Workshop Manual
Tiguan 2016 ➤
Tiguan RUS 2017 ➤
Electrical system

Edition 08.2017

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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

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

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Contents

00 - Technical data 1
1 Safety information 1
1.1 Safety measures when working on vehicles with a start/stop system 1
1.2 Safety precautions when using testers and measuring instruments during a road test 1
2 Repair instructions 2
2.1 Contact corrosion 2
2.2 Routing and attachment of lines 2
3 Battery 3
3.1 Battery - general notes 3
3.2 Types of battery 3

27 - Starter, current supply, CCS 4
1 Battery 4
1.1 Assembly overview - battery 4
1.2 Removing and installing battery 7
1.3 Disconnecting and connecting battery 14
1.4 Removing and installing battery tray 17
1.5 Checking battery 18
1.6 Charging battery 19
1.7 Removing and installing earth wire with battery monitor control unit J367 19
1.8 Adapting battery monitor control unit J367 21
2 Alternator 22
2.1 Assembly overview - alternator 22
2.2 Removing and installing alternator 23
2.3 Checking alternator 29
2.4 Removing and installing poly V-belt pulley 30
2.5 Removing and installing voltage regulator 37
3 Starter motor 40
3.1 Assembly overview - starter 40
3.2 Removing and installing starter motor 41
4 Cruise control system (CCS) 46
5 Start/stop system 47
5.1 General description - start/stop system 47
5.2 Overview of fitting locations - start/stop system 47
6 Adaptive cruise control 48
6.1 Overview of fitting locations - adaptive cruise control 48
6.2 Removing and installing automatic distance control unit 48
6.3 Calibrating adaptive cruise control 49

90 - Gauges, instruments 50
1 Dash panel insert 50
1.1 Assembly overview - dash panel insert 50
1.2 Assembly overview - head-up display 51
1.3 Removing and installing dash panel insert KX2 52
1.4 Removing and installing control unit for head-up display 55
2 Horn 57
2.1 Assembly overview - horn 57
2.2 Removing and installing treble horn H2 and bass horn H7 57
2.3 Removing and installing bracket for horn H2 / H7 58

92 - Windscreen wash/wipe system 60
1 windscreen wiper system. 60

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1.1 Assembly overview - windscreen wiper system . . . 60
1.2 Moving wipers to service position . . . 63
1.3 Removing and installing wiper blade . . . 63
1.4 Removing and installing wiper arms . . . 64
1.5 Adjusting wiper arms . . . 66
1.6 Removing and installing wiper motor V . . . 67
1.7 Renewing wiper motor . . . 68
1.8 Deactivating APP function of wiper motor . . . 70
1.9 Removing and installing rain and light sensor . . . 71
1.10 Repairing rain and light sensor . . . 73
2 Windscreen washer system . . . 76
2.1 Assembly overview - windscreen washer system . . . 76
2.2 Removing and installing washer fluid reservoir . . . 80
2.3 Removing and installing windscreen washer fluid level sender . . . 84
2.4 Removing and installing windscreen washer pump . . . 85
2.5 Removing and installing washer jets . . . 86
2.6 Adjusting spray jets . . . 87
3 Rear window wiper system . . . 88
3.1 Assembly overview - rear window wiper system . . . 88
3.2 Removing and installing wiper blade . . . 89
3.3 Removing and installing wiper arm . . . 89
3.4 Adjusting wiper arm . . . 90
3.5 Removing and installing rear window wiper motor V12 . . . 91
4 Rear window washer system . . . 93
4.1 Assembly overview - rear window washer system . . . 93
4.2 Removing and installing washer fluid reservoir . . . 96
4.3 Removing and installing rear window washer pump . . . 96
4.4 Removing and installing washer jet . . . 96
4.5 Adjusting spray jet . . . 97
5 Headlight washer system . . . 98
5.1 Assembly overview - headlight washer system . . . 98
5.2 Removing and installing washer fluid reservoir . . . 100
5.3 Removing and installing headlight washer system pump V11 . . . 100
5.4 Removing and installing pop-up cylinder . . . 101
5.5 Adjusting spray jets . . . 102
6 Washer fluid lines . . . 104
6.1 Repairing washer fluid lines . . . 104

94 - Lights, bulbs, switches - exterior . . . 105
1 Headlights . . . 105
1.1 Assembly overview - headlight . . . 105
1.2 Removing and installing headlight . . . 113
1.3 Adjusting headlights . . . 114
1.4 Adjusting headlight installation position . . . 114
1.5 Removing and installing front turn signal bulb M5 / M7 . . . 115
1.6 Installing repair kit for headlight housing . . . 116
1.7 Converting headlights from driving on right to driving on left . . . 118
1.8 Converting headlights from driving on left to driving on right . . . 118
1.9 Removing and installing headlight range control motor V48 / V49 . . . 119
1.10 Removing and installing dipped beam bulb . . . 124
1.11 Removing and installing headlight main beam bulb M30 / M32 . . . 129
1.12 Removing and installing side light bulb M1 / M3 . . . 134
1.13 Removing and installing daytime running light bulb L174 / L175 . . . 134
1.14 Removing and installing LED modules for daytime running light and side light L176 / L177 . . . 135

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1.15 Removing and installing bulbs for cornering light L148 / L149 . . . 137
1.16 Removing and installing output module for headlight J667 / J668 . . . 137
1.17 Removing and installing output module 1 for left LED headlight A27 / A31 . . . 140
1.18 Removing and installing swivel module position sensor G474 / G475 . . . 142
1.19 Removing and installing dynamic cornering light control motor V318 / V319 . . . 142
2 Fog lights . . . 143
2.1 Assembly overview - fog lights . . . 143
2.2 Removing and installing fog light . . . 143
2.3 Removing and installing fog light bulb L22 / L23 . . . 145
3 Lights in exterior mirror . . . 147
3.1 Assembly overview - lights in exterior mirror . . . 147
3.2 Removing and installing turn signal . . . 148
3.3 Removing and installing entry light in exterior mirror . . . 150
4 Tail lights . . . 151
4.1 Assembly overview - tail lights in body . . . 151
4.2 Assembly overview - tail lights in rear lid . . . 152
4.3 Removing and installing tail light in rear lid . . . 152
4.4 Adjusting installation position of tail light . . . 153
4.5 Removing and installing tail light . . . 154
4.6 Removing and installing tail light bulb M2 / M4 . . . 155
4.7 Removing and installing rear fog light bulb L46 / L47 . . . 155
4.8 Removing and installing brake and tail light bulb M21 / M22 . . . 155
4.9 Removing and installing reversing light bulb . . . 155
4.10 Removing and installing turn signal bulb . . . 156
5 High-level brake light . . . 157
5.1 Assembly overview - high-level brake light . . . 157
5.2 Removing and installing additional brake light . . . 157
6 Number plate light . . . 160
6.1 Assembly overview – number plate lights . . . 160
6.2 Removing and installing number plate light X4 / X5 . . . 161
6.3 Removing and installing bulb for number plate light X4 / X5 . . . 161
7 Entry and start authorisation system . . . 162
7.1 Overview of fitting locations - entry and start authorisation system . . . 162
7.2 Overview of fitting locations - keyless entry system . . . 165
7.3 Removing and installing interface for entry and start system J965 . . . 167
7.4 Removing and installing door exterior handle contact sensor G415 / G416 . . . 168
7.5 Removing and installing interior aerial 1 for entry and start authorisation R138 . . . 168
7.6 Removing and installing interior aerial 2 for entry and start system R139 . . . 169
7.7 Removing and installing driver side aerial for entry and start system R134 . . . 170
7.8 Removing and installing front passenger side aerial for entry and start system R135 . . . 170
7.9 Removing and installing rear bumper aerial for entry and start system R136 . . . 170
7.10 Removing and installing luggage compartment aerial for entry and start system R137 . . . 171
7.11 Removing and installing rear lid power opening control unit J938 . . . 172
7.12 Removing and installing rear lid power opening sender G750 / G760 . . . 172
8 Steering column switch module . . . 173
8.1 Assembly overview - steering column switch module . . . 173
8.2 Removing and installing lock cylinder . . . 175
8.3 Removing and installing ignition key withdrawal lock solenoid N376 . . . 177
8.4 Removing and installing ignition/starter switch . . . 178
8.5 Removing and installing steering column switch module . . . 179
8.6 Removing and installing steering column electronics control unit J527 . . . 181
8.7 Removing and installing turn signal switch E2 . . . 185
8.8 Removing and installing intermittent wiper switch E22 . . . 186
8.9 Removing and installing immobiliser reader coil D2 . . . 186
8.10 Removing and installing base for steering column combination switch . . . 187

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8.11 Removing and installing steering lock housing . . . 188
9 Parking aid . . . 190
9.1 Assembly overview – parking aid . . . 190
9.2 Removing and installing parking aid control unit J446 . . . 193
9.3 Removing and installing front parking aid warning buzzer H22 . . . 195
9.4 Removing and installing rear parking aid warning buzzer H15 . . . 196
9.5 Removing and installing front parking aid senders . . . 196
9.6 Removing and installing rear parking aid senders . . . 197
10 Park assist steering . . . 198
10.1 Assembly overview - park assist steering . . . 198
10.2 Removing and installing park assist steering control unit J791 . . . 199
10.3 Removing and installing front senders . . . 199
10.4 Removing and installing rear senders . . . 200
11 Automatic headlight range control . . . 201
11.1 Assembly overview - automatic headlight range control . . . 201
11.2 Removing and installing cornering light and headlight range control unit J745 . . . 203
12 Towing bracket . . . 208
12.1 Assembly overview - towing bracket socket . . . 208
12.2 Trailer socket U10 . . . 208
12.3 Removing and installing trailer detector control unit J345 . . . 209

96 - Lights, bulbs, switches - interior . . . 210
1 Lights . . . 211
1.1 Overview of fitting locations - lights in dash panel . . . 212
1.2 Overview of fitting locations - lights in front doors . . . 213
1.3 Overview of fitting locations - lights in rear doors . . . 214
1.4 Overview of fitting locations - lights in centre console . . . 215
1.5 Overview of fitting locations - lights in luggage compartment . . . 216
1.6 Overview of fitting locations - lights in roof trim . . . 217
1.7 Removing and installing glove compartment light W6 . . . 218
1.8 Replacing bulb for glove compartment light W6 . . . 219
1.9 Removing and installing front footwell light K268 / K269 . . . 220
1.10 Removing and installing front footwell illumination bulb L151 / L152 . . . 220
1.11 Removing and installing Central locking SAFELOCK function warning lamp K133 . . . 221
1.12 Removing and installing reflectors in door . . . 221
1.13 Removing and installing entry light W92 / W93 . . . 222
1.14 Removing and installing interior door handle illumination bulb L146 / L147 . . . 222
1.15 Removing and installing rear interior door handle illumination bulb L133 / L134 . . . 223
1.16 Removing and installing light 1 for front door background lighting L199 / L200 . . . 223
1.17 Removing and installing light 1 for rear door background lighting L201 / L202 . . . 223
1.18 Removing and installing roof ambient lighting bulb W76 / W77 . . . 224
1.19 Removing and installing selector lever position display Y26 . . . 224
1.20 Removing and installing luggage compartment light W3 . . . 225
1.21 Removing and installing electric torch R280 . . . 225
1.22 Removing and installing surround lighting 1 in rear lid W61 . . . 225
1.23 Removing and installing illuminated vanity mirror W20 / W14 . . . 226
1.24 Removing and installing bulb for front interior light W1 . . . 227
1.25 Removing and installing bulb for rear interior light W43 . . . 229
1.26 Removing and installing bulb for front reading light W13 / W19 . . . 231
1.27 Removing and installing bulb for rear reading light W11 / W12 . . . 231
1.28 Renewing bulb of rear interior light W47 / W48 . . . 231
2 Controls . . . 233
2.1 Overview of fitting locations - controls in dash panel . . . 234
2.2 Overview of fitting locations - controls in front doors . . . 236
2.3 Overview of fitting locations - controls in rear doors . . . 237

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2.4 Overview of fitting locations - controls in centre console . . . 238
2.5 Overview of fitting locations - controls in luggage compartment . . . 239
2.6 Overview of fitting locations - controls in roof trim . . . 240
2.7 Removing and installing rotary light switch EX1 . . . 242
2.8 Removing and installing headlight range control regulator E102 . . . 242
2.9 Removing and installing switch for Head-up Display E736 . . . 243
2.10 Removing and installing TCS and ESP button E256 . . . 244
2.11 Removing and installing parking aid button E266 . . . 244
2.12 Removing and installing park assist steering button E581 . . . 244
2.13 Removing and installing Start/Stop operation button E693 . . . 244
2.14 Removing and installing button for Charisma E735 . . . 245
2.15 Removing and installing switch module in centre console EX23 / EX30 . . . 245
2.16 Removing and installing operating unit for driving mode selection E881 . . . 246
2.17 Removing and installing hazard warning light switch EX3 . . . 248
2.18 Removing and installing buttons for seat heating E653 / E654 . . . 248
2.19 Removing and installing glove compartment light switch E26 . . . 248
2.20 Removing and installing exterior mirror adjuster EX11 . . . 249
2.21 Removing and installing operating unit for window regulator in driver door E512 . . . 250
2.22 Removing and installing front passenger side window regulator button E716 . . . 250
2.23 Removing and installing driver side interior locking button for central locking system E308 . . . 251
2.24 Removing and installing rear lid remote release button E233 . . . 251
2.25 Removing and installing button for deactivating interior monitoring and vehicle inclination sensor E616 . . . 252
2.26 Removing and installing door contact switch F2 / F3 . . . 253
2.27 Removing and installing rear window regulator button E711 / E713 . . . 253
2.28 Removing and installing rear door contact switches F10 / F11 . . . 254
2.29 Removing and installing electromechanical parking brake button E538 / auto-hold button E540 . . . 254
2.30 Removing and installing the starter button E378 . . . 255
2.31 Removing and installing rear lid warning buzzer H32 . . . 255
2.32 Removing and installing rear lid contact switch . . . 256
2.33 Removing and installing rear lid closure button E574 . . . 256
2.34 Removing and installing electric hinged tow coupling attachment button E474 . . . 257
2.35 Removing and installing vanity mirror contact switch F147 / F148 . . . 257
2.36 Removing and installing sunroof button E325 . . . 258
2.37 Removing and installing front interior light/reading light . . . 258
2.38 Removing and installing rear interior light/reading light . . . 259
2.39 Removing and installing front reading light button E633 / E634 . . . 262

3 Anti-theft alarm . . . 263
3.1 Assembly overview - interior monitor . . . 263
3.2 Removing and installing alarm horn H12 . . . 264
3.3 Removing and installing anti-theft alarm sensor G578 . . . 265

4 Lane change assist . . . 268
4.1 Assembly overview - lane change assist . . . 268
4.2 Removing and installing lane change assist warning lamp in exterior mirror K233 / K234 . . . 269
4.3 Removing and installing lane change assist control unit J769 / J770 . . . 269
4.4 Calibrating lane change assist . . . 270

5 Front camera for assist systems . . . 277
5.1 Removing and installing front camera for driver assist systems . . . 277

6 Cigarette lighter, socket . . . 278
6.1 Assembly overview – DC/AC converter with socket, 12 V - 230 V . . . 278
6.2 Removing and installing cigarette lighter U1 . . . 279
6.3 Removing and installing socket illumination bulb L42 . . . 279
6.4 Removing and installing rear cigarette lighter illumination bulb L32 . . . 279

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6.5 Removing and installing electric socket U 279
6.6 Removing and installing DC/AC converter with socket, 12 V - 230 V U13 279

97 - Wiring 281

1 Relay carriers, fuse holders, electronics boxes 281
1.1 Overview of fitting locations - relay carriers, fuse holders, E-boxes 281
1.2 Removing and installing electronics box (E-box) 285
1.3 Removing and installing relay and fuse holder in electronics box 287
1.4 Removing and installing relay and fuse carrier behind dash panel 289
1.5 Removing and installing main fuse carrier 291

2 Select Control units 293
2.1 Overview of fitting locations - control units 293
2.2 Assembly overview - onboard supply control unit 296
2.3 Assembly overview - data bus diagnostic interface 298
2.4 Removing and installing onboard supply control unit J519 299
2.5 Removing and installing data bus diagnostic interface J533 303
2.6 Removing and installing bracket for onboard supply control unit J519 305
2.7 Renewing bracket for onboard supply control unit J519 307
2.8 Removing and installing parking aid control unit J446 / park assist steering control unit J791 307
2.9 Removing and installing rear lid control unit J605 308

3 Connectors 309
3.1 Repairing electrical wiring harnesses and plug-in connections 309

4 Releasing and dismantling connector housings 310

5 Repairing aerial cables 311

6 Fibre optic cables 312

7 Vehicle diagnosis, testing and information systems 313

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00 – Technical data

1 Safety information

(VRL010729; Edition 08.2017)

⇒ "1.1 Safety measures when working on vehicles with a start/stop system", page 1

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

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

WARNING

Injury hazard as a result of automatic engine start in vehicles with start/stop system.

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

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

Observe the following if test and measuring equipment is required during a road test:

WARNING

Risk of accident due to distraction and inadequate securing of test and measuring equipment.

Danger as a result of activation of front passenger airbag in event of an accident.

- *Operation of test and measuring equipment while driving results in distraction.*
- *The risk of injuries increases significantly when test and measuring equipment is not secured.*
- *Always strap test and measuring equipment in place on rear seat, and have a 2nd person operate them.*

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2 Repair instructions

⇒ “2.1 Contact corrosion”, page 2

⇒ “2.2 Routing and attachment of lines”, page 2

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 .

Please note:

- Only use genuine replacement parts which are tested and compatible with aluminium.
- Only use Volkswagen Genuine Accessories.
- Damage resulting from contact corrosion is not covered by the warranty.

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. Where necessary, make sketches or take photographs.
- To avoid damaging pipes and wires, ensure adequate clearance from all moving or hot components in the engine compartment on account of the confined space.

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3 Battery

⇒ “3.1 Battery - general notes”, page 3

⇒ “3.2 Types of battery”, page 3

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

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27 – Starter, current supply, CCS

1 Battery

⇒ “1.1 Assembly overview - battery”, page 4

⇒ “1.2 Removing and installing battery”, page 7

⇒ “1.3 Disconnecting and connecting battery”, page 14

⇒ “1.4 Removing and installing battery tray”, page 17

⇒ “1.5 Checking battery”, page 18

⇒ “1.6 Charging battery”, page 19

⇒ “1.7 Removing and installing earth wire with battery monitor control unit J367 ”, page 19

⇒ “1.8 Adapting battery monitor control unit J367 ”, page 21

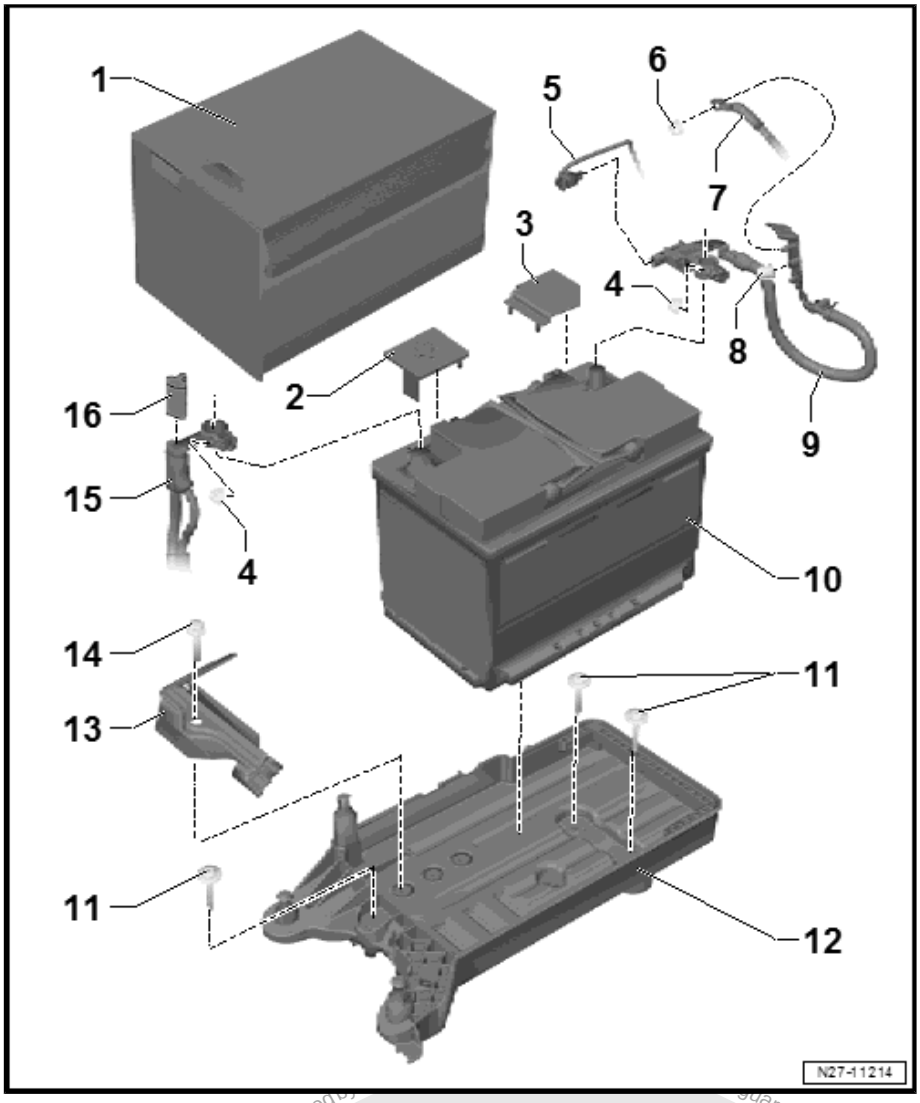
1.1 Assembly overview - battery

⇒ “1.1.1 Assembly overview - battery; battery in engine compartment”, page 4

⇒ “1.1.2 Assembly overview - battery; battery in luggage compartment”, page 6

1.1.1 Assembly overview - battery; battery in engine compartment

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1 - Heat shield sleeve

2 - Cover

- For positive battery terminal
- Not fitted in all vehicles

3 - Cover

- For negative battery terminal

4 - Nut

- 6 Nm

5 - Electrical connector

- For battery monitor control unit - J367-
- Observe specified sequence for work steps when connecting earth cable ⇒ page 14

6 - Nut

- 9 Nm

7 - Earth cable

8 - Nut

- 20 Nm

9 - Earth cable

- With battery terminal clamp and battery monitor control unit - J367-
- Adapting battery monitor control unit - J367- ⇒ page 21
- Disconnecting and connecting ⇒ page 14
- Removing and installing ⇒ page 19

10 - Battery

- Removing and installing ⇒ page 7
- Disconnecting and connecting ⇒ page 14
- Renewing (on vehicles equipped with Start/Stop system) ⇒ page 9

11 - Bolts

- Qty. 3
- 9 Nm

12 - Battery tray

- Removing and installing ⇒ page 17

13 - Retaining clip

14 - Bolt

- 20 Nm

15 - Positive cable

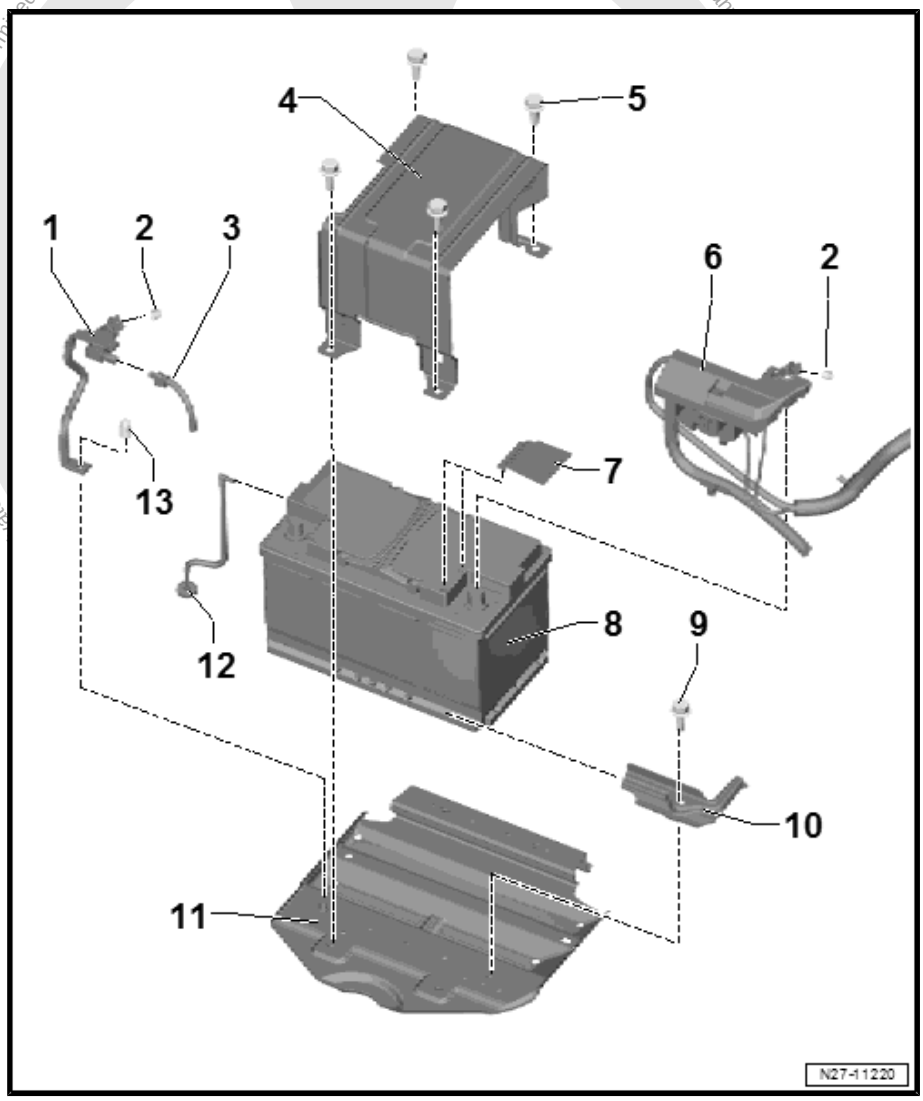
- With battery terminal clamp
- Disconnecting and connecting ⇒ page 14

16 - Cover

- For positive cable

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1.1.2 Assembly overview - battery; battery in luggage compartment



1 - Earth cable

- With battery terminal clamp and battery monitor control unit - J367-
- Removing and installing ⇒ page 20
- Disconnecting and connecting ⇒ page 16
- Adapting battery monitor control unit - J367- ⇒ page 21

2 - Nut

- 6 Nm

3 - Electrical connector

- For battery monitor control unit - J367-
- Observe specified sequence for work steps when connecting earth cable ⇒ page 16

4 - Reinforcement

- Removing and installing

5 - Bolt

- Qty. 4
- 20 Nm

6 - Main fuse carrier

- With battery terminal clamp
- Assembly overview ⇒ page 284
- Disconnecting and connecting ⇒ page 16

7 - Cover

- For positive battery terminal

8 - Battery - A-

- Removing and installing ⇒ page 10
- Disconnecting and connecting ⇒ page 16
- Renewing (on vehicles equipped with Start/Stop system) ⇒ page 13

9 - Bolt

- 20 Nm

10 - Retaining clip

11 - Battery tray

- Integrated with body

12 - Central gas venting system

- With grommet

13 - Nut

- 20 Nm

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1.2 Removing and installing battery

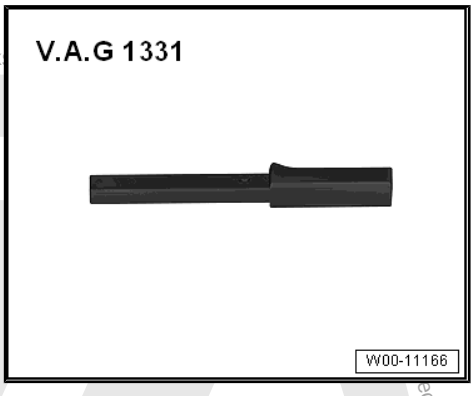
⇒ “1.2.1 Removing and installing battery; battery in engine compartment”, page 7

⇒ “1.2.2 Removing and installing battery, battery in luggage compartment”, page 10

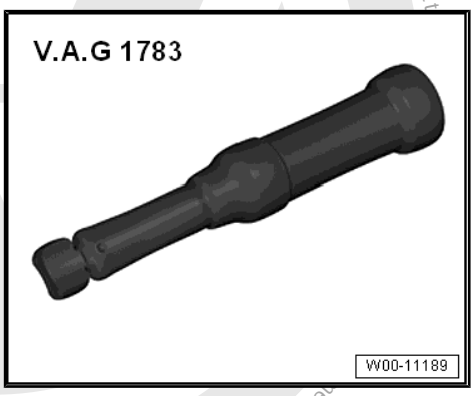
1.2.1 Removing and installing battery; battery in engine compartment

Special tools and workshop equipment required

- Torque wrench - V.A.G 1331-



- Torque wrench - V.A.G 1783-



Removing

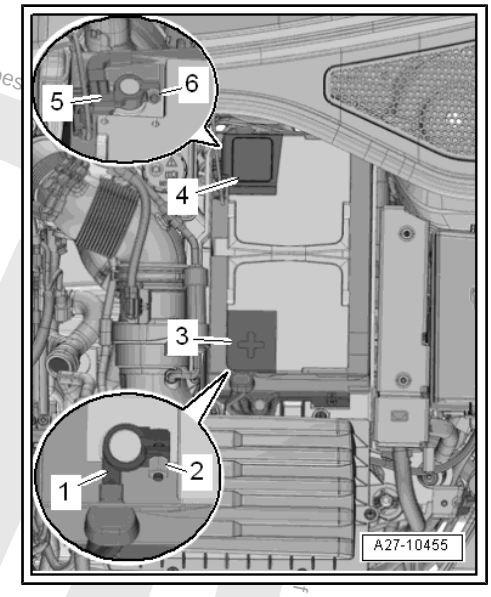
– Switch off ignition and all electrical consumers.

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

– Open cover of heat insulation sleeve.

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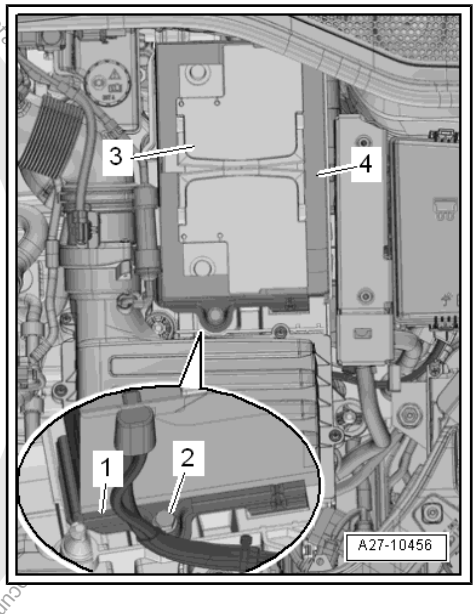
– Open cover -4- on battery negative terminal.
– Loosen nut -6- a few turns.
– Pull battery clamp -5- of earth cable off negative battery terminal.
– If fitted, open cover -3- on battery positive terminal.
– Loosen nut -2- a few turns.
– Pull battery clamp -1- of positive cable off positive battery terminal.



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– Pull heat insulation sleeve -4- upwards slightly.
– Unscrew bolt -2- on securing bracket -1-.
– Remove securing bracket -1-.
– Lift out battery -3- from engine compartment at an angle of 45°.



Installing

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

Caution

A loosely fitted battery creates the following dangers:

- ***Shortened service life caused by vibration damage (danger of explosion).***
- ***The plates in the battery cells will be damaged if the battery is not secured correctly.***
- ***Damage to battery casing by clamping bracket (possible leakage of acid with high consequential costs).***
- ***Poor crash safety.***

Note

- *Only install maintenance-free batteries in accordance to specifications “TL82506” (as of December 1997) and “VW75073” (as of August 2001).*
- *Batteries from the replacement parts range feature a base strip adapter for matching to different retainer flanges.*
- *The ⇒ battery operating instructions give details of when and how to use the base strip adapter.*

Vehicles with start/stop system

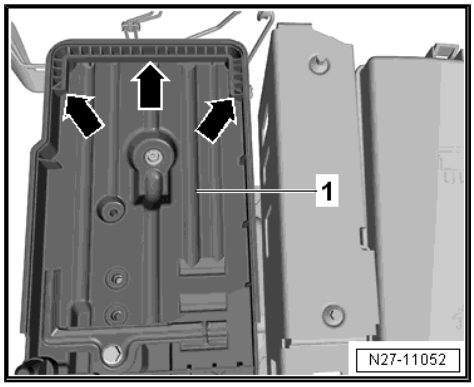
Note

- *Due to higher demands on the deep-cycle resistance, a special battery is used in vehicles equipped with a start/stop system.*
- *When renewing the battery, note the correct part designation.*
- *Batteries intended for use in vehicles with a start/stop system are marked “AGM” (Absorbent Glass Mat) or “EFB” (Enhanced Flooded Battery).*

Continued for all vehicles

– 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 -1-.

• Make sure that lug -arrow- on securing bracket -1- engages into recess in battery base strip.

– Tighten bolt -2- for securing bracket -1-.

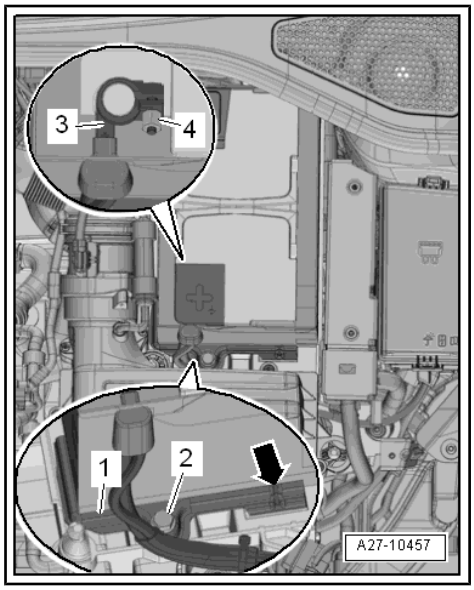
– Checking battery is seated securely

With ignition and electrical equipment switched off, connect battery in the following sequence:

– Fit battery clamp -3- of positive cable to positive battery terminal “+”.

– Tighten nut -4-.

– Connect battery ⇒ page 14 .



Note

If the battery is renewed, the battery monitor control unit - J367- must be adapted ⇒ page 21 .

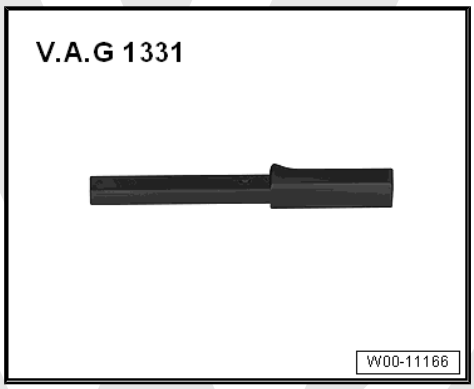
Specified torques

♦ ⇒ “1.1.1 Assembly overview - battery; battery in engine compartment”, page 4

1.2.2 Removing and installing battery, battery in luggage compartment

Special tools and workshop equipment required

♦ Torque wrench - V.A.G 1331-



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- Torque wrench - V.A.G 1410-



WARNING

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 .

Removing

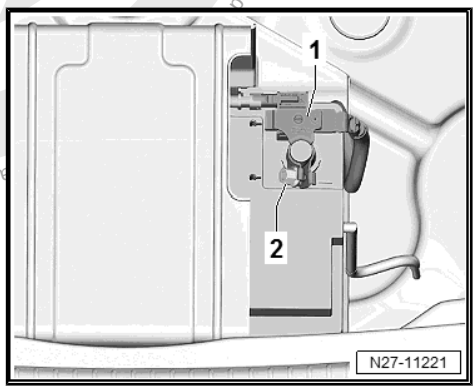
– Switch off ignition and all electrical consumers.

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

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

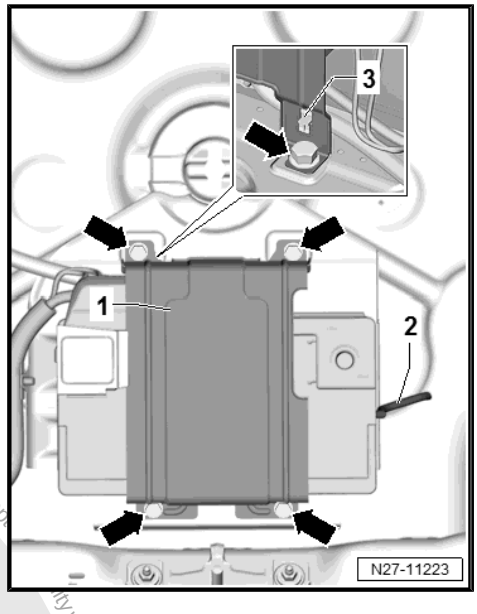
– Loosen nut -2- a few turns.

– Pull battery clamp -1- of earth wire off negative battery terminal.

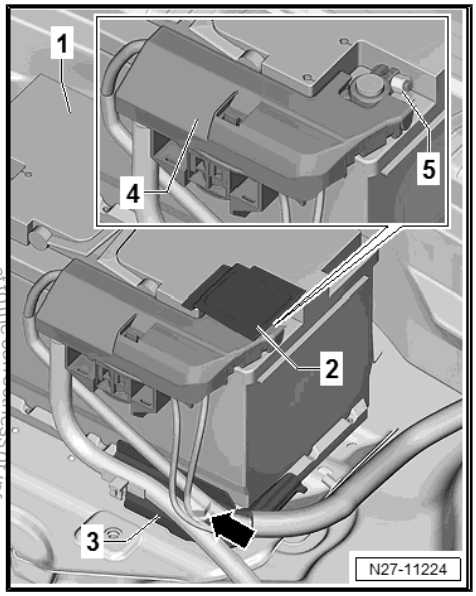


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– Pull central gas venting system -2- off battery - A- .
– Remove retainer -3- for wire from reinforcement -1-.
– Unscrew bolts -arrows-.
– Remove reinforcement -1- upwards.



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– Open cover -2- for positive battery terminal.
– Loosen nut -5- several turns.
– Pull battery clamp with main fuse carrier -4- off positive battery terminal.
– Unscrew bolt -arrow- from securing bracket -3-.
– Remove securing bracket -3-.
– Pull battery - A- -1- in direction of travel and slightly towards left out of battery tray.
– Lift battery - A- -1- out of luggage compartment.

Installing

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

Caution

A loosely fitted battery creates the following dangers:

- ***Shortened service life caused by vibration damage (danger of explosion).***
- ***The plates in the battery cells will be damaged if the battery is not secured correctly.***
- ***Damage to battery casing by clamping bracket (possible leakage of acid with high consequential costs).***
- ***Poor crash safety.***

Note

- *Only install maintenance-free batteries in accordance to specifications "TL82506" (as of December 1997) and "VW75073" (as of August 2001).*
- *Batteries from the replacement parts range feature a base strip adapter for matching to different retainer flanges.*
- *The ⇒ battery operating instructions give details of when and how to use the base strip adapter.*

Vehicles with start/stop system

Note

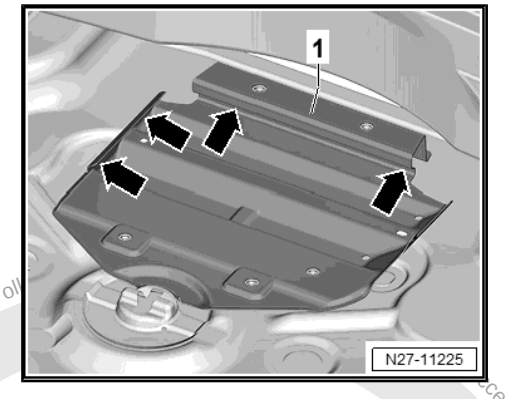
- *Due to higher demands on the deep-cycle resistance, a special battery is used in vehicles equipped with a start/stop system.*
- *When renewing the battery, note the correct part designation.*
- *Batteries intended for use in vehicles with a start/stop system are marked "AGM" (Absorbent Glass Mat) or "EFB" (Enhanced Flooded Battery).*

Continued for all vehicles

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– Place battery - A- into battery tray -1- so that battery base strip lies against stops at bottom and sides -arrows-.

• It should no longer be possible to move battery - A- towards rear or sides.



– Fit securing bracket -3-.

– Tighten bolt -arrow- for securing bracket -3-.

– Ensure that battery - A- is seated securely.

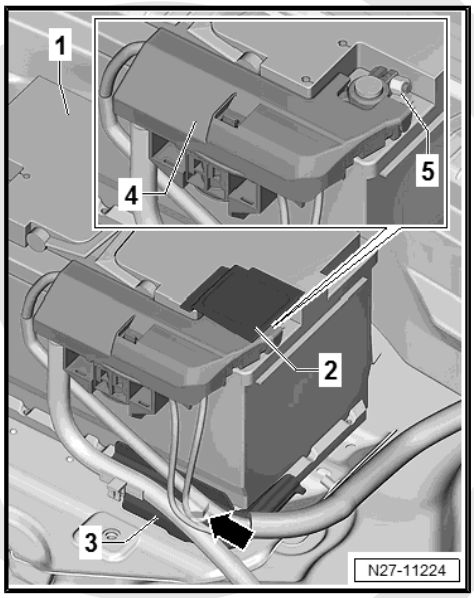
With ignition and electrical equipment switched off, connect battery - A- in the following sequence:

– Push battery clamp with main fuse carrier -4- onto positive battery terminal.

– Tighten nut -5-.

– Close cover -2- for positive battery terminal.

– Connect battery - A- ⇒ page 16 .



Note

If the battery is renewed, the battery monitor control unit - J367- must be adapted ⇒ page 21 .

Specified torques

◆ ⇒ “1.1.2 Assembly overview - battery; battery in luggage compartment”, page 6

1.3 Disconnecting and connecting battery

⇒ “1.3.1 Disconnecting and connecting battery; battery in engine compartment”, page 14

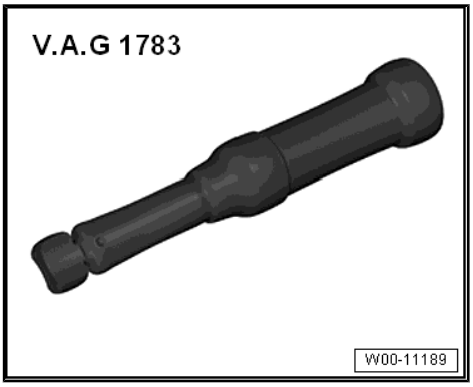
⇒ “1.3.2 Disconnecting and connecting battery, battery in luggage compartment”, page 16

1.3.1 Disconnecting and connecting battery; battery in engine compartment

Special tools and workshop equipment required

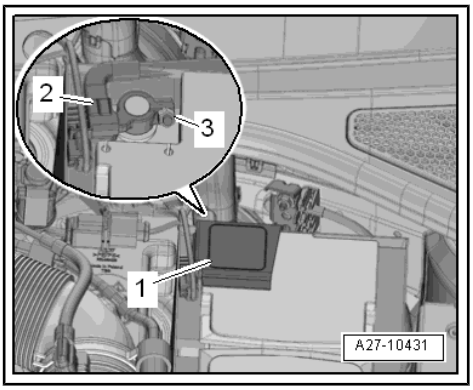
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- Torque wrench - V.A.G 1783-



Disconnecting

– Switch off ignition and all electrical consumers.
– Keep the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.
– Open cover -1- on battery negative terminal.
– Loosen nut -3- a few turns.
– Pull battery clamp -2- of earth wire off battery terminal.

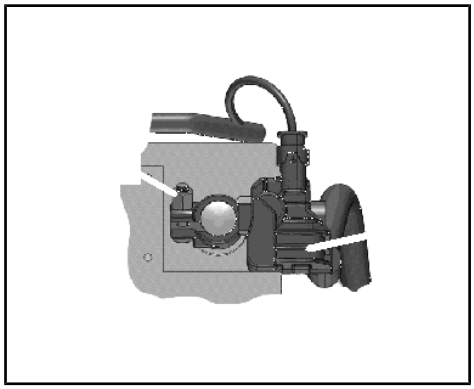


Connecting

Observe the following when connecting the battery:

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– Separate electrical connector -2- on battery monitor control unit - J367- -3-.
– Fit battery terminal clamp of earth cable to negative battery terminal “–” by hand.
– Tighten nut -1-.
– Reconnect connector -2- to battery monitor control unit - J367- .
– Switch on ignition.
– Check time and adjust, if necessary.
– Completely open windows, and then completely close them.
– Then, with windows closed, pull window regulator switches until relay can be heard to switch.
– Check convenience mode of the window regulators.



With convenience closing activated, windows must close fully without the need for holding the window regulator switch.

Note

After the voltage supply has been switched back on, the vehicle must travel several meters before the ESP warning lamp goes out.

Specified torques

- ⇒ “1.1.1 Assembly overview - battery; battery in engine compartment”, page 4

1.3.2 Disconnecting and connecting battery, battery in luggage compartment

Caution

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

- ***Contrary to the following description, the battery must be disconnected with the ignition SWITCHED ON when working on pyrotechnic components (e.g. airbags, belt tensioners) ⇒ General body repairs, interior; Rep. gr. 00 ; Safety precautions; Safety precautions when working on pyrotechnic components .***

Special tools and workshop equipment required

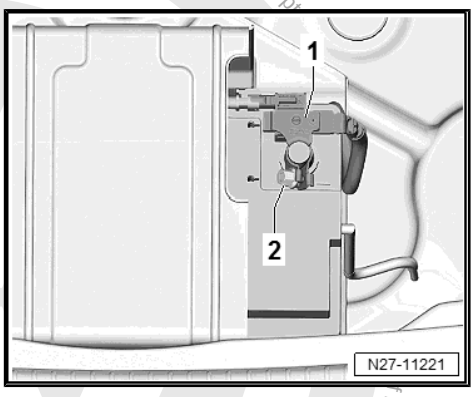
- Torque wrench - V.A.G 1410-



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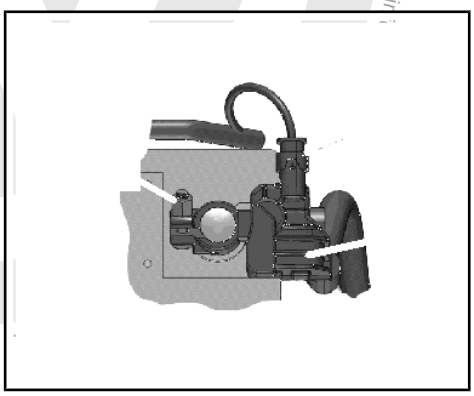
Disconnecting

– Switch off ignition and all electrical consumers.
– Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.
– Remove luggage compartment floor from vehicle towards rear.
– Loosen nut -2- a few turns.
– Pull battery clamp -1- of earth wire off negative battery terminal.



Connecting

Observe the following when connecting the battery:



– Separate electrical connector -2- on battery monitor control unit - J367- -3-.
– Fit battery terminal clamp of earth cable to negative battery terminal “–” by hand.
– Tighten nut -1-.
– Reattach electrical connector -2- to battery monitor control unit - J367- -3-.
– Switch on ignition.
– Check time and adjust, if necessary.
– Completely open windows, and then completely close them.
– Then, with windows closed, pull window regulator switches until relay can be heard to switch.
– Check convenience mode of the window regulators.

With convenience closing activated, windows must close fully without the need for holding the window regulator switch.

Note

After the voltage supply has been switched back on, the vehicle must travel several meters before the ESP warning lamp goes out.

Specified torques

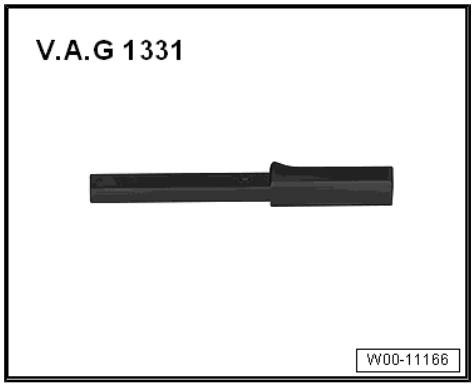
◆ ⇒ “1.1.2 Assembly overview - battery; battery in luggage compartment”, page 6

1.4 Removing and installing battery tray

Special tools and workshop equipment required

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- Torque wrench - V.A.G 1331-



Removing

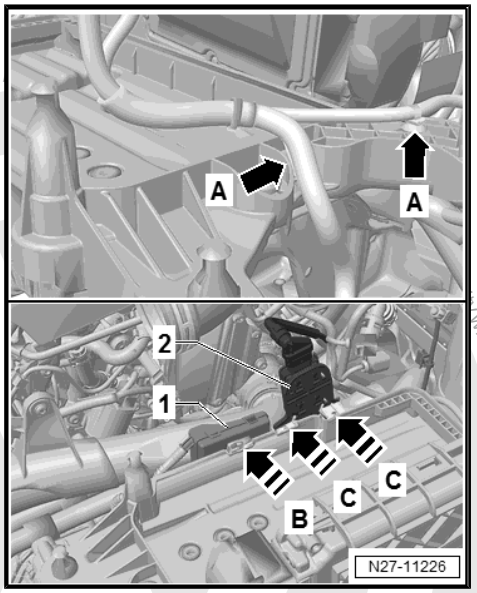
– Remove battery - A- ⇒ page 7 .

– If necessary, remove air filter housing ⇒ Rep. gr. 23 ; Air filter; Removing and installing air filter housing or ⇒ Rep. gr. 24 ; Air filter; Removing and installing air filter housing .

– Lay wiring harness on battery tray -arrows A- to one side.

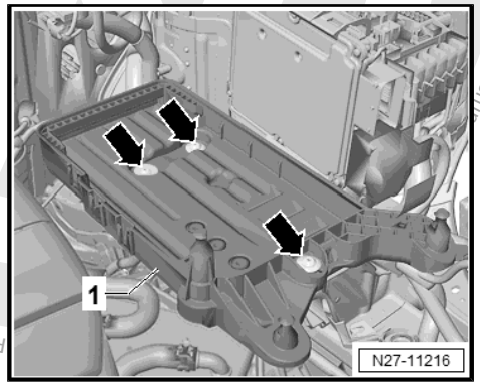
– If fitted, release fastener -arrow B- on water separator for dual clutch gearbox -1-, and unclip water separator -1- upwards from battery tray.

– If fitted, release fasteners -arrows C- on bracket for control unit for NOx sender - J583- -2-, and pull bracket for control unit for NOx sender - J583- -2- upwards off battery tray.



– Unscrew bolts -arrows-.

– Remove battery tray -1-.



Installing

Install in reverse order of removal.

Specified torques

- ⇒ “1.1.1 Assembly overview - battery; battery in engine compartment”, page 4

1.5 Checking battery

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

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

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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-

⇒ "1.7.1 Removing and installing earth cable with battery monitor control unit J367 , battery in engine compartment", page 19

⇒ "1.7.2 Removing and installing earth cable with battery monitor control unit J367 , battery in luggage compartment", page 20

1.7.1 Removing and installing earth cable with battery monitor control unit - J367- , battery in engine compartment

Special tools and workshop equipment required

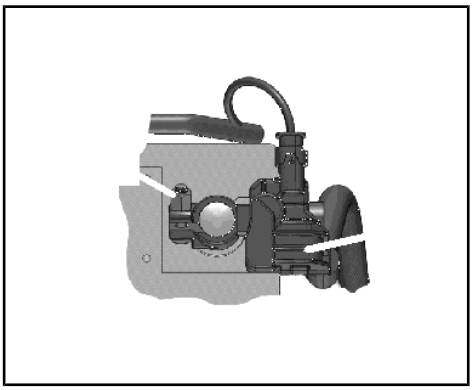
- Torque wrench - V.A.G 1331-



Removing

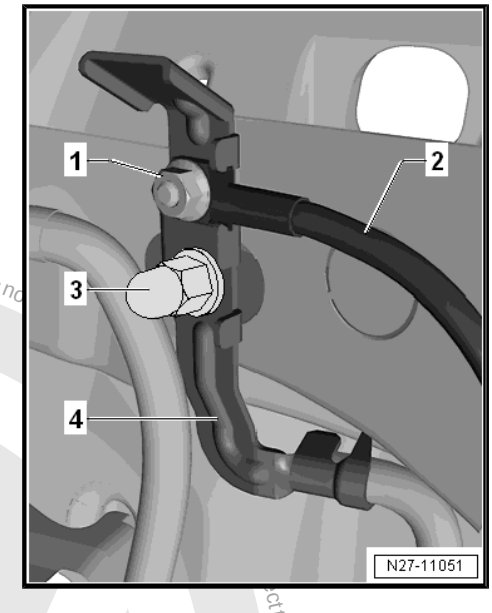
– Remove battery - A- ⇒ page 7 .

– Separate electrical connector -2- on battery monitor control unit - J367- -3-.



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– Unscrew nut -1- from earth cable -2-.
– Unscrew nut -3-.
– Remove earth wire with battery monitor control unit - J367- -4-.



Installing

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

– Adapt battery monitor control unit - J367- ⇒ page 21 .

Specified torques

◆ ⇒ “1.1.1 Assembly overview - battery; battery in engine compartment”, page 4

1.7.2 Removing and installing earth cable with battery monitor control unit - J367- , battery in luggage compartment

Special tools and workshop equipment required

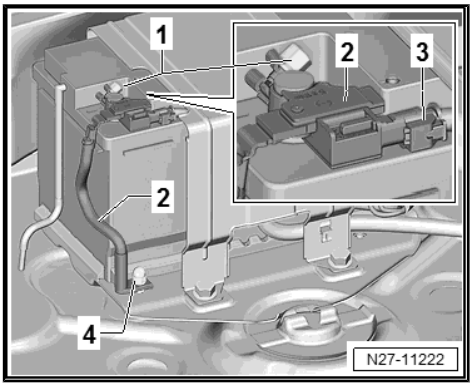
◆ Torque wrench - V.A.G 1331-



Removing

– Remove luggage compartment floor from vehicle towards rear.

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– Loosen nut -1- a few turns.
– Pull battery clamp of earth cable -2- off negative battery terminal.
– Release and disconnect electrical connector -3- on battery monitor control unit - J367- .
– Unscrew nut -4-.
– 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 21 .

Specified torques

◆ ⇒ "1.1.2 Assembly overview - battery; battery in luggage compartment", page 6

1.8 Adapting battery monitor control unit - J367-

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

– Connect ⇒ Vehicle diagnostic tester ⇒ page 313 .
– Adapt battery monitor control unit - J367- ⇒ Vehicle diagnostic tester.

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2 Alternator

⇒ “2.1 Assembly overview - alternator”, page 22

⇒ “2.2 Removing and installing alternator”, page 23

⇒ “2.3 Checking alternator”, page 29

⇒ “2.4 Removing and installing poly V-belt pulley”, page 30

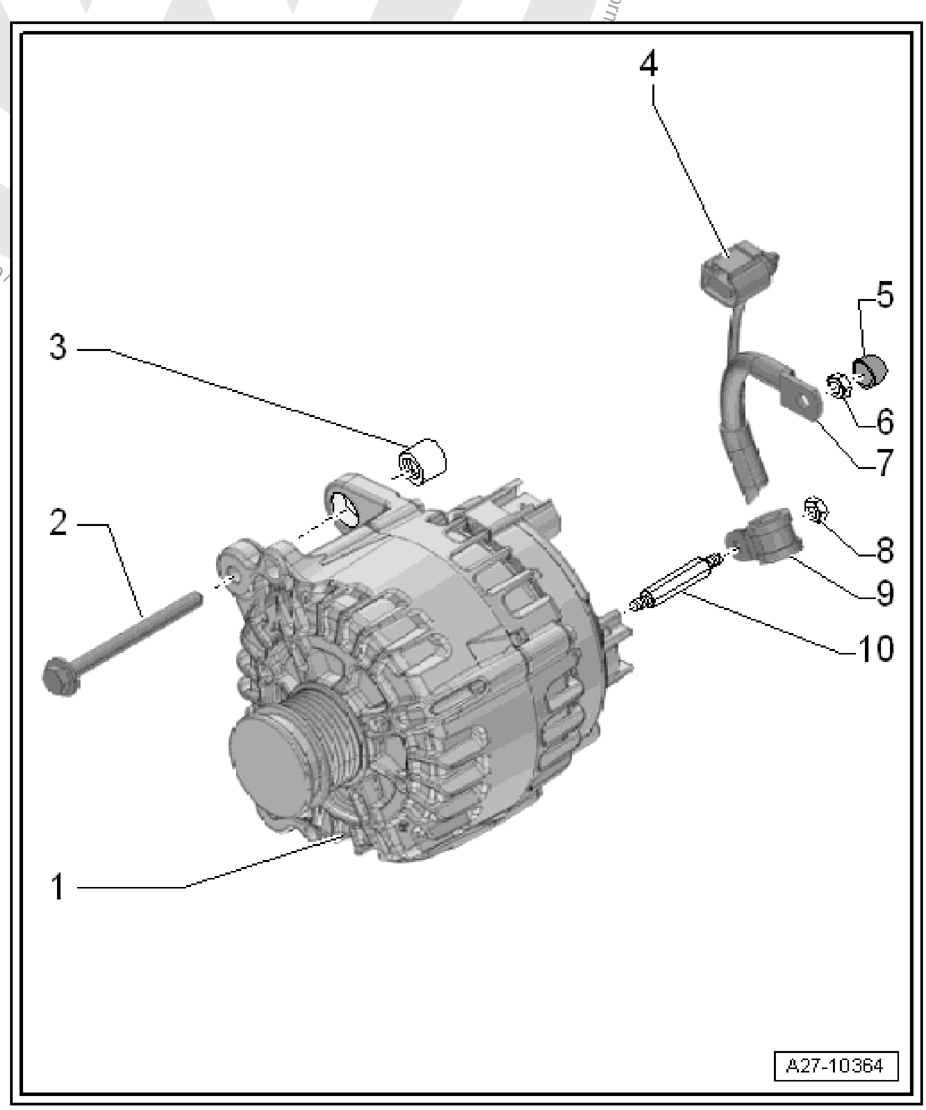
⇒ “2.5 Removing and installing voltage regulator”, page 37

2.1 Assembly overview - alternator

⇒ “2.1.1 Assembly overview - alternator with sliding bushes”, page 22

⇒ “2.1.2 Assembly overview - alternator without sliding bushes”, page 23

2.1.1 Assembly overview - alternator with sliding bushes



1 - Alternator
- ❑ Removing and installing poly V-belt pulley ⇒ page 30
- ❑ Removing and installing voltage regulator - C1- ⇒ page 37
- ❑ Checking ⇒ page 29
- ❑ Removing and installing ⇒ page 23

2 - Bolts
- ❑ Qty. 2
- ❑ 23 Nm

3 - Sliding bushes
- ❑ Qty. 2
- ❑ Free off sliding bushes

4 - Electrical connector

5 - Cover

6 - Nut
- ❑ 20 Nm

7 - Terminal 30/B+

8 - Nut
- ❑ Not fitted in all vehicles
- ❑ 3.2 Nm

9 - Clamp
- ❑ Not fitted in all vehicles

10 - Threaded pin
- ❑ Not fitted in all vehicles
- ❑ 3.2 Nm

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2.1.2 Assembly overview - alternator without sliding bushes

1 - Bolts
- ❑ Qty. 4
- ❑ 23 Nm

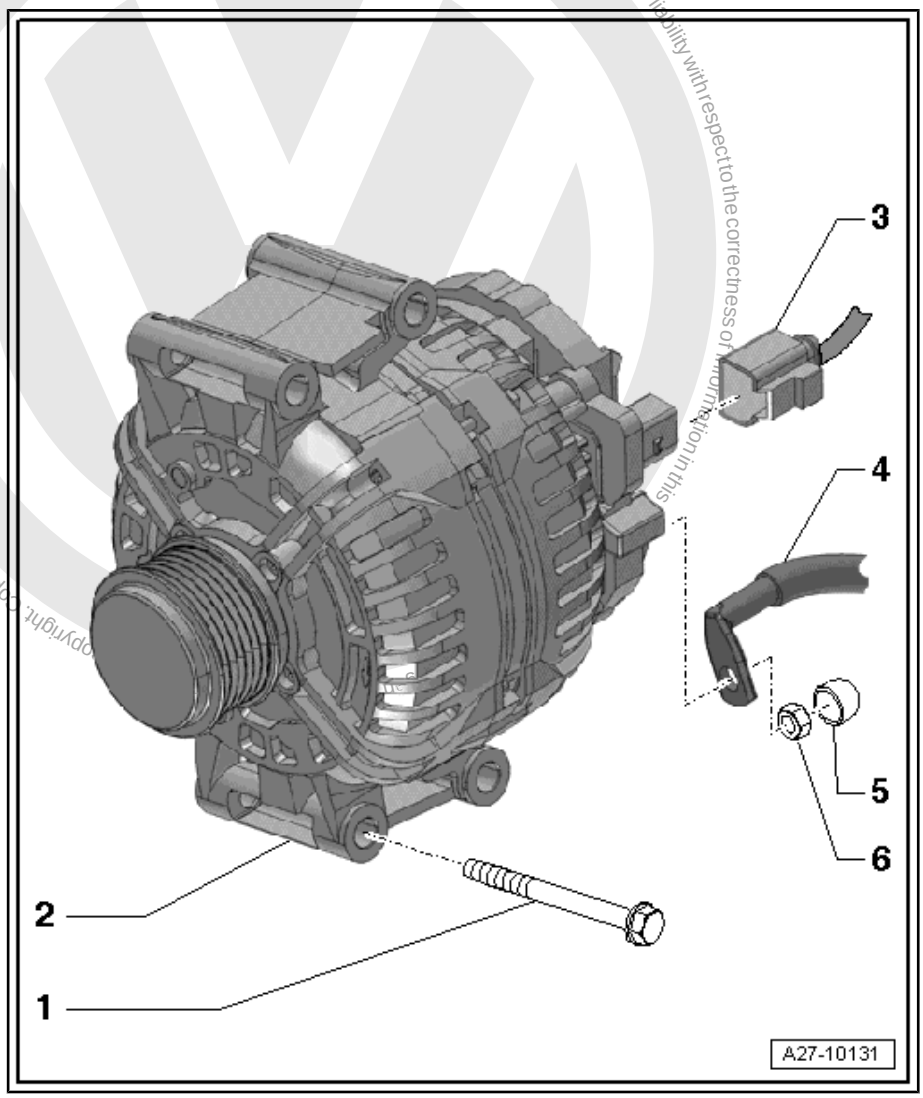
2 - Alternator
- ❑ Removing and installing poly V-belt pulley ⇒ page 30
- ❑ Removing and installing voltage regulator - C1- ⇒ page 37
- ❑ Checking ⇒ page 29
- ❑ Removing and installing ⇒ page 23

3 - Electrical connector

4 - Terminal 30/B+

5 - Cover

6 - Nut
- ❑ 20 Nm



2.2 Removing and installing alternator

⇒ "2.2.1 Removing and installing alternator, vehicles with 1.4 l TSI engine", page 23

⇒ "2.2.2 Removing and installing alternator, vehicles with 2.0 l TSI engine", page 25

⇒ "2.2.3 Removing and installing alternator, vehicles with TDI engine", page 27

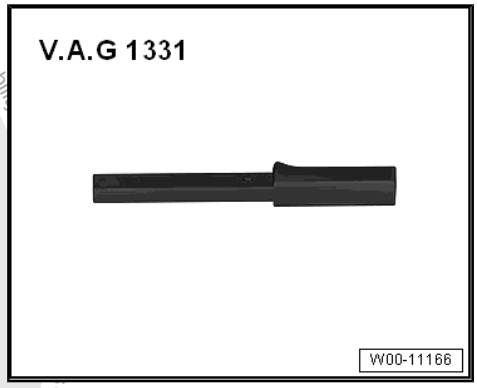
2.2.1 Removing and installing alternator, vehicles with 1.4 l TSI engine

Special tools and workshop equipment required

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- Torque wrench - V.A.G 1331-



Removing

– With ignition switched off, disconnect earth cable from battery ⇒ page 14 .

– Remove poly V-belt ⇒ Rep. gr. 13 ; Cylinder block, pulley end; Removing and installing poly V-belt .

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

Vehicles with air conditioning system

Caution

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

- ***Do NOT stretch, kink or bend refrigerant lines and hoses.***

– Remove air conditioner compressor from bracket ⇒ Heating, air conditioning system; Rep. gr. 87 ; Air conditioner compressor; Removing air conditioner compressor from and installing on bracket .

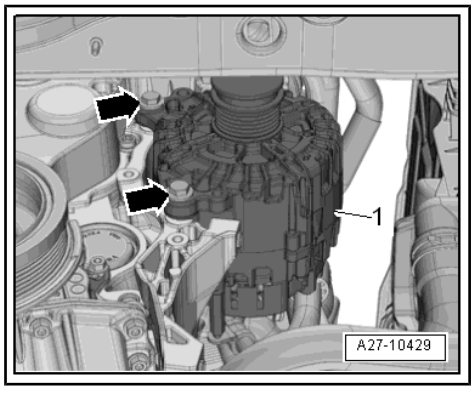
– Secure air conditioner compressor to lock carrier so that refrigerant lines are not under tension.

Continued for all vehicles

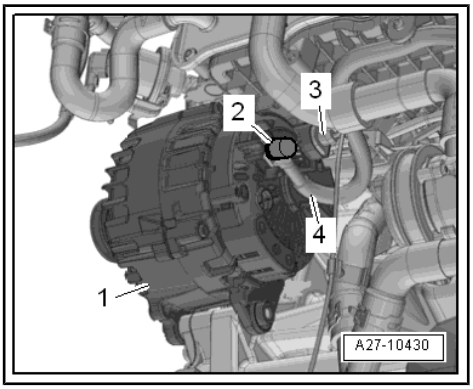
– Unscrew bolts -arrows-.

Note

- *If alternator - C- -1- is stuck in its bracket, screw bolts in again except for the last 2 turns.*
- *Carefully hit bolt heads with flat side of hammer to release sliding bushes of alternator mounting.*



– Remove alternator - C- -1- from bracket with electrical wires still connected.
– Disconnect electrical connector -3-.
– Lever off cap -2-.
– Unscrew nut and remove terminal 30/B+ -4-.
– Remove alternator - C- -1- downwards to the right.



Installing

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

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

Note

Make sure that bushes slide freely and are not too tight (loosen, if necessary) because otherwise the clamping force of a stiff bush will be insufficient even when the correct torque is applied.

– Connect battery ⇒ page 14 .
– Always start engine and check belt running after completing work.

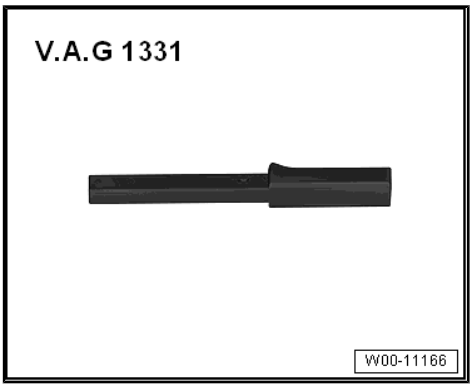
Specified torques

♦ ⇒ “2.1.1 Assembly overview - alternator with sliding bushes”, page 22

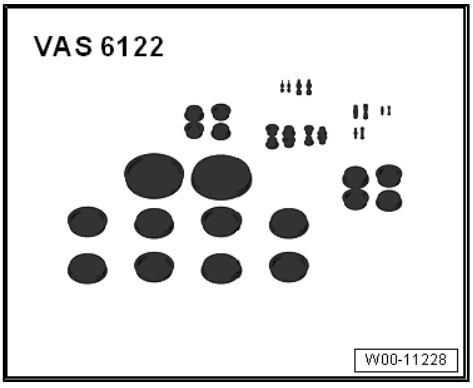
2.2.2 Removing and installing alternator, vehicles with 2.0 l TSI engine

Special tools and workshop equipment required

♦ Torque wrench - V.A.G 1331-



♦ Engine bung set - VAS 6122-



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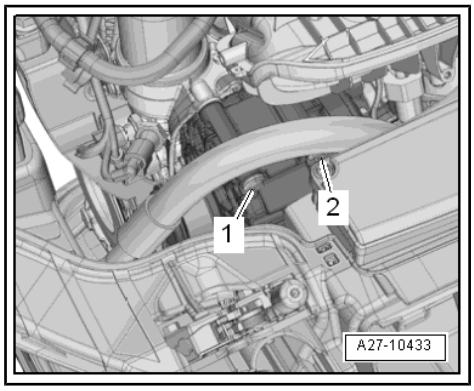
Removing

– With ignition switched off, disconnect earth cable from battery ⇒ page 14 .

– Remove radiator cowl ⇒ Rep. gr. 19 ; Radiator/radiator fan; Removing and installing radiator cowl .

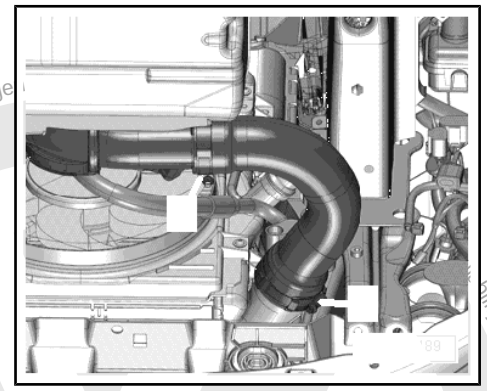
– Remove poly V-belt ⇒ Rep. gr. 13 ; Cylinder block, pulley end; Removing and installing poly V-belt .

– Unscrew bolts -1- and -2-.



– Release hose clips -1- and -2- and remove air intake hose.

– Seal open lines and connections using clean plugs from engine bung set - VAS 6122- .



– Lay coolant hose -3- to one side.

– Release hose clip -2-.

– Unscrew bolts -arrows-.

– Disconnect electrical connector -1-.

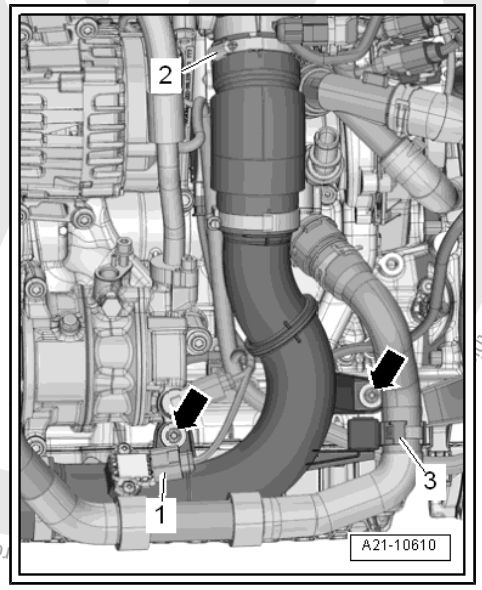
– Remove right air intake pipe.

Vehicles with air conditioning system

Caution

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

- ***Do NOT stretch, kink or bend refrigerant lines and hoses.***

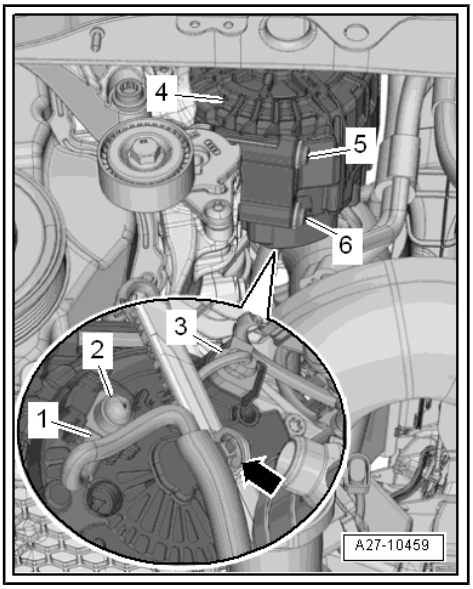


– Remove air conditioner compressor from bracket ⇒ Heating, air conditioning system; Rep. gr. 87 ; Air conditioner compressor; Removing air conditioner compressor from and installing on bracket .

– Secure air conditioner compressor to lock carrier so that refrigerant lines are not under tension.

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Continued for all vehicles



– Move electrical wiring harness clear -arrow-.
– Unscrew bolts -5- and -6-.
– Pull alternator - C- -4- towards front.
– Disconnect electrical connector -3-.
– Lever off cap -2-.
– Unscrew nut and remove terminal 30/B+ -1-.
– Remove alternator - C- -4- downwards (towards centre of vehicle).

Installing

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

– Connect battery ⇒ page 14 .
– Always start engine and check belt running after completing work.

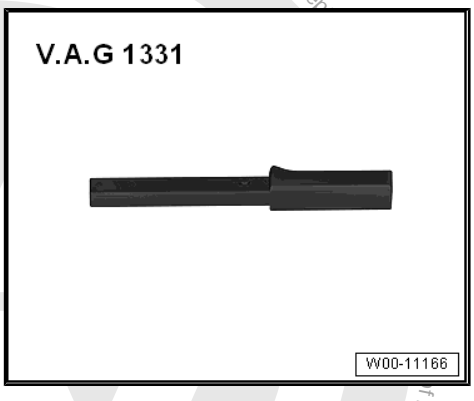
Specified torques

♦ ⇒ “2.1.2 Assembly overview - alternator without sliding bushes”, page 23

2.2.3 Removing and installing alternator, vehicles with TDI engine

Special tools and workshop equipment required

♦ Torque wrench - V.A.G 1331-



♦ Torque wrench - V.A.G 1783-



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Removing

– With ignition switched off, disconnect earth cable from battery ⇒ page 14 .

– Remove poly V-belt ⇒ Rep. gr. 13 ; Cylinder block, pulley end; Removing and installing poly V-belt .

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

Vehicles without bi-turbo engine

– Remove radiator cowl ⇒ Rep. gr. 19 ; Radiator/radiator fan; Removing and installing radiator cowl .

Vehicles with bi-turbo engine

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

– Remove actuator for engine temperature regulation - N493- ⇒ Rep. gr. 19 ; Coolant pump, thermostat .

– Remove charge air cooling pump - V188- ⇒ Rep. gr. 19 ; Coolant pump, thermostat; Removing and installing electric coolant pump .

Vehicles with air conditioning system

Caution

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

- ***Do NOT stretch, kink or bend refrigerant lines and hoses.***

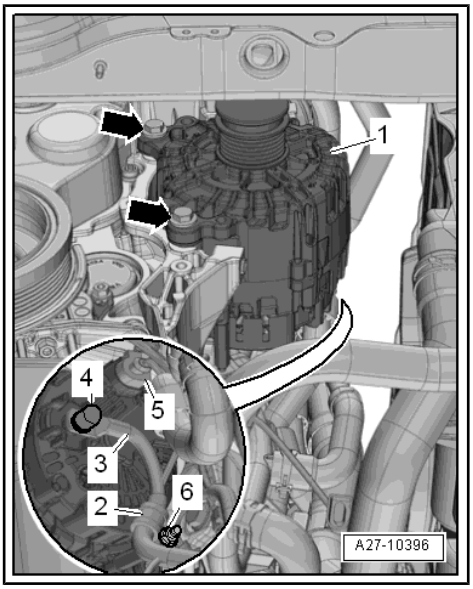
– Remove air conditioner compressor from bracket ⇒ Heating, air conditioning system; Rep. gr. 87 ; Air conditioner compressor; Removing air conditioner compressor from and installing on bracket .

– Secure air conditioner compressor to lock carrier so that refrigerant lines are not under tension.

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Continued for all vehicles

– Unscrew bolts -arrows-.



Note

- *If alternator - C- -1- is stuck in its bracket, screw bolts in again except for the last 2 turns.*
- *Carefully hit bolt heads with flat side of hammer to release sliding bushes of alternator mounting.*

– Remove alternator - C- -1- from bracket with electrical wires still connected.

– Disconnect electrical connector -5-.

– Lever off cap -4-.

– Unscrew nut, and remove terminal 30/B+ -3-.

– Unscrew nut -6-, and pull off clamp -2-.

– Remove alternator - C- -1- downwards to the right.

Installing

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

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

Note

Make sure that bushes slide freely and are not too tight (loosen, if necessary) because otherwise the clamping force of a stiff bush will be insufficient even when the correct torque is applied.

– Connect battery ⇒ page 14 .

– Always start engine and check belt running after completing work.

Specified torques

- ⇒ “2.1.1 Assembly overview - alternator with sliding bushes”, page 22

2.3 Checking alternator

– Check alternator - C- ⇒ Vehicle diagnostic tester.

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2.4 Removing and installing poly V-belt pulley

⇒ “2.4.1 Removing and installing poly V-belt pulley without freewheel”, page 30

⇒ “2.4.2 Removing and installing poly V-belt pulley with freewheel, manufacturer: Bosch”, page 31

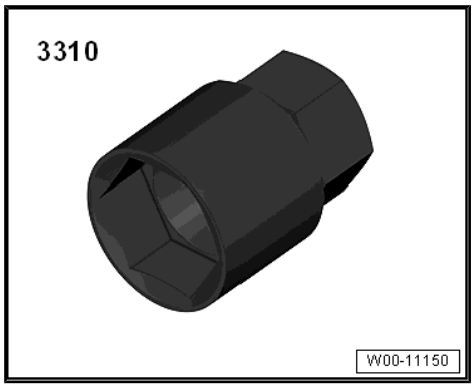
⇒ “2.4.3 Removing and installing poly V-belt pulley with freewheel, manufacturer: Valeo”, page 33

⇒ “2.4.4 Removing and installing decoupler pulley with freewheel”, page 35

2.4.1 Removing and installing poly V-belt pulley without freewheel

Special tools and workshop equipment required

- Socket insert - 3310-



- Torque wrench - V.A.G 1332-



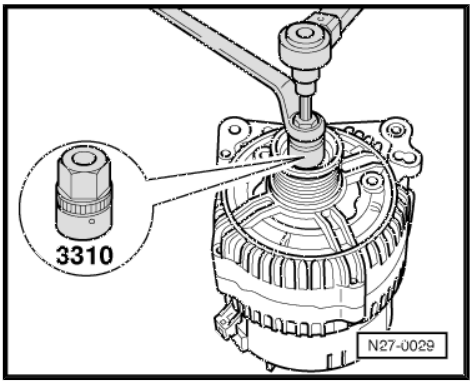
Removing

– Remove alternator - C- ⇒ page 23 .

– Clamp alternator - C- in vice at mounting points.

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– Unscrew securing nut of poly V-belt pulley from alternator shaft using socket - 3310- .
– Remove poly V-belt pulley from alternator shaft.



Installing

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

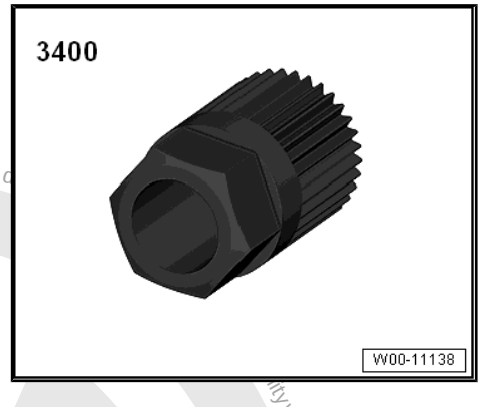
Specified torques

Component	Specified torque
Securing nut for poly V-belt pulley	65 Nm

2.4.2 Removing and installing poly V-belt pulley with freewheel, manufacturer: Bosch

Special tools and workshop equipment required

♦ Multipoint adapter - 3400-



♦ Torque wrench - V.A.G 1332-

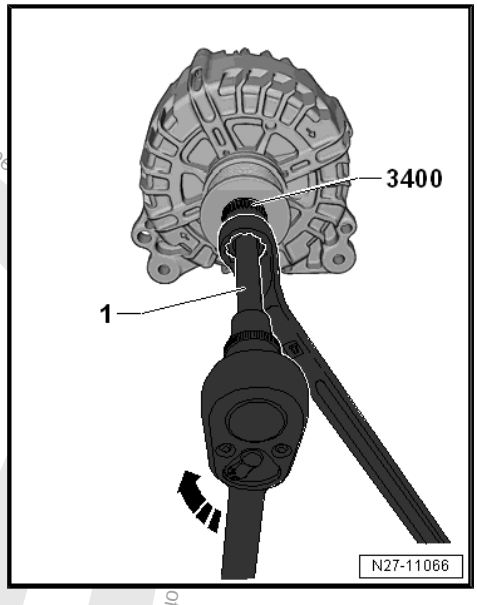


Removing

– Remove alternator - C- ⇒ page 23 .
– Clamp alternator - C- in vice at mounting points.
– Lever off poly V-belt pulley cap.

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– Insert adapter - 3400- into poly V-belt pulley using 17 mm ring spanner.
– Insert M10 multipoint bit -1- into alternator shaft.
– Counterhold alternator shaft whilst releasing poly V-belt pulley by turning it anti-clockwise with ring spanner.
– Hold poly V-belt pulley stationary by hand.
– Turn alternator shaft until poly V-belt pulley can be removed.



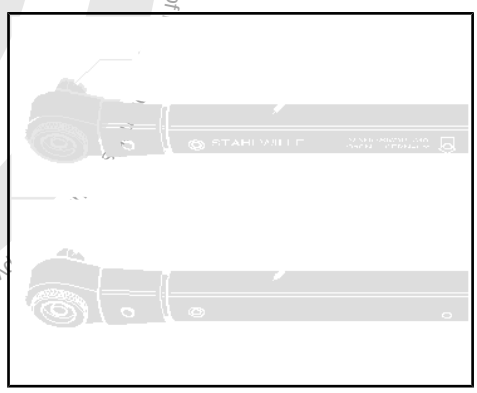
Installing

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

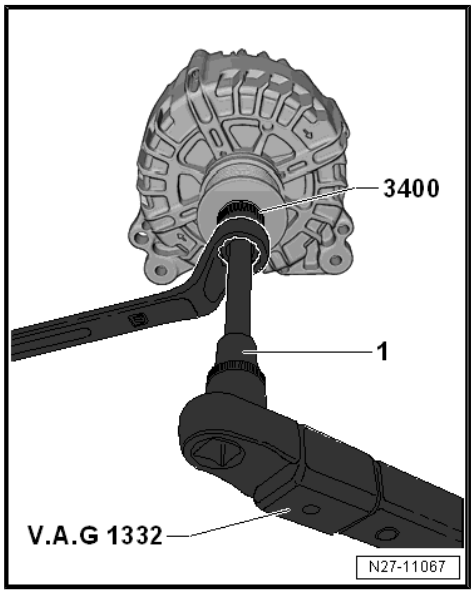
– Screw poly V-belt pulley by hand onto alternator shaft as far as stop.

Before installing poly V-belt pulley, alternator must be adapted as follows:

– Release socket drive -1- and pull off grip -2-.
– Turn grip -2- 180°, and reinsert socket -1-.
– Set turning direction of torque wrench - V.A.G 1332- to anti-clockwise at socket drive.



– Insert M10 multipoint bit -1- into alternator shaft.
– Counterhold adapter - 3400- using 17 mm ring spanner.
– Tighten poly V-belt pulley by turning alternator shaft anti-clockwise using torque wrench - V.A.G 1332- .



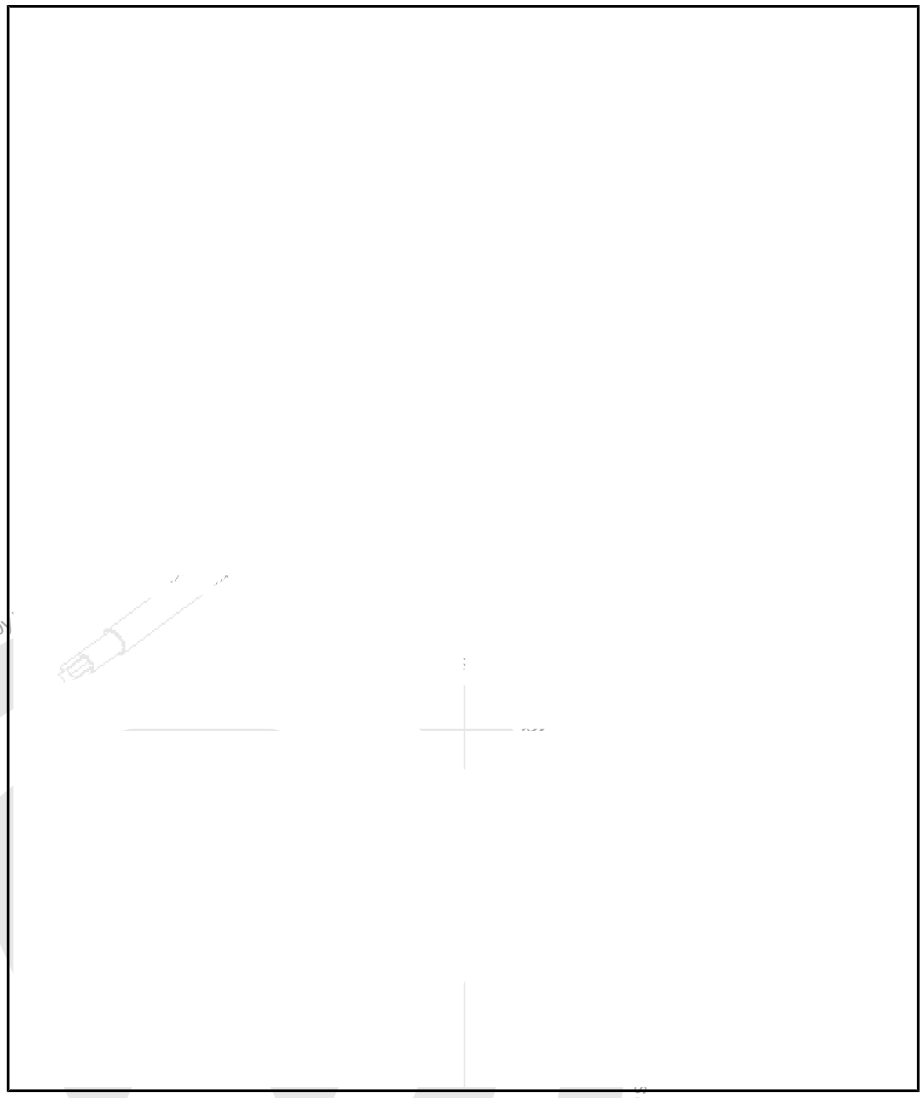
Specified torques

Component	Specified torque
Securing nut for poly V-belt pulley	80 Nm

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2.4.3 Removing and installing poly V-belt pulley with freewheel, manufacturer: Valeo

Special tools and workshop equipment required



- Multipoint adapter - 3400-
- Torque wrench - V.A.G 1332-
- TORX driver bit - V.A.G 1603/1-

Removing:

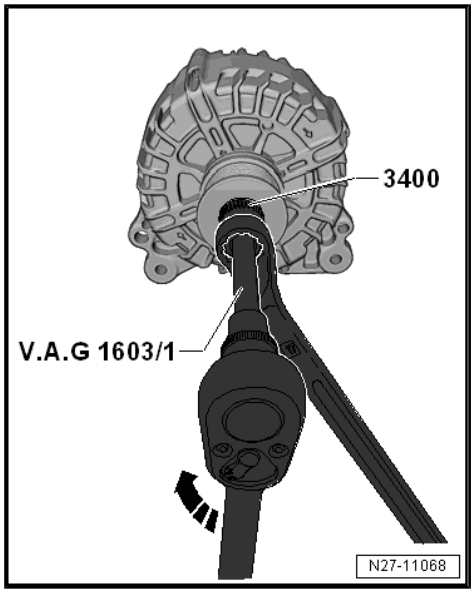
– Remove alternator - C- ⇒ page 23 .

– Clamp alternator - C- in vice at mounting points.

– Lever off poly V-belt pulley cap.

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– Insert adapter - 3400- into poly V-belt pulley using 17 mm ring spanner.
– Insert TORX key - V.A.G 1603/1- into alternator shaft.
– Counterhold alternator shaft whilst releasing poly V-belt pulley by turning it anti-clockwise with ring spanner.
– Hold poly V-belt pulley stationary by hand.
– Turn alternator shaft until poly V-belt pulley can be removed.



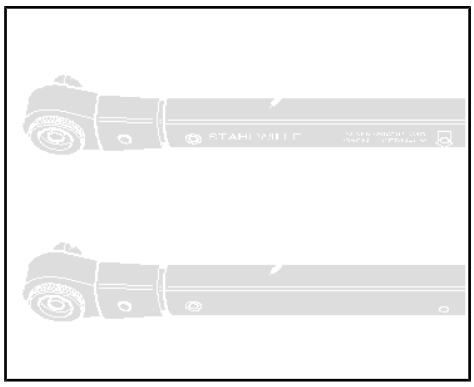
Installing

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

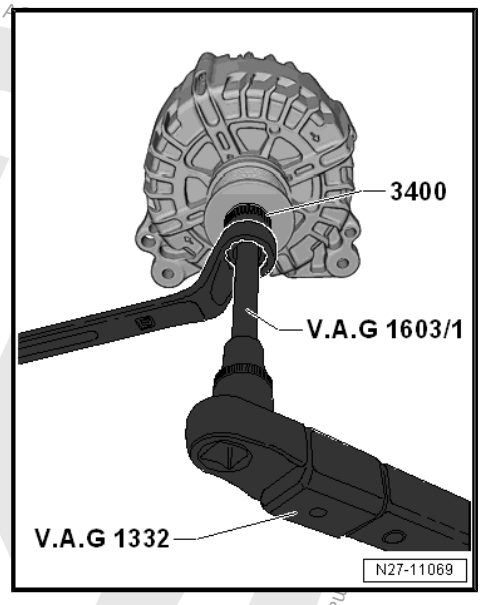
– Screw poly V-belt pulley by hand onto alternator shaft as far as stop.

To install poly V-belt pulley, the torque wrench - V.A.G 1332- needs to be set up as follows:

– Release socket drive -1- and pull off grip -2-.
– Turn grip -2- 180°, and reinsert socket -1-.
– Set turning direction of torque wrench - V.A.G 1332- to anti-clockwise at socket drive.



– Insert TORX key - V.A.G 1603/1- into alternator shaft.
– Counterhold adapter - 3400- using 17 mm ring spanner.
– Tighten poly V-belt pulley by turning alternator shaft anti-clockwise using torque wrench - V.A.G 1332- .



Specified torques

Component	Specified torque
Securing nut for poly V-belt pulley	80 Nm

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2.4.4 Removing and installing decoupler pulley with freewheel

General description

There are different types of decoupled pulleys with freewheel.

Before removing the decoupler pulley with freewheel, it must be determined which special tool must be used.

Caution

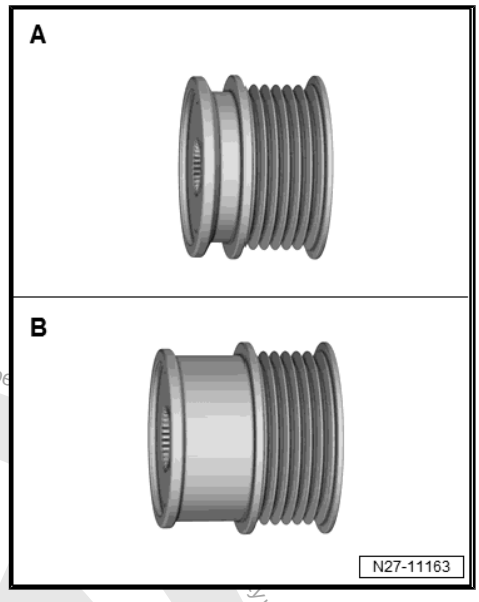
The length of the poly V-belt depends on the version of decoupler pulley with freewheel installed.

Check which version of decoupler pulley with freewheel is installed in order to ensure installation of the correct poly V-belt. Refer to ETKA for proper allocation of the poly V-belt.

Distinguishing between different versions of decoupler pulleys with freewheel:

-A- decoupler pulley with freewheel, small; use adapter -T10474-

-B- decoupler pulley with freewheel, large; use adapter -3400-

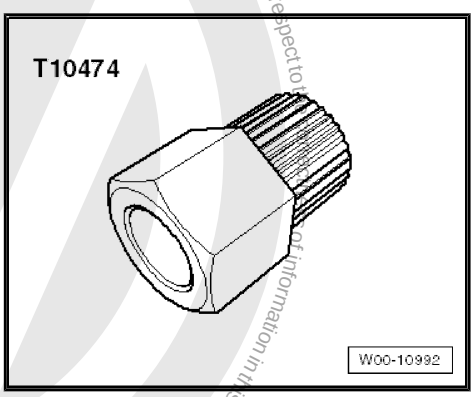


Note

The poly V-belt for the large decoupler pulley with freewheel must be longer owing to the fact that the decoupler pulley with freewheel has a larger diameter.

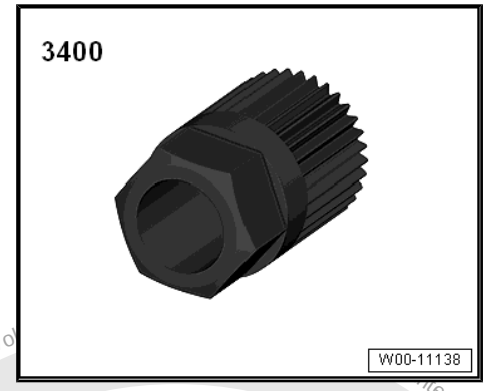
Special tools and workshop equipment required

- Multipoint adapter - T10474-



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♦ Multipoint adapter - 3400-



♦ Torque wrench - V.A.G 1332-



♦ Socket drive with 8 mm hexagon socket or TORX T50

Removing:

– Remove alternator - C- ⇒ page 23 .

– Clamp alternator - C- in vice at mounting points.

– Remove protective cap (where present) from decoupler pulley with freewheel.

– Insert multipoint adapter - T10474- or multipoint adapter - 3400- -1- into pulley, and fit a ring spanner.

– Insert suitable tool -2- into alternator shaft.

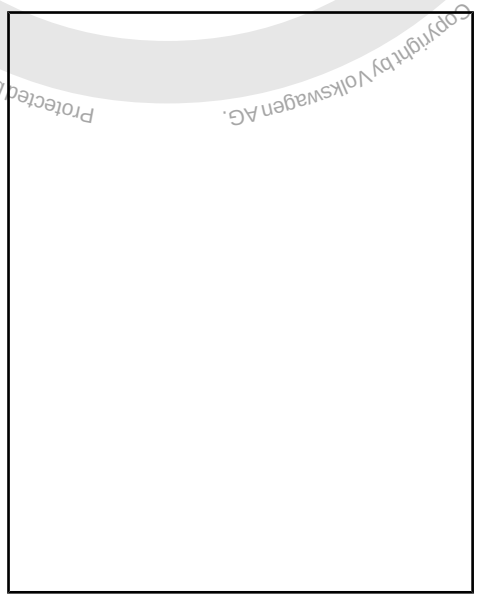
– Turn alternator shaft clockwise to loosen it, counterholding with ring spanner while doing so.

– Hold decoupled pulley with freewheel stationary with your hand, and turn alternator shaft until decoupled pulley with freewheel can be removed.

Installing:

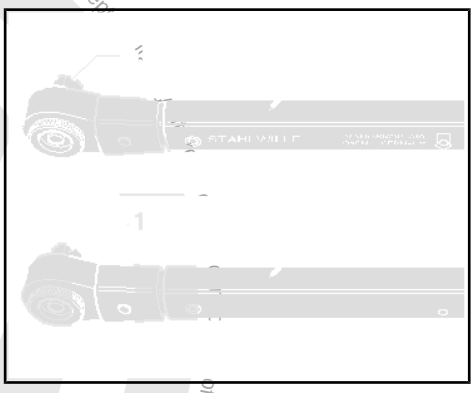
Install in the reverse order of removal, observing the following:

Modify the torque wrench - V.A.G 1332- as follows to assemble decoupled pulley with freewheel:

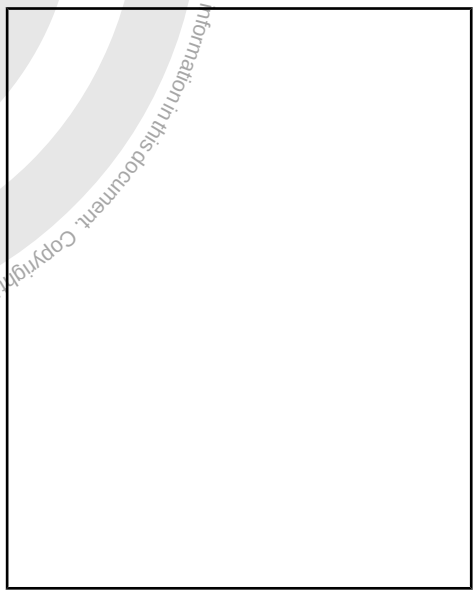


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– Release socket drive -1- and pull off grip -2-.
– Turn torque wrench grip -2- 180° and reinsert socket drive.
– Set turning direction of torque wrench - V.A.G 1332- to anti-clockwise at socket drive.
– First screw poly V-belt pulley with freewheel onto alternator shaft by hand to stop.



