



Workshop Manual ID.3 2020 >

Electrical system

Edition 02.2021



List of Workshop Manual Repair Groups

Repair Group

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

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



Contents

00 - Technical data	1
1 Safety information	1
1.1 Safety measures for working on vehicles with high-voltage system	1
1.2 Safety precautions when working in the vicinity of high-voltage components	2
1.3 Safety precautions when using testers and measuring instruments during a road test	2
2 Repair instructions	3
2.1 Contact corrosion	3
2.2 Routing and attachment of lines	3
3 Battery	4
3.1 Battery - general notes	4
3.2 Types of battery	4
4 Hazard classification for the high-voltage system	5
27 - Starter, current supply, CCS	6
1 Battery	6
1.1 Assembly overview – battery	6
1.2 Removing and installing battery	8
1.3 Disconnecting and connecting battery	11
1.4 Removing and installing battery tray	13
1.5 Checking battery	13
1.6 Charging battery	13
1.7 Removing and installing earth wire with battery monitor control unit J367	13
1.8 Adapting battery monitor control unit J367	14
90 - Gauges, instruments	15
1 Dash panel insert	15
1.1 Assembly overview - control unit with display unit for driver information system J1254 ..	15
1.2 Assembly overview - head-up display	15
1.3 Removing and installing control unit with display unit for driver information system J1254 ..	16
1.4 Removing and installing control unit for head-up display	18
1.5 Calibrating control unit for head-up display	20
2 Horn	25
2.1 Assembly overview - horn	25
2.2 Removing and installing horn/dual tone horn H1	25
92 - Windscreen wash/wipe system	27
1 Windscreen wiper system	27
1.1 Assembly overview - windscreen wiper system	27
1.2 Moving wipers to service position	29
1.3 Removing and installing wiper blade	29
1.4 Removing and installing wiper arms	30
1.5 Adjusting wiper arms	32
1.6 Removing and installing windscreen wiper motor V216/V217	34
1.7 Coding wiper motor	35
1.8 Removing and installing rain and light sensor	35
2 Windscreen washer system	39
2.1 Assembly overview - windscreen washer system	39
2.2 Removing and installing washer fluid reservoir	40
2.3 Removing and installing windscreen washer pump	42
2.4 Removing and installing spray jets	43
2.5 Adjusting spray jets	44
3 Rear window wiper system	45



3.1	Assembly overview - rear window wiper system	45
3.2	Removing and installing wiper blade	45
3.3	Removing and installing wiper arm	46
3.4	Adjusting wiper arm	47
3.5	Removing and installing rear window wiper motor V12	48
4	Rear window washer system	50
4.1	Assembly overview - rear window washer system	50
4.2	Removing and installing spray jet	50
4.3	Adjusting spray jet	51
5	Washer fluid lines	52
5.1	Repairing washer fluid lines	52
94 - Lights, bulbs, switches - exterior	53	
1	Headlights	53
1.1	Assembly overview – headlight	53
1.2	Removing and installing headlight	57
1.3	Adjusting headlights	58
1.4	Installing repair kit for headlight housing	58
1.5	Removing and installing front turn signal bulb M5/M7	60
1.6	Removing and installing headlight range control motor V48/V49	61
1.7	Removing and installing LED module for daytime running light and side light L176/L177 ..	66
1.8	Removing and installing headlight fan V407/V408	68
1.9	Removing and installing output module 1 for LED headlight A27/A31	71
1.10	Removing and installing fibre optic cable for front contour lighting in radiator grille L362/L363	74
2	Lights in exterior mirror	75
2.1	Assembly overview - lights in exterior mirror	75
2.2	Removing and installing turn signal	76
2.3	Removing and installing entry light in exterior mirror	77
3	Lights in exterior door handle	79
3.1	Assembly overview – lights in exterior door handle	79
3.2	Removing and installing bulb for exterior door handle lighting	79
4	Tail lights	81
4.1	Assembly overview - tail light cluster in body	81
4.2	Assembly overview – design element without lighting function, rear lid	82
4.3	Removing and installing design elements without lighting function	83
4.4	Removing and installing tail light cluster	84
4.5	Removing and installing rear fog light	85
5	Charging flap unit	87
5.1	Assembly overview - charging flap unit	87
5.2	Removing and installing LED module for charging socket 1 L263	87
6	High-level brake light	89
6.1	Assembly overview – high-level brake light	89
6.2	Removing and installing high-level brake light	89
7	Number plate light	92
7.1	Removing and installing number plate light X4/X5	92
8	Entry and start authorisation system	93
8.1	Overview of fitting locations - entry and start authorisation system	93
8.2	Overview of fitting locations - keyless entry system	95
8.3	Removing and installing interface for entry and start system J965	99
8.4	Removing and installing interior aerial 1 for entry and start authorisation R138	101
8.5	Removing and installing driver exterior door handle EX6 inc. contact sensor for front left exterior door handle G605	101
8.6	Removing and installing front passenger exterior door handle EX7 inc. contact sensor for front left exterior door handle G605	103



8.7	Removing and installing luggage compartment aerial for entry and start system R137 ..	105
8.8	Removing and installing control unit 2 for break-in protection J1192/control unit 3 for break-in protection J1193	106
8.9	Removing and installing control unit 4 for break-in protection J1194/control unit 5 for break-in protection J1195	107
9	Steering column switch module	108
9.1	Assembly overview - steering column electronics control unit J527	108
9.2	Removing and installing steering column electronics control unit J527	109
9.3	Removing and installing immobiliser reader coil D2	110
10	Automatic headlight range control	112
10.1	Assembly overview - automatic headlight range control	112
11	Towing bracket	113
11.1	Assembly overview - towing bracket socket	113
11.2	Trailer socket	113
11.3	Removing and installing trailer detector control unit J345	114
96 - Lights, bulbs, switches - interior	115	
1	Lights	115
1.1	Overview of fitting locations - lights in dash panel	115
1.2	Overview of fitting locations - ambient lighting in doors	116
1.3	Overview of fitting locations - lights in centre console	117
1.4	Overview of fitting locations - lights in luggage compartment	118
1.5	Overview of fitting locations - lights in roof trim	119
1.6	Removing and installing light for front left door contour lighting L251/light for front right door contour lighting L252	120
1.7	Removing and installing light 2 for front left door contour lighting L296/light 2 for front right door contour lighting L297	121
1.8	Removing and installing footwell light W9/W10	121
1.9	Removing and installing Central locking SAFELOCK function warning lamp K133	122
1.10	Removing and installing front passenger side airbag deactivated warning lamp K145	123
1.11	Removing and installing luggage compartment light W3	123
1.12	Removing and installing illuminated vanity mirror W20/W14	124
1.13	Removing and installing front left reading lamp W65/front right reading lamp W66	125
1.14	Removing and installing rear left reading light W11/rear right reading light W12	125
1.15	Removing and installing dynamic light strip 1 for information in dash panel L385	125
1.16	Removing and installing light 1 for centre console background lighting L193	126
1.17	Removing and installing light for ambient lighting	127
2	Controls	130
2.1	Overview of fitting locations - controls in dash panel	130
2.2	Overview of fitting locations - controls in front doors	131
2.3	Overview of fitting locations - controls in rear doors	132
2.4	Overview of fitting locations - controls in luggage compartment	133
2.5	Overview of fitting locations - controls in roof trim	134
2.6	Removing and installing operating unit for lighting EX59	136
2.7	Removing and installing hazard warning lights button E229	140
2.8	Removing and installing centre switch module in dash panel EX22	140
2.9	Removing and installing operating unit for window regulator in driver door EX36	140
2.10	Removing and installing front passenger side window regulator button E716	141
2.11	Removing and installing rear window regulator button E711/E713	142
2.12	Removing and installing electromechanical parking brake button E538	142
2.13	Removing and installing the starter button E378	143
2.14	Removing and installing front interior light/reading light	143
2.15	Removing and installing rear interior light/reading light	144
3	Anti-theft alarm	146
3.1	Assembly overview - interior monitor	146
3.2	Removing and installing alarm horn H12	147



3.3	Removing and installing anti-theft alarm sensor G578	148
4	Cigarette lighter, socket	150
4.1	Removing and installing 12 V socket 3 U19	150
97 - Wiring	151	
1	Relay carriers, fuse holders, electronics boxes	151
1.1	Overview of fitting locations - relay carriers, fuse holders, E-boxes	151
1.2	Removing and installing electronics box (E-box)	154
1.3	Removing and installing fuse holder A SA	155
1.4	Removing and installing fuse holder B SB	157
1.5	Removing and installing fuse holder C SC	159
1.6	Removing and installing bracket for relay and fuse holder behind dash panel on driver side	160
2	Select Control units	162
2.1	Overview of fitting locations - control units	162
2.2	Assembly overview - onboard supply control unit	163
2.3	Removing and installing onboard supply control unit J519	165
2.4	Removing and installing bracket for onboard supply control unit J519	167
2.5	Removing and installing data bus diagnostic interface J533	169
2.6	Removing and installing fan for data bus diagnostic interface J533	170
3	Connectors	171
3.1	Repairing electrical wiring harnesses and plug-in connections	171
4	Releasing and dismantling connector housings	172
5	Repairing aerial wires	173
6	Fibre optic cables	174
7	Vehicle diagnosis, testing and information systems	175



00 – Technical data

1 Safety information

(VRL015271; Edition 02.2021)

⇒ [m1.1 measures for working on vehicles with high-voltage system", page 1](#)

⇒ [p1.2 precautions when working in the vicinity of high-voltage components", page 2](#)

⇒ [p1.3 precautions when using testers and measuring instruments during a road test", page 2](#)

1.1 Safety measures for working on vehicles with high-voltage system

Danger to life from high voltage

The high-voltage system is under high voltage. Severe or fatal injury from electric shock.

- Persons with life-preserving or other electronic medical devices in or on their body must not perform any work on the high-voltage system. Such medical devices include internal analgesic pumps, implanted defibrillators, pacemakers, insulin pumps and hearing aids.
- The high-voltage system must be de-energised by a suitably qualified technician.

Risk of injury from unexpected engine start

An electric vehicle's operational readiness is hard to determine. There is a risk of parts of the body being trapped or drawn in.

- Deactivate operational readiness and switch off all electrical consumers.
- Store the vehicle key and other entry and start authorisation systems outside the vehicle to prevent the vehicle from being switched on unintentionally.

Risk of damage to high-voltage cables

Improper handling of high-voltage cables or high-voltage connectors can result in damage to their insulation.

- Never support body weight on high-voltage cables or high-voltage connectors.
- Never support any tools on high-voltage cables or high-voltage connectors.
- Never kink or severely bend high-voltage cables.
- Always observe the coding when connecting high-voltage connectors.



Risk of injury from activate stationary air conditioning

On electric and hybrid vehicles with active stationary air conditioning, the stationary air conditioning could switch on unintentionally. Risk of limbs becoming trapped or drawn in by the radiator fan starting automatically.

- Deactivate the stationary air conditioning.

1.2 Safety precautions when working in the vicinity of high-voltage components

Danger to life from high voltage

The high-voltage system is under high voltage. Damage to high-voltage components can result in severe or fatal injury from electric shock.

- Perform visual check of high-voltage components and high-voltage cables.
- Never use cutting or forming tools, or any other sharp-edged tools.
- Never weld, braise or use hot glue or hot air.

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

Risk of injury caused by unsecured testing and measuring instruments

When the front passenger airbag is triggered in an accident, insufficiently secured testing and measuring instruments become dangerous projectiles.

- Secure testing and measuring instruments on the rear seat.

Or

- Have a second person operate the test and measuring equipment on the rear seat.



2 Repair instructions

[⇒ c2.1 orrosion", page 3](#)

[⇒ a2.2 nd attachment of lines", page 3](#)

2.1 Contact corrosion

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

For this reason, only connecting elements with a special surface coating have been fitted.

In addition, rubber, plastic and 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 catalogue (ETKA).

Please note:

- ◆ It is recommended to use genuine parts only as these have been tested and are compatible with aluminium.

2.2 Routing and attachment of lines

- ◆ 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. Make sketches or take photographs if necessary.
- ◆ To avoid damage to lines, ensure adequate clearance from all moving or hot components in the engine compartment on account of the confined space.
- ◆ Any wiring fasteners which have been released during removal must be of the same type and must be attached at the same locations when installing to prevent any rattling or damage.
- ◆ If hydraulic, pneumatic or electrical lines are to be disconnected or removed and installed, draw or take a photo of the layout and correct allocation. This helps to ensure that they are returned to their original position.



3 Battery

[⇒ -3.1 general notes", page 4](#)

[⇒ o3.2 f battery", page 4](#)

3.1 Battery - general notes

All instructions and notes regarding this chapter are available under ⇒ Electrical system, General information; Rep. gr. 27; Battery

3.2 Types of battery

All instructions and notes regarding this chapter are available under ⇒ Electrical system, General information; Rep. gr. 27; Battery; Battery types



4 Hazard classification for the high-voltage system

All instructions and notes regarding this chapter are available under ➔ Electric drive; Rep. gr. 00; Hazard classification of high-voltage system



27 – Starter, current supply, CCS

1 Battery

- ⇒ [o1.1 verview – battery”, page 6](#)
- ⇒ [a1.2 nd installing battery”, page 8](#)
- ⇒ [a1.3 nd connecting battery”, page 11](#)
- ⇒ [a1.4 nd installing battery tray”, page 13](#)
- ⇒ [b1.5 attery”, page 13](#)
- ⇒ [b1.6 attery”, page 13](#)
- ⇒ [a1.7 nd installing earth wire with battery monitor control unitJ367”, page 13](#)
- ⇒ [b1.8 attery monitor control unitJ367”, page 14](#)

1.1 Assembly overview – battery

**1 - Battery clamp**

- For positive battery terminal clamp
- Disconnecting and connecting [page 11](#)
- 6 Nm

2 - Positive cable**3 - Cover**

- For positive battery terminal

4 - Nut

- For slave start positive
- 20 Nm

5 - Cover

- For negative battery terminal

6 - Nut

- For slave start negative
- 20 Nm

7 - Earth cable

- With battery terminal clamp and battery monitor control unit -J367-
- Removing and installing [page 13](#)
- Disconnecting and connecting [page 11](#)
- Adaptation [page 14](#)
- 6 Nm

8 - Battery

- Removing and installing [page 8](#)
- Disconnecting and connecting [page 11](#)

9 - Bolt

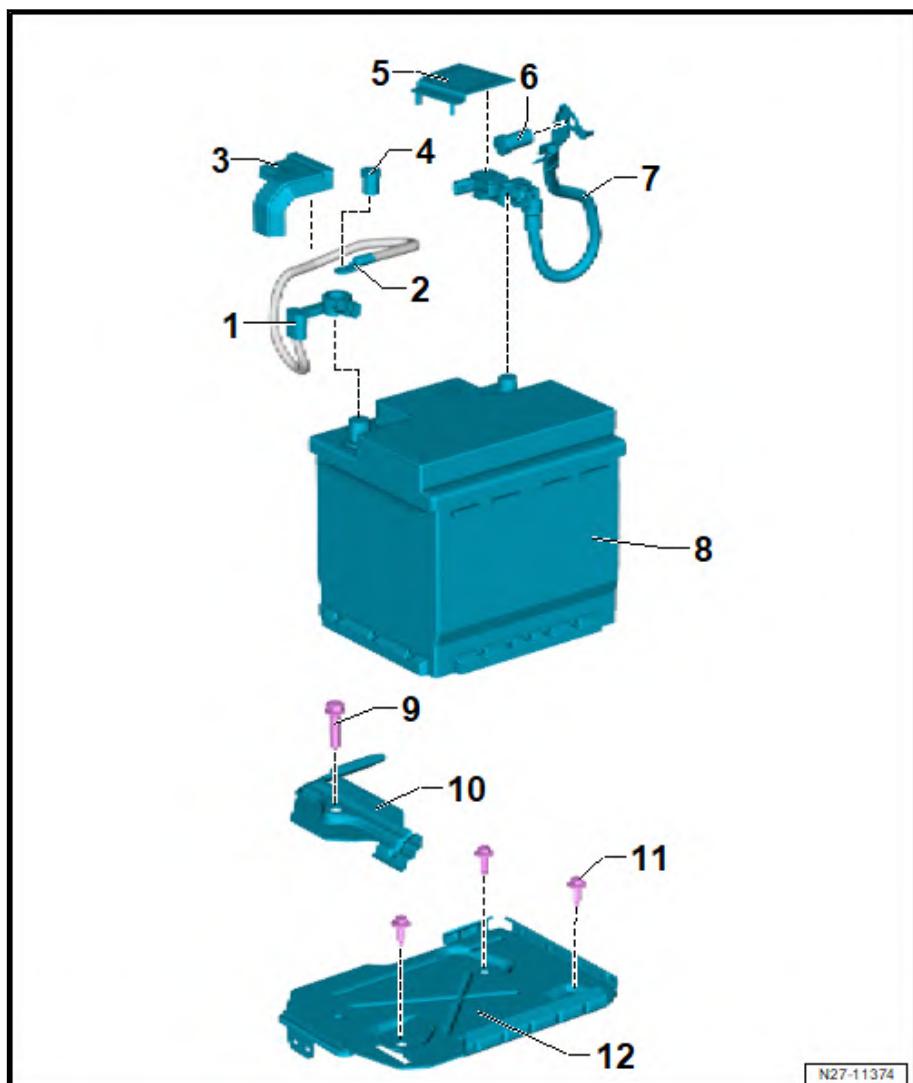
- 20 Nm

10 - Retaining clip**11 - Bolt**

- Qty. 3
- 9 Nm

12 - Battery tray

- Removing and installing [page 13](#)



N27-11374



1.2 Removing and installing battery



Note

- ◆ If the battery is renewed, the battery monitor control unit -J367- must be adapted [⇒ page 14](#).
- ◆ Always make sure to comply with the warning notices and safety regulations when working on the battery ⇒ Electrical system, General information; Rep. gr. 27; Battery.

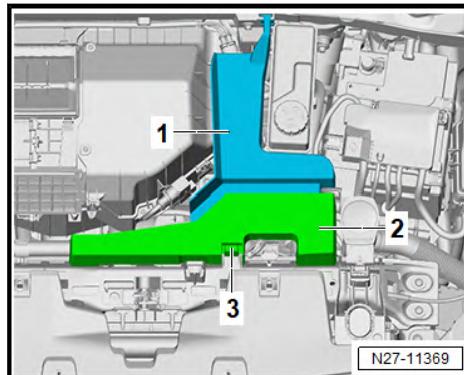
Renew battery

Use only maintenance-free 12-volt vehicle batteries compliant with the standards TL 825 06 and VW 7 50 73. These standards must be dated October 2014 or later.

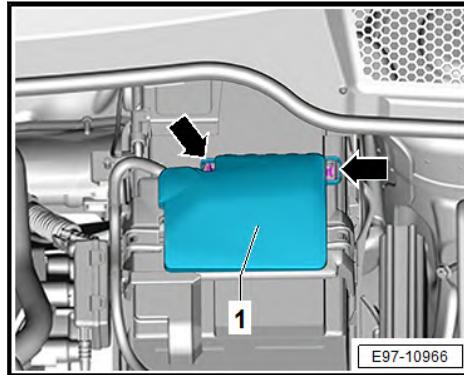
If unsuitable batteries are used, the type approval becomes invalid.

Removing

- Deactivate operational readiness and switch off all electrical consumers.
- Store the vehicle key and other entry and start authorisation systems outside the vehicle to prevent the vehicle from being switched on unintentionally.
- Release locking lug -3-.

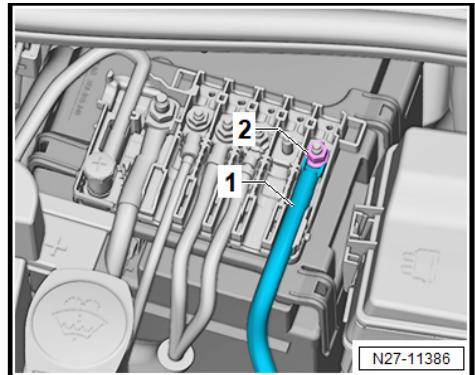


- Remove cover for high-voltage connection on front end of vehicle -2-.
- Remove cover for high-voltage connection on front end of vehicle -1- from guide.
- Disconnect battery [⇒ page 11](#).
- Release retaining lugs -arrows-.

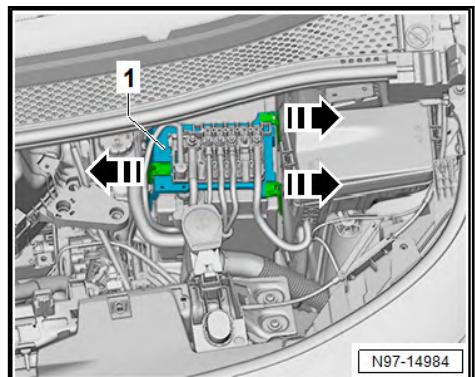




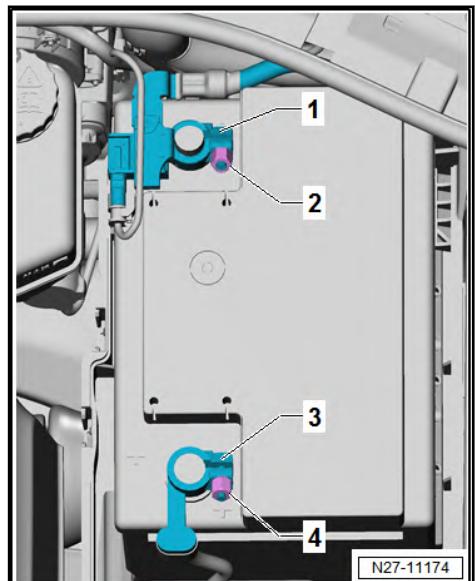
- Detach cover -1-.
- Unscrew nuts -2-.



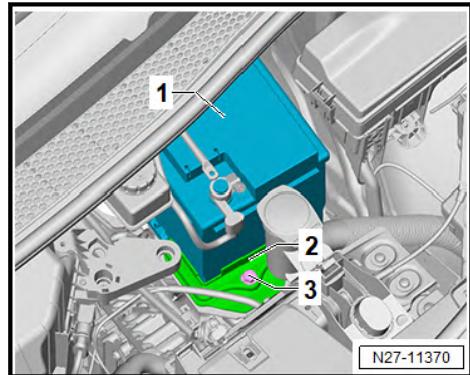
- Remove wire -1-.
- Release retaining tabs on fuse holder A -SA- -1- in direction of -arrow-.



- Remove fuse holder A -SA- -1- and lay it aside with electrical wires connected.
- Open cover for positive battery terminal.
- Loosen nut -4- several turns and disconnect battery terminal clamp -3- of positive cable from positive battery terminal.

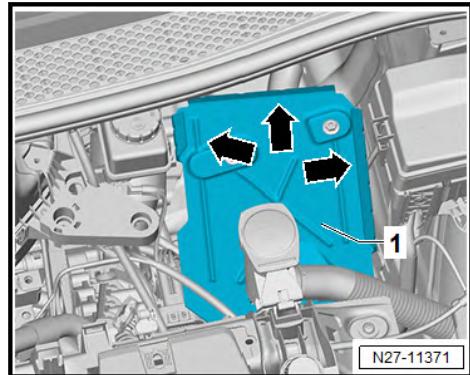


- Unscrew bolt -3-.



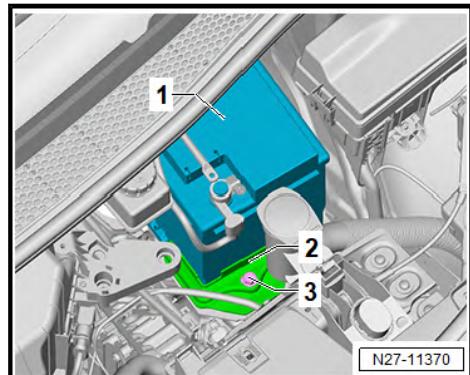
- Detach securing bracket -2-.
- Pull out battery -1- in direction of travel from battery tray and remove upwards from engine compartment.

Installing



Install in the reverse order of removal, observing the following:

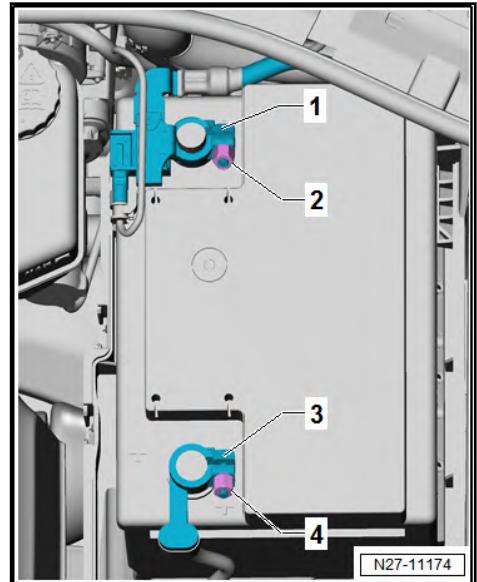
- Insert battery in battery tray -1- in such a way that battery base strip makes contact at bottom and side of stop -arrows-.
- It should no longer be possible to move battery towards rear or sides.
- Fit securing bracket -2-.



- Make sure that the lug on the securing bracket engages in the recess in the battery base strip.
- Tighten bolt -3-.
- Check battery -1- is seated securely.



With operational readiness deactivated and electrical consumers switched off, connect battery in the following sequence:



- Push battery clamp of positive cable -3- onto positive battery terminal.
- Tighten nut -4-.
- Connect battery [⇒ page 11](#).

Specified torques

- ◆ [⇒ o1.1 verview – battery”, page 6](#)
- ◆ [⇒ o1.1 f fitting locations - relay carriers, fuse holders, E-boxes”, page 151](#)

1.3 Disconnecting and connecting battery

Disconnecting

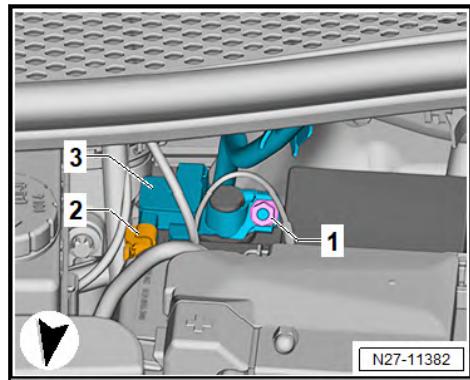
- Deactivate operational readiness and switch off all electrical consumers.
- Store the vehicle key and other entry and start authorisation systems outside the vehicle to prevent the vehicle from being switched on unintentionally.

Vehicles with R744 refrigerant

- Observe safety measures on vehicles with air conditioning system and R744 refrigerant ⇒ Heating, air conditioning system; Rep. gr. 00; Safety notices.

Continued for all vehicles

- Open cover above battery negative terminal.
- Loosen nut -1- several turns, and pull battery clamp -3- of earth cable off negative battery terminal.



Note

A voltage test of the 12-V electrical system must be performed after the 12-V battery is disconnected. The voltage must be 0 V.

- Perform voltage test of 12-V electrical system.

Vehicles with electrical system that is not de-energised

- De-energise high-voltage system ⇒ Electric drive; Rep. gr. 93; De-energising high-voltage system.
- Perform voltage test of 12-V electrical system.

Continued for all vehicles

Connecting

Observe the following when connecting the battery:

- Fit battery clamp -3- of earth cable to negative battery terminal.
- Tighten nut -1-.
- Adapt battery monitor control unit -J367- [⇒ page 14](#).
- Activate operational readiness.
- Open and close door windows to fully opened and fully closed position respectively.
- Then, when door windows are closed, pull the window regulator buttons until the relay audibly switches.
- Check convenience mode of the window regulator motors.

With convenience mode activated, door windows must close fully without the need to hold window regulator button.

Note

This work step is necessary so that the ESC warning lamp goes out.

- Activate vehicle's drive system.
- Select drive position.
- Turn steering wheel left and right onto stops.
- Read event memory ⇒ Vehicle diagnostic tester.

ESC warning lamp must go out.



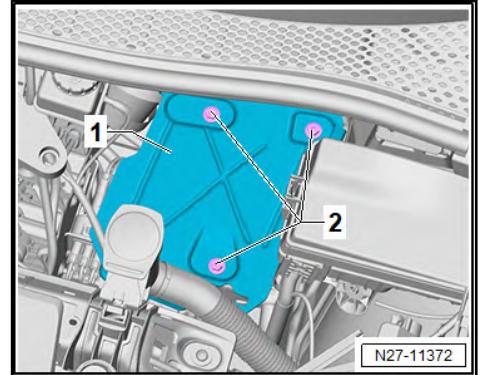
Specified torques

- ◆ [⇒ o1.1 verview – battery”, page 6](#)

1.4 Removing and installing battery tray

Removing

- Remove battery [⇒ page 8](#).
- Unscrew bolts -2-.



- Separate cable tie with connector housing from battery tray.
- Remove battery tray -1-.

Installing

Install in the reverse order of removal, observing the following:

Specified torques

- ◆ [⇒ o1.1 verview – battery”, page 6](#)

1.5 Checking battery

Check battery ⇒ Maintenance; Booklet 51.1; Descriptions of work.

During vehicle self-diagnosis, the battery is monitored by the data bus diagnostic interface -J533- ⇒ Vehicle diagnostic tester.

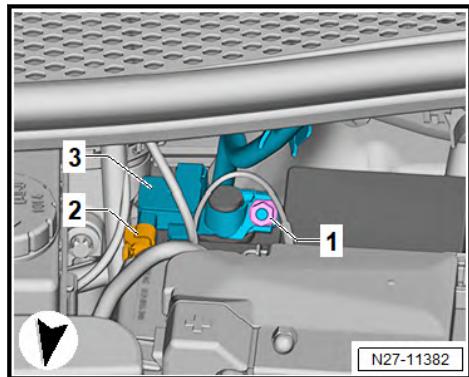
1.6 Charging battery

Charging battery ⇒ Electrical system, General information; Rep. gr. 27; Charging battery.

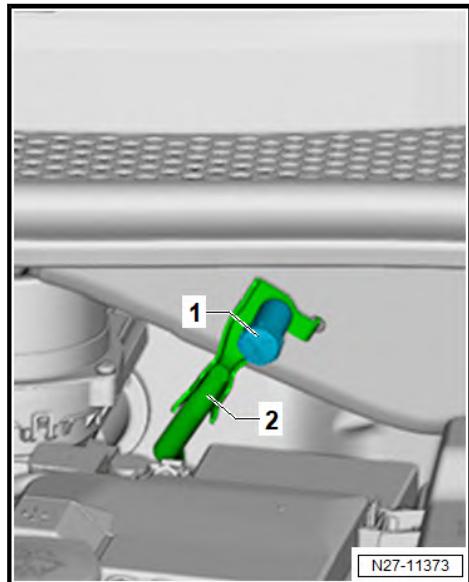
1.7 Removing and installing earth wire with battery monitor control unit -J367-

Removing

- Disconnect battery [⇒ page 11](#).
- Separate electrical connector -2- on battery monitor control unit -J367- -3-.



- Unscrew nut for jump start box negative -1-.



- Remove earth cable -2- with battery monitor control unit -J367-.

Installing

Install in the reverse order of removal, observing the following:

- Adapt battery monitor control unit -J367- [⇒ page 14](#).

Specified torques

- ◆ [⇒ o1.1 verview – battery”, page 6](#)

1.8 Adapting battery monitor control unit - J367-

After the installation of a new battery or a new battery monitor control unit -J367-, the battery monitor control unit -J367- must be adapted.

- Adapt battery monitor control unit -J367- ⇒ Vehicle diagnostic tester.



90 – Gauges, instruments

1 Dash panel insert

[⇒ o1.1 overview - control unit with display unit for driver information system J1254", page 15](#)

[⇒ o1.2 overview - head-up display", page 15](#)

[⇒ a1.3 and installing control unit with display unit for driver information system J1254", page 16](#)

[⇒ a1.4 and installing control unit for head-up display", page 18](#)

[⇒ c1.5 ontrol unit for head-up display", page 20](#)

1.1 Assembly overview - control unit with display unit for driver information system -J1254-

1 - Gap cover for dash panel insert

- Assembly overview
⇒ General body repairs, interior; Rep. gr. 68; Compartments and covers; Assembly overview - steering column trim.

2 - Dash panel insert trim

3 - Bolt

- Qty. 6
- 3 Nm

4 - Steering column electronics control unit -J527-

- Removing and installing [⇒ page 109](#)

5 - Control unit with display unit for driver information system -J1254-

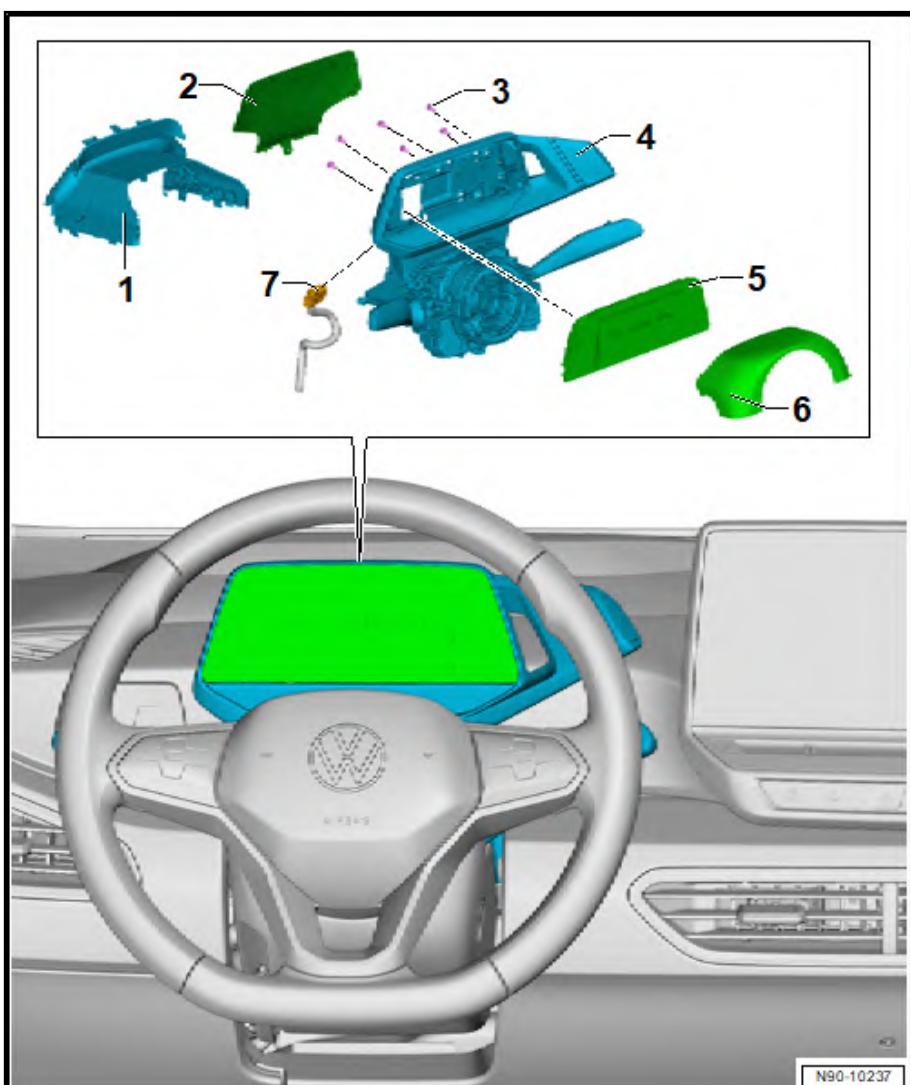
- Removing and installing [⇒ page 16](#)

6 - Upper steering column trim

- Removing and installing ⇒ General body repairs, interior; Rep. gr. 68; Compartments/covers; Removing and installing upper steering column trim.

7 - Electrical connector

- For control unit with display unit for driver information system -J1254-



Volkswagen Technical Site: <https://vwts.ru>

1.2 Assembly overview - head-up display



1 - Dash panel trim panel

- Assembly overview
→ General body repairs, interior; Rep. gr. 70; Dash panel; Assembly overview - dash panel

2 - Bolt

- Qty. 6
- 1.2 Nm

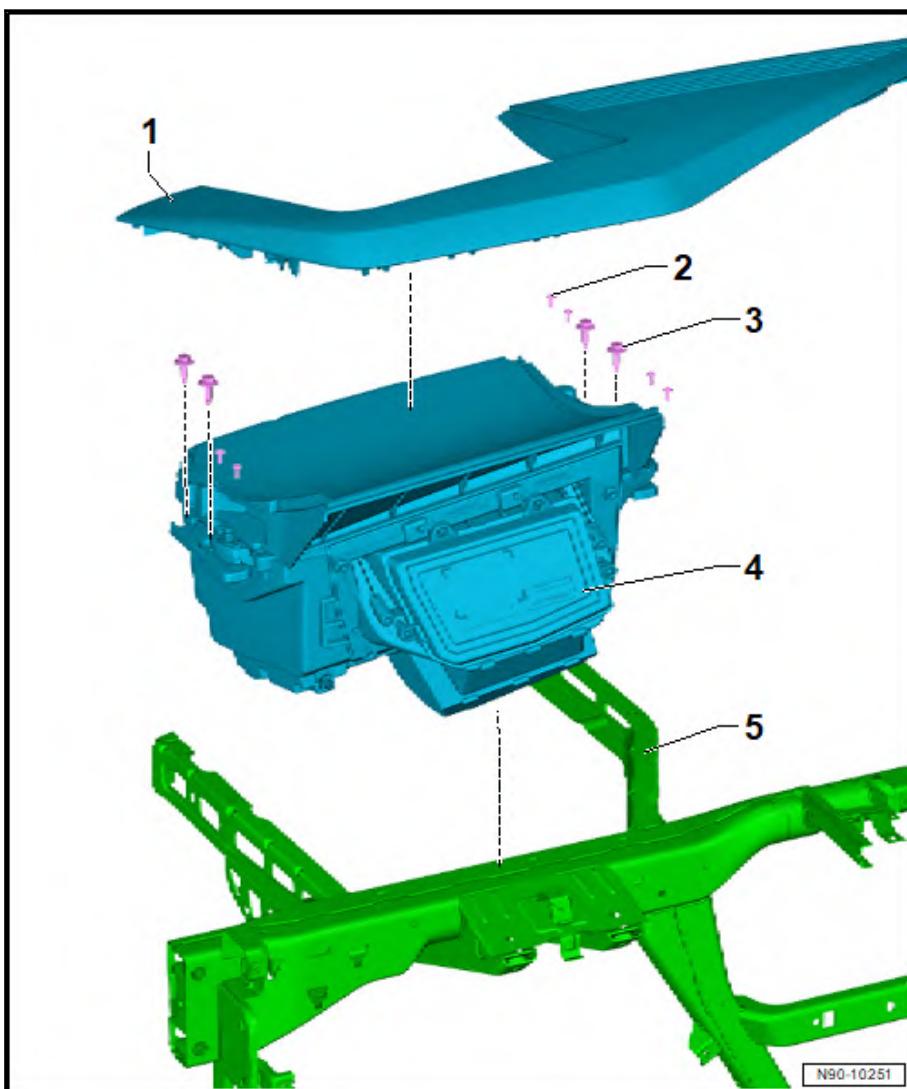
3 - Bolt

- Qty. 4
- 4.5 Nm

4 - Assembly overview - head-up display -J898-

- Removing and installing ⇒ [page 18](#)
- Calibrating ⇒ [page 20](#)

5 - Central tube for dash panel



1.3 Removing and installing control unit with display unit for driver information system -J1254-

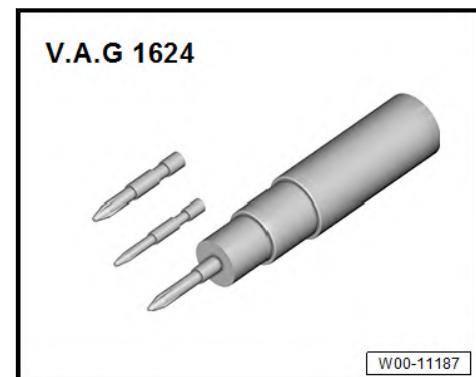


If the control unit with display unit for driver information system -J1254- is renewed, call up the respective function ⇒ Vehicle diagnostic tester.

Special tools and workshop equipment required



- ◆ Torque screwdriver -V.A.G 1624-

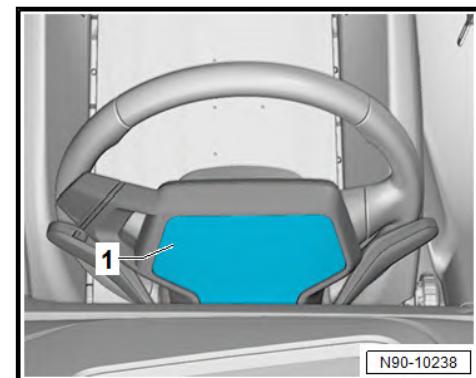


- ◆ Removal wedge -3409-

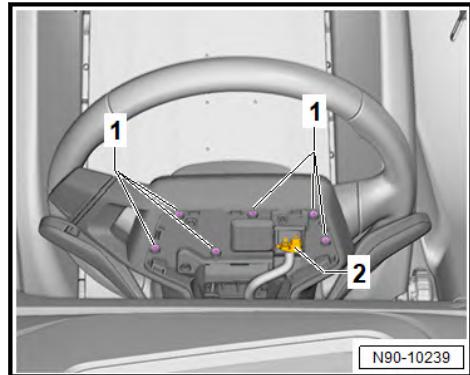


Removing

- Move steering wheel to rearmost and lowest position. Use the full range of the steering column adjustment for this purpose.
- Deactivate operational readiness and switch off all electrical consumers.
- Store the vehicle key and other entry and start authorisation systems outside the vehicle to prevent the vehicle from being switched on unintentionally.
- Remove gap cover for dash panel insert ⇒ General body repairs, interior; Rep. gr. 68; Compartments and covers; Assembly overview - steering column trim.
- Unclip trim for control unit with display unit for driver information system -J1254- -1- with removal wedge -3409-.



- Disconnect electrical connector -2-.



- Secure control unit with display unit for driver information system -J1254- to prevent it from falling out.
- Unscrew bolts -1-.
- Remove control unit with display unit for driver information system -J1254-.

Installing

Install in the reverse order of removal, observing the following:

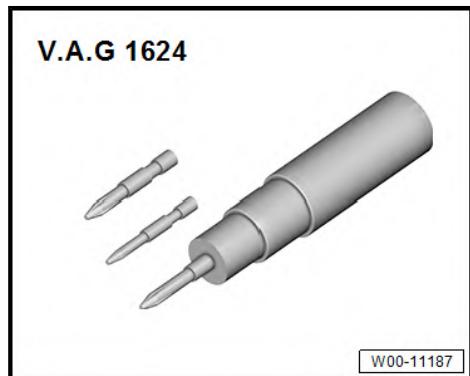
Specified torques

- ◆ [⇒ o1.1 overview - control unit with display unit for driver information system J1254”, page 15](#)

1.4 Removing and installing control unit for head-up display

Special tools and workshop equipment required

- ◆ Torque screwdriver -V.A.G 1624-



Note

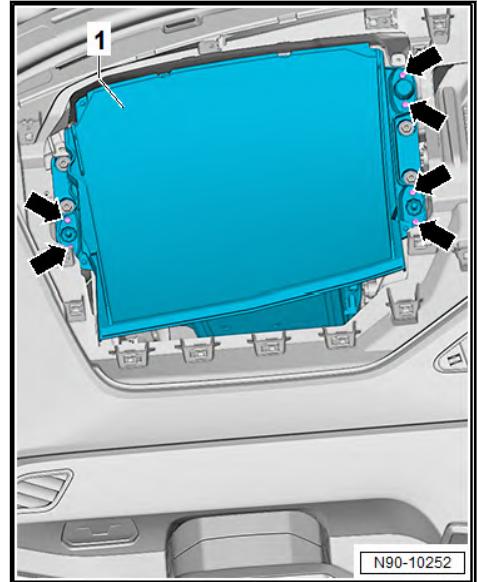
If the control unit for Head-up Display -J898- is renewed, start the respective function ⇒ Vehicle diagnostic tester.

Removing

- Remove windscreen ⇒ General body repairs, exterior; Rep. gr. 64; Windscreen; Removing and installing windscreen.
- Remove dynamic light strip 1 for information in dash panel -L385- ⇒ [page 125](#).
- Remove trim panel for dash panel ⇒ General body repairs, interior; Rep. gr. 70; Dash panel; Assembly overview - dash panel.



- If fitted, place dash panel insulation to one side.
- Cover control unit for head-up display -J898- -1- with a soft cloth.



- Unscrew bolts -arrow-.
- Remove control unit for head-up display -J898- -1- until electrical connectors are accessible.
- Disconnect electrical connectors.
- Remove control unit for head-up display -J898- -1-.

Installing

Install in the reverse order of removal, observing the following:

NOTICE

Risk of irreparable damage to control unit for head-up display -J898-.

- Never apply pressure to the upper part of the housing when inserting the control unit.

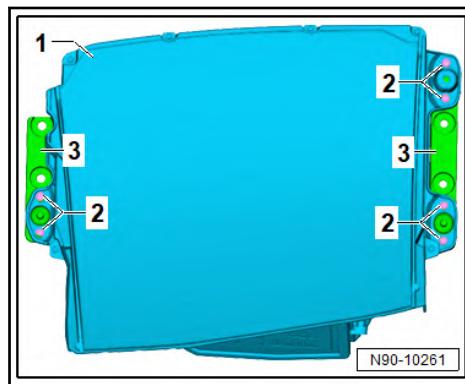
NOTICE

Risk of irreparable damage to control unit for head-up display -J898-.

- Should a control unit for head-up display -J898- fall down, it must be replaced.



Renew control unit for head-up display -J898-



- On new part, unscrew bolts -2-.
- Remove actuator plates -3- from control unit for head-up display -J898- -1-.

Continued for all vehicles

- Insert control unit for head-up display -J898- -1-.
- Tighten bolts -2-.
- Position windscreen and secure temporarily - do not bond in.
- Activate operational readiness.
- Perform functional check.
- Install windscreen ⇒ General body repairs, exterior; Rep. gr. 64; Windscreen; Removing and installing windscreen.
- Calibrate control unit for head-up display -J898- -1- [⇒ page 20](#).

Specified torques

- ◆ [⇒ o1.2 verview - head-up display", page 15](#)

1.5 Calibrating control unit for head-up display

[⇒ c1.5.1 ontrol unit for head-up display, left-hand drive vehicle", page 20](#)

[⇒ c1.5.2 ontrol unit for head-up display, right-hand drive vehicle", page 22](#)

1.5.1 Calibrating control unit for head-up display, left-hand drive vehicle

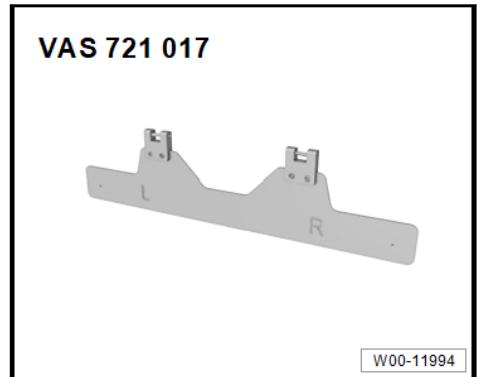
Special tools and workshop equipment required

- ◆ Setting device -VAS 6430-





- ◆ Calibration board for head-up display AR -VAS 721 017-



- ◆ Vehicle diagnostic tester

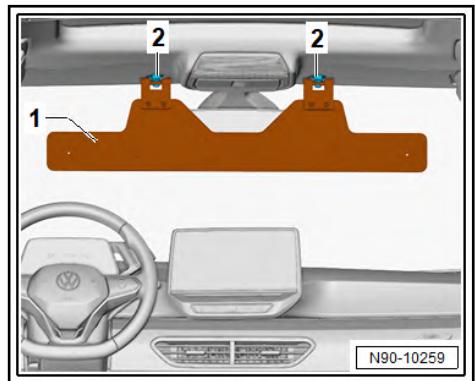
Conditions

Control unit for head-up display -J898- must be calibrated in the following conditions:

- ◆ Installation position of central tube for dash panel has been changed.
- ◆ Central tube for dash panel was removed and reinstalled.
- ◆ Windscreen was removed and reinstalled.
- ◆ Control unit for head-up display was removed and reinstalled or renewed.

