ "2.4.4 Tightening torques: Alternator", page 25

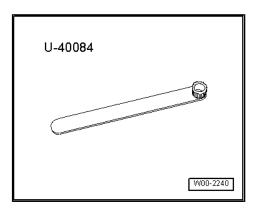
## 2.5.2 Removing and installing poly-V belt pulley with free wheel, manufacturer: **Bosch**

Special tools and workshop equipment required

◆ Torque wrenches - SAT 8010-



- ◆ Socket wrench XZN 1/2" M 10 long point SAT 1006/2 10L-
- ♦ Polygonal adaptor U 40084-



## Removing

- Remove alternator <u>⇒ page 15</u>.
- Place the alternator in a vice using the appropriate points.



Remove the protective hood of the poly-V belt free wheel pul-



## Note

The thread of the alternator shaft is a counter clockwise rotating thread. Therefore, when releasing, turn to the right and turn to the left, when tightening.

- Introduce the tool polygonal adaptor U 40084- to the alternator pulley.
- Introduce the the socket wrench XZN 1/2" M10 long point -SAT 1006/2 10L- -1- on the alternator axle.
- Loosen the screw joints turning to the right (immobilising the axle with the polygonal spanner).
- Hold the poly-V belt free wheel pulley and turn the alternator axle until the pulley can be removed.

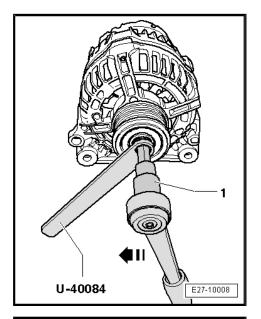
## Installing

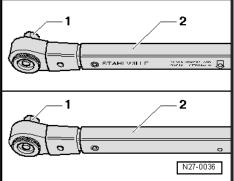
Installation is carried out in the reverse sequence; note the following:

Bolt the poly-V belt with freewheel pulley onto the alternator axle (screw in by hand until the stop).

To install the poly-V belt freewheel pulley, the torque wrench -SAT 8010- must be adapted as follows:

- Release the socket -1- and remove it from the handle -2-.
- Turn the handle -2- of the torque wrench 180° and place the socket.
- Set turning direction of torque wrench to anti-clockwise on socket drive.



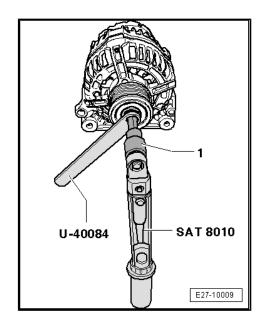




- Introduce the the socket wrench XZN 1/2" M10 long point -SAT 1006/2 10L- -1- on the alternator axle.
- Use the polygonal adapter U 40084- tool to immobilise the
- Tighten the Poly-V belt pulley without freewheel sprocket: In order to do this, turn the alternator shaft to the left using the torque wrench - SAT 8010- .

#### **Specified torques**

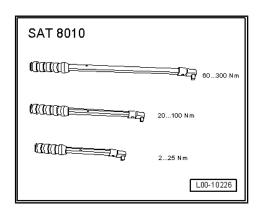
♦ ⇒ "2.4.4 Tightening torques: Alternator", page 25



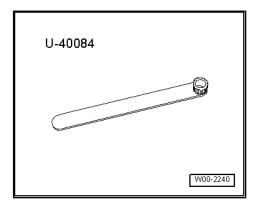
#### Removing and installing poly-V belt pul-2.5.3 ley with free wheel: manufacturer: Valeo

#### Special tools and workshop equipment required

♦ Torque wrenches - SAT 8010-



- ♦ Socket spanner TORX 1/2 T50 long point SAT 1006/8 50L-
- ◆ Polygonal adaptor U 40084-



#### Removing

- Remove alternator ⇒ page 15.
- Place the alternator in a vice using the appropriate points.
- Remove the protective hood of the poly-V belt free wheel pul-

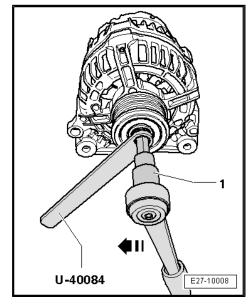




#### Note

The thread of the alternator shaft is a counter clockwise rotating thread. Therefore, when releasing, turn to the right and turn to the left, when tightening.

- Insert the multi-point adapter U 40084- into the Poly-V belt with the free running of the alternator using a ring spanner SW 17.
- Fit the TORX screwdriver insert SAT 1006/8 50L- into the alternator's shaft.
- Loosen the screw joints turning to the right (and locking with the polygonal spanner).
- Hold the poly-V belt free wheel pulley and turn the alternator axle until the pulley can be removed.



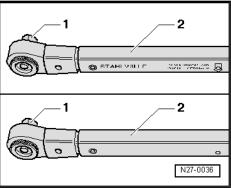
#### Installing

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

 Bolt the poly-V belt with freewheel pulley onto the alternator axle (screw in by hand until the stop).

To install the poly-V belt freewheel pulley, the torque wrench - SAT 8010- must be adapted as follows:

- Release the socket -1- and remove it from the handle -2-.
- Turn the handle -2- of the torque wrench 180° and place the socket.
- Set turning direction of torque wrench to anti-clockwise on socket drive.

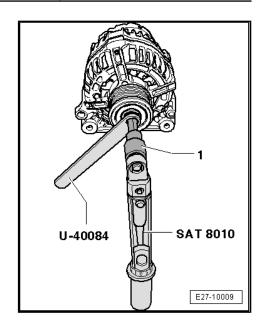




- Fit the TORX screwdriver insert SAT 1006/8 50L- into the alternator's shaft.
- Counterhold the multi-point adapter SAT 40084- using the ring spanner SW 17.
- Tighten the Poly-V belt pulley without freewheel sprocket: In order to do this, turn the alternator shaft to the left using the torque wrench - SAT 8010- .

#### **Specified torques**

◆ ⇒ "2.4.4 Tightening torques: Alternator", page 25



#### 2.6 Removing and installing voltage regula-

⇒ "2.6.1 Voltage regulator: removing and installing - manufacturer: Bosch .", page 31

 $\Rightarrow$  "2.6.2 Voltage regulator: removing and installing, manufacturer: Valeo .", page 32

#### 2.6.1 Voltage regulator: removing and installing - manufacturer: Bosch .

#### Special tools and workshop equipment required

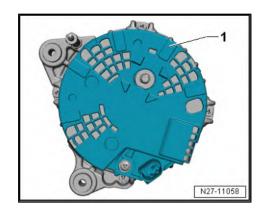
♦ Torque screwdriver - V.A.G 1624-



#### Removing

Remove alternator ⇒ page 15.

Carefully lever off protective cap -1- from alternator - C- .



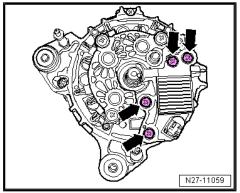
- Unscrew securing bolts -arrows- for voltage regulator C1- .
- Remove voltage regulator C1- from alternator C- .

#### Installing

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

#### **Specified torques**

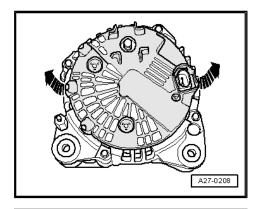
♦ ⇒ "2.4.1 Assembly overview - Valeo alternator", page 24



#### 2.6.2 Voltage regulator: removing and installing, manufacturer: Valeo .

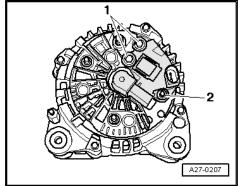
#### Removing

- Remove alternator <u>⇒ page 15</u>.
- Disengage cover of rear part of alternator from studs -arrows-.



- Unscrew bolt -1- and double bolt -2-.
- Remove voltage regulator.

#### Installing



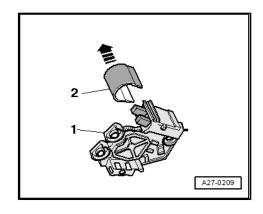


- Remove protective cap -2- of voltage regulator -1- by pressing in -direction of arrow-.
- When fitting the voltage regulator, take care that the brushes are correctly applied to the contact surfaces.
- Reattach protective cap on installed voltage regulator.

Perform remaining installation in reverse order of removal.

#### Specified torques

◆ ⇒ "2.4.1 Assembly overview - Valeo alternator", page 24



#### 3 Starter:

- ⇒ "3.1 Assembly overview starter", page 34
- ⇒ "3.2 Starter motor: removing and installing", page 35

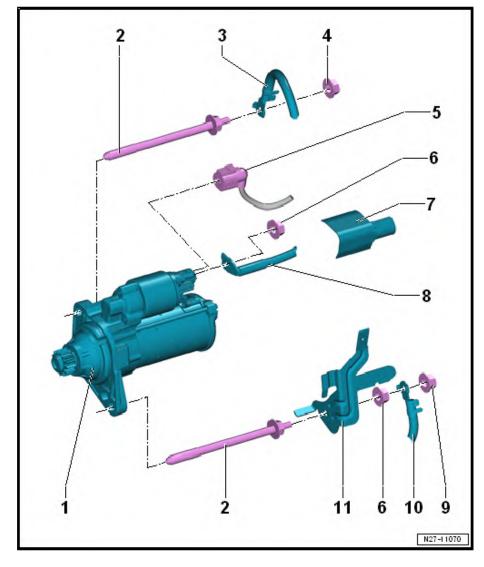
#### 3.1 Assembly overview - starter

⇒ "3.1.1 Exploded view - starter, vehicles with manual gearbox", page 34

⇒ "3.1.2 Exploded view - starter, vehicles with dual clutch gearbox", page 35

#### 3.1.1 Exploded view - starter, vehicles with manual gearbox

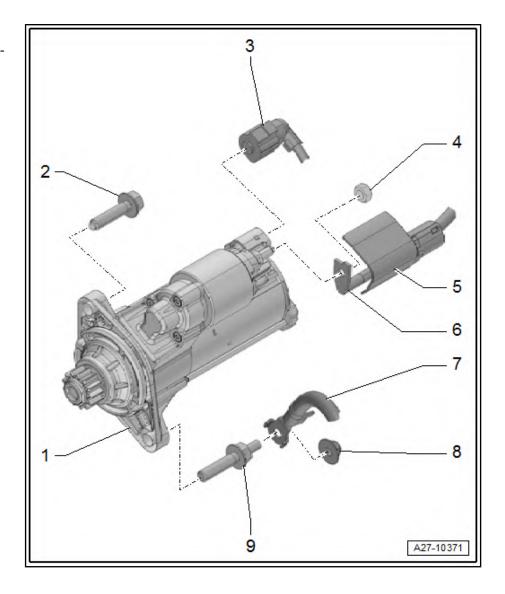
- 1 Starter: B-
  - □ Removal and installation ⇒ page 35
- 2 Screw
  - □ 80 Nm
- 3 Earth wire
  - Depending on equipment
- 4 Nut
  - Depending on equipment
  - □ 20 Nm
- 5 Electric connector
- 6 Nut
  - □ 20 Nm
- 7 Cover
- 8 Terminal 30/B+
- 9 Nut
  - Depending on equipment
  - □ 20 Nm
- 10 Earth wire
  - Depending on equipment
- 11 Bracket/bearing/support
  - ☐ For the cable harness



#### 3.1.2 Exploded view - starter, vehicles with dual clutch gearbox

#### 1 - Starter:

- ☐ Removal and installation ⇒ page 35
- 2 Screw
  - □ 80 Nm
- 3 Electric connector
- 4 Nut
  - □ 20Nm
- 5 Cap
- 6 Terminal 30/B+
- 7 Earth wire
- 8 Nut
  - □ 23 Nm
- 9 Screw
  - □ 80 Nm



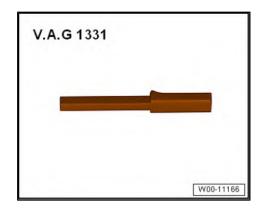
#### 3.2 Starter motor: removing and installing

- ⇒ "3.2.1 Installing and removing the starter, manual transmission, gasoline engine", page 35
- ⇒ "3.2.2 Installing and removing the starter, manual transmission, diesel engine", page 37
- $\Rightarrow$  "3.2.3 Removing and installing starter; vehicles with 1.8 I FSI engine and dual clutch gearbox", page 38

#### 3.2.1 Installing and removing the starter, manual transmission, gasoline engine

Special tools and workshop equipment required

Torque wrenches - VAG 1331-



Torque wrenches - VAG 1332-



#### Removing

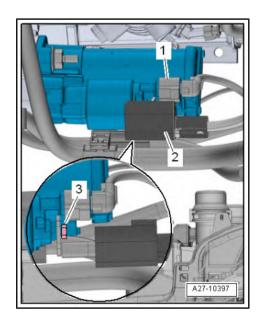
With the ignition switched off, disconnect battery earth cable <u>⇒ page 9</u> .

#### Only for engine type 1.8 I TSI

Remove air filter housing ⇒ Rep. gr. 23; Air filter; Removing and installing air filter housing.

#### Continued for all versions

- Unplug connector -1- by sliding locking element to rear and pressing down release catch.
- Press off cap -2-.
- Unscrew wire for terminal 30/B+ -3- from alternator.
- Remove the lower engine noise insulation ⇒ General body repairs, exterior; Rep. gr. 66; Noise insulation; removing and installing the noise insulation.



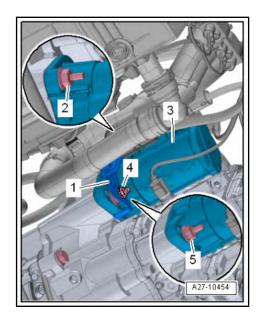


- Remove nut -4- and detach bracket -1- for electrical wiring. Wiring remains connected.
- Unscrew screws -2 and 5- and remove the -3- starter.

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

#### Specified torques

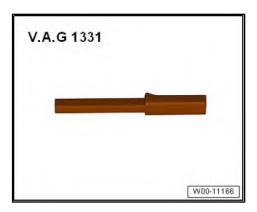
♦ ⇒ "3.1.1 Exploded view - starter, vehicles with manual gearbox", page 34



#### 3.2.2 Installing and removing the starter, manual transmission, diesel engine

#### Special tools and workshop equipment required

♦ Torque wrenches - VAG 1331-



♦ Torque wrenches - VAG 1332-

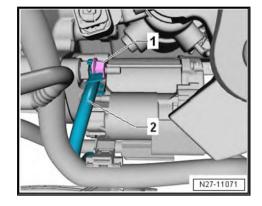


#### Removing

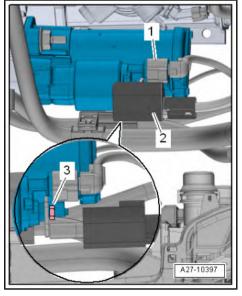
- With the ignition switched off, disconnect battery earth cable ⇒ page 9
- Remove air filter housing ⇒ Rep. gr. 23; Air filter; Removing and installing air filter housing.



- Remove nut -1- from upper securing bolt of starter. B- .
- Unbolt earth wire -2-.



- Pull out the plug -1-.
- Press off cap -2-.
- Unscrew nut -3- and remove terminal 30/B+.
- Remove the lower engine noise insulation ⇒ General body repairs, exterior; Rep. gr. 66; Noise insulation; removing and installing the noise insulation.



Remove nut -4- and push bracket -1- of the wiring harness.



#### Note

Leave electrical wiring connected.

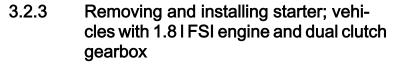
- Unscrew the screws -2- and -5- of the starter B- -3-.
- Remove the starter B- -3-.

#### Installing

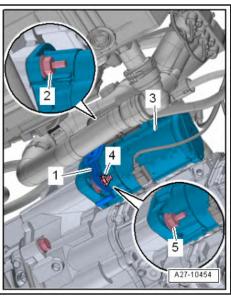
Installation is carried out in the reverse sequence; note the following:

#### **Specified torques**

♦ "3.1.1 Exploded view - starter, vehicles with manual gearbox", page 34



Special tools and workshop equipment required





◆ Torque wrenches - VAG 1331-

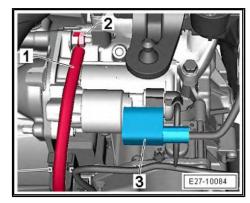


♦ Torque wrenches - VAG 1332-



#### Removing

- With the ignition switched off, disconnect battery earth cable <u>⇒ page 9</u> .
- Remove air filter housing ⇒ Rep. gr. 23; Air filter; Removing and installing air filter housing .
- Remove nut -2-.
- Unbolt earth wire -1-.
- Press off cap -3-.



- Unplug connector -4- by sliding locking element to rear and pressing down release catch.
- Unscrew the nut of terminal 30/B+ -5- on the starter.
- Unscrew screws -1 and 2- and move the -3- starter up.

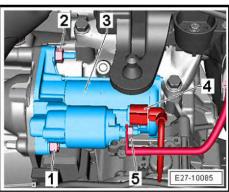
#### Installing

Installation is carried out in the reverse sequence; note the fol-

Connect battery. Steps required ⇒ page 10.

#### Specified torques

⇒ "3.1.2 Exploded view - starter, vehicles with dual clutch gearbox", page 35



#### 4 Start-Stop System

#### ⇒ "4.1 General description - start/stop system", page 40

#### 4.1 General description - start/stop system

#### 1 - Alternator

Removal and installation ⇒ page 15

# 2 - Onboard supply control unit - J519-

□ Removal and installation ⇒ page 274

#### 3 - Instrument cluster

□ Removal and installation ⇒ page 50

# 4 - Switch for Start Stop Operation

□ Removal and installation ⇒ page 236

# 5 - Battery monitoring control unit - J367-

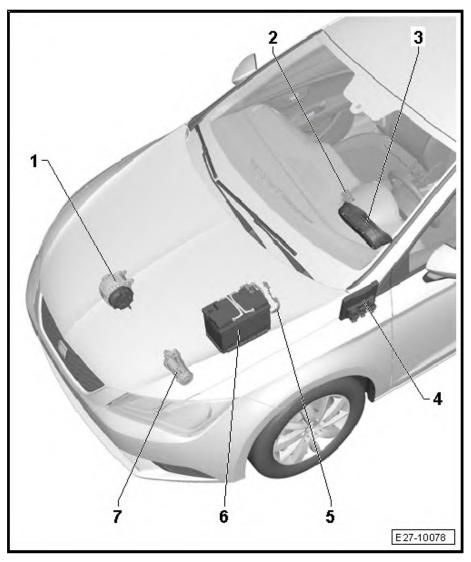
- □ Removal and installation ⇒ page 12
- Adaptation ⇒ page 13

#### 6 - Battery:

□ Removal and installation ⇒ page 5

#### 7 - Starter:

□ Removal and installation ⇒ page 34





#### 5 Adaptive cruise control

- ⇒ "5.1 Components of Adaptive Cruise Control", page 41
- $\Rightarrow$  "5.2 Removing and installing the automatic distance control unit", page 42
- ⇒ "5.3 Calibrating adaptive cruise control", page 48

#### 5.1 **Components of Adaptive Cruise Control**

⇒ "5.1.1 Fitting location overview - adaptive cruise control", page

#### 5.1.1 Fitting location overview - adaptive cruise control

- 1 Adaptive cruise control unit - J428-
  - Assembly overview ⇒ page 48
- 2 ACC button E357-
  - Combined component with steering column switch module. Cannot be renewed individually.
  - ☐ Switch module: remove and install ⇒ page 175
- 3 Instrument cluster KX2-
  - ☐ With control unit in dash panel insert - J285-
  - Removal and installation ⇒ page 50



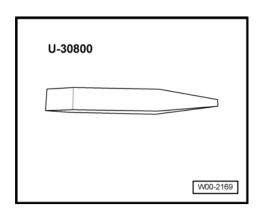
# 5.2 Removing and installing the automatic distance control unit

- ⇒ "5.2.1 Removing and installing the automatic distance control unit", page 42
- ⇒ "5.2.2 Radar holder for the adaptive cruise control unit J428 : remove and install", page 43
- ⇒ "5.2.3 Removing and installing trim for radar sensor", page 44
- ⇒ "5.2.4 Settings of the studs on the adapter", page 45
- ⇒ "5.2.5 Remove and install adapter", page 46
- ⇒ "5.2.6 Assembly overview adaptive cruise control unit J428 ", page 48

# 5.2.1 Removing and installing the automatic distance control unit

Special tools and workshop equipment required

♦ Lever - U30800-



◆ Torque wrenches - VAG 1331-





Note

For greater clarity the bumper grille is not depicted in the illustration.

#### Removing

Switch off ignition and all electrical consumers.

#### Vehicles without access and start authorisation system

Remove ignition key, if fitted.

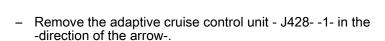


#### Vehicles with access and start authorisation system

Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

#### Continued for all vehicles

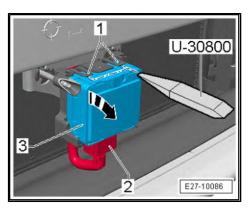
- Removing trim for radar sensor ⇒ page 44.
- Pull out the plug -2-.
- Prise out the securing tabs -1- with the aid of the lever -U30800- in order to free the centre nipple.
- Turn the adaptive cruise control unit J428- -3- in the -direction of the arrow-.

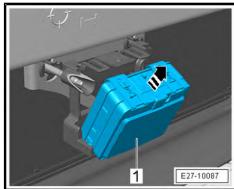


#### Installing

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

Calibrate adaptive cruise control ⇒ page 48.





#### 5.2.2 Radar holder for the adaptive cruise control unit - J428- : remove and install

#### Special tools and workshop equipment required

Calliper square - VAS 6335-



#### Note

- For greater clarity the bumper grille is not depicted in the illustration.
- Completely remove the adaptive cruise control unit assembly - J428- .

#### Removing

Switch off ignition and all electrical consumers.

#### Vehicles without access and start authorisation system

- Remove ignition key, if fitted.

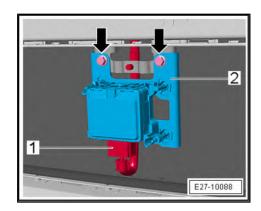
#### Vehicles with access and start authorisation system

Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

#### Continued for all vehicles

Removing trim for radar sensor ⇒ page 44.

- Pull out the plug -1-.
- Unscrew bolts -arrows-.
- Lay the adaptive cruise control unit assembly J428- -2- on a workbench.



E27-10089

- Release the fasteners -1- in the -direction of the arrow-.
- Remove the fasteners -1- from the studs -2-.
- Remove the radar holder -3- from the assembly -4- adapter/ adaptive cruise control unit - J428- .

#### Installing

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



#### Note

- Replace the fasteners -1-.
- The studs -1- on the adapter are pre-set. If necessary, adjust the setting <del>⇒ page 45</del>.

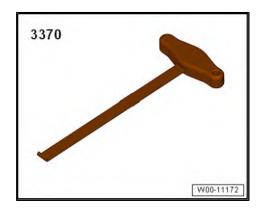
#### **Specified torques**

⇒ "5.2.6 Assembly overview - adaptive cruise control unit J428 page 48

#### 5.2.3 Removing and installing trim for radar sensor

#### Special tools and workshop equipment required

◆ Lever for the front-end - 3370-



#### Removing

- Switch off ignition and all electrical consumers.

#### Vehicles without access and start authorisation system

Remove ignition key, if fitted.



#### Vehicles with access and start authorisation system

 Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

#### Continued for all vehicles

 Insert the lever for the front end - 3370- in the side recess and pull not too strongly in the -direction of the arrow-.



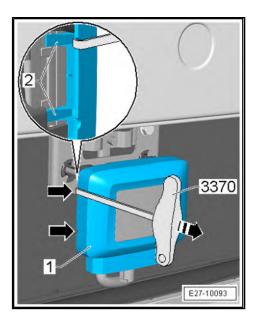
#### Note

For greater clarity the bumper grille is not depicted in the illustration.

- Remove with the fixing lugs -2- on both sides.

#### Installing

Installation takes place in reverse order.



#### 5.2.4 Settings of the studs on the adapter

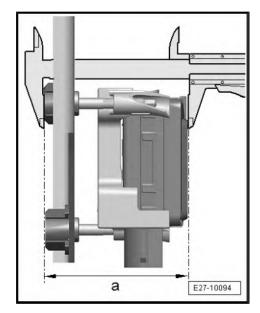
#### Special tools and workshop equipment required

Gauges for measuring spacing - VAS 6335-

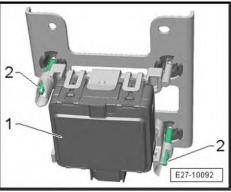
In order to measure the adjustment dimension and be able to carry out adjustment the assembly adaptive cruise control unit assembly consisting of the following components - J428- must be fitted:

- ◆ Fasteners ⇒ Item 7 (page 48)
- ◆ Radar holder ⇒ Item 6 (page 48)
- ♦ Studs ⇒ Item 4 (page 48)
- Adapters ⇒ Item 3 (page 48)
- Adaptive cruise control unit J428- ⇒ Item 2 (page 48)
- Lay the adaptive cruise control unit assembly J428- down on a soft and clean surface.

- With a sliding calliper measure VAS 6335- the setting dimension -a- on all studs and adjust if necessary.
- Setting dimension -a-= 68.2 mm



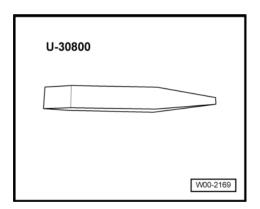
Adjuster screws -2- of the adaptive cruise control unit - J428-



#### 5.2.5 Remove and install adapter

Special tools and workshop equipment required

♦ Lever - U30800-





◆ Torque wrenches - VAG 1331-



♦ Calliper square - VAS 6335-

#### Removing

Switch off ignition and all electrical consumers.

#### Vehicles without access and start authorisation system

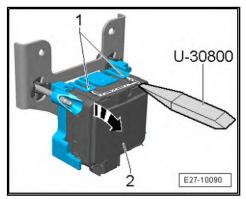
- Remove ignition key, if fitted.

#### Vehicles with access and start authorisation system

Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

#### Continued for all vehicles

- Disconnect ignition and all electrical loads, and remove ignition key.
- Remove the radar holder for the adaptive cruise control unit -J428- <u>⇒ page 43</u> .
- Prise out the securing tabs -1- with the aid of the lever -U30800- and move the adaptive cruise control unit - J428--2- in -the direction of the arrow-.



Remove the adaptive cruise control unit - J428- -2- from the adapter -1- in -the direction of the arrow-.

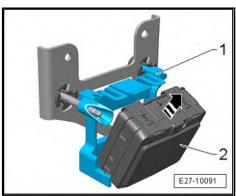
#### Installing

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



#### Note

- Replace the fasteners ⇒ Item 7 (page 48).
- The studs ⇒ Item 4 (page 48) on the adapter are pre-set. If necessary, adjust the setting ⇒ page 45.



#### 5.2.6 Assembly overview - adaptive cruise control unit - J428-



#### Note

For greater clarity the bumper grille is not depicted in the illustration.

#### 1 - Cover

Removal and installation ⇒ page 44

#### 2 - Adaptive cruise control unit - J428-

- □ Removal and installation ⇒ page 42
- □ Calibrating ⇒ page 48

#### 3 - Adapter

- □ Removal and installation <u>⇒ page 46</u>
- Measure adjustment and adjust if necessary <u>⇒ page 45</u> .

#### 4 - Threaded pins

- 2 units.
- ☐ If adjustment is completed, stud setting must not be changed anymore.
- Measure adjustment and adjust if necessary <u>⇒ page 45</u> .

#### 5 - Screw

- □ 2 units.
- □ 8 Nm

#### 6 - Radar holder

Removal and installation ⇒ page 43

#### 7 - Mounting clips

- 3 units.
- □ Renew

#### 8 - Electric connector

#### 9 - Front bumper bracket

 $\Box$  On the front cross member, see  $\Rightarrow$  ETKA.

# 9 E 27-10096

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

#### 5.3 Calibrating adaptive cruise control

#### Requirements

- The adaptive cruise control unit J428- needs to be calibrated if the following conditions apply:
- Adaptive cruise control unit J428- has been removed and then reinstalled or it has been renewed.



- Bumping into adaptive cruise control unit J428- due to incautious installation of front bumper carrier.
- Damage to the front bumper carrier as a result of a front-end collision or similar.
- The front bumper carrier has been removed and then reinstalled or it has been renewed.
- ♦ Rear axle toe has been adjusted.



#### Note

- Excessive horizontal adjustment of the adaptive cruise control unit - J428- results in permanent deactivation of the functions ACC/front scan system. This is displayed in the dash panel insert - KX2- by the following message: ACC / FrontAssist not available.
- Limited sensor functionality due to soiling or weather conditions such as heavy rain, snowfall, sensor icing etc. results in a temporary non-availability of the functions ACC/front scan system. This is displayed in the dash panel insert - KX2- by the following message: ACC / FrontAssist: Sensor without view.
- Calibrate adaptive cruise control ⇒ Running gear, axles, steering; Rep. gr. 44; Adaptive cruise control; Calibrating adaptive cruise control.

### 90 – Gauges, instruments

#### 1 Instrument cluster

 $\Rightarrow$  "1.1 Installing and removing the KX2 dashboard instrument cluster", page 50

#### 1.1 Installing and removing the KX2 dashboard instrument cluster

Special tools and workshop equipment required

◆ Lever for the front-end - 3370-





#### Note

- All control lights in the dashboard instrument cluster are equipped with LEDs. LEDs cannot be renewed separately if defective. The instrument cluster must be renewed.
- ♦ The dash panel insert must not be dismantled.
- When removing dash panel insert, it is not necessary to remove steering wheel.

#### Removing

- Switch off ignition and all electrical consumers.

#### Vehicles without access and start authorisation system

Remove ignition key, if fitted.

#### Vehicles with access and start authorisation system

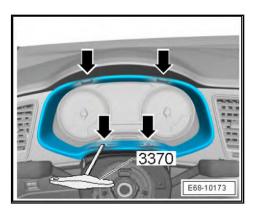
 Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

#### Continued for all vehicles

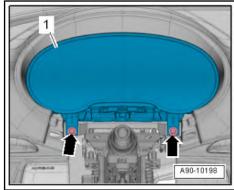
 Move steering wheel down and to rear as far as possible, making use of full range of steering column adjuster.



Remove the trim of the dash panel insert using the lever for the front end - 3370- at the points shown -arrow-.



- Unscrew bolts -arrows-.
- Pull out dash panel insert -1- until it makes contact with steering wheel.
- Disconnect connector.



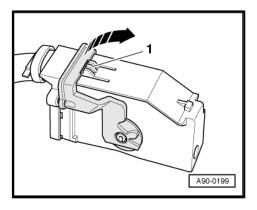
- Unplug electrical connector by releasing catch -1- and moving retaining clip in direction of -arrow-.
- Take out dash panel insert towards front passenger side between steering wheel and dash panel.

#### Installing

Installation takes place in reverse order.

#### **Specified torques**

◆ Tightening torque of the dash panel insert screws: 2.5 Nm



#### 2 Horn

- ⇒ "2.1 Assembly overview horn", page 52
- ⇒ "2.2 Tweeter H2 / Woofer H7: installing and removing", page 53

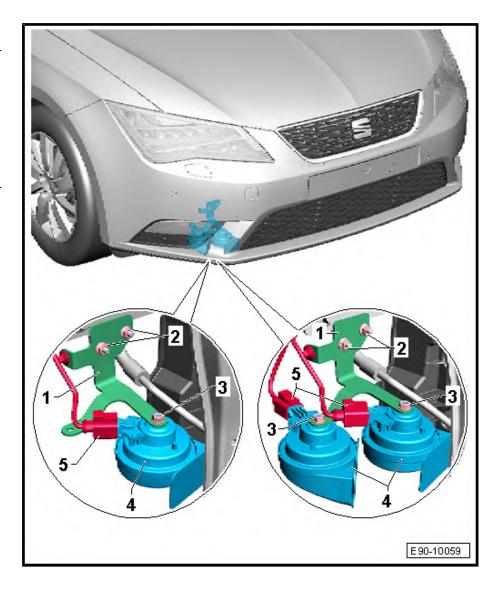
#### 2.1 Assembly overview - horn

- ⇒ "2.1.1 Assembly overview Horn, vehicles with horns on the right longitudinal chassis beam", page 52
- ⇒ "2.1.2 Assembly overview Horn, vehicles with horns on both longitudinal chassis beams", page 53

# 2.1.1 Assembly overview - Horn, vehicles with horns on the right longitudinal chassis beam

#### 1 - Bracket/bearing/support

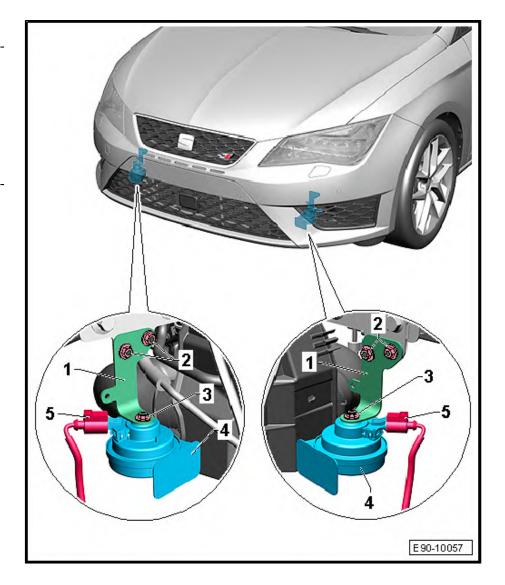
- □ Removal and installation ⇒ page 53
- 2 Nuts
  - □ 13 ± 2 Nm
- 3 Nut
  - □ 10 ± 2 Nm
- 4 Horns
  - □ Removal and installation ⇒ page 53
- 5 Electric connector



#### 2.1.2 Assembly overview - Horn, vehicles with horns on both longitudinal chassis beams

#### 1 - Bracket/bearing/support

- ☐ Removal and installation ⇒ page 54
- 2 Nuts
  - □ 13 ± 2 Nm
- 3 Nut
  - □ 10 ± 2 Nm
- 4 Horns
  - □ Removal and installation ⇒ page 54
- 5 Electric connector



#### 2.2 Tweeter H2 / Woofer H7: installing and removing

⇒ "2.2.1 Installing and removing tweeter H2 / woofer H7, vehicles with horns on the right longitudinal chassis beam", page 53

⇒ "2.2.2 Installing and removing tweeter H2 / woofer H7, vehicles with horns on both longitudinal chassis beams", page 54

#### 2.2.1 Installing and removing tweeter H2 / woofer H7, vehicles with horns on the right longitudinal chassis beam

#### Removing

- Switch off ignition and all electrical consumers.

#### Vehicles without access and start authorisation system

Remove ignition key, if fitted.

#### Vehicles with access and start authorisation system

 Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

#### Continued for all vehicles

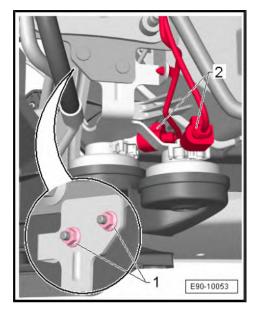
- Place the vehicle on a lifting platform.
- Remove the lower engine noise insulation ⇒ General body repairs, exterior; Rep. gr. 66; Noise insulation; removing and installing the noise insulation.
- Unscrew the fixing nuts -1- of the horn bracket on the bodywork.
- Unplug electrical connectors -2-.
- Unit bracket Remove the signal horn.

#### Installing

Installation is carried out in reverse order.

#### **Specified torques**

⇒ "2.1.1 Assembly overview - Horn, vehicles with horns on the right longitudinal chassis beam", page 52



# 2.2.2 Installing and removing tweeter H2 / woofer H7, vehicles with horns on both longitudinal chassis beams



#### Note

Removal and installation are described for the left side. Removal and installation on the right side are carried out laterally reversed in the same way.

#### Removing

- Switch off ignition and all electrical consumers.

#### Vehicles without access and start authorisation system

Remove ignition key, if fitted.

#### Vehicles with access and start authorisation system

 Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

#### Continued for all vehicles

- Place the vehicle on a lifting platform.
- Remove the left front wheel ⇒ Rep. gr. 44; Rims and Tyres.
- Remove the spoiler on the front left wheel well ⇒ Chassis external assembly work; Rep. gr. 66; Wheel well liner.
- Remove the lower engine noise insulation ⇒ General body repairs, exterior; Rep. gr. 66; Noise insulation; removing and installing the noise insulation.



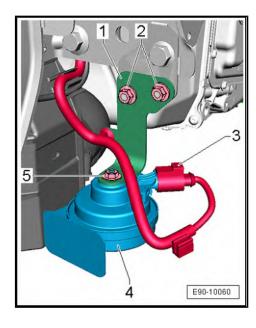
- Unplug the electrical connector -3-.
- Remove fixing nut-5- of signal horn.
- Take out the signal horn -4-.
- Unscrew nuts -2-.
- Take out the signal horn retainer -1-.

#### Installing

Installation is carried out in reverse order.

#### Specified torques

⇒ "2.1.2 Assembly overview - Horn, vehicles with horns on both longitudinal chassis beams", page 53



## 92 – Windscreen wash/wipe system

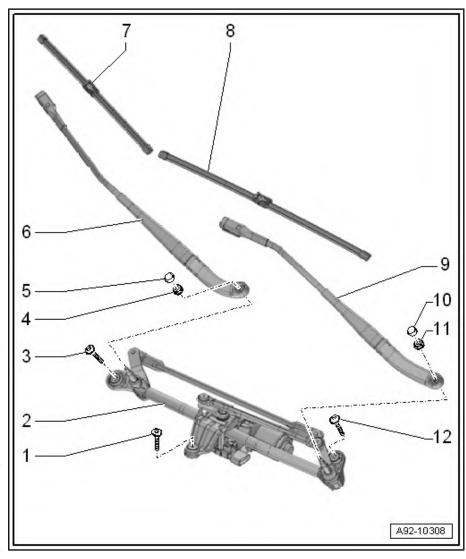
#### 1 Windscreen wiper

- ⇒ "1.1 Assembly overview windscreen wiper system", page 56
- ⇒ "1.2 Moving windscreen wipers to service position", page 57
- ⇒ "1.3 Removing and installing wiper blade", page 57
- ⇒ "1.4 Removing and installing wiper arms", page 58
- ⇒ "1.5 Adjusting windscreen wiper arms", page 59
- ⇒ "1.6 Removing and installing windscreen wiper motor V", page 61
- ⇒ "1.7 Deactivating APP function of wiper motor", page 61
- ⇒ "1.8 Removing and installing rain and light sensor", page 62

#### 1.1 Assembly overview - windscreen wiper system

#### 1 - Screw

- ☐ Tightening sequence ⇒ page 57
- 2 Wiper motor V-
  - ☐ With wiper motor control unit J400-
  - ☐ Switch-off the APS ⇒ page 61
  - □ Removal and installation ⇒ page 61
- 3 Screw
  - ☐ Tightening sequence ⇒ page 57
- 4 Nut
  - □ 18 Nm + <sub>-</sub> 2
- 5 Cap
- 6 Wiper arm, passenger's side (LHD)
  - ☐ Different length ⇒ Electronic parts catalogue
  - □ Removal and installation ⇒ page 58
  - □ Adjusting ⇒ page 59
- 7 Wiper blade, passenger's side (LHD)
  - □ Different length ⇒ Electronic parts catalogue
  - □ Replace ⇒ page 57
- 8 Wiper blade, driver's side (LHD)
  - ☐ Different length ⇒ Electronic parts catalogue
  - □ Replace ⇒ page 57





#### 9 - Wiper arm, driver's side (LHD)

- ☐ Different length ⇒ Electronic parts catalogue
- ☐ Removal and installation ⇒ page 58
- Adjusting ⇒ page 59

10 - Cap

11 - Nut

□ 18 Nm + <sub>-</sub> 2

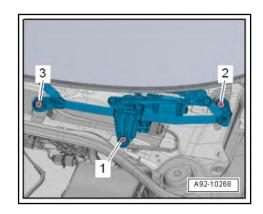
12 - Screw

☐ Tightening sequence ⇒ page 57

#### Wiper motor - tightening torque and tightening sequence

- Tighten bolts in stages in sequence shown:

phase	Bolts	Tightening torque
1	-2,3 and 1-	Screw in bolts by hand until they make contact
2	-2, 3 and 1-	10Nm <sup>+</sup> <sub>-</sub> 1



#### 1.2 Moving windscreen wipers to service position



Note

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

- At sub-zero temperatures, first check that the wiper blades are not frozen onto the glass.
- Switch on ignition briefly and then switch off.
- Operate "touch wipe" function within 10 seconds.
- The wipers will run to the "service position".



#### Caution

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

- ♦ Do not move the vehicle when the wiper arms are lifted up off the windscreen.
- The windscreen wipers automatically run back to the park position when the wiper switch is operated or when road speed exceeds 6 km/h.

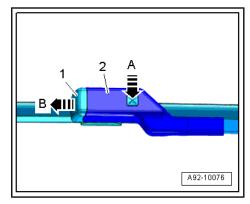
#### 1.3 Removing and installing wiper blade

#### Removing

Move windscreen wipers to service position  $\Rightarrow$  page 57.



- Lift wiper arm off windscreen.
- Push the retainer -arrow A- and pull on the wiper blade -1-, as far as it will go. Bend the wiper blade and take it out of the wiper arm -2- -arrow B-.
- Detach wiper blade.



#### Installing



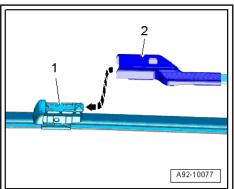
#### Caution

Risk of damage to body.

◆ The wiper blades for driver's and front passenger's side have different lengths.

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

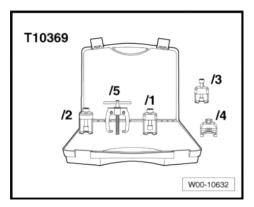
- Guide wiper blade -1- into wiper arm -2- in parallel position -arrow-. Make sure that retaining clip on wiper blade engages audibly in wiper arm when fitting wiper blade.
- The wipers will leave the "service position" when you operate the switch for the windscreen wipers or when road speed exceeds 6 km/h.



#### 1.4 Removing and installing wiper arms

Special tools and workshop equipment required

◆ Tool kit for wiper arms - T10369-



#### Removing



#### Caution

Risk of damage to wiper shafts

♦ The wiper shafts can be damaged if you attempt to detach the wiper arms without using the puller - T10369/1-.

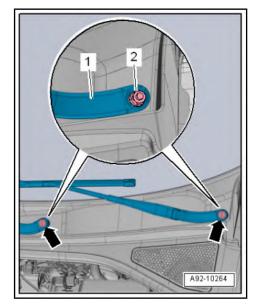




#### Note

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

- Move windscreen wipers to service position <u>⇒ page 57</u>.
- Pry cover caps -arrows- off wiper arms -1- with a screwdriver.
- Slacken nuts -2- a few turns.