– Insert multipoint adapter - T10474- -1- into decoupler pulley with freewheel, and fit a ring spanner.
– Insert suitable tool -2- into alternator shaft.
– Turn alternator shaft anti-clockwise using torque wrench - V.A.G 1332- -3- in order to tighten decoupled pulley with freewheel.



Specified torques

Component	Specified torque
Securing nut for poly V-belt pulley	80 Nm

2.5 Removing and installing voltage regulator

⇒ “2.5.1 Removing and installing voltage regulator, manufacturer: Bosch”, page 37

⇒ “2.5.2 Removing and installing voltage regulator, manufacturer: Valeo”, page 38

2.5.1 Removing and installing voltage regulator, manufacturer: Bosch

Special tools and workshop equipment required

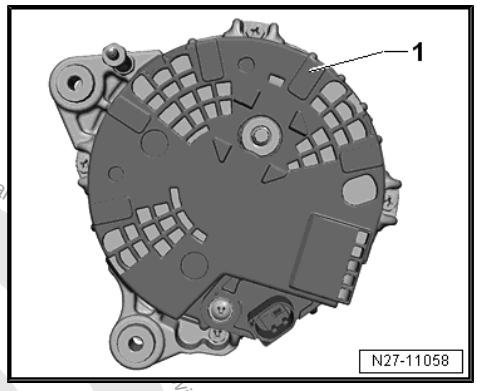
♦ Torque screwdriver - V.A.G 1624-



Removing

– Remove alternator - C- ⇒ page 23 .

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



– Remove bolts -arrows- for voltage regulator - C1- .

– Remove voltage regulator - C1- from alternator - C- .



Installing

Install in reverse order of removal.

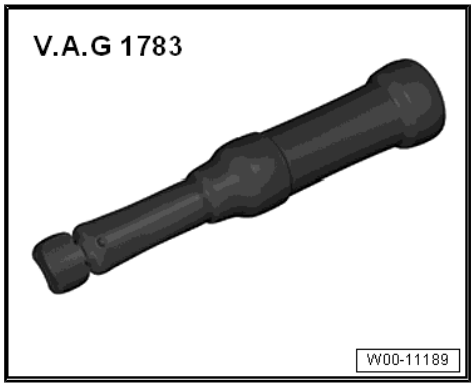
Specified torques

Component	Specified torque
Bolts for voltage regulator - C1-	2 Nm

2.5.2 Removing and installing voltage regulator, manufacturer: Valeo

Special tools and workshop equipment required

♦ Torque wrench - V.A.G 1783-

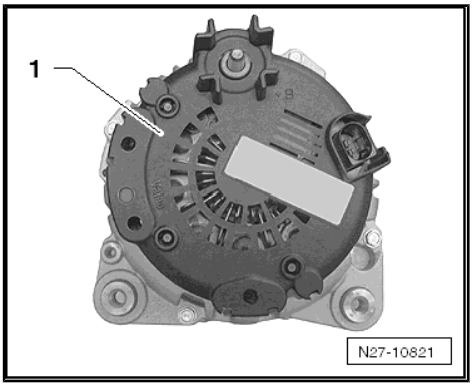


Removing

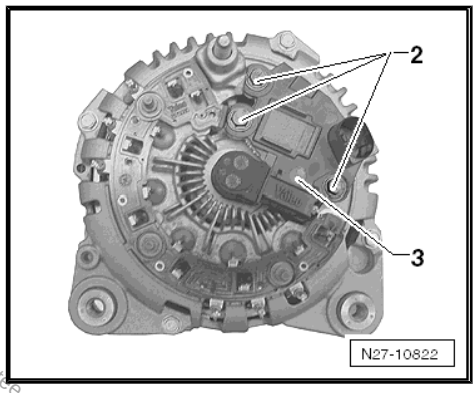
– Remove alternator - C- ⇒ page 23 .

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



– Unscrew bolts -2- of voltage regulator - C1- -3-.
– Remove voltage regulator - C1- -3- from alternator - C- .

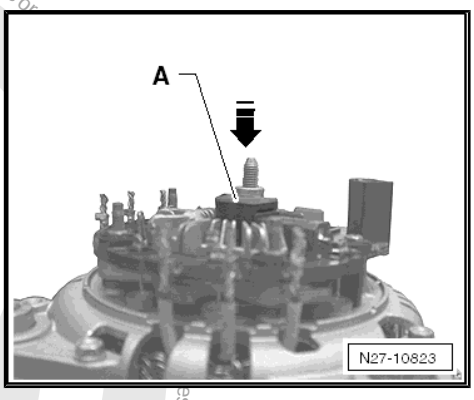


Installing

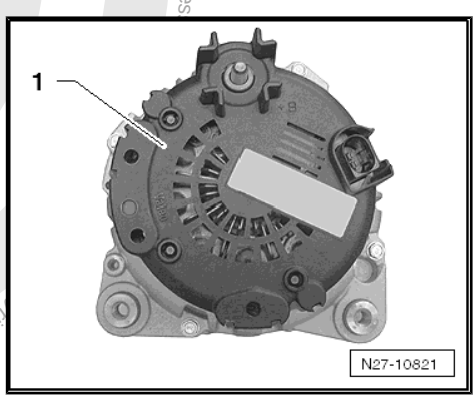
Install in the reverse order of removal, observing the following:

– Install voltage regulator - C1- .

– Press down protective cap for carbon brushes -A- -arrow- until is it flush with the voltage regulator housing.



– Fit new protective cap -1- to alternator - C- .



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Specified torques

Component	Specified torque
Bolts for voltage regulator - C1-	4 Nm

3 Starter motor

⇒ “3.1 Assembly overview - starter”, page 40

⇒ “3.2 Removing and installing starter motor”, page 41

3.1 Assembly overview - starter

⇒ “3.1.1 Exploded view - starter (vehicles with manual gearbox)”, page 40

⇒ “3.1.2 Assembly overview - starter (vehicles with dual clutch gearbox)”, page 41

3.1.1 Exploded view - starter (vehicles with manual gearbox)

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1 - Starter motor - B-
- ❑ Removing and installing ⇒ page 41

2 - Centre hex stud
- ❑ 80 Nm

3 - Earth cable
- ❑ Depending on equipment

4 - Nut
- ❑ Depending on equipment
- ❑ 20 Nm

5 - Electrical connector

6 - Nut
- ❑ 20 Nm

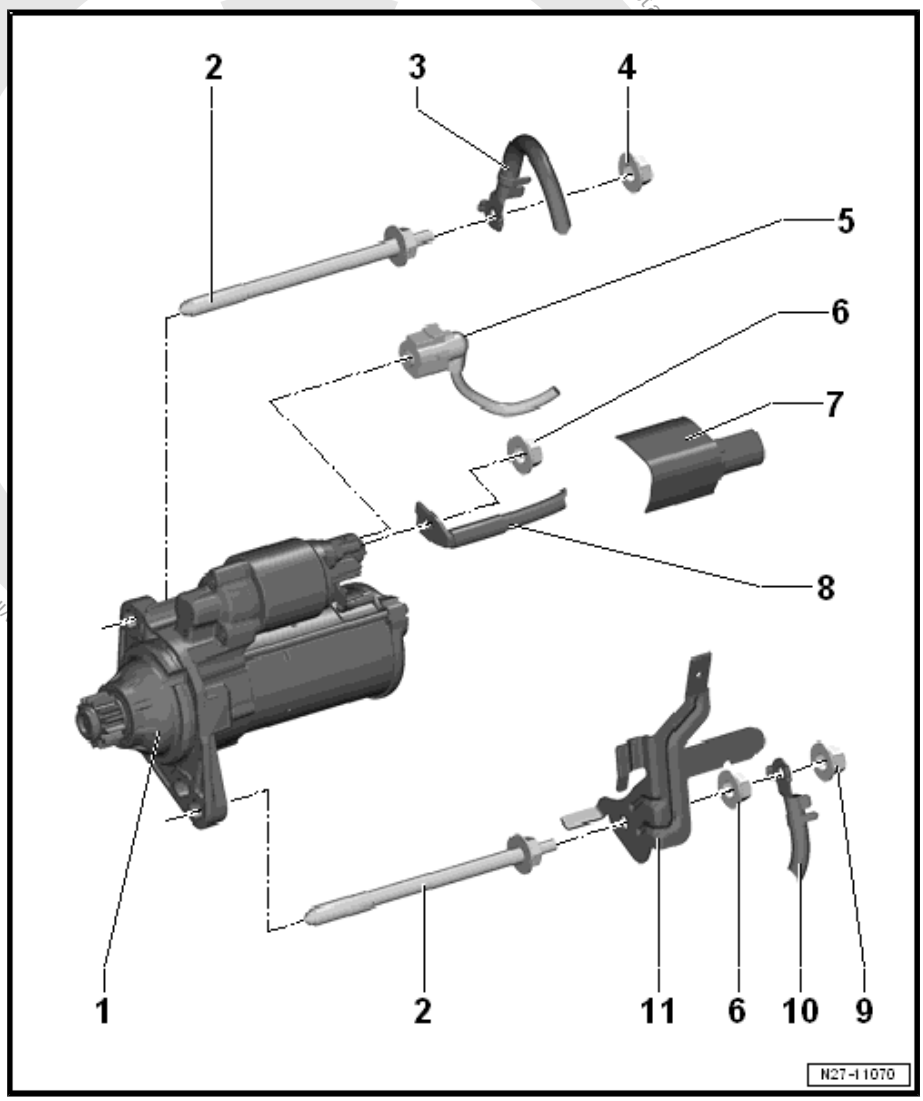
7 - Cover

8 - Terminal 30/B+

9 - Nut
- ❑ Depending on equipment
- ❑ 20 Nm

10 - Earth cable
- ❑ Depending on equipment

11 - Bracket
- ❑ For wiring harness



3.1.2 Assembly overview - starter (vehicles with dual clutch gearbox)

1 - Starter motor - B-
- ❑ Removing and installing ⇒ page 43

2 - Bolt
- ❑ 40 Nm

3 - Electrical connector

4 - Nut
- ❑ 20 Nm

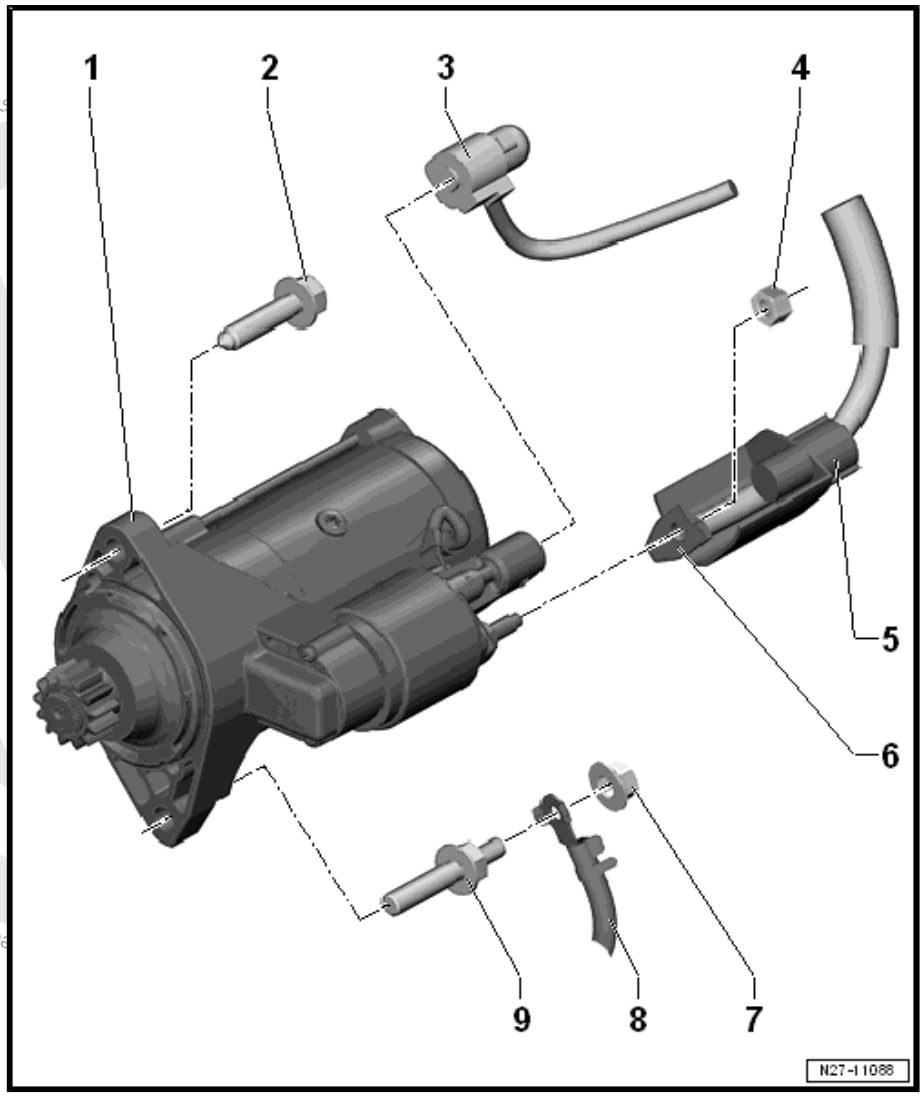
5 - Cover

6 - Terminal 30/B+

7 - Nut
- ❑ 20 Nm

8 - Earth cable

9 - Bolt
- ❑ 40 Nm



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3.2 Removing and installing starter motor

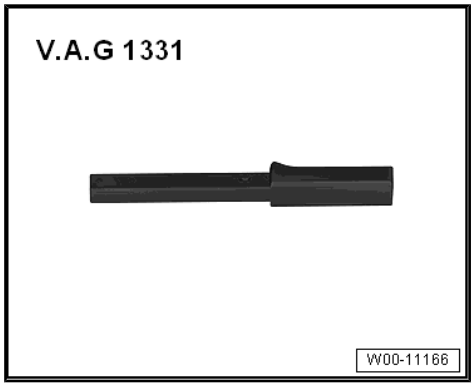
⇒ "3.2.1 Removing and installing starter, vehicle with manual gearbox", page 41

⇒ "3.2.2 Removing and installing starter, vehicles with dual clutch gearbox", page 43

3.2.1 Removing and installing starter, vehicle with manual gearbox

Special tools and workshop equipment required

♦ Torque wrench - V.A.G 1331-



♦ Torque wrench - V.A.G 1332-



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Removing

– With ignition switched off, disconnect earth wire from battery -A- ⇒ page 14 .

– Remove noise insulation ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Assembly overview - noise insulation .

Vehicles with air filter housing installed above starter - B-

– Remove air filter housing ⇒ Rep. gr. 23 ; Air filter; Removing and installing air filter housing or ⇒ Rep. gr. 24 ; Air filter; Removing and installing air filter housing .

Continued for all vehicles

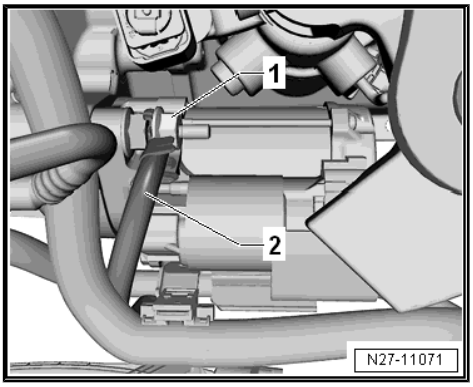
– Disconnect electrical connector -1-.

– Press off cap -2-.

– Unscrew nut -3-, and remove terminal 30/B+.



– Unscrew nut -1- from upper bolt of starter - B- .
– Remove earth cable -2-.



– Unscrew nut -4- and remove retainer -1- for wiring harness.

Note

The electrical wiring remains connected.

– Unscrew bolts -2- and -5- from starter - B- -3-.
– Remove starter - B- -3- downwards.

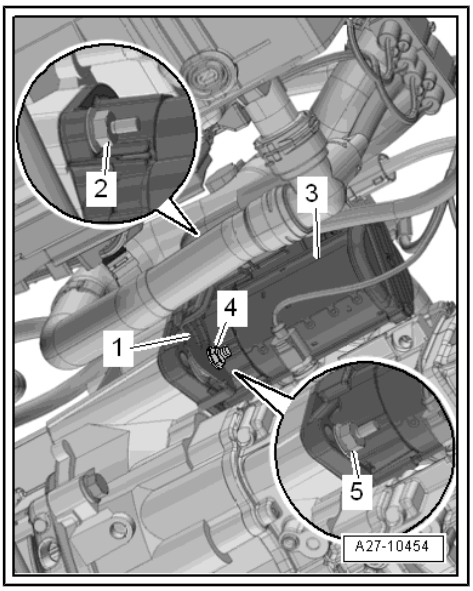
Installing

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

– Connect battery - A- ⇒ page 14 .

Specified torques

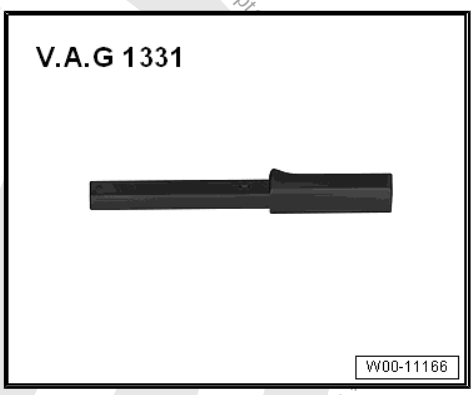
◆ ⇒ “3.1.1 Exploded view - starter (vehicles with manual gearbox)”, page 40



3.2.2 Removing and installing starter, vehicles with dual clutch gearbox

Special tools and workshop equipment required

◆ Torque wrench - V.A.G 1331-



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♦ Torque wrench - V.A.G 1332-



Removing

– With ignition switched off, disconnect earth wire from battery - A- ⇒ page 14 .

Vehicles with air filter housing installed above starter - B-

– Remove air filter housing ⇒ Rep. gr. 23 ; Air filter; Removing and installing air filter housing or ⇒ Rep. gr. 24 ; Air filter; Removing and installing air filter housing .

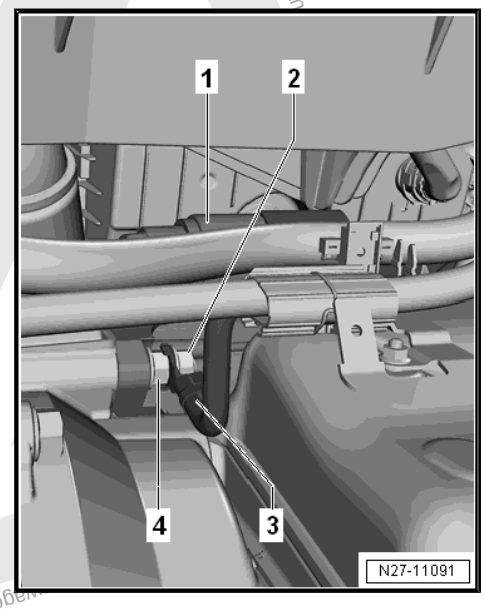
Continued for all vehicles

– If necessary, remove noise insulation ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Assembly overview - noise insulation .

– Unscrew nut -2- from lower bolt for starter - B- -1-.

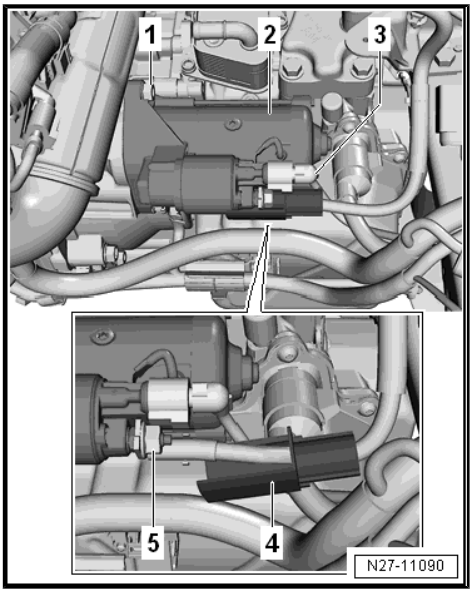
– Remove earth cable -3-.

– Unscrew bolt -4- of starter - B- -1-.



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– Disconnect electrical connector -3-.
– Press off cap -4-.
– Unscrew nut -5-, and remove terminal 30/B+.
– Unscrew bolt -1- of starter - B- -2-.
– Remove starter - B- -2- upwards.



Installing

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

– Connect battery - A- ⇒ page 14 .

Specified torques

◆ ⇒ “3.1.2 Assembly overview - starter (vehicles with dual clutch gearbox)”, page 41

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4 Cruise control system (CCS)

All instructions and notes regarding this chapter are available under ⇒ Electrical system, General information; Rep. gr. 27 ; Cruise control system (CCS)

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5 Start/stop system

⇒ “5.1 General description - start/stop system”, page 47

⇒ “5.2 Overview of fitting locations - start/stop system”, page 47

5.1 General description - start/stop system

The start/stop system is used for reducing fuel consumption by automatically switching off the engine when the vehicle is stationary and automatically starting it when the driver wants the vehicle to move on. The start/stop mode is activated automatically. In order for this to happen, the vehicle must be driven for approx. 4 seconds at a minimum speed of 3 km/h.

5.2 Overview of fitting locations - start/stop system

Note

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

1 - Start/stop operation switch - E693-

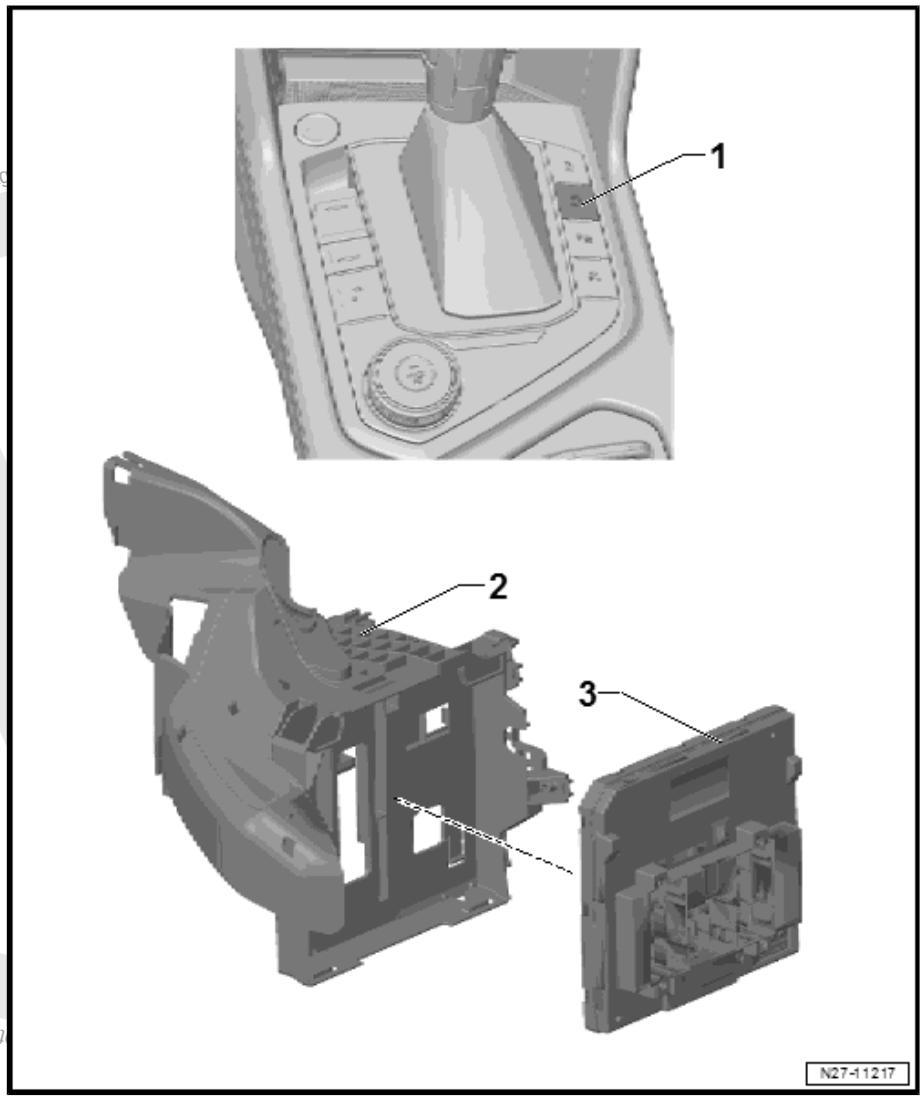
- ❑ Removing and installing ⇒ page 244

2 - Bracket

- ❑ For onboard supply control unit - J519-

3 - Onboard supply control unit - J519-

- ❑ Fitting location overview ⇒ page 296



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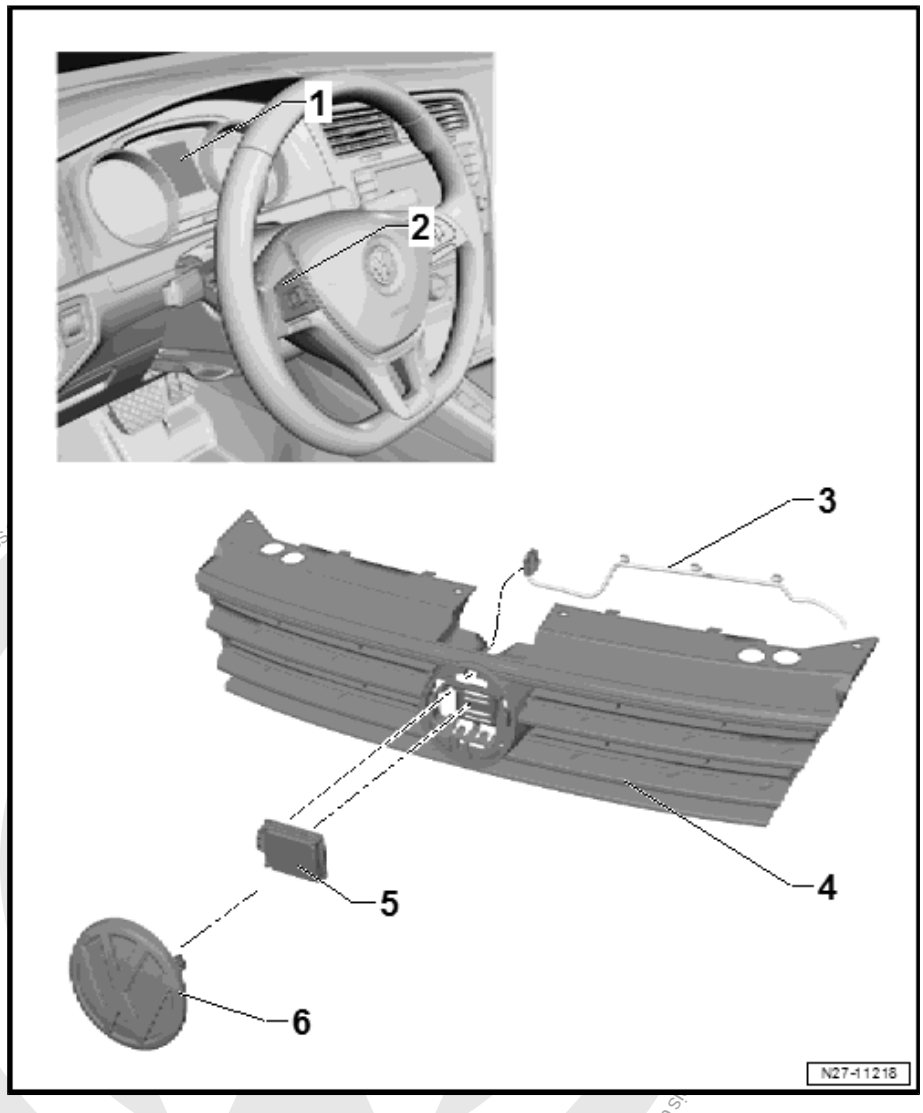
6 Adaptive cruise control

⇒ “6.1 Overview of fitting locations - adaptive cruise control”, page 48

⇒ “6.2 Removing and installing automatic distance control unit”, page 48

⇒ “6.3 Calibrating adaptive cruise control”, page 49

6.1 Overview of fitting locations - adaptive cruise control



1 - Dash panel insert - KX2-

- ❑ With control unit in dash panel insert - J285- .
- ❑ Removing and installing ⇒ page 52

2 - Adaptive cruise control button - E357-

- ❑ Integrated in multifunction steering wheel
- ❑ Removing and installing ⇒ Communication; Rep. gr. 91 ; Multifunction steering wheel; Removing and installing multifunction buttons in steering wheel -E441- / -E440- .

3 - Electrical connector

4 - Radiator grille

- ❑ Removing and installing ⇒ General body repairs, exterior; Rep. gr. 66 ; Radiator grille/front trim; Removing and installing radiator grille .

5 - Adaptive cruise control unit - J428-

- ❑ Calibrating ⇒ page 49
- ❑ Removing and installing ⇒ page 48

6 - Volkswagen emblem

- ❑ Removing and installing ⇒ General body repairs, exterior; Rep. gr. 66 ; Lettering and emblems; Removing and installing emblems at vehicle front .

6.2 Removing and installing automatic distance control unit

Note

If the automatic distance control unit - J428- is renewed, start the respective function ⇒ Vehicle diagnostic tester.

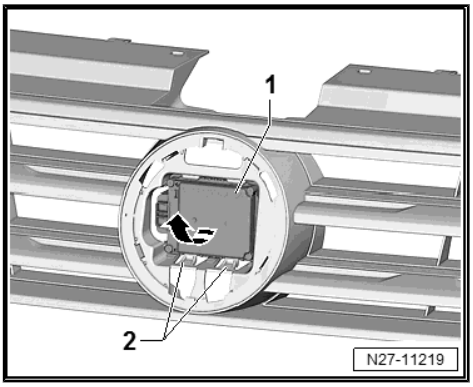
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Removing

– Remove VW emblem from radiator grille ⇒ General body repairs, exterior; Rep. gr. 66 ; Lettering and emblems; Removing and installing emblems at vehicle front .

– Release locking lugs -2-.

– At the same time, swing adaptive cruise control unit - J428- -1- in -direction of arrow- out of radiator grille.



Installing

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

– The adaptive cruise control unit - J428- must be heard to engage firmly in radiator grille.

– If necessary, calibrate adaptive cruise control ⇒ page 49 .

6.3 Calibrating adaptive cruise control

Conditions

– The adaptive cruise control unit - J428- must be calibrated if any of the following conditions apply:

⇒ Running gear, axles, steering; Rep. gr. 44 ; Adaptive cruise control; Calibrating adaptive cruise control

Note

♦ *Excessive horizontal adjustment of the adaptive cruise control unit - J428- results in permanent deactivation of the functions ACC/front scan system. In this case, the following message appears in the dash panel insert - KX2- :* `ACC/front scan system not available`.

♦ *Limited sensor functionality due to soiling or weather conditions, e.g. heavy rain, snowfall, sensor icing etc., results in temporary loss of the ACC/front scan system functions. In this case, the following message appears in the dash panel insert - KX2- :* `ACC/front scan system: no sensor data`.

– Calibrate adaptive cruise control ⇒ Running gear, axles, steering; Rep. gr. 44 ; Adaptive cruise control; Calibrating adaptive cruise control .

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90 – Gauges, instruments

1 Dash panel insert

⇒ “1.1 Assembly overview - dash panel insert”, page 50

⇒ “1.2 Assembly overview - head-up display”, page 51

⇒ “1.3 Removing and installing dash panel insert KX2 ”, page 52

⇒ “1.4 Removing and installing control unit for head-up display”, page 55

1.1 Assembly overview - dash panel insert

1 - Electrical connector

2 - Dash panel insert - KX2-

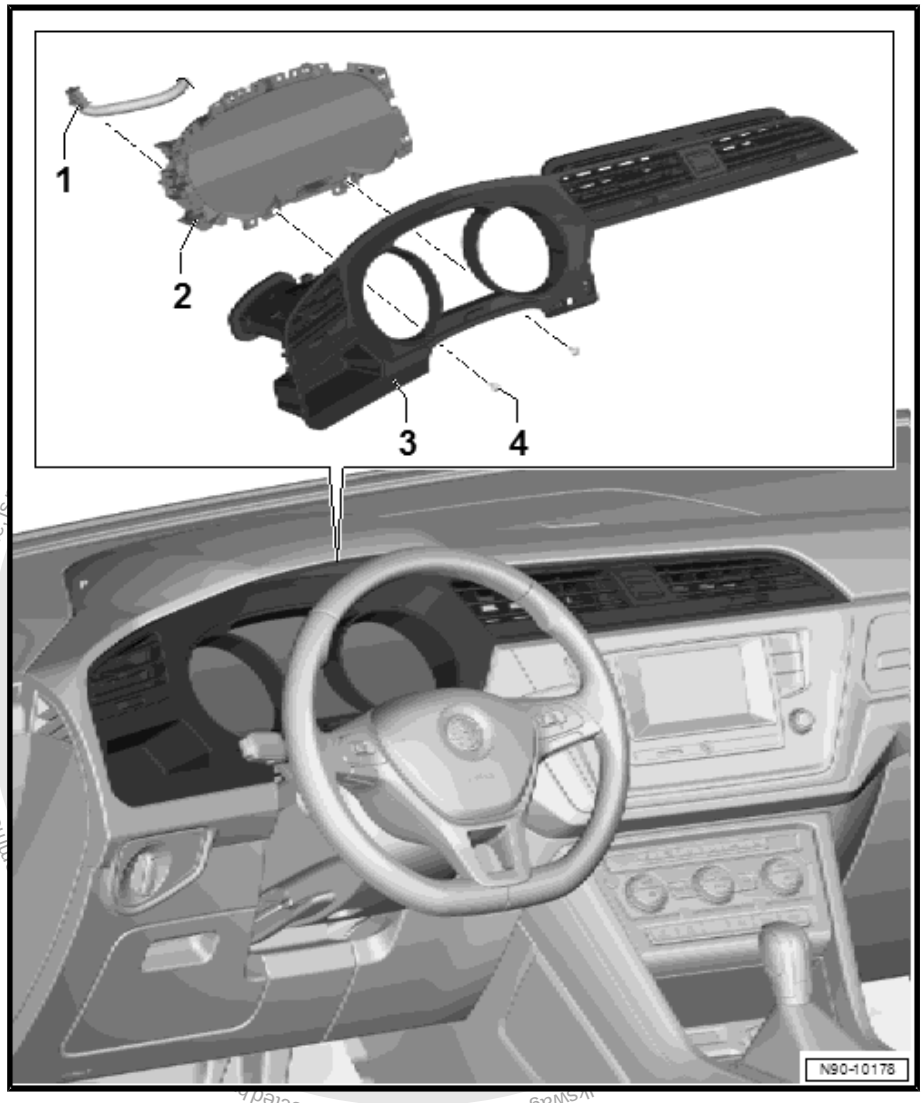
- ❑ With control unit in dash panel insert - J285- .
- ❑ Removing and installing ⇒ page 52

3 - Dash panel insert trim

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

4 - Bolts

- ❑ Qty. 2
- ❑ 1.5 Nm



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1.2 Assembly overview - head-up display

Note

- *The illustration shows fitting locations for left-hand drive vehicles. Fitting locations for right-hand drive vehicles are similar.*
- *For reasons of clarity, the dash panel is not shown in illustration.*

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1 - Assembly overview - head-up display - J898-

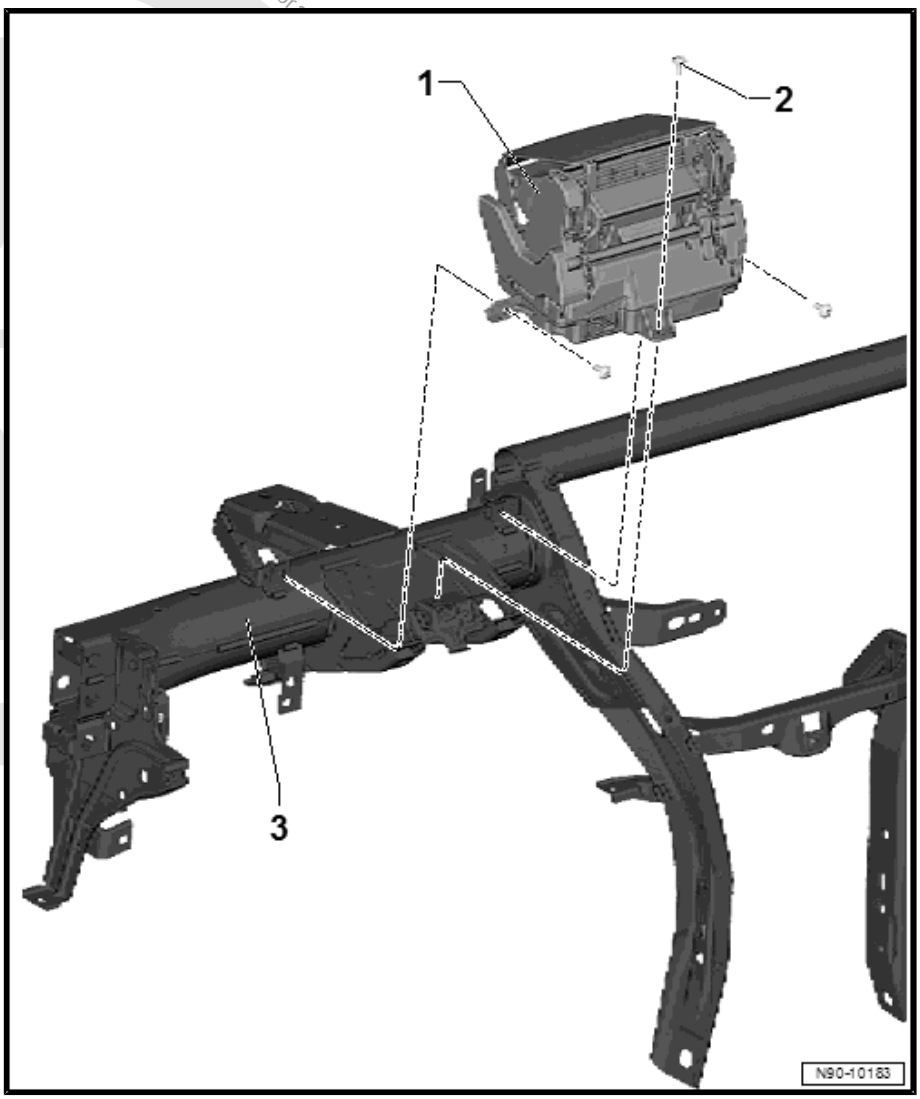
- ❑ Removing and installing ⇒ page 55

2 - Bolt

- ❑ Qty. 3
- ❑ 1.5 Nm

3 - Central tube for dash panel

- ❑ Assembly overview ⇒ General body repairs, interior; Rep. gr. 70 ; Central tube for dash panel; Assembly overview - central tube for dash panel



1.3 Removing and installing dash panel insert - KX2-

⇒ “1.3.1 Removing and installing dash panel insert KX2 , dash panel insert with analogue instruments”, page 52

⇒ “1.3.2 Removing and installing dash panel insert KX2 , fully digital dash panel insert”, page 53

1.3.1 Removing and installing dash panel insert - KX2- , dash panel insert with analogue instruments

Special tools and workshop equipment required

- Torque screwdriver - V.A.G 1624-



- Vehicle diagnostic tester

Note

- *All indicator lamps in the dash panel insert - KX2- are equipped with light-emitting diodes. Light-emitting diodes cannot be renewed separately if defective. The dash panel insert must be renewed.*
- *The dash panel insert - KX2- must not be dismantled.*
- *If the dash panel insert - KX2- with the control unit in dash panel insert - J285- is to be renewed, start the respective function ⇒ Vehicle diagnostic tester.*

General description:

Following components are integrated in the dash panel insert - KX2- :

- Control unit in dash panel insert - J285-
- Fuel gauge - G1-
- Speedometer - G21-
- Coolant temperature gauge - G3-
- Rev. counter - G5-
- Warning lamps

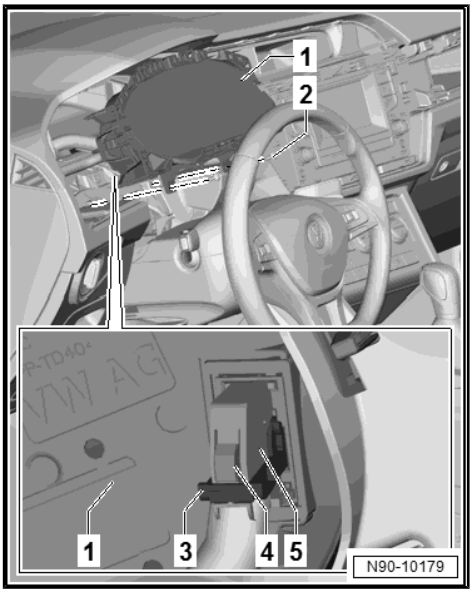
Removing

– Move steering wheel to rearmost and lowest position. Use the full range of the steering column adjustment for this purpose.

– Switch off ignition and all electrical consumers.

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– Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.
– Unclip upper steering column trim from lower steering column trim ⇒ General body repairs, interior; Rep. gr. 68 ; Compartments and covers; Removing and installing upper steering column trim .
– Remove trim panel for dash panel on driver side ⇒ General body repairs, interior; Rep. gr. 70 ; Dash panel; Removing and installing trim panel for dash panel .
– Unscrew bolts -2-.



Note

The dash panel insert - KX2- is engaged in the dash panel. Therefore, a greater force is necessary to remove it.

– Pull out dash panel insert - KX2- -1- until it makes contact with steering wheel.
– Disconnect electrical connector -5-.
– Press locking detent -4- to disconnect connector.
– Swing retaining bracket -3-, and pull off connector -5-.
– Remove dash panel insert - KX2- towards front passenger side between steering wheel and dash panel.

Installing

Install in reverse order of removal.

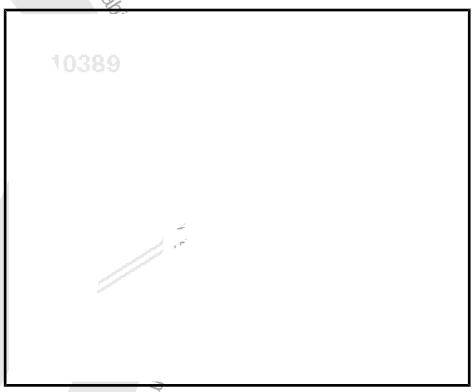
Specified torques

♦ ⇒ “1.1 Assembly overview - dash panel insert”, page 50

1.3.2 Removing and installing dash panel insert - KX2- , fully digital dash panel insert

Special tools and workshop equipment required

♦ Assembly tool - T10389-



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- Torque screwdriver - V.A.G 1624-



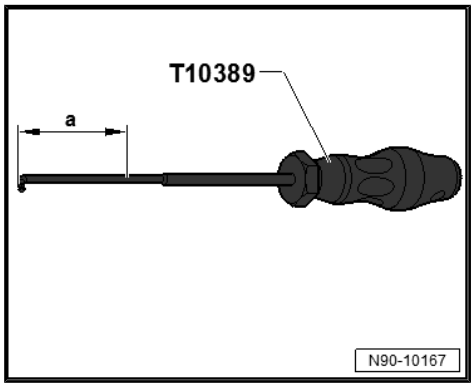
- Protective cap for wiring harness connector - VAS 6223/9-



Note

- *The dash panel insert - KX2- must not be dismantled.*
- *It is not necessary to remove the steering wheel prior to removal of the dash panel insert - KX2- .*
- *If the dash panel insert - KX2- with the control unit in dash panel insert - J285- is to be renewed, start the respective function ⇒ Vehicle diagnostic tester.*

Removing



– Mark dimension -a- on assembly tool - T10389- using e.g. textile reinforced tape.

- Dimension -a- = 46.5 mm

– Move steering wheel to rearmost and lowest position. Use the full range of the steering column adjustment for this purpose.

– Switch off ignition and all electrical consumers.

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

– Unclip upper steering column trim from lower steering column trim ⇒ General body repairs, interior; Rep. gr. 68 ; Compartments and covers; Removing and installing upper steering column trim .

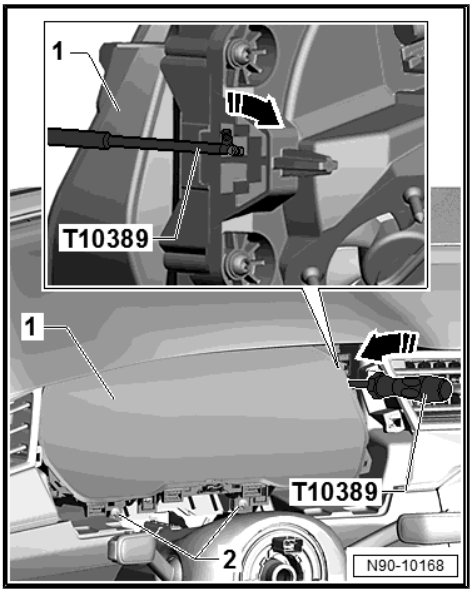
– Remove trim panel for dash panel on driver side ⇒ General body repairs, interior; Rep. gr. 70 ; Dash panel; Removing and installing trim panel for dash panel .

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– Unscrew bolts -2-.

Carefully push assembly tool - T10389- between dash panel insert - KX2- -1- and dash panel until the mark previously made on the assembly tool is flush with the dash panel insert.

– Turn assembly tool - T10389- by 90° so that »hook« on assembly tool engages in recess in dash panel insert - KX2- -1-.



Note

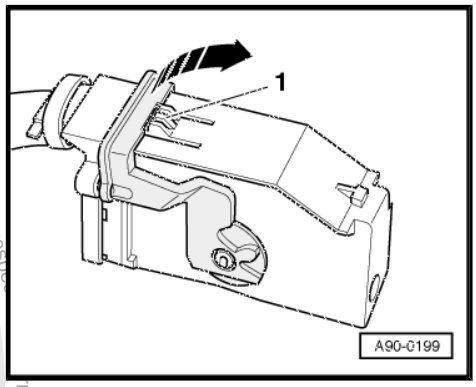
The dash panel insert - KX2- is engaged in the dash panel. Therefore, a greater force is necessary to remove it.

– Release dash panel insert - KX2- -1- from fasteners in dash panel using assembly tool - T10389- .

– Repeat the same procedure on the other side of dash panel insert - KX2- .

– Pull out dash panel insert - KX2- so that connectors become accessible.

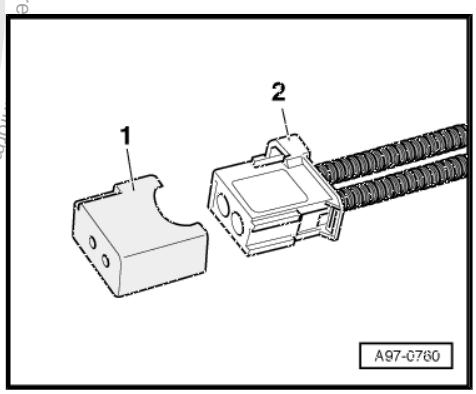
– Separate electrical connector.



– Press locking detent -1- to disconnect connector.

– Swing retainer in -direction of arrow- and pull off connector.

– Release and disconnect MOST bus connector.



– Attach protective cap for cable-set connector - VAS 6223/9- -1- by plugging it on the connector of MOST bus -2-.

– Remove dash panel insert - KX2- from between steering wheel and dash panel.

Installing

Install in reverse order of removal.

Specified torques

◆ ⇒ “1.1 Assembly overview - dash panel insert”, page 50

1.4 Removing and installing control unit for head-up display

Special tools and workshop equipment required

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- Torque screwdriver - V.A.G 1624-



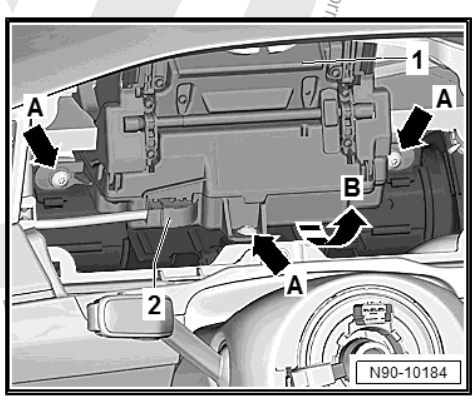
Note

- *Removal and installation are described for left-hand drive vehicles. Removal and installation for right-hand drive vehicles is similar.*
- *If the control unit for Head-up Display - J898- is renewed, start the respective function ⇒ Vehicle diagnostic tester.*

Removing

Note

For purposes of clarity, the steering wheel is not shown.



– Remove dash panel insert - KX2- ⇒ page 52 .
– Release and disconnect electrical connector -2-.
– Unscrew bolts -arrows A-.
– Swing control unit for head-up display in -direction of arrow B- out of dash panel.

Installing

Install in reverse order of removal.

Specified torques

- ⇒ “1.2 Assembly overview - head-up display”, page 51

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2 Horn

⇒ “2.1 Assembly overview - horn”, page 57

⇒ “2.2 Removing and installing treble horn H2 and bass horn H7 ”, page 57

⇒ “2.3 Removing and installing bracket for horn H2 / H7 ”, page 58

2.1 Assembly overview - horn

Note

The vehicle shown in the illustration may differ from the actual vehicle.

1 - Bracket

- ❑ For horn -H2- / -H7-
- ❑ Removing and installing ⇒ page 58

2 - Bolt

- ❑ 18 Nm

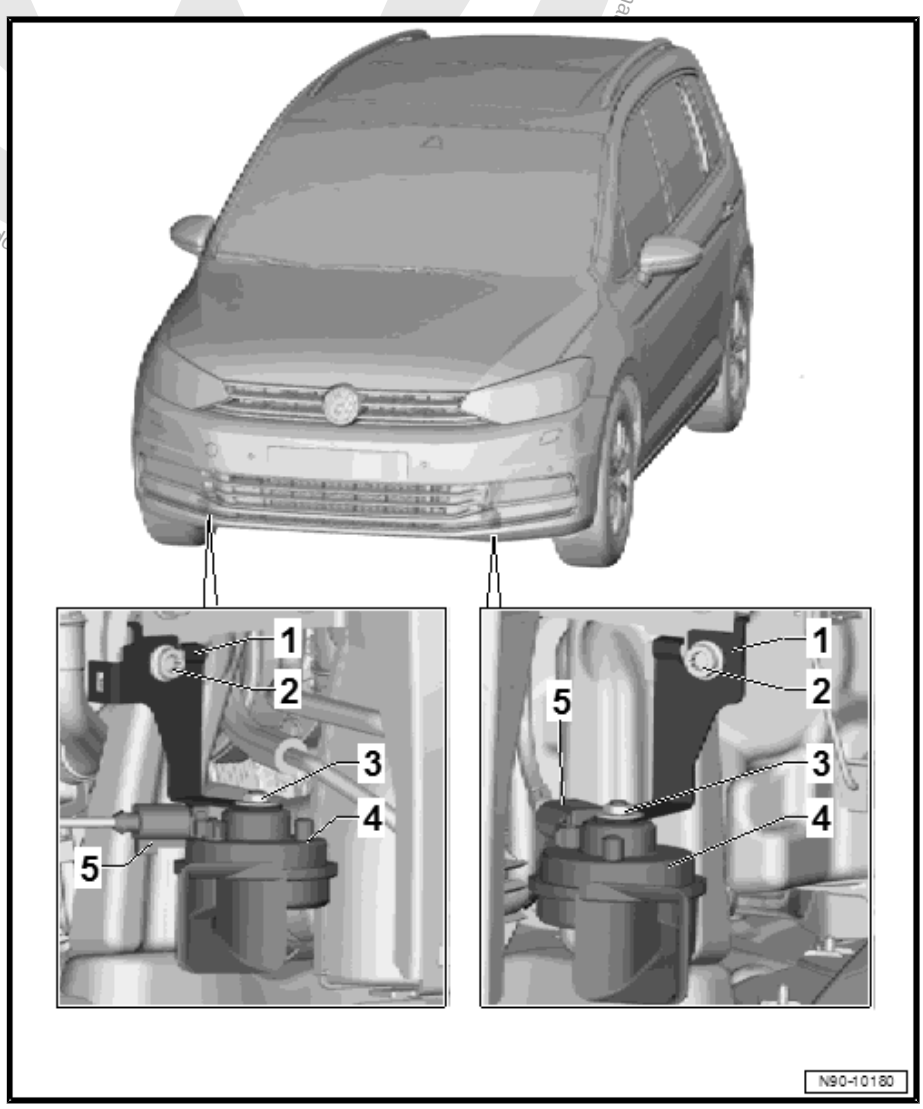
3 - Nut

- ❑ 9 Nm

4 - Horn

- ❑ Treble horn - H2- installed on left.
- ❑ Bass horn - H7- installed on right.
- ❑ Removing and installing ⇒ page 57

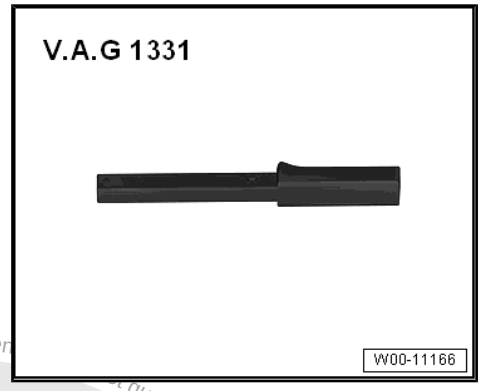
5 - Electrical connector



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

Special tools and workshop equipment required

- Torque wrench - V.A.G 1331-



Note

Removal and installation are described for the right side. Removal and installation on the left side are analogous.

Removing

– Remove noise insulation ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Assembly overview - noise insulation .

– Release and disconnect connector -1-.

– Unscrew nut -3-.

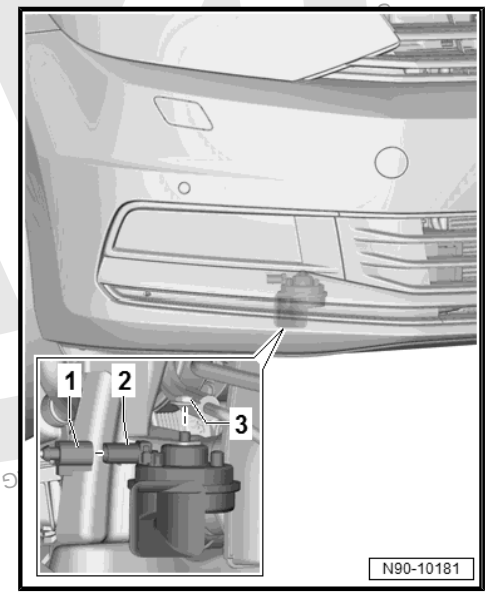
– Detach horn -2- from bracket.

Installing

Install in reverse order of removal.

Specified torques

- ⇒ “2.1 Assembly overview - horn”, page 57

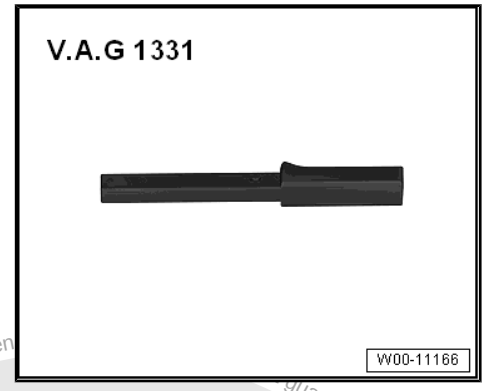


2.3 Removing and installing bracket for horn -H2- / -H7-

Special tools and workshop equipment required

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♦ Torque wrench - V.A.G 1331-



Note

Removal and installation are described for the right side. Removal and installation on the left side are analogous.

Removing

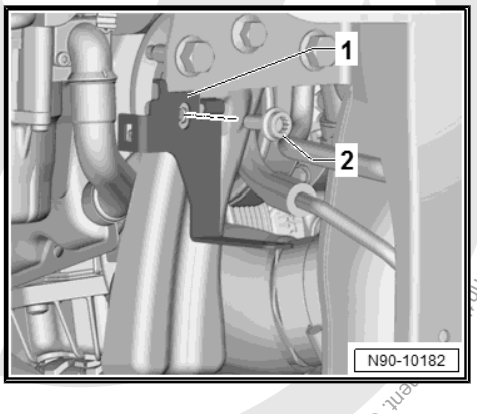
– Remove horn -H2- / -H7- ⇒ page 57 .
– Unscrew bolt -2-.
– Remove bracket -1-.

Installing

Install in reverse order of removal.

Specified torques

♦ ⇒ “2.1 Assembly overview - horn”, page 57



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92 – Windscreen wash/wipe system

1 windscreen wiper system.

⇒ “1.1 Assembly overview - windscreen wiper system”, page 60

⇒ “1.2 Moving wipers to service position”, page 63

⇒ “1.3 Removing and installing wiper blade”, page 63

⇒ “1.4 Removing and installing wiper arms”, page 64

⇒ “1.5 Adjusting wiper arms”, page 66

⇒ “1.6 Removing and installing wiper motor V ”, page 67

⇒ “1.7 Renewing wiper motor”, page 68

⇒ “1.8 Deactivating APP function of wiper motor”, page 70

⇒ “1.9 Removing and installing rain and light sensor”, page 71

⇒ “1.10 Repairing rain and light sensor”, page 73

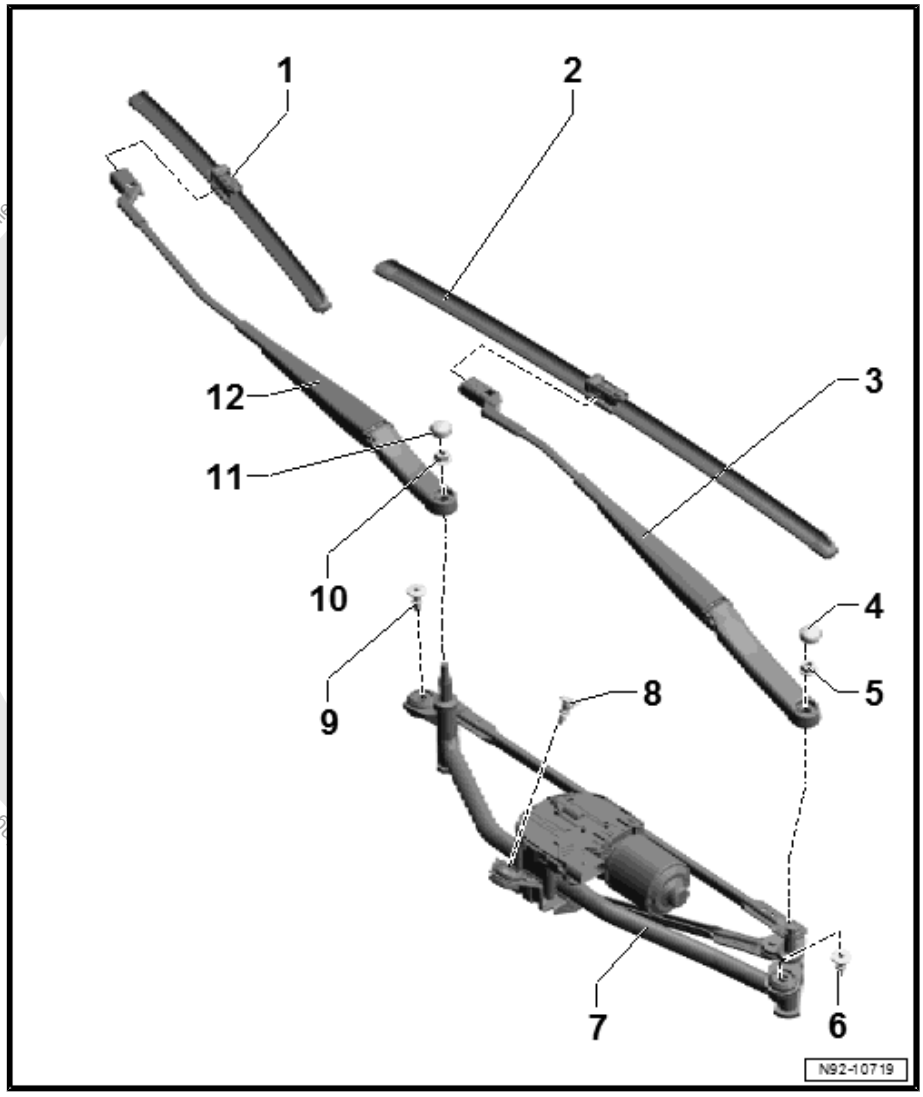
1.1 Assembly overview - windscreen wiper system

⇒ “1.1.1 Assembly overview - windscreen wiper system”, page 60

⇒ “1.1.2 Assembly overview - wiper motor and wiper frame”, page 62

1.1.1 Assembly overview - windscreen wiper system

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1 - Wiper blade on front passenger side

- ❑ Different length ⇒ Electronic Parts Catalogue (ETKA)
- ❑ Removing and installing ⇒ page 63

2 - Wiper blade on driver side

- ❑ Different length ⇒ Electronic Parts Catalogue (ETKA)
- ❑ Removing and installing ⇒ page 63

3 - Wiper arm on driver side

- ❑ Different length ⇒ Electronic Parts Catalogue (ETKA)
- ❑ Removing and installing ⇒ page 64
- ❑ Adjusting ⇒ page 66

4 - Cover

5 - Nut

- ❑ 20 Nm

6 - Bolt

- ❑ Specified torque and tightening sequence ⇒ page 62

7 - Wiper frame

- ❑ With windscreen wiper motor - V-
- ❑ With wiper motor control unit - J400- .
- ❑ Removing and installing ⇒ page 67

8 - Bolt

- ❑ Specified torque and tightening sequence ⇒ page 62

9 - Bolt

- ❑ Specified torque and tightening sequence ⇒ page 62

10 - Nut

- ❑ 20 Nm

11 - Cover

12 - Wiper arm on front passenger side

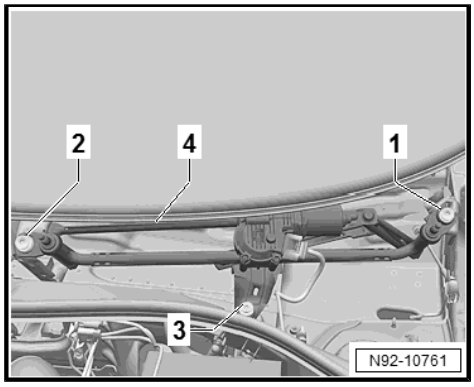
- ❑ Different length ⇒ Electronic Parts Catalogue (ETKA)
- ❑ Removing and installing ⇒ page 64
- ❑ Adjusting ⇒ page 66

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Wiper frame - specified torque and tightening sequence

– Tighten bolts for wiper frame -4- in stages in the sequence shown:

Stage	Bolts	Specified torque
1.	-1 … 3-	Screw in by hand as far as stop
2.	-1 … 3-	8 Nm



1.1.2 Assembly overview - wiper motor and wiper frame

1 - Wiper frame

❑ Removing and installing ⇒ page 67

2 - Nut

❑ 25 Nm

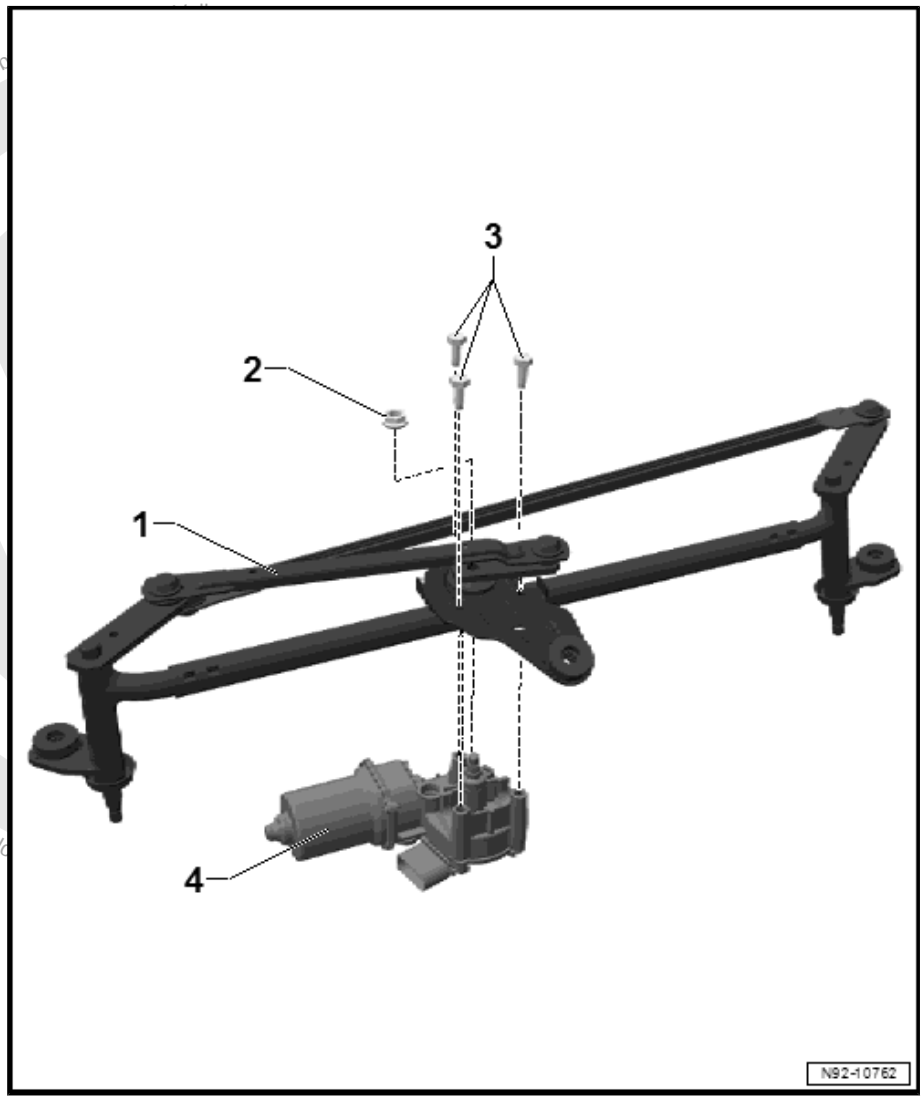
3 - Bolts

❑ Qty. 3

❑ 9 Nm

4 - Wiper motor - V-

❑ Removing and installing ⇒ page 68



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1.2 Moving wipers to service position

Caution

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

- *Do not manoeuvre the vehicle with wiper arms folded out.*
- *The wipers automatically move back to the park position when the wiper switch is operated or when road speed exceeds 6 km/h.*

Caution

Risk of damage to wiper blades due to freezing.

- *In the event of frost, check if wiper blades are frozen.*

Note

If it is necessary for the windscreen 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.

– Switch on ignition.
– Switch off ignition.
– Activate “flick wipe”.
• The wipers are moving to “service position”.

1.3 Removing and installing wiper blade

Removing

– Move wipers to service position ⇒ page 63 .

Caution

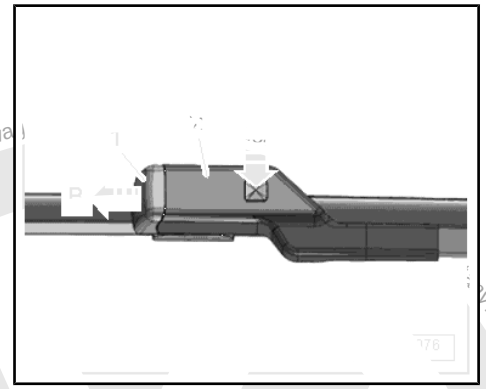
Risk of damage to the wiper blade.

- *Joint-free wipers are very flexible. To lift the wiper blades off the windscreen, touch them only in the area in which the wiper blades are attached to the wipers.*

– Lift wiper arm off the windscreen.

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– Press retaining clip -arrow A- and push wiper blade -1- off wiper arm -2- -arrow B-.
– Remove wiper blade -1-.

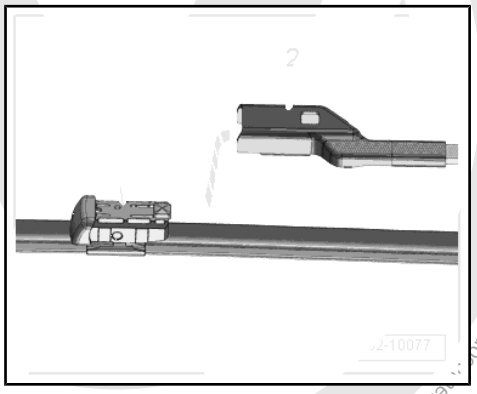


Installing

> **Caution**
>
> *Risk of damage to the vehicle body.*
>
> ♦ *Wiper blades for driver and front passenger sides each have a different length.*

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

– Insert wiper blade -1- in parallel movement into wiper arm -2- -arrow-. Ensure that wiper blade -1- is pushed into wiper arm -2- until retaining clip is heard to engage.



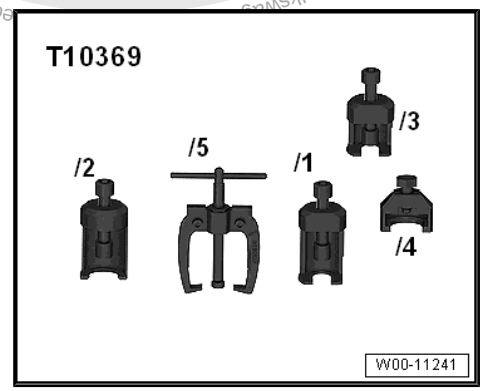
To leave the “service position”:

– Operate windscreen wiper switch. or
– Drive vehicle faster than 6 km/h.

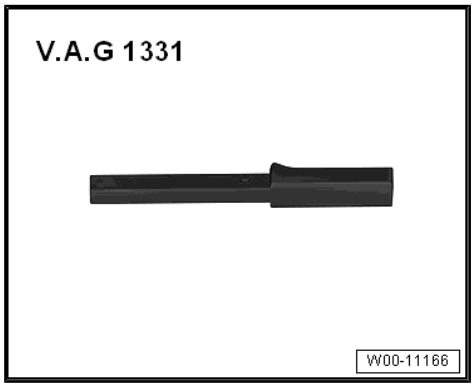
1.4 Removing and installing wiper arms

Special tools and workshop equipment required

♦ Puller - T10369-



♦ Torque wrench - V.A.G 1331-



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Removing

Caution

Risk of damage to wiper shafts.

- *There is a risk of damage to the wiper shafts when trying to release the wiper arms without using the puller - T10369/1- .*

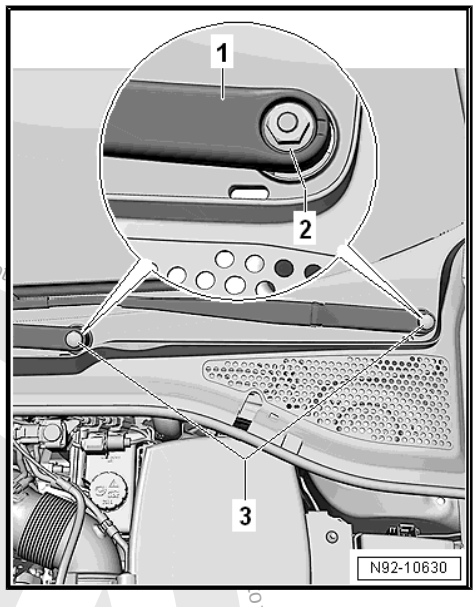
Note

- *If it is necessary for the wiper motor to run during the working procedure, the bonnet must be closed as otherwise the power supply to the wiper motor will be interrupted.*
- *Removal and installation are described for left-hand drive vehicles. Removal and installation for right-hand drive vehicles is similar.*

– Move wipers to service position ⇒ page 63 .

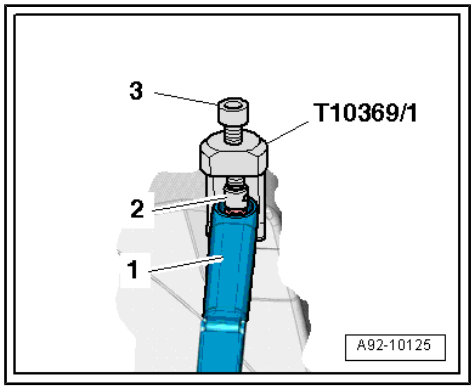
– Using a screwdriver, lever caps -3- off wiper arms -1-.

– Loosen nuts -2- a few turns.



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– Fit puller - T10369/1- to wiper arm -1- as shown in illustration.
– Fit thrust piece -2- to wiper arm shaft.
– Turn bolt -3- clockwise until wiper arm -1- has been pulled off wiper shaft.
– Unscrew nut completely and remove wiper arm -1-.



Installing

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

Caution

Risk of damage to the vehicle body.

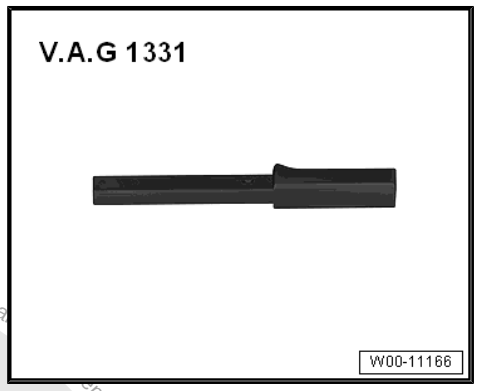
- *Wiper arms for driver and front passenger sides each have a different length.*

– Adjust wiper arms ⇒ page 66 .

1.5 Adjusting wiper arms

Special tools and workshop equipment required

- Torque wrench - V.A.G 1331-



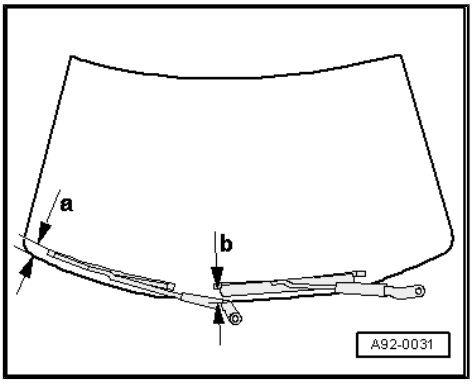
Note

- *If it is necessary for the wiper motor to run during the working procedure, the bonnet must be closed as otherwise the power supply to the wiper motor will be interrupted.*
- *Removal and installation are described for left-hand drive vehicles. Removal and installation for right-hand drive vehicles is similar.*

– Deactivate APP function ⇒ page 70 .
– Removing wiper arm ⇒ page 64 .
– Switch on ignition.
– Actuate “flick wipe” function and allow wiper motor to move to its end position.
– Switch off ignition.
– Fit wiper arm together with attached wiper blade onto wiper shaft.

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– Align wiper blade as follows on windscreen:

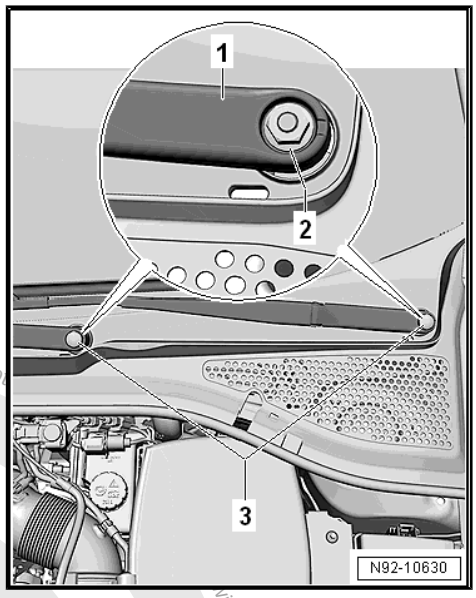


Note

The dimensions given here indicate the distance between the tip of the wiper blades (driver and front passenger sides) and the plenum chamber cover at the bottom edge of the windscreen.

- Dimension -a- = 10 mm + 10 mm.
- Dimension -b- = 10 mm ± 10 mm.

– Tighten nuts -2- for wiper arms -1-.



– Switch on ignition.

– Actuate “flick wipe” function and allow wiper arms move to their end position.

– Switch off ignition.

– Check wiper arm adjustment again and correct, if necessary.

– Press caps -3- onto wiper arms.

Specified torques

- ⇒ “1.1 Assembly overview - windscreen wiper system”, page 60

1.6 Removing and installing wiper motor - V-

Special tools and workshop equipment required

- Torque wrench - V.A.G 1410-



Note

- *If the wiper motor - V- with the wiper motor control unit - J400- is to be renewed, start the respective function ⇒ Vehicle diagnostic tester.*
- *Removal and installation are described for left-hand drive vehicles. Removal and installation for right-hand drive vehicles is similar.*

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Removing

– Removing wiper arm ⇒ page 64 .

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

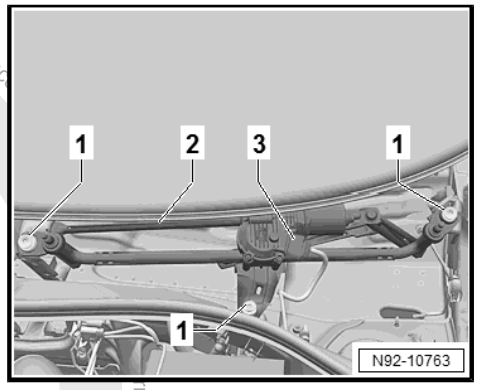
– If fitted, release and disconnect connector for heated windscreen.

– Release and disconnect connector -3-.

– Unscrew bolts -1-.

– Remove wiring harness from wiper frame -2-.

– Guide wiper frame -2- with linkage and wiper motor out of plenum chamber.



Installing

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

– Adjust wiper arms ⇒ page 66 .

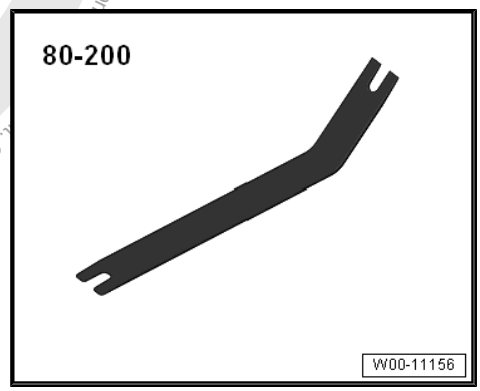
Specified torques

♦ ⇒ Fig. ""Wiper frame - specified torque and tightening sequence"" , page 62

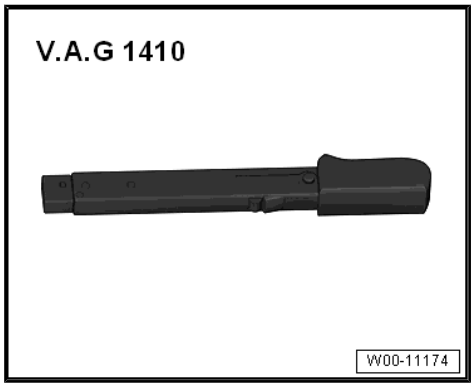
1.7 Renewing wiper motor

Special tools and workshop equipment required

♦ Release lever - 80-200-

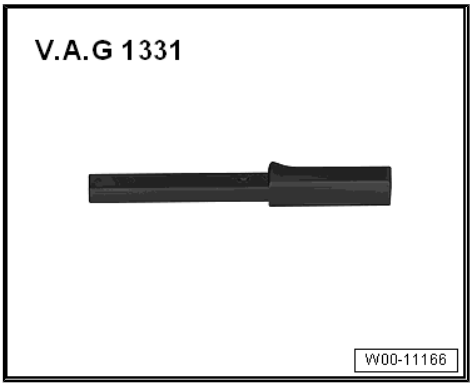


♦ Torque wrench - V.A.G 1410-



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- Torque wrench - V.A.G 1331-



WARNING

Danger of injury!

- *Risk of crushing injuries when performing work on uncovered windscreen wiper system.*
- *The windscreen wiper system may only be operated after its proper installation.*

Caution

There is a risk of damage to the bonnet and the wiper arms.

- *Before operating the windscreen wiper system with open bonnet, ensure that there is sufficient space for the components to move.*

Note

- *In order to be able to operate the windscreen wiper system with open bonnet, the bonnet lock must be engaged in position »closed«.*
- *Removal and installation are described for left-hand drive vehicles. Removal and installation for right-hand drive vehicles is similar.*

Removing

– Deactivate APP function of wiper motor ⇒ page 70 .

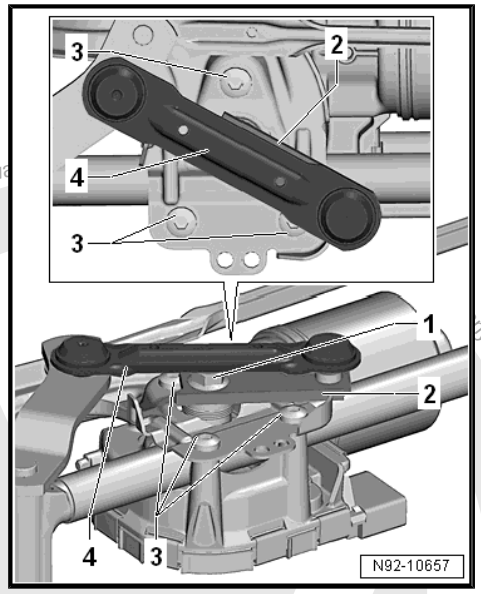
– Remove wiper motor - V- ⇒ page 67 .

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– Lever drive rod -4- off motor crank ball joint -2- using removal lever - 80-200- .
– Unscrew nut -1-.
– Pull motor crank -2- off wiper motor shaft.
– Unscrew bolts -3-.
– Remove wiper motor - V- from wiper frame.

Installing

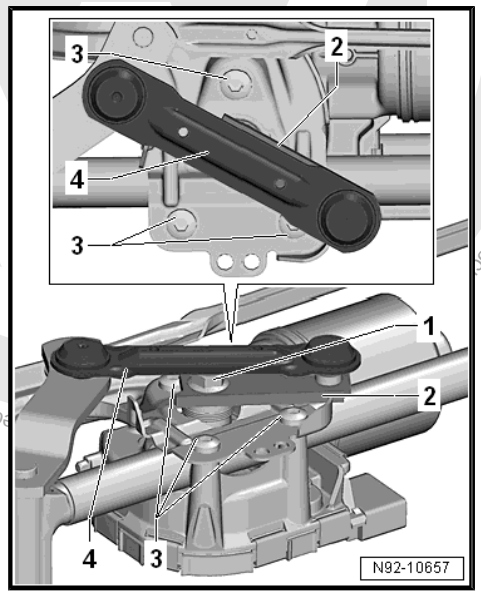
– Attach electrical connector to windscreen wiper motor - V- .
– Switch on ignition.
– Actuate “flick wipe” function, and allow wiper motor - V- to move to its end position.
– Switch off ignition.
– Separate electrical connector.



– Fit wiper motor - V- to wiper frame.
– Screw in bolts -3-.
– Fit motor crank -2- to windscreen wiper motor shaft.
– Screw on nut -1-.
– Align drive rod -4- parallel to motor crank -2-.
– Tighten nut -1-.
– Connect drive rod -4- to motor crank -2- at ball joint.
– Install wiper motor - V- ⇒ page 67 .

Specified torques

♦ ⇒ “1.1.2 Assembly overview - wiper motor and wiper frame”, page 62



1.8 Deactivating APP function of wiper motor

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

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

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

Note

♦ *The APP function cannot be activated.*
♦ *After 100 cycles of wiper movement, the APP function is activated automatically. This applies to wiper motors on which the APP function has been deactivated and also to new wiper motors.*

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– Connect vehicle diagnostic tester ⇒ page 313 .

– Deactivate APP function of wiper motor ⇒ Vehicle diagnostic tester.

Note

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

1.9 Removing and installing rain and light sensor

Note

- *The rain and light sensor has a silicon layer (coupling pad) which forms the contact surface to the windscreen.*
- *The rain and light sensor has been designed so that it can be used again. A prerequisite for re-use is that the coupling pad is not damaged or dirty (check!).*
- *If a 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 fitted arbitrarily. Determine the correct rain and light sensor - G397- using the Electronic parts catalogue (ETKA).*

Removing

– Switch off ignition and all electrical consumers.

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

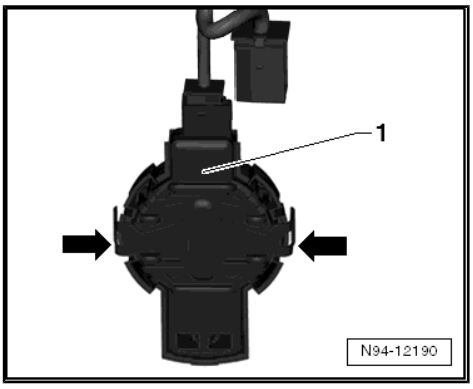
– Remove interior mirror ⇒ General body repairs, interior; Rep. gr. 68 ; Interior mirror; Removing and installing interior mirror .

Note

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

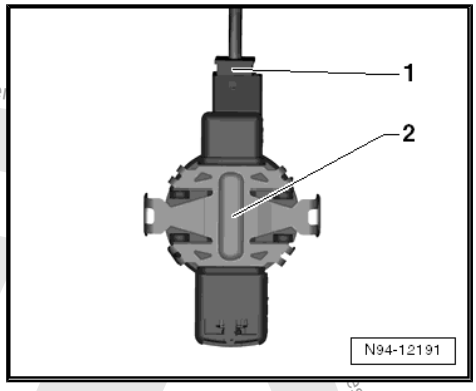
– Release retaining clip on left and right -arrows-.

– Starting from top, carefully lever rain and light sensor - G397- -1- out of retaining frame on windscreen.



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– Release and disconnect connector -1-.
– Remove rain and light sensor - G397- -2-.



Caution

Store the removed rain and light sensor - G397- so that the coupling pad cannot be damaged or soiled from dust etc. until it is refitted.

Installing

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

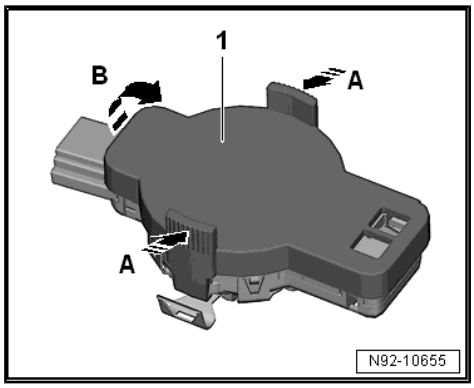
Caution

- ***Prior to installation, thoroughly clean the surface of the windscreen within the retaining frame for rain and light sensor - G397- . Make sure to completely remove any remains of the coupling pad adhering to the windscreen.***
- ***When installing, the surface of the coupling pad of the rain and light sensor - G397- must not be soiled or damaged. A sensor with a damaged coupling pad must be renewed*** *⇒ page 73* ***.***

Note

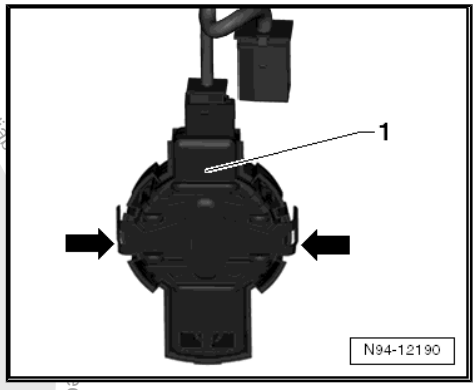
If the surface of the coupling pad on the rain and light sensor - G397- is soiled, it may be possible to clean it by "bonding on" and then "pulling off" one or more adhesive strips.

– Thoroughly clean windscreen in area of retaining plate.
– Push grip in direction of arrow -A-.
– Remove protective cap -1- in direction of -arrow B-.



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



Note

- *Even if the sensor is installed correctly, small air bubbles may initially appear between the windscreen and the coupling pad. After approx. 10 minutes, the contact surface must be free of bubbles.*
- *If the contact surface is not free of bubbles after 10 minutes, the rain and light sensor - G397- must be removed and installed anew.*
- *Air bubbles between the windscreen and the coupling pad will cause the rain and light sensor - G397- to malfunction.*

– Read event memory and delete sporadic faults ⇒ Vehicle diagnostic tester.

Note

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

– If the rain and light sensor - G397- was renewed, perform coding ⇒ Vehicle diagnostic tester.

1.10 Repairing rain and light sensor

⇒ “1.10.1 Repairing rain and light sensor, TRW”, page 73

⇒ “1.10.2 Repairing rain and light sensor, Valeo”, page 74

1.10.1 Repairing rain and light sensor, TRW

The housings for the rain and light sensors - G397- from various manufacturers differ.

The sensor housing with lens unit is always supplied as a replacement part in component parts with retaining clips. In vehicles which do not require these retaining clips, the clips must be removed.

Procedure

– Remove rain and light sensor - G397- ⇒ page 71 .

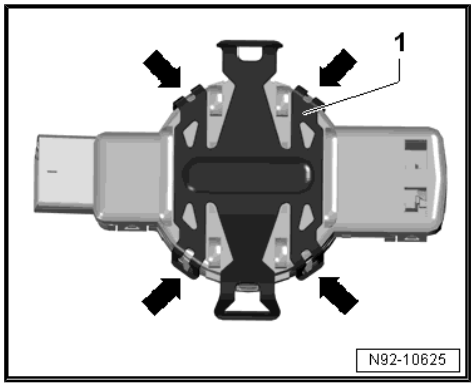
Caution

The sensor electronics may be damaged.

- *When separating the housing parts, do not insert the screwdriver as far as the sensor electronics.*
- *Do not touch the rain sensor electronics.*

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– Release 4 locking lugs -arrows- of retaining clip -1- using a suitable screwdriver, and remove retaining clip.

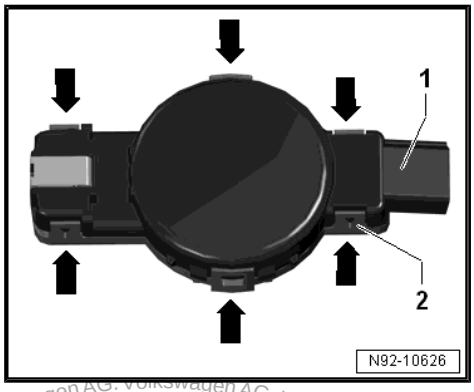


– Separate upper part of housing -1- together with lens unit from bottom part of housing -2- by releasing retaining lugs -arrows- on both sides.

Caution

The optical unit of the sensor may be damaged.

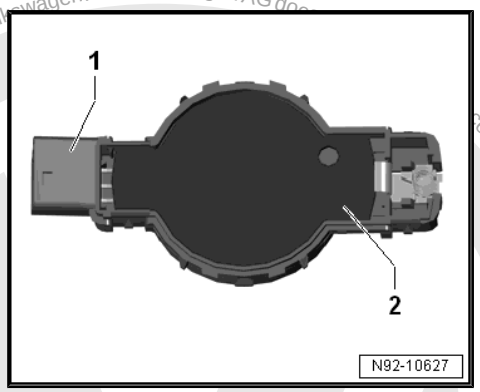
- *Do not grasp on optical unit.*



– Remove sensor electronics -2- from upper part of old housing -1- and insert into new upper part of new housing in exactly same way.

– Engage upper part of housing with lens unit and protective cover with lower part of housing.

– Install rain and light sensor - G397- ⇒ page 71 .



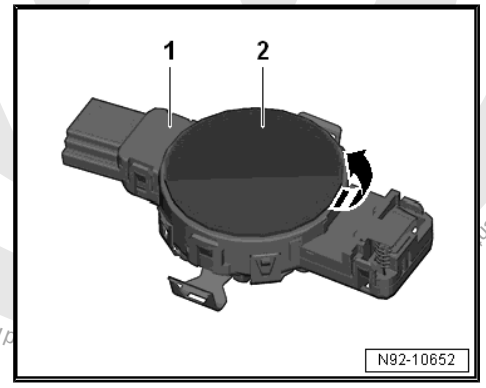
1.10.2 Repairing rain and light sensor, Valeo

– Remove rain and light sensor - G397- ⇒ page 71 .

– Carefully remove sensor foil -2- or any sensor foil residue from rain and light sensor - G397- -1-.

Caution

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

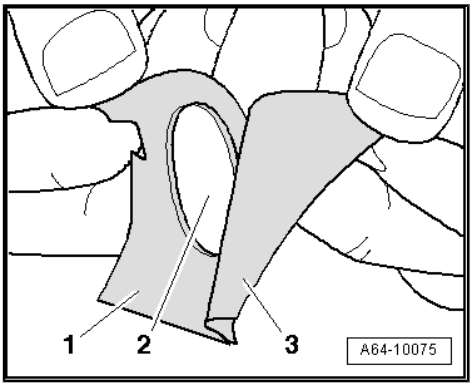


– Clean sensor surfaces with cleaning solution D 009 401 04.

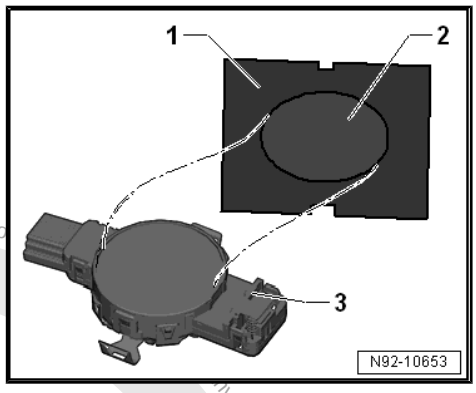
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– Pull silicone paper -3- off sensor foil -2-.

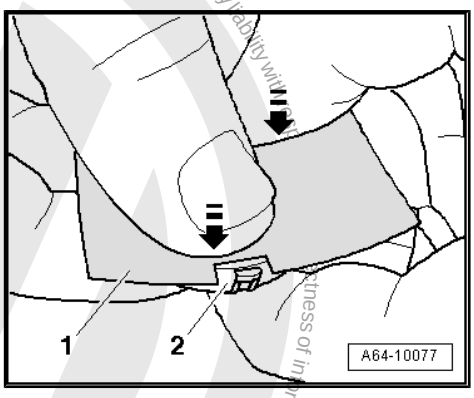
Initially, the transparent protective film -1- remains on sensor film as an assembly aid.



– With the aid of transparent protective foil -1-, position sensor foil -2- on rain and light sensor - G397- -3-.

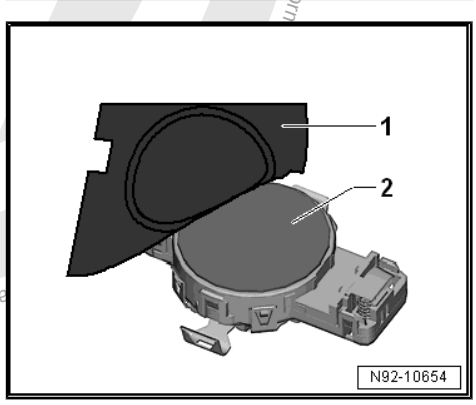


– Using protective film -1-, press sensor foil onto rain and light sensor - G397- -2- ensuring there are no bubbles.



– Pull transparent protective foil -1- off sensor foil -2-.

– Install rain and light sensor - G397- ⇒ page 71 .