Calibration

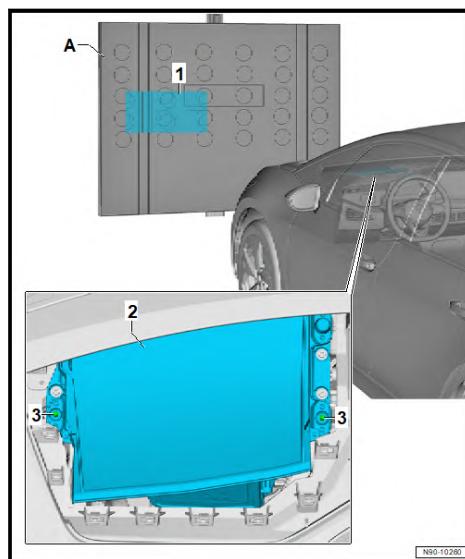
- Calibrate front camera for driver assist systems ⇒ Driver assist systems; Rep. gr. 98; Front camera for assist systems; Calibrating front camera for assist systems.
- Fold down left and right sun visors, detach and swivel to one side.
- Attach calibration board for head-up display AR -VAS 721 017- -1- to centre bracket for sun visors -2-.



- Align calibration board for head-up display AR -VAS 721 017- -1- in centre brackets -2-.
- Remove trim panel for dash panel ⇒ General body repairs, interior; Rep. gr. 70; Dash panel; Assembly overview - dash panel.
- Call up test screen with vehicle diagnostic tester ⇒ Vehicle diagnostic tester.
- Check position of test screen through hole on driver side of calibration board for head-up display AR -VAS 721 017- -1-.



Vehicles with incorrectly positioned test screen



- Bring test screen -1- with setting device -VAS 6430- -A- into alignment as accurately as possible on control unit for head-up display -J898- -2- using setting screws -3-.

Continued for all vehicles

- After calibration, deactivate operational readiness and switch off all electrical consumers.

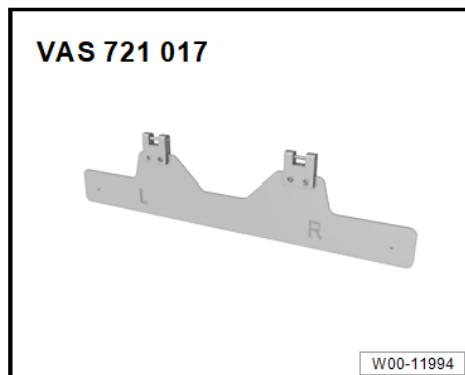
1.5.2 Calibrating control unit for head-up display, right-hand drive vehicle

Special tools and workshop equipment required

- ◆ Setting device -VAS 6430-



- ◆ Calibration board for head-up display AR -VAS 721 017-



- ◆ Vehicle diagnostic tester



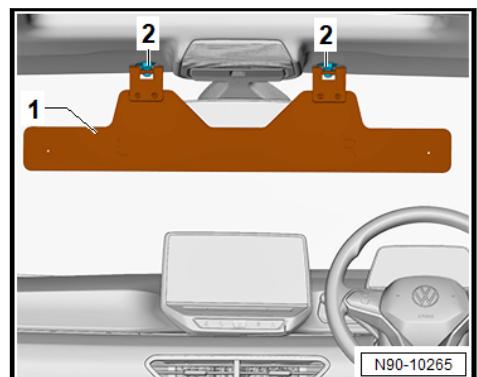
Conditions

Control unit for head-up display -J898- must be calibrated in the following conditions:

- ◆ Installation position of central tube for dash panel has been changed
- ◆ Central tube for dash panel was removed and installed

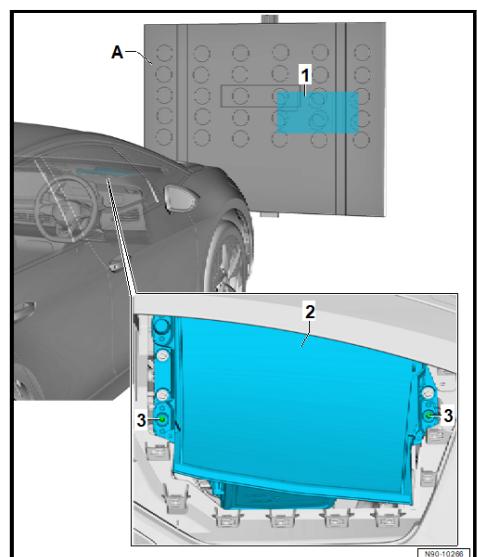
Calibration

- Calibrate front camera for driver assist systems ⇒ Driver assist systems; Rep. gr. 98; Front camera for assist systems; Calibrating front camera for assist systems.
- Fold down left and right sun visors, detach and swivel to one side.
- Attach calibration board for head-up display AR -VAS 721 017- -1- to centre bracket for sun visors -2-.



- Align calibration board for head-up display AR -VAS 721 017- -1- in centre brackets -2-.
- Remove trim panel for dash panel ⇒ General body repairs, interior; Rep. gr. 70; Dash panel; Assembly overview - dash panel.
- Call up test screen with vehicle diagnostic tester ⇒ Vehicle diagnostic tester.
- Check position of test screen via hole on driver side of calibration board for head-up display AR -VAS 721 017- -1-.

Vehicles with incorrectly positioned test screen





- Bring test screen -1- with setting device -VAS 6430- -A- into alignment as accurately as possible on control unit for head-up display -J898- -2- using setting screws -3-.

Continued for all vehicles

- After calibration, deactivate operational readiness and switch off all electrical consumers.
- Disconnect ⇒ Vehicle diagnostic tester from diagnostic connection.



2 Horn

[⇒ o2.1 overview - horn", page 25](#)

[⇒ a2.2 nd installing horn/dual tone hornH1", page 25](#)

2.1 Assembly overview - horn

1 - Horn or dual tone horn -
H1-

- Removing and installing [⇒ page 25](#)

2 - Nut

- 11 Nm

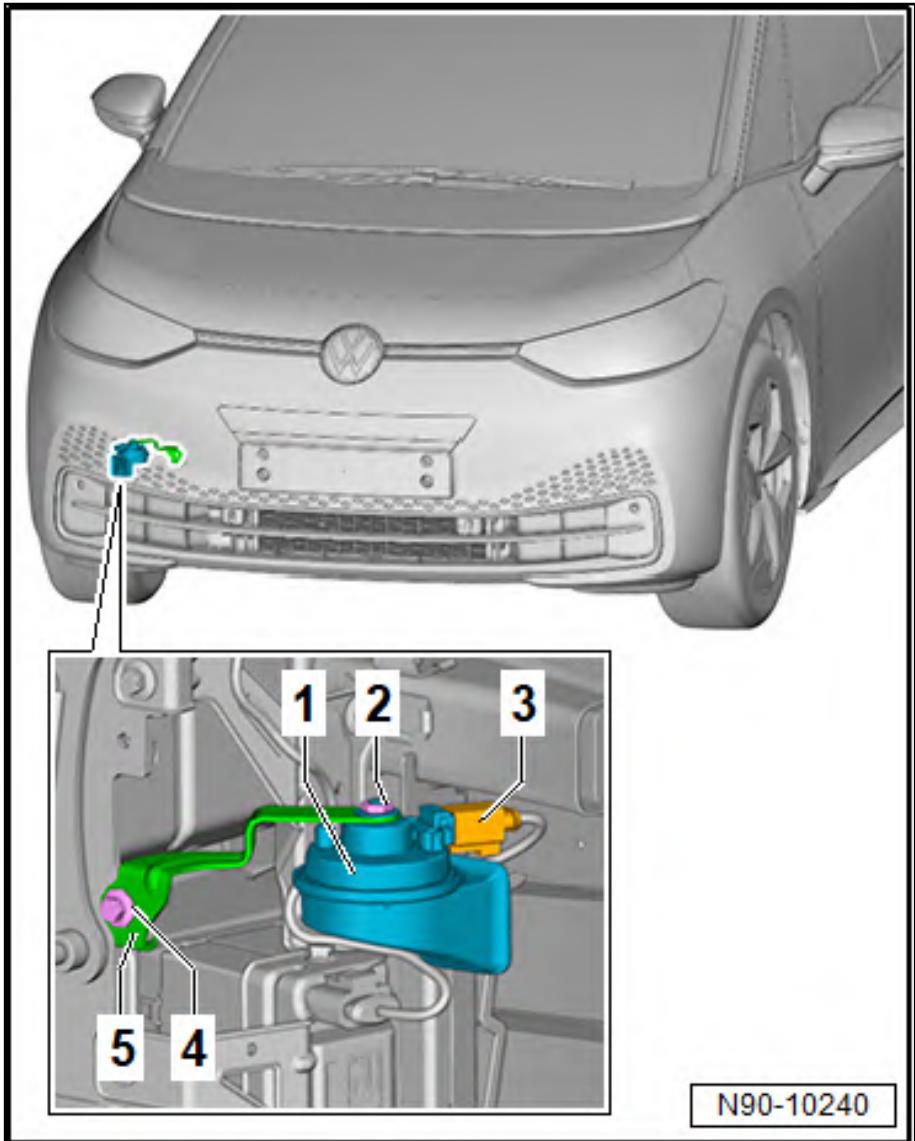
3 - Electrical connector

4 - Bolt

- 18 Nm

5 - Bracket

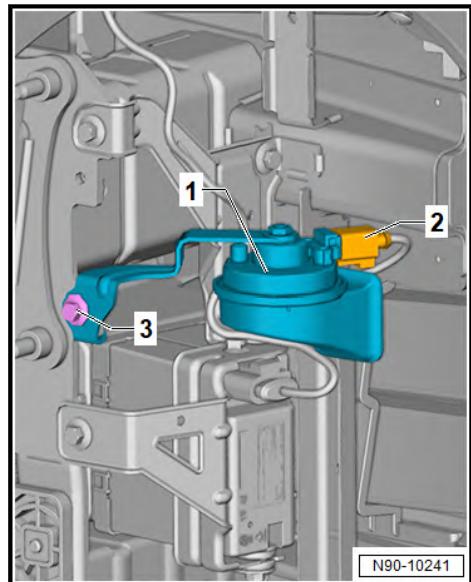
- For horn/dual tone horn
-H1-



2.2 Removing and installing horn/dual tone horn -H1-

Removing

- Remove front right wheel housing liner ⇒ General body re-pairs, exterior; Rep. gr. 66; Wheel housing liner; Removing and installing front wheel housing liner.
- Unscrew bolt -3-.



- Remove horn/dual tone horn -H1- -1-.
- Disconnect electrical connector -2-.

Installing

Install in the reverse order of removal, observing the following:

- Perform functional check.

Specified torques

- ◆ [⇒ o2.1 overview - horn”, page 25](#)



92 – Windscreen wash/wipe system

1 Windscreen wiper system

- ⇒ [o1.1 overview - windscreen wiper system", page 27](#)
- ⇒ [w1.2 ipers to service position", page 29](#)
- ⇒ [a1.3 nd installing wiper blade", page 29](#)
- ⇒ [a1.4 nd installing wiper arms", page 30](#)
- ⇒ [w1.5 iper arms", page 32](#)
- ⇒ [a1.6 nd installing windscreen wiper motorV216/V217", page 34](#)
- ⇒ [w1.7 iper motor", page 35](#)
- ⇒ [a1.8 nd installing rain and light sensor", page 35](#)

1.1 Assembly overview - windscreen wiper system



1 - Left wiper blade

- Removing and installing [⇒ page 29](#)

2 - Left wiper arm

- Removing and installing [⇒ page 30](#)
- Adjusting [⇒ page 32](#)

3 - Cover

4 - Nut

- 30 Nm

5 - Bolt

- Tightening sequence and specified torque [⇒ page 28](#)

6 - Driver side wiper motor - V216-

- Removing and installing [⇒ page 34](#)

7 - Right wiper blade

- Removing and installing [⇒ page 29](#)

8 - Right wiper arm

- Removing and installing [⇒ page 30](#)
- Adjusting [⇒ page 32](#)

9 - Bolt

- Tightening sequence and specified torque [⇒ page 28](#)

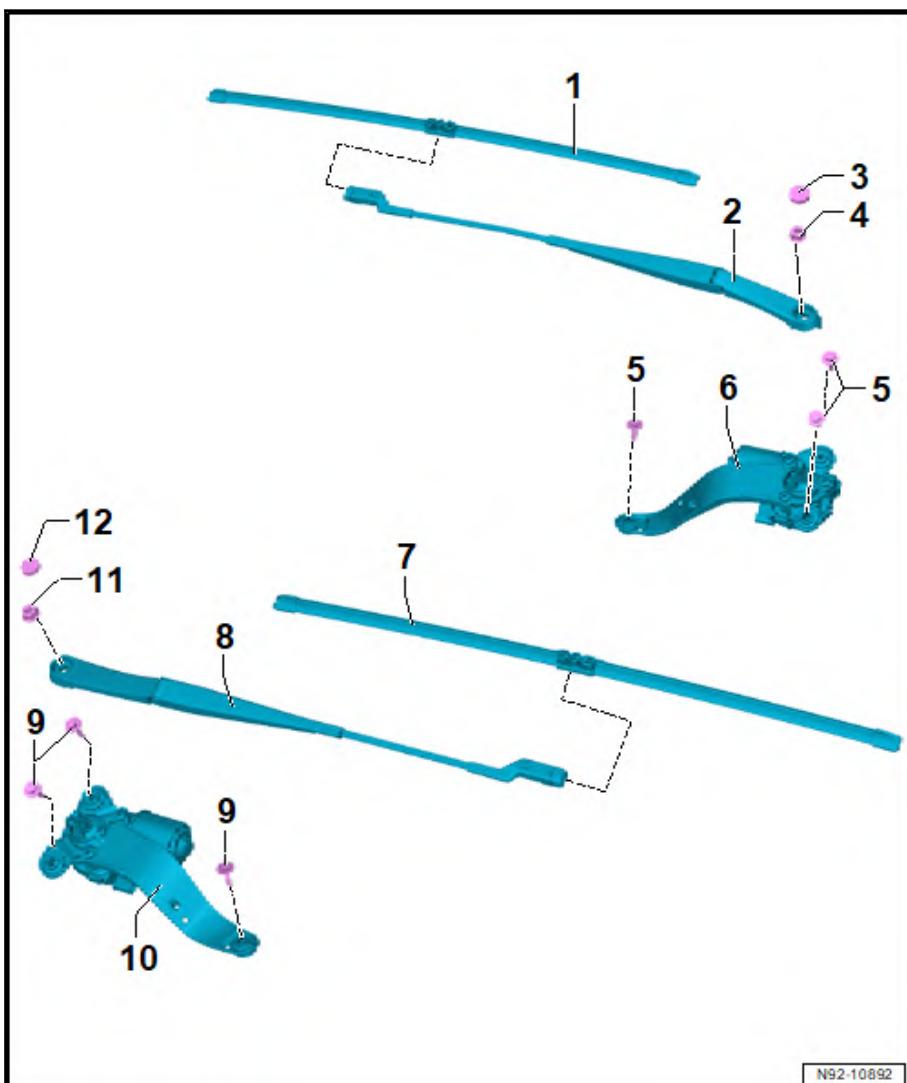
10 - Passenger side wiper motor - V217-

- Removing and installing [⇒ page 34](#)

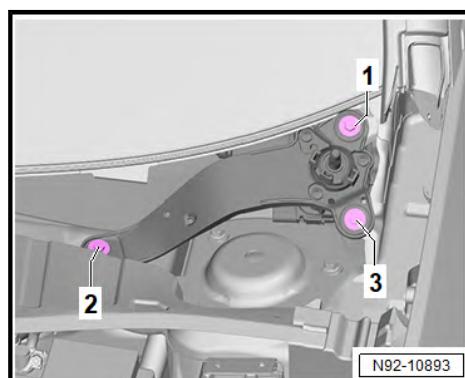
11 - Nut

- 30 Nm

12 - Cover



Removing and installing windscreen wiper motor - specified torque and tightening sequence





- Tighten bolts in stages in the sequence shown:

i Note

As an example, the tightening sequence is described for the left of the vehicle.

Stage	Component	Specified torque
1.	-1-, -2- and -3-	Screw onto stop by hand
2.	-1-, -2- and -3-	8 Nm

1.2 Moving wipers to service position

! NOTICE

Risk of damaging the bonnet when moving wipers back into the park position.

- Never move vehicle with wiper arms folded out.

i Note

- ◆ If it is necessary for the wiper motor to run during the working procedure, the bonnet must be closed completely, as otherwise the power supply to the wiper motor will be interrupted.
- ◆ The wiper motor only works when the bonnet is fully closed.
- When there is a risk of frost, check if wiper blades are frozen to windscreen.
- Briefly activate operational readiness and deactivate.
- Press windscreen wiper lever to “flick wipe” position within 10 seconds.
- Wipers move to “service position”.

1.3 Removing and installing wiper blade

! NOTICE

Risk of damage to windscreen.

- Prevent the wiper arm folding back unexpectedly.

! NOTICE

Risk of damage to the wiper blade.

- To lift wiper blade off windscreen, touch it only in area in which wiper blade is attached to wiper.

! NOTICE

Risk of damage to wiper arm and wiper blade.

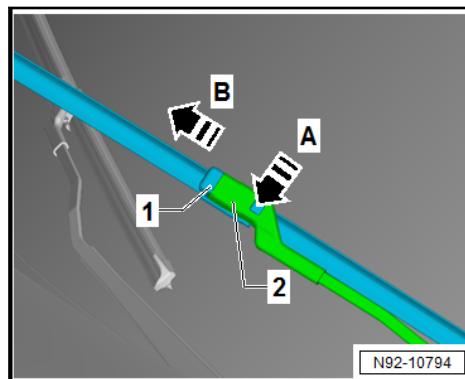
- Avoid bending wiper arm and wiper blade.

Removing

- Move wipers to service position [⇒ page 29](#).
- Lift wiper arm off the windscreen.

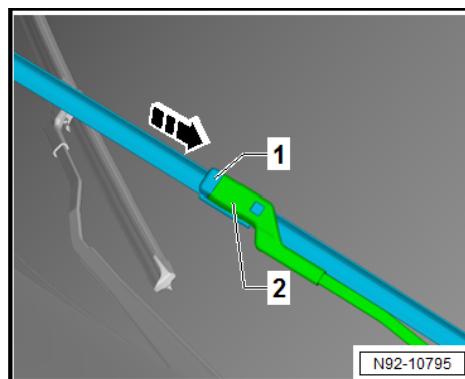


- Push retaining clip in -direction of arrow A-.



- Push wiper blade -1- in -direction of arrow B- off wiper arm -2-.
- Remove wiper blade -1-.

Installing



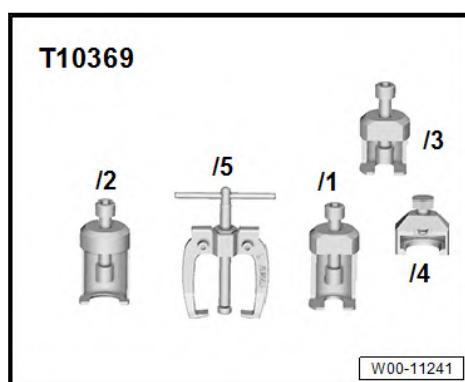
Install in the reverse order of removal, observing the following:

- Insert wiper blade -1- in parallel movement in -direction of arrow- into wiper arm -2-. Ensure that wiper blade -1- is pushed into wiper arm -2- until retaining clip is heard to engage.
- Activate "flick wipe" function to exit the service position.

1.4 Removing and installing wiper arms

Special tools and workshop equipment required

- ◆ Puller -T10369-





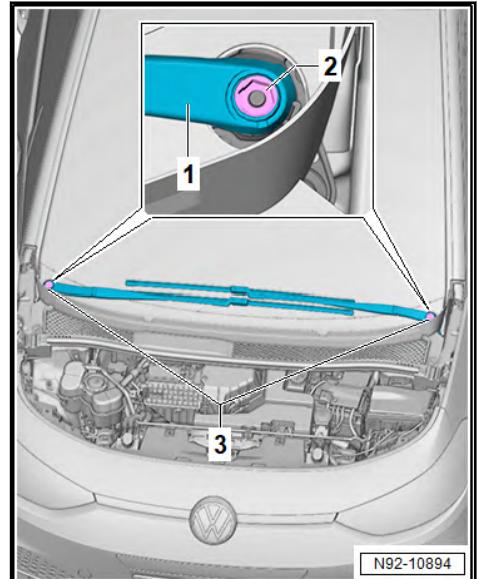
! NOTICE

Risk of damage to wiper arm

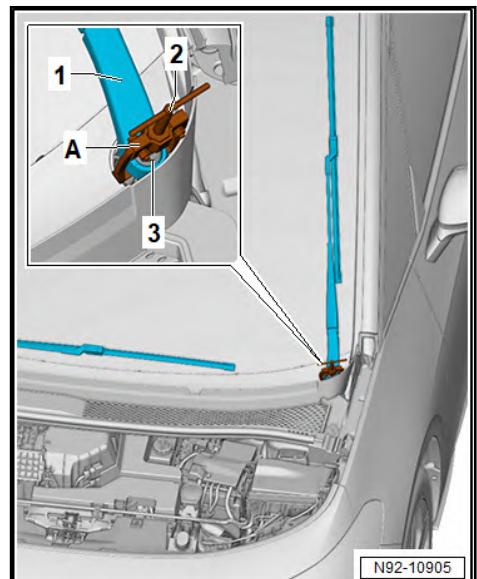
- Use only puller -T10369/5-.

Removing

- Move wipers to service position [⇒ page 29](#).
- Using a suitable screwdriver, lever off caps -3- from wiper arms -1-.



- Loosen nuts -2- a few turns.
- Move wiper arms to upper turning point.
- Mount puller -T10369/5- -A- on wiper arm -1-.



- Position thrust piece -3- on wiper motor shaft.
- Turn spindle -2- clockwise until wiper arm -1- is pulled off wiper motor shaft.
- Remove puller -T10369/5- -A- from wiper arm -1-.



- Unscrew nut.
- Remove wiper arm -1-.

Installing

Install in the reverse order of removal, observing the following:

- Activate operational readiness.
- Perform coding of wiper motor [⇒ page 35](#).
- Actuate “flick wipe” function and allow wiper motors to move to their end position.
- Fit both wiper arms in approximate park positions on wiper motor shafts.
- Screw on nuts -arrows- finger-tight.



- Adjust wiper arms [⇒ page 32](#).

Specified torques

- ◆ [⇒ o1.1 overview - windscreen wiper system”, page 27](#)

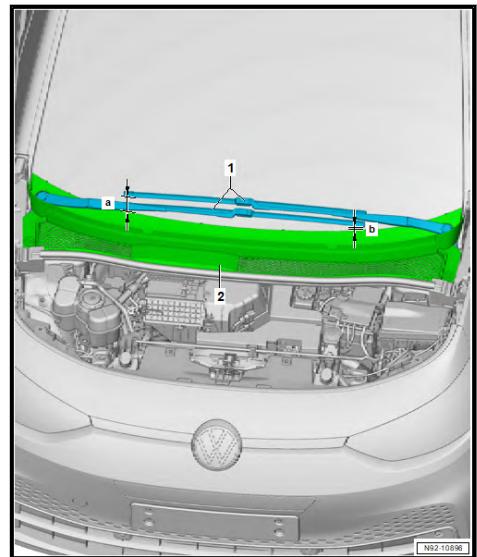
1.5 Adjusting wiper arms

Procedure

- Activate operational readiness.
- Perform coding of wiper motor [⇒ page 35](#).
- Actuate “flick wipe” function and allow wiper arms to move to their end position.
- Switch off vehicle’s “ready” mode.
- Detach wiper arms [⇒ page 30](#).
- Adjust wiper arms.



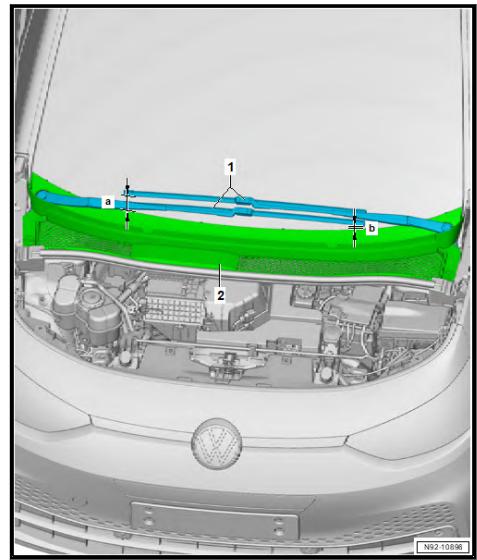
Left



Distance -a- between end of wiper blade and plenum chamber cover -2- at bottom edge of windscreen must be 70 mm or 20 mm above marking in windscreen.

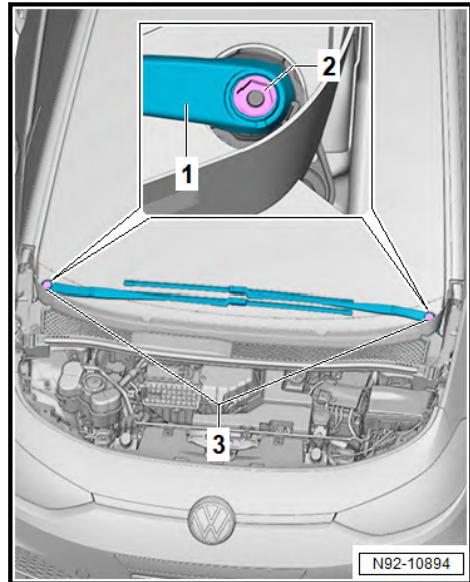
- Adjust wiper blade park position by repositioning wiper arm -1- if necessary.

Right



Distance -b- between end of wiper blade and plenum chamber cover -2- at bottom edge of windscreen must be 15 mm.

- Adjust wiper blade park position by repositioning wiper arm -1- if necessary.
- Tighten nuts -2- for wiper arms -1-.



N92-10894

- Activate operational readiness.
- Actuate “flick wipe” function and allow wiper arms to move to their end position.
- Switch off vehicle’s “ready” mode.
- Check wiper arm adjustment again and correct if necessary.
- Press caps -3- onto wiper arms.

Specified torques

- ◆ [⇒ o1.1 verview - windscreen wiper system”, page 27](#)

1.6 Removing and installing windscreen wiper motor -V216-/V217-

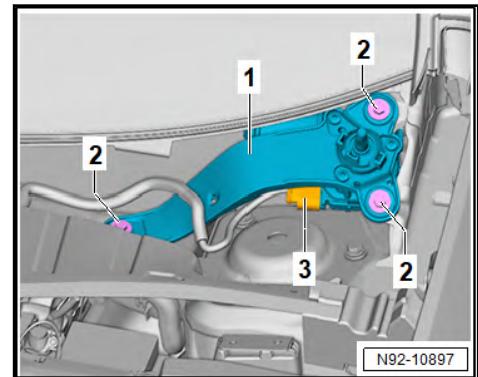


Note

- ◆ If the wiper motor -V216-/V217- is renewed, call-up the respective function ⇒ Vehicle diagnostic tester.
- ◆ Removal and installation are described for the left vehicle side as an example.

Removing

- Remove plenum chamber cover ⇒ General body repairs, exterior; Rep. gr. 50; Bulkhead; Removing and installing plenum chamber cover.
- Unscrew bolts -2-.



- Disconnect electrical connector -3-.
- If fitted, disconnect connector of electronic damping control.
- Remove windscreen wiper motor -V216- / -V217- -1-.

Installing

Install in the reverse order of removal, observing the following:

- Adjust wiper arms [⇒ page 32](#).

Specified torques

- ◆ [⇒ Fig. ““Removing and installing windscreen wiper motor - specified torque and tightening sequence””, page 28](#)

1.7 Coding wiper motor

Wiper motor coding results in self-locking function of wiper motor being activated.

To install wiper arm on wiper motor, self-locking function of wiper motor must be switched on. To ensure this, the wiper motor must be coded.

Note

- ◆ *It is not possible to deactivate the self-locking function.*
- ◆ *Self-locking is automatically deactivated after 100 cycles of wiper movement. This applies to wiper motors whose self-locking function has been activated and also to new wiper motors.*

- Perform coding of wiper motor [⇒ Vehicle diagnostic tester](#).

1.8 Removing and installing rain and light sensor

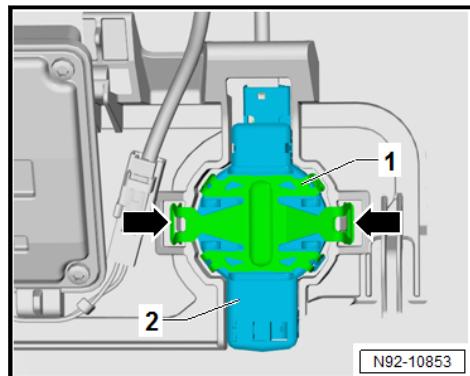
Note

- ◆ *If the rain and light sensor -G397- is renewed with a rain and light sensor -G397- having a different part number, the new rain and light sensor -G397- has to be coded [⇒ Vehicle diagnostic tester](#).*
- ◆ *The rain and light sensors -G397- cannot be installed in any order. Determine the correct rain and light sensor -G397- using the [⇒ Electronic parts catalogue \(ETKA\)](#).*



Removing

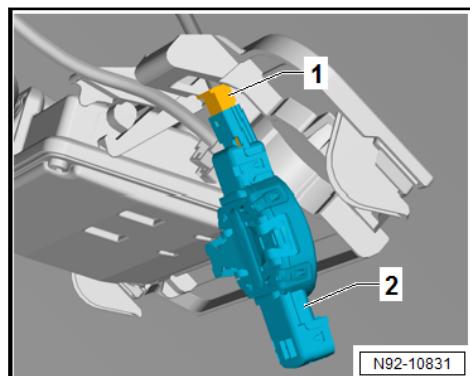
- Deactivate operational readiness and switch off all electrical consumers.
- Store the vehicle key and other entry and start authorisation systems outside the vehicle to prevent the vehicle from being switched on unintentionally.
- Remove front camera cover ⇒ General body repairs, interior; Rep. gr. 68; Interior mirror; Removing and installing interior mirror.
- Release retaining clip -1- at -arrows-.



NOTICE

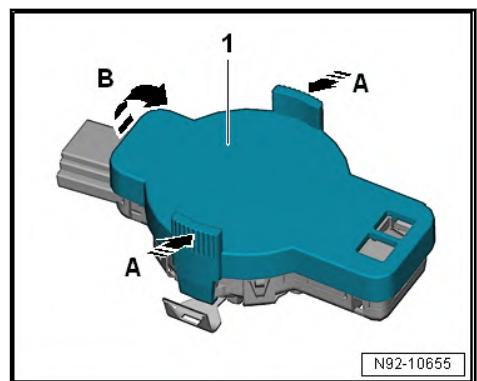
Risk of damage to silicone layer of rain and light sensor
-G397-.

- Wait for at least 1 minute after releasing the retaining clip.
- Starting from top, carefully lever rain and light sensor -G397-2- out of retaining frame on windscreen.
- Disconnect electrical connector -1-.





Installing



Install in the reverse order of removal, observing the following:

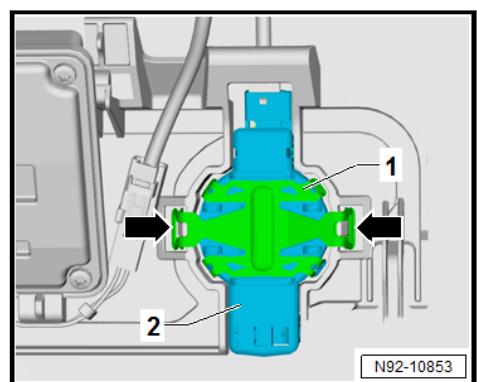
Note

- ◆ Prior to installation, thoroughly clean the surface of the windscreen in the area of the retaining frame for rain and light sensor -G397-. Make sure to completely remove any silicone layer residue on the windscreen.
- ◆ If the surface of the silicone layer on the rain and light sensor -G397- is soiled, it can be cleaned by "bonding on" and then "pulling off" one or more adhesive strips.

NOTICE

Risk of damage to silicone layer of rain and light sensor -G397-.

- When installing, the surface of the rain and light sensor -G397- must not be soiled or damaged.
- Remove protective cap -1-.
- Push locking lug in direction of -arrow A-.
- Remove protective cap -1- in direction of -arrow B-.
- Insert rain and light sensor -G397- -2- into retaining frame on windscreen.



- Push in retaining clip -1- at -arrows- until it can be heard to engage.



NOTICE

Malfunctions of rain and light sensor -G397-

- After approx. 10 minutes, the contact surface must be free of bubbles.
- If contact surface is not free of bubbles after 10 minutes, rain and light sensor -G397- must be removed and installed anew.



Note

With the rain and light sensor -G397- disconnected, opening the door, for example, can activate the CAN bus. The sporadic event entries in the onboard supply control unit must be deleted following repair work.

- Read event memory, and clear any sporadic faults stored for rain and light sensor -G397- ⇒ Vehicle diagnostic tester.
- If the rain and light sensor -G397- was renewed, perform coding ⇒ Vehicle diagnostic tester.



2 Windscreen washer system

[⇒ o2.1 overview - windscreen washer system", page 39](#)

[⇒ a2.2 nd installing washer fluid reservoir", page 40](#)

[⇒ a2.3 nd installing windscreen washer pump", page 42](#)

[⇒ a2.4 nd installing spray jets", page 43](#)

[⇒ s2.5 pray jets", page 44](#)

2.1 Assembly overview - windscreen washer system

1 - Right spray jet

- Versions with right washer jet heater element -Z21-
- Removing and installing [⇒ page 43](#)
- Adjusting [⇒ page 44](#)

2 - Left spray jet

- Versions with left washer jet heater element - Z20-
- Removing and installing [⇒ page 43](#)
- Adjusting [⇒ page 44](#)

3 - Electrical connector

4 - Electrical connector

5 - Grommet

- For washer fluid hose in bonnet

6 - Hose for washer fluid

7 - Windscreen and rear window washer pump -V59-

- Removing and installing [⇒ page 42](#)

8 - Sealing grommet

9 - Connection for washer fluid hose

- For windscreen and rear window washer pump -V59-

10 - Washer fluid reservoir

- Removing and installing [⇒ page 40](#)

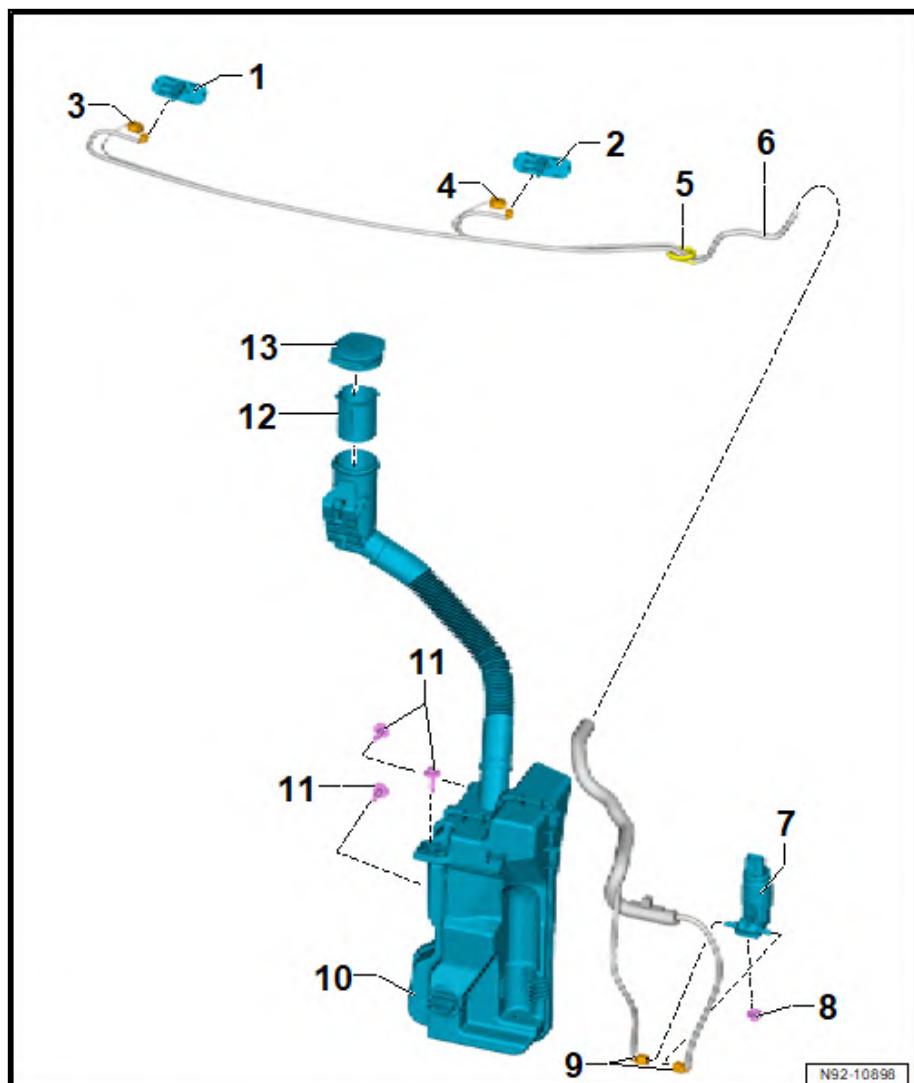
11 - Bolts

- Qty. 3
- 8 Nm

12 - Strainer

13 - Cap

- For filler neck



N92-10698



2.2 Removing and installing washer fluid reservoir

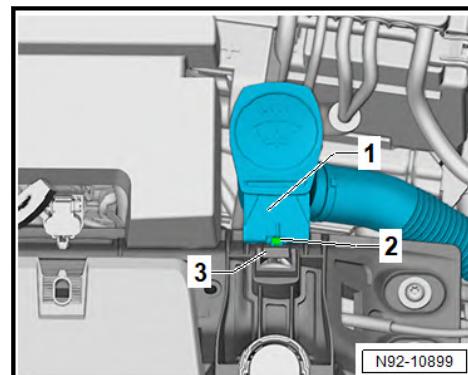
Special tools and workshop equipment required

- ◆ Drip tray -VAS 6208-



Removing

- Remove front left wheel housing liner ⇒ General body repairs, exterior; Rep. gr. 66; Wheel housing liner; Removing and installing front wheel housing liner.
- Remove bumper cover ⇒ General body repairs, exterior; Rep. gr. 63; Front bumper; Removing and installing bumper cover.
- Place drip tray -VAS 6208- under washer fluid reservoir.
- Release locking lug -2-.

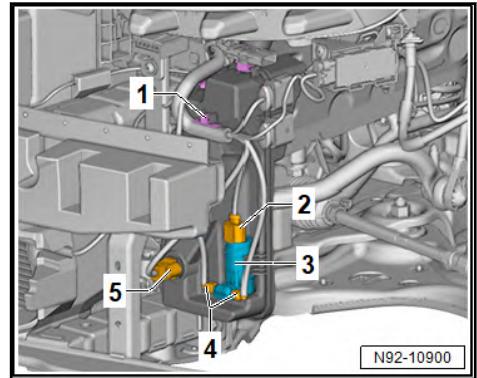


- Pull filler neck -1- upwards out of bracket on lock carrier -3-.

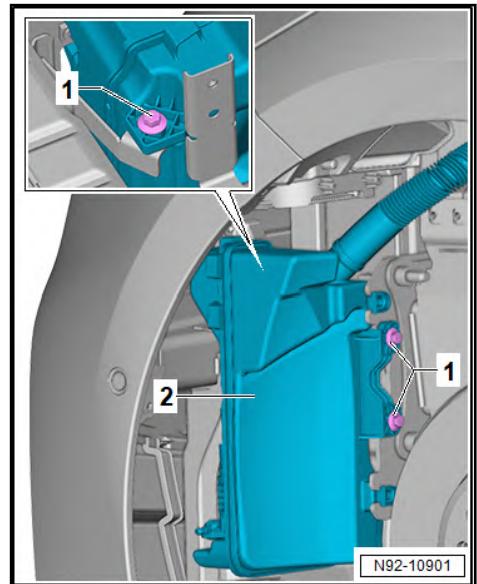
NOTICE

Risk of leakage.

- The washer fluid reservoir, the filler pipe and the filler neck are not designed to be separated from each other.
- Separate electrical connectors -2- and -5-.



- Release and pull off washer fluid hoses -4- on windscreen and rear window washer pump -V59- -3-.
- Pull off retainer -1- for wiring harnesses from washer fluid reservoir.
- Unscrew bolts -1-.



- Pull washer fluid reservoir -2- off guide rails, and remove it.

Installing

Install in the reverse order of removal, observing the following:



Note

To prevent incorrect connection of the washer fluid hoses on the windscreen and rear window washer pump -V59-, the connections on the windscreen and rear window washer pump -V59- and washer fluid hoses are colour-coded. The connection pieces of the washer fluid hoses must be inserted in the corresponding colour-coded connections of the window washer pump during installation.

Specified torques

- ◆ [⇒ o2.1 overview - windscreen washer system”, page 39](#)



2.3 Removing and installing windscreen washer pump

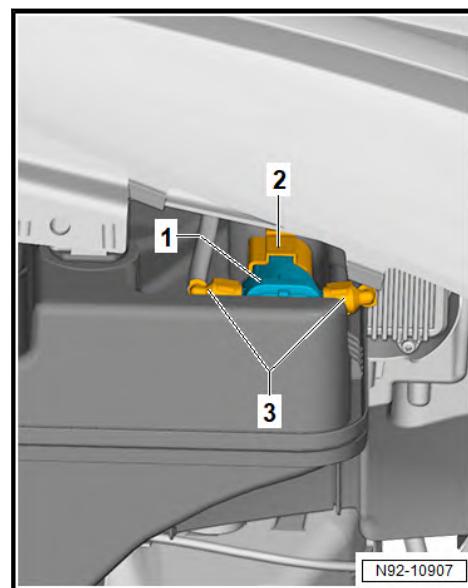
Special tools and workshop equipment required

- ◆ Drip tray -VAS 6208-



Removing

- Detach front left wheel housing liner ⇒ General body repairs, exterior; Rep. gr. 66; Wheel housing liner; Removing and installing front wheel housing liner.
- Place drip tray -VAS 6208- under washer fluid reservoir.
- Disconnect electrical connector -2-.



- Pull out windscreen and rear window washer pump -V59- -1- upwards.
- Release and pull off washer fluid hoses -3-.

Installing

Install in the reverse order of removal, observing the following:

**i Note**

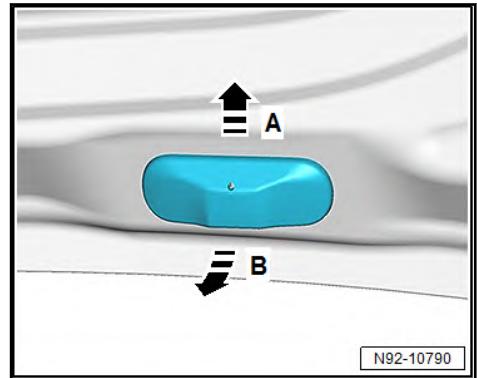
To prevent incorrect connection of the washer fluid hoses on the windscreen and rear window washer pump -V59-, the connections on the windscreen and rear window washer pump -V59- and washer fluid hoses are colour-coded. The connection pieces of the washer fluid hoses must be inserted in the corresponding colour-coded connections of the window washer pump during installation.

- Check sealing grommet for damage and correct seating.

2.4 Removing and installing spray jets

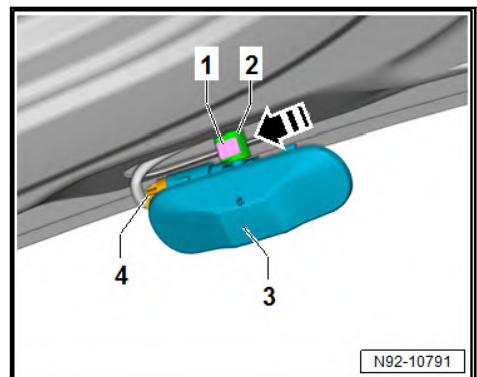
Removing

- Open bonnet.
- Push spray jet upwards in direction of -arrow A-.



N92-10790

- Swivel spray jet downwards out of bonnet in direction of -arrow B-.
- Release securing clip -1- in direction of -arrow-.



N92-10791

- Pull off washer fluid hose connection -2-.
- Disconnect electrical connector -4-.
- Remove spray jet -3-.

Installing

Install in the reverse order of removal, observing the following:



! NOTICE

Leaks from connection for washer fluid hose.

- When connecting washer fluid hose, securing clip must engage audibly in connection for washer fluid hose.
- Starting at the top, push spray jet into mounting hole in bonnet until spray jet is heard to engage.
- Adjusting spray jets [⇒ page 44](#).

2.5 Adjusting spray jets

 Note

If the spray pattern is uneven due to soiling in the spray jet, remove spray jet and rinse with water against the direction of spray. Subsequent blowing through with compressed air against the spraying direction is permitted. Never use implements to clean the spray jets.

- Adjust spray jets ⇒ Maintenance; Booklet 51.1; Descriptions of work.

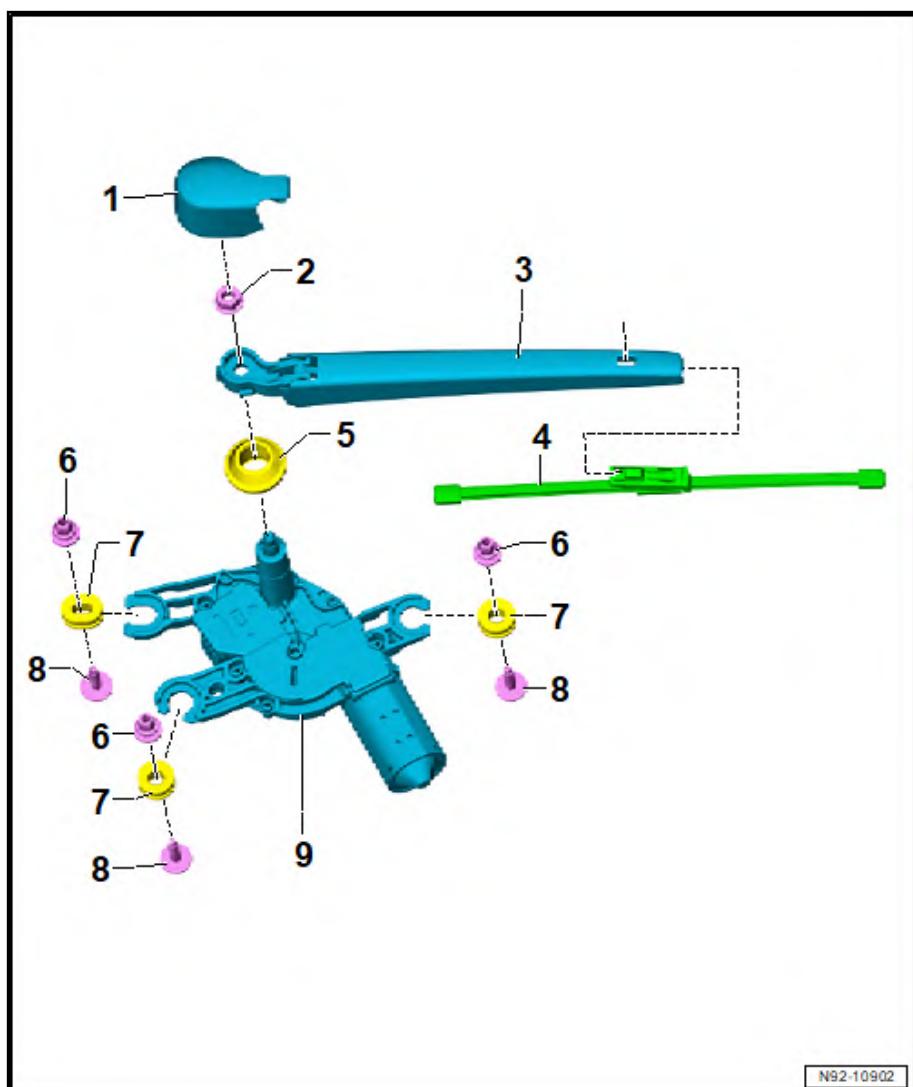


3 Rear window wiper system

- [⇒ o3.1 overview - rear window wiper system", page 45](#)
- [⇒ a3.2 nd installing wiper blade", page 45](#)
- [⇒ a3.3 nd installing wiper arm", page 46](#)
- [⇒ w3.4 iper arm", page 47](#)
- [⇒ a3.5 nd installing rear window wiper motorV12", page 48](#)

3.1 Assembly overview - rear window wiper system

- 1 - Cover
- 2 - Nut
 - 12 Nm
- 3 - Wiper arm
- 4 - Wiper blade
- 5 - Seal
- 6 - Spacer
- 7 - Rubber ring
- 8 - Bolt
 - Qty. 3
 - 8 Nm
- 9 - Rear window wiper motor -V12-
 - Removing and installing [⇒ page 48](#)



3.2 Removing and installing wiper blade

NOTICE

Risk of damage to rear window.