- Apply puller T10369/1- at wiper arm -1- as shown in illustra-
- Apply thrust piece -2- at wiper shaft.
- Turn bolt -3- clockwise until wiper arm is clear of wiper shaft.
- Remove nuts and detach wiper arms.

#### Installing



#### Caution

Risk of damage to body.

The wiper arms for driver's and front passenger's side have different lengths.

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

Adjust windscreen wiper arms ⇒ page 59.

#### 1.5 Adjusting windscreen wiper arms

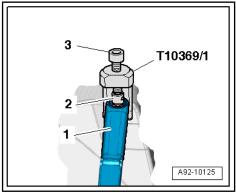
#### Operation process



#### Note

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

Remove wiper arms ⇒ page 58.



- Switch on ignition.
- Actuate "touch wipe" function and allow wiper motor to move to end position.



#### Note

- Every second time the wiper motor is switched off it runs back slightly after reaching the end position, which turns the lip of the wiper blade in the opposite direction.
- ♦ The wiper motor moves the wiper arms down beyond their end position and then back up slightly. This slightly raised position must not be used when aligning the wiper crank.
- You must use the end setting at which the wiper motor moves directly to its park position (without returning). Operate the "touch-wipe" function again as necessary.

#### Removing

- Switch off ignition and all electrical consumers.

#### Vehicles without access and start authorisation system

- Remove ignition key, if fitted.

#### Vehicles with access and start authorisation system

 Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

#### Continued for all vehicles

- Attach wiper arm to wiper shaft with wiper blade fitted and align wiper blade on windscreen as follows:
- Before screwing off the windscreen wiper arms, the wiper blades must be positioned on the markings of the windscreen -a- and -b-.



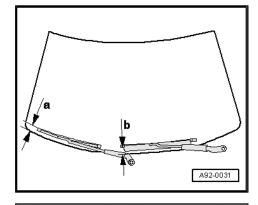
#### Note

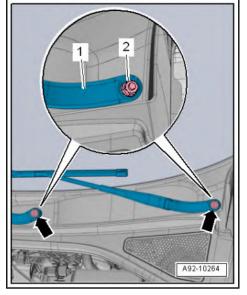
Dimensions indicate distance between tips of wiper blades and plenum chamber cover at bottom edge of windscreen.

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

#### Specified torques

♦ "1.1 Assembly overview - windscreen wiper system", page 56







#### 1.6 Removing and installing windscreen wiper motor V

#### Removing

- Remove wiper arms  $\Rightarrow$  page 58.
- Remove bolts -1, 3, 5-.
- Take wiper frame -2- with linkage and wiper motor out of plenum chamber.
- Unplug the electrical connector -4-.

#### Installing

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

Fit wiper motor with wiper frame in vehicle.

#### **Specified torques**

- ⇒ Fig. ""Wiper motor tightening torque and tightening se-<u>quence"", page 57</u>
- ⇒ "1.5 Adjusting windscreen wiper arms", page 59

#### 1.7 Deactivating APP function of wiper mo-

The windscreens wiper system is equipped with APP function (alternating park position).

With the APP function, the wiper is moved up slightly once it has reached the lowest position. This occurs every second time the wiper system is switched off.

To fit the motor crank on the wiper motor, it is necessary for the motor to be in the lowest park position. To ensure this position is reached, the APP function must be deactivated.



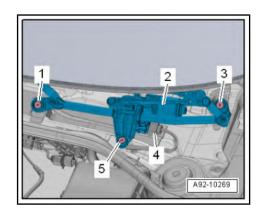
#### Note

- The APP function cannot be activated.
- After 100 cycles of wiper movement, the APP function is activated automatically. This applies to wiper motors on which the APP function has been deactivated and also to new wiper mo-
- Connecting diagnosis tester ⇒ page 282.
- Deactivate APP function of wiper motor ⇒ Vehicle diagnostic tester.



#### Note

Following successful completion of APP function coding / deactivation, the wiper motor is located in the lower park position after the next wipe cycle.



# 1.8 Removing and installing rain and light sensor

- ⇒ "1.8.1 Removing and installing rain and light sensor G397, vehicles with front camera for driver assist systems", page 62
- ⇒ "1.8.2 Removing and installing rain and light sensor G397, vehicles without front camera for driver assist systems", page 64
- ⇒ "1.8.3 Repairing rain and light sensor G397 , TRW", page 67
- ⇒ "1.8.4 Repairing rain and light sensor G397 , Valeo", page 68
- 1.8.1 Removing and installing rain and light sensor G397-, vehicles with front camera for driver assist systems



#### Note

- ♦ The rain and light sensor has a silicon layer (coupling pad) which forms the contact surface to the windscreen.
- The rain and light sensor has been designed so that it can be used again. A prerequisite for re-use is that the coupling pad is not damaged or dirty (check!).

#### Removing

Switch off ignition and all electrical consumers.

#### Vehicles without access and start authorisation system

Remove ignition key, if fitted.

#### Vehicles with access and start authorisation system

 Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

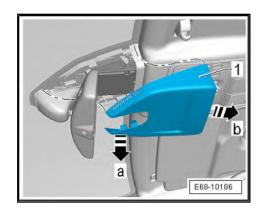
#### Continued for all vehicles

 Cover -1- of the front camera support is pushed downward -Arrow A- unclip and remove -Arrow A-.



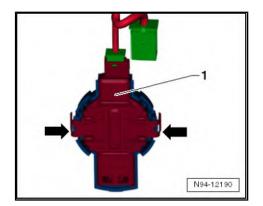
#### Note

Wait at least 1 minute after releasing the retaining clip. This is necessary to ensure that the silicone coating is relieved of tension and will not be damaged during removal.





- Release retaining clip on left and right -arrows-.
- Carefully lever out rain and light sensor G397- -1- from retaining frame on windscreen, starting from the top.

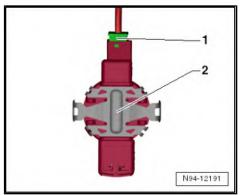


 Release and pull off connector -1- and remove rain and light sensor - G397- -2-.



#### Caution

Until the time comes to reinstall it, store removed rain and light sensor - G397- in a place where the coupling pad cannot be damaged or soiled from dust, etc.



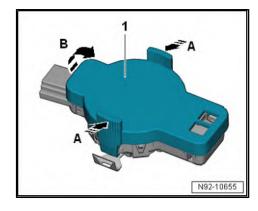
#### Installing

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



#### Caution

- Prior to installation, thoroughly clean the surface of the windscreen inside the retaining frame for rain and light sensor - G397-. Any remains of coupling pad adhering to the windscreen must be completely removed.
- The surface (coupling pad) of the rain and light sensor -G397- must not be soiled on installation. A sensor with damaged coupling pad must be renewed ⇒ page 67.





#### Note

If the surface of the coupling pad on the rain and light sensor - G397- is soiled, it may be possible to clean it by "sticking on" and then "pulling off" one or more adhesive strips.

- Clean windscreen within retaining plate thoroughly.
- If necessary, remove protective cap -1- from new rain and light sensor - G397- .
- Press grip in direction of arrow -A-.
- Remove protective cap -1- in direction of arrow -B-.

- Reconnect connector.
- Insert rain and light sensor G397- -1- into retaining frame on windscreen.
- Push retaining clip on both sides -arrows- so that it can be heard to engage.



#### Note

- Even when sensor is installed correctly, small air bubbles may first appear between windscreen and coupling pad. After approx. 10 minutes, the contact surface must be free of bubbles.
- If the contact surface is not free of bubbles after 10 minutes, the rain and light sensor - G397- must be removed and installed anew.
- Air bubbles between the windscreen and coupling pad can lead to malfunctions in the rain and light sensor - G397- .
- If rain and light sensor G397- was replaced, perform coding ⇒ page 64.

#### Code the rain and light sensor - G397-

- Connect vehicle diagnostic tester ⇒ Vehicle diagnostic tester.
- Coding rain and light sensor G397- ⇒ Vehicle diagnostic tester.

#### 1.8.2 Removing and installing rain and light sensor - G397-, vehicles without front camera for driver assist systems



#### Note

- The rain and light sensor has a silicon layer (coupling pad) which forms the contact surface to the windscreen.
- The rain and light sensor has been designed so that it can be used again. A prerequisite for re-use is that the coupling pad is not damaged or dirty (check!).

#### Removing

- Switch off ignition and all electrical consumers.

#### Vehicles without access and start authorisation system

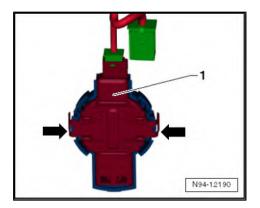
Remove ignition key, if fitted.

#### Vehicles with access and start authorisation system

Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

#### Continued for all vehicles

Remove centre console ⇒ General body repairs, interior; Rep. gr. 68; Centre console; Removing and installing centre console.



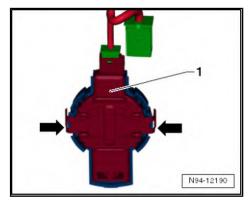




#### Note

Wait at least 1 minute after releasing the retaining clip. This is necessary to ensure that the silicone coating is relieved of tension and will not be damaged during removal.

- Release retaining clip on left and right -arrows-.
- Carefully lever out rain and light sensor G397- -1- from retaining frame on windscreen, starting from the top.

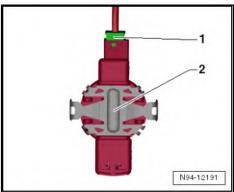


Release and pull off connector -1- and remove rain and light sensor - G397- -2-.



#### Caution

Until the time comes to reinstall it, store removed rain and light sensor - G397- in a place where the coupling pad cannot be damaged or soiled from dust, etc.



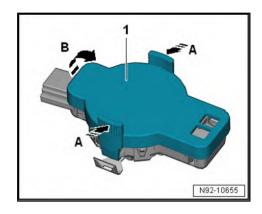


Installation is carried out in the reverse sequence; note the following:



#### Caution

- Prior to installation, thoroughly clean the surface of the windscreen inside the retaining frame for rain and light sensor - G397-. Any remains of coupling pad adhering to the windscreen must be completely removed.
- The surface (coupling pad) of the rain and light sensor -G397- must not be soiled on installation. A sensor with damaged coupling pad must be renewed.





#### Note

If the surface of the coupling pad on the rain and light sensor - G397- is soiled, it may be possible to clean it by "sticking on" and then "pulling off" one or more adhesive strips.

- Clean windscreen within retaining plate thoroughly.
- If necessary, remove protective cap -1- from new rain and light sensor - G397- .
- Press grip in direction of arrow -A-.
- Remove protective cap -1- in direction of arrow -B-.
- Reconnect connector.
- Insert rain and light sensor G397- -1- into retaining frame on windscreen.
- Push retaining clip on both sides -arrows- so that it can be heard to engage.

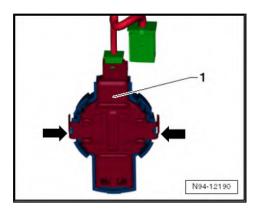


#### Note

- Even when sensor is installed correctly, small air bubbles may first appear between windscreen and coupling pad. After approx. 10 minutes, the contact surface must be free of bubbles.
- If the contact surface is not free of bubbles after 10 minutes, the rain and light sensor - G397- must be removed and installed anew.
- ♦ Air bubbles between the windscreen and coupling pad can lead to malfunctions in the rain and light sensor G397-.
- If rain and light sensor G397- was replaced, perform coding
   ⇒ page 66

#### Code the rain and light sensor - G397-

- Connect vehicle diagnostic tester ⇒ Vehicle diagnostic tester.
- Coding rain and light sensor G397- ⇒ Vehicle diagnostic tester.





### 1.8.3 Repairing rain and light sensor - G397-, TRW

There are different housings depending on the make of rain sensor.

The rain sensor housing with lens unit is always supplied as a replacement in individual parts with retaining clips. On vehicles for which these retaining clips are not required, the clips must be removed.

Carry out the following work:

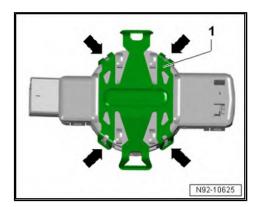
Remove rain sensor ⇒ page 62.



#### Caution

The rain sensor electronics could become damaged.

- ♦ When separating the housing parts, do not insert the screwdriver up to the rain sensor electronics.
- ♦ Do not touch the rain sensor electronics.
- Release 4 locking lugs -arrows- of retaining clip -1- using a suitable screwdriver, and remove retaining clip.



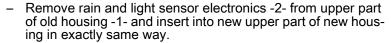
 Separate upper part of housing -1- together with lens unit from bottom part of housing -2- by releasing retaining lugs -arrows- on both sides.



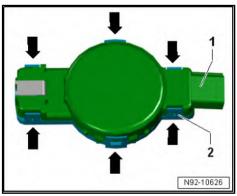
#### Caution

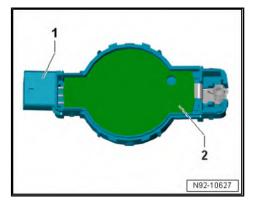
The lens unit of the rain and light sensor may become damaged.

♦ Do not touch the lens unit.



- Engage upper part of housing with lens unit and protective cover with lower part of housing.
- Install rain sensor ⇒ page 62.





## 1.8.4 Repairing rain and light sensor - G397-, Valeo

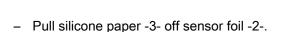
- Remove rain and light sensor G397- ⇒ page 62.
- Carefully remove sensor foil -2- or any sensor foil residues from rain and light sensor - G397- -1-.



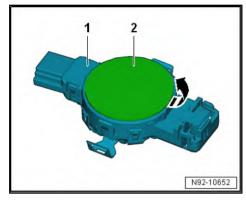
#### Caution

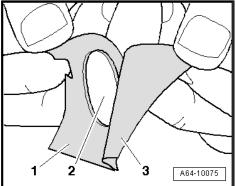
The surfaces of the sensor must be completely free of remnants of foil.

Clean sensor surfaces with cleaning solution D 009 401 04.

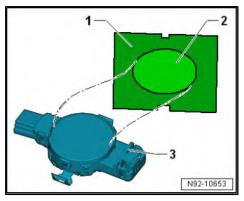


The transparent protective foil -1- remains initially on sensor foil as an assembly aid.

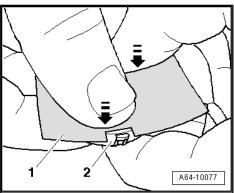




 Place sensor foil on rain and light sensor -2- with aid of transparent protective film -1-.

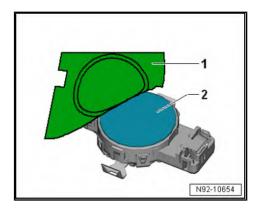


 Press sensor foil through protective film -1- onto rain and light sensor -2- making sure there are no air bubbles.





- Peel transparent protective film -1- off sensor foil -2-.
- Install rain sensor ⇒ page 62.



#### 2 Windscreen washer

- ⇒ "2.1 Assembly overview windscreen washer system", page 70
- ⇒ "2.2 Removing and installing headlamp washer reservoir", page 73
- ⇒ "2.3 Removing and installing windscreen washer fluid level sender", page 80
- ⇒ "2.4 Removing and installing windscreen washer pump", page 81
- ⇒ "2.5 Removing and installing spray jets", page 83
- ⇒ "2.6 Jet adjustment", page 84
- 2.1 Assembly overview windscreen washer system
- $\Rightarrow$  "2.1.1 Assembly overview windscreen wiper system, vehicles without additional left cooler", page 70
- ⇒ "2.1.2 Assembly overview windscreen wiper system, vehicles with additional left cooler", page 72
- 2.1.1 Assembly overview windscreen wiper system, vehicles without additional left cooler



#### 1 - Windscreen and headlamp washer reservoir

Removal and installation ⇒ page 74

#### 2 - Nut

- ☐ 3 Pieces
- ☐ Tightening torque, 8 Nm

#### 3 - Filler pipe

#### 4 - Charging hoses

☐ Removal and installation ⇒ page 73

#### 5 - Strainer

#### 6 - Filler cap

☐ For filler neck

#### 7 - Washer jet

- ☐ Version with right spray jet heater element - Z21-
- ☐ Removal and installation ⇒ page 83
- Adjusting ⇒ page 84

#### 8 - Nipple

☐ For washer fluid hose in bonnet

#### 9 - Windscreen and rear window washer pump - V59-

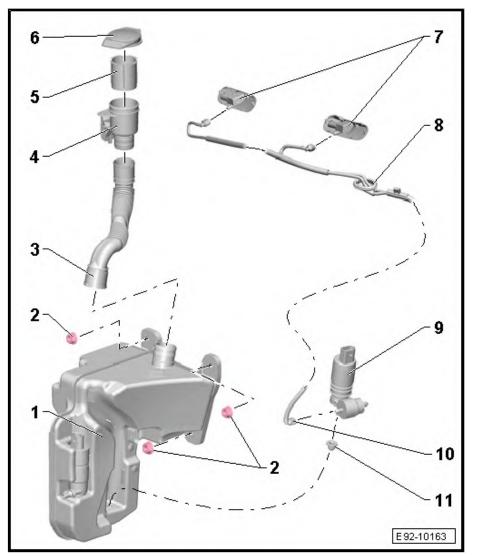
☐ Removal and installation ⇒ page 81

#### 10 - Water pipe

☐ For windscreen washer system

#### 11 - Sleeve

☐ Renew if damaged.



## 2.1.2 Assembly overview - windscreen wiper system, vehicles with additional left cooler

#### 1 - Screw

- □ 3 units.
- □ 8 Nm ± 1.2

#### 2 - Screw

□ 8 Nm ± 1.2

#### 3 - Nut

□ 8 Nm ± 1.2

#### 4 - Mounting

- ☐ For washer fluid reservoir
- □ Removal and installation ⇒ page 79

#### 5 - Mounting

- □ For filler neck
- □ Removal and installation ⇒ page 79

#### 6 - Nut

- ☐ 2 units.
- □ 8 Nm ± 1.2

### 7 - Washer fluid level sender - G33-

□ Removal and installation ⇒ page 80

#### 8 - Sleeve

□ Renew if damaged.

#### 9 - Water pipe

☐ For windscreen washer system

#### 10 - Right spray jet

- ☐ Version with right spray jet heater element Z21-
- □ Removal and installation ⇒ page 83
- Adjusting ⇒ page 84

#### 11 - Left spray jet

- ☐ Version with left washer jet heater element Z20-
- □ Removal and installation ⇒ page 83
- Adjusting ⇒ page 84

#### 12 - Nipple

☐ For washer fluid hose in bonnet

#### 13 - Screw

□ 8 Nm ± 1.2

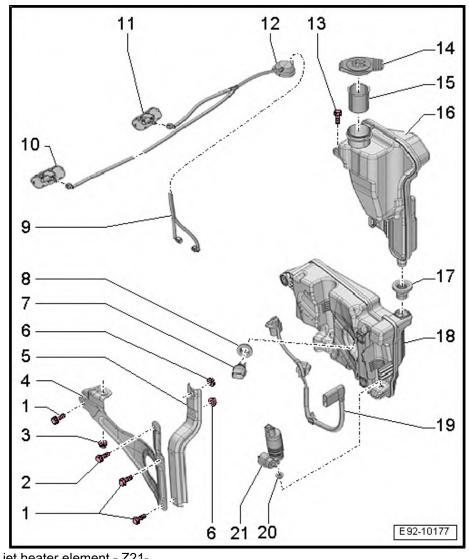
#### 14 - Filler cap

☐ For filler neck

#### 15 - Strainer

#### 16 - Charging hoses

☐ For washer fluid reservoir





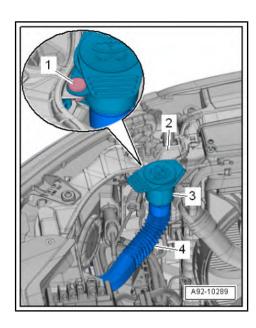
- □ Removal and installation ⇒ page 76
- 17 Sleeve
  - □ Renew if damaged.
- 18 Windscreen and headlamp washer reservoir
  - □ Removal and installation ⇒ page 77
- 19 Electrical wiring harness
- 20 Sleeve
  - □ Renew if damaged.
- 21 Windscreen and rear window washer pump V59-
  - □ Removing and installing

#### 2.2 Removing and installing headlamp washer reservoir

- ⇒ "2.2.1 Installing and removing the filler pipes of the washer fluid reservoir, vehicles without additional left cooler", page 73
- ⇒ "2.2.2 Installing and removing the washer fluid reservoir, vehicles without additional left cooler", page 74
- ⇒ "2.2.3 Installing and removing the filler pipes of the washer fluid reservoir, vehicles with additional left cooler", page 76
- ⇒ "2.2.4 Installing and removing the washer fluid reservoir, vehicles with additional left cooler", page 77
- ⇒ "2.2.5 Installing and removing the filler pipes of the washer fluid reservoir, vehicles with additional left cooler", page 79
- ⇒ "2.2.6 Installing and removing the intake of the washer fluid reservoir, vehicles with additional left cooler", page 79
- 2.2.1 Installing and removing the filler pipes of the washer fluid reservoir, vehicles without additional left cooler

#### Removing

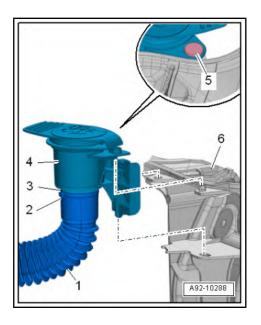
- Detach fastener -1-.
- Pull filler neck -3- out of bracket on lock carrier -2-.
- Pull filler neck off filler pipe -4-.





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

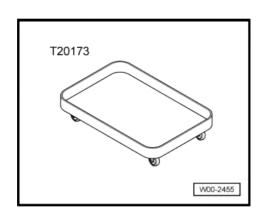
- Slide filler neck -4- onto filler pipe -1- as far as stop.
- Lug -3- must make contact in recess -2- on filler pipe.
- Fit filler neck onto lock carrier -6- and secure with fastener



#### 2.2.2 Installing and removing the washer fluid reservoir, vehicles without additional left cooler

#### Special tools and workshop equipment required

Rear shelf - T20173-





#### Note

This procedure describes the removal and installation of the fluid reservoir for the windscreen and headlamp washer system. Removal and installation of washer fluid reservoirs without headlight washer system are carried out in the same way.

#### Removing

- Place the vehicle on a lifting platform.
- Switch off ignition and all electrical consumers.

#### Vehicles without access and start authorisation system

Remove ignition key, if fitted.

#### Vehicles with access and start authorisation system

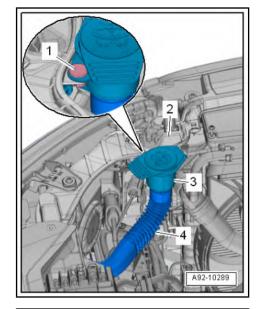
Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

#### Continued for all vehicles

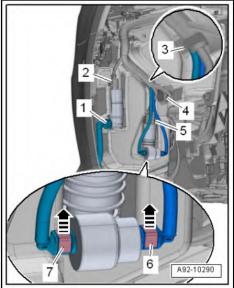
Remove the left front wheel ⇒ Rep. gr. 44; Rims and Tyres.



- Remove the spoiler on the front left wheel well  $\Rightarrow$  Chassis external assembly work; Rep. gr. 66; Wheel well liner .
- Place below the collecting tray T20173-.
- Detach fastener -1-.
- Pull filler neck -3- out of bracket on lock carrier -2-.
- Pull filler pipe off -4- washer fluid reservoir.



- Unplug electrical connectors -2, 4, 5- and detach wiring harness -3- from washer fluid reservoir.
- Unlock lid catches -6 and 7-- Arrows- and remove the fluid lines from the windscreen washer pump.
- Press release tab and pull washer fluid hose -1- off headlight washer system pump.



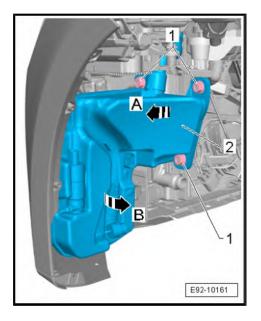


- Unscrew the fixing nuts -1- of the chamber on the bodywork.
- Undo the washing water tank -2- from the threaded pins at the front and bottom -arrow A-.
- Swivel washer fluid reservoir to rear -arrow B- and remove.

Installation takes place in reverse order.

#### **Specified torques**

⇒ "2.1.1 Assembly overview - windscreen wiper system, vehicles without additional left cooler", page 70



#### 2.2.3 Installing and removing the filler pipes of the washer fluid reservoir, vehicles with additional left cooler

#### Removing

- Place the vehicle on a lifting platform.
- Switch off ignition and all electrical consumers.

#### Vehicles without access and start authorisation system

Remove ignition key, if fitted.

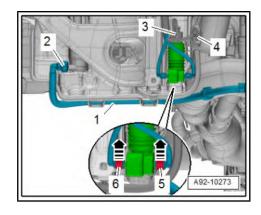
#### Vehicles with access and start authorisation system

Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

#### Continued for all vehicles

#### If there is washer fluid in the filler hose, drain it off.

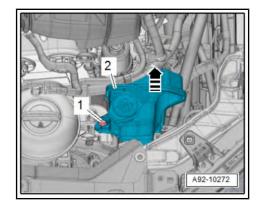
- Remove the right front wheel ⇒ Rep. gr. 44; Rims and Tyres.
- Remove the spoiler on the front left wheel well ⇒ Chassis external assembly work; Rep. gr. 66; Wheel well liner.
- Put the drip pan T20173- under the windscreen and front headlight washing unit.
- Unlock lid catches -5 and 6- Arrows- and remove the fluid lines from the windscreen washer pump.
- Press release tab and pull washer fluid hose -2- off headlight washer system pump.





#### Continued for all versions

- Unscrew the bolt -1-.
- Remove filler neck -2- upwards and out of its retainer and the windscreen and headlamp washer reservoir -arrow-.



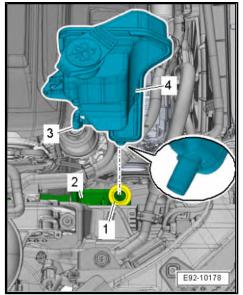
#### Installing

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

- Check that sealing grommet -1- is seated correctly.
- Place filler neck in retainer -2- and in windscreen and headlamp washer reservoir.
- Insert filler neck into washer fluid reservoir.
- When doing so, guide -3- must be aligned with the retainer.

#### **Specified torques**

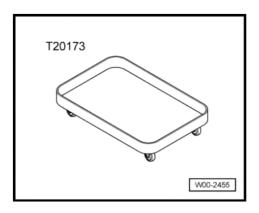
◆ ⇒ "2.1.2 Assembly overview - windscreen wiper system, vehicles with additional left cooler", page 72



#### 2.2.4 Installing and removing the washer fluid reservoir, vehicles with additional left cooler

Special tools and workshop equipment required

♦ Rear shelf - T20173-





Note

This procedure describes the removal and installation of the fluid reservoir for the windscreen and headlamp washer system. Removal and installation of washer fluid reservoirs without headlight washer system are carried out in the same way.



#### Removing

- Place the vehicle on a lifting platform.
- Switch off ignition and all electrical consumers.

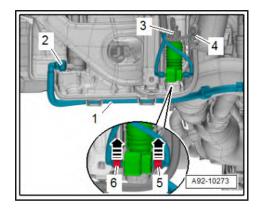
#### Vehicles without access and start authorisation system

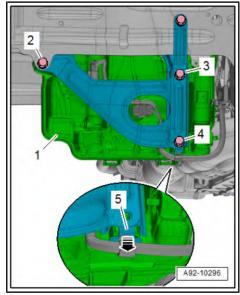
Remove ignition key, if fitted.

#### Vehicles with access and start authorisation system

Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

- Remove the right front wheel ⇒ Rep. gr. 44; Rims and Tyres.
- Remove the spoiler on the front left wheel well ⇒ Chassis external assembly work; Rep. gr. 66; Wheel well liner.
- Expose central connector -4- and disconnect.
- Unplug the electrical connector -3-.
- Place below the collecting tray T20173- .
- Unlock lid catches -5 and 6- Arrows- and remove the fluid lines from the windscreen washer pump.
- Press release tab and pull washer fluid hose -2- off headlight washer system pump.
- Expose water pipe -1-.
- Unscrew bolts -2, 3 and 4-.
- Remove windscreen and headlamp washer reservoir -1- from retainer -5- -arrow- and detach downwards from filler neck.
- Remove the windscreen and headlamp washer reservoir.





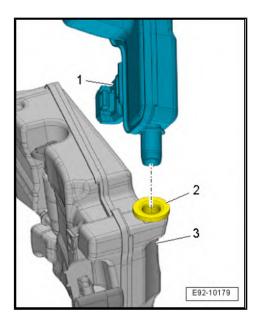


Installation is carried out in the reverse sequence; note the following:

Check that sealing grommet -2- is seated correctly on windscreen and headlamp washer reservoir -3-.

#### Specified torques

⇒ "2.1.2 Assembly overview - windscreen wiper system, vehicles with additional left cooler", page 72



#### 2.2.5 Installing and removing the filler pipes of the washer fluid reservoir, vehicles with additional left cooler

#### Removing

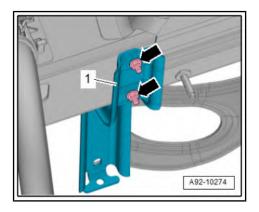
- Remove filler neck for washer fluid reservoir ⇒ page 76.
- Remove washer fluid reservoir ⇒ page 77.
- Unscrew nuts -arrows- and detach bracket -1-.

#### Installing

Installation takes place in reverse order.

#### **Specified torques**

♦ "2.1.2 Assembly overview - windscreen wiper system, vehicles with additional left cooler", page 72



#### 2.2.6 Installing and removing the intake of the washer fluid reservoir, vehicles with additional left cooler

#### Removing

Remove washer fluid reservoir ⇒ page 77.

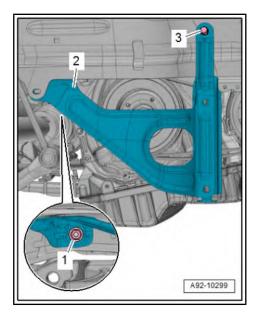


- Unscrew nut -1- and bolt -3-.
- Detach mounting -2-.

Installation takes place in reverse order.

#### **Specified torques**

⇒ "2.1.2 Assembly overview - windscreen wiper system, vehicles with additional left cooler", page 72



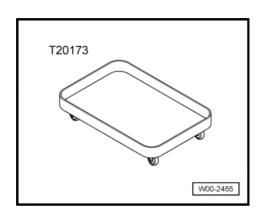
#### 2.3 Removing and installing windscreen washer fluid level sender

⇒ "2.3.1 Installing and removing the fill indicators of the washer fluid reservoir, vehicles with additional left cooler", page 80

#### Installing and removing the fill indicators 2.3.1 of the washer fluid reservoir, vehicles with additional left cooler

Special tools and workshop equipment required

Rear shelf - T20173-



#### Removing

- Place the vehicle on a lifting platform.
- Switch off ignition and all electrical consumers.

#### Vehicles without access and start authorisation system

Remove ignition key, if fitted.

#### Vehicles with access and start authorisation system

Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

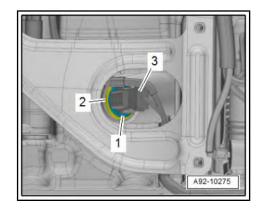
- Remove the right front wheel ⇒ Rep. gr. 44; Rims and Tyres.
- Remove the spoiler on the front left wheel well ⇒ Chassis external assembly work; Rep. gr. 66; Wheel well liner.



- Place below the collecting tray T20173-.
- Unplug the electrical connector -3-.
- Pull washer fluid level sender -1- out of washer fluid reservoir.

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

- Check sealing grommet -2- for damage.



#### 2.4 Removing and installing windscreen washer pump

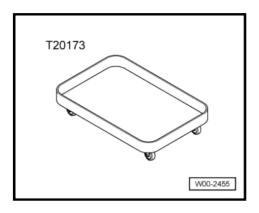
⇒ "2.4.1 Installing and removing the washer pump, vehicles without additional left cooler", page 81

⇒ "2.4.2 Installing and removing the windscreen washer pump, vehicles with additional left cooler", page 82

#### 2.4.1 Installing and removing the washer pump, vehicles without additional left cooler

Special tools and workshop equipment required

♦ Rear shelf - T20173-



#### Removing

- Place the vehicle on a lifting platform.
- Switch off ignition and all electrical consumers.

#### Vehicles without access and start authorisation system

- Remove ignition key, if fitted.

#### Vehicles with access and start authorisation system

Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

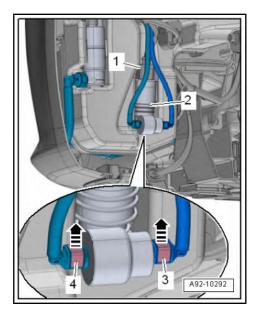
- Remove the left front wheel ⇒ Rep. gr. 44; Rims and Tyres.
- Remove the spoiler on the front left wheel well ⇒ Chassis external assembly work; Rep. gr. 66; Wheel well liner.



- Unplug the electrical connector -1-.
- Place below the collecting tray T20173-.
- Unlock catches in -3 and- 4 -arrows- and the fluid line from the front and back light washer pump - V59- -2- .
- Lift windscreen and rear window washer pump V59- out of washer fluid reservoir.

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

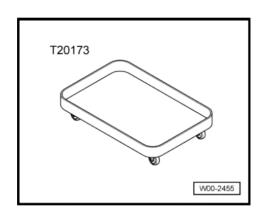
Check sealing grommet for damage.



#### 2.4.2 Installing and removing the windscreen washer pump, vehicles with additional left cooler

#### Special tools and workshop equipment required

Rear shelf - T20173-



#### Removing

- Place the vehicle on a lifting platform.
- Switch off ignition and all electrical consumers.

#### Vehicles without access and start authorisation system

Remove ignition key, if fitted.

#### Vehicles with access and start authorisation system

Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

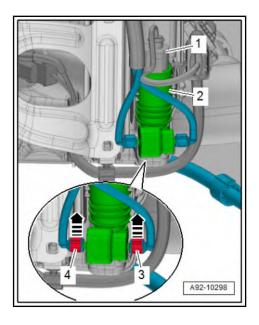
- Remove the right front wheel ⇒ Rep. gr. 44; Rims and Tyres.
- Remove the spoiler on the front left wheel well ⇒ Chassis external assembly work; Rep. gr. 66; Wheel well liner.



- Unplug the electrical connector -1-.
- Place below the collecting tray T20173-.
- Unlock lid catches -3 and 4- -Arrows- and remove the fluid lines from the windscreen washer pump-2-.
- Lift washer pump out of washer fluid reservoir.

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

Check sealing grommet for damage.



#### 2.5 Removing and installing spray jets

#### Removing

Switch off ignition and all electrical consumers.

#### Vehicles without access and start authorisation system

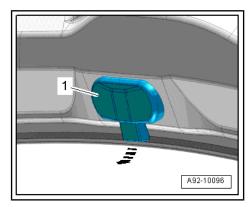
- Remove ignition key, if fitted.

#### Vehicles with access and start authorisation system

Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

#### Continued for all vehicles

- Unclip the windscreen spray jet from the front of the flap -1--arrow-.

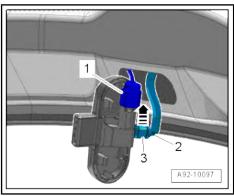


- Release the safety lock -3- in -the direction of the arrow- and remove the washer fluid hose -2- from the wash water spray
- If present, disconnect electrical connector -1-.

#### Installing

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

- When pushing on the washer fluid hose, take care that you can hear the retaining clips locking in to the connection of the washer fluid hose.
- Insert spray jet in bonnet.



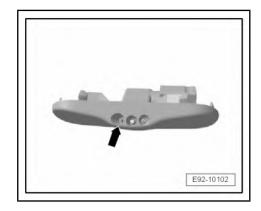
#### 2.6 Jet adjustment



#### **WARNING**

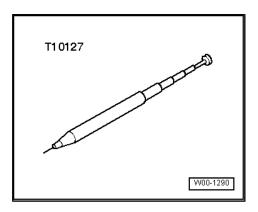
- ♦ Never clean the nozzles using any objects.
- To install the conducts, do not use a needle or similar object under any circumstances, as it could damage the jet water conduct!

These have been set in the factory and there is no need to reset them. Check only.

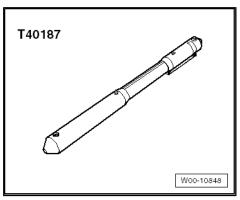


#### Special tools and workshop equipment required

 Adjusting tool for windscreen spray jet - T10127- fitted with needle - 3125/5A-



◆ Adjustment tool for wiper jet - T40187-





#### Setting distances for the spray nozzles

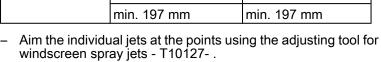


#### Note

The specified distances are calculated to allow for the motion of the vehicle when driving. When the vehicle is stationary the direction of the jets will be slightly different.

Mark 6 points on the windscreen wiper using a pen with watersoluble felt-tip.

Dimension in mm	Driver side	Passenger side
-a- =	max. 322 mm	max. 322 mm
	min. 536 mm	min. 536 mm
-b- =	max. 556 mm	max. 556 mm
	min. 498 mm	min. 498 mm
-c- =	max. 239 mm	max. 239 mm
	min. 533 mm	min. 533 mm
-d- =	max. 275 mm	max. 275 mm
	min. 326 mm	min. 326 mm
-e- =	max. 495 mm	max. 495 mm
	min. 673 mm	min. 673 mm
-f- =	max. 84 mm	max. 84 mm
	min. 197 mm	min. 197 mm



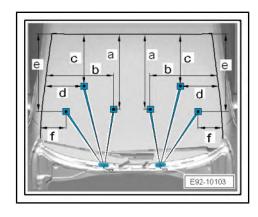
Or use the adjustment tool for windscreen wiper spray nozzles -T40187-.

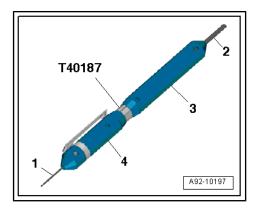


#### **WARNING**

#### Injury risk!

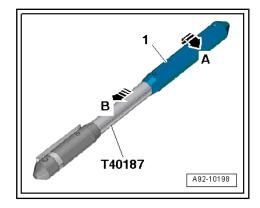
- ♦ If the adjustment tool for the spray nozzles T40187- is not used then make sure that both sides are covered and always engaged with the covers -3- and -4-.
- If one side is not engaged with the cover, there is a risk of injuries from the needle - 3125/5A- -1- or with fitted pin -2-.
- When opening from the respective side, make sure that the opposite side is not pointing toward the hand.







Release long cover -1- on adjusting tool for washer jet -T40187- -arrow A- and slide towards rear -arrow B-.



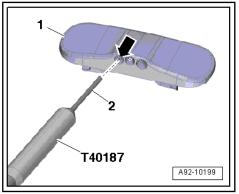
- Fit adjusting pin -2- onto appropriate spray jet -arrow- of spray jet unit -1-, aim at the marks previously made on windscreen and adjust if necessary.
- If spray pattern does not match specifications, clean the contaminated spray jet.



#### **WARNING**

#### Injury risk!

The adjusting pin must be covered and secured with the cover each time it has been used.



#### Cleaning spray jet:

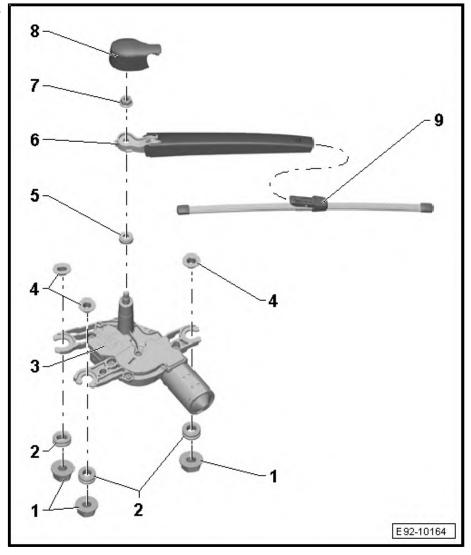
- Remove the spray jets ⇒ page 83.
- Rinse spray jet with clear water in opposite direction of spray.
- The spray nozzles should only be cleaned against the spraying direction using compressed air to remove any residual dirt.
- If spray pattern still does not match specifications, renew the spray jet.

#### 3 Rear window wiper system

- ⇒ "3.1 Assembly overview rear window wiper system",
- ⇒ "3.2 Removing and installing wiper blade", page 88
- ⇒ "3.3 Removing and installing windscreen wiper arm", <u>page 88</u>
- ⇒ "3.4 Adjusting windscreen wiper arm", page 89
- ⇒ "3.5 Installing and removing the V12 back window wiper motor", page 90

#### 3.1 Assembly overview - rear window wiper system

- 1 M6 securing nut with wash-
  - □ 3 units.
  - □ 8 Nm
- 2 Washer
  - □ 3 units.
- 3 Rear windscreen washer motor - V12-
  - □ Removal and installation ⇒ page 90
- 4 Separation element
  - □ 3 units.
- 5 Rubber seal
  - □ Renew if damaged.
  - □ Removal and installation ⇒ page 90
- 6 Windscreen wiper arm
  - ☐ Removal and installation ⇒ page 88
  - Adjusting ⇒ page 89
- 7 Nut
  - ☐ 12 Nm
- 8 Cap for rear window wiper
- 9 Wiper blades
  - □ Replace ⇒ page 88



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

#### 3.2 Removing and installing wiper blade

#### Removing



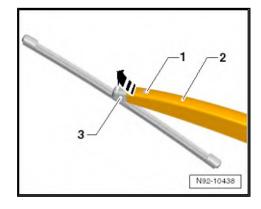
#### Note

The joint-free wiper blade is very flexible. To lift the wiper blade off the rear window, grasp it only in the area in which the wiper blade is attached to the wiper.

- Fold up wiper arm -2-.
- Push the button -1- and pull on the wiper blade -3-, as far as it will go. Bend the wiper blade -3- and take it in the -direction of the arrow- out of its mounting.

#### Installing

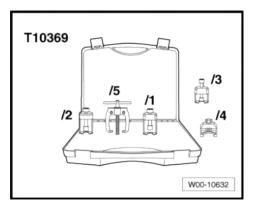
Installation is carried out in reverse order.



## 3.3 Removing and installing windscreen wiper arm

#### Special tools and workshop equipment required

◆ Tool kit for wiper arms - T10369-



#### Removing

- Switch on ignition.
- Actuate rear wiper and allow wiper arm to move to end position.
- Switch off ignition and all electrical consumers.