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2 Windscreen washer system

⇒ “2.1 Assembly overview - windscreen washer system”, page 76

⇒ “2.2 Removing and installing washer fluid reservoir”, page 80

⇒ “2.3 Removing and installing windscreen washer fluid level sender”, page 84

⇒ “2.4 Removing and installing windscreen washer pump”, page 85

⇒ “2.5 Removing and installing washer jets”, page 86

⇒ “2.6 Adjusting spray jets”, page 87

2.1 Assembly overview - windscreen washer system

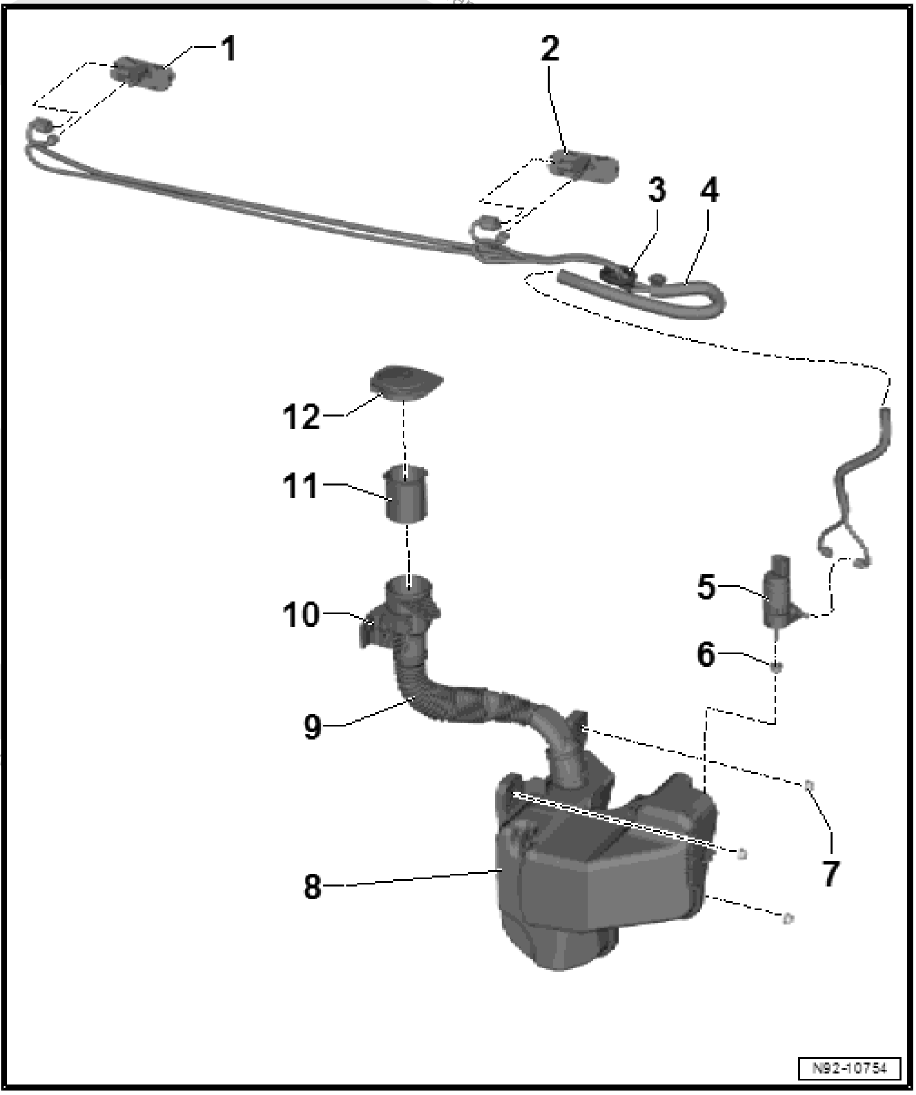
⇒ “2.1.1 Assembly overview - windscreen washer system, washer fluid reservoir in front left wheel housing, without headlight washer system”, page 76

⇒ “2.1.2 Assembly overview - windscreen washer system, washer fluid reservoir in front left wheel housing, with headlight washer system”, page 78

⇒ “2.1.3 Assembly overview - windscreen washer system, washer fluid reservoir in front right wheel housing”, page 79

2.1.1 Assembly overview - windscreen washer system, washer fluid reservoir in front left wheel housing, without headlight washer system

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1 - Right spray jet

- ❑ Versions with right washer jet heater element - Z21-
- ❑ Removing and installing ⇒ page 86
- ❑ Adjusting ⇒ page 87

2 - Left spray jet

- ❑ Versions with left washer jet heater element - Z20-
- ❑ Removing and installing ⇒ page 86
- ❑ Adjusting ⇒ page 87

3 - Grommet

- ❑ For water line in bonnet

4 - Water line

- ❑ For windscreen washer system
- ❑ Colour: black

5 - Windscreen and rear window washer pump - V59-

- ❑ Removing and installing ⇒ page 85

6 - Sealing grommet

- ❑ Renew if damaged

7 - Nuts

- ❑ Qty. 3
- ❑ 8 Nm

8 - Washer fluid reservoir

- ❑ With windscreen washer fluid level sender - G33-
- ❑ Removing and installing ⇒ page 80

9 - Filler pipe

- ❑ For washer fluid reservoir

10 - Filler neck

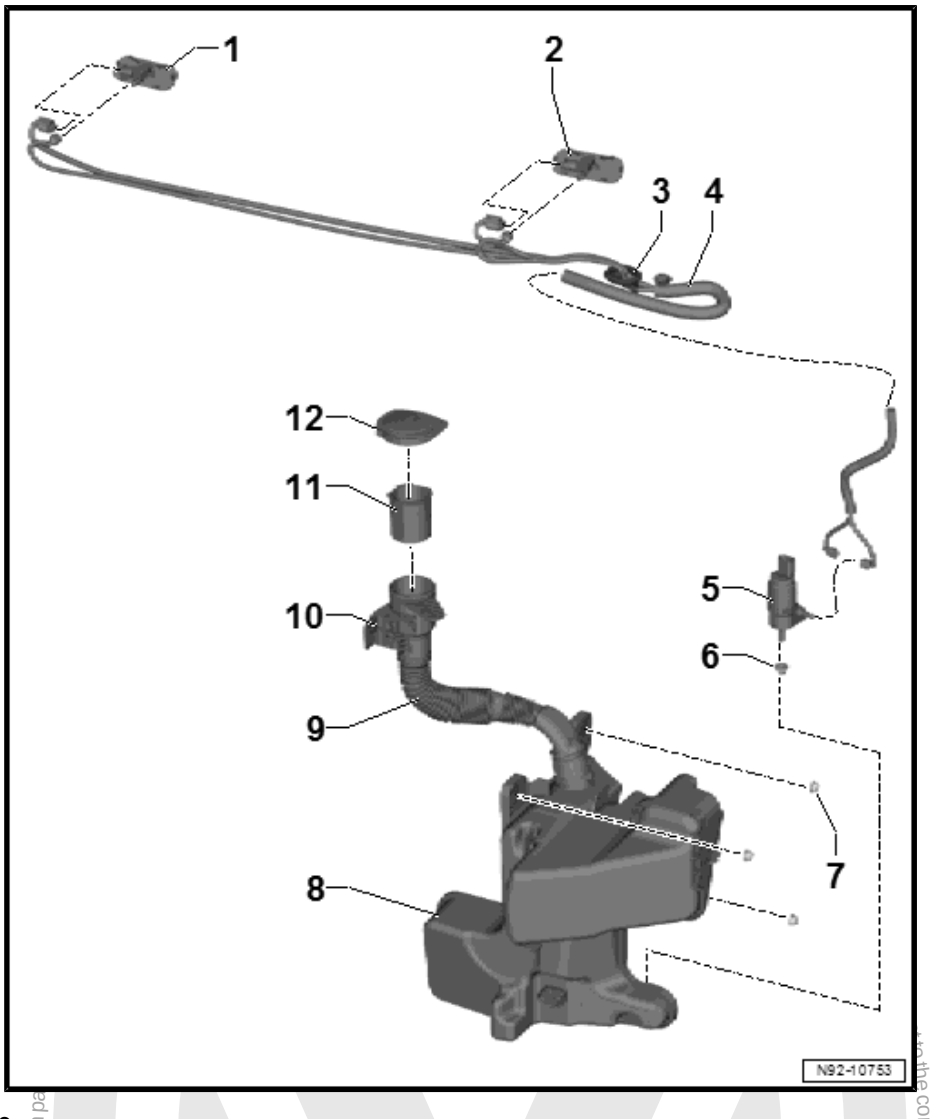
- ❑ For washer fluid reservoir

11 - Strainer

12 - Cap

- ❑ For filler neck

2.1.2 Assembly overview - windscreen washer system, washer fluid reservoir in front left wheel housing, with headlight washer system



1 - Right spray jet

- ❑ Versions with right washer jet heater element - Z21-
- ❑ Removing and installing ⇒ page 86
- ❑ Adjusting ⇒ page 87

2 - Left spray jet

- ❑ Versions with left washer jet heater element - Z20-
- ❑ Removing and installing ⇒ page 86
- ❑ Adjusting ⇒ page 87

3 - Grommet

- ❑ For water line in bonnet

4 - Water line

- ❑ For windscreen washer system
- ❑ Colour: black

5 - Windscreen and rear window washer pump - V59-

- ❑ Removing and installing ⇒ page 85

6 - Sealing grommet

- ❑ Renew if damaged

7 - Nuts

- ❑ Qty. 3
- ❑ 8 Nm

8 - Washer fluid reservoir

- ❑ With windscreen washer fluid level sender - G33-
- ❑ Removing and installing ⇒ page 80

9 - Filler pipe

- ❑ For washer fluid reservoir

10 - Filler neck

- ❑ For washer fluid reservoir

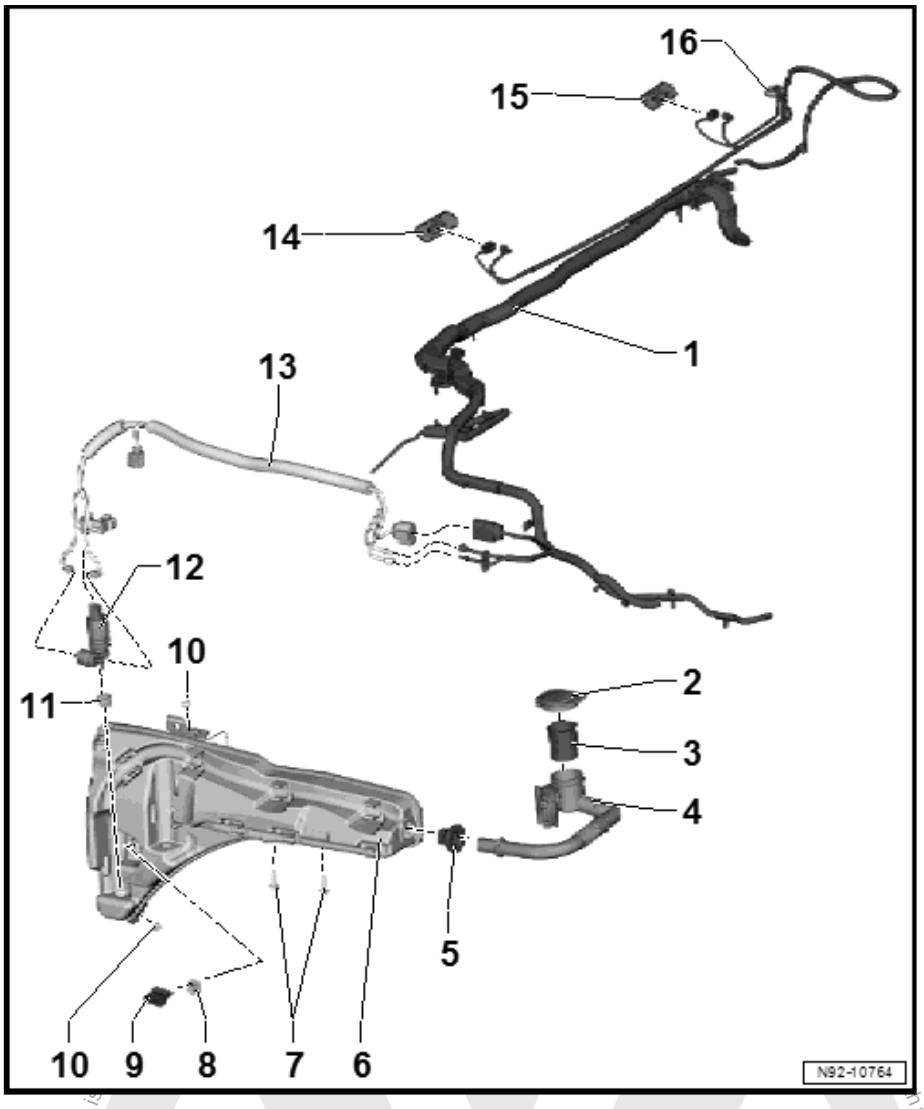
11 - Strainer

12 - Cap

- ❑ For filler neck

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2.1.3 Assembly overview - windscreen washer system, washer fluid reservoir in front right wheel housing



1 - Water line
- ❑ For windscreen washer system
- ❑ In engine compartment

2 - Cap
- ❑ For filler neck

3 - Strainer

4 - Filler neck
- ❑ For washer fluid reservoir

5 - Seal
- ❑ For filler neck
- ❑ Renew if damaged

6 - Washer fluid reservoir
- ❑ Removing and installing ⇒ page 82

7 - Bolt
- ❑ Qty. 2
- ❑ 8 Nm

8 - Seal
- ❑ Renew if damaged

9 - Windscreen washer fluid level sender - G33-
- ❑ Removing and installing ⇒ page 84

10 - Nut
- ❑ Qty. 2
- ❑ 8 Nm

11 - Sealing grommet
- ❑ Renew if damaged

12 - Windscreen and rear window washer pump - V59-
- ❑ Removing and installing ⇒ page 86

13 - Adapter line
- ❑ On washer fluid reservoir

14 - Right spray jet
- ❑ Versions with right washer jet heater element - Z21-
- ❑ Removing and installing ⇒ page 86
- ❑ Adjusting ⇒ page 87

15 - Left spray jet
- ❑ Versions with left washer jet heater element - Z20-
- ❑ Removing and installing ⇒ page 86
- ❑ Adjusting ⇒ page 87

16 - Grommet
- ❑ For water line in bonnet

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2.2 Removing and installing washer fluid reservoir

⇒ “2.2.1 Removing and installing washer fluid reservoir, washer fluid reservoir in front left wheel housing”, page 80

⇒ “2.2.2 Removing and installing washer fluid reservoir, washer fluid reservoir in front right wheel housing”, page 82

2.2.1 Removing and installing washer fluid reservoir, washer fluid reservoir in front left wheel housing

Special tools and workshop equipment required

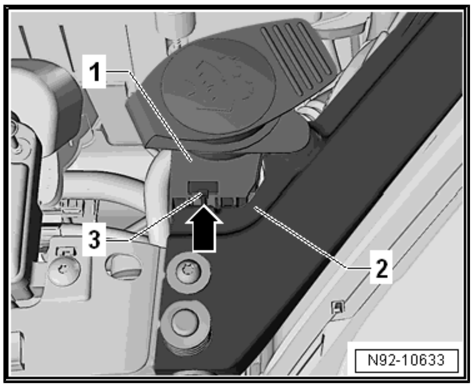
- Torque wrench - V.A.G 1410-



- Drip tray

Removing

- Remove front left wheel housing liner ⇒ General body repairs, exterior; Rep. gr. 66 ; Wheel housing liners; Removing and installing front wheel housing liners .
- Remove left headlight ⇒ page 113 .
- Place drip tray under washer fluid reservoir.
- Release locking lug -3-.



> **Caution**
>
> *Risk of leakage.*
>
> - *The washer fluid reservoir is constructed in a one-piece design. The washer fluid reservoir, the filler pipe and the filler neck are not intended to be separated from each other. If they are nevertheless detached from each other, the connection could then leak.*

- Pull filler neck -1- upwards out of bracket on lock carrier -2-.

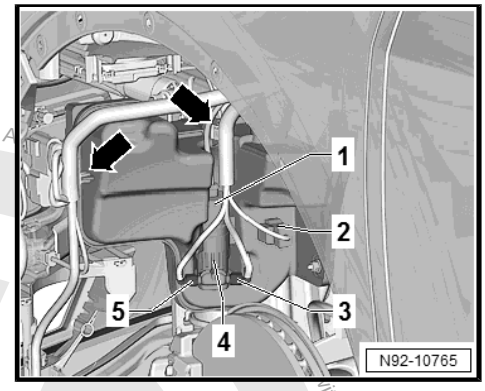
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Vehicles without headlight washer system

– Release and disconnect electrical connectors -1- and -2-.

– Release water lines -3- and -5-, and pull them off windscreen and rear window washer pump - V59- -4-.

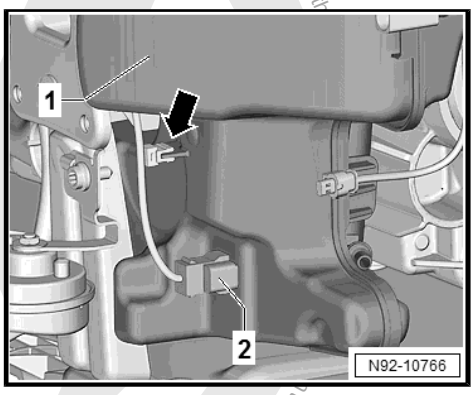
– Remove retainers -arrows- for lines from washer fluid reservoir.



Models fitted with headlight washer system

– Release and disconnect connector -2- at front of windscreen washer fluid level sender - G33- .

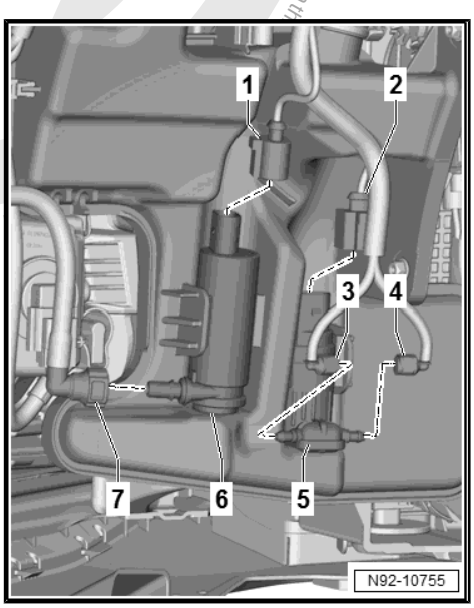
– Remove retainer -arrow- for wiring harness from washer fluid reservoir -1-.



– Release and disconnect electrical connectors -1- and -2-.

– Release and pull off water lines -3- and -4- on windscreen and rear window washer pump - V59- -5-.

– Release water lines -7-, and pull them off headlight washer system pump - V11- -6-.

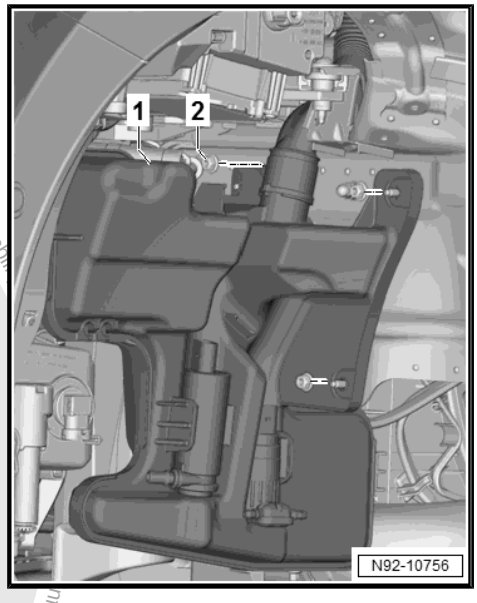


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Continued for all vehicles

– Unscrew nuts -2-.

– Pull washer fluid reservoir -1- off threaded pins, and remove it.



Installing

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

Note

The connections at the pump and hoses are colour-marked to prevent incorrect connection of the washer fluid lines to the windscreen and rear window washer pump - V59- . The hose fittings must be connected to the correct colour-coded pump connections during installation.

Specified torques

♦ ⇒ “2.1 Assembly overview - windscreen washer system”, page 76

2.2.2 Removing and installing washer fluid reservoir, washer fluid reservoir in front right wheel housing

Special tools and workshop equipment required

♦ Torque wrench - V.A.G 1410-



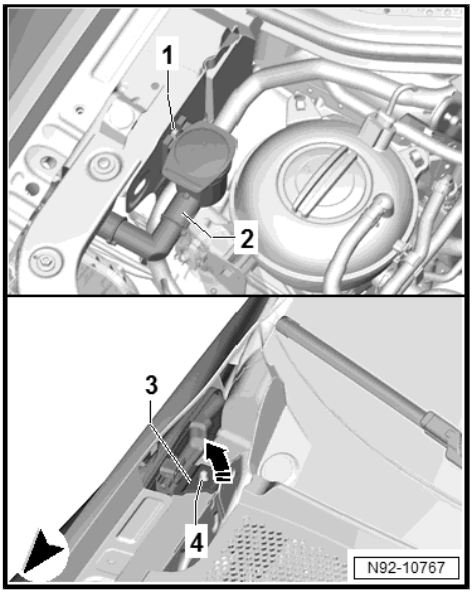
♦ Drip tray

Removing

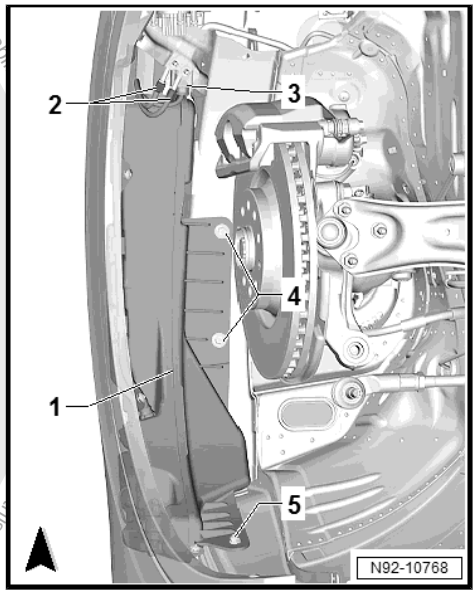
– Place drip tray under washer fluid reservoir.

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– Release locking lug -1-.
– Pull filler neck -2- upwards out of bracket on longitudinal member.
– Pull filler neck -2- towards front out of washer fluid reservoir, and remove it.
– Unscrew nut -4-.
– Fold tab -3- on washer fluid reservoir upwards in -direction of arrow-.
– Remove right front wheel ⇒ Running gear, axles, steering; Rep. gr. 44 ; Wheels, tyres; Wheel change .
– Remove front right wheel housing liner ⇒ General body repairs, exterior; Rep. gr. 66 ; Wheel housing liner; Removing and installing front wheel housing liner .
– Remove noise insulation between wing and upper longitudinal member ⇒ General body repairs, exterior; Rep. gr. 50 ; Wing; Assembly overview - wing .



– Disconnect water lines for windscreen and rear window washer system at coupling points -2-.
– Release and disconnect connectors -3-.
– Unscrew bolts -4- for washer fluid reservoir -1-.
– Unscrew nuts -5- for washer fluid reservoir -1-.



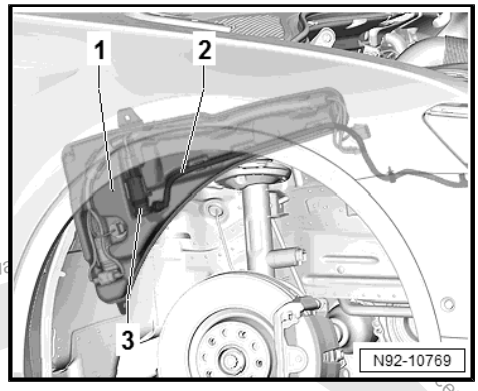
Vehicles without headlight washer system

– Guide washer fluid reservoir -1- downwards out of wing.

Models fitted with headlight washer system

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– Guide washer fluid reservoir -1- downwards out of wing until water line -2- for headlight washer system is accessible.
– Release water line -2-, and pull it off headlight washer system pump - V11- -3-.
– Lay water line -2- on washer fluid reservoir -1- to one side.
– Remove washer fluid reservoir -1-.



Installing

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

Note

The connections to the pump and hose lines are colour-marked in order to prevent the washer fluid lines from being incorrectly connected to the windscreen and rear window washer pump - V59- . The hose fittings must be connected to the correct colour-coded pump connections during installation.

– When fitting the filler neck onto the washer fluid reservoir, make sure the seal is properly seated in the washer fluid reservoir.

Specified torques

♦ ⇒ “2.1.3 Assembly overview - windscreen washer system, washer fluid reservoir in front right wheel housing”, page 79

2.3 Removing and installing windscreen washer fluid level sender

⇒ “2.3.1 Removing and installing windscreen washer fluid level sender, washer fluid reservoir in front left wheel housing”, page 84

⇒ “2.3.2 Removing and installing windscreen washer fluid level sender, washer fluid reservoir in front right wheel housing”, page 84

2.3.1 Removing and installing windscreen washer fluid level sender, washer fluid reservoir in front left wheel housing

Note

The windscreen washer fluid level sender - G33- can only be renewed together with the whole reservoir.

– Removing and installing washer fluid reservoir ⇒ page 80 .

2.3.2 Removing and installing windscreen washer fluid level sender, washer fluid reservoir in front right wheel housing

Special tools and workshop equipment required

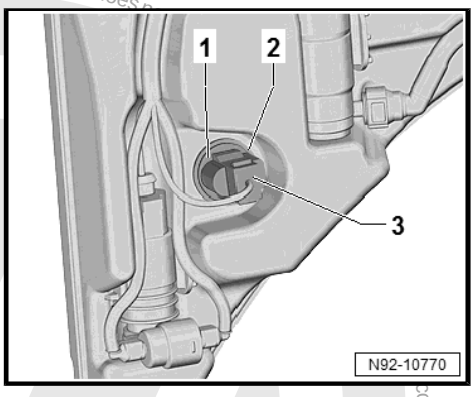
♦ Drip tray

Removing

– Remove washer fluid reservoir ⇒ page 82 .

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– Release and disconnect connector -3-.
– Place drip tray under washer fluid reservoir.
– Pull windscreen washer fluid level sender - G33- -1- out of washer fluid reservoir.
– If necessary, remove seal -3- for windscreen washer fluid level sender - G33- -1- from washer fluid reservoir.



Installing

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

– Ensure that seal is fitted correctly to opening in washer fluid reservoir.
– Coat seal with washer fluid so that windscreen washer fluid level sender - G33- can be inserted more easily.

2.4 Removing and installing windscreen washer pump

⇒ “2.4.1 Removing and installing washer pump, washer fluid reservoir in front left wheel housing”, page 85

⇒ “2.4.2 Removing and installing washer pump, washer fluid reservoir in front right wheel housing”, page 86

2.4.1 Removing and installing washer pump, washer fluid reservoir in front left wheel housing

Special tools and workshop equipment required

♦ Drip tray

Note

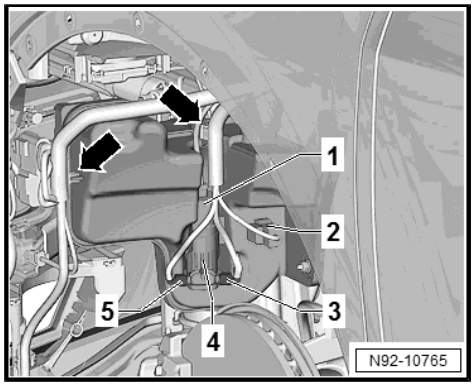
The removal and installation of the washer pump is described for vehicles without headlight washer system. The removal and installation of the washer pump for vehicles without headlight washer system are carried out in the same way.

Removing

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

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– Release and disconnect connector -1-.
– Release water lines -3- and -5-, and pull them off windscreen and rear window washer pump - V59- -4-.
– Pull windscreen and rear window washer pump - V59- -4- upwards out of washer fluid reservoir.



Installing

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

Note

The connections at the pump and hoses are colour-marked to prevent incorrect connection of the washer fluid lines to the windscreen and rear window washer pump - V59- . The hose fittings must be connected to the correct colour-coded pump connections during installation.

– Check sealing grommet for damage and correct seating.

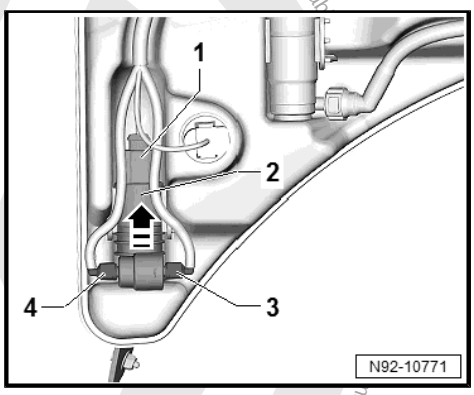
2.4.2 Removing and installing washer pump, washer fluid reservoir in front right wheel housing

Special tools and workshop equipment required

♦ Drip tray

Removing

– Remove washer fluid reservoir ⇒ page 82 .
– Release and disconnect connector -1-.
– Release and pull off water lines -3- and -4- on windscreen and rear window washer pump - V59- -2-.
– Pull windscreen and rear window washer pump - V59- -2- in -direction of arrow- out of washer fluid reservoir.



Installing

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

Note

The connections to the pump and hose lines are colour-marked in order to prevent the washer fluid lines from being incorrectly connected to the windscreen and rear window washer pump - V59- . The hose fittings must be connected to the correct colour-coded pump connections during installation.

– Check sealing grommet for damage and correct seating.

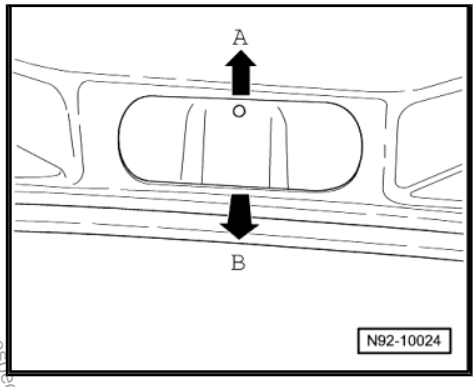
2.5 Removing and installing washer jets

Removing

– Open bonnet.

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– Push spray jet upwards -arrow A- and pull out of flap at the rear -arrow B-.



– Release hose clip -1- in direction of -arrow-.
– Pull off hose connection -2- from spray jet -4-.
– Disconnect electrical connector -3-.
– Remove spray jet -4-.

Installing

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

Note

When connecting the washer fluid line, ensure that the securing clip engages audibly in the connection.

– Starting at the top, push spray jet into mounting hole until it locks in place audibly.
– Adjusting spray jets ⇒ page 87 .

2.6 Adjusting spray jets

Caution

Risk of damage.

- ***Never use items to clean the washer jets!***

Note

In case of uneven spray field due to impurities in the spray jet: remove spray jet and rinse it through with water, opposite to direction of spray. Subsequent blowing through with compressed air against the spraying direction is permitted. Never use items to clean the washer jets!

– Adjusting windscreen washer system spray jets ⇒ Maintenance ; Booklet 40.1 ; Descriptions of work

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3 Rear window wiper system

⇒ “3.1 Assembly overview - rear window wiper system”, page 88

⇒ “3.2 Removing and installing wiper blade”, page 89

⇒ “3.3 Removing and installing wiper arm”, page 89

⇒ “3.4 Adjusting wiper arm”, page 90

⇒ “3.5 Removing and installing rear window wiper motor V12 ”, page 91

3.1 Assembly overview - rear window wiper system

1 - Cover

2 - Nut

- ❑ 12 Nm

3 - Wiper arm with joint-free wiper

- ❑ Removing and installing ⇒ page 89
- ❑ Adjusting park position ⇒ page 90
- ❑ Removing and installing joint-free wipers ⇒ page 89 .

4 - Seal

- ❑ Integral part of rear window
- ❑ Renew if damaged ⇒ page 91 .
- ❑ Removing and installing ⇒ page 91

5 - Rear window wiper motor - V12-

- ❑ Removing and installing ⇒ page 91

6 - Nuts

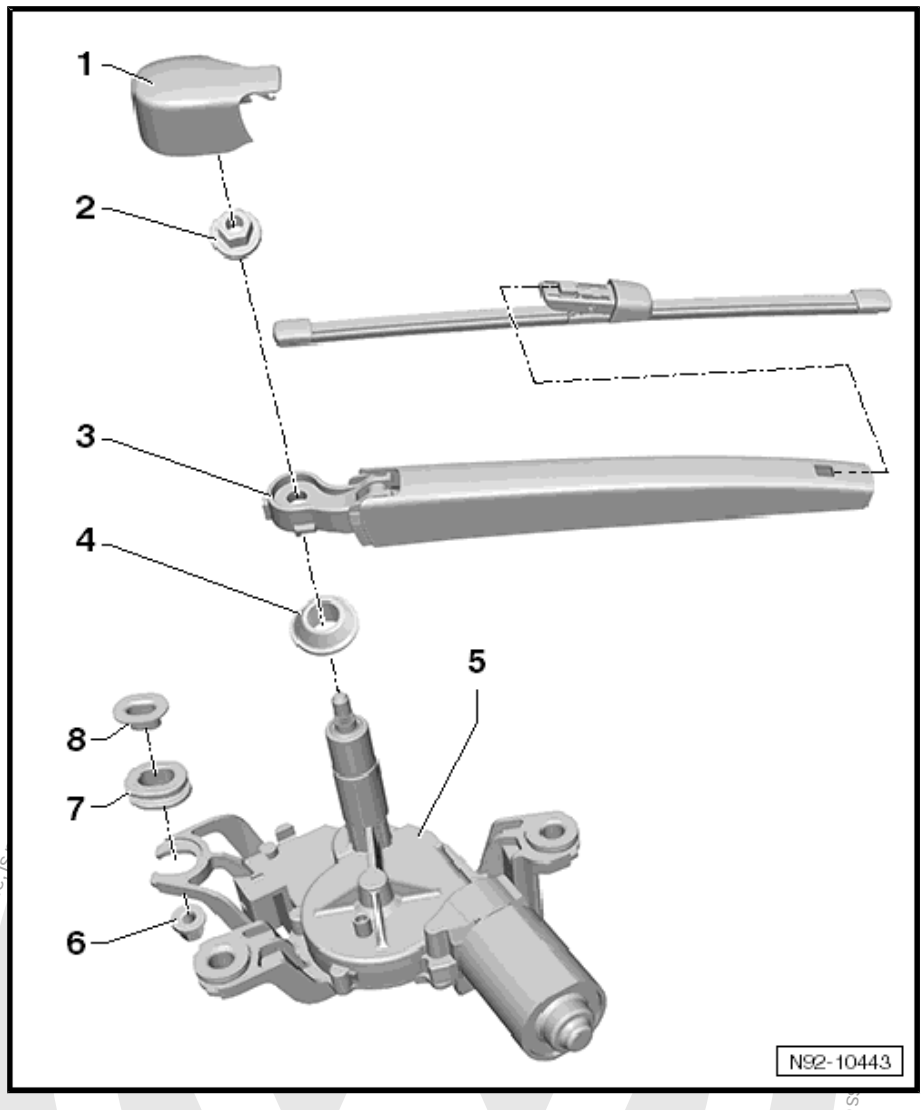
- ❑ Qty. 3
- ❑ 8 Nm

7 - Rubber rings

- ❑ Qty. 3

8 - Spacers

- ❑ Qty. 3



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3.2 Removing and installing wiper blade

Caution

Risk of damage to the wiper blade.

- *Joint-free wipers are very flexible. To lift the wiper blades off the rear window, touch them only in the area in which the wiper blades are attached to the wipers.*

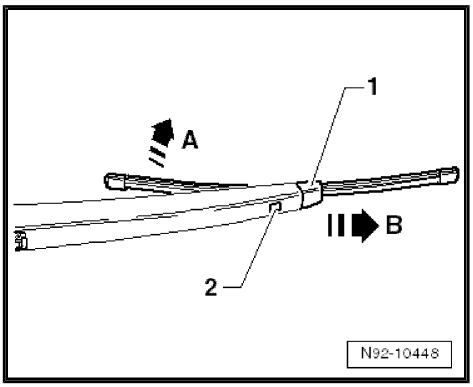
Removing

– Lift wiper arm off the rear window.

– Swing wiper blade in -direction of arrow A- out of wiper arm.

– Press release button -2-.

– Pull wiper blade on wiper blade fastener -1- in -direction of arrow B- out of wiper arm.



Installing

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

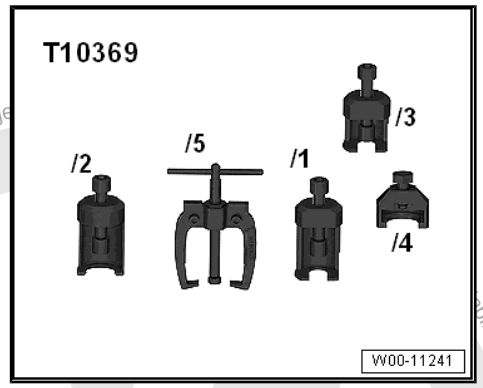
Note

The wiper blade should be heard to engage in the wiper arm.

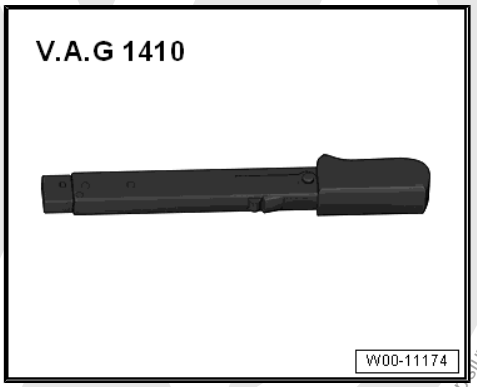
3.3 Removing and installing wiper arm

Special tools and workshop equipment required

- Puller - T10369-



- Torque wrench - V.A.G 1410-

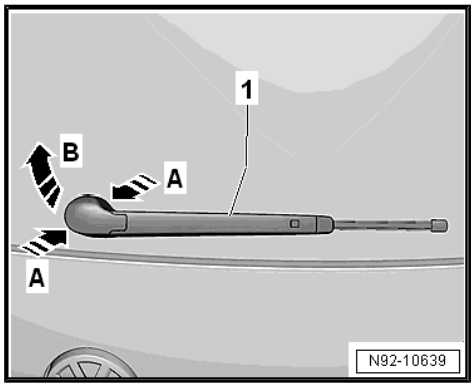


Removing

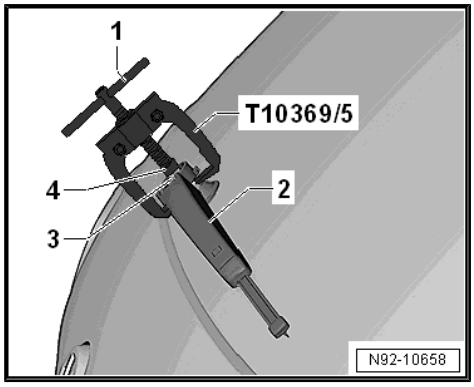
– Switch on ignition.

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– Actuate “rear window wipe” function and allow wiper arm to move to its end position.
– Switch off ignition.
– Press together cap of rear window wiper -1- in direction of -arrow A-.
– Fold up cap in direction of -arrow B-.



– Loosen nut -3- a few turns.
– Fit puller - T10369/5- to wiper arm -2-.
– Fit thrust piece -4- to wiper arm shaft.
– Screw in bolt -1- until wiper arm has been pulled off the wiper shaft.
– Completely unscrew nut -3-.
– Remove wiper arm -2-.



Installing

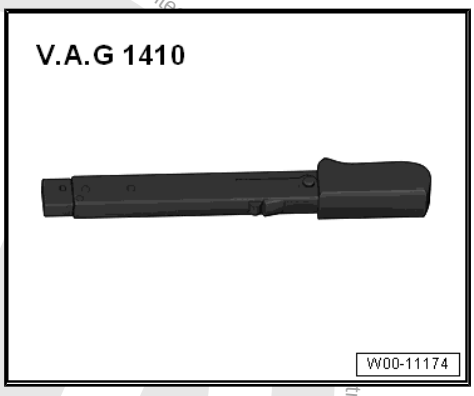
Install in the reverse order of removal, observing the following:

– Adjust wiper arm ⇒ page 90 .

3.4 Adjusting wiper arm

Special tools and workshop equipment required

♦ Torque wrench - V.A.G 1410-



Procedure

– Remove wiper arm ⇒ page 89 .
– Switch on ignition.
– Actuate “rear window wipe” function and allow wiper shaft to move to its end position.
– Switch off ignition.
– Fit wiper arm together with attached wiper blade onto wiper shaft.

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– Align wiper blade as follows against the rear window:

Note

The dimension given here indicates the distance between the tip of the wiper blade and the bottom edge of the rear window.

♦ Dimension -a- = 29 mm ± 5 mm.

– Tighten wiper arm nut.

– Switch on ignition.

– 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

♦ ⇒ “3.1 Assembly overview - rear window wiper system”, page 88

3.5 Removing and installing rear window wiper motor - V12-

Special tools and workshop equipment required

♦ Torque wrench - V.A.G 1410-



Removing

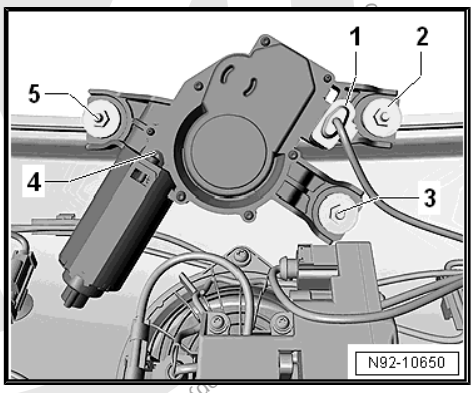
– Remove wiper arm ⇒ page 89 .

– Remove lower rear lid trim ⇒ General body repairs, interior; Rep. gr. 70 ; Luggage compartment trims; Removing and installing lower rear lid trim .

– Release and disconnect connector -1-.

– Unscrew nuts -2-, -3- and -5-.

– Remove rear window wiper motor - V12- -4-.



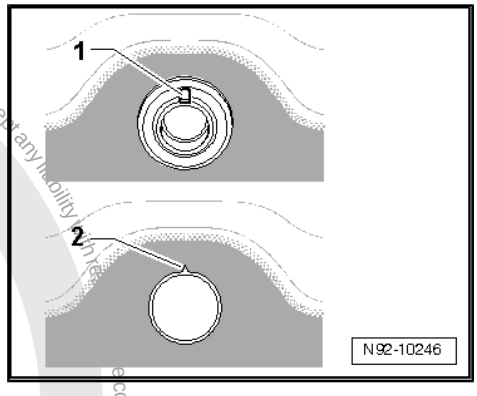
Installing

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

– If necessary, moisten inner side of seal in rear window with a rubber and plastic-compatible lubricant (e.g. polyethylene glycol).

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– Check seal is seated correctly in opening of rear window. Mark -1- on seal must align with mark -2- on rear window.



– Adjust wiper arm ⇒ page 90 .

Specified torques

◆ ⇒ “3.1 Assembly overview - rear window wiper system”, page 88

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4 Rear window washer system

⇒ “4.1 Assembly overview - rear window washer system”, page 93

⇒ “4.2 Removing and installing washer fluid reservoir”, page 96

⇒ “4.3 Removing and installing rear window washer pump”, page 96

⇒ “4.4 Removing and installing washer jet”, page 96

⇒ “4.5 Adjusting spray jet”, page 97

4.1 Assembly overview - rear window washer system

⇒ “4.1.1 Assembly overview - rear window washer system, washer fluid reservoir in front left wheel housing”, page 93

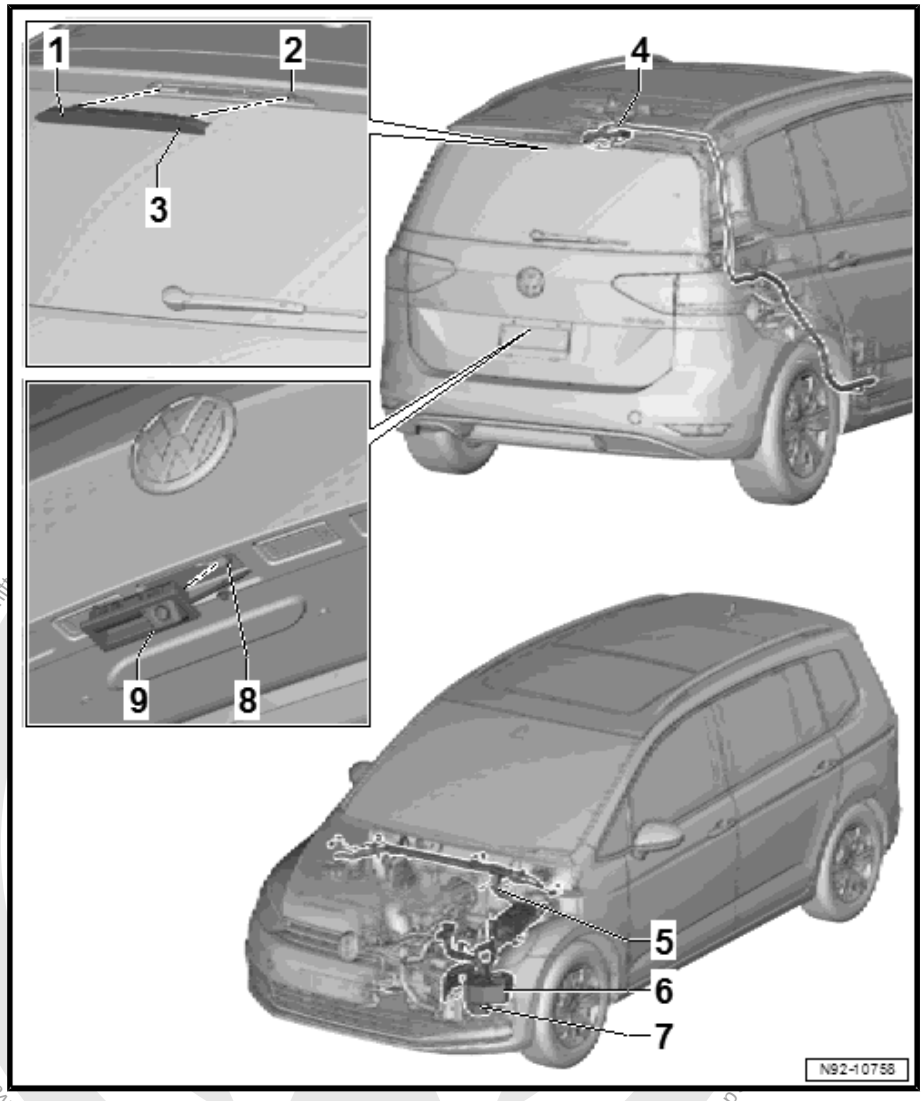
⇒ “4.1.2 Assembly overview - rear window washer system, washer fluid reservoir in front right wheel housing”, page 95

4.1.1 Assembly overview - rear window washer system, washer fluid reservoir in front left wheel housing

Note

The vehicle shown in the illustration may differ from the actual vehicle.

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1 - High-level brake light

- ❑ Removing and installing ⇒ page 157

2 - Connection for washer fluid hose

- ❑ For rear window washer system.

3 - Spray nozzle

- ❑ Removing and installing ⇒ page 96
- ❑ Adjusting ⇒ page 97

4 - Water line

- ❑ In right side panel, to spray jet of rear window washer system and spray jet for reversing camera - R189- / rear overhead view camera - R246-

5 - Water line

- ❑ In engine compartment, to spray jet of rear window washer system and spray jet for reversing camera - R189- / rear overhead view camera - R246-

6 - Windscreen and rear window washer pump - V59-

- ❑ Removing and installing ⇒ page 96
- ❑ With sealing grommet; renew if damaged.

7 - Washer fluid reservoir

- ❑ Removing and installing ⇒ page 96

8 - Connection for washer fluid hose

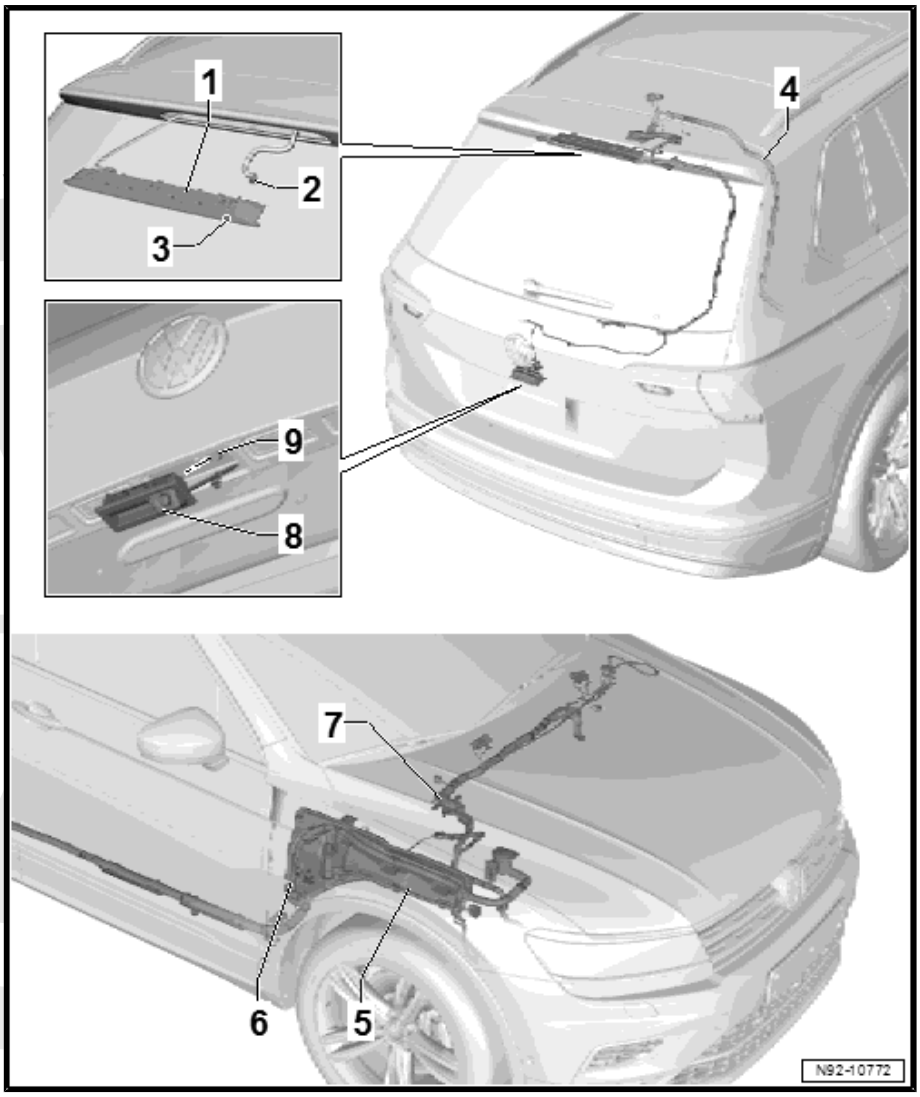
- ❑ For spray jet of reversing camera - R189- / rear overhead view camera - R246-

9 - Reversing camera - R189- / rear overhead view camera - R246-

- ❑ With spray jet
- ❑ Spray jet cannot be replaced as single part
- ❑ Removing and installing ⇒ Communication; Rep. gr. 91 ; Reversing camera; Removing and installing reversing camera - R189- or ⇒ Communication; Rep. gr. 91 ; Overhead view camera; Overview of fitting locations - overhead view camera

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4.1.2 Assembly overview - rear window washer system, washer fluid reservoir in front right wheel housing



1 - High-level brake light

- ❑ Removing and installing ⇒ page 157

2 - Connection for washer fluid hose

- ❑ For rear window washer system.

3 - Spray nozzle

- ❑ Removing and installing ⇒ page 96
- ❑ Adjusting ⇒ page 97

4 - Water line

- ❑ In right side panel, to spray jet of rear window washer system and spray jet for reversing camera - R189- / rear overhead view camera - R246-

5 - Washer fluid reservoir

- ❑ Removing and installing ⇒ page 96

6 - Windscreen and rear window washer pump - V59-

- ❑ Removing and installing ⇒ page 96
- ❑ With sealing grommet; renew if damaged.

7 - Water line

- ❑ In engine compartment, to spray jet of rear window washer system and spray jet for reversing camera - R189- / rear overhead view camera - R246-

8 - Reversing camera - R189- / rear overhead view camera - R246-

- ❑ With spray jet
- ❑ Spray jet cannot be replaced as single part
- ❑ Removing and installing ⇒ Communication; Rep. gr. 91 ; Reversing camera; Removing and installing reversing camera - R189- or ⇒ Communication; Rep. gr. 91 ; Overhead view camera; Overview of fitting locations - overhead view camera

9 - Connection for washer fluid hose

- ❑ For spray jet of reversing camera - R189- / rear overhead view camera - R246-

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4.2 Removing and installing washer fluid reservoir

Note

Depending on the vehicle equipment, the washer fluid reservoir (which is the same for the windscreen and the rear window washer systems) is located in the front left wheel housing or the front right wheel housing.

– Removing and installing washer fluid reservoir, washer fluid reservoir in front left wheel housing ⇒ page 80 .
– Removing and installing washer fluid reservoir, washer fluid reservoir in front right wheel housing ⇒ page 82 .

4.3 Removing and installing rear window washer pump

Note

Depending on the vehicle equipment, the washer pump (which is the same for the windscreen and the rear window washer systems) is located in the front left wheel housing or the front right wheel housing.

– Removing and installing windscreen and rear window washer pump - V59- , washer fluid reservoir in front left wheel housing ⇒ page 85 .
– Removing and installing windscreen and rear window washer pump - V59- , washer fluid reservoir in front right wheel housing ⇒ page 86 .

4.4 Removing and installing washer jet

Note

The spray jet is installed in the high-level brake light.

Removing:

– Remove high-level brake light ⇒ page 157 .
– Release the two catches -arrows-.
– Pull spray jet -1- towards rear out of high-level brake light.

Installing

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

Note

When connecting the washer fluid line, ensure that the securing clip engages audibly in the connection.

– Adjusting spray jet ⇒ page 97 .

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4.5 Adjusting spray jet

– Adjusting rear window washer system spray jets ⇒ Maintenance ; Booklet 40.1 ; Descriptions of work .

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5 Headlight washer system

⇒ “5.1 Assembly overview - headlight washer system”, page 98

⇒ “5.2 Removing and installing washer fluid reservoir”, page 100

⇒ “5.3 Removing and installing headlight washer system pump V11 ”, page 100

⇒ “5.4 Removing and installing pop-up cylinder”, page 101

⇒ “5.5 Adjusting spray jets”, page 102

5.1 Assembly overview - headlight washer system

⇒ “5.1.1 Assembly overview - headlight washer system, washer fluid reservoir in front left wheel housing”, page 98

⇒ “5.1.2 Assembly overview - headlight washer system, washer fluid reservoir in front right wheel housing”, page 99

5.1.1 Assembly overview - headlight washer system, washer fluid reservoir in front left wheel housing

1 - Washer fluid reservoir
- ❑ Removing and installing ⇒ page 100

2 - Nuts
- ❑ Qty. 3
- ❑ Specified torque ⇒ Item 7 (page 78)

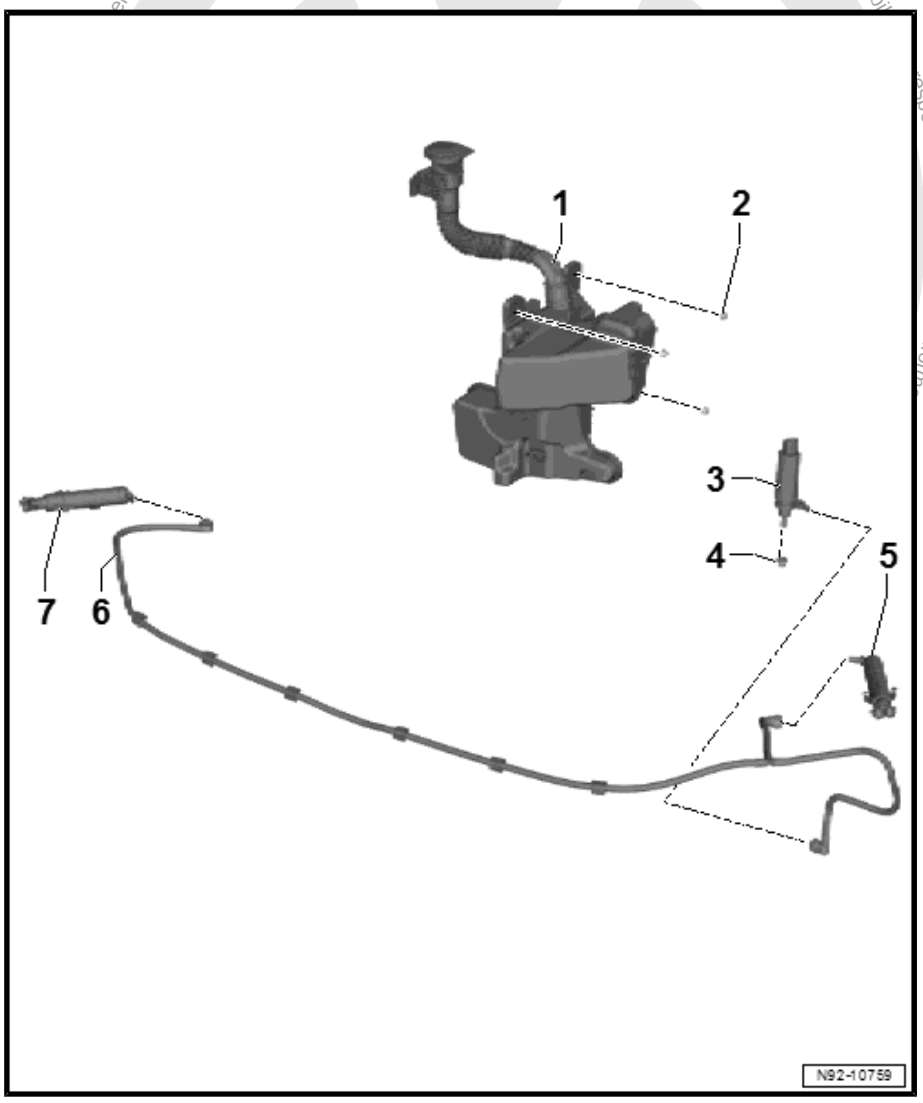
3 - Headlight washer system pump - V11-
- ❑ Removing and installing ⇒ page 100

4 - Sealing grommet
- ❑ Renew if damaged

5 - Left spray jet
- ❑ Adjusting ⇒ page 102

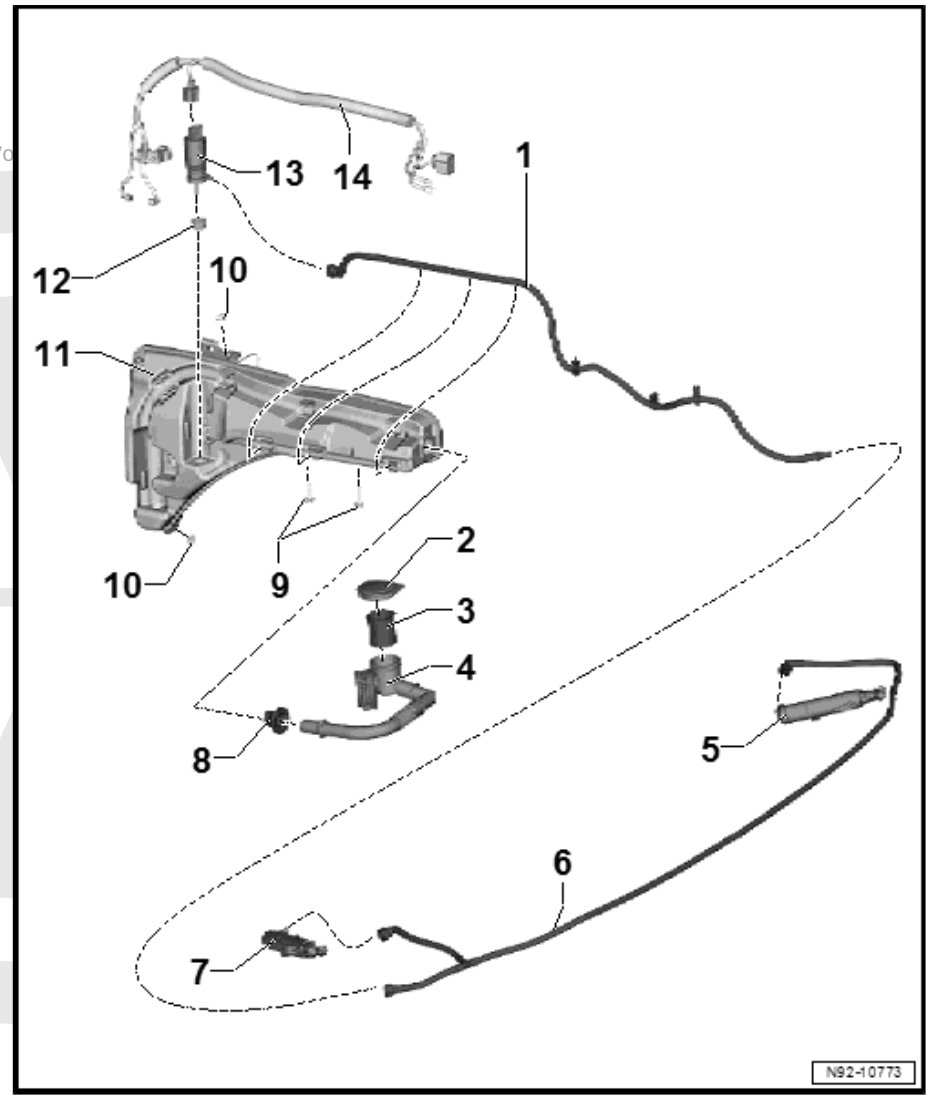
6 - Water hose

7 - Right spray jet
- ❑ Adjusting ⇒ page 102



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5.1.2 Assembly overview - headlight washer system, washer fluid reservoir in front right wheel housing



1 - Water hose
- ❑ On washer fluid reservoir

2 - Cap
- ❑ For filler neck

3 - Strainer

4 - Filler neck
- ❑ For washer fluid reservoir

5 - Left spray jet
- ❑ Adjusting ⇒ page 102

6 - Water hose
- ❑ In front bumper cover

7 - Right spray jet
- ❑ Adjusting ⇒ page 102

8 - Seal
- ❑ For filler neck
- ❑ Renew if damaged

9 - Bolt
- ❑ Qty. 2
- ❑ Specified torque ⇒ Item 7 (page 79)

10 - Nut
- ❑ Qty. 2
- ❑ Specified torque ⇒ Item 10 (page 79)

11 - Washer fluid reservoir
- ❑ Removing and installing ⇒ page 100

12 - Sealing grommet
- ❑ Renew if damaged

13 - Headlight washer system pump - V11-
- ❑ Removing and installing ⇒ page 100

14 - Adapter line
- ❑ On washer fluid reservoir

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5.2 Removing and installing washer fluid reservoir

Note

Depending on the vehicle equipment, the washer fluid reservoir (which is the same for the windscreen and rear window washer system and the headlight washer system) is located in the front left wheel housing or the front right wheel housing.

– Removing and installing washer fluid reservoir, washer fluid reservoir in front left wheel housing ⇒ page 80 .
– Removing and installing washer fluid reservoir, washer fluid reservoir in front right wheel housing ⇒ page 82 .

5.3 Removing and installing headlight washer system pump - V11-

⇒ “5.3.1 Removing and installing headlight washer system pump V11 , washer fluid reservoir in front left wheel housing”, page 100

⇒ “5.3.2 Removing and installing headlight washer system pump V11 , washer fluid reservoir in front right wheel housing”, page 100

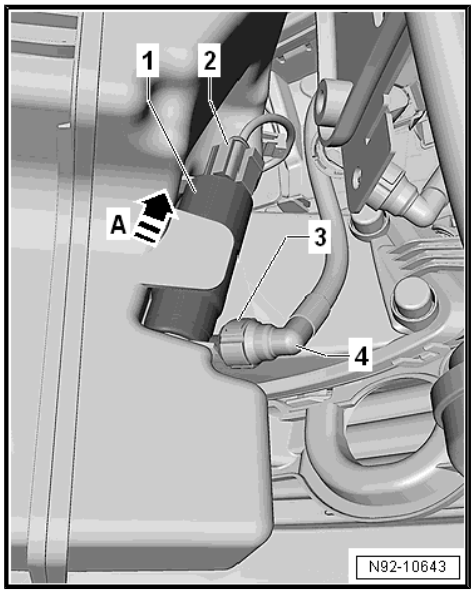
5.3.1 Removing and installing headlight washer system pump - V11- , washer fluid reservoir in front left wheel housing

Special tools and workshop equipment required

♦ Drip tray

Removing

– Remove front left wheel housing liner ⇒ General body repairs, exterior; Rep. gr. 66 ; Wheel housing liners; Removing and installing front wheel housing liners .
– Disconnect electrical connector -2-.
– Place drip tray under washer fluid reservoir.
– Press release tab -3- on both sides.
– Pull water hose -4- off headlight washer system pump - V11- -1-.
– Pull headlight washer system pump - V11- -1- in direction of -arrow A- out of washer fluid reservoir.



Installing

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

Note

When connecting the washer fluid line, ensure that the securing clip engages audibly in the connection.

– Check sealing grommet for damage and correct seating.

5.3.2 Removing and installing headlight washer system pump - V11- , washer

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fluid reservoir in front right wheel housing

Special tools and workshop equipment required

- ♦ Drip tray

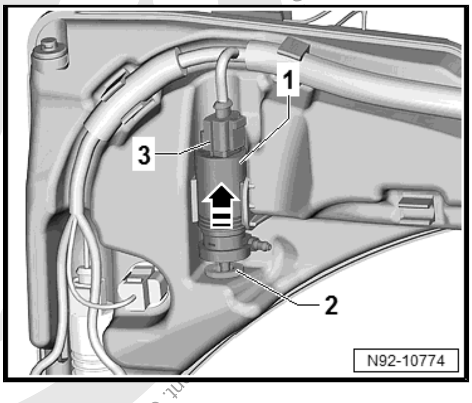
Removing

– Remove washer fluid reservoir ⇒ page 82 .

– Release and disconnect connector -3-.

– Place drip tray under washer fluid reservoir.

– Pull headlight washer system pump - V11- -1- in -direction of arrow- out of washer fluid reservoir.



Installing

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

Note

When connecting the washer fluid line, ensure that the securing clip engages audibly in the connection.

– Check sealing grommet -2- for damage and correct seating.

5.4 Removing and installing pop-up cylinder

Special tools and workshop equipment required

- ♦ Drip tray

Removing

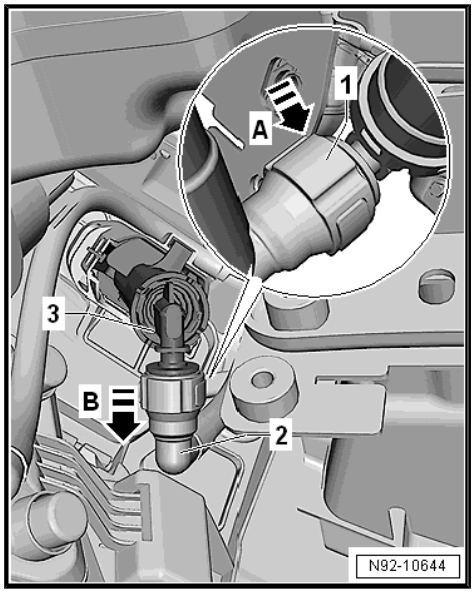
Note

Removal and installation are described for the left side. The removal and installation procedure for the right-hand side is basically the same.

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

– Place drip tray under pop-up cylinder.

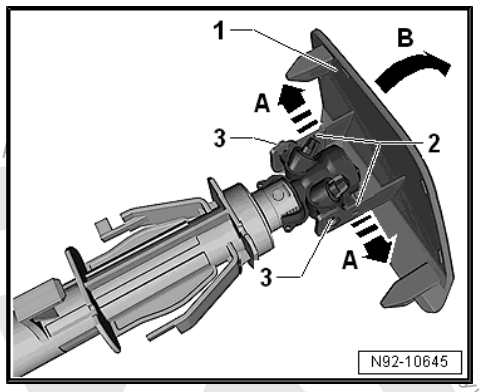
– Press release tab on both sides of connection -1- in -direction of arrow A-.
– Pull water hose -2- in direction of -arrow B- off pop-up cylinder -3-.



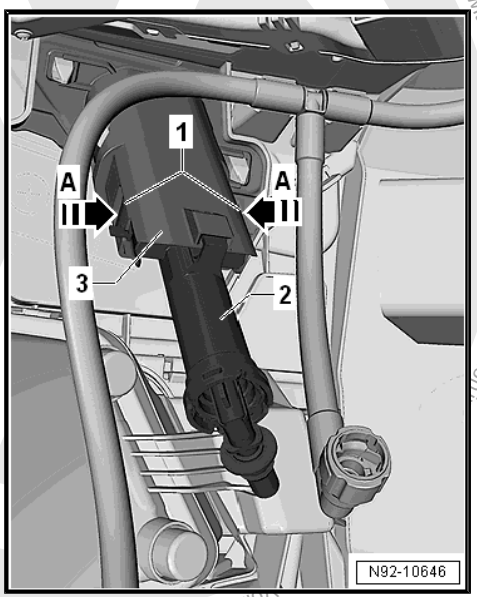
Note

The removal of the cap should be carried out with aid of a second person.

– Working with compressed air, drive pop-up cylinder together with cap -1- out of bumper cover and hold it in place.
– Press cap -1- on both sides out of upper mountings -2- in direction of -arrow A-.
– Swivel cap -1- in direction of -arrow B-. While doing so, unclip it from lower mountings -3-.



– Press release buttons -1- in direction of -arrow A-.
– Pull pop-up cylinder -2- downwards out of mounting -3-.



Installing

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

Note

- *Observe the markings distinguishing the pop-up cylinders for left and right.*
- *Ensure that the pop-up cylinder engages audibly when being pushed into the mounting.*
- *When connecting the washer fluid line, ensure that the securing clip engages audibly in the connection.*

5.5 Adjusting spray jets

Note

The delivered spray jets are preset by the manufacturer so that there is no need to adjust them following installation.

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– Checking adjustment of spray jets ⇒ Maintenance ; Booklet 40.1 ; Descriptions of work .

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6 Washer fluid lines

⇒ “6.1 Repairing washer fluid lines”, page 104

6.1 Repairing washer fluid lines

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

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94 – Lights, bulbs, switches - exterior

1 Headlights

⇒ “1.1 Assembly overview - headlight”, page 105

⇒ “1.2 Removing and installing headlight”, page 113

⇒ “1.3 Adjusting headlights”, page 114

⇒ “1.4 Adjusting headlight installation position”, page 114

⇒ “1.5 Removing and installing front turn signal bulb M5 / M7 ”, page 115

⇒ “1.6 Installing repair kit for headlight housing”, page 116

⇒ “1.7 Converting headlights from driving on right to driving on left”, page 118

⇒ “1.8 Converting headlights from driving on left to driving on right”, page 118

⇒ “1.9 Removing and installing headlight range control motor V48 / V49 ”, page 119

⇒ “1.10 Removing and installing dipped beam bulb”, page 124

⇒ “1.11 Removing and installing headlight main beam bulb M30 / M32 ”, page 129

⇒ “1.12 Removing and installing side light bulb M1 / M3 ”, page 134

⇒ “1.13 Removing and installing daytime running light bulb L174 / L175 ”, page 134

⇒ “1.14 Removing and installing LED modules for daytime running light and side light L176 / L177 ”, page 135

⇒ “1.15 Removing and installing bulbs for cornering light L148 / L149 ”, page 137

⇒ “1.16 Removing and installing output module for headlight J667 / J668 ”, page 137

⇒ “1.17 Removing and installing output module 1 for left LED headlight A27 / A31 ”, page 140

⇒ “1.18 Removing and installing swivel module position sensor G474 / G475 ”, page 142

⇒ “1.19 Removing and installing dynamic cornering light control motor V318 / V319 ”, page 142

1.1 Assembly overview - headlight

⇒ “1.1.1 Assembly overview - dual halogen headlight”, page 105

⇒ “1.1.2 Assembly overview - LED headlights without variable light distribution”, page 108

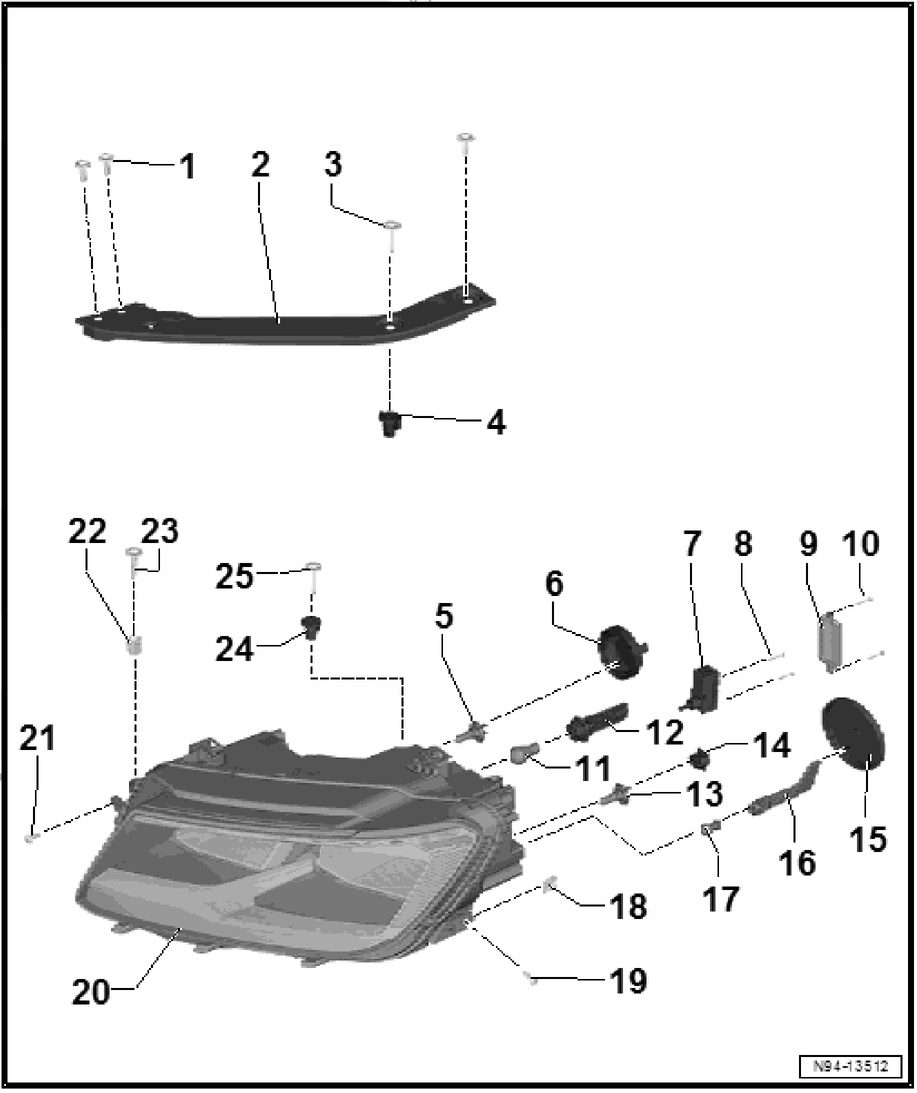
⇒ “1.1.3 Assembly overview - LED headlights with variable light distribution”, page 110

⇒ “1.1.4 Assembly overview - add-on parts for headlights”, page 112

⇒ “1.1.5 Assembly overview - repair kit for headlight housing”, page 113

1.1.1 Assembly overview - dual halogen headlight

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1 - Bolt
- ❑ Qty. 3
- ❑ Specified torque ⇒ General body repairs, exterior; Rep. gr. 50 ; Lock carrier; Assembly overview - lock carrier

2 - Mounting plate

3 - Bolt
- ❑ 4 Nm

4 - Compensation element

5 - Headlight main beam bulb
- ❑ Left headlight main beam bulb - M30-
- ❑ Right headlight main beam bulb - M32-
- ❑ Removing and installing ⇒ page 129

6 - Housing cover
- ❑ For bulbs for main beam headlight

7 - Headlight range control motor
- ❑ Left headlight range control motor - V48-
- ❑ Right headlight range control motor - V49-
- ❑ Removing and installing ⇒ page 119

8 - Bolts
- ❑ Qty. 2
- ❑ 2.5 Nm

9 - Housing cover
- ❑ For headlight range control motor.
- ❑ To be used in event of repairs

10 - Bolts
- ❑ To be used in event of repairs
- ❑ Qty. 2
- ❑ 2 Nm

11 - Front turn signal bulb
- ❑ Front left turn signal bulb - M5-
- ❑ Front right turn signal bulb - M7-
- ❑ Removing and installing ⇒ page 115

12 - Handle
- ❑ With bulb carrier
- ❑ For front turn signal bulb

13 - Headlight dipped beam bulb
- ❑ Left headlight dipped beam bulb - M29-
- ❑ Right headlight dipped beam bulb - M31-
- ❑ Removing and installing ⇒ page 124

14 - Bulb carrier

- ❑ For headlight dipped beam bulbs

15 - Housing cover

- ❑ For headlight dipped beam bulb and side light/daytime running light bulb

16 - Bulb carrier

- ❑ For side light/daytime running light bulb

17 - Side light/daytime running light bulb

- ❑ Left side light bulb - M1- / left daytime running light bulb - L174-
- ❑ Right side light bulb - M3- / right daytime running light bulb - L175-
- ❑ Removing and installing ⇒ page 134

18 - Speed nut

19 - Bolt

- ❑ 4 Nm

20 - Headlights

- ❑ Removing and installing ⇒ page 113
- ❑ Adjusting ⇒ page 114

21 - Stop bolt

22 - Banjo bolt

- ❑ For height adjustment of headlight

23 - Bolt

- ❑ 4 Nm

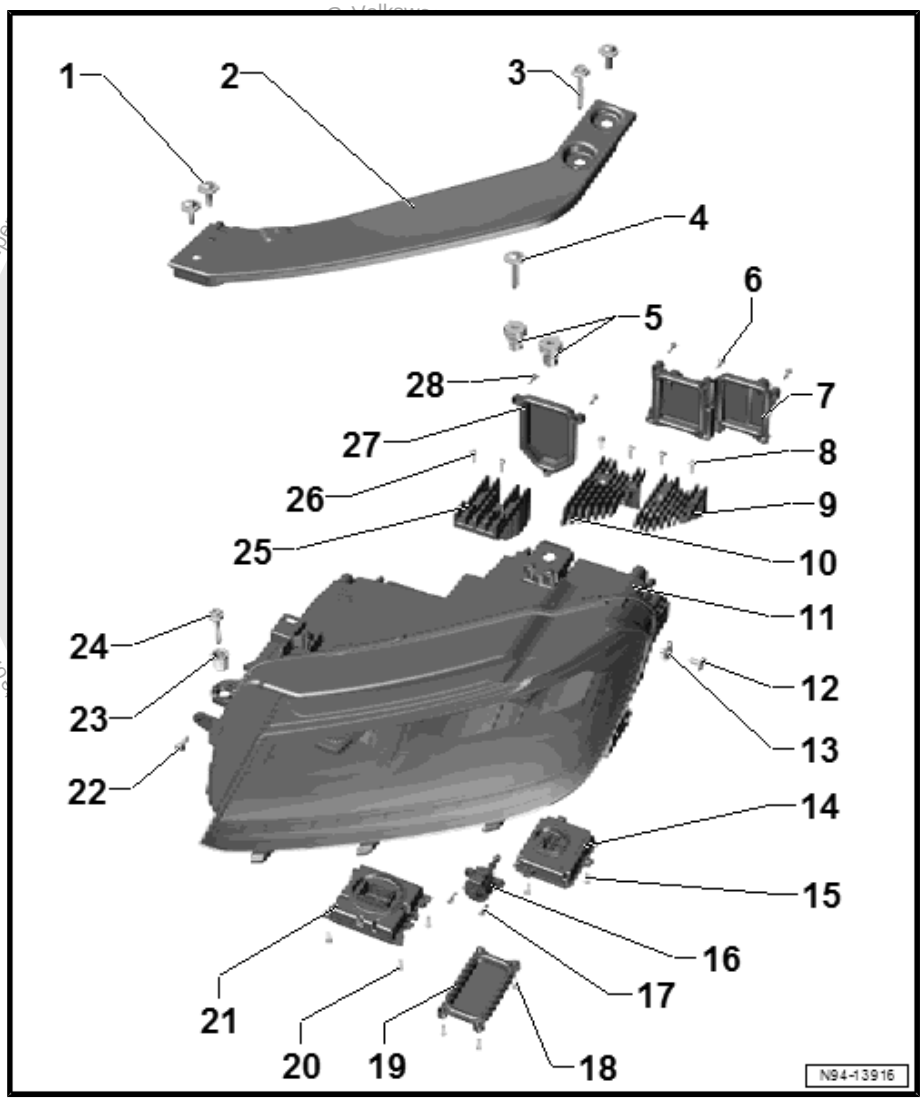
24 - Compensation element

25 - Bolt

- ❑ Only needs to be loosened
- ❑ 4 Nm

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1.1.2 Assembly overview - LED headlights without variable light distribution



1 - Bolt

- ❑ Qty. 3
- ❑ Specified torque ⇒ General body repairs, exterior; Rep. gr. 50 ; Lock carrier; Assembly overview - lock carrier

2 - Mounting plate

3 - Bolt

- ❑ 4 Nm

4 - Bolt

- ❑ Only needs to be loosened
- ❑ 4 Nm

5 - Compensation element

- ❑ Qty. 2

6 - Bolt

- ❑ To be used in event of repairs
- ❑ Qty. 6
- ❑ 1.5 Nm

7 - Housing cover

- ❑ For bulbs for main beam headlight
- ❑ To be used in event of repairs

8 - Bolt

- ❑ Qty. 4
- ❑ 1.5 Nm

9 - LED module for headlight dipped beam bulb

- ❑ Left headlight dipped beam bulb - M29-
- ❑ Right headlight dipped beam bulb - M31-
- ❑ Removing and installing ⇒ page 125

10 - LED module for headlight dipped beam bulb

- ❑ Left headlight dipped beam bulb - M29-
- ❑ Right headlight dipped beam bulb - M31-
- ❑ Removing and installing ⇒ page 125

11 - Headlights

- ❑ Removing and installing ⇒ page 113
- ❑ Adjusting ⇒ page 114

12 - Bolt

- ❑ 4 Nm

13 - Speed nut

14 - Power output module for headlight

- ❑ Output module for left headlight - J667-
- ❑ Output module for right headlight - J668-

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- ❑ Removing and installing ⇒ page 137

15 - Bolt

- ❑ Qty. 3
- ❑ 1.5 Nm

16 - Headlight range control motor

- ❑ Left headlight range control motor - V48-
- ❑ Right headlight range control motor - V49-
- ❑ Removing and installing ⇒ page 121

17 - Bolts

- ❑ Qty. 2
- ❑ 1.5 Nm

18 - Bolt

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

19 - Housing cover

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

20 - Bolt

- ❑ Qty. 4
- ❑ 1.5 Nm

21 - Output module 1 for left LED headlight

- ❑ Output module 1 for right LED headlight - A27-
- ❑ Output module 1 for left LED headlight - A31-
- ❑ Removing and installing ⇒ page 140

22 - Stop bolt

23 - Banjo bolt

- ❑ For height adjustment of headlight

24 - Bolt

- ❑ 4 Nm

25 - LED module for headlight main beam bulb

- ❑ Left headlight main beam bulb - M30-
- ❑ Right headlight main beam bulb - M32-
- ❑ Removing and installing ⇒ page 130

26 - Bolt

- ❑ Qty. 2
- ❑ 1.5 Nm

27 - Housing cover

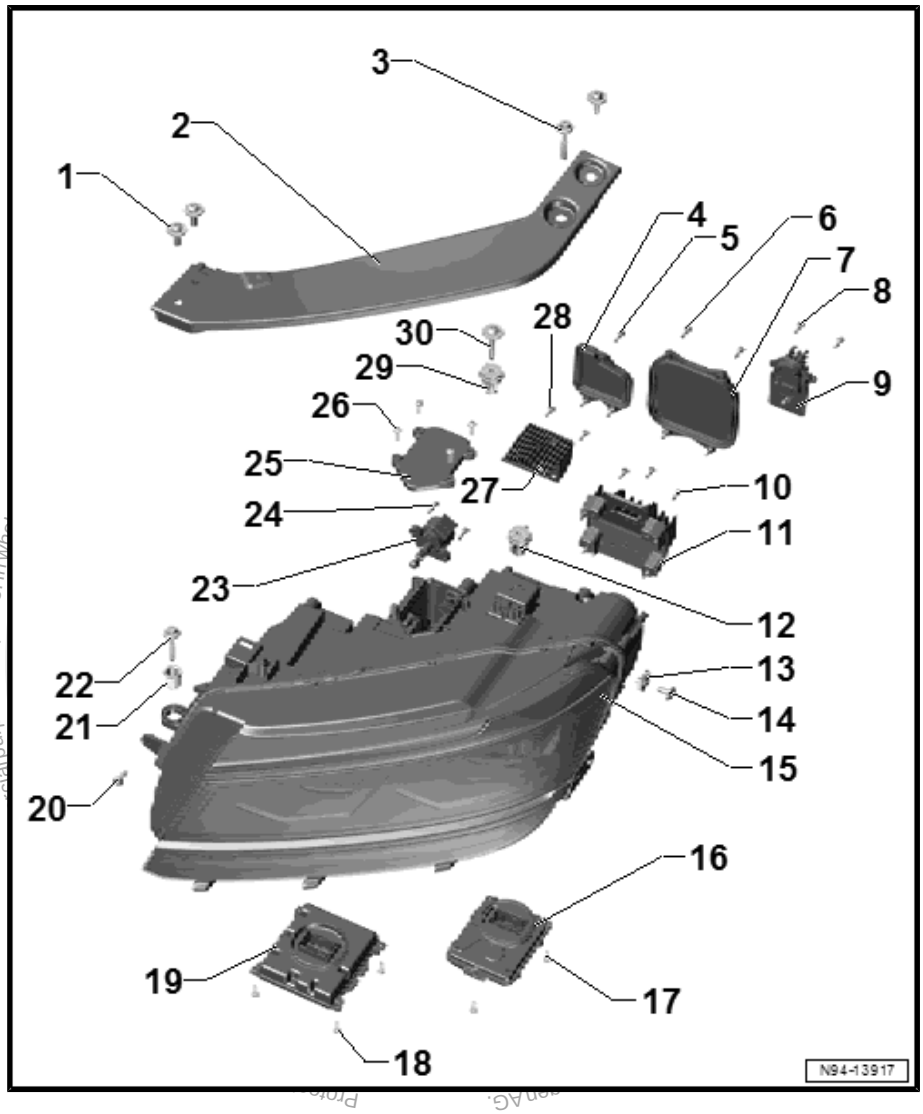
- ❑ For headlight dipped beam bulbs
- ❑ To be used in event of repairs

28 - Bolt

- ❑ To be used in event of repairs
- ❑ Qty. 3
- ❑ 1.5 Nm

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1.1.3 Assembly overview - LED headlights with variable light distribution



1 - Bolt

- ❑ Qty. 3
- ❑ Specified torque ⇒ General body repairs, exterior; Rep. gr. 50 ; Lock carrier; Assembly overview - lock carrier

2 - Mounting plate

3 - Bolt

- ❑ 4 Nm

4 - Housing cover

- ❑ For bulbs for main beam headlight
- ❑ To be used in event of repairs

5 - Bolt

- ❑ To be used in event of repairs
- ❑ Qty. 3
- ❑ 1.5 Nm

6 - Bolt

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

7 - Housing cover

- ❑ For headlight dipped beam bulbs
- ❑ To be used in event of repairs

8 - Bolt

- ❑ Qty. 3
- ❑ 1.5 Nm

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

- ❑ Left LED module for daytime running light and side light - L176-
- ❑ Right LED module for daytime running light and side light - L177-
- ❑ Removing and installing ⇒ page 135

10 - Bolt

- ❑ Qty. 5
- ❑ 1.5 Nm

11 - LED module for headlight dipped beam bulb

- ❑ Left headlight dipped beam bulb - M29-
- ❑ Right headlight dipped beam bulb - M31-
- ❑ Removing and installing ⇒ page 127

12 - Compensation element

13 - Speed nut

14 - Bolt

- ❑ 4 Nm

15 - Headlights

- ❑ Removing and installing ⇒ page 113
- ❑ Adjusting ⇒ page 114

16 - Power output module for headlight

- ❑ Output module for left headlight - J667-
- ❑ Output module for right headlight - J668-
- ❑ Removing and installing ⇒ page 138

17 - Bolt

- ❑ Qty. 3
- ❑ 1.5 Nm

18 - Bolt

- ❑ Qty. 4
- ❑ 1.5 Nm

19 - Output module 1 for left LED headlight

- ❑ Output module 1 for right LED headlight - A27-
- ❑ Output module 1 for left LED headlight - A31-
- ❑ Removing and installing ⇒ page 141

20 - Stop bolt

21 - Banjo bolt

- ❑ For height adjustment of headlight

22 - Bolt

- ❑ 4 Nm

23 - Headlight range control motor

- ❑ Left headlight range control motor - V48-
- ❑ Right headlight range control motor - V49-
- ❑ Removing and installing ⇒ page 122

24 - Bolt

- ❑ Qty. 2
- ❑ 1.5 Nm

25 - Housing cover

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

26 - Bolt

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

27 - LED module for headlight main beam bulb

- ❑ Left headlight main beam bulb - M30-
- ❑ Right headlight main beam bulb - M32-
- ❑ Removing and installing ⇒ page 132

28 - Bolt

- ❑ Qty. 2

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- ❑ 1.5 Nm

29 - Compensation element

30 - Bolt

- ❑ Only needs to be loosened
- ❑ 4 Nm

1.1.4 Assembly overview - add-on parts for headlights

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1 - Headlights

- ❑ Removing and installing ⇒ page 113
- ❑ Adjusting ⇒ page 114

2 - Cover trim

- ❑ Only for LED headlights with variable light distribution

3 - Retaining spring

- ❑ Qty. 3
- ❑ Only for LED headlights with variable light distribution

4 - Seal

5 - Trim strip

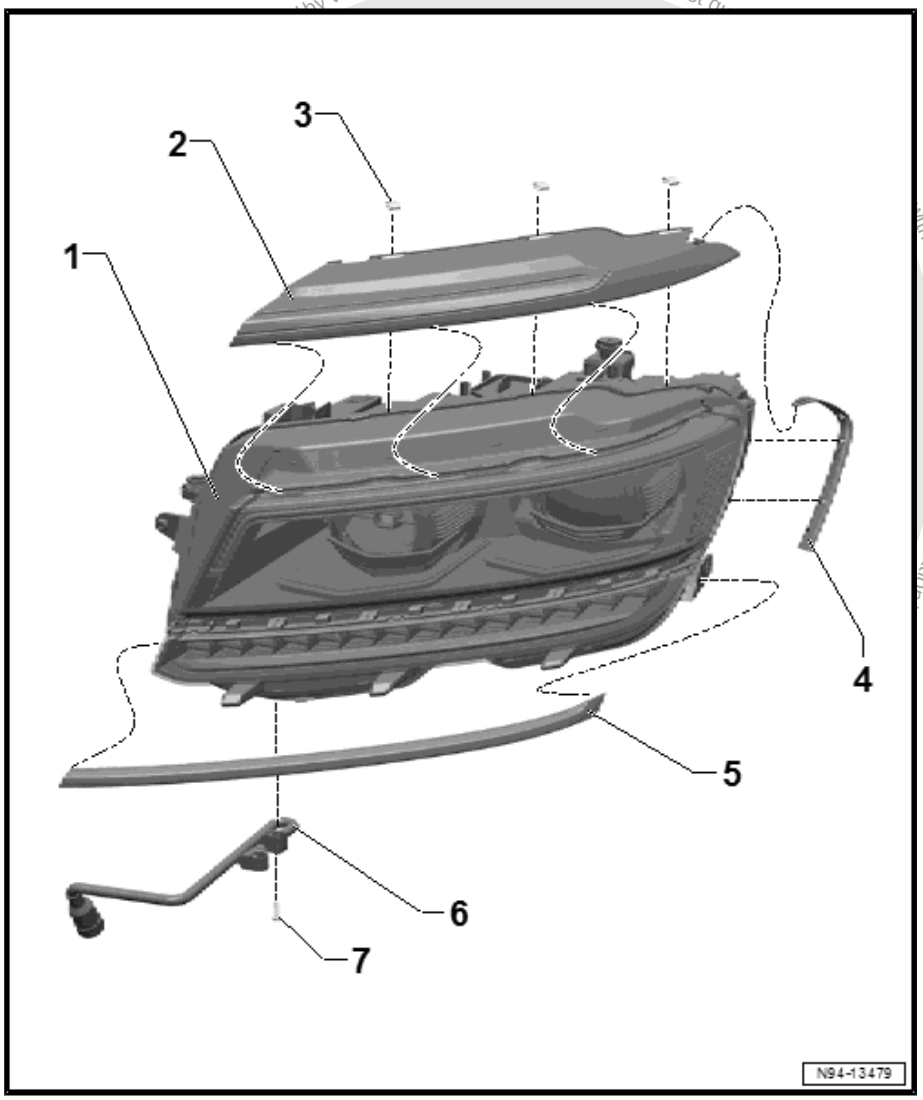
- ❑ Only for LED headlights with variable light distribution

6 - Breather hose

- ❑ Not on dual halogen headlights

7 - Bolt

- ❑ Not on dual halogen headlights
- ❑ 1 Nm



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1.1.5 Assembly overview - repair kit for headlight housing

1 - Headlights
- ❑ Removing and installing ⇒ page 113
- ❑ Adjusting ⇒ page 114

2 - Upper retaining tab
- ❑ Removing and installing ⇒ page 116

3 - Bolt
- ❑ Qty. 2
- ❑ 1 Nm

4 - Inner retaining tab
- ❑ Removing and installing ⇒ page 116

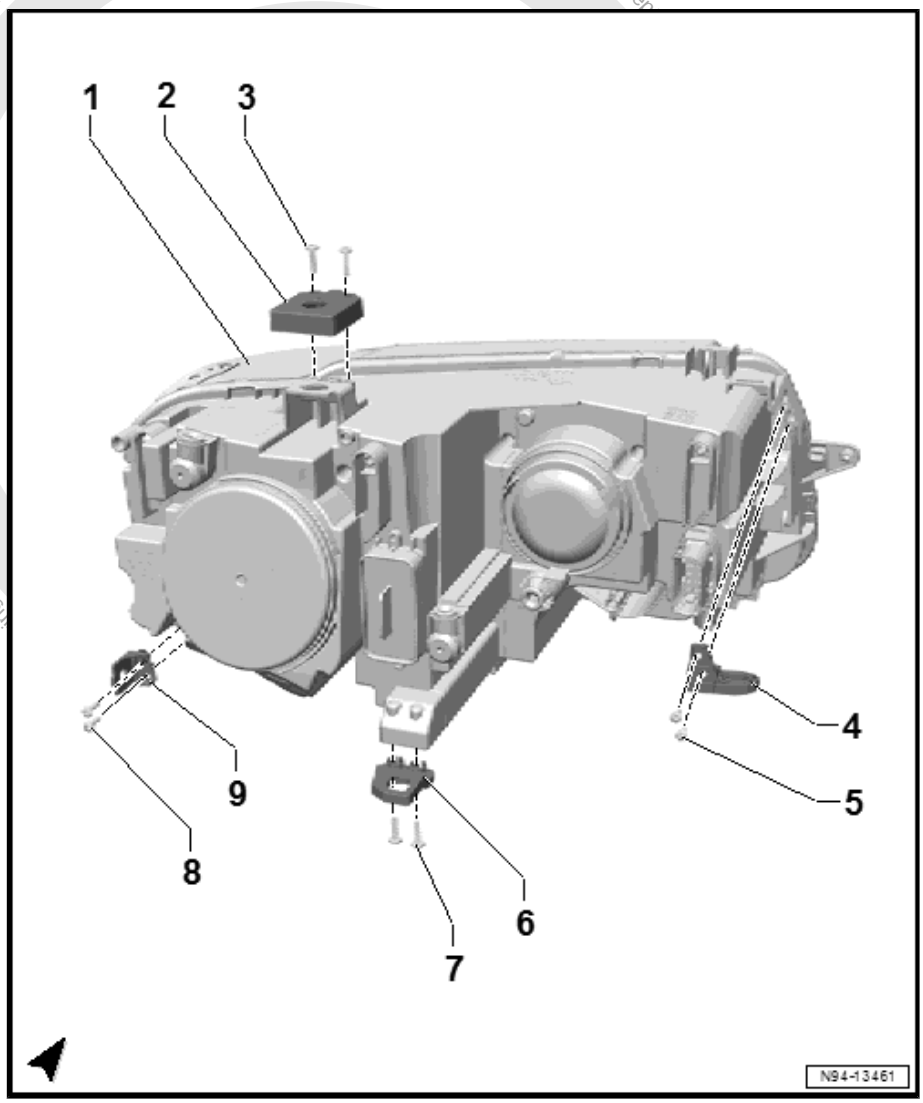
5 - Bolt
- ❑ Qty. 2
- ❑ 1 Nm

6 - Rear retaining tab
- ❑ Removing and installing ⇒ page 116

7 - Bolt
- ❑ Qty. 2
- ❑ 1 Nm

8 - Bolt
- ❑ Qty. 2
- ❑ 1 Nm

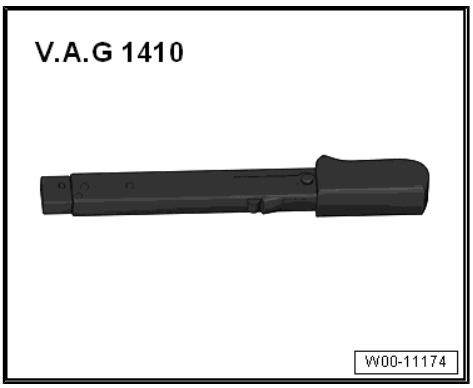
9 - Outer retaining tab
- ❑ Removing and installing ⇒ page 116



1.2 Removing and installing headlight

Special tools and workshop equipment required

♦ Torque wrench - V.A.G 1410-



Removing

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

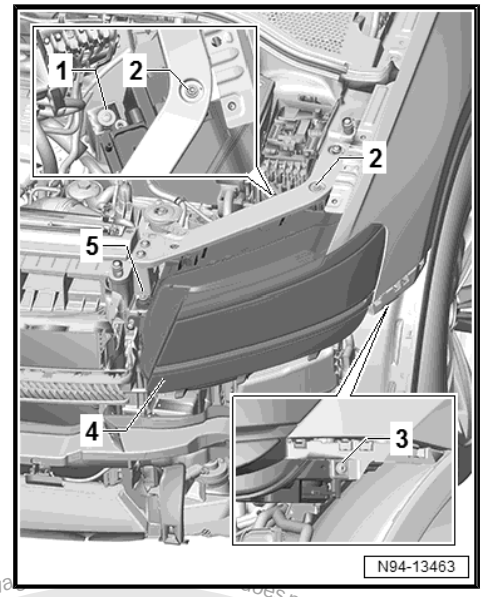
– Loosen bolt -1- a few turns.