- Prevent the wiper arm folding back unexpectedly.



! NOTICE

Risk of damage to the wiper blade.

- To lift wiper blade off rear window, touch it only in area in which wiper blade is attached to wiper.

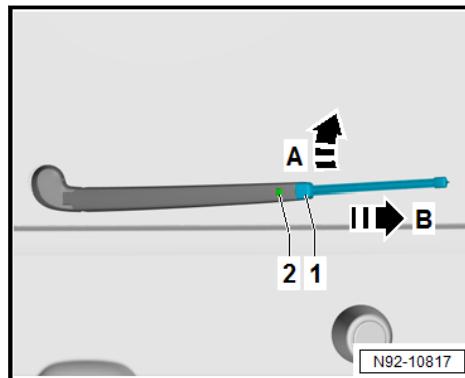
! NOTICE

Risk of damage to wiper arm and wiper blade.

- Avoid bending wiper arm and wiper blade.

Removing

- Lift wiper arm off the rear window.
- Swivel wiper blade -1- in direction of -arrow A- out of wiper arm.



- Press release button -2-.
- Pull wiper blade -1- in -direction of arrow B- out of washer wiper arm.

Installing

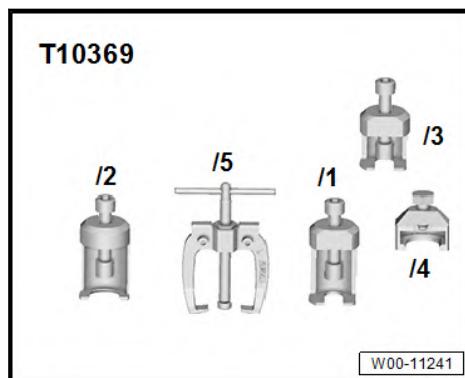
Install in the reverse order of removal, observing the following:

- The wiper blade must be heard to engage in the wiper arm.

3.3 Removing and installing wiper arm

Special tools and workshop equipment required

- ◆ Puller -T10369-

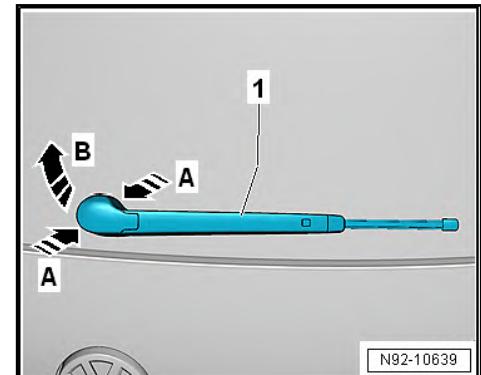


Removing

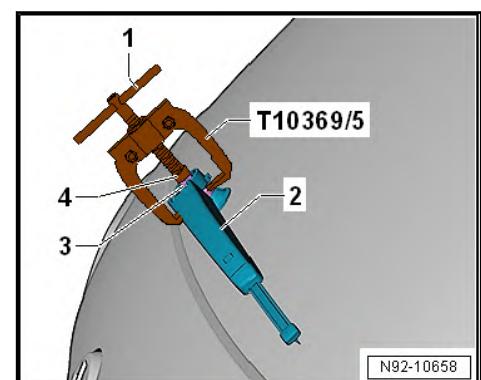
- Activate operational readiness.
- Actuate "rear window wipe" function and allow wiper motor shaft to move to its end position.



- Deactivate operational readiness and switch off all electrical consumers.
- Store the vehicle key and other entry and start authorisation systems outside the vehicle to prevent the vehicle from being switched on unintentionally.
- Press together cap of rear window wiper system -1- in direction of -arrow A-.



- Fold up cap in -direction of arrow B-, an unclip it.
- Loosen nut (do not unscrew completely).
- Fit puller -T10369/5- to wiper arm -2-.



- Position thrust piece -4- on wiper motor shaft.
- Turn spindle -1- clockwise until wiper arm is pulled off wiper motor shaft.
- Unscrew nuts -3-.
- Remove wiper arm -2-.

Installing

Install in the reverse order of removal, observing the following:

- Adjust wiper arm [page 47](#).

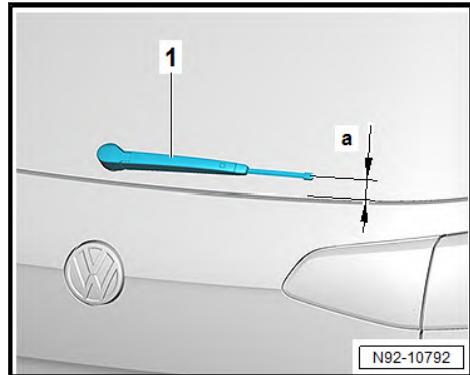
3.4 Adjusting wiper arm

Procedure

- Activate operational readiness.
- Actuate “rear window wipe” function and allow wiper motor shaft to move to its end position.
- Switch off vehicle’s “ready” mode.
- Detach wiper arm [page 46](#).



Distance -a- from end of wiper blade to bottom edge of rear window must be 38 +/- 5 mm.



- Adjust wiper blade park position by repositioning wiper arm -1- if necessary.
- Tighten nut of wiper arm -1-.
- Activate operational readiness.
- Actuate "rear window wipe" function and allow wiper arm to move to its end position.
- Check wiper arm adjustment again and correct if necessary.

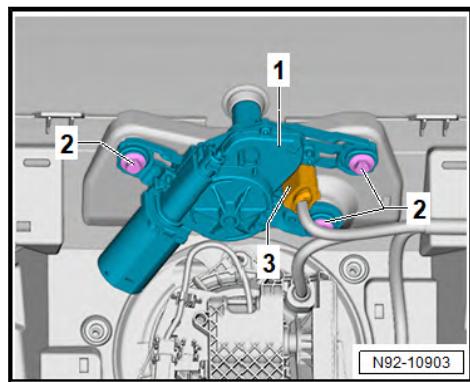
Specified torques

- ◆ [⇒ o3.1 overview - rear window wiper system](#), page 45

3.5 Removing and installing rear window wiper motor -V12-

Removing

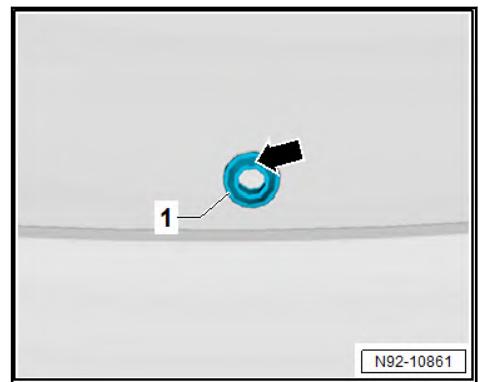
- Remove wiper arm [⇒ page 46](#).
- Remove lower rear lid trim ⇒ General body repairs, interior; Rep. gr. 70; Luggage compartment trims; Removing and installing lower rear lid trim.
- Disconnect electrical connector -3-.



- Unscrew bolts -2-.
- Remove rear window wiper motor -V12- -1-.



Installing



Install in the reverse order of removal, observing the following:

- Coat inside of seal in rear window with lubricant if necessary
⇒ Electronic parts catalogue (ETKA).
- Check seal -1- is seated correctly in opening of rear window.
Mark -arrow- on seal must align with mark on rear window.
- Adjust wiper arm [⇒ page 47](#).

Specified torques

- ◆ [⇒ o3.1 overview - rear window wiper system”, page 45](#)



4 Rear window washer system

⇒ [o4.1 overview - rear window washer system", page 50](#)

⇒ [a4.2 nd installing spray jet", page 50](#)

⇒ [s4.3 pray jet", page 51](#)

4.1 Assembly overview - rear window washer system

1 - Trim panel for rear spoiler

- Removing and installing ⇒ General body repairs, exterior; Rep. gr. 66; Spoiler

2 - Spray jet

- Removing and installing ⇒ [page 50](#)
- Adjusting ⇒ [page 51](#)

3 - Hose for washer fluid

- In left side panel to spray jet of rear window washer system

4 - Hose for washer fluid

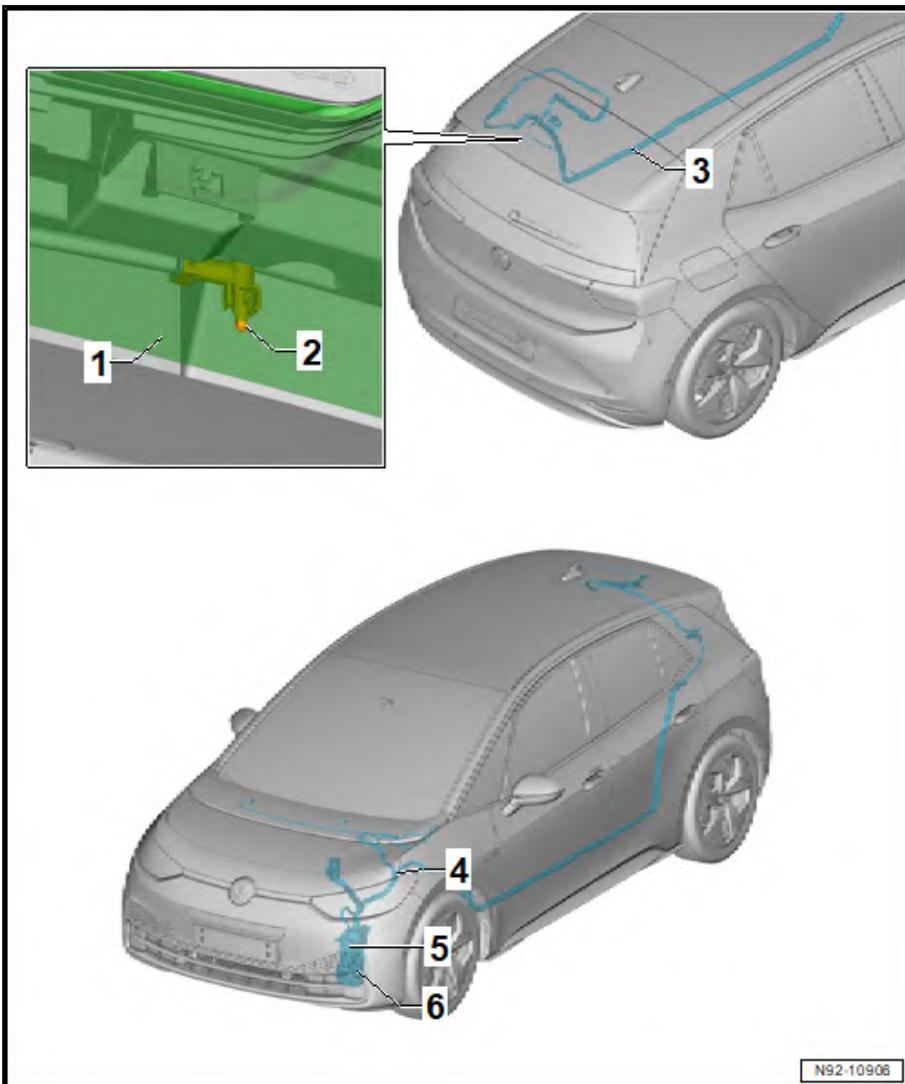
- In engine compartment to spray jet of rear window washer system

5 - Washer fluid reservoir

- Removing and installing ⇒ [page 40](#)

6 - Windscreen and rear window washer pump -V59-

- Removing and installing ⇒ [page 42](#)
- With sealing grommet; renew if damaged.

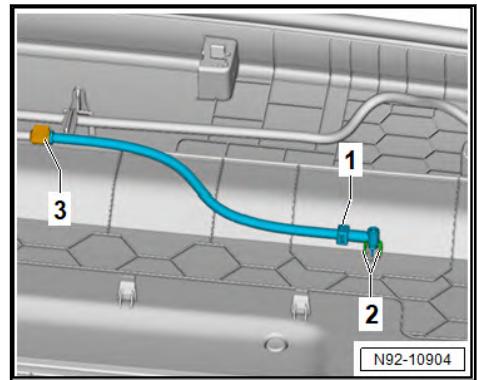


N92-10906

4.2 Removing and installing spray jet

Removing:

- Remove rear spoiler trim ⇒ General body repairs, exterior; Rep. gr. 66; Spoilers.
- Release and pull off washer fluid hose -3-.



- Release fasteners -2-.
- Pull out spray jet -1-.

Installing

Install in the reverse order of removal, observing the following:

NOTICE

Leaks from connection for washer fluid hose.

- When connecting washer fluid hose, securing clip must engage audibly in connection for washer fluid hose.

4.3 Adjusting spray jet



Note

The rear window spray jet cannot be adjusted.



5 Washer fluid lines

[⇒ w5.1 washer fluid lines", page 52](#)

5.1 Repairing washer fluid lines

All instructions and notes regarding this chapter are available under ⇒ Electrical system, General information; Rep. gr. 92; Hose repair.



94 – Lights, bulbs, switches - exterior

1 Headlights

- ⇒ [o1.1 verview – headlight”, page 53](#)
- ⇒ [a1.2 nd installing headlight”, page 57](#)
- ⇒ [h1.3 eadlights”, page 58](#)
- ⇒ [r1.4 epair kit for headlight housing”, page 58](#)
- ⇒ [a1.5 nd installing front turn signal bulb M5/M7”, page 60](#)
- ⇒ [a1.6 nd installing headlight range control motor V48/V49”, page 61](#)
- ⇒ [a1.7 nd installing LED module for daytime running light and side lightL176/L177”, page 66](#)
- ⇒ [a1.8 nd installing headlight fanV407/V408”, page 68](#)
- ⇒ [a1.9 nd installing output module 1 for LED headlightA27/A31”, page 71](#)
- ⇒ [a1.10 nd installing fibre optic cable for front contour lighting in radiator grilleL362/L363”, page 74](#)

1.1 Assembly overview – headlight

- ⇒ [o1.1.1 verview - LED headlight \(Standard\)”, page 53](#)
- ⇒ [o1.1.2 verview - LED headlight \(high\)”, page 54](#)
- ⇒ [o1.1.3 verview - repair kit for headlight housing”, page 56](#)

1.1.1 Assembly overview - LED headlight (Standard)



1 - Front left headlight -MX1-/front right headlight -MX2-

- Removing and installing [⇒ page 57](#)
- Adjusting [⇒ page 58](#)

2 - Front left turn signal bulb -M5-/front right turn signal bulb -M7-

- Removing and installing [⇒ page 60](#)

3 - Handle

- For front turn signal bulb -M5-/M7-

4 - Left headlight range control motor -V48/right headlight range control motor -V49-

- Removing and installing [⇒ page 61](#)

5 - Bolt

- To be used in event of repairs
- Qty. 4
- 1.5 Nm

6 - Housing cover

- To be used in event of repairs
- For headlight range control motor

7 - Seal

- For housing cover

8 - Seal

9 - Speed nut

- M6

10 - Bolt

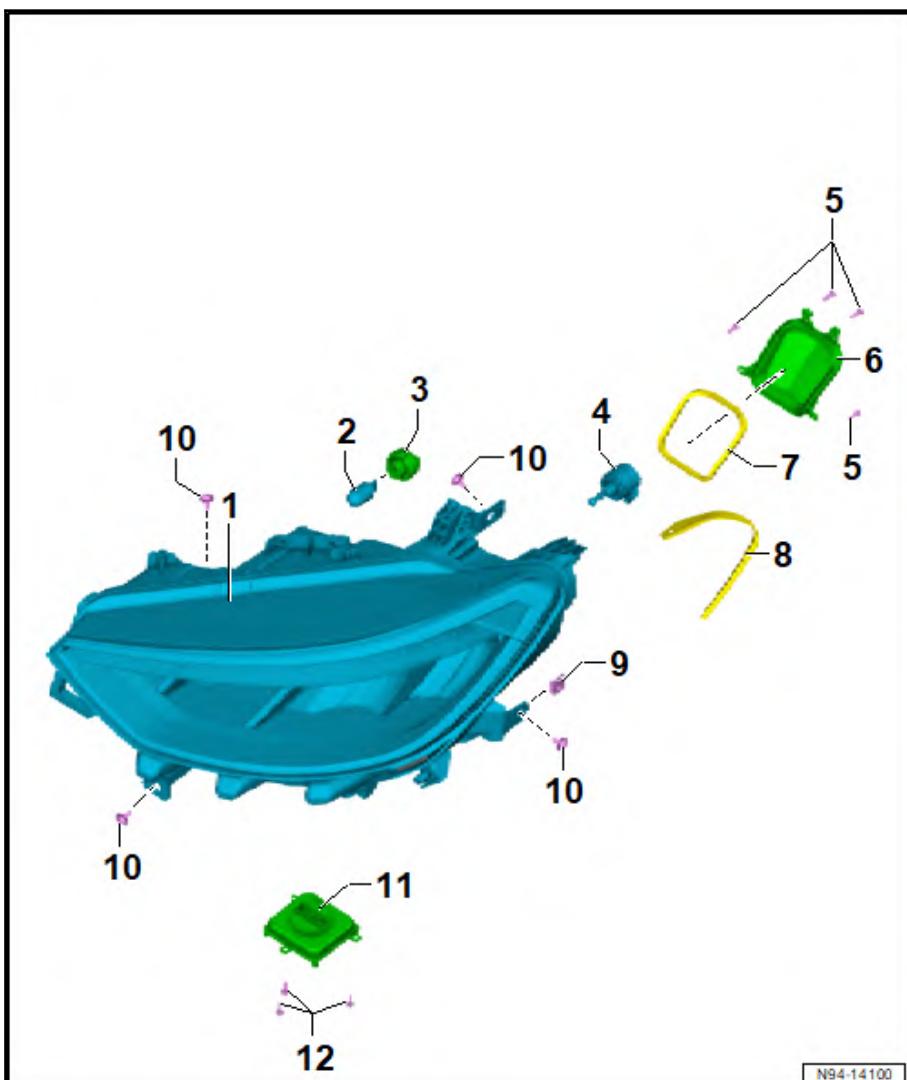
- Qty. 4
- 4.5 Nm

11 - Output module 1 for left LED headlight -A31-/output module 1 for right LED headlight -A27-

- Removing and installing [⇒ page 71](#)

12 - Bolt

- Qty. 3
- 1.5 Nm



Volkswagen Technical Site: <https://vwts.ru>

1.1.2 Assembly overview - LED headlight (high)



1 - Front left headlight -MX1-/front right headlight -MX2-

- Removing and installing [page 57](#)
- Adjusting [page 58](#)

2 - Support

- For headlight range control motor

3 - Left headlight range control motor -V48-/right headlight range control motor -V49-

- Removing and installing [page 61](#)

4 - Left headlight fan -V407-/right headlight fan -V408-

- Removing and installing [page 68](#)

5 - Bolt

- Qty. 2
- 1.5 Nm

6 - Seal

- For housing cover

7 - Bolt

- To be used in event of repairs
- Qty. 4
- 1.5 Nm

8 - Housing cover

- To be used in event of repairs
- For headlight range control motor

9 - Bolt

- To be used in event of repairs
- Qty. 4
- 1.5 Nm

10 - Housing cover

- To be used in event of repairs
- For headlight fan -V407-/V408-

11 - Seal

- For housing cover

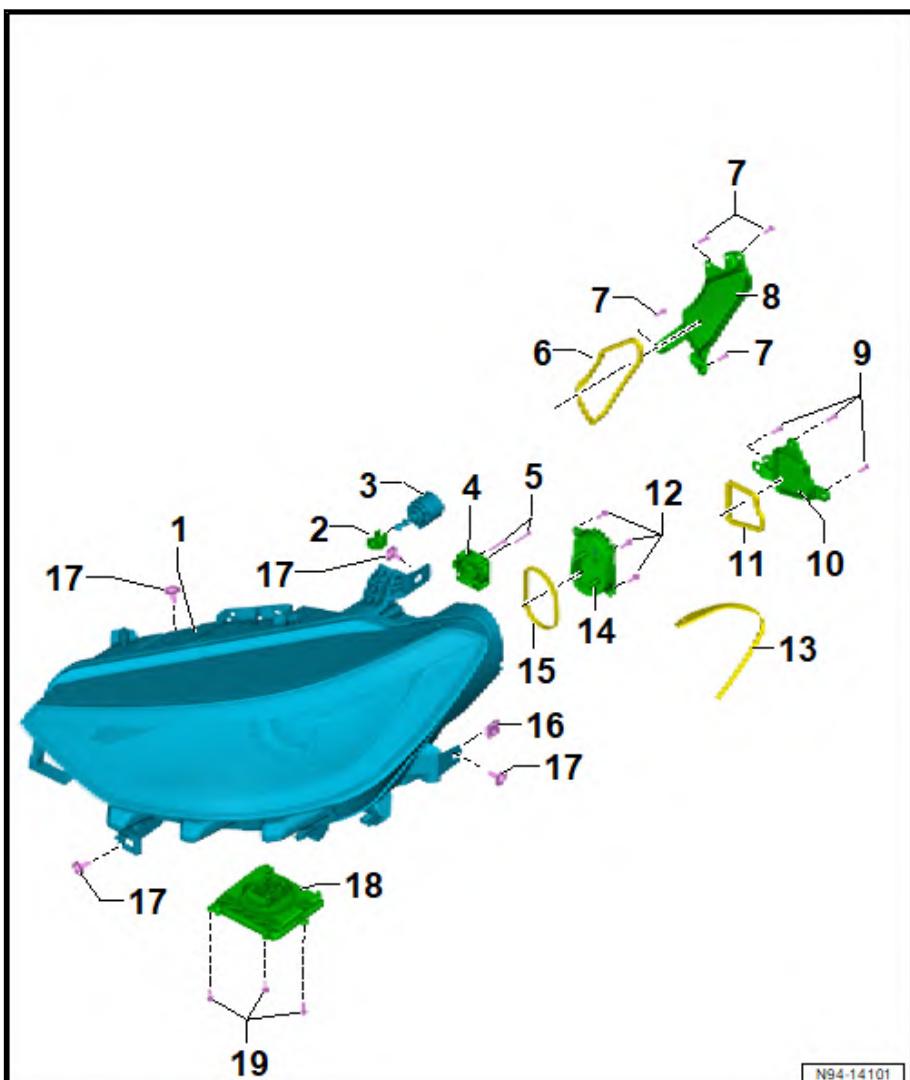
12 - Bolt

- Qty. 3
- 1.5 Nm

13 - Seal

14 - Left LED module for daytime running light and side light -L176-/right LED module for daytime running light and side light -L177-

- Front turn signal bulb -M5-/M7- and LED module for daytime running lights and side lights -L176-/L177- form a unit and cannot be removed separately.
- Removing and installing [page 66](#)





15 - Seal

- For left LED module for daytime running light and side light -L176/-L177-

16 - Speed nut

- M6

17 - Bolt

- Qty. 4
- 4.5 Nm

18 - Output module 1 for left LED headlight -A31-/output module 1 for right LED headlight -A27-

- Removing and installing [page 71](#)

19 - Bolt

- Qty. 3
- 1.5 Nm

1.1.3 Assembly overview - repair kit for headlight housing



1 - Front left headlight -MX1-/ front right headlight -MX2-

- Removing and installing [⇒ page 57](#)
- Adjusting [⇒ page 58](#)

2 - Bolt

- Qty. 2
- 1.5 Nm

3 - Upper retaining tab

- Removing and installing [⇒ page 58](#)

4 - Bolt

- Qty. 2
- 1.5 Nm

5 - Inner retaining tab

- Removing and installing [⇒ page 58](#)

6 - Front retaining tab

- Removing and installing [⇒ page 58](#)

7 - Bolt

- Qty. 2
- 1.5 Nm

8 - Bolt

- Qty. 2
- 1.5 Nm

9 - Rear retaining tab

- Removing and installing [⇒ page 58](#)

10 - Bolt

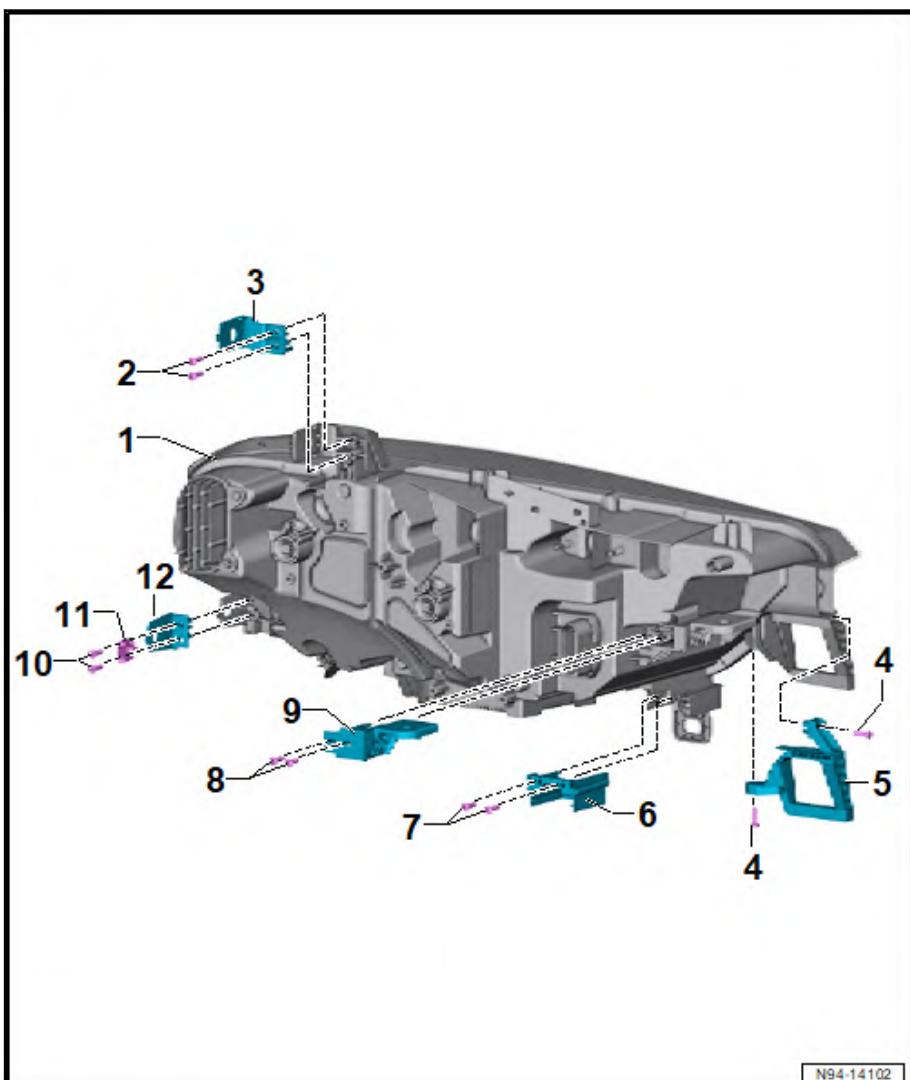
- Qty. 2
- 1.5 Nm

11 - Speed nut

- M6

12 - Outer retaining tab

- Removing and installing [⇒ page 58](#)

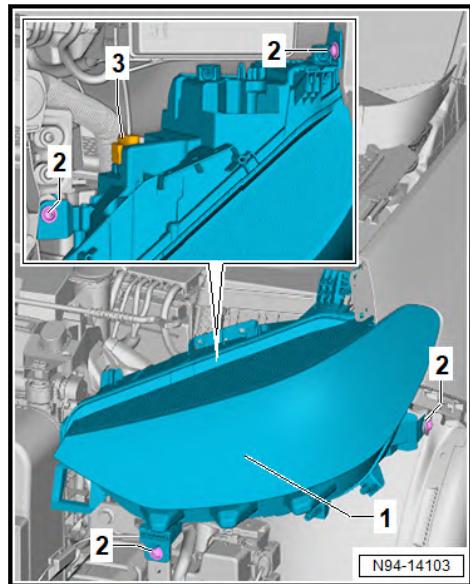


N94-14102

1.2 Removing and installing headlight

Removing

- Deactivate operational readiness and switch off all electrical consumers.
- Store the vehicle key and other entry and start authorisation systems outside the vehicle to prevent the vehicle from being switched on unintentionally.
- Remove bumper cover ⇒ General body repairs, exterior; Rep. gr. 63; Front bumper; Removing and installing bumper cover.
- Unscrew bolts -2-.



- Disconnect electrical connector -3-.
- If present, separate connector from control unit 2 for break-in protection -J1192- / control unit 3 for break-in protection -J1193-.
- Remove headlight -1-.

Installing

Install in the reverse order of removal, observing the following:

- Press headlight into bumper guide.
- Perform functional check.
- Check headlight setting and adjust headlight if necessary
⇒ Maintenance; Booklet 36.1; Descriptions of work

Specified torques

- ◆ [⇒ o1.1 overview – headlight”, page 53](#)

1.3 Adjusting headlights

Adjusting LED headlights ⇒ Maintenance; Booklet 51.1; Descriptions of work.

1.4 Installing repair kit for headlight housing

Special tools and workshop equipment required

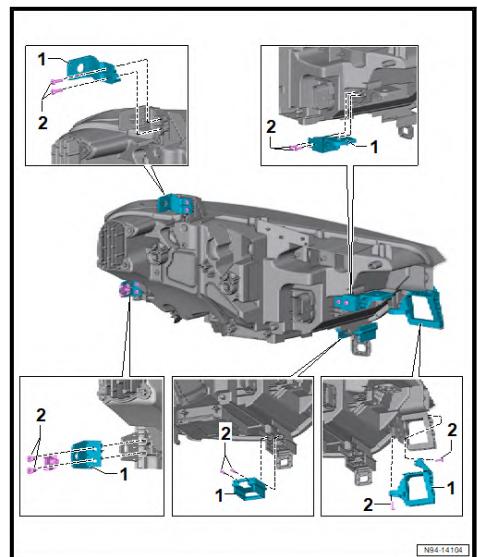
- ◆ Torque screwdriver -VAS 6494-





Note

- ◆ Broken off headlight retaining tabs can be replaced by installing the repair kit for headlight housing. There is therefore no need to renew the headlight.
- ◆ Various headlight housing repair kits are available for the headlight -MX1-/MX2- → Electronic parts catalogue (ETKA).
- Remove headlight -MX1-/MX2- from which retaining tab has broken off [⇒ page 57](#).
- Remove remaining parts of defective retaining tab from headlight housing.
- Fit retaining tab -1- of repair kit on headlight -MX1-/MX2-.



- Tighten bolts -2-.
- Install headlight -MX1-/MX2- and align it flush to body contour.
- Perform functional check.
- Check headlight setting and adjust headlight if necessary
→ Maintenance; Booklet 36.1; Descriptions of work

Specified torques

- ◆ [⇒ o1.1.3 overview - repair kit for headlight housing", page 56](#)



1.5 Removing and installing front turn signal bulb -M5/-M7-

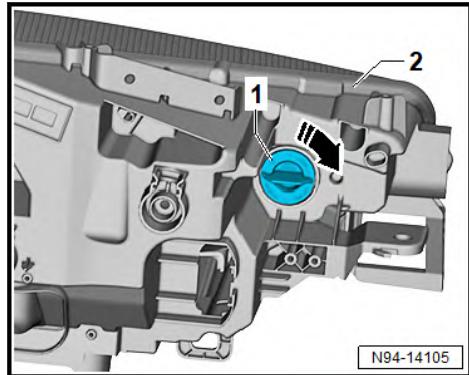
⇒ [a1.5.1 nd installing front turn signal bulb M5/M7, LED headlight \(Standard\)", page 60](#)

⇒ [a1.5.2 nd installing front turn signal bulb M5/M7, LED headlight \(High\)", page 61](#)

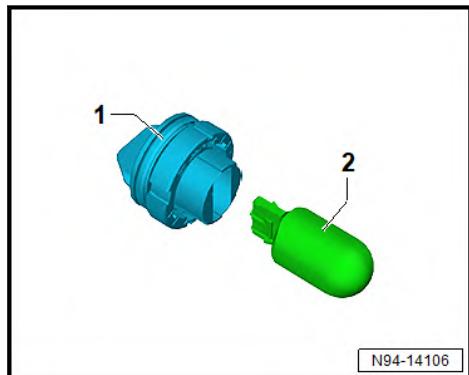
1.5.1 Removing and installing front turn signal bulb -M5/-M7-, LED headlight (Standard)

Removing

- Unscrew holder with front turn signal bulb -M5/-M7- -1- in direction of -arrow- from headlight housing -2-.



- Pull front turn signal bulb -M5/-M7- -2- out of bulb holder -1-.



Installing

Install in the reverse order of removal, observing the following:

NOTICE

Risk of damage to front turn signal bulb -M5/-M7-.

- Do not touch glass part of front turn signal bulb -M5/-M7- with bare fingers. To insert front turn signal bulb -M5/-M7-, wear e.g. clean fabric glove.
- Perform functional check.
- Check headlight setting and adjust headlight if necessary
⇒ Maintenance; Booklet 39.1; Descriptions of work



1.5.2 Removing and installing front turn signal bulb -M5-/M7-, LED headlight (High)



Note

Front turn signal bulb -M5-/M7- and LED module for daytime running lights and side lights -L176-/L177- form a unit and cannot be removed separately.

- Removing and installing LED module for daytime running light and side light -L176-/L177- [⇒ page 66](#).

1.6 Removing and installing headlight range control motor -V48-/V49-

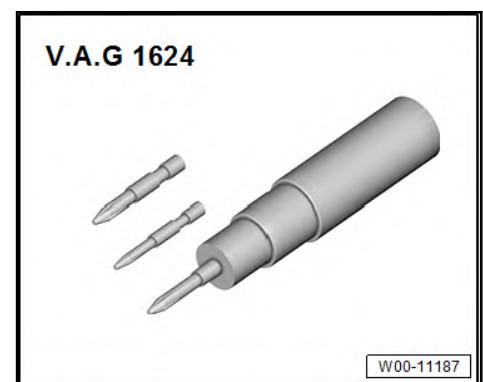
[⇒ a1.6.1 nd installing headlight range control motor V48/V49, LED headlights \(Standard\)", page 61](#)

[⇒ a1.6.2 nd installing headlight range control motor V48/V49, LED headlights \(High\)", page 64](#)

1.6.1 Removing and installing headlight range control motor -V48-/V49-, LED headlights (Standard)

Special tools and workshop equipment required

- ◆ Torque screwdriver -V.A.G 1624-



- ◆ ESD workplace -VAS 6613-

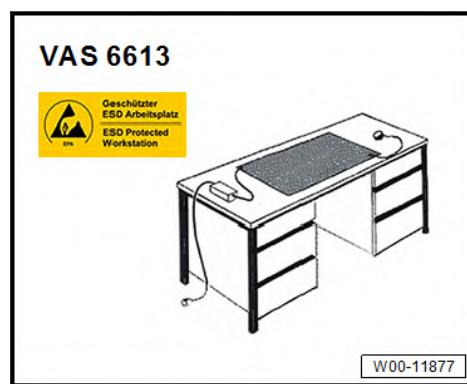


NOTICE

Risk of headlight -MX1-/MX2- being irreparably damaged by electrostatic discharge from human body.

- Work on headlight range control motor -V48-/V49- may be performed only in a designated ESD workplace.

Structure of ESD workplace -VAS 6613-



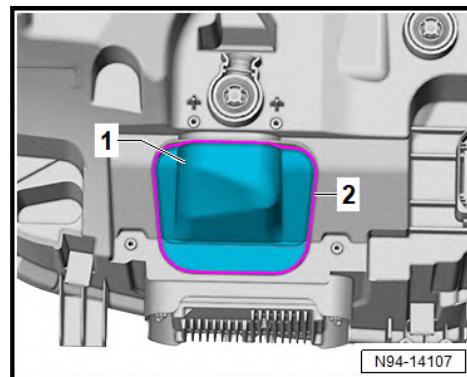
- Cable with crocodile clip
- Equipotential bonding cable
- Protective mat
- Wrist strap

Note

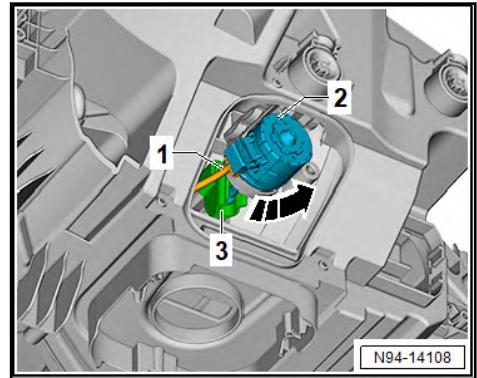
Removal and installation are described for the left vehicle side as an example.

Removing

- Remove headlight -MX1/-MX2- [page 57](#).
- Turn height adjustment screws at top of headlight -MX1/-MX2- onto stop towards right.
- Use a hammer to carefully release housing cover -1- along predetermined break line -2-.



- Remove housing cover -1- from headlight -MX1/-MX2-.
- Release headlight range control motor -V48/-V49- -2-.



N94-14108

- ◆ On front left headlight -MX1-, turn in direction of -arrow-.
- ◆ On front right headlight -MX2- turn in opposite direction of -arrow-.
- Swivel headlight range control motor -V48-/V49- -2- downwards so that ball head is pushed upwards out of mounting -3- in headlight -MX1-/MX2-.
- Pull headlight range control motor -V48-/V49- -2- backwards out of headlight -MX1-/MX2- until electrical connector -1- is accessible.
- Disconnect electrical connector -1-.
- Remove headlight range control motor -V48-/V49- -2-.

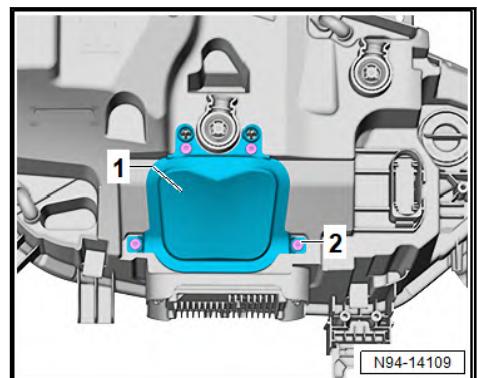
Installing

Install in the reverse order of removal, observing the following:

NOTICE

Risk of headlight -MX1-/MX2- being irreparably damaged by water ingress.

- Make sure that seal is correctly seated when housing cover is installed.
- Pull reflector on ball head mounting towards rear.
- Attach ball head on headlight range control motor -V48-/V49- to mounting in headlight -MX1-/MX2-.
- Position new housing cover -1- on headlight -MX1-/MX2-.



N94-14109

- Tighten bolts -2-.
- Perform functional check.
- Check headlight setting and adjust headlight if necessary
⇒ Maintenance; Booklet 39.1; Descriptions of work



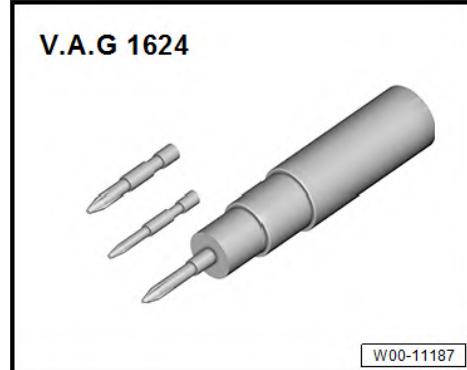
Specified torques

- ◆ [⇒ o1.1.1 verview - LED headlight \(Standard\)", page 53](#)

1.6.2 Removing and installing headlight range control motor -V48-/V49-, LED headlights (High)

Special tools and workshop equipment required

- ◆ Torque screwdriver -V.A.G 1624-



- ◆ ESD workplace -VAS 6613-

NOTICE

Risk of headlight -MX1-/MX2- being irreparably damaged by electrostatic discharge from human body.

- Work on headlight range control motor -V48-/V49- may be performed only in a designated ESD workplace.

Structure of ESD workplace -VAS 6613-



- Cable with crocodile clip
- Equipotential bonding cable
- Protective mat
- Wrist strap

Note

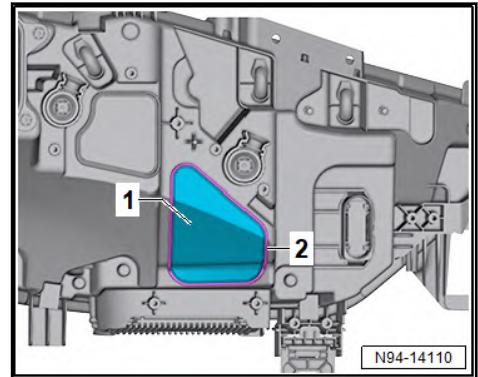
Removal and installation are described for the left vehicle side as an example.

Removing

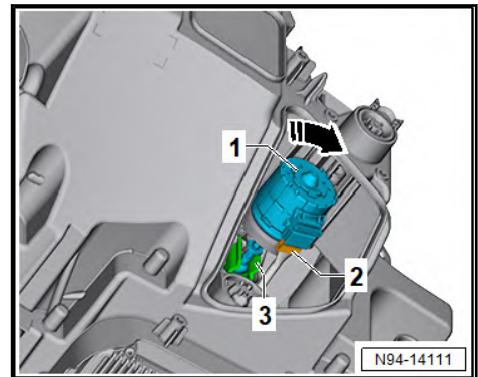
- Remove headlight -MX1-/MX2- [⇒ page 57](#).



- Turn height adjustment screws at top of headlight -MX1/-MX2- onto stop towards right.
- Use a hammer to carefully release housing cover -1- along predetermined break line -2-.



- Remove housing cover -1- from headlight -MX1/-MX2-.
- Release headlight range control motor -V48/-V49- -1-.



- ◆ On front left headlight -MX1-, turn in direction of -arrow-.
- ◆ On front right headlight -MX2- turn in opposite direction of -arrow-.
- Swivel headlight range control motor -V48/-V49- -1- downwards so that ball head is pushed upwards out of mounting -3- in headlight -MX1/-MX2-.
- Pull headlight range control motor -V48/-V49- -1- backwards out of headlight -MX1/-MX2- until electrical connector -2- is accessible.
- Disconnect electrical connector -2-.
- Remove headlight range control motor -V48/-V49- -1-.

Installing

Install in the reverse order of removal, observing the following:

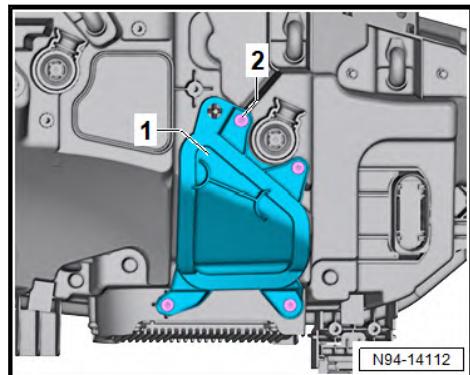


Risk of headlight -MX1/-MX2- being irreparably damaged by water ingress.

- Make sure that seal is correctly seated when housing cover is installed.
- Pull reflector on ball head mounting towards rear.
- Attach ball head on headlight range control motor -V48/-V49- to mounting in headlight -MX1/-MX2-.



- Position new housing cover -1- on headlight -MX1/-MX2-.



- Tighten bolts -2-.
- Perform functional check.
- Check headlight setting and adjust headlight if necessary
⇒ Maintenance; Booklet 39.1; Descriptions of work

Specified torques

- ◆ ⇒ [o1.1.2 overview - LED headlight \(high\)", page 54](#)

1.7 Removing and installing LED module for daytime running light and side light -L176/-L177-

⇒ [a1.7.1 and installing LED module for daytime running light and side light L176/L177, LED headlight \(Standard\)", page 66](#)

⇒ [a1.7.2 and installing LED module for daytime running light and side light L176/L177, LED headlight \(High\)", page 66](#)

1.7.1 Removing and installing LED module for daytime running light and side light -L176/-L177-, LED headlight (Standard)



Note

LED modules for daytime running light and side light -L176/-L177- are integrated in headlight -MX1/-MX2-. These LEDs cannot be renewed. The headlight -MX1/-MX2- must be completely renewed.

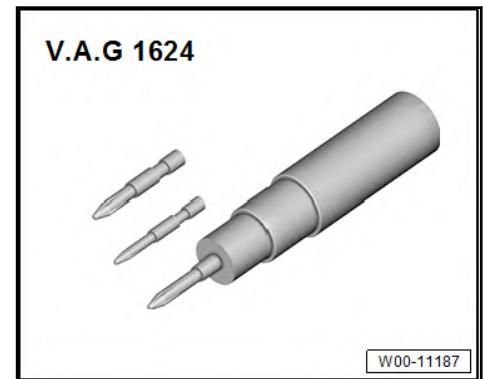
- Removing and installing headlight -MX1- / -MX2- ⇒ [page 57](#).

1.7.2 Removing and installing LED module for daytime running light and side light -L176/-L177-, LED headlight (High)

Special tools and workshop equipment required



- ◆ Torque screwdriver -V.A.G 1624-



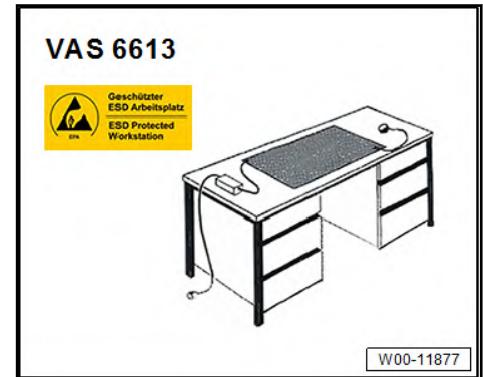
- ◆ ESD workplace -VAS 6613-

! *NOTICE*

Risk of headlight -MX1-/MX2- being irreparably damaged by electrostatic discharge from human body.

- Work on the LED module must be performed only at an ESD workplace.

Structure of ESD workplace -VAS 6613-



- Cable with crocodile clip
- Equipotential bonding cable
- Protective mat
- Wrist strap

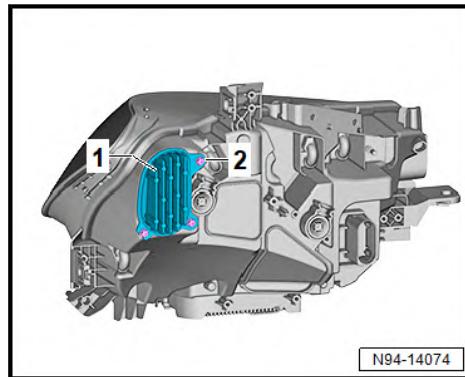


Note

Removal and installation are described for the left vehicle side as an example.

Removing

- Remove headlight -MX1-/MX2- [page 57](#).
- Unscrew bolts -2-.



- Guide LED module for daytime running light and side light -L176-/L177- -1- out of headlight housing until electrical connector is accessible.
- Separate electrical connector.
- Remove LED module for daytime running light and side light -L176-/L177- -1-.

Installing

Install in the reverse order of removal, observing the following:



Risk of headlight -MX1-/MX2- being irreparably damaged by water ingress.

- Ensure that seal is properly seated.
- Check seal between LED module for daytime running light and side light -L176-/L177- and headlight -MX1-/MX2- for damage.
- Perform functional check.
- Check headlight setting and adjust headlight if necessary
⇒ Maintenance; Booklet 36.1; Descriptions of work

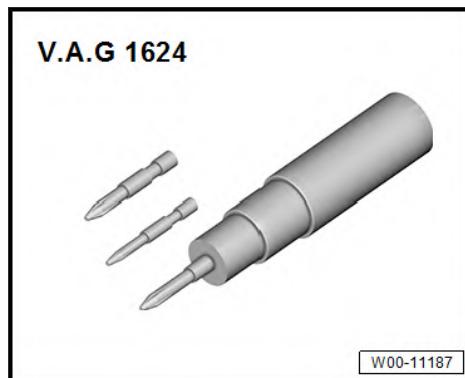
Specified torques

- ◆ [⇒ o1.1.2 overview - LED headlight \(high\)", page 54](#)

1.8 Removing and installing headlight fan -V407-/V408-

Special tools and workshop equipment required

- ◆ Torque screwdriver -V.A.G 1624-



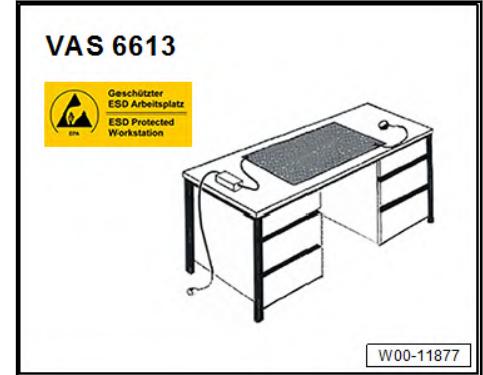
- ◆ ESD workplace -VAS 6613-

**NOTICE**

Risk of headlight -MX1-/MX2- being irreparably damaged by electrostatic discharge from human body.