#### Vehicles without access and start authorisation system

Remove ignition key, if fitted.

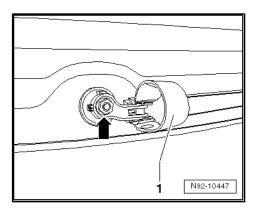
#### Vehicles with access and start authorisation system

 Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.



#### Continued for all vehicles

- Raise cowling -1- of rear window wiper and hook out.
- Loosen but do not completely remove securing nut -arrow-.

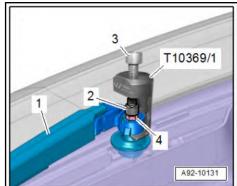


- Apply puller T10369/1- at wiper arm -1- as shown in illustra-
- Apply thrust piece -2- at wiper shaft.
- Turn bolt -3- clockwise until wiper arm is clear of wiper shaft.
- Remove nut and detach wiper arm.

#### Installing

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

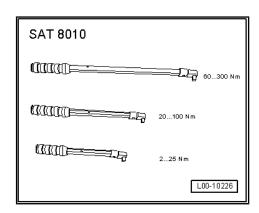
Adjust wiper arm ⇒ page 89.



#### 3.4 Adjusting windscreen wiper arm

#### Special tools and workshop equipment required

♦ Torque spanner set - SAT 8010-



Put the windscreen wiper arm, with the wiper blade fitted, on the windscreen wiper shaft. Align the wiper blade on the rear window, in the following manner:



#### Note

- The measurement -a- gives the distance from the point of the wiper blade to the lower edge of the window.
- Dimension -a- for the adjustment is marked on the rear win-
- Switch on ignition.
- Activate the rear window washer and ensure the wiper arm reaches the resting position.
- Re-check the windscreen wiper arm adjustment; correct it if necessary.

#### **Specified torques**

⇒ "3.1 Assembly overview - rear window wiper system", page

#### 3.5 Installing and removing the V12 back window wiper motor

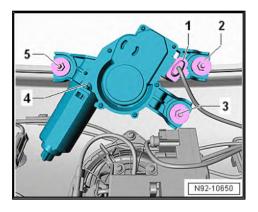
#### Special tools and workshop equipment required

♦ Torque wrenches - VAG 1331-



#### Removing

- Removing wiper arm ⇒ page 88.
- Removing lower interior tailgate panel ⇒ Bodywork Interior installation work; Rep. gr. 70; Load space lining; lower interior tailgate panel: removal and installation.
- Pull out the plug -1-.
- Unscrew nuts -2-, -3- and -5-.
- Remove rear window wiper motor V12- -4-.





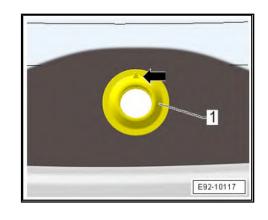


Installation is carried out in the reverse sequence; note the following:

- Before installing rear window wiper motor, moisten inner side of rear window rubber seal using a rubber and plastic compatible lubricant (e.g. polyethylene glycol), if necessary.
- Insert rubber seal -1- into rear window.
- The -arrow- on the sealing rubber points to the roof of the vehicle.

#### **Specified torques**

- "3.1 Assembly overview rear window wiper system", page
- ⇒ "3.4 Adjusting windscreen wiper arm", page 89



#### 4 Rear window washer system

- ⇒ "4.1 Assembly overview rear window washer system", page 92
- ⇒ "4.2 Removing and installing headlamp washer reservoir", page 93
- ⇒ "4.3 Removing and installing rear window washer pump", page 93
- ⇒ "4.4 Removing and installing the spray jet", page 93
- ⇒ "4.5 Spray jet: adjustment", page 94
- 4.1 Assembly overview rear window washer system
- ⇒ "4.1.1 Assembly overview back windscreen wiper system, vehicles without additional left cooler", page 92
- ⇒ "4.1.2 Assembly overview back windscreen wiper system, vehicles with additional left cooler", page 93
- 4.1.1 Assembly overview back windscreen wiper system, vehicles without additional left cooler

### 1 - Windscreen and headlamp washer reservoir

Removal and installation ⇒ page 74

#### 2 - Additional brake light

- □ Removal and installation ⇒ page 166
- Removing and installing, on spoiler⇒ page 165

#### 3 - Washer jet

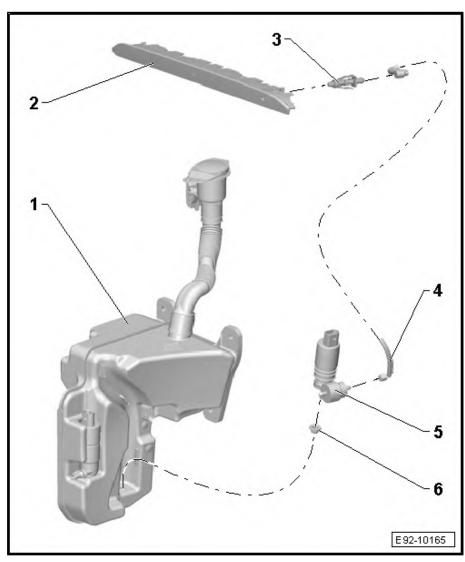
- □ Removal and installation ⇒ page 93
- Adjusting ⇒ page 94

#### 4 - Water pipe

- ☐ For rear window washer system
- 5 Windscreen and rear window washer pump V59-
  - □ Removal and installation ⇒ page 81

#### 6 - Sleeve

□ Renew if damaged.





#### 4.1.2 Assembly overview - back windscreen wiper system, vehicles with additional left cooler

#### 1 - Water pipe

☐ For rear window washer system

#### 2 - Washer jet

- ☐ Removal and installation ⇒ page 93
- □ Adjusting ⇒ page 94

#### 3 - Additional brake light

- ☐ Removal and installation ⇒ page 166
- Removing and installing, on spoiler ⇒ page 165

#### 4 - Filler neck for the window and headlight washer system reservoir

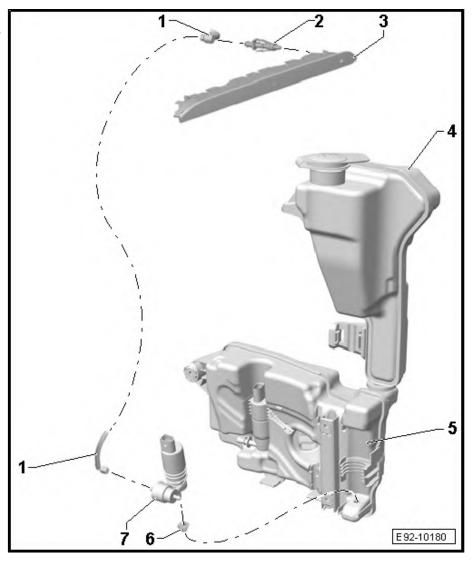
- Removal and installation <del>⇒ page 76</del>
- 5 Windscreen and headlamp washer reservoir
  - Removal and installation ⇒ page 77

#### 6 - Sleeve

□ Renew if damaged.

#### 7 - Windscreen and rear window washer pump - V59-

□ Removal and installation ⇒ page 82



#### 4.2 Removing and installing headlamp washer reservoir

.2 Removing and installing headlamp washer reservoir", page

#### 4.3 Removing and installing rear window washer pump

⇒ "2.4 Removing and installing windscreen washer pump", page 81

#### 4.4 Removing and installing the spray jet

The spray nozzle is installed in the lamp for the additional brake light - M25- .

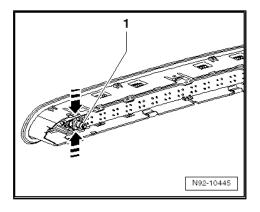


#### Removing

- Remove the High-level brake light bulb M25- . ⇒ "5.2 Removing and installing high-level brake light",
- Release both catches -arrows- and pull spray jet -1- to rear out of high-level brake light bulb - M25-.

#### Installing

- Installation is carried out in reverse order.
- Adjusting spray jet <del>⇒ page 94</del>.



#### 4.5 Spray jet: adjustment



#### Note

In case of uneven spray field due to impurities within the spray jet: remove spray jet and rinse it through with water, opposite to direction of spray. Blowing through in the opposite direction with compressed air is permitted. Do not use any objects for cleaning spray jets!

Adjustment of the wash jet for rear window washer system ⇒ Maintenance ; Booklet 501 .

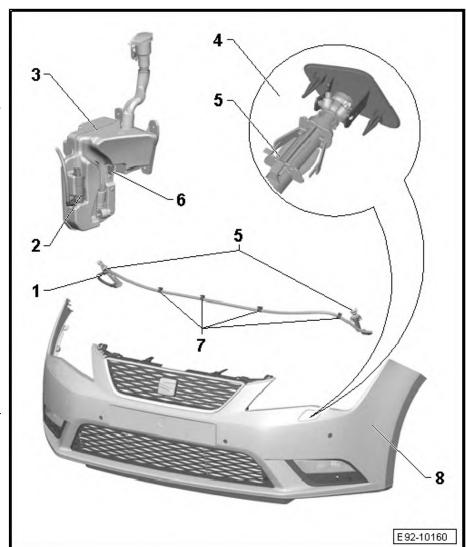


#### 5 Headlamp washers

- ⇒ "5.1 Assembly overview headlight washer system", <u>page 95</u>
- ⇒ "5.2 Removing and installing headlamp washer reservoir", page
- ⇒ "5.3 Removing and installing headlight washer system V11 pump", page 97
- ⇒ "5.4 Removing and installing spray jets", page 98
- ⇒ "5.5 Jet adjustment", page 100
- 5.1 Assembly overview - headlight washer system
- ⇒ "5.1.1 Assembly overview headlight wiper system, vehicles without additional left cooler", page 95
- $\Rightarrow$  "5.1.2 Assembly overview headlight wiper system, vehicles with additional left cooler", page 96

#### 5.1.1 Assembly overview - headlight wiper system, vehicles without additional left cooler

- 1 Flexible hose
- 2 Headlamp washer pump -V11-
  - □ Removal and installation  $\Rightarrow$  page 97
- 3 Windscreen and headlamp washer reservoir
  - ☐ Removal and installation ⇒ page 74
- 4 Cap
  - □ Removal and installation ⇒ page 98
- 5 Spray jet
  - □ Removal and installation <del>⇒ page 98</del>
  - Adjusting ⇒ page 100
  - ☐ Breather ⇒ page 100
- 6 Washer fluid level sender -G33-
  - Cannot be removed
  - In the event of a fault, it is not possible to replace washer fluid level sender - G33- separately.
- 7 Clips
  - for fixing the hose
  - Repair of hoses ⇒ page 101
- 8 Front bumper cover
  - ☐ Install bumper cover



(front) ⇒ General body repairs, exterior; Rep. gr. 63; Front bumper; Removing and installing bumper cover (front) .

### 5.1.2 Assembly overview - headlight wiper system, vehicles with additional left cooler

#### 1 - Flexible hose

### 2 - Headlamp washer pump - V11-

- □ Removal and installation ⇒ page 98
- 3 Washer fluid level sender G33-
  - □ Removal and installation ⇒ page 80

### 4 - Windscreen and headlamp washer reservoir

- □ Removal and installation ⇒ page 77
- 5 Filler neck for the window and headlight washer system reservoir
  - □ Removal and installation ⇒ page 76

#### 6 - Cap

□ Removal and installation ⇒ page 98

#### 7 - Spray jet

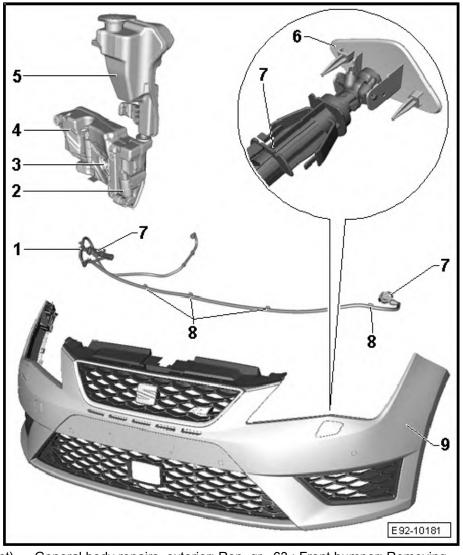
- Removal and installation ⇒ page 98
- Adjusting ⇒ page 100
- □ Breather ⇒ page 100

#### 8 - Clips

- for fixing the hose
- □ Repair of hoses⇒ page 101

#### 9 - Front bumper cover

☐ Install bumper cover (front) ⇒ General body repairs, exterior; Rep. gr. 63; Front bumper; Removing and installing bumper cover (front).





#### 5.2 Removing and installing headlamp washer reservoir

2 Removing and installing headlamp washer reservoir", page

#### 5.3 Removing and installing headlight washer system V11 pump

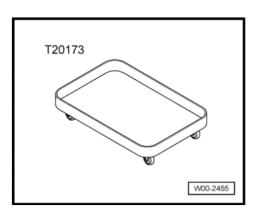
⇒ "5.3.1 Installing and removing the headlight washer system V11 pump, vehicles without additional left cooler", page 97

⇒ "5.3.2 Installing and removing the headlight washer system V11 pump, vehicles with additional left cooler", page 98

#### 5.3.1 Installing and removing the headlight washer system V11 pump, vehicles without additional left cooler

Special tools and workshop equipment required

♦ Rear shelf - T20173-



#### Removing

- Place the vehicle on a lifting platform.
- Switch off ignition and all electrical consumers.

#### Vehicles without access and start authorisation system

Remove ignition key, if fitted.

#### Vehicles with access and start authorisation system

Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

- Remove the left front wheel ⇒ Rep. gr. 44; Rims and Tyres.
- Remove the spoiler on the front left wheel well ⇒ Chassis external assembly work; Rep. gr. 66; Wheel well liner.



- Unplug the electrical connector -2-.
- Place below the collecting tray T20173- .
- Separate the hose line for water -1- from the headlight washer system pump - V11- -3- by pressing the unlocking tab -5-.
- Lift headlight washer system pump out of washer fluid reservoir.

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

- Check sealing grommet -4- for damage.

## 2 1 1 A92-10271

# 5.3.2 Installing and removing the headlight washer system V11 pump, vehicles with additional left cooler

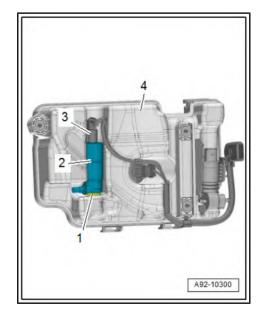
#### Removing

- Remove washer fluid reservoir ⇒ page 77.
- Unplug the electrical connector -3-.
- Lift headlamp washer system pump -2- out of washer fluid reservoir -4-.

#### Installing

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

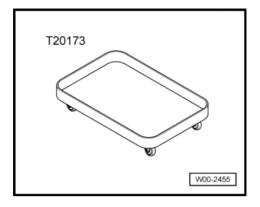
Check sealing grommet -1- for damage.



#### 5.4 Removing and installing spray jets

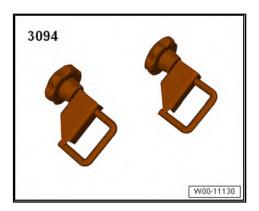
Special tools and workshop equipment required

♦ Rear shelf - T20173-

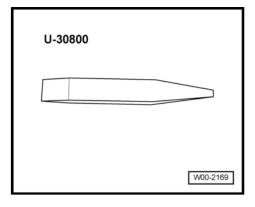




♦ Hose clamps, up to Ø 25 mm - 3094-



♦ Lever - U30800-



#### Removing

- Switch off ignition and all electrical consumers.

#### Vehicles without access and start authorisation system

Remove ignition key, if fitted.

#### Vehicles with access and start authorisation system

Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

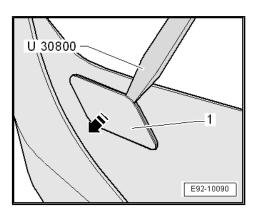
#### Continued for all vehicles

Pull off the protector trim -1- of the spray nozzle with the lever - U 30800- in -direction of arrow-.



#### Caution

When firmly holding the elevation cylinder, ensure you do not damage it.



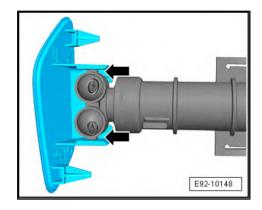


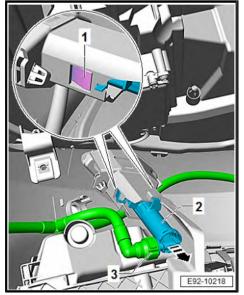
Hold the elevation cylinder with pliers.

- Unclip the release tabs -arrows- and remove the protector trim of the spray nozzle.
- Place the drip tray for fluids T20173- under the vehicle.
- Disconnect the supply hoses for washer fluid of the front windscreen washer system with the hose clamps up to 25 mm -3094-.
- Remove front bumper cover ⇒ General body repairs, exterior; Rep. gr. 63; Front bumper; Removing and installing bumper cover.
- Unlock hose connection -3- and pull off the spray nozzle -2-.
- Press on the two retaining clips -1- and pull out the spray nozzle -2- in -direction of arrow-.

#### Installing

Install in reverse order.





#### 5.5 Jet adjustment



#### WARNING

- ♦ Never clean the nozzles using any objects.
- To install the conducts, do not use a needle or similar object under any circumstances, as it could damage the jet water conduct!



#### Note

- The spray jets are pre-set at the factory and do not have to be adjusted following installation.
- ♦ If necessary, the jets must be adjusted, see ⇒ Maintenance; Booklet 501.

### Washer fluid hoses 6

⇒ "6.1 Repairing washer fluid lines", page 101

### Repairing washer fluid lines 6.1



Note

All instructions and references for this chapter are found under ⇒ Electrical system, General information; Rep. gr. 92; Washer fluid

# 94 – Lights, bulbs, switches - exterior

# 1 Headlamps

- ⇒ "1.1 Assembly overview headlight", page 102
- ⇒ "1.2 Removing and installing headlight", page 106
- ⇒ "1.3 Adjust headlights", page 111
- ⇒ "1.4 Correcting installation position of headlight", page 117
- ⇒ "1.5 Installing and removing the bulb for front blinker light M5 / M7", page 118
- ⇒ "1.6 Installing repair kit for headlight housing", page 119
- ⇒ "1.7 Changing headlights over from driving on right to driving on left", page 120
- ⇒ "1.8 Changing headlights over from driving on left to driving on right", page 120
- ⇒ "1.9 Installing and removing servomotor for headlight range adjustment V48 / V49", page 121
- ⇒ "1.10 Removing and installing dipped beam bulb", page 125
- ⇒ "1.11 Removing and installing dipped beam bulb M30 / M32", page 126
- ⇒ "1.12 Removing and installing parking light bulb M1 / M3", page 127
- ⇒ "1.13 Installing and removing the power module for headlight J667 / J668", page 128

# 1.1 Assembly overview - headlight

- ⇒ "1.1.1 Assembly overview headlight, halogen headlight", page 102
- ⇒ "1.1.2 Assembly overview Headlights, Full-LED headlights", page 104
- ⇒ "1.1.3 Assembly overview headlight, headlight track", page 105

# 1.1.1 Assembly overview - headlight, halogen headlight



### 1 - Headlamps

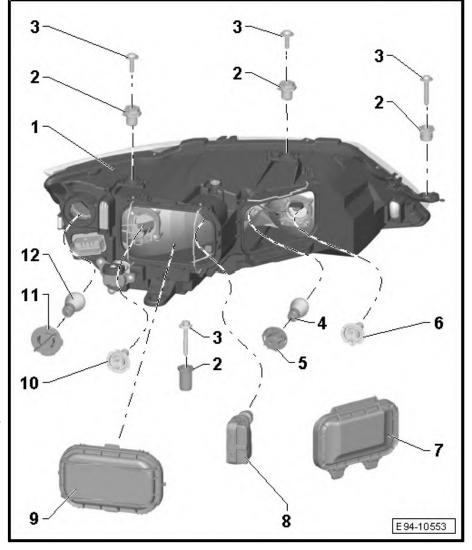
- Removal and installation ⇒ page 106
- Correcting installation position of headlight ⇒ page 117
- ☐ Headlights: Adjust ⇒ page 111
- ☐ Headlights: checking adiustment ⇒ page 111

# 2 - Adjustment nut

- □ 4 Pieces
- Correcting installation position of headlight ⇒ page 117

# 3 - Bolts

- □ 4 Pieces
- □ 4.5 Nm
- 4 Front left turn signal bulb -M5- or front right turn signal bulb - M7-
  - □ Replace ⇒ page 118
- 5 Flasher light lamp holder
- 6 Left-hand main beam headlamp - M30- or the right-hand main beam headlamp - M32-
  - □ Replace ⇒ page 126
- 7 Rear cover for the main beam / indicator
- 8 Left headlight range control motor - V48- or right headlight range control motor - V49-
  - □ Removal and installation ⇒ page 121
- 9 Rear cover for the dipped beam
- 10 Bulb for left dipped beam M29- or bulb for right dipped beam M31-
  - □ Replace ⇒ page 125
- 11 Lamp holder for the daytime running light / side light
- 12 Left bulb for daytime running lights and parking lights L186- and right bulb for daytime running lights and parking lights - L188-
  - □ Replace ⇒ page 127



# 1.1.2 Assembly overview - Headlights, Full-LED headlights

# 1 - Headlamps

- □ Removal and installation ⇒ page 106
- □ Correcting installation position of headlight⇒ page 117
- ☐ Headlights: Adjust
  ⇒ page 111
- □ LED headlight: check setting ⇒ page 113

# 2 - Adjustment nut

- ☐ 4 Pieces
- □ Correcting installation position of headlight
   ⇒ page 117

# 3 - Securing screws

- 4 Pieces
- □ 4.5 Nm

# 4 - Cover the main beam bulb

### 5 - Vehicle level sender

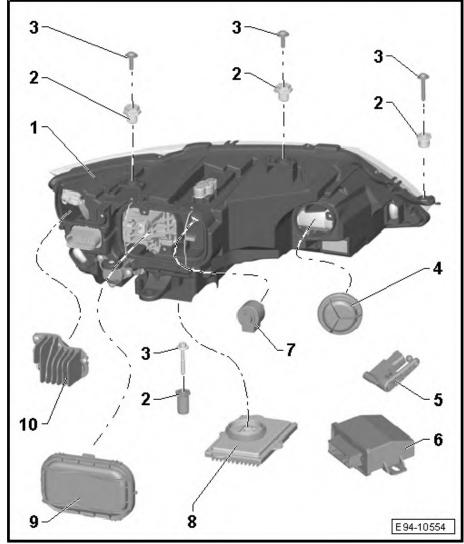
 Removal and installation ⇒ Undercarriage, axles, steering; Rep. gr. 43; Vehicle level indicator

# 6 - Headlight range control unit - J431-

□ Removal and installation ⇒ page 199

# 7 - Left headlight range control motor - V48- or right headlight range control motor - V49-

Removal and installation ⇒ page 123



- 8 Output module for left headlight J667- or output module for right headlight J668-
  - □ Removal and installation ⇒ page 128

### 9 - Cover for dipped beam bulb

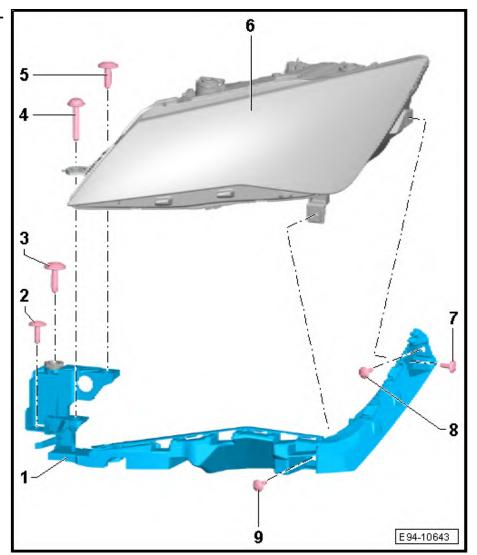
# 10 - Left LED module for daytime running lights and side light - L176- or right LED module for daytime running lights and side light - L177-

□ Removal and installation ⇒ page 129

### Assembly overview - headlight, headlight track 1.1.3

# 1 - Headlight track under headlight

- 2 Screw
  - □ 2 Nm
- 3 Screw
  - □ 4.5 Nm
- 4 Screw
  - □ 4.5 Nm
- 5 Screw
  - □ 4.5 Nm
- 6 Headlamps
  - ☐ Removal and installation <u>⇒ page 106</u>
- 7 Screw
  - □ 2 Nm
- 8 Screw
  - □ 2 Nm
- 9 Screw
  - □ 4 Nm



# 1.2 Removing and installing headlight

- ⇒ "1.2.1 Headlights: removing and installing, left headlight", page 106
- ⇒ "1.2.2 Headlights: removing and installing, right headlight", page 109
- ⇒ "1.2.3 Headlights: removing and installing, both headlights", page 109
- ⇒ "1.2.4 Headlights: removing and installing, headlight track", page 111

# 1.2.1 Headlights: removing and installing, left headlight

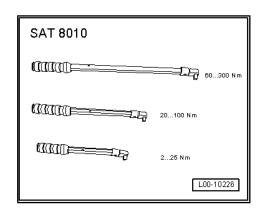


### Note

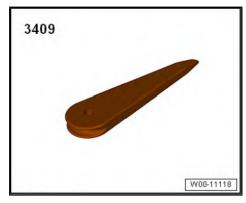
Removal and installation are described for the left side. Removal and installation on the right side are carried out laterally reversed in the same way.

# Special tools and workshop equipment required

◆ Torque spanner set - SAT 8010-



♦ Lever - 3409-



# Removing

- Switch off ignition and all electrical consumers.

# Vehicles without access and start authorisation system

Remove ignition key, if fitted.

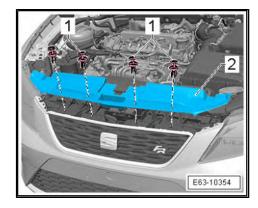
## Vehicles with access and start authorisation system

 Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

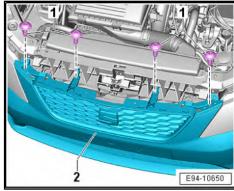


# Continued for all vehicles

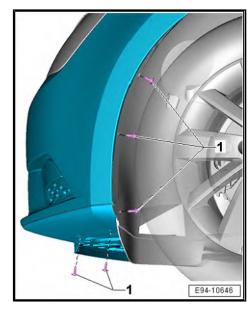
- Lift the front bonnet. Use the rod to keep it open.
- Remove cover of the lock carrier -2-; for this purpose use a flange screwdriver; turn the rivet heads -1- by  $90^\circ$  to the left and then pull them out with the lever 3409- .
- Remove the cover of the lock carrier -2-.



- Remove the securing bolts -1- securing the bumper trim -2-.

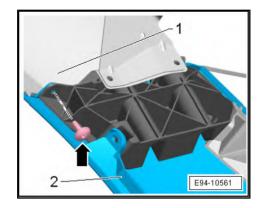


- Remove bolts -1-.

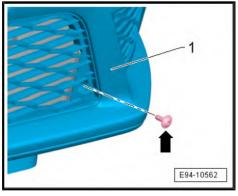




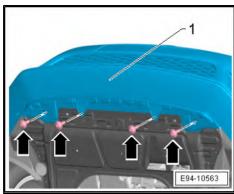
Unscrew the fixing screws -arrow- between the bumper lining -2- and wing -1-.



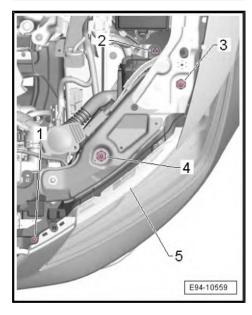
Unscrew the fixing screws -arrow- between the bumper lining -1- and crossbeam.



- Remove the fixing screws -arrow- of the spoiler -1-.

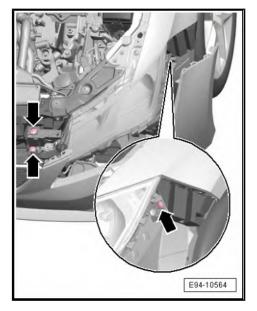


Unscrew screws -2-, -3- and -4-.





- Remove the bumper trim, first hang this out at the corner and then push forwards.
- Remove the fixing screws -arrows- between the headlight lamps and the body.

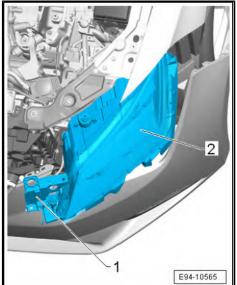


- Disconnect the unit from the headlight track -1- and headlight
- Disconnect the headlight plug connection.
- Remove the unit comprising headlight lamp -1- and headlight -2-.

Install in reverse order for the removal. During this step, observe the following:

# **Specified torques**

- ♦ ± "1.1 Assembly overview headlight", page 102
- ⇒ "1.4 Correcting installation position of headlight", page 117
- ⇒ "1.3 Adjust headlights", page 111



### 1.2.2 Headlights: removing and installing, right headlight



Note

The removal and installation procedure is the same on both sides.

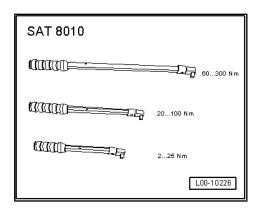
# Removing

⇒ page 106

### 1.2.3 Headlights: removing and installing, both headlights

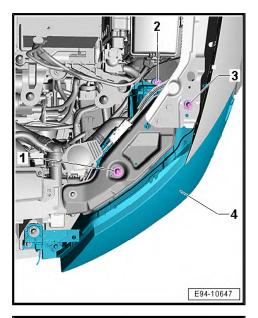
Special tools and workshop equipment required

Torque spanner set - SAT 8010-

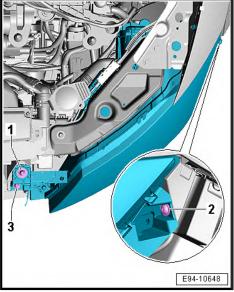


# Removing

- Remove bumper cover (front) ⇒ General body repairs, exterior; Rep. gr. 63; Front bumper; Removing and installing bumper cover (front).
- Remove bolts -1-, -2- and -3- from both headlights.



Remove securing bolts -1-, -2- and -3- of the sliding rails used to fix the headlights to the chassis from both headlights.



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

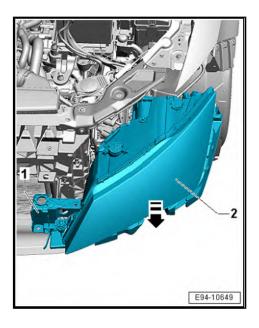


- Separate the two component groups headlight sliding rail -1and headlights -2- from each other on both sides.
- Unplug the electric fog lamp plug connector.
- Remove headlights.

Install in reverse order for the removal. During this step, observe the following:

### **Specified torques**

- ⇒ "1.1 Assembly overview headlight", page 102
- ⇒ "1.4 Correcting installation position of headlight",
- ⇒ "1.3 Adjust headlights", page 111



### 1.2.4 Headlights: removing and installing, headlight track



# Note

Removal and installation are described for the left side. Removal and installation on the right side are carried out laterally reversed in the same way.

# Removing

- Remove headlight <u>⇒ page 106</u>.
- Unscrew the fixing screws -arrow- between the headlight lamp -1- and headlight -2-.

### Installing

Install in reverse order for the removal. During this step, observe the following:

# Specified torques

- ⇒ "1.1.3 Assembly overview headlight, headlight track", page 105
- ⇒ "1.4 Correcting installation position of headlight", page 117
- ⇒ "1.3 Adjust headlights", page 111

### 1.3 Adjust headlights

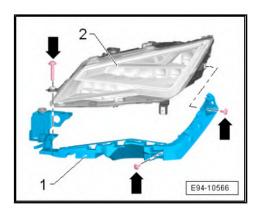
.3.1 Adjusting headlights, headlight with halogen bulb", page

⇒ "1.3.2 Adjusting headlight, LED headlight", page 113

### 1.3.1 Adjusting headlights, headlight with halogen bulb

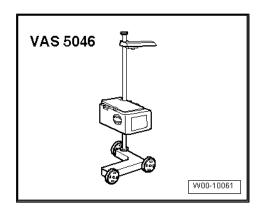
In principle, the following conditions for adjustment and verification are valid for all countries. But legal guidelines and prescriptions of each country should be followed

Special tools and workshop equipment required





Headlight adjustment unit - VAS 5046A-



# Testing and adjusting conditions

- The vehicle and the lamp regulating equipment should be on a flat surface.
- Fuel tank full
- Tyre pressure is correct
- The headlamp glass should not be damaged or dirty
- Reflectors and lamps are okay
- Load: with one person or 75 kg on the driver's seat and the rest of the vehicle empty (empty weight)
- Headlamp regulating control set to "0"
- The vehicle must have run a little, or the front and rear shock absorbers should be pushed up and down several times, so the springs are correctly seated.
- The handbrake must be released to avoid tension in the suspension.
- The vehicle and the headlight adjuster VAS 5046A- must be aligned
- The distance between the lamp alignment unit and the lamp should be 20 to 30 cm ⇒ Instruction manual for the lamp alignment unit

The inclination heights in "%" are engraved on the left-hand side of the headlamp. Headlights must be adjusted according to this information. The percentage is based on a projection interval of 10 m. Example: Converting a dip setting of 1.0 % = 10 cm.

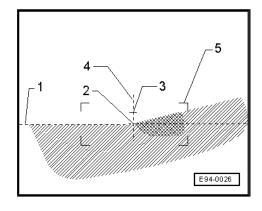
# Check the adjustment of headlights (with a new display without an adjustment line of 15°)

Perform the following check of the main headlamps:

- Check that with the dipped beam on, the bright/dim horizontal limit touches the dividing line -1- of the verification surface.
- Check that the point of inflection -2- between the horizontal left part and the right raising part of the bright/dim limit passes the vertical by the central mark -3-. The clear centre of the light beam should be, in this case, to the right of the vertical -4-.

### Check the adjustment of headlamps (with display with adjustment line of 15°)

Perform the following check of the main headlamps:





- Check that with the dipped beam on, the bright/dim horizontal limit touches the dividing line -1- of the verification surface.
- Check if the right raising part touches the Bright/dim limit of the adjusting line of 15°, which starts to go up after the point of inflection -2-. The clear centre of the light beam should be, in this case, to the right of the vertical -4-.

### For both methods:



# Note

- To better locate the point of inflection -2-, follow the bright/dim limit on the extreme limits -5- from left to right, and find the intersection point with the prolongation of the line of 15° of the bright limit/dim limit, following from top to bottom.
- After the regulatory dipped beam adjustment, half of the light beam of the road lamp should be on the central mark -3-.
- If the alignment unit of the headlamps is well regulated, it may be verified that in the final lamp position the acceptable limit value of light intensity is not overshot (normally < 1 lx). If this limit is exceeded, the adjustment must be repeated in order not to blind other drivers ⇒ Operating instructions of the headlight adjustment device and country specific guidelines .
- It is recommended to align the headlights with the screen at an adjust line of 15 °.
- Moreover, the final position of the headlamps may be verified with a vertical wall situated 10 metres from the vehicle with the lamp alignment unit method. ⇒ Instruction manual for the headlamp alignment unit

### Control of full-beam lights

Switch on the main beams after adjusting the passing beam. A very illuminated area can be seen in the centre of the plate. If this is not the case, adjust the headlights to the left or right.



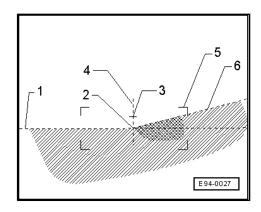
### Note

After the adjustment is checked and if an adjustment is necessary *⇒ page 111* .

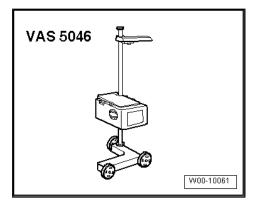
### 1.3.2 Adjusting headlight, LED headlight

In principle, the following conditions for adjustment and verification are valid for all countries. But legal guidelines and prescriptions of each country should be followed

Special tools and workshop equipment required



♦ Headlight adjustment unit - VAS 5046A-





### Testing and adjusting conditions

- The vehicle and the lamp regulating equipment should be on a flat surface.
- Fuel tank full
- Tyre pressure is correct
- The headlamp glass should not be damaged or dirty
- Reflectors and lamps are okay
- Allow headlight to cool down to ambient temperature with bonnet open, check by touching housing cover on back of headlight with your hand.
- Load: with one person or 75 kg on the driver's seat and the rest of the vehicle empty (empty weight)
- Headlamp regulating control set to "0"
- The vehicle must have run a little, or the front and rear shock absorbers should be pushed up and down several times, so the springs are correctly seated.
- The handbrake must be released to avoid tension in the suspension.
- The vehicle and the headlight adjuster VAS 5046A- must be aligned
- Position headlight adjustment unit in front of headlight at distance -a- 30 ... 70 cm. Dimension -b- = 3 cm must not be exceeded (measured from centre of reference LED).
- The degree of inclination is pre-set on the headlight setting unit.
- The degree of inclination is imprinted on the upper edge of the headlight in "%".
- The inclination for this headlight is 1%



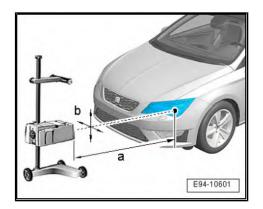
### Note

- Set the headlight according to the degree of inclination imprinted on the headlight.
- The percentage is based on a projection interval of 10 m. Example: Converting a dip setting of 1.0 % = 10 cm.

# **Preparation work**

- Vehicle must be on a level surface.
- To prepare the headlight setting, switch off the ignition and switch on again.
- Turn light switch E1- to "dipped beam" position not to "Auto" position.
- Close all doors and the rear lid and keep them closed during the complete checking and adjusting procedure.

# Headlight setting





Headlight adjustment unit must be centrally aligned with uppermost LED lens -1-.

Check the adjustment of headlights (with a new display without an adjustment line of 15°)

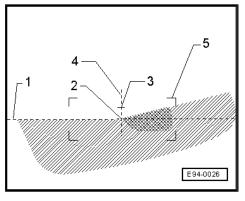
Perform the following check of the main headlamps:



- Check that with the dipped beam on, the bright/dim horizontal limit touches the dividing line -1- of the verification surface.
- Check that the point of inflection -2- between the horizontal left part and the right raising part of the bright/dim limit passes the vertical by the central mark -3-. The clear centre of the light beam should be, in this case, to the right of the vertical -4-.

Check the adjustment of headlamps (with display with adjustment line of 15°)

Perform the following check of the main headlamps:





- Check that with the dipped beam on, the bright/dim horizontal limit touches the dividing line -1- of the verification surface.
- Check if the right raising part touches the Bright/dim limit of the adjusting line of 15°, which starts to go up after the point of inflection -2-. The clear centre of the light beam should be, in this case, to the right of the vertical -4-.

### For both methods:



# Note

- To better locate the point of inflection -2-, follow the bright/dim limit on the extreme limits -5- from left to right, and find the intersection point with the prolongation of the line of 15° of the bright limit/dim limit, following from top to bottom.
- After the regulatory dipped beam adjustment, half of the light beam of the road lamp should be on the central mark -3-.
- If the alignment unit of the headlamps is well regulated, it may be verified that in the final lamp position the acceptable limit value of light intensity is not overshot (normally < 1 lx). If this limit is exceeded, the adjustment must be repeated in order not to blind other drivers ⇒ Operating instructions of the headlight adjustment device and country specific guidelines .
- It is recommended to align the headlights with the screen at an adjust line of 15 °.
- Moreover, the final position of the headlamps may be verified with a vertical wall situated 10 metres from the vehicle with the lamp alignment unit method. ⇒ Instruction manual for the headlamp alignment unit



### Note

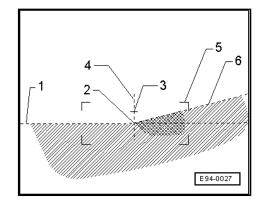
After the adjustment is checked and if an adjustment is necessary *⇒ page 111 .* 

### 1.4 Correcting installation position of headlight

### Special tools and workshop equipment required

♦ Torque wrenches - VAG 1331-







# Note

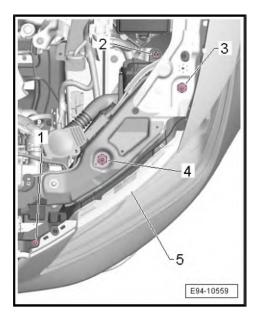
Clearance and concision of the headlight on the assembly (fender, bumper and hood) ⇒ Body Repairs; Rep. gr. 00.

- Undo the screws -1, 2, 3 and 4-.
- Adjust the height and angle of the headlight using the hexagonal nuts, see ⇒ Body Repairs; Rep. gr. 00.
- Tighten the screws -1-, -3-, -2- and -4- in this sequence so that the headlight -5- fits flush to the chassis.



### Note

The adjustment must be carried out following each removal and installation or after correcting the installation position in all cases ⇒ page 111.



# 1.5 Installing and removing the bulb for front blinker light M5 / M7



### Note

- The figures show the replacement of the left turn signal lamp of the left headlamp. The turn signal in the right-hand headlamp is replaced in the same way.
- ♦ The headlight does not have to be removed.

## Removing

Switch off ignition and all electrical consumers.

# Vehicles without access and start authorisation system

Remove ignition key, if fitted.

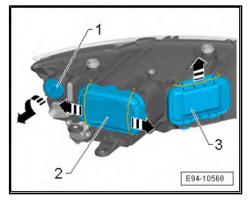
### Vehicles with access and start authorisation system

 Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

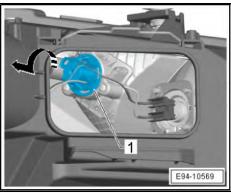


# Continued for all vehicles

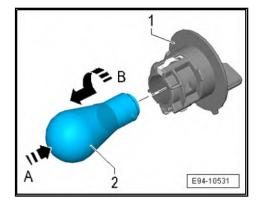
- Separate the headlight cover -3-.



Rotate bulb holder -1- to the left remove it in the direction of the -arrow-.



- Hold the bulb holder -1- press in the bulb -2- arrow -A- and turn to the left -arrow B- .
- Remove bulb -2- from holder -1-.



### 1.6 Installing repair kit for headlight housing



# Note

- ♦ Broken-off headlight retaining tabs can be renewed by installing repair kit. Therefore there is no need to replace the entire headlight.
- Different repair kits are available for both left and right side headlights ⇒ Electronic parts catalogue .

# Operation process

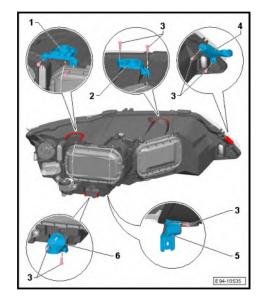
- Remove headlight with broken retaining tabs ⇒ page 109.
- Remove remaining parts of broken retaining tabs from headlight housing.