– Unscrew bolts -2-, -3- and -5-.

– Release and disconnect electrical connector on headlight -4-.

– Guide out headlight -4- towards front. When doing this, detach headlight seal from wing.

– On LED headlights, note breather hose on headlight -4-.



Installing

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

– Press headlight into bumper guide.

– On LED headlights, make sure that the breather hose is positioned properly.

– Ensure uniform gap all around headlight ⇒ page 114 .

– Check headlight setting and adjust headlight if necessary ⇒ Maintenance ; Booklet 40.1 ; Descriptions of work

Specified torques

♦ ⇒ “1.1 Assembly overview - headlight”, page 105

1.3 Adjusting headlights

⇒ “1.3.1 Adjusting headlights”, page 114

⇒ “1.3.2 Adjusting fog lights”, page 114

1.3.1 Adjusting headlights

Adjusting headlights ⇒ Maintenance ; Booklet 40.1 ; Descriptions of work

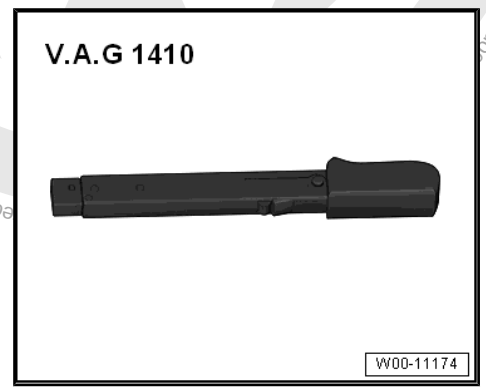
1.3.2 Adjusting fog lights

Adjusting fog lights ⇒ Maintenance ; Booklet 40.1 ; Descriptions of work

1.4 Adjusting headlight installation position

Special tools and workshop equipment required

♦ Torque wrench - V.A.G 1410-



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Procedure

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

– Loosen bolts -1-, -2-, -3- and -5-.

– Ensure uniform gap between headlight -4- and wing.

– Tighten bolts -2- and -3-.

– Close bonnet.

– Adjust banjo bolt of bolt -5- to ensure gaps are even all round.

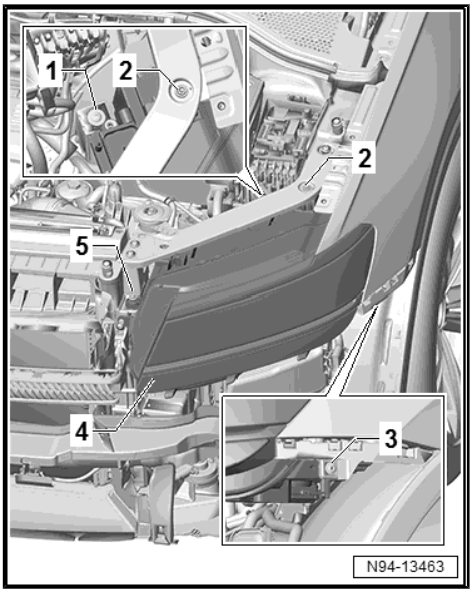
– Open bonnet.

– Tighten bolt -5- inside banjo bolt.

– Tighten bolt -1-.

– Perform functional check.

– Check headlight setting and adjust headlight if necessary ⇒ Maintenance ; Booklet 40.1 ; Descriptions of work



Specified torques

◆ ⇒ “1.1 Assembly overview - headlight”, page 105

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

⇒ “1.5.1 Removing and installing front turn signal bulb M5 / M7 , dual halogen headlights”, page 115

⇒ “1.5.2 Removing and installing front turn signal bulb M5 / M7 , LED headlights”, page 116

1.5.1 Removing and installing front turn signal bulb -M5- / -M7- , dual halogen headlights

Note

Removal and installation are described for the left side. The removal and installation procedure for the right-hand side is basically the same.

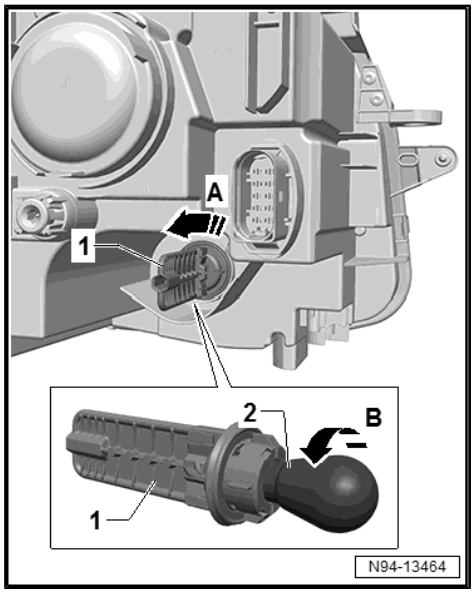
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Removing

– Release bulb carrier -1- in -direction of arrow A-.

– Pull bulb carrier -1- with front left turn signal bulb - M5- out of mounting on headlight.

– Push front left turn signal bulb - M5- -2- slightly into bulb carrier -1- and, at the same time, turn it to stop in -direction of arrow B-. Then, pull it out of bulb carrier.



Installing

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

Caution

Risk of damage to the headlight.

- *Do not touch the glass part of the bulb with bare fingers. Fingers leave traces of grease on the glass bulb, which evaporate when the bulb is switched on and cause the glass bulb to cloud over.*
- *Wear e.g. clean fabric gloves when inserting bulbs.*
- *Make sure the housing cover is correctly seated when installing. The ingress of water will cause permanent damage to the headlight.*

– Perform functional check.

– Check headlight setting and adjust headlight if necessary ⇒ Maintenance ; Booklet 40.1 ; Descriptions of work

1.5.2 Removing and installing front turn signal bulb -M5- / -M7- , LED headlights

Note

The front turn signal bulbs (LEDs) are integrated in the headlight. These LEDs cannot be renewed. The headlight can be renewed only as a complete unit.

– Removing and installing headlights ⇒ page 113 .

1.6 Installing repair kit for headlight housing

Special tools and workshop equipment required

- Torque screwdriver - V.A.G 1624-



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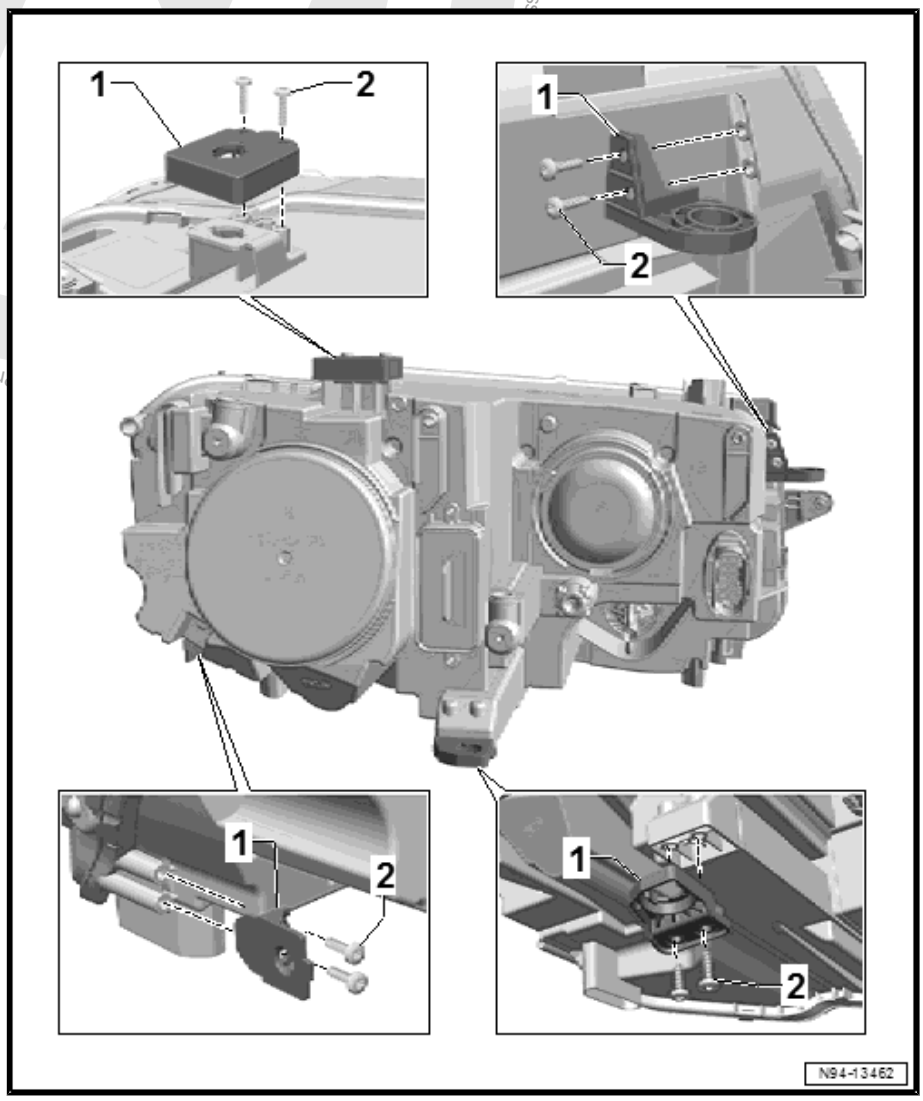
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Note

- *If retaining tabs broke off the headlights, they can be renewed using the repair kit for headlight housing. There is therefore no need to renew the entire headlight.*
- *There are different repair kits available for the left and right headlight ⇒ Electronic parts catalogue .*
- *Removal and installation are described for the left side. The removal and installation procedure for the right-hand side is basically the same.*

– Remove headlight whose retaining tab is broken ⇒ page 113 .

– Remove remaining parts of broken retaining tab from headlight housing.



– Fit retaining tab -1- of repair kit to headlamp and secure it with bolt -2-.

– Install headlight, and align it flush to body contour ⇒ page 113 .

– Perform functional check.

– Check headlight setting and adjust headlight if necessary
⇒ Maintenance ; Booklet 40.1 ; Descriptions of work

Specified torques

- ⇒ “1.1.5 Assembly overview - repair kit for headlight housing”, page 113

1.7 Converting headlights from driving on right to driving on left

⇒ “1.7.1 Changing headlights over from driving on right to driving on left (dual halogen headlights)”, page 118

⇒ “1.7.2 Converting headlights from driving on right to driving on left, LED headlights”, page 118

1.7.1 Changing headlights over from driving on right to driving on left (dual halogen headlights)

If an RHD vehicle is driven in a left-traffic country, or vice versa, the headlights do not need to be adapted in any way.

1.7.2 Converting headlights from driving on right to driving on left, LED headlights

If a right-hand drive vehicle is driven in a left-hand drive country, or vice versa, the headlights must be converted. This is necessary in order to avoid dazzling oncoming traffic with the asymmetric low beam headlights.

Note

- *The conversion from driving on left to driving on right, or vice versa, is performed by means of the infotainment system.*
- *It is only permissible to make use of the headlight converter for a short period of time. When permanently driving in the respective country during a longer period of time, suitable headlights need to be installed according to valid specifications.*

– On the display unit for front information display and operating unit control unit - J685- , press button CAR.

– Press function buttons Setup and Light.

– Perform adjustment in menu “Light Settings”.

1.8 Converting headlights from driving on left to driving on right

⇒ “1.8.1 Changing headlights over from driving on left to driving on right (dual halogen headlights)”, page 118

⇒ “1.8.2 Converting headlights from driving on left to driving on right, LED headlights”, page 119

1.8.1 Changing headlights over from driving on left to driving on right (dual halogen headlights)

If an RHD vehicle is driven in a left-traffic country, or vice versa, the headlights do not need to be adapted in any way.

1.8.2 Converting headlights from driving on left to driving on right, LED headlights

If a right-hand drive vehicle is driven in a left-hand drive country, or vice versa, the headlights must be converted. This is necessary in order to avoid dazzling oncoming traffic with the asymmetric low beam headlights.

Note

- *The conversion from driving on left to driving on right, or vice versa, is performed by means of the infotainment system.*
- *It is only permissible to make use of the headlight converter for a short period of time. When permanently driving in the respective country during a longer period of time, suitable headlights need to be installed according to valid specifications.*

– On the display unit for front information display and operating unit control unit - J685- , press button CAR.

– Press function buttons Setup and Light.

– Perform adjustment in menu “Light Settings”.

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

⇒ “1.9.1 Removing and installing headlight range control motor V48 / V49 (dual halogen headlights)”, page 119

⇒ “1.9.2 Removing and installing headlight range control motor V48 / V49 , LED headlights without variable light distribution”, page 121

⇒ “1.9.3 Removing and installing headlight range control motor V48 / V49 , LED headlights with variable light distribution”, page 122

1.9.1 Removing and installing headlight range control motor -V48- / -V49- (dual halogen headlights)

Special tools and workshop equipment required

- Torque screwdriver - V.A.G 1624-



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Note

Removal and installation are described for the left side. Removal and installation on the right side are analogous.

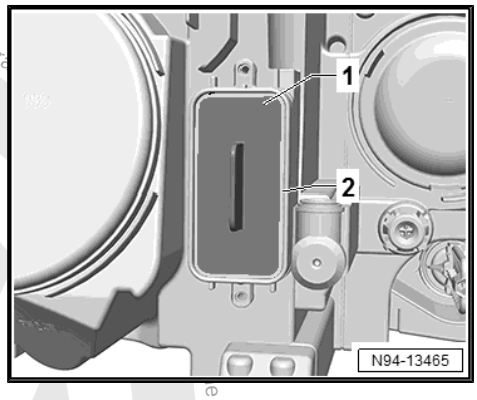
Removing

– Remove headlight ⇒ page 113 .

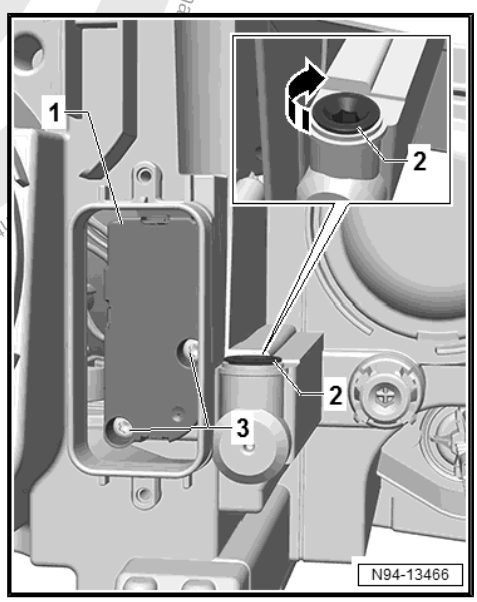
Caution

Risk of damage to the headlight.

- ***When removing the housing cover, make sure not to damage the sealing edge on the headlight housing. The ingress of water will cause permanent damage to the headlight.***



– First, use a utility knife to carefully cut into back of headlight housing cover -1- along predetermined break line -2-.
– Then, use a hammer to carefully release housing cover -1- along predetermined break line -2-.
– Remove housing cover -1- from headlight.



– Turn adjuster screw -2- to stop in -direction of arrow-.
– Unscrew bolts -3-.
– Carefully pull left headlight range control motor - V48- -1- towards rear out of headlight until connector is accessible.
– Release and disconnect connector on left headlight range control motor - V48- -1-.
– Remove left headlight range control motor - V48- -1-.

Installing

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

– Pull reflector on ball head mounting towards rear.
– Attach ball head on left headlight range control motor - V48- in ball head mounting in headlight.

Caution

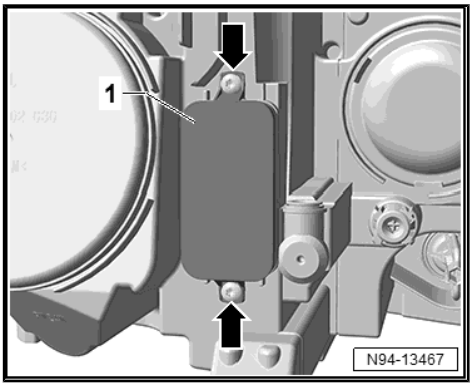
Risk of damage to the headlight.

- ***Make sure the housing cover is correctly seated when installing. The ingress of water will cause permanent damage to the headlight.***

– Position new housing cover -1- onto headlight.
– Screw in and tighten bolts -arrows-.
– Perform functional check.
– Check headlight setting and adjust headlight if necessary
⇒ Maintenance ; Booklet 40.1 ; Descriptions of work

Specified torques

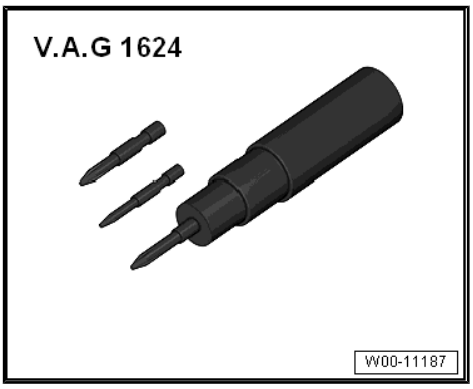
♦ ⇒ “1.1.1 Assembly overview - dual halogen headlight”, page 105



1.9.2 Removing and installing headlight range control motor -V48- / -V49- , LED headlights without variable light distribution

Special tools and workshop equipment required

♦ Torque screwdriver - V.A.G 1624-



Note

Removal and installation are described for the left side. Removal and installation on the right side are analogous.

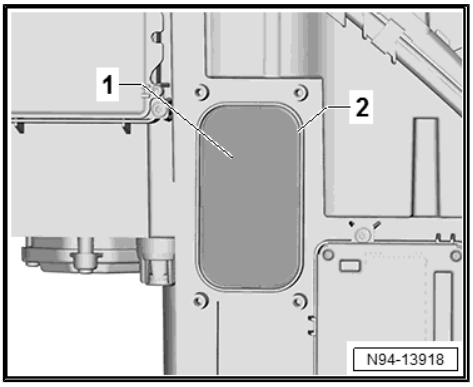
Removing

– Remove headlight ⇒ page 113 .

Caution

Risk of damage to the headlight.

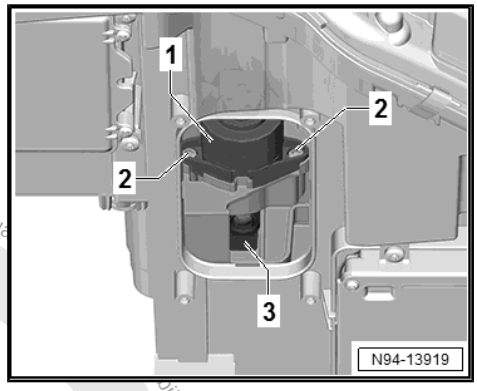
♦ ***When removing the housing cover, make sure not to damage the sealing edge on the headlight housing. The ingress of water will cause permanent damage to the headlight.***



– First, use a utility knife to carefully cut into bottom of headlight housing cover -1- along predetermined break line -2-.
– Then, use a hammer to carefully release housing cover -1- along predetermined break line -2-.
– Remove housing cover -1- from headlight.

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– Unscrew bolts -2-.
– Swing left headlight range control motor - V48- -1- upwards so that ball head is pushed downwards out of ball head mounting -3- in headlight.
– Carefully swing left headlight range control motor - V48- -1- downwards out of headlight until connector is accessible.
– Release and disconnect connector on left headlight range control motor - V48- -1-.
– Remove left headlight range control motor - V48- -1-.



Installing

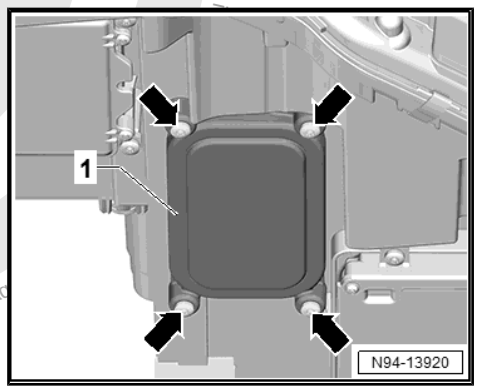
Install in the reverse order of removal, observing the following:

Caution

Risk of damage to the headlight.

- *Make sure the housing cover is correctly seated when installing. The ingress of water will cause permanent damage to the headlight.*

– Position new housing cover -1- onto headlight.
– Screw in and tighten bolts -arrows-.
– Perform functional check.
– Check headlight setting and adjust headlight if necessary ⇒ Maintenance ; Booklet 40.1 ; Descriptions of work



Specified torques

- ⇒ “1.1.2 Assembly overview - LED headlights without variable light distribution”, page 108

1.9.3 Removing and installing headlight range control motor -V48- / -V49- , LED headlights with variable light distribution

Special tools and workshop equipment required

- Torque screwdriver - V.A.G 1624-



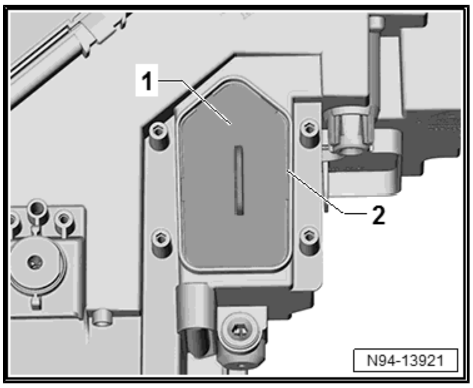
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Note

Removal and installation are described for the left side. Removal and installation on the right side are analogous.

Removing

– Remove headlight ⇒ page 113 .



Caution

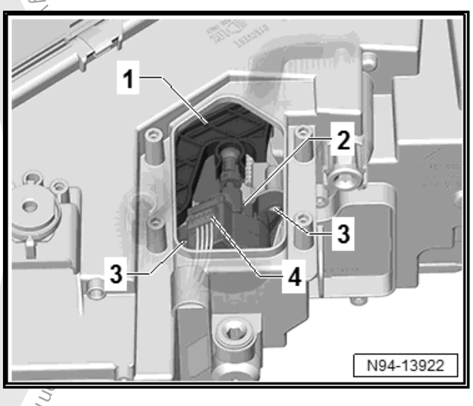
Risk of damage to the headlight.

- ♦ *When removing the housing cover, make sure not to damage the sealing edge on the headlight housing. The ingress of water will cause permanent damage to the headlight.*

– First, use a utility knife to carefully cut into top of headlight housing cover -1- along predetermined break line -2-.

– Then, use a hammer to carefully release housing cover -1- along predetermined break line -2-.

– Remove housing cover -1- from headlight.



– Release and disconnect electrical connector -4-.

– Unscrew bolts -3-.

– Carefully swing headlight range control motor - V48- -2- upwards out of ball head mounting -1-.

– Remove left headlight range control motor - V48- -2-.

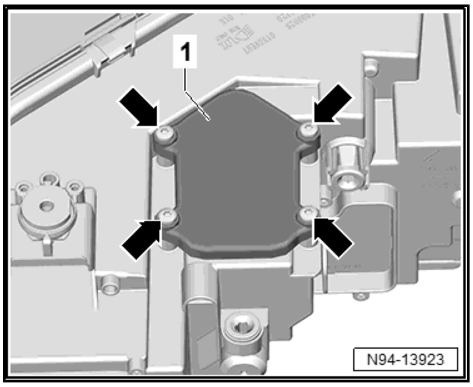
Installing

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

Caution

Risk of damage to the headlight.

- ♦ *Make sure the housing cover is correctly seated when installing. The ingress of water will cause permanent damage to the headlight.*



– Position new housing cover -1- onto headlight.

– Screw in and tighten bolts -arrows-.

– Perform functional check.

– Check headlight setting and adjust headlight if necessary ⇒ Maintenance ; Booklet 40.1 ; Descriptions of work

Specified torques

- ♦ ⇒ “1.1.3 Assembly overview - LED headlights with variable light distribution”, page 110

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1.10 Removing and installing dipped beam bulb

⇒ “1.10.1 Removing and installing headlight dipped beam bulb (dual halogen headlights)”, page 124

⇒ “1.10.2 Removing and installing headlight dipped beam bulb, LED headlights without variable light distribution”, page 125

⇒ “1.10.3 Removing and installing headlight dipped beam bulb, LED headlights with variable light distribution”, page 127

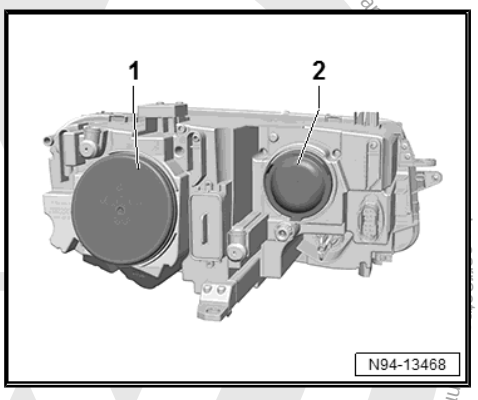
1.10.1 Removing and installing headlight dipped beam bulb (dual halogen headlights)

Note

Removal and installation are described for the left side. The removal and installation procedure for the right-hand side is basically the same.

Removing

– Pull housing cover -1- off headlight.

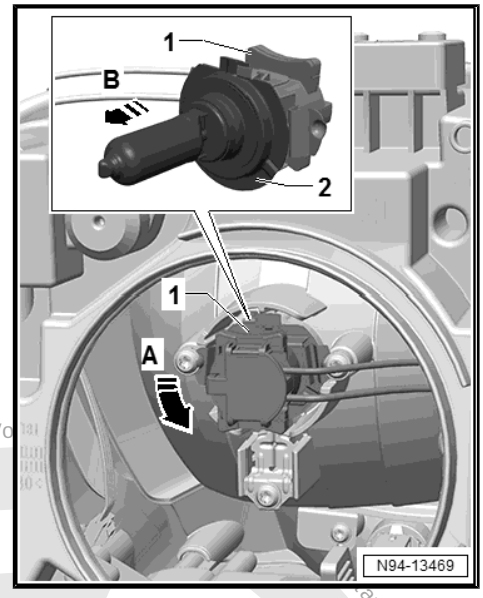


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– Release bulb carrier -1- in -direction of arrow A-.

– Pull bulb carrier -1- with left headlight dipped beam bulb - M29- out of mounting on reflector.

– Pull left headlight dipped beam bulb - M29- -2- straight in -direction of arrow B- out of bulb carrier -1-.



Installing

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

> **Caution**
>
> *Risk of damage to the headlight.*
>
> - *Do not touch the glass part of the bulb with bare fingers. Fingers leave traces of grease on the glass bulb, which evaporate when the bulb is switched on and cause the glass bulb to cloud over.*
> - *Wear e.g. clean fabric gloves when inserting bulbs.*
> - *Make sure the housing cover is correctly seated when installing. The ingress of water will cause permanent damage to the headlight.*

– Perform functional check.

– Check headlight setting and adjust headlight if necessary ⇒ Maintenance ; Booklet 40.1 ; Descriptions of work

1.10.2 Removing and installing headlight dipped beam bulb, LED headlights without variable light distribution

Special tools and workshop equipment required

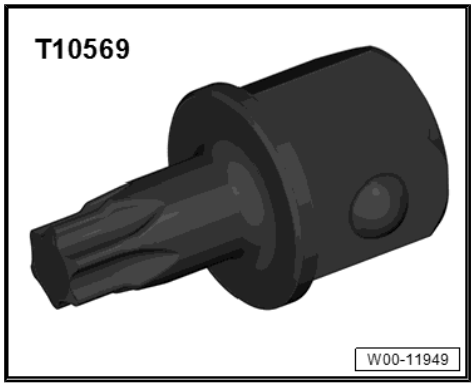
- Torque screwdriver - V.A.G 1624-



- ESD workplace - VAS 6613-

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- Torx bit T30 - T10569-



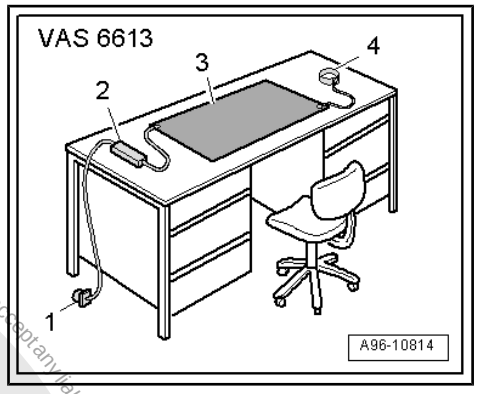
Note

Removal and installation are described for the left side. The removal and installation procedure for the right-hand side is basically the same.

Caution

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

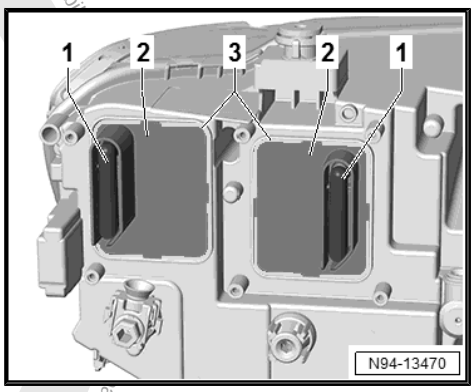
Structure of ESD workplace - VAS 6613-



1 - Connector adapter for earthing module
2 - Earthing module
3 - ESD table mat
4 - Wrist strap

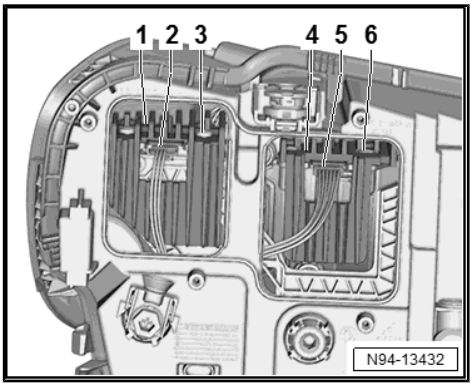
Removing

– Remove headlight ⇒ page 113 .
– Remove breather hoses -1- from headlight.
– Use a hammer to carefully release housing cover -2- along predetermined break lines -3-.
– Detach housing cover -2- from headlight.



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– Disconnect electrical connectors -2- and -5-.
– Loosen bolts -3- and -6-.
– Carefully guide LED modules -1- and -4- for dipped beam headlight towards rear out of headlight, and remove them.



Installing

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

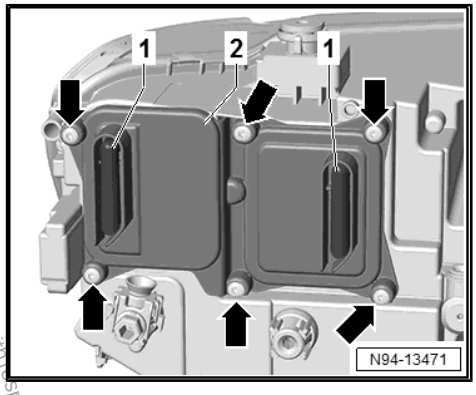
– Make sure the LED modules are properly positioned in installation position.

Caution

Risk of damage to the headlight.

- *Make sure the housing cover is correctly seated when installing. The ingress of water will cause permanent damage to the headlight.*

– Fit new housing cover -2- onto headlight.
– Screw in and tighten bolts -arrows-.
– Fit breather hoses -1- to new housing cover -2-.
– Perform functional check.
– Check headlight setting and adjust headlight if necessary ⇒ Maintenance ; Booklet 40.1 ; Descriptions of work



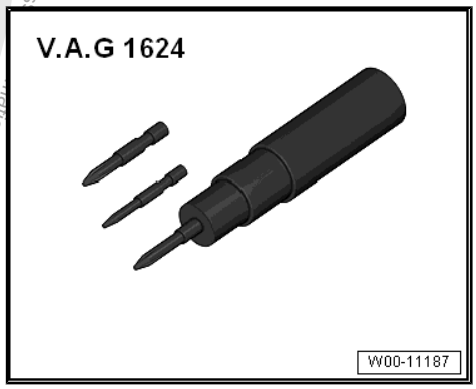
Specified torques

- ⇒ “1.1.2 Assembly overview - LED headlights without variable light distribution”, page 108

1.10.3 Removing and installing headlight dipped beam bulb, LED headlights with variable light distribution

Special tools and workshop equipment required

- Torque screwdriver - V.A.G 1624-



- ESD workplace - VAS 6613-

Note

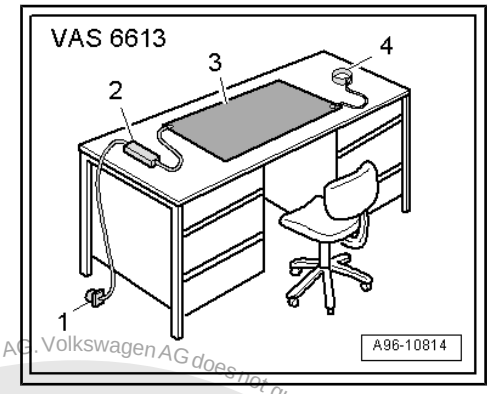
Removal and installation are described for the left side. The removal and installation procedure for the right-hand side is basically the same.

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Caution

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

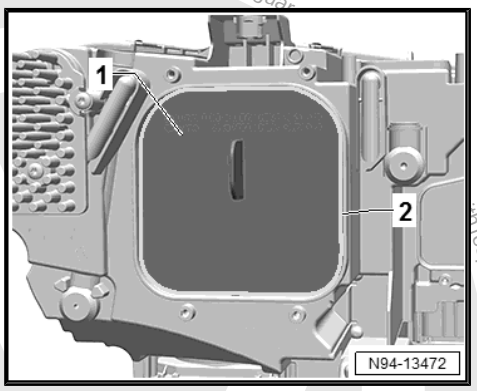
Structure of ESD workplace - VAS 6613-



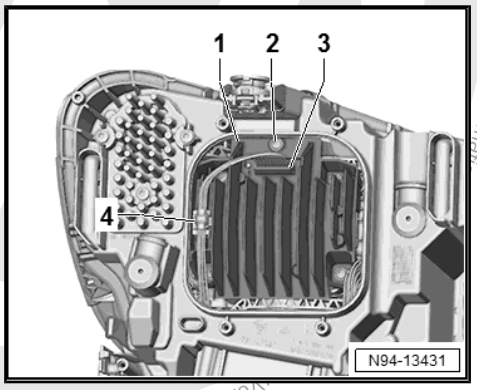
1 - Connector adapter for earthing module
2 - Earthing module
3 - ESD table mat
4 - Wrist strap

Removing

– Remove headlight ⇒ page 113 .
– Use a hammer to carefully release housing cover -1- along predetermined break line -2-.
– Remove housing cover -1- from headlight.



– Release and disconnect connector -3-.
– Unclip wiring harness from retainer -4-.
– Unscrew bolts -2-.
– Carefully guide LED module for dipped beam headlight -1- towards rear out of headlight, and remove it.



Installing

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

– Make sure the LED module is properly positioned in installation position.

Caution

Risk of damage to the headlight.

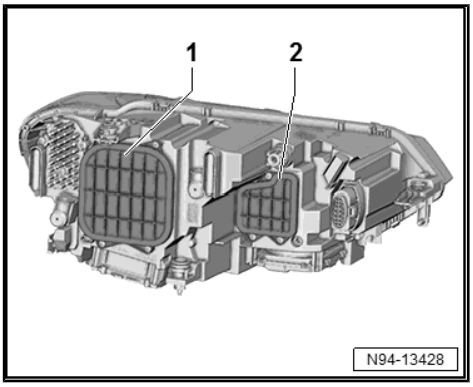
- ***Make sure the housing cover is correctly seated when installing. The ingress of water will cause permanent damage to the headlight.***

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– Position new housing cover -1- onto headlight.
– Screw in bolts -2-, and tighten them.
– Perform functional check.
– Check headlight setting and adjust headlight if necessary
⇒ Maintenance ; Booklet 40.1 ; Descriptions of work

Specified torques

◆ ⇒ “1.1.3 Assembly overview - LED headlights with variable light distribution”, page 110



1.11 Removing and installing headlight main beam bulb -M30- / -M32-

⇒ “1.11.1 Removing and installing headlight main beam bulb M30 / M32 (dual halogen headlights)”, page 129

⇒ “1.11.2 Removing and installing headlight main beam bulb M30 / M32 , LED headlights without variable light distribution”, page 130

⇒ “1.11.3 Removing and installing headlight main beam bulb M30 / M32 , LED headlights with variable light distribution”, page 132

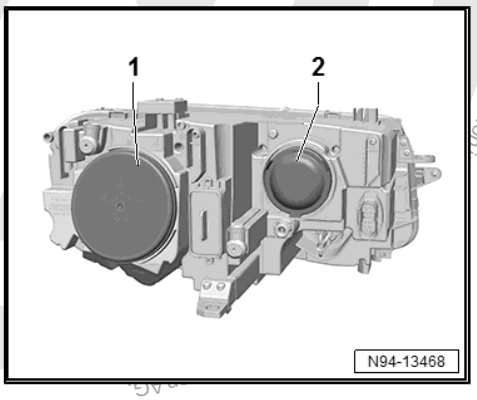
1.11.1 Removing and installing headlight main beam bulb -M30- / -M32- (dual halogen headlights)

Note

Removal and installation are described for the left side. The removal and installation procedure for the right-hand side is basically the same.

Removing

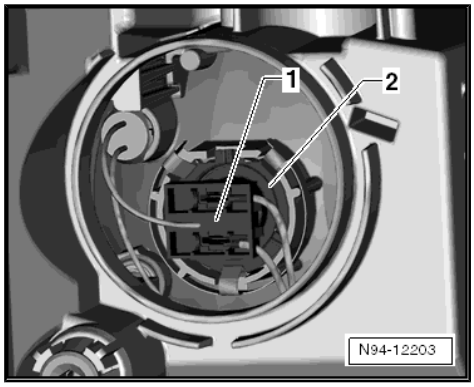
– Pull off housing cover -2- from headlight.



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– Grasp connector -1-, and press it upwards together with left headlight main beam bulb - M30- -2- until left headlight main beam bulb - M30- -2- is released.

– Pull left headlight main beam bulb - M30- -2- on connector -1- towards rear out of reflector.



– Pull out left headlight main beam bulb - M30- -2- from connector -1- in a straight line.

Installing

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

Caution

Risk of damage to the headlight.

- ***Do not touch the glass part of the bulb with bare fingers. Fingers leave traces of grease on the glass bulb, which evaporate when the bulb is switched on and cause the glass bulb to cloud over.***
- ***Wear e.g. clean fabric gloves when inserting bulbs.***
- ***Make sure the housing cover is correctly seated when installing. The ingress of water will cause permanent damage to the headlight.***

– Perform functional check.

– Check headlight setting and adjust headlight if necessary ⇒ Maintenance ; Booklet 40.1 ; Descriptions of work

1.11.2 Removing and installing headlight main beam bulb -M30- / -M32- , LED headlights without variable light distribution

Special tools and workshop equipment required

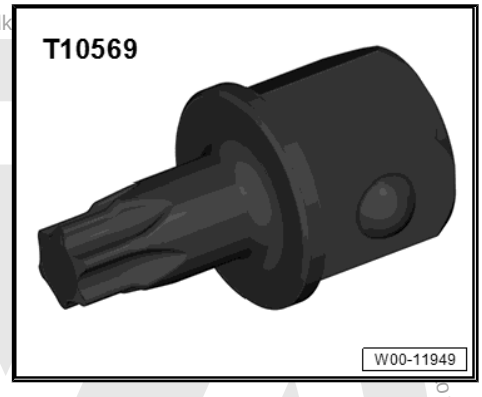
- Torque screwdriver - V.A.G 1624-



- ESD workplace - VAS 6613-

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♦ Torx bit T30 - T10569-



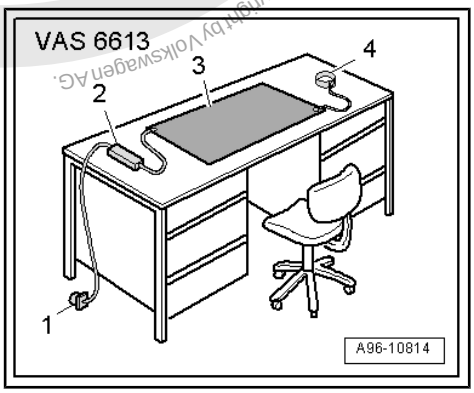
Note

Removal and installation are described for the left side. The removal and installation procedure for the right-hand side is basically the same.

Caution

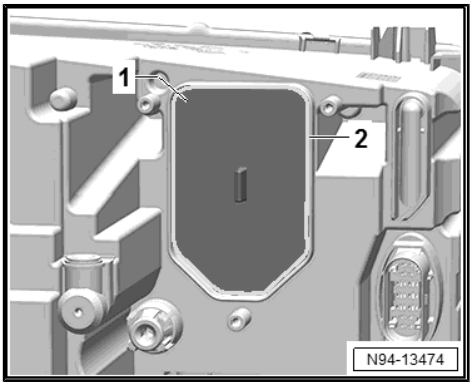
Work on the LED module must be performed only at an ESD workplace.

Structure of ESD workplace - VAS 6613-



1 - Connector adapter for earthing module
2 - Earthing module
3 - ESD table mat
4 - Wrist strap

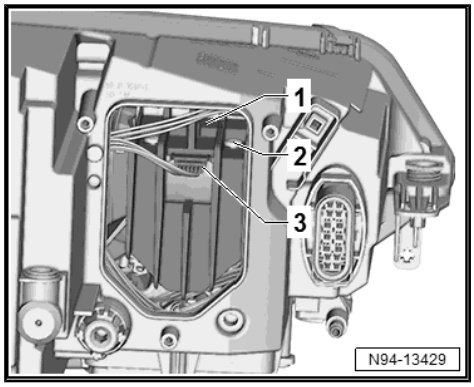
Removing



– Remove headlight ⇒ page 113 .
– Use a hammer to carefully release housing cover -1- along predetermined break line -2-.
– Remove housing cover -1- from headlight.

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to the correctness of information in this documen

– Release and disconnect connector -3-.
– Loosen bolts -2-.
– Carefully guide LED module for main beam headlight -1- towards rear out of headlight, and remove it.



Installing

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

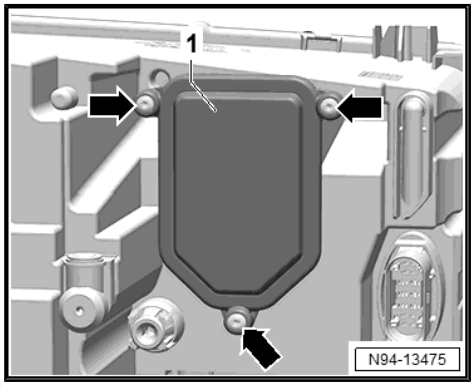
– Make sure the LED module is properly positioned in installation position.

Caution

Risk of damage to the headlight.

- *Make sure the housing cover is correctly seated when installing. The ingress of water will cause permanent damage to the headlight.*

– Position new housing cover -1- onto headlight.
– Screw in and tighten bolts -arrows-.
– Perform functional check.
– Check headlight setting and adjust headlight if necessary ⇒ Maintenance ; Booklet 40.1 ; Descriptions of work



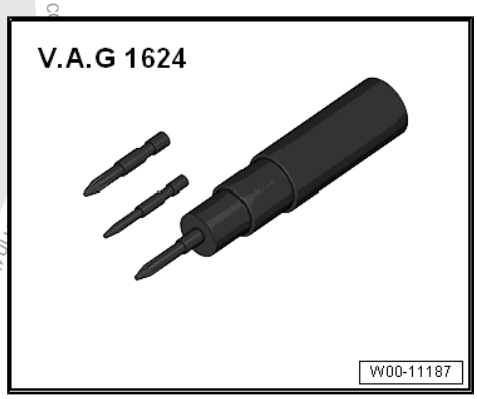
Specified torques

- ⇒ “1.1.2 Assembly overview - LED headlights without variable light distribution”, page 108

1.11.3 Removing and installing headlight main beam bulb -M30- / -M32- , LED headlights with variable light distribution

Special tools and workshop equipment required

- Torque screwdriver - V.A.G 1624-



- ESD workplace - VAS 6613-

Note

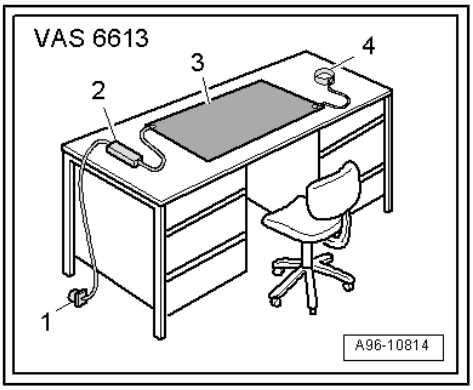
Removal and installation are described for the left side. The removal and installation procedure for the right-hand side is basically the same.

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Caution

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

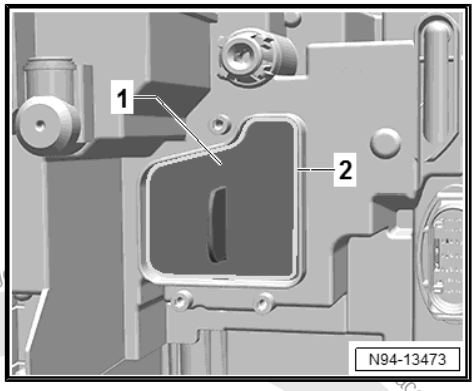
Structure of ESD workplace - VAS 6613-



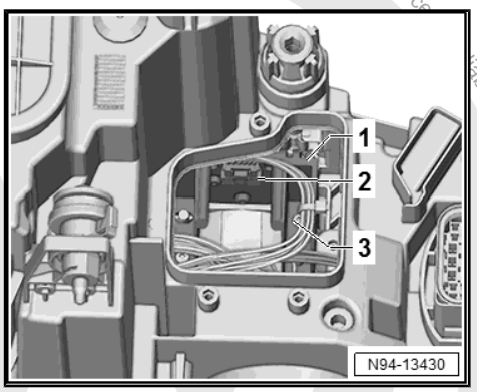
1 - Connector adapter for earthing module
2 - Earthing module
3 - ESD table mat
4 - Wrist strap

Removing

– Remove headlight ⇒ page 113 .
– Use a hammer to carefully release housing cover -1- along predetermined break line -2-.
– Remove housing cover -1- from headlight.



– Release and disconnect electrical connector -2-.
– Unscrew bolts -3-.
– Carefully guide LED module for main beam headlight -1- towards rear out of headlight, and remove it.



Installing

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

– Make sure the LED module is properly positioned in installation position.

Caution

Risk of damage to the headlight.

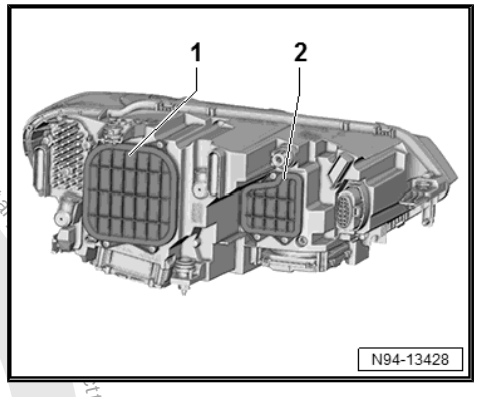
- *Make sure the housing cover is correctly seated when installing. The ingress of water will cause permanent damage to the headlight.*

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– Fit new housing cover -3- onto headlight.
– Screw in bolts -2-, and tighten them.
– Perform functional check.
– Check headlight setting and adjust headlight if necessary ⇒ Maintenance ; Booklet 40.1 ; Descriptions of work

Specified torques

◆ ⇒ “1.1.3 Assembly overview - LED headlights with variable light distribution”, page 110



1.12 Removing and installing side light bulb -M1- / -M3-

Note

The side light bulb -M1- / -M3- and daytime running light bulb -L174- / -L175- are integrated in one component.

– Removing and installing daytime running light bulb -L174- / -L175- ⇒ page 134 .

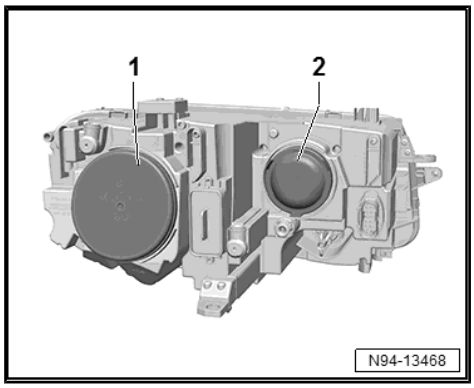
1.13 Removing and installing daytime running light bulb -L174- / -L175-

Note

Removal and installation are described for the left side. The removal and installation procedure for the right-hand side is basically the same.

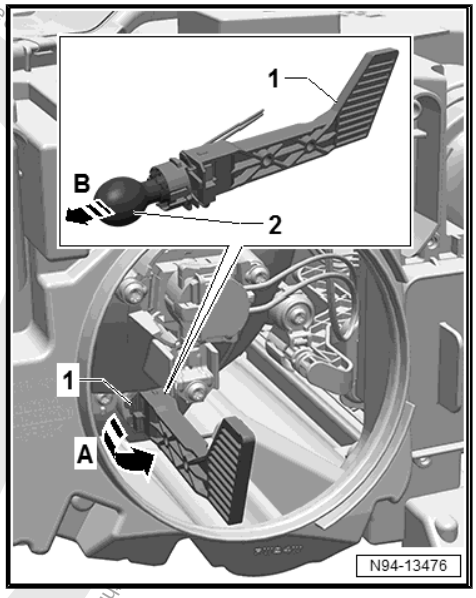
Removing

– Pull housing cover -1- off headlight.



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– Release bulb carrier -1- in -direction of arrow A-.
– Pull bulb carrier -1- with left daytime running light bulb - L174- out of mounting on reflector.
– Pull left daytime running light bulb - L174- -2- straight in -direction of arrow B- out of bulb carrier -1-.



Installing

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

Caution

Risk of damage to the headlight.

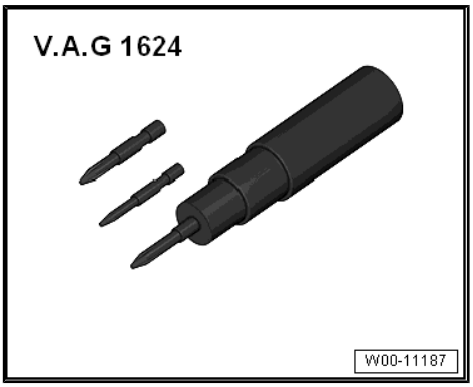
- ***Do not touch the glass part of the bulb with bare fingers. Fingers leave traces of grease on the glass bulb, which evaporate when the bulb is switched on and cause the glass bulb to cloud over.***
- ***Wear e.g. clean fabric gloves when inserting bulbs.***

– Perform functional check.
– Check headlight setting and adjust headlight if necessary ⇒ Maintenance ; Booklet 40.1 ; Descriptions of work

1.14 Removing and installing LED modules for daytime running light and side light - L176- / -L177-

Special tools and workshop equipment required

- Torque screwdriver - V.A.G 1624-



- ESD workplace - VAS 6613-

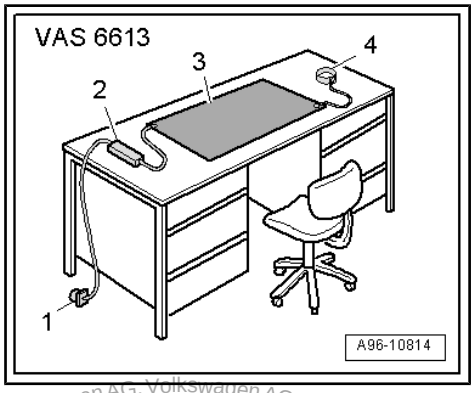
Note

Removal and installation are described for the left side. The removal and installation procedure for the right-hand side is basically the same.

Caution

Work on the LED module for daytime running light and side light -L176- / -L177- must be performed only at an ESD workplace.

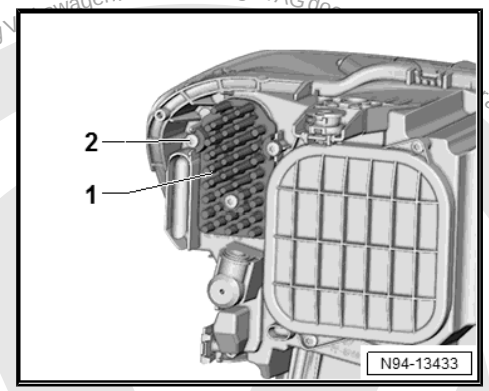
Structure of ESD workplace - VAS 6613-



1 - Connector adapter for earthing module
2 - Earthing module
3 - ESD table mat
4 - Wrist strap

Removing

– Remove headlight ⇒ page 113 .



– Unscrew bolts -2-.
– Carefully pull left LED module for daytime running light and side light - L176- -1- towards rear out of headlight housing until connector is accessible.
– Release and disconnect connector on left LED module for daytime running light and side light - L176- -1-.
– Remove left LED module for daytime running light and side light - L176- -1-.

Installing

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

– Check seal between left LED module for daytime running light and side light - L176- and headlight housing for damage.

Caution

Risk of damage to the headlight.

- *Make sure the left LED module for daytime running light and side light - L176- is correctly seated when installing. The ingress of water will cause permanent damage to the headlight.*

– Perform functional check.
– Check headlight setting and adjust headlight if necessary ⇒ Maintenance ; Booklet 40.1 ; Descriptions of work

Specified torques

- ⇒ “1.1.3 Assembly overview - LED headlights with variable light distribution”, page 110

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1.15 Removing and installing bulbs for cornering light -L148- / -L149-

⇒ “1.15.1 Removing and installing static cornering light bulb L148 / L149 , except for LED headlights with variable light distribution”, page 137

⇒ “1.15.2 Removing and installing static cornering light bulb L148 / L149 , only LED headlights with variable light distribution”, page 137

1.15.1 Removing and installing static cornering light bulb -L148- / -L149- , except for LED headlights with variable light distribution

Note

The static cornering light bulb -L148- / -L149- and the fog light bulb -L22- / -L23- form one unit.

– Removing and installing fog light bulb -L22- / -L23- ⇒ page 145 .

1.15.2 Removing and installing static cornering light bulb -L148- / -L149- , only LED headlights with variable light distribution

Note

The static cornering light bulb -L148- / -L149- is installed in the headlight housing and cannot be renewed separately in the event of a fault.

– Removing and installing headlights ⇒ page 113 .

1.16 Removing and installing output module for headlight -J667- / -J668-

⇒ “1.16.1 Removing and installing output module for headlight J667 / J668 , LED headlights without variable light distribution”, page 137

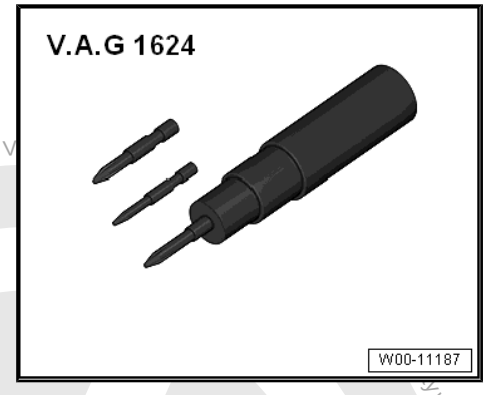
⇒ “1.16.2 Removing and installing output module for headlight J667 / J668 , LED headlights with variable light distribution”, page 138

1.16.1 Removing and installing output module for headlight -J667- / -J668- , LED headlights without variable light distribution

Special tools and workshop equipment required

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- Torque screwdriver - V.A.G 1624-

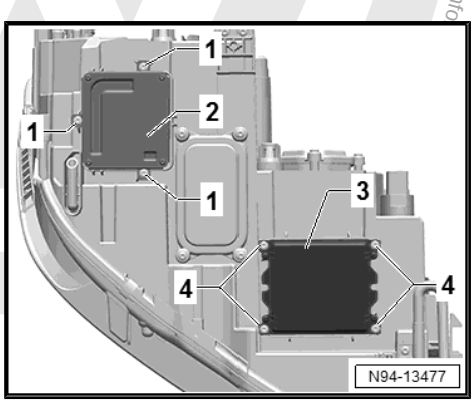


Note

Removal and installation are described for the left side. The removal and installation procedure for the right-hand side is basically the same.

Removing

- Remove headlight ⇒ page 113.
- Unscrew bolts -1-.
- Pull output module for left headlight - J667- -2- off headlight housing until connector is accessible.
- Release and disconnect electrical connector on output module for left headlight - J667- -2-.
- Detach output module for left headlight - J667- -2-.



Installing

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

- Check seal between output module for left headlight - J667- and headlight housing for damage.

Caution

Risk of damage to the headlight.

- ***Make sure the seal is correctly seated when installing the output module for left headlight - J667- . The ingress of water will cause permanent damage to the headlight.***

- Perform functional check.
- Check headlight setting and adjust headlight if necessary ⇒ Maintenance ; Booklet 40.1 ; Descriptions of work

Specified torques

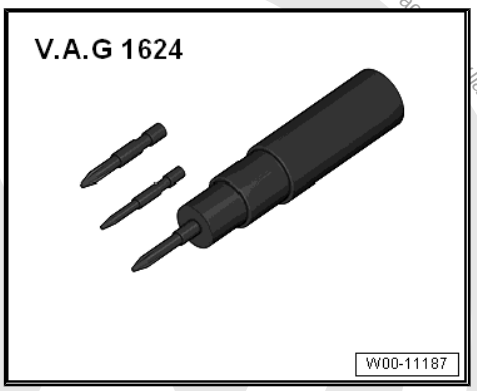
- ⇒ “1.1.2 Assembly overview - LED headlights without variable light distribution”, page 108

1.16.2 Removing and installing output module for headlight -J667- / -J668- , LED headlights with variable light distribution

Special tools and workshop equipment required

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- Torque screwdriver - V.A.G 1624-



Note

Removal and installation are described for the left side. The removal and installation procedure for the right-hand side is basically the same.

Removing

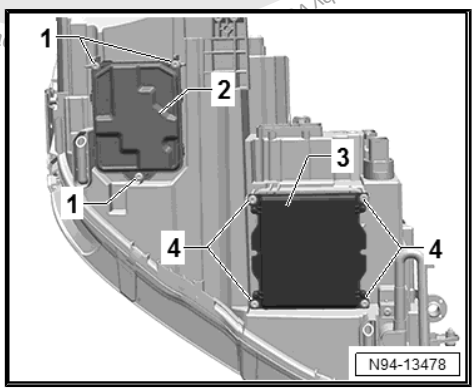
– Remove headlight ⇒ page 113 .

– Unscrew bolts -1-.

– Pull output module for left headlight - J667- -2- off headlight housing until connector is accessible.

– Release and disconnect electrical connector on output module for left headlight - J667- -2-.

– Detach output module for left headlight - J667- -2-.



Installing

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

– Check seal between output module for left headlight - J667- and headlight housing for damage.

Caution

Risk of damage to the headlight.

- ***Make sure the seal is correctly seated when installing the output module for left headlight - J667- . The ingress of water will cause permanent damage to the headlight.***

– Perform functional check.

– Check headlight setting and adjust headlight if necessary ⇒ Maintenance ; Booklet 40.1 ; Descriptions of work

Specified torques

- ⇒ “1.1.3 Assembly overview - LED headlights with variable light distribution”, page 110

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

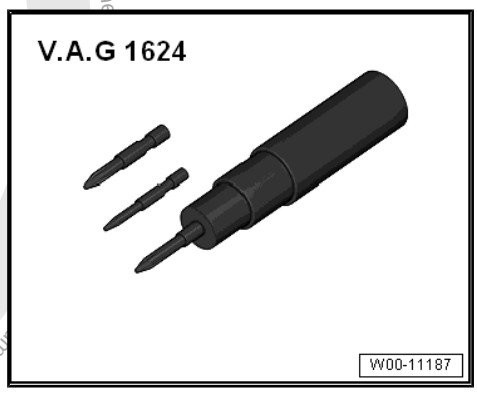
⇒ “1.17.1 Removing and installing output module 1 for headlight A27 / A31 , LED headlights without variable light distribution”, page 140

⇒ “1.17.2 Removing and installing output module 1 for headlight A27 / A31 , LED headlights with variable light distribution”, page 141

1.17.1 Removing and installing output module 1 for headlight -A27- / -A31- , LED headlights without variable light distribution

Special tools and workshop equipment required

- Torque screwdriver - V.A.G 1624-



Note

Removal and installation are described for the left side. The removal and installation procedure for the right-hand side is basically the same.

Removing

– Remove headlight ⇒ page 113 .

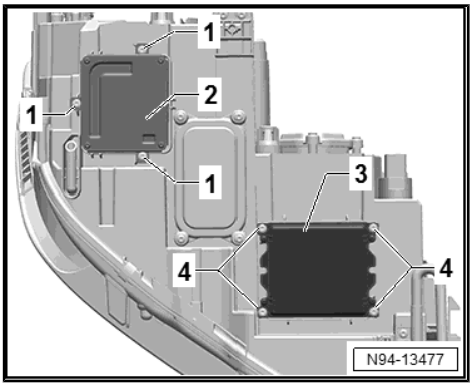
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– Unscrew bolts -4-.

– Pull output module 1 for left LED headlight - A31- -3- off headlight housing until connector is accessible.

– Release and disconnect electrical connector on output module 1 for left LED headlight - A31- -3-.

– Remove output module 1 for left LED headlight - A31- -3-.



Installing

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

– Check seal between output module 1 for left LED headlight - A31- and headlight housing for damage.

Caution

Risk of damage to the headlight.

- ***Make sure the seal is correctly seated when installing the output module 1 for left LED headlight - A31- . The ingress of water will cause permanent damage to the headlight.***

– Perform functional check.

– Check headlight setting and adjust headlight if necessary
⇒ Maintenance ; Booklet 40.1 ; Descriptions of work

Specified torques

- ⇒ “1.1.2 Assembly overview - LED headlights without variable light distribution”, page 108

1.17.2 Removing and installing output module 1 for headlight -A27- / -A31- , LED headlights with variable light distribution

Special tools and workshop equipment required

- Torque screwdriver - V.A.G 1624-



Note

Removal and installation are described for the left side. The removal and installation procedure for the right-hand side is basically the same.

Removing

– Remove headlight ⇒ page 113 .

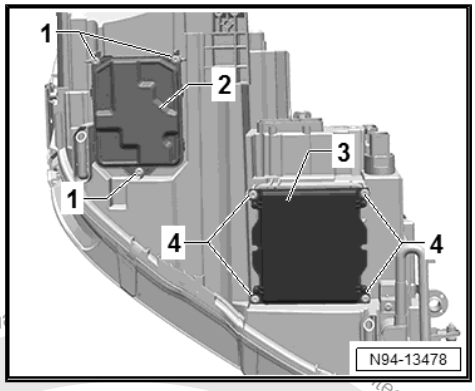
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– Unscrew bolts -4-.

– Pull output module 1 for left LED headlight - A31- -3- off headlight housing until connector is accessible.

– Release and disconnect electrical connector on output module 1 for left LED headlight - A31- -3-.

– Remove output module 1 for left LED headlight - A31- -3-.



Installing

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

– Check seal between output module 1 for left LED headlight - A31- and headlight housing for damage.

Caution

Risk of damage to the headlight.

- ***Make sure the seal is correctly seated when installing the output module 1 for left LED headlight - A31- . The ingress of water will cause permanent damage to the headlight.***

– Perform functional check.

– Check headlight setting and adjust headlight if necessary ⇒ Maintenance ; Booklet 40.1 ; Descriptions of work

Specified torques

- ⇒ “1.1.3 Assembly overview - LED headlights with variable light distribution”, page 110

1.18 Removing and installing swivel module position sensor -G474- / -G475-

Note

- *The left swivel module position sensor - G474- and right swivel module position sensor - G475- are only fitted on LED headlights with variable light distribution.*
- *The swivel module position sensor is located in the headlight housing and cannot be renewed separately in the event of a fault.*

– Removing and installing headlights ⇒ page 113 .

1.19 Removing and installing dynamic cornering light control motor -V318- / -V319-

Note

- *The left dynamic cornering light control motor - V318- and right dynamic cornering light control motor - V319- are only fitted on LED headlights with variable light distribution.*
- *The dynamic cornering light control motor is located in the headlight housing and cannot be renewed separately in the event of a fault.*

– Removing and installing headlights ⇒ page 113 .

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2 Fog lights

⇒ “2.1 Assembly overview - fog lights”, page 143

⇒ “2.2 Removing and installing fog light”, page 143

⇒ “2.3 Removing and installing fog light bulb L22 / L23 ”, page 145

2.1 Assembly overview - fog lights

1 - Fog lights

- ❑ Removing and installing ⇒ page 143

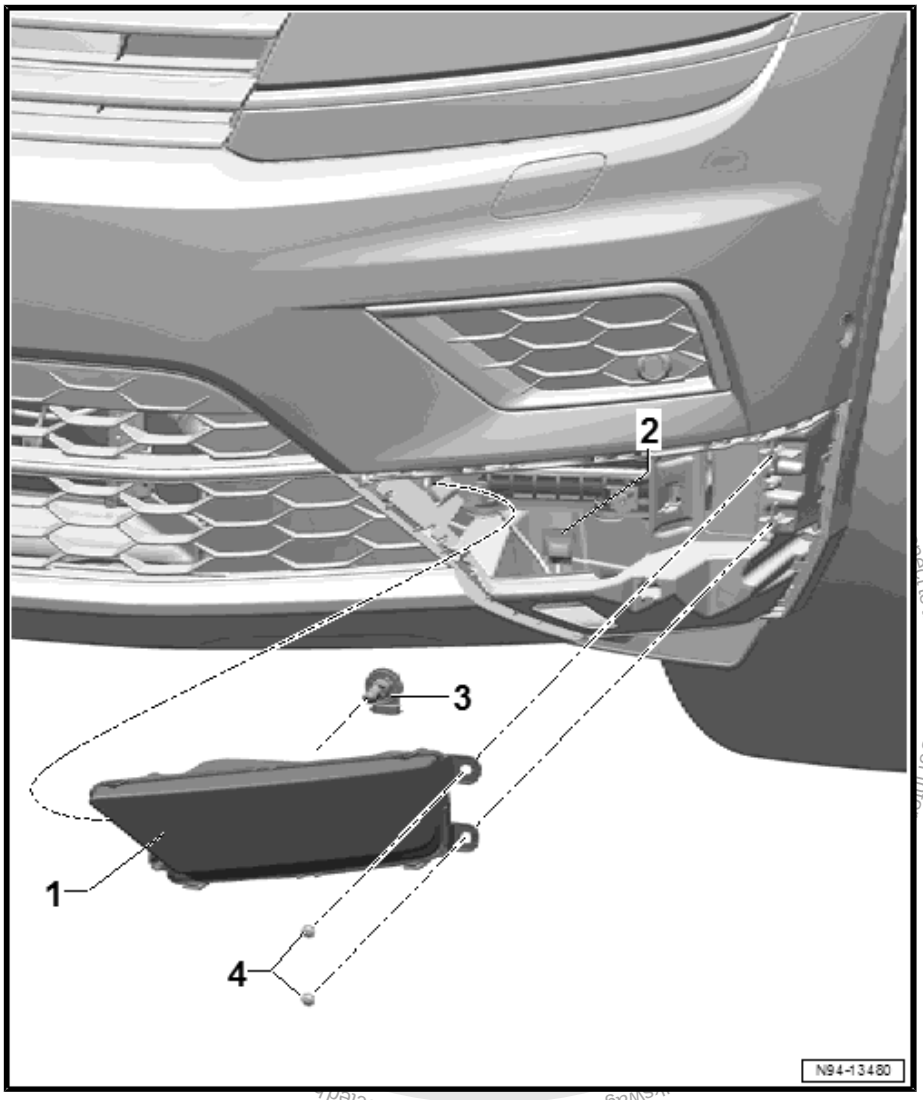
2 - Electrical connector

3 - Fog light bulb and cornering light bulb

- ❑ Left fog light bulb - L22- and light cornering light bulb - L148-
- ❑ Right fog light bulb - L23- and right cornering light bulb - L149-
- ❑ Removing and installing ⇒ page 145

4 - Bolts

- ❑ Qty. 2
- ❑ 2 Nm



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2.2 Removing and installing fog light

Special tools and workshop equipment required

- Torque screwdriver - V.A.G 1624-

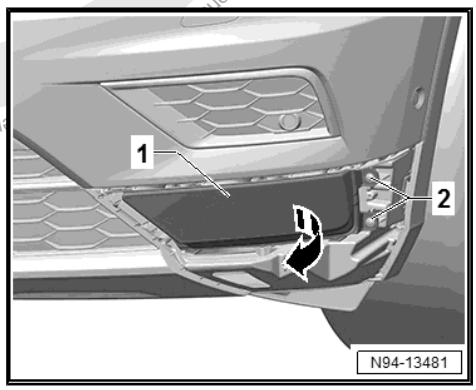


Note

Removal and installation are described for the left side. The removal and installation procedure for the right-hand side is basically the same.

Removing

- Switch off ignition and all electrical consumers.
- Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.
- Turn light switch to “0” position.
- Remove fog light trim ⇒ General body repairs, exterior; Rep. gr. 63 ; Front bumper; Assembly overview - bumper cover .
- Unscrew bolts -2-.
- Swing fog light -1- in -direction of arrow- out of front bumper cover, taking length of connected wires into consideration.
- Release and disconnect connector on fog light -1-.
- Remove front fog light .



Installing

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

- Adjusting fog lights ⇒ Maintenance ; Booklet 40.1 ; Descriptions of work

Specified torques

- ⇒ “2.1 Assembly overview - fog lights”, page 143

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2.3 Removing and installing fog light bulb - L22- / -L23-

⇒ “2.3.1 Removing and installing fog light bulb L22 / L23 , vehicles with washer fluid reservoir in front left wheel housing”, page 145

⇒ “2.3.2 Removing and installing fog light bulb L22 / L23 , vehicles with washer fluid reservoir in front right wheel housing”, page 146

2.3.1 Removing and installing fog light bulb - L22- / -L23- , vehicles with washer fluid reservoir in front left wheel housing

Note

- *The fog light bulb -L22- / -L23- also fulfils the function of static cornering light bulb -L148- / -L149- .*
- *Removal and installation are described for the left side. The removal and installation procedure for the right-hand side is basically the same.*

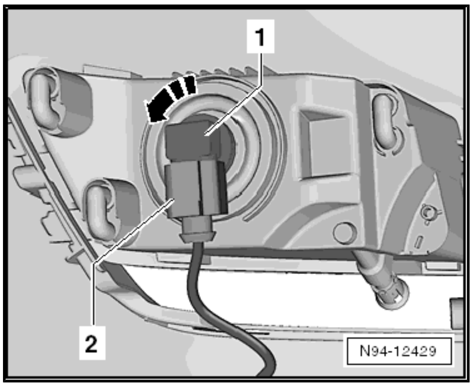
Removing

– Detach front section of wheel housing liner; do not remove wheel housing liner completely ⇒ General body repairs, exterior; Rep. gr. 66 ; Wheel housing liner; Removing and installing front wheel housing liner .

– Release and disconnect electrical connector -2-.

– Turn left fog light bulb - L22- -1- in -direction of arrow-.

– Pull left fog light bulb - L22- -1- out of fog light housing -5-.



Installing

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

Caution

Risk of damage to the headlight.

- *Do not touch the glass part of the bulb with bare fingers. Fingers leave traces of grease on the glass bulb, which evaporate when the bulb is switched on and cause the glass bulb to cloud over.*
- *Wear e.g. clean fabric gloves when inserting bulbs.*
- *Make sure cover cap is correctly seated when installing. The ingress of water will cause permanent damage to the headlight.*

– Perform functional check.

– Check fog light settings and adjust fog lights if necessary ⇒ Maintenance ; Booklet 40.1 ; Descriptions of work .

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2.3.2 Removing and installing fog light bulb - L22- / -L23- , vehicles with washer fluid reservoir in front right wheel housing

Note

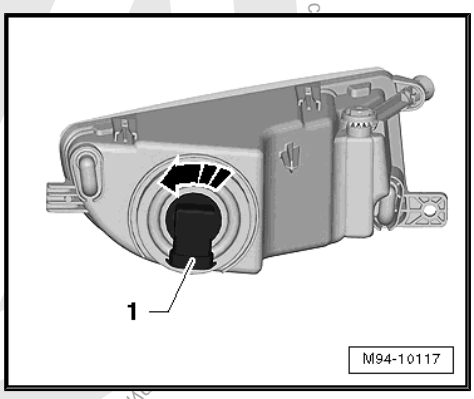
- *The fog light bulb -L22- / -L23- also fulfils the function of static cornering light bulb -L148- / -L149- .*
- *Removal and installation are described for the left side. The removal and installation procedure for the right-hand side is basically the same.*

Removing

– Remove fog light ⇒ page 143 .

– Release left fog light bulb - L22- -1- in -direction of arrow-.

– Pull left fog light bulb - L22- -1- out of fog light housing.



Installing

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

Caution

Risk of damage to the headlight.

- ***Do not touch the glass part of the bulb with bare fingers. Fingers leave traces of grease on the glass bulb, which evaporate when the bulb is switched on and cause the glass bulb to cloud over.***
- ***Wear e.g. clean fabric gloves when inserting bulbs.***
- ***Make sure cover cap is correctly seated when installing. The ingress of water will cause permanent damage to the headlight.***

– Perform functional check.

– Check fog light settings and adjust fog lights if necessary ⇒ Maintenance ; Booklet 40.1 ; Descriptions of work .

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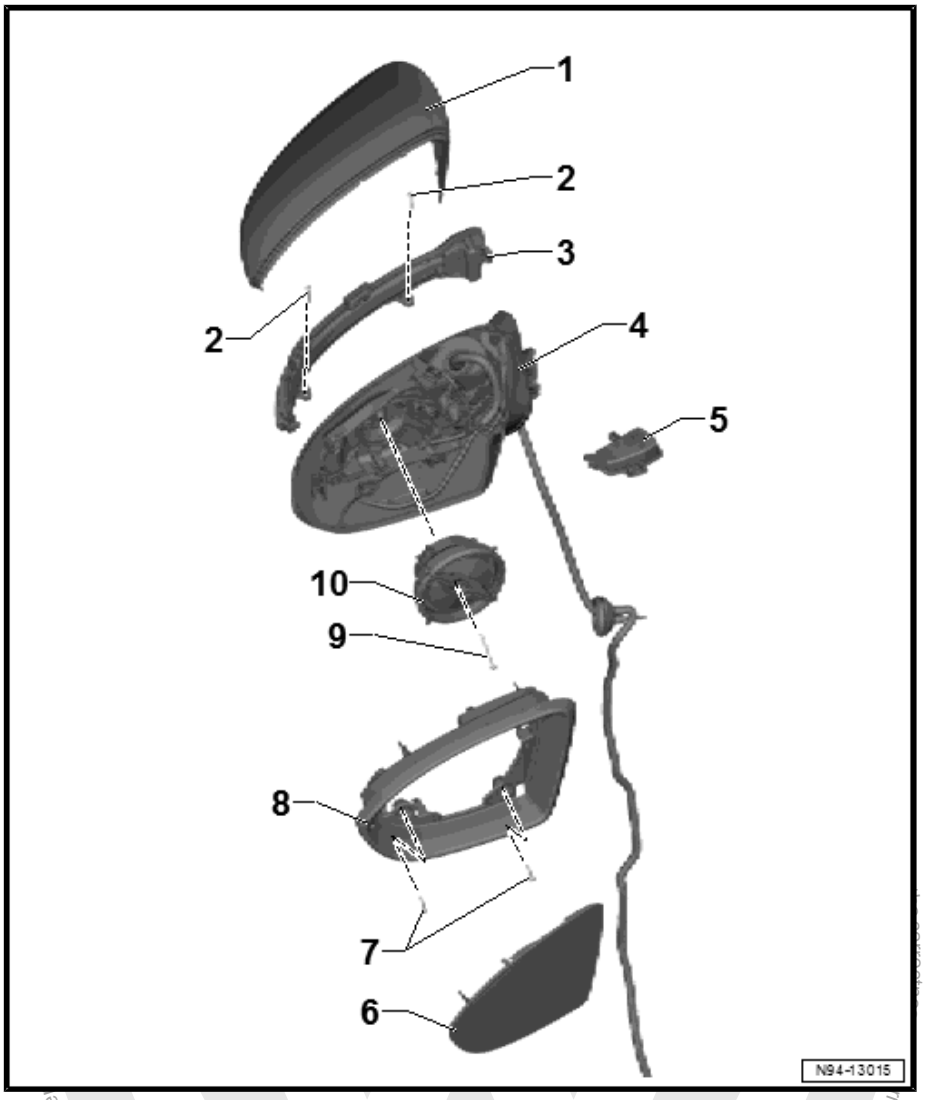
3 Lights in exterior mirror

⇒ “3.1 Assembly overview - lights in exterior mirror”, page 147

⇒ “3.2 Removing and installing turn signal”, page 148

⇒ “3.3 Removing and installing entry light in exterior mirror”, page 150

3.1 Assembly overview - lights in exterior mirror



1 - Mirror cover

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

2 - Bolts

- ❑ Qty. 2
- ❑ 1 Nm

3 - Turn signal

- ❑ Removing and installing ⇒ page 148

4 - Mirror mounting

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

5 - Entry light in exterior mirror

- ❑ Driver side entry light in exterior mirror - W52-
- ❑ Front passenger side entry light in exterior mirror - W53-
- ❑ Removing and installing ⇒ page 150

6 - Mirror glass

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

7 - Bolts

- ❑ Qty. 2
- ❑ Specified torque ⇒ General body repairs, exterior; Rep. gr. 66 ; Exterior mirror; Assembly overview - exterior mirror

8 - Mirror trim

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

9 - Bolt

- ❑ Specified torque ⇒ General body repairs, exterior; Rep. gr. 66 ; Exterior mirror; Assembly overview - exterior mirror

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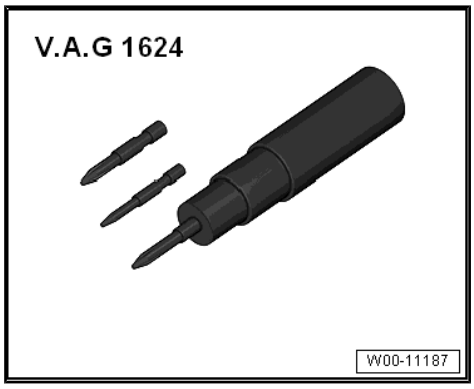
10 - Mirror adjustment unit

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

3.2 Removing and installing turn signal

Special tools and workshop equipment required

- ♦ Torque screwdriver - V.A.G 1624-

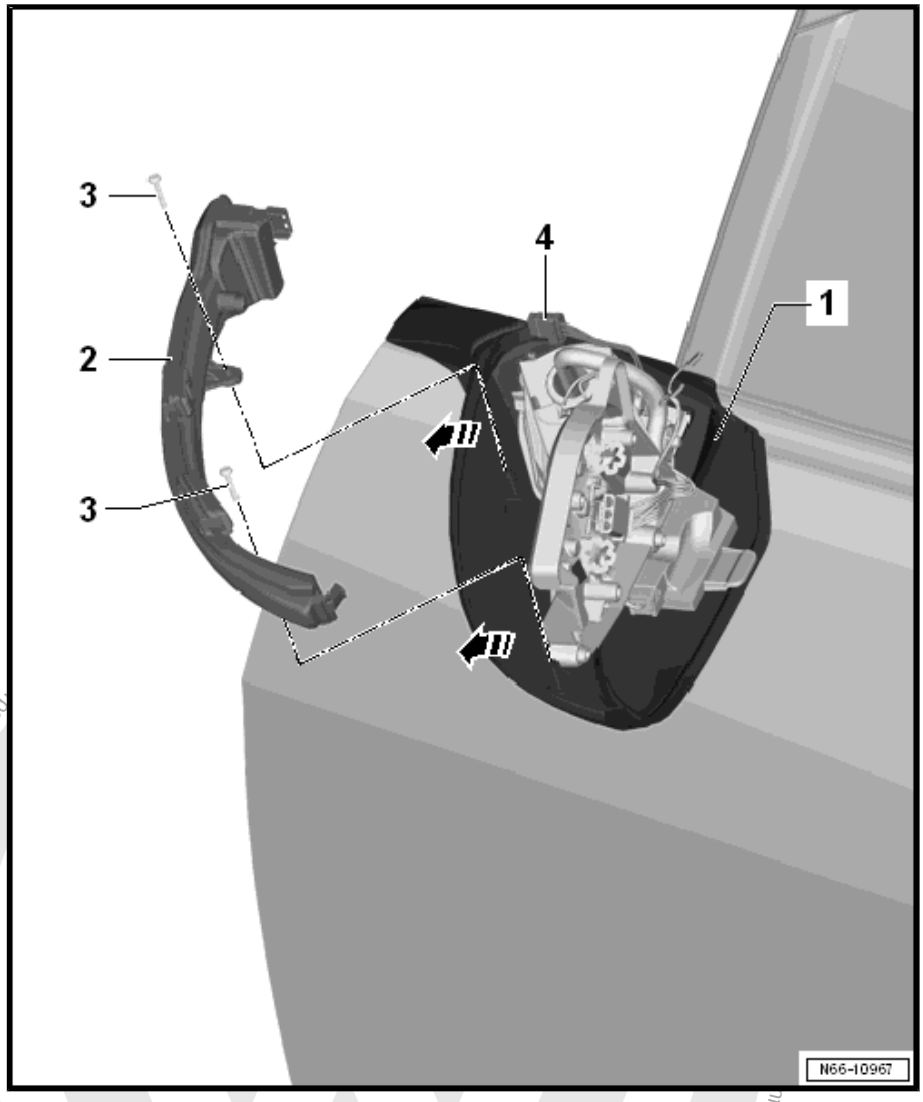


Note

- ♦ *Removal and installation are described for the left side. The removal and installation procedure for the right-hand side is basically the same.*
- ♦ *If the event of a defective LED, the turn signal repeater needs to be renewed.*

Removing

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– Remove mirror trim ⇒ General body repairs, exterior; Rep. gr. 66 ; Exterior mirror; Removing and installing mirror trim .
– Release and disconnect electrical connector -4-.
– Unscrew bolts -3-.
– Remove turn signal -2- upwards from mirror mounting -1-.

Installing

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

– Perform functional check.

Specified torques

◆ ⇒ “3.1 Assembly overview - lights in exterior mirror”, page 147

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3.3 Removing and installing entry light in exterior mirror

Note

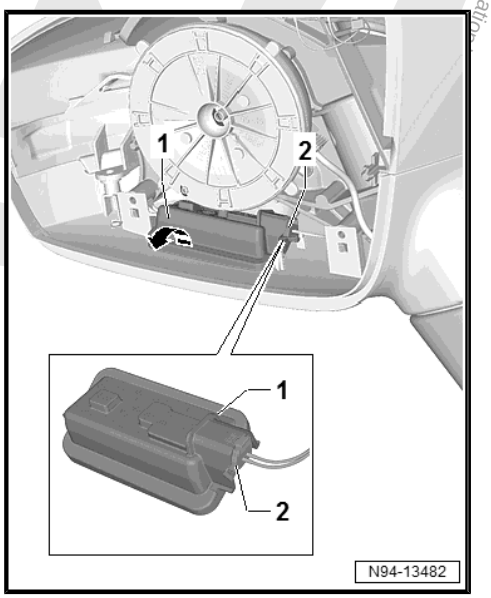
- *Removal and installation are described for the left side. The removal and installation procedure for the right-hand side is basically the same.*
- *If the event of a defective LED, the entry light in exterior mirror needs to be renewed.*

Removing

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

– Unclip driver side entry light in exterior mirror - W52- -1- in -direction of arrow B- from mirror housing.

– Release and disconnect electrical connector -2-.



Installing

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

– Perform functional check.

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4 Tail lights

⇒ “4.1 Assembly overview - tail lights in body”, page 151

⇒ “4.2 Assembly overview - tail lights in rear lid”, page 152

⇒ “4.3 Removing and installing tail light in rear lid”, page 152

⇒ “4.4 Adjusting installation position of tail light”, page 153

⇒ “4.5 Removing and installing tail light”, page 154

⇒ “4.6 Removing and installing tail light bulb M2 / M4 ”, page 155

⇒ “4.7 Removing and installing rear fog light bulb L46 / L47 ”, page 155

⇒ “4.8 Removing and installing brake and tail light bulb M21 / M22 ”, page 155

⇒ “4.9 Removing and installing reversing light bulb”, page 155

⇒ “4.10 Removing and installing turn signal bulb”, page 156

4.1 Assembly overview - tail lights in body

1 - Fastener

- ❑ Designed as a quick-release fastener
- ❑ Release and remove in -direction of arrow-

2 - Seal

- ❑ Renew if damaged

3 - Tail light

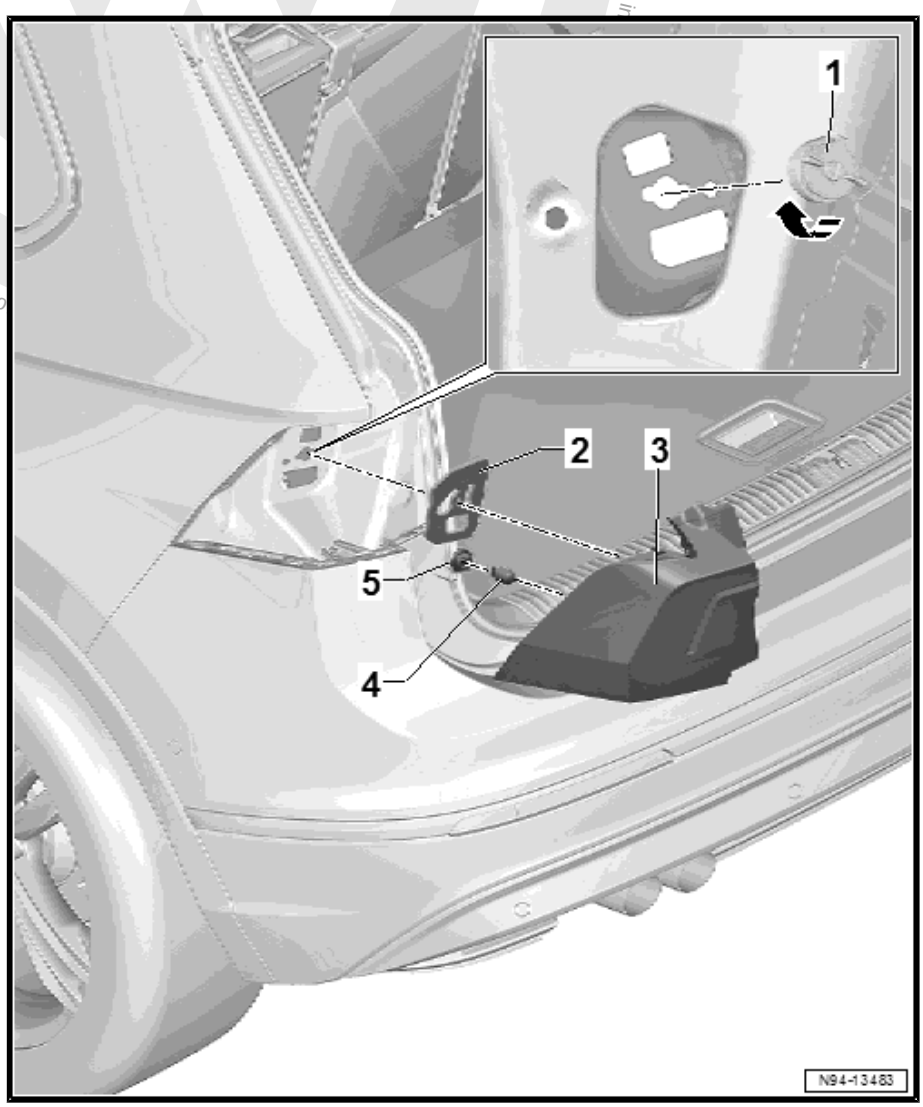
- ❑ Left tail light - MX3-
- ❑ Right tail light - MX4-
- ❑ Removing and installing ⇒ page 154

4 - Rear turn signal bulb

- ❑ Rear left turn signal bulb - M6-
- ❑ Rear right turn signal bulb - M8-
- ❑ Fitted depending on equipment
- ❑ Removing and installing ⇒ page 156

5 - Bulb carrier

- ❑ Fitted depending on equipment



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4.2 Assembly overview - tail lights in rear lid

1 - Nuts

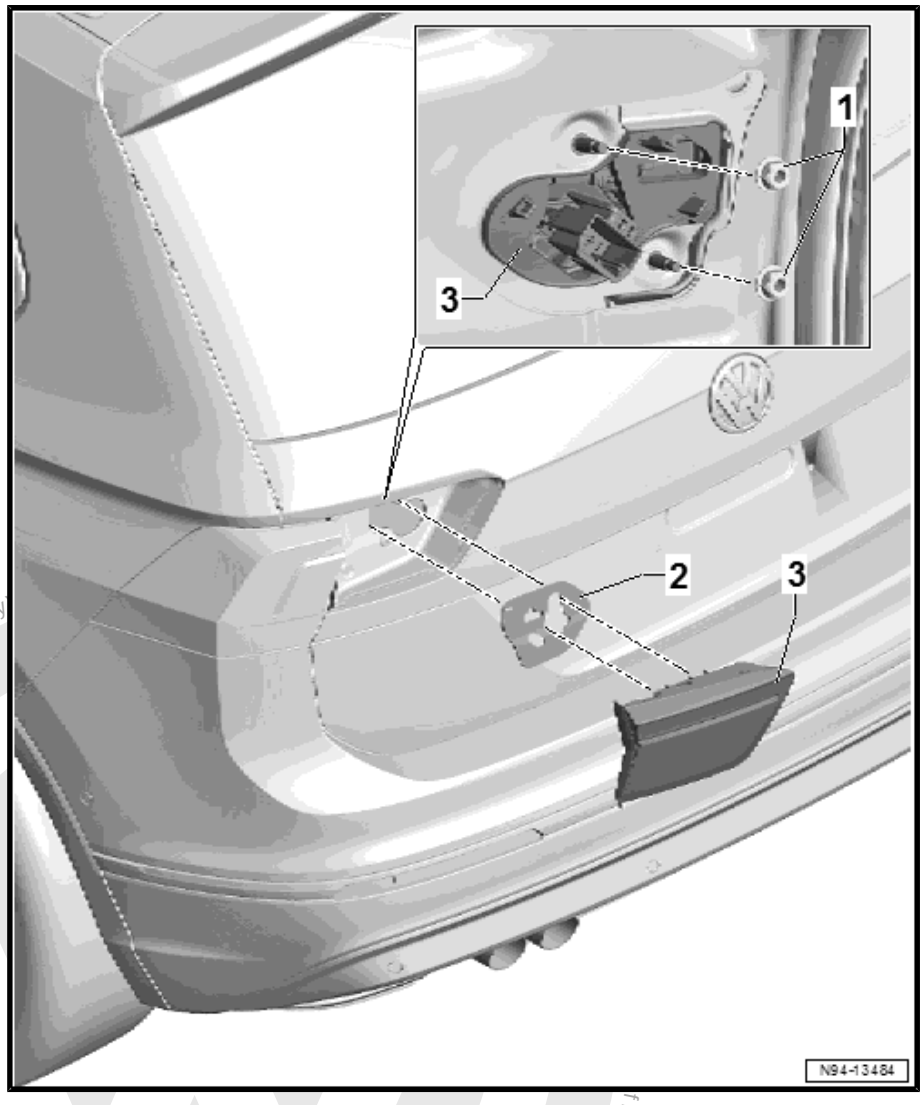
- ❑ Qty. 2
- ❑ 3 Nm

2 - Seal

- ❑ Renew if damaged

3 - Tail light

- ❑ Left tail light 2 - MX5-
- ❑ Right tail light 2 - MX6-
- ❑ Removing and installing ⇒ page 152



4.3 Removing and installing tail light in rear lid

Note

- *Removal and installation are described for the left side. The removal and installation procedure for the right-hand side is basically the same.*
- *If the event of a defective LED, the entire tail light cluster needs to be renewed.*

Removing

– Turn light switch to zero position.

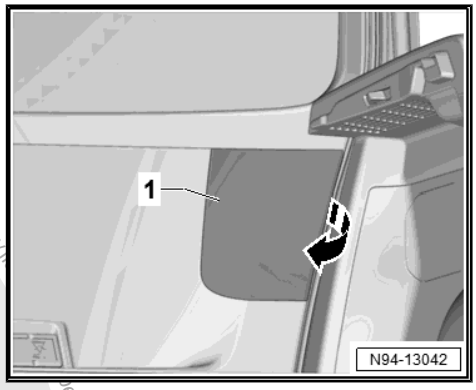
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Caution

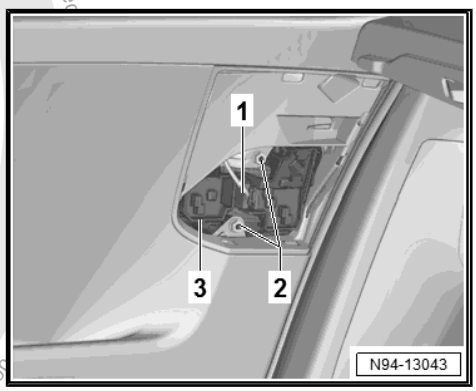
Danger of damage to component surfaces.

- *When using leverage tools, mask visible areas of the component with commercially available adhesive tape.*

– If needed, apply a narrow screwdriver at opening on side.
– Press off cover -1- in -direction of arrow-.



– Release and disconnect connector -1-.
– Unscrew nuts -2-.
– Swing left tail light cluster 2 - MX5- -3- outwards out of rear lid opening.



Installing

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

Note

- *Ensure that the gap between vehicle body and tail light housing is properly sealed by the seal.*
- *Make sure that the connector is engaged firmly.*

– Swing left tail light 2 - MX5- from the outside into rear lid opening.
– Align it properly to make contact at top and centre.
– Tighten nuts at top of tail light cluster 2 - MX5- and then at bottom.
– Perform functional check.

Specified torques

- ⇒ “4.2 Assembly overview - tail lights in rear lid”, page 152

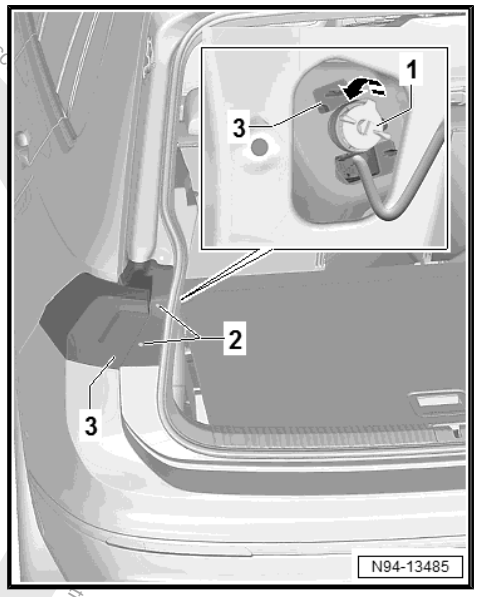
4.4 Adjusting installation position of tail light

Note

- *Installation position can only be corrected on tail light cluster on body.*
- *The procedure for adjusting the installation position is described for the left side. The procedure on the right side is analogous.*

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– Turn light switch to zero position.
– Remove service flap in left luggage compartment side trim.
– Loosen quick-release fastener -1- by $^1/_2$ turn in -direction of arrow-.
– Adjust installation position of tail light cluster by screwing adjuster elements -2- in or out.



Note

Ensure that the tail light -3- lies flush against the surrounding components.