- Work on the headlight fan -V407-/V408- must be performed in an ESD workplace only.

Structure of ESD workplace -VAS 6613-



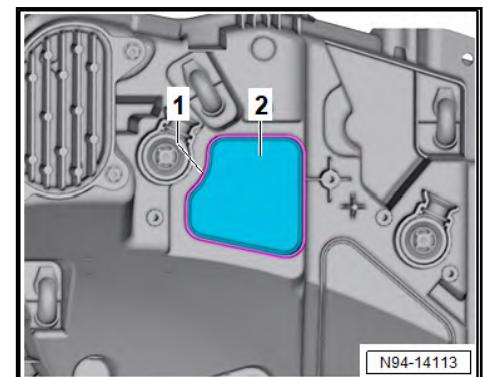
- Cable with crocodile clip
- Equipotential bonding cable
- Protective mat
- Wrist strap

**Note**

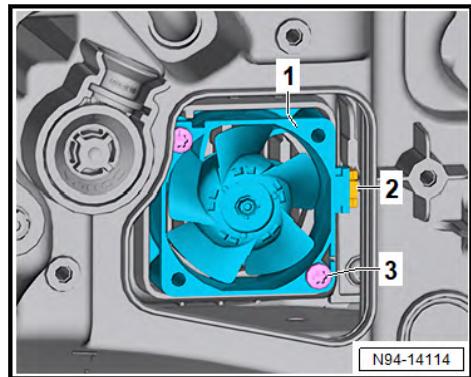
Removal and installation are described for the left vehicle side as an example.

Removing

- Remove headlight -MX1-/MX2- [⇒ page 57](#).
- Use a hammer to carefully release housing cover -2- along predetermined break line -1-.



- Remove housing cover -2- from headlight -MX1-/MX2-.
- Unscrew bolts -3-.



- Disconnect electrical connector -2-.
- Remove headlight fan -V407-/V408- -1-.

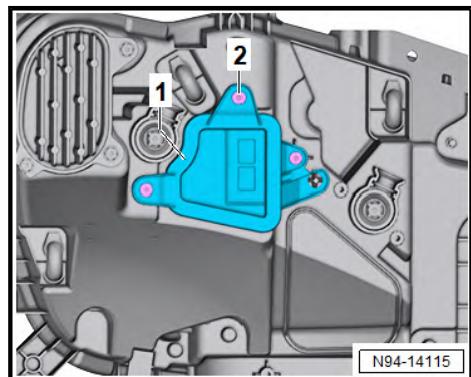
Installing

Install in the reverse order of removal, observing the following:

NOTICE

Risk of headlight -MX1-/MX2- being irreparably damaged by water ingress.

- Make sure that seal is correctly seated when housing cover is installed.
- Position new housing cover -1- on headlight -MX1-/MX2-.



- Tighten bolts -2-.
- Check headlight setting and adjust headlight if necessary
⇒ Maintenance; Booklet 39.1; Descriptions of work

Specified torques

- ◆ [⇒ o1.1.2 overview - LED headlight \(high\)", page 54](#)



1.9 Removing and installing output module 1 for LED headlight -A27-/A31-

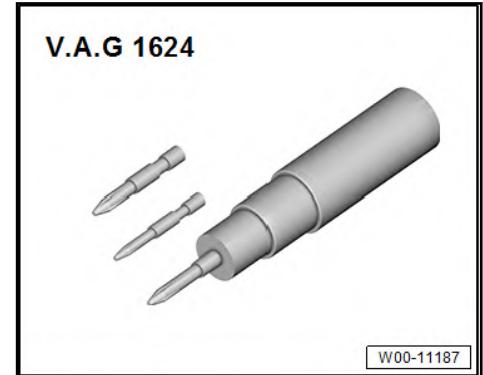
⇒ [a1.9.1 nd installing output module 1 for LED head-lightA27/A31, LED headlight \(Standard\)", page 71](#)

⇒ [a1.9.2 nd installing output module 1 for LED head-lightA27/A31, LED headlight \(High\)", page 72](#)

1.9.1 Removing and installing output module 1 for LED headlight -A27-/A31-, LED headlight (Standard)

Special tools and workshop equipment required

- ◆ Torque screwdriver -V.A.G 1624-



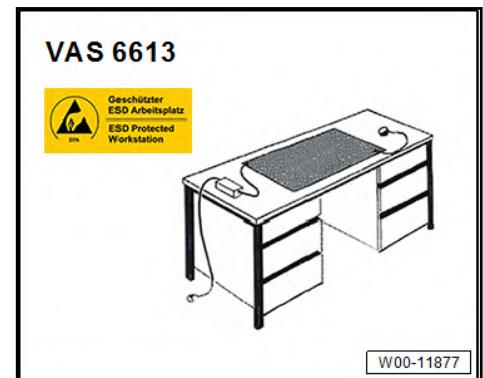
- ◆ ESD workplace -VAS 6613-

NOTICE

Risk of headlight -MX1/-MX2- being irreparably damaged by electrostatic discharge from human body.

- Work on the output module 1 for LED headlight -A27-/A31- may be performed only in an ESD workplace.

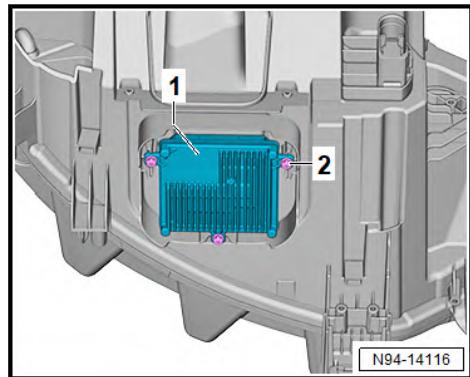
Structure of ESD workplace -VAS 6613-



- Cable with crocodile clip
- Equipotential bonding cable
- Protective mat
- Wrist strap

Removing

- Remove headlight -MX1/-MX2- [⇒ page 57](#).
- Unscrew bolts -2-.



- Pull output module 1 for LED headlight -A27-/A31- -1- backwards out of headlight -MX1-/MX2- until electrical connector is accessible.
- Separate electrical connector.
- Remove output module 1 for LED headlight -A27-/A31- -1-.

Installing

Install in the reverse order of removal, observing the following:

NOTICE

Risk of headlight -MX1-/MX2- being irreparably damaged by water ingress.

- Ensure that seal is properly seated.
- Check seal between output module 1 for LED headlight -A27-/A31- and headlight -MX1-/MX2- for damage.
- Perform functional check.
- Check headlight setting and adjust headlight if necessary
⇒ Maintenance; Booklet 40.1; Descriptions of work

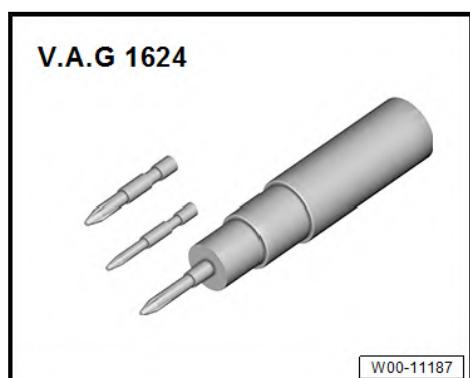
Specified torques

- ◆ [⇒ o1.1.1 verview - LED headlight \(Standard\)", page 53](#)

1.9.2 Removing and installing output module 1 for LED headlight -A27-/A31-, LED headlight (High)

Special tools and workshop equipment required

- ◆ Torque screwdriver -V.A.G 1624-



- ◆ ESD workplace -VAS 6613-

**! NOTICE**

Risk of headlight -MX1-/MX2- being irreparably damaged by electrostatic discharge from human body.

- Work on the output module 1 for LED headlight -A27-/A31- may be performed only in an ESD workplace.

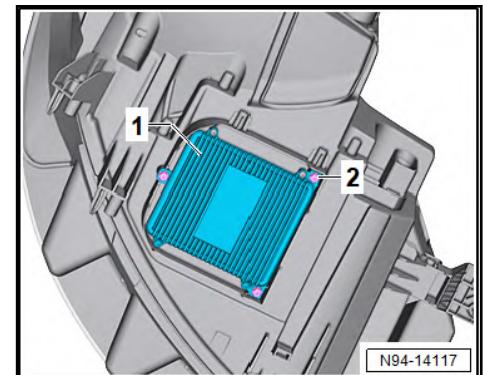
Structure of ESD workplace -VAS 6613-



- Cable with crocodile clip
- Equipotential bonding cable
- Protective mat
- Wrist strap

Removing

- Remove headlight -MX1-/MX2- [page 57](#).
- Unscrew bolts -2-.



- Pull output module 1 for LED headlight -A27-/A31- -1- backwards out of headlight -MX1-/MX2- until electrical connector is accessible.
- Separate electrical connector.
- Remove output module 1 for LED headlight -A27-/A31- -1-.

Installing

Install in the reverse order of removal, observing the following:

! NOTICE

Risk of headlight -MX1-/MX2- being irreparably damaged by water ingress.

- Ensure that seal is properly seated.



- Check seal between output module 1 for LED headlight -A27-/A31- and headlight -MX1-/MX2- for damage.
- Perform functional check.
- Check headlight setting and adjust headlight if necessary
⇒ Maintenance; Booklet 40.1; Descriptions of work

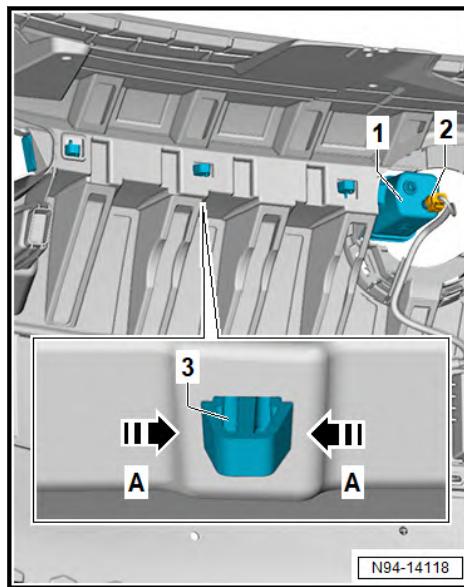
Specified torques

- ◆ [⇒ o1.1.2 overview - LED headlight \(high\), page 54](#)

1.10 Removing and installing fibre optic cable for front contour lighting in radiator grille -L362/-L363-

Removing

- Remove bumper cover ⇒ General body repairs, exterior; Rep. gr. 63; Front bumper; Removing and installing bumper cover.
- Remove badge at front ⇒ General body repairs, exterior; Rep. gr. 66; Lettering and badges; Removing and installing badges at front.
- Disconnect electrical connector -2-.



- Release retaining clips -3- in direction of -arrow A-.
- Pull out fibre optic cable for front contour lighting in radiator grille -L362/-L363- -1-.

Installing

Install in the reverse order of removal, observing the following:

- Perform functional check.



2 Lights in exterior mirror

⇒ [o2.1 overview - lights in exterior mirror", page 75](#)

⇒ [a2.2 nd installing turn signal", page 76](#)

⇒ [a2.3 nd installing entry light in exterior mirror", page 77](#)

2.1 Assembly overview - lights in exterior mirror



1 - Mirror cover

- Removing and installing ⇒ General body repairs, exterior; Rep. gr. 66; Exterior mirror; Removing and installing mirror cover.

2 - Bolt

- Qty. 2
- 0.8 Nm

3 - Turn signal

- Removing and installing ⇒ [page 76](#)

4 - Bolt

- Qty. 3
- 9.0 Nm

5 - Mirror frame

- Removing and installing ⇒ General body repairs, exterior; Rep. gr. 66; Exterior mirror; Removing and installing mirror frame

6 - Mirror glass

- Removing and installing ⇒ General body repairs, exterior; Rep. gr. 66; Exterior mirror; Removing and installing mirror glass

7 - Bolt

- Qty. 2
- 0.8 Nm

8 - Driver side entry light in exterior mirror -W52-/front passenger side entry light in exterior mirror -W53-

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

9 - Bolt

- 0.8 Nm

10 - Mirror adjustment unit

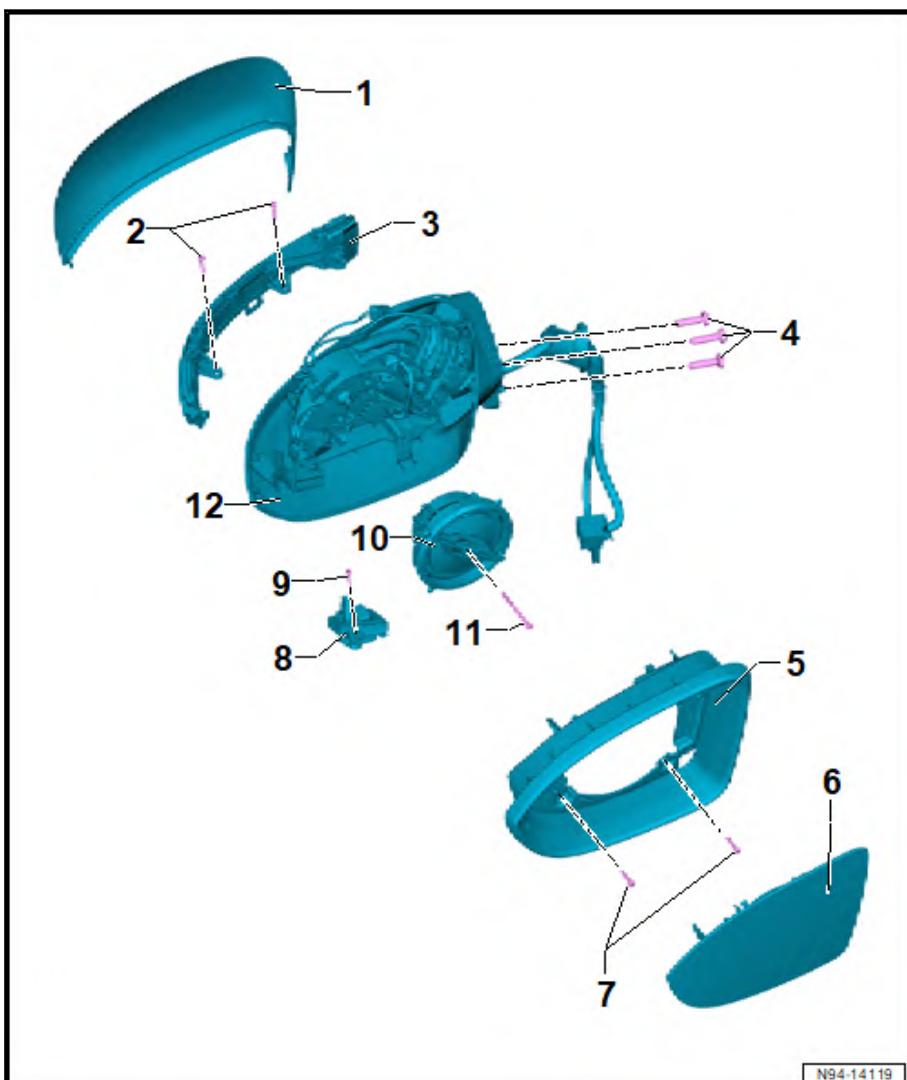
- Removing and installing ⇒ General body repairs, exterior; Rep. gr. 66; Exterior mirror; Removing and installing mirror adjustment unit.

11 - Bolt for adjuster unit

- 0.8 Nm

12 - Exterior mirror

- Removing and installing ⇒ General body repairs, exterior; Rep. gr. 66; Exterior mirror; Removing and installing exterior mirror

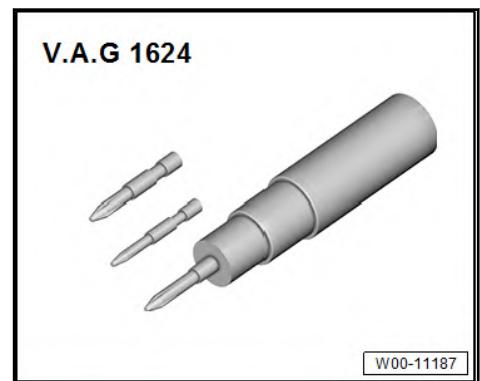


2.2 Removing and installing turn signal

Special tools and workshop equipment required

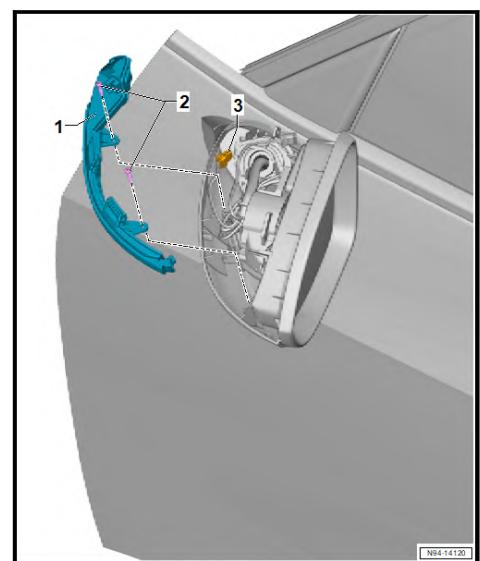


- ◆ Torque screwdriver -V.A.G 1624-



Removing

- Remove mirror cover ⇒ General body repairs, exterior; Rep. gr. 66; Exterior mirrors; Removing and installing mirror cover.
- Disconnect electrical connector -3-.



- Unscrew bolts -2-.

- Remove turn signal -1-.

Installing

Install in the reverse order of removal, observing the following:

- Perform functional check.

Specified torques

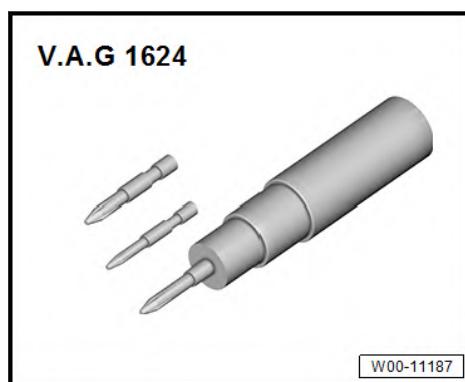
- ◆ [⇒ o2.1 overview - lights in exterior mirror", page 75](#)

2.3 Removing and installing entry light in exterior mirror

Special tools and workshop equipment required

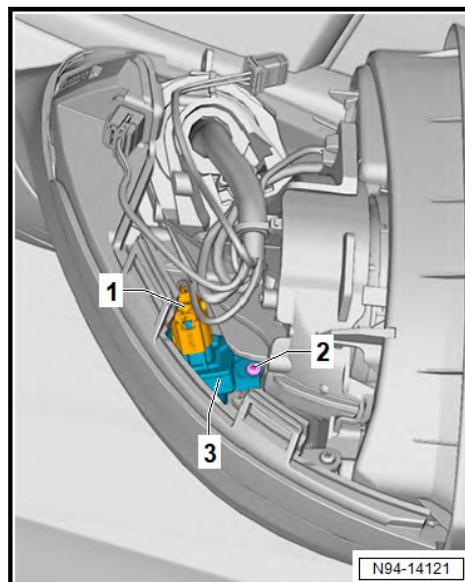


- ◆ Torque screwdriver -V.A.G 1624-



Removing

- Remove turn signal [⇒ page 76](#).
- Unscrew bolt -2-.



- Guide entry light in exterior mirror -3- out of mirror housing until electrical connector is accessible.
- Disconnect electrical connector -1-.
- Remove entry light in exterior mirror -3-.

Installing

Install in the reverse order of removal, observing the following:

- Perform functional check.

Specified torques

- ◆ [⇒ o2.1 overview - lights in exterior mirror”, page 75](#)



3 Lights in exterior door handle

[⇒ o3.1 overview – lights in exterior door handle”, page 79](#)

[⇒ a3.2 nd installing bulb for exterior door handle lighting”, page 79](#)

3.1 Assembly overview – lights in exterior door handle

1 - Mounting bracket

- Removing and installing door handle
⇒ General body repairs, exterior; Rep. gr. 57; Door components; Removing and installing door handle.

2 - Bulb for exterior door handle lighting

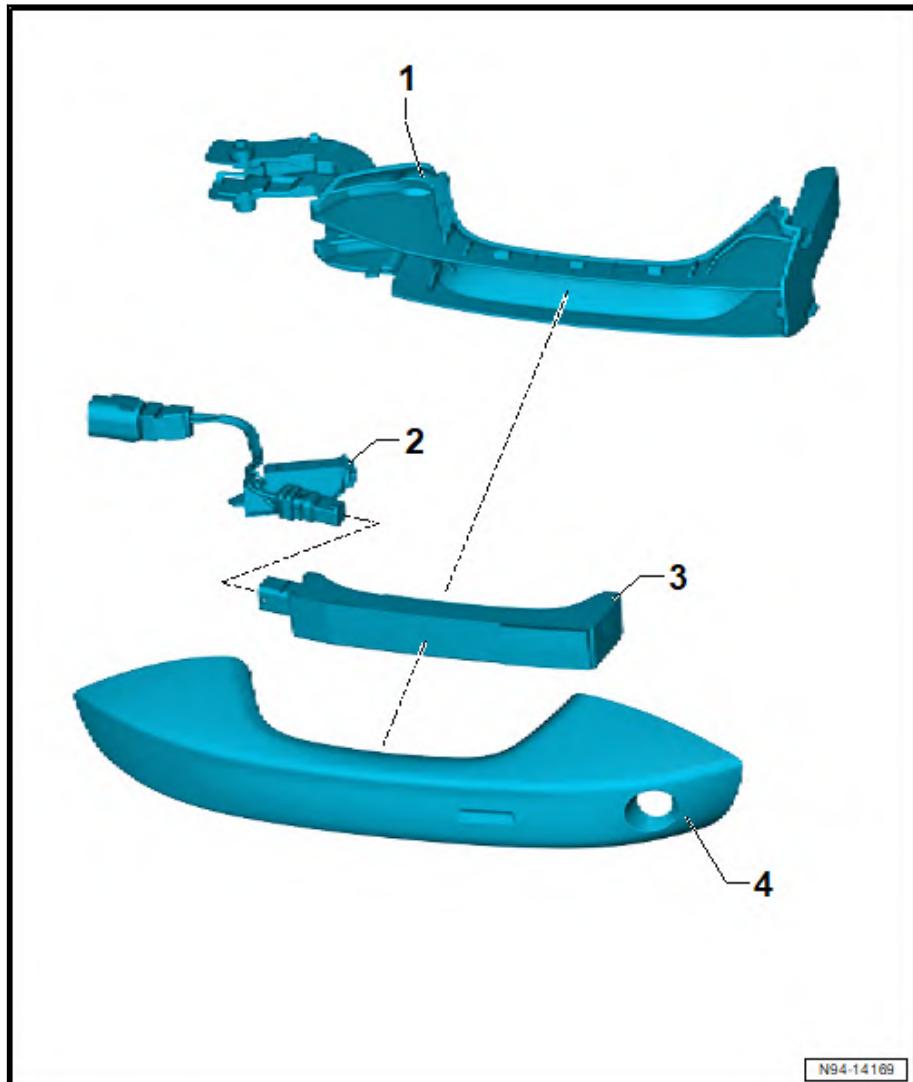
- Light for exterior door handle illumination, driver side -L283-
- Light for exterior door handle illumination, front passenger side - L284-
- Light for rear exterior door handle illumination, driver side -L285-
- Light for rear exterior door handle illumination, passenger side - L286-
- Removing and installing [⇒ page 79](#)

3 - Driver exterior door handle -EX6- inc. contact sensor for front left exterior door handle -G605-/front passenger exterior door handle -EX7- inc. contact sensor for front left exterior door handle -G605-

- Removing and installing [⇒ page 95](#)

4 - Door handle trim

- Removing and installing ⇒ General body repairs, exterior; Rep. gr. 58; Door components; Assembly overview – door handle and door lock



N94-14189

3.2 Removing and installing bulb for exterior door handle lighting



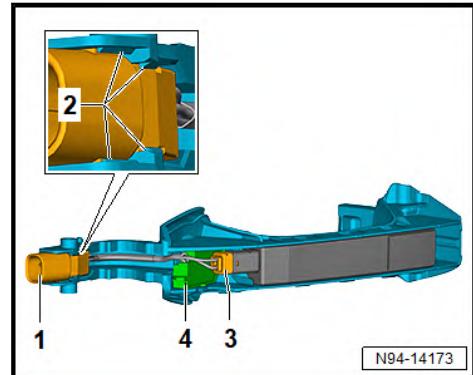
Note

Removal and installation are described for the driver side as an example.



Removing

- Remove door handle trim ⇒ General body repairs, exterior; Rep. gr. 58; Door components; Assembly overview – door handle and door lock.
- Disconnect electrical connector -3-.



- Release locking lugs -2-.
- Remove electrical connector -1-.
- Remove light for exterior door handle illumination, driver side -L283- -4-.

Installing

Install in the reverse order of removal, observing the following:

- Perform functional check.



4 Tail lights

[⇒ o4.1 overview - tail light cluster in body", page 81](#)

[⇒ o4.2 overview – design element without lighting function, rear lid", page 82](#)

[⇒ a4.3 nd installing design elements without lighting function", page 83](#)

[⇒ a4.4 nd installing tail light cluster", page 84](#)

[⇒ a4.5 nd installing rear fog light", page 85](#)

4.1 Assembly overview - tail light cluster in body

1 - Left tail light -MX3-/right tail light -MX4-

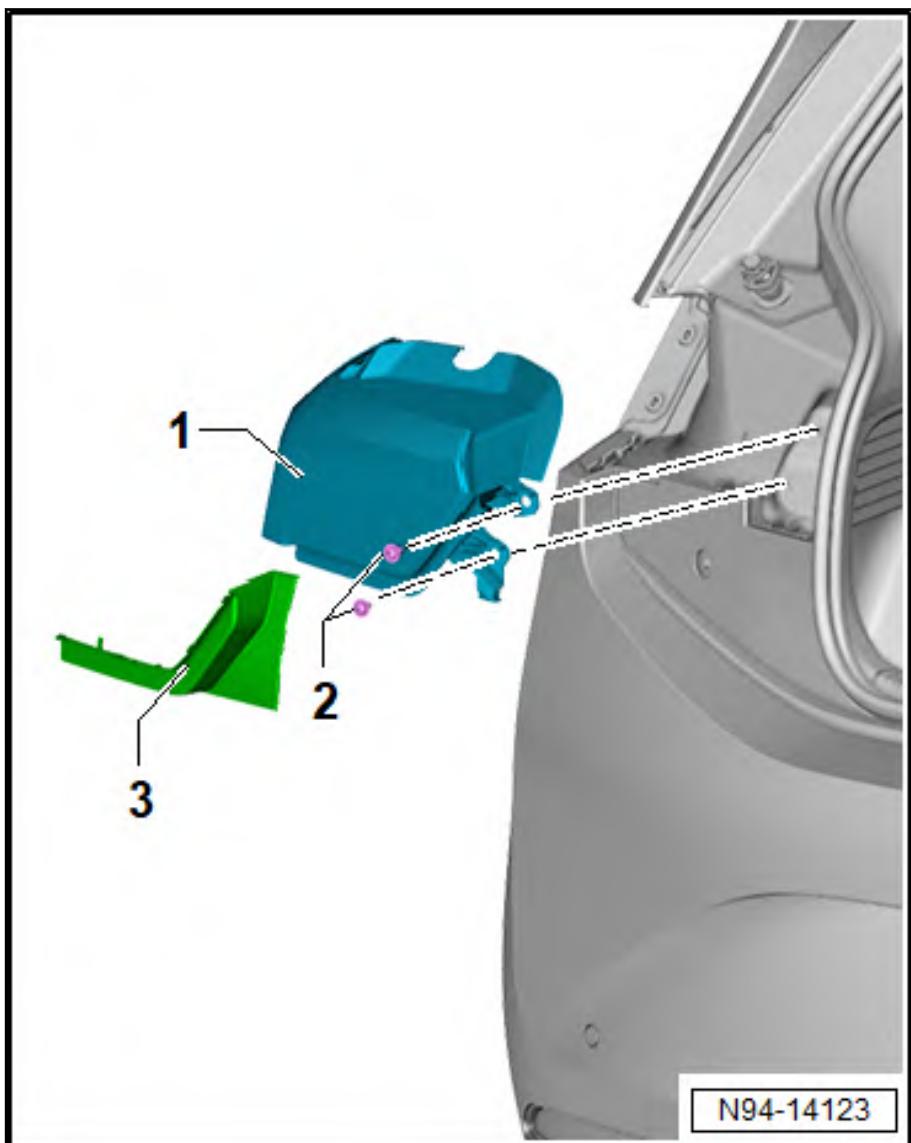
- Tail light on body
- Removing and installing [⇒ page 84](#)

2 - Bolts

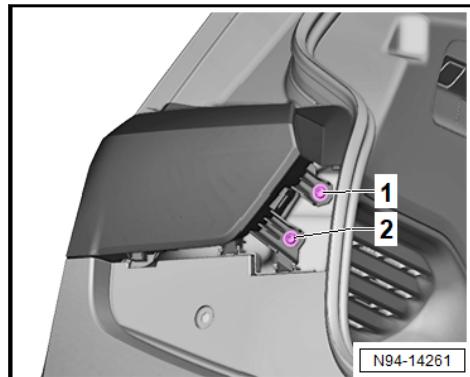
- Tightening sequence and specified torque [⇒ page 81](#)

3 - Lower tail light cluster trim

- Removing and installing [⇒ page 84](#)



Body tail light clusters - specified torque and tightening sequence



- Tighten bolts in stages in the sequence shown:



Note

As an example, the tightening sequence is described for the left of the vehicle.

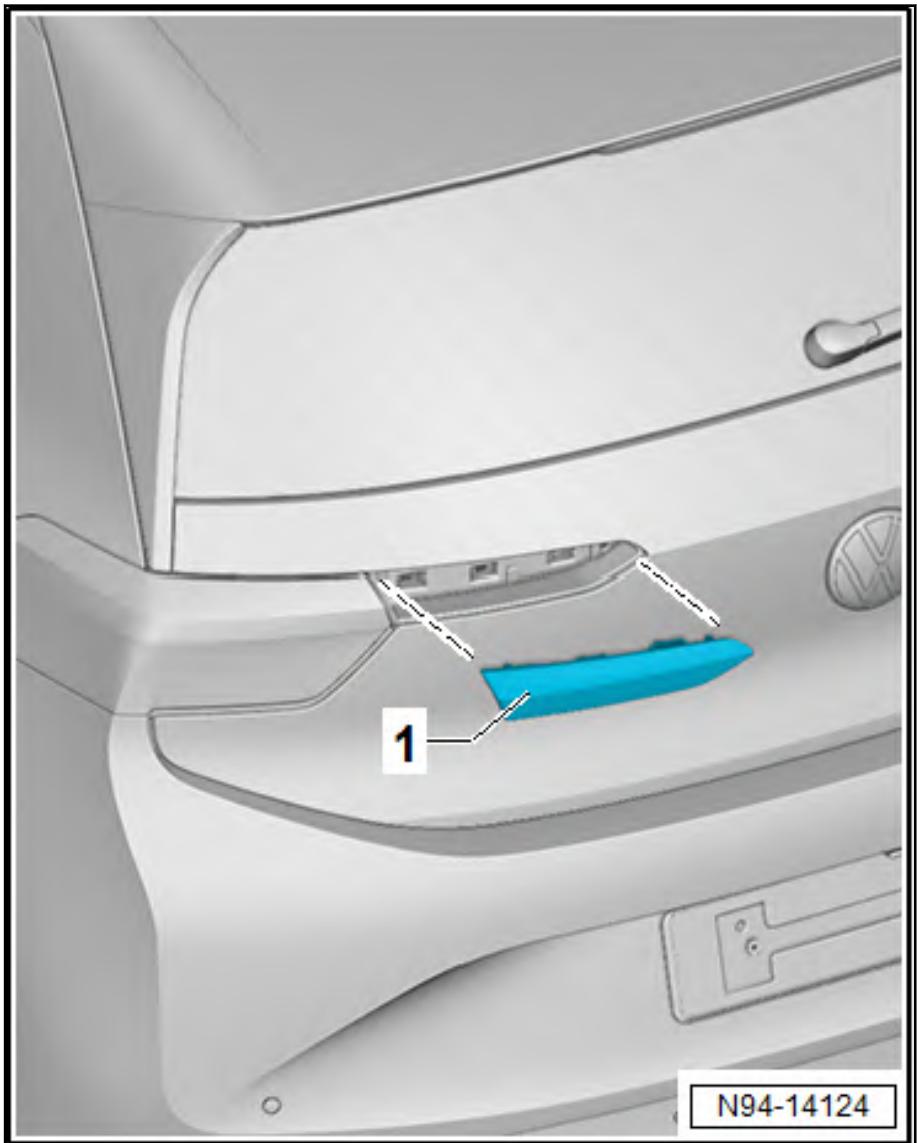
Stage	Component	Specified torque
1.	-1- and -2-	Screw in by hand
2.	-1- and -2-	3 Nm

4.2 Assembly overview – design element without lighting function, rear lid



1 - Design element without lighting function

- Design element without lighting function
- Removing and installing [page 83](#)



N94-14124

4.3 Removing and installing design elements without lighting function

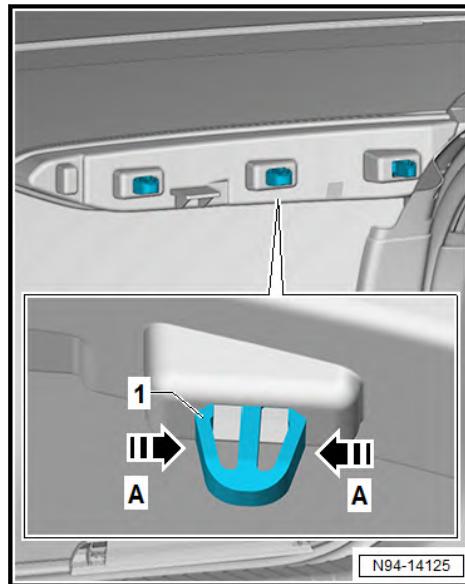


Note

Removal and installation are described for the left vehicle side as an example.

Removing

- Remove lower rear lid trim ⇒ General body repairs, interior; Rep. gr. 70; Luggage compartment trims; Removing and installing lower rear lid trim.
- Release retaining clips -1- in direction of -arrow A-.



- Remove design element without lighting function.

Installing

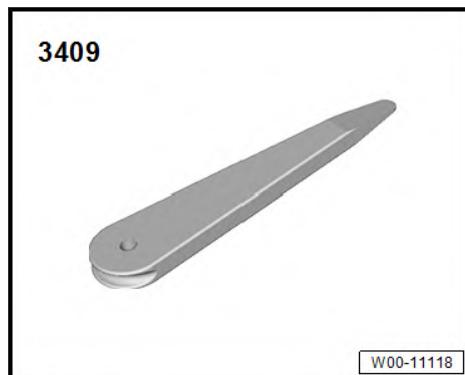
Install in the reverse order of removal, observing the following:

- The reflector must engage audibly.

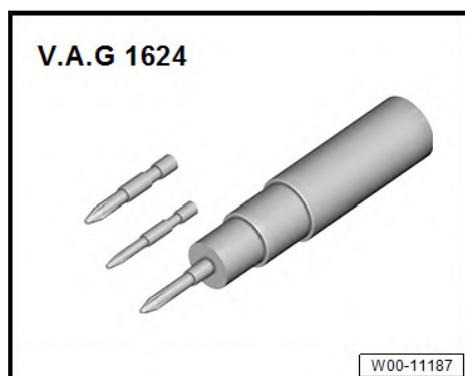
4.4 Removing and installing tail light cluster

Special tools and workshop equipment required

- ◆ Removal wedge -3409-



- ◆ Torque screwdriver -V.A.G 1624-



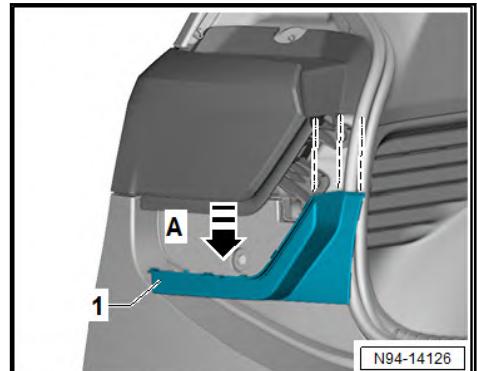


Note

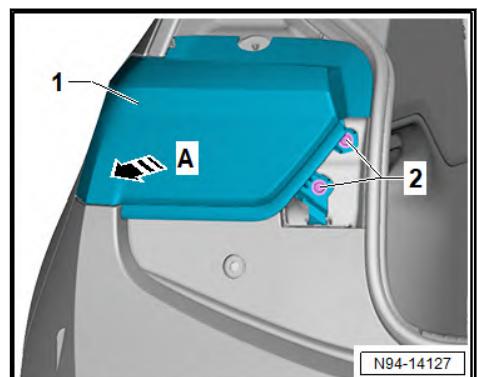
Removal and installation are described for the left vehicle side as an example.

Removing

- Unclip low tail light cluster trim -1- in direction of -arrow A- with removal wedge -3409-.



- Unscrew bolts -2-.



- Take out left tail light cluster -MX3- -1- in direction of -arrow A- enough to allow access to electrical connector.
- Separate electrical connector.
- Remove left tail light -MX3- -1-.

Installing

Install in the reverse order of removal, observing the following:

- Perform functional check.

Specified torque

◆ [⇒ o4.1 overview - tail light cluster in body", page 81](#)

4.5 Removing and installing rear fog light

Note

For rear fog light -X3-, L0L means left-hand side of vehicle and L0R means right-hand side of vehicle.

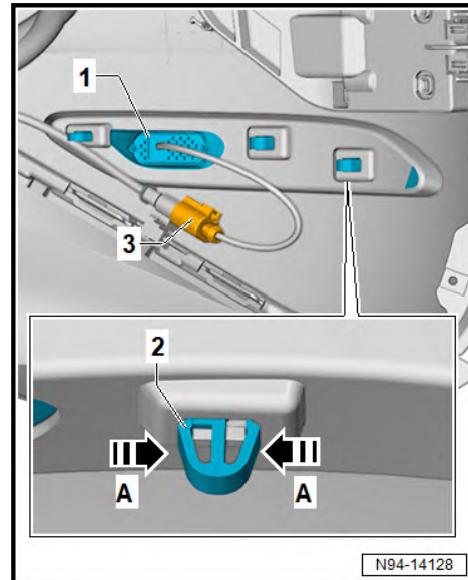


Note

Removal and installation are described for the left vehicle side as an example.

Removing

- Remove rear wheel housing liner ⇒ General body repairs, exterior; Rep. gr. 66; Wheel housing liner; Removing and installing rear wheel housing liner.
- Disconnect electrical connector -3-.



- Release retaining clips -2- in direction of -arrow A-.
- Remove rear fog light -1-.

Installing

Install in the reverse order of removal, observing the following:

- The rear fog light must engage audibly.
- Perform functional check.



5 Charging flap unit

[⇒ o5.1 overview - charging flap unit", page 87](#)

[⇒ a5.2 nd installing LED module for charging socket 1L263", page 87](#)

5.1 Assembly overview - charging flap unit

1 - Charging socket flap

- Removing and installing ⇒ General body repairs, exterior; Rep. gr. 55; Charging flap unit; Removing and installing charging socket flap

2 - Charging flap unit

- Removing and installing ⇒ General body repairs, exterior; Rep. gr. 55; Charging flap unit; Removing and installing charging flap unit

3 - Bolt

- 1.5 Nm

4 - LED module for charging socket 1 -L263-

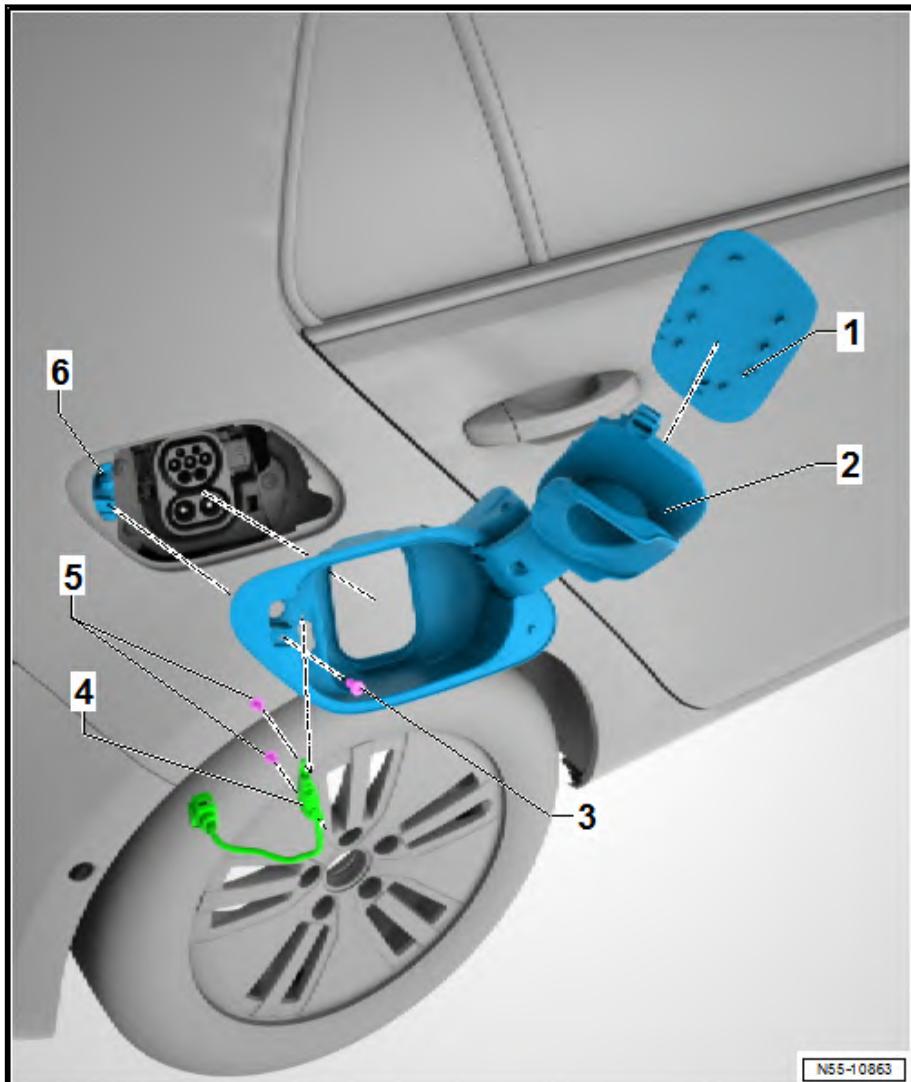
- Removing and installing [⇒ page 87](#)

5 - Bolt

- Qty. 2
- 1.5 Nm

6 - Actuator for charging socket flap lock 1 -F496-

- Removing and installing ⇒ General body repairs, exterior; Rep. gr. 57; Central locking



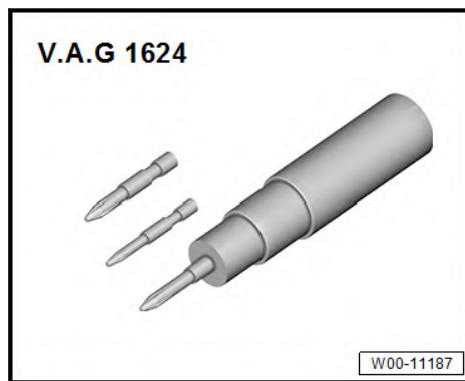
N55-10863

5.2 Removing and installing LED module for charging socket 1 -L263-

Special tools and workshop equipment required

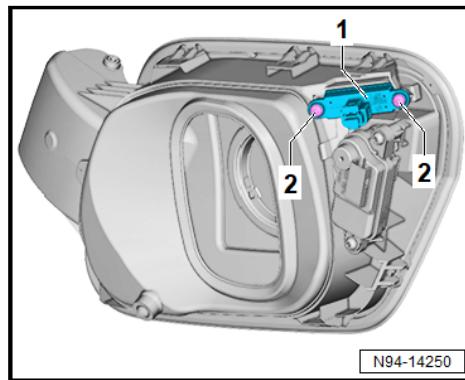


- ◆ Torque screwdriver -V.A.G 1624-



Removing

- Remove charging flap unit ⇒ General body repairs, exterior; Rep. gr. 55; Charging flap unit; Removing and installing charging flap unit
- Disconnect electrical connector on LED module for charging socket 1 -L263- -1-.



- Unscrew bolts -2-.
- Remove LED module for charging socket 1 -L263- -1-.

Installing

Install in the reverse order of removal, observing the following:

- Perform functional check.

Specified torques

- ◆ [⇒ o5.1 verview - charging flap unit", page 87](#)



6 High-level brake light

⇒ [o6.1 overview – high-level brake light", page 89](#)

⇒ [a6.2 nd installing high-level brake light", page 89](#)

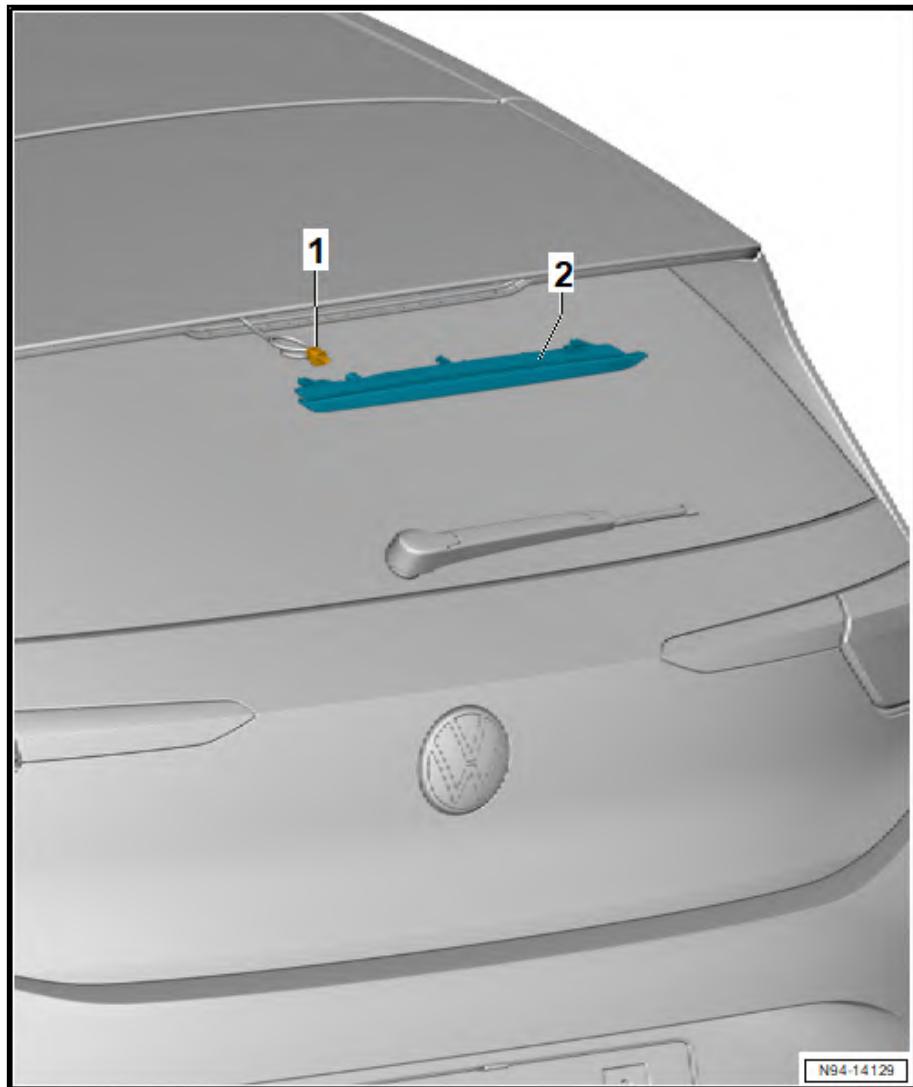
6.1 Assembly overview – high-level brake light

1 - Electrical connector

- With high-level brake light bulb

2 - High-level brake light bulb -M25-

- Removing and installing ⇒ [page 89](#)



N94-14129

6.2 Removing and installing high-level brake light

Special tools and workshop equipment required



- ◆ Removal wedge set -VAS 895 015-



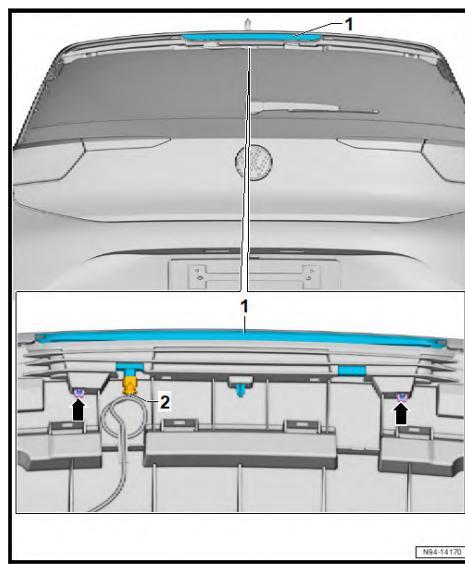
NOTICE

Risk of damage to component surfaces.