Mount the fixing tags -1-, -2-, -4-, -5- and -6- of the repair set on the headlight housing and fix in place with the screws -3-.

# **Specified torques**

Component	Nm
Lug fixing screws	4.5



### 1.7 Changing headlights over from driving on right to driving on left

Adjusting the halogen headlamps: Countries with left-hand drive traffic for driving in countries with right-hand drive traffic or viceversa

No adjustments need to be made to the headlights when travelling in countries where the vehicle is driven on the other side of the

Adapting the full LED headlight: Countries with left-hand drive traffic for driving in countries with right-hand drive traffic or vice-

No adjustments need to be made to the headlights when travelling in countries where the vehicle is driven on the other side of the road.



### Note

For additional information, see the ⇒ Owner's Manual that includes the vehicle equipment.

### 1.8 Changing headlights over from driving on left to driving on right

Halogen headlight adaptation: Countries with driving on left to driving in countries with driving on right

No adjustments need to be made to the headlights when travelling in countries where the vehicle is driven on the other side of the road.

Full LED headlight adaptation: Countries with driving on left to driving in countries with driving on right

No adjustments need to be made to the headlights when travelling in countries where the vehicle is driven on the other side of the road.





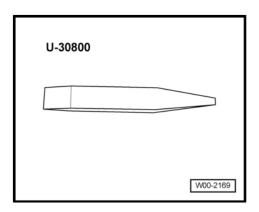
# Note

For additional information, see the ⇒ Owner's Manual that includes the vehicle equipment.

- 1.9 Installing and removing servomotor for headlight range adjustment V48 / V49
- ⇒ "1.9.1 Installing and removing servomotor for headlight range adjustment V48 / V49, halogen headlight", page 121
- ⇒ "1.9.2 Installing and removing servomotor for headlight range adjustment V48 / V49, LED headlights", page 123
- 1.9.1 Installing and removing servomotor for headlight range adjustment V48 / V49, halogen headlight

Special tools and workshop equipment required

♦ Lever - U 30800-





- In the figures, the replacement of the left headlight range control motor - V48- of the left headlight is displayed. The renewal of the motor for the headlight range control - V49- of the righthand headlight is carried out in the same way.
- ♦ The headlight does not have to be removed.

# Removing

Switch off ignition and all electrical consumers.

### Vehicles without access and start authorisation system

Remove ignition key, if fitted.

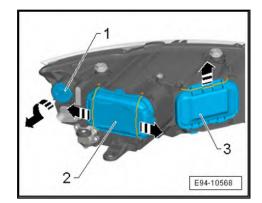
# Vehicles with access and start authorisation system

Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

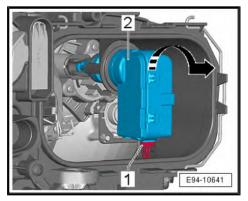
### Continued for all vehicles

Turn the swivel of the transfer system of the control to the end position.

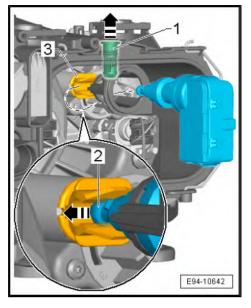
Remove the headlight cover -2- and -3-.



- Disconnect plug -1-.
- Turn the left headlight range control motor V48- -2- to the right -arrow-.



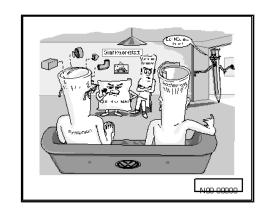
- Remove the swivel -1- using the lever U30800- in -the arrow direction- .
- To tighten the left headlight range control motor V48- pivot the ball head -2- in the guide -3- and pull the ball head from the guide end -arrow-.





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

- Turn the ball head of the servomotor to the left for light range adjustment - V48- by hand until it has been completely removed -B-.
- Pull the optical unit by hand through the headlight cover, so that the dipped beam reflectors face up.
- Hold the dipped beam reflectors up and insert the ball head of the left servomotor for light range adjustment - V48- into the quide.





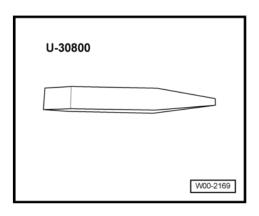
# Note

It is absolutely essential to adjust the headlights ⇒ page 111 after every removal of the left-side actuator motor for beam throw adjustment - V48-.

# 1.9.2 Installing and removing servomotor for headlight range adjustment V48 / V49, LED headlights

Special tools and workshop equipment required

Lever - U 30800-





# Note

- In the figures, the replacement of the left headlight range control motor - V48- of the left headlight is displayed. The renewal of the motor for the headlight range control - V49- of the righthand headlight is carried out in the same way.
- The headlight does not have to be removed.

### Removing

Switch off ignition and all electrical consumers.

# Vehicles without access and start authorisation system

Remove ignition key, if fitted.

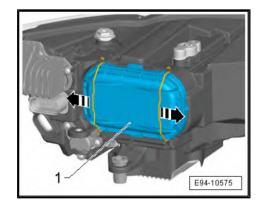
# Vehicles with access and start authorisation system

Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

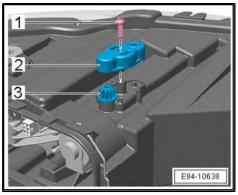


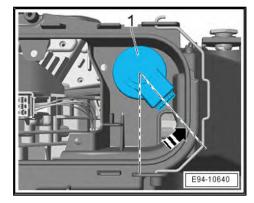
# Continued for all vehicles

- Remove the lock carrier strut ⇒ Chassis external assembly work; Rep. gr. 50; Lock carrier
- Remove the cover -1- by releasing the springs -arrows-.

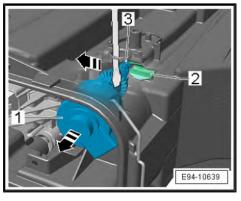


- Turn the swivel of the transfer system of the control -2- into the end position.
- Unscrew the bolt -1-.
- Completely remove the transfer system of the control -2-.
- Remove the swivel -3- using the lever U30800-.
- Disconnect the plug of the Servomotor on the left for light range adjustment V48- .
- Release the left headlight range control motor V48- -1- by turning in the -direction of the arrow-.





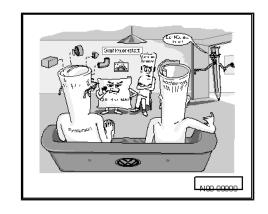
- Swivel the left servomotor for light range adjustment V48-and remove the ball head -3- from the holder -2- from the side.
- If necessary, use a screwdriver as a lever and pry ball head out of guide.





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

- Turn the ball head of the servomotor to the left for light range adjustment - V48- by hand until it has been completely removed -B-.
- Pull the optical unit by hand through the headlight cover, so that the dipped beam reflectors face up.
- Hold the dipped beam reflectors up and insert the ball head of the left servomotor for light range adjustment - V48- into the quide.





### Note

It is absolutely essential to adjust the headlights <u>⇒ page 113</u> after every removal of the left-side actuator motor for beam throw adjustment - V48-.

### 1.10 Removing and installing dipped beam bulb



### Note

- The illustrations show how to change the dipped beam bulb of the left headlight. The dipped-beam bulb in the right-hand headlamp is replaced in the same way.
- The headlight does not have to be removed.

### Removing

Switch off ignition and all electrical consumers.

### Vehicles without access and start authorisation system

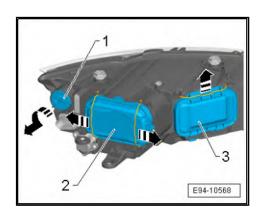
- Remove ignition key, if fitted.

### Vehicles with access and start authorisation system

Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

# Continued for all vehicles

Separate the headlight cover -2-.





- Separate the connector -1- from the left headlight dipped beam bulb - M29-.
- Press on the spring-loaded bar of the bulb and push to the right -arrow-
- Hold the bulb at the rear and remove pull out of the headlight.



# Note

- Never allow bulb glass to come into contact with hands.
- When installing, make sure that the lugs of the lamp are fitted correctly to the headlight mount.

# 2

# 1.11 Removing and installing dipped beam bulb M30 / M32



# Note

- ◆ The following illustrations show renewal of the main beam bulb for the left headlight. The high-beam bulb in the right-hand headlamp is replaced in the same way.
- ♦ The headlight does not have to be removed.

### Removing

Switch off ignition and all electrical consumers.

### Vehicles without access and start authorisation system

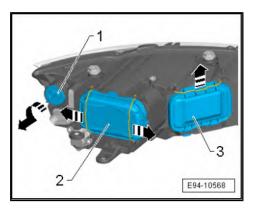
Remove ignition key, if fitted.

### Vehicles with access and start authorisation system

 Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

# Continued for all vehicles

Separate the headlight cover -3-.





- Disconnect the plug connector -1- from the bulb for left high beam - M30- .
- Remove the bulb -2- from the frame of the reflector by pressing



# Note

- Never allow bulb glass to come into contact with hands.
- When installing, make sure that the lugs of the lamp are fitted correctly to the headlight mount.

# E94-10570

### 1.12 Removing and installing parking light bulb M1 / M3



# Note

- The illustrations show the change of bulb for daytime running lights and parking light on the left headlight. The change of the bulb for daytime running light and parking light on the right headlight is done as follows.
- ♦ The headlight does not have to be removed.

# Removing

Switch off ignition and all electrical consumers.

# Vehicles without access and start authorisation system

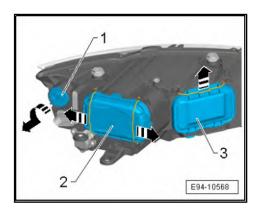
Remove ignition key, if fitted.

# Vehicles with access and start authorisation system

Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

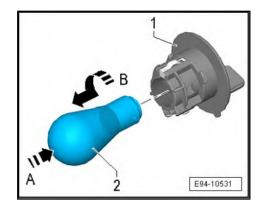
### Continued for all vehicles

Rotate bulb holder -1- to the left remove it in the direction of the -arrow-.





- Hold the bulb holder -1- tight and press on the bulb -2- and turn to the left in the direction of the -arrow-.
- Remove bulb -2- from holder -1-.



### 1.13 Installing and removing the power module for headlight J667 / J668

 $\Rightarrow$  "1.13.1 Installing and removing the power module for headlight J667 / J668, left side", page 128

⇒ "1.13.2 Installing and removing the power module for headlight J667 / J668, right side", page 129

### 1.13.1 Installing and removing the power module for headlight J667 / J668, left side

# Removing

Switch off ignition and all electrical consumers.

# Vehicles without access and start authorisation system

- Remove ignition key, if fitted.

# Vehicles with access and start authorisation system

Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

### Continued for all vehicles

- Remove headlight <u>⇒ page 106</u>.
- Unscrew bolts -arrows-.
- Detach control unit -1- from headlight.

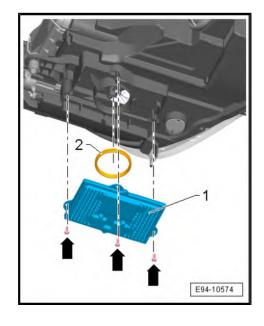
# Installing

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

Check the seal between the control unit and the headlight for damage.

# **Specified torques**

♦ Bolt tightening torque 1.5 Nm





### 1.13.2 Installing and removing the power module for headlight J667 / J668, right side

# Removing

- Remove the lower engine noise insulation ⇒ General body repairs, exterior; Rep. gr. 66; Noise insulation; removing and installing the noise insulation.
- Remove bolts -2-.
- Detach control unit -1- from headlight.

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

Check the seal between the control unit and the headlight for damage.

# Specified torques

- ♦ Bolt tightening torque 1.5 Nm
- 1.14 Removing and installing left LED module for daytime driving light and side light - L176- / right LED module for daytime driving light and side light - L177-



# Note

The illustrations show the replacement of the left LED module for daylight driving light and side light - L176- of the left headlight. The replacement of the right LED module for daylight driving light and side light - L177- of the right headlight follows the same procedure.

# Removing

Switch off ignition and all electrical consumers.

# Vehicles without access and start authorisation system

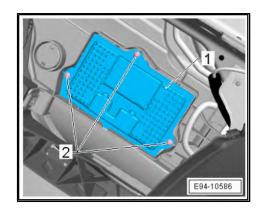
Remove ignition key, if fitted.

## Vehicles with access and start authorisation system

Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

### Continued for all vehicles

Remove left headlight ⇒ page 106





Remove the three securing bolts -1- of the left LED module for daylight driving light and side light - L176- .

Pull the left LED module for daylight driving light and side light - L176- -2- out of the headlight.

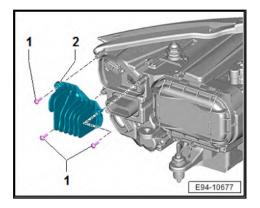
# Installing

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

Check the seal between the control unit and the headlight for damage.

# **Specified torques**

♦ Bolt tightening torque 1.5 Nm





### 2 Fog lights

- ⇒ "2.1 Removing and installing fog light", page 131
- ⇒ "2.2 Removing and installing fog light bulb L22 / L23", page 135
- ⇒ "2.3 Adjusting fog lights", page 137

### 2.1 Removing and installing fog light

- ⇒ "2.1.1 Fog lights, removing and installing, until week 45/16", page 131
- ⇒ "2.1.2 Fog lights, removing and installing, FR, left side, until week 45/16", page 132
- ⇒ "2.1.3 Fog lights, removing and installing, FR, right side, until week 45/16", page 133
- ⇒ "2.1.4 Fog lights, removing and installing, from week 45/16", page 133

### 2.1.1 Fog lights, removing and installing, until week 45/16

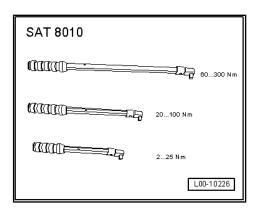


## Note

Removal and installation are described for the left side. Removal and installation on the right side are carried out laterally reversed in the same way.

# Special tools and workshop equipment required

◆ Torque spanner set - SAT 8010-



◆ Lever - U 30800-

### Removing

Switch off ignition and all electrical consumers.

### Vehicles without access and start authorisation system

Remove ignition key, if fitted.

# Vehicles with access and start authorisation system

Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

# Continued for all vehicles

Remove the front grille of the bumper cover ⇒ page 133 ⇒ General body repairs, exterior; Rep. gr. 63; Front bumper; Assembly overview - bumper cover





The shape of the fog lights and the number and position of the screws is different depending on the model.

# Vehicles with retaining clip, except version "FR"

Use a small screwdriver to remove the retaining clip -1- from the radiator grille.

### Continue for all vehicles:

- Unscrew the three securing bolts -arrow- from the fog light bracket on the trim of the bumper.
- Remove fog lamp.
- Separate the fog lamp connector.

### Installing

Install in reverse order for the removal. During this step, observe the following:

Check fog light adjustment ⇒ page 137.

# **Specified torques**

Securing bolts of the grille of the bumper trim	Nm
Securing bolts of the fog lamp on the trim of the bumper	2 Nm <sup>+</sup> <sub>-</sub> 0.5 Nm

### 2.1.2 Fog lights, removing and installing, FR, left side, until week 45/16

# Removing

- Switch off ignition and all electrical consumers.

### Vehicles without access and start authorisation system

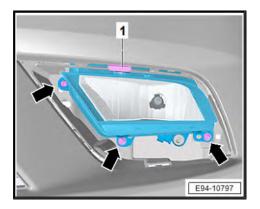
Remove ignition key, if fitted.

### Vehicles with access and start authorisation system

Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

# Continued for all vehicles

- Remove bumper cover (front) ⇒ General body repairs, exterior; Rep. gr. 63; Front bumper; Removing and installing bumper cover (front).
- Disconnect the headlight cleaning line.
- Disconnect the fog lamp plug connector.





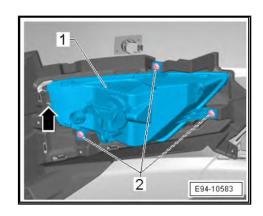
- Unscrew the three securing bolts -2- from the fog light -1- on the trim of the bumper.
- Undo the clip -arrow- and pull the headlight out of its mount.

Install in reverse order for the removal. During this step, observe the following:

Check fog light adjustment ⇒ page 137.

### **Specified torques**

Securing bolts of the grille of the bumper trim	Nm
Securing bolts of the fog lamp on the trim of the bumper	2 Nm <sup>+</sup> <sub>-</sub> 0.5 Nm



### 2.1.3 Fog lights, removing and installing, FR, right side, until week 45/16

# Removing

- Remove the lower engine noise insulation ⇒ General body repairs, exterior; Rep. gr. 66; Noise insulation; removing and installing the noise insulation.
- Remove the connector -1- of the lamp bracket.
- Unscrew the three securing bolts -2- from the fog light bracket on the trim of the bumper.
- Undo the clip -arrow- and pull the headlight out of its mount.
- Remove the fog light by turning it.

# Installing

Install in reverse order for the removal. During this step, observe the following:

- Check fog light adjustment ⇒ page 137.

# Specified torques

Securing bolts of the grille of the bumper trim	Nm
Securing bolts of the fog lamp on the trim of the bumper	2 Nm <sup>+</sup> <sub>-</sub> 0.5 Nm

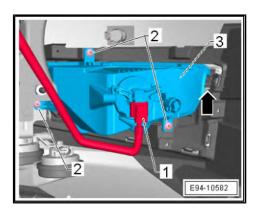
### Fog lights, removing and installing, from 2.1.4 week 45/16



# Note

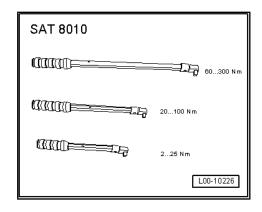
Removal and installation are described for the left side. Removal and installation on the right side are carried out laterally reversed in the same way.

Special tools and workshop equipment required





Torque spanner set - SAT 8010-



♦ Lever - U 30800-

### Removing

Switch off ignition and all electrical consumers.

# Vehicles without access and start authorisation system

Remove ignition key, if fitted.

### Vehicles with access and start authorisation system

Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

### Continued for all vehicles

Remove the front grille of the bumper cover <del>⇒ page 133</del> ⇒ General body repairs, exterior; Rep. gr. 63; Front bumper; Assembly overview - bumper cover



# Note

The shape of the fog lights and the number and position of the screws is different depending on the model.

### Vehicles with retaining clip, except version "FR"

Use a small screwdriver to remove the retaining clip -1- from the radiator grille.

### Continued for all vehicles:

- Unscrew the securing bolts -arrow- from the fog light bracket on the trim of the bumper.
- Remove fog lamp.
- Separate the fog lamp connector.

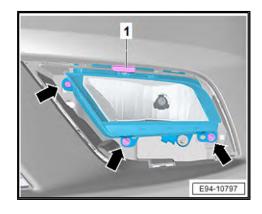
# Installing

Install in reverse order for the removal. During this step, observe the following:

Check fog light adjustment ⇒ page 137.

# Specified torques

Securing bolts of the grille of the bumper trim	2 Nm
Securing bolts of the fog lamp on the trim of the bumper	2 Nm <sup>+</sup> <sub>-</sub> 0.5 Nm





### 2.2 Removing and installing fog light bulb L22 / L23

⇒ "2.2.1 Removing and installing fog light bulb L22 / L23", page 135

"2.2.2 Installing and removing the left fog light bulb L22 FR fog light", page 135

⇒ "2.2.3 Installing and removing the right fog light bulb L23 FR fog light", page 136

### 2.2.1 Removing and installing fog light bulb L22 / L23



# Note

- ♦ Do not touch the halogen bulb glass when installing it.
- The lamp holder is part of the halogen lamp.

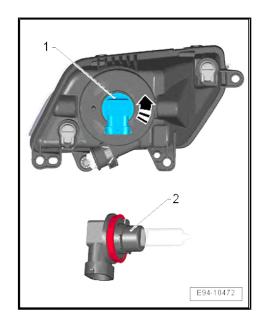
# Removing

- Disconnect ignition and all electrical loads, and remove ignition key.
- Remove fog light ⇒ page 131 .
- Turn the lamp holder -1- 45° anticlockwise -arrow-.
- Remove lamp -2- from the housing of the fog lamp.

### Installing

Install in reverse order for the removal. During this step, observe the following:

- Place the lamp so that the recess of the lamp holder matches up with the lug of the housing.
- Check fog light adjustment ⇒ page 137.



### 2.2.2 Installing and removing the left fog light bulb - L22- FR fog light



# Note

- Do not touch the halogen bulb glass when installing it.
- The lamp holder is part of the halogen lamp.

# Removing

- Disconnect ignition and all electrical loads, and remove ignition key.
- Remove bumper cover (front) ⇒ General body repairs, exterior; Rep. gr. 63; Front bumper; Removing and installing bumper cover (front).
- Disconnect the headlight cleaning line.
- Separate the fog lamp connector.



### Caution

Take care when pressing the retaining tags of the safety lock, these may break easily.

- Using a narrow screwdriver, press the safety catch -1- through the opening -arrow-.
- Remove the safety catch -1-.
- Turn the lamp holder -2- counterclockwise -arrow-.
- Remove lamp -2- from the housing of the fog lamp.

### Installing

Install in reverse order for the removal. During this step, observe the following:

- Place the lamp so that the recess of the lamp holder matches up with the lug of the housing.
- Check fog light adjustment ⇒ page 137.

# 2.2.3 Installing and removing the right fog light bulb - L23- FR fog light



# Note

- ♦ Do not touch the halogen bulb glass when installing it.
- ♦ The lamp holder is part of the halogen lamp.

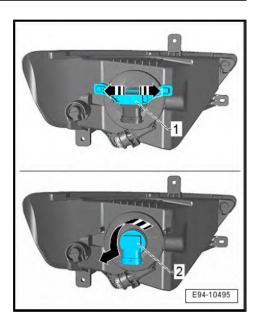
### Removing

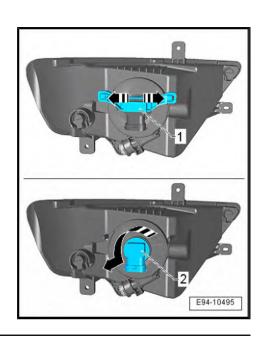
- Remove the lower engine noise insulation ⇒ General body repairs, exterior; Rep. gr. 66; Noise insulation; removing and installing the noise insulation.
- Pull connector from bulb holder.
- Using a narrow screwdriver, press the safety catch through the opening.
- Turn the lamp holder counter-clockwise.
- Remove the lamp from the fog lamp housing.

### Installing

Install in reverse order for the removal. During this step, observe the following:

- Place the lamp so that the recess of the lamp holder matches up with the lug of the housing.
- Check fog light adjustment ⇒ page 137.







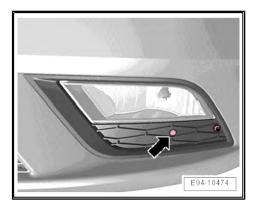
#### 2.3 Adjusting fog lights

- ⇒ "2.3.1 Adjusting fog lights", page 137
- ⇒ "2.3.2 Adjusting the fog lights, FR headlights", page 137

#### 2.3.1 Adjusting fog lights

- The conditions for checking and adjustment are the same as for the main headlamps.
- Regulate the reach of the headlamps, turning the alignment screw -arrow- with a screwdriver.

Tilt measurement: -1 % + -0.2



#### 2.3.2 Adjusting the fog lights, FR headlights

- The conditions for checking and adjustment are the same as for the main headlamps.
- Regulate the reach of the headlamps, turning the alignment screw -arrow- with a screwdriver.

Tilt measurement: -1 % + \_0.2



#### 3 Lights in exterior mirror

⇒ "3.1 Assembly overview - lights in exterior mirror", page 138

⇒ "3.2 Installing and removing the exterior mirror turn signal bulb L131 / L132", page 138

#### 3.1 Assembly overview - lights in exterior mirror

#### 1 - Mirror mounting

☐ Installing and removing ⇒ General body repairs, exterior; Rep. gr. 66; Exterior mirror; installing and removing exterior mirror

#### 2 - Turn signal light bulb

- Driver side exterior mirror turn signal bulb -L131-
- ☐ Front passenger side exterior mirror turn signal bulb - L132-
- Removal and installation ⇒ page 138

#### 3 - Bolts

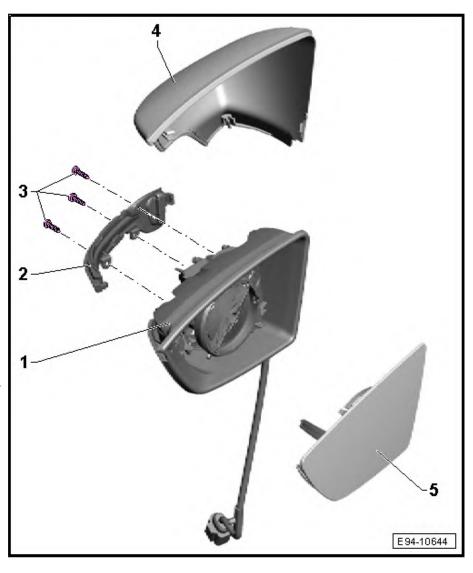
□ 0.9 Nm

#### 4 - Cover for mirror

☐ Installing and removing ⇒ General body repairs, exterior; Rep. gr. 66; Exterior mirror; installing and removing mirror housing

#### 5 - Mirror glass

☐ Installing and removing ⇒ General body repairs, exterior; Rep. gr. 66; Exterior mirror; installing and removing exterior mirror glass



#### 3.2 Installing and removing the exterior mirror turn signal bulb L131 / L132

#### Removing

Switch off ignition and all electrical consumers.

#### Vehicles without access and start authorisation system

Remove ignition key, if fitted.

#### Vehicles with access and start authorisation system

Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.



#### Continued for all vehicles

- Remove mirror cover  $\Rightarrow$  General body repairs, exterior; Rep. gr. 66; Exterior mirror; Removing and installing mirror cover.
- Unplug the electrical connector -2-.
- Unscrew bolts -arrows-.
- Remove the bulb for the indicator -1- upwards out of the mount -3- in the exterior mirror actuator.

#### Installing

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

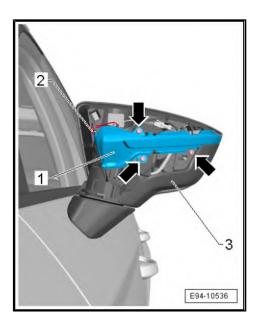


#### Note

Entire turn signal in exterior mirror must be renewed as a complete unit if an LED is defective.

#### Specified torques

◆ ⇒ "3.1 Assembly overview - lights in exterior mirror", page 138



#### 4 Tail lights

- ⇒ "4.1 Installation location overview Tail Lights", page 140
- ⇒ "4.2 Removing and installing tail lights on tailgate", page 146
- ⇒ "4.3 Removing and installing tail light", page 150
- ⇒ "4.4 Removing and installing tail lights M2 / M4", page 155
- ⇒ "4.5 Removing and installing turn signal bulb", page 160

## 4.1 Installation location overview - Tail Lights

- ⇒ "4.1.1 Installation overview Tail Lights, Leon / Leon SC ", page 140
- ⇒ "4.1.2 Installation location overview Tail Lights, Leon ST", page 142
- ⇒ "4.1.3 Installation location overview rear lights, Leon / Leon SC, LED, until cw 45/16", page 143
- ⇒ "4.1.4 Installation location overview rear lights, Leon / Leon SC, LED, from cw 45/16", page 144
- ⇒ "4.1.5 Installation location overview rear lights, Leon / Leon ST, LED, until cw 45/16", page 145
- ⇒ "4.1.6 Installation location overview rear lights, Leon / Leon ST, LED, from cw 45/16", page 146
- 4.1.1 Installation overview Tail Lights, Leon / Leon SC



#### 1 - Rear lights on bodywork

☐ Tail light on the wing: removing and installing ⇒ page 150

#### 2 - Indicator bulb

- ☐ Rear left turn signal bulb - M6-
- Rear right turn signal bulb M8-
- □ Removal and installation <del>⇒ page 160</del>

#### 3 - Lamp for closing / brake light

Replacing the bulbs, remove the bulb holder ⇒ page 160

#### 4 - Bulb holder on the chassis

Removal and installation ⇒ page 160

#### 5 - Securing handle

□ 3.5 Nm

#### 6 - Nuts

- ☐ 3 Pieces
- □ 5 Nm

#### 7 - Tailgate bulb holder

☐ Removal and installation <u>⇒ page 155</u>

#### 8 - Parking light bulb

□ Removal and installation ⇒ page 155

#### 9 - Parking light bulb

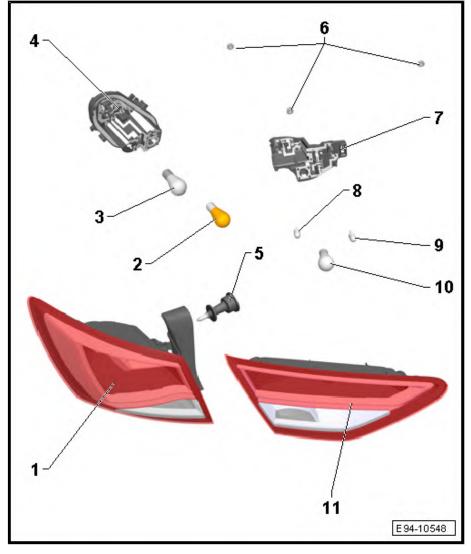
□ Removal and installation ⇒ page 155

#### 10 - Bulb for the reversing light or rear fog light

- ☐ Left reversing light bulb M16-
- ☐ Rear fog light bulb, right side
- □ Replacing the bulbs, remove the bulb holder <u>⇒ page 155</u>

#### 11 - Rear lights on the tailgate

☐ Removing and installing on the tailgate ⇒ page 146



#### 4.1.2 Installation location overview - Tail Lights, Leon ST

#### 1 - Rear lights on bodywork

☐ Tail light on the wing: removing and installing <u>⇒ page 151</u>

#### 2 - Indicator bulb

- ☐ Rear left turn signal bulb - M6-
- Rear right turn signal bulb - M8-
- ☐ Replacing the bulbs, remove the bulb holder ⇒ page 161

#### 3 - Lamp for closing / brake light

☐ Replacing the bulbs, remove the bulb holder ⇒ page 161

#### 4 - Bulb holder on the chassis

□ Removal and installation ⇒ page 161

#### 5 - Securing handle

□ 3.5 Nm

#### 6 - Nuts

- □ 3 Pieces
- □ 5 Nm

#### 7 - Tailgate bulb holder

□ Removal and installation ⇒ page 156

#### 8 - Parking light bulb

☐ Replacing the bulbs, remove the bulb holder ⇒ page 156

#### 9 - Parking light bulb

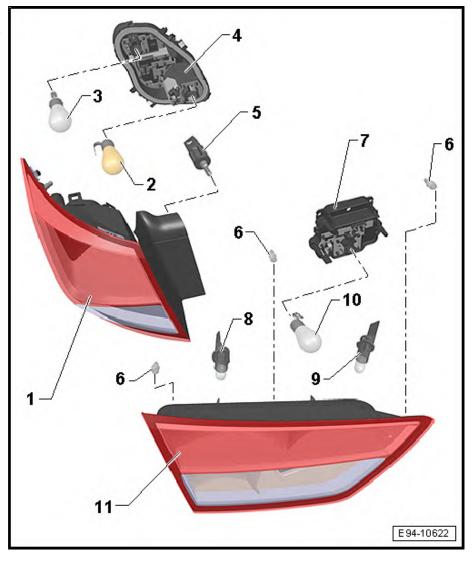
□ Renewing bulbs ⇒ page 156

#### 10 - Bulb for the reversing light or rear fog light

- ☐ Left reversing light bulb M16-
- ☐ Rear fog light bulb, right side
- □ Replacing the bulbs, remove the bulb holder ⇒ page 156

#### 11 - Rear lights on the tailgate

□ Removing and installing on the tailgate ⇒ page 147



6



#### 4.1.3 Installation location overview - rear lights, Leon / Leon SC, LED, until cw 45/16

3

#### 1 - Rear lights on bodywork

Tail light on the wing: removing and installing ⇒ page 152

#### 2 - LED connector: stop and position

- 8 LED module: Stop and 17 LED module: Pos.
- ☐ The LED modules are a part of the tail light of the fixed lighting system and the LEDs cannot be replaced.

#### 3 - Bulb holder on the chassis

□ Removal and installation  $\Rightarrow$  page 162

#### 4 - Indicator bulb

- Rear left turn signal bulb - M6-
- Rear right turn signal bulb - M8-
- □ Replacing the bulbs, remove the bulb holder ⇒ page 162

#### 5 - Securing handle

□ 3.5 Nm

#### 6 - Nuts

- □ 3 Pieces
- □ 3.5 Nm

#### 7 - Tailgate bulb holder

Removal and installation ⇒ page 158

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#### 8 - Bulb for the reversing light or rear fog light

- ☐ Left reversing light bulb M16-
- □ Rear right fog light bulb
- □ Replacing the bulbs, remove the bulb holder ⇒ page 158

#### 9 - LED connector: position

- 25 LED module: Pos.
- The LED modules are a part of the tail light of the moving lighting system and the LEDs cannot be replaced.

#### 10 - Rear lights on the tailgate

☐ Removing and installing on the tailgate ⇒ page 148

## 4.1.4 Installation location overview - rear lights, Leon / Leon SC, LED, from cw 45/16

#### 1 - Nuts

- ☐ 3 Pieces
- □ 3.5 Nm

#### 2 - Securing handle

□ 3.5 Nm

#### 3 - Rear lights on bodywork

□ Tail light on the wing: removing and installing
 ⇒ page 152

#### 4 - Reverse light bulb

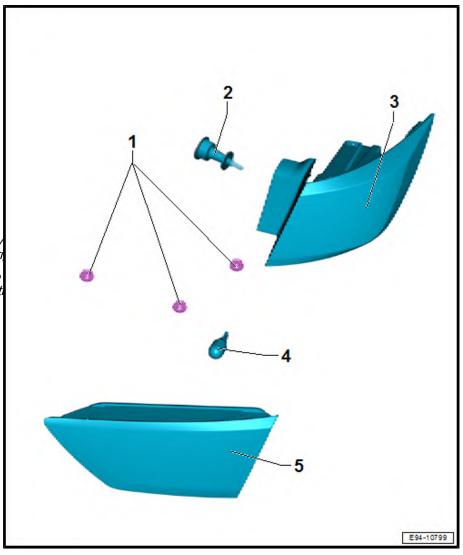


#### Note

- ◆ For left-hand drive v bulb is fitted in the ri
- For right-hand drive this bulb is fitted in the

#### 5 - Rear lights on the tailgate

Removing and installing on the tailgate⇒ page 148





#### 4.1.5 Installation location overview - rear lights, Leon / Leon ST, LED, until cw 45/16

#### 1 - Rear lights on bodywork

Tail light on the wing: removing and installing ⇒ page 154

#### 2 - LED connector: stop and position

- 8 LED module: Stop and 17 LED module: Pos.
- ☐ The LED modules are a part of the tail light of the fixed lighting system and the LEDs cannot be replaced.

#### 3 - Bulb holder on the chassis

Removal and installation  $\Rightarrow$  page 163

#### 4 - Indicator bulb

- ☐ Rear left turn signal bulb - M6-
- Rear right turn signal bulb - M8-
- ☐ Replacing the bulbs, remove the bulb holder ⇒ page 163

#### 5 - Securing handle

□ 3.5 Nm

#### 6 - Nuts

- □ 3 Pieces
- □ 3.5 Nm

#### 7 - Tailgate bulb holder

Removal and installation ⇒ page 159

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#### 8 - Bulb for the reversing light or rear fog light

- ☐ Left reversing light bulb M16-
- □ Rear right fog light bulb
- □ Replacing the bulbs, remove the bulb holder ⇒ page 159

#### 9 - LED connector: position

- 25 LED module: Pos.
- ☐ The LED modules are a part of the tail light of the moving lighting system and the LEDs cannot be replaced.

#### 10 - Rear lights on the tailgate

☐ Removing and installing on the tailgate ⇒ page 149

### 4.1.6 Installation location overview - rear lights, Leon / Leon ST, LED, from cw 45/16

#### 1 - Nuts

- 3 Pieces
- □ 3.5 Nm

#### 2 - Securing handle

□ 3.5 Nm

#### 3 - Rear lights on bodywork

- □ Tail light on the wing: removing and installing
  ⇒ page 152
- 4 Reverse light bulb

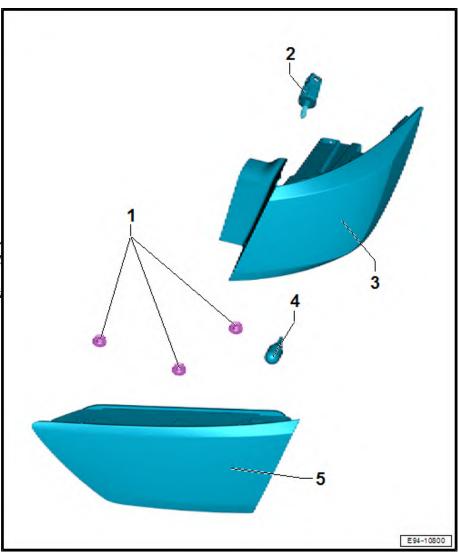


#### Note

- ◆ For left-hand drive v bulb is fitted in the ri
- For right-hand drive this bulb is fitted in the

#### 5 - Rear lights on the tailgate

Removing and installing on the tailgate⇒ page 148



## 4.2 Removing and installing tail lights on tailgate

- ⇒ "4.2.1 Installing and removing tailgate lights, Leon / Leon SC", page 146
- ⇒ "4.2.2 Remove and install tailgate lights, Leon ST", page 147
- ⇒ "4.2.3 Installing and removing tailgate lights, Leon / Leon SC, LED", page 148
- ⇒ "4.2.4 Remove and install tailgate lights, Leon ST, LED", page 149

## 4.2.1 Installing and removing tailgate lights, Leon / Leon SC

#### Removing

Switch off ignition and all electrical consumers.



#### Vehicles without access and start authorisation system

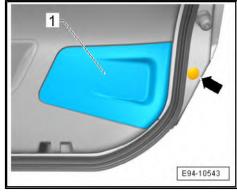
- Remove ignition key, if fitted.

#### Vehicles with access and start authorisation system

Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

#### Continued for all vehicles

- Open tailgate.
- Clip out the service cover -1- from the tailgate trim.
- Remove the lock -arrow-.



- Remove the electrical connector.
- Unscrew the three nuts -arrow- of the rear light.
- Remove the rear light.

#### Installing

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

- First secure exterior bolts, checking clearances between sides of optical group and body.
- Ensure contact of the edges of the casing with the bodywork.

#### **Specified torques**

Component	Nm
Rear lights on the tailgate, fastening nuts	5

#### 4.2.2 Remove and install tailgate lights, Leon ST

#### Removing

Switch off ignition and all electrical consumers.

#### Vehicles without access and start authorisation system

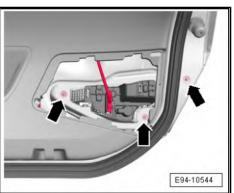
Remove ignition key, if fitted.

#### Vehicles with access and start authorisation system

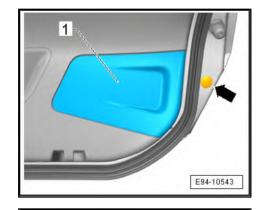
Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

#### Continued for all vehicles

Open tailgate.



- Clip out the service cover -1- from the tailgate trim.
- Remove the lock -arrow-.



- Disconnect plug -1-.
- Unscrew the three nuts -arrow- of the rear light.
- Remove the rear light.

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

- First secure exterior bolts, checking clearances between sides of optical group and body.
- Ensure contact of the edges of the casing with the bodywork.

#### **Specified torques**

Component	Nm
Rear lights on the tailgate, fastening nuts	5

#### 4.2.3 Installing and removing tailgate lights, Leon / Leon SC, LED

#### Removing

Switch off ignition and all electrical consumers.

#### Vehicles without access and start authorisation system

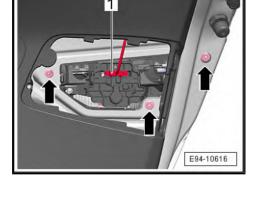
Remove ignition key, if fitted.

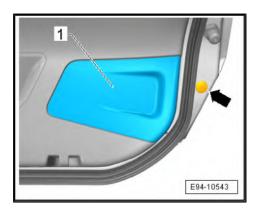
#### Vehicles with access and start authorisation system

Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

#### Continued for all vehicles

- Open tailgate.
- Clip out the service cover -1- from the tailgate trim.
- Remove the lock -arrow-.







- Remove the electrical connector.
- Unscrew the three nuts -arrow- of the rear light.
- Remove the rear light.

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

- First secure exterior bolts, checking clearances between sides of optical group and body.
- Ensure contact of the edges of the casing with the bodywork.

#### **Specified torques**

Component	Nm
Rear lights on the tailgate, fastening nuts	5

#### 4.2.4 Remove and install tailgate lights, Leon ST, LED

#### Removing

Switch off ignition and all electrical consumers.

#### Vehicles without access and start authorisation system

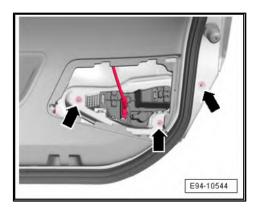
- Remove ignition key, if fitted.

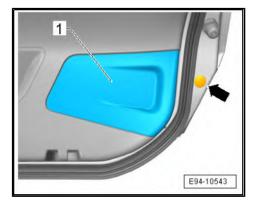
#### Vehicles with access and start authorisation system

Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

#### Continued for all vehicles

- Open tailgate.
- Clip out the service cover -1- from the tailgate trim.
- Remove the lock -arrow-.







- Disconnect plug -1-.
- Unscrew the three nuts -arrow- of the rear light.
- Remove the rear light.

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

- First secure exterior bolts, checking clearances between sides of optical group and body.
- Ensure contact of the edges of the casing with the bodywork.

#### **Specified torques**

Component	Nm
Rear lights on the tailgate, fastening nuts	5

#### 4.3 Removing and installing tail light

 $\Rightarrow$  "4.3.1 Installing and removing tail lights, Leon / Leon SC", page  $\underline{150}$ 

⇒ "4.3.2 Remove and install tail lights, Leon ST", page 151

⇒ "4.3.3 Installing and removing tail lights, Leon / Leon SC, LED", page 152

⇒ "4.3.4 Remove and install tail lights, Leon ST, LED", page 154

### 4.3.1 Installing and removing tail lights, Leon / Leon SC

#### Special tools and workshop equipment required

♦ Lever - 3409-



#### Removing

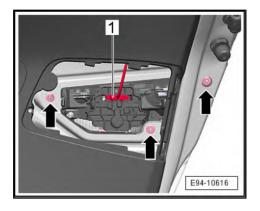
- Switch off ignition and all electrical consumers.