– Turn quick-release fastener -1- to stop in opposite -direction of arrow-, and lock it in place.
– Install service flap in left luggage compartment side trim.

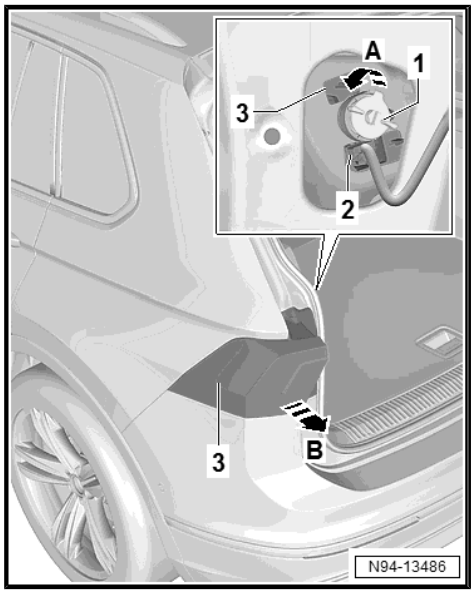
4.5 Removing and installing tail light

Note

Removal and installation are described for the left side. The removal and installation procedure for the right-hand side is basically the same.

Removing

– Turn light switch to zero position.
– Remove service flap in luggage compartment side trim.
– Release and disconnect electrical connector -2-.
– Turn quick-release fastener -1- to stop in -direction of arrow A-.
– Remove tail light cluster -3- in -direction of arrow B-.



Installing

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

Note

- *Ensure that the gap between vehicle body and tail light housing is properly sealed by the seal.*
- *Make sure that the connector is engaged firmly.*

– Turn quick-release fastener -1- to stop in opposite -direction of arrow A-, and lock it in place.
– Perform functional check.

4.6 Removing and installing tail light bulb -M2- / -M4-

Note

The tail light cluster bulbs are LEDs and are integrated in the tail light clusters. These LEDs cannot be renewed. The entire tail light cluster must be renewed.

– Removing and installing tail light -MX3- / -MX4- ⇒ page 154 .

– Removing and installing tail light cluster in rear lid -MX5- / -MX6- ⇒ page 152 .

4.7 Removing and installing rear fog light bulb -L46- / -L47-

Note

The rear fog light bulbs are LEDs and are integrated in the tail light clusters. These LEDs cannot be renewed. The entire tail light cluster must be renewed.

– Removing and installing tail light cluster in rear lid -MX5- / -MX6- ⇒ page 152 .

4.8 Removing and installing brake and tail light bulb -M21- / -M22-

Note

The brake and tail light cluster bulbs are LEDs and are integrated in the tail light clusters. These LEDs cannot be renewed. The entire tail light cluster must be renewed.

– Removing and installing tail light -MX3- / -MX4- ⇒ page 154 .

– Only for vehicles with tail light clusters in dark red: removing and installing tail light cluster in rear lid -MX5- / -MX6- ⇒ page 152 .

4.9 Removing and installing reversing light bulb

Note

The reversing light bulbs are LEDs and are integrated in the tail light clusters. These LEDs cannot be renewed. The entire tail light cluster must be renewed.

– For vehicles with tail light clusters in dark red: removing and installing tail light cluster -MX3- / -MX4- ⇒ page 154 .

– For vehicles without tail light clusters in dark red: removing and installing tail light cluster in rear lid -MX5- / -MX6- ⇒ page 152 .

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4.10 Removing and installing turn signal bulb

⇒ “4.10.1 Removing and installing turn signal bulb, except for tail light clusters in dark red”, page 156

⇒ “4.10.2 Removing and installing turn signal bulb, only tail light clusters in dark red”, page 156

4.10.1 Removing and installing turn signal bulb, except for tail light clusters in dark red

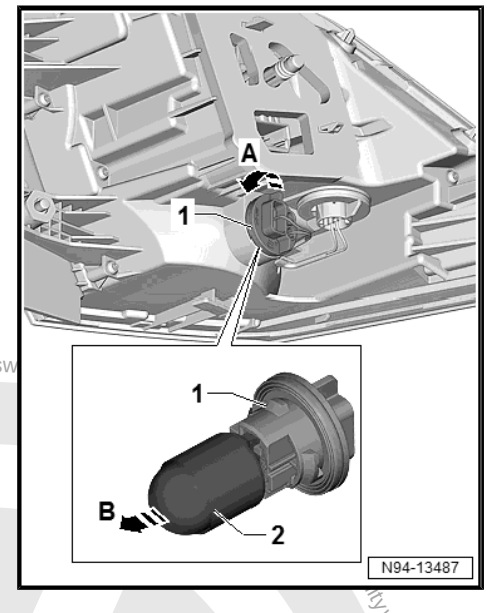
Removing

– Remove tail light cluster on body ⇒ page 154 .

– Release bulb carrier -1- in -direction of arrow A-.

– Pull bulb carrier -1- with rear left turn signal bulb - M6- out of mounting on tail light cluster.

– Pull rear left turn signal bulb - M6- -2- straight in -direction of arrow B- out of bulb carrier -1-.



Installing

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

Caution

Risk of damage to the bulb.

- ***Do not touch the glass part of the bulb with bare fingers. Fingers leave traces of grease on the glass bulb, which evaporate when the bulb is switched on and cause the glass bulb to cloud over.***
- ***Wear e.g. clean fabric gloves when inserting bulbs.***

– Perform functional check.

4.10.2 Removing and installing turn signal bulb, only tail light clusters in dark red

Note

The turn signal bulbs are LEDs and are integrated in the tail light clusters. These LEDs cannot be renewed. The entire tail light cluster must be renewed.

– Removing and installing tail light -MX3- / -MX4- ⇒ page 154 .

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5 High-level brake light

⇒ “5.1 Assembly overview - high-level brake light”, page 157

⇒ “5.2 Removing and installing additional brake light”, page 157

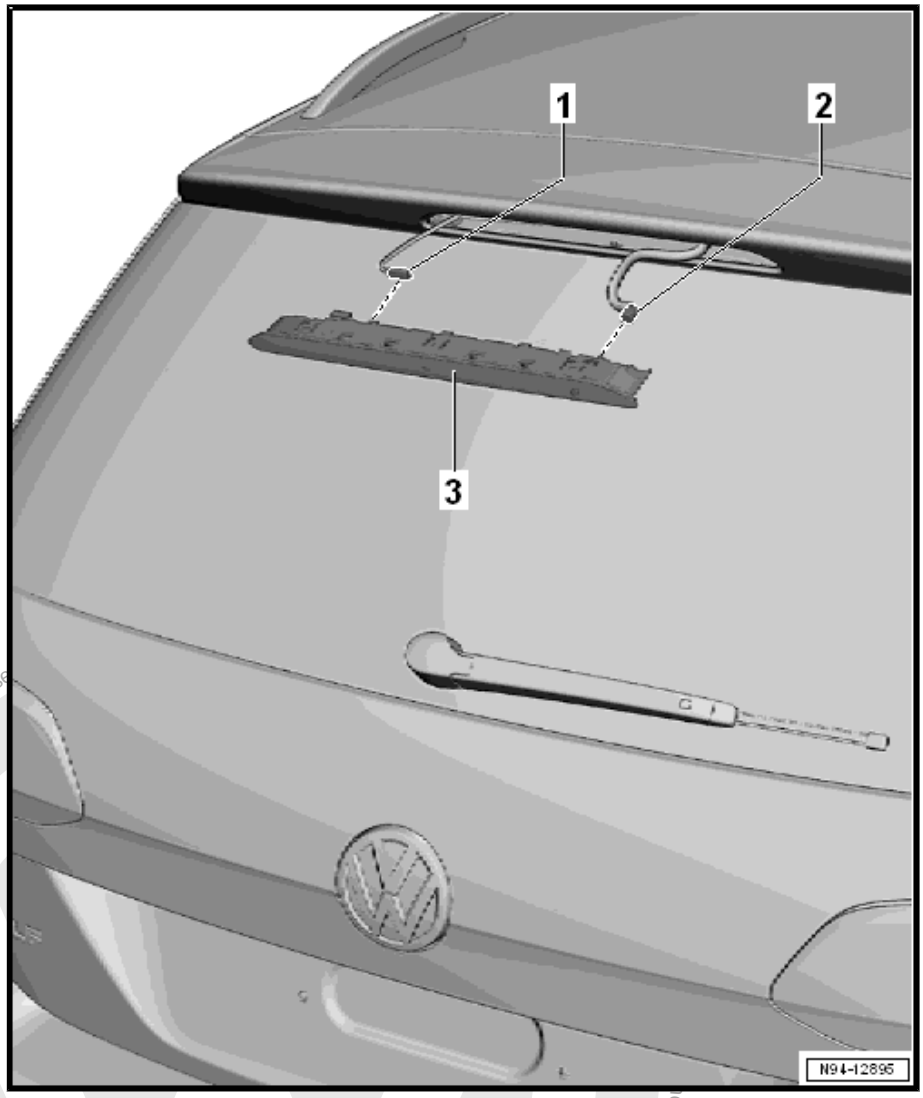
5.1 Assembly overview - high-level brake light

1 - Connector for brake light

2 - Connection for washer fluid hose

3 - High-level brake light

- ❑ With high-level brake light bulb - M25-
- ❑ Removing and installing ⇒ page 157

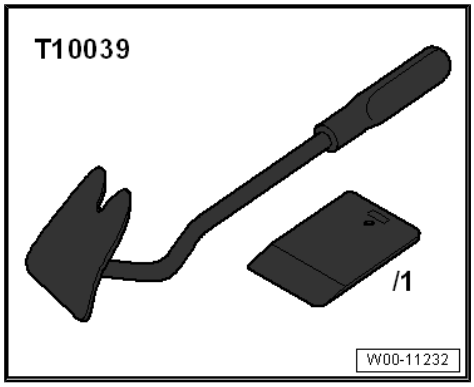


5.2 Removing and installing additional brake light

Special tools and workshop equipment required

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- Plastic wedge - T10039/1-



Removing

– Switch off ignition and all electrical consumers.

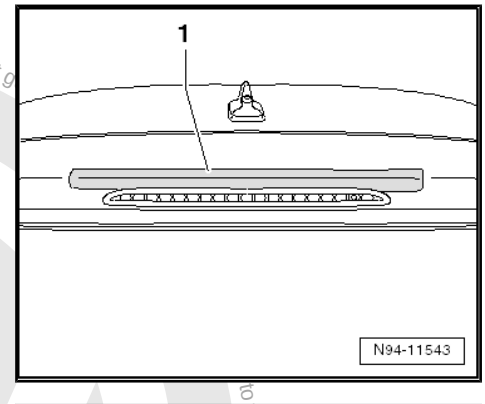
– Keep the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

Caution

Danger of damage to component surfaces.

- *When using leverage tools, mask visible areas of the component with commercially available adhesive tape.*

– Attach a strip of adhesive tape -1- to rear lid area above high-level brake light.



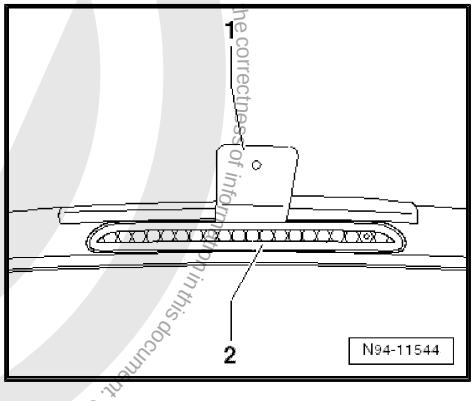
Caution

Make sure the seal is not damaged when removing the high-level brake light.

– Insert plastic wedge - T10039/1- -1- at top between high-level brake light -2- and rear lid.

– Press down high-level brake light -2- using plastic wedge - T10039/1-

– Swing high-level brake light -2- out of rear lid.



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– Pull out hose-locking device -arrow-.
– Pull hose connection -1- off high-level brake light.
– Disconnect electrical connector -2-.
– Remove additional brake light.

Installing

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

Note

- *If the event of a defective LED, the entire high-level brake light needs to be renewed.*
- *When installing high-level brake light, make sure seal is correctly seated. The seal must not form loops or be damaged.*
- *When connecting the washer fluid line, ensure that the securing clip engages audibly in the connection.*

– Connect hose connection and connectors.
– Guide high-level brake light into rear lid.
– Engage locking devices at top.
– Engage retaining springs at bottom.
– Check high-level brake light and rear window washer system for fault-free operation.

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6 Number plate light

⇒ “6.1 Assembly overview – number plate lights”, page 160

⇒ “6.2 Removing and installing number plate light X4 / X5 ”, page 161

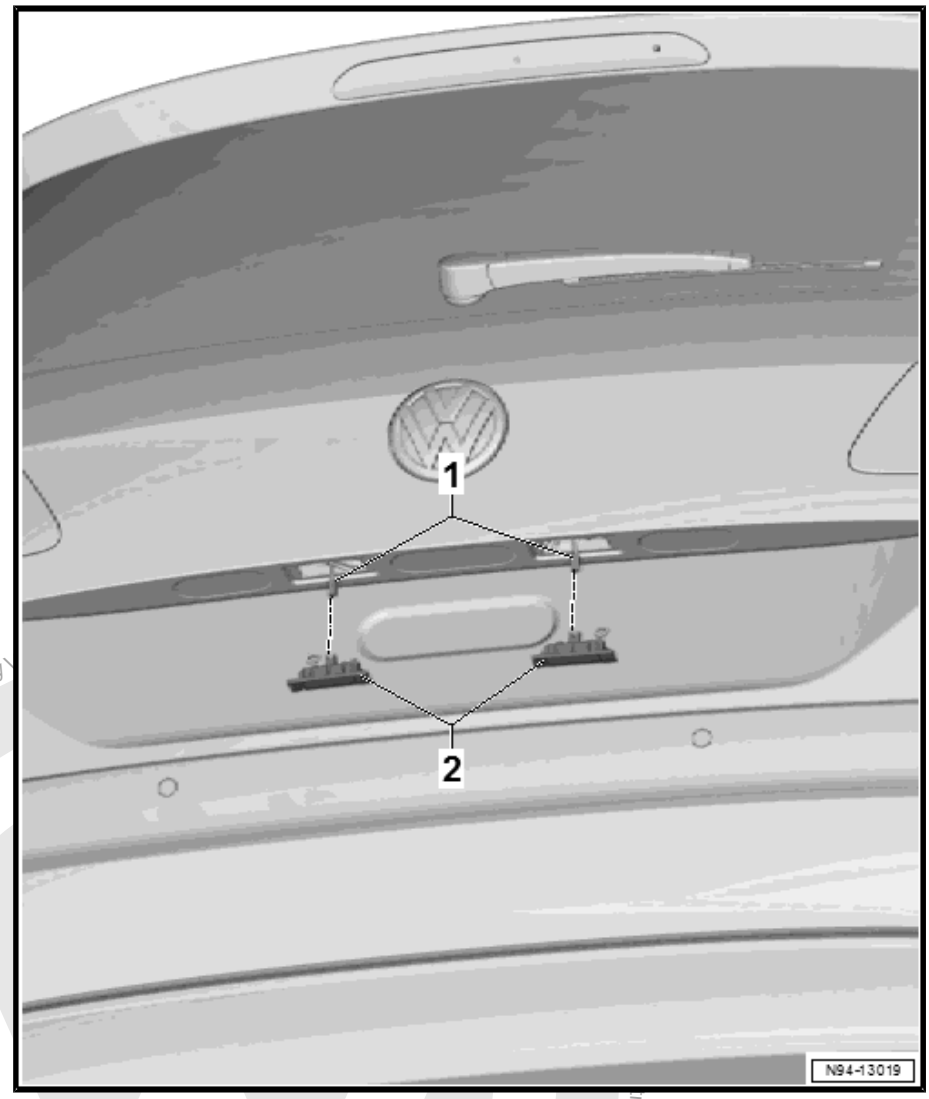
⇒ “6.3 Removing and installing bulb for number plate light X4 / X5 ”, page 161

6.1 Assembly overview – number plate lights

1 - Electrical connectors

2 - Number plate light -X4- / -X5-

- ❑ Removing and installing ⇒ page 161



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

Note

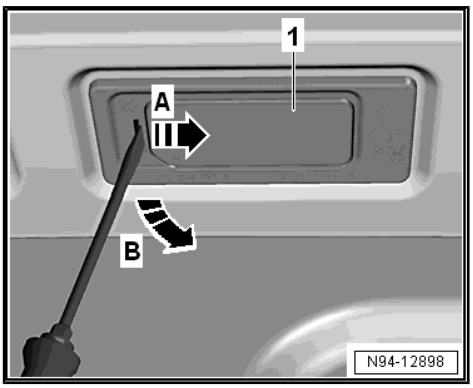
- *Removal and installation are described for the right side. Removal and installation on the left side are analogous.*
- *Since the number plate lights are equipped with LEDs, the entire number plate light must be renewed in the event of a fault.*

Removing

– Turn light switch to zero position.

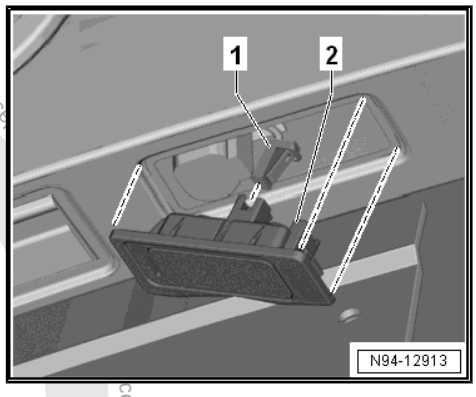
– Use a suitable tool to push right number plate light - X5- -1- in -direction of arrow A-.

– Swing right number plate light - X5- -1- in -direction of arrow B- out of rear lid.



– Release connector -1- and disconnect.

– Remove right number plate light - X5- -2-.



Installing

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

Note

Insert number plate light into rear lid so that retaining clip points to right-hand side of vehicle.

– Perform functional check.

6.3 Removing and installing bulb for number plate light - X4- / -X5-

Since the number plate lights are equipped with LEDs, the entire number plate light must be renewed in the event of a fault.

Removing and installing number plate light - X4- / -X5-
⇒ page 161 .

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7 Entry and start authorisation system

⇒ “7.1 Overview of fitting locations - entry and start authorisation system”, page 162

⇒ “7.2 Overview of fitting locations - keyless entry system”, page 165

⇒ “7.3 Removing and installing interface for entry and start system J965 ”, page 167

⇒ “7.4 Removing and installing door exterior handle contact sensor G415 / G416 ”, page 168

⇒ “7.5 Removing and installing interior aerial 1 for entry and start authorisation R138 ”, page 168

⇒ “7.6 Removing and installing interior aerial 2 for entry and start system R139 ”, page 169

⇒ “7.7 Removing and installing driver side aerial for entry and start system R134 ”, page 170

⇒ “7.8 Removing and installing front passenger side aerial for entry and start system R135 ”, page 170

⇒ “7.10 Removing and installing luggage compartment aerial for entry and start system R137 ”, page 171

⇒ “7.9 Removing and installing rear bumper aerial for entry and start system R136 ”, page 170

⇒ “7.11 Removing and installing rear lid power opening control unit J938 ”, page 172

⇒ “7.12 Removing and installing rear lid power opening sender G750 / G760 ”, page 172

7.1 Overview of fitting locations - entry and start authorisation system

⇒ “7.1.1 Overview of fitting locations - entry and start authorisation system, LHD vehicles”, page 162

⇒ “7.1.2 Overview of fitting locations - entry and start authorisation system, RHD vehicles”, page 164

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

Note

The vehicle shown in the illustration may differ from the actual vehicle.

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1 - Interface for entry and start system - J965-

- ❑ Removing and installing ⇒ page 167

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

- ❑ Removing and installing ⇒ Running gear, axles, steering; Rep. gr. 48 ; Steering column; Assembly overview - steering column .

3 - Immobiliser reader coil - D2-

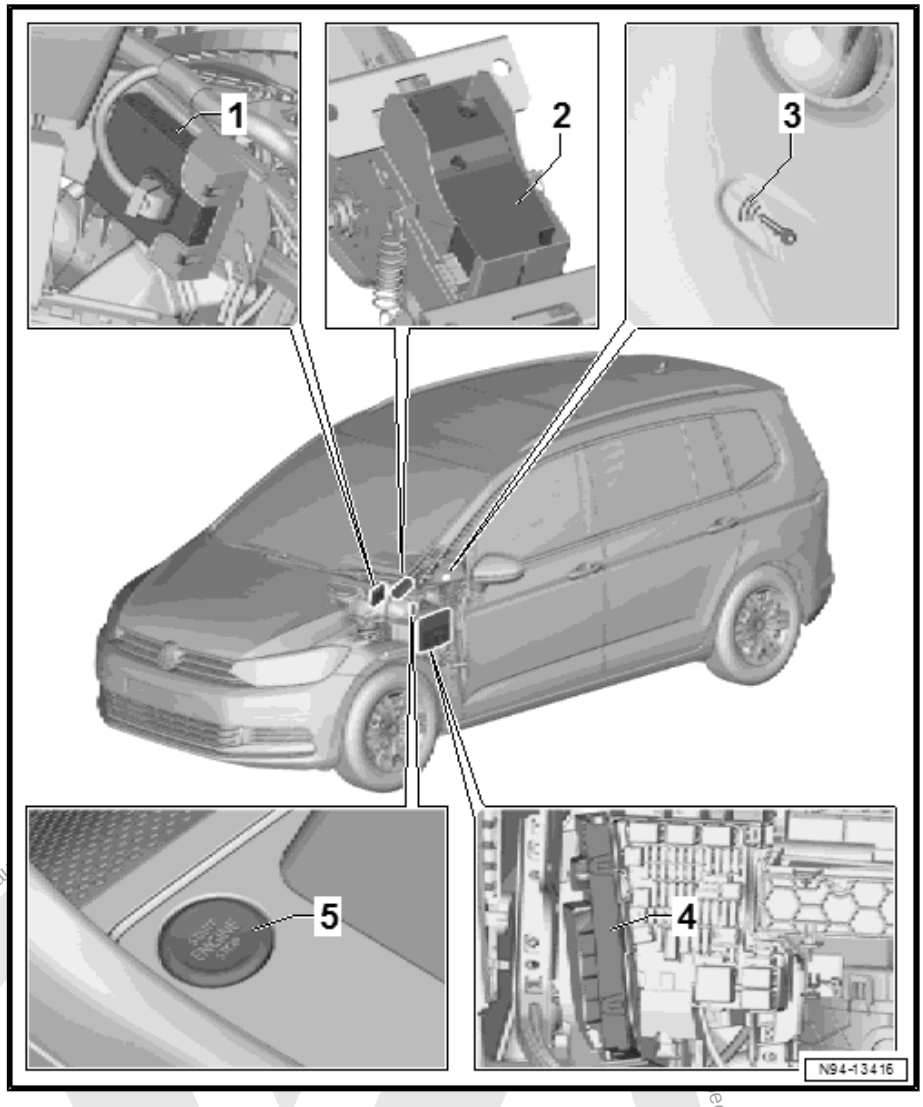
- ❑ Removing and installing ⇒ page 186

4 - Onboard supply control unit - J519-

- ❑ With central locking and anti-theft alarm system aerial - R47-
- ❑ Assembly overview ⇒ page 296
- ❑ Removing and installing ⇒ page 299

5 - Starter button - E378-

- ❑ Removing and installing ⇒ page 255



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

Note

The vehicle shown in the illustration may differ from the actual vehicle.

1 - Immobiliser reader coil - D2-

- ❑ Removing and installing ⇒ page 186

2 - Interface for entry and start system - J965-

- ❑ Removing and installing ⇒ page 167

3 - Onboard supply control unit - J519-

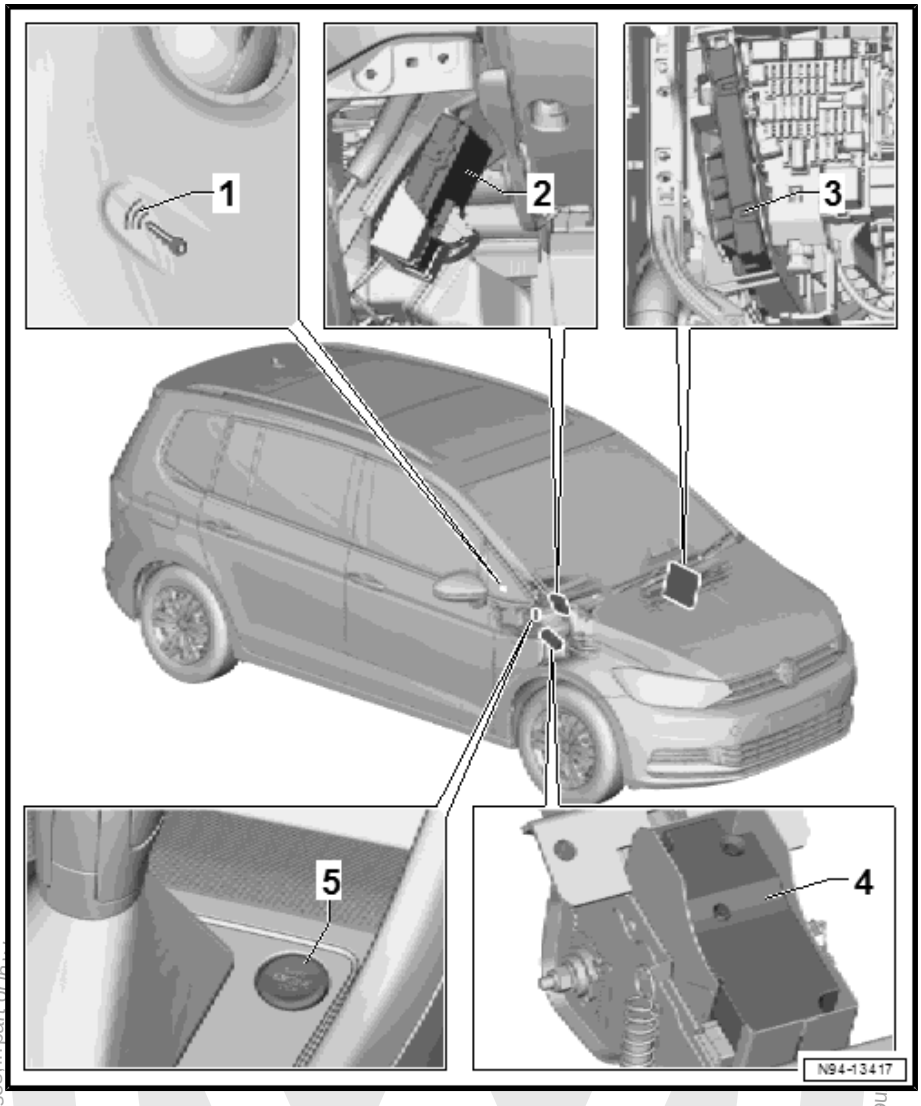
- ❑ With central locking and anti-theft alarm system aerial - R47-
- ❑ Assembly overview ⇒ page 296
- ❑ Removing and installing ⇒ page 299

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

- ❑ Removing and installing ⇒ Running gear, axles, steering; Rep. gr. 48 ; Steering column; Assembly overview - steering column .

5 - Starter button - E378-

- ❑ Removing and installing ⇒ page 255



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7.2 Overview of fitting locations - keyless entry system

⇒ “7.2.1 Overview of fitting locations - front keyless entry system, LHD vehicles”, page 165

⇒ “7.2.2 Overview of fitting locations - front keyless entry system, RHD vehicles”, page 166

⇒ “7.2.3 Overview of fitting locations - rear keyless entry system”, page 167

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

Note

The vehicle shown in the illustration may differ from the actual vehicle.

1 - Front passenger side door exterior handle

- ❑ With front passenger door exterior handle contact sensor - G416-
- ❑ Removing and installing ⇒ page 168
- ❑ With passenger side aerial for entry and start system - R135-
- ❑ Removing and installing ⇒ page 170

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

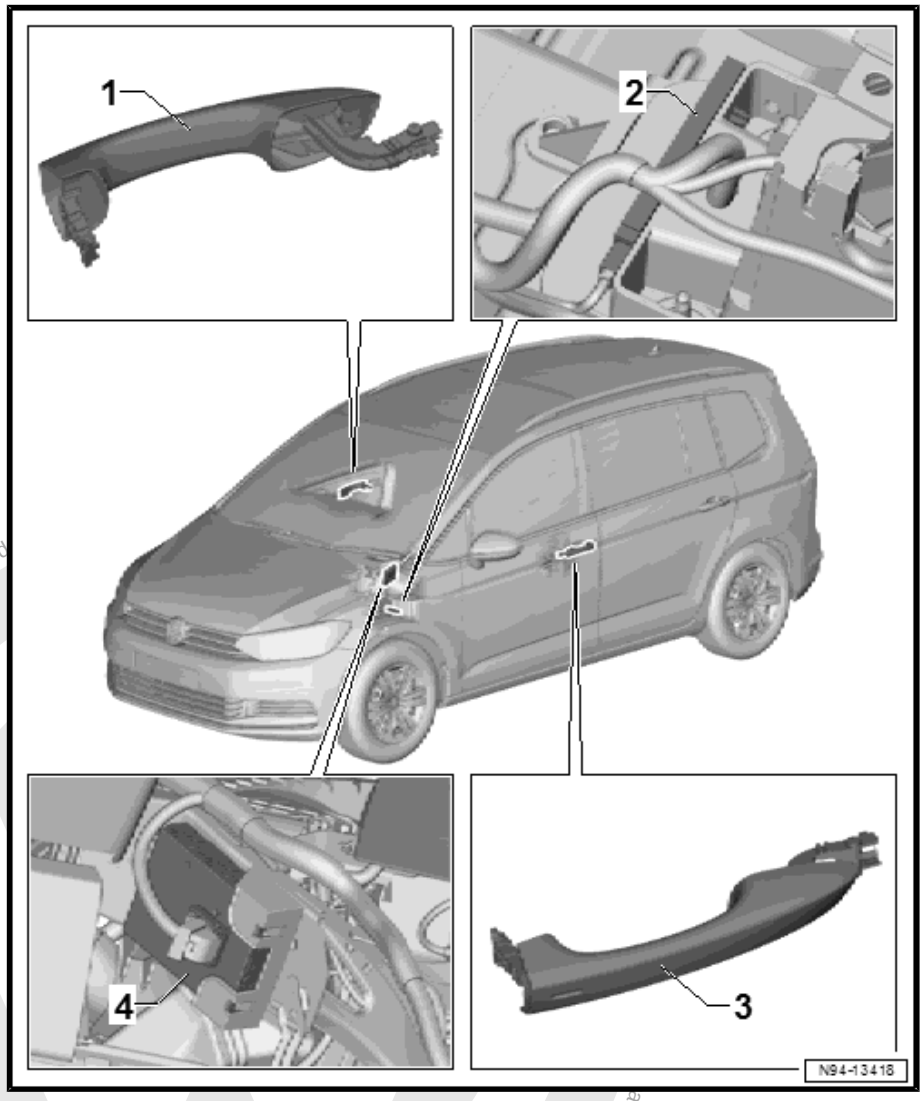
- ❑ Removing and installing ⇒ page 168

3 - Driver side door exterior handle

- ❑ With driver exterior door handle contact sensor - G415-
- ❑ Removing and installing ⇒ page 168
- ❑ With driver side aerial for entry and start system - R134-
- ❑ Removing and installing ⇒ page 170

4 - Interface for entry and start system - J965-

- ❑ Removing and installing ⇒ page 167

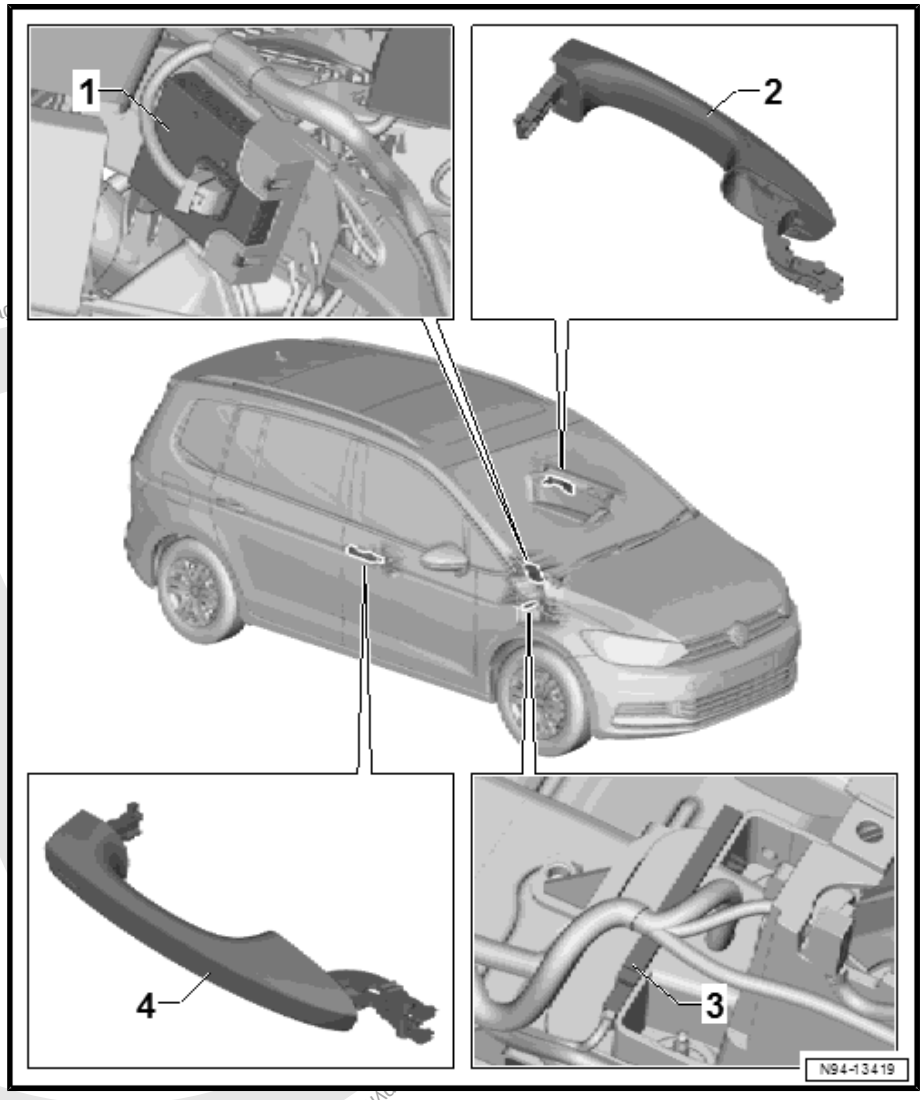


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7.2.2 Overview of fitting locations - front keyless entry system, RHD vehicles

Note

The vehicle shown in the illustration may differ from the actual vehicle.



1 - Interface for entry and start system - J965-

- Removing and installing ⇒ page 167

2 - Front passenger side door exterior handle

- With front passenger door exterior handle contact sensor - G416-
- Removing and installing ⇒ page 168
- With passenger side aerial for entry and start system - R135-
- Removing and installing ⇒ page 170

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

- Removing and installing ⇒ page 168

4 - Driver side door exterior handle

- With driver exterior door handle contact sensor - G415-
- Removing and installing ⇒ page 168
- With driver side aerial for entry and start system - R134-
- Removing and installing ⇒ page 170

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7.2.3 Overview of fitting locations - rear keyless entry system

1 - Interior aerial 2 for entry and start system - R139-

- ❑ Removing and installing ⇒ page 169

2 - Rear bumper aerial for entry and start system - R136-

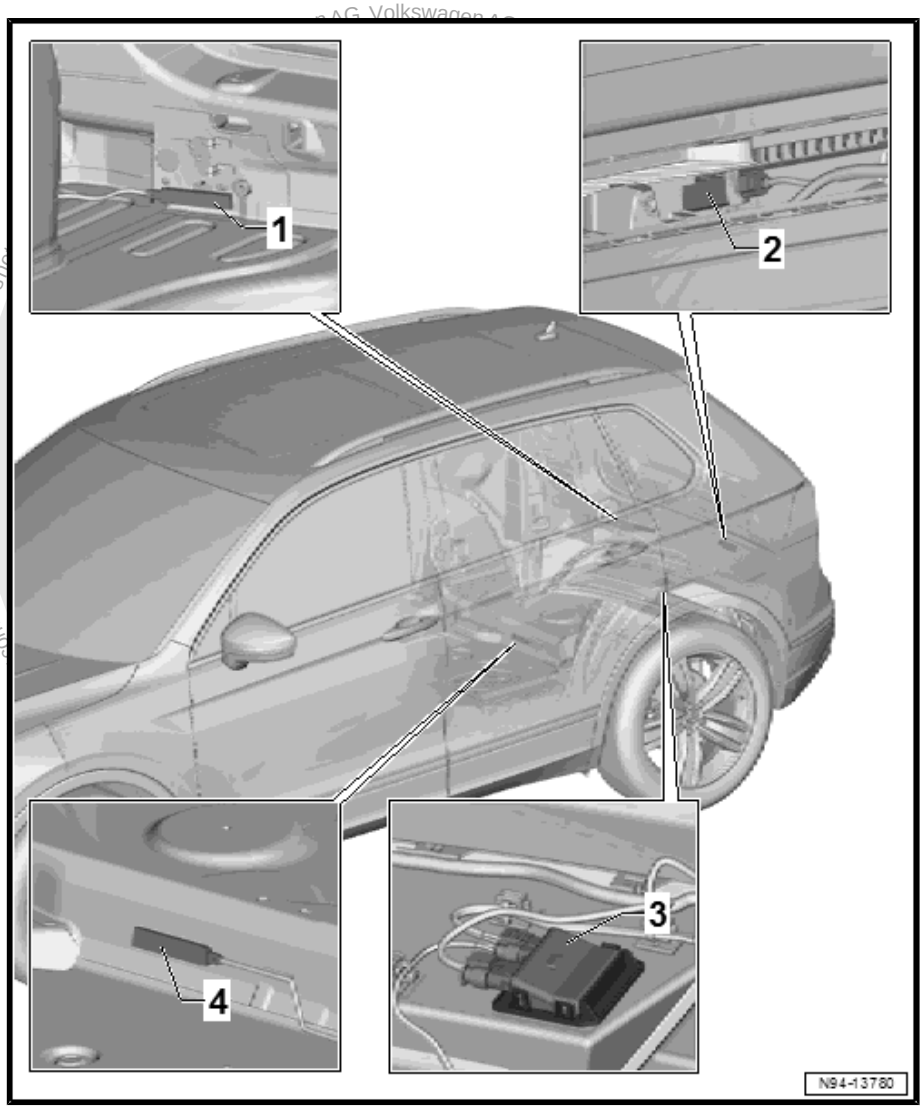
- ❑ Removing and installing ⇒ page 170

3 - Rear lid power opening control unit - J938-

- ❑ With rear lid power opening sender - G750- and rear lid power opening sender 2 - G760-
- ❑ Removing and installing ⇒ page 172

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

- ❑ Removing and installing ⇒ page 171



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

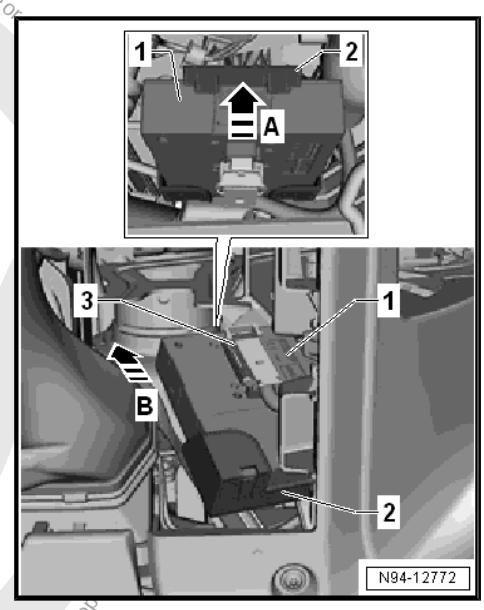
Note

- *If the control unit is renewed, perform the adaptation routines using ⇒ Vehicle diagnostic tester.*
- *Removal and installation are described for left-hand drive vehicles. Removal and installation for right-hand drive vehicles is similar.*

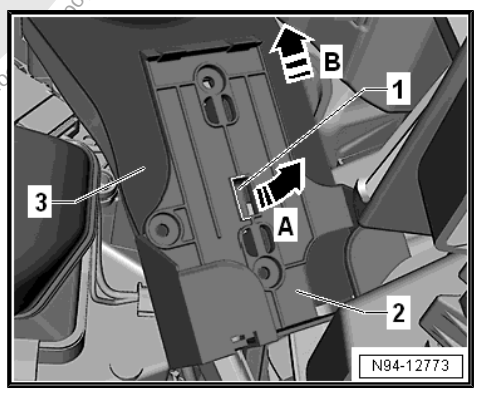
Removing

– Remove knee airbag with igniter ⇒ General body repairs, interior; Rep. gr. 69 ; Knee airbags; Removing and installing knee airbag with igniter .

– Release and disconnect connector -3-.
– Press bracket -2- of interface for entry and start system - J965- -1- at top in direction of -arrow A-.
– Remove interface for entry and start system - J965- -1- from bracket -2- in direction of -arrow B-.



– Lever out catch -1- in direction of -arrow A-, using a small screwdriver if necessary.
– Remove bracket -2- from support -3- in direction of -arrow B-.



Installing

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

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

7.4 Removing and installing door exterior handle contact sensor -G415- / -G416-

Note

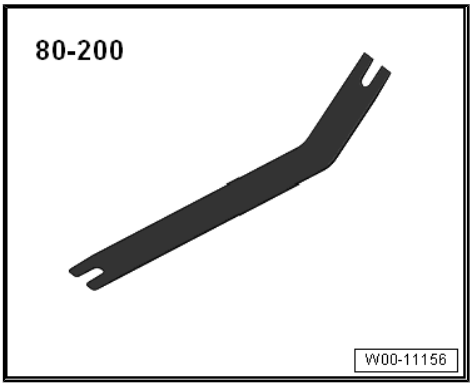
The driver door exterior handle touch sensor - G415- or front passenger door exterior handle touch sensor - G416- is integrated in the respective exterior door handle and cannot be renewed individually if defective.

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

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

Special tools and workshop equipment required

♦ Release lever - 80 - 200-



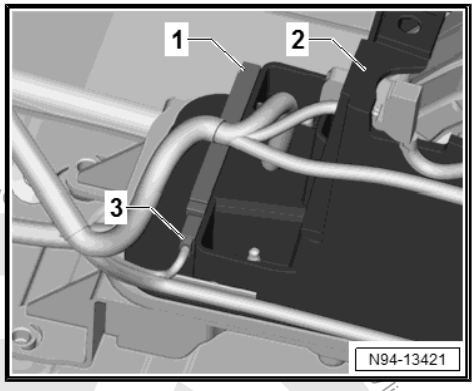
Removing

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

– Remove air duct vent at rear of centre console ⇒ Heating, air conditioning; Rep. gr. 87 ; Air duct; Assembly overview - air duct and air distribution in passenger compartment .

– Lever off interior aerial 1 for entry and start system - R138- -1- from bracket -2- using removal lever - 80 - 200- .

– Release and disconnect connector -3-.



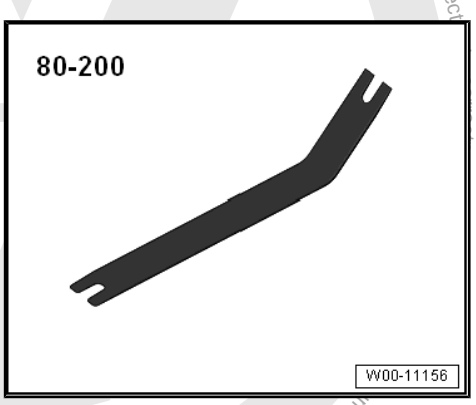
Installing

Install in reverse order of removal.

7.6 Removing and installing interior aerial 2 for entry and start system - R139-

Special tools and workshop equipment required

♦ Release lever - 80 - 200-



Removing

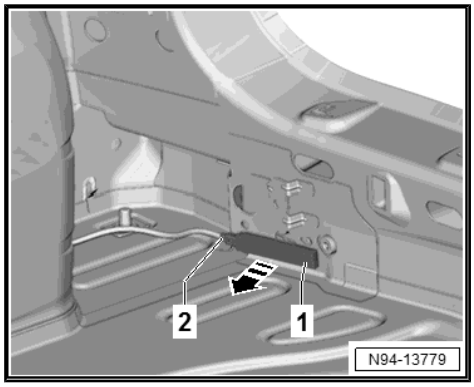
– Detach rear section of right hand side panel trim in luggage compartment far enough to permit access to access/start system antenna 2 in vehicle interior - R139- ⇒ General body repairs, interior; Rep. gr. 70 ; Luggage compartment trim; Removing and installing luggage compartment side panel trim .

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– Use removal lever - R139- to lever interior aerial 2 for entry and start system - 80 - 200- -1- in -direction of arrow- off body panel.
– Release and disconnect electrical connector -2-.

Installing

Install in reverse order of removal.



7.7 Removing and installing driver side aerial for entry and start system - R134-

Note

The driver side aerial for entry and start authorisation - R134- is integrated in the exterior door handle and cannot be renewed separately if defective.

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

7.8 Removing and installing front passenger side aerial for entry and start system - R135-

Note

The front passenger side aerial for entry and start authorisation - R135- is integrated in the exterior door handle and cannot be renewed separately if defective.

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

7.9 Removing and installing rear bumper aerial for entry and start system - R136-

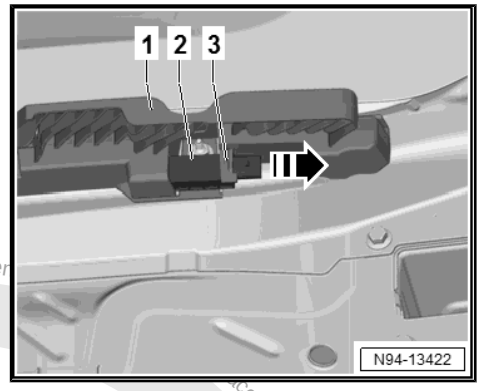
Removing

– Remove rear bumper cover ⇒ General body repairs, exterior; Rep. gr. 63 ; Rear bumper; Removing and installing bumper cover .
– Release and disconnect connector on rear bumper aerial for entry and start system - R136- .

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– Lift up retaining lug -3- slightly.

– Pull rear bumper aerial for entry and start system - R136- -2- in -direction of arrow- out of centre guide profile -1-.



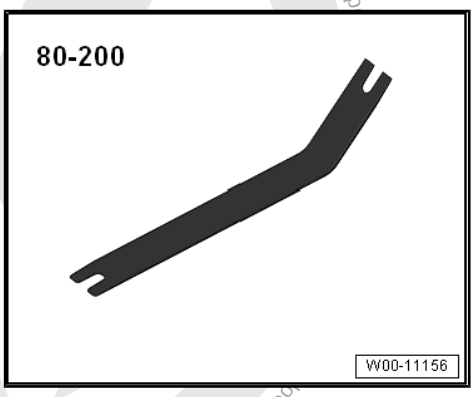
Installing

Install in reverse order of removal.

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

Special tools and workshop equipment required

♦ Release lever - 80 - 200-



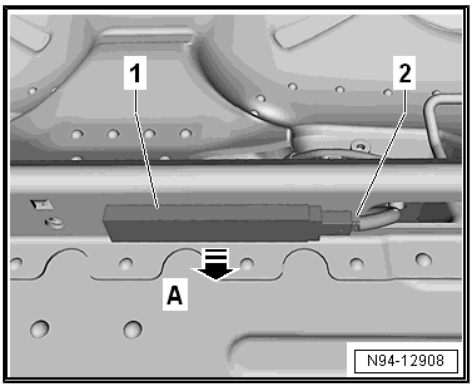
Removing

– Remove bracket for luggage compartment floor covering ⇒ General body repairs, interior; Rep. gr. 70 ; Luggage compartment trims; Removing and installing bracket for luggage compartment floor covering .

– Remove rear left seat ⇒ General body repairs, interior; Rep. gr. 72 ; Rear seats; Removing and installing bench seat / individual seats .

– Fold rear floor covering in rear left area towards front.

– Use removal lever - R137- to lever luggage compartment aerial for entry and start system - 80 - 200- -1- in -direction of arrow A- off body.



– Release and disconnect electrical connector -2-.

Installing

Install in reverse order of removal.

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7.11 Removing and installing rear lid power opening control unit - J938-

Removing

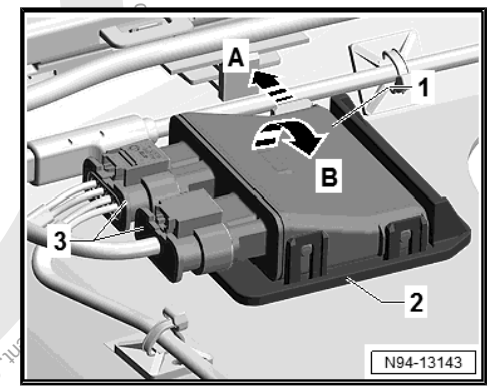
Note

- *The rear lid power opening control unit - J938- is located behind the rear bumper cover. It can be removed and installed through the aperture for the towing bracket.*
- *If the rear lid power opening control unit - J938- is renewed, carry out adaptations in the interface for entry and start authorisation system - J965- using ⇒ Vehicle diagnostic tester.*

– Release and disconnect connectors -3-.

– Release catch on bracket -2- in direction of -arrow A-.

– Swing rear lid power opening control unit - J938- -1- out of bracket -2- in direction of -arrow B- and remove.



Installing

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

– If rear lid power opening control unit - J938- has been renewed, carry out basic settings in interface for access and start authorisation system - J965- ⇒ Vehicle diagnostic tester.

7.12 Removing and installing rear lid power opening sender -G750- / -G760-

Removing

– Remove rear bumper cover ⇒ General body repairs, exterior; Rep. gr. 63 ; Rear bumper; Removing and installing bumper cover .

– Detach wiring harness from upper retainer -3-.

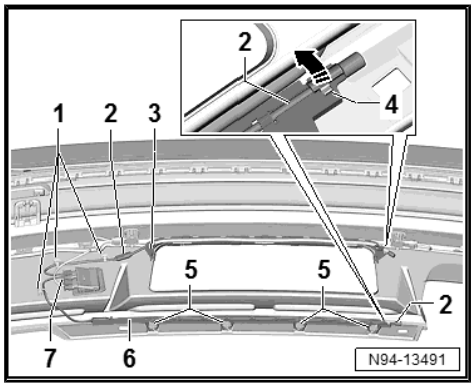
– Release and disconnect electrical connector -7-.

– Remove retainers -1- from rear bumper cover.

– Release retaining lug -4- on upper cover retainer -3-, and open cover in -direction of arrow-.

– Release retaining lug -4- on lower cover retainer -6-, and open cover in -direction of arrow-.

– Unclip rear lid power opening sender -G750- / -G760- -2- from upper retainer -3- and lower retainer -6-.



If required for any additional repair work, remove upper retainer -3- and lower retainer -6- as follows:

– Pull upper retainer -3- with retaining clips off rear bumper cover.

– Remove spreader rivet -5- from lower retainer -6-, and remove lower retainer -6- from rear bumper cover.

Installing

Install in reverse order of removal.

8 Steering column switch module

⇒ “8.1 Assembly overview - steering column switch module”, page 173

⇒ “8.2 Removing and installing lock cylinder”, page 175

⇒ “8.3 Removing and installing ignition key withdrawal lock solenoid N376 ”, page 177

⇒ “8.4 Removing and installing ignition/starter switch”, page 178

⇒ “8.5 Removing and installing steering column switch module”, page 179

⇒ “8.6 Removing and installing steering column electronics control unit J527 ”, page 181

⇒ “8.7 Removing and installing turn signal switch E2 ”, page 185

⇒ “8.8 Removing and installing intermittent wiper switch E22 ”, page 186

⇒ “8.9 Removing and installing immobiliser reader coil D2 ”, page 186

⇒ “8.10 Removing and installing base for steering column combination switch”, page 187

⇒ “8.11 Removing and installing steering lock housing”, page 188

8.1 Assembly overview - steering column switch module

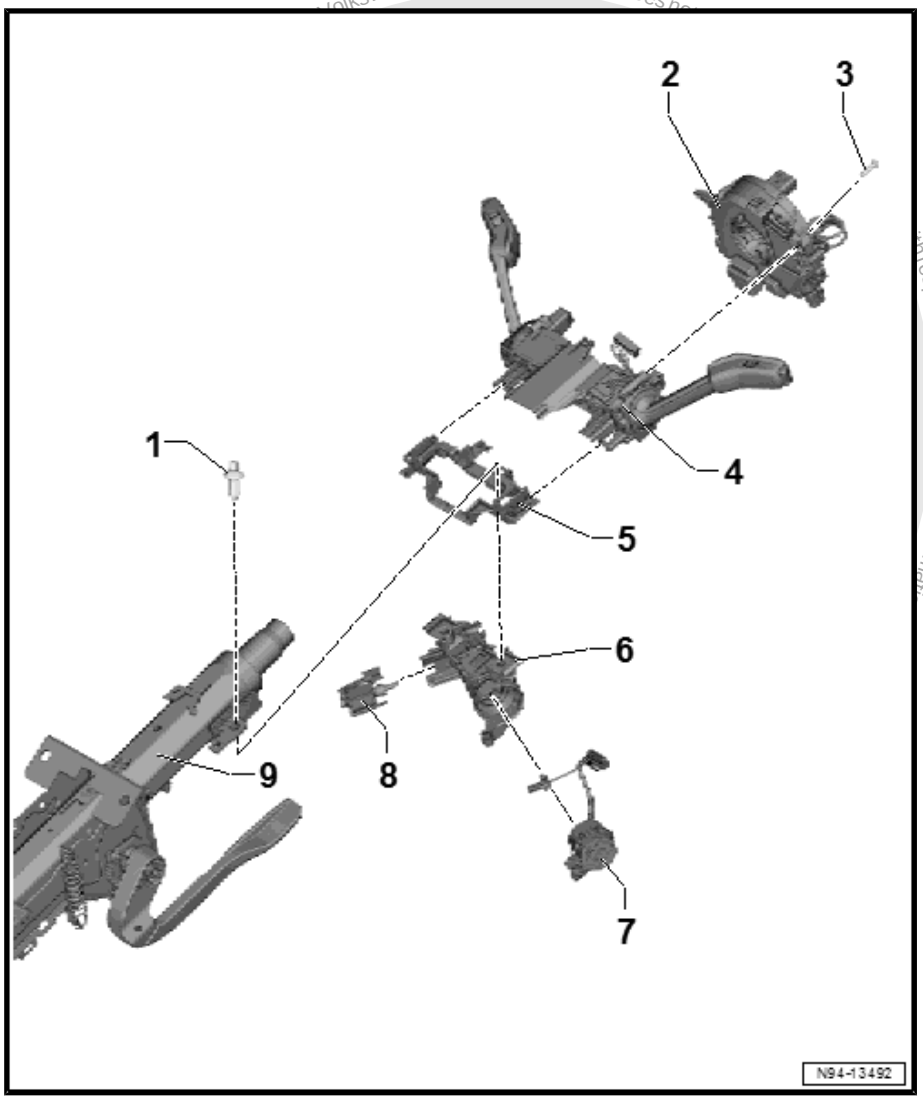
⇒ “8.1.1 Assembly overview - steering column switch module, with mechanical ignition lock”, page 173

⇒ “8.1.2 Assembly overview - steering column switch module, with electronic ignition lock”, page 175

8.1.1 Assembly overview - steering column switch module, with mechanical ignition lock

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1 - Bolt

- ❑ Qty. 2
- ❑ Shear bolts for steering lock housing

2 - Steering column electronics control unit - J527-

- ❑ With airbag coil connector and return ring with slip ring - F138-
- ❑ Removing and installing ⇒ page 181

3 - Bolts

- ❑ Qty. 3
- ❑ 1.1 Nm

4 - Steering column combination switch

- ❑ With turn signal switch - E2- , intermittent wiper switch - E22-
- ❑ Removing and installing ⇒ page 185

5 - Plate base

- ❑ For steering column combination switch
- ❑ Removing and installing ⇒ page 187

6 - Steering lock housing

- ❑ With lock cylinder and immobiliser reader coil - D2-
- ❑ Removing and installing steering lock housing ⇒ page 188
- ❑ Removing and installing lock cylinder ⇒ page 175
- ❑ Removing and installing immobiliser reader coil - D2- ⇒ page 186

7 - Ignition/starter switch - D-

- ❑ Removing and installing ⇒ page 178

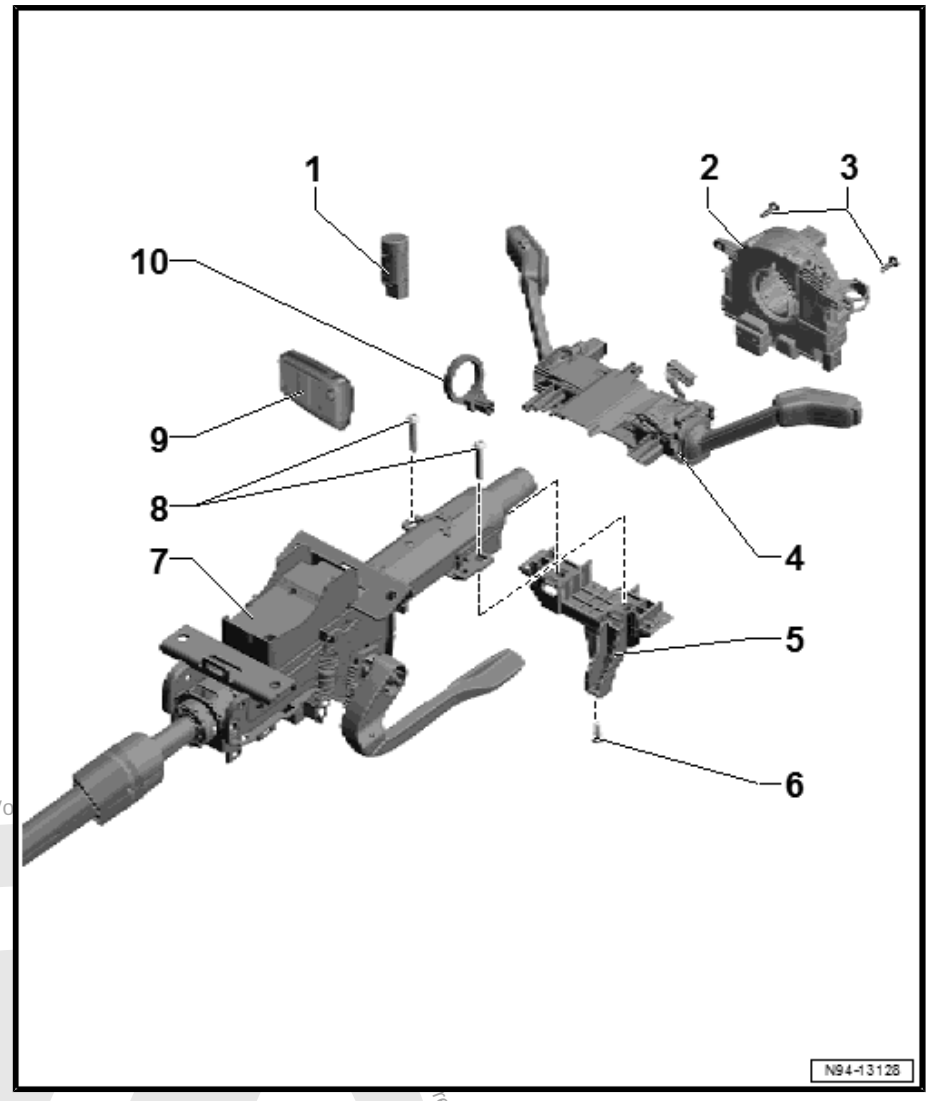
8 - Ignition key withdrawal lock solenoid - N376-

- ❑ Removing and installing ⇒ page 177

9 - Steering column

- ❑ Assembly overview ⇒ Running gear, axles, steering; Rep. gr. 48 ; Steering column, Assembly overview - steering column

8.1.2 Assembly overview - steering column switch module, with electronic ignition lock



1 - Starter button - E378-

- ❑ Removing and installing ⇒ page 255

2 - Steering column electronics control unit - J527-

- ❑ With airbag coil connector and return ring with slip ring - F138-
- ❑ Removing and installing ⇒ page 181

3 - Bolts

- ❑ Qty. 3
- ❑ 1.1 Nm

4 - Steering column combination switch

- ❑ With turn signal switch - E2- , intermittent wiper switch - E22-
- ❑ Removing and installing ⇒ page 185

5 - Plate base

- ❑ For steering column combination switch
- ❑ Removing and installing ⇒ page 187

6 - Bolt

- ❑ For securing lower steering column trim
- ❑ Specified torque ⇒ General body repairs, interior; Rep. gr. 68 ; Compartments and covers; Assembly overview - steering column trim .

7 - 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-

8 - Bolts

- ❑ Qty. 2
- ❑ For base for steering column combination switch
- ❑ 9 Nm

9 - Ignition key

10 - Immobiliser reader coil - D2-

- ❑ Removing and installing ⇒ page 186

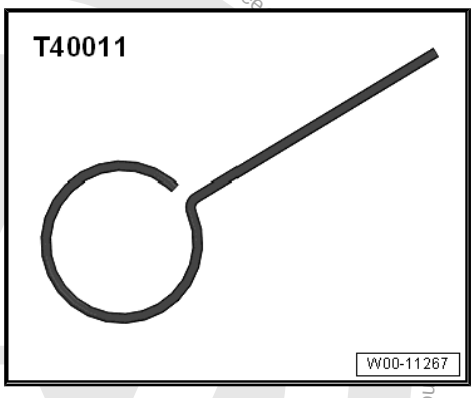
8.2 Removing and installing lock cylinder

Special tools and workshop equipment required

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- Locking pin - T40011- or



- suitable welding wire

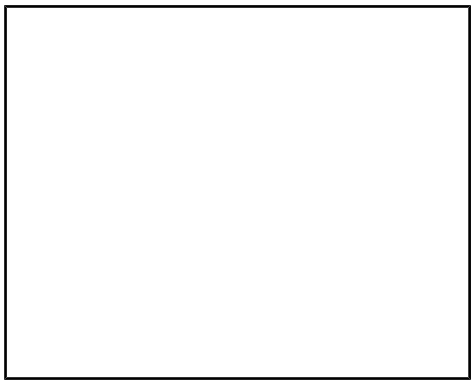
Removing

– Remove lower steering column trim ⇒ General body repairs, interior; Rep. gr. 68 ; Compartments and covers; Removing and installing lower steering column trim .

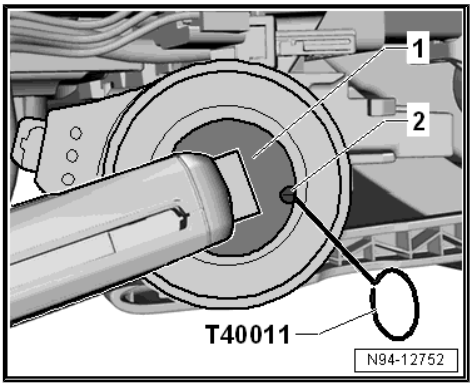
Note

- *To remove the lock cylinder, it might be necessary to fold aside the ignition key.*
- *For reasons of clarity, the ignition lock is illustrated in the correct position without the ignition key.*

– Turn ignition key to “Ignition ON” position. This will align the recess in trim -arrow- with hole in ignition lock.



– Fold aside ignition key as far as possible.
– Insert locking pin - T40011- or suitable welding wire to stop into hole -2-.
– Pull lock cylinder -1- out of steering lock housing.



WARNING

Risk of seized steering lock.

- ***The steering lock must not be actuated without lock cylinder.***

Note

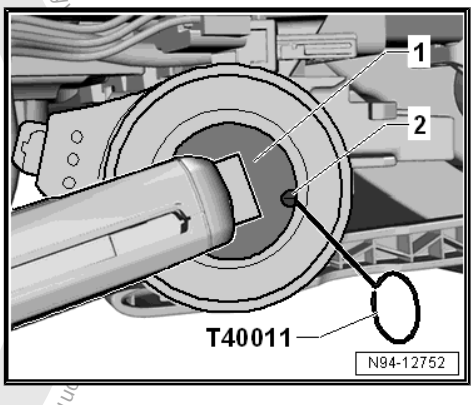
- *A seized steering lock must be renewed.*
- *The reader coil is integrated in the lock cylinder and cannot be renewed individually.*
- *The entire lock cylinder must be renewed if the reader coil is defective.*
- *A new lock cylinder can be ordered from the responsible distribution centre or the importer. When ordering, the vehicle-specific locking number according to the VIN must be provided.*

– Release and disconnect connector on reader coil.

Installing

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

– Insert ignition key into lock cylinder and turn it to position “Ignition On”.
– Again, insert locking pin - T40011- or suitable welding wire to stop into hole at front edge.
– Connect electrical connector to immobiliser reader coil.
– Press lock cylinder -1- together with reader coil into steering lock housing -3-.
– Remove locking pin - T40011- from hole -2-.
– Press in lock cylinder tightly until locking mechanism can be heard to engage.



8.3 Removing and installing ignition key withdrawal lock solenoid - N376-

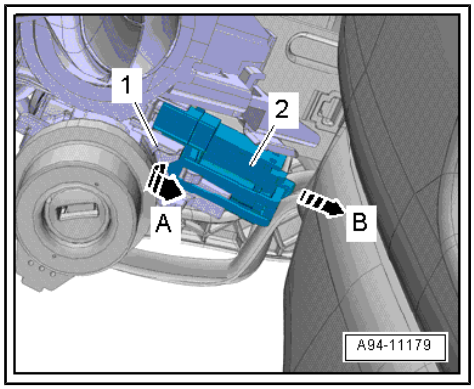
Removing

– Remove lower steering column trim ⇒ General body repairs, interior; Rep. gr. 68; Compartments and covers; Removing and installing lower steering column trim .

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– Release retaining clip -arrow A-, and pull ignition key withdrawal lock solenoid - N376- -2- off steering lock housing -1- -arrow B-.

– The electrical connection will be disconnected automatically.



Installing

Install in reverse order of removal.

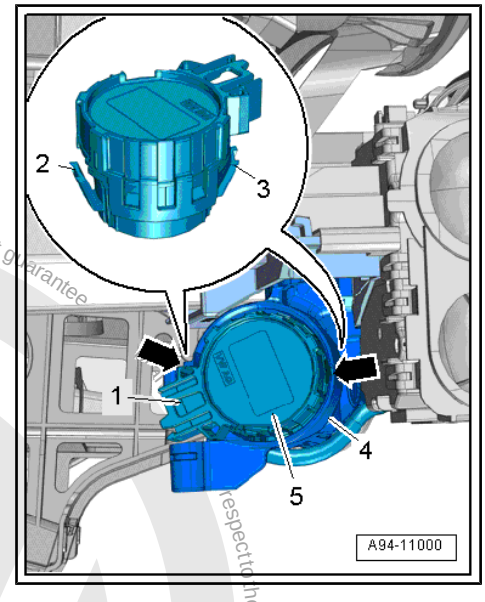
8.4 Removing and installing ignition/starter switch

Removing

– Remove lower steering column trim ⇒ General body repairs, interior; Rep. gr. 68 ; Compartments and covers; Removing and installing lower steering column trim .

– Release and disconnect connector -1-.

– Insert jeweller screwdrivers into recesses -arrows- in steering lock housing -4- to release retaining clips -2 and 3-.



If this procedure cannot be applied due to lack of space, make an auxiliary tool consisting of 2 wire hooks as described below.

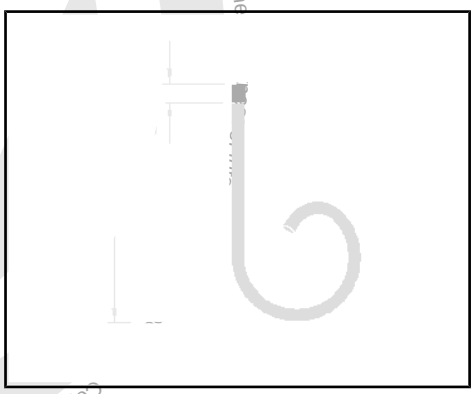
– Bend one end of welding wire (1 mm in diameter) to form a loop.

– Cut welding wire to length -a-.

♦ Dimension -a- = approx. 50 mm.

– File off the wire at the tip of the loop to form a pointed hook.

♦ Dimension -b- = 5 mm.



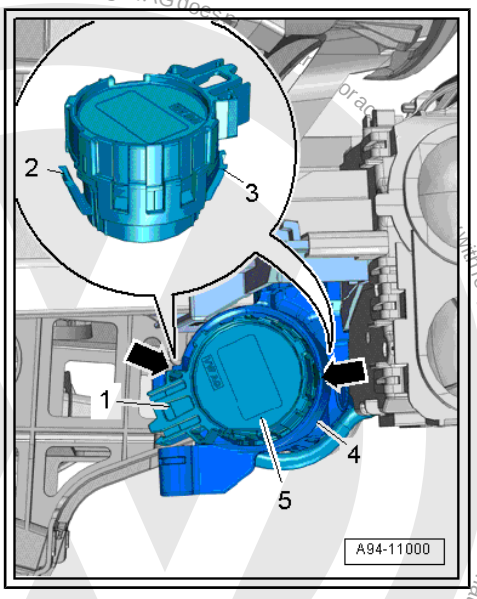
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– Pull ignition/starter switch - D- -5- out of steering lock housing while ensuring that jeweller screwdriver or wire hooks remain inserted.

Installing

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

– Insert ignition/starter switch - D- into steering lock housing until it can be heard to engage.



8.5 Removing and installing steering column switch module

Removing

– Align front wheels to straight-ahead position – steering wheel in zero position.

– Move steering wheel to rearmost and lowest position. Use the full range of the steering column adjustment for this purpose.

– Remove steering wheel ⇒ Running gear, axles, steering; Rep. gr. 48 ; Steering wheel; Removing and installing steering wheel .

– Remove lower steering column trim ⇒ General body repairs, interior; Rep. gr. 68 ; Compartments and covers; Removing and installing lower steering column trim .

WARNING

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

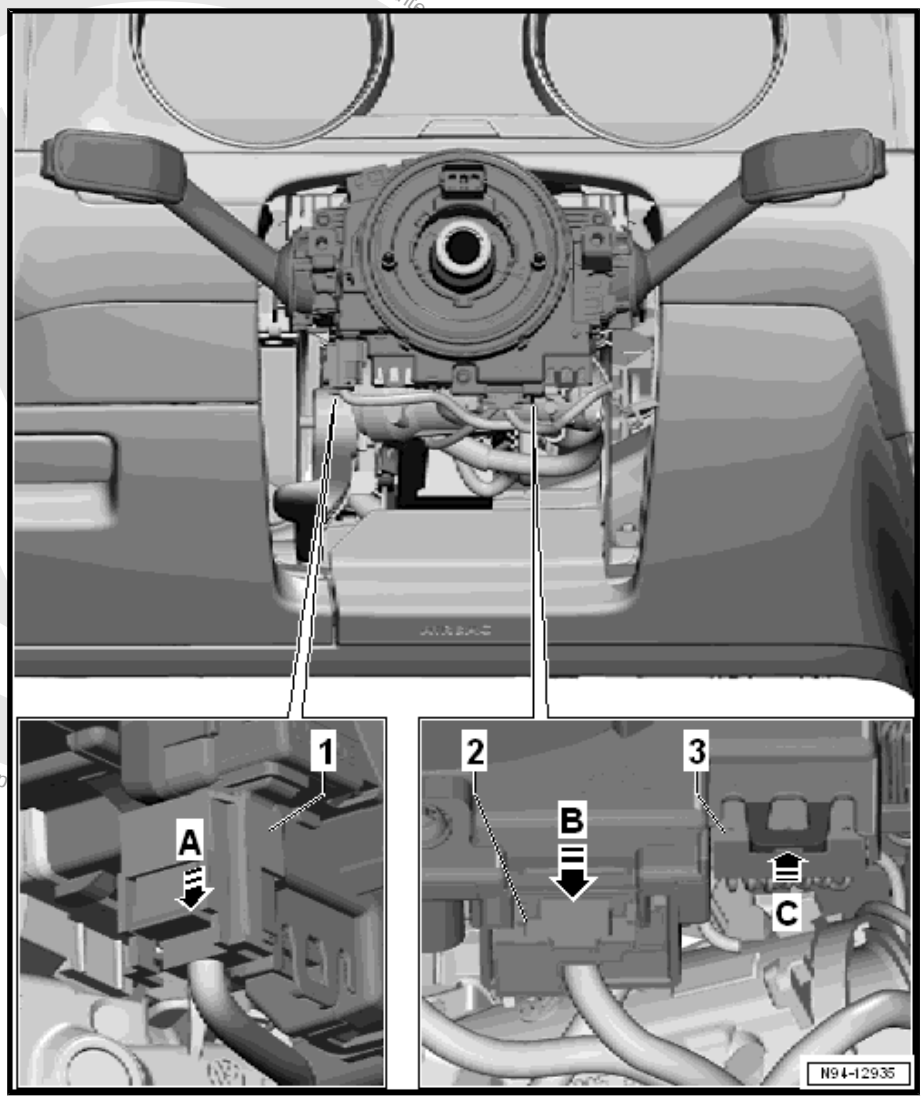
- ***Before disconnecting the electrical connector, the mechanic must electrostatically discharge himself or herself by briefly grasping hold of door striker plate or similar.***

Note

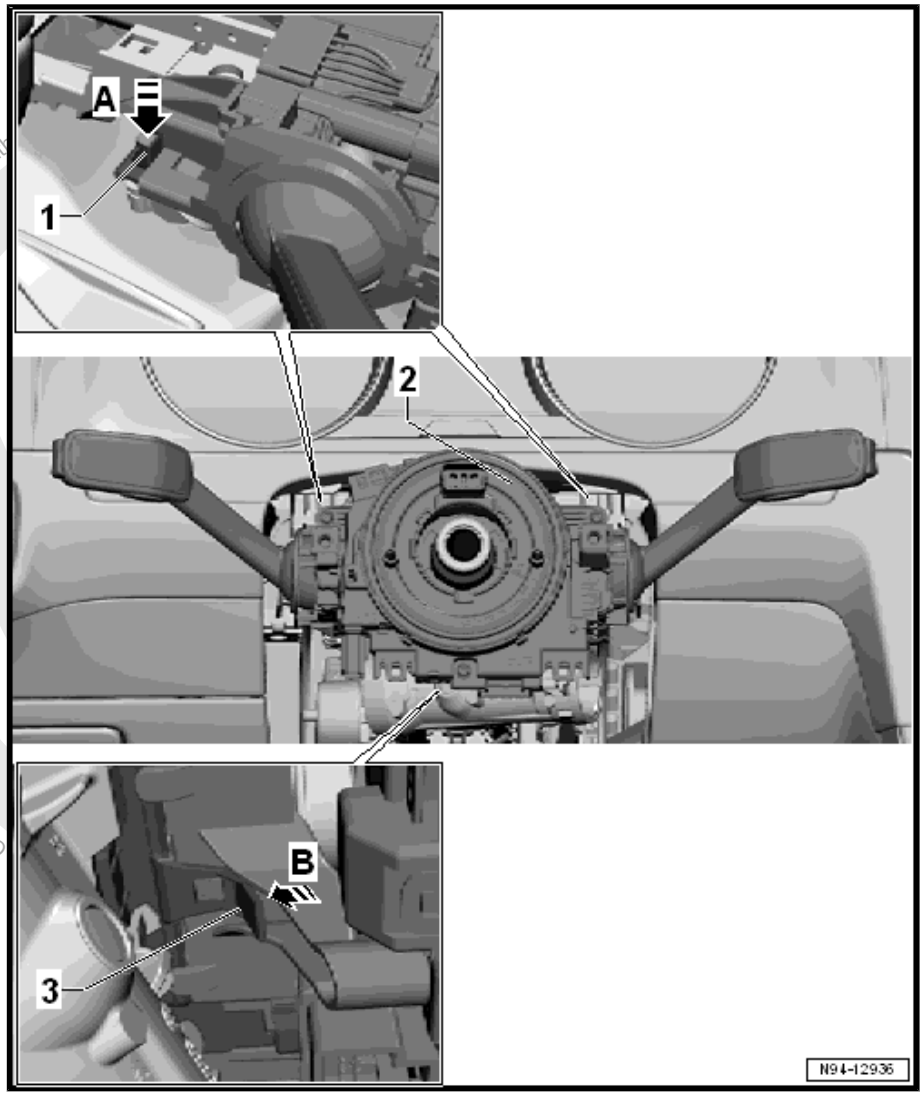
The number of connectors on the steering column electronics control unit - J527- may vary depending on the vehicle equipment.

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– Pull out connector lock in direction of arrow -A- and press it down.
– Disconnect electrical connector -1-.
– Pull out connector lock in direction of arrow -B- and press it down.
– Disconnect electrical connector -2-.
– Press connector lock in direction of arrow -C- and disconnect electrical connector -3-.



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– Press release on both sides -1- in direction of arrow -A-.
– Pull off steering column switch module -2- slightly.
– Press retaining tab -3- in direction of arrow -B-.
– Pull off steering column switch module -2-.

Installing

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

– Ensure that switch module of steering column is engaged correctly.
– If a new steering column electronics control unit - J527- is installed, do not remove transport protection until steering wheel is mounted.

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

Special tools and workshop equipment required

- Torque screwdriver - V.A.G 1624-



Note

- *Airbag coil connector and return ring with slip ring - J527- is integrated in steering column electronics control unit - F138- .*
- *If the control unit is renewed, perform the adaptation routines using ⇒ Vehicle diagnostic tester.*

Removing

– Align front wheels to straight-ahead position – steering wheel in zero position.

– Move steering wheel to rearmost and lowest position. Use the full range of the steering column adjustment for this purpose.

– Remove steering wheel ⇒ Running gear, axles, steering; Rep. gr. 48 ; Steering wheel; Removing and installing steering wheel .

– Remove lower steering column trim ⇒ General body repairs, interior; Rep. gr. 68 ; Compartments and covers; Removing and installing lower steering column trim .

WARNING

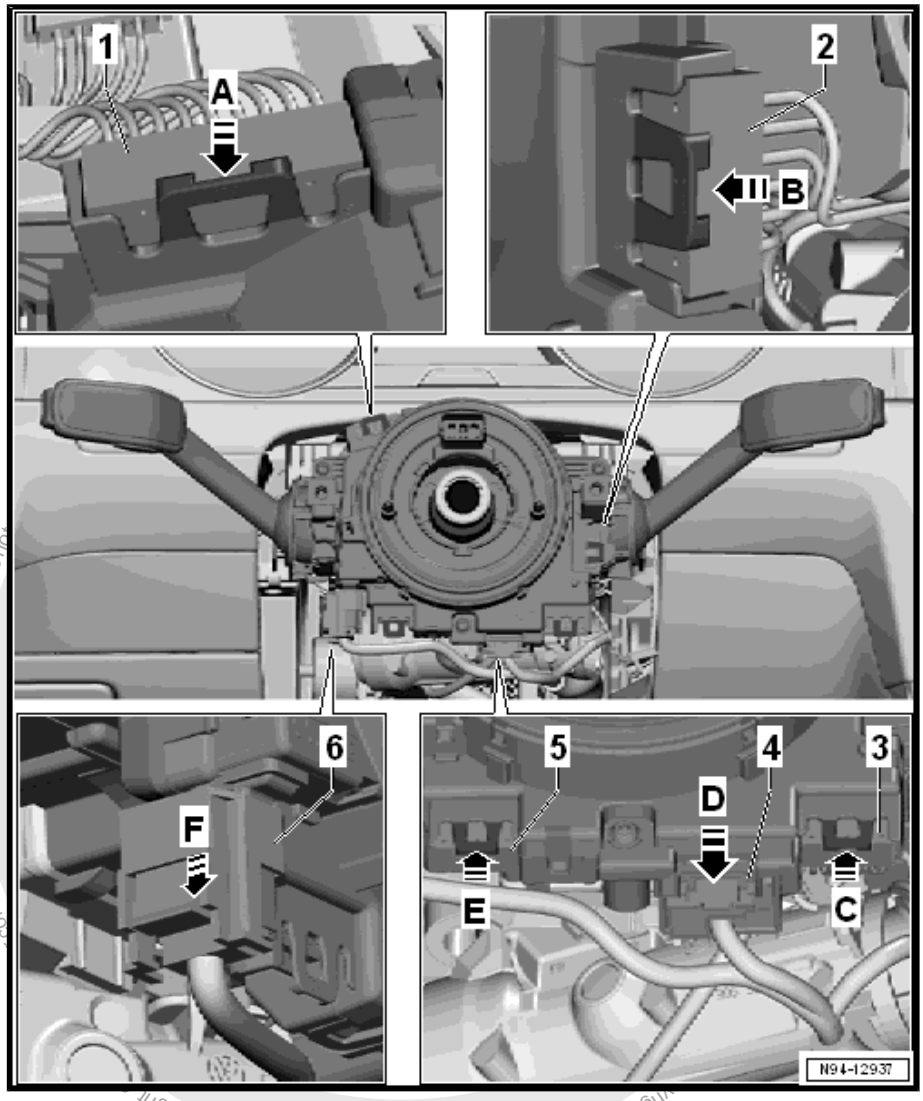
Risk of damage to the electronic components due to electrostatic discharge.

- ***Before disconnecting the electrical connector, the mechanic must electrostatically discharge himself or herself by briefly grasping hold of door striker plate or similar.***

Note

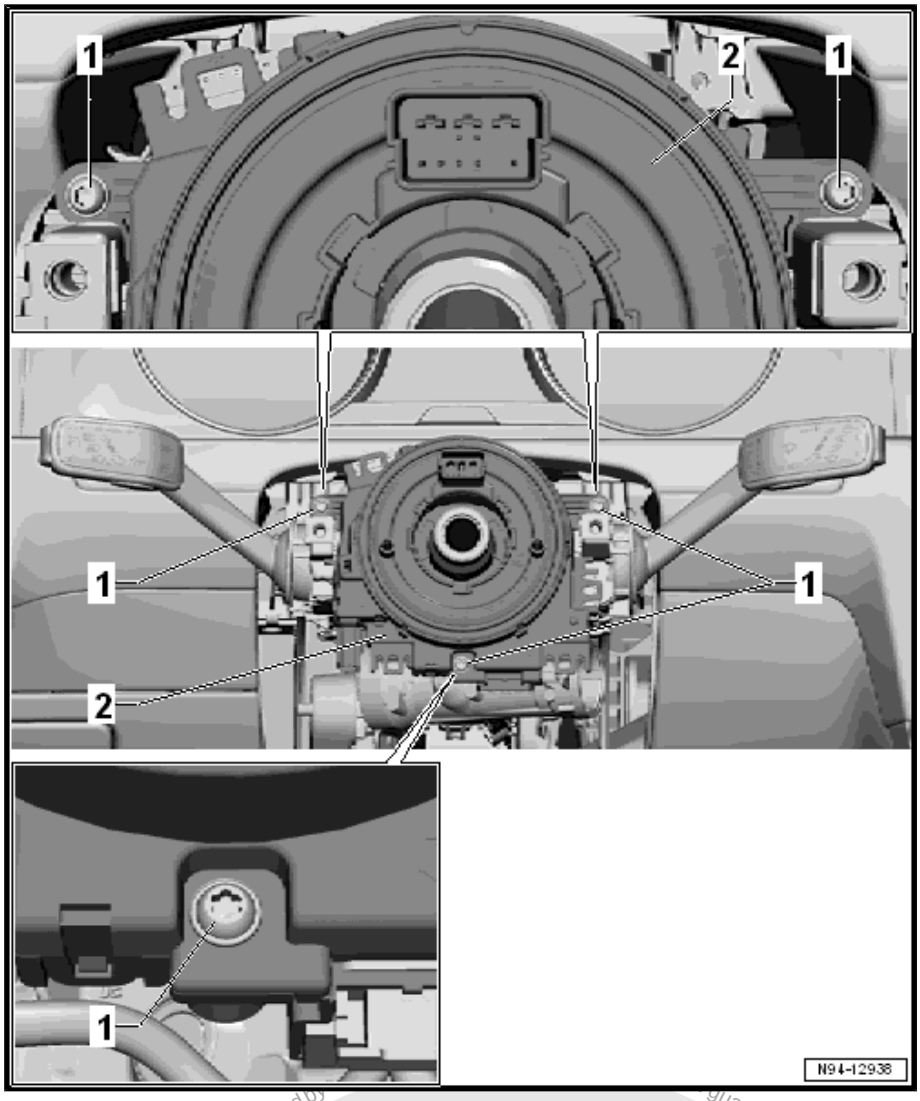
The number of connectors on the steering column electronics control unit - J527- may vary depending on the vehicle equipment.

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– Press connector lock in direction of arrow -A- and disconnect electrical connector -1-.
– Press connector lock in direction of arrow -B- and disconnect electrical connector -2-.
– Press connector lock in direction of arrow -C- and disconnect electrical connector -3-.
– Pull out connector lock in direction of arrow -D- and press it down.
– Disconnect electrical connector -4-.
– Press connector lock in direction of arrow -E- and disconnect electrical connector -5-.
– Pull out connector lock in direction of arrow -F- and press it down.
– Disconnect electrical connector -6-.



– Unscrew bolts -1-.
– Remove steering column electronics control unit - J527- -2- from steering column combination switch - E595- .

Installing

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

– If a new steering column electronics control unit - J527- is installed, do not remove transport protection until steering wheel is mounted.

Specified torques

◆ ⇒ “8.1 Assembly overview - steering column switch module”, page 173

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8.7 Removing and installing turn signal switch - E2-

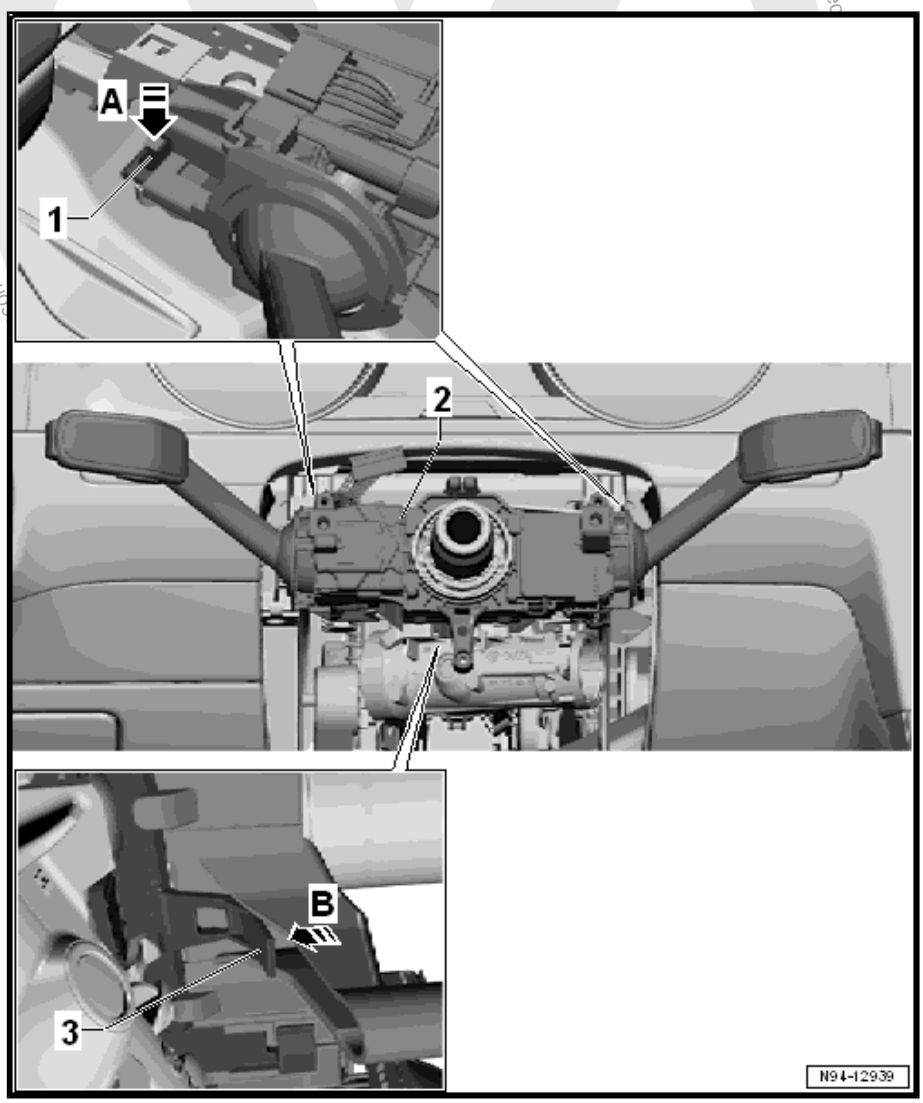
Note

- *The turn signal switch - E2- , cruise control system switch - E45- and intermittent wiper switch - E22- are combined to form the steering column combination switch - E595- .*
- *These switches cannot be separated.*
- *If one of the switches is defective, the steering column combination switch - E595- must be renewed as a complete unit.*

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Removing

– Remove steering column electronics control unit - J527- ⇒ page 181 .



– Press release on both sides -1- in -direction of arrow A-.
– Pull off steering column combination switch - E595- -2- slightly.
– Press retaining tab -3- in direction of -arrow B-.
– Pull off steering column combination switch - E595- -2-.

Installing

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

– Make sure that steering column combination switch - E595- is engaged correctly.

8.8 Removing and installing intermittent wiper switch - E22-

Note

- *The turn signal switch - E2- , cruise control system switch - E45- and intermittent wiper switch - E22- are combined to form the steering column combination switch - E595- .*
- *These switches cannot be separated.*
- *If one of the switches is defective, the steering column combination switch - E595- must be renewed as a complete unit.*

– Removing and installing turn signal switch - E2- ⇒ page 185 .

8.9 Removing and installing immobiliser reader coil - D2-

⇒ “8.9.1 Removing and installing immobiliser reader coil, vehicles with mechanical ignition lock”, page 186

⇒ “8.9.2 Removing and installing immobiliser reader coil, vehicles with electronic ignition lock”, page 186

8.9.1 Removing and installing immobiliser reader coil, vehicles with mechanical ignition lock

Note

The immobiliser reader coil - D2- is integrated in the lock cylinder and cannot be renewed individually.

– Removing and installing lock cylinder ⇒ page 175 .

8.9.2 Removing and installing immobiliser reader coil, vehicles with electronic ignition lock

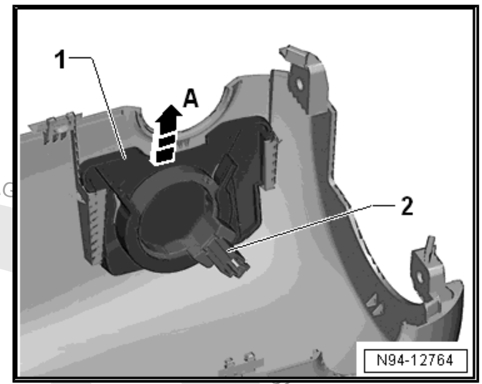
Removing

– Move steering wheel to lowest possible position, taking advantage of full adjustment range of steering column adjustment.

– Remove lower steering column trim ⇒ General body repairs, interior; Rep. gr. 68 ; Compartments and covers; Removing and installing lower steering column trim .

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– Push reader coil -2- in direction of -arrow A- out of mounting -1-.



Installing

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

– Press reader coil into mounting until it engages audibly.

8.10 Removing and installing base for steering column combination switch

⇒ “8.10.1 Removing and installing base for steering column combination switch, vehicles with mechanical ignition lock”, page 187

⇒ “8.10.2 Removing and installing base for steering column combination switch, vehicles with electronic ignition lock ignition lock”, page 187

8.10.1 Removing and installing base for steering column combination switch, vehicles with mechanical ignition lock

Note

The base for steering column combination switch is removed and installed together with the steering lock housing.

– Removing and installing steering lock housing ⇒ page 188 .

8.10.2 Removing and installing base for steering column combination switch, vehicles with electronic ignition lock ignition lock

Special tools and workshop equipment required

♦ Torque wrench - V.A.G 1410-



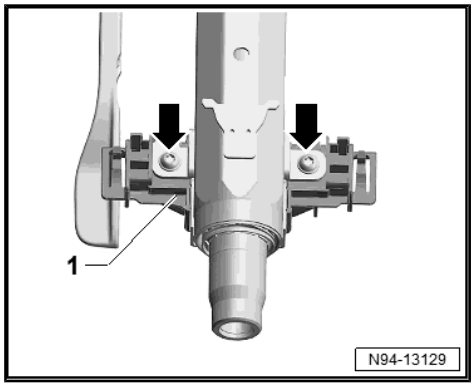
Removing

– Remove steering column switch module ⇒ page 179 .

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– Unscrew bolts -arrows-.

– Remove base for steering column combination switch -1-.



Installing

Install in reverse order of removal.

Specified torques

♦ ⇒ “8.1.2 Assembly overview - steering column switch module, with electronic ignition lock”, page 175

8.11 Removing and installing steering lock housing

Special tools and workshop equipment required

♦ Socket - T10424-

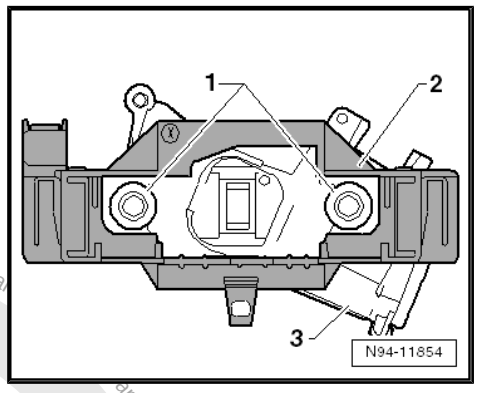
Removing

– Remove steering column switch module ⇒ page 179 .

– Release and disconnect connector on immobiliser reader coil - D2- .

Note

If it is not possible to remove the shear bolts -1- with the socket - T10424- , the bolt will need to be drilled out using an angle drill and a 8.5 mm drill bit.



– Using socket - T10424- , unscrew shear bolts -1- .

– Remove steering lock housing -3- together with base for steering column switch -2-.

– Remove steering lock housing from base for steering column combination switch.

In order to renew the steering lock housing, the ignition/starter switch and the lock cylinder must be removed.

– Remove ignition/starter switch ⇒ page 178 .

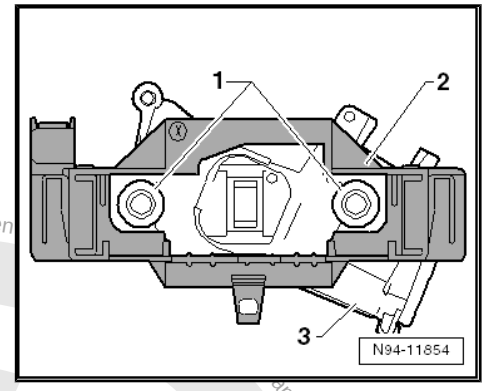
– Remove lock cylinder ⇒ page 175 .

Installing

• Ignition/starter switch installed ⇒ page 178

• Lock cylinder installed ⇒ page 175

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– Insert steering lock housing -3- into base for steering column combination switch -2-.
– Push steering column combination switch - E595- straight into steering column switch base until it securely engages.
– Push preassembled unit consisting of steering lock housing, base for steering column combination switch and steering column combination switch - E595- as far as it will go onto steering column, and align it with threaded holes.
– Secure steering lock housing -3- to steering column using new shear-head bolts -1-.
– Tighten new shear-head bolts -1- until bolt heads shear off.

Further installation is performed in reverse sequence.