- Before using a lever, always mask off the components installed in visible areas using commercially available adhesive tape.

Removing:

- Deactivate operational readiness and switch off all electrical consumers.
- Store the vehicle key and other entry and start authorisation systems outside the vehicle to prevent the vehicle from being switched on unintentionally.
- Remove rear spoiler trim ⇒ General body repairs, exterior; Rep. gr. 66; Spoilers.
- Release high-level brake light bulb -M25- -1- from retaining clips -arrow- using removal wedge set -VAS 895 015-.



- Guide out high-level brake light bulb -M25- -1- until electrical connector -2- is accessible.
- Disconnect electrical connector -2-.
- Remove high-level brake light bulb -M25- -1-.

Installing

Install in the reverse order of removal, observing the following:

**! NOTICE**

Risk of high-level brake light bulb -M25- becoming damaged from water ingress.

- When installing high-level brake light bulb -M25-, ensure the seal is seated correctly.
- Attach connector -2-.
- High-level brake light bulb -M25- -1- must engage audibly in rear lid.
- Perform functional check.



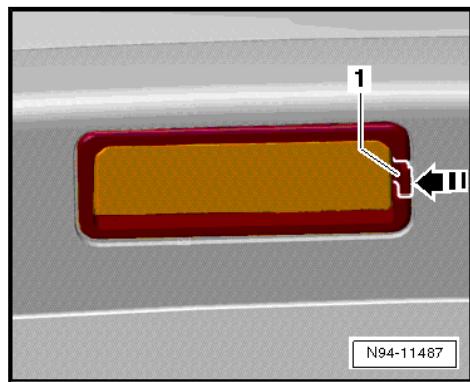
7 Number plate light

⇒ [a7.1 nd installing number plate lightX4/X5", page 92](#)

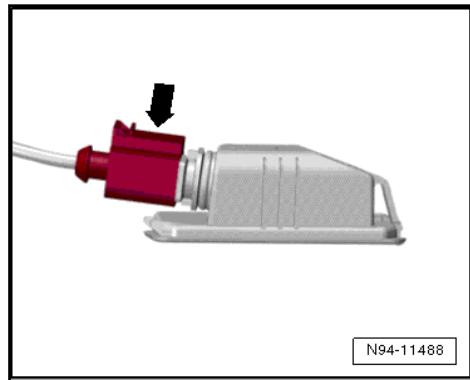
7.1 Removing and installing number plate light -X4-/X5-

Removing

- Deactivate operational readiness and switch off all electrical consumers.
- Store the vehicle key and other entry and start authorisation systems outside the vehicle to prevent the vehicle from being switched on unintentionally.
- Release retaining lug in direction of -arrow-.



- Remove number plate light -X4-/X5- -1- until electrical connector is accessible.
- Separate electrical connector -arrow-.



- Remove number plate light -X4-/X5-.

Installing

Install in the reverse order of removal, observing the following:

- Perform functional check.



8 Entry and start authorisation system

- ⇒ [o8.1 f fitting locations - entry and start authorisation system", page 93](#)
- ⇒ [o8.2 f fitting locations - keyless entry system", page 95](#)
- ⇒ [a8.3 nd installing interface for entry and start systemJ965", page 99](#)
- ⇒ [a8.4 nd installing interior aerial 1 for entry and start authorisationR138", page 101](#)
- ⇒ [a8.5 nd installing driver exterior door handleEX6 inc. contact sensor for front left exterior door handleG605", page 101](#)
- ⇒ [a8.6 nd installing front passenger exterior door handleEX7 inc. contact sensor for front left exterior door handleG605", page 103](#)
- ⇒ [a8.7 nd installing luggage compartment aerial for entry and start systemR137", page 105](#)
- ⇒ [a8.8 nd installing control unit 2 for break-in protectionJ1192/control unit 3 for break-in protectionJ1193", page 106](#)
- ⇒ [a8.9 nd installing control unit 4 for break-in protectionJ1194/control unit 5 for break-in protectionJ1195", page 107](#)

8.1 Overview of fitting locations - entry and start authorisation system

- ⇒ [o8.1.1 f fitting locations - entry and start authorisation system, LHD vehicles", page 93](#)
- ⇒ [o8.1.2 f fitting locations - entry and start authorisation system, RHD vehicles", page 94](#)

8.1.1 Overview of fitting locations - entry and start authorisation system, LHD vehicles



1 - Immobiliser reader coil - D2-

- Removing and installing [⇒ page 110](#)

2 - Starter button -E378-

- Removing and installing [⇒ page 143](#)

3 - Control unit 5 for break-in protection -J1195-

- Removing and installing [⇒ page 107](#)

4 - Control unit 4 for break-in protection -J1194-

- Removing and installing [⇒ page 107](#)

5 - Interface for entry and start system -J965-

- Removing and installing [⇒ page 99](#)

6 - Onboard supply control unit -J519-

- Removing and installing [⇒ page 165](#)

7 - Control unit 2 for break-in protection -J1192-

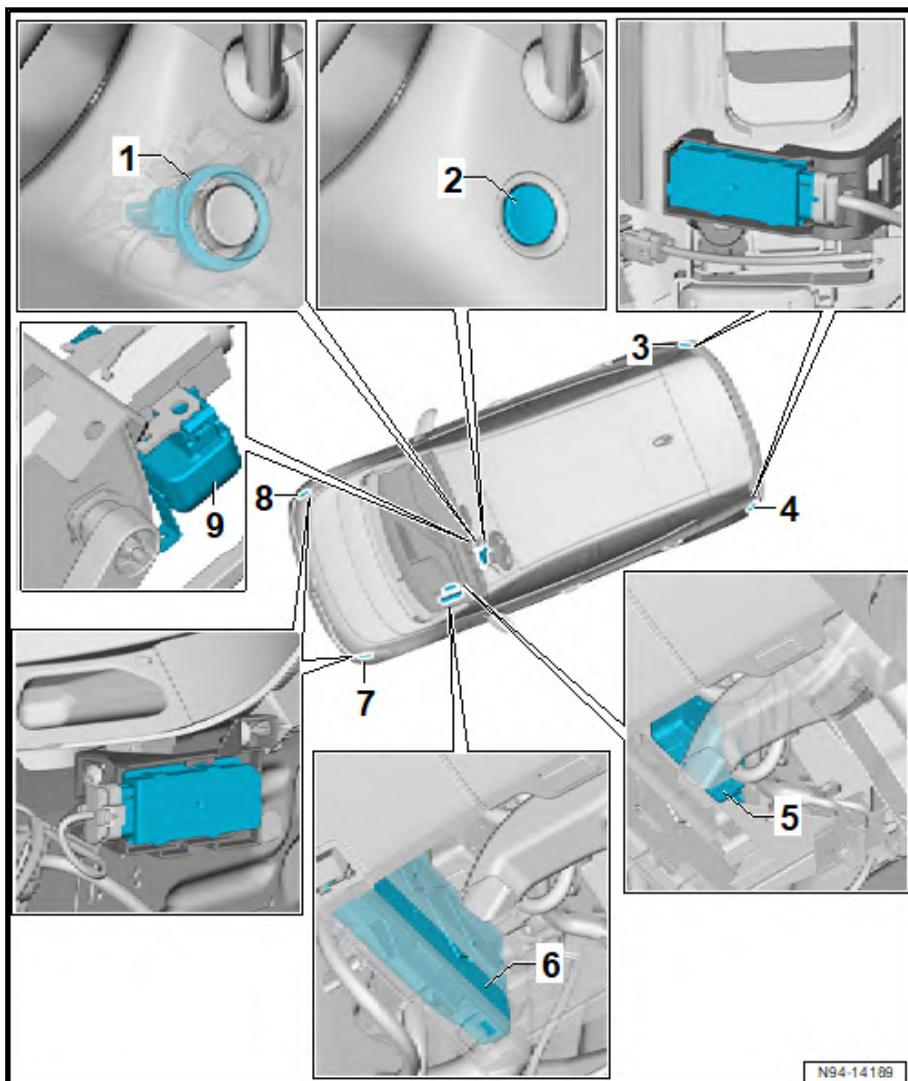
- Removing and installing [⇒ page 106](#)

8 - Control unit 3 for break-in protection -J1193-

- Removing and installing [⇒ page 106](#)

9 - Control unit for electronic steering column lock -J764-

- Removing and installing ⇒ Running gear, axles, steering; Rep. gr. 48; Steering column; Removing and installing control unit for electronic steering column lock J764



N94-14189

8.1.2 Overview of fitting locations - entry and start authorisation system, RHD vehicles



1 - Immobiliser reader coil - D2-

- Removing and installing [⇒ page 110](#)

2 - Starter button -E378-

- Removing and installing [⇒ page 143](#)

3 - Control unit 5 for break-in protection -J1195-

- Removing and installing [⇒ page 107](#)

4 - Control unit 4 for break-in protection -J1194-

- Removing and installing [⇒ page 107](#)

5 - Onboard supply control unit -J519-

- Removing and installing [⇒ page 166](#)

6 - Interface for entry and start system -J965-

- Removing and installing [⇒ page 100](#)

7 - Control unit 2 for break-in protection -J1192-

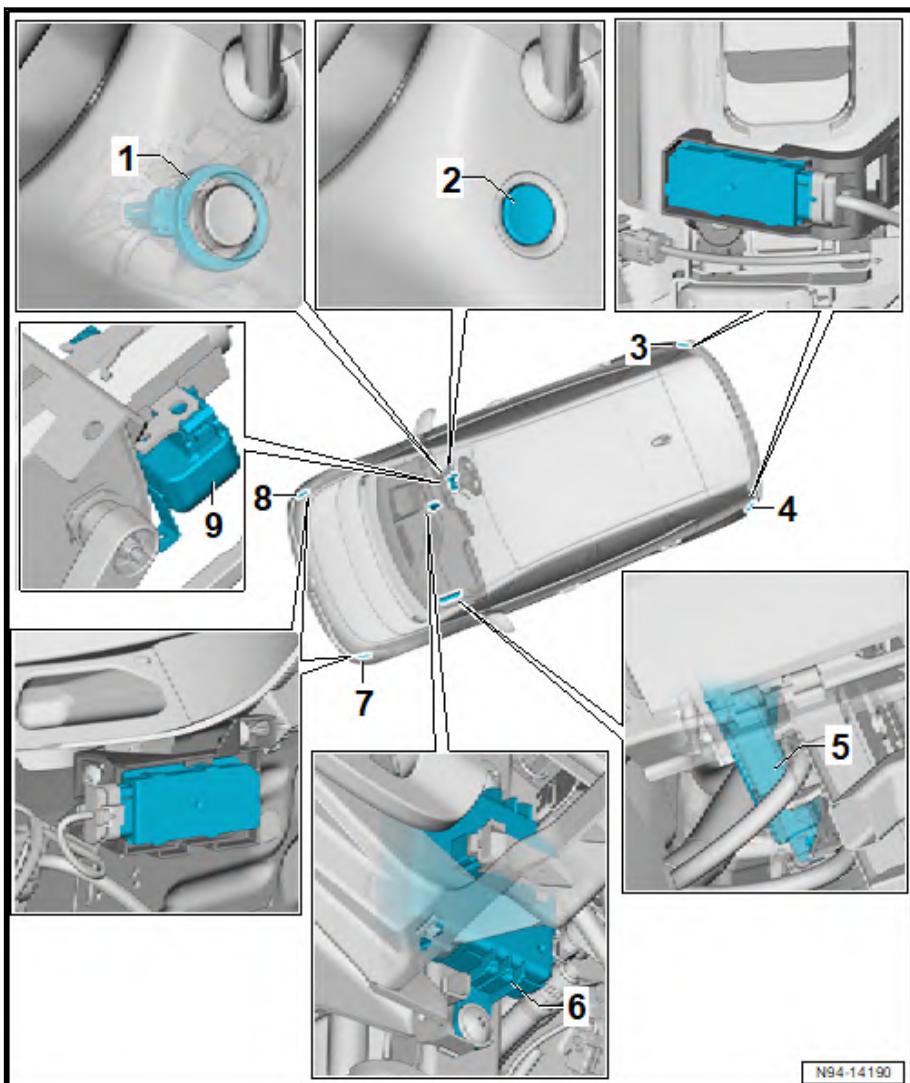
- Removing and installing [⇒ page 106](#)

8 - Control unit 3 for break-in protection -J1193-

- Removing and installing [⇒ page 106](#)

9 - Control unit for electronic steering column lock -J764-

- Removing and installing ⇒ Running gear, axles, steering; Rep. gr. 48; Steering column; Removing and installing control unit for electronic steering column lock J764



N94-14190

8.2 Overview of fitting locations - keyless entry system

[⇒ 8.2.1 f fitting locations - front keyless entry system, LHD vehicles](#), page 95

[⇒ 8.2.2 f fitting locations - rear keyless entry system, LHD vehicles](#), page 96

[⇒ 8.2.3 f fitting locations - front keyless entry system, RHD vehicles](#), page 97

[⇒ 8.2.4 f fitting locations - rear keyless entry system, RHD vehicles](#), page 98

8.2.1 Overview of fitting locations - front keyless entry system, LHD vehicles



1 - Front passenger door handle

- With front passenger exterior door handle - EX7- inc. contact sensor for front left exterior door handle -G605- Removing and installing [⇒ page 103](#)

2 - Interior aerial 1 for entry and start authorisation -R138-

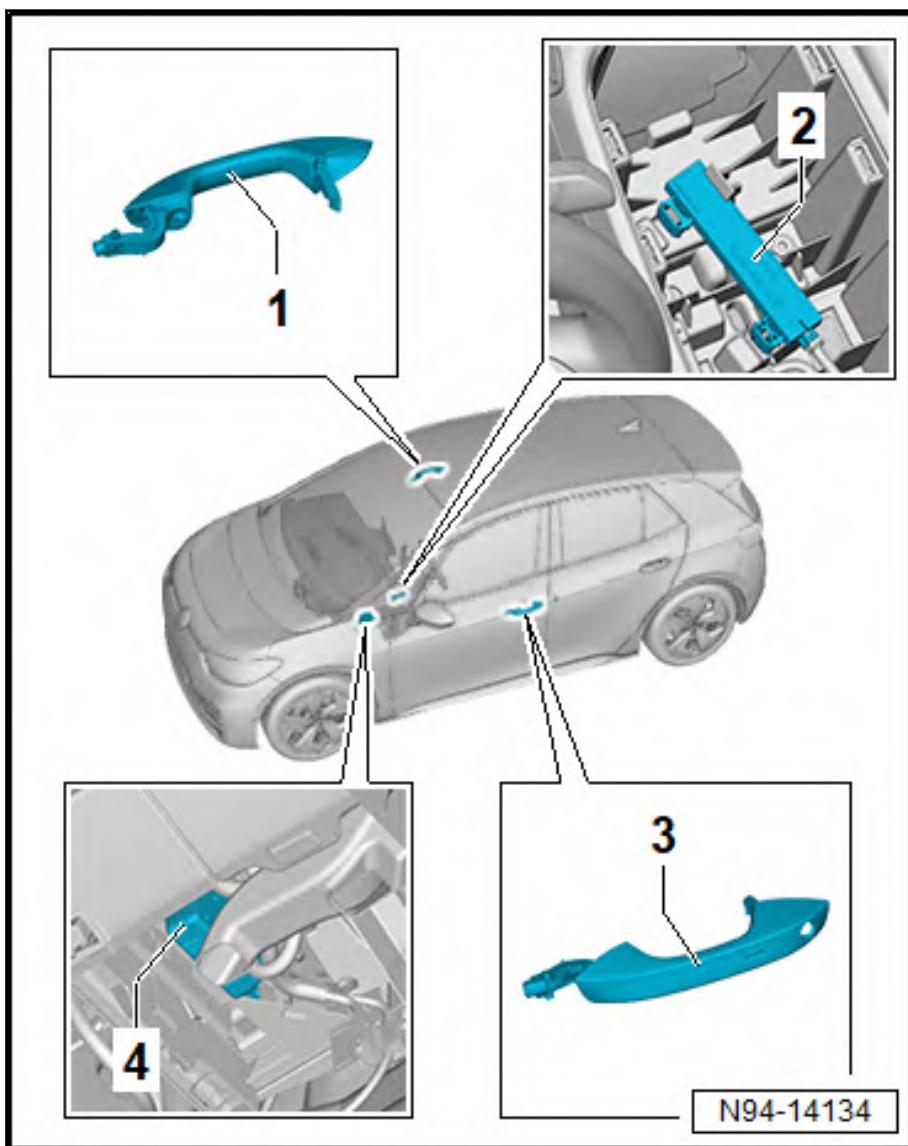
- Removing and installing [⇒ page 101](#)

3 - Driver door handle

- With driver exterior door handle -EX6- inc. contact sensor for front left exterior door handle -G605- Removing and installing [⇒ page 101](#)

4 - Interface for entry and start system -J965-

- Removing and installing [⇒ page 99](#)



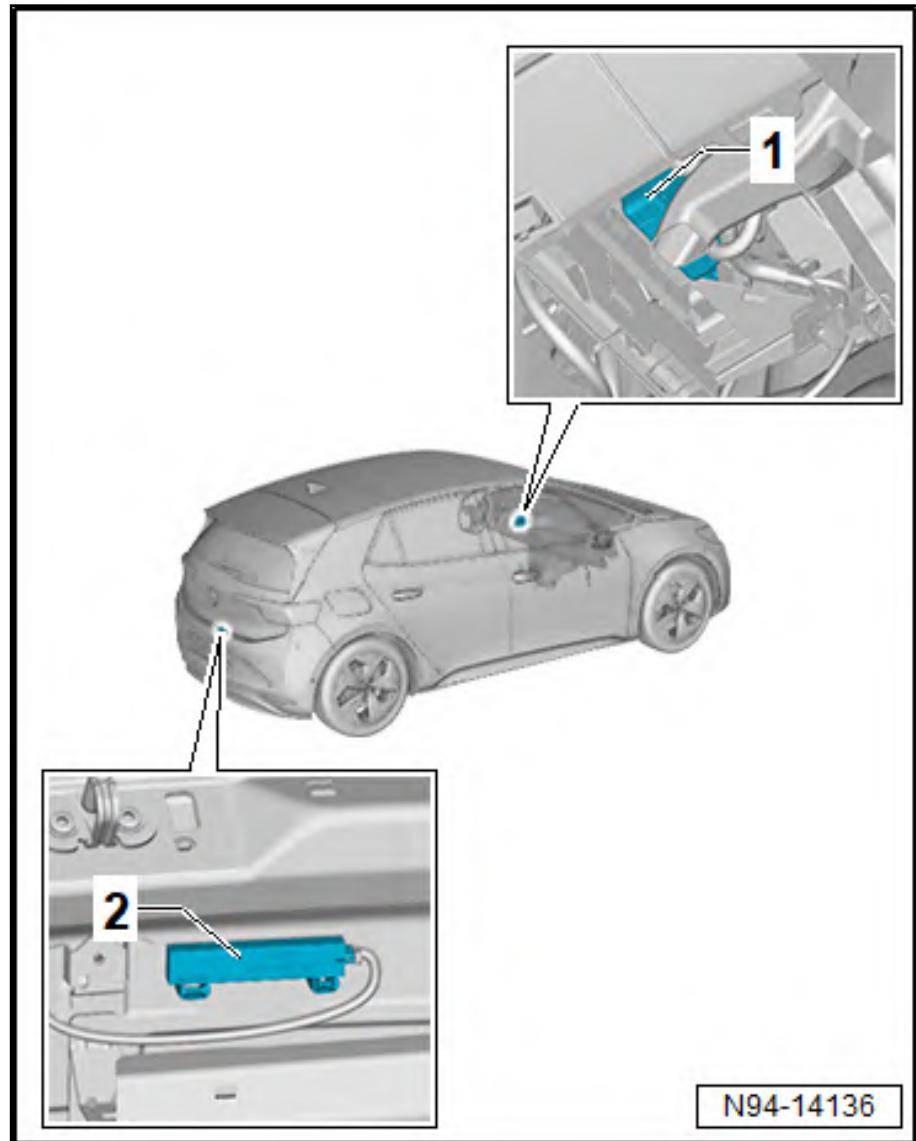
8.2.2 Overview of fitting locations - rear keyless entry system, LHD vehicles

**1 - Interface for entry and start system -J965-**

- Removing and installing [⇒ page 99](#)

2 - Luggage compartment aerial for entry and start system -R137-

- Removing and installing [⇒ page 105](#)



8.2.3 Overview of fitting locations - front keyless entry system, RHD vehicles



1 - Front passenger door handle

- With front passenger exterior door handle - EX7- inc. contact sensor for front left exterior door handle -G605- Removing and installing [⇒ page 103](#)

2 - Interface for entry and start system -J965-

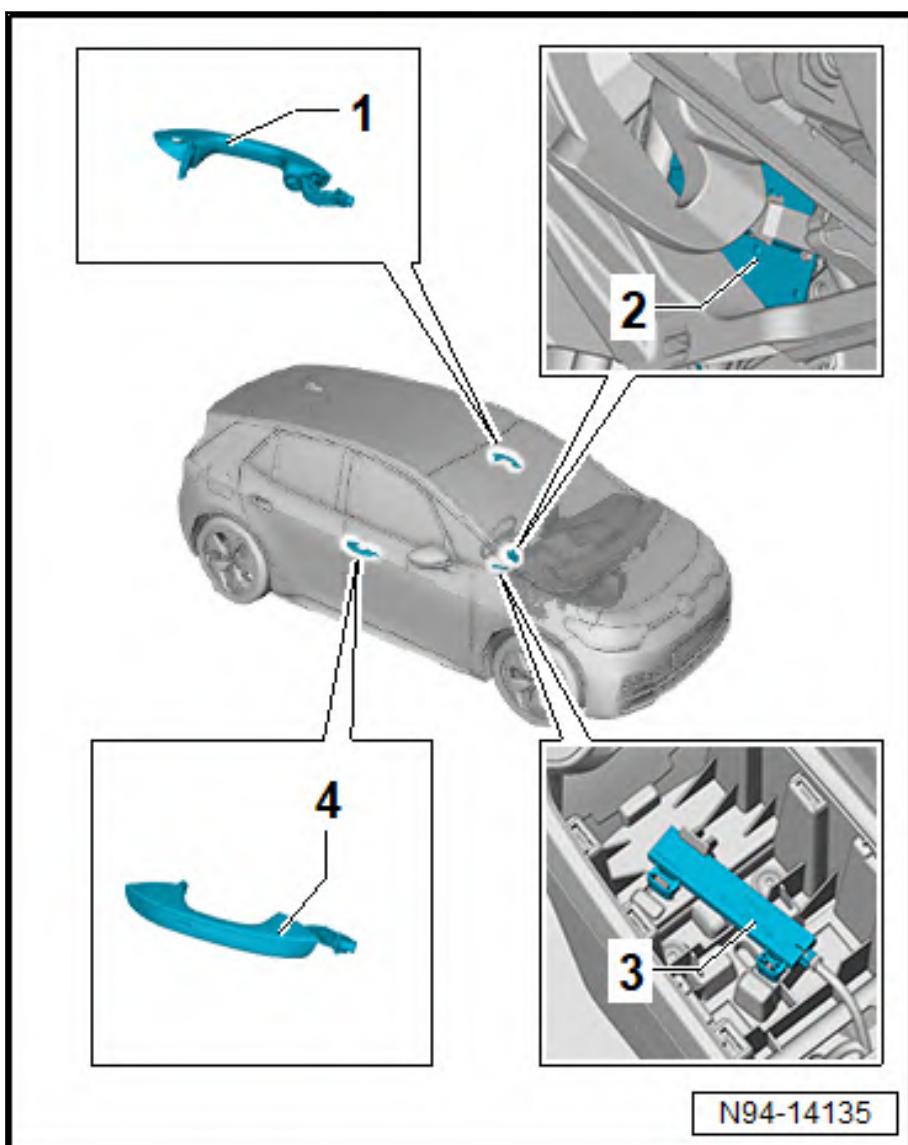
- Removing and installing [⇒ page 100](#)

3 - Interior aerial 1 for entry and start authorisation -R138-

- Removing and installing [⇒ page 101](#)

4 - Driver door handle

- With driver exterior door handle -EX6- inc. contact sensor for front left exterior door handle -G605- Removing and installing [⇒ page 101](#)



8.2.4 Overview of fitting locations - rear keyless entry system, RHD vehicles

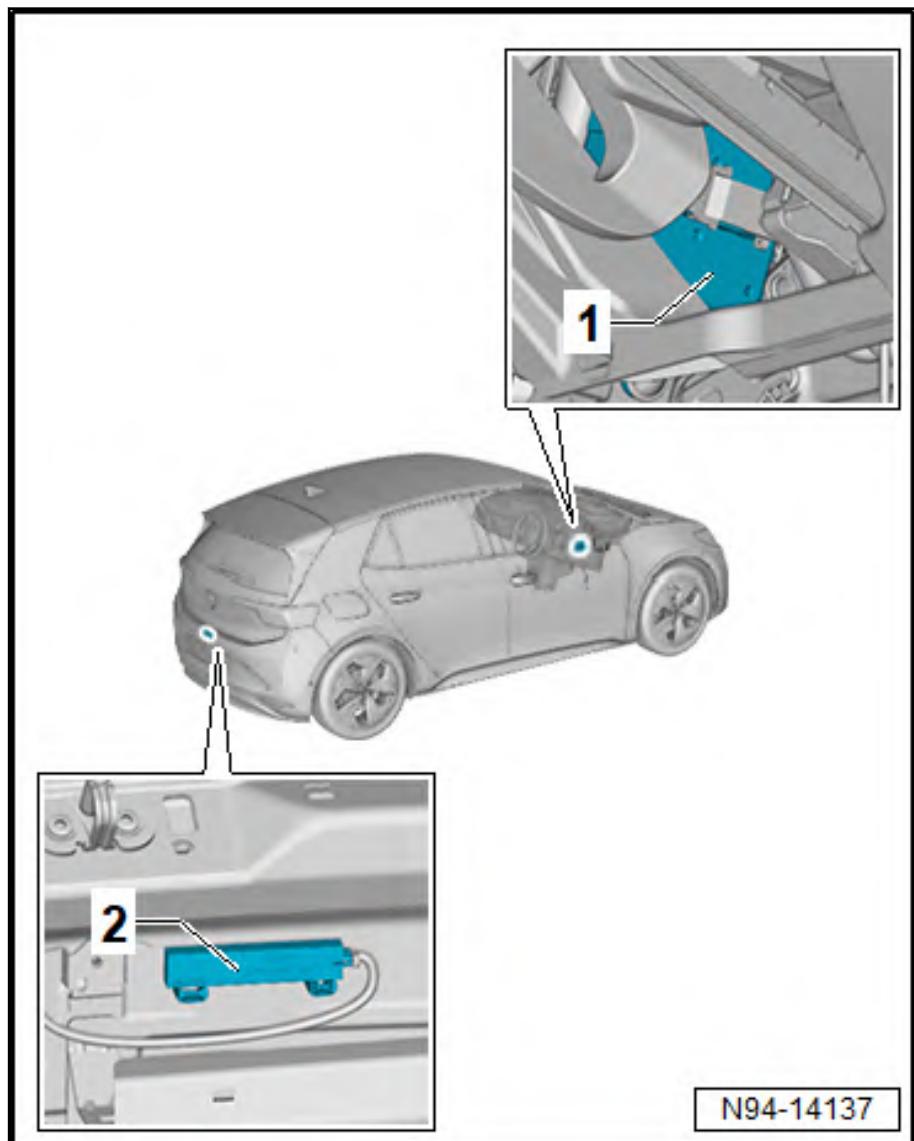


1 - Interface for entry and start system -J965-

- Removing and installing [page 100](#)

2 - Luggage compartment aerial for entry and start system -R137-

- Removing and installing [page 105](#)



N94-14137

8.3 Removing and installing interface for entry and start system -J965-

[⇒ a8.3.1 nd installing interface for entry and start systemJ965, left-hand drive vehicle", page 99](#)

[⇒ a8.3.2 nd installing interface for entry and start systemJ965, right-hand drive vehicle", page 100](#)

8.3.1 Removing and installing interface for entry and start system -J965-, left-hand drive vehicle



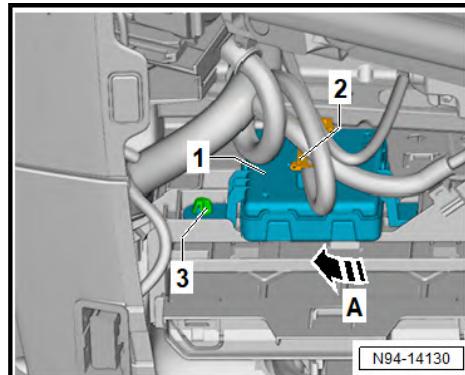
Note

If the entry and start authorisation control unit -J965- is renewed, start the respective function ⇒ Vehicle diagnostic tester.



Removing

- Disconnect electrical connector -2-.



- Release locking lug -3-.
- Swivel out entry and start authorisation control unit -J965- -1- in direction of -arrow A-.

Installing

Install in the reverse order of removal, observing the following:

- Ensure that interface for entry and start authorisation system -J965- engages audibly in bracket.

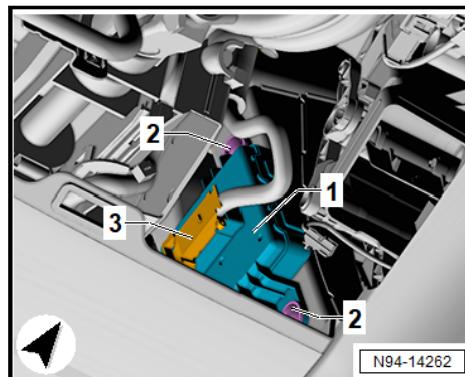
8.3.2 Removing and installing interface for entry and start system -J965-, right-hand drive vehicle



If the entry and start authorisation control unit -J965- is renewed, start the respective function ⇒ Vehicle diagnostic tester.

Removing

- Remove footwell vent on driver side ⇒ Heating, air conditioning; Rep. gr. 87; Air duct; Removing and installing footwell vent on driver side.
- Unscrew bolts -2-.



- Swivel out entry and start authorisation control unit -J965- -1-.
- Disconnect electrical connector -3-.



Installing

Install in the reverse order of removal, observing the following:

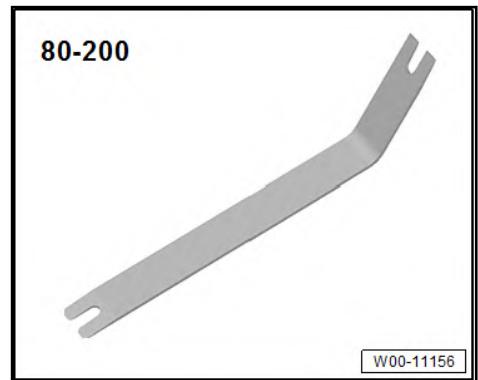
Specified torque

Component	Specified torque
Bolts -2-	8 Nm

8.4 Removing and installing interior aerial 1 for entry and start authorisation - R138-

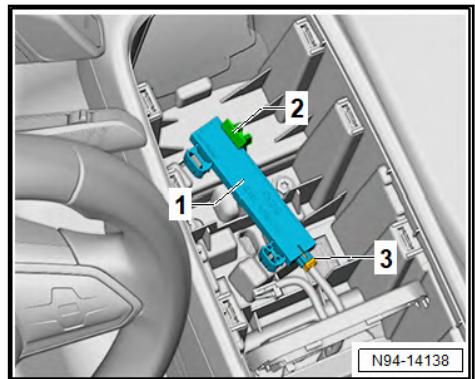
Special tools and workshop equipment required

- ◆ Removal lever -80-200-



Removing

- Remove centre console insert ⇒ General body repairs, interior; Rep. gr. 68; Centre console; Removing and installing centre console insert .
- Release fastener -2-.



- Using removal lever -R138-, lever interior aerial 1 for entry and start authorisation -80-200- -1- off pin.
- Disconnect electrical connector -3-.

Installing

Install in reverse order of removal.

8.5 Removing and installing driver exterior door handle -EX6- inc. contact sensor for front left exterior door handle -G605-

Special tools and workshop equipment required



- ◆ Hot-air blower -V.A.G 1416-



- ◆ Adhesive strip remover -VAS 6349-



Note

- ◆ *Bonded joints of driver exterior door handle -EX6- inc. contact sensor for front left exterior door handle -G605- cannot be reused.*
- ◆ *Driver exterior door handle -EX6- inc. contact sensor for front left exterior door handle -G605- must be renewed after removal.*

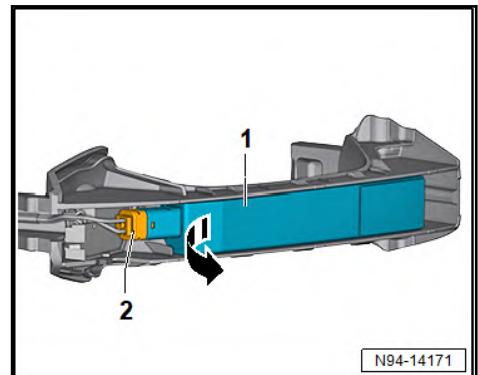
Fitting instructions

- ◆ Before removal, use hot air blower -V.A.G 1416- to heat up door handle base.
- ◆ When removing or installing driver exterior door handle -EX6- inc. contact sensor for front left exterior door handle -G605-, use only adhesive remover allocated accordingly via ⇒ ETKA to remove adhesive residue.
- ◆ Remove any adhesive residue from adhesive tape using adhesive strip remover -VAS 6349-.
- ◆ Make sure that the bonding surfaces are free of dust and grease.
- ◆ Driver exterior door handle -EX6- inc. contact sensor for front left exterior door handle -G605- must be bonded in straight after cleaning.
- ◆ Do not remove protective film until immediately before installation.
- ◆ Working temperature is approx. 21°C.



Removing

- Remove door handle trim → General body repairs, exterior; Rep. gr. 58; Door components; Assembly overview – door handle and door lock.
- Follow the installation instructions [⇒ page 102](#).
- Disconnect electrical connector -2-.



- Lever out driver exterior door handle -EX6- inc. contact sensor for front left exterior door handle -G605- -1- in direction of -arrow-

Installing

Install in the reverse order of removal, observing the following:

- Follow the installation instructions [⇒ page 102](#).
- Remove adhesive residue from door handle base.
- Align driver exterior door handle -EX6- inc. contact sensor for front left exterior door handle -G605- -1- and bond into door handle base.

8.6 Removing and installing front passenger exterior door handle -EX7- inc. contact sensor for front left exterior door handle -G605-

Special tools and workshop equipment required

- ◆ Hot-air blower -V.A.G 1416-





- ◆ Adhesive strip remover -VAS 6349-



Note

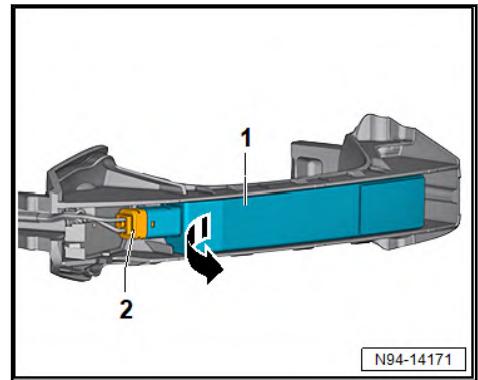
- ◆ Bonded joints of front passenger exterior door handle -EX7- inc. contact sensor for front left exterior door handle -G605- cannot be reused.
- ◆ Front passenger exterior door handle -EX7- inc. contact sensor for front left exterior door handle -G605- must be renewed after removal.

Fitting instructions

- ◆ Before removal, use hot air blower -V.A.G 1416- to heat up door handle base.
- ◆ When removing or installing front passenger exterior door handle -EX7- incl. contact sensor for front left exterior door handle -G605-, use only adhesive remover allocated accordingly via ⇒ ETKA to remove adhesive residue.
- ◆ Remove any adhesive residue from adhesive tape using adhesive strip remover -VAS 6349-.
- ◆ Make sure that the bonding surfaces are free of dust and grease.
- ◆ Front passenger exterior door handle -EX7- inc. contact sensor for front left exterior door handle -G605- must be bonded in straight after cleaning.
- ◆ Do not remove protective film until immediately before installation.
- ◆ Working temperature is approx. 21°C.

Removing

- Remove door handle trim ⇒ General body repairs, exterior; Rep. gr. 58; Door components; Assembly overview – door handle and door lock.
- Follow the installation instructions ⇒ [page 104](#) .
- Disconnect electrical connector -2-.



- Lever out front passenger exterior door handle -EX7- inc. contact sensor for front left exterior door handle -G605- -1- in direction of -arrow-

Installing

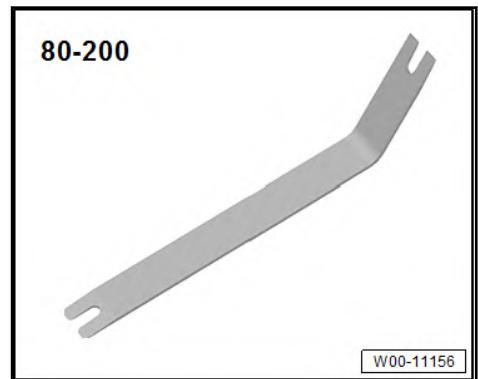
Install in the reverse order of removal, observing the following:

- Follow the installation instructions [page 104](#).
- Remove adhesive residue from door handle base.
- Align front passenger exterior door handle -EX7- inc. contact sensor for front left exterior door handle -G605- -1- and bond into door handle base.

8.7 Removing and installing luggage compartment aerial for entry and start system -R137-

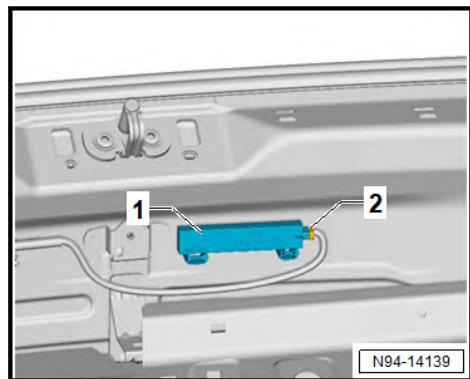
Special tools and workshop equipment required

- ◆ Removal lever -80-200-



Removing

- Remove lock carrier trim ⇒ General body repairs, interior; Rep. gr. 70; Luggage compartment trims; Removing and installing lock carrier trim.
- Use removal lever -80-200- to lever luggage compartment aerial for entry and start system -R137- -1- off pins.



- Disconnect electrical connector -2-.

Installing

Install in reverse order of removal.

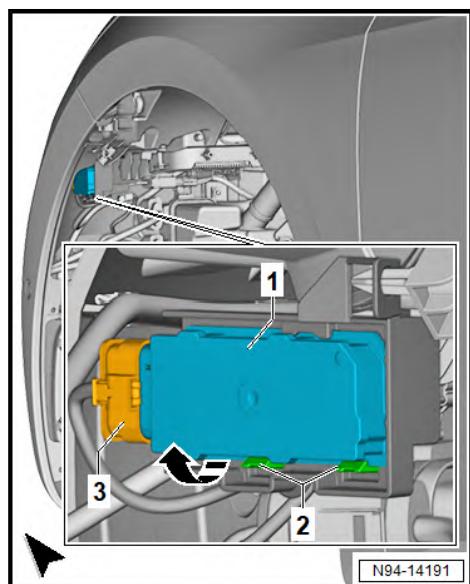
8.8 Removing and installing control unit 2 for break-in protection -J1192-/control unit 3 for break-in protection -J1193-



Removal and installation are described for the left vehicle side as an example.

Removing

- Remove front left wheel housing liner ⇒ General body repairs, exterior; Rep. gr. 66; Wheel housing liner; Removing and installing front wheel housing liner.
- Disconnect electrical connector -3-.



- Release locking lugs -2-.
- Swivel out control unit 2 for break-in protection -J1192- -1- in direction of -arrow-.

Installing

Install in reverse order of removal.



8.9 Removing and installing control unit 4 for break-in protection -J1194-/control unit 5 for break-in protection -J1195-

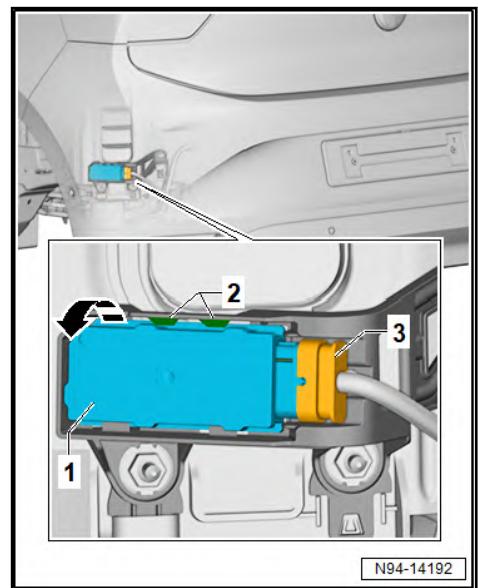


Note

Removal and installation are described for the left vehicle side as an example.

Removing

- Remove rear bumper cover ⇒ General body repairs, exterior; Rep. gr. 63; Rear bumper; Removing and installing bumper cover.
- Disconnect electrical connector -3-.



- Release locking lugs -2-.
- Swivel out control unit 4 for break-in protection -J1194- -1- in direction of -arrow-.

Installing

Install in reverse order of removal.



9 Steering column switch module

⇒ [o9.1 overview - steering column electronics control unit J527", page 108](#)

⇒ [a9.2 nd installing steering column electronics control unit J527", page 109](#)

⇒ [a9.3 nd installing immobiliser reader coil D2", page 110](#)

9.1 Assembly overview - steering column electronics control unit -J527-

1 - Starter button -E378-

- Removing and installing ⇒ [page 143](#)

2 - Immobiliser reader coil - D2-

- Removing and installing ⇒ [page 110](#)

3 - Steering column electronics control unit -J527-

- Individual components are installed in steering column electronics control unit -J527- and cannot be removed individually.

- ◆ Turn signal switch -E2-
- ◆ Intermittent wiper switch - E22-
- ◆ Vehicles with cruise control system: with cruise control system switch - E45-.
- Removing and installing ⇒ [page 109](#)

4 - Bolt

- Qty. 2
- For control unit for electronic steering column lock -J764-, shear bolt

5 - Bracket for dash panel insert

- Removing and installing ⇒ Running gear, axles, steering; Rep. gr. 48; Steering column; Removing and installing control unit for electronic steering column lock -J764-

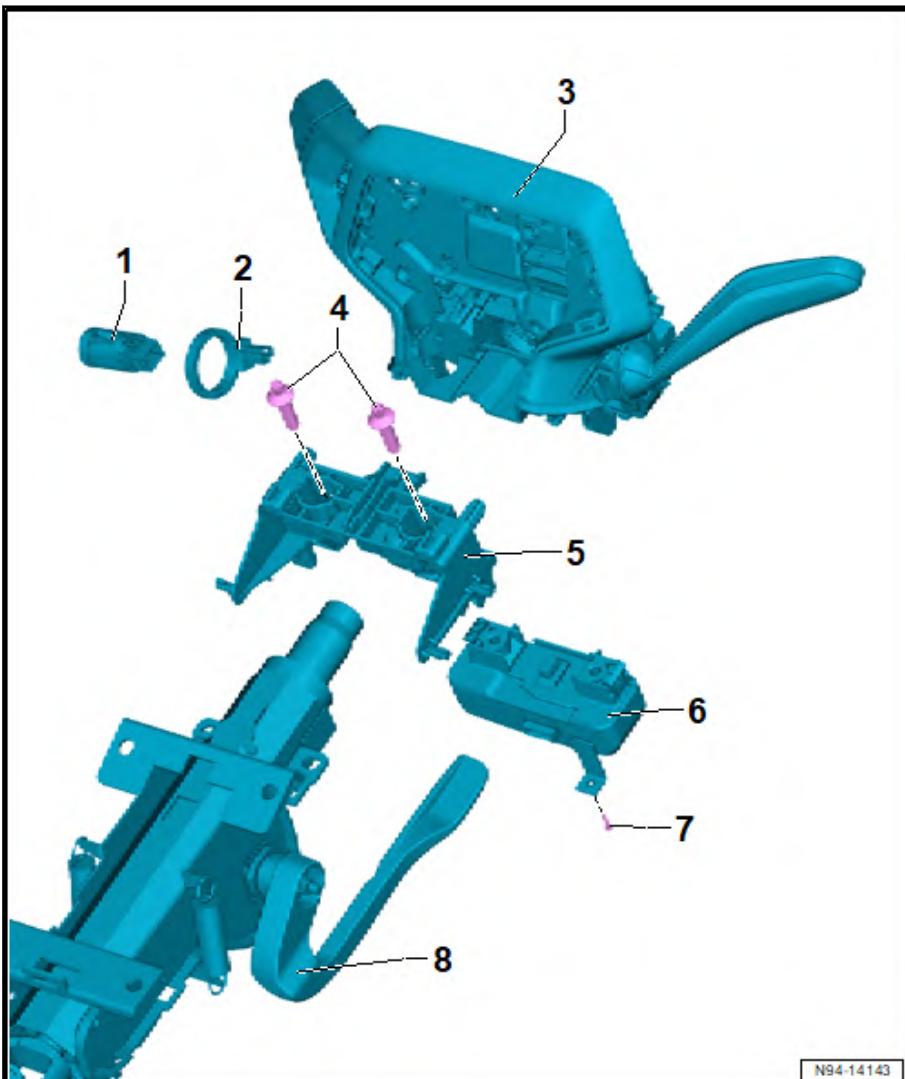
6 - Control unit for electronic steering column lock -J764-

- Removing and installing ⇒ Running gear, axles, steering; Rep. gr. 48; Steering column; Removing and installing control unit for electronic steering column lock -J764-

7 - Bolt

- 2.5 Nm

8 - Steering column

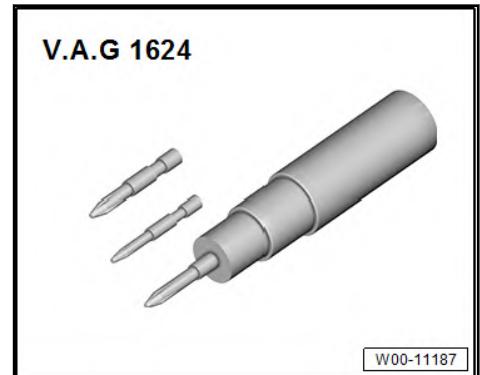




9.2 Removing and installing steering column electronics control unit -J527-

Special tools and workshop equipment required

- ◆ Torque screwdriver -V.A.G 1624-



Note

If the steering column electronics control unit -J527- is renewed, start the respective function ⇒ Vehicle diagnostic tester.



Risk of damage to the return ring.