#### Vehicles without access and start authorisation system

- Remove ignition key, if fitted.

#### Vehicles with access and start authorisation system

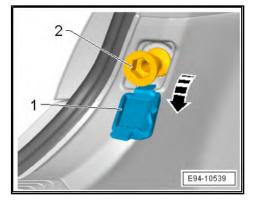
 Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.



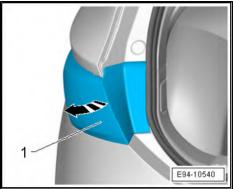


#### Continued for all vehicles

- Open the boot and the side mount -1- in the trim.
- Undo the securing handle -2-.



- Swing the tail gate -1- outwards -arrow-.



- Use the lever 3409- to unhook the bolts -1- for fastening onto the body.
- Remove the electrical connector -arrow-.

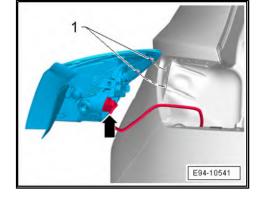
#### Installing

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

- First secure exterior bolts, checking clearances between sides of optical group and body.
- Ensure contact of the edges of the casing with the bodywork.

#### Specified torques

Component	Nm
Rear light on the bodywork, M6 securing handle	3.5



#### 4.3.2 Remove and install tail lights, Leon ST

#### Special tools and workshop equipment required

♦ Lever - 3409-



#### Removing

- Switch off ignition and all electrical consumers.

#### Vehicles without access and start authorisation system

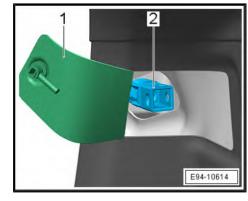
Remove ignition key, if fitted.

#### Vehicles with access and start authorisation system

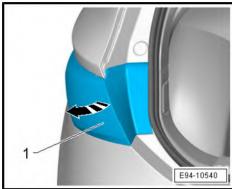
Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

#### Continued for all vehicles

- Open luggage compartment.
- Open the side holder -1- in the trim.
- Undo the securing handle -2-.



Swing the tail gate -1- outwards -arrow-.



- Use the lever 3409- to unhook the bolts -1- for fastening onto the body.
- Remove the electrical connector -arrow-.

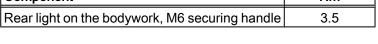
#### Installing

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

- First secure exterior bolts, checking clearances between sides of optical group and body.
- Ensure contact of the edges of the casing with the bodywork.

#### **Specified torques**

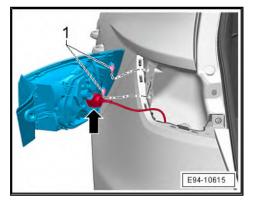
Component	Nm
Rear light on the bodywork, M6 securing handle	3.5



Installing and removing tail lights, Leon /

#### Leon SC, LED

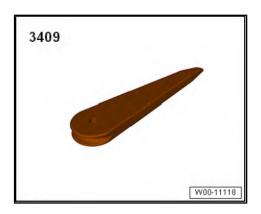
#### Special tools and workshop equipment required



4.3.3



♦ Lever - 3409-



#### Removing

- Switch off ignition and all electrical consumers.

#### Vehicles without access and start authorisation system

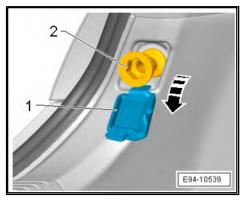
- Remove ignition key, if fitted.

#### Vehicles with access and start authorisation system

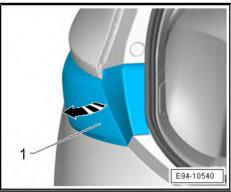
Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

#### Continued for all vehicles

- Open the boot and the side mount -1- in the trim.
- Undo the securing handle -2-.



- Swing the tail gate -1- outwards -arrow-.





- Use the lever 3409- to unhook the bolts -1- for fastening onto the body.
- Remove the electrical connector -arrow-.

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

- First secure exterior bolts, checking clearances between sides of optical group and body.
- Ensure contact of the edges of the casing with the bodywork.

#### Specified torques

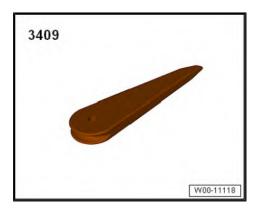
Component	Nm
Rear light on the bodywork, M6 securing handle	3.5

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## 4.3.4 Remove and install tail lights, Leon ST, LED

#### Special tools and workshop equipment required

♦ Lever - 3409-



#### Removing

- Switch off ignition and all electrical consumers.

#### Vehicles without access and start authorisation system

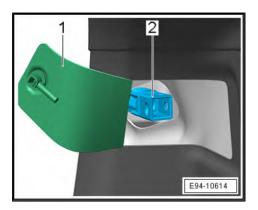
Remove ignition key, if fitted.

#### Vehicles with access and start authorisation system

 Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

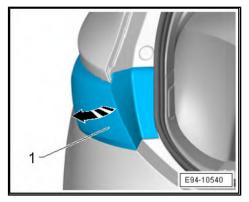
#### Continued for all vehicles

- Open luggage compartment.
- Open the side holder -1- in the trim.
- Undo the securing handle -2-.





Swing the tail gate -1- outwards -arrow-.



- Use the lever 3409- to unhook the bolts -1- for fastening onto the body.
- Remove the electrical connector -arrow-.

#### Installing

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

- First secure exterior bolts, checking clearances between sides of optical group and body.
- Ensure contact of the edges of the casing with the bodywork.

#### Specified torques

Component	Nm
Rear light on the bodywork, M6 securing handle	3.5

#### 4.4 Removing and installing tail lights M2 / **M4**

- "4.4.1 Removing and installing tail lights M2 / M4, Leon / Leon SC ", page 155
- ⇒ "4.4.2 Removing and installing tail lights M2 / M4, Leon ST", page 156
- ⇒ "4.4.3 Removing and installing tail lights M2 / M4, Leon / Leon SC, LED", page 158
- ⇒ "4.4.4 Removing and installing tail lights M2 / M4, Leon ST, LED", page 159

#### 4.4.1 Removing and installing tail lights M2 / M4, Leon / Leon SC

#### Removing

Switch off ignition and all electrical consumers.

#### Vehicles without access and start authorisation system

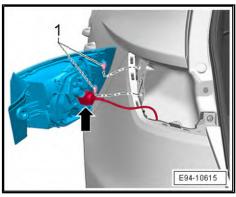
Remove ignition key, if fitted.

#### Vehicles with access and start authorisation system

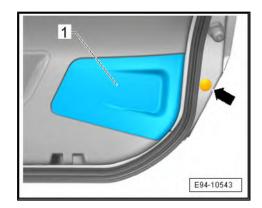
Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

#### Continued for all vehicles

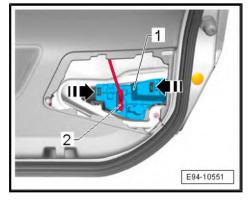
Open tailgate.



Clip out the service cover -1- from the tailgate trim.



- Remove the plug connector -2- from bulb holder -1-.
- Take bulb holder -1- out of housing by pressing retainers in direction of -arrow-.

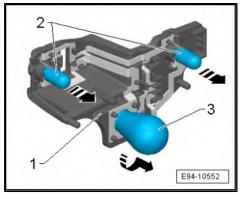


- Unscrew the bulbs -2- for the side light from the bulb holder
- Take out the bulbs -3- for the rear fog light or reverse light from the bulb holder -1-.

#### Installing

Installation is carried out in the reverse sequence; note the fol-

Fit new bulbs in bulb holder; do not touch the glass part of the bulb with bare hands.



#### 4.4.2 Removing and installing tail lights M2 / M4, Leon ST

#### Removing

Switch off ignition and all electrical consumers.

#### Vehicles without access and start authorisation system

Remove ignition key, if fitted.

#### Vehicles with access and start authorisation system

Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

#### Continued for all vehicles

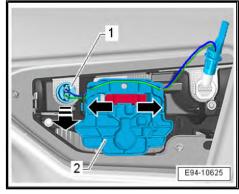
- Open tailgate.



Clip out the service cover -1- from the tailgate trim.



- Pull the plug connector from the bulb holder -2-.
- Take bulb holder -2- out of housing by pressing retainers in direction of -arrow-.
- Disconnect the plug inside the bulb holder.

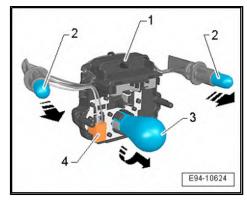


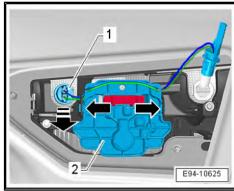
Take the bulbs -3- for the rear fog or reversing light in -the direction of the arrow- out of the bulb holder -1-.



#### Note

- For renewing the bulbs for reversing or rear fog lights the connector -4- must not be disconnected.
- For renewing the bulbs of the sidelights the bulb carrier -1must not be taken out.
- Take out the sidelight bulbs -1- by pulling in -the direction of the arrow-.



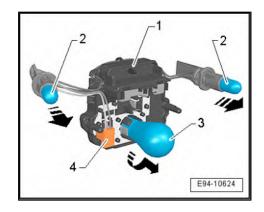


 Take out the bulbs -2- by pulling in -the direction of the arrow-.

#### Installing

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

 Fit new bulbs in bulb holder; do not touch the glass part of the bulb with bare hands.



## 4.4.3 Removing and installing tail lights M2 / M4, Leon / Leon SC, LED

#### Removing

Switch off ignition and all electrical consumers.

#### Vehicles without access and start authorisation system

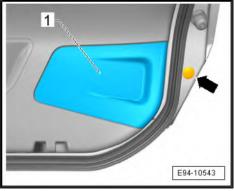
Remove ignition key, if fitted.

#### Vehicles with access and start authorisation system

 Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

#### Continued for all vehicles

- Open tailgate.
- Clip out the service cover -1- from the tailgate trim.



- Pull the plug connector from the bulb holder -1-.
- Push on the retaining tabs -arrows-.
- Remove the bulb frame from the rear light.



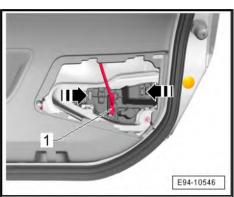
#### Caution

Do not apply excessive force to the bulb holder in order not to overheat the wires of the LED module.



#### **Note**

The plug connector of the LED module is similar to the lamp holder

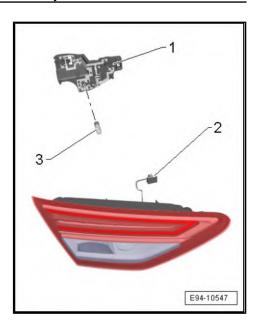




- Take out the bulb -3- for the fog light or reverse light from the bulb holder -1-.
- Separate the plug connector -2- (LED module) from the lamp holder -1-.

Installation is carried out in the reverse sequence; note the fol-

- Fit new bulbs in bulb holder; do not touch the glass part of the bulb with bare hands.
- Switch the plug connector of the LED module.
- Route the wiring harness of the LED module to its fitting position without interruptions.



#### Removing and installing tail lights M2 / 4.4.4 M4, Leon ST, LED

#### Removing

- Switch off ignition and all electrical consumers.

#### Vehicles without access and start authorisation system

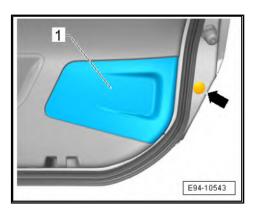
Remove ignition key, if fitted.

#### Vehicles with access and start authorisation system

Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

#### Continued for all vehicles

- Open tailgate.
- Clip out the service cover -1- from the tailgate trim.



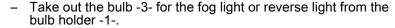


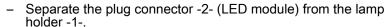
- Remove the connector -1- of the lamp bracket.
- Push on the retaining tabs -arrows-.
- Remove the bulb frame from the rear light.



#### Caution

Do not apply excessive force to the bulb holder in order not to overheat the wires of the LED module.

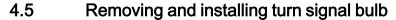




#### Installing

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

- Fit new bulbs in bulb holder; do not touch the glass part of the bulb with bare hands.
- Switch the plug connector of the LED module.
- Route the wiring harness of the LED module to its fitting position without interruptions.



⇒ "4.5.1 Installing and removing turn signal bulbs, Leon / Leon SC ", page 160

⇒ "4.5.2 Removing and installing turn signal bulb, Leon ST", page <u>161</u>

⇒ "4.5.3 Installing and removing turn signal bulbs, Leon / Leon SC, LED", page 162

⇒ "4.5.4 Removing and installing turn signal bulb, Leon ST, LED", page 163

#### 4.5.1 Installing and removing turn signal bulbs, Leon / Leon SC

#### Removing

Switch off ignition and all electrical consumers.

Vehicles without access and start authorisation system

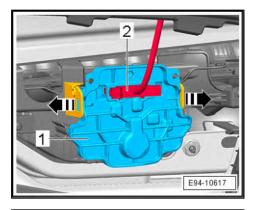
Remove ignition key, if fitted.

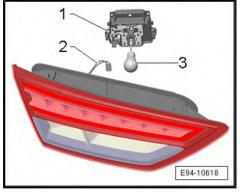
Vehicles with access and start authorisation system

Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

#### Continued for all vehicles

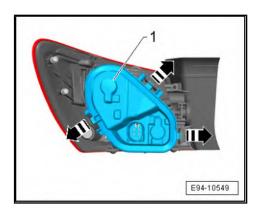
Removing the rear light  $\Rightarrow$  page 152.







Take bulb holder -1- out of housing by pressing retainers in direction of -arrow-.

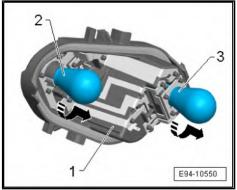


- Remove the front left indicator bulb M6- or front right indicator bulb - M8- -2- from the lamp frame -1-.
- Take out the bulb for the brake light -3- from the bulb holder

#### Installing

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

Fit new bulbs in bulb holder; do not touch the glass part of the bulb with bare hands.



#### 4.5.2 Removing and installing turn signal bulb, Leon ST

#### Removing

- Switch off ignition and all electrical consumers.

#### Vehicles without access and start authorisation system

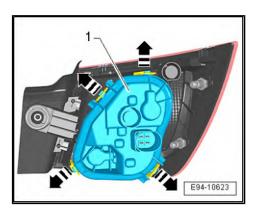
- Remove ignition key, if fitted.

#### Vehicles with access and start authorisation system

Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

#### Continued for all vehicles

- Removing the rear light  $\Rightarrow$  page 151.
- Take bulb holder -1- out of housing by pressing retainers in direction of -arrow-.

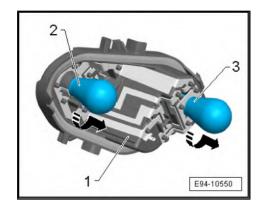




- Remove the front left indicator bulb M6- or front right indicator bulb - M8- -2- from the lamp frame -1-.
- Take out the bulb for the brake light -3- from the bulb holder -1-.

Installation is carried out in the reverse sequence; note the fol-

Fit new bulbs in bulb holder; do not touch the glass part of the bulb with bare hands.



#### Installing and removing turn signal 4.5.3 bulbs, Leon / Leon SC, LED

#### Removing

Switch off ignition and all electrical consumers.

#### Vehicles without access and start authorisation system

Remove ignition key, if fitted.

#### Vehicles with access and start authorisation system

Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

#### Continued for all vehicles

- Removing the rear light  $\Rightarrow$  page 152.
- Remove the bulb frame from the rear light.



#### Caution

Do not apply excessive force to the bulb holder in order not to overheat the wires of the LED module.



#### Note

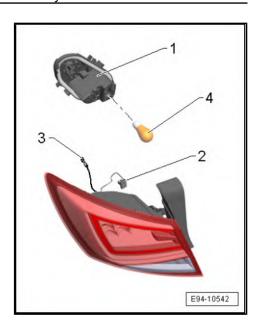
The plug connector of the LED module is similar to the lamp hold-



- Remove the front left indicator bulb M6- or front right indicator bulb - M8- -4- from the lamp frame -1-.
- Disconnect connectors -2- and -3- (LED module) from the bulb holder -1-.

Installation is carried out in the reverse sequence; note the fol-

- Fit new bulbs in bulb holder; do not touch the glass part of the bulb with bare hands.
- Plug in the LED module plug.
- Route the wiring harness of the LED module to its fitting position without interruptions.



#### 4.5.4 Removing and installing turn signal bulb, Leon ST, LED

#### Removing

- Switch off ignition and all electrical consumers.

#### Vehicles without access and start authorisation system

Remove ignition key, if fitted.

#### Vehicles with access and start authorisation system

Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

#### Continued for all vehicles

- Removing the rear light ⇒ page 154.
- Remove the bulb frame from the rear light.



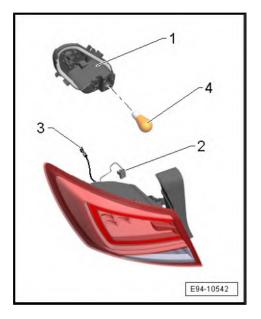
#### Caution

Do not apply excessive force to the bulb holder in order not to overheat the wires of the LED module.

- SEAT auto emoció
- Remove the front left indicator bulb M6- or front right indicator bulb - M8- -4- from the lamp frame -1-.
- Disconnect connectors -2- and -3- (LED module) from the bulb holder -1-.

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

- Fit new bulbs in bulb holder; do not touch the glass part of the bulb with bare hands.
- Plug in the LED module plug.
- Route the wiring harness of the LED module to its fitting position without interruptions.



#### Additional brake lights 5

- ⇒ "5.1 Assembly overview high-level brake light", page 165
- ⇒ "5.2 Removing and installing high-level brake light", page 166
- 5.1 Assembly overview - high-level brake light
- ⇒ "5.1.1 Assembly overview high-level brake light on spoiler", page 165
- 5.1.1 Assembly overview - high-level brake light on spoiler

#### 1 - Light tube for the rear window wiper fluid

- □ Version 1 ⇒ page 169
- □ Version 2 ⇒ page 169

#### 2 - Washer jet

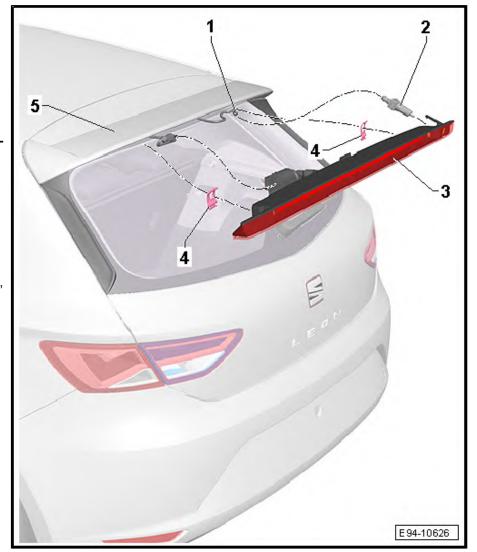
- ☐ Removal and installation ⇒ page 93
- 3 Additional brake light bulb -M25-
  - ☐ Removal and installation  $\Rightarrow$  page 168

#### 4 - Retaining clips

2 Pieces

#### 5 - Spoiler

☐ Installing and removing ⇒ General body repairs, exterior; Rep. gr. 66; Spoiler; removing and installing spoiler





#### 5.2 Removing and installing high-level brake light

⇒ "5.2.1 Removing and installing high-level brake light", page 166

 $\Rightarrow$  "5.2.2 Removing and installing high-level brake light on the spoiler", page 168

#### 5.2.1 Removing and installing high-level brake light

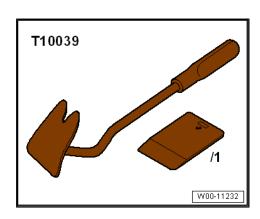


#### Note

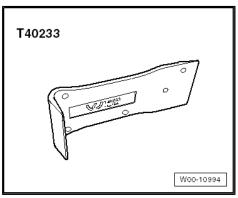
When removing and installing components that are in view (switches, covers, trim and so on), mask off areas in which tools (assembly wedge - T10039/1-, screwdriver) are used to lever out those components using commercially available masking tape.

#### Special tools and workshop equipment required

♦ Wedge - T10039/1-



Removal wedge mad of plastic - T40233-



#### Removing

Switch off ignition and all electrical consumers.

#### Vehicles without access and start authorisation system

Remove ignition key, if fitted.

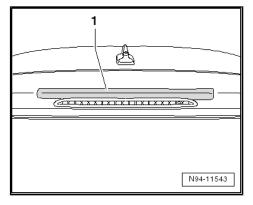
#### Vehicles with access and start authorisation system

Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

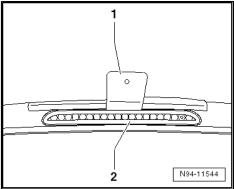


#### Continued for all vehicles

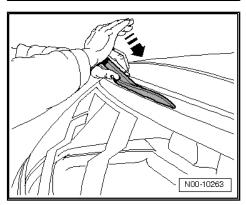
Mask the area of the tailgate above the lamp for the additional brake light with a strip of regular adhesive tap -1-.



Insert assembly wedge - T10039/1--1- at top between bulb for additional brake light - M25- -2- and rear lid.



- Release catch of bulb for additional brake light M25- by pushing assembly wedge in direction of front of vehicle.
- Take bulb for additional brake light M25- out of rear lid, taking connected wiring lengths into account.



Pull out hose lock -arrow- and pull off hose connection -1- from

high-level brake light bulb - M25- .

 Release and pull connector -2- off and remove additional brake light bulb - M25- .

#### Installing

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



#### Note

On fitting the third brake light - M25- make sure that the seal is correctly positioned. The seal should not have kinks or be damaged in any way.

- Attach connector so that it latches into place.
- Starting at the lower edge, insert bulb for additional brake light into rear lid, making sure it engages securely.
- Check function of high-level brake light bulb M25- .

## 5.2.2 Removing and installing high-level brake light on the spoiler

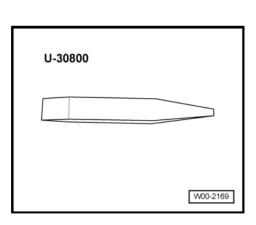


#### Note

When removing and installing components that are in view (switches, covers, trim etc.), areas in which tools (levers - U 30800- and screwdrivers) are used are to be masked off with commercially available adhesive tape.

#### Special tools and workshop equipment required

◆ Lever - U 30800-



#### Removing

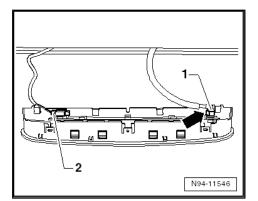
Switch off ignition and all electrical consumers.

#### Vehicles without access and start authorisation system

Remove ignition key, if fitted.

#### Vehicles with access and start authorisation system

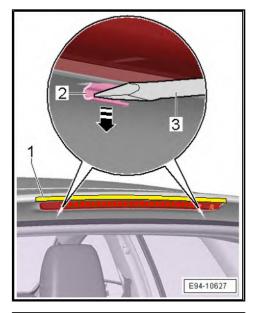
 Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.



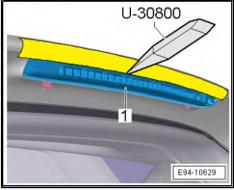


#### Continued for all vehicles

- Stick a strip of commercially available adhesive tape -1- in the spoiler area to the lamp of the high-level brake light - M25-.
- With the aid of a screwdriver -3- push the fasteners -2- in -the direction of the arrow-.



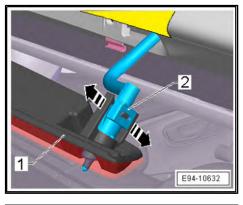
- Insert the lever U 30800- from above between the lamp for the high-level brake light - M25- -1- and the spoiler.
- Remove the lamp for the high-level brake light M25- of the spoiler whereby care is to be taken with the length of fluid hose to the screen wash nozzle and the connected wiring.



#### Version 1

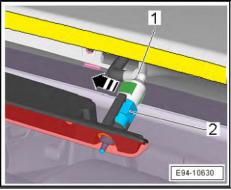
 Release the retaining clips -arrows- and disconnect the screen wash nozzle -2- from the lamp for the high-level brake light -M25- -1-.

#### Version 2



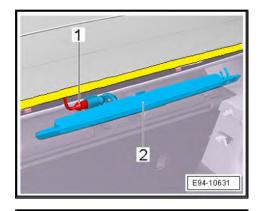
 Release the retaining clips -1- -arrows- and disconnect the fluid hose from the screen wash nozzle -2-.

#### Continue for all vehicles





Disconnect the electrical connector -1- of the lamp for the highlevel brake light - M25- -2-.



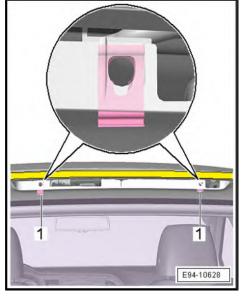
#### Installing

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

- Plug in connector.
- Snap the hose onto the screen wash nozzle.

Place the retaining clips -1- in installation position.

- Insert the lamp for the high-level brake light M25- into the spoiler and snap into place.
- Push the retaining clips on until they close with the spoiler.
- Check function of high-level brake light bulb M25- .





#### 6 Number plate light

⇒ "6.1 Installing and removing number plate light X4 / X5", <u>page 171</u>

⇒ "6.2 Installing and removing number plate light bulb X4 / X5", page 172

#### 6.1 Installing and removing number plate light X4 / X5

⇒ "6.1.1 Installing and removing number plate light X4 / X5", page 171

⇒ "6.1.2 Installing and removing number plate light X4 / X5, LED", page 172

#### 6.1.1 Installing and removing number plate light X4 / X5

#### Removing

Switch off ignition and all electrical consumers.

#### Vehicles without access and start authorisation system

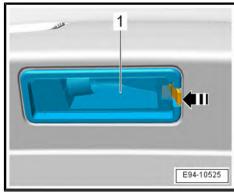
Remove ignition key, if fitted.

#### Vehicles with access and start authorisation system

Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

#### Continued for all vehicles

Remove the indicator lights -1- out of the bumper from behind by unlocking the retaining tab -arrow-.



Release and separate the plug connector -1- and then remove the lamp holder from the number plate light -2-.

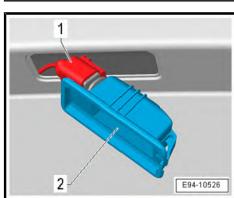
#### Installing

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



#### Note

- Insert number plate light into bumper cover so that connector is oriented to left side of vehicle.
- Engage the indicator light in the bumper mount in a safe man-
- Check function of number plate light.



#### 6.1.2 Installing and removing number plate light X4 / X5, LED

#### Removing

Switch off ignition and all electrical consumers.

#### Vehicles without access and start authorisation system

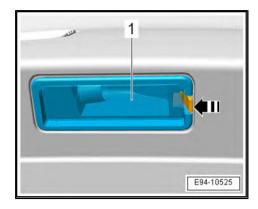
Remove ignition key, if fitted.

#### Vehicles with access and start authorisation system

Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

#### Continued for all vehicles

Remove the indicator lights -1- out of the bumper from behind by unlocking the retaining tab -arrow-.



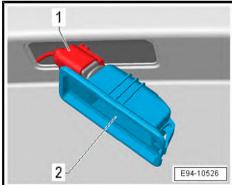
Release and separate the plug connector -1- and then remove the lamp holder from the number plate light -2-.

#### Installing

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



If the LED is defective, the number plate light must be completely renewed.



#### 6.2 Installing and removing number plate light bulb X4 / X5

#### Removing

Switch off ignition and all electrical consumers.

#### Vehicles without access and start authorisation system

Remove ignition key, if fitted.

#### Vehicles with access and start authorisation system

Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

#### Continued for all vehicles

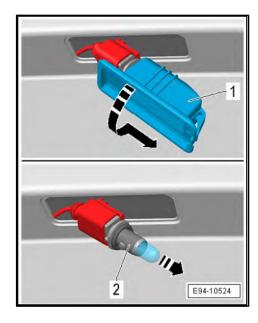
Remove the number plate light out of the latching in the bumper <u>⇒ page 171</u>.



- Turn lamp holder -1- in the direction of the -arrow-.
- Take out the bulb holder -1-.
- Hold the bulb holder -2- in your hand and remove the bulb in the direction of the -arrow-.

### Installing

Installation is carried out in reverse order.



# 7 Switch module of the steering column

- ⇒ "7.1 Assembly overview steering column switch module", page 174
- ⇒ "7.2 Removing and installing steering column switch module", page 175
- ⇒ "7.3 Removing and installing steering column electrical control unit J527", page 177
- ⇒ "7.4 Removing and installing ignition and starter switch", page 179
- ⇒ "7.5 Lock cylinder, removing and installing", page 180
- ⇒ "7.6 Steering lock housing: removing and installing", page 181

# 7.1 Assembly overview - steering column switch module

#### 1 - Shear bolts

- 2 units.
- ☐ These are securing bolts. These are tightened until the head of the bolt shears-off.

#### 2 - Steering column

#### 3 - Switch module

- with indicator switch -E2-, windscreen wiper switch for intermittent operation - E22-, switch for manual dipping and headlight flasher - E4-
- □ Version with switch for GRA - E45-
- ☐ Version with main beam assist and lane assist
- □ Removal and installation ⇒ page 175

#### 4 - Steering lock body

□ Removal and installation ⇒ page 181

#### 5 - Lock cylinder:

- □ Removal and installation ⇒ page 180
- remove when installing the steering wheel

#### 6 - Ignition key

# 7 - Screw

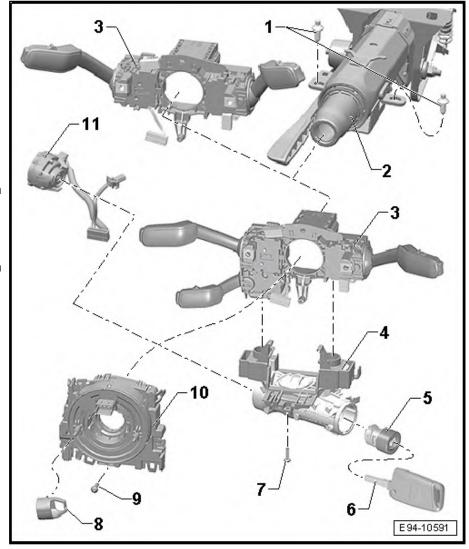
☐ 1.1 Nm

### 8 - Transport protection

only with spare parts

#### 9 - Screw

□ 1.1 Nm



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



#### 10 - Steering column electronics control unit - J527-

- ☐ With airbag coil connector and return ring with slip ring F138-
- □ Removal and installation ⇒ page 177



#### Caution

Risk of damage to the return ring. Return ring with slip ring must not be turned following removal.

#### 11 - Ignition/starter switch - D-

□ Removal and installation ⇒ page 179

# 7.2 Removing and installing steering column switch module

#### Removing

- Move steering wheel down and to rear as far as possible, making use of full range of steering column adjuster.
- Switch off ignition and all electrical consumers.

#### Vehicles without access and start authorisation system

Remove ignition key, if fitted.

#### Vehicles with access and start authorisation system

 Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

# Continued for all vehicles

 Remove steering wheel ⇒ Running gear, axles, steering; Rep. gr. 48; Steering wheel; Removing and installing steering wheel.



#### Note

Secure with adhesive tape -2- the spring for airbag/retractor ring with contact ring - F138- -1- in the centre position.

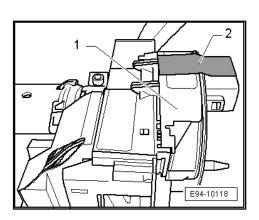
- Remove steering column trim (bottom) ⇒ General body repairs, interior; Rep. gr. 68; Shelves / trim panels; Removing and installing steering column trim (bottom).
- Install upper steering column cover ⇒ General body repairs, interior; Rep. gr. 68; Compartments/covers; Removing and installing upper steering column cover.



#### **WARNING**

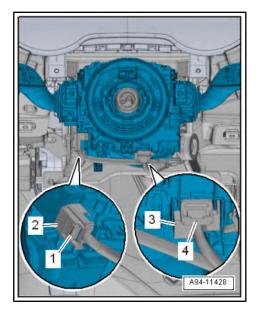
Risk of irreparable damage to electronic components due to static discharge.

 Before disconnecting the electrical connection, the mechanic must discharge static by briefly touching striker plate for door or similar.

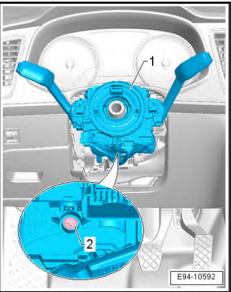




- Remove the fuse -4- of the plug connector -3- and press the unlocking element downwards, disconnect the plug connector -3-.
- Pull out the fuse -1- of the plug connector -2- and press it downwards, disconnect the plug connector -2-.



- Unscrew the bolt -2-.
- Remove the switch module -1- of the steering column.
- Remove the Steering column electronics control unit J527from the steering column switching module ⇒ page 177.



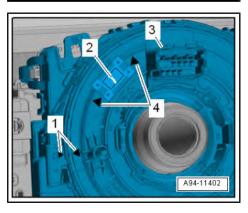
#### Installing

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

- Before pushing on the steering column switch module, check the following on the steering column electronics control unit -3-:
- The "arrows" -1- must face each other.
- Coil connector -2- must be visible through window between "arrows" -4-.

#### **Specified torques**

⇒ "7.1 Assembly overview - steering column switch module", page 174





# 7.3 Removing and installing steering column electrical control unit J527

#### Removing

- Turn front wheels in straight-ahead position steering wheel in 0-position.
- Move steering wheel down and to rear as far as possible, making use of full range of steering column adjuster.
- Switch off ignition and all electrical consumers.

#### Vehicles without access and start authorisation system

Remove ignition key, if fitted.

#### Vehicles with access and start authorisation system

 Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

#### Continued for all vehicles

Remove steering wheel ⇒ Running gear, axles, steering; Rep. gr. 48; Steering wheel; Removing and installing steering wheel



#### Note

Secure with adhesive tape -2- the spring for airbag/retractor ring with contact ring - F138- -1- in the centre position.

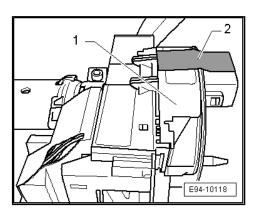
- Remove steering column trim (bottom) ⇒ General body repairs, interior; Rep. gr. 68; Shelves / trim panels; Removing and installing steering column trim (bottom).
- Install upper steering column cover ⇒ General body repairs, interior; Rep. gr. 68; Compartments/covers; Removing and installing upper steering column cover.



#### WARNING

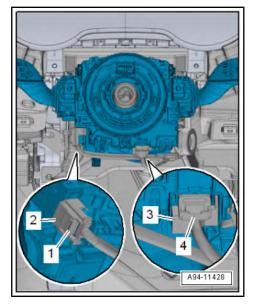
Risk of irreparable damage to electronic components due to static discharge.

 Before disconnecting the electrical connection, the mechanic must discharge static by briefly touching striker plate for door or similar.





- Pull out connector locking element -4-, press down release mechanism and unplug electrical connector -3-.
- Pull out connector locking element -1-, press down and unplug electrical connector -2-.

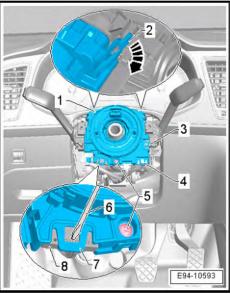


- Disconnect electrical plugs -1, 3, 4 and 8-, then insert the screwdriver -6- as shown in the illustration, and carefully remove the plug connections from the snap arm -7-.
- Unscrew the bolt -5-.
- Release retaining tabs -2- -arrow- and detach steering column electronics control unit - J527- from steering column switch module.



#### Note

The exact assignment should be gleaned from the latest current flow diagram ⇒ Current flow diagrams, Electrical fault finding and Fitting locations.



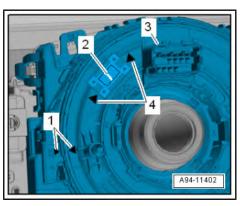
#### Installing

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

- Before pushing steering column electronics control unit J527--3- on, check the following:
- The "arrows" -1- must face each other.
- Coil connector -2- must be visible through window between 'arrows" -4-.
- Make sure all electrical connectors are properly engaged.

#### **Specified torques**

⇒ "7.1 Assembly overview - steering column switch module", page 174





# 7.4 Removing and installing ignition and starter switch

#### Removing

Switch off ignition and all electrical consumers.

#### Vehicles without access and start authorisation system

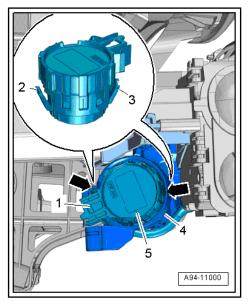
- Remove ignition key, if fitted.

#### Vehicles with access and start authorisation system

 Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

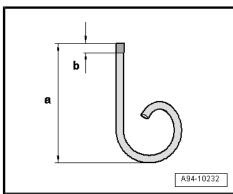
#### Continued for all vehicles

- Remove steering column trim (bottom) ⇒ General body repairs, interior; Rep. gr. 68; Shelves / trim panels; Removing and installing steering column trim (bottom).
- Unplug the electrical connector -1-.
- Unlatch the retaining clips -2 and 3- at the recesses -Arrowsin the steering column lock housing -4- by inserting the watchmaker screwdrivers.



If procedure cannot be performed due to limited space, improvise suitable tool (2 bent wires) as described below.

- Bend one end of a welding rod with diam. Ø 1 mm as a loop and cut down to length -a-.
- Dimension -a- = about 50 mm
- File wire hook so that end is pointed.
- Dimension -b- = 5 mm



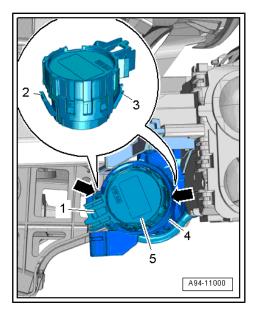


 Pull ignition/starter switch - D- -5- out of the steering lock housing. The jeweller screwdrivers or wire pegs must remain inserted while doing so.

#### Installing

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

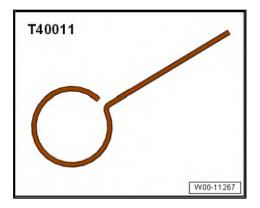
Insert ignition/starter - D- into steering lock housing until it engages audibly.



# 7.5 Lock cylinder, removing and installing

Special tools and workshop equipment required

♦ Dowel pin - T40011-



#### Removing

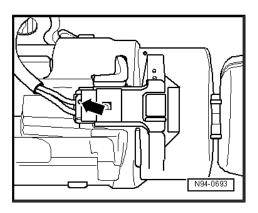
- Switch off ignition and all electrical consumers.
- Remove steering column trim (bottom) 

  General body repairs, interior; Rep. gr. 68; Shelves / trim panels; Removing and installing steering column trim (bottom).
- Remove the lock cylinder carefully from the -arrow- immobiliser reading coil.



#### Note

The immobiliser reading oil is secured to the lock cylinder and cannot be replaced separately.





Turn spare key to "ignition on" position, thereby aligning recess in trim -arrow- with hole in ignition lock.



#### Note

For illustration purposes, the correct ignition lock position is shown without ignition key.

Insert dowel pin - T40011- into hole as far as stop and at the same time pull lock cylinder -1- with reader coil out of steering lock housing -2-.



#### **WARNING**

Risk of lock-up on steering lock.

Do not operate steering lock without lock cylinder.



#### Note

- A blocked steering lock must be replaced.
- The reader coil is integrated into the lock cylinder and cannot be renewed separately.
- The complete lock cylinder must be renewed if the reader coil is defective.
- A new lock cylinder can be ordered from the responsible distribution centre or the importer. When ordering, the vehiclespecific locking number according to the VIN must be provided.
- Unplug electrical connector at reader coil.

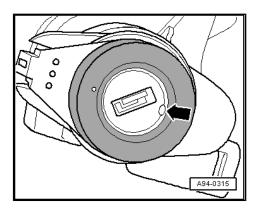
#### Installing

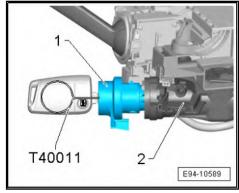
Installation is carried out in the reverse sequence; note the following:

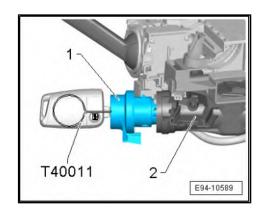
- Insert spare key in lock cylinder and turn to "ignition on" posi-
- Re-insert locking pin T40011- in hole on end face as far as it will go.
- Fit the connector to the immobilizer reader coil.
- Insert lock cylinder -1- with reader coil in steering lock housing
- Pull out locking pin T40011- and press in lock cylinder firmly until catch engages audibly.

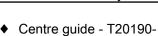
#### 7.6 Steering lock housing: removing and installing

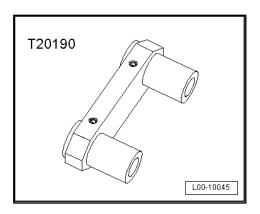
Special tools and workshop equipment required











#### Removing

- Switch off ignition and all electrical consumers.

# Vehicles without access and start authorisation system

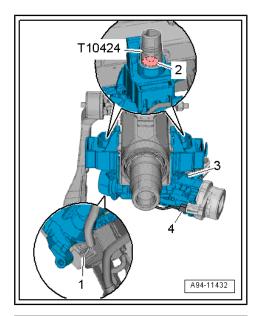
Remove ignition key, if fitted.

#### Vehicles with access and start authorisation system

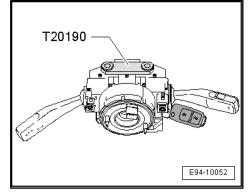
Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

#### Continued for all vehicles

- Remove steering column switch module ⇒ page 175.
- Unplug electrical connectors -1 and 4-.
- Remove breakable head bolts -2- by drilling them with an angular hand drill.



- Drill out both screw heads with the tool T20190 and a  $\varnothing$  5-mm drill, drilling depth 7 mm. Replace the drill with a  $\varnothing$  10-mm drill and repeat the process until both screw heads have been removed from the screws.
- Remove ignition/starter switch <u>⇒ page 179</u>.
- Remove lock cylinder ⇒ page 180.

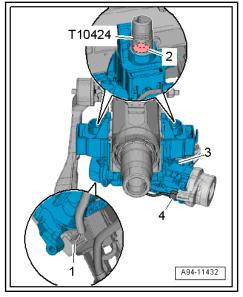




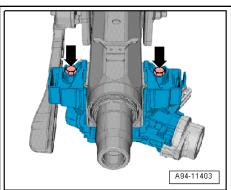
- Detach steering lock housing -3-.

### Installing

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



- Tighten new bolts -arrows- until head shears off.