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9 Parking aid

⇒ “9.1 Assembly overview – parking aid”, page 190

⇒ “9.2 Removing and installing parking aid control unit J446 ”, page 193

⇒ “9.3 Removing and installing front parking aid warning buzzer H22 ”, page 195

⇒ “9.4 Removing and installing rear parking aid warning buzzer H15 ”, page 196

⇒ “9.5 Removing and installing front parking aid senders”, page 196

⇒ “9.6 Removing and installing rear parking aid senders”, page 197

9.1 Assembly overview – parking aid

⇒ “9.1.1 Assembly overview - front parking aid, LHD vehicles”, page 190

⇒ “9.1.2 Assembly overview - front parking aid, RHD vehicles”, page 192

⇒ “9.1.3 Assembly overview - rear parking aid system”, page 193

9.1.1 Assembly overview - front parking aid, LHD vehicles

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1 - Parking aid button - E266-

- ❑ Removing and installing ⇒ page 244

2 - Front parking aid warning buzzer - H22-

- ❑ Only for 8-channel parking aid
- ❑ Removing and installing ⇒ page 195

3 - Bracket

- ❑ For parking aid control unit - J446- .
- ❑ Removing and installing ⇒ page 307

4 - Parking aid control unit - J446-

- ❑ Removing and installing ⇒ page 193

5 - Front left parking aid sender - G255-

- ❑ Removing and installing ⇒ page 196

6 - Front inner left parking aid sender - G254-

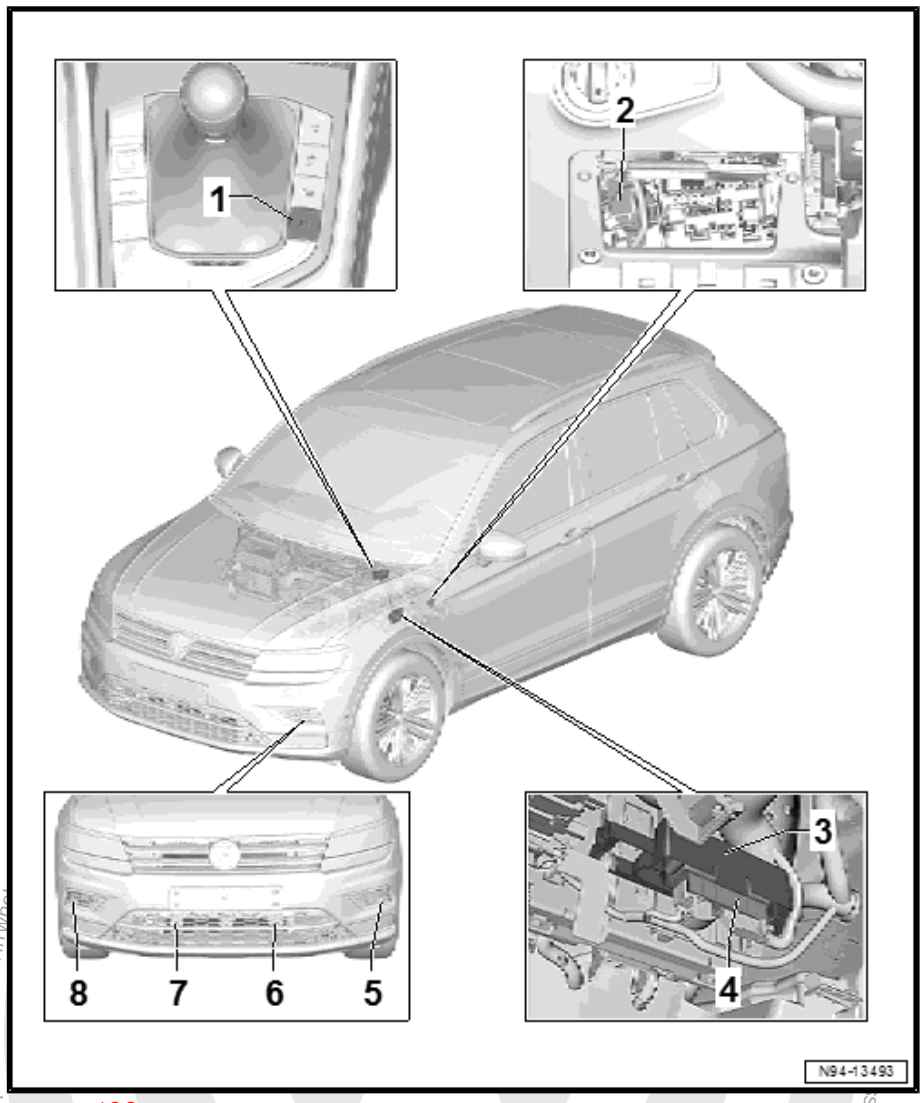
- ❑ Removing and installing ⇒ page 196

7 - Front inner right parking aid sender - G253-

- ❑ Removing and installing ⇒ page 196

8 - Front right parking aid sender - G252-

- ❑ Removing and installing ⇒ page 196



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9.1.2 Assembly overview - front parking aid, RHD vehicles

1 - Parking aid button - E266-

- ❑ Removing and installing ⇒ page 244

2 - Front parking aid warning buzzer - H22-

- ❑ Only for 8-channel parking aid
- ❑ Removing and installing ⇒ page 195

3 - Front left parking aid sender - G255-

- ❑ Removing and installing ⇒ page 196

4 - Front inner left parking aid sender - G254-

- ❑ Removing and installing ⇒ page 196

5 - Front inner right parking aid sender - G253-

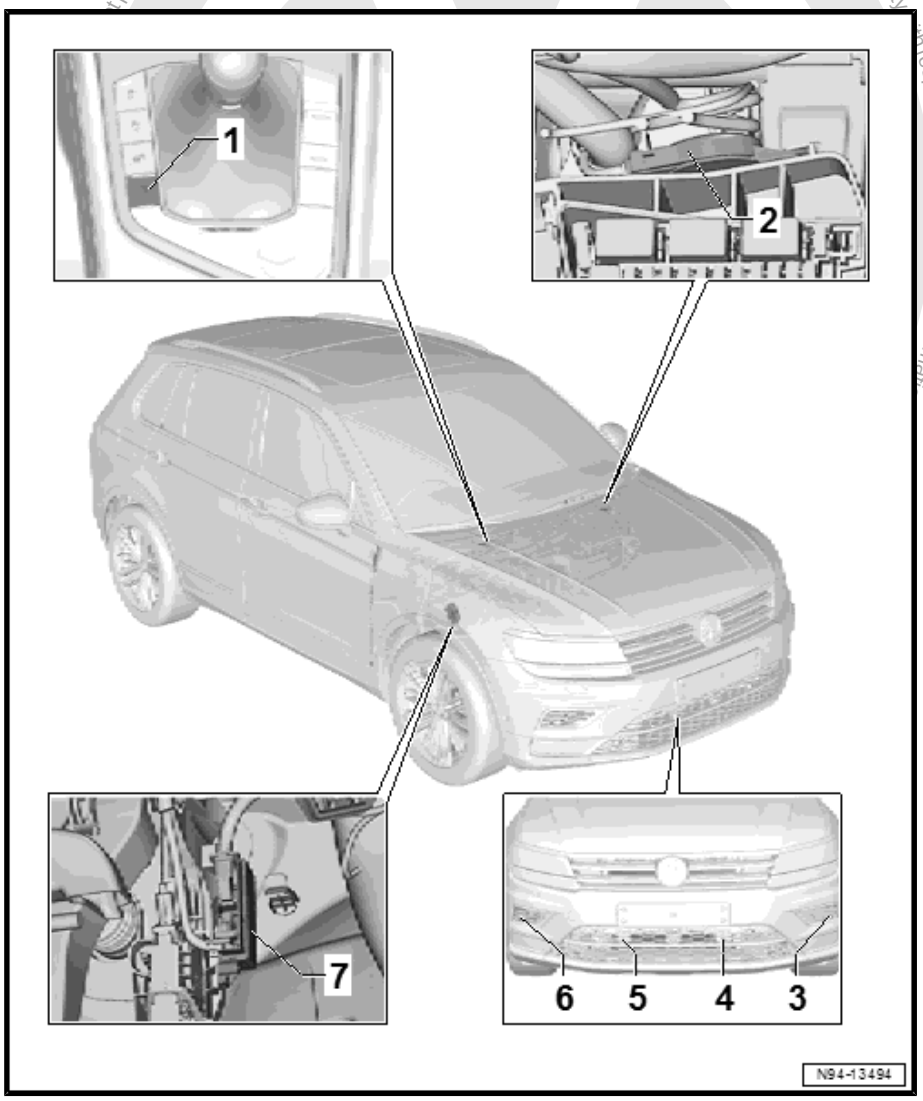
- ❑ Removing and installing ⇒ page 196

6 - Front right parking aid sender - G252-

- ❑ Removing and installing ⇒ page 196

7 - Parking aid control unit - J446-

- ❑ Removing and installing ⇒ page 194



9.1.3 Assembly overview - rear parking aid system

1 - Rear parking aid warning buzzer - H15-

- ❑ Removing and installing ⇒ page 196

2 - Spreader rivet

- ❑ Qty. 2

3 - Rear right parking aid sender - G206-

- ❑ Removing and installing ⇒ page 197

4 - Rear centre left parking aid sender - G205-

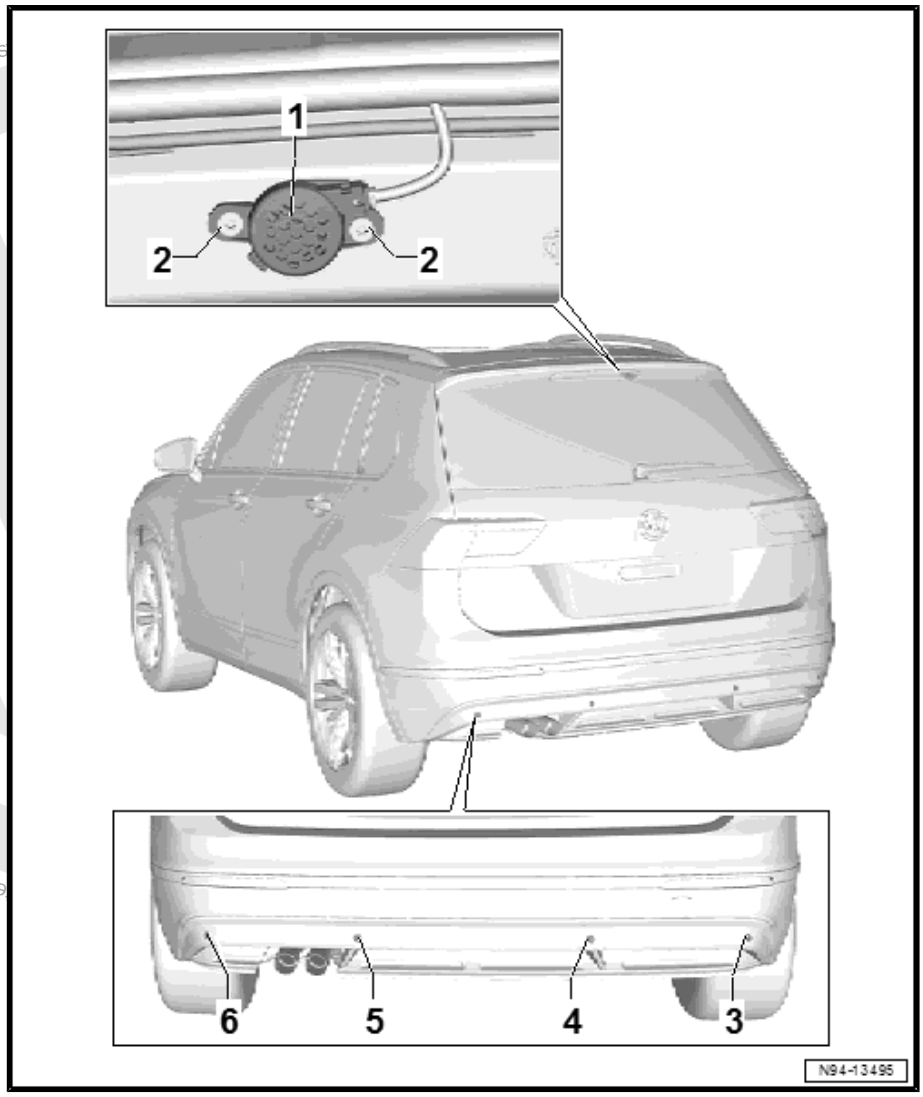
- ❑ Removing and installing ⇒ page 197

5 - Rear centre parking aid sender - G204-

- ❑ Removing and installing ⇒ page 197

6 - Rear left parking aid sender - G203-

- ❑ Removing and installing ⇒ page 197



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9.2 Removing and installing parking aid control unit - J446-

⇒ "9.2.1 Removing and installing parking aid control unit J446 , left-hand drive vehicle", page 193

⇒ "9.2.2 Removing and installing parking aid control unit J446 , RHD vehicle", page 194

9.2.1 Removing and installing parking aid control unit - J446- , left-hand drive vehicle

Note

If the control unit is renewed, perform the adaptation routines using ⇒ Vehicle diagnostic tester.

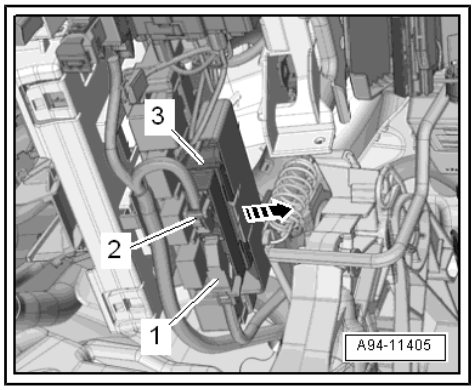
Removing

– Remove footwell cover on driver side ⇒ General body repairs, interior; Rep. gr. 68 ; Compartments/covers .

– Release and disconnect electrical connectors -1- and -2-.

– Release retaining tab in direction of -arrow-.

– Remove parking aid control unit - J446- -3- downwards from bracket.



Installing

Install in reverse order of removal.

9.2.2 Removing and installing parking aid control unit - J446- , RHD vehicle

Note

If the control unit is renewed, perform the adaptation routines using ⇒ Vehicle diagnostic tester.

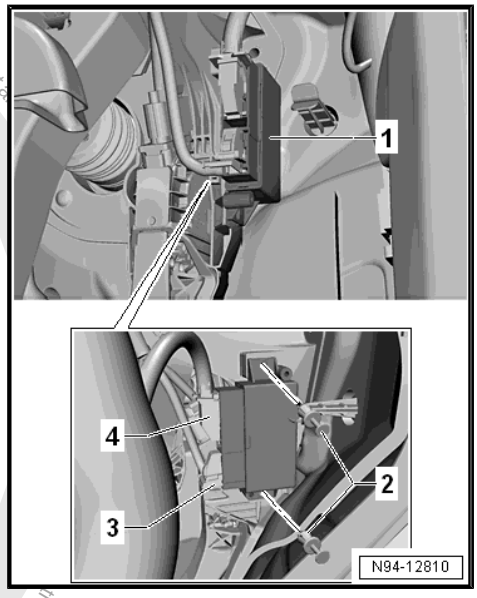
Removing

– Remove footwell cover on driver side ⇒ General body repairs, interior; Rep. gr. 68 ; Compartments/covers .

– Release and pull out spreader rivets -2-.

– Remove parking aid control unit - J446- -1-.

– Release and disconnect connectors -3- and -4-.



Installing

Install in reverse order of removal.

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9.3 Removing and installing front parking aid warning buzzer - H22-

⇒ “9.3.1 Removing and installing front parking aid warning buzzer H22 , LHD vehicles”, page 195

⇒ “9.3.2 Removing and installing front parking aid warning buzzer H22 , RHD vehicles”, page 195

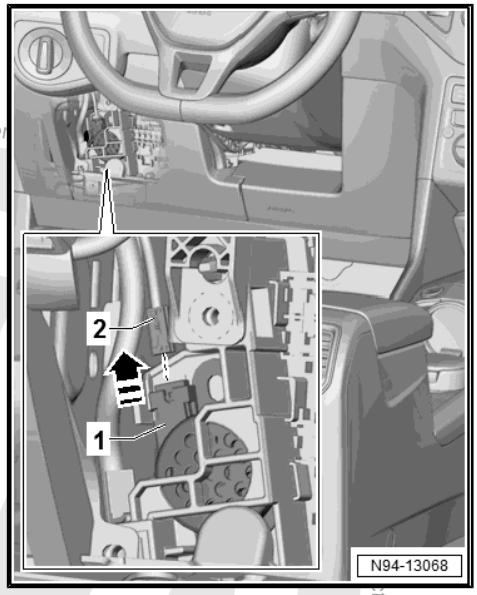
9.3.1 Removing and installing front parking aid warning buzzer - H22- , LHD vehicles

Removing

– Remove storage compartment on driver side ⇒ General body repairs, interior; Rep. gr. 68 ; Compartments/covers; Overview of fitting locations - compartments/covers .

– Use a suitable screwdriver to push front parking aid warning buzzer - H22- -1- in -direction of arrow- out of mounting.

– Release and disconnect electrical connector -2-.



Installing

Install in reverse order of removal.

9.3.2 Removing and installing front parking aid warning buzzer - H22- , RHD vehicles

Removing

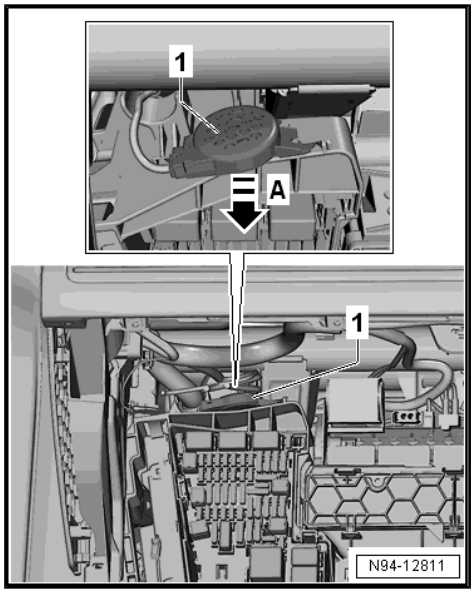
– Remove glove compartment ⇒ General body repairs, interior; Rep. gr. 68 ; Compartments/covers; Removing and installing glove compartment .

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– Using a narrow screwdriver, push front parking aid warning buzzer - H22- -1- in direction of -arrow A- out of mounting.
– Remove front parking aid warning buzzer - H22- -1-.
– Release and separate electrical connector.

Installing

Install in reverse order of removal.



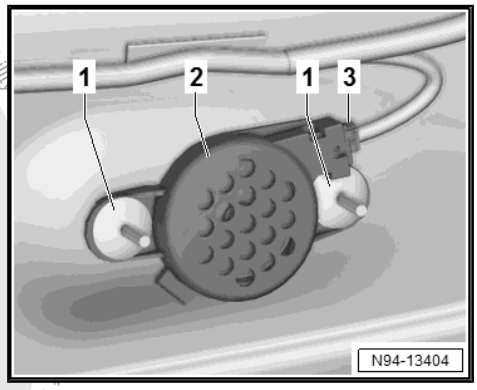
9.4 Removing and installing rear parking aid warning buzzer - H15-

Removing

– Lower moulded headliner at rear ⇒ General body repairs, interior; Rep. gr. 70 ; Roof trim panels; Removing and installing moulded headliner .
– Remove spreader rivets -1-.
– Remove rear parking aid warning buzzer - H15- -2-.
– Release and disconnect connector -3-.

Installing

Install in reverse order of removal.



9.5 Removing and installing front parking aid senders

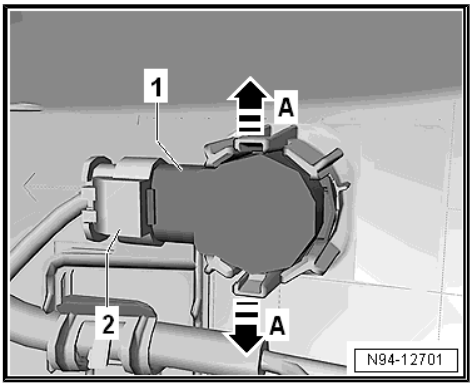
Removing

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

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– Press both locking lugs in direction of -arrow A- while, at the same time, pressing in sender -1- from the outside in.

– Release and disconnect electrical connector -2-.



Installing

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

Note

- *When inserting the sender in the sender retainer, make sure that the isolation ring (black silicone ring) is seated correctly on the sender head.*
- *Both locking lugs of sender retainer must audibly engage when installing the sender.*

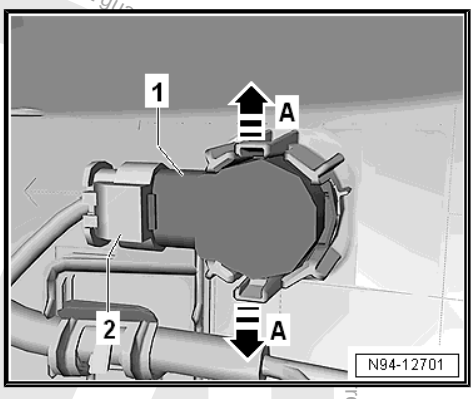
9.6 Removing and installing rear parking aid senders

Removing

– Remove rear bumper cover ⇒ General body repairs, exterior; Rep. gr. 63 ; Rear bumper; Removing and installing bumper cover .

– Press both locking lugs in direction of -arrow A- while, at the same time, pressing in sender -1- from the outside in.

– Release and disconnect electrical connector -2-.



Installing

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

Note

- *When inserting the sender in the sender retainer, make sure that the isolation ring (black silicone ring) is seated correctly on the sender head.*
- *Both locking lugs of sender retainer must audibly engage when installing the sender.*

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10 Park assist steering

⇒ “10.1 Assembly overview - park assist steering”, page 198

⇒ “10.2 Removing and installing park assist steering control unit J791 ”, page 199

⇒ “10.3 Removing and installing front senders”, page 199

⇒ “10.4 Removing and installing rear senders”, page 200

10.1 Assembly overview - park assist steering

⇒ “10.1.1 Assembly overview - park assist steering, LHD vehicles”, page 198

⇒ “10.1.2 Assembly overview - park assist steering, RHD vehicles”, page 199

10.1.1 Assembly overview - park assist steering, LHD vehicles

1 - Park assist steering button - E581-

- ❑ Removing and installing ⇒ page 244

2 - Rear park assist steering senders

- ❑ Rear left park assist steering sender - G716-
- ❑ Rear right park assist steering sender - G717-
- ❑ Removing and installing ⇒ page 200

3 - Bracket

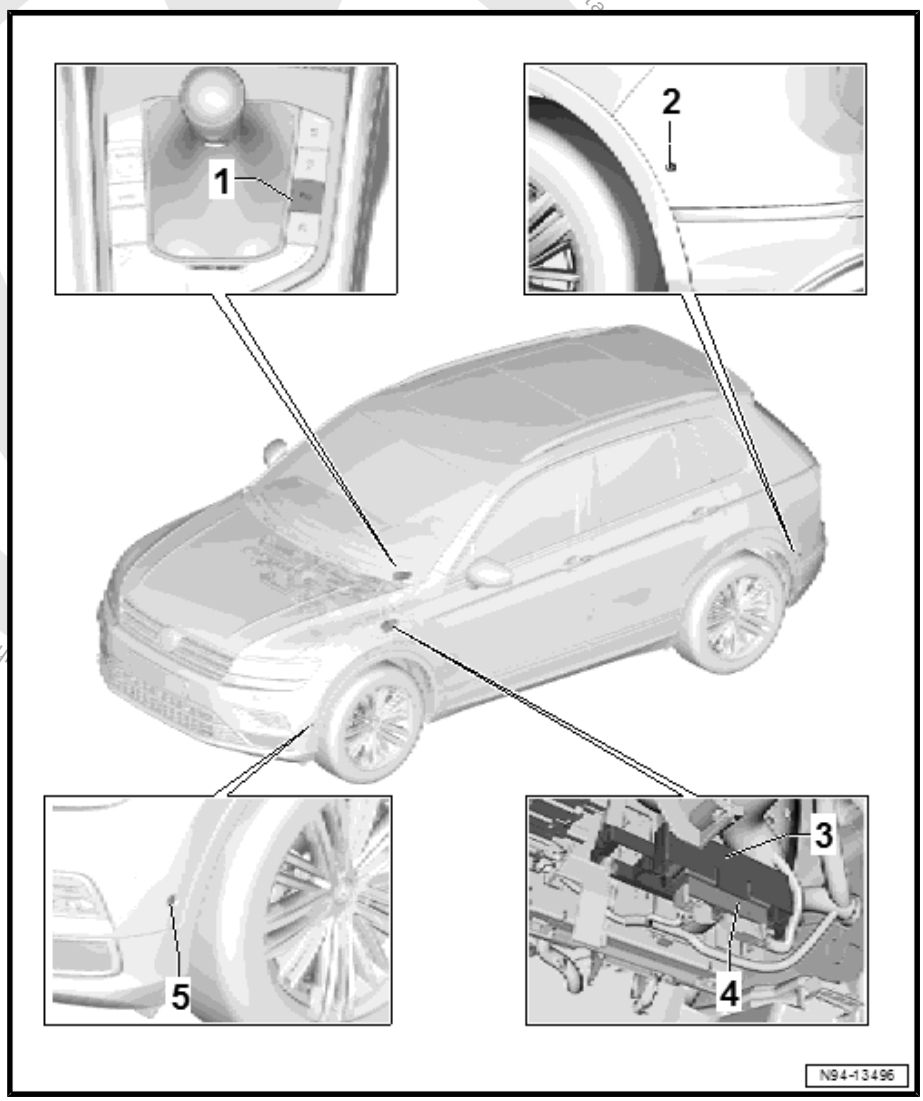
- ❑ For park assist steering control unit - J791-
- ❑ Removing and installing ⇒ page 307

4 - Park assist steering control unit - J791-

- ❑ Removing and installing ⇒ page 199

5 - Front park assist steering senders

- ❑ Front left sender for park assist steering on left side of vehicle - G568-
- ❑ Front right sender for park assist steering on right side of vehicle - G569-
- ❑ Removing and installing ⇒ page 199



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10.1.2 Assembly overview - park assist steering, RHD vehicles

1 - Rear park assist steering senders

- ❑ Rear left park assist steering sender - G716-
- ❑ Rear right park assist steering sender - G717-
- ❑ Removing and installing ⇒ page 200

2 - Park assist steering button - E581-

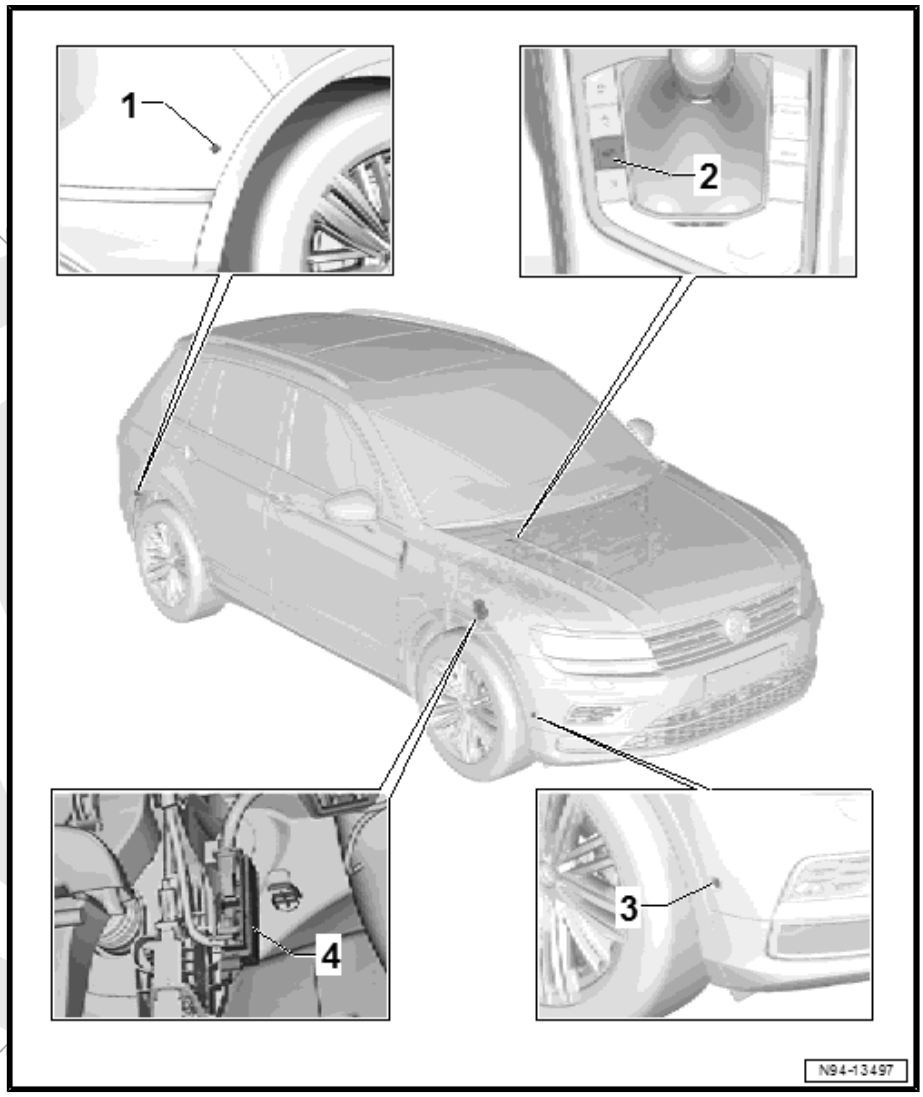
- ❑ Removing and installing ⇒ page 244

3 - Front park assist steering senders

- ❑ Front left sender for park assist steering on left side of vehicle - G568-
- ❑ Front right sender for park assist steering on right side of vehicle - G569-
- ❑ Removing and installing ⇒ page 199

4 - Park assist steering control unit - J791-

- ❑ Removing and installing ⇒ page 199



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10.2 Removing and installing park assist steering control unit - J791-

Note

The park assist steering control unit - J791- is removed and installed in the same way as the parking aid control unit - J446- .

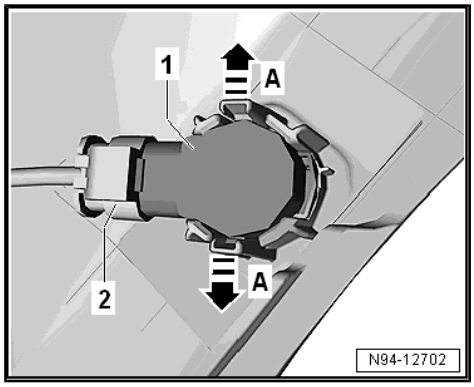
– Removing and installing parking aid control unit - J446- ⇒ page 193 .

10.3 Removing and installing front senders

Removing

– Detach front section of wheel housing liner; do not remove wheel housing liner completely ⇒ General body repairs, exterior; Rep. gr. 66 ; Wheel housing liner; Removing and installing front wheel housing liner .

– Press both locking lugs in direction of -arrow A- while pressing in sender -1- from the outside in.
– Release and disconnect electrical connector -2-.



Installing

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

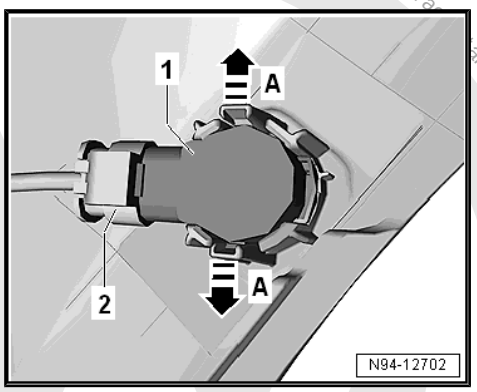
Note

- *When inserting the sender in the sender retainer, make sure that the isolation ring (black silicone ring) is seated correctly on the sender head.*
- *Both locking lugs of sender retainer must audibly engage when installing the sender.*

10.4 Removing and installing rear senders

Removing

– Remove rear bumper cover ⇒ General body repairs, exterior; Rep. gr. 63 ; Rear bumper; Removing and installing bumper cover .
– Press both locking lugs in direction of -arrow A- while, at the same time, pressing in sender -1- from the outside in.
– Release and disconnect electrical connector -2-.



Installing

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

Note

- *When inserting the sender in the sender retainer, make sure that the isolation ring (black silicone ring) is seated correctly on the sender head.*
- *Both locking lugs of sender retainer must audibly engage when installing the sender.*

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11 Automatic headlight range control

⇒ “11.1 Assembly overview - automatic headlight range control”, page 201

⇒ “11.2 Removing and installing cornering light and headlight range control unit J745 ”, page 203

11.1 Assembly overview - automatic headlight range control

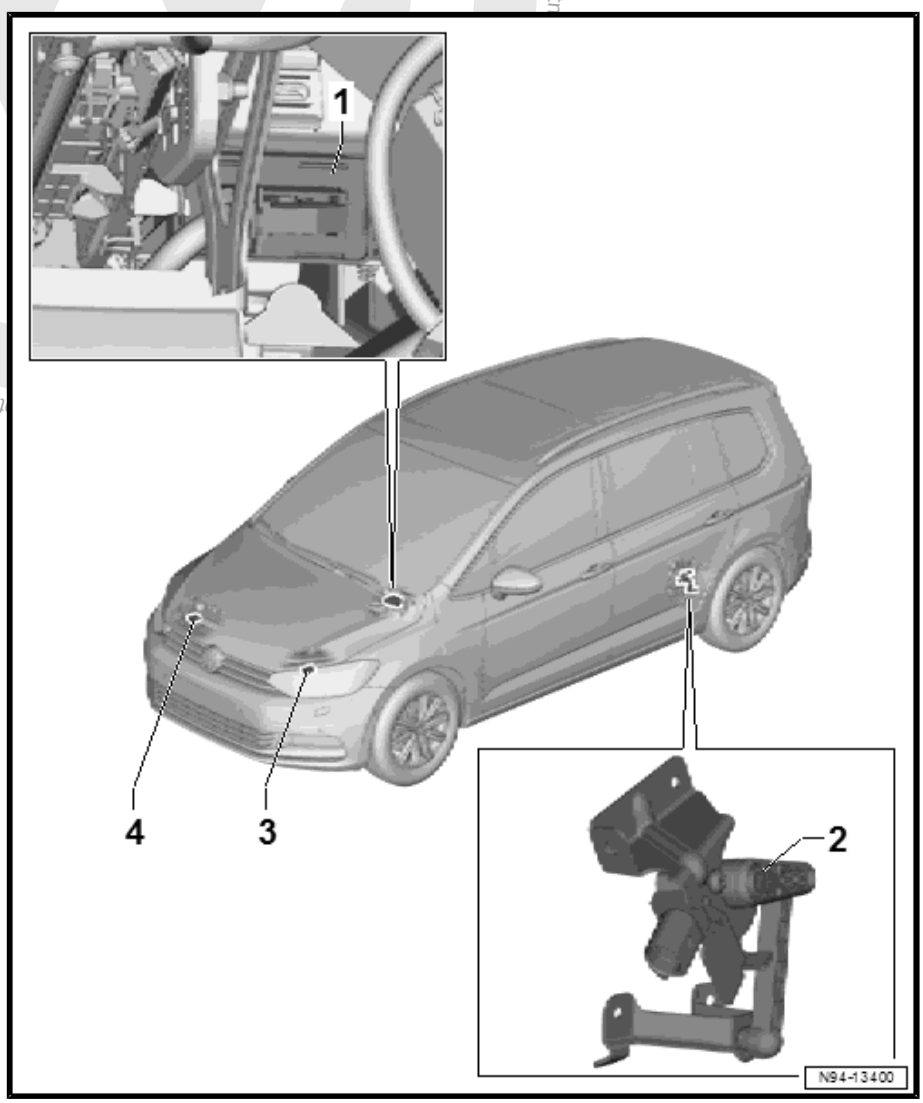
⇒ “11.1.1 Assembly overview - automatic headlight range control, LHD vehicles”, page 201

⇒ “11.1.2 Assembly overview - automatic headlight range control, RHD vehicles”, page 202

11.1.1 Assembly overview - automatic headlight range control, LHD vehicles

Note

The vehicle shown in the illustration may differ from the actual vehicle.



1 - Cornering light and headlight range control unit - J745-

- ❑ On mounting bracket for pedal cluster
- ❑ Removing and installing, control unit without extra bracket ⇒ page 203
- ❑ Removing and installing, control unit with extra bracket ⇒ page 204

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 119

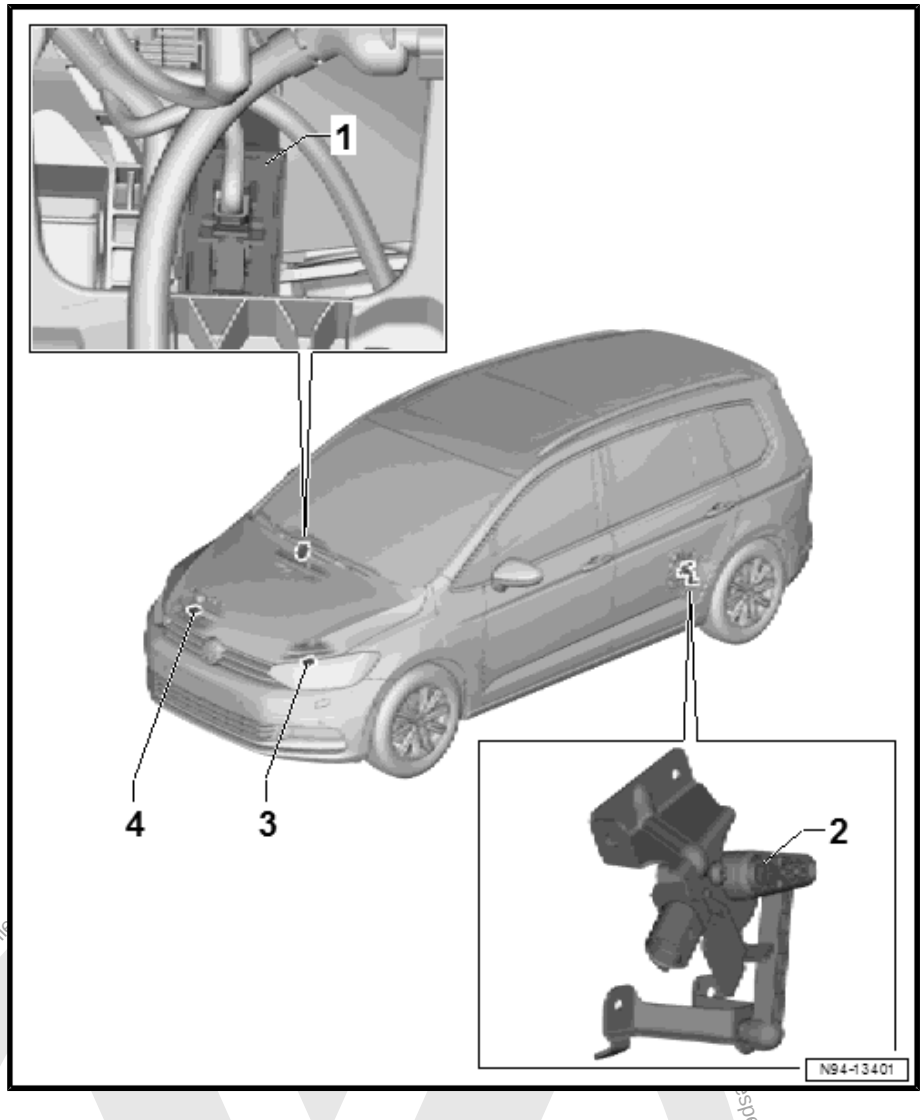
4 - Right headlight range control motor - V49-

- ❑ Removing and installing ⇒ page 119

11.1.2 Assembly overview - automatic headlight range control, RHD vehicles

Note

The vehicle shown in the illustration may differ from the actual vehicle.



1 - Cornering light and headlight range control unit - J745-

- ❑ at top outside on pedal cluster mounting bracket
- ❑ Removing and installing, control unit without extra bracket ⇒ page 205
- ❑ Removing and installing, control unit with extra bracket ⇒ page 206

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 119

4 - Right headlight range control motor - V49-

- ❑ Removing and installing ⇒ page 119

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11.2 Removing and installing cornering light and headlight range control unit - J745-

⇒ “11.2.1 Removing and installing control unit for cornering light and headlight range control J745 , LHD, control unit without additional bracket”, page 203

⇒ “11.2.2 Removing and installing control unit for cornering light and headlight range control J745 , LHD, control unit with additional bracket”, page 204

⇒ “11.2.3 Removing and installing control unit for cornering light and headlight range control J745 , RHD, control unit without additional bracket”, page 205

⇒ “11.2.4 Removing and installing control unit for cornering light and headlight range control J745 , RHD, control unit with additional bracket”, page 206

11.2.1 Removing and installing control unit for cornering light and headlight range control - J745- , LHD, control unit without additional bracket

Note

If the control unit is renewed, perform the adaptation routines using ⇒ Vehicle diagnostic tester.

Removing

– Switch off ignition and all electrical consumers.

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

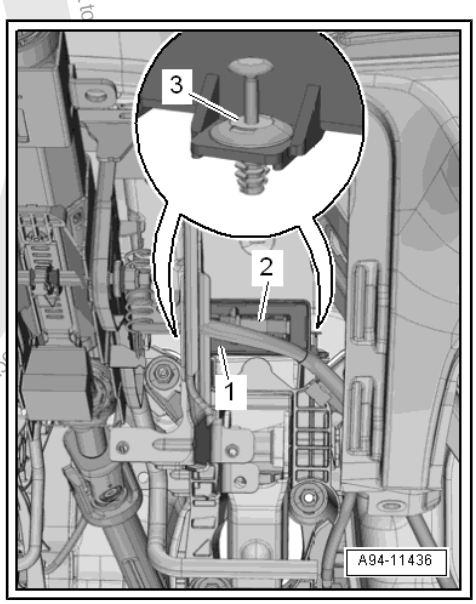
– If fitted, remove knee airbag on driver side ⇒ General body repairs, interior; Rep. gr. 69 ; Knee airbags; Removing and installing knee airbag with igniter .

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

– Release spreader rivets -3-, and pull them out.

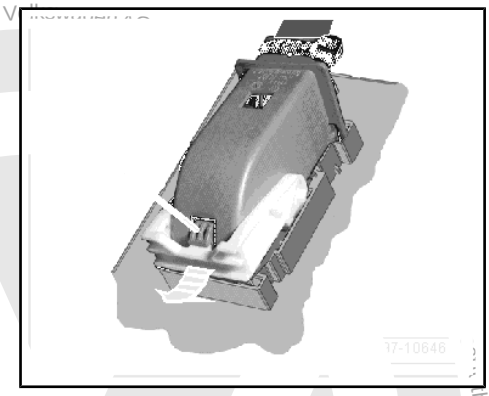
– Remove headlight range control unit -1- towards rear.

– Disconnect electrical connector -2-.



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– To do so, press locking detent -1-, swing retainer in -direction of arrow- and pull off connector.

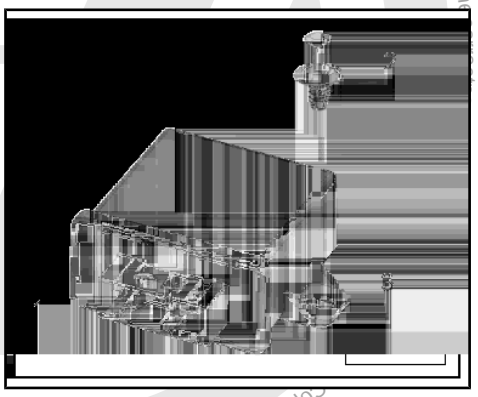


Installing

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

– Push spreader rivets -2- into opening -3- in control unit -1-.

– Engage spreader rivets by turning them 90° -arrow-.



11.2.2 Removing and installing control unit for cornering light and headlight range control - J745- , LHD, control unit with additional bracket

Note

If the control unit is renewed, perform the adaptation routines using ⇒ Vehicle diagnostic tester.

Removing

– Switch off ignition and all electrical consumers.

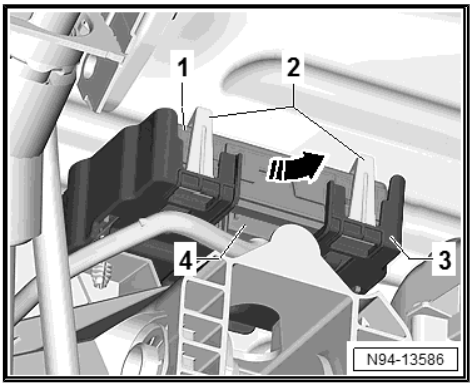
– Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

– If fitted, remove knee airbag on driver side ⇒ General body repairs, interior; Rep. gr. 69 ; Knee airbags; Removing and installing knee airbag with igniter .

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

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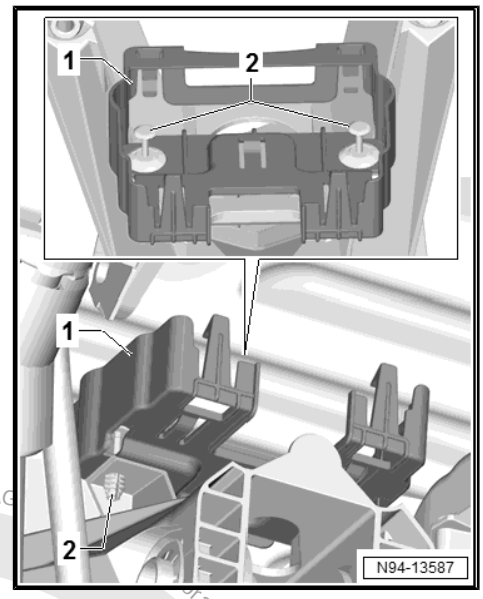
– Release retaining lugs -2- on bracket -3-.
– At the same time, pull control unit for cornering light and headlight range control - J745- -1- in direction of -arrow- out of bracket -3-.
– Release and disconnect connector -4-.



– Remove spreader rivets -2-.
– Remove bracket -1- from pedal cluster mounting bracket.

Installing

Install in reverse order of removal.



11.2.3 Removing and installing control unit for cornering light and headlight range control - J745-, RHD, control unit without additional bracket

Note

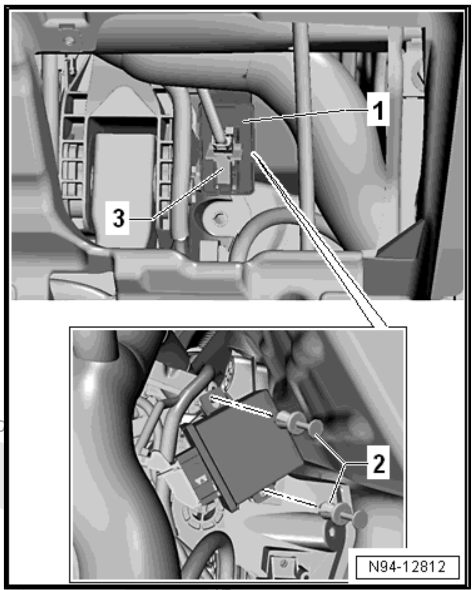
If the control unit is renewed, perform the adaptation routines using ⇒ Vehicle diagnostic tester.

Removing

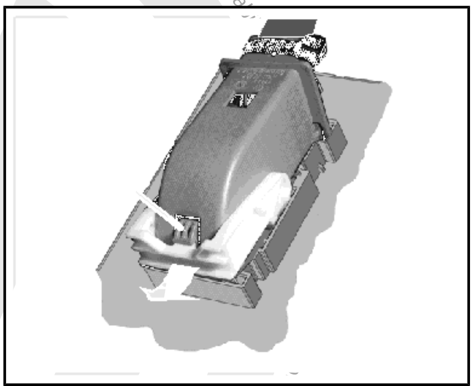
– Switch off ignition and all electrical consumers.
– Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.
– Remove footwell cover on driver side ⇒ General body repairs, interior; Rep. gr. 68 ; Compartments/covers .

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- Release and pull out spreader rivets -2-.
- Remove headlight range control unit -1- downwards.
- Disconnect electrical connector -3-.



- To do so, press locking detent -1-, swing retainer in -direction of arrow- and pull off connector.



Installing

Install in reverse order of removal.

11.2.4 Removing and installing control unit for cornering light and headlight range control - J745- , RHD, control unit with additional bracket

Note

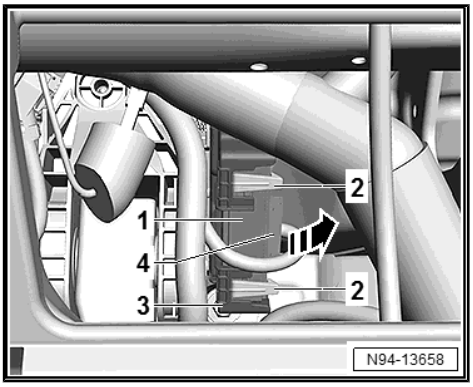
If the control unit is renewed, perform the adaptation routines using ⇒ Vehicle diagnostic tester.

Removing

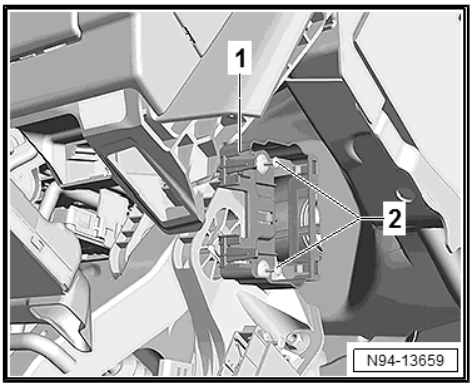
- Switch off ignition and all electrical consumers.
- Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.
- Remove footwell cover on driver side ⇒ General body repairs, interior; Rep. gr. 68 ; Compartments/covers .

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– Release retaining lugs -2- on bracket -3-.
– At the same time, pull control unit for cornering light and headlight range control - J745- -1- in direction of -arrow- out of bracket -3-.
– Release and disconnect connector -4-.



– Remove spreader rivets -2-.
– Remove bracket -1- from pedal cluster mounting bracket.



Installing

Install in reverse order of removal.

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12 Towing bracket

⇒ “12.1 Assembly overview - towing bracket socket”, page 208

⇒ “12.2 Trailer socket U10 ”, page 208

⇒ “12.3 Removing and installing trailer detector control unit J345 ”, page 209

12.1 Assembly overview - towing bracket socket

1 - Trailer socket - U10-

- ❑ Pin assignment ⇒ page 208

2 - Sensors

- ❑ For trailer load indicator

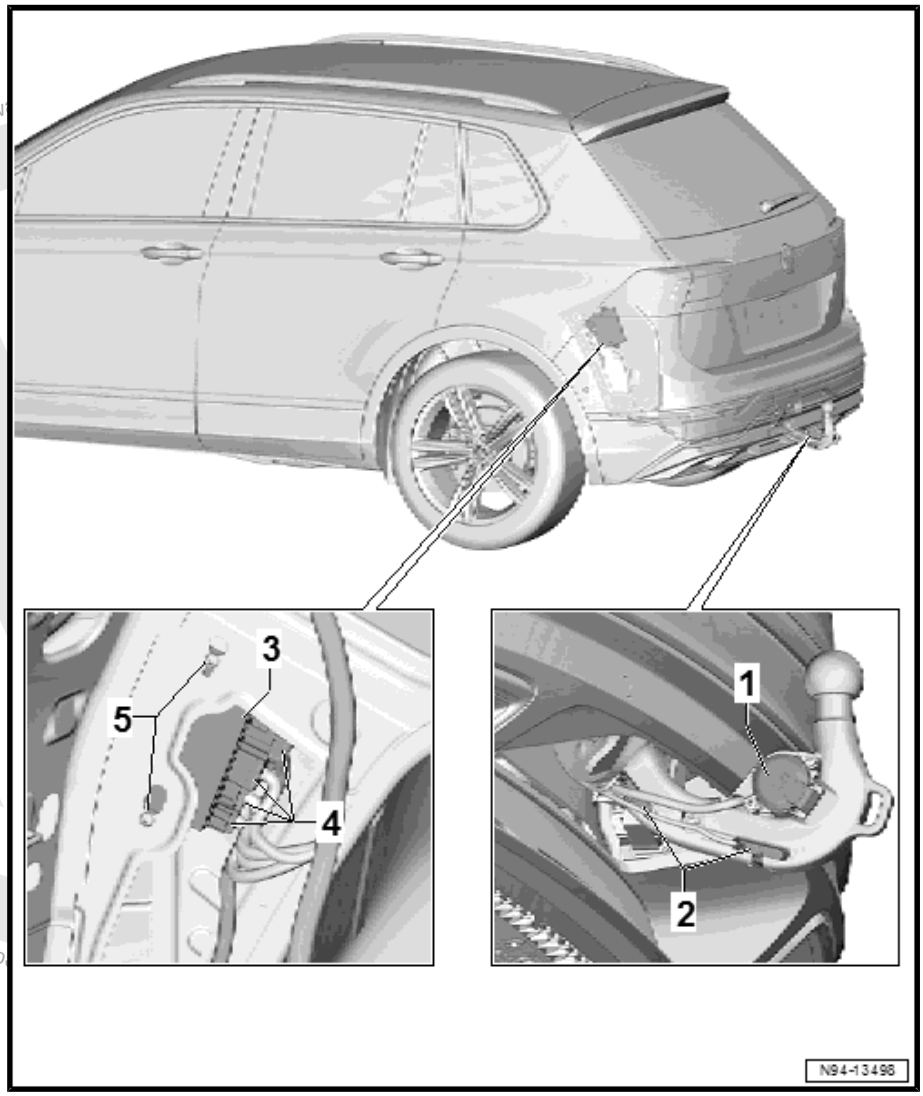
3 - Trailer detector control unit - J345-

- ❑ Removing and installing ⇒ page 209

4 - Electrical connectors

5 - Bolt

- ❑ Qty. 2
- ❑ 2 Nm



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12.2 Trailer socket - U10-

Properties of pin 9:

- Pin 9, permanent plus, continuous supply of battery positive voltage from vehicle to trailer.
- Permanent plus is directly connected to vehicle battery with no interruption.
- Low permissible current range, approx. 7.5 to 10 A

Pin assignment on trailer socket - U10- :

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

12.3 Removing and installing trailer detector control unit - J345-

Special tools and workshop equipment required

- Torque screwdriver - V.A.G 1624-

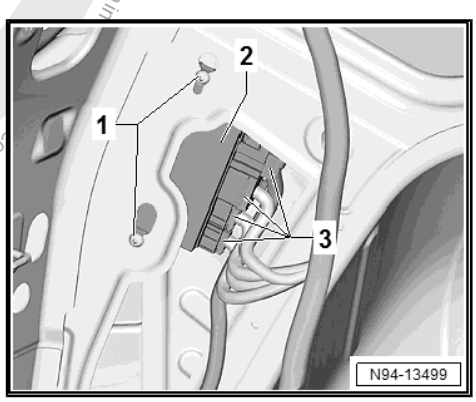


Note

If the control unit is renewed, perform the adaptation routines using ⇒ Vehicle diagnostic tester.

Removing

- Switch off ignition and all electrical consumers.
- Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.
- Remove left luggage compartment side trim ⇒ General body repairs, interior; Rep. gr. 70 ; Luggage compartment trims; Removing and installing luggage compartment side trim .
- Loosen bolts -1- a few turns.
- Push trailer detector control unit - J345- -2- slightly upwards.
- Guide bolts -1- on trailer detector control unit - J345- -2- towards outside out of body panel.
- Guide trailer detector control unit - J345- -2- through opening in body panel into luggage compartment.
- Release and disconnect connectors -3-.



Installing

Install in reverse order of removal.

Specified torques

- ⇒ “12.1 Assembly overview - towing bracket socket”, page 208

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96 – Lights, bulbs, switches - interior

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1 Lights

⇒ “1.1 Overview of fitting locations - lights in dash panel”, page 212

⇒ “1.2 Overview of fitting locations - lights in front doors”, page 213

⇒ “1.3 Overview of fitting locations - lights in rear doors”, page 214

⇒ “1.4 Overview of fitting locations - lights in centre console”, page 215

⇒ “1.5 Overview of fitting locations - lights in luggage compartment”, page 216

⇒ “1.6 Overview of fitting locations - lights in roof trim”, page 217

⇒ “1.7 Removing and installing glove compartment light W6 ”, page 218

⇒ “1.8 Replacing bulb for glove compartment light W6 ”, page 219

⇒ “1.9 Removing and installing front footwell light K268 / K269 ”, page 220

⇒ “1.10 Removing and installing front footwell illumination bulb L151 / L152 ”, page 220

⇒ “1.11 Removing and installing Central locking SAFELOCK function warning lamp K133 ”, page 221

⇒ “1.12 Removing and installing reflectors in door”, page 221

⇒ “1.13 Removing and installing entry light W92 / W93 ”, page 222

⇒ “1.14 Removing and installing interior door handle illumination bulb L146 / L147 ”, page 222

⇒ “1.15 Removing and installing rear interior door handle illumination bulb L133 / L134 ”, page 223

⇒ “1.16 Removing and installing light 1 for front door background lighting L199 / L200 ”, page 223

⇒ “1.17 Removing and installing light 1 for rear door background lighting L201 / L202 ”, page 223

⇒ “1.18 Removing and installing roof ambient lighting bulb W76 / W77 ”, page 224

⇒ “1.19 Removing and installing selector lever position display Y26 ”, page 224

⇒ “1.20 Removing and installing luggage compartment light W3 ”, page 225

⇒ “1.21 Removing and installing electric torch R280 ”, page 225

⇒ “1.22 Removing and installing surround lighting 1 in rear lid W61 ”, page 225

⇒ “1.23 Removing and installing illuminated vanity mirror W20 / W14 ”, page 226

⇒ “1.24 Removing and installing bulb for front interior light W1 ”, page 227

⇒ “1.25 Removing and installing bulb for rear interior light W43 ”, page 229

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⇒ “1.26 Removing and installing bulb for front reading light W13 / W19 ”, page 231

⇒ “1.27 Removing and installing bulb for rear reading light W11 / W12 ”, page 231

⇒ “1.28 Renewing bulb of rear interior light W47 / W48 ”, page 231

1.1 Overview of fitting locations - lights in dash panel

1 - Front passenger side airbag deactivated warning lamp - K145-

- ❑ Front passenger airbag warning lamp - K145- is removed together with hazard warning light switch - EX3- ⇒ page 248

2 - Glove compartment light - W6-

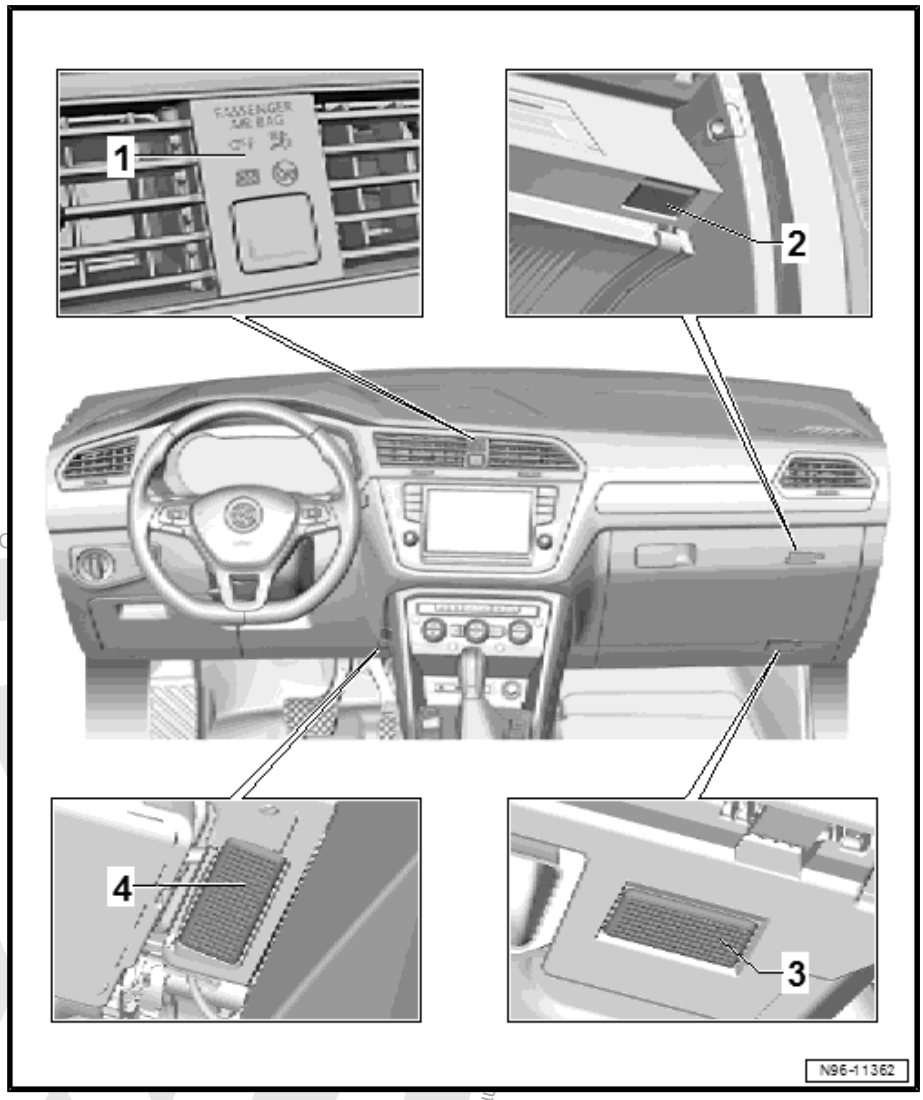
- ❑ Removing and installing ⇒ page 218

3 - Front right footwell light - K269-

- ❑ Removing and installing ⇒ page 220

4 - Front left footwell light - K268-

- ❑ Removing and installing ⇒ page 220



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1.2 Overview of fitting locations - lights in front doors

Note

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

1 - Central locking SAFELOCK function warning lamp - K133-

- ❑ Removing and installing ⇒ page 221

2 - Driver side door interior handle illumination bulb - L146-

- ❑ Removing and installing ⇒ page 222

3 - Front passenger side door interior handle illumination bulb - L147-

- ❑ Removing and installing ⇒ page 222

4 - Light 1 for front right door background lighting - L200-

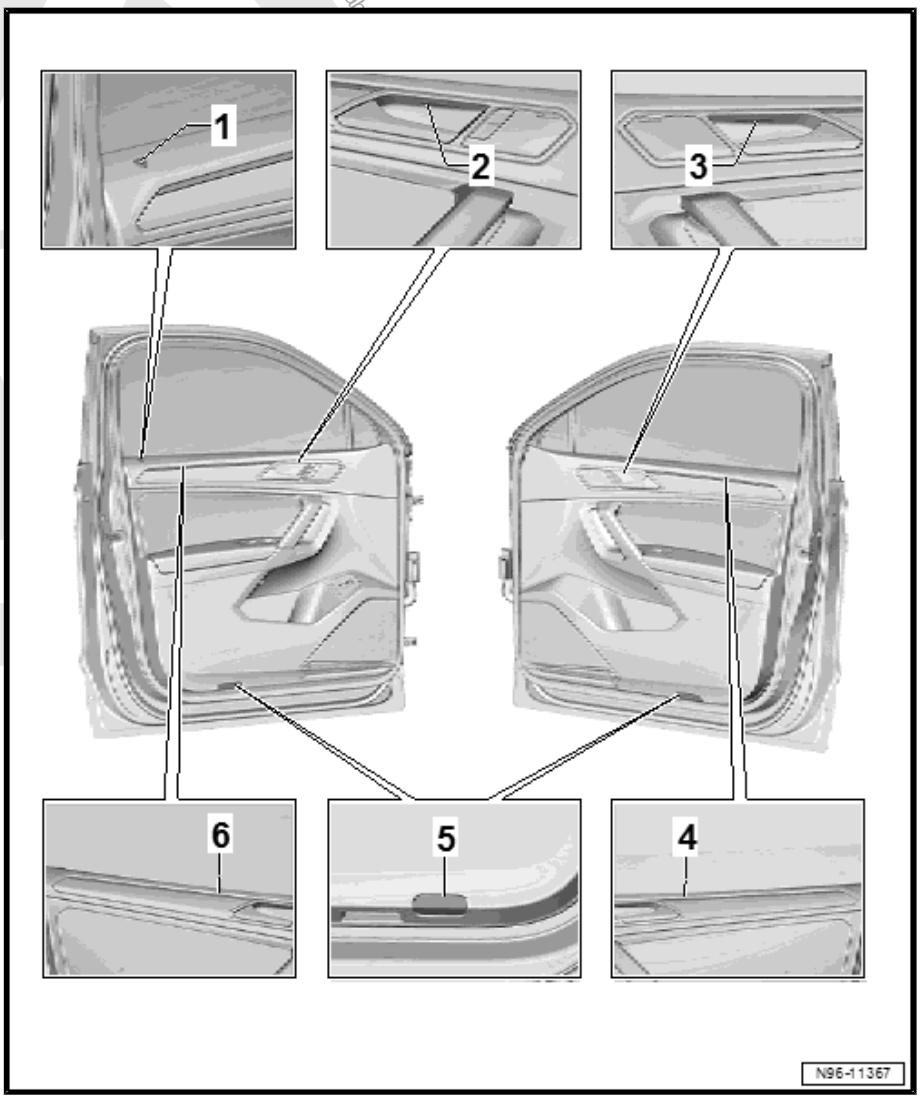
- ❑ Removing and installing ⇒ page 223

5 - Reflector in door

- ❑ Removing and installing ⇒ page 221

6 - Light 1 for front left door background lighting - L199-

- ❑ Removing and installing ⇒ page 223



Not illustrated:

- ♦ Driver side entry light - W92- / passenger side entry light - W93- in front sill panel moulding, removing and installing ⇒ page 222

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1.3 Overview of fitting locations - lights in rear doors

1 - Rear left interior door handle illumination bulb - L133-

- ❑ Removing and installing ⇒ page 223

2 - Rear right interior door handle illumination bulb - L134-

- ❑ Removing and installing ⇒ page 223

3 - Light 1 for rear right door background lighting - L202-

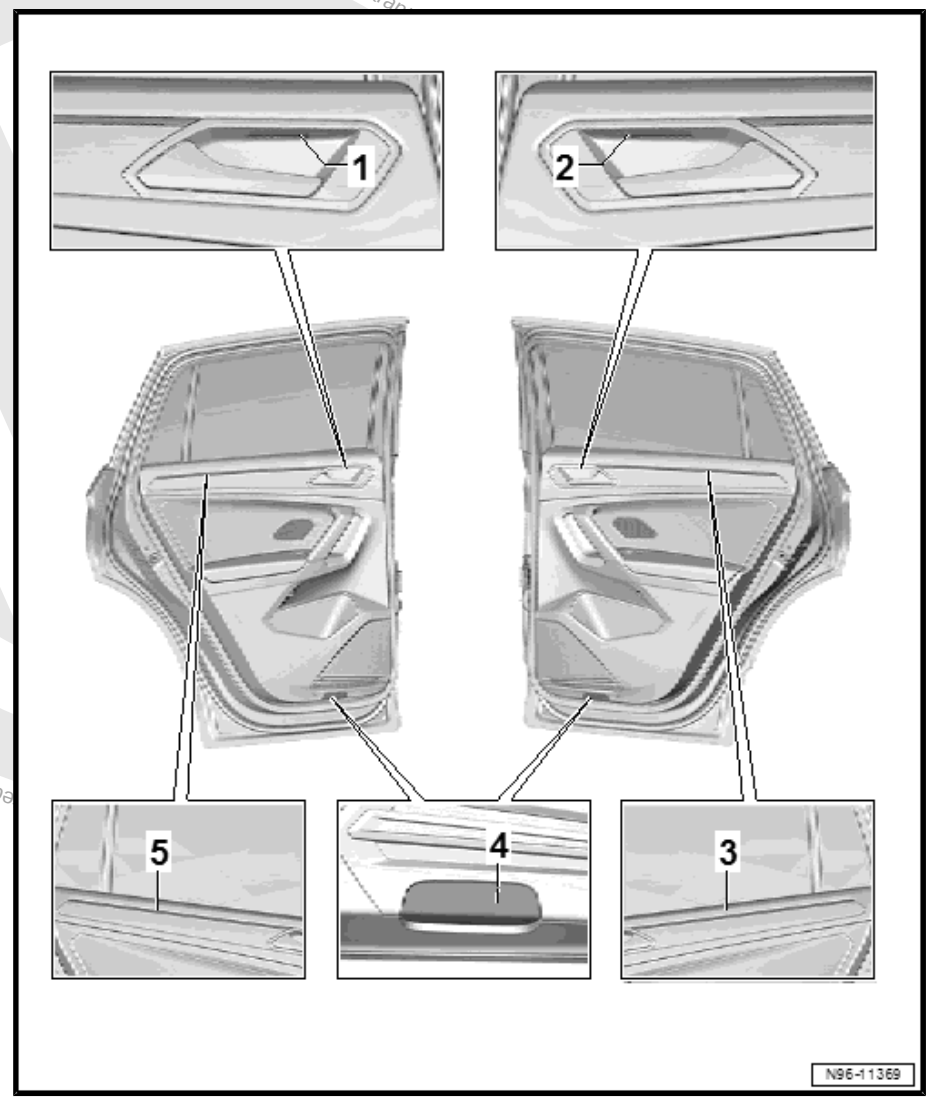
- ❑ Removing and installing ⇒ page 223

4 - Reflector in door

- ❑ Removing and installing ⇒ page 221

5 - Light 1 for rear left door background lighting - L201-

- ❑ Removing and installing ⇒ page 223

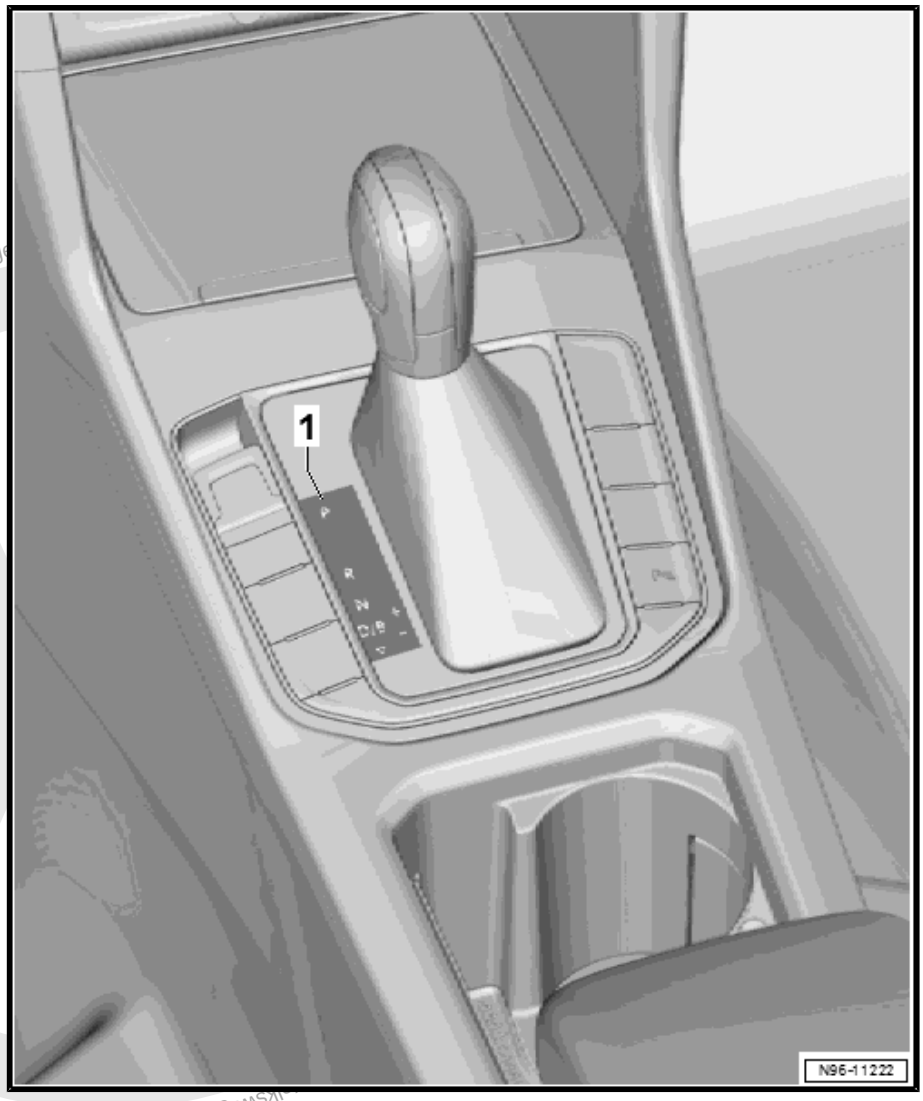


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1.4 Overview of fitting locations - lights in centre console

1 - Selector lever position display - Y26-

- ❑ Removing and installing ⇒ page 224



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1.5 Overview of fitting locations - lights in luggage compartment

1 - Surround lighting 1 in rear lid - W61-

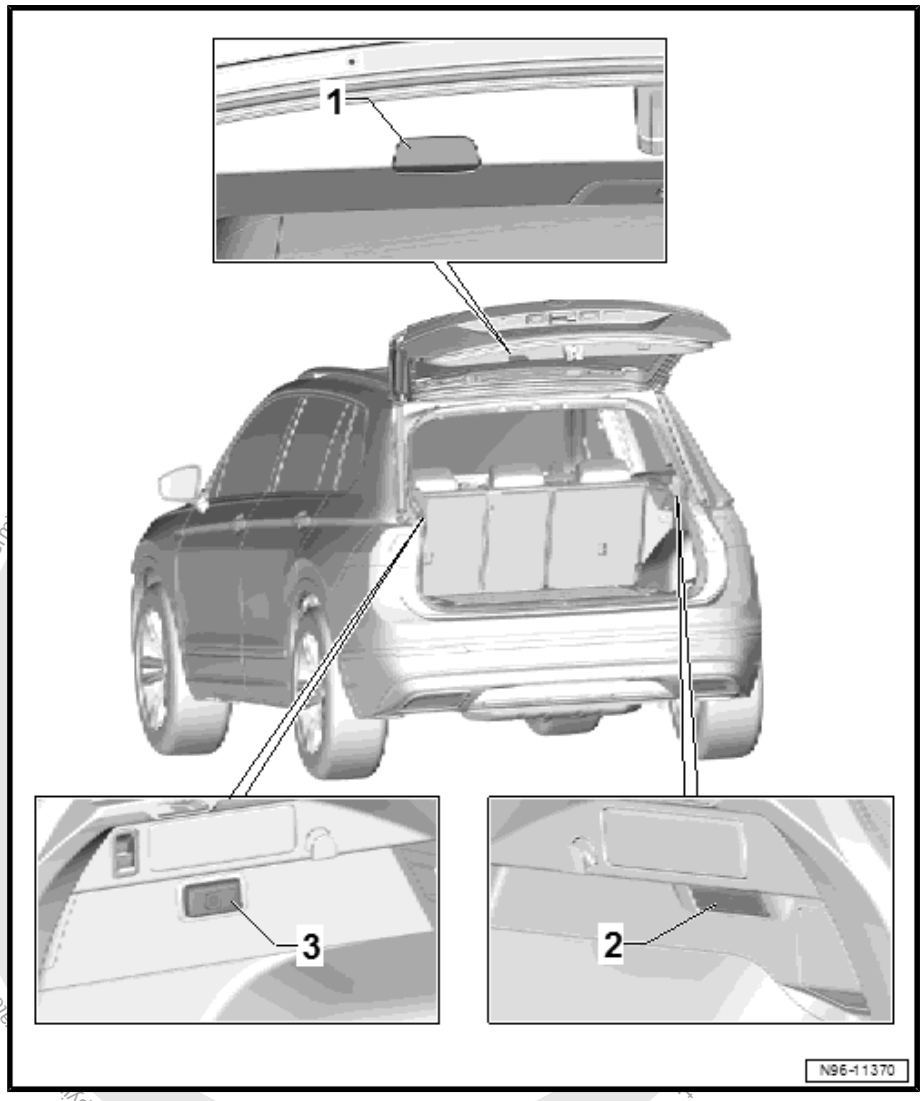
- ❑ Removing and installing ⇒ page 225

2 - Luggage compartment light - W3-

- ❑ Removing and installing ⇒ page 225

3 - Electric torch - R280-

- ❑ Removing and installing ⇒ page 225



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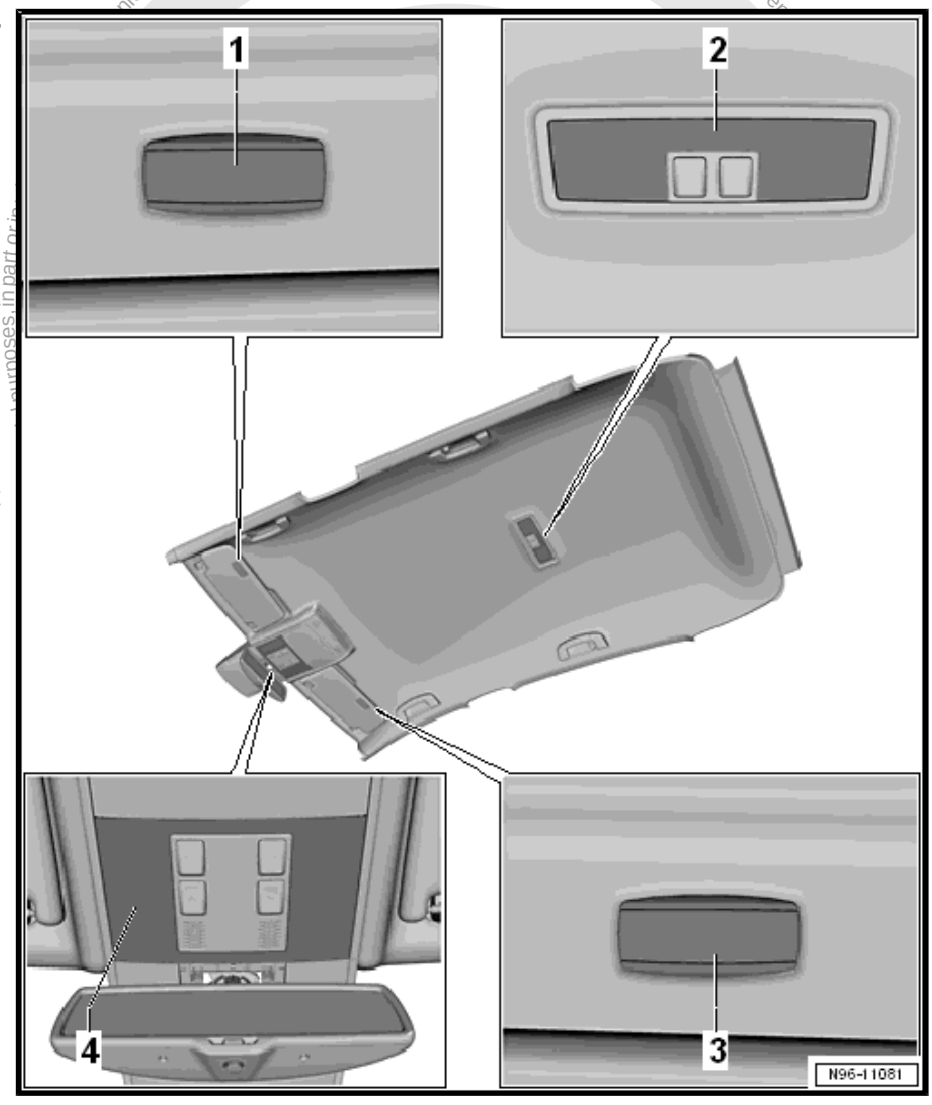
1.6 Overview of fitting locations - lights in roof trim

⇒ “1.6.1 Overview of fitting locations – lights in roof trim, without panorama tilting sunroof”, page 217

⇒ “1.6.2 Overview of fitting locations – lights in roof trim, with panorama tilting sunroof”, page 218

1.6.1 Overview of fitting locations – lights in roof trim, without panorama tilting sunroof

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1 - Driver side illuminated vanity mirror - W20-

- ❑ In the case of vanity mirrors with LED lighting, the entire light must be renewed in the event of a fault.
- ❑ Removing and installing ⇒ page 226

2 - Rear interior light - WX2-

- ❑ With rear reading light - W11- / -W12-
- ❑ Removing and installing ⇒ page 259
- ❑ Removing and installing bulb for rear interior light - W43- ⇒ page 229
- ❑ Removing and installing bulb for rear left reading light - W11- / rear right reading light - W12- ⇒ page 231

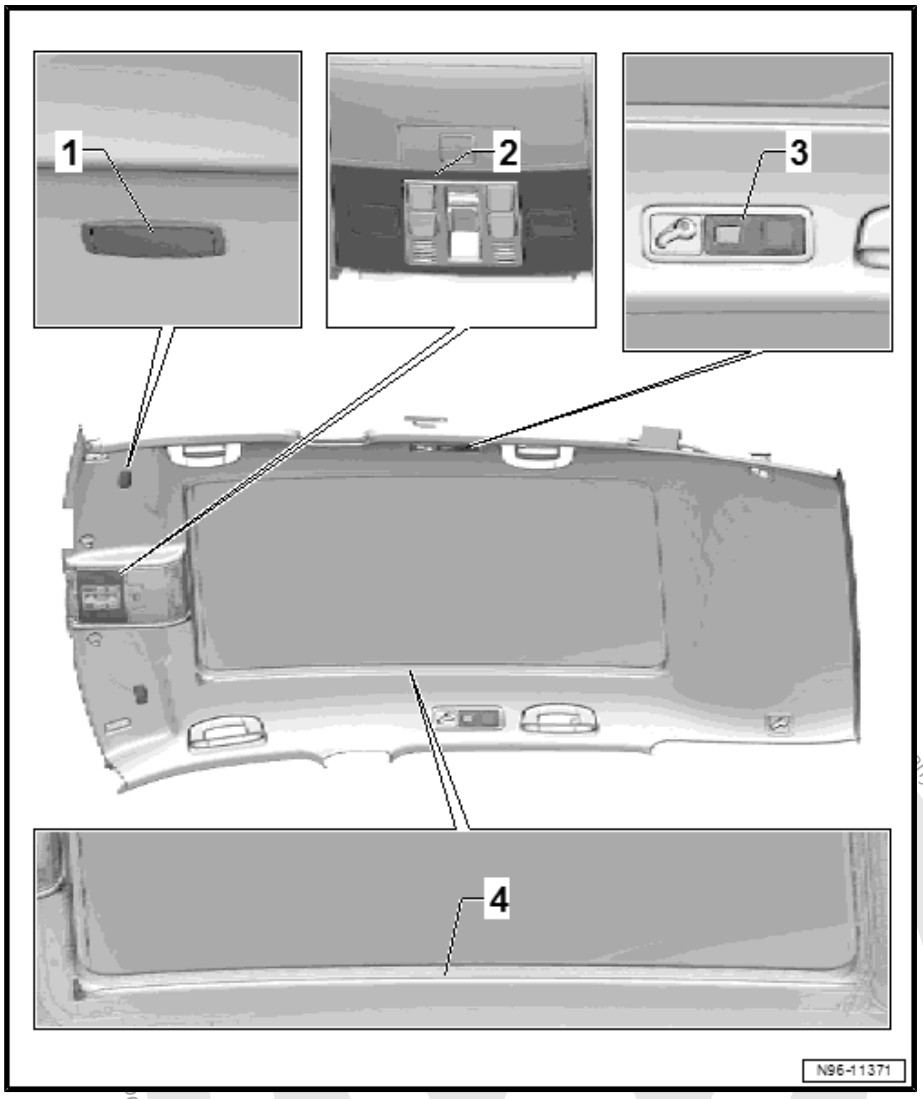
3 - Front passenger side illuminated vanity mirror - W14-

- ❑ In the case of vanity mirrors with LED lighting, the entire light must be renewed in the event of a fault.
- ❑ Removing and installing ⇒ page 226

4 - Front interior light - WX1-

- ❑ With driver side reading light - W19- and front passenger reading light - W13-
- ❑ Removing and installing ⇒ page 258
- ❑ Removing and installing bulb for front interior light - WX1- ⇒ page 227
- ❑ Removing and installing bulb for front passenger reading light - W13- / driver side reading light - W19- ⇒ page 231

1.6.2 Overview of fitting locations – lights in roof trim, with panorama tilting sunroof



1 - Illuminated vanity mirror - W14- / -W20-

- ❑ Front passenger side illuminated vanity mirror - W14-
- ❑ Driver side illuminated vanity mirror - W20-
- ❑ Removing and installing ⇒ page 226

2 - Front interior light - WX1-

- ❑ With driver side reading light - W19- and front passenger reading light - W13-
- ❑ Removing and installing ⇒ page 258
- ❑ Removing and installing bulb for front interior light - WX1- ⇒ page 227
- ❑ Removing and installing bulb for front passenger reading light - W13- / driver side reading light - W19- ⇒ page 231

3 - Rear interior light -W47- / -W48-

- ❑ Rear left interior light - W47-
- ❑ Rear right interior light - W48-
- ❑ Removing and installing ⇒ page 261
- ❑ Bulb for rear interior light -W47- / -W48- ⇒ page 231

4 - Roof ambient lighting bulb -W76- / -W77-

- ❑ Roof ambient lighting bulb, left - W76-
- ❑ Roof ambient lighting bulb, right - W77-
- ❑ Removing and installing ⇒ page 224

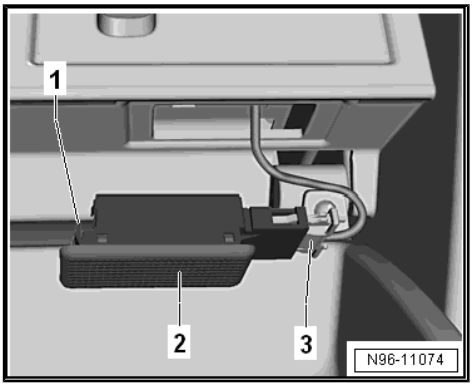
1.7 Removing and installing glove compartment light - W6-

Removing

– Turn light switch to zero position.

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– Press in locking lug -1- using a flat screwdriver, and lever out glove compartment light -2-.
– Release and disconnect connector -3-.



Installing

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

Note

If an LED glove compartment light - W6- is faulty, the entire light must be renewed.

– Insert glove compartment light into opening and engage it on opposite side.
– Perform functional check.

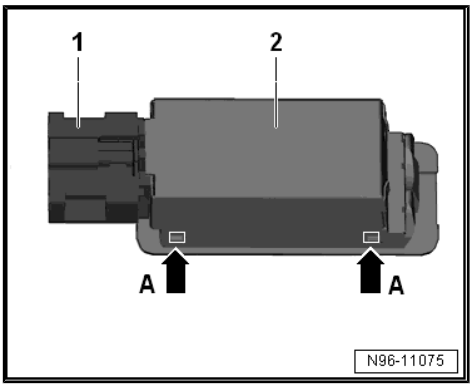
1.8 Replacing bulb for glove compartment light - W6-

Note

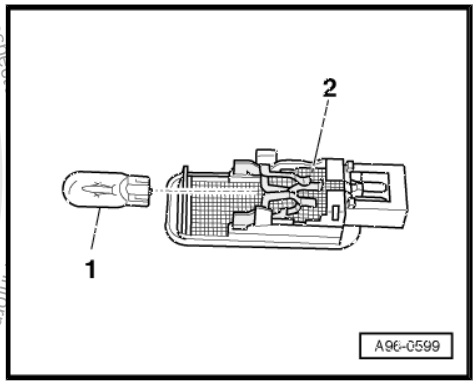
If an LED glove compartment light - W6- is faulty, the entire light must be renewed.

Removing

– Remove glove compartment light - W6- ⇒ page 218 .
– Lever off heat shield -2- on both sides at arrows -A-.
– Remove heat shield -2- from glove compartment light - W6- -1-.



– Pull bulb -1- out of bulb holder -2- on reverse side of glove compartment light.



Installing

Install in reverse order of removal.

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1.9 Removing and installing front footwell light -K268- / -K269-

⇒ “1.9.1 Removing and installing front left footwell light K268 ”, page 220

⇒ “1.9.2 Removing and installing front right footwell light K269 ”, page 220

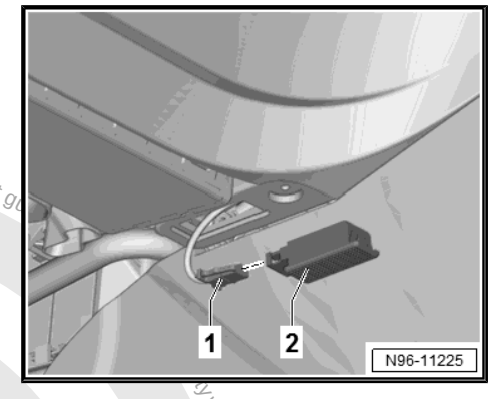
1.9.1 Removing and installing front left footwell light - K268-

Removing

– Use a flat screwdriver to push in locking lug on front left footwell light - K268- -2-.

– Lever out footwell light -2-.

– Release and disconnect connector -1-.



Installing

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

Note

Since the footwell light is equipped with LEDs, the entire light must be renewed in the event of a fault.

– Perform functional check.

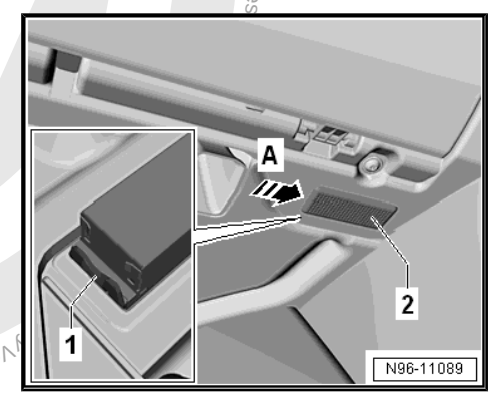
1.9.2 Removing and installing front right footwell light - K269-

Removing

– Use a flat screwdriver to push in locking lug -1- at point indicated by -arrow A-.

– Lever out footwell light -2-.

– Release and separate electrical connector.



Installing

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

Note

Since the footwell light is equipped with LEDs, the entire light must be renewed in the event of a fault.

– Perform functional check.

1.10 Removing and installing front footwell illumination bulb -L151- / -L152-

Since the front footwell light is equipped with LEDs, the entire light must be renewed.

– Removing and installing front footwell light -K268- / -K269- ⇒ page 220 .

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

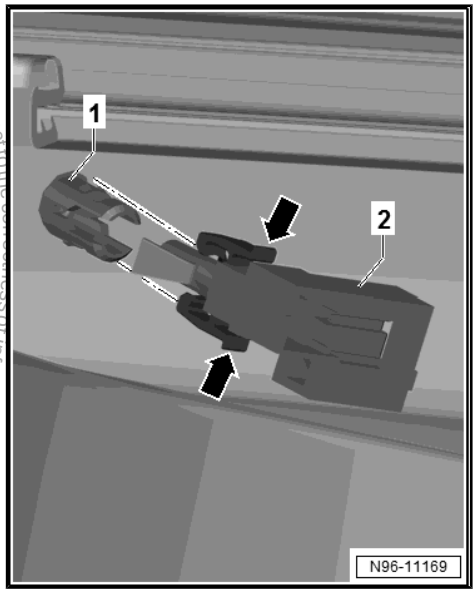
Removing

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

– Release and separate electrical connector.

– Release retaining lugs on central locking SAFELOCK function warning lamp - K133- -2- by pressing them -arrows-.

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



Installing

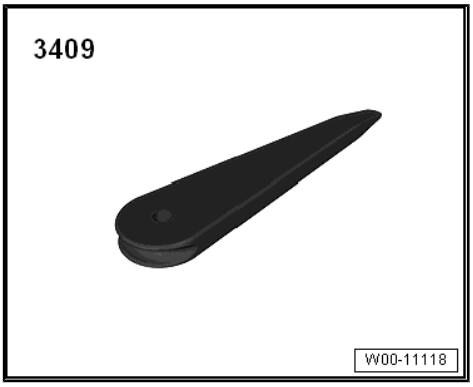
Install in the reverse order of removal, observing the following:

– Perform functional check.

1.12 Removing and installing reflectors in door

Special tools and workshop equipment required

♦ Removal wedge - 3409-



Note

The removal and installation procedure is the same for all reflectors and is therefore described here for just one reflector.

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Caution

Danger of damage to component surfaces.

- *When working with leverage tools, always mask off the components installed in visible areas using commercially available adhesive tape.*

Removing

– Use removal wedge - 3409- to lever reflector out of door -arrows-.

Installing

Install in reverse order of removal.

1.13 Removing and installing entry light - W92- / -W93-

Note

The driver side entry light - W92- / passenger side entry light - W93- is integrated in the front sill panel moulding and cannot be renewed individually.

– Removing and installing front sill panel moulding ⇒ General body repairs, interior; Rep. gr. 70 ; Trims, interior; Removing and installing sill panel moulding

1.14 Removing and installing interior door handle illumination bulb -L146- / -L147-

Note

Removal and installation are described for the left side. The removal and installation procedure for the right-hand side is basically the same.

Removing

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

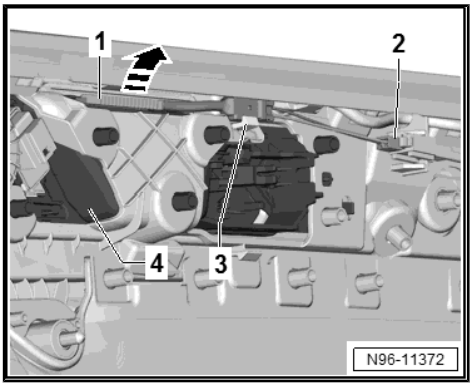
Caution

Risk of damage to the light conductor.

- *Only touch the light conductor at the light emitting element in area of the interior door handle.*

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– Release and disconnect electrical connector -2-.
– Disengage light conductor -1- at retaining lug -3-.
– Carefully lift light conductor -2- slightly, and swing it in -direction of arrow- out of interior door handle -4-.



Installing

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

– Perform functional check.

1.15 Removing and installing rear interior door handle illumination bulb -L133- / -L134-

Note

The removal and installation procedure of the rear left interior door handle illumination bulb - L133- / rear right interior door handle illumination bulb - L134- is analogous to that of the driver side door interior handle illumination bulb - L146- / front passenger side door interior handle illumination bulb - L146- .

– Removing and installing door interior handle illumination bulbs -L146- / -L147- ⇒ page 222 .

1.16 Removing and installing light 1 for front door background lighting -L199- / -L200-

Note

The light 1 for front left door background lighting - L199- / light 1 for front right door background lighting - L200- is integrated in the trim panel of the front door trim and cannot be renewed individually.

– Removing and installing trim panel of front door trim ⇒ General body repairs, interior; Rep. gr. 70 ; Front door trims; Removing and installing trim panel .

1.17 Removing and installing light 1 for rear door background lighting -L201- / -L202-

Note

The light 1 for rear left door background lighting - L201- / light 1 for rear right door background lighting - L202- is integrated in the trim panel of the rear door trim and cannot be renewed individually.

– Removing and installing trim panel of rear door trim ⇒ General body repairs, interior; Rep. gr. 70 ; Rear door trims; Removing and installing trim panel .

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1.18 Removing and installing roof ambient lighting bulb -W76- / -W77-

Note

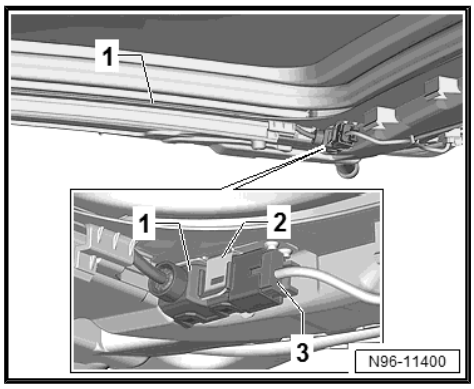
Removal and installation are described for the left side. The removal and installation procedure for the right-hand side is basically the same.

Removing

– Remove sunroof frame ⇒ General body repairs, exterior; Rep. gr. 60 ; Sunroof; Removing and installing sunroof frame .

– Release and disconnect connector -3-.

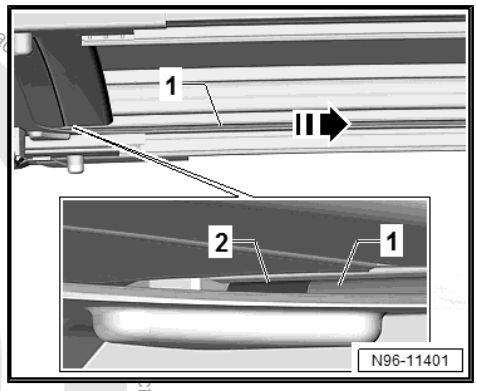
– Unclip connector housing of roof ambient lighting bulb, left - W76- -1- from clip -2-.



– Carefully guide roof ambient lighting bulb, left - W76- -1- towards front -arrow- out of sunroof frame.

– When doing this, note end cap -2- of roof ambient lighting bulb, left - W76- -1-.

• The end cap -2- must not get stuck in the sunroof frame but needs to remain on the roof ambient lighting bulb, left - W76- -1-.



Installing

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

– Perform functional check.

1.19 Removing and installing selector lever position display - Y26-

Note

The selector lever position display - Y26- is integrated in the selector cover and cannot be removed individually.