- When removed, the return ring with slip ring must not be turned.

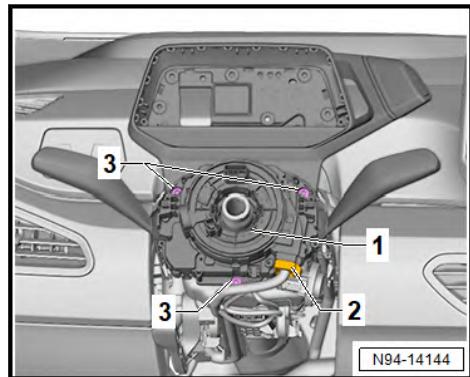
Removing

- Move steering wheel to rearmost and lowest position. Use the full range of the steering column adjustment for this purpose.
- Remove lower steering column trim ⇒ General body repairs, interior; Rep. gr. 68; Compartments and covers; Removing and installing lower steering column trim.
- Remove dash panel insert ⇒ [a1.3 nd installing control unit with display unit for driver information systemJ1254](#), page [16](#).



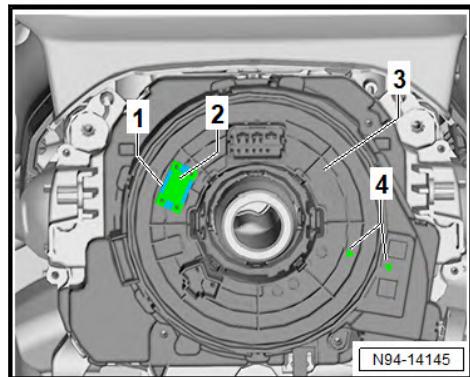
Risk of damage to the electronic components due to electrostatic discharge.

- Before disconnecting electrical connector, mechanic must electrostatically discharge himself or herself by briefly touching door striker plate or similar.
- Disconnect electrical connector -2-.



- Unscrew bolts -3-.
- Pull off steering column electronics control unit -J527- -1-.

Installing



Install in the reverse order of removal, observing the following:

- Before pushing on steering column switch module, ensure the following for steering column electronics control unit - J527- -3-:
 - ◆ The “arrows” -4- must align.
 - ◆ Coil connector -2- must be visible in window -1-.

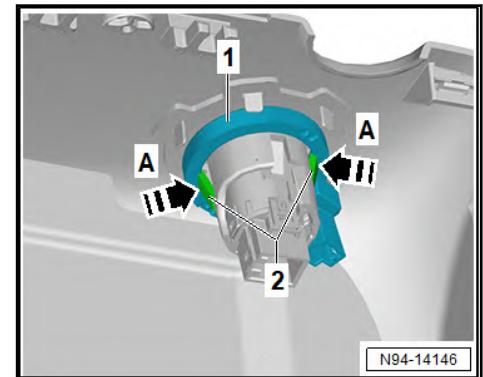
Specified torques

Component	Specified torque
Switch module bolts	1.3 Nm

9.3 Removing and installing immobiliser reader coil -D2-

Removing

- Remove lower steering column trim ⇒ General body repairs, interior; Rep. gr. 68; Compartments and covers; Removing and installing lower steering column trim.
- Release locking lugs -2- in direction of -arrow A-.



- Pull out immobiliser reader coil -D2- -1-.

Installing

Install in the reverse order of removal, observing the following:

- Press reader coil into mounting until it engages audibly.



10 Automatic headlight range control

⇒ [o10.1 overview - automatic headlight range control", page 112](#)

10.1 Assembly overview - automatic headlight range control

1 - Diagnostics interface for data bus -J533-

- Right-hand drive vehicles: installed behind glove compartment
- Removing and installing ⇒ [page 169](#)

2 - Rear left vehicle level sender -G76-

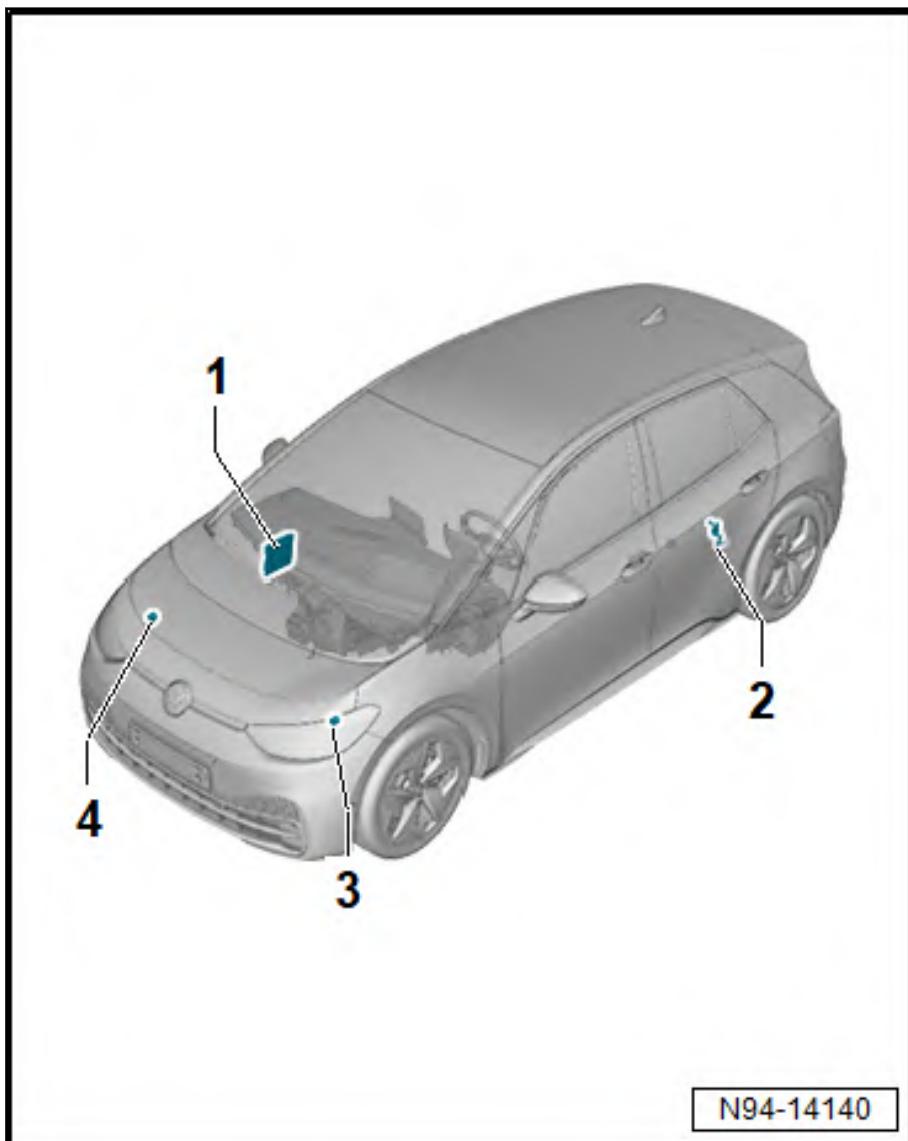
- Fitting location: on rear suspension link
- Assembly overview
⇒ Running gear, axles, steering; Rep. gr. 43; Vehicle level senders; Assembly overview - rear vehicle level senders.

3 - Left headlight range control motor -V48-

- Removing and installing ⇒ [page 61](#)

4 - Right headlight range control motor -V49-

- Removing and installing ⇒ [page 61](#)





11 Towing bracket

- ⇒ [o11.1 overview - towing bracket socket", page 113](#)
- ⇒ [s11.2 socket", page 113](#)
- ⇒ [a11.3 and installing trailer detector control unitJ345", page 114](#)

11.1 Assembly overview - towing bracket socket

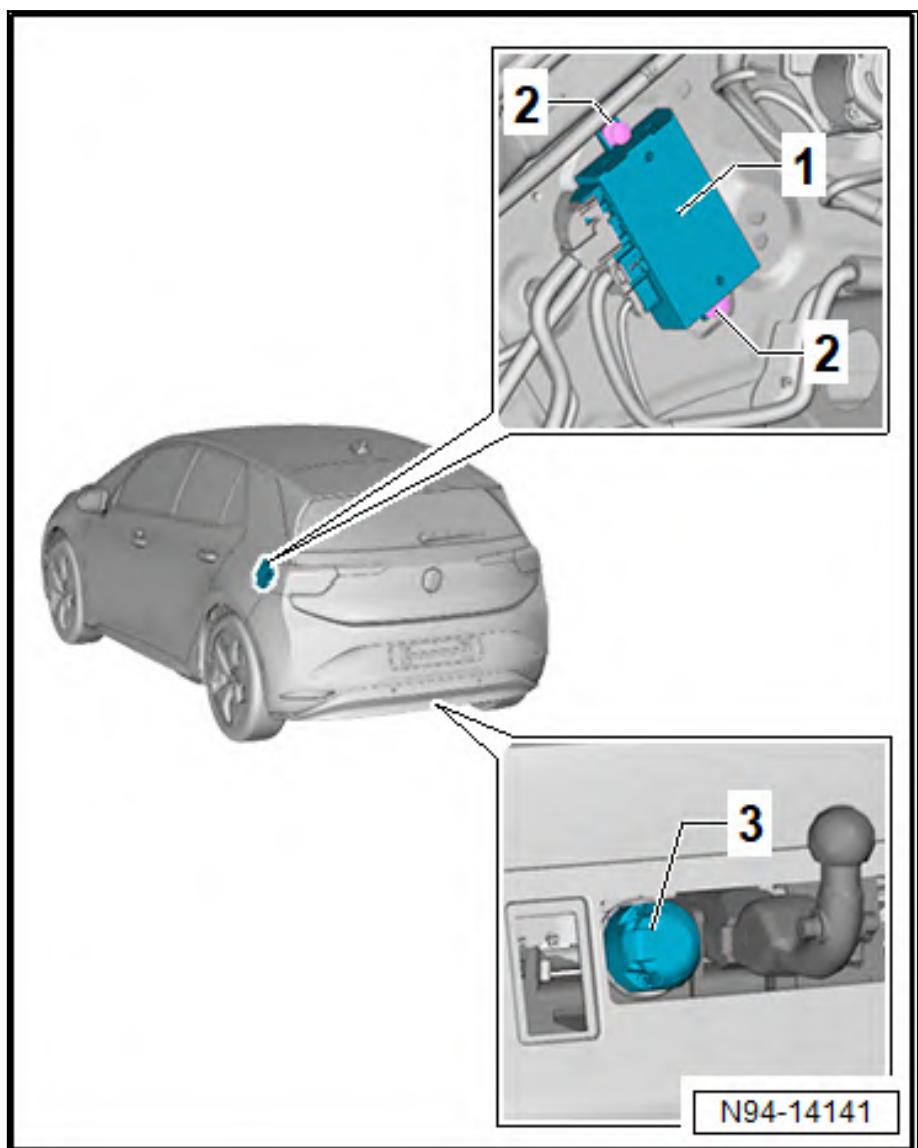
1 - Trailer detector control unit
-J345-

- Removing and installing ⇒ [page 114](#)

2 - Spreader rivet

3 - Trailer socket -U10-

- Pin assignment ⇒ [page 113](#)



11.2 Trailer socket

Pin assignment on trailer socket -U10-:

The pin assignment can be found in the latest current flow diagram ⇒ Current flow diagrams, Electrical fault finding and Fitting locations.



11.3 Removing and installing trailer detector control unit -J345-

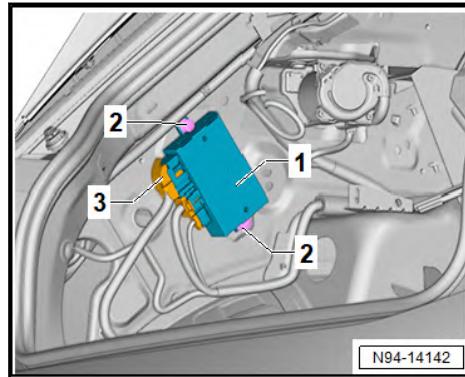


Note

If the trailer detector control unit -J345- is renewed, start the respective function ⇒ Vehicle diagnostic tester.

Removing

- Deactivate operational readiness and switch off all electrical consumers.
- Store the vehicle key and other entry and start authorisation systems outside the vehicle to prevent the vehicle from being switched on unintentionally.
- Remove bracket for digital sound package control unit - J525- ⇒ Communication; Rep. gr. 91; Sound system; Overview of fitting locations - sound system.
- Remove spreader rivet -2-.



- Remove trailer detector control unit -J345- -1-.
- Disconnect electrical connectors -3-.

Installing

Install in reverse order of removal.



96 – Lights, bulbs, switches - interior

1 Lights

- ⇒ o1.1 f fitting locations - lights in dash panel", page 115
- ⇒ o1.2 f fitting locations - ambient lighting in doors", page 116
- ⇒ o1.3 f fitting locations - lights in centre console", page 117
- ⇒ o1.4 f fitting locations - lights in luggage compartment", page 118
- ⇒ o1.5 f fitting locations - lights in roof trim", page 119
- ⇒ a1.6 nd installing light for front left door contour light-ingL251/light for front right door contour lightingL252", page 120
- ⇒ a1.7 nd installing light 2 for front left door contour light-ingL296/light 2 for front right door contour lightingL297", page 121
- ⇒ a1.8 nd installing footwell lightW9/W10", page 121
- ⇒ a1.9 nd installing Central locking SAFELOCK function warning lampK133", page 122
- ⇒ a1.10 nd installing front passenger side airbag deactivated warning lampK145", page 123
- ⇒ a1.11 nd installing luggage compartment lightW3", page 123
- ⇒ a1.12 nd installing illuminated vanity mirror W20/W14", page 124
- ⇒ a1.13 nd installing front left reading lampW65/front right reading lampW66", page 125
- ⇒ a1.14 nd installing rear left reading lightW11/rear right reading lightW12", page 125
- ⇒ a1.15 nd installing dynamic light strip 1 for information in dash panelL385", page 125
- ⇒ a1.16 nd installing light 1 for centre console background light-ingL193", page 126
- ⇒ a1.17 nd installing light for ambient lighting", page 127

1.1 Overview of fitting locations - lights in dash panel



1 - Dynamic light strip 1 for information in dash panel - L385-

- Removing and installing [⇒ page 125](#)

2 - Light 2 for dash panel contour lighting -L244-

- Removing and installing [⇒ page 127](#)

3 - Right footwell light -W10-

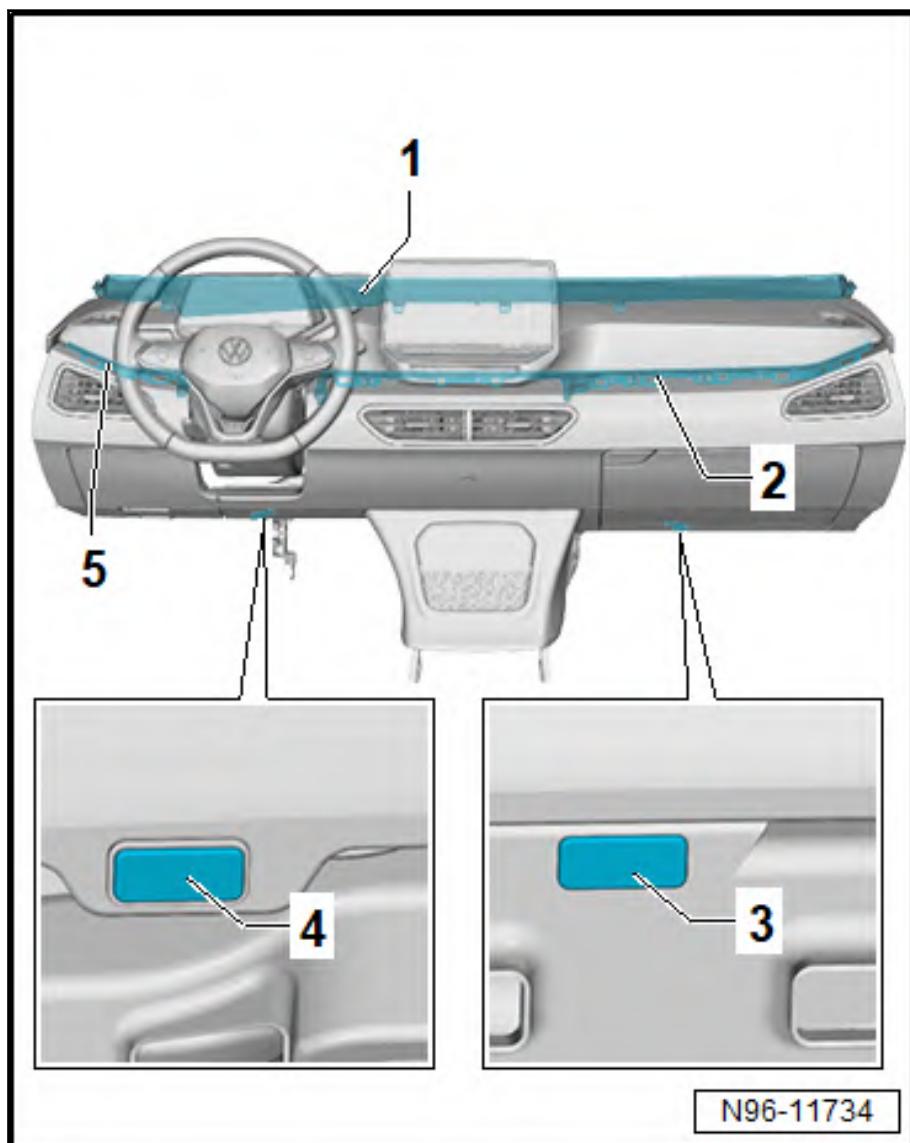
- Removing and installing [⇒ page 121](#)

4 - Left footwell light -W9-

- Removing and installing [⇒ page 121](#)

5 - Light 1 for dash panel contour lighting -L243-

- Removing and installing [⇒ page 127](#)



1.2 Overview of fitting locations - ambient lighting in doors

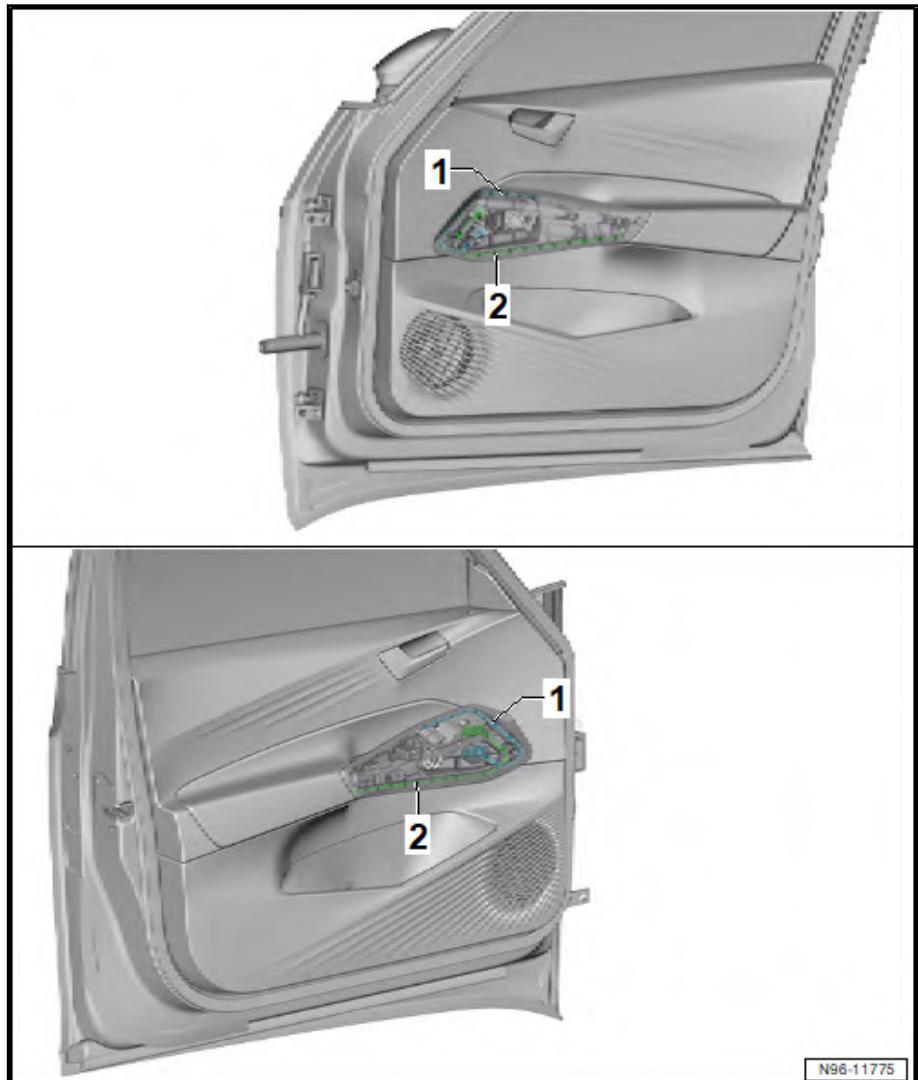


1 - Light for front left door contour lighting -L251-/light for front right door contour lighting -L252-

- Removing and installing [page 120](#)

2 - Light 2 for front left door contour lighting -L296-/light 2 for front right door contour lighting -L297-

- Removing and installing [page 121](#)



N96-11775

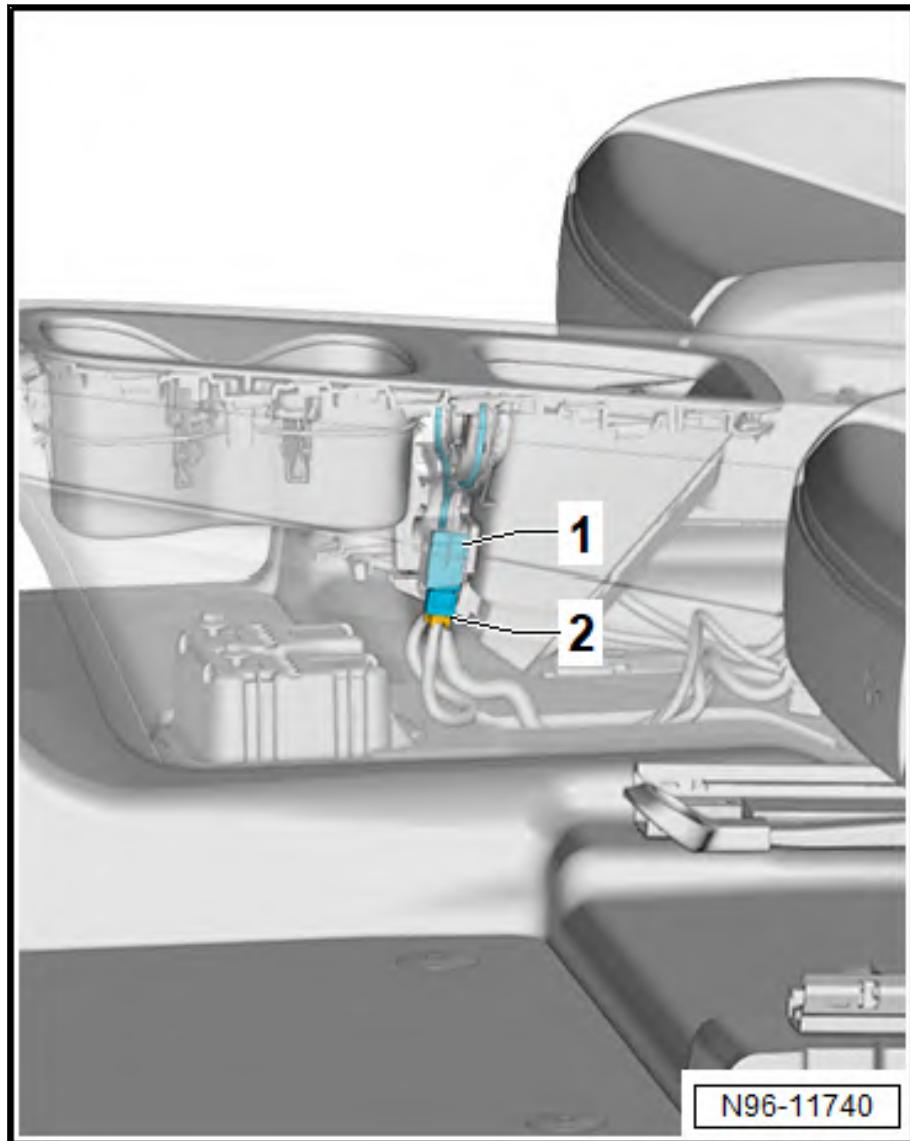
1.3 Overview of fitting locations - lights in centre console



1 - Front centre console light
for ambient lighting 1 -L193-

- Removing and installing [⇒ page 126](#)

2 - Electrical connector



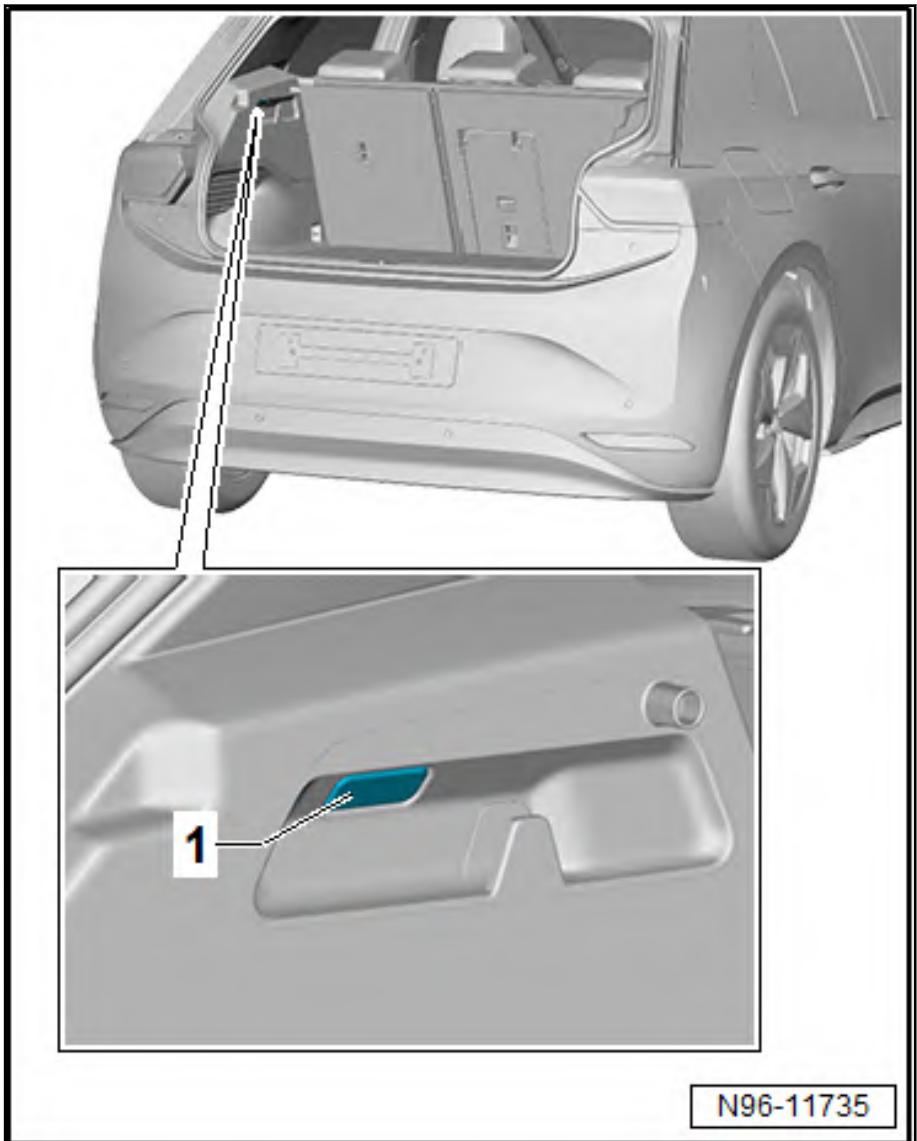
N96-11740

1.4 Overview of fitting locations - lights in luggage compartment



1 - Luggage compartment light -W3-

- On left in luggage compartment side trim
- Removing and installing [⇒ page 123](#)



1.5 Overview of fitting locations - lights in roof trim



1 - Driver side illuminated vanity mirror -W20-

- Removing and installing [⇒ page 124](#)

2 - Rear interior light -WX2-

- ◆ Rear left reading light - W11-
- ◆ Rear right reading light - W12-
- ◆ Rear left reading light switch -E454-
- ◆ Rear right reading light switch -E455-
- The buttons are an integral part of the rear interior light -WX2- and cannot be removed individually.
- Removing and installing [⇒ page 125](#)

3 - Front passenger side illuminated vanity mirror -W14-

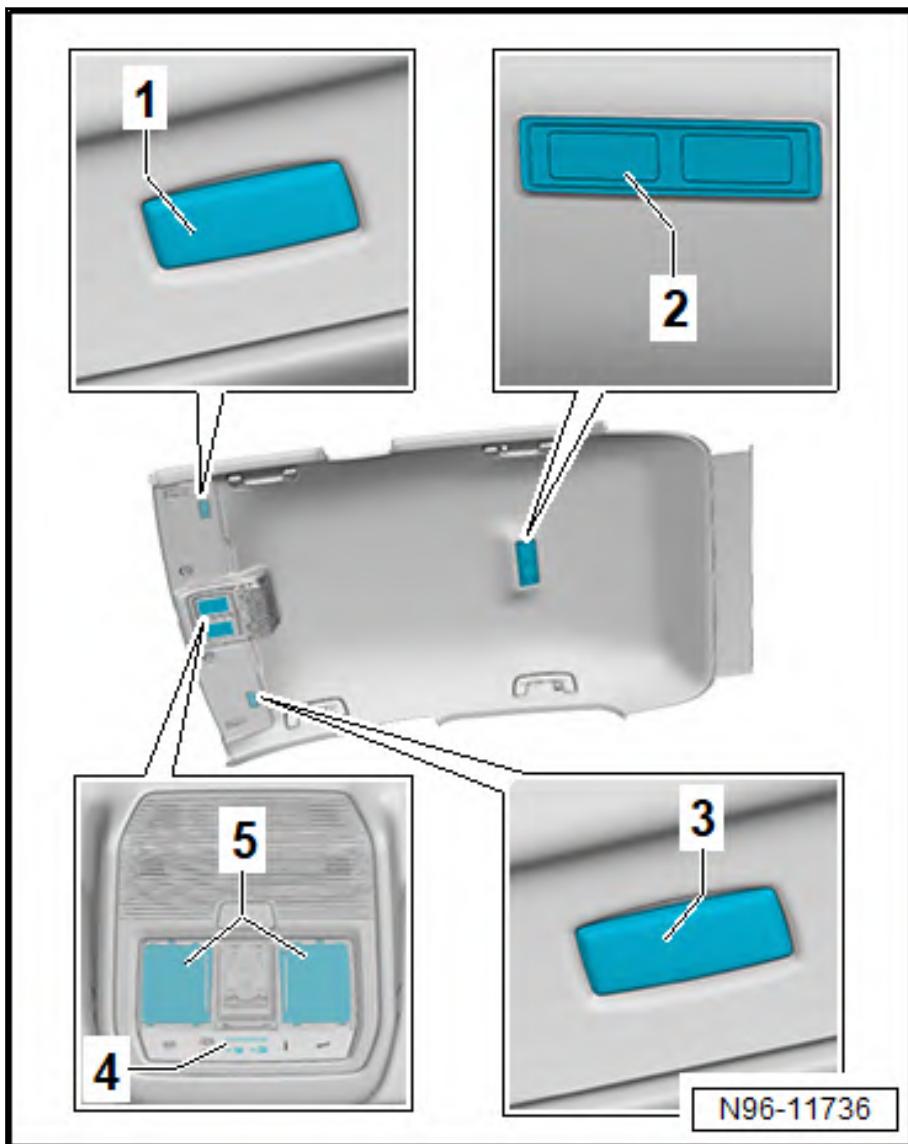
- Removing and installing [⇒ page 124](#)

4 - Warning lamp for airbag deactivated on front passenger side -K145-

- Front passenger airbag warning lamp -K145- is integrated in front interior light -WX1- and cannot be removed individually.
- Removing and installing [⇒ page 123](#)

5 - Front left reading light - W65-/front right reading light -W66-

- Front left reading light -W65-/front right reading light -W66- are integrated in front interior light -WX1- and cannot be removed individually.
- Removing and installing [⇒ page 125](#)



1.6 Removing and installing light for front left door contour lighting -L251-/light for front right door contour lighting -L252-



Note

Light for front left door contour lighting -L251-/light for front right door contour lighting -L252- are integrated in door trim and cannot be removed individually.

- Remove front door trim panels ⇒ General body repairs, interior; Rep. gr. 70; Front door trim panels; Removing and installing front door trim panels.



1.7 Removing and installing light 2 for front left door contour lighting -L296-/light 2 for front right door contour lighting -L297-

Note

Light 2 for front left door contour lighting -L296-/light 2 for front right door contour lighting -L297- are integrated in door trim and cannot be removed individually.

- Remove front door trim panels ⇒ General body repairs, interior; Rep. gr. 70; Front door trim panels; Removing and installing front door trim panels.

1.8 Removing and installing footwell light -W9-/W10-

[⇒ a1.8.1 and installing left footwell light W9", page 121](#)

[⇒ a1.8.2 and installing right footwell light W10", page 122](#)

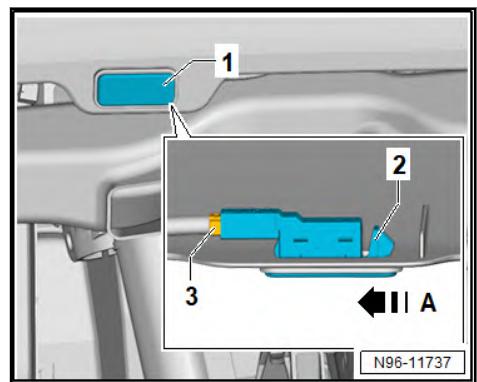
1.8.1 Removing and installing left footwell light -W9-

Removing

NOTICE

Risk of damage to component surfaces.

- Before using a lever, always mask off the components installed in visible areas using commercially available adhesive tape.
- Release locking lug -2- in direction of -arrow A-.



- Swivel out footwell light -1-.
- Disconnect electrical connector -3-.

Installing

Install in the reverse order of removal, observing the following:

- Perform functional check.



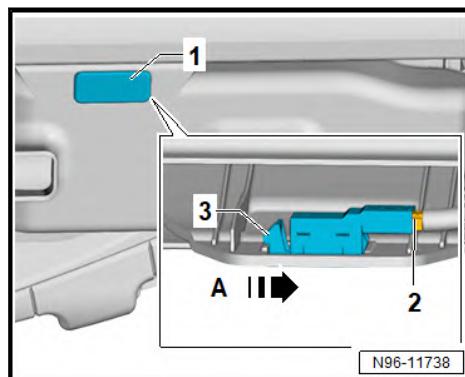
1.8.2 Removing and installing right footwell light -W10-

Removing

NOTICE

Risk of damage to component surfaces.

- Before using a lever, always mask off the components installed in visible areas using commercially available adhesive tape.
- Release locking lug -3- in direction of -arrow A-.



- Swivel out footwell light -1-.
- Disconnect electrical connector -2-.

Installing

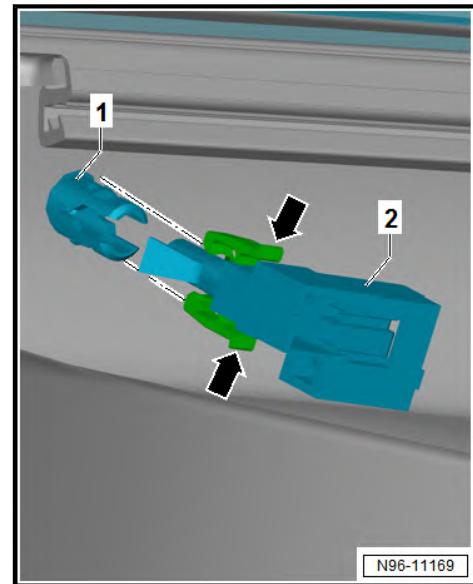
Install in the reverse order of removal, observing the following:

- Perform functional check.

1.9 Removing and installing Central locking SAFELOCK function warning lamp -K133-

Removing

- Remove front door trim panel ⇒ General body repairs, interior; Rep. gr. 70; Front door trim panels; Removing and installing front door trim panel.
- Separate electrical connector.
- Release retaining lugs -arrows-.



N96-11169

- Pull central locking SAFELOCK function warning lamp -K133- -2- out of mounting -1-.

Installing

Install in the reverse order of removal, observing the following:

- Perform functional check.

1.10 Removing and installing front passenger side airbag deactivated warning lamp -K145-



Note

Front passenger airbag warning lamp -K145- is integrated in front interior light -WX1- and cannot be removed individually.

- Removing and installing front interior light -WX1- [⇒ page 143](#)

1.11 Removing and installing luggage compartment light -W3-

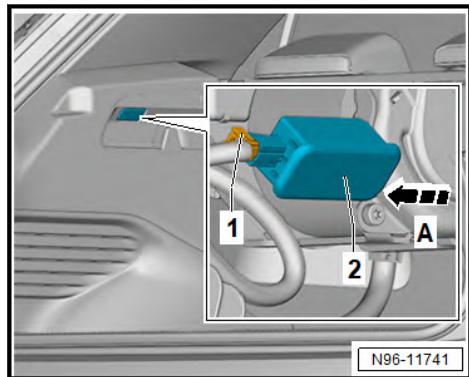
Removing



NOTICE

Risk of damage to component surfaces.

- Before using a lever, always mask off the components installed in visible areas using commercially available adhesive tape.
- Using a flat screwdriver, release luggage compartment light -W3- -2- in direction of -arrow A-.



- Disconnect electrical connector -1-.

Installing

Install in the reverse order of removal, observing the following:

- Perform functional check.

1.12 Removing and installing illuminated vanity mirror -W20/-W14-

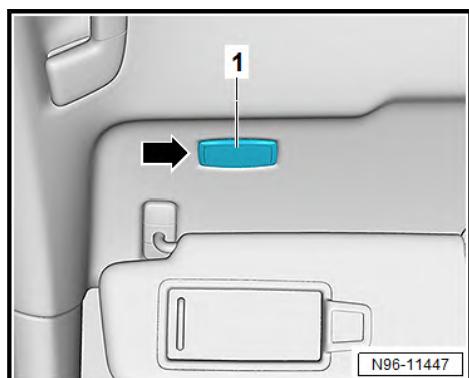
Removing

- Swing sun visor towards front.

NOTICE

Risk of damage to component surfaces.

- Before using a lever, always mask off the components installed in visible areas using commercially available adhesive tape.
- Lever off light -1- for vanity mirror using a flat head screwdriver at recess -arrow-.



- Separate electrical connector.

Installing

Install in the reverse order of removal, observing the following:

- Perform functional check.



1.13 Removing and installing front left reading lamp -W65-/front right reading lamp -W66-



Note

Front left reading light -W65-/front right reading light -W66- are integrated in front interior light -WX1- and cannot be removed individually.

- Removing and installing front interior light -WX1- [⇒ page 143](#).

1.14 Removing and installing rear left reading light -W11-/rear right reading light -W12-



Note

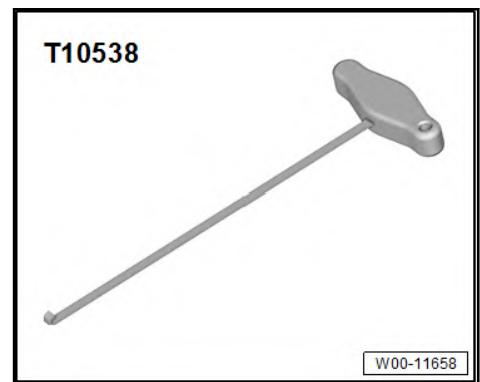
Rear left reading light -W11-/rear right reading light -W12- are integrated in front interior light -WX2- and cannot be removed individually.

- Removing and installing rear interior light -WX2- [⇒ page 144](#).

1.15 Removing and installing dynamic light strip 1 for information in dash panel -L385-

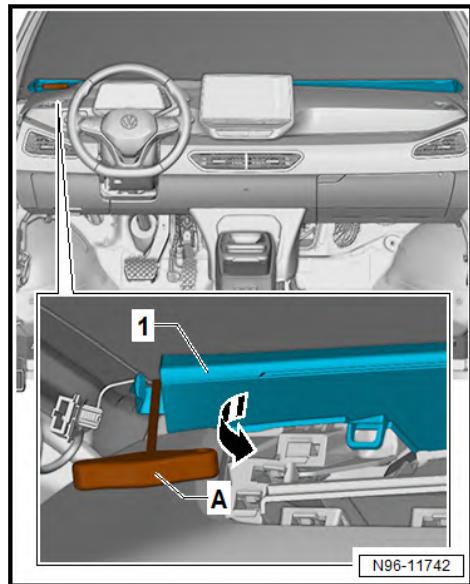
Special tools and workshop equipment required

- ◆ Hook -T10538-



Removing

- Remove A-pillar trims ⇒ General body repairs, interior; Rep. gr. 70; Trims, interior; Removing and installing A-pillar trim.
- Remove trim panel for dash panel ⇒ General body repairs, interior; Rep. gr. 70; Dash panel; Assembly overview - dash panel.
- Detach dynamic light strip 1 for information in dash panel -L385- -1- with hook -T10538- -A- from left side in direction of -arrow-.



- Secure dynamic light strip 1 for information in dash panel -L385- -1- to prevent it from re-engaging.
- Detach right side as described for left side.
- Separate electrical connector.
- Remove dynamic light strip 1 for information in dash panel -L385- -1-.

Installing

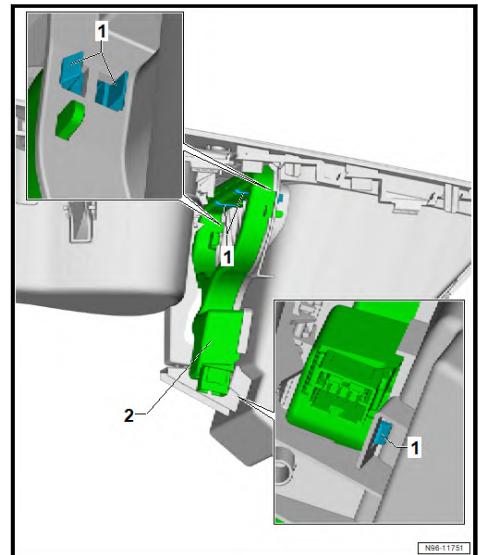
Install in the reverse order of removal, observing the following:

- Dynamic light strip 1 for information in dash panel -L385- must engage audibly.
- Perform functional check.

1.16 Removing and installing light 1 for centre console background lighting -L193-

Removing

- Remove centre console insert ⇒ General body repairs, interior; Rep. gr. 68; Centre console; Removing and installing centre console insert .
- Separate electrical connector.
- Release locking lugs -1-.



- Remove light 1 for centre console background lighting - L193- -2-.

Installing

Install in the reverse order of removal, observing the following:

- Perform functional check.

1.17 Removing and installing light for ambient lighting

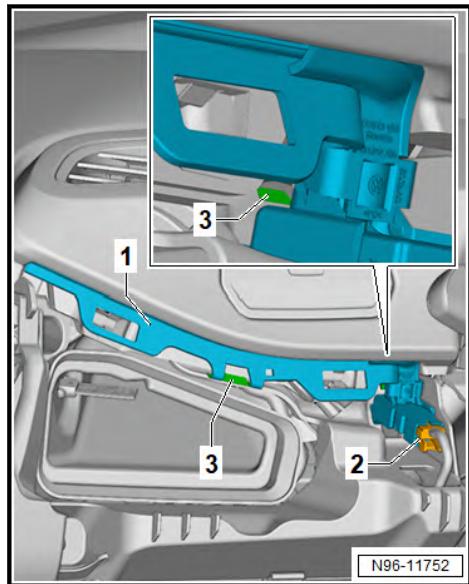
[⇒ a1.17.1 nd installing light 1 for dash panel contour lighting-L243 on driver side", page 127](#)

[⇒ a1.17.2 nd installing light 2 for dash panel contour lighting-L244 on front passenger side", page 128](#)

1.17.1 Removing and installing light 1 for dash panel contour lighting -L243- on driver side

Removing

- Remove dash panel trim on driver side ⇒ General body repairs, interior; Rep. gr. 68; Compartments/covers; Removing and installing dash panel trim on driver side.
- Disconnect electrical connector -2-.



- Release locking lugs -3-.
- Remove light 1 for dash panel contour lighting -L243- -1-.

Installing

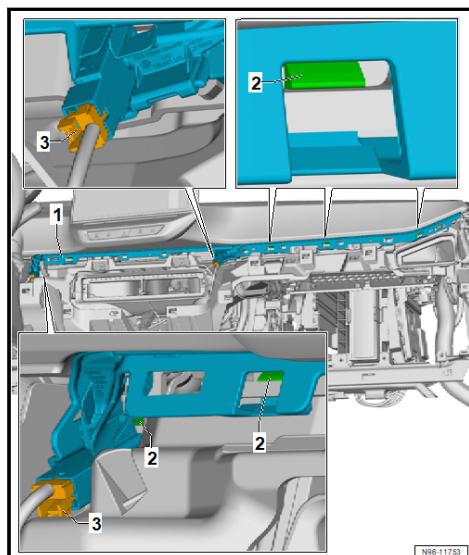
Install in the reverse order of removal, observing the following:

- Perform functional check.

1.17.2 Removing and installing light 2 for dash panel contour lighting -L244- on front passenger side

Removing

- Remove dash panel cover on front passenger side ⇒ General body repairs, interior; Rep. gr. 68; Compartments/covers; Overview of fitting locations - compartments/covers.
- Disconnect electrical connectors -3-.



- Release locking lugs -2-.
- Remove light 2 for dash panel contour lighting -L244- -1-.



Installing

Install in the reverse order of removal, observing the following:

- Perform functional check.