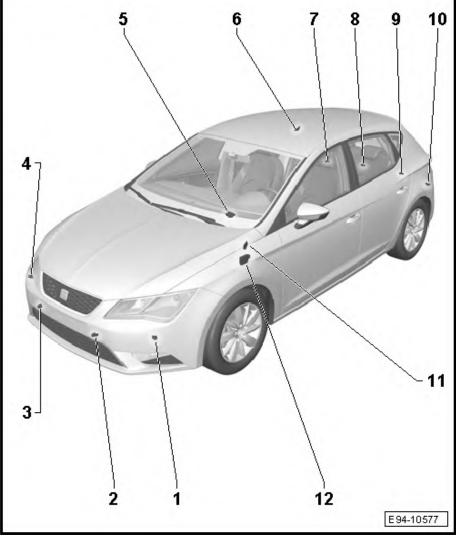


# 8 Parking aid

- ⇒ "8.1 Assembly overview parking aid", page 184
- ⇒ "8.2 Removing and installing parking aid J446", page 185
- ⇒ "8.3 Removing and installing warning buzzers for front parking assist H22", page 186
- ⇒ "8.4 Removing and installing warning buzzers for back parking assist H15", page 187
- ⇒ "8.5 Removing and installing front parking aid senders", page 189
- ⇒ "8.6 Removing and installing rear parking aid senders", page 189

# 8.1 Assembly overview - parking aid

- 1 Front left parking aid sender G255-
  - Removal and installation ⇒ page 189
- 2 Front centre left parking aid sender G254-
  - Removal and installation ⇒ page 189
- 3 Front centre right parking aid sender G253-
  - Removal and installation ⇒ page 189
- 4 Front right parking aid sender - G252-
  - □ Removal and installation ⇒ page 189
- 5 Parking aid button E266-
  - □ Removing and installing
- 6 Rear parking aid warning buzzer H15-
  - □ Remove and install, Leon <u>⇒ page 187</u>
  - □ Remove and install, Leon SC <u>⇒ page 188</u>
  - Remove and install, Leon ST ⇒ page 188
- 7 Rear right parking aid sender - G206-
  - □ Removal and installation ⇒ page 189
- 8 Rear centre right parking aid sender G205-
  - ☐ Removal and installation ⇒ page 189
- 9 Rear centre left parking aid sender G204-
  - □ Removal and installation ⇒ page 189
- 10 Rear left parking aid sender G203-
  - □ Removal and installation ⇒ page 189





- 11 Front parking aid warning buzzer H22-
  - ☐ Removal and installation <u>⇒ page 186</u>
- 12 Parking aid control unit J446-
  - ☐ Removal and installation <u>⇒ page 185</u>

#### 8.2 Removing and installing parking aid J446

⇒ "8.2.1 Removing and installing parking aid J446", page 185

⇒ "8.2.2 Remove and install the control unit holder for J446 the parking assist", page 185

#### 8.2.1 Removing and installing parking aid J446

#### Removing

Switch off ignition and all electrical consumers.

#### Vehicles without access and start authorisation system

Remove ignition key, if fitted.

### Vehicles with access and start authorisation system

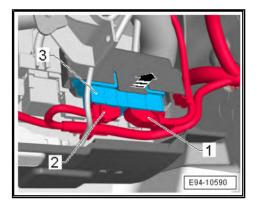
Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

#### Continued for all vehicles

- Depending on the configuration, remove the knee airbag on driver's side ⇒ General body repairs, interior; Rep. gr. 69; Knee airbags; remove or install knee airbag with ignition or remove the cover panel.
- Remove footwell vent on driver's side > Heating, air conditioning; Rep. gr. 87; Ventilation system; footwell vent driver's side: remove and install .
- Disconnect the electrical plugs -1 and 2-, press the safety catch, turn the retention bracket and remove the plug.
- Disengage retaining tab -arrow- and remove control unit -3downwards from retainer.

#### Installing

Installation takes place in reverse order.



#### 8.2.2 Remove and install the control unit holder for - J446- the parking assist

#### Special tools and workshop equipment required

◆ Gauge

#### Removing

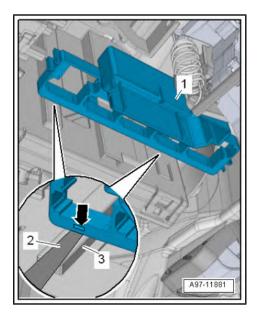
- With the ignition switched off, disconnect battery earth cable <u>⇒ page 9</u> .
- Remove control unit for parking aid J446- . ⇒ page 185



- Remove fuse holder C and move to one side <u>⇒ page 272</u>.
- Insert a 0.9 mm feeler -2- behind the opening -Arrow- as shown in the illustration.
- Remove bracket -1- downwards from bracket for onboard supply control unit -3-.

#### Installing

Installation takes place in reverse order.



#### 8.3 Removing and installing warning buzzers for front parking assist H22

#### Removing

Switch off ignition and all electrical consumers.

#### Vehicles without access and start authorisation system

- Remove ignition key, if fitted.

#### Vehicles with access and start authorisation system

Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

#### Continued for all vehicles

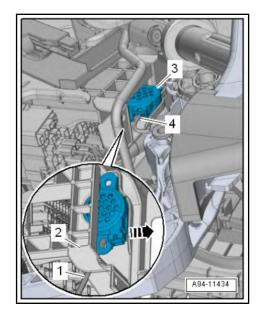
- Depending on the configuration, remove the knee airbag on driver's side ⇒ General body repairs, interior; Rep. gr. 69; Knee airbags; remove or install knee airbag with ignition or remove the cover panel.
- Remove footwell vent on driver's side ⇒ Heating, air conditioning; Rep. gr. 87; Ventilation system; footwell vent driver's side: remove and install .



- Release the front parking aid warning buzzer H22- -3- from its mount -1- using a narrow screwdriver -2- -arrow-.
- Detach the front parking aid warning buzzer H22- .
- Unplug the electrical connector -4-.

#### Installing

Installation takes place in reverse order.



#### 8.4 Removing and installing warning buzzers for back parking assist H15

⇒ "8.4.1 Removing and installing warning buzzers for back parking assist H15", page 187

 $\Rightarrow$  "8.4.2 Removing and installing warning buzzers for back parking assist H15, Leon SC", page 188

 $\Rightarrow$  "8.4.3 Removing and installing warning buzzers for back parking assist H15, Leon ST", page 188

#### 8.4.1 Removing and installing warning buzzers for back parking assist H15

#### Removing

- Switch off ignition and all electrical consumers.

#### Vehicles without access and start authorisation system

- Remove ignition key, if fitted.

#### Vehicles with access and start authorisation system

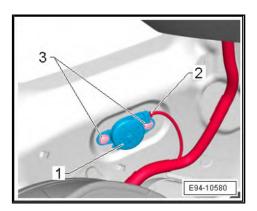
Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

#### Continued for all vehicles

- Remove C-pillar cover  $\Rightarrow$  General body repairs, interior; Rep. gr. 70; Interior covers; C-pillar cover: remove and install.
- Remove the expanding clips -3-.
- Remove the warning buzzer for the rear parking aid -1- together with the expanding clips.
- Unplug the electrical connector -2-.

#### Installing

Installation takes place in reverse order.



# 8.4.2 Removing and installing warning buzzers for back parking assist H15, Leon SC

#### Removing

Switch off ignition and all electrical consumers.

#### Vehicles without access and start authorisation system

- Remove ignition key, if fitted.

#### Vehicles with access and start authorisation system

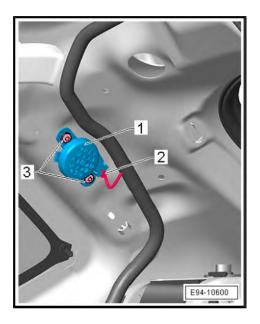
 Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

#### Continued for all vehicles

- Remove C-pillar cover ⇒ General body repairs, interior; Rep. gr. 70; Interior covers; C-pillar cover: remove and install.
- Unplug the electrical connector -2-.
- Remove the expanding clips -3-.
- Remove the warning buzzer for the rear parking aid -1- together with the expanding clips.

#### Installing

Installation takes place in reverse order.



# 8.4.3 Removing and installing warning buzzers for back parking assist H15, Leon ST

#### Removing

Switch off ignition and all electrical consumers.

#### Vehicles without access and start authorisation system

Remove ignition key, if fitted.

#### Vehicles with access and start authorisation system

 Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

### Continued for all vehicles

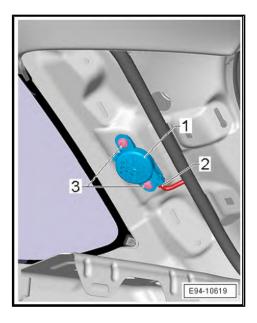
Remove D-pillar cover ⇒ General body repairs, interior; Rep. gr. 70; Interior covers; D-pillar cover: remove and install.



- Unplug the electrical connector -2-.
- Remove the expanding clips -3-.
- Remove the warning buzzer for the rear parking aid -1- together with the expanding clips.

#### Installing

Installation takes place in reverse order.



#### 8.5 Removing and installing front parking aid senders

#### Removing

- Switch off ignition and all electrical consumers.

#### Vehicles without access and start authorisation system

Remove ignition key, if fitted.

#### Vehicles with access and start authorisation system

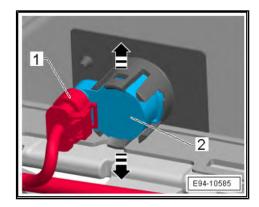
Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

#### Continued for all vehicles

- Remove front bumper cover ⇒ General body repairs, exterior; Rep. gr. 63; Front bumper; Removing and installing bumper cover.
- Pull-off the electrical connection -1- in the sensor.
- Press on both lugs in the -direction of the arrow- and press the sender -2- from the outside to the inside.

#### Installing

Installation takes place in reverse order.



#### 8.6 Removing and installing rear parking aid senders

#### Removing

Switch off ignition and all electrical consumers.

#### Vehicles without access and start authorisation system

Remove ignition key, if fitted.



#### Vehicles with access and start authorisation system

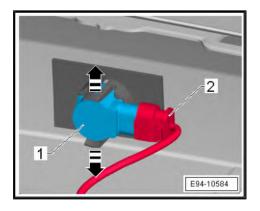
Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

#### Continued for all vehicles

- Remove back bumper cover ⇒ General body repairs, exterior; Rep. gr. 63; Back bumper; Removing and installing bumper
- Pull-off the electrical connection -2- in the sensor.
- Press on both lugs in the -direction of the arrow- and push the sender -1- from the outside to the inside.

#### Installing

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



#### 9 Entry and start authorisation

- ⇒ "9.1 Overview of fitting locations access and start authorization system", page 191
- ⇒ "9.2 Overview of fitting locations keyless access authorization system", page 193
- ⇒ "9.3 Removing and installing entry and start authorisation control unit J518", page 194
- ⇒ "9.4 Removing and installing front door exterior handle switch", <u>page 195</u>
- ⇒ "9.5 Removing and installing interior aerial 1 for entry and start authorisation R138 ", page 195
- $\Rightarrow$  "9.6 Removing and installing front passenger side aerial for entry and start authorisation R135 ", page 196
- ⇒ "9.7 Removing and installing driver side aerial for entry and start authorisation R134", page 196
- ⇒ "9.8 Removing and installing luggage compartment aerial for entry and start system R137 ", page 197
- ⇒ "9.9 Removing and installing rear bumper aerial for entry and start authorisation R136 ", page 197
- 9.1 Overview of fitting locations - access and start authorization system



#### 1 - Starter button - E378-

☐ Removal and installation <u>⇒ page 253</u>

# 2 - Steering column lock control element - N360-

□ Removing and installing ⇒ Running gear, axles, steering; Rep. gr. 48; Steering column; removing and installing safety locking of the active steering (locking solenoid)

#### 3 - Onboard supply control unit - J519-

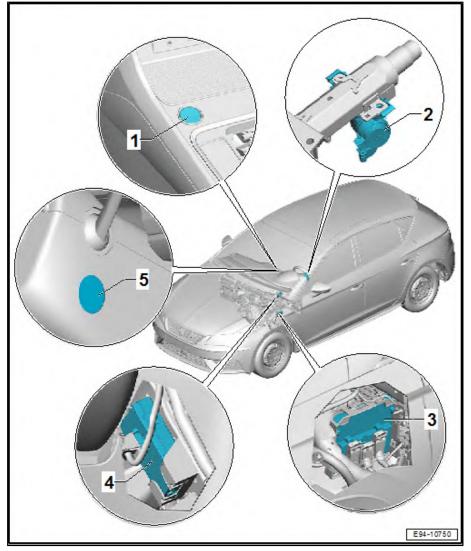
- ☐ With central locking and anti-theft alarm system aerial - R47-
- Assembly overview ⇒ page 273

#### 4 - Entry and start authorisation control unit - J518-

☐ Removal and installation ⇒ page 194

#### 5 - Immobiliser reading cylinder - D2-

☐ Removal and installation. ⇒ page 258





#### 9.2 Overview of fitting locations - keyless access authorization system

⇒ "9.2.1 Overview of fitting locations - keyless access authorization system, front", page 193

 $\Rightarrow$  "9.2.2 Overview of fitting locations - keyless entry system, rear", page 194

#### 9.2.1 Overview of fitting locations - keyless access authorization system, front

#### 1 - Front passenger's exterior door handle

- □ Remove and install with sensor for front right exterior door handle contact - G606-⇒ page 195
- □ With front passenger side aerial for entry and start authorisation -R135- . Removing and installing <del>⇒ page 196</del>.

#### 2 - Interior aerial 1 for entry and start authorisation - R138-

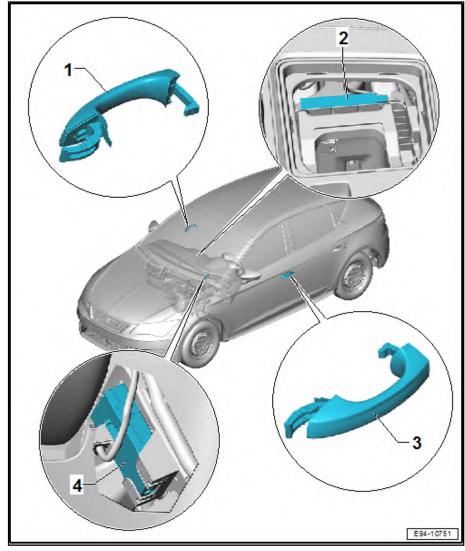
Removal and installation ⇒ page 195

#### 3 - Driver's exterior door handle

- □ Remove and install with sensor for front left exterior door handle contact - G605-⇒ page 195
- ☐ With driver side aerial for entry and start authorisation - R134- . Removing and installing ⇒ page 196

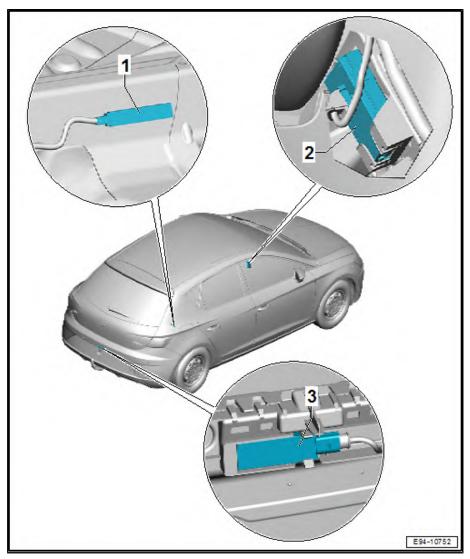
#### 4 - Entry and start authorisation control unit - J518-

Removal and installation ⇒ page 194



# 9.2.2 Overview of fitting locations - keyless entry system, rear

- 1 Luggage compartment aerial for entry and start system R137-
  - □ Removal and installation ⇒ page 197
- 2 Entry and start authorisation control unit J518-
  - □ Removal and installation ⇒ page 194
- 3 Rear bumper aerial for entry and start authorisation R136-
  - □ Removal and installation ⇒ page 197



# 9.3 Removing and installing entry and start authorisation control unit - J518-

#### Removing

Switch off ignition and all electrical consumers.

#### Vehicles without access and start authorisation system

Remove ignition key, if fitted.

#### Vehicles with access and start authorisation system

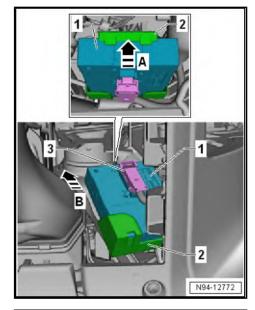
 Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

#### Continued for all vehicles

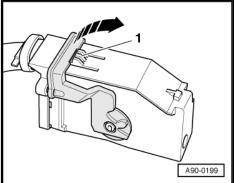
- Remove footwell cover on driver side ⇒ General body repairs, interior; Rep. gr. 68; Compartments/covers.
- Remove knee airbag with igniter ⇒ General body repairs, interior; Rep. gr. 69; Knee airbags; Assembly overview knee airbag .



- Press the top bracket -2- of the entry and start authorisation control unit - J518- -1- in the -direction of arrow A-.
- Remove entry and start authorisation control unit J518- -1from bracket -2- in direction of arrow -B-.
- Release connector -3- and unplug.



- Press safety catch -1- to disconnect connector.
- Swing retainer in -direction of arrow- and pull off connector.

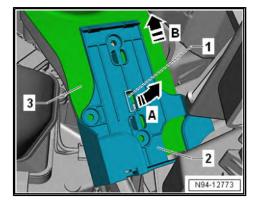


- Lever out catch -1- in -direction of arrow A-, using a narrow screwdriver if necessary.
- Remove bracket -2- from support -3- in direction of arrow -B-.

#### Installation

Install in reverse order to dismantling, noting the following.

- Ensure that bracket for entry and start authorisation control unit - J518- engages audibly.
- Ensure that entry and start authorisation control unit J518engages audibly in bracket.



#### 9.4 Removing and installing front door exterior handle switch

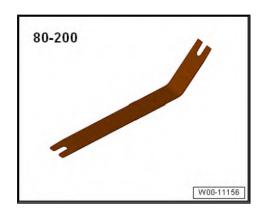
The sensor for front left exterior door handle contact - G605- and the sensor for front right exterior door handle contact - G606- is integrated in the relevant exterior door handle and cannot be renewed individually in case of a defect.

Removing and installing door handle  $\Rightarrow$  General body repairs, exterior; Rep. gr. 57; Door components; Removing and installing door handle.

#### 9.5 Removing and installing interior aerial 1 for entry and start authorisation - R138-

Special tools and workshop equipment required

Lever - 80 200-



#### Removing

Switch off ignition and all electrical consumers.

#### Vehicles without access and start authorisation system

Remove ignition key, if fitted.

### Vehicles with access and start authorisation system

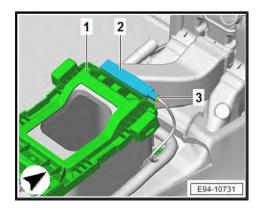
Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

#### Continued for all vehicles

- Remove centre console cover ⇒ General body repairs, interior; Rep. gr. 68; Centre console; Removing and installing centre console cover .
- Pry off the interior aerial 1 for entry and start system R138--2- using the lever - 80 200- from the bracket -1-.
- Release connector -3- and unplug.

#### Installation

Install in reverse order.



#### 9.6 Removing and installing front passenger side aerial for entry and start authorisation - R135-

The front passenger side aerial for entry and start authorisation -R135- is integrated in the exterior door handle and cannot be renewed separately if defective.

- Removing and installing door handle ⇒ General body repairs, exterior; Rep. gr. 57; Door components; Removing and installing door handle.
- 9.7 Removing and installing driver side aerial for entry and start authorisation -R134-

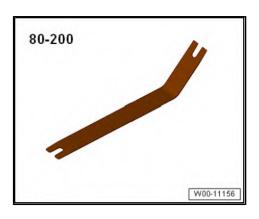
The driver side aerial for entry and start authorisation - R134- is integrated in the exterior door handle and cannot be renewed separately if defective.



- Removing and installing door handle ⇒ General body repairs, exterior; Rep. gr. 57; Door components; Removing and installing door handle.
- 9.8 Removing and installing luggage compartment aerial for entry and start system R137-

#### Special tools and workshop equipment required

♦ Lever - 80 200-



#### Removing

- Switch off ignition and all electrical consumers.

#### Vehicles without access and start authorisation system

- Remove ignition key, if fitted.

#### Vehicles with access and start authorisation system

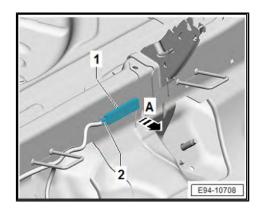
 Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

#### Continued for all vehicles

- Remove rear bench seat ⇒ General body repairs Interior;
   Rep. gr. 72; Rear seats; Removing and installing bench seat / individual seats.
- Fold back floor covering.
- Pry off the luggage compartment aerial for entry and start system R137- -1- using the lever 80 200- in the -direction of arrow A- from the body.
- Release connector -2- and unplug.

#### Installation

Install in reverse order.



# 9.9 Removing and installing rear bumper aerial for entry and start authorisation - R136-

#### Removing

- Switch off ignition and all electrical consumers.



#### Vehicles without access and start authorisation system

- Remove ignition key, if fitted.

#### Vehicles with access and start authorisation system

Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

#### Continued for all vehicles

Remove rear bumper cover ⇒ General body repairs, exterior; Rep. gr. 63; Rear bumper; Removing and installing bumper cover.



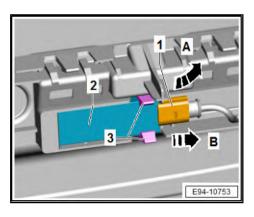
#### Note

Depending on the model, the aerial in the rear bumper for access and start authorization - R136- is aligned the other way .

- Unlock tabs -3-.
- Turn the luggage compartment aerial for entry and start system - R136- -2- slightly in the -direction of arrow A-.
- Pull out the luggage compartment aerial for entry and start system - R136- -2- in the -direction of arrow B- from the retainers -3-.
- Release connector -1- and unplug.

#### Installation

Install in reverse order.





#### 10 Automatic headlight range control

⇒ "10.1 Removing and installing headlight range control unit", page 199

#### 10.1 Removing and installing headlight range control unit

#### Removing

Switch off ignition and all electrical consumers.

#### Vehicles without access and start authorisation system

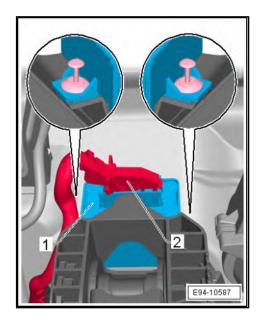
Remove ignition key, if fitted.

#### Vehicles with access and start authorisation system

Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

#### Continued for all vehicles

- Depending on the configuration, remove the knee airbag on driver's side ⇒ General body repairs, interior; Rep. gr. 69; Knee airbags; remove or install knee airbag with ignition or remove the cover panel.
- Remove footwell vent on driver's side ⇒ Heating, air conditioning; Rep. gr. 87; Ventilation system; footwell vent driver's side: remove and install.
- Unplug electrical connector -2- by pressing catch and turning retaining clip; then detach connector.

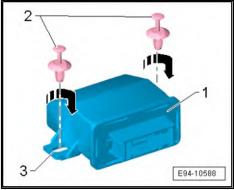


Remove the expanding clips -2- and take out headlight range control unit -1- towards rear.

#### Installing

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

Insert fastener -2- in opening -3- on control unit -1-, as shown in illustration, and lock by turning 90° -arrow-.



#### 11 **Towing bracket**

- ⇒ "11.1 Assembly overview towing bracket socket", page 200
- ⇒ "11.2 Removing and installing trailer detector control unit J345 ", page 201

#### 11.1 Assembly overview - towing bracket socket

⇒ "11.1.1 Assembly overview – Socket for trailer hitch, Leon / Leon SC", page 200

⇒ "11.1.2 Assembly overview – Socket for trailer hitch, Leon ST", page 201

#### 11.1.1 Assembly overview – Socket for trailer hitch, Leon / Leon SC

# 1 - Control unit for trailer detection - J345- .

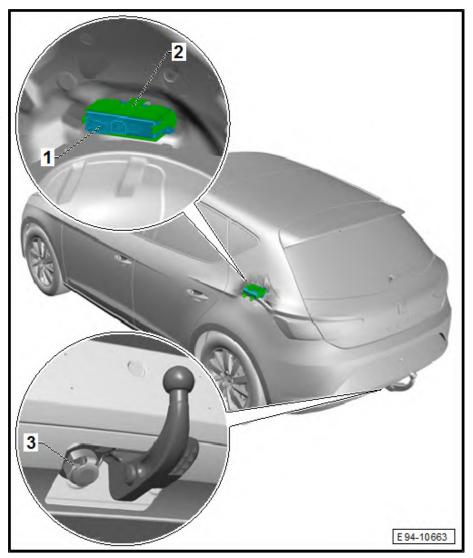
☐ Removal and installation. ⇒ page 201

#### 2 - Bracket/bearing/support

☐ For fastening the control unit for trailer detection -J345-.

#### 3 - Trailer socket - U10- .

☐ The exact pin assignment can be found in the current flow diagram ⇒ Current flow diagrams, Electrical fault finding and Fitting loca-





#### 11.1.2 Assembly overview – Socket for trailer hitch, Leon ST

#### 1 - Control unit for trailer detection - J345-.

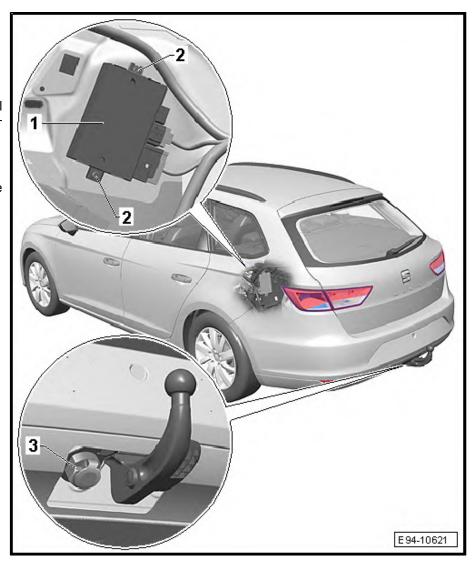
Removal and installation. <u>⇒ page 201</u>

#### 2 - Press rivet

For fastening the control unit for trailer detection -J345-.

#### 3 - Trailer socket - U10-

☐ The exact pin assignment can be found in the current flow diagram ⇒ Current flow diagrams, Electrical fault finding and Fitting locations.



#### 11.2 Removing and installing trailer detector control unit - J345-

⇒ "11.2.1 Removing and installing control unit for trailer detection J345 , Leon ST", page 201

⇒ "11.2.2 Removing and installing control unit for trailer detection J345 , Leon / Leon SC", page 202

⇒ "11.2.3 Removing and installing bracket for control unit for trailer detection J345 , Leon / Leon SC", page 203

#### 11.2.1 Removing and installing control unit for trailer detection - J345-, Leon ST

#### Removing

Switch off ignition and all electrical consumers.

#### Vehicles without access and start authorisation system

Remove ignition key, if fitted.

#### Vehicles with access and start authorisation system

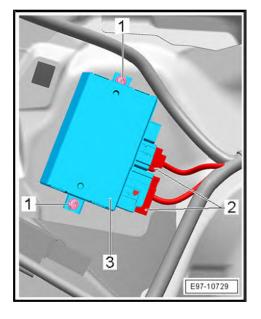
Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

#### Continued for all vehicles

- Remove luggage compartment side panel trim ⇒ Internal chassis installation work; Rep. gr. 70; luggage compartment panel trim; uninstalling and installing the luggage compartment side panel trim.
- Remove the press rivets -1-.
- Remove trailer detector control unit J345- -3-.
- Unplug electrical connectors -2-.

#### Installing

Installation takes place in reverse order.



#### 11.2.2 Removing and installing control unit for trailer detection - J345-, Leon / Leon SC

#### Removing

Switch off ignition and all electrical consumers.

#### Vehicles without access and start authorisation system

Remove ignition key, if fitted.

# Vehicles with access and start authorisation system

Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

#### Continued for all vehicles

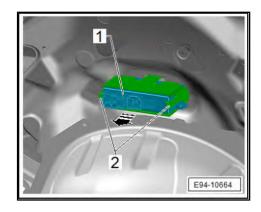
- Remove luggage compartment side panel trim ⇒ Internal chassis installation work; Rep. gr. 70; luggage compartment panel trim; uninstalling and installing the luggage compartment side panel trim.
- Unplug the electrical connectors.



- Loosen the fasteners -2- of the bracket for the control unit for trailer detection - J345- .
- Take out the control unit for trailer detection J345- -1- in -direction of arrow-.

#### Installing

Installation takes place in reverse order.



#### 11.2.3 Removing and installing bracket for control unit for trailer detection - J345-, Leon / Leon SC

#### Removing

Switch off ignition and all electrical consumers.

#### Vehicles without access and start authorisation system

- Remove ignition key, if fitted.

#### Vehicles with access and start authorisation system

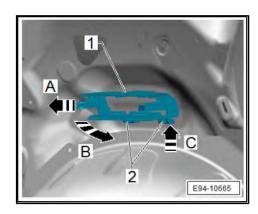
Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

#### Continued for all vehicles

- Remove luggage compartment side panel trim ⇒ Internal chassis installation work; Rep. gr. 70; luggage compartment panel trim; uninstalling and installing the luggage compartment side panel trim.
- Remove trailer detector control unit J345- ⇒ page 202.
- Press the fastener -1- carefully turn the bracket of the control unit for trailer detection - J345- in direction of arrow -arrow B-, until the fasteners -1- and -2- come loose from the body.
- Slide the bracket of the control unit for trailer detection J345in direction of arrow -arrow C- and -arrow A- in order to take it out of the body.

#### Installing

Installation takes place in reverse order.



### 12 Soundaktor

- ⇒ "12.1 Assembly overview Soundaktor", page 204
- $\Rightarrow$  "12.2 Structure-borne sound control unit J869 : removing and <code>installing\*</code>, <code>page 204</code>
- ⇒ "12.3 Actuator for structure-borne sound R214 : removing and installing", page 205
- ⇒ "12.4 Remove and install the holder for actuator for structureborne sound R214", page 206

# 12.1 Assembly overview - Soundaktor

1	_	9	cr	·_	۱۸/

- 2 units.
- □ 5.5 Nm

# 2 - Mount for Soundaktor - R214-

- Removing and installing the resonator holder
   ⇒ page 206
- 3 Actuator for structure-borne sound R214-
  - □ Removal and installation ⇒ page 205

#### 4 - Nut

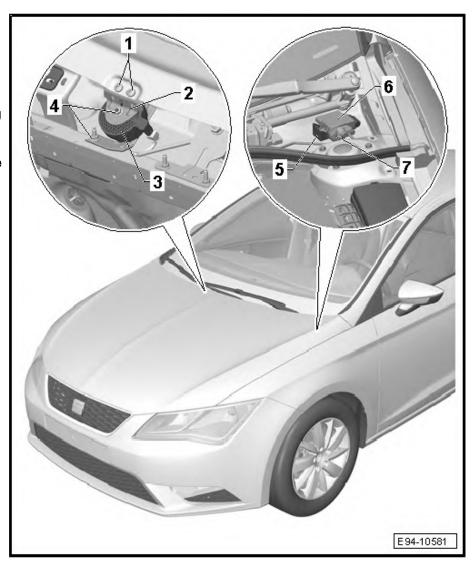
- ☐ 2 units.
- □ 8 Nm

# 5 - Bracket of the control unit for structure-borne sound - J869-

- Remove and install the control unit holder for structure-borne sound J869- ⇒ page 204
- 6 Control unit for structureborne sound - J869-
  - □ Structure-borne sound control unit: removing and installing J869⇒ page 204

#### 7 - Nut

- ☐ 1 units.
- □ 4.5 Nm



# 12.2 Structure-borne sound control unit - J869- : removing and installing

#### Removing

- Switch off ignition and all electrical consumers.

## Vehicles without access and start authorisation system

- Remove ignition key, if fitted.

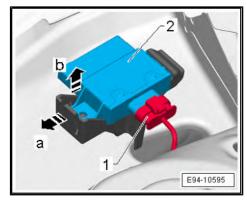


#### Vehicles with access and start authorisation system

Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

#### Continued for all vehicles

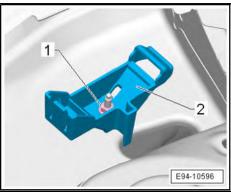
- Remove plenum chamber cover ⇒ General body repairs, exterior; Rep. gr. 50; Bulkhead: removing and installing plenum chamber cover .
- Disconnect the connector -1- on the control unit for structureborne sound - J869- .
- Undo the retaining clips in the -direction of arrow a- in order to be able to remove the control unit for structure-borne sound -J869- in the -direction of arrow b-.



- Undo the fixing nuts -1- from the bracket of the control unit for structure-borne sound - J869- .
- Remove the bracket -2- for the plenum chamber.

#### Installing

- Install in reverse order.



#### 12.3 Actuator for structure-borne sound -R214-: removing and installing

#### Removing

Switch off ignition and all electrical consumers.

#### Vehicles without access and start authorisation system

- Remove ignition key, if fitted.

#### Vehicles with access and start authorisation system

Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

#### Continued for all vehicles

Remove plenum chamber cover ⇒ General body repairs, exterior; Rep. gr. 50; Bulkhead: removing and installing plenum chamber cover .



- Disconnect the connector -1- on the actuator for structureborne sound - R214-.
- Remove nut -3-.
- Remove the actuator for structure-borne sound R214- from the plenum chamber.

#### Installation:

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

#### **Specified torques**

◆ ⇒ "12.1 Assembly overview - Soundaktor", page 204

#### 12.4 Remove and install the holder for actuator for structure-borne sound - R214-

#### Removing

- Remove windscreen ⇒ General body repairs, exterior; Rep. gr. 64; Windscreen; Removing and installing windscreen .
- Remove nut -1-.
- Remove bolts -2-.
- Remove the bracket -3- for the plenum chamber.

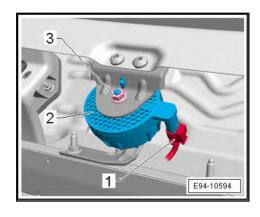
#### Installation:

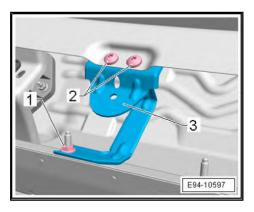
Installation is carried out in the reverse sequence; note the following:

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

#### **Specified torques**

♦ = "12.1 Assembly overview - Soundaktor", page 204





# Lights, bulbs, switches - interior

# Lights

- ⇒ "1.1 Fitting location overview lights in dash panel", page 207
- ⇒ "1.2 Fitting location overview lights in front doors", page 209
- ⇒ "1.3 Overview of fitting locations lights in centre console", page 210
- ⇒ "1.4 Fitting location overview lights in luggage compartment", page 212
- ⇒ "1.5 Fitting location overview lights in roof trim", page 213
- ⇒ "1.6 Glove compartment light W6: Removing and installing", page 213
- ⇒ "1.7 Remove and install footwell light W9 / W10.", page 215
- ⇒ "1.8 Removing and installing front footwell light bulb L151 / L152", page 216
- ⇒ "1.9 Removing and installing central locking deadlock function warning lamp -SAFE- K133 ", page 217
- ⇒ "1.10 Removing and installing selector lever display unit Y26 ", page 217
- ⇒ "1.11 Remove and install luggage compartment light W3", page 217
- ⇒ "1.12 Installing and removing illuminated make-up mirror W20 / W14", page 219
- ⇒ "1.13 Replacing the bulb for interior light W1 / W13 / W19, front", page 220
- ⇒ "1.14 Replacing the bulb or rear interior light W47 / W48", page 221
- ⇒ "1.15 Removing and installing LED for background lighting", <u>page 222</u>
- ⇒ "1.16 Removing and installing storage compartment illumination bulb L120 ", page 223
- 1.1 Fitting location overview - lights in dash panel



#### 1 - Indicator lamp for hazard warning light - K6-

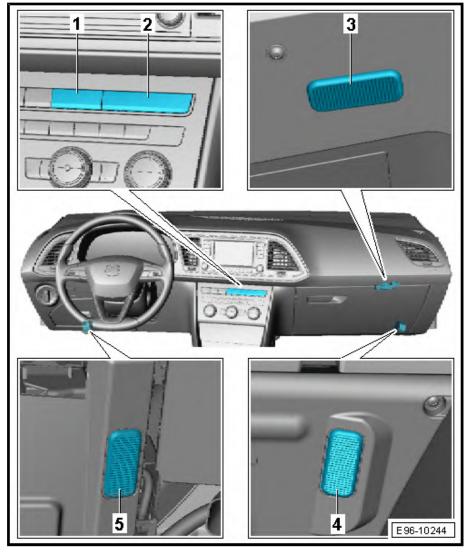
- Removal and installation ⇒ page 236
- 2 Warning lamp for airbag deactivated on front passenger side - K145- / front passenger side airbag deactivated warning lamp - K286-
  - ☐ Removal and installation ⇒ page 236
- 3 Glove compartment light W6-
  - Removal and installation ⇒ page 213

#### 4 - Right footwell light - W10-

- ☐ In the right footwell light - W10- with LED, the light must be replaced if there is a defect.
- □ Removal and installation ⇒ page 215
- Renewing bulb ⇒ page 216

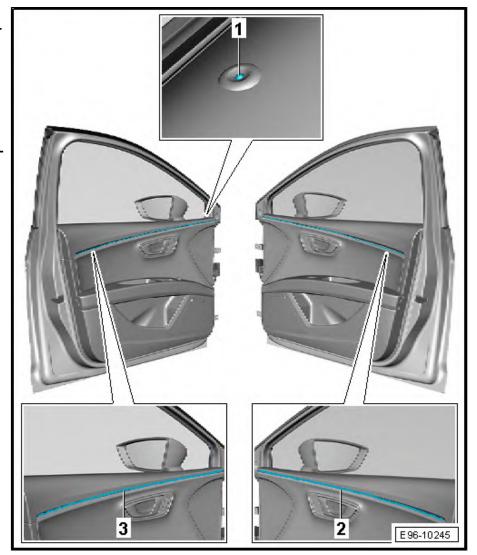
#### 5 - Left footwell light - W9-

- ☐ In the left footwell light W9- with LED, the light must be replaced if there is a defect.
- Removal and installation ⇒ page 215
- Renewing bulb ⇒ page 216



### 1.2 Fitting location overview - lights in front doors

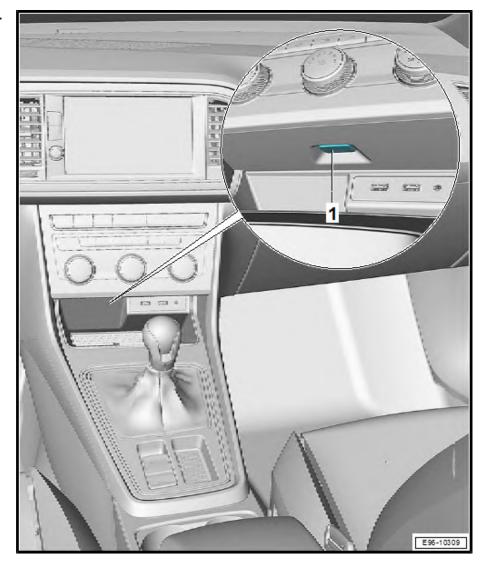
- 1 Central locking deadlock function warning lamp K133-
  - □ Removal and installation ⇒ page 217
- 2 Light for passenger door ambient lighting W87-
  - □ Removal and installation ⇒ page 222
- 3 Background lighting assembly on driver door W86-
  - ☐ Removal and installation ⇒ page 222



### Overview of fitting locations - lights in centre console 1.3

## 1 - Storage compartment illumination bulb - L120-

□ Removal and installation ⇒ page 223





- 1 Selector lever position display Y26-
  - ☐ Removal and installation ⇒ page 217

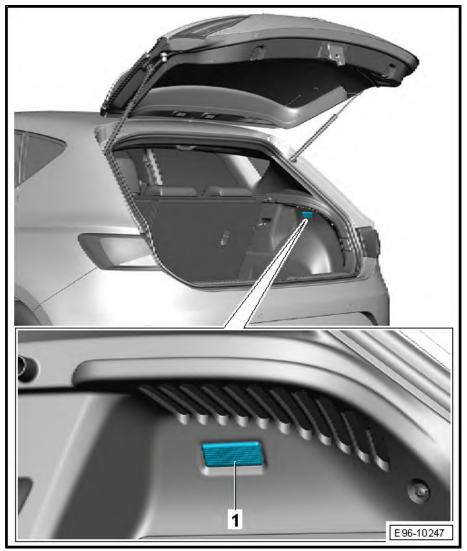




### 1.4 Fitting location overview - lights in luggage compartment

### 1 - Luggage compartment light - W3-

- ☐ In the luggage compartment light W3- with LED, the light must be replaced if there is a defect.
- Removal and installation <u>⇒ page 217</u>





#### 1.5 Fitting location overview - lights in roof trim

### 1 - Driver side illuminated make-up mirror - W20-

- In the illuminated makeup mirror on the driver's side - W20- with LED, the light must be replaced if there is a defect.
- Removal and installation ⇒ page 219

### 2 - Rear left interior light - W47-

- ☐ In the left rear interior light - W47- with LED, the light must be replaced if there is a de-
- Removal and installation ⇒ page 221

### 3 - Rear interior light - WX2-

- In the rear interior light -WX2- with LED, the light must be replaced if there is a defect.
- □ Removal and installation ⇒ page 250

### 4 - Rear right interior light -W48-

- ☐ In the right rear interior light - W48- with LED, the light must be replaced if there is a defect.
- Removal and installation  $\Rightarrow$  page 221

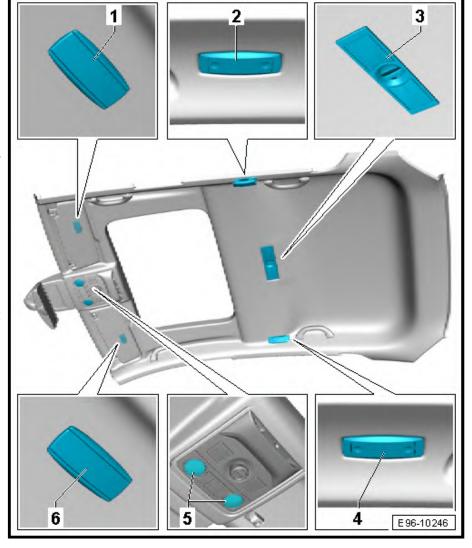
### 5 - Front interior light - WX1-

- In the front interior light WX1- with LED, the light must be replaced if there is a defect.
- □ Removal and installation ⇒ page 246
- □ Replace bulb for passenger reading light. W13- ⇒ page 220
- □ Replace bulb for driver's side reading light. W19- ⇒ page 220

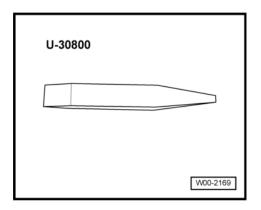
### 6 - Front passenger side illuminated vanity mirror - W14-

- In the illuminated make-up mirror on the passenger's side W14- with LED, the light must be replaced if there is a defect.
- ☐ Removal and installation ⇒ page 219

### 1.6 Glove compartment light - W6-: Removing and installing



Lever - U30800-





### Note

For removing and installing of components located in a visible zones (switches, covers, linings, etc.) always protect the zones where a lever (lever - U30800-, screwdriver) must be used using normal adhesive tape.