– Removing and installing selector cover ⇒ Rep. gr. 34 ; Selector mechanism; Removing and installing selector lever handle

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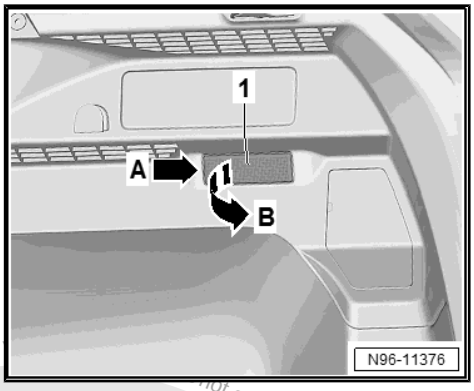
1.20 Removing and installing luggage compartment light - W3-

Removing

– Use a flat screwdriver -arrow A- to push in retaining lug at front of luggage compartment light - W3- -1-.

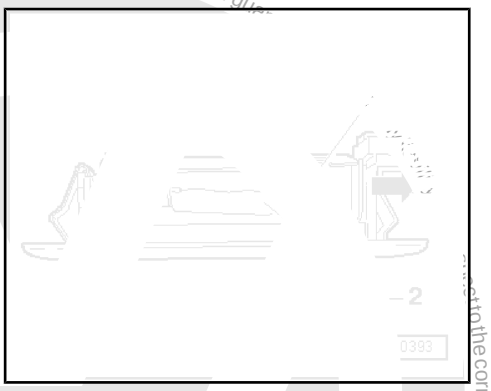
– At the same time, swing luggage compartment light - W3- -1- in -direction of arrow B- out of luggage compartment side trim.

– Release and disconnect connector on luggage compartment light - W3- -1-.



– Press contact plate -1- of light in -direction of arrow-.

– Remove festoon bulb -2- from bulb holder.



Installing

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

– Insert luggage compartment light into opening and engage it on opposite side.

– Perform functional check.

1.21 Removing and installing electric torch - R280-

Removing

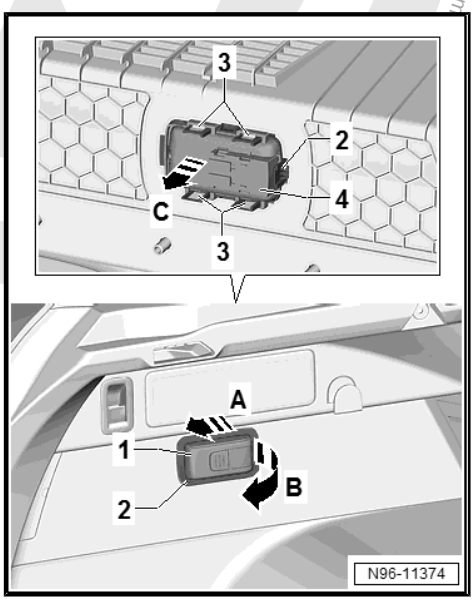
– Push electric torch - R280- -1- in -direction of arrow A-.

– Remove electric torch - R280- -1- in -direction of arrow B- from retainer.

– Remove left luggage compartment side trim ⇒ General body repairs, interior; Rep. gr. 70 ; Luggage compartment trims; Removing and installing luggage compartment side trim .

– Release retaining lugs -3- on trim -2-.

– At the same time, pull retainer -4- for electric torch - R280- in -direction of arrow C- off trim -2-.



Installing

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

– Retainer for electric torch - R280- must securely engage in trim.

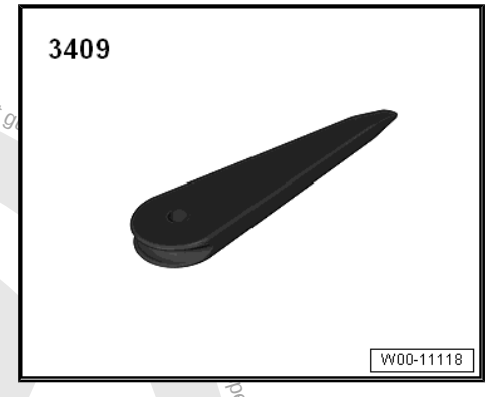
– Perform functional check.

1.22 Removing and installing surround lighting 1 in rear lid - W61-

Special tools and workshop equipment required

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- Removal wedge - 3409-



Note

Since the surround lighting 1 in rear lid - W61- is equipped with LEDs, the entire light must be renewed in the event of a fault.

Caution

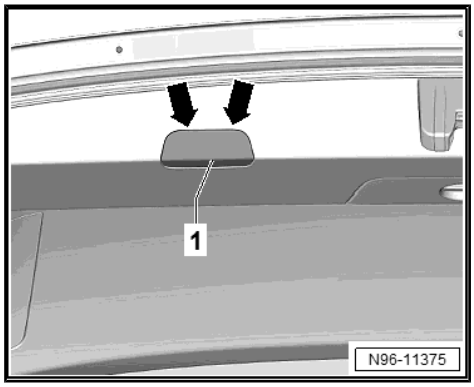
Danger of damage to component surfaces.

- ***When working with leverage tools, always mask off the components installed in visible areas using commercially available adhesive tape.***

Removing

– Use removal wedge - W61- or a screwdriver to carefully lever surround lighting 1 in rear lid - 3409- -1- out of lower rear lid trim -arrows-.

– Release and disconnect connector on surround lighting 1 in rear lid - W61- -1-.



Installing

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

Note

Since the surround lighting 1 in rear lid - W61- is equipped with LEDs, the entire light must be renewed in the event of a fault.

– Perform functional check.

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

Note

- *Since the light for the illuminated vanity mirror is equipped with LEDs, the entire light must be renewed in the event of a fault.*
- *Removal and installation are described for the left side. The removal and installation procedure for the right-hand side is basically the same.*

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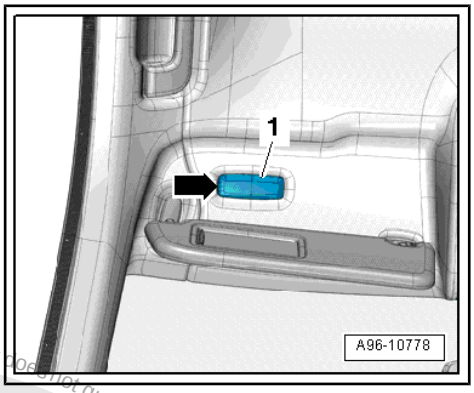
Removing

– Swing sun visor forwards.

> **Caution**
>
> *Danger of damage to component surfaces.*
>
> ♦ *When working with leverage tools, always mask off the components installed in visible areas using commercially available adhesive tape.*

– Insert a flat screwdriver into notch -arrow- and carefully lever out vanity mirror light -1-.

– Disconnect connector, remove light for illuminated vanity mirror.



Installing

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

– Insert vanity mirror light into opening and engage it on opposite side.

– Perform functional check.

1.24 Removing and installing bulb for front interior light - W1-

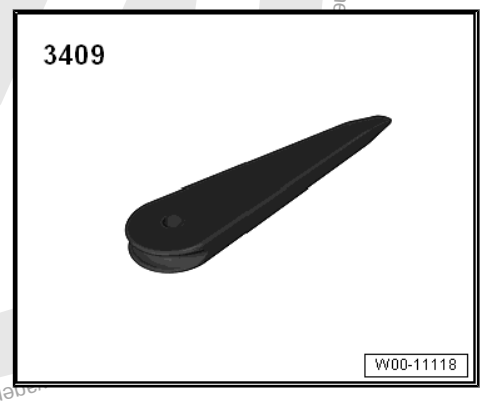
⇒ "1.24.1 Removing and installing bulb for front interior light W1 with incandescent bulbs", page 227

⇒ "1.24.2 Removing and installing light for front interior light W1 with LED", page 228

1.24.1 Removing and installing bulb for front interior light - W1- with incandescent bulbs

Special tools and workshop equipment required

♦ Removal wedge - 3409-



> **Note**
>
> *The bulb for the front interior light - WX1- and the bulb for the front passenger reading light - W13- / driver reading light - W19- is the same component.*

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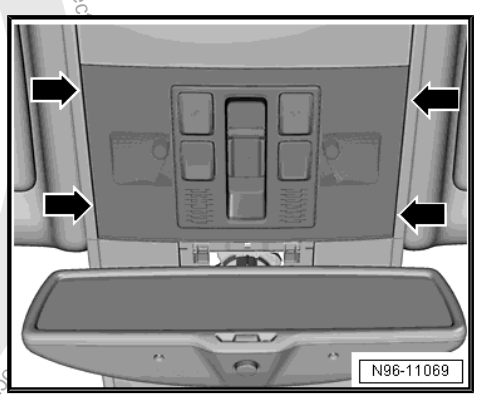
Removing

Caution

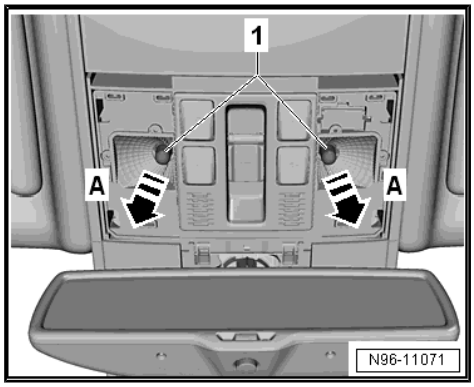
Danger of damage to component surfaces.

- *When working with leverage tools, always mask off the components installed in visible areas using commercially available adhesive tape.*

– Lever off lens of front interior light - W1- at points marked with -arrows- using removal wedge - 3409- .



– Pull bulb -1- in -direction of arrow A- out of bulb carrier.



Installing

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

Caution

Risk of damage to the bulb.

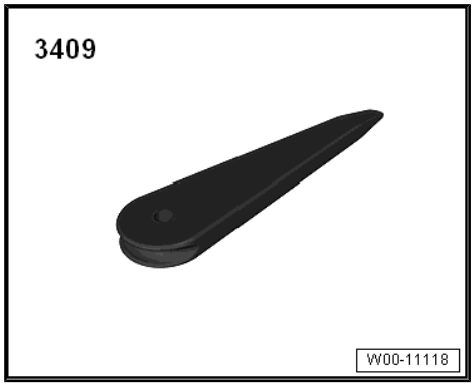
- *Do not touch the glass part of the bulb with bare fingers. Fingers leave traces of grease on the glass bulb, which evaporate when the bulb is switched on and cause the glass bulb to cloud over.*
- *Wear e.g. clean fabric gloves when inserting bulbs.*

– Perform functional check.

1.24.2 Removing and installing light for front interior light - W1- with LED

Special tools and workshop equipment required

- Removal wedge - 3409-



Note

- *The bulb for the front interior light - WX1- and the bulb for the front passenger reading light - W13- / driver reading light - W19- is the same component.*
- *If the front interior light - WX1- or front passenger reading light - W13- / driver side reading light - W19- are defective, the lens must be renewed.*

Removing

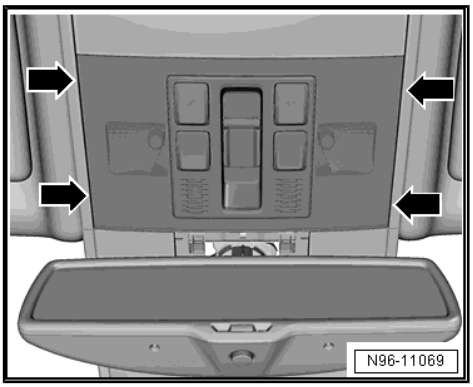
Caution

Danger of damage to component surfaces.

- ***When working with leverage tools, always mask off the components installed in visible areas using commercially available adhesive tape.***

– Lever off lens of front interior light - W1- at points marked with -arrows- using removal wedge - 3409- .

– Release and disconnect connectors.



Installing

Install in reverse order of removal.

– Perform functional check.

1.25 Removing and installing bulb for rear interior light - W43-

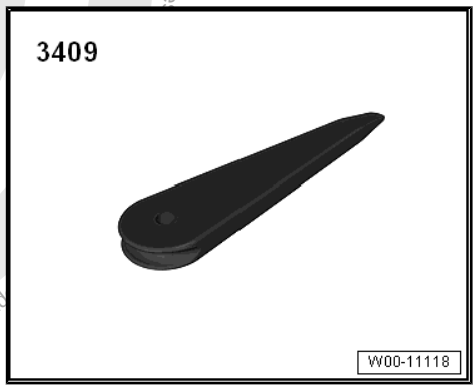
⇒ "1.25.1 Removing and installing bulb for rear interior light W43 with incandescent bulbs", page 229

⇒ "1.25.2 Removing and installing light for rear interior light W43 with LED", page 230

1.25.1 Removing and installing bulb for rear interior light - W43- with incandescent bulbs

Special tools and workshop equipment required

- Removal wedge - 3409-



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Note

The same bulbs are used for the rear interior light - W43- and the rear left reading light - W11- / rear right reading light - W12- .

Removing

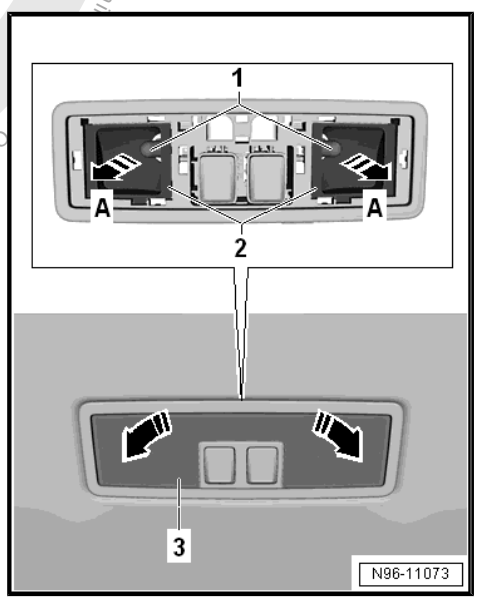
Caution

Danger of damage to component surfaces.

- ***When working with leverage tools, always mask off the components installed in visible areas using commercially available adhesive tape.***

– Lever off lens -3- for rear interior light - W43- using removal wedge - 3409- .

– Pull bulb -1- in -direction of arrow A- out of bulb holder -2-.



Installing

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

Caution

Risk of damage to the bulb.

- ***Do not touch the glass part of the bulb with bare fingers. Fingers leave traces of grease on the glass bulb, which evaporate when the bulb is switched on and cause the glass bulb to cloud over.***
- ***Wear e.g. clean fabric gloves when inserting bulbs.***

– Perform functional check.

1.25.2 Removing and installing light for rear interior light - W43- with LED

Note

- *The same bulbs are used for the rear interior light - W43- and the rear left reading light - W11- / rear right reading light - W12- .*
- *If the rear interior light - W43- is defective, the complete interior light must be renewed.*

– Removing and installing rear interior light - W43- ⇒ page 259 .

1.26 Removing and installing bulb for front reading light -W13- / -W19-

Note

The bulb for the front passenger reading light - W13- / driver side reading light - W19- and the bulb for the front interior light - W1- is the same component.

– Removing and installing bulb for front interior light - W1- ⇒ page 227 .

1.27 Removing and installing bulb for rear reading light -W11- / -W12-

Note

The bulb for the rear left reading light - W11- / rear right reading light - W12- and the bulb for the rear interior light - W43- is the same component.

– Removing and installing bulb for rear interior light - W43- ⇒ page 229 .

1.28 Renewing bulb of rear interior light - W47- / -W48-

Note

If the rear interior light -W47- / -W48- is defective, the complete interior light must be renewed.

– Removing and installing rear interior light/reading light ⇒ page 261 .

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2 Controls

⇒ “2.1 Overview of fitting locations - controls in dash panel”, page 234

⇒ “2.2 Overview of fitting locations - controls in front doors”, page 236

⇒ “2.3 Overview of fitting locations - controls in rear doors”, page 237

⇒ “2.4 Overview of fitting locations - controls in centre console”, page 238

⇒ “2.5 Overview of fitting locations - controls in luggage compartment”, page 239

⇒ “2.6 Overview of fitting locations - controls in roof trim”, page 240

⇒ “2.7 Removing and installing rotary light switch EX1 ”, page 242

⇒ “2.8 Removing and installing headlight range control regulator E102 ”, page 242

⇒ “2.9 Removing and installing switch for Head-up Display E736 ”, page 243

⇒ “2.10 Removing and installing TCS and ESP button E256 ”, page 244

⇒ “2.11 Removing and installing parking aid button E266 ”, page 244

⇒ “2.12 Removing and installing park assist steering button E581 ”, page 244

⇒ “2.13 Removing and installing Start/Stop operation button E693 ”, page 244

⇒ “2.14 Removing and installing button for Charisma E735 ”, page 245

⇒ “2.15 Removing and installing switch module in centre console EX23 / EX30 ”, page 245

⇒ “2.16 Removing and installing operating unit for driving mode selection E881 ”, page 246

⇒ “2.17 Removing and installing hazard warning light switch EX3 ”, page 248

⇒ “2.18 Removing and installing buttons for seat heating E653 / E654 ”, page 248

⇒ “2.19 Removing and installing glove compartment light switch E26 ”, page 248

⇒ “2.20 Removing and installing exterior mirror adjuster EX11 ”, page 249

⇒ “2.21 Removing and installing operating unit for window regulator in driver door E512 ”, page 250

⇒ “2.22 Removing and installing front passenger side window regulator button E716 ”, page 250

⇒ “2.23 Removing and installing driver side interior locking button for central locking system E308 ”, page 251

⇒ “2.24 Removing and installing rear lid remote release button E233 ”, page 251

⇒ “2.25 Removing and installing button for deactivating interior monitoring and vehicle inclination sensor E616 ”, page 252

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⇒ “2.26 Removing and installing door contact switch F2 / F3 ”, page 253

⇒ “2.27 Removing and installing rear window regulator button E711 / E713 ”, page 253

⇒ “2.28 Removing and installing rear door contact switches F10 / F11 ”, page 254

⇒ “2.29 Removing and installing electromechanical parking brake button E538 / auto-hold button E540 ”, page 254

⇒ “2.30 Removing and installing the starter button E378 ”, page 255

⇒ “2.31 Removing and installing rear lid warning buzzer H32 ”, page 255

⇒ “2.32 Removing and installing rear lid contact switch”, page 256

⇒ “2.33 Removing and installing rear lid closure button E574 ”, page 256

⇒ “2.34 Removing and installing electric hinged tow coupling attachment button E474 ”, page 257

⇒ “2.35 Removing and installing vanity mirror contact switch F147 / F148 ”, page 257

⇒ “2.36 Removing and installing sunroof button E325 ”, page 258

⇒ “2.37 Removing and installing front interior light/reading light”, page 258

⇒ “2.38 Removing and installing rear interior light/reading light”, page 259

⇒ “2.39 Removing and installing front reading light button E633 / E634 ”, page 262

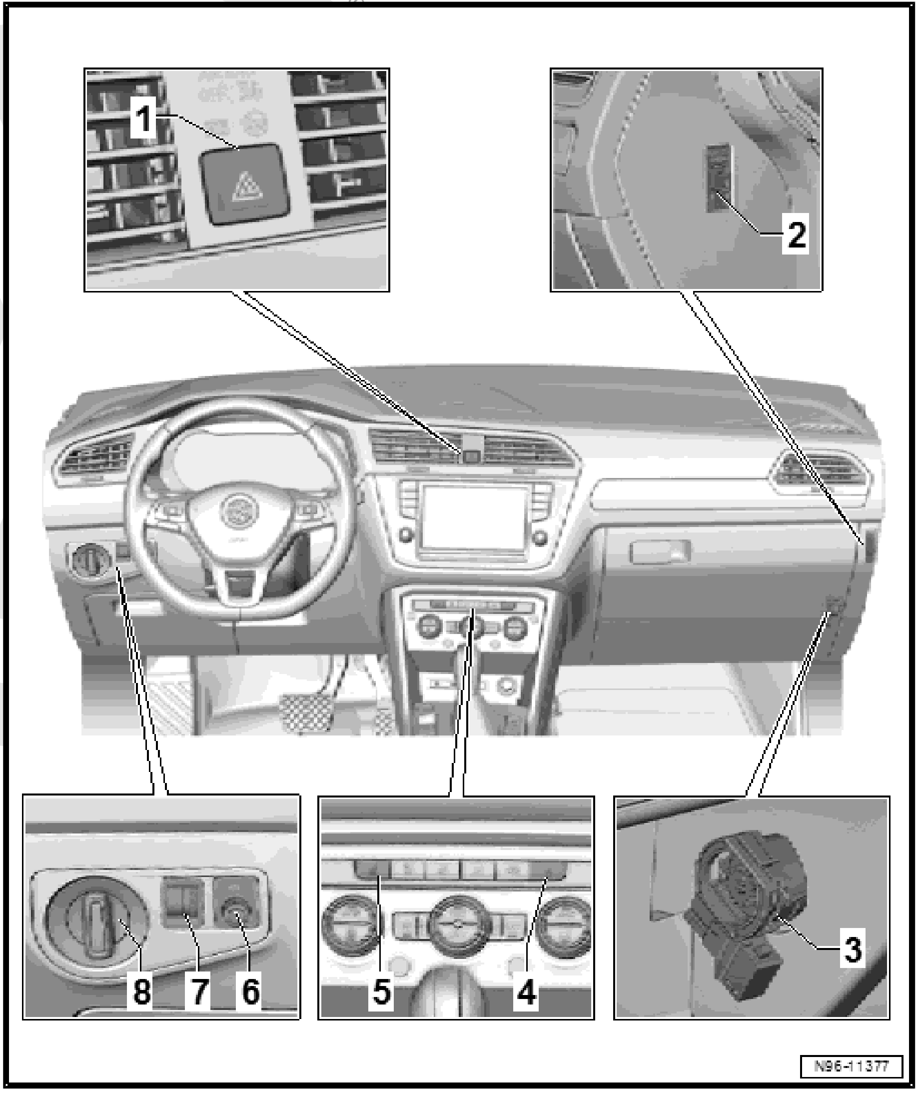
2.1 Overview of fitting locations - controls in dash panel

Note

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

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1 - Hazard warning light switch - EX3-

❑ Removing and installing ⇒ page 248

2 - Key operated switch to deactivate front passenger side airbag - E224-

❑ Assembly overview ⇒ General body repairs, interior; Rep. gr. 69 ; Airbag (front passenger side); Assembly overview - airbag (front passenger side)

3 - Glove compartment light switch - E26-

❑ Removing and installing ⇒ page 248

4 - Button for right seat heating - E654-

❑ integrated in operating and display unit of air conditioning system/Climatronic

❑ Cannot be renewed separately if defective.

❑ Removing and installing operating and display unit ⇒ Heating, air conditioning; Rep. gr. 87 ; Operating and display unit; Removing and installing operating and display unit

5 - Button for left seat heating - E653-

❑ integrated in operating and display unit of air conditioning system/Climatronic

❑ Cannot be renewed separately if defective.

❑ Removing and installing operating and display unit ⇒ Heating, air conditioning; Rep. gr. 87 ; Operating and display unit; Removing and installing operating and display unit

6 - Switch for Head-up Display - E736-

❑ Depending on equipment

❑ Removing and installing ⇒ page 243

7 - Headlight range control regulator - E102-

❑ Depending on equipment

❑ Removing and installing ⇒ page 242

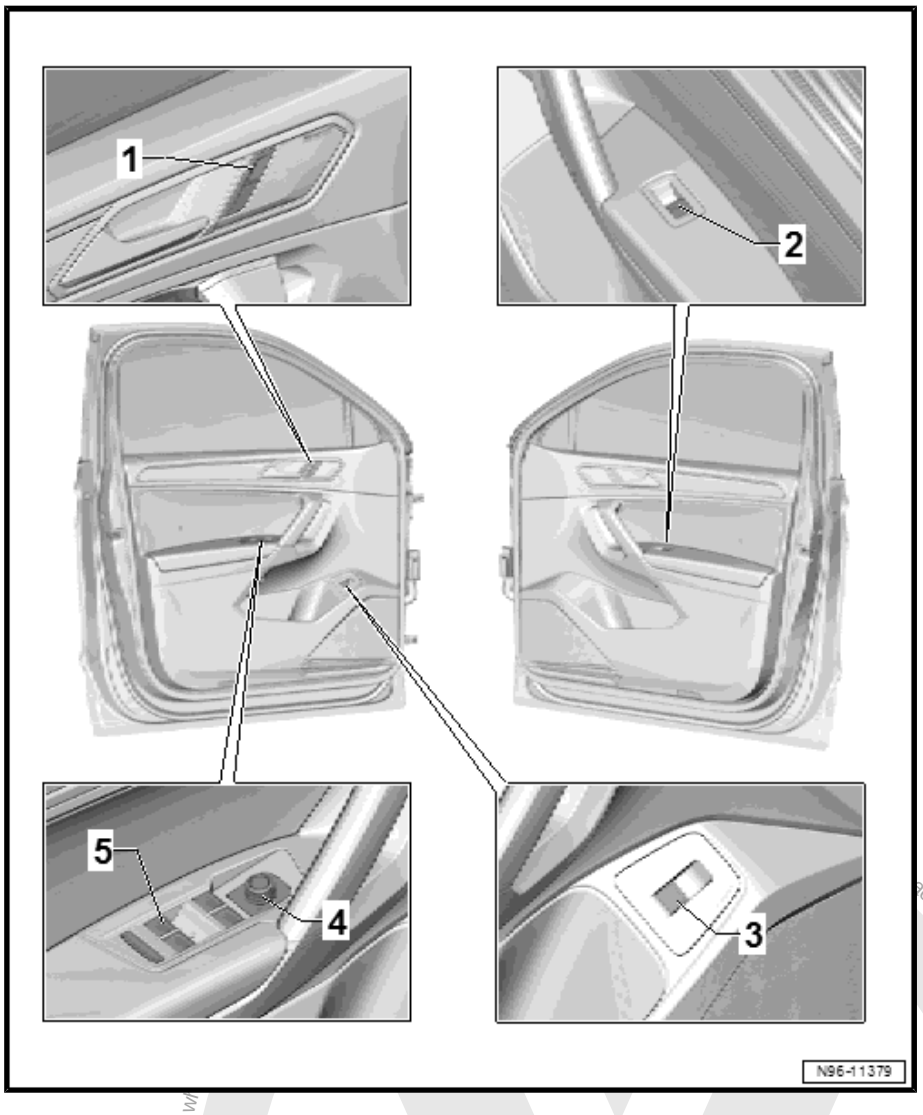
8 - Rotary light switch - EX1-

❑ Removing and installing ⇒ page 242

2.2 Overview of fitting locations - controls in front doors

Note

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



1 - Driver side interior locking button for central locking system - E308-

- ❑ Removing and installing ⇒ page 251

2 - Front passenger side window regulator button - E716-

- ❑ Removing and installing ⇒ page 250

3 - Rear lid remote release button - E233-

- ❑ Removing and installing ⇒ page 251

4 - Exterior mirror adjuster - EX11-

- ❑ Removing and installing ⇒ page 249

5 - Operating unit for window regulator in driver door - E512-

- ❑ with:

- ♦ Front driver side window regulator button - E710-
- ♦ Front passenger side window regulator button - E716-
- ♦ Rear driver side window regulator button - E711-
- ♦ Rear passenger side window regulator button - E713-
- ♦ Central switch for window regulators in driver door - E189-

- ❑ Removing and installing ⇒ page 250

Not illustrated:

- ♦ Button for deactivating interior monitoring and vehicle inclination sensor - E616-
  ⇒ “3.1 Assembly overview - interior monitor”, page 263 .
- ♦ Driver door contact switch - F2- and front passenger door contact switch - F3-
  ⇒ “2.26 Removing and installing door contact switch F2 / F3 ”, page 253

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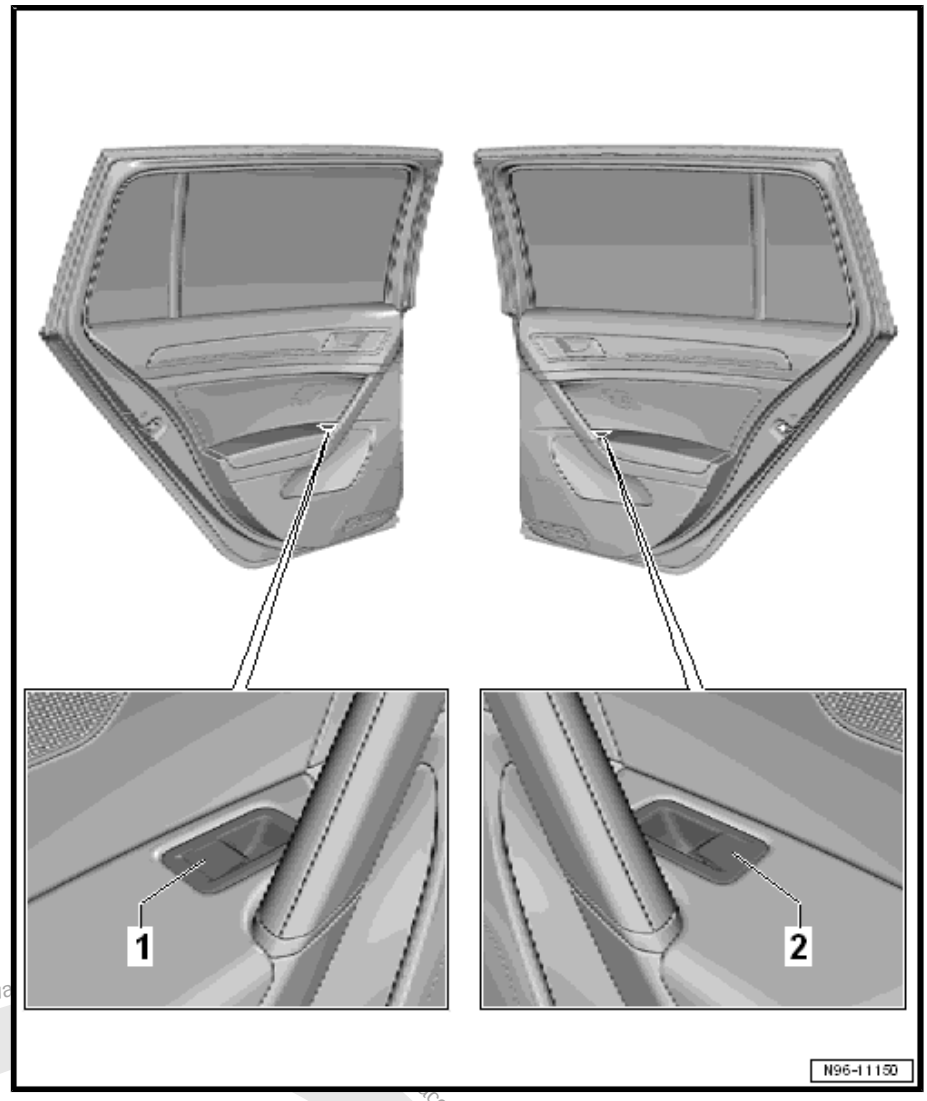
2.3 Overview of fitting locations - controls in rear doors

1 - Rear driver side window regulator button - E711-

- ❑ Removing and installing ⇒ page 253

2 - Rear passenger side window regulator button - E713-

- ❑ Removing and installing ⇒ page 253



Not illustrated:

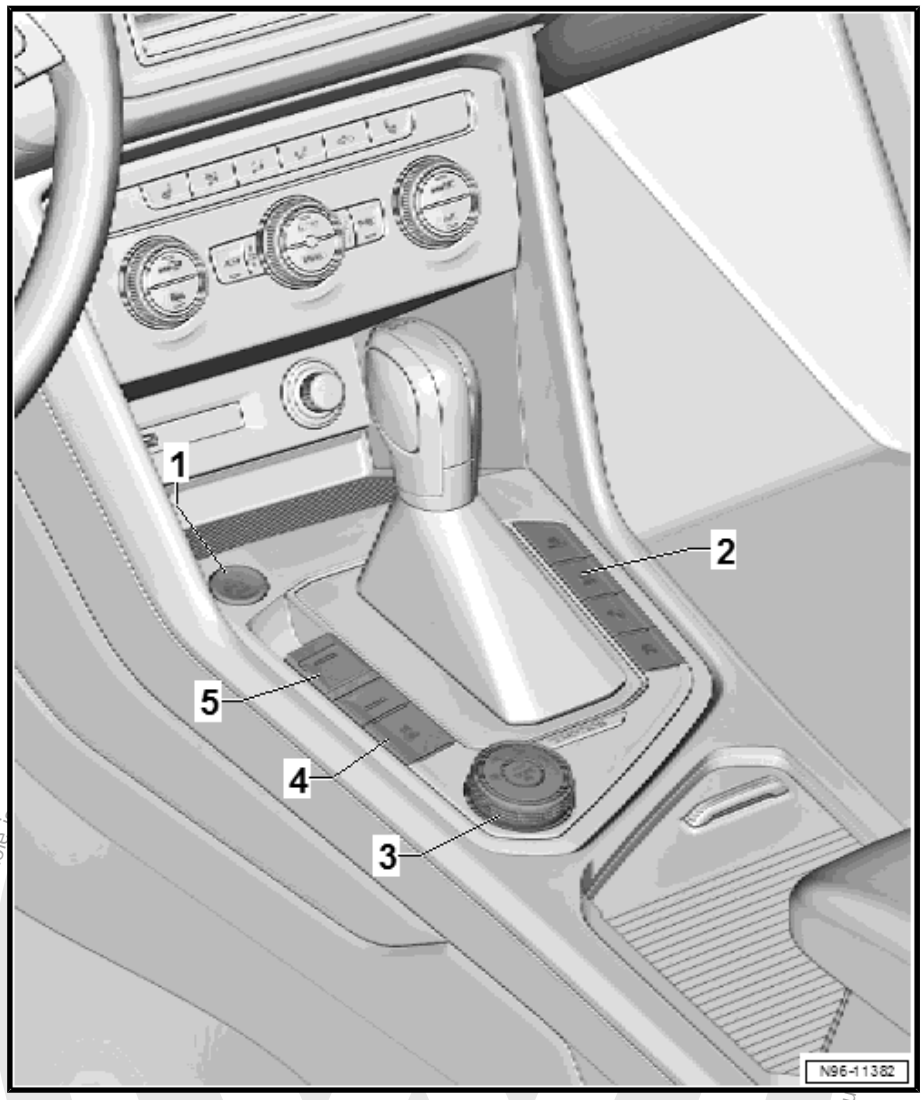
- ♦ Rear left door contact switch - F10- and rear right door contact switch - F11-
  ⇒ "2.28 Removing and installing rear door contact switches F10 / F11 ", page 254

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2.4 Overview of fitting locations - controls in centre console

Note

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



1 - Starter button - E378-

- ❑ Removing and installing ⇒ page 255

2 - Switch module 2 in centre console - EX30-

- ❑ Each of the buttons is installed in the switch module and cannot be removed individually.
- ❑ The following switches may be installed depending on the equipment level:

- ♦ Parking aid button - E266-
- ♦ Park assist steering button - E581-
- ♦ Start/stop operation switch - E693-
- ♦ Button for driver profile selection - E735-
  - ❑ Removing and installing ⇒ page 245

3 - Operating unit for driving mode selection - E881-

- ❑ All-wheel drive vehicles only
- ❑ Removing and installing ⇒ page 246

4 - Switch module 1 in centre console - EX23-

- ❑ TCS and ESP button - E256-
- ❑ Removing and installing ⇒ page 245

5 - Electromechanical parking brake button - E538- and auto-hold button - E540-

- ❑ Removing and installing ⇒ page 254

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2.5 Overview of fitting locations - controls in luggage compartment

1 - Button for electric hinged towing coupling - E474-

- ❑ Removing and installing ⇒ page 257

2 - Rear lid warning buzzer - H32-

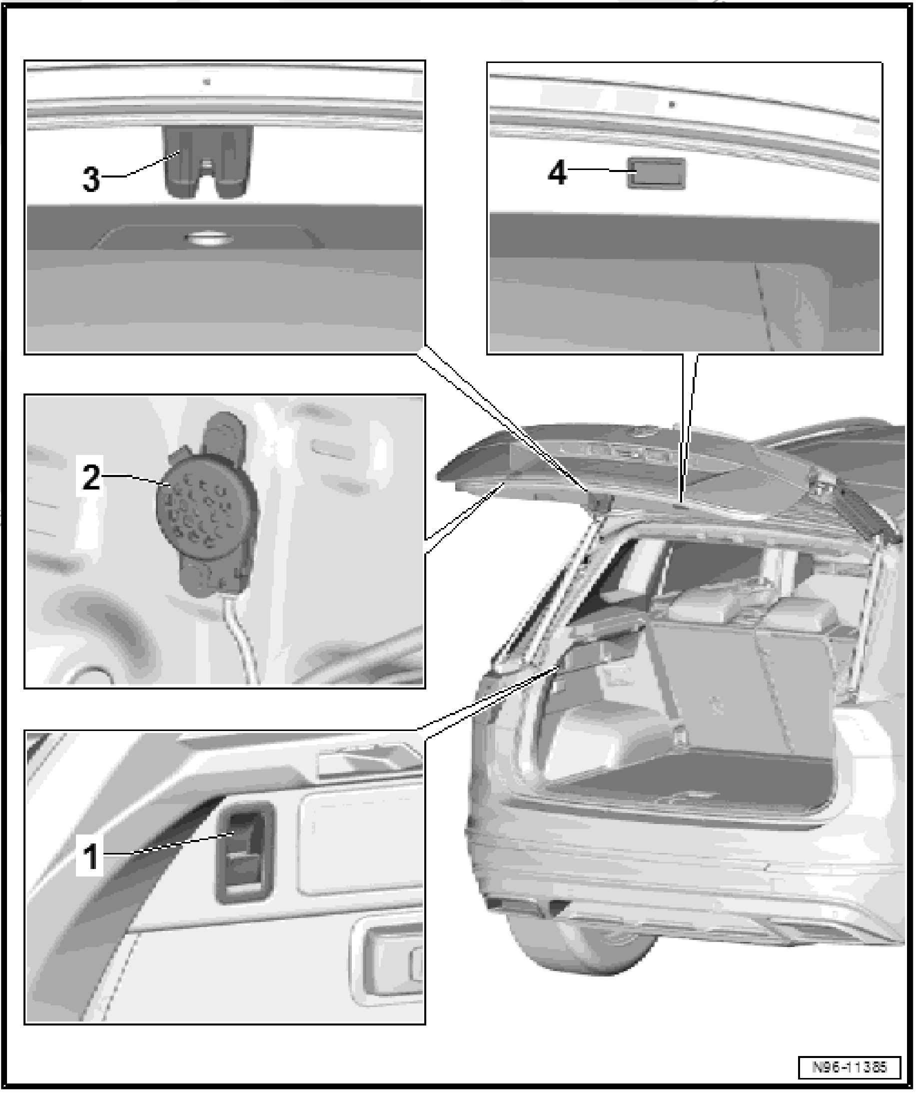
- ❑ Removing and installing ⇒ page 255

3 - Rear lid contact switch

- ❑ Rear lid contact switch for anti-theft alarm - F123-
- ❑ Removing and installing ⇒ page 256

4 - Button for closing rear lid - E574-

- ❑ Removing and installing ⇒ page 256



2.6 Overview of fitting locations - controls in roof trim

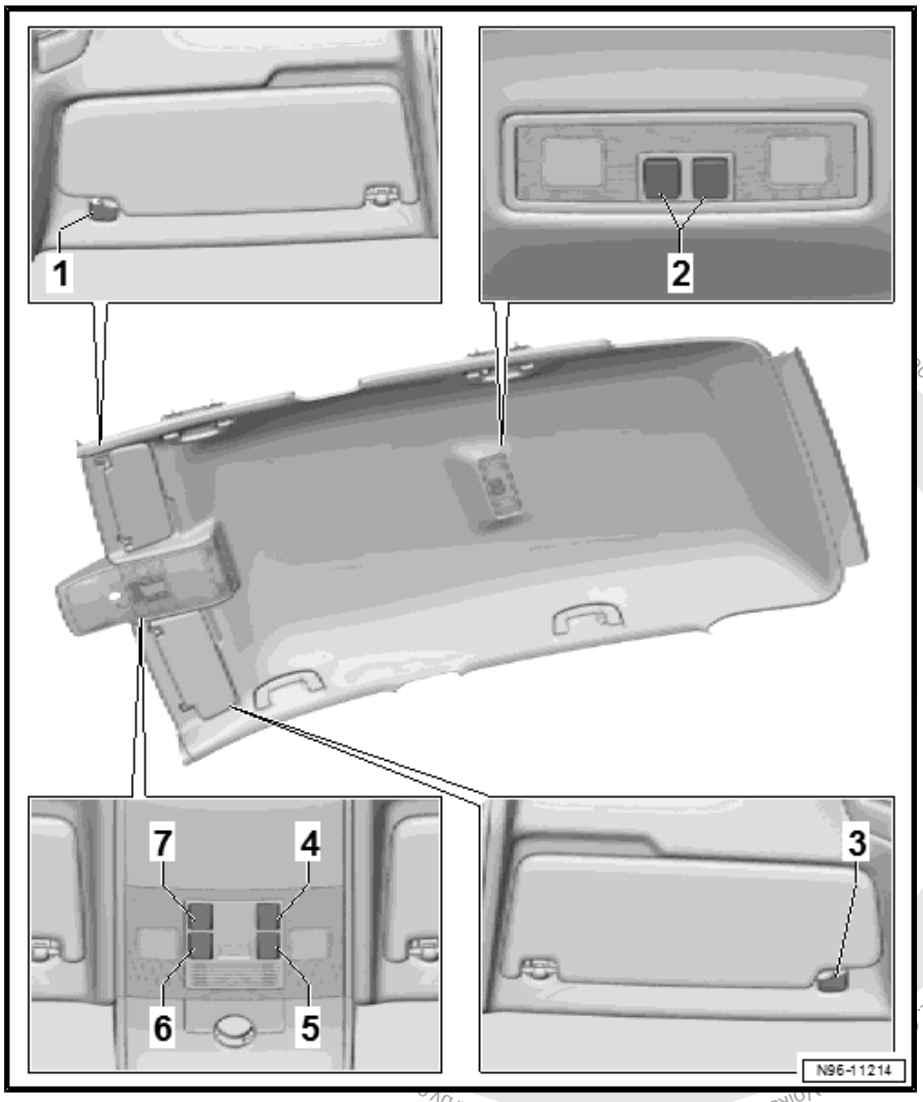
⇒ "2.6.1 Overview of fitting locations - controls in roof trim, without panorama tilting sunroof", page 240

⇒ "2.6.2 Overview of fitting locations - controls in roof trim, with panorama tilting sunroof", page 241

2.6.1 Overview of fitting locations - controls in roof trim, without panorama tilting sunroof

Note

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



1 - Front passenger vanity mirror contact switch - F148-

- ❑ The vanity mirror contact switch is an integral part of the sun visor bracket and cannot be renewed individually if defective.
- ❑ Removing and installing ⇒ page 257

2 - Button for rear reading light -W11- / -W12-

- ❑ Installed in rear interior light - WX2-
- ❑ Removing and installing ⇒ page 259

3 - Driver vanity mirror contact switch - F147-

- ❑ The vanity mirror contact switch is an integral part of the sun visor bracket and cannot be renewed individually if defective.
- ❑ Removing and installing ⇒ page 257

4 - Button for rear interior light - W43-

- ❑ Installed in front interior light - WX1-
- ❑ Removing and installing ⇒ page 262

5 - Front right reading light button - E634-

- ❑ Installed in front interior light - WX1-
- ❑ Removing and installing ⇒ page 262

6 - Front left reading light button - E633-

- ❑ For switching front interior light - W1- on and off
- ❑ Removing and installing ⇒ page 262

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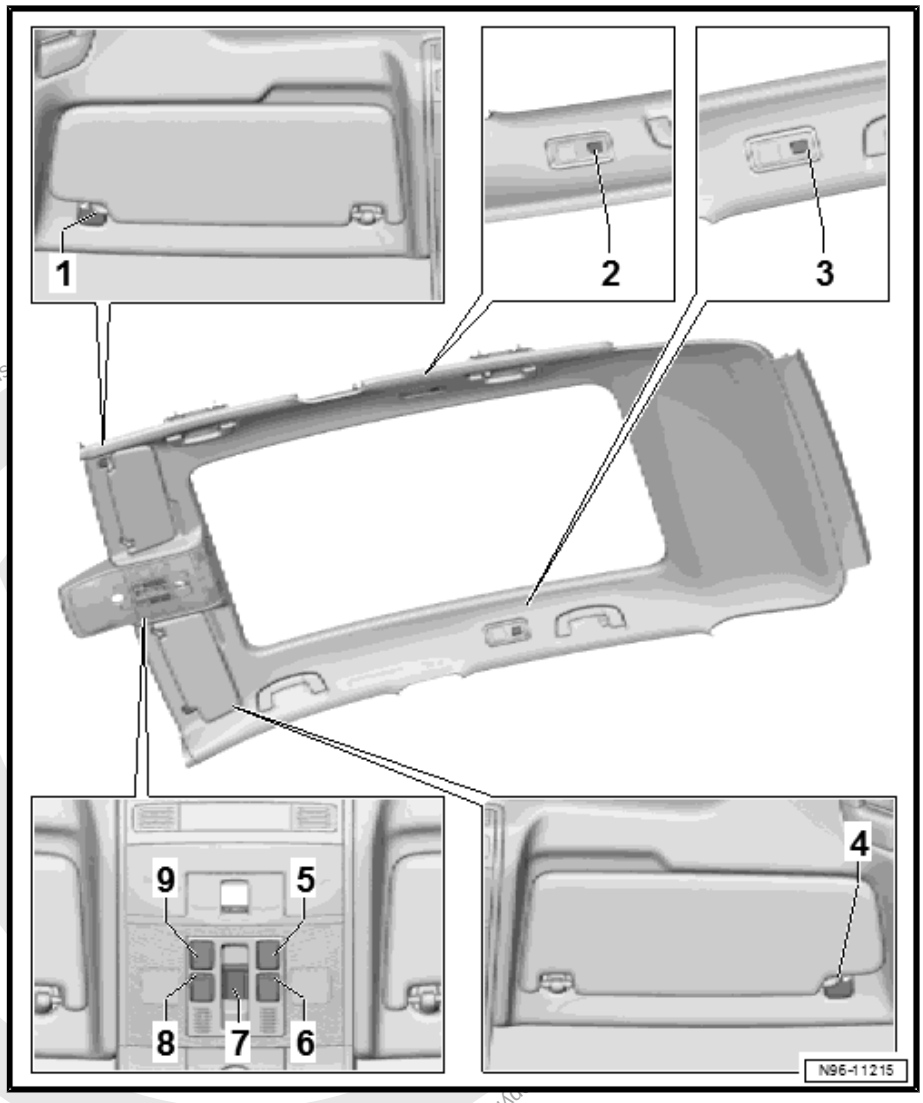
7 - Button for door opening light

- ❑ Installed in front interior light - WX1-
- ❑ Removing and installing ⇒ page 258

2.6.2 Overview of fitting locations - controls in roof trim, with panorama tilting sunroof

Note

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



1 - Driver vanity mirror contact switch - F147-

- ❑ The vanity mirror contact switch is an integral part of the sun visor bracket and cannot be renewed individually if defective.
- ❑ Removing and installing ⇒ page 257

2 - Button for rear left interior light - W47-

- ❑ Installed in rear left interior light - W47-
- ❑ Removing and installing ⇒ page 261

3 - Button for rear right interior light - W48-

- ❑ Installed in rear right interior light - W48-
- ❑ Removing and installing ⇒ page 261

4 - Front passenger vanity mirror contact switch - F148-

- ❑ The vanity mirror contact switch is an integral part of the sun visor bracket and cannot be renewed individually if defective.
- ❑ Removing and installing ⇒ page 257

5 - Button for rear interior light -W47- / -W48-

- ❑ Installed in front interior light - WX1-
- ❑ Removing and installing ⇒ page 258

6 - Front right reading light button - E634-

- ❑ Installed in front interior light - WX1-
- ❑ Removing and installing ⇒ page 262

7 - Sunroof button - E325-

- ❑ Removing and installing ⇒ page 258

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8 - Front left reading light button - E633-

- ❑ For switching front interior light - W1- on and off
- ❑ Removing and installing ⇒ page 262

9 - Button for door opening light

- ❑ Installed in front interior light - WX1-
- ❑ Removing and installing ⇒ page 258

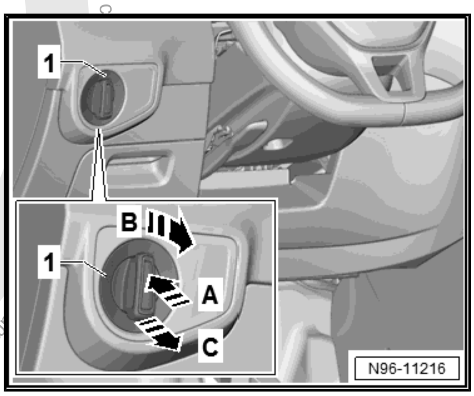
2.7 Removing and installing rotary light switch - EX1-

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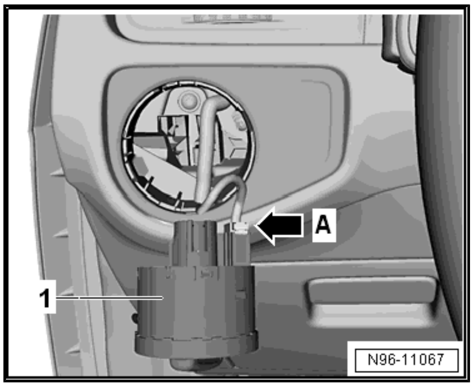
Note

Removal and installation are described for left-hand drive vehicles. Removal and installation for right-hand drive vehicles is similar.

Removing



- Turn light switch to zero position.
- Press rotary knob -1- in direction of -arrow A-.
- Turn rotary knob -1- in direction of -arrow B-.
- Hold rotary knob -1- in this position.
- Pull rotary light switch - EX1- in direction of -arrow C- out of dash panel.



- Release and disconnect connectors -arrow A-.
- Remove rotary light switch - EX1- -1-.

Installing

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

- Perform functional check.

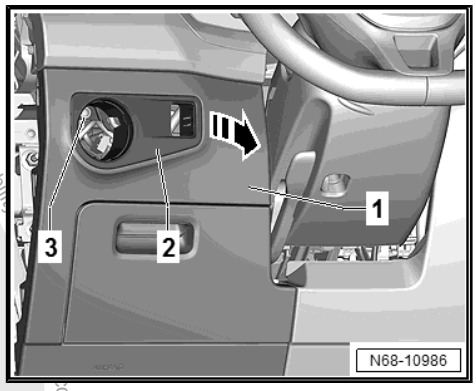
2.8 Removing and installing headlight range control regulator - E102-

Note

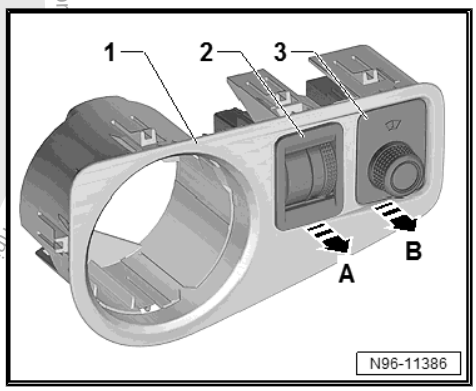
Removal and installation are described for left-hand drive vehicles. Removal and installation for right-hand drive vehicles is similar.

Removing

– Remove rotary light switch - EX1- ⇒ page 242 .
– Unscrew bolt -3-.
– Pull trim -2- out of dash panel cover -1-.
– Release and disconnect connectors.



– Push headlight range control regulator - E102- -2- from behind in -direction of arrow A- out of trim -1-.



Installing

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

– Perform functional check.

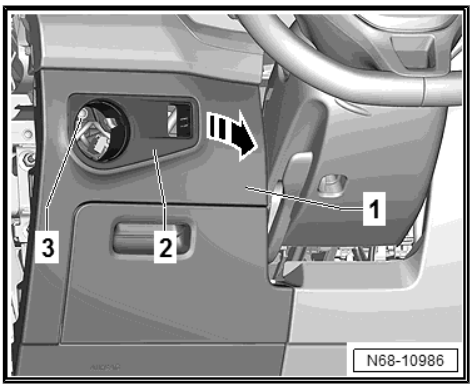
2.9 Removing and installing switch for Head-up Display - E736-

Note

Removal and installation are described for left-hand drive vehicles. Removal and installation for right-hand drive vehicles is similar.

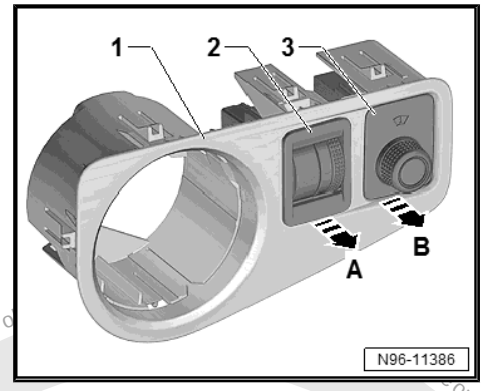
Removing

– Remove rotary light switch - EX1- ⇒ page 242 .
– Unscrew bolt -3-.
– Pull trim -2- out of dash panel cover -1-.
– Release and disconnect connectors.



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– Push switch for Head-up Display - E736- -3- from behind in -direction of arrow B- out of trim -1-.



Installing

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

– Perform functional check.

2.10 Removing and installing TCS and ESP button - E256-

Note

The TCS and ESP button - E256- is integrated in the switch module 1 in centre console - EX23- and cannot be renewed individually.

– Removing and installing switch module 1 in centre console - EX23- ⇒ page 245 .

2.11 Removing and installing parking aid button - E266-

Note

The parking aid button - E266- is integrated in the switch module 2 in centre console - EX30- and cannot be renewed individually.

– Removing and installing switch module 2 in centre console - EX30- ⇒ page 245 .

2.12 Removing and installing park assist steering button - E581-

Note

The park assist steering button - E581- is integrated in the switch module 2 in centre console - EX30- and cannot be renewed individually.

– Removing and installing switch module 2 in centre console - EX30- ⇒ page 245 .

2.13 Removing and installing Start/Stop operation button - E693-

Note

The Start/Stop operation button - E693- is integrated in the switch module 2 in centre console - EX30- and cannot be renewed individually.

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– Removing and installing switch module 2 in centre console - EX30- ⇒ page 245 .

2.14 Removing and installing button for Charisma - E735-

Note

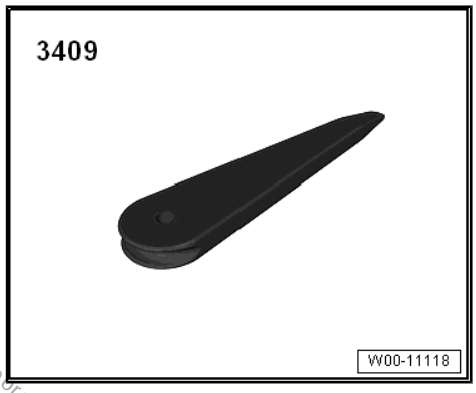
The driving mode selection button - E735- is integrated in the switch module 2 in centre console - EX30- and cannot be renewed individually.

– Removing and installing switch module 2 in centre console - EX30- ⇒ page 245 .

2.15 Removing and installing switch module in centre console -EX23- / -EX30-

Special tools and workshop equipment required

♦ Removal wedge - 3409-



Note

♦ *On the left and right next to the gear lever, there can be the following buttons in two button modules, depending on the equipment level. The procedure for removal and installation of the button modules is identical for both modules and is therefore described for one of them only. A removed button module cannot be dismantled further.*

♦ *Removal and installation are described for left-hand drive vehicles. Removal and installation for right-hand drive vehicles is similar.*

Switch module 1 in centre console - EX23- :

♦ TCS and ESP button - E256-

Switch module 2 in centre console - EX30- :

♦ Parking aid button - E266-

♦ Park assist steering button - E581-

♦ Start/stop operation switch - E693-

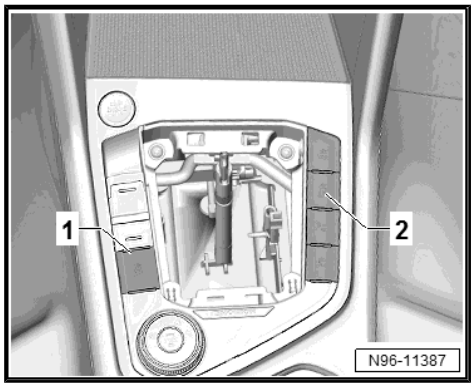
♦ Button for driver profile selection - E735-

Removing

– Switch off ignition and all electrical consumers.

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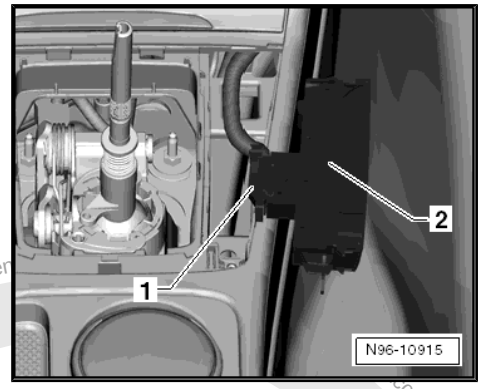
– Store the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.
– Unclip selector cover and remove it upwards from centre console ⇒ Rep. gr. 34 ; Selector mechanism; Removing and installing gear knob or ⇒ Rep. gr. 34 ; Selector mechanism; Removing and installing selector lever handle .
– Lift driver side switch module -1- or front passenger side switch module -2- out of centre console.



– Release and disconnect connector -1- on switch module -2-.
– Remove switch module on driver side or switch module on front passenger side.

If the switch module on driver side/front passenger side cannot be removed as described, proceed as follows:

– Remove centre console insert ⇒ General body repairs, interior; Rep. gr. 68 ; Centre console; Removing and installing centre console insert .
– Unclip switch module on driver side/front passenger side from below from centre console insert.



Installing

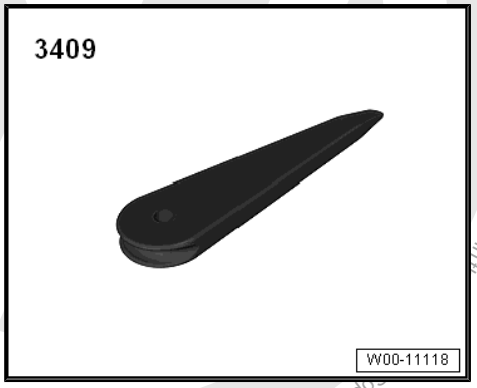
Install in the reverse order of removal, observing the following:

– Perform functional check.

2.16 Removing and installing operating unit for driving mode selection - E881-

Special tools and workshop equipment required

♦ Removal wedge - 3409-



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Note

Removal and installation are described for left-hand drive vehicles. Removal and installation for right-hand drive vehicles is similar.

Removing

– Switch off ignition and all electrical consumers.

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

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

Caution

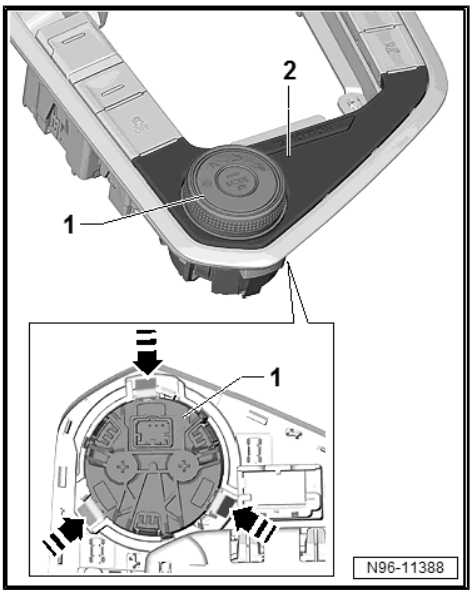
Danger of damage to component surfaces.

- ***When working with leverage tools, always mask off the components installed in visible areas using commercially available adhesive tape.***

– Unclip trim -2- from centre console insert using removal wedge - 3409- .

– Release retaining clips on operating unit for driving mode selection - E881- -1- in -direction of arrow-.

– Push operating unit for driving mode selection - E881- -1- out of centre console insert.



Installing

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

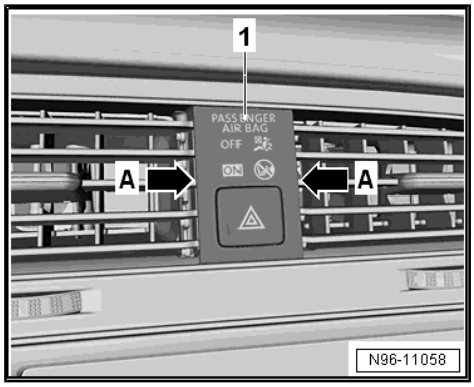
– Perform functional check.

2.17 Removing and installing hazard warning light switch - EX3-

Removing

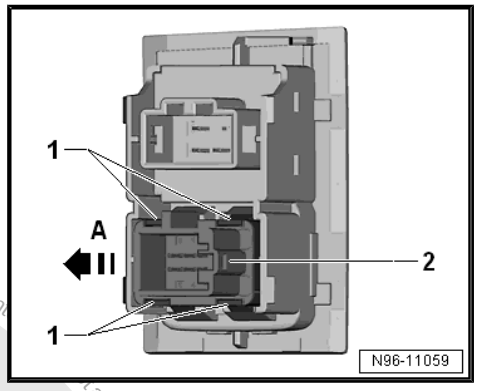
– Grasp front passenger side airbag deactivated warning lamp - K145- -1- at sides -arrows A-, and pull it out of dash panel.

– Release and disconnect connectors.



– Release fasteners -1-.

– Push hazard warning light switch - EX3- -2- in -direction of arrow A- out of front passenger side airbag deactivated warning lamp - K145- .



Installing

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

– Perform functional check.

2.18 Removing and installing buttons for seat heating -E653- / -E654-

Note

The seat heating buttons -E653- / -E654- are integrated in the operating and display unit of the air conditioning system/Climatronic and cannot be renewed separately in the event of a fault.

– Removing and installing operating and display unit of air conditioning system/Climatronic ⇒ Heating, air conditioning; Rep. gr. 87 ; Operating and display unit; Removing and installing operating and display unit .

2.19 Removing and installing glove compartment light switch - E26-

Note

Removal and installation are described for left-hand drive vehicles. Removal and installation for right-hand drive vehicles is similar.

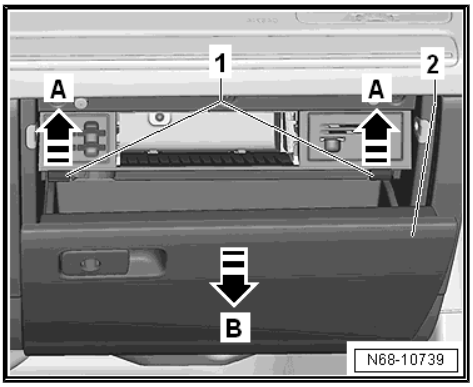
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Removing

– Open glove compartment cover -2-.

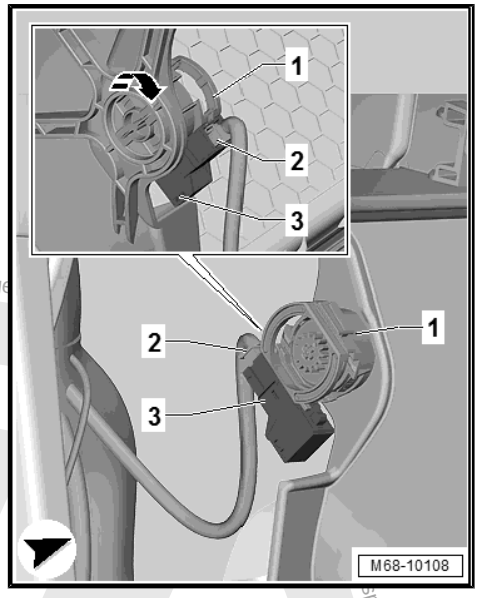
– Push limit stops -1- for glove compartment lid -2- upwards -arrows A-.

– At the same time, open glove compartment cover -2- further -arrow B-. When doing this, carefully pull toothed rack of deceleration element out of damper element.



– Release and disconnect connector -2- on switch for glove compartment light - E26- -3-.

– Turn damper element -1- with switch for glove compartment light - E26- -3- 90° ($^1/_4$ turn) in -direction of arrow-, and remove it from glove compartment.



Installing

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

Note

If the deceleration element falls out of the damper element, fit it back to the damper element in the correct installation position.

Caution

Carefully push toothed rack into damper element in correct installation position.

– Perform functional check.

2.20 Removing and installing exterior mirror adjuster - EX11-

Note

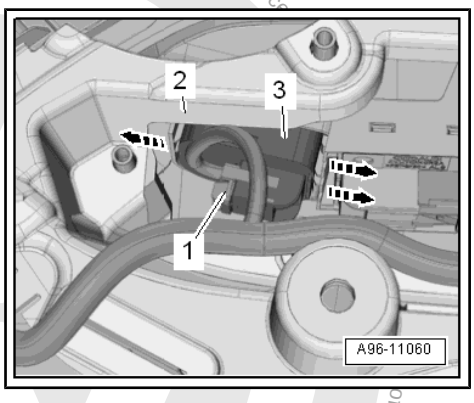
Removal and installation are described for left-hand drive vehicles. Removal and installation for right-hand drive vehicles is similar.

Removing

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

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– Carefully release fasteners in direction of -arrow- using a small screwdriver.
– Pull exterior mirror adjuster - EX11- -3- out of switch mounting -2-.
– Release and disconnect connector -1-.



Installing

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

– Perform functional check.

2.21 Removing and installing operating unit for window regulator in driver door - E512-

Note

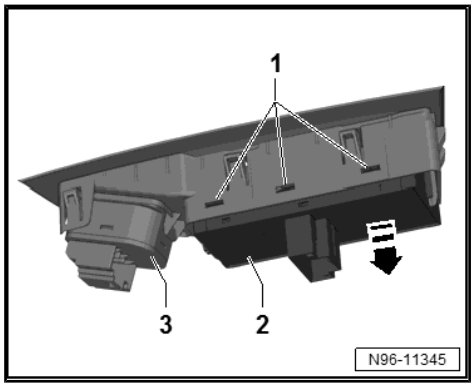
Removal and installation are described for left-hand drive vehicles. Removal and installation for right-hand drive vehicles is similar.

Removing

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

Note

For greater clarity, the door trim is not shown.



– Use a small screwdriver to release fasteners -1- on both sides.
– Pull out operating unit for window regulator in driver door - E512- -2- from switch unit trim -3- in direction of -arrow-.
– Disconnect connector on operating unit for window regulator in driver door - E512- -2-.

Installing

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

– Perform functional check.

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

Note

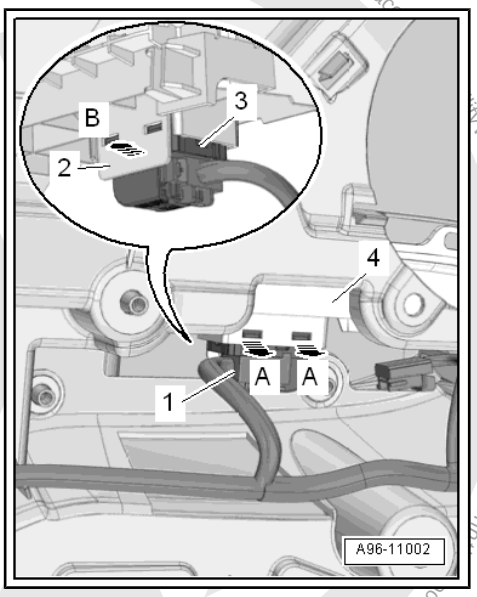
Removal and installation are described for left-hand drive vehicles. Removal and installation for right-hand drive vehicles is similar.

Removing

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

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– Use a small screwdriver to release fasteners in -direction of arrow A-.
– Release retaining tab -2- in direction of -arrow B-.
– Detach Front passenger side window regulator button - E716- -3- from switch mounting, and remove it towards rear.
– Release and disconnect connector -1-.



Installing

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

– Perform functional check.

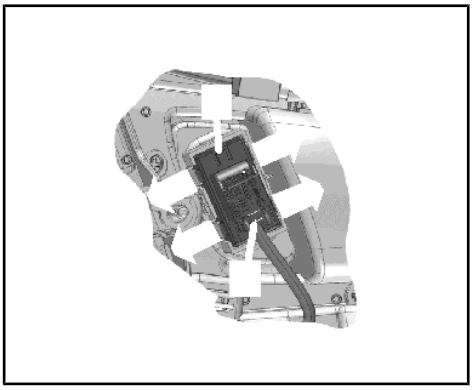
2.23 Removing and installing driver side interior locking button for central locking system - E308-

Note

Removal and installation are described for left-hand drive vehicles. Removal and installation for right-hand drive vehicles is similar.

Removing

– Remove front door trim panel ⇒ General body repairs, interior; Rep. gr. 70 ; Front door trim panels; Removing and installing front door trim panel .
– Release and disconnect connector -1-.
– Release retaining clips in direction of -arrow-.
– Push out driver side interior locking button for central locking system - E308- -2- outwards.



Installing

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

– Perform functional check.

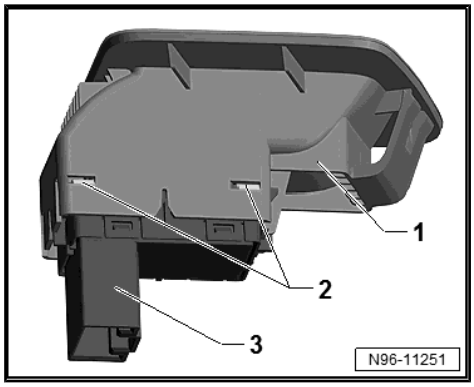
2.24 Removing and installing rear lid remote release button - E233-

Note

Removal and installation are described for left-hand drive vehicles. Removal and installation for right-hand drive vehicles is similar.

Removing

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



Note

For greater clarity, the door trim is not shown.

– Using a small screwdriver, release fasteners -2- on both sides.
– Pull rear lid remote release button - E233- -3- out of trim -1-.
– Release and disconnect connector on rear lid remote release button - E233- -3-.

Installing

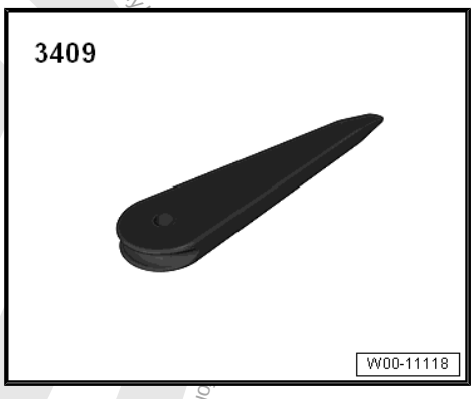
Install in the reverse order of removal, observing the following:

– Perform functional check.

2.25 Removing and installing button for deactivating interior monitoring and vehicle inclination sensor - E616-

Special tools and workshop equipment required

♦ Removal wedge - 3409-



Note

Removal and installation are described for left-hand drive vehicles. Removal and installation for right-hand drive vehicles is similar.

Removing

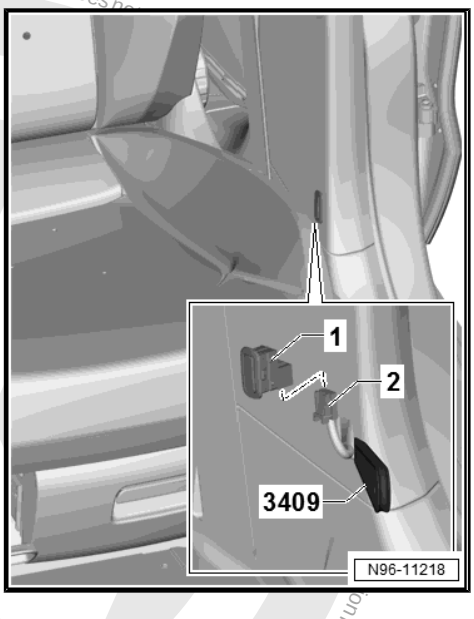
Caution

Danger of damage to component surfaces.

- ***When working with leverage tools, always mask off the components installed in visible areas using commercially available adhesive tape.***

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– Apply removal wedge - VAS 3409- or screwdriver at lower edge of button for deactivating interior monitoring and vehicle inclination sensor - E616- -1- and lever out.
– Remove button from B-pillar trim.
– Release and disconnect electrical connector -2-.



Installing

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

– Perform functional check.

2.26 Removing and installing door contact switch -F2- / -F3-

Note

The door contact switch -F2- / -F3- is installed in the door lock and cannot be renewed separately in the event of a defect.

– Removing and installing front door lock ⇒ General body repairs, exterior; Rep. gr. 57 ; Door components; Removing and installing door lock .

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

Note

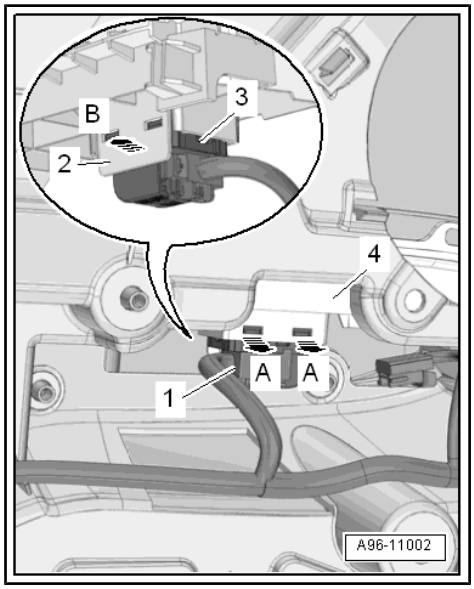
Removal and installation are described for the left side. The removal and installation procedure for the right-hand side is basically the same.

Removing

– Remove rear door trim ⇒ General body repairs, interior; Rep. gr. 70 ; Rear door trims; Removing and installing rear door trim .

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– Using a small screwdriver, release locking devices in direction of -arrow A-.
– Release retaining tab -2- in direction of -arrow B-.
– Take window regulator switch -3- out of switch mounting and remove towards rear.



Installing

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

– Perform functional check.

2.28 Removing and installing rear door contact switches -F10- / -F11-

Note

The rear door contact switch -F10- / -F11- is integrated in the door lock and cannot be renewed separately in the event of a fault.

– Removing and installing rear door lock ⇒ General body repairs, exterior; Rep. gr. 58 ; Door components; Removing and installing door lock .

2.29 Removing and installing electromechanical parking brake button - E538- / auto-hold button - E540-

Note

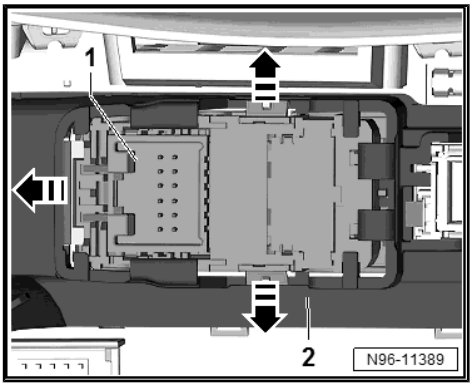
- *The electromechanical parking brake button - E538- and the auto-hold button - E540- are combined to form one component and cannot be separated.*
- *Removal and installation are described for left-hand drive vehicles. Removal and installation for right-hand drive vehicles is similar.*

Removing

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

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– Release retaining lugs on centre console insert -2- in -direction of arrow-.
– Push electromechanical parking brake button - E538- -1- upwards out of centre console insert -2-.



Installing

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

– Perform functional check.

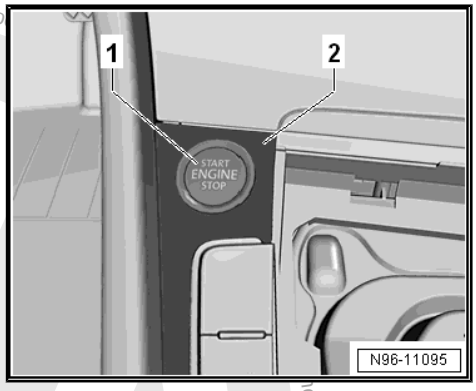
2.30 Removing and installing the starter button - E378-

Note

Removal and installation are described for left-hand drive vehicles. Removal and installation for right-hand drive vehicles is similar.

Removing

– Unclip selector cover and remove it upwards from centre console ⇒ Rep. gr. 34 ; Selector mechanism; Removing and installing gear knob or ⇒ Rep. gr. 34 ; Selector mechanism; Removing and installing selector lever handle .
– Push starter button - E378- -1- from below out of centre console insert -2-. When doing so, retaining clips become released.
– Release and separate electrical connector.



If the starter button - E378- cannot be removed as described, proceed as follows:

– Remove centre console insert ⇒ General body repairs, interior; Rep. gr. 68 ; Centre console; Removing and installing centre console insert .
– Push starter button - E378- from below out of centre console insert.

Installing

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

– Perform functional check.

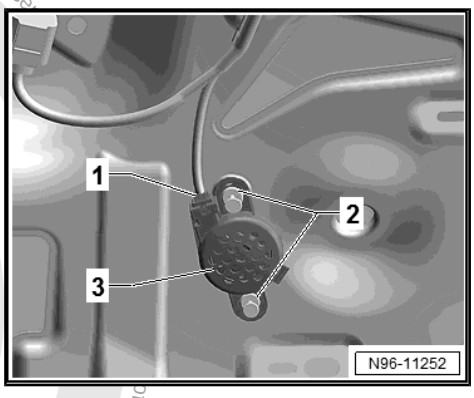
2.31 Removing and installing rear lid warning buzzer - H32-

Removing

– Remove lower rear lid trim ⇒ General body repairs, interior; Rep. gr. 70 ; Luggage compartment trims; Removing and installing lower rear lid trim .

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– Lever off spreader rivets -2-.
– Remove rear lid warning buzzer - H32- -3-.
– Release and disconnect connector -1-.



Installing

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

– Perform functional check.

2.32 Removing and installing rear lid contact switch

Note

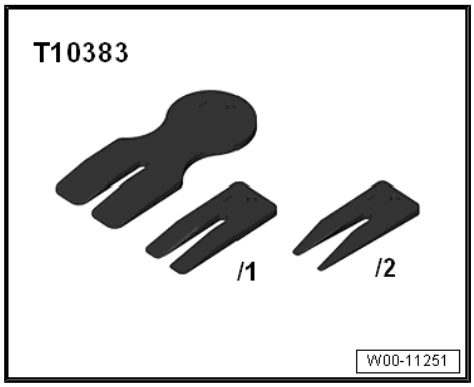
The rear lid contact switch is an integral part of the rear lid lock and cannot be renewed individually.

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

2.33 Removing and installing rear lid closure button - E574-

Special tools and workshop equipment required

♦ Wedges - T10383-



Removing

Caution

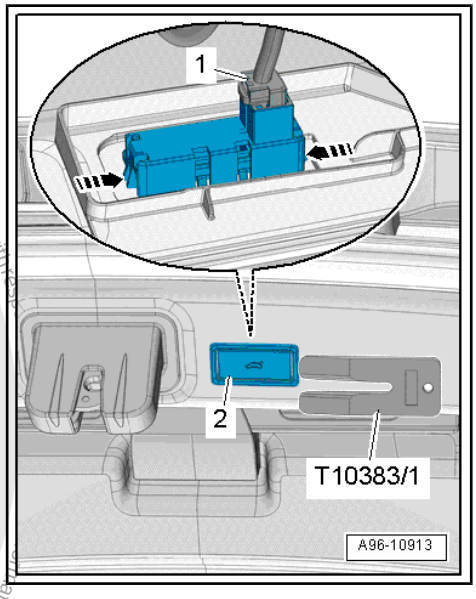
Danger of damage to component surfaces.

- *When working with leverage tools, always mask off the components installed in visible areas using commercially available adhesive tape.*

– Release catches -arrows- on rear lid closure button - E574- -2- using wedge -T10383/1- .
– Pull rear lid closure button - E574- -2- out of lower rear lid trim.
– Release and disconnect connector -1-.

If the rear lid closure button - E574- cannot be removed as described, proceed as follows:

– Remove lower rear lid trim ⇒ General body repairs, interior; Rep. gr. 70 ; Luggage compartment trims; Removing and installing lower rear lid trim .
– Unclip rear lid closure button - E574- from lower rear lid trim from the inside.



Installing

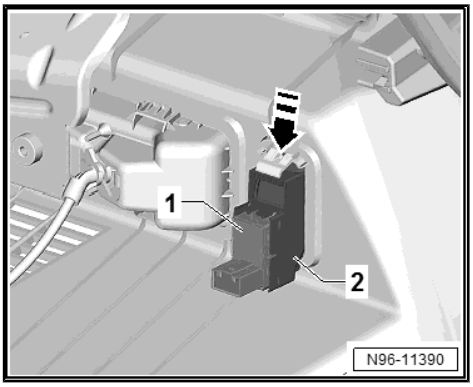
Install in the reverse order of removal, observing the following:

– Perform functional check.

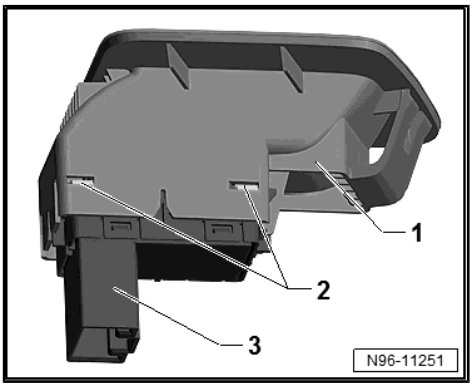
2.34 Removing and installing electric hinged tow coupling attachment button - E474-

Removing

– Detach left luggage compartment side trim until trim -2- with electric hinged tow coupling attachment button - E474- -1- is accessible ⇒ General body repairs, interior; Rep. gr. 70 ; Luggage compartment trims; Removing and installing luggage compartment side trim .
– Release and disconnect connector on electric hinged tow coupling attachment button - E474- -1-.
– Release retaining lugs on trim -2- at rear of luggage compartment side trim in -direction of arrow-.
– Swing trim -2- with electric hinged tow coupling attachment button - E474- -1- inwards out of luggage compartment side trim.



– Using a small screwdriver, release locking devices -2- on both sides.
– Remove electric hinged tow coupling attachment button - E474- -3- from trim -1-.



Installing

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

– Perform functional check.

2.35 Removing and installing vanity mirror contact switch -F147- / -F148-

Note

The vanity mirror contact switch -F147- / -F148- is an integral part of the sun visor bracket and cannot be renewed separately in the event of a fault.

– Removing and installing sun visor ⇒ General body repairs, interior; Rep. gr. 68 ; Equipment; Removing and installing sun visor .

2.36 Removing and installing sunroof button - E325-

Special tools and workshop equipment required

♦ Torque screwdriver - V.A.G 1624-

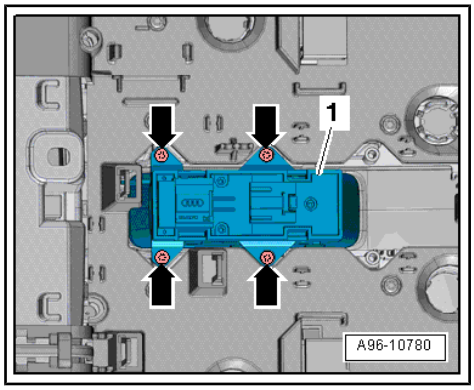


Removing

– Remove front interior light - WX1- ⇒ page 258 .

– Unscrew bolts -arrows-.

– Remove sunroof button - E325- -1- from front interior light.



Installing

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

– Perform functional check.

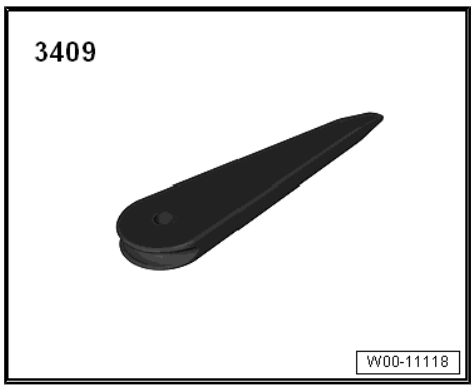
Specified torques

Component	Specified torque
Sunroof button - E325- on front interior light - WX1-	1 Nm

2.37 Removing and installing front interior light/reading light

Special tools and workshop equipment required

♦ Removal wedge - 3409-



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Note

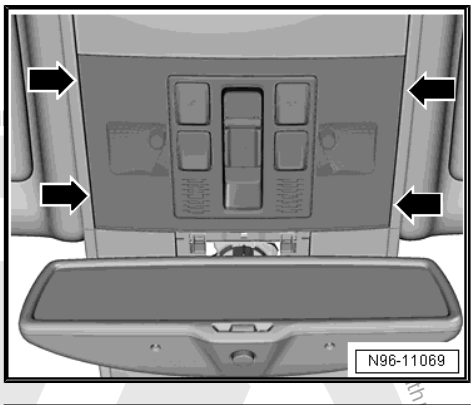
The switch module is an integral part of the front interior light - WX1- and cannot be removed individually.

Removing

– If necessary, remove cover for mirror base ⇒ General body repairs, interior; Rep. gr. 68 ; Interior mirror; Assembly overview - interior mirror .

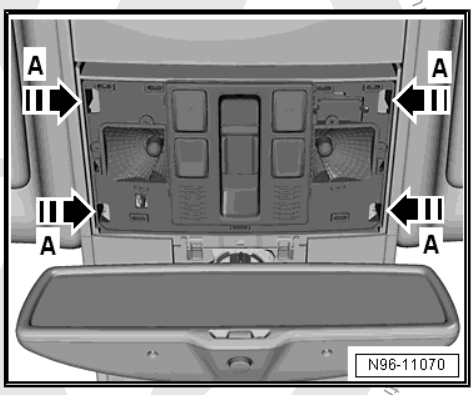
– Lever off lens of front interior light - WX1- at points marked with -arrows- using removal wedge - 3409- .

– If fitted, release and disconnect connectors.



– Press fasteners in direction of -arrow A-, and remove front interior light - WX1- .

– Release and disconnect connectors.



Installing

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

– Perform functional check.

2.38 Removing and installing rear interior light/reading light

⇒ "2.38.1 Removing and installing rear interior light/reading light, vehicles without panoramic tilting sunroof", page 259

⇒ "2.38.2 Removing and installing rear interior light/reading light, vehicles with panoramic tilting sunroof", page 261

2.38.1 Removing and installing rear interior light/reading light, vehicles without panoramic tilting sunroof

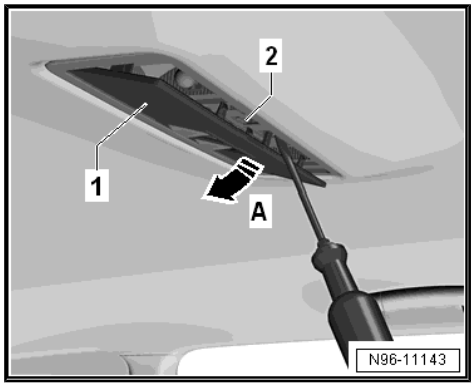
Removing

Note

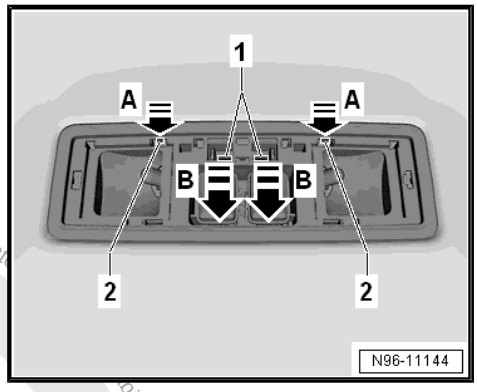
- *The buttons are an integral part of the rear interior light - WX2- and cannot be removed individually.*
- *The rear interior light - WX2- is secured by a two-stage locking element.*

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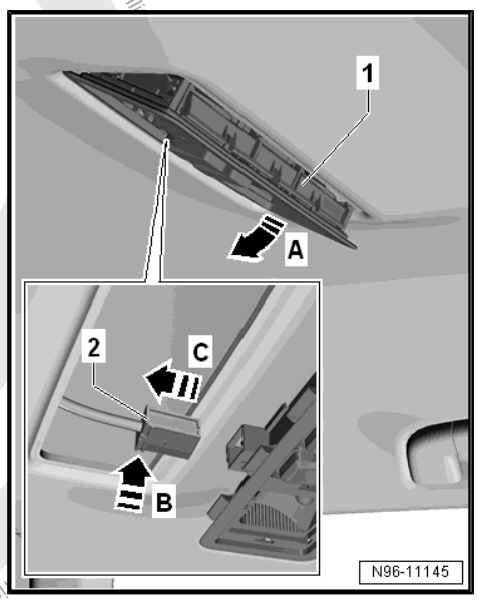
– Using, for example, a narrow screwdriver, lever out lens -1- in direction of -arrow A-.
– Remove lens -1- from rear interior light - WX2- -2-.



– Using, for example, a narrow screwdriver, release fasteners -2- in direction of -arrow A-.
– Push locking element -1- in -direction of arrow B-.



– Remove rear interior light - WX2- -1- from roof aperture in direction of -arrow A-.
– Push connector lock in -direction of arrow B-, and disconnect electrical connector in -direction of arrow C-.



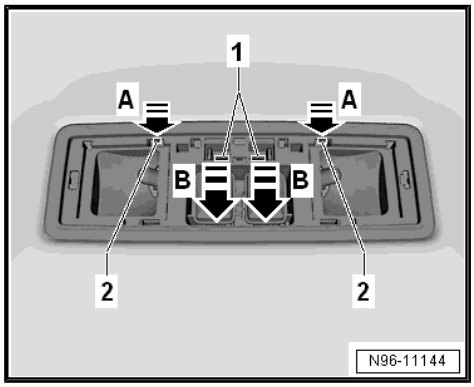
Installing

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

Note

Electrical connector must face direction of travel.

– Press locking element -1- in opposite direction of -arrow B-. Catches -2- must engage audibly.
– Perform functional check.

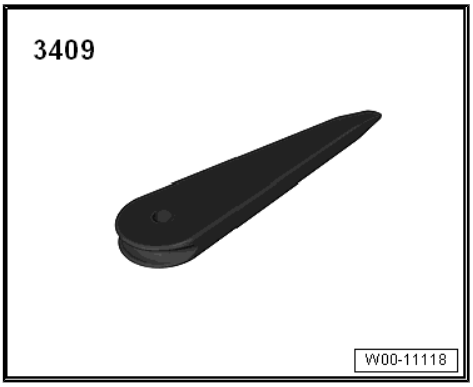


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2.38.2 Removing and installing rear interior light/reading light, vehicles with panoramic tilting sunroof

Special tools and workshop equipment required

- Removal wedge - 3409-



Note

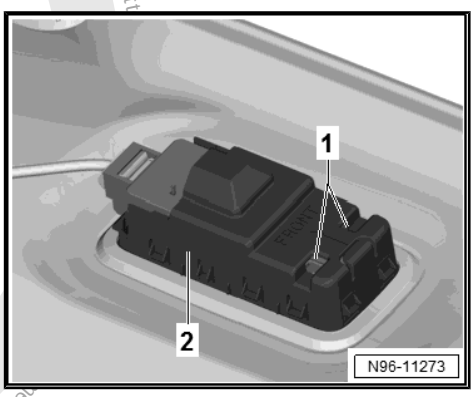
- *The buttons are an integral part of the rear left interior light - W47- / rear right interior light - W48- and cannot be removed individually.*
- *Removal and installation are described for the left side. The removal and installation procedure for the right-hand side is basically the same.*

Removing

– Remove moulded headliner ⇒ General body repairs, interior; Rep. gr. 70 ; Roof trims; Removing and installing moulded headliner .

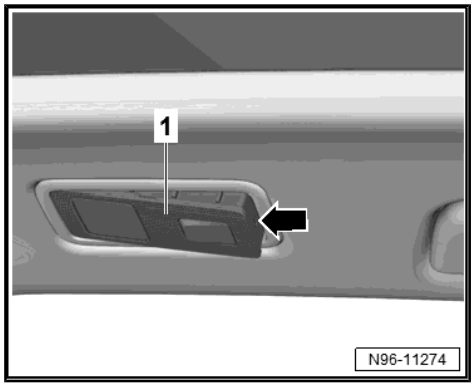
– Treat moulded headliner with care, and make sure to lay it down on a clean surface.

– Press fasteners -1-, and swing interior light out of holder -2-.

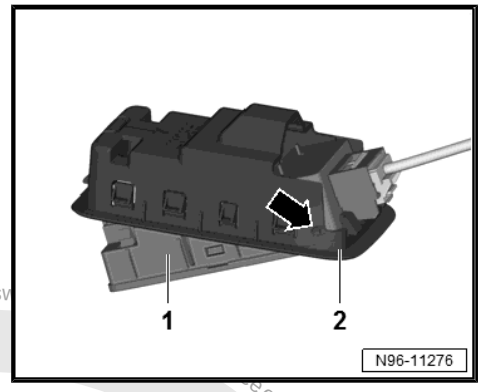


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– If necessary, use removal wedge - 3409- to lever light -1- out of holder -arrow-.



– Using removal wedge - 3409- , unclip interior light -1- at pivot points -arrow- on both sides of light out of holder -2-.
– Release and separate electrical connector on interior light -1-.



Installing

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

– Perform functional check.

2.39 Removing and installing front reading light button -E633- / -E634-

Note

The front left reading light button - E633- / front right reading light button - E634- is an integral part of the front interior light/reading light and cannot be removed individually.

– Removing and installing front interior light/reading light ⇒ page 258 .

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3 Anti-theft alarm

⇒ “3.1 Assembly overview - interior monitor”, page 263

⇒ “3.2 Removing and installing alarm horn H12 ”, page 264

⇒ “3.3 Removing and installing anti-theft alarm sensor G578 ”, page 265

3.1 Assembly overview - interior monitor

⇒ “3.1.1 Assembly overview - interior monitoring, LHD vehicles”, page 263

⇒ “3.1.2 Assembly overview - interior monitoring, RHD vehicles”, page 264

3.1.1 Assembly overview - interior monitoring, LHD vehicles

Note

The vehicle shown in the illustration may differ from the actual vehicle.

1 - Anti-theft alarm system sensor - G578-

- ❑ Depending on equipment, the installation position may differ slightly
- ❑ Removing and installing ⇒ page 265
- ❑ Needs parametrisation after renewal ⇒ page 265 .