2 Controls

- ⇒ o2.1 f fitting locations - controls in dash panel", page 130
- ⇒ o2.2 f fitting locations - controls in front doors", page 131
- ⇒ o2.3 f fitting locations - controls in rear doors", page 132
- ⇒ o2.4 f fitting locations - controls in luggage compartment",
page 133
- ⇒ o2.5 f fitting locations - controls in roof trim", page 134
- ⇒ a2.6 nd installing operating unit for lightingEX59", page 136
- ⇒ a2.7 nd installing hazard warning lights buttonE229", page
140
- ⇒ a2.8 nd installing centre switch module in dash panelEX22",
page 140
- ⇒ a2.9 nd installing operating unit for window regulator in driver
doorEX36", page 140
- ⇒ a2.10 nd installing front passenger side window regulator
buttonE716", page 141
- ⇒ a2.11 nd installing rear window regulator buttonE711/E713",
page 142
- ⇒ a2.12 nd installing electromechanical parking brake but-
tonE538", page 142
- ⇒ a2.13 nd installing the starter buttonE378", page 143
- ⇒ a2.14 nd installing front interior light/reading light", page 143
- ⇒ a2.15 nd installing rear interior light/reading light", page 144

2.1 Overview of fitting locations - controls in dash panel



Note

*Overview shows L0L. Removal and installation are described
for L0R.*



**1 - Operating unit for lighting
-EX59-**

- Removing and installing [⇒ page 136](#)

**2 - Electromechanical parking
brake button -E538-**

- Removing and installing [⇒ page 142](#)

**3 - Key operated switch to de-
activate front passenger side
airbag -E224-**

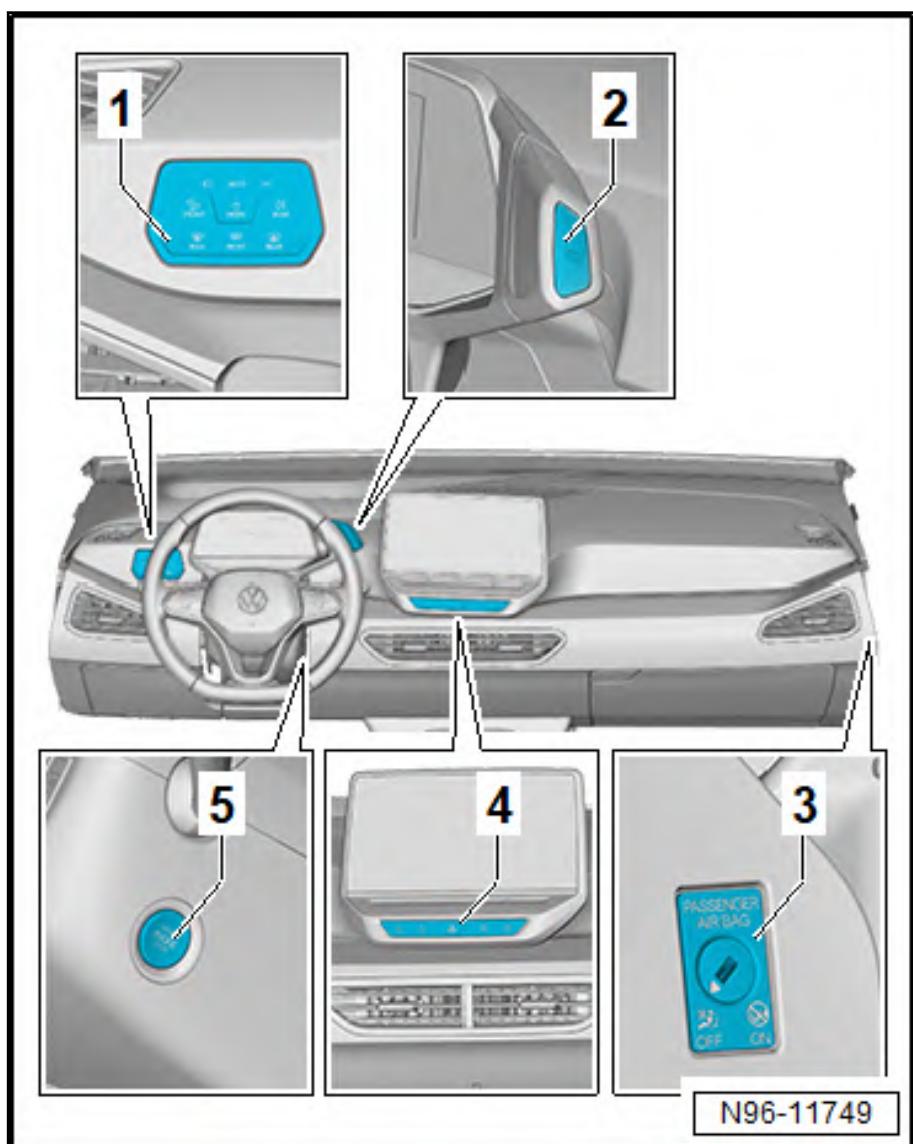
- Assembly overview
→ General body re-
pairs, interior; Rep.
gr. 69; Airbag (front
passenger side); As-
sembly overview - air-
bag (front passenger
side)

**4 - Centre switch module in
dash panel -EX22-**

- ◆ Warning lamp button - E229-
- ◆ Air conditioning system and heating button -E85-
- ◆ Button for driver profile selection -E735-
- ◆ Button for driver assist systems -E617-
- ◆ Operating unit 1 for driver and convenience functions -E791-
 - Individual buttons are installed in centre switch module in dash panel -EX22- and can-
not be removed individually.
 - Removing and installing [⇒ page 140](#)

5 - Starter button -E378-

- Removing and installing [⇒ page 143](#)



2.2 Overview of fitting locations - controls in front doors

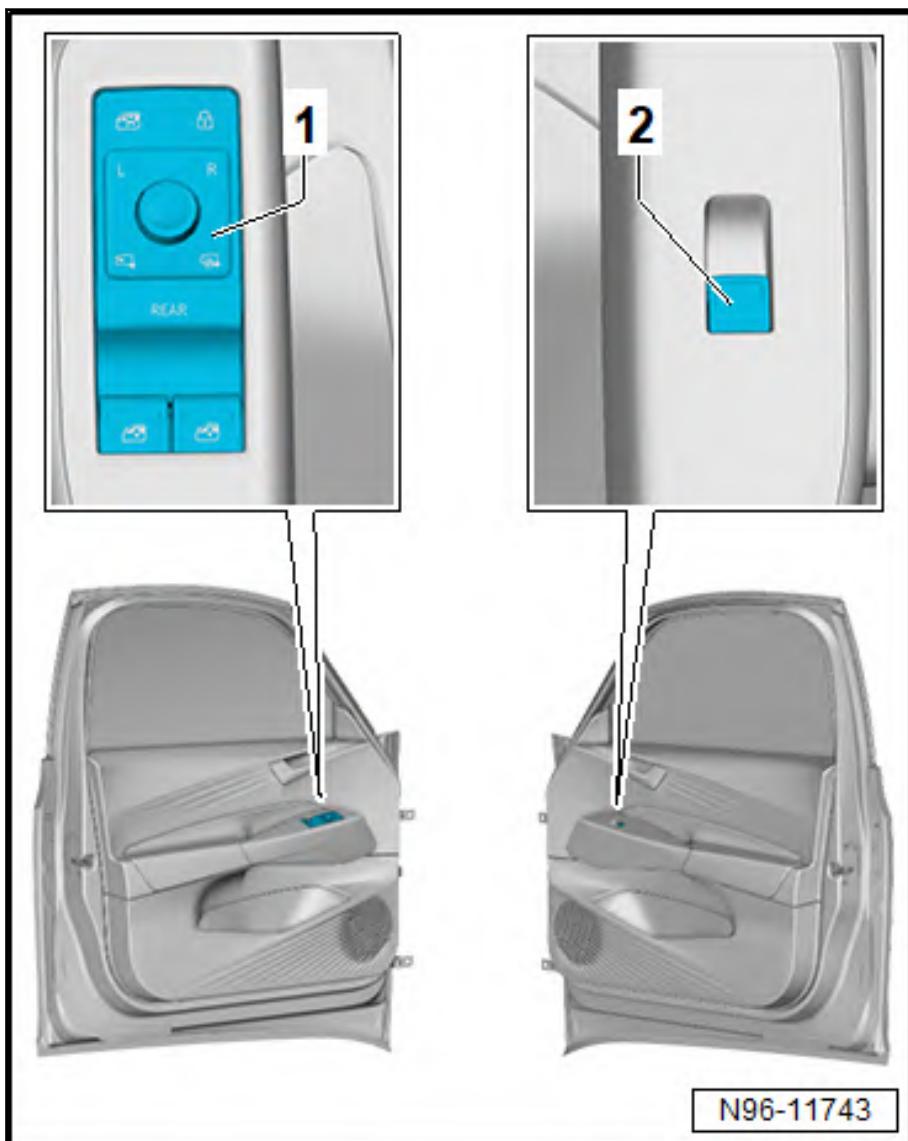


The illustration shows fitting locations for left-hand drive vehicles. Fitting locations for right-hand drive vehicles are similar.



1 - Operating unit for window regulator in driver door -EX36-

- ◆ Childproof lock button - E318-
- ◆ Operating unit for window regulator in driver door - E512-
- ◆ Front driver side window regulator button -E710-
- ◆ Rear driver side window regulator button, in driver door -E712-
- ◆ Rear passenger side window regulator button, in driver door -E714-
- ◆ Front passenger side window regulator button, in driver door -E715-
- ◆ Window regulator lock warning lamp -K194-
- ◆ Driver side interior locking button for central locking system -E308-
- ◆ Exterior mirror adjuster - EX11-
- ◆ Button illumination bulb - L76-
 - Individual buttons and switches are installed in operating unit for window regulator in driver door -EX36- and cannot be removed separately.
 - Removing and installing [⇒ page 140](#)



N96-11743

2 - Front passenger side window regulator button -E716-

- Removing and installing [⇒ page 141](#)

Not illustrated:

- ◆ Driver door contact switch -F2- and front passenger door contact switch -F3- ⇒ General body repairs, exterior; Rep. gr. 57; Door installations; Removing and installing door lock

2.3 Overview of fitting locations - controls in rear doors

**1 - Rear driver side window regulator button -E711-**

- Removing and installing [⇒ page 142](#)

2 - Rear passenger side window regulator button -E713-

- Removing and installing [⇒ page 142](#)

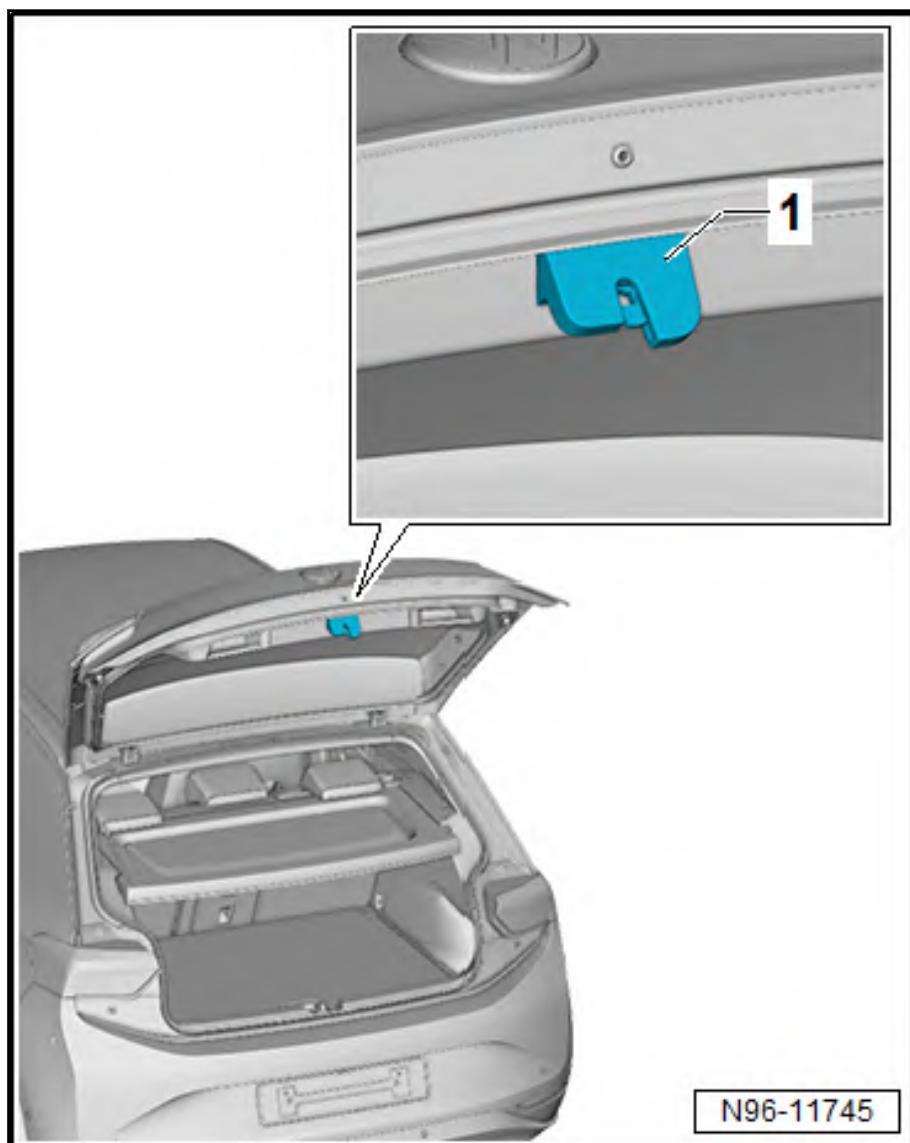
**Not illustrated:**

- ◆ Rear door contact switch, driver side -F505- and rear door contact switch, passenger side -F506- ⇒ General body repairs, exterior; Rep. gr. 58; Door installations; Removing and installing door lock

2.4 Overview of fitting locations - controls in luggage compartment



1 - Rear lid lock unit -VX25-
inc. rear lid contact switch -
F111-



N96-11745



Note

The rear lid contact switch -F111-
is integrated in the rear lid lock unit
-VX25- and cannot be renewed in-
dividually.

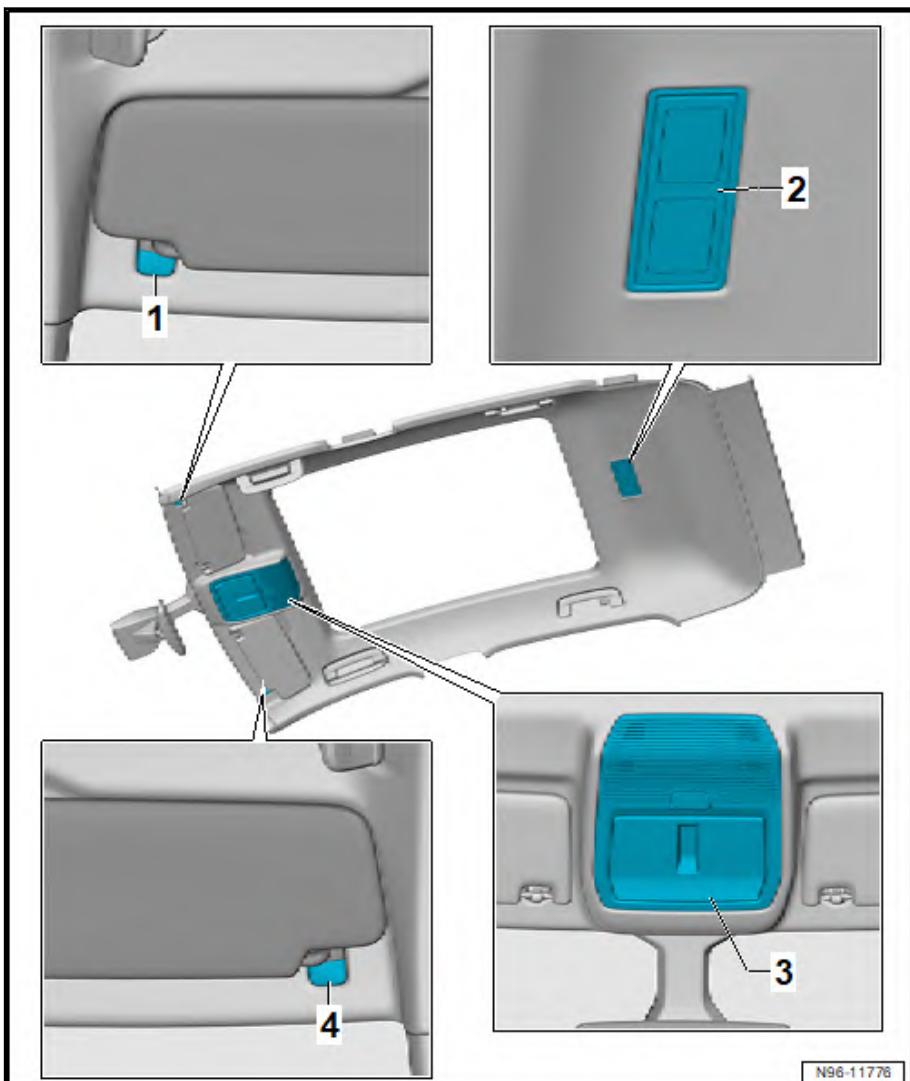
- Removing and installing ⇒ General body repairs, exterior; Rep. gr. 55; Rear lid; Removing and installing rear lid lock

2.5 Overview of fitting locations - controls in roof trim



1 - Driver vanity mirror contact switch -F147-

- The vanity mirror contact switch is as integral part of the sun visor bracket and cannot be renewed individually if defective.
- Removing and installing ⇒ General body repairs, interior; Rep. gr. 68; Equipment; Removing and installing sun visor



N96-11776

2 - Rear interior light -WX2-

- ◆ Rear left reading light - W11-
- ◆ Rear right reading light - W12-
- ◆ Rear left reading light switch -E454-
- ◆ Rear right reading light switch -E455-
- The buttons are an integral part of the rear interior light -WX2- and cannot be removed individually.
- Removing and installing ⇒ [page 144](#)

3 - Front interior light -WX1-

- ◆ Button 1 for roof roller blind -E584-
- ◆ Front left reading light - W65-
- ◆ Front right reading light -W66-
- ◆ Front interior light button -E326-
- ◆ Rear interior light button -E327-
- ◆ Front left reading light button -E633-
- ◆ Front right reading light button -E634-
- ◆ Emergency assistance call button -E276-
- ◆ Button illumination bulb -L76-
- ◆ Telephone microphone -R38-
- ◆ Front passenger airbag deactivated warning lamp -K145-
- The buttons are an integral part of the front interior light -WX1- and cannot be removed individually.
- Removing and installing ⇒ [page 143](#)

4 - Front passenger vanity mirror contact switch -F148-

- The vanity mirror contact switch is as integral part of the sun visor bracket and cannot be renewed individually if defective.
- Removing and installing ⇒ General body repairs, interior; Rep. gr. 68; Equipment; Removing and installing sun visor



2.6 Removing and installing operating unit for lighting -EX59-

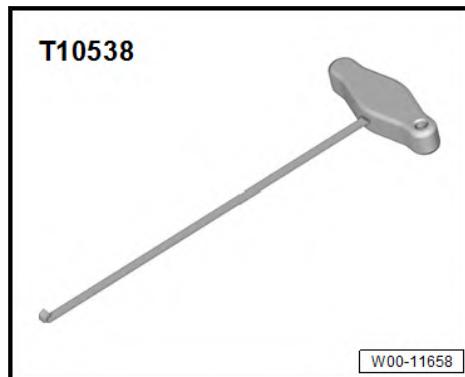
⇒ [a2.6.1 nd installing operating unit for lightingEX59, left-hand drive vehicle", page 136](#)

⇒ [a2.6.2 nd installing operating unit for lightingEX59, right-hand drive vehicle", page 138](#)

2.6.1 Removing and installing operating unit for lighting -EX59-, left-hand drive vehicle

Special tools and workshop equipment required

- ◆ Hook -T10538-



T10538

W00-11658

- ◆ Hand drill
- ◆ 8 mm drill bit



Note

Operating unit for lighting -EX59- cannot be removed intact.



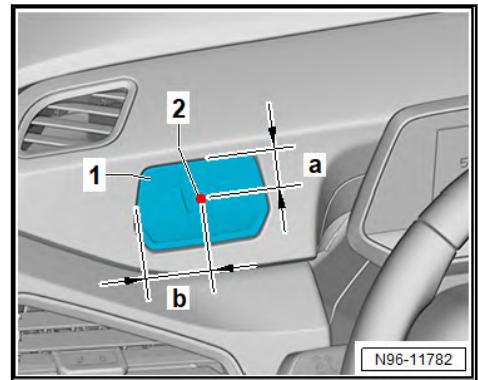
CAUTION

Risk of hands and eyes being injured by glass splinters.
When removing damaged components, glass splinters may enter eyes and flesh wounds may occur.

- Wear protective goggles.
- Wear protective gloves.

Removing

- Deactivate operational readiness and switch off all electrical consumers.
- Store the vehicle key and other entry and start authorisation systems outside the vehicle to prevent the vehicle from being switched on unintentionally.
- Mark centre of operating unit for lighting -EX59- -1- according to dimension -a- and -b- -2-.



- ◆ a = 26 mm
- ◆ b = 42 mm

NOTICE

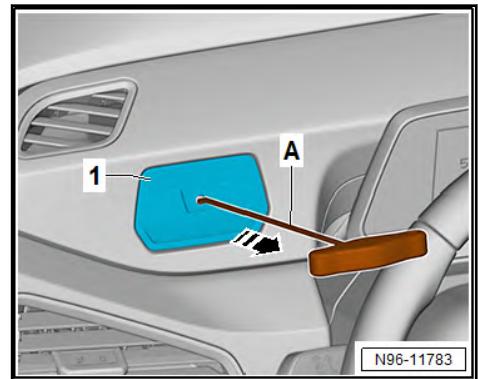
Danger of damage to components.

- Protect dash panel and dash panel vent from swarf.

NOTICE

Risk of air duct being damaged.

- Mark 30 mm for plunge depth of drill bit.
- Drill 30 mm into operating unit for lighting -EX59- -1- at marking -2- using 8 mm drill bit.
- Guide hook -T10538- -A- through hole.



- Engage hook -T10538- -A- in operating unit for lighting -EX59- -1-.
- Pull out operating unit for lighting -EX59- -1- in direction of -arrow-.
- Separate electrical connector.

Installing

Install in the reverse order of removal, observing the following:

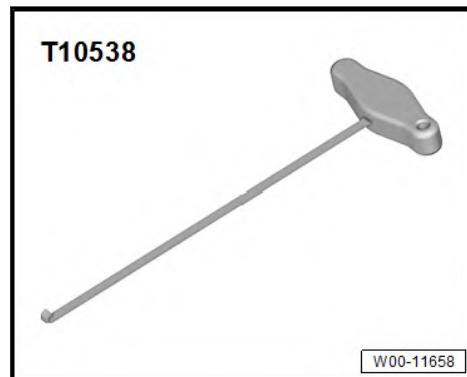
- Operating unit for lighting -EX59- must be heard to engage.
- Perform functional check.



2.6.2 Removing and installing operating unit for lighting -EX59-, right-hand drive vehicle

Special tools and workshop equipment required

- ◆ Hook -T10538-



- ◆ Hand drill
- ◆ 8 mm drill bit



Note

Operating unit for lighting -EX59- cannot be removed intact.



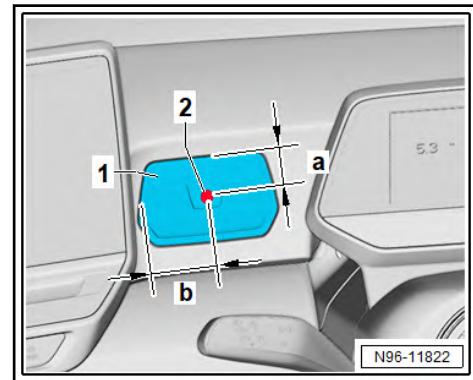
CAUTION

Risk of hands and eyes being injured by glass splinters.
When removing damaged components, glass splinters may enter eyes and flesh wounds may occur.

- Wear protective goggles.
- Wear protective gloves.

Removing

- Deactivate operational readiness and switch off all electrical consumers.
- Store the vehicle key and other entry and start authorisation systems outside the vehicle to prevent the vehicle from being switched on unintentionally.
- Remove steering wheel ⇒ Running gear, axles, steering; Rep. gr. 48; Steering wheel; Removing and installing steering wheel.
- Mark centre of operating unit for lighting -EX59- -1- according to dimension -a- and -b- -2-.



- ◆ a = 26 mm
- ◆ b = 42 mm

NOTICE

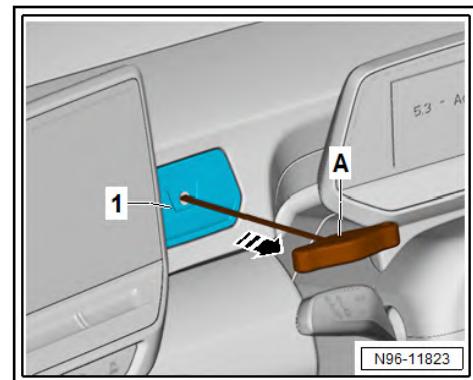
Danger of damage to components.

- Protect dash panel and dash panel vent from swarf.

NOTICE

Risk of air duct being damaged.

- Mark 30 mm for plunge depth of drill bit.
- Drill 30 mm into operating unit for lighting -EX59- -1- at marking -2- using 8 mm drill bit.
- Guide hook -T10538- -A- through hole.



- Engage hook -T10538- -A- in operating unit for lighting -EX59- -1-.
- Pull out operating unit for lighting -EX59- -1- in direction of -arrow-.
- Separate electrical connector.

Installing

Install in the reverse order of removal, observing the following:

- Operating unit for lighting -EX59- must be heard to engage.
- Perform functional check.



2.7 Removing and installing hazard warning lights button -E229-



Note

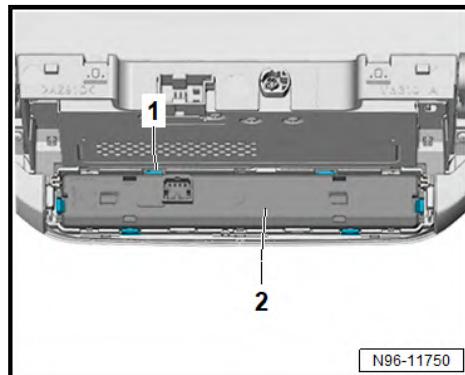
The hazard warning lights button -E229- is integrated in the centre switch module in dash panel -EX22- and cannot be renewed individually.

- Removing and installing centre switch module in dash panel -EX22- [⇒ page 140](#).

2.8 Removing and installing centre switch module in dash panel -EX22-

Removing

- Remove display unit for front information display and operating unit control unit -J685- ⇒ Communication; Rep. gr. 91; Infotainment system; Removing and installing display unit for front information display and operating unit control unit J685.
- Release fasteners -1-.



- Remove centre switch module in dash panel -EX22- -2-.

Installing

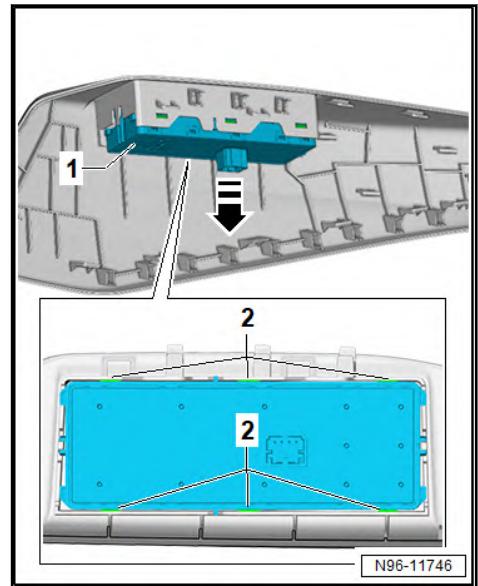
Install in the reverse order of removal, observing the following:

- Perform functional check.

2.9 Removing and installing operating unit for window regulator in driver door - EX36-

Removing

- Remove trim for button ⇒ General body repairs, interior; Rep. gr. 70; Front door trims; Removing and installing trim for button.
- Release fasteners -2-.



- Remove operating unit for window regulator in driver door -EX36- -1- in direction of -arrow-.

Installing

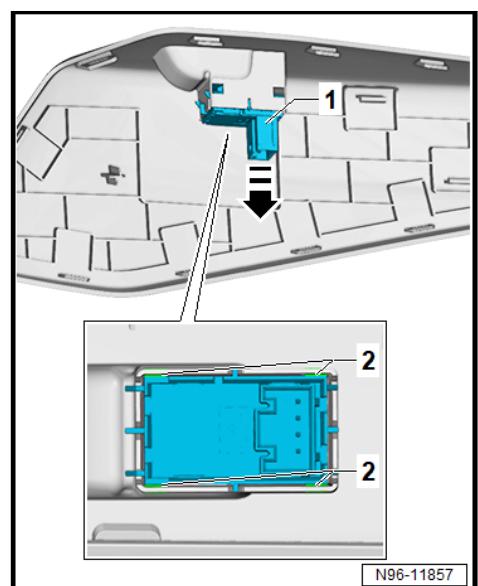
Install in the reverse order of removal, observing the following:

- Perform functional check.

2.10 Removing and installing front passenger side window regulator button - E716-

Removing

- Remove trim for button ⇒ General body repairs, interior; Rep. gr. 70; Front door trims; Removing and installing trim for button.
- Release fasteners -2-.



- Remove front passenger side window regulator button - E716- -1- in direction of -arrow-.



Installing

Install in the reverse order of removal, observing the following:

- Perform functional check.

2.11 Removing and installing rear window regulator button -E711-/E713-

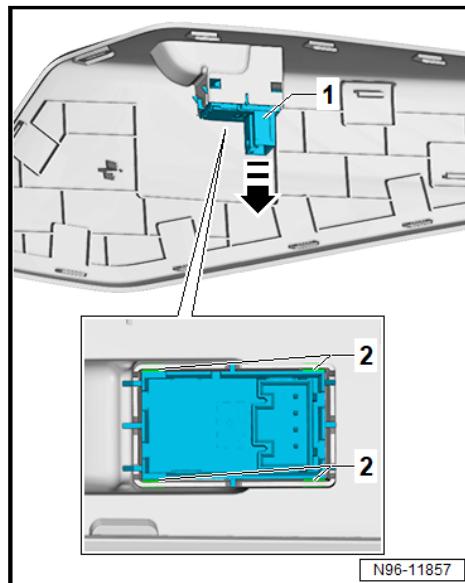


Note

Removal and installation are described for the left vehicle side as an example.

Removing

- Remove trim for button ⇒ General body repairs, interior; Rep. gr. 70; Front door trims; Removing and installing trim for button.
- Release fasteners -2-.



- Remove front passenger side window regulator button - E716- -1- in direction of -arrow-.

Installing

Install in the reverse order of removal, observing the following:

- Perform functional check.

2.12 Removing and installing electromechanical parking brake button -E538-



Note

Electromechanical parking brake button -E538- is integrated in steering column electronics control unit -J527- and cannot be removed individually.

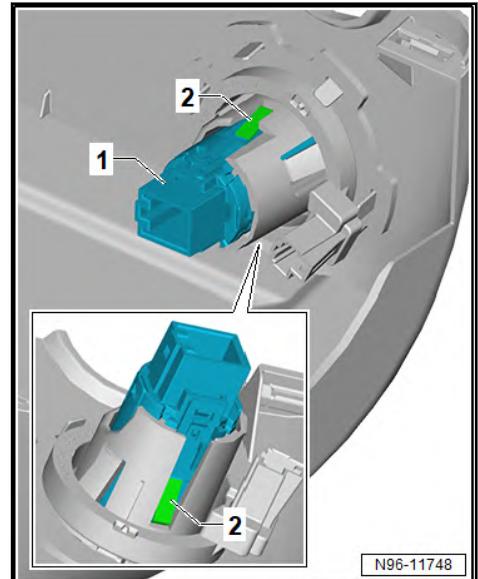
- Removing and installing steering column electronics control unit -J527- [⇒ page 109](#).



2.13 Removing and installing the starter button -E378-

Removing

- Remove lower steering column trim ⇒ General body repairs, interior; Rep. gr. 68; Compartments and covers; Removing and installing lower steering column trim.
- Release retaining clips -2-.



N96-11748

- Remove starter button -E378- -1-.

Installing

Install in reverse order of removal.

2.14 Removing and installing front interior light/reading light

Special tools and workshop equipment required

- ◆ Removal wedge set -VAS 895 015-



W00-12129



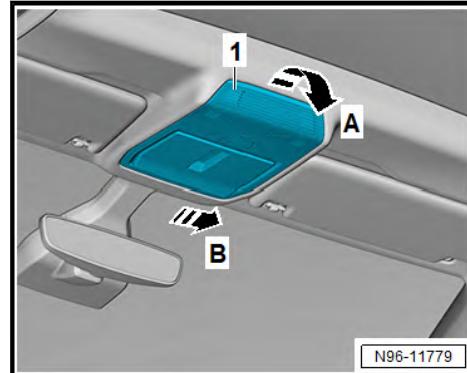
Risk of damage to component surfaces.

- Before using a lever, always mask off the components installed in visible areas using commercially available adhesive tape.



Removing

- Using removal wedge set -VAS 895 015-, release front interior light -WX1- -1- in rear area in direction of -arrow A-.



- Disconnect electrical connectors.
- Remove front interior light -WX1- -1- in direction of -arrow B-.

Installing

Install in the reverse order of removal, observing the following:

- Front interior light -WX1- must engage audibly.
- Perform functional check.

2.15 Removing and installing rear interior light/reading light

Special tools and workshop equipment required

- Removal wedge set -VAS 895 015-



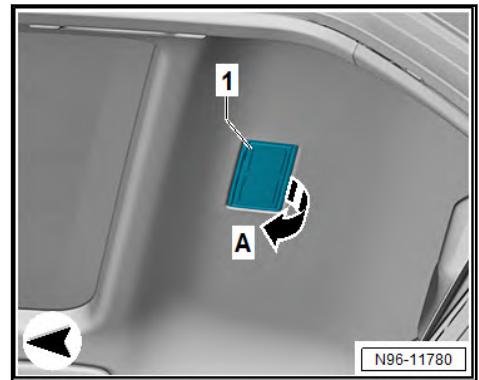
NOTICE

Risk of damage to component surfaces.

- Before using a lever, always mask off the components installed in visible areas using commercially available adhesive tape.

Removing

- Using removal wedge set -VAS 895 015-, release rear interior light -WX2- -1- in rear area in direction of -arrow A-.



- Remove rear interior light -WX2- -1- until electrical connector is accessible.
- Separate electrical connector.
- Remove rear interior light -WX2- -1-.

Installing

Install in the reverse order of removal, observing the following:

- Rear interior light -WX2- must engage audibly.
- Perform functional check.



3 Anti-theft alarm

- ⇒ [o3.1 verview - interior monitor", page 146](#)
- ⇒ [a3.2 nd installing alarm hornH12", page 147](#)
- ⇒ [a3.3 nd installing anti-theft alarm sensorG578", page 148](#)

3.1 Assembly overview - interior monitor

- ⇒ [o3.1.1 verview - interior monitoring, LHD vehicles", page 146](#)
- ⇒ [o3.1.2 verview - interior monitoring, RHD vehicles", page 146](#)

3.1.1 Assembly overview - interior monitoring, LHD vehicles

1 - Alarm horn -H12-

- Removing and installing ⇒ [page 147](#)

2 - Bracket for alarm horn - H12-

3 - Shear nut

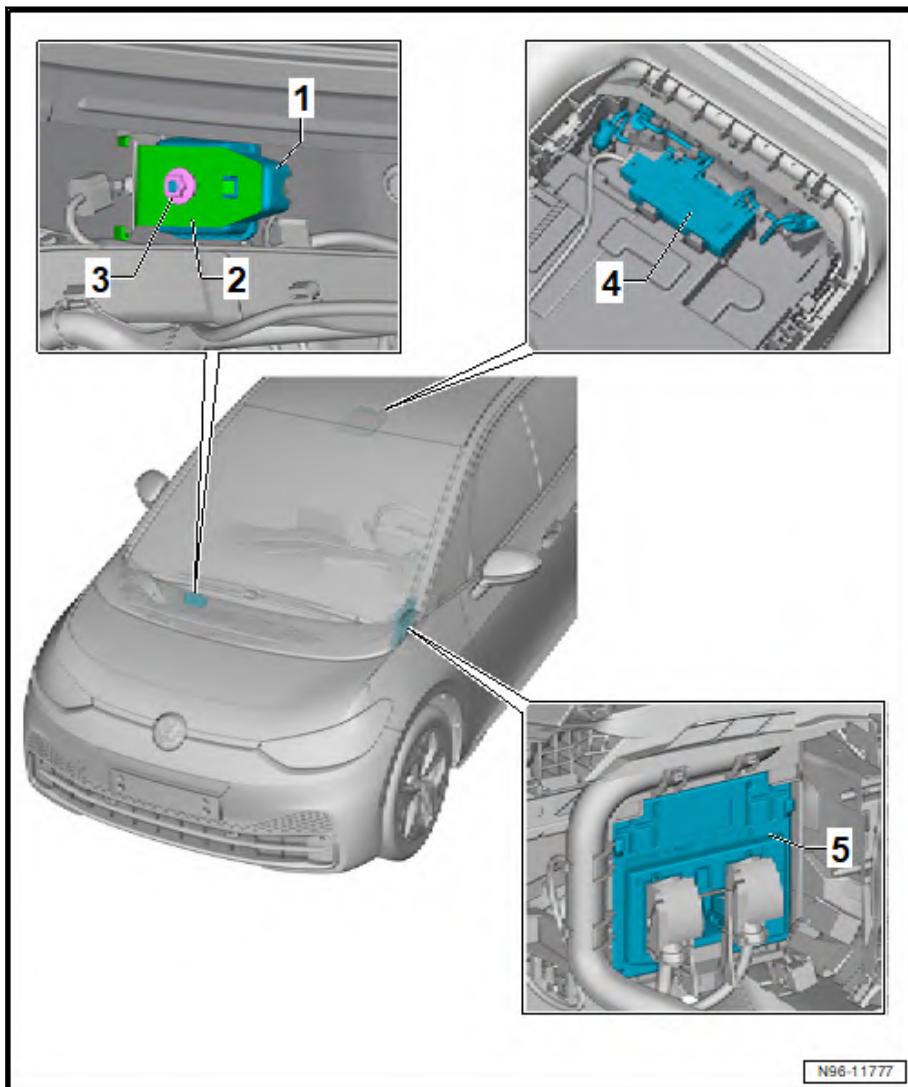
- Renew after removal
- Tighten until head shears off

4 - Anti-theft alarm sensor - G578-

- Removing and installing ⇒ [page 148](#)
- Needs parametrisation after renewal ⇒ [page 148](#).

5 - Onboard supply control unit -J519-

- Assembly overview ⇒ [page 163](#)



3.1.2 Assembly overview - interior monitoring, RHD vehicles

**1 - Alarm horn -H12-**

- Removing and installing [page 147](#)

2 - Bracket for alarm horn - H12-**3 - Shear nut**

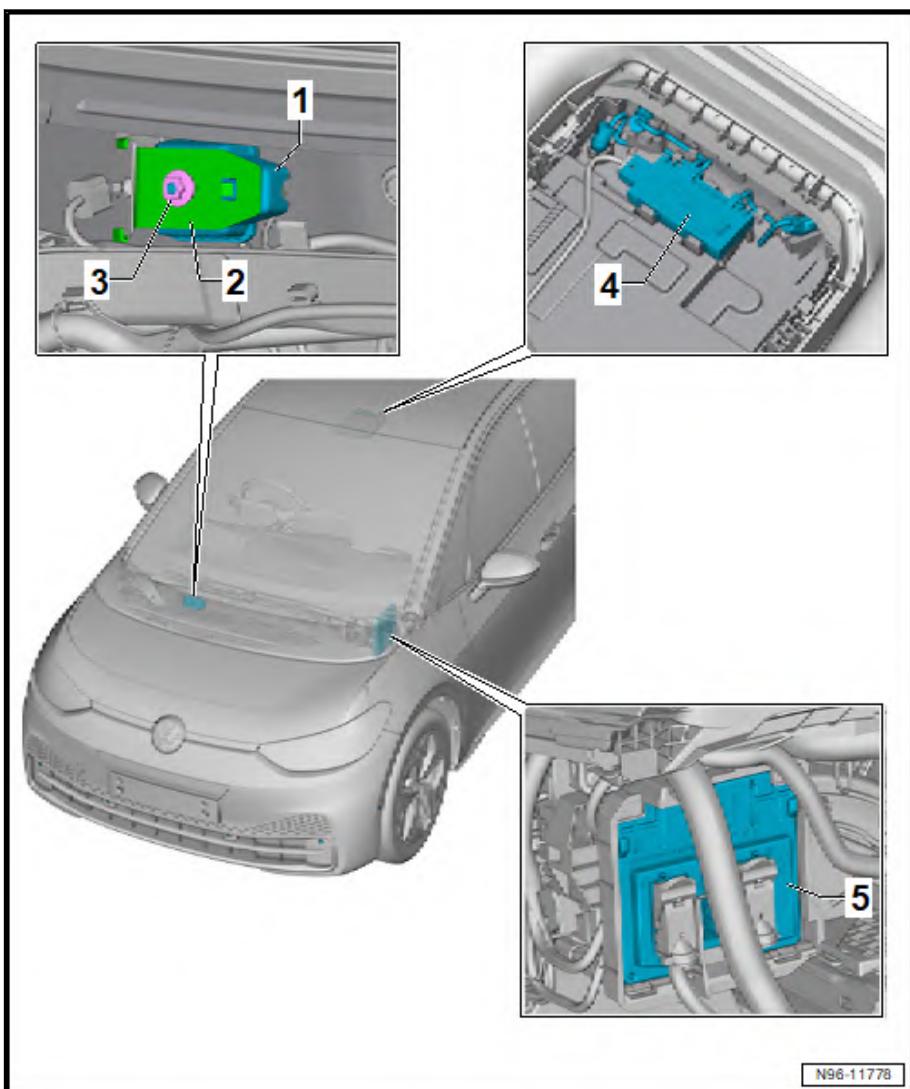
- Renew after removal
- Tighten until head shears off

4 - Anti-theft alarm sensor - G578-

- Removing and installing [page 148](#)
- Needs parametrisation after renewal [page 148](#)

5 - Onboard supply control unit -J519-

- Assembly overview [page 164](#)



N96-11778

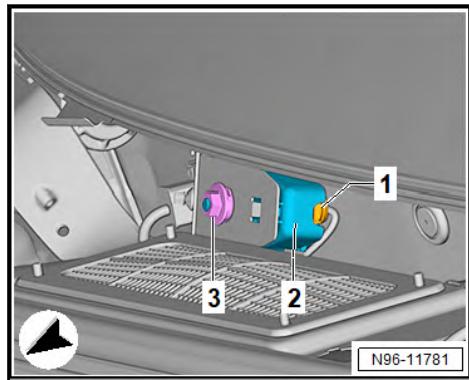
3.2 Removing and installing alarm horn - H12-

**Note**

The metal washer cannot be removed intact.

Removing

- Remove plenum chamber cover ⇒ General body repairs, exterior; Rep. gr. 50; Bulkhead; Removing and installing plenum chamber cover.
- Destroy shear nut -3- using suitable workshop equipment.



- Remove alarm horn -2- from plenum chamber.
- Disconnect electrical connector -1-.

Installing

Install in the reverse order of removal, observing the following:

- Renew shear nuts after removal.
- Tighten new shear nut until head shears off.
- Perform functional check.

Specified torques

- ◆ [⇒ o3.1 overview - interior monitor”, page 146](#)

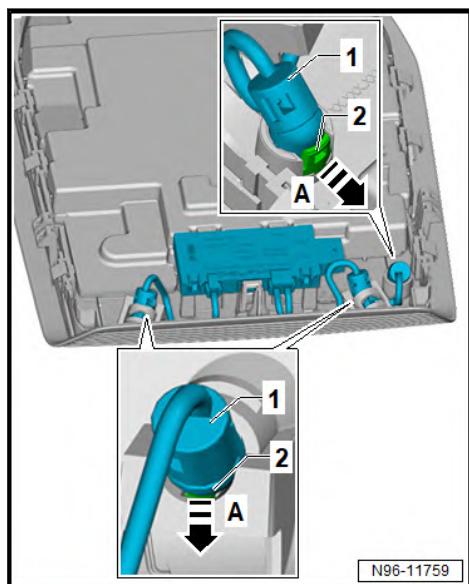
3.3 Removing and installing anti-theft alarm sensor -G578-



If anti-theft alarm system sensor -G578- is renewed, anti-theft alarm system sensor -G578- must be parametrised.

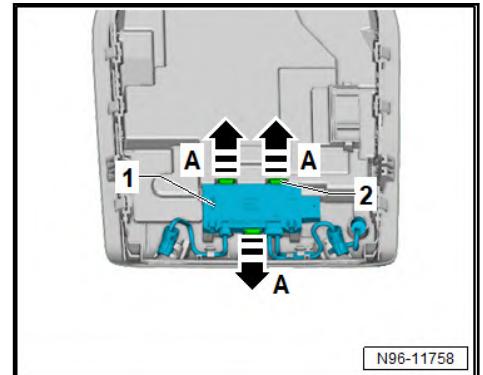
Removing

- Remove front interior light -WX1- [⇒ a2.14 nd installing front interior light/reading light”, page 143](#).
- Release retaining tabs -2- in direction of -arrow A-.





- Remove single sensor -1- from roof module.
- Release locking lugs -2- in direction of -arrow A-.



- Detach anti-theft alarm sensor -G578- -1-.

Installing

Install in the reverse order of removal, observing the following:

- Parametrise anti-theft alarm system sensor -G578- ⇒ Vehicle diagnostic tester.
- Perform functional check.