### Removing

- Switch off ignition and all electrical consumers.

### Vehicles without access and start authorisation system

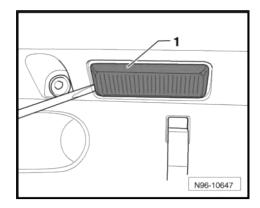
Remove ignition key, if fitted.

### Vehicles with access and start authorisation system

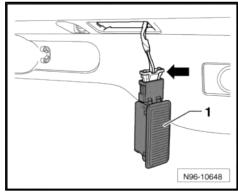
Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

### Continued for all vehicles

Carefully lever out the interior light -1- using the lever -U30800-.



Disconnect plug connector -arrows- and remove the glove compartment light -1-.

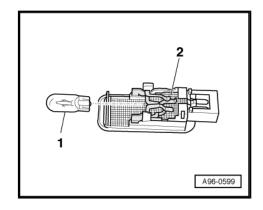




Remove bulb -1- from bulb holder -2- on reverse side of glove compartment light.

### Installing

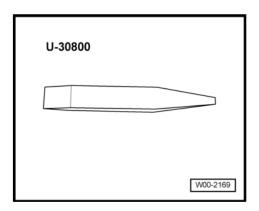
Installation takes place in reverse order.



### 1.7 Remove and install footwell light W9 / W10.

### Special tools and workshop equipment required

♦ Lever - U30800-



### Removing

- Switch off ignition and all electrical consumers.

### Vehicles without access and start authorisation system

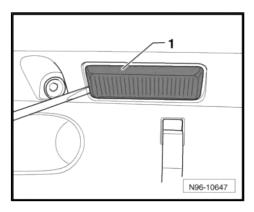
- Remove ignition key, if fitted.

### Vehicles with access and start authorisation system

Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

### Continued for all vehicles

Footwell light, left side - W9- or Footwell light, right side - W10-1-, carefully lever out using the lever - U30800- .

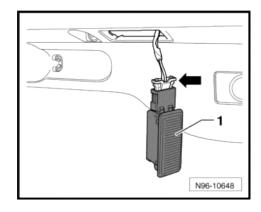




Disengage and disconnect the plug connector -arrow- and remove the footwell light, left side - W9- or footwell light, right side - W10- .

### Installing

Installation takes place in reverse order.



### Removing and installing front footwell 1.8 light bulb L151 / L152

### Removing

Switch off ignition and all electrical consumers.

### Vehicles without access and start authorisation system

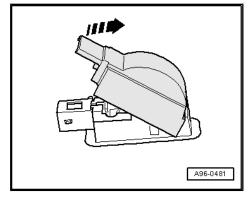
Remove ignition key, if fitted.

### Vehicles with access and start authorisation system

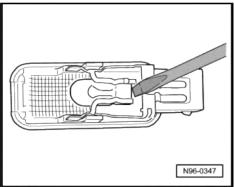
Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

### Continued for all vehicles

- Remove footwell light, left side W9- / Footwell light, right side - W10- <u>⇒ page 215</u>.
- Carefully prise off cover over bulb -arrow-.



Carefully pry bulb out of bulb holder.





### 1.9 Removing and installing central locking deadlock function warning lamp -SAFE-- K133-

### Removing

Switch off ignition and all electrical consumers.

### Vehicles without access and start authorisation system

- Remove ignition key, if fitted.

### Vehicles with access and start authorisation system

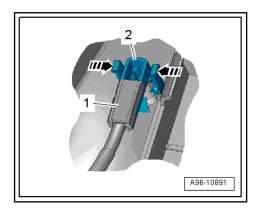
Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

### Continued for all vehicles

- Remove door trim ⇒ General body repairs, interior; Rep. gr. 70; Front door trim; Removing and installing front door trim.
- Release retaining clips -arrows-.
- Remove LED -1- for central locking downwards out of door trim

### Installing

Installation takes place in reverse order.



### 1.10 Removing and installing selector lever display unit - Y26-



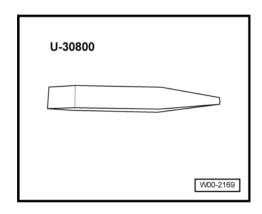
### Note

The selector lever position display - Y26- -1- is integrated in the selector lever gaiter and cannot be removed individually.

Removing and installing selector cover ⇒ Rep. gr. 34; Selector mechanism; Removing and installing selector lever handle

### 1.11 Remove and install luggage compartment light W3

Lever - U30800-



### Removing

Switch off ignition and all electrical consumers.

### Vehicles without access and start authorisation system

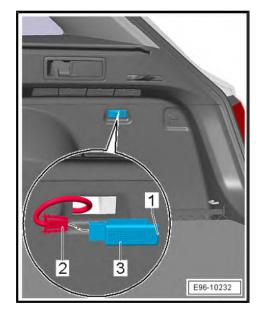
Remove ignition key, if fitted.

### Vehicles with access and start authorisation system

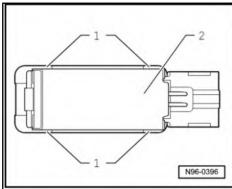
Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

### Continued for all vehicles

- Press the fixing lugs -1- together using the lever U30800- and remove the luggage compartment light -3-.
- Unplug the electrical connector -2-.



Release locking lugs -1- and remove heat shield -2- from light lens.

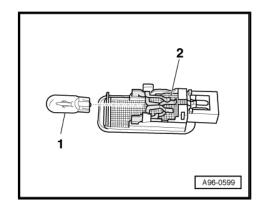




Remove bulb -1- from bulb holder -2- on reverse side of luggage compartment light.

### Installing

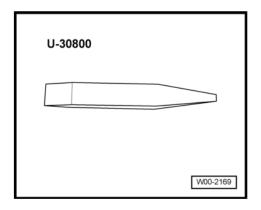
Installation takes place in reverse order.



### Installing and removing illuminated 1.12 make-up mirror W20 / W14

### Special tools and workshop equipment required

♦ Lever - U30800-



### Removing

- Switch off ignition and all electrical consumers.

### Vehicles without access and start authorisation system

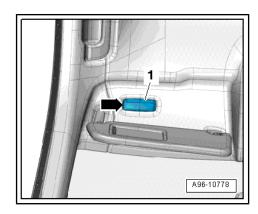
Remove ignition key, if fitted.

### Vehicles with access and start authorisation system

Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

### Continued for all vehicles

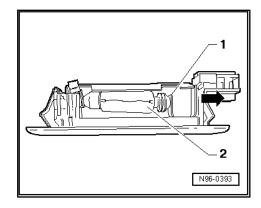
- Swivel sun visor forwards.
- Carefully pry out the light -1- of the make-up mirror using a lever U30800- applied in the recess -arrow-.
- Disconnect connector.



Press the contact plate -1- of light by outwards and remove festoon bulb -2- from bulb holder.

### Installing

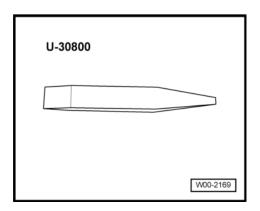
Installation takes place in reverse order.



### 1.13 Replacing the bulb for interior light W1 / W13 / W19, front

### Special tools and workshop equipment required

♦ Lever - U30800-



### Removing

- Switch off ignition and all electrical consumers.

### Vehicles without access and start authorisation system

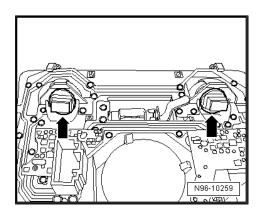
Remove ignition key, if fitted.

### Vehicles with access and start authorisation system

Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

### Continued for all vehicles

- Removing and installing interior light/reading light (front) ⇒ page 246
- Turn bulb holder -arrows- of defective reading lamp by 90° to the left.
- Take the bulb with holder out of the reading light.

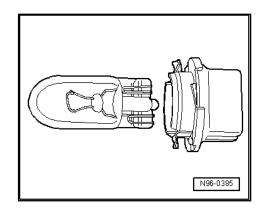




Pull glass-base bulb out of bulb holder.

### Installing

Installation takes place in reverse order.



### Replacing the bulb or rear interior light 1.14 W47 / W48

### Removing

- Switch off ignition and all electrical consumers.

### Vehicles without access and start authorisation system

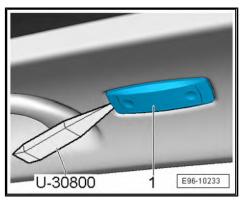
Remove ignition key, if fitted.

### Vehicles with access and start authorisation system

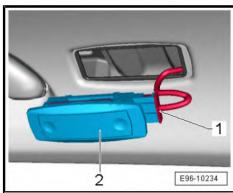
Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

### Continued for all vehicles

Carefully prise out the rear left-hand interior light - W47- or rear right-hand interior light - W48- -1- with the lever - U30800- .

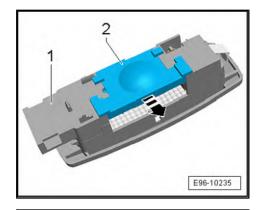


Release the plug connection -1- and remove together with the rear left-hand interior light - W47- or the rear right-hand interior light - W48- -2-.





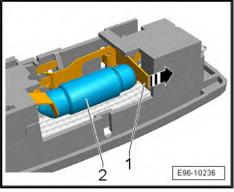
Push the cover -2- in -the direction of the arrow-.



- Push the contact plate -1- of the light in -the direction of the arrow-.
- Remove festoon bulb -2- from bulb holder.

### Installing

Installation takes place in reverse order.



### Removing and installing LED for back-1.15 ground lighting

### Removing

- Switch off ignition and all electrical consumers.

### Vehicles without access and start authorisation system

Remove ignition key, if fitted.

### Vehicles with access and start authorisation system

Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

### Continued for all vehicles

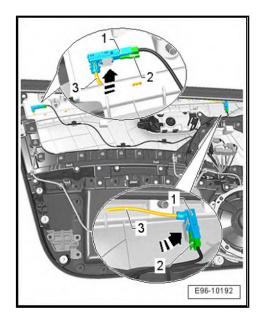
Remove door trim  $\Rightarrow$  General body repairs, interior; Rep. gr. 70; Front door trim; Removing and installing front door trim.



- Remove the plug connectors of the -2- LED module -1-.
- Remove the LED module from its mount -1- in -the direction of the arrow-.
- Hold the light strip tight -3- tight and pull on the LED module -1- until the clips are released.

### Installing

Installation takes place in reverse order.

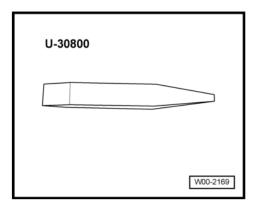


### 1.16 Removing and installing storage compartment illumination bulb - L120-

If the centre console light with LED has a defect, the lighting should be changed.

### Special tools and workshop equipment required

◆ Lever - U30800-



### Removing

- Switch off ignition and all electrical consumers.

### Vehicles without access and start authorisation system

Remove ignition key, if fitted.

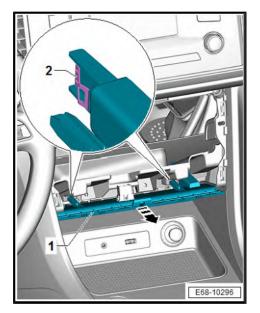
### Vehicles with access and start authorisation system

Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

### Continued for all vehicles

Removing the air conditioning block ⇒ heater and fresh air ventilation system, A/C system; Rep. gr. 87; Operating and display unit; overview of fitting locations - operating and display unit .

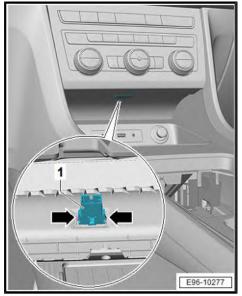
Detach the trim -1- -direction of arrow-.



- Release electrical connector and separate from the lights in the centre console.
- Press on the fasteners -arrows- and remove ambient lighting -1- from the cover of the storage compartment in the centre console.

### Installing

Installation takes place in reverse order.





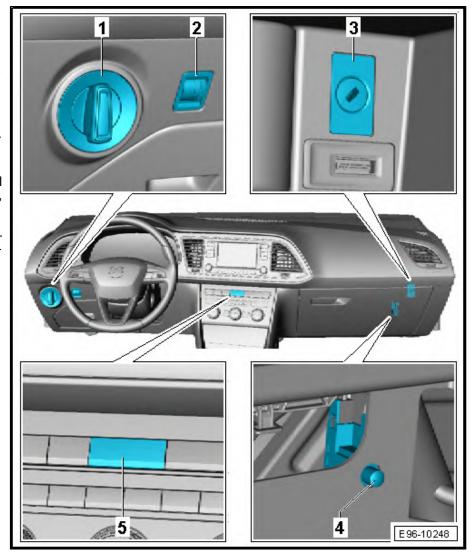
#### 2 Controls

- <u>"2.1 Overview of fitting locations controls in dash panel", page</u>
- ⇒ "2.2 Overview of fitting locations controls in front doors", page
- ⇒ "2.3 Fitting locations overview controls in rear doors", page 229
- ⇒ "2.4 Overview of fitting locations controls in centre console", page 230
- ⇒ "2.5 Overview of fitting locations controls in luggage compartment", page 231
- ⇒ "2.6 Overview of fitting locations controls in roof trim", page 232
- ⇒ "2.7 Remove and install EX1 light rotation switch.", page 232
- ⇒ "2.8 Installation and removal of the headlight range thumb wheel E102", page 234
- ⇒ "2.9 Removing and installing switches in dash panel", page 236
- ⇒ "2.10 Removing and installing glove compartment light switch E26 ", page 238
- $\Rightarrow$  "2.11 Installing and removing the mirror adjustment switch E43 / E168", page 239
- ⇒ "2.12 Installation and removal of the operating unit for window regulator in driver door E512", page 240
- ⇒ "2.13 Removing and installing window regulator E107 in the passenger door", page 242
- ⇒ "2.14 Removing and installing internal lock button on the driver's side E308", page 243
- ⇒ "2.15 Remove and install door contact switch F2 / F3", page 243
- ⇒ "2.16 Installation and removal of the button for window regulator in back door E700 / E705", page 243
- ⇒ "2.17 Remove and install back door contact switch F10 / F11", page 245
- ⇒ "2.18 Removing and installing electromechanical parking brake button E538 / auto-hold button E540 ", page 245
- ⇒ "2.19 Removing and installing rear lid contact switch", page 245
- ⇒ "2.20 Remove and install contact switch for vanity mirror F147 / F148", page 246
- ⇒ "2.21 Removing and installing button for sunroof E325", page 246
- ⇒ "2.22 Removing and installing interior light/reading light (front)", page 246
- ⇒ "2.23 Interior light / front reading lamp unit: removing and installing", page 250
- ⇒ "2.24 Button for tyre pressure control unit E226: removing and installing", page 252
- ⇒ "2.25 Removing and installing the starter button E378", page 253



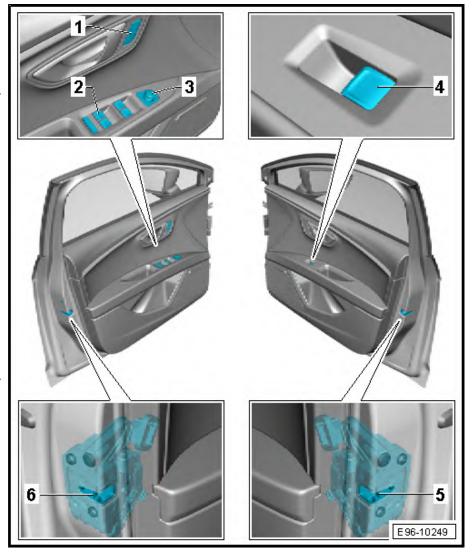
### Overview of fitting locations - controls in dash panel 2.1

- 1 Rotary light switch EX1-
  - □ Removal and installation ⇒ page 232
- 2 Thumb wheel for headlight range control E102-
  - □ Removal and installation <u>⇒ page 234</u>
- 3 Key operated switch to de-activate airbag on front pas-senger side E224-
  - ☐ Installation and removal ⇒ General body repairs, interior; Rep. gr. 69; Airbag (passenger side); Key holder for disengagement of passenger airbag
- 4 Glove compartment light switch - E26-
  - □ Removal and installation ⇒ page 238
- 5 Button in dash panel
  - ☐ Removal and installation ⇒ page 236



#### 2.2 Overview of fitting locations - controls in front doors

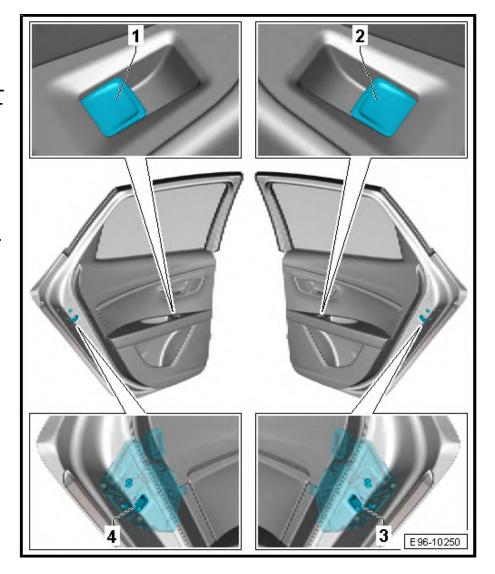
- 1 Interior door-locking button - E308-
  - Removal and installation <u>⇒ page 243</u>
- 2 Operating unit for window regulator in driver door - E512-
  - Removal and installation ⇒ page 240
- 3 Mirror adjustment switch -E43- or adjustment switch for mirror with fold-in feature -E168-
  - ☐ Removal and installation ⇒ page 239
- 4 Window regulator switch in front passenger door - E107-
  - ☐ Removal and installation ⇒ page 242
- 5 Front passenger door contact switch - F3-
  - □ Removal and installation <u>⇒ page 243</u>
- 6 Driver door contact switch -F2-
  - ☐ Removal and installation <u>⇒ page 243</u>





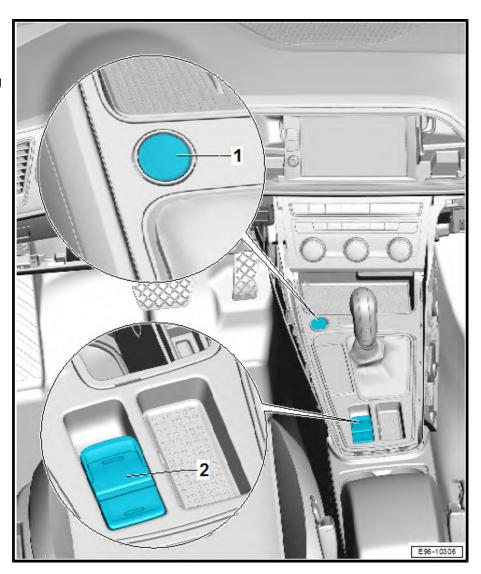
### Fitting locations overview - controls in rear doors 2.3

- 1 Rear driver side window regulator button - E711-
  - □ Removal and installation ⇒ page 243
- 2 Rear passenger side window regulator button E713-
  - □ Removal and installation ⇒ page 243
- 3 Contact switch on back door, driver's side F505-
  - □ Removal and installation ⇒ page 245
- 4 Contact switch on back door passenger side F506-
  - ☐ Removal and installation <u>⇒ page 245</u>



### Overview of fitting locations - controls in centre console 2.4

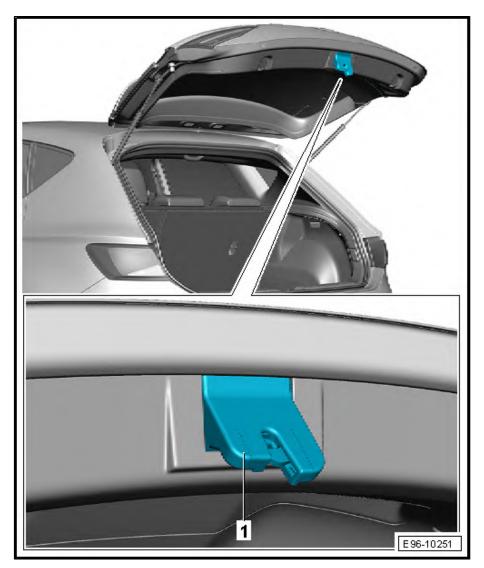
- 1 Starter button E378-
  - □ Removal and installation <u>⇒ page 253</u>
- 2 Electromechanical parking brake button E538- / Auto-hold button E540-
  - Removal and installation <u>⇒ page 245</u>



### Overview of fitting locations - controls in luggage compartment 2.5

# 1 - Rear lid contact switch for anti-theft alarm - F123-

☐ Removal and installation ⇒ page 245



### 2.6 Overview of fitting locations - controls in roof trim

### 1 - Driver vanity mirror contact switch - F147-

- □ Removal and installation ⇒ page 246
- 2 Rear interior light switch W43-
  - ☐ Installed on the rear interior light WX2-
  - □ Removal and installation ⇒ page 250

### 3 - Sunroof button - E325-

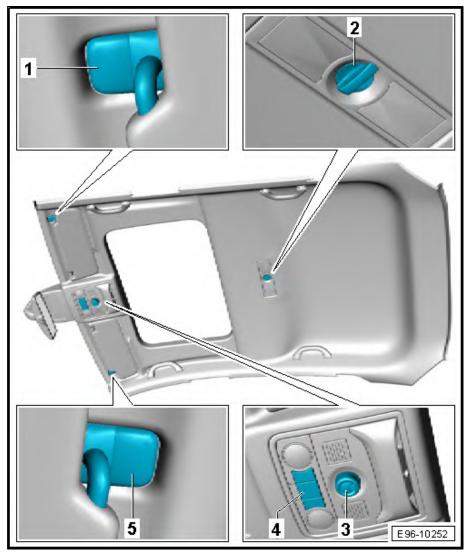
- ☐ Installed on the front roof module WX3-
- □ Removal and installation ⇒ page 246

### 4 - Front roof module - WX3-

Removal and installation ⇒ page 246

### 5 - Front passenger vanity mirror contact switch - F148-

□ Removal and installation ⇒ page 246



# 2.7 Remove and install EX1 light rotation switch.

⇒ "2.7.1 Remove and install EX1 light rotation switch, ►12.12", page 232

⇒ "2.7.2 Remove and install EX1 light rotation switch, 01.13►", page 233

# 2.7.1 Remove and install EX1 light rotation switch, ►12.12

### Removing

Switch off ignition and all electrical consumers.

### Vehicles without access and start authorisation system

- Remove ignition key, if fitted.

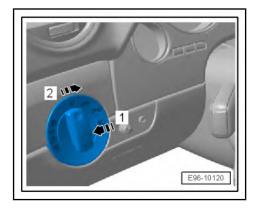
### Vehicles with access and start authorisation system

 Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.



### Continued for all vehicles

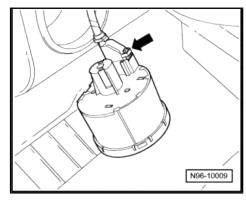
- Press light switch -arrow 1- and at the same time turn it to right -arrow 2-.
- Keep the switch in this position.



- Pull light switch out of switch housing -arrow 3-.

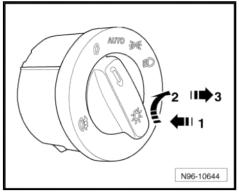


Release connector -arrow- and disconnect.



### Installing

- Fit connector to light switch.
- Hold the light switch tight, press on the rotary handle -arrow 1- and turn this slightly to the right -arrow 2-.
- Leave the rotary grip in this position and insert light switch in dash panel.
- Turn rotary grip to "0" position, release and engage switch.



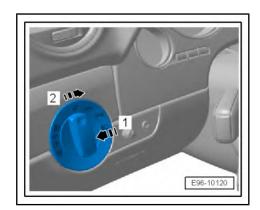
### Remove and install EX1 light rotation 2.7.2 switch, 01.13►

### Removing

Disconnect ignition and all electrical loads, and remove ignition key.



- Open the lower cover on the driver's side.
- Push on both sides to loosen the brake from its cover; open it completely.
- Disconnect the connector of the light switch E1- through the opening in the lower cover.
- Press light switch -arrow 1- and at the same time turn it to right -arrow 2-.
- Keep the switch in this position.

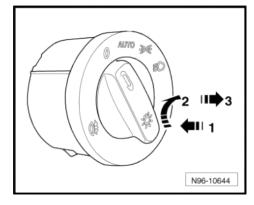


- Pull light switch out of switch housing -arrow 3-.



### Installation:

- Hold the light switch tight, press on the rotary handle -arrow 1- and turn this slightly to the right -arrow 2-.
- Leave the rotary grip in this position and insert light switch in dash panel.
- Turn rotary grip to "0" position, release and engage switch.
- Connect the connector of the light switch E1- through the opening in the lower cover.
- Close the lower cover on the driver's side.



# 2.8 Installation and removal of the headlight range thumb wheel E102

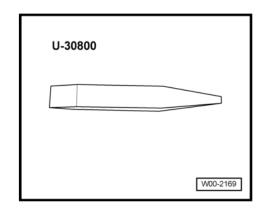
⇒ "2.8.1 Installation and removal of the headlight range thumb wheel E102, ►12.12", page 234

⇒ "2.8.2 Installation and removal of the headlight range thumb wheel E102, 01.13▶", page 235

# 2.8.1 Installation and removal of the headlight range thumb wheel E102, ►12.12



◆ Lever - U30800-



### Removing

- Switch off ignition and all electrical consumers.

### Vehicles without access and start authorisation system

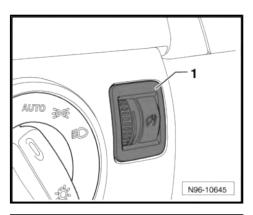
- Remove ignition key, if fitted.

### Vehicles with access and start authorisation system

Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

### Continued for all vehicles

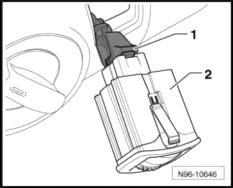
Remove the dash panel: pry out the headlight range control thumb wheel - E102- -1- using the lever - U30800- carefully.



Release and separate connector -1- and remove the headlight range control thumb wheel - E102- -2-.

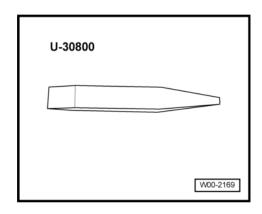
### Installing

Installation takes place in reverse order.



### 2.8.2 Installation and removal of the headlight range thumb wheel E102, 01.13▶

Lever - U30800-



### Removing

Switch off ignition and all electrical consumers.

### Vehicles without access and start authorisation system

Remove ignition key, if fitted.

### Vehicles with access and start authorisation system

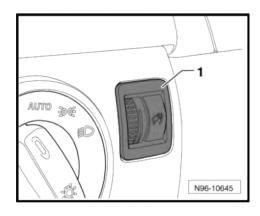
Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

### Continued for all vehicles

- Open the lower cover on the driver's side.
- Push on both sides to loosen the brake from its cover; open it completely.
- Connector of the thumb wheel for the headlight range control - E102- through the opening in the lower cover.
- Remove the dash panel: pry out the headlight range control thumb wheel - E102- -1- using the lever - U30800- carefully.

### Installing

- Lock the thumb wheel of the headlight range control E102- .
- Connect the connector of the thumb wheel of the headlight range control - E102- through the opening in the lower cover.
- Close the lower cover on the driver's side.



### 2.9 Removing and installing switches in dash panel



◆ Lever for the front-end - 3370-



### Removing

- Switch off ignition and all electrical consumers.

### Vehicles without access and start authorisation system

- Remove ignition key, if fitted.

### Vehicles with access and start authorisation system

Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

### Continued for all vehicles

- Open the cover of the centre console shelf.
- Using the hook for the front end 3370-, loosen the operating unit at the points -arrows- and remove.

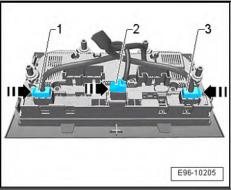


### Note

The plug connectors of the heating control unit - J65- , Climatronic control unit - J255- or Air conditioning control unit - J301- are not displayed for better representation.



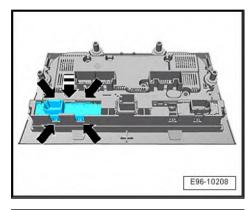
Disconnect the electric plug of the switch to be removed -1-, -2- or -3- and press on the lock -arrow-.

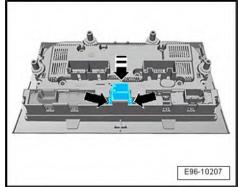




- Carefully disengage the snap arm of the switch to be removed -Arrows- and remove the module in -the direction- of the arrow.
- Park assist switch E266-:
- Switch module for driving mode selection E592-
- Switch for Start-Stop Operation E693-



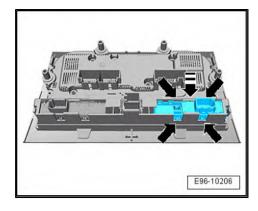




- Front passenger side switched off airbag warning lamp K145-
- Front passenger side airbag warning lamp K286-

### Installation:

Installation is carried out in reverse order.



### 2.10 Removing and installing glove compartment light switch - E26-

### Removing

Switch off ignition and all electrical consumers.

### Vehicles without access and start authorisation system

Remove ignition key, if fitted.

### Vehicles with access and start authorisation system

Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

### Continued for all vehicles

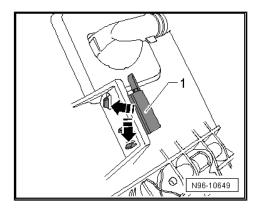
Remove glove compartment ⇒ General body repairs, interior; Rep. gr. 68; Compartments/covers; Removing and installing glove compartment.



Undo the retaining clamps -arrows- and remove the glove compartment light switch -1-.

### Installation:

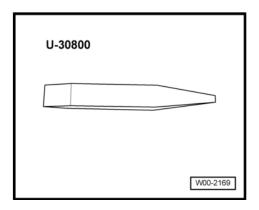
Installation is carried out in reverse order.



### 2.11 Installing and removing the mirror adjustment switch E43 / E168

Special tools and workshop equipment required

♦ Lever - U30800-





### Note

- The switch module may vary, depending on equipment. Installation and removal of the switch module is identical and only one of the switch modules is described. The switch module cannot be removed after installation.
- The removal and installation procedures are described for LHD vehicles. Removal and installation for RHD vehicles are similar.

### Removing

- Switch off ignition and all electrical consumers.

### Vehicles without access and start authorisation system

- Remove ignition key, if fitted.

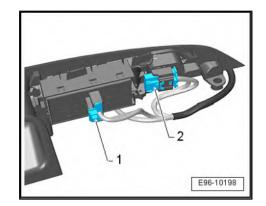
### Vehicles with access and start authorisation system

Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

### Continued for all vehicles

Remove front door trim ⇒ General body repairs, interior; Rep. gr. 70; Front door trim; Removing and installing front door trim .

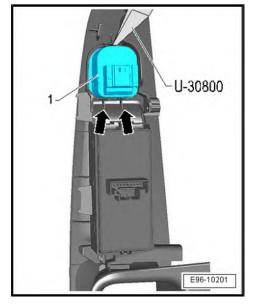
Disconnect plug connectors -1- and -2-.



Carefully remove the snap arm -arrow- using the lever - U30800- from the installation frame and take out the switch -1- for the mirror adjustment.

### Installing

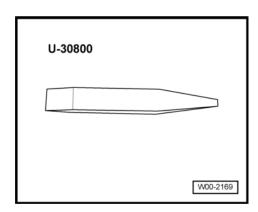
Installation takes place in reverse order.



### 2.12 Installation and removal of the operating unit for window regulator in driver door E512

### Special tools and workshop equipment required

♦ Lever - U30800-







### Note

- The switch module may vary, depending on equipment. Installation and removal of the switch module is identical and only one of the switch modules is described. The switch module cannot be removed after installation.
- The removal and installation procedures are described for LHD vehicles. Removal and installation for RHD vehicles are similar.

### Removing

Switch off ignition and all electrical consumers.

### Vehicles without access and start authorisation system

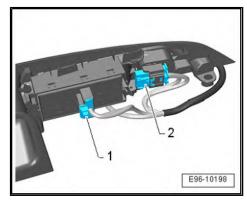
Remove ignition key, if fitted.

### Vehicles with access and start authorisation system

Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

### Continued for all vehicles

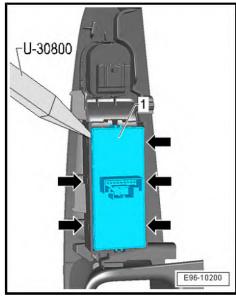
- Remove front door trim ⇒ General body repairs, interior; Rep. gr. 70; Front door trim; Removing and installing front door trim .
- Disconnect plug connectors -1- and -2-.



Carefully release the locking tabs -arrows- from the mounting frame using lever - U30800- and remove the window lifter switch assembly.

### Installing

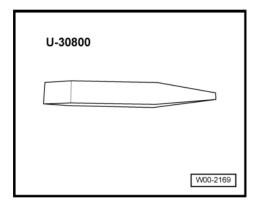
Installation takes place in reverse order.



### 2.13 Removing and installing window regulator E107 in the passenger door

### Special tools and workshop equipment required

♦ Lever - U30800-





### Note

- The switch module may vary, depending on equipment. Installation and removal of the switch module is identical and only one of the switch modules is described. The switch module cannot be removed after installation.
- The removal and installation procedures are described for LHD vehicles. Removal and installation for RHD vehicles are similar.

### Removing

Switch off ignition and all electrical consumers.

### Vehicles without access and start authorisation system

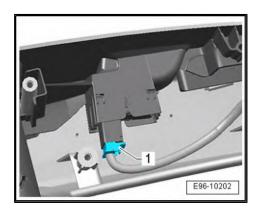
Remove ignition key, if fitted.

### Vehicles with access and start authorisation system

Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

### Continued for all vehicles

- Remove front door trim ⇒ General body repairs, interior; Rep. gr. 70; Front door trim; Removing and installing front door
- Unplug connector -1-.

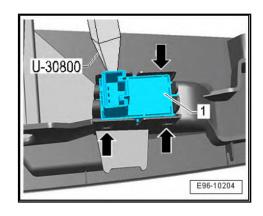




- Carefully release the locking tabs -arrows- from the mounting frame using the lever - U30800-.
- Remove the switch -1- from the mount.

### Installing

Installation takes place in reverse order.



### 2.14 Removing and installing internal lock button on the driver's side E308

### Removing

Switch off ignition and all electrical consumers.

### Vehicles without access and start authorisation system

Remove ignition key, if fitted.

### Vehicles with access and start authorisation system

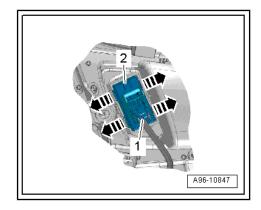
Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

### Continued for all vehicles

- Remove door trim  $\Rightarrow$  General body repairs, interior; Rep. gr. 70; Front door trim; Removing and installing front door trim.
- Unplug the electrical connector -1-.
- Release retaining clips -arrows- and press out interior locking switch -2- outwards.

### Installing

Installation takes place in reverse order.



### 2.15 Remove and install door contact switch F2 / F3

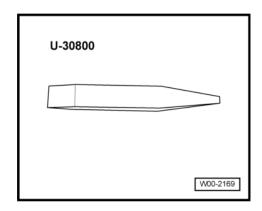


### Note

The door contact switch is located in the door lock and cannot be renewed separately if defective.

Remove front door lock ⇒ General body repairs, exterior; Rep. gr. 57; Door components; Removing and installing door lock.

### 2.16 Installation and removal of the button for window regulator in back door E700 / E705



### Removing

- Switch off ignition and all electrical consumers.

### Vehicles without access and start authorisation system

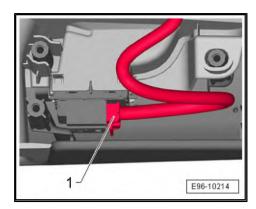
Remove ignition key, if fitted.

### Vehicles with access and start authorisation system

 Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

### Continued for all vehicles

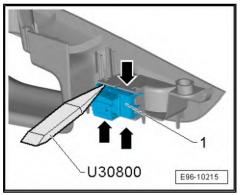
- Remove back door arm rest ⇒ General body repairs, interior; Rep. gr. 70; Front door trim; Removing and installing front arm rest trim.
- Unplug the connector -1- from the window lifter switch.



- Carefully release the locking tabs -arrows- from the mounting frame using the lever - U30800-.
- Remove the window lifter switch.

### Installing

Installation takes place in reverse order.





#### 2.17 Remove and install back door contact switch F10 / F11



#### Note

The door contact switch is located in the door lock and cannot be renewed separately if defective.

Remove back door lock ⇒ General body repairs, exterior; Rep. gr. 57; Door components; Removing and installing door lock.

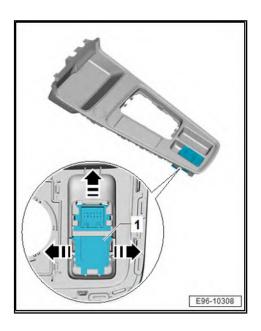
#### 2.18 Removing and installing electromechanical parking brake button - E538-/ auto-hold button - E540-

#### Removing

- Remove centre console cover > General body repairs, interior; Rep. gr. 68; Centre console; Removing and installing centre console cover.
- Unlock the retaining clips -arrows- and remove the button -1from its retainer.

Installation is carried out in the reverse sequence; note the following.

Installing the centre console cover ⇒ General body repairs, interior; Rep. gr. 68; Centre console; removing and installing the centre console cover.



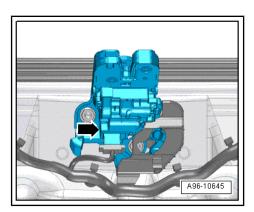
#### 2.19 Removing and installing rear lid contact switch



### Note

Tailgate contact switch is located in tailgate lock -arrow- and cannot be replaced separately in the event of a fault.

Removing and installing tailgate lock ⇒ General body repairs, exterior; Rep. gr. 55; Tailgate; Removing and installing hatch lock.



#### 2.20 Remove and install contact switch for vanity mirror F147 / F148



#### Note

The contact switch for the vanity mirror is located in the sun visor and cannot be renewed separately if defective.

Remove and install visor ⇒ General body repairs, exterior; Rep. gr. 68; Equipment; installing and removing sun visor.

#### 2.21 Removing and installing button for sunroof E325

#### Removing

Switch off ignition and all electrical consumers.

#### Vehicles without access and start authorisation system

Remove ignition key, if fitted.

#### Vehicles with access and start authorisation system

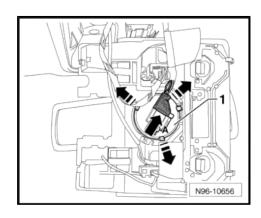
Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

#### Continued for all vehicles

- Remove the front roof module WX3- ⇒ page 246.
- Release and disconnect connector -arrow A-.
- Undo the retaining lugs -arrow- and remove the button -1- from the frame.

#### Installing

Installation is carried out in reverse order.



#### 2.22 Removing and installing interior light/ reading light (front)

⇒ "2.22.1 Removing and installing interior light/reading light <u>(front), without alarm system", page 246</u>

⇒ "2.22.2 Removing and installing front interior and reading lights, vehicles without panorama sliding sunroof", page 248

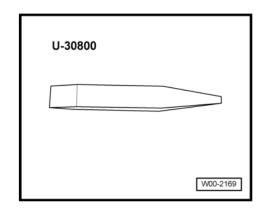
⇒ "2.22.3 Removing and installing front interior and reading lights, vehicles with panorama sliding sunroof", page 249

### Removing and installing interior light/ 2.22.1 reading light (front), without alarm sys-

Special tools and workshop equipment required



♦ Lever - U30800-



#### Removing

- Switch off ignition and all electrical consumers.

### Vehicles without access and start authorisation system

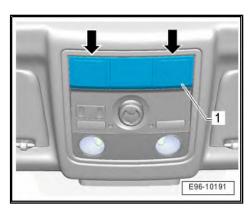
- Remove ignition key, if fitted.

#### Vehicles with access and start authorisation system

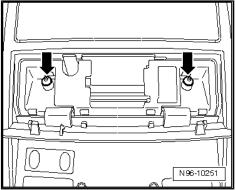
Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

#### Continued for all vehicles

Remove the trim -1- with the lever - U30800- from the inserts, with the -arrows- .



Remove both securing screws -arrows- and remove the interior light from the roof module.

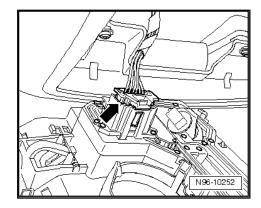




- Remove the interior light from the roof module.
- Disconnect connectors -arrows-.

#### Installing

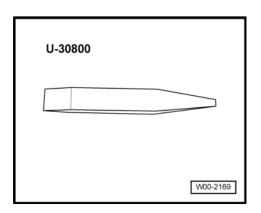
Installation is carried out in reverse order.



#### 2.22.2 Removing and installing front interior and reading lights, vehicles without panorama sliding sunroof

#### Special tools and workshop equipment required

♦ Lever - U30800-



#### Removing

- Switch off ignition and all electrical consumers.

#### Vehicles without access and start authorisation system

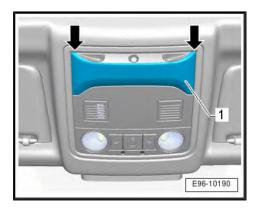
- Remove ignition key, if fitted.

#### Vehicles with access and start authorisation system

Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

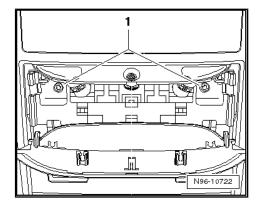
#### Continued for all vehicles

Remove the trim -1- with the lever - U30800- from the inserts. with the -arrows- .





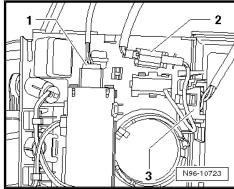
Remove both securing screws -1- and remove the interior light from the roof module.



- Unplug the three plug connectors -1-, -2- and -3-.