2 - Button for deactivating interior monitoring and vehicle inclination sensor - E616-

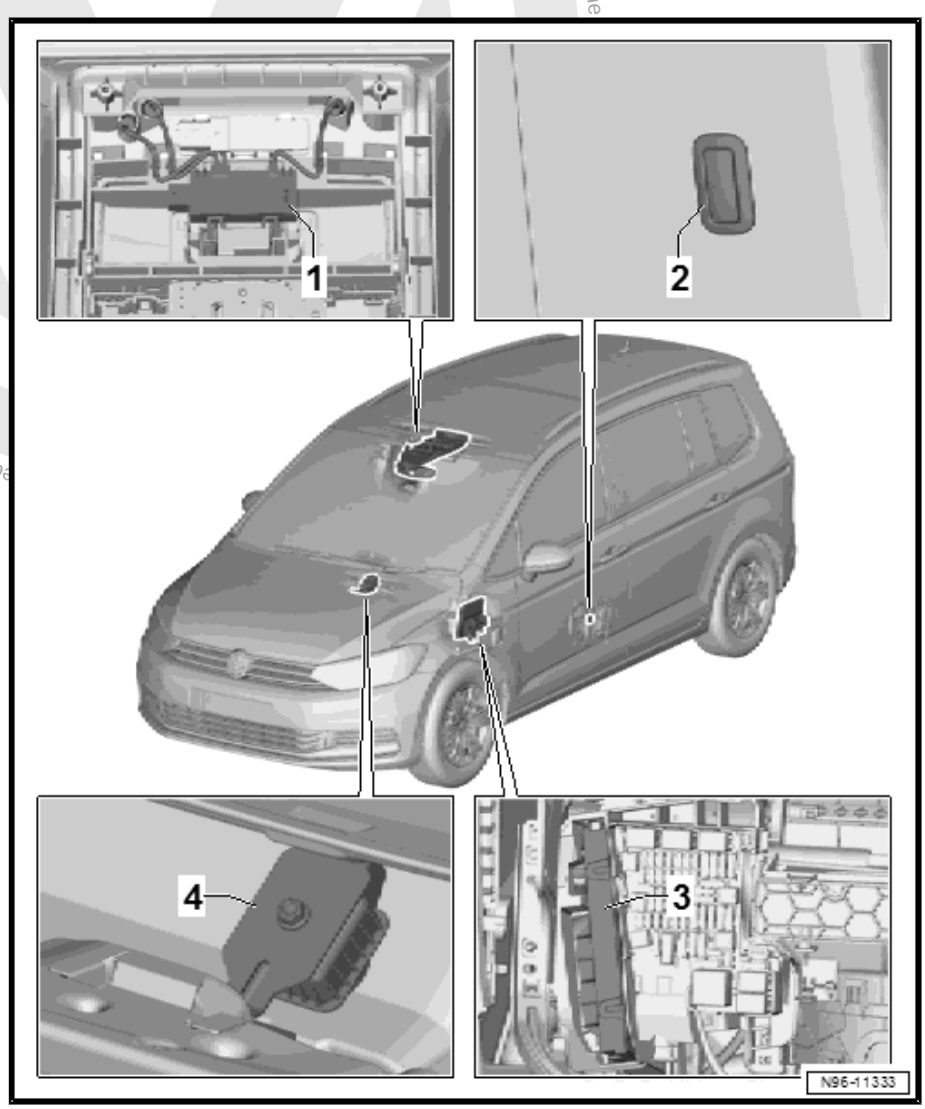
- ❑ Removing and installing ⇒ page 252

3 - Onboard supply control unit - J519-

- ❑ With central locking and anti-theft alarm system aerial - R47-
- ❑ Assembly overview ⇒ page 296
- ❑ Removing and installing ⇒ page 299

4 - Alarm horn - H12-

- ❑ Removing and installing ⇒ page 264

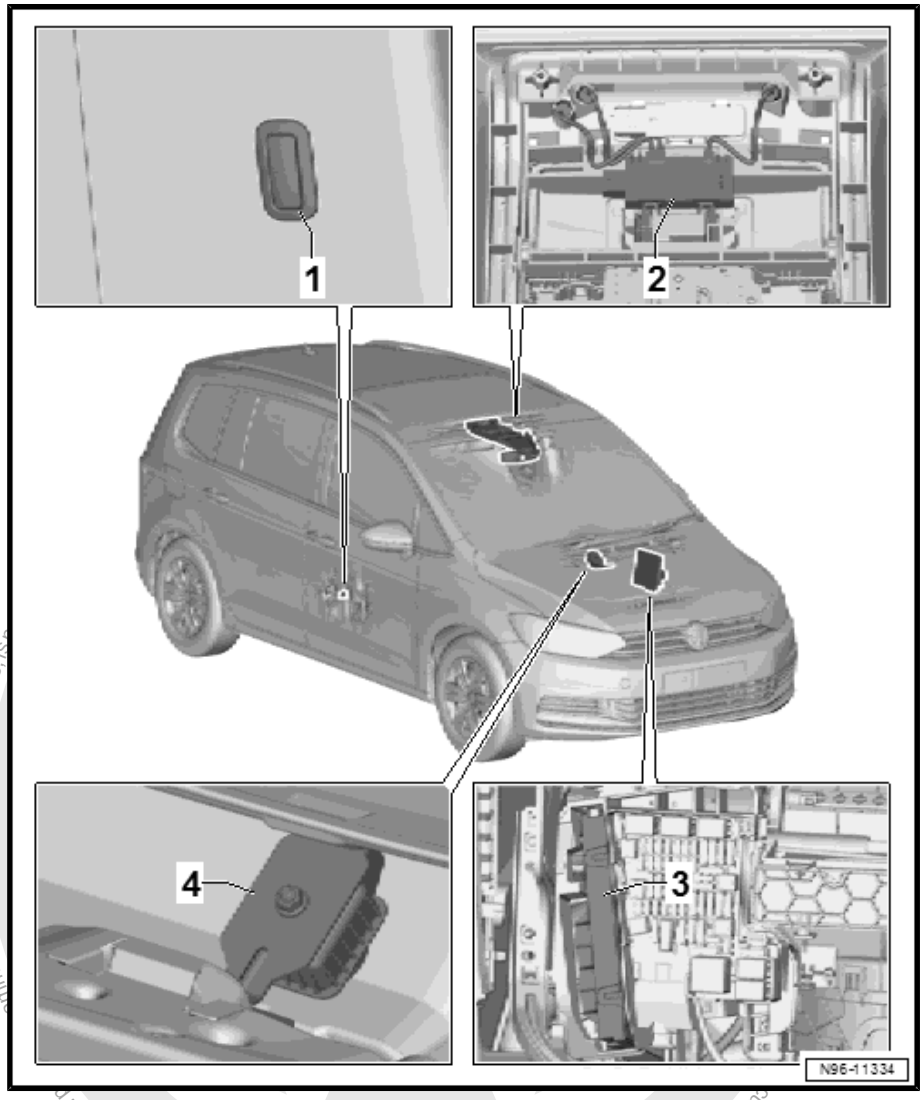


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3.1.2 Assembly overview - interior monitoring, RHD vehicles

Note

The vehicle shown in the illustration may differ from the actual vehicle.



1 - Button for deactivating interior monitoring and vehicle inclination sensor - E616-

- ❑ Removing and installing ⇒ page 252

2 - Anti-theft alarm system sensor - G578-

- ❑ Depending on equipment, the installation position may differ slightly
- ❑ Removing and installing ⇒ page 265
- ❑ Needs parametrisation after renewal ⇒ page 265 .

3 - Onboard supply control unit - J519-

- ❑ With central locking and anti-theft alarm system aerial - R47-
- ❑ Assembly overview ⇒ page 296
- ❑ Removing and installing ⇒ page 299

4 - Alarm horn - H12-

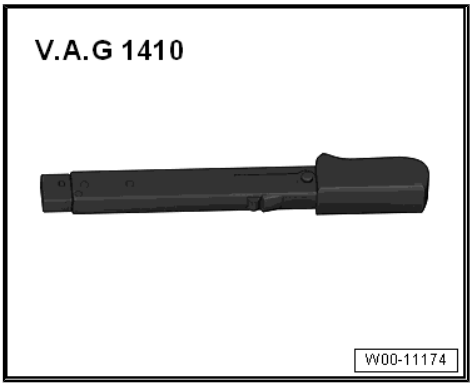
- ❑ Removing and installing ⇒ page 264

3.2 Removing and installing alarm horn - H12-

Special tools and workshop equipment required

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♦ Torque wrench - V.A.G 1410-



Removing

– Remove plenum chamber cover ⇒ General body repairs, exterior; Rep. gr. 50 ; Plenum chamber cover; Removing and installing plenum chamber cover .

– Remove wiring harness from studs of nuts -3-.

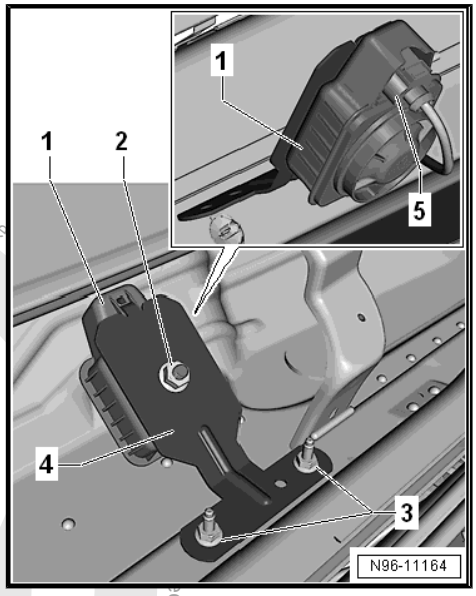
– Unscrew nuts -3-.

– Remove alarm horn - H12- -1- together with bracket -4- from plenum chamber.

– Release and disconnect electrical connector -5-.

– Undo nuts -2-.

– Remove alarm horn - H12- -1- from bracket -4-.



Installing

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

– Perform functional check.

Specified torques

Component	Specified torque
Alarm horn - H12- to bracket	6 Nm
Bracket to body	9 Nm

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

⇒ "3.3.1 Removing and installing anti-theft alarm sensor G578 , vehicles with small storage compartment in headliner", page 265

⇒ "3.3.2 Removing and installing anti-theft alarm sensor G578 , vehicles with large storage compartment in headliner", page 266

3.3.1 Removing and installing anti-theft alarm sensor - G578-, vehicles with small storage compartment in headliner

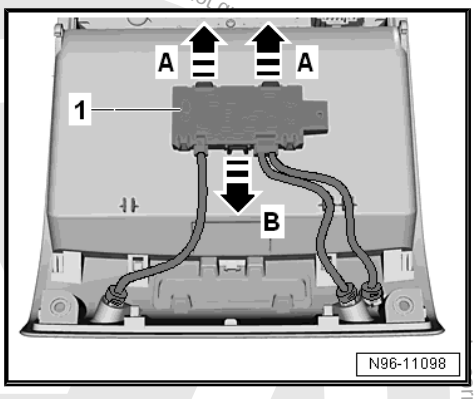
Removing

– Remove front interior light - WX1- ⇒ page 258 .

– Remove storage compartment in roof headliner ⇒ General body repairs, interior; Rep. gr. 68 ; Compartments and covers; Removing and installing storage compartment in roof headliner .

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– Release retaining tabs in direction of arrows -A- and -B-, respectively.
– Remove anti-theft alarm sensor - G578- -1- from storage compartment in headliner.
– Remove the 3 individual sensors one after the other from storage compartment in headliner as follows:



– Release retaining tabs in direction of arrows -A- and -B-, respectively.
– Remove individual sensor -1- from storage compartment in headliner.

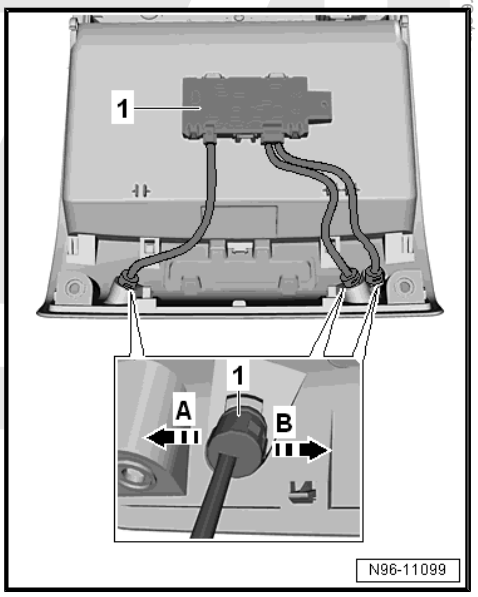
Installing

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

Note

The anti-theft alarm sensor - G578- needs to be parametrised after renewal.

– Parametrise anti-theft alarm system sensor - G578- ⇒ Vehicle diagnostic tester.

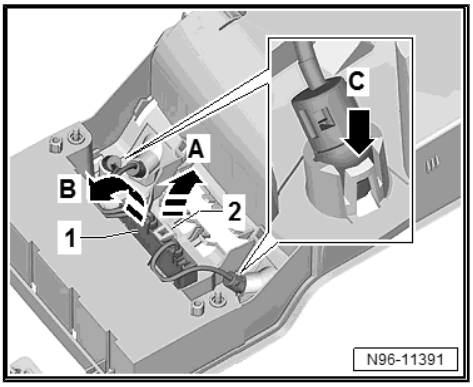


3.3.2 Removing and installing anti-theft alarm sensor - G578- , vehicles with large storage compartment in headliner

Removing

– Remove front interior light - WX1- ⇒ page 258 .
– Remove storage compartment in roof headliner ⇒ General body repairs, interior; Rep. gr. 68 ; Compartments and covers; Removing and installing storage compartment in roof headliner .

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– Release retaining tab -2- on storage compartment in headliner in -direction of arrow A-.
– Remove anti-theft alarm sensor - G578- -1- in -direction of arrow B- from storage compartment in headliner.
– Remove the 3 individual sensors one after the other from storage compartment in headliner as follows:
– Release retaining tab -arrow C-.
– Remove individual sensor -3- from storage compartment in headliner.

Installing

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

Note

The anti-theft alarm sensor - G578- needs to be parametrised after renewal.

– Parametrise anti-theft alarm system sensor - G578- ⇒ Vehicle diagnostic tester.

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4 Lane change assist

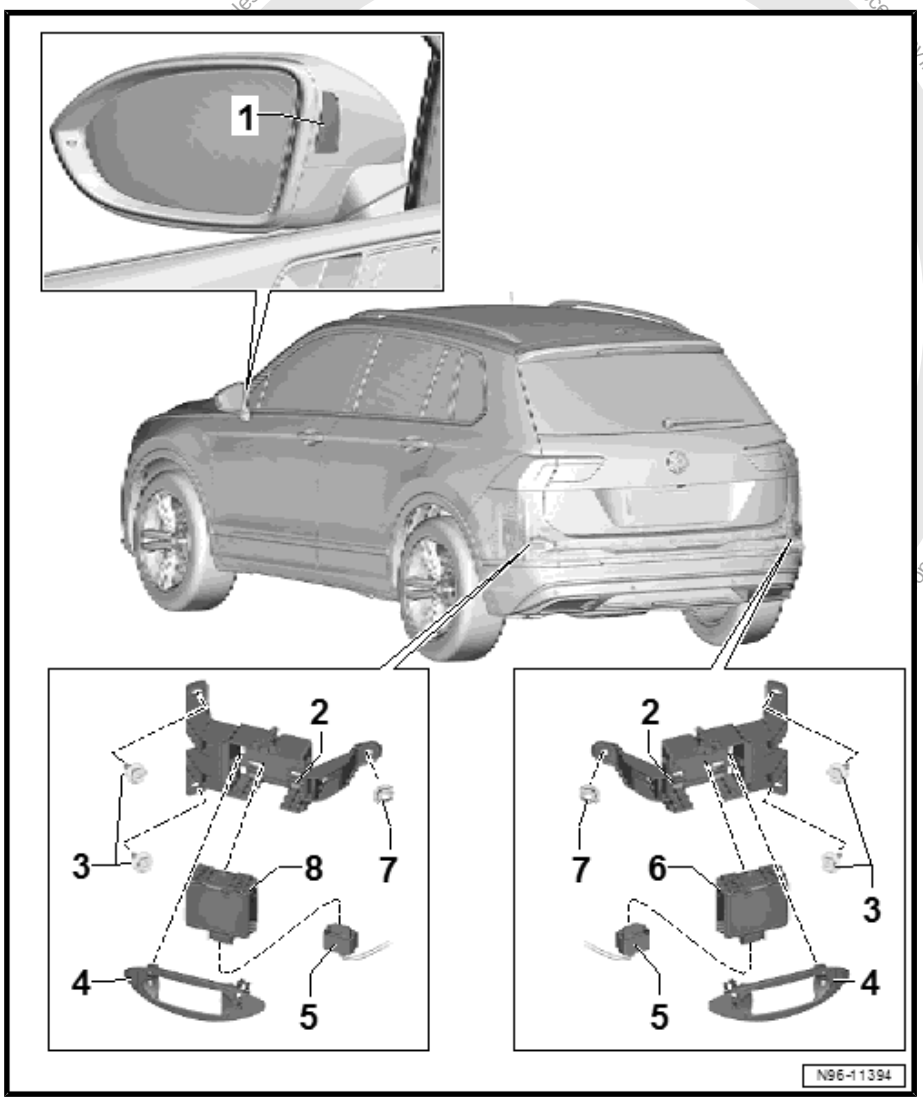
⇒ “4.1 Assembly overview - lane change assist”, page 268

⇒ “4.2 Removing and installing lane change assist warning lamp in exterior mirror K233 / K234 ”, page 269

⇒ “4.3 Removing and installing lane change assist control unit J769 / J770 ”, page 269

⇒ “4.4 Calibrating lane change assist”, page 270

4.1 Assembly overview - lane change assist



1 - Lane change assist warning lamp in exterior mirror -K233- / -K234-

- ❑ Lane change assist warning lamp in driver side exterior mirror - K233-
- ❑ Lane change assist warning lamp in front passenger side exterior mirror - K234-
- ❑ Removing and installing ⇒ page 269

2 - Bracket

- ❑ Removing and installing ⇒ page 269

3 - Bolts

- ❑ Qty. 2 on each side
- ❑ 6 Nm

4 - Shield

- ❑ Removing and installing ⇒ page 269

5 - Electrical connector

6 - Lane change assist control unit - J769-

- ❑ Master
- ❑ Removing and installing ⇒ page 269
- ❑ Calibrating ⇒ page 270

7 - Nuts

- ❑ Qty. 1 on each side
- ❑ 3.5 Nm

8 - Lane change assist control unit 2 - J770-

- ❑ Slave
- ❑ Removing and installing ⇒ page 269
- ❑ Calibrating ⇒ page 270

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4.2 Removing and installing lane change assist warning lamp in exterior mirror - K233- / -K234-

Note

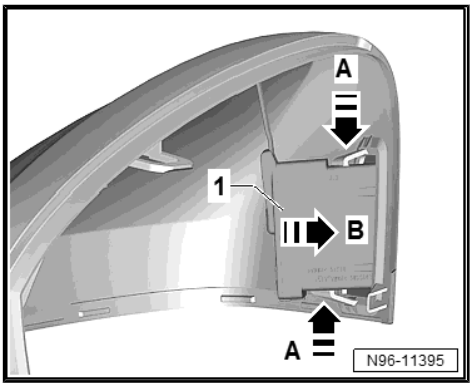
Removal and installation are described for the left side. The removal and installation procedure for the right-hand side is basically the same.

Removing

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

– Release retaining lugs on lane change assist warning lamp in driver side exterior mirror - K233- -1- in -direction of arrow A-.

– Push lane change assist warning lamp in driver side exterior mirror - K233- -1- in -direction of arrow B- out of mirror cover.



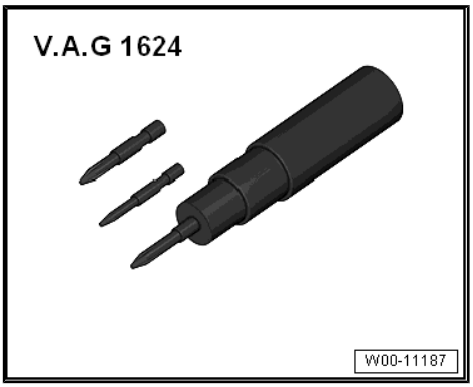
Installing

Install in reverse order of removal.

4.3 Removing and installing lane change assist control unit -J769- / -J770-

Special tools and workshop equipment required

♦ Torque screwdriver - V.A.G 1624-



Note

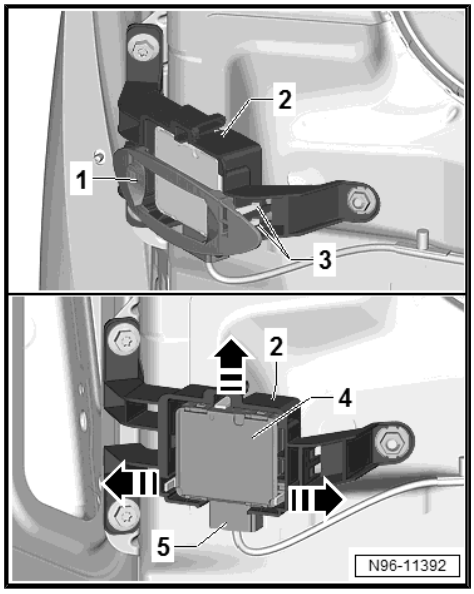
Removal and installation are described for the left side. The removal and installation procedure for the right-hand side is basically the same.

Removing

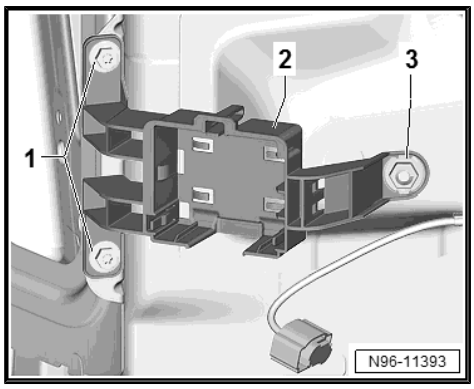
– Remove rear bumper cover ⇒ General body repairs, exterior; Rep. gr. 63 ; Rear bumper; Removing and installing bumper cover .

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– Release retaining lugs -3- on both sides of guard -1-.
– At the same time, remove guard -1- towards rear from bracket -2-.
– Release and disconnect electrical connector -5-.
– Release retaining lugs on bracket -2- in -direction of arrow-.
– At the same time, remove lane change assist control unit 2 - J770- -4- towards rear from bracket -2-.



– Unscrew bolts -1-.
– Unscrew nut -3-.
– Detach bracket -2-.



Installing

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

– Calibrate lane change assist control unit -J769- / -J770- ⇒ page 270 .

Specified torques

♦ ⇒ “4.1 Assembly overview - lane change assist”, page 268

4.4 Calibrating lane change assist

4.4.1 Measurement location

Conditions

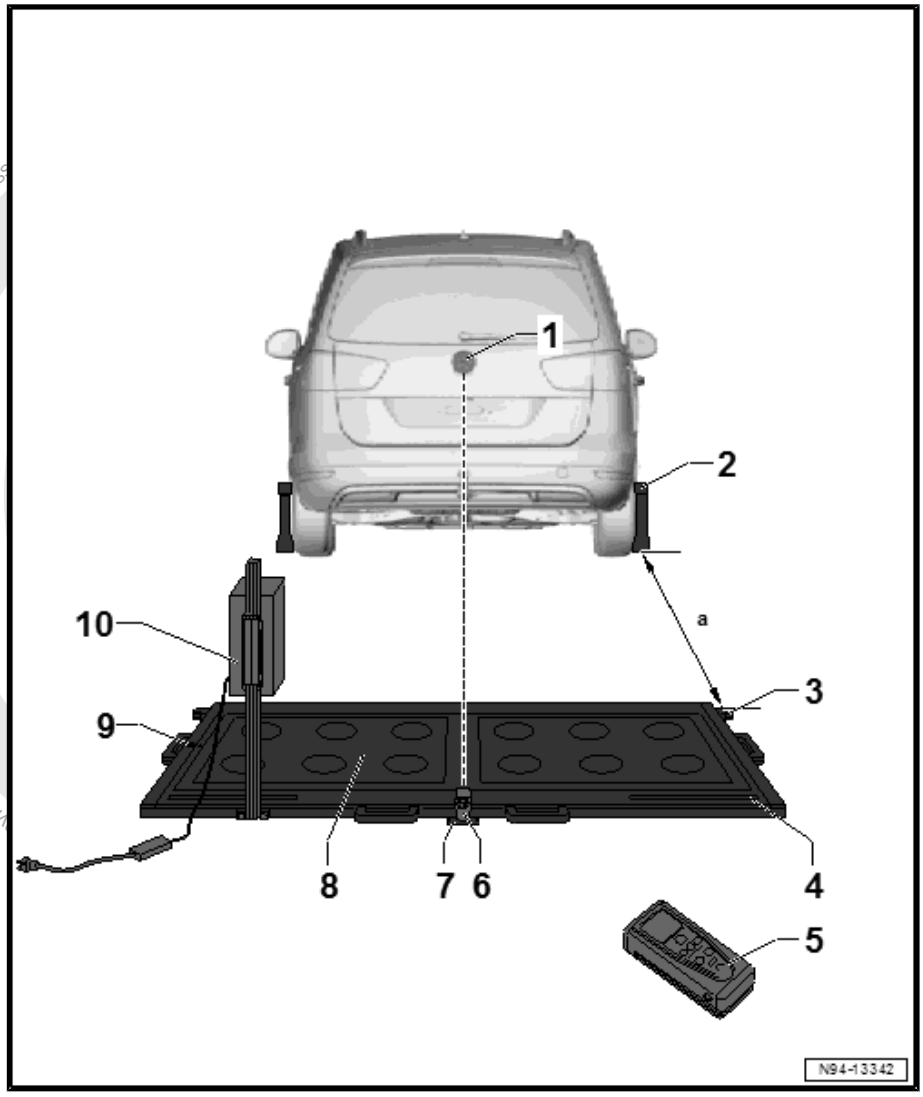
Lane change assist must be calibrated under the following conditions:

♦ Lane change assist control unit - J769- and/or lane change assist control unit 2 - J770- were renewed
♦ Lane change assist control unit - J769- and/or lane change assist control unit 2 - J770- were removed and installed
♦ Installation position of lane change assist control unit -J769- / -J770- was changed
♦ Rear bumper cover was removed and installed
♦ Relevant entry made by lane change assist control unit - J769- / -J770- in event memory ⇒ Vehicle diagnostic tester

Note

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1 - Volkswagen emblem

- ❑ Laser pointer aligned to centre of Volkswagen logo

2 - Wheel centre mounting - VAS 6350/1-

- ❑ With wheel bolt adapter (AF 17) and measuring paddle

3 - Stop bracket

- ❑ to support spacing laser -VAS 6350/2- for distance measurement
- ❑ Distance from wheel centre mountings -VAS 6350/1- on rear wheels: Dimension -a- = 1700 ± 10 mm.

4 - Measuring scale

- ❑ to position calibration unit for lane change assist -VAS 6350/4-
- ❑ Dimension to be set, measuring point on steel rule = 769 mm

5 - Spacing laser - VAS 6350/2-

- ❑ for distance measurement
- ❑ Handling ⇒ Operating instructions

6 - Linear laser - VAS 6350/3-

- ❑ with “laser goggles”
- ❑ on calibration unit - VAS 6350-
- ❑ Handling ⇒ Operating instructions

7 - Plastic foot

- ❑ Qty. 3
- ❑ Adjustable to change horizontal position of calibration unit - VAS 6350-

8 - Calibration unit - VAS 6350-

9 - Spirit level

- ❑ on calibration unit - VAS 6350-
- ❑ to check horizontal position of calibration unit - VAS 6350-

10 - Calibration unit for lane change assist -VAS 6350/4-

- ❑ is changed over from the left to the right-hand side of the measuring field during calibration
- ❑ If assembled correctly, the mains power lead should be fitted to the bottom left of the calibration unit (as seen facing direction of normal travel)
- ❑ Height of upper edge of calibration unit to hall floor: 744 mm

4.4.2 Preparatory measures for calibration

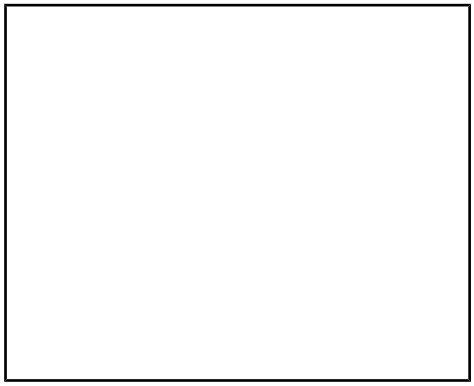
Extensive preliminary work is required before the actual calibration can be carried out using the vehicle diagnostic tester.

Prerequisites:

- Position vehicle on a firm and level surface.
- Apply parking brake – the vehicle must not be moved while the calibration procedure is being performed.
- Align front wheels to straight-ahead position – steering wheel in zero position.
- Nobody may be inside vehicle during measurement.
- Opening and closing the vehicle doors during calibration must be avoided.

Special tools and workshop equipment required

♦ Calibration unit - VAS 6350-



♦ Vehicle diagnostic tester

Procedure

– Connect vehicle diagnostic tester .

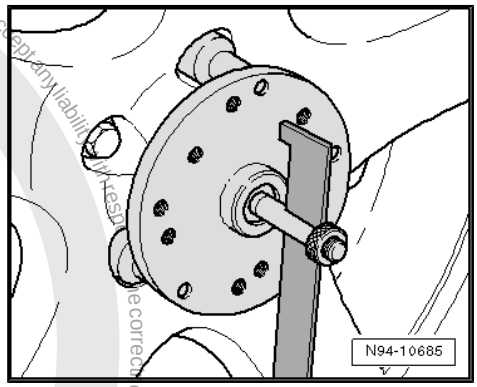
– Switch on ignition.

– Attach 3 wheel bolt adapters (spanner size 17) to each wheel centre mounting - VAS 6350/1- for the wheel securing bolts.

– Insert measuring paddles in both wheel centre mountings - VAS 6350/1- , and secure them with clamping nut.

– Fit wheel centre mountings - VAS 6350/1- onto wheel bolts on both rear wheels.

- The turning centre of the wheel centre mounting must be in the turning centre of the wheel.



Note

Fit wheel centre mountings - VAS 6350/1- onto the wheels so that the "anti-theft wheel bolts" are not connected to the wheel centre mountings.

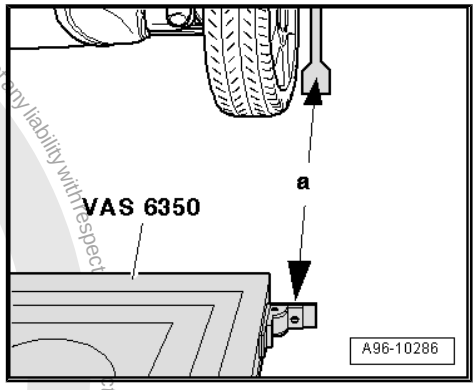
– Adjust measuring paddles with the help of the clamping nuts in such a way that they can move freely just above the floor.

- The measuring paddles must not be restricted in movement.
- The measuring paddles must be vertical.

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– Position calibration unit - VAS 6350- at distance -a- to rear wheels.

• Dimension -a- = 1700 ± 10 mm.



– Push ON button to switch on spacing laser -VAS 6350/2- .

Display on -VAS 6350/2- :

• "- - m"

Note

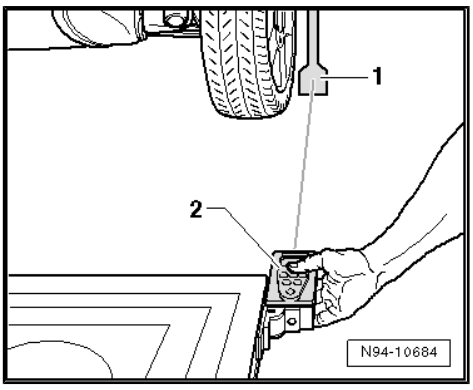
The laser is switched on at the same time.

– Hold spacing laser -VAS 6350/2- -2- for distance measurement flush with stop bracket as shown in illustration.

• When doing this, make sure that spacing laser -VAS 6350/2- is firmly in contact with stop bracket.

– Ensure that the "laser beam" for distance measurement is at the bottom enlarged part on the measuring paddle -1-.

If this is not the case, adjust height of measuring paddles using lock nuts on wheel centre mountings - VAS 6350/1- .



– Now, briefly press ON button to measure distance.

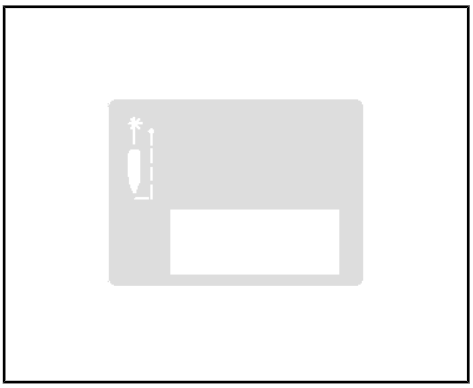
Display on -VAS 6350/2- :

• "1,700 m" (specification: 1700 ± 10 mm).

– Repeat the measuring process from the left stop bracket to the measuring paddle on the rear left wheel.

• Measured distance value must be identical on both sides.

If both measured values are not identical, adjust calibration unit - VAS 6350- accordingly.



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Note

The vehicle shown in the illustration may differ from the actual vehicle.

– Attach calibration unit for lane change assist -VAS 6350/4- on rear left on mounting of calibration unit - VAS 6350- .

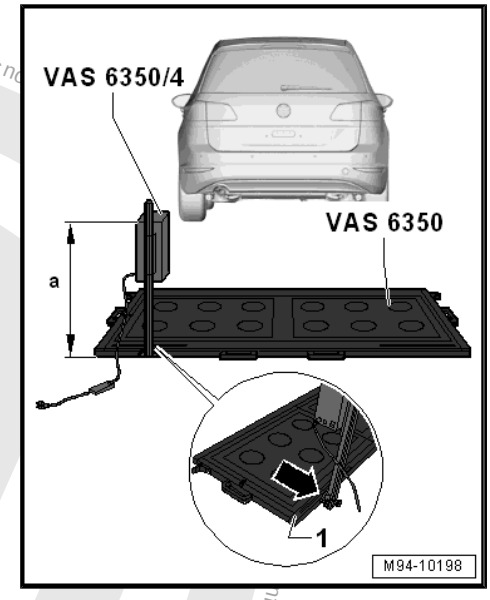
• If assembled correctly, the mains power lead should be fitted to the bottom left of the calibration unit (as seen facing direction of normal travel).

• Dimension -a- = 744 mm (measured from upper edge of calibration unit to workshop floor).

– The dimension is set with the measuring point -arrow- at the base of the calibration unit on the scale of the steel rule -1-.

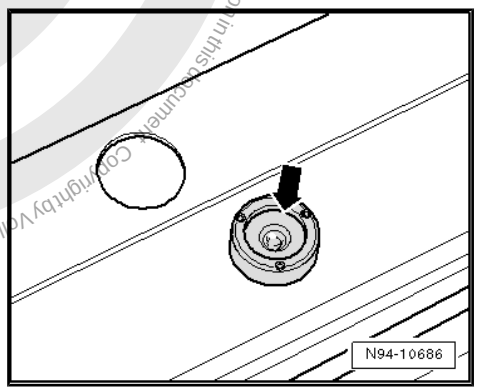
• Setting dimension left = 769 mm (read off on measuring scale -1-).

– Connect the calibration unit for lane change assist -VAS 6350/4- to mains voltage.



– Bring the calibration unit - VAS 6350- to the horizontal position with the aid of the vial (sight glass) -arrow- by turning the plastic feet.

– Put on “laser protection glasses”.

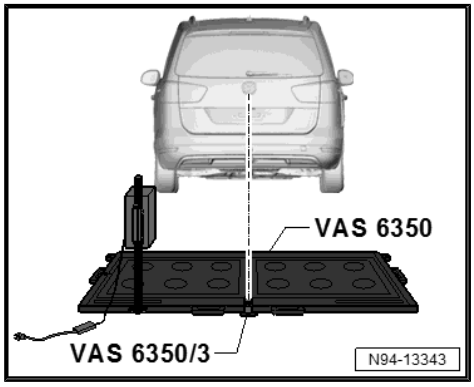


Note

The vehicle shown in the illustration may differ from the actual vehicle.

– Switch on linear laser - VAS 6350/3- on calibration unit - VAS 6350- .

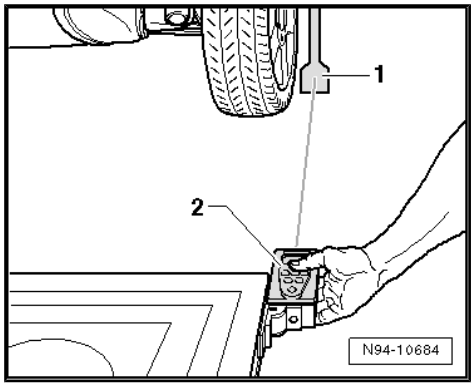
– Align the whole calibration unit - VAS 6350- so that the laser beam is focused on the rear of the vehicle in the centre above the Volkswagen emblem.



– Check the spacing on the left and right again between the stop brackets of the calibration unit - VAS 6350- and the measuring paddles -1- on the wheel mountings.

• Specification: 1700 ± 10 mm

Calibrating lane change assist control unit ⇒ page 275 .



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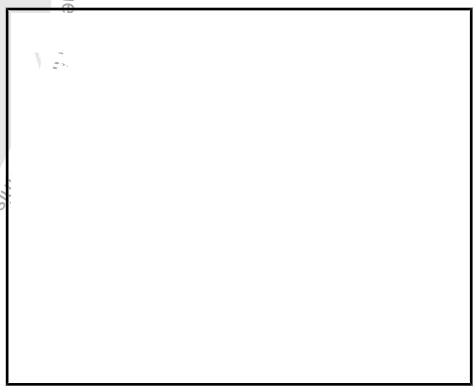
4.4.3 Calibrating lane change assist control unit -J769- / -J770-

Note

Before the actual calibration process of the control units, the calibration unit - VAS 6350- needs to be set up as described in the following chapter.

Special tools and workshop equipment required

- Calibration unit - VAS 6350-



- Vehicle diagnostic tester

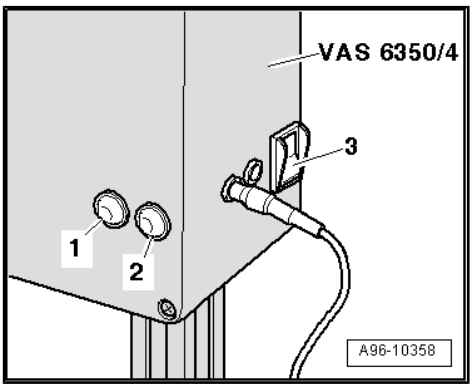
During the calibration process the following should not occur:

- Vehicle doors should not be opened or closed.
- There should be no-one in the vehicle.
- No-one should pass through the space between the vehicle and the calibration unit for lane change assist -VAS 6350/4- .

Procedure:

– Switch on the calibration unit for lane change assist -VAS 6350/4- using the mains switch -3-.

- The green LED -1- must light up.



Note

If the red LED -2- lights up: Check the calibration unit for lane change assist -VAS 6350/4- .

– Connect vehicle diagnostic tester .

– Select option for calibration in “Guided Fault Finding” mode ⇒ Vehicle diagnostic tester.

– Proceed by following the instructions on the display of vehicle diagnostic tester .

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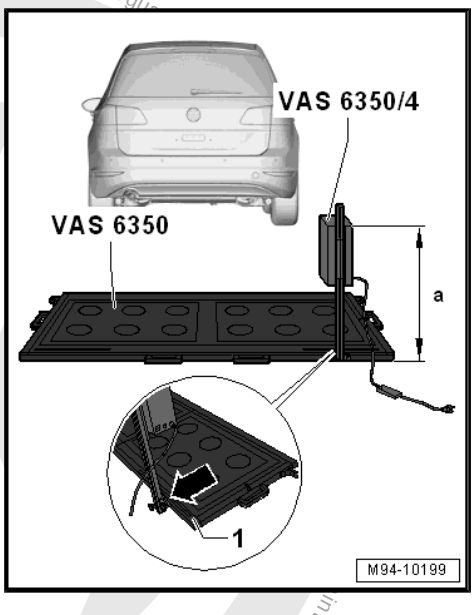
Note

The vehicle shown in the illustration may differ from the actual vehicle.

– Switch off the calibration unit for lane change assist -VAS 6350/4- , and change to the other side.

As the program runs, you will be requested to change the calibration unit for lane change assist -VAS 6350/4- from the left to the right-hand side of the calibration unit - VAS 6350- .

- If assembled correctly, the mains power lead should be fitted to the bottom left of the calibration unit (as seen facing direction of normal travel).
- Dimension -a- = 744 mm (measured from upper edge of calibration unit to floor).
- Setting dimension right = 769 mm (read off from measuring scale -1-).

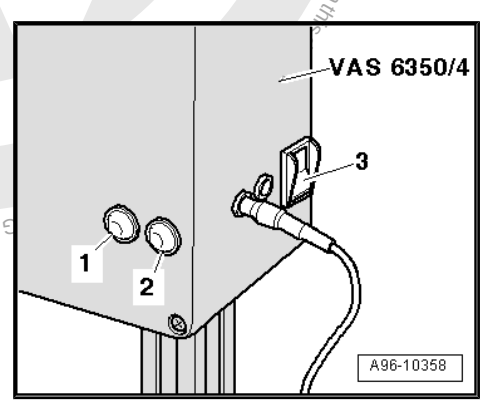


– Switch on the calibration unit for lane change assist -VAS 6350/4- using the mains switch -3-.

- The green LED -1- must light up.

– Proceed by following the instructions on the display of vehicle diagnostic tester .

Upon completion of lane change assist system calibration switch off ignition and disconnect diagnosis connector.



5 Front camera for assist systems

⇒ “5.1 Removing and installing front camera for driver assist systems”, page 277

5.1 Removing and installing front camera for driver assist systems

Removing

– Switch off ignition and all electrical consumers.

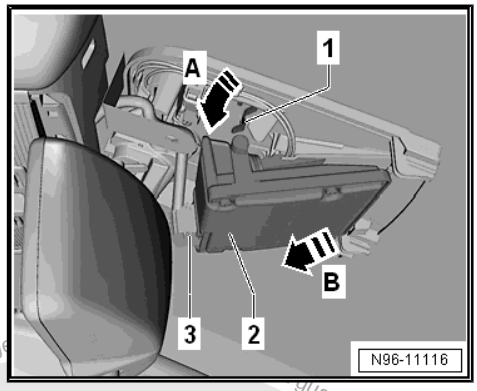
– Keep the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.

– Remove cover for mirror base ⇒ General body repairs, interior; Rep. gr. 68 ; Interior mirror; Assembly overview - interior mirror .

– Unclip front camera for driver assist systems - R242- -2- from retaining clips -1- in direction of -arrow A-.

– Pull front camera for driver assist systems - R242- -2- in direction of -arrow B- out of mounting.

– Release and disconnect connector -3-.



Installing

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

– Calibrating front camera for driver assist systems - R242- ⇒ Running gear, axles, steering; Rep. gr. 44 ; Front camera for driver assist systems; Calibrating front camera for driver assist systems .

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6 Cigarette lighter, socket

⇒ “6.1 Assembly overview – DC/AC converter with socket, 12 V - 230 V”, page 278

⇒ “6.2 Removing and installing cigarette lighter U1 ”, page 279

⇒ “6.3 Removing and installing socket illumination bulb L42 ”, page 279

⇒ “6.4 Removing and installing rear cigarette lighter illumination bulb L32 ”, page 279

⇒ “6.5 Removing and installing electric socket U ”, page 279

⇒ “6.6 Removing and installing DC/AC converter with socket, 12 V - 230 V U13 ”, page 279

6.1 Assembly overview – DC/AC converter with socket, 12 V - 230 V

1 - Bolt

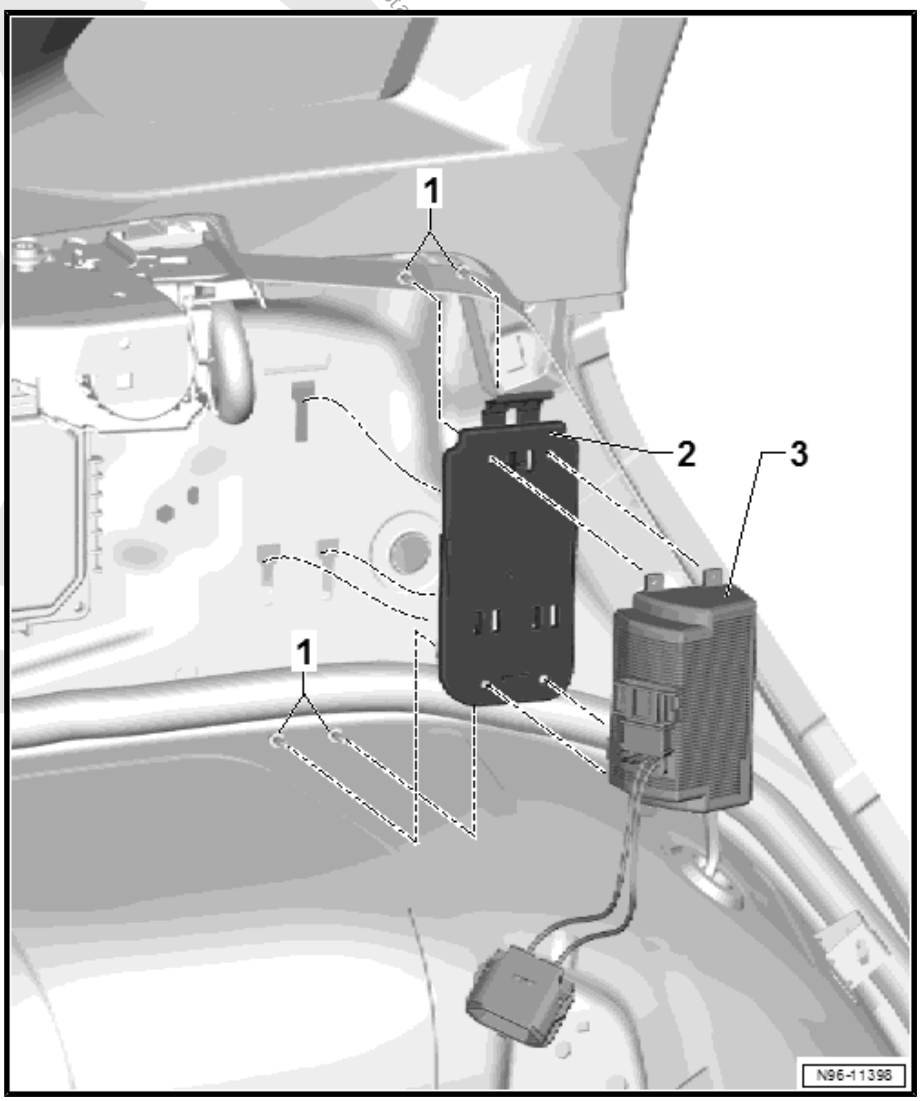
- ❑ Qty. 4
- ❑ 1.5 Nm

2 - Bracket

- ❑ Removing and installing ⇒ page 279

3 - AC/DC converter with socket, 12 V-230 V - U13-

- ❑ Must not be opened
- ❑ No repairs to connector, wiring and 230 V socket
- ❑ Removing and installing ⇒ page 279



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6.2 Removing and installing cigarette lighter - U1-

All instructions and notes regarding this chapter are available under ⇒ Electrical system, General information; Rep. gr. 96 ; Cigarette lighter - U1-

6.3 Removing and installing socket illumination bulb - L42-

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

6.4 Removing and installing rear cigarette lighter illumination bulb - L32-

All instructions and notes regarding this chapter are available under ⇒ Electrical system, General information; Rep. gr. 96 ; Cigarette lighter - U1-

6.5 Removing and installing electric socket - U-

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

6.6 Removing and installing DC/AC converter with socket, 12 V - 230 V - U13-

Special tools and workshop equipment required

- Torque screwdriver - V.A.G 1624-



WARNING

There is a danger of an electric shock.

- *In the housing of the DC/AC converter with socket, 12 V - 230 V - U13- there are capacitors that may still be charged with a residual voltage.*
- *Never open the housing of the DC/AC converter with socket, 12 V - 230 V - U13- .*
- *The connector, wiring and 230 V socket must never be repaired.*
- *The complete unit must be replaced if the connector, wiring and 230 V socket or the AC/DC converter are defective.*

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Removing

– Switch off ignition and all electrical consumers.

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

– Remove left luggage compartment side trim ⇒ General body repairs, interior; Rep. gr. 70 ; Luggage compartment trims; Removing and installing luggage compartment side trim .

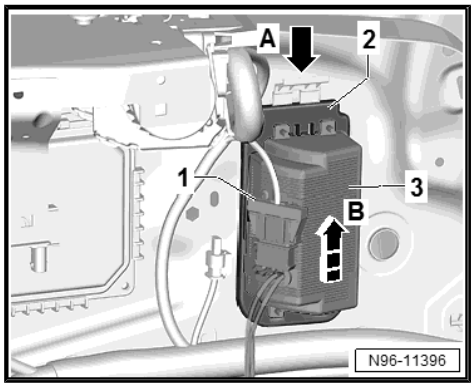
– Release and disconnect connector -1-.

– Remove bracket for wires to 230 V socket from body.

– Release catch -arrow A- on bracket -2-.

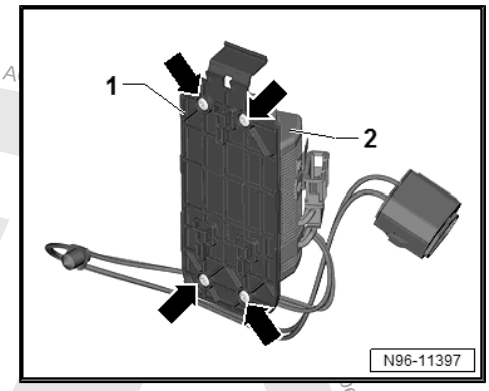
– At the same time move bracket -2- with DC/AC converter with socket, 12 V - 230 V - U13- -3- to stop in -direction of arrow B-.

– Remove bracket -2- with DC/AC converter with socket, 12 V - 230 V - U13- -3- from body.



– Unscrew bolts -arrows-.

– Remove DC/AC converter with socket, 12 V - 230 V - U13- -2- from bracket -1-.



Installing

Install in reverse order of removal.

Specified torques

◆ ⇒ “6.1 Assembly overview – DC/AC converter with socket, 12 V - 230 V”, page 278

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97 – Wiring

1 Relay carriers, fuse holders, electronics boxes

⇒ “1.1 Overview of fitting locations - relay carriers, fuse holders, E-boxes”, page 281

⇒ “1.2 Removing and installing electronics box (E-box)”, page 285

⇒ “1.3 Removing and installing relay and fuse holder in electronics box”, page 287

⇒ “1.4 Removing and installing relay and fuse carrier behind dash panel”, page 289

⇒ “1.5 Removing and installing main fuse carrier”, page 291

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

⇒ “1.1.1 Relay carriers, fuse carriers, electronics box (engine compartment)”, page 281

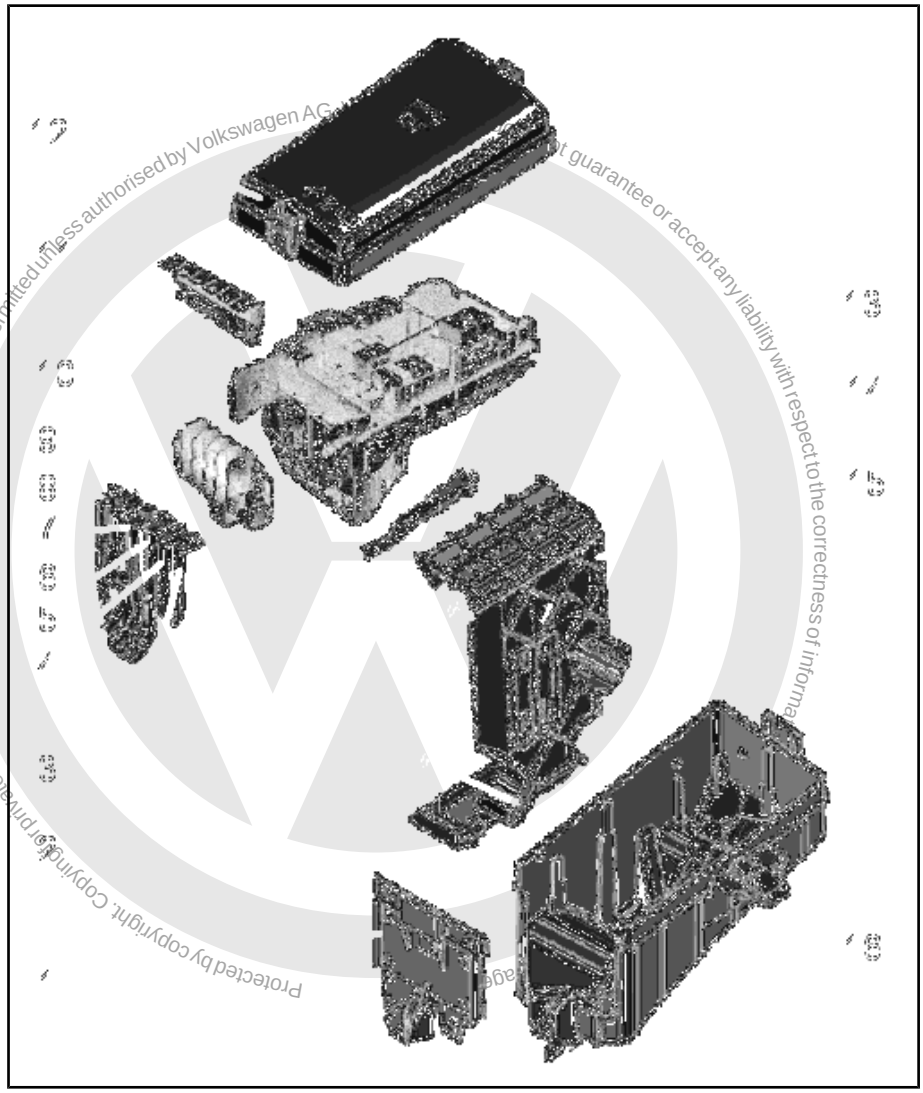
⇒ “1.1.2 Relay carrier, fuse carrier in dash panel/A-pillar, LHD vehicles”, page 283

⇒ “1.1.3 Relay carrier, fuse carrier in dash panel/A-pillar, RHD vehicles”, page 284

⇒ “1.1.4 Main fuse carrier on battery; battery in luggage compartment”, page 284

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

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1 - Front cover
- ❑ For electronics box in engine compartment.

2 - Nut
- ❑ 9 Nm

3 - Nut
- ❑ 9 Nm

4 - Wire
- ❑ For radiator fan
- ❑ 4.5 Nm

5 - Wire
- ❑ For terminal 30
- ❑ 4.5 Nm

6 - Wire
- ❑ For electromechanical power steering
- ❑ 4.5 Nm

7 - Wire
- ❑ For battery B+
- ❑ 6 Nm

8 - Wire
- ❑ For terminal 30
- ❑ 4.5 Nm

9 - Wire
- ❑ For alternator
- ❑ 6 Nm

10 - Fuse holder A - SA-
- ❑ Removing and installing ⇒ page 288

11 - Fuse holder
- ❑ Removing and installing ⇒ page 288

12 - Cover
- ❑ For electronics box in engine compartment.

13 - Relay and fuse holder B - SB-
- ❑ With connecting bar for fuse holder A
- ❑ Removing and installing ⇒ page 287

14 - Wire
- ❑ 6 Nm

15 - Bracket
- ❑ For engine control unit

16 - Electronics box in engine compartment
- ❑ Removing and installing ⇒ page 285

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1.1.2 Relay carrier, fuse carrier in dash panel/A-pillar, LHD vehicles

Note

The vehicle shown in the illustration may differ from the actual vehicle.

1 - Bracket

- For parking aid control unit - J446- / park assist steering control unit - J791-
- Removing and installing ⇒ page 307

2 - Bracket

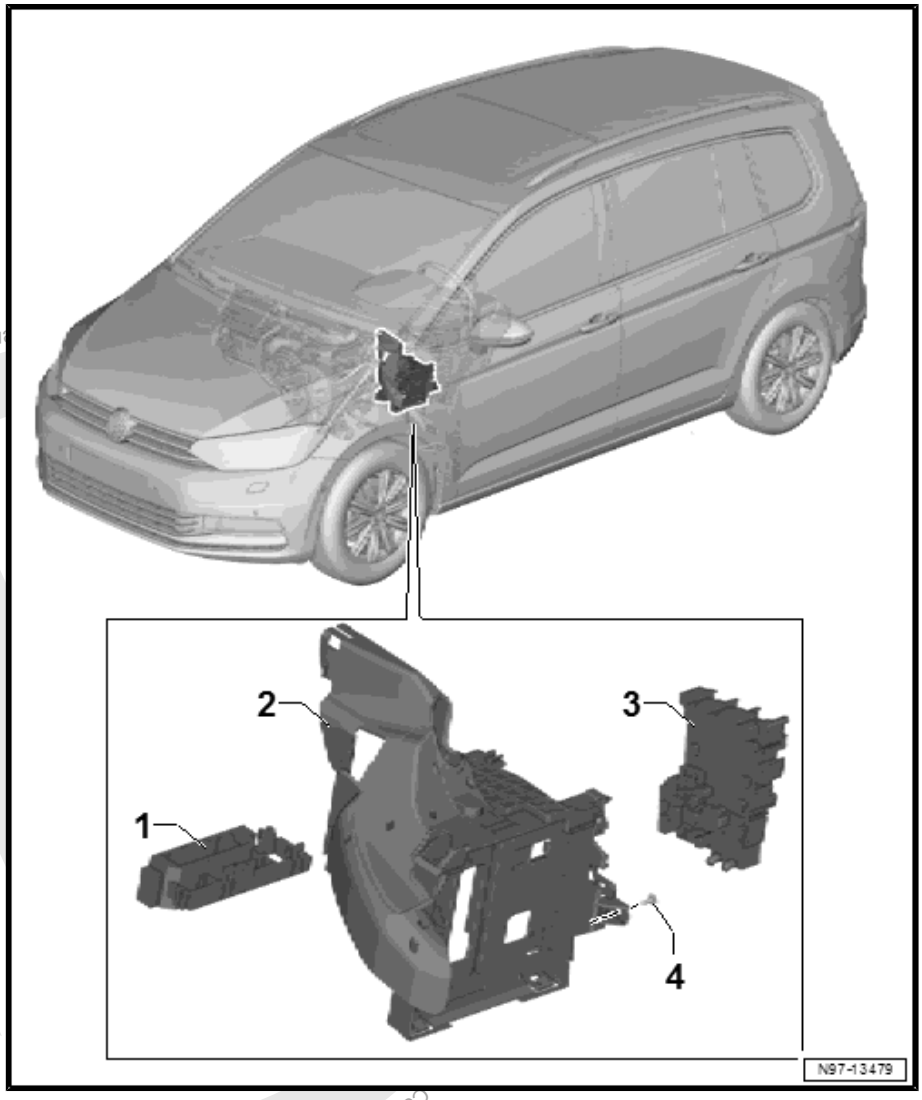
- For onboard supply control unit - J519-
- Removing and installing ⇒ page 305

3 - Fuse holder C - SC-

- Removing and installing ⇒ page 289

4 - Bolt

- Qty. 3
- 4.5 Nm



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1.1.3 Relay carrier, fuse carrier in dash panel/A-pillar, RHD vehicles

Note

The vehicle shown in the illustration may differ from the actual vehicle.

1 - Bracket

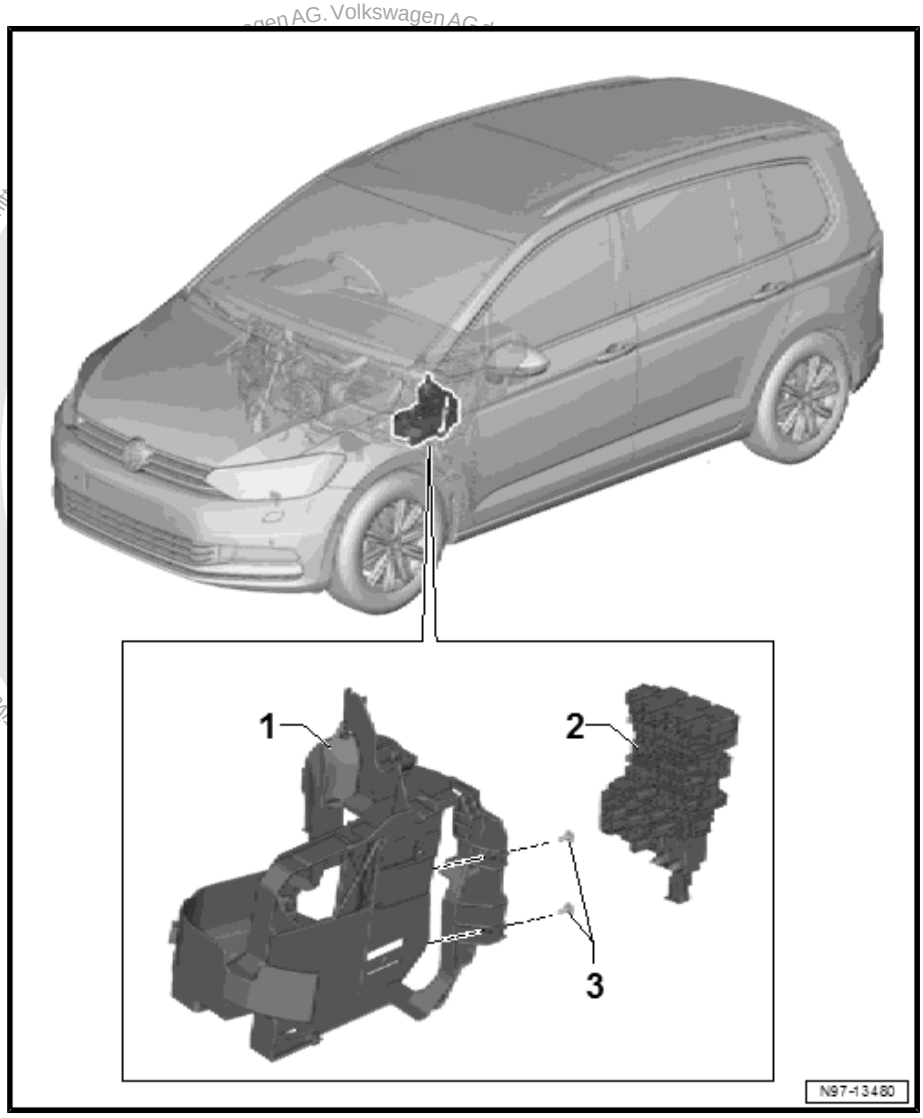
- ❑ For onboard supply control unit - J519-
- ❑ Removing and installing ⇒ page 306

2 - Fuse holder C - SC-

- ❑ Removing and installing ⇒ page 289

3 - Bolts

- ❑ Qty. 3
- ❑ 4.5 Nm



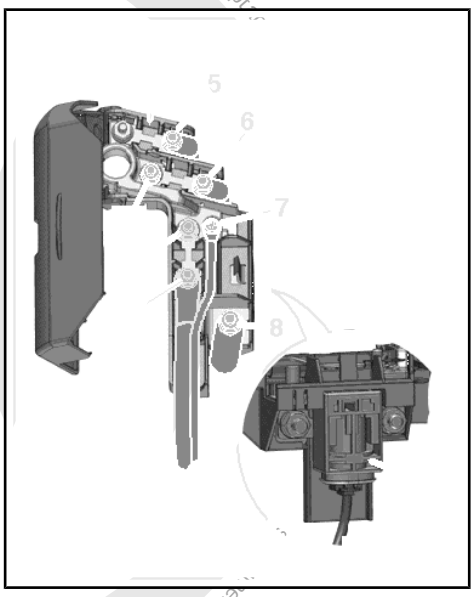
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...vate or commercial purposes, in part or in whole, is not permitt...

1.1.4 Main fuse carrier on battery; battery in luggage compartment

The main fuse carrier is located in the rear centre of the luggage compartment on the positive battery terminal.

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The fuse holder D - SD- and the positive battery terminal clamp are integrated in the main fuse carrier.



1 - Wire, 7.5 Nm

2 - Nut, 7.5 Nm

3 - Nut, 7.5 Nm

4 - Removing and installing fuse holder D - SD- ⇒ page 291

5 - Wire, 7.5 Nm

6 - Wire, 7.5 Nm

7 - Bolt, 2.5 Nm

8 - Positive cable to battery positive tap in engine compartment, 15 Nm

9 - Battery isolation igniter - N253- , ⇒ General body repairs, interior; Rep. gr. 69 ; Battery isolation igniter; Assembly overview - battery isolation igniter

1.2 Removing and installing electronics box (E-box)

Special tools and workshop equipment required

- Torque wrench - V.A.G 1410-



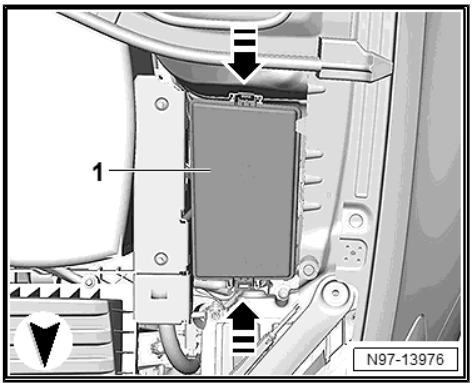
Removing

– With ignition switched off, disconnect earth cable from battery ⇒ page 14 .

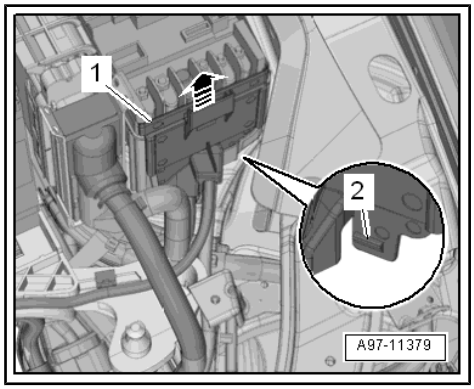
– Remove engine control unit, and lay it to one side with connectors attached ⇒ Rep. gr. 23 ; Engine control unit; Removing and installing engine control unit - J623- or ⇒ Rep. gr. 24 ; Engine control unit; Removing and installing engine control unit - J623- .

– Press release buttons -arrows-.

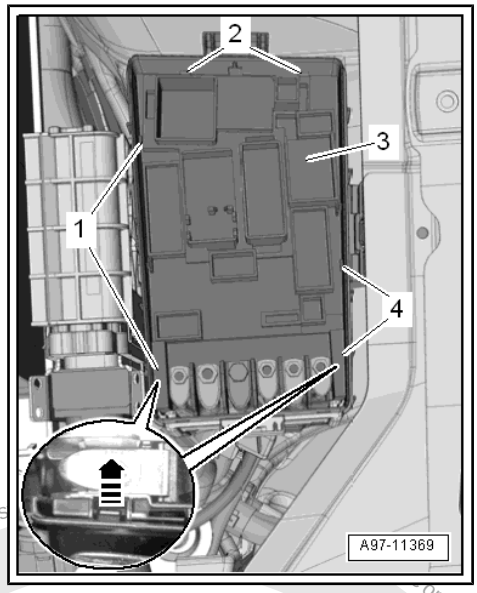
– Remove cover -1-.



– Using screwdriver, release retaining tab -2-.
– Pull off cover -1- in direction of -arrow-.



– Cut through cable tie (bottom) on wiring harness.
– Release fasteners -1, 2, 4- -arrow-.
– Remove fuse holder B -3-, and lay it to one side.



– Remove nuts -arrows-
– Remove bracket for engine control unit -1-.
– Release retaining tab -3-.
– Detach electronics box in engine compartment -2- from studs.
– Lift out engine compartment electronics box -2-.



Installing

Install in reverse order of removal.

Specified torques

◆ ⇒ “1.1 Overview of fitting locations - relay carriers, fuse holders, E-boxes”, page 281

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1.3 Removing and installing relay and fuse holder in electronics box

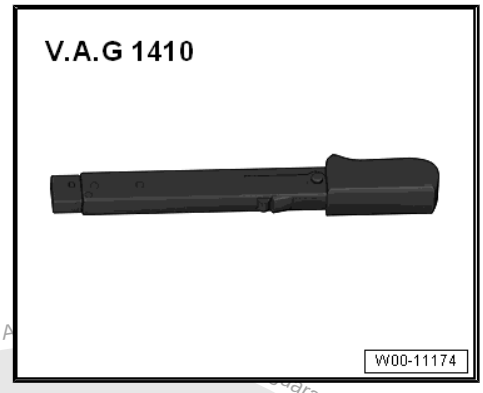
⇒ “1.3.1 Removing and installing fuse holder B SB ”, page 287

⇒ “1.3.2 Removing and installing fuse holder A SA ”, page 288

1.3.1 Removing and installing fuse holder B - SB-

Special tools and workshop equipment required

- Torque wrench - V.A.G 1410-

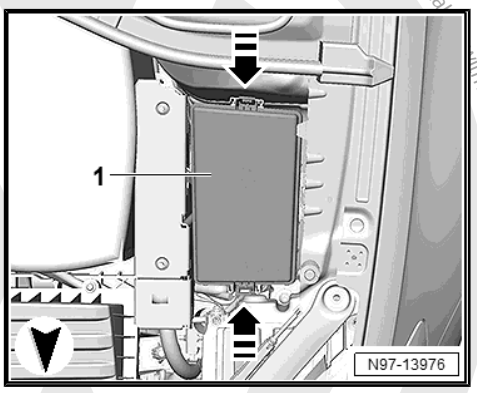


Removing

– With ignition switched off, disconnect earth cable from battery ⇒ page 14 .

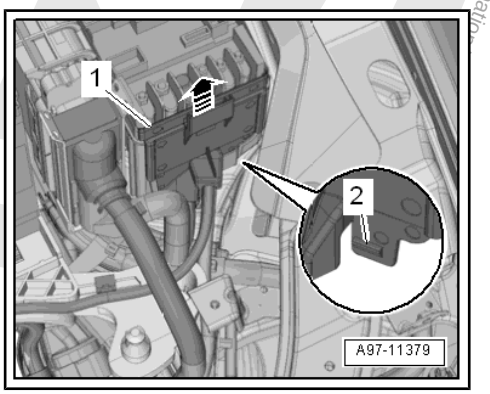
– Press release buttons -arrow-.

– Remove cover -1-.



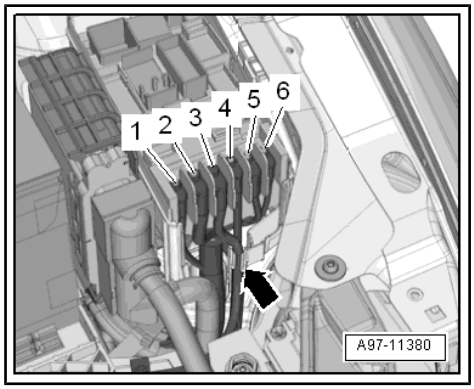
– Using screwdriver, release retaining tab -2-.

– Pull off front cover -1- in direction of -arrow-.



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– Mark allocation of electrical wiring at threaded connections for reinstallation.
– Unscrew nuts -1, 2, 4, 5, 6-.
– Unscrew bolt -3-.
– Lay aside electrical wiring -arrow-.



– Cut through cable tie (bottom) on wiring harness.
– Release fasteners -1, 2, 4- -arrow-.
– Remove fuse holder B -3-, and lay it to one side.

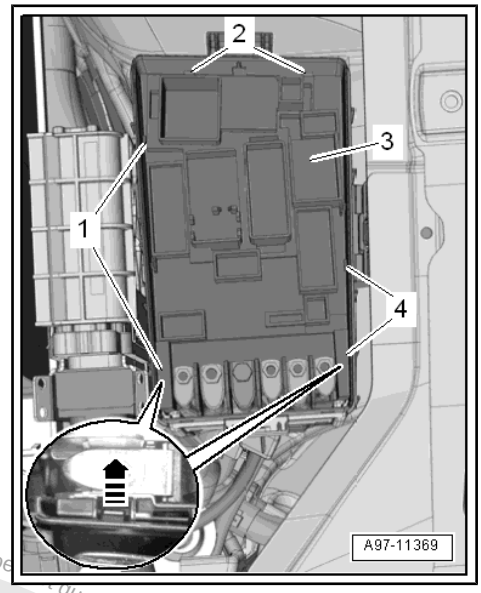
Installing

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

– Fit and secure electrical wiring to fuse holder A according to markings made earlier.

Specified torques

◆ ⇒ “1.1 Overview of fitting locations - relay carriers, fuse holders, E-boxes”, page 281



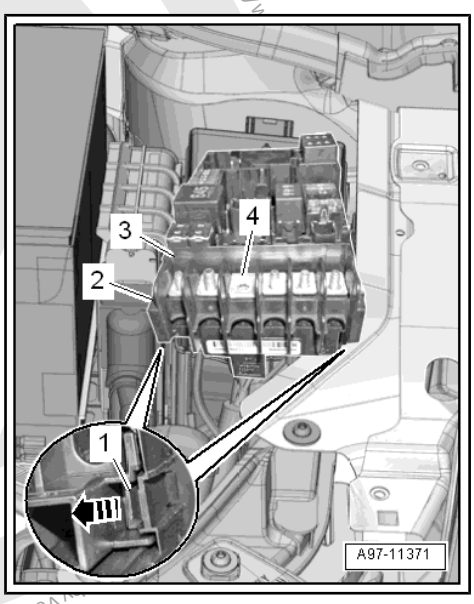
1.3.2 Removing and installing fuse holder A -SA-

Removing

– Remove fuse holder B ⇒ page 287 .
– Remove securing bar -4- upwards from fuse holder B -3-.
– Release retaining tab -1- in direction of -arrow-.
– Remove fuse holder A -2- downwards from fuse holder B -3-.

Installing

Install in reverse order of removal.



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1.4 Removing and installing relay and fuse carrier behind dash panel

⇒ "1.4.1 Removing and installing relay and fuse carrier behind dash panel, LHD vehicles", page 289

⇒ "1.4.2 Removing and installing relay and fuse carrier behind dash panel, RHD vehicles", page 289

1.4.1 Removing and installing relay and fuse carrier behind dash panel, LHD vehicles

Removing

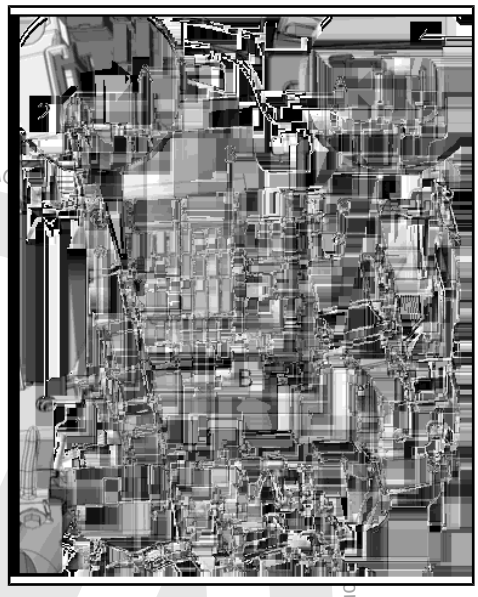
– With ignition switched off, disconnect earth cable from battery ⇒ page 14 .

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

– Release retaining tab -2- and -4- in direction of -arrows A-.

– Pull out fuse holder C - SC- -3- from bracket -1- in direction of -arrow B-.

– Disconnect electrical wiring.



Note

- *The exact assignment should be gleaned from the latest current flow diagram ⇒ Current flow diagrams, Electrical fault finding and Fitting locations.*
- *Take photographs of the assignment, if necessary.*

Installing

Install in reverse order of removal.

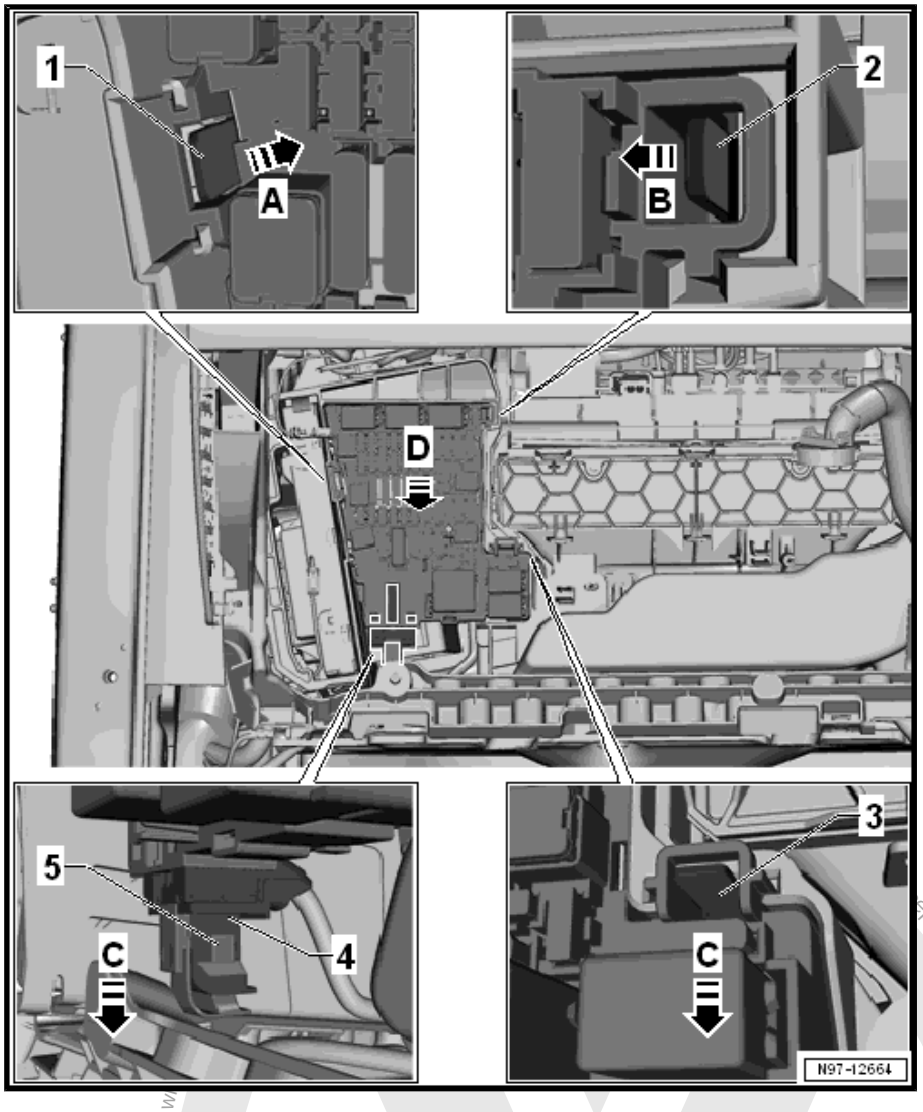
1.4.2 Removing and installing relay and fuse carrier behind dash panel, RHD vehicles

Removing

– With ignition switched off, disconnect earth cable from battery ⇒ page 14 .

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

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Note

- *The exact 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.*

– Press locking element -5- on both sides and pull it in direction of -arrow C-.
– Separate electrical connector -4- in direction of -arrow C-.
– Release retaining tab -1- in direction of -arrow A-.
– Release retaining tab -2- in direction of -arrow B-.
– Release retaining tab -3- in direction of -arrow C-.
– Pull out fuse holder C - SC- backwards from bracket in direction of -arrow D-.
– Disconnect electrical wiring.

Installing

Install in reverse order of removal.

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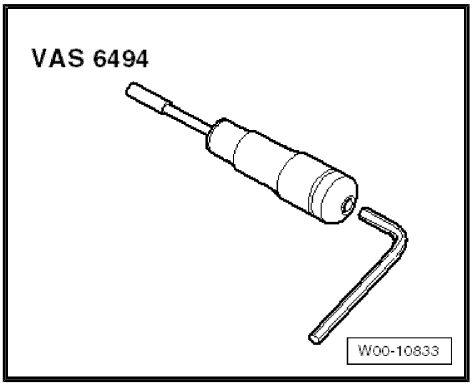
1.5 Removing and installing main fuse carrier

Special tools and workshop equipment required

- Torque wrench - V.A.G 1410-



- Torque screwdriver - VAS 6494-

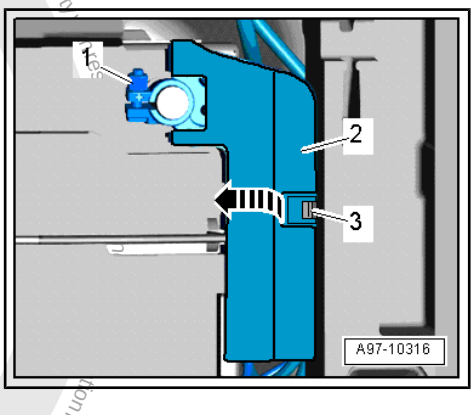


The main fuse carrier is located in the rear centre of the luggage compartment on the positive battery terminal.

The fuse holder D - SD- and the positive battery terminal clamp are integrated in the main fuse carrier.

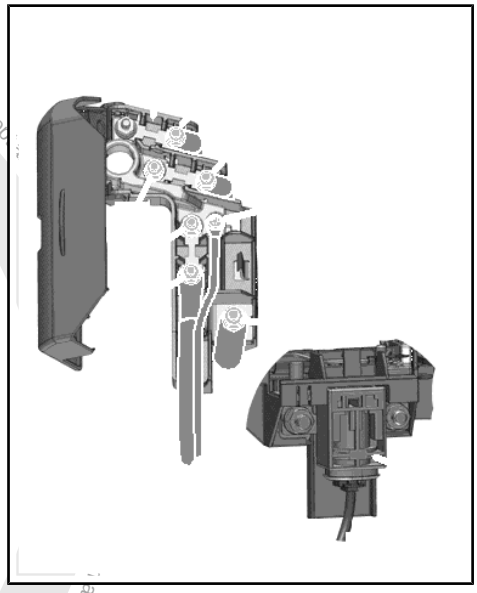
Removing

– With ignition switched off, disconnect earth cable from battery ⇒ page 16 .
– Loosen nut -1- of battery clamp on positive battery terminal by several turns.
– Release retaining spring -3-, and open cover -2- of main fuse carrier -arrow-.



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– Unbolt wires -1, 5, 6, 7, 8-.
– Remove battery isolation igniter - N253- -9- ⇒ General body repairs, interior; Rep. gr. 69 ; Battery isolation igniter; Removing and installing battery isolation igniter .
– Pull battery clamp with main fuse carrier -4- off positive battery terminal, and remove it.



Installing

Install in reverse order of removal.

Specified torques

◆ ⇒ “1.1.4 Main fuse carrier on battery; battery in luggage compartment”, page 284

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2 Select Control units

⇒ “2.1 Overview of fitting locations - control units”, page 293

⇒ “2.2 Assembly overview - onboard supply control unit”, page 296

⇒ “2.3 Assembly overview - data bus diagnostic interface”, page 298

⇒ “2.4 Removing and installing onboard supply control unit J519 ”, page 299

⇒ “2.5 Removing and installing data bus diagnostic interface J533 ”, page 303

⇒ “2.6 Removing and installing bracket for onboard supply control unit J519 ”, page 305

⇒ “2.7 Renewing bracket for onboard supply control unit J519 ”, page 307

⇒ “2.8 Removing and installing parking aid control unit J446 / park assist steering control unit J791 ”, page 307

⇒ “2.9 Removing and installing rear lid control unit J605 ”, page 308

2.1 Overview of fitting locations - control units

⇒ “2.1.1 Overview of fitting locations - control units, LHD vehicles”, page 293

⇒ “2.1.2 Overview of fitting locations - control units, RHD vehicles”, page 295

2.1.1 Overview of fitting locations - control units, LHD vehicles

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1 - Rear lid control unit - J605-

- ❑ Removing and installing ⇒ page 308

2 - Bracket

- ❑ For onboard supply control unit - J519-
- ❑ Removing and installing ⇒ page 305

3 - Onboard supply control unit - J519-

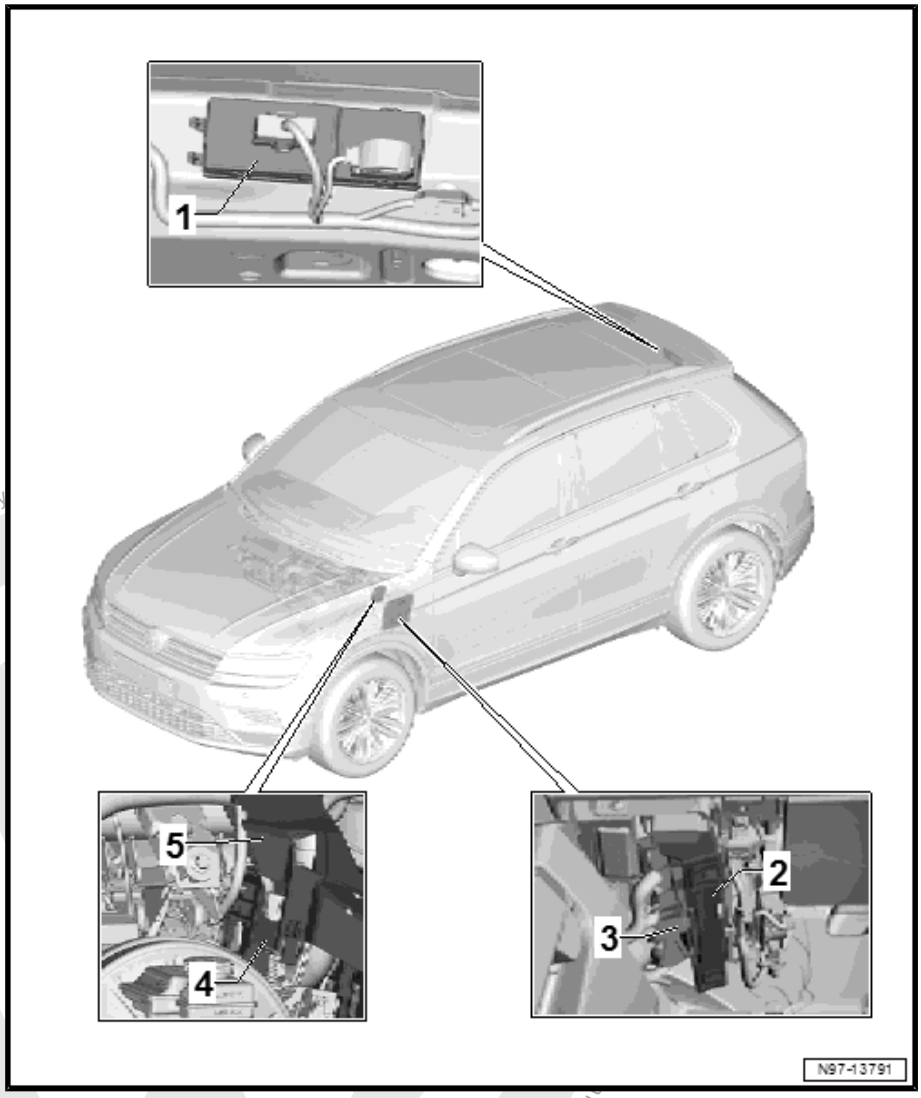
- ❑ Assembly overview ⇒ page 296

4 - Diagnostics interface for data bus - J533-

- ❑ Assembly overview ⇒ page 298

5 - Bracket

- ❑ For data bus diagnostic interface - J533- .



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2.1.2 Overview of fitting locations - control units, RHD vehicles

1 - Rear lid control unit - J605-

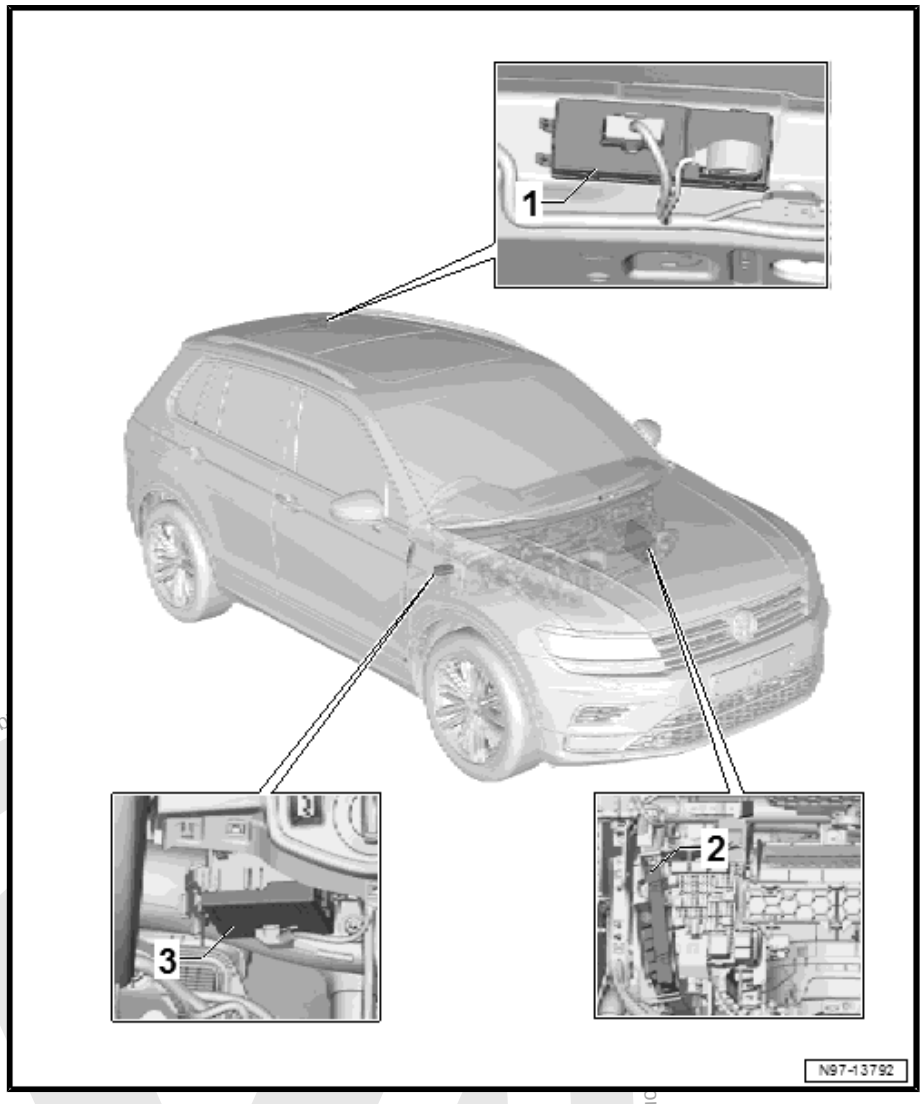
- ❑ Removing and installing ⇒ page 308

2 - Onboard supply control unit - J519-

- ❑ Assembly overview ⇒ page 296
- ❑ Removing and installing bracket ⇒ page 305

3 - Diagnostics interface for data bus - J533-

- ❑ Assembly overview ⇒ page 298



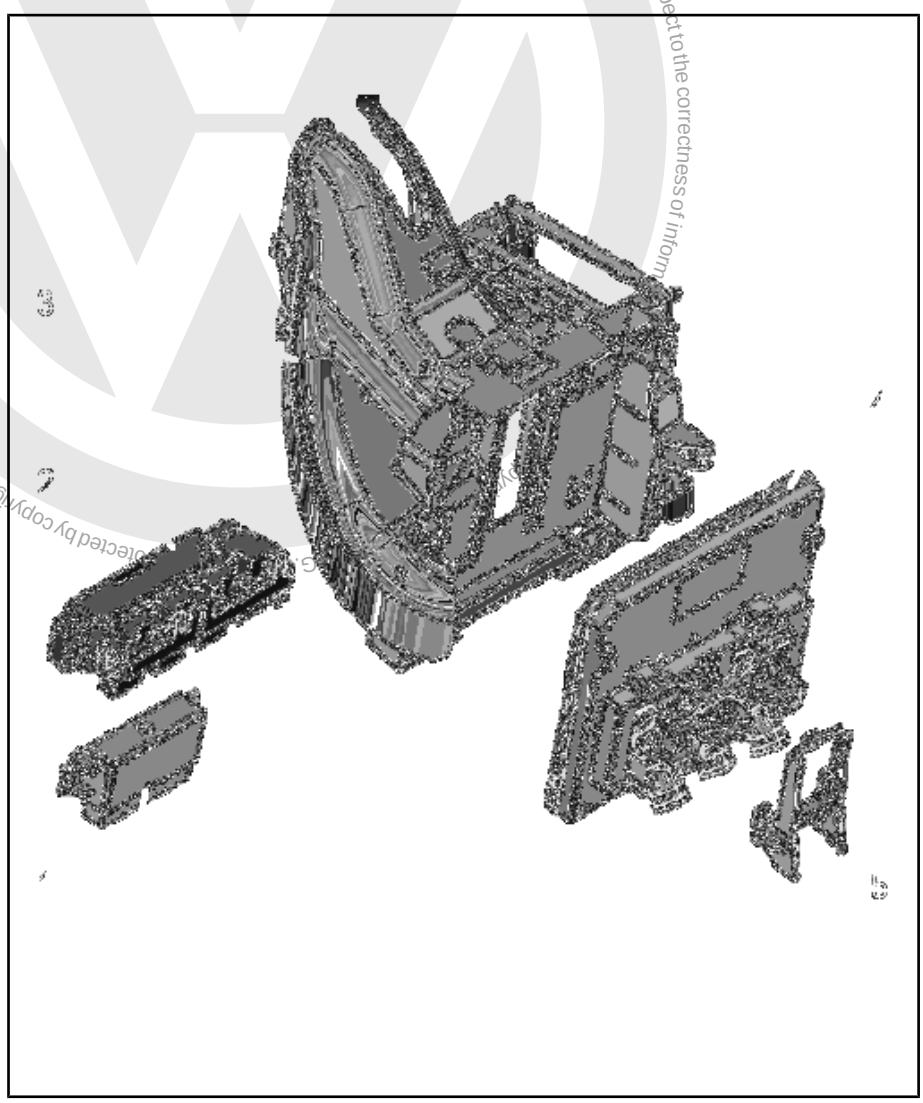
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2.2 Assembly overview - onboard supply control unit

⇒ “2.2.1 Assembly overview - onboard supply control unit, LHD vehicles”, page 296

⇒ “2.2.2 Assembly overview - onboard supply control unit, RHD vehicles”, page 297

2.2.1 Assembly overview - onboard supply control unit, LHD vehicles



1 - Control unit

Versions with parking aid:

- ❑ Parking aid control unit - J446-
- ❑ Assembly overview ⇒ page 190

Versions with park assist steering:

- ❑ Park assist steering control unit - J791-
- ❑ Assembly overview ⇒ page 198

2 - Bracket

- ❑ For parking aid control unit - J446- / park assist steering control unit - J791-
- ❑ Removing and installing ⇒ page 307

3 - Bracket

- ❑ For onboard supply control unit - J519-
- ❑ Removing and installing ⇒ page 305

4 - Onboard supply control unit - J519-

- ❑ Removing and installing ⇒ page 299

5 - Guide

- ❑ For electrical connector (centre)

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2.2.2 Assembly overview - onboard supply control unit, RHD vehicles

1 - Bracket

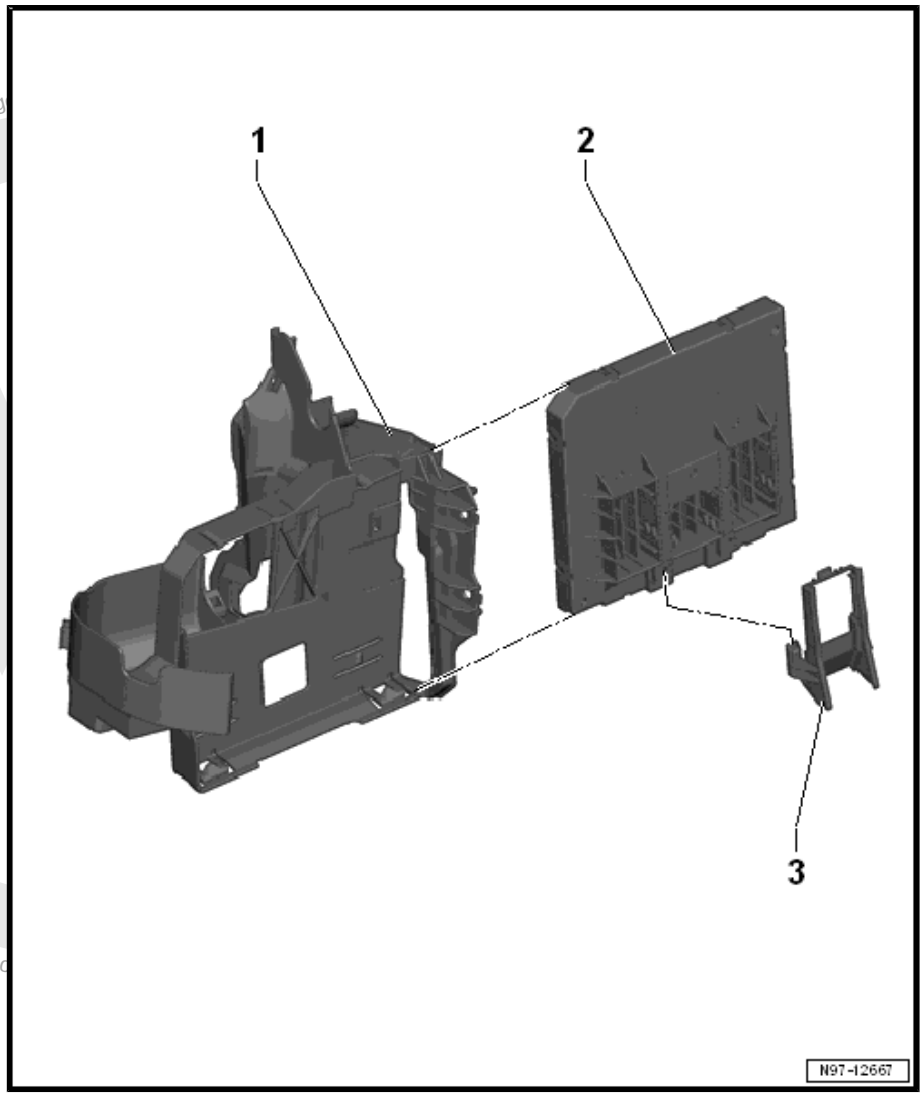
- ❑ For onboard supply control unit - J519-
- ❑ Removing and installing ⇒ page 305

2 - Onboard supply control unit - J519-

- ❑ Removing and installing ⇒ page 299

3 - Guide

- ❑ For electrical connector (centre)



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2.3 Assembly overview - data bus diagnostic interface

⇒ “2.3.1 Assembly overview - data bus diagnostic interface, left-hand drive vehicles”, page 298

⇒ “2.3.2 Assembly overview - data bus diagnostic interface, right-hand drive vehicles”, page 299

2.3.1 Assembly overview - data bus diagnostic interface, left-hand drive vehicles