4 Cigarette lighter, socket

⇒ a4.1 nd installing 12 V socket 3U19", page 150

4.1 Removing and installing 12 V socket 3 -U19-

In luggage compartment

All instructions and notes regarding this chapter are available under ⇒ Electrical system - General information; Rep. gr. 96;
12 V socket; Removing and installing 12 V socket



97 – Wiring

1 Relay carriers, fuse holders, electronics boxes

[⇒ o1.1 f fitting locations - relay carriers, fuse holders, E-boxes”, page 151](#)

[⇒ a1.2 nd installing electronics box \(E-box\)”, page 154](#)

[⇒ a1.3 nd installing fuse holder ASA”, page 155](#)

[⇒ a1.4 nd installing fuse holder BSB”, page 157](#)

[⇒ a1.5 nd installing fuse holder CSC”, page 159](#)

[⇒ a1.6 nd installing bracket for relay and fuse holder behind dash panel on driver side”, page 160](#)

1.1 Overview of fitting locations - relay carriers, fuse holders, E-boxes

[⇒ c1.1.1 arriers, fuse carriers, electronics box \(engine compartment\)”, page 151](#)

[⇒ c1.1.2 arrier, fuse carrier in dash panel/A-pillar, LHD vehicles”, page 153](#)

[⇒ c1.1.3 arrier, fuse carrier in dash panel/A-pillar, RHD vehicles”, page 153](#)

1.1.1 Relay carriers, fuse carriers, electronics box (engine compartment)

- ## 1 - Cover

- ## 2 - Positive cable

- ### 3 - Retaining clip

- ## 4 - Electrical wire

- See current flow diagram for pin assignment ⇒ Current flow diagrams, Electrical fault finding and Fitting locations

- 12 Nm

- ## 5 - Electrical wire

- ❑ See current flow diagram for pin assignment ⇒ Current flow diagrams, Electrical fault finding and Fitting locations

- 12 Nm

- ## 6 - Electrical wire

- See current flow diagram for pin assignment ⇒ Current flow diagrams, Electrical fault finding and Fitting locations

- 12 Nm

- 7 - Electrical wire

- See current flow diagram for pin assignment ⇒ Current flow diagrams, Electrical fault finding and Fitting locations

- 12 Nm

- 8 - Electrical wire

- See current flow diagram for pin assignment ⇒ Current flow diagrams, Electrical fault finding and Fitting locations

- 12 Nm

- 9 - Cover

- For electronics box in engine compartment

- #### **10 - Fuse holder A -SA-**

- #### Removing and installing [page 155](#)

- #### **I - Fuse holder B -SB-**

- ### Remove

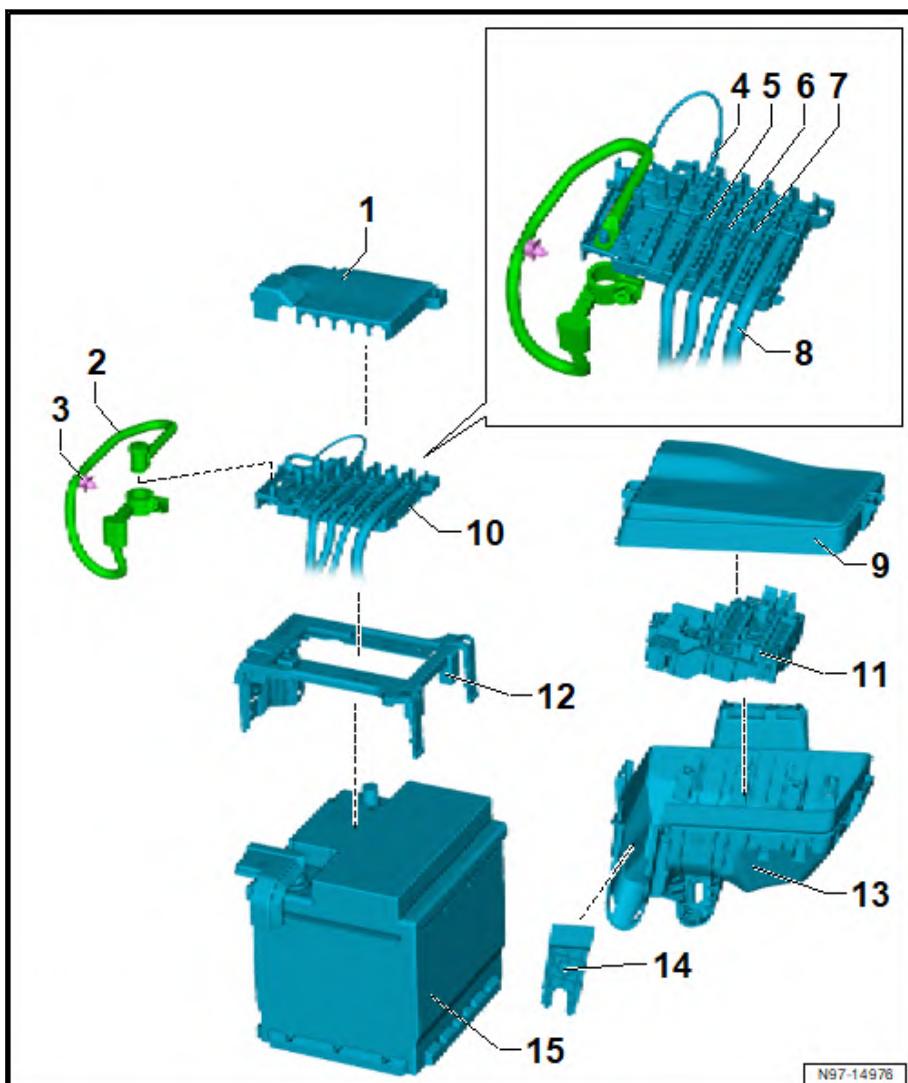
- ## 2 Bracket

- For fuse holder A -SA-

- ### **3 - Electronics box in engine compartment**

- ## ❑ Removing

- 1 - Front cover



Volkswagen Technical Site: <https://vwts.ru>



15 - Battery

- Removing and installing [⇒ page 8](#)

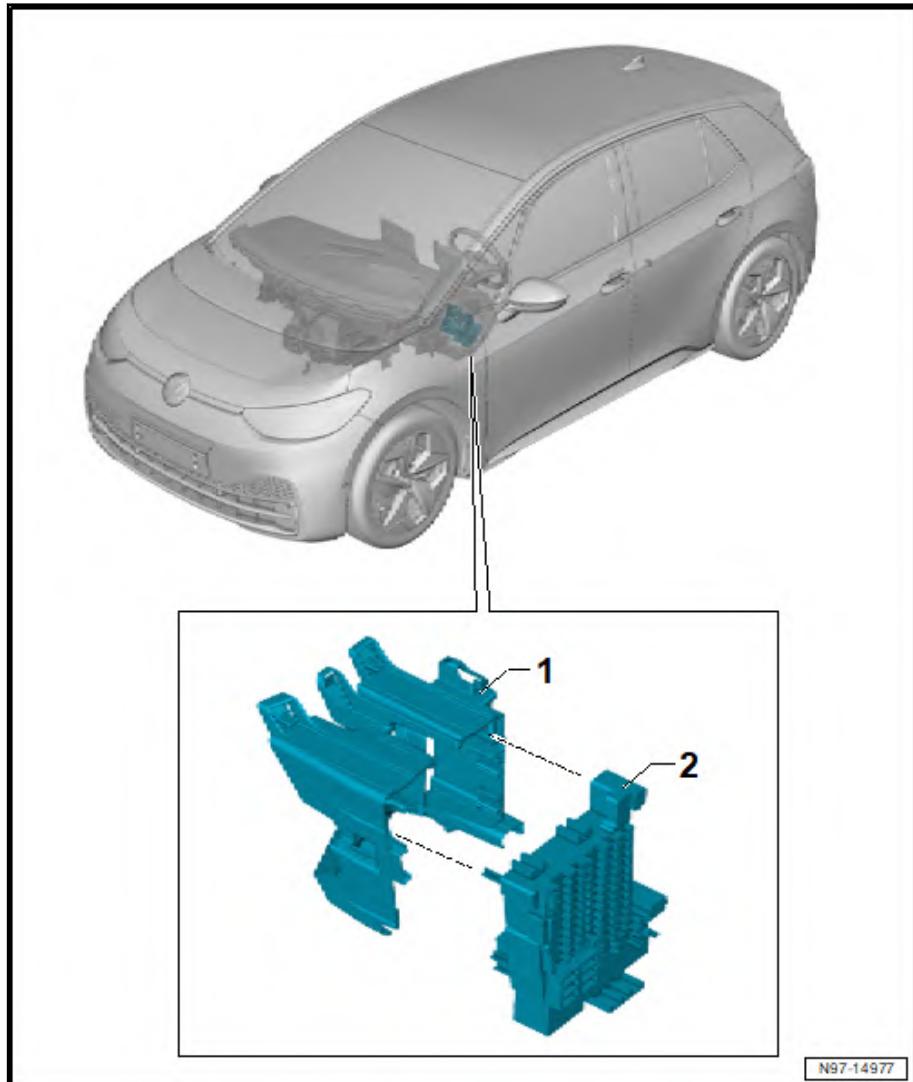
1.1.2 Relay carrier, fuse carrier in dash panel/A-pillar, LHD vehicles

1 - Bracket

- For fuse holder C -SC-
- Removing and installing [⇒ page 160](#)

2 - Fuse holder C -SC-

- Removing and installing [⇒ page 159](#)



1.1.3 Relay carrier, fuse carrier in dash panel/A-pillar, RHD vehicles

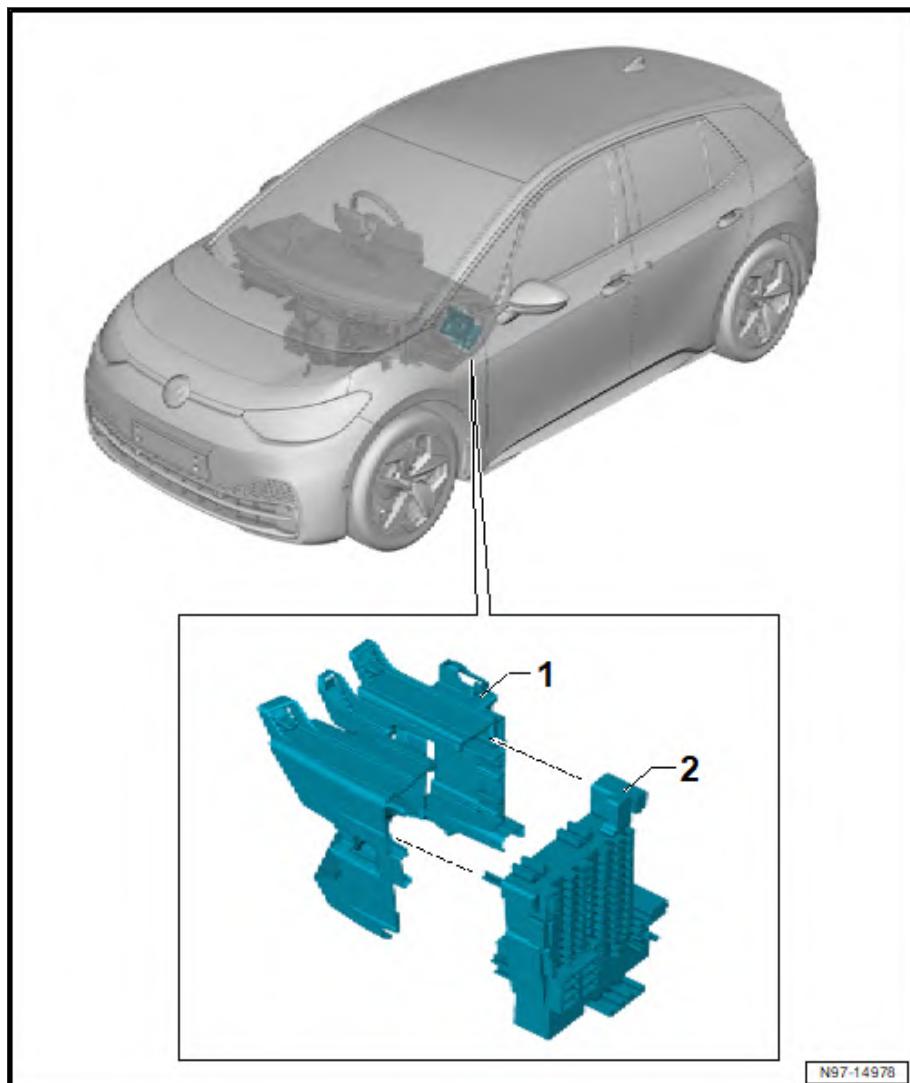


1 - Bracket

- For fuse holder C -SC-
- Removing and installing [⇒ page 160](#)

2 - Fuse holder C -SC-

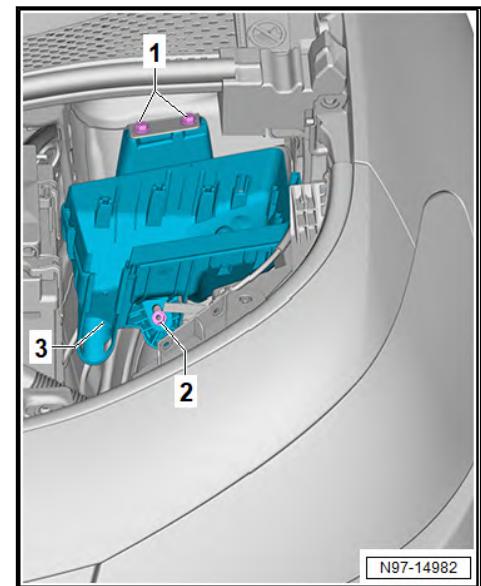
- Removing and installing [⇒ page 159](#)



1.2 Removing and installing electronics box (E-box)

Removing

- Remove fuse holder B -SB- [⇒ page 157](#) .
- Unscrew nuts -2-.



- Unscrew bolts -1-.
- Remove electronics box from engine compartment -3-.

Installing

Install in the reverse order of removal, observing the following:

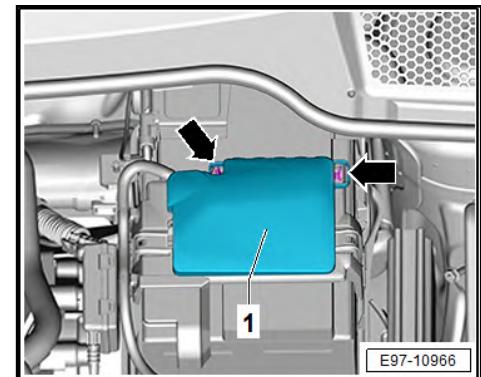
Specified torques

Component	Specified torque
Securing nut -2-	8 Nm
Securing bolts -1-	8 Nm

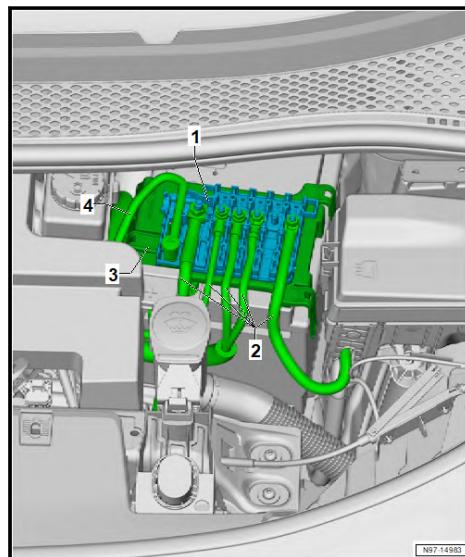
1.3 Removing and installing fuse holder A -SA-

Removing

- Disconnect battery [page 11](#).
- Release retaining lugs -arrows-.



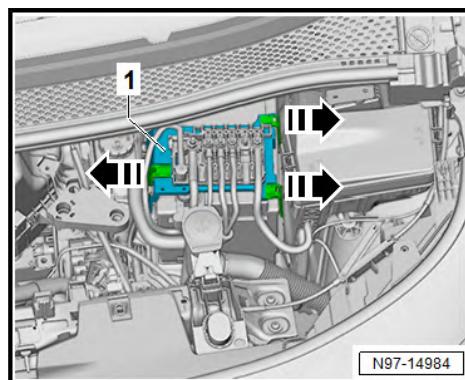
- Detach cover -1-.
- Mark wires -2-.



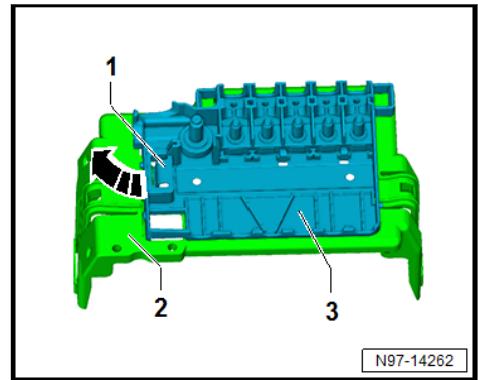
! NOTICE

Danger of connectors being inserted in incorrect position.

- The exact pin assignment should be gleaned from the latest current flow diagram ⇒ Current flow diagrams, Electrical fault finding and Fitting locations.
- Take photographs of the assignment, if necessary.
- Unscrew nuts of electrical wires -2-.
- Remove electrical wires -2-.
- Remove cable ties from bracket -3-.
- Unscrew nut of positive cable -4-.
- Remove positive cable -4- from fuse holder A -SA- -1-.
- Release retaining tabs on bracket -1- in -direction of arrow-.



- Remove bracket for fuse holder A -SA- -1-.
- Release retaining lug -1-.



- Remove fuse holder A -SA- -3- in -direction of arrow- from bracket -2-.

Installing

Install in reverse order of removal.

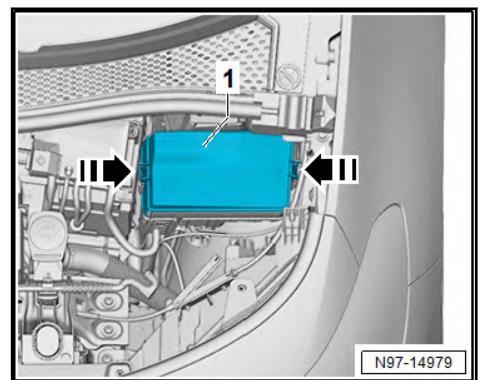
Specified torques

- ◆ [⇒ o1.1 f fitting locations - relay carriers, fuse holders, E-box-es", page 151](#)

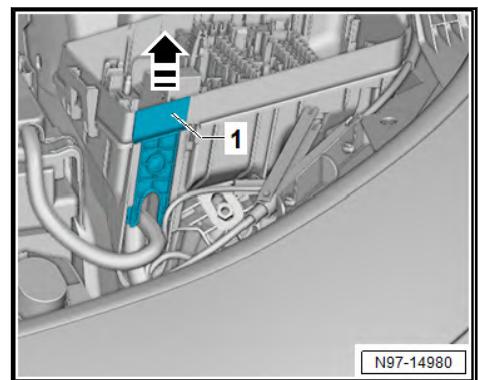
1.4 Removing and installing fuse holder B -SB-

Removing

- With operational readiness deactivated, disconnect earth cable from battery [⇒ page 13](#).
- Release retaining lugs -arrow-.

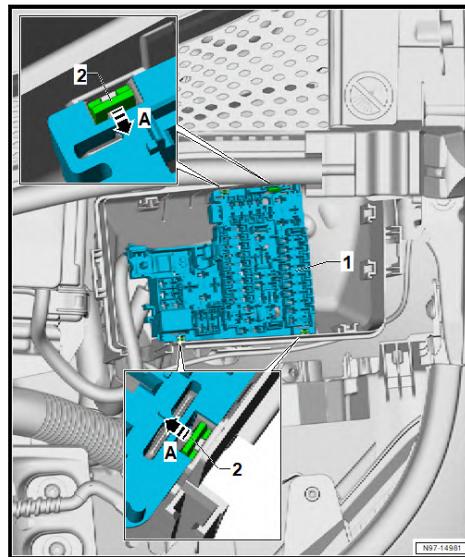


- Remove cover -1-.
- Pull off front cover -1- in direction of -arrow-.

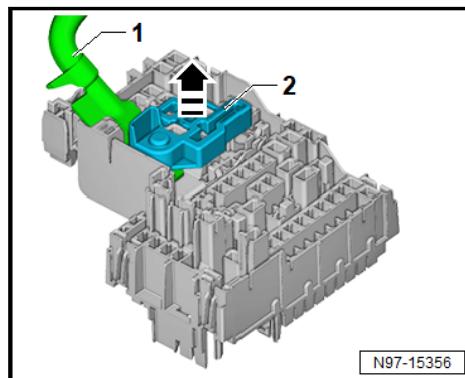




- Release fasteners -2- in direction of -arrow A-.



- Remove fuse holder B -SB- -1-.
- Remove protective cap -2- in direction of -arrow-.



- Unscrew nut of cable -1-.
- Remove wire -1-.

NOTICE

Danger of connectors being inserted in incorrect position.

- The exact pin assignment should be gleaned from the latest current flow diagram ⇒ Current flow diagrams, Electrical fault finding and Fitting locations.
- Take photographs of the assignment, if necessary.

- Disconnect electrical wiring.

Installing

Install in the reverse order of removal, observing the following:

Specified torque

Component	Specified torque
Nut of wire -1-	9 Nm



1.5 Removing and installing fuse holder C -SC-

⇒ a1.5.1 nd installing fuse holder CSC, left-hand drive vehicle", page 159

⇒ a1.5.2 nd installing fuse holder CSC, right-hand drive vehicle", page 159

1.5.1 Removing and installing fuse holder C -SC-, left-hand drive vehicle

Removing

- With operational readiness deactivated, disconnect earth cable from battery [⇒ page 11](#).
- Remove dash panel ⇒ General body repairs, interior; Rep. gr. 70; Dash panel; Removing and installing dash panel.
- Release retaining tabs -2- in direction of -arrow A-.



- Remove fuse holder C -SC- -1-.

! NOTICE

Danger of connectors being inserted in incorrect position.

- The exact pin assignment should be gleaned from the latest current flow diagram ⇒ Current flow diagrams, Electrical fault finding and Fitting locations.
- Take photographs of the assignment, if necessary.
- Disconnect electrical wiring.

Installing

Install in reverse order of removal.

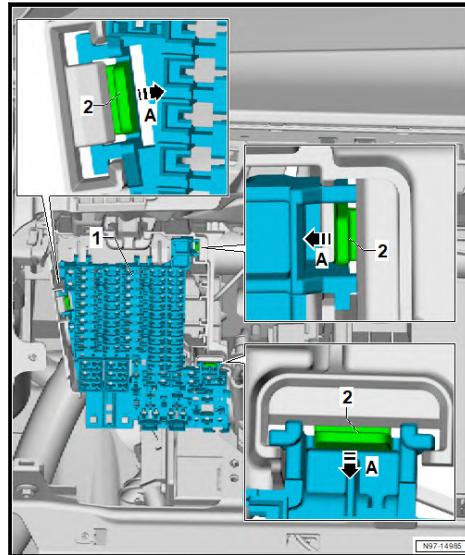
1.5.2 Removing and installing fuse holder C -SC-, right-hand drive vehicle

Removing

- With operational readiness deactivated, disconnect earth cable from battery [⇒ page 11](#).



- Remove dash panel cover on front passenger side ⇒ General body repairs, interior; Rep. gr. 68; Compartments/covers; Overview of fitting locations - compartments/covers.
- Release retaining tabs -2- in direction of -arrow A-.



- Remove fuse holder C -SC- -1-.

NOTICE

Danger of connectors being inserted in incorrect position.

- The exact pin assignment should be gleaned from the latest current flow diagram ⇒ Current flow diagrams, Electrical fault finding and Fitting locations.
- Take photographs of the assignment, if necessary.
- Disconnect electrical wiring.

Installing

Install in reverse order of removal.

1.6 Removing and installing bracket for relay and fuse holder behind dash panel on driver side

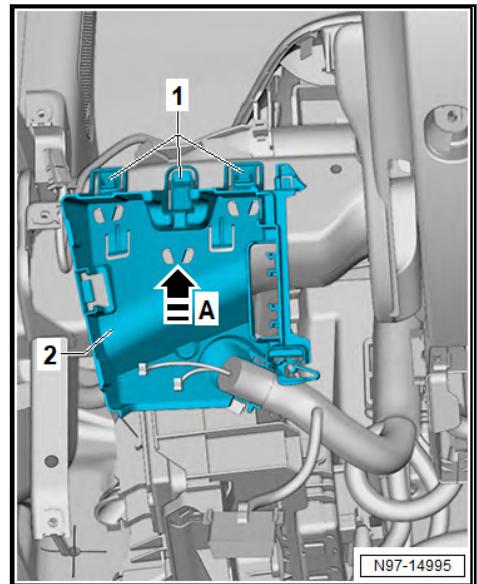
⇒ [a1.6.1 nd installing bracket for relay and fuse carrier behind dash panel on driver side, left-hand drive vehicle", page 160](#)

⇒ [a1.6.2 nd installing bracket for relay and fuse carrier behind dash panel on driver side, right-hand drive vehicle", page 161](#)

1.6.1 Removing and installing bracket for relay and fuse carrier behind dash panel on driver side, left-hand drive vehicle

Removing

- Place relay and fuse holder behind dash panel on driver side to one side [page 159](#).
- Remove cable tie from bracket.
- Release locking lugs -1-.



- Remove bracket -2- in direction of -arrow A-.

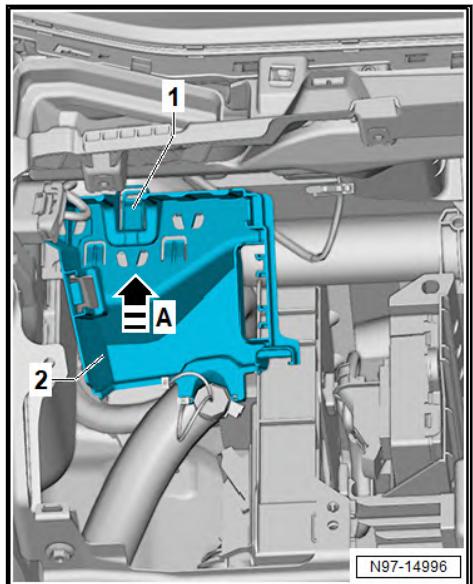
Installing

Install in reverse order of removal.

1.6.2 Removing and installing bracket for relay and fuse carrier behind dash panel on driver side, right-hand drive vehicle

Removing

- Place relay and fuse holder behind dash panel on driver side to one side [⇒ page 159](#).
- Remove cable tie from bracket.
- Release locking lug -1-.



- Remove bracket -2- in direction of -arrow A-.

Installing

Install in reverse order of removal.



2 Select Control units

- ⇒ [o2.1 f fitting locations - control units", page 162](#)
- ⇒ [o2.2 verview - onboard supply control unit", page 163](#)
- ⇒ [a2.3 nd installing onboard supply control unitJ519", page 165](#)
- ⇒ [a2.4 nd installing bracket for onboard supply control unitJ519", page 167](#)
- ⇒ [a2.5 nd installing data bus diagnostic interfaceJ533", page 169](#)
- ⇒ [a2.6 nd installing fan for data bus diagnostic interfaceJ533", page 170](#)

2.1 Overview of fitting locations - control units

- ⇒ [o2.1.1 f fitting locations – control units, left-hand drive vehicles", page 162](#)
- ⇒ [o2.1.2 f fitting locations – control units, right-hand drive vehicles", page 163](#)

2.1.1 Overview of fitting locations – control units, left-hand drive vehicles

1 - Diagnostics interface for data bus -J533-

- Removing and installing ⇒ [page 169](#)

2 - Trailer detector control unit -J345-

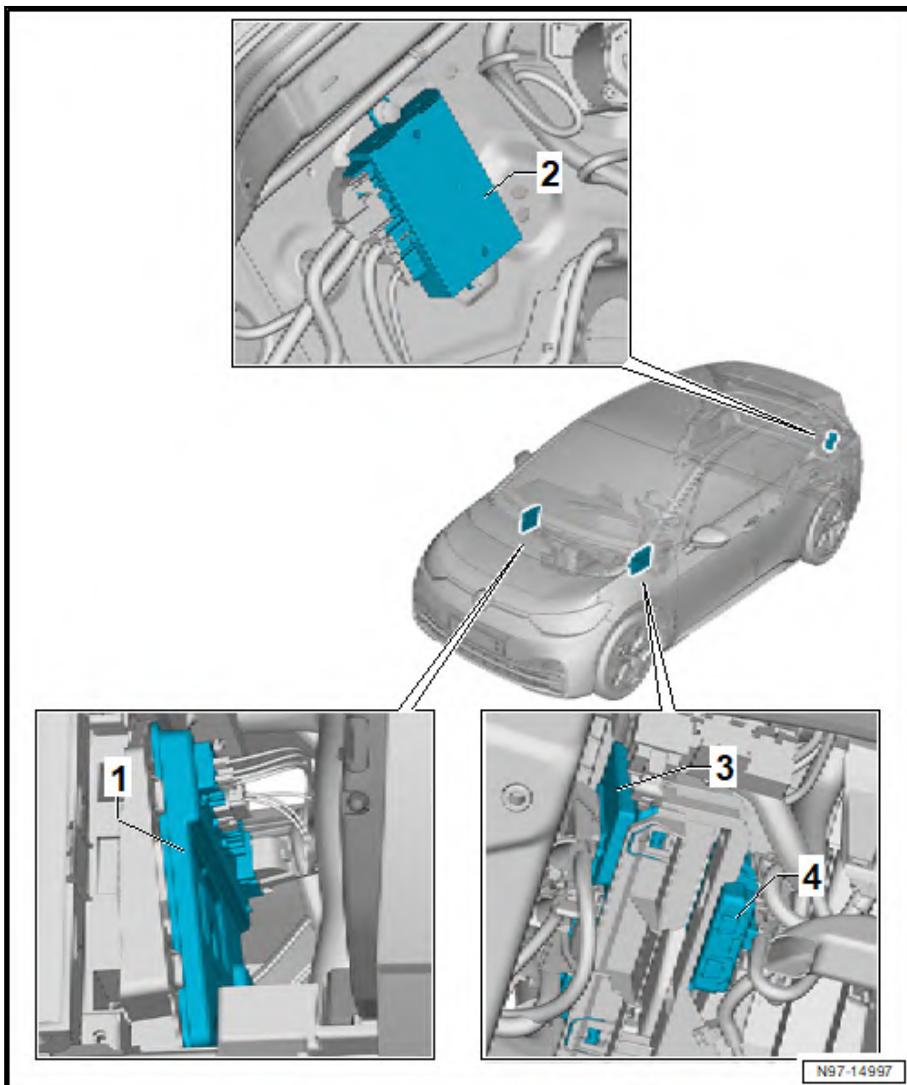
- Assembly overview ⇒ [page 114](#)

3 - Onboard supply control unit -J519-

- Assembly overview ⇒ [page 163](#)

4 - Interface for entry and start system -J965-

- Assembly overview ⇒ [page 93](#)





2.1.2 Overview of fitting locations – control units, right-hand drive vehicles

1 - Interface for entry and start system -J965-

- Assembly overview [⇒ page 93](#)

2 - Trailer detector control unit -J345-

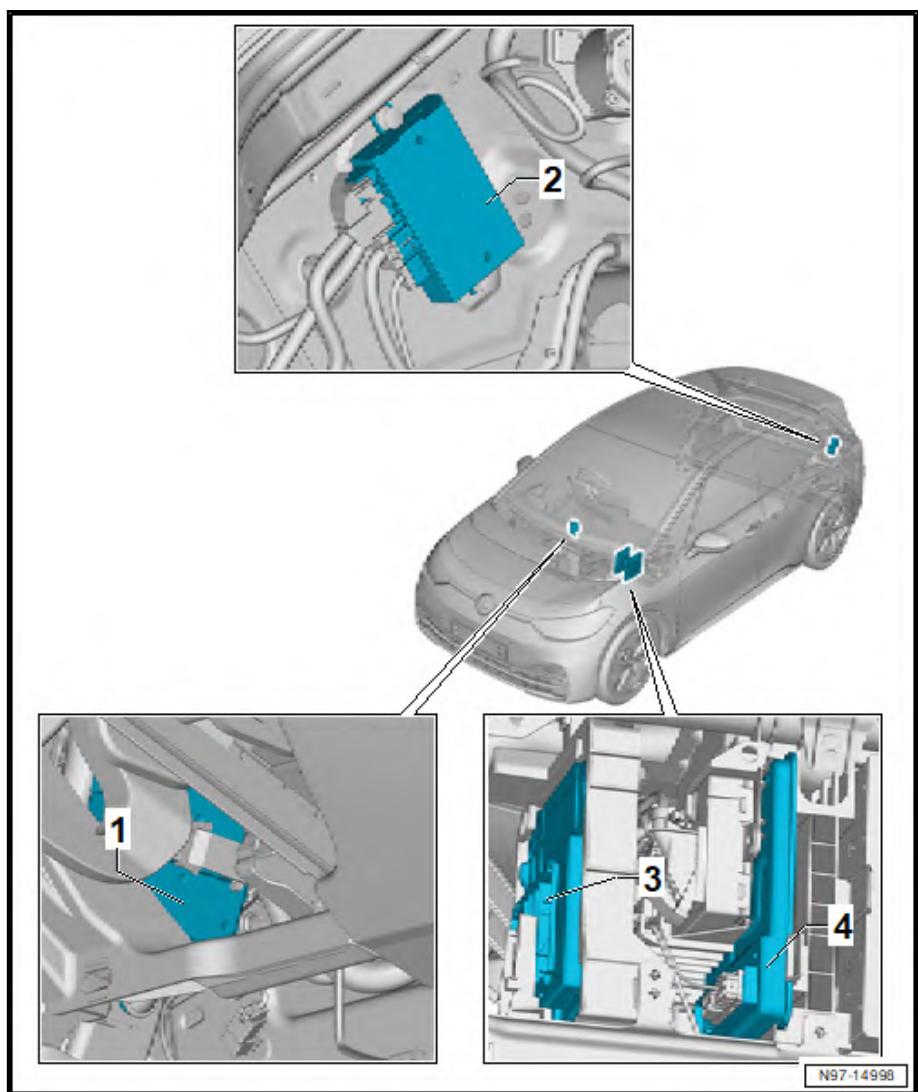
- Assembly overview [⇒ page 114](#)

3 - Onboard supply control unit -J519-

- Assembly overview [⇒ page 164](#)

4 - Diagnostics interface for data bus -J533-

- Removing and installing [⇒ page 169](#)



N97-14998

2.2 Assembly overview - onboard supply control unit

[⇒ o2.2.1 overview – onboard supply control unit, left-hand drive vehicles](#), page 163

[⇒ o2.2.2 overview – onboard supply control unit, right-hand drive vehicles](#), page 164

2.2.1 Assembly overview – onboard supply control unit, left-hand drive vehicles



1 - Interface for entry and start system -J965-

- Removing and installing [page 99](#)

2 - Bracket

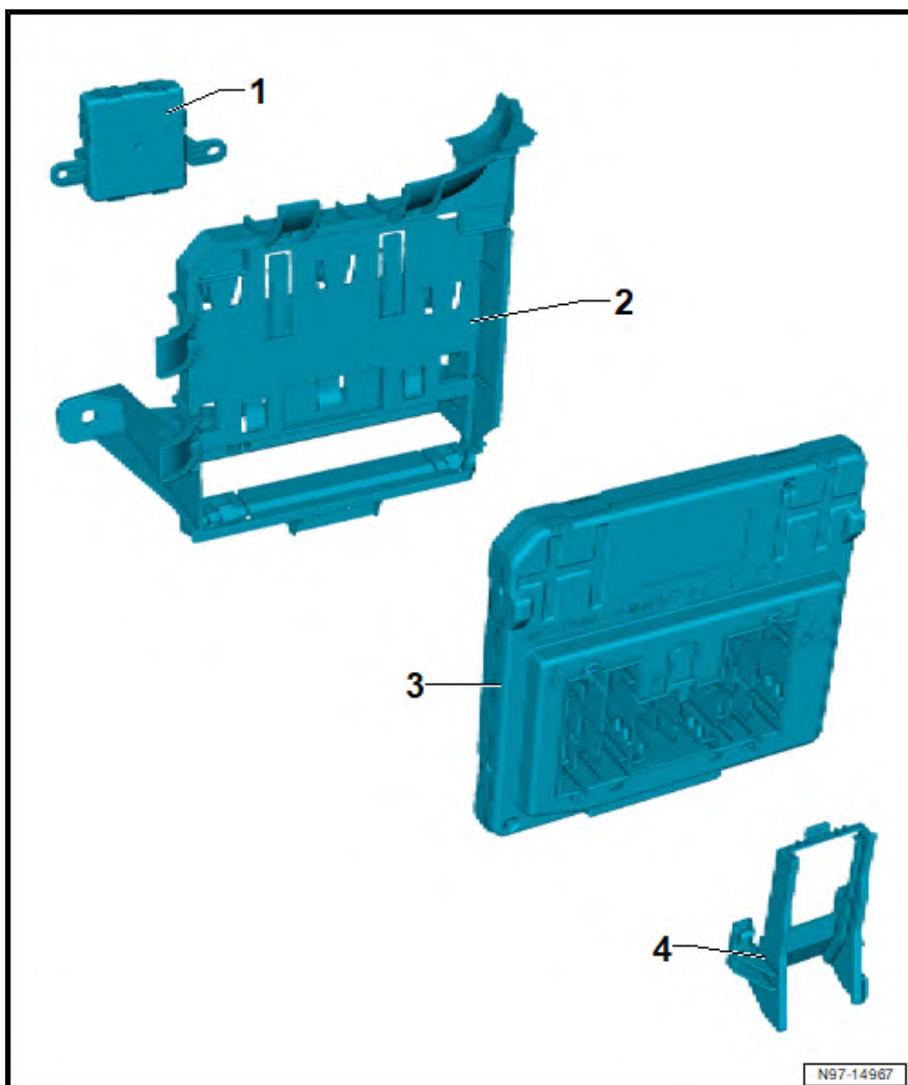
- For onboard supply control unit -J519- and interface for entry and start system -J965-
- Removing and installing [page 167](#)

3 - Onboard supply control unit -J519-

- Removing and installing [page 165](#)

4 - Guide

- For electrical connector (centre)



2.2.2 Assembly overview – onboard supply control unit, right-hand drive vehicles



1 - Bracket

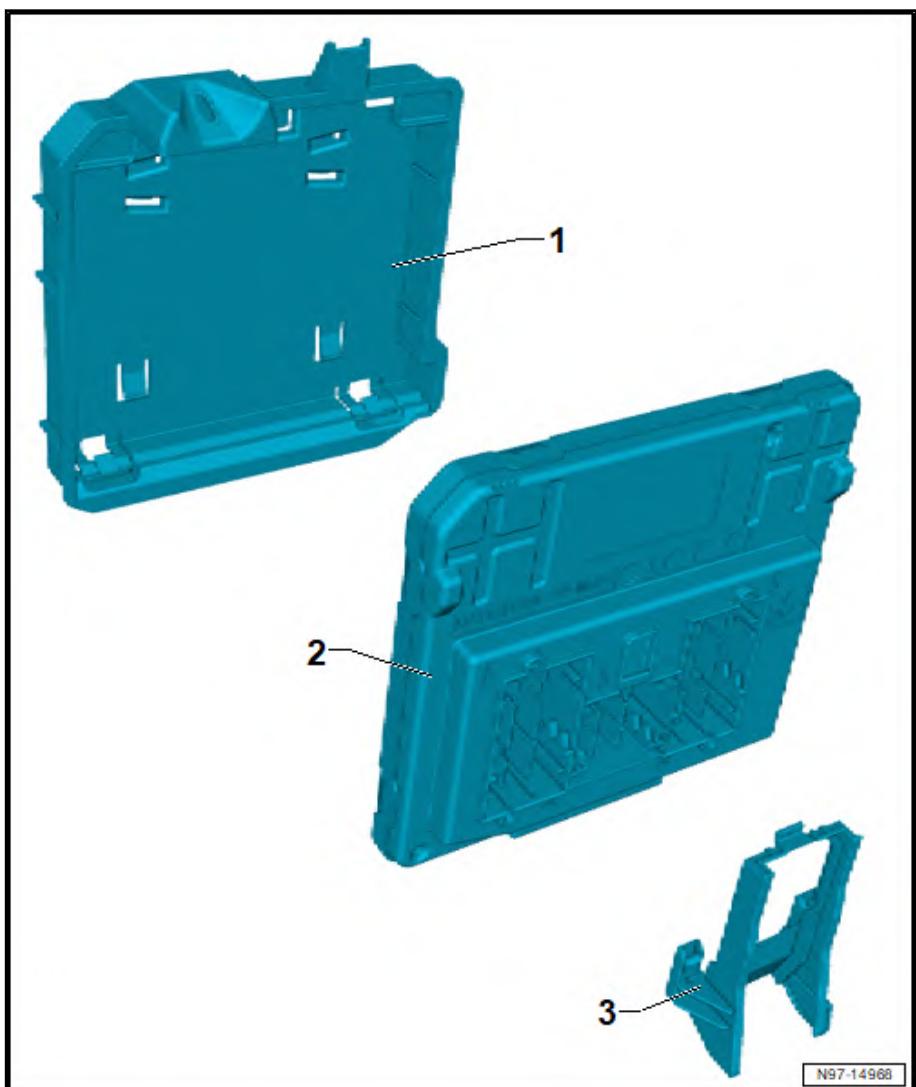
- For onboard supply control unit -J519-
- Removing and installing [page 167](#)

2 - Onboard supply control unit -J519-

- Removing and installing [page 165](#)

3 - Guide

- For electrical connector (centre)
- Depending on equipment



N97-14968

2.3 Removing and installing onboard supply control unit -J519-

[⇒ a2.3.1 nd installing onboard supply control unit J519, LHD vehicles](#), page 165

[⇒ a2.3.2 nd installing onboard supply control unit J519, RHD vehicles](#), page 166

2.3.1 Removing and installing onboard supply control unit -J519-, LHD vehicles



Note

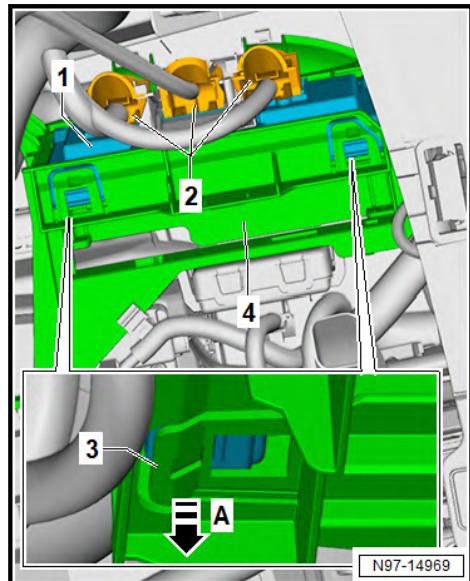
If the onboard supply control unit -J519- is renewed, start the respective function ⇒ Vehicle diagnostic tester.

Removing

- Deactivate operational readiness and switch off all electrical consumers.



- Store the vehicle key and other entry and start authorisation systems outside the vehicle to prevent the vehicle from being switched on unintentionally.
- Remove dash panel trim on driver side ⇒ General body repairs, interior; Rep. gr. 68; Compartments/covers; Removing and installing dash panel trim on driver side.
- Disconnect electrical connectors -2-.



- Release retaining springs -3- in direction of -arrow A-.
- Swivel onboard supply control unit -J519- -1- out of bracket -4-.

Installing

Install in reverse order of removal.

2.3.2 Removing and installing onboard supply control unit -J519-, RHD vehicles

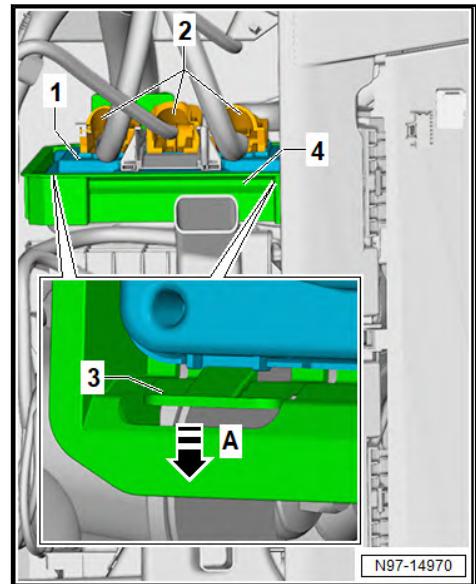


Note

If the onboard supply control unit -J519- is renewed, start the respective function ⇒ Vehicle diagnostic tester.

Removing

- Deactivate operational readiness and switch off all electrical consumers.
- Store the vehicle key and other entry and start authorisation systems outside the vehicle to prevent the vehicle from being switched on unintentionally.
- Removing and installing dash panel cover on front passenger side
- Disconnect electrical connectors -2-.



- Release retaining springs -3- in direction of -arrow A-.
- Swivel onboard supply control unit -J519- -1- out of bracket -4-.

Installing

Install in reverse order of removal.

2.4 Removing and installing bracket for onboard supply control unit -J519-

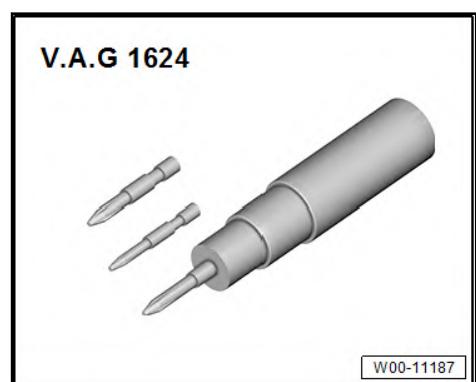
⇒ a2.4.1 nd installing bracket for onboard supply control unit J519 and interface for entry and start system J965, left-hand drive vehicle", page 167

⇒ a2.4.2 nd installing bracket for onboard supply control unit J519, right-hand drive vehicle", page 169

2.4.1 Removing and installing bracket for onboard supply control unit -J519- and interface for entry and start system - J965-, left-hand drive vehicle

Special tools and workshop equipment required

- ◆ Torque screwdriver -V.A.G 1624-

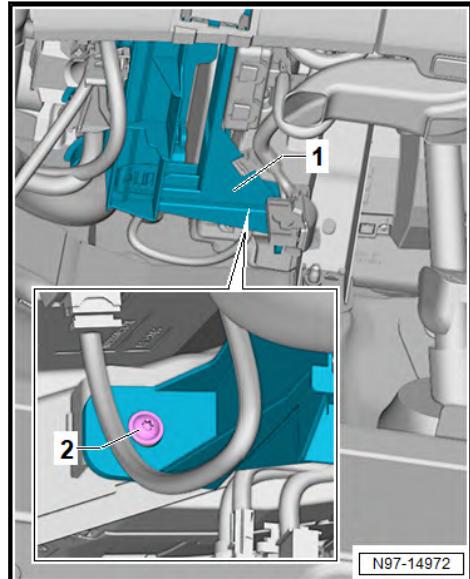


Removing

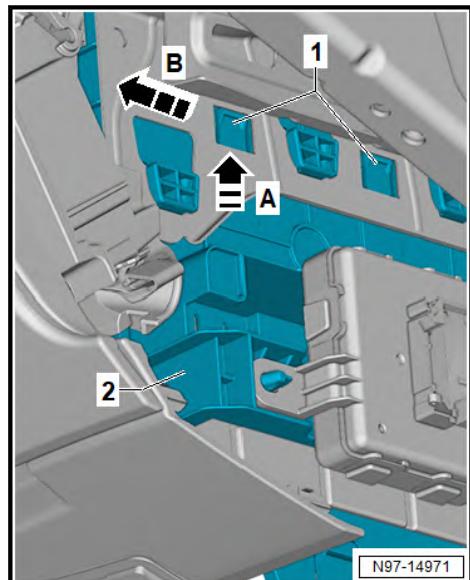
- With operational readiness deactivated, disconnect earth cable from battery [⇒ page 11](#).



- Remove dash panel ⇒ General body repairs, interior; Rep. gr. 70; Dash panel; Removing and installing dash panel.
- Removing and installing bracket for relay and fuse carrier behind dash panel ⇒ [page 160](#)
- Remove onboard supply control unit -J519- ⇒ [page 165](#).
- Separate connector from interface for entry and start system -J965- ⇒ [page 99](#).
- Remove cable tie from bracket.
- Unscrew bolt -2-.



- Release locking lugs -1-.



- Push bracket -2- in direction of -arrow A-.
- Remove bracket -2- in direction of -arrow B-.

Installing

Install in the reverse order of removal, observing the following:



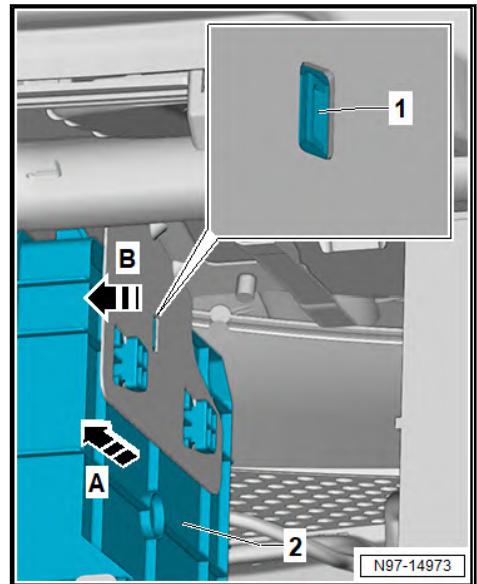
Specified torque

Component	Specified torque
Bolt for onboard supply control unit bracket	4.5 Nm

2.4.2 Removing and installing bracket for onboard supply control unit -J519-, right-hand drive vehicle

Removing

- With operational readiness deactivated, disconnect earth cable from battery [⇒ page 11](#).
- Remove module carrier strut.
- Remove onboard supply control unit -J519- [⇒ page 165](#).
- Remove wiring harness from bracket.
- Release locking lug -1-.



- Push bracket -2- in direction of -arrow A-.
- Remove bracket -2- in direction of -arrow B-.

Installing

Install in reverse order of removal.

2.5 Removing and installing data bus diagnostic interface -J533-



Note

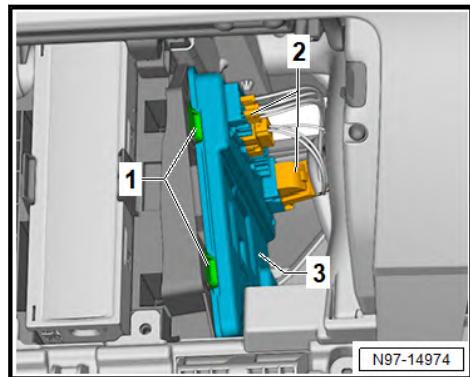
If the data bus diagnostic interface -J533- is renewed, start the respective function ⇒ Vehicle diagnostic tester.

Removing

- Remove glove compartment cover ⇒ General body repairs, interior; Rep. gr. 68; Compartments/covers; Assembly overview - glove compartment.



- Release locking lugs -1-.



- Pull out data bus diagnostic interface -J533- -3- until connectors -2- are accessible.
- Separate connectors -2-.
- Pull out data bus diagnostic interface -J533- -3-.

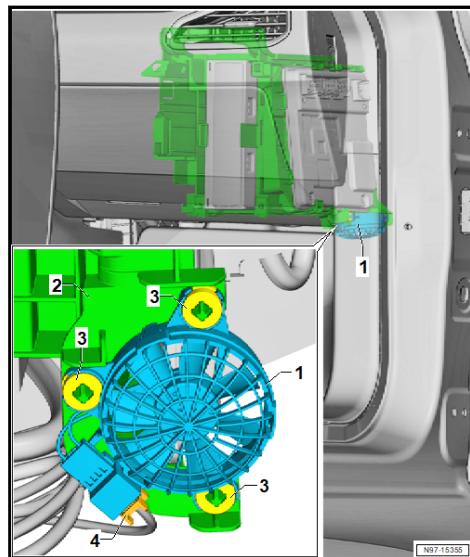
Installing

Install in reverse order of removal.

2.6 Removing and installing fan for data bus diagnostic interface -J533-

Removing

- Pull off fan -1- with rubber bushes -3- from bracket -2-.



- Disconnect electrical connector -4-.
- Remove fan -1-.

Installing

Install in reverse order of removal.



3 Connectors

⇒ [e3.1 Electrical wiring harnesses and plug-in connections", page 171](#)

3.1 Repairing electrical wiring harnesses and plug-in connections

⇒ [t3.1.1 o wiring harnesses and connectors", page 171](#)

⇒ [c3.1.2 onnector housings and electrical connectors", page 171](#)

3.1.1 Repairs to wiring harnesses and connectors

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

3.1.2 Repairing connector housings and electrical connectors

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



4 Releasing and dismantling connector housings

All instructions and notes regarding this chapter are available under ⇒ Electrical system, General information; Rep. gr. 97; Repairs to wiring harnesses and connectors; Releasing and dismantling connector housings



5 Repairing aerial wires

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 aerial wires



6 Fibre optic cables

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 fibre optic cables



7 Vehicle diagnosis, testing and information systems

All instructions and notes regarding this chapter are available under ➔ Electrical system, General information; Rep. gr. 97; Vehicle diagnosis, testing and information systems