### Installing

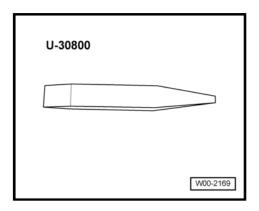
Installation is carried out in reverse order.



#### Removing and installing front interior 2.22.3 and reading lights, vehicles with panorama sliding sunroof

Special tools and workshop equipment required

♦ Lever - U30800-



#### Removing

- Switch off ignition and all electrical consumers.

Vehicles without access and start authorisation system

Remove ignition key, if fitted.

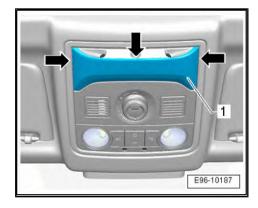
Vehicles with access and start authorisation system

Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

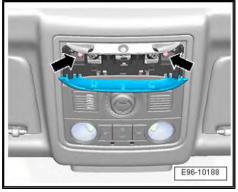


#### Continued for all vehicles

Remove the trim -1- with the lever - U30800- from the inserts, with the -arrows- .



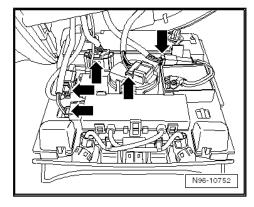
Remove both securing screws -arrows- and remove the interior light from the roof module.



Dependant on equipment, release connectors -arrows-, disconnect and remove interior light.

#### Installing

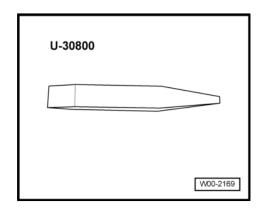
Installation is carried out in the reverse order.



#### Interior light / front reading lamp unit: re-2.23 moving and installing

#### Special tools and workshop equipment required

♦ Lever - U30800-





#### Removing

- Switch off ignition and all electrical consumers.

### Vehicles without access and start authorisation system

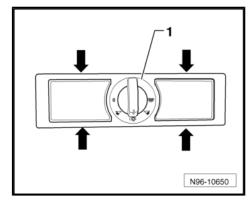
- Remove ignition key, if fitted.

#### Vehicles with access and start authorisation system

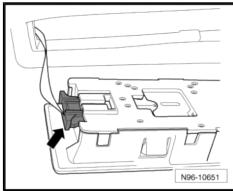
Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

#### Continued for all vehicles

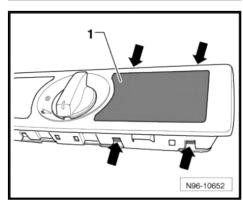
Unlatch the snap tabs -arrow- with the lever - U30800- or a suitable screwdriver, and remove the back interior light/reading light from the roof trim taking care of the connection lines.



Release and detach connector -arrow- and remove rear interior light - W43-.



Release the 4 locking lugs -arrows- each of lens -1- and remove lens from interior light by lifting it straight upwards.

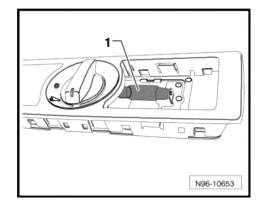




Remove bulb -1- from holder.

#### Installing

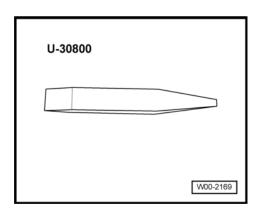
Installation is carried out in reverse order.



#### 2.24 Button for tyre pressure control unit -E226-: removing and installing

#### Special tools and workshop equipment required

♦ Lever - U30800-



#### Removing

- Switch off ignition and all electrical consumers.

#### Vehicles without access and start authorisation system

Remove ignition key, if fitted.

#### Vehicles with access and start authorisation system

Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

#### Continued for all vehicles

- Open the glove compartment cover.
- Carefully remove button for tyre pressure control unit E226--1- using the lever - U30800- .
- Disconnect the connector from the button for the tyre pressure control unit - E226-.

#### Installing

Installation takes place in reverse order.

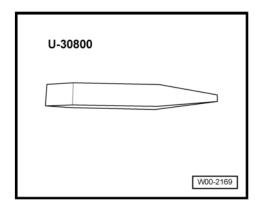




#### 2.25 Removing and installing the starter button - E378-

#### Special tools and workshop equipment required

♦ Lever - U30800-



Shape an implement with two wire hooks as outlined below.

- Bend one end of a welding rod with diam. Ø 1 mm as a loop and cut down to length -a-.
- Dimension -a- = about 50 mm
- File wire hook so that end is pointed.
- Dimension -b- = 5 mm

#### Removing

- Switch off ignition and all electrical consumers.

#### Vehicles without access and start authorisation system

- Remove ignition key, if fitted.

#### Vehicles with access and start authorisation system

Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

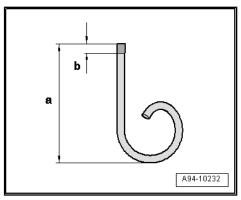
#### Continued for all vehicles

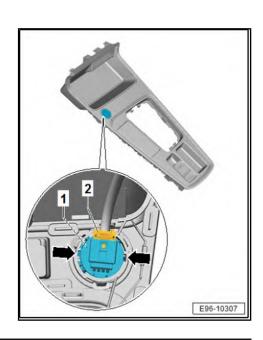
- Remove centre console cover ⇒ General body repairs, interior; Rep. gr. 68; Centre console; Removing and installing centre console cover.
- Separate the electrical connector -2- from the starter button -E378- -1-.
- Introduce the two wire hooks into the recesses -arrows- and unclip the retaining clips from the starter button - E378-.
- Pull the starter button E378- -1- from the centre console cover; leave the wire hooks in the recesses.

#### Installation

Install in reverse order.

Perform functional check.





## 3 Anti-theft alarm system

- ⇒ "3.1 Assembly overview interior monitor", page 254
- ⇒ "3.2 Alarm horn H12: removing and fitting", page 255
- ⇒ "3.3 Removing and installing anti-theft alarm sensor G578", page 255
- ⇒ "3.4 Removing and installing interior monitoring and vehicle inclination sensor E616", page 256

### 3.1 Assembly overview - interior monitor

#### 1 - Alarm horn - H12-

Removal and installation ⇒ page 255

## 2 - Bracket for alarm horn - H12-

☐ Retaining nuts, 7 Nm

#### 3 - Nut

□ 7 Nm

## 4 - Individual sensor for interior monitor (left-side)

- Can only be renewed together with anti-theft alarm sensor - G578-
- □ Removal and installation ⇒ page 255

## 5 - Individual sensor for interior monitor (right-side)

- Can only be renewed together with anti-theft alarm sensor - G578-
- □ Removal and installation ⇒ page 255

#### 6 - Front roof module - WX3-

□ Removal and installation ⇒ page 246

## 7 - Anti-theft alarm system sensor - G578-

Removal and installation ⇒ page 255

# 8 - Button deactivation of interior monitor and vehicle tilt - E616-

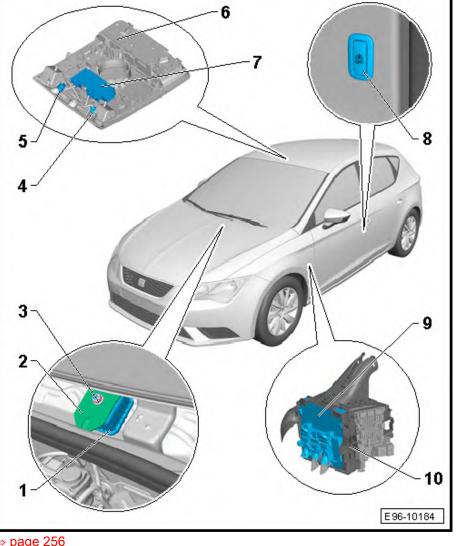
☐ Removal and installation ⇒ page 256

#### 9 - Onboard supply control unit - J519-

- ☐ With central locking and anti-theft alarm system aerial R47-
- Assembly overview ⇒ page 273

#### 10 - Bracket/bearing/support

for the onboard supply control unit





#### 3.2 Alarm horn - H12-: removing and fitting

#### Removing

- Switch off ignition and all electrical consumers.

#### Vehicles without access and start authorisation system

- Remove ignition key, if fitted.

#### Vehicles with access and start authorisation system

Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

#### Continued for all vehicles

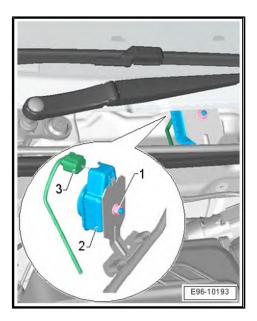
- Remove plenum chamber cover ⇒ General body repairs, exterior; Rep. gr. 50; Bulkhead: removing and installing plenum chamber cover .
- Remove nut -1-.
- Remove the alarm horn -2- from the bracket.
- Pull out the plug -3-.
- Remove the alarm horn -2-.

#### Installing

Installation takes place in reverse order.

#### **Specified torques**

♦ ⇒ "3.1 Assembly overview - interior monitor", page 254



#### 3.3 Removing and installing anti-theft alarm sensor - G578-

#### Removing

Switch off ignition and all electrical consumers.

#### Vehicles without access and start authorisation system

- Remove ignition key, if fitted.

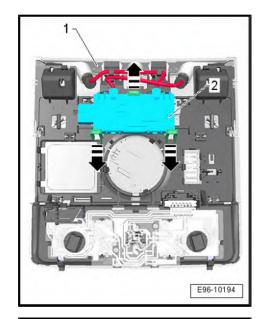
#### Vehicles with access and start authorisation system

Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

#### Continued for all vehicles

Remove front roof module ⇒ page 246.

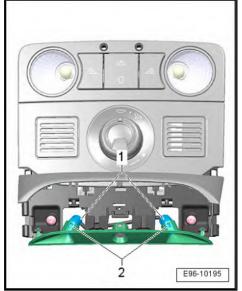
Release retaining tabs -arrows- and remove anti-theft alarm sensor - G578- -item 2- from roof module -1-.



Release retaining tab -2- and remove individual sensor -1- (left and right) from roof module.

#### Installing

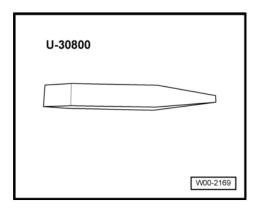
Installation takes place in reverse order.



#### Removing and installing interior moni-3.4 toring and vehicle inclination sensor -E616-

Special tools and workshop equipment required

♦ Lever - U30800-







#### Note

The removal and installation procedures are described for LHD vehicles. Removal and installation for RHD vehicles are similar.

#### Removing

- Switch off ignition and all electrical consumers.

#### Vehicles without access and start authorisation system

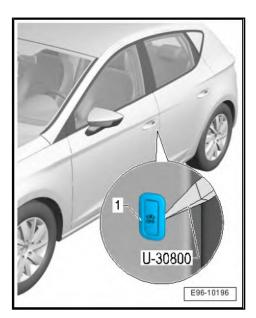
- Remove ignition key, if fitted.

#### Vehicles with access and start authorisation system

Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

#### Continued for all vehicles

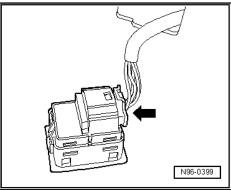
Carefully lever off the button for deactivating interior monitoring and vehicle inclination sensor - E616- -1- using the lever - U30800- .



Release and detach the plug connector -arrow- and remove button.

#### Installing

Installation takes place in reverse order.



#### **Immobiliser** 4

⇒ "4.1 Remove immobiliser reader coil, vehicles with keyless access system", page 258

#### 4.1 Remove immobiliser reader coil, vehicles with keyless access system

#### Removing

- Move steering wheel to rearmost and lowest position. Use the entire range of adjustment of the steering column for this pur-
- Switch off ignition and all electrical consumers.

#### Vehicles without access and start authorisation system

Remove ignition key, if fitted.

#### Vehicles with access and start authorisation system

Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

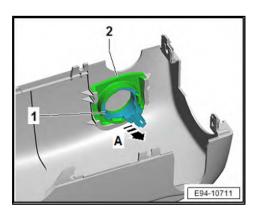
#### Continued for all vehicles

- Remove steering column trim (bottom) ⇒ General body repairs, interior; Rep. gr. 68; Storage compartments/covers; removing and installing steering column trim (bottom).
- Press the immobiliser reader coil D2- -1- in the -direction of arrow A- from the mounting -2-.

#### Installation

Install in reverse order to dismantling, noting the following.

Press immobiliser reader coil - D2- into mounting until it engages audibly.





#### 5 Lane change assist

### ⇒ "5.1 Overview - lane change assist", page 259

#### 5.1 Overview - lane change assist

#### 1 - Front camera for driver assist systems - R242-

□ Removal and installation ⇒ page 260

#### 2 - Windscreen heater for sensors, front - Z113-

- ☐ Installation location: in interior mirror support
- The Windscreen heater for sensors, front -Z113- is integrated in the retaining plate that is stuck on the windscreen and cannot be replaced separately. In the event of damage, the windscreen must be replaced ⇒ General body work - exterior installation work; Rep. gr. 64; Windscreen; installing and removing windscreen

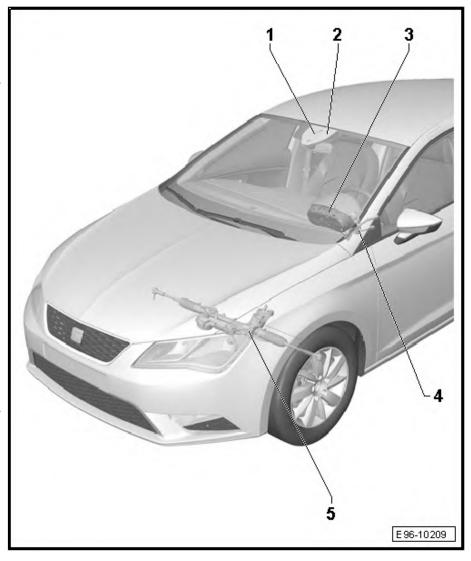
### 3 - Instrument cluster

□ Removal and installation ⇒ page 50

#### 4 - Switch module of the steering column

- Activation of the lane change assist occurs using the driver assistance system button -E617- .
- □ Removal and installation ⇒ page 175

#### 5 - Steering box



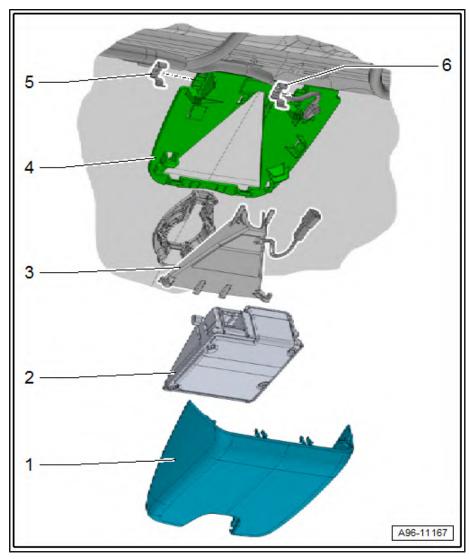
## 6 Front camera for assist systems

⇒ "6.1 Assembly overview - Front camera for assist systems", page 260

 $\Rightarrow$  "6.2 Removing and installing front camera for driver assist systems", page 260

### 6.1 Assembly overview - Front camera for assist systems

- 1 Cover
- 2 Front camera for driver assist systems R242-
  - □ Removal and installation ⇒ page 260
- 3 Lens Hood
  - With pane heating
  - □ Removal and installation ⇒ page 260
- 4 Retainer
  - ☐ Cannot be separated from the windscreen
- 5 Retention clip
  - Only replace in the event of damage
- 6 Retention clip
  - Only replace in the event of damage

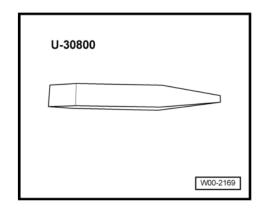


# 6.2 Removing and installing front camera for driver assist systems

Special tools and workshop equipment required



◆ Lever - U30800-



#### Removing

- Switch off ignition and all electrical consumers.

#### Vehicles without access and start authorisation system

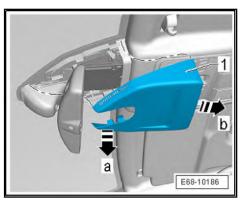
Remove ignition key, if fitted.

#### Vehicles with access and start authorisation system

Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

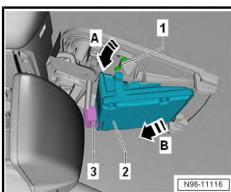
#### Continued for all vehicles

Cover -1- of the front camera support is pushed downward -Arrow A- unclip and remove -Arrow B- .



- Push clip -1- on the right side of the front camera for driver assist system - R242- up and at the same time push back in -arrow direction B- .
- Turn the camera to the right until it is completely disconnected.
- Pull out the plug -3-.

#### Removing lens hood





- Unplug electrical connectors -4- and -3-.
- Press the retention clips in the -arrow direction- and remove the lens hood -2- from the holder -1- downward.

#### Installing

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

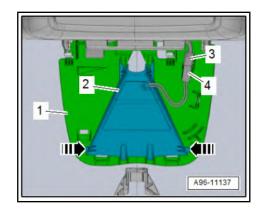


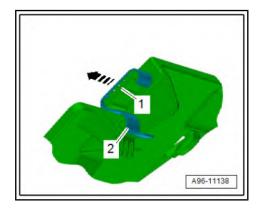
#### Note

The field of vision of the camera may not be damaged or dirty on the inside of the glass.

If the retention clips are deformed, replace them.

- Remove the retention clip -2- from the holder -1- in -the direction of the arrow- and replace with a new one.
- The field of vision of the windscreen must be cleaned with cleaning solution D 009 401 04- .
- Calibrate the front camera for the driver assist system ⇒ Running gear, axles, steering; Rep. gr. 44; Front camera for assistance systems; Calibrating front camera for assistance systems.





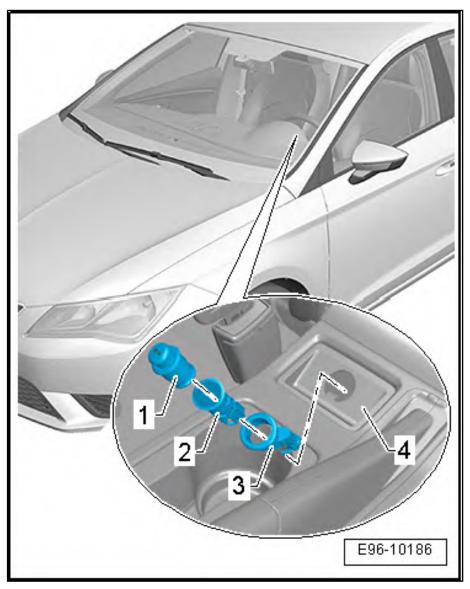


#### 7 Cigarette lighter, socket

- ⇒ "7.1 Assembly overview cigarette lighter, 12 V socket", page 263
- ⇒ "7.2 Removing and installing cigarette lighter U1", page 264
- ⇒ "7.3 Removing and installing socket illumination bulb L42", page 265
- $\Rightarrow$  "7.4 Removing and installing rear cigarette lighter illumination bulb L32 ", page 265
- ⇒ "7.5 Removing and installing U socket", page 265
- Assembly overview cigarette lighter, 7.1 12 V socket
- ⇒ "7.1.1 Assembly overview cigarette lighter, 12 V socket, Leon, Leon SC", page 263
- ⇒ "7.1.2 Assembly overview cigarette lighter, 12 V socket, Leon ST", page 264

#### 7.1.1 Assembly overview - cigarette lighter, 12 V socket, Leon, Leon SC

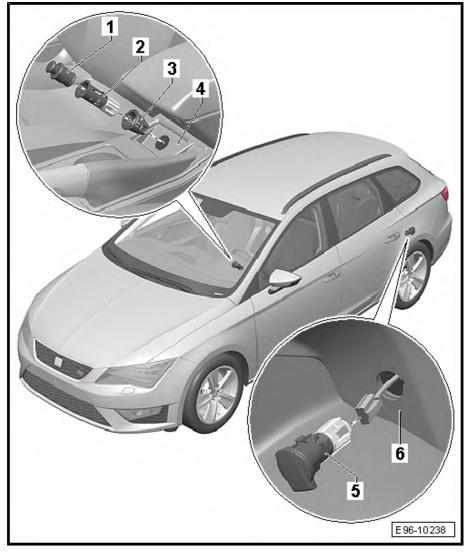
- 1 Cigarette lighter U1- or cover of the 12-V-socket - U5-
- 2 Housing for cigarette lighter U1- or 12-V-socket U5-
  - □ Removal and installation <u>⇒ page 264</u>
- 3 Cigarette lighter illumination bulb - L28- or lamp for the 12 V socket - U5-
  - Removal and installation ⇒ page 265



#### 4 - Centre console (front)

## 7.1.2 Assembly overview - cigarette lighter, 12 V socket, Leon ST

- 1 Cigarette lighter U1- or cover of the 12-V-socket U5-
- 2 Housing for cigarette lighter U1- or 12-V-socket U5-
  - □ Removal and installation ⇒ page 264
- 3 Bulb for cigarette lighter light L28- or bulb for socket lighting L42-
  - Removal and installation ⇒ page 265
- 4 Centre console (front)
- 5 12-V socket U5-
  - □ Removal and installation ⇒ page 265
- 6 Left-hand storage compartment holder



# 7.2 Removing and installing cigarette lighter - U1-



Note

All instructions and references for this chapter are found under ⇒ Electrical system, General information; Rep. gr. 96; Cigarette lighter -U1-, 12-V socket.



#### 7.3 Removing and installing socket illumination bulb - L42-



Note

All instructions and references for this chapter are found under ⇒ Electrical system, General information; Rep. gr. 96; Cigarette lighter -U1-, 12-V socket.

#### 7.4 Removing and installing rear cigarette lighter illumination bulb - L32-



Note

All instructions and references for this chapter are found under ⇒ Electrical system, General information; Rep. gr. 96; Cigarette lighter -U1-, 12-V socket .

#### 7.5 Removing and installing - U- socket



Note

All instructions and references for this chapter are found under ⇒ Electrical system, General information; Rep. gr. 96; Cigarette lighter -U1-, 12-V socket.

## 97 – Wiring

- Relay carrier, fuse holder, E-boxes
- ⇒ "1.1 Overview of fitting locations relay carriers, fuse carriers, electronics boxes", page 266
- ⇒ "1.2 Removing and installing electronics box (E-box)", page 268
- ⇒ "1.3 Removing and installing relay and fuse holder in E-box", page 270
- ⇒ "1.4 Removing and installing main fuse holder in E-box", page 271
- ⇒ "1.5 Removing and installing relay and fuse holder behind dash panel on driver side", page 272
- 1.1 Overview of fitting locations - relay carriers, fuse carriers, electronics boxes
- ⇒ "1.1.1 Installation site overview fuse box, E-boxes in the engine compartment", page 266
- ⇒ "1.1.2 Installation site overview fuse box, E-boxes in the engine compartment, A-column on left hand drive", page 268
- 1.1.1 Installation site overview - fuse box, E-boxes in the engine compartment



#### 1 - Cover (front)

☐ For electronics box (engine compartment)

#### 2 - Nut

□ 9 Nm

#### 3 - Nut

□ 9 Nm

#### 4 - Lines

☐ For radiator fan(s)

□ 4.5 Nm

#### 5 - Lines

☐ For terminal 30

□ 4.5 Nm

#### 6 - Lines

□ For electromechanical power steering

□ 4.5 Nm

#### 7 - Lines

□ For battery B+

□ 6 Nm

#### 8 - Lines

☐ For terminal 30

□ 4.5 Nm

#### 9 - Lines

For the alternator

□ 6 Nm

#### 10 - Fuse holder A - SA-

☐ Removal and installation <u>⇒ page 271</u>

## 11 - Securing bar

□ Removal and installation ⇒ page 271

#### 12 - Cover

☐ For electronics box (engine compartment)

### 13 - Relay carrier and safety bracket B - SB-

- ☐ With connecting bar for fuse holder A
- ☐ Removal and installation <u>⇒ page 270</u>

#### 14 - Lines

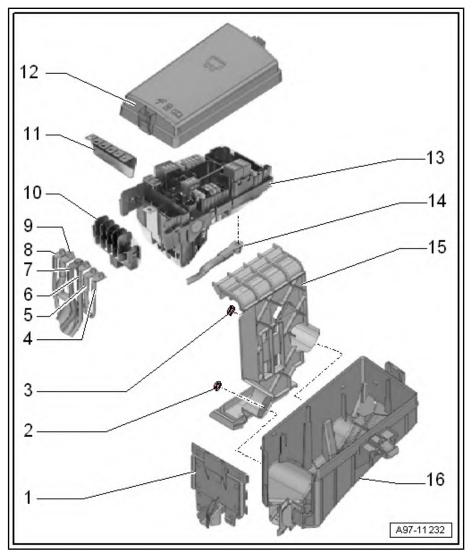
□ 6 Nm

#### 15 - Bracket/bearing/support

☐ For engine control unit

#### 16 - Electronics box in the engine compartment

☐ Removal and installation ⇒ page 268



#### 1.1.2 Installation site overview - fuse box, E-boxes in the engine compartment, A-column on left hand drive

#### 1 - Mount for on board system control module - J519-

□ Removal and installation  $\Rightarrow$  page 276

#### 2 - Remove and install the control unit holder for the parking assist - J446-

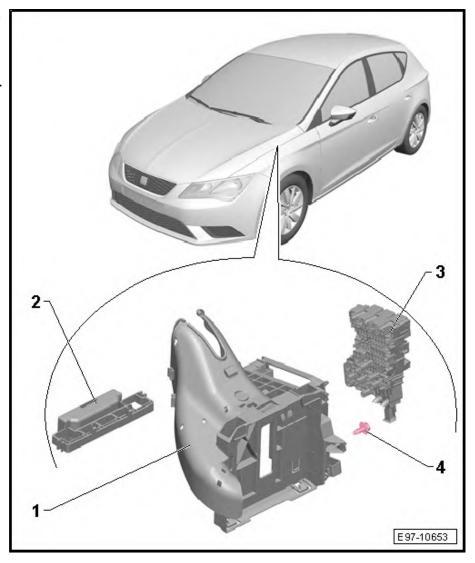
Removal and installation <u>⇒ page 185</u>

#### 3 - Fuse holder C - SC-

□ Removal and installation ⇒ page 272

#### 4 - Screw

- 3 units.
- □ 3 Nm



#### 1.2 Removing and installing electronics box (E-box)

#### Removing

- With the ignition switched off, disconnect battery earth cable ⇒ page 9 .
- Remove air filter housing ⇒ Rep. gr. 23; Air filter; Removing and installing air filter housing .

#### Diesel engine

Remove the engine control unit and lay to the side with connected plugs ⇒ Rep. gr. 23 ; Engine control unit; Engine control unit - J623- :installation and removal .

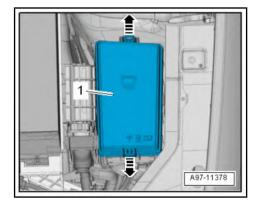
#### Petrol engine

Remove the engine control unit and lay to the side with connected plugs ⇒ Rep. gr. 24; Engine control unit; Engine control unit - J623-:installation and removal.

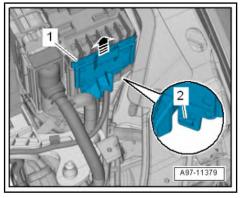


#### Continued for all vehicles

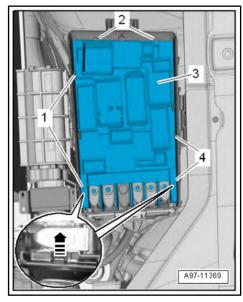
Press release tabs -arrow- and detach cover -1- for electronics box (engine compartment).



Release retaining tab -2- with a screwdriver and pull off cover (front) -1- upwards -arrow-.



- Cut through cable tie (bottom) on wiring harness.
- Unlatch catch mechanisms -1, 2 and 4- in -the direction of the arrow-, remove fuse holder B-3- and place to the side.





- Unscrew nuts -arrows- and detach bracket for engine control
- Release retaining tab -3- and disengage electronics box (engine compartment) -2- from studs.
- Lift out electronics box (engine compartment).

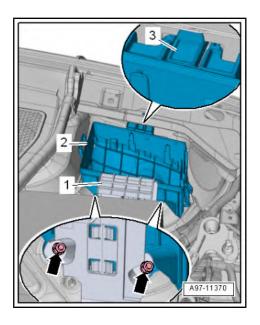
#### Installing

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

Connect battery. Steps required ⇒ page 10.

#### **Specified torques**

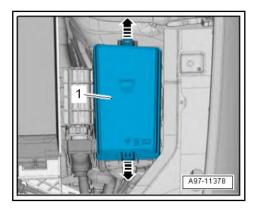
⇒ "1.1.1 Installation site overview - fuse box, E-boxes in the engine compartment", page 266



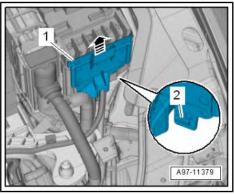
#### 1.3 Removing and installing relay and fuse holder in E-box

#### Removing

- With the ignition switched off, disconnect battery earth cable ⇒ page 9
- Remove air filter housing ⇒ Rep. gr. 23; Air filter; Removing and installing air filter housing.
- Press release tabs -arrow- and detach cover -1- for electronics box (engine compartment).

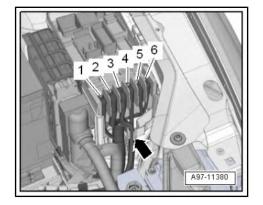


- Release retaining tab -2- with a screwdriver and pull off cover (front) -1- upwards -arrow-.
- Mark assignment of electrical wiring at screw connections for re-installation.





- Remove nuts -1, 2, 4, 5 and 6- and screw -3- and expose electrical lines -arrow-.
- Cut through cable tie (bottom) on wiring harness.



- Unlatch catch mechanisms -1, 2 and 4- in -the direction of the arrow-, remove fuse holder B-3- and place to the side.

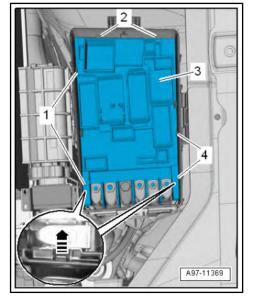
#### Installing

Installation is carried out in the reverse sequence; note the fol-

- Fit and secure electrical wiring to fuse holder A according to markings made earlier.
- Connect battery. Steps required <u>⇒ page 10</u>.

### Specified torques

⇒ "1.1.1 Installation site overview - fuse box, E-boxes in the engine compartment", page 266



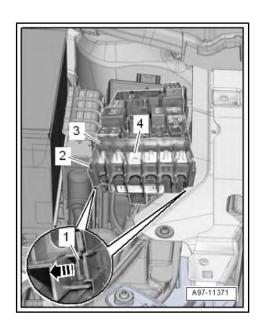
#### 1.4 Removing and installing main fuse holder in E-box

### Removing

- With the ignition switched off, disconnect battery earth cable <u>⇒ page 9</u> .
- Remove fuse holder B ⇒ page 270.
- Take securing bar -4- out of fuse holder B upwards.
- Unlatch mounting clip -1- in -arrow direction- and remove fuse holder A -2- downward out of fuse holder B -3-.

#### Installing

Installation takes place in reverse order.



#### 1.5 Removing and installing relay and fuse holder behind dash panel on driver side

#### Removing

- With the ignition switched off, disconnect battery earth cable ⇒ page 9.
- Remove side dash panel cover  $\Rightarrow$  General body repairs, interior; Rep. gr. 70; Dash panel; Removing and installing side dash panel.
- Remove driver's side footwell cover ⇒ Rep. gr. 70; dash
- Release catches -2- and -4- -arrow A-.
- Pull fuse holder C -3- towards rear -arrow B- out of bracket
- Disconnect electrical wiring.

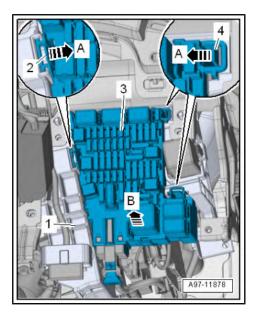


#### Note

The exact assignment should be gleaned from the latest current flow diagram ⇒ Current flow diagrams, Electrical fault finding and Fitting locations.

#### Installing

Installation takes place in reverse order.

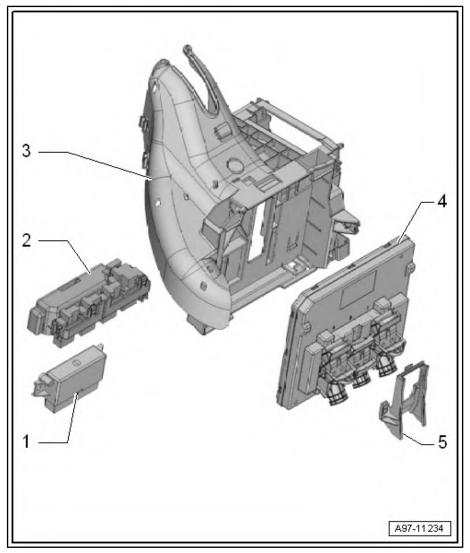


#### 2 Control units

- ⇒ "2.1 Overview of fitting locations control units", page 273
- ⇒ "2.2 Assembly overview data bus diagnostic interface", page 274
- ⇒ "2.3 Control unit for the onboard network J519 : removal and fitting", page 274
- ⇒ "2.4 Removing and installing data bus diagnostic interface J533 <u>", page 276</u>

#### Overview of fitting locations - control units 2.1

- 1 Parking aid control unit -J446-
  - □ Removal and installation ⇒ page 185
- 2 Remove and install the control unit holder for the parking assist - J446-
  - Removal and installation ⇒ page 185
- 3 Mount for on board system control module - J519-
  - □ Removal and installation ⇒ page 276
- 4 Onboard supply control unit - J519-
  - □ Removal and installation ⇒ page 274
- 5 Rail
  - □ For electrical connector (centre)



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

### 2.2 Assembly overview - data bus diagnostic interface

#### 1 - Electric connector

☐ For data bus diagnostic interface - J533-

## 2 - Diagnostic interface for data bus - J533-

□ Removal and installation ⇒ page 276

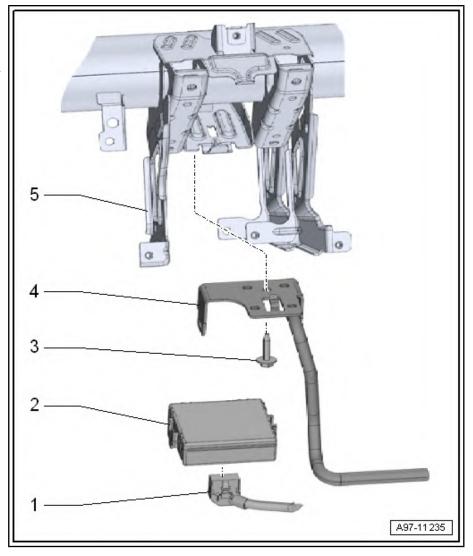
#### 3 - Screw

☐ Tightening torque ⇒ General body repairs, interior; Rep. gr. 70; Central well of dash panel; Assembly overview - central well of dash panel.

#### 4 - Crash bar

☐ Installation overview ⇒ General body repairs, interior; Rep. gr. 70; Central well of dash panel; Assembly instructions - central well of dash panel.

## 5 - Central tube of the dash panel



# 2.3 Control unit for the onboard network - J519- : removal and fitting

⇒ "2.3.1 Control unit for the onboard network J519 : removal and fitting", page 274

 $\Rightarrow$  "2.3.2 Removing and installing bracket for onboard supply control unit J519 ", page 276

# 2.3.1 Control unit for the onboard network - J519- : removal and fitting

#### Removing

Switch off ignition and all electrical consumers.

#### Vehicles without access and start authorisation system

- Remove ignition key, if fitted.

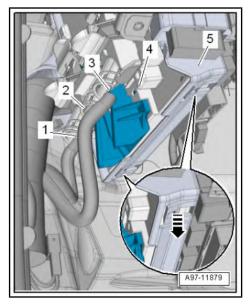
#### Vehicles with access and start authorisation system

 Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

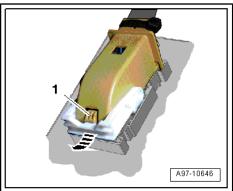


#### Continued for all vehicles

- Remove driver's side footwell cover ⇒ Rep. gr. 70; dash panel.
- Unplug connectors -1-, -2- and -3-.



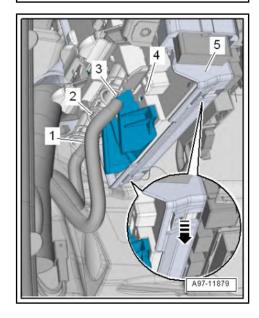
Unplug electrical connector by pressing catch -1- and moving retaining clip in direction of -arrow-; then detach connector.



 Release retaining springs -arrow-, swivel
 -onboard supply control unit- out of bracket -5- and remove downwards.

#### Installing

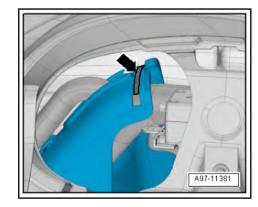
Installation takes place in reverse order.



#### 2.3.2 Removing and installing bracket for onboard supply control unit - J519-

#### Removing

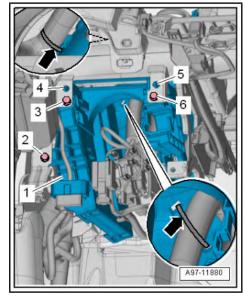
- With the ignition switched off, disconnect battery earth cable ⇒ page 9
- Removing dash panel insert <u>⇒ page 50</u>.
- Cut through cable tie -arrow-.
- Disengage fuse holder C and push to side ⇒ page 272.
- Remove front parking aid warning buzzer H22-⇒ page 186 .
- Removing and installing onboard supply control unit J519-



- Unscrew screws -2-, -3- and -6-.
- Push bracket -1- as far forward as possible out of the central well, until the centring dowels -4 and 5- hang out.
- Cut through cable ties -arrows-.
- Move electrical wiring harness clear at mounting.
- Take out bracket towards passenger compartment.

#### Installing

Installation takes place in reverse order.



#### 2.4 Removing and installing data bus diagnostic interface - J533-

#### Removing

- Depending on the configuration, remove the knee airbag on driver's side ⇒ General body repairs, interior; Rep. gr. 69; Knee airbags; remove or install knee airbag with ignition or remove the cover panel.
- Remove footwell vent on driver's side ⇒ Heating, air conditioning; Rep. gr. 87; Ventilation system; footwell vent driver's side: remove and install.



- Unplug electrical connector -1- using a small screwdriver.
- Release catches -arrows- and pull data bus diagnostic interface J533- -item 3- downwards off bracket -2-.



#### Note

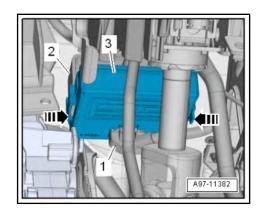
The exact assignment should be gleaned from the latest current flow diagram ⇒ Current flow diagrams, Electrical fault finding and Fitting locations.

#### Installing

Installation takes place in reverse order.

#### Specified torques

◆ ⇒ "2.2 Assembly overview - data bus diagnostic interface", page 274



### 3 Connectors

- ⇒ "3.1 Unplugging door separating connector (left-side)", page 278
- ⇒ "3.2 Unplugging door separating connector (right-side)", page 278
- ⇒ "3.3 Removing and installing connector point at A-pillar (left-side)", page 278
- ⇒ "3.4 Removing and installing connector point at A-pillar (right-side)", page 279
- ⇒ "3.5 Repairing electrical wiring harnesses and plug-in connections", page 280

# 3.1 Unplugging door separating connector (left-side)

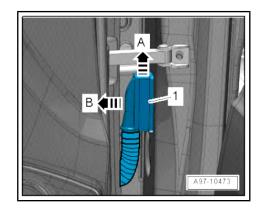
#### Removing



Note

The removal and installation procedure is the same on both sides.

- Open the door.
- Release catch in direction of -arrow A- and detach pin from door -1- towards the outside -arrow B-.



# 3.2 Unplugging door separating connector (right-side)



Note

The removal and installation procedure is the same on both sides.

#### Removing

⇒ "3.1 Unplugging door separating connector (left-side)", page 278

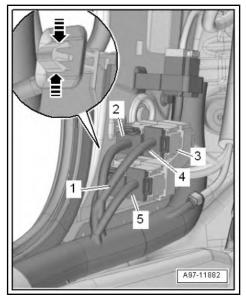
# 3.3 Removing and installing connector point at A-pillar (left-side)

#### Removing

- With the ignition switched off, disconnect battery earth cable
   ⇒ page 9.
- Remove lower A-pillar cover ⇒ General body repairs, interior;
   Rep. gr. 70; Interior covers; Door sill: remove and install.



- Release retaining clips -arrows- and disengage connector point -3- from A-pillar.
- Disconnect connectors -1-, -2-, -4- and -5-.



Release retaining clip -3- -arrow- and press connector -2- out of retainer -1-.



#### Note

The exact assignment should be gleaned from the latest current flow diagram ⇒ Current flow diagrams, Electrical fault finding and Fitting locations.

#### Installing

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

Connect battery. Steps required ⇒ page 10.

#### 3.4 Removing and installing connector point at A-pillar (right-side)

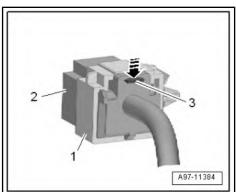


#### Note

The removal and installation procedure is the same on both sides.

#### Removing

⇒ "3.3 Removing and installing connector point at A-pillar (leftside)", page 278



# 3.5 Repairing electrical wiring harnesses and plug-in connections

⇒ "3.5.1 Repairs to wiring harnesses and connectors", page 280

⇒ "3.5.2 Repairing connector housings and electrical connectors", page 280

# 3.5.1 Repairs to wiring harnesses and connectors



#### Note

All instructions and notes regarding this chapter are available under ⇒ Electrical System, General Information; Rep. gr. 97; Repairs to wiring harnesses and connectors; Repairs to wiring harnesses.

# 3.5.2 Repairing connector housings and electrical connectors



#### Note

All instructions and notes regarding this chapter are available under ⇒ Electrical System, General Information; Rep. gr. 97; Repairs to wiring harnesses and connectors; Repairs to connector housings and connectors.

#### Repairing aerial wires 4



Note

All instructions and notes regarding this chapter are available under ⇒ Electrical System, General Information; Rep. gr. 97; Repairs to wiring harnesses and connectors; Repairs to wiring harnesses .

#### Vehicle diagnostic, testing and infor-5 mation systems



Note

All instructions and notes regarding this chapter are available under ⇒ Electrical System, General Information; Rep. gr. 97; Vehicle diagnosis, testing and information systems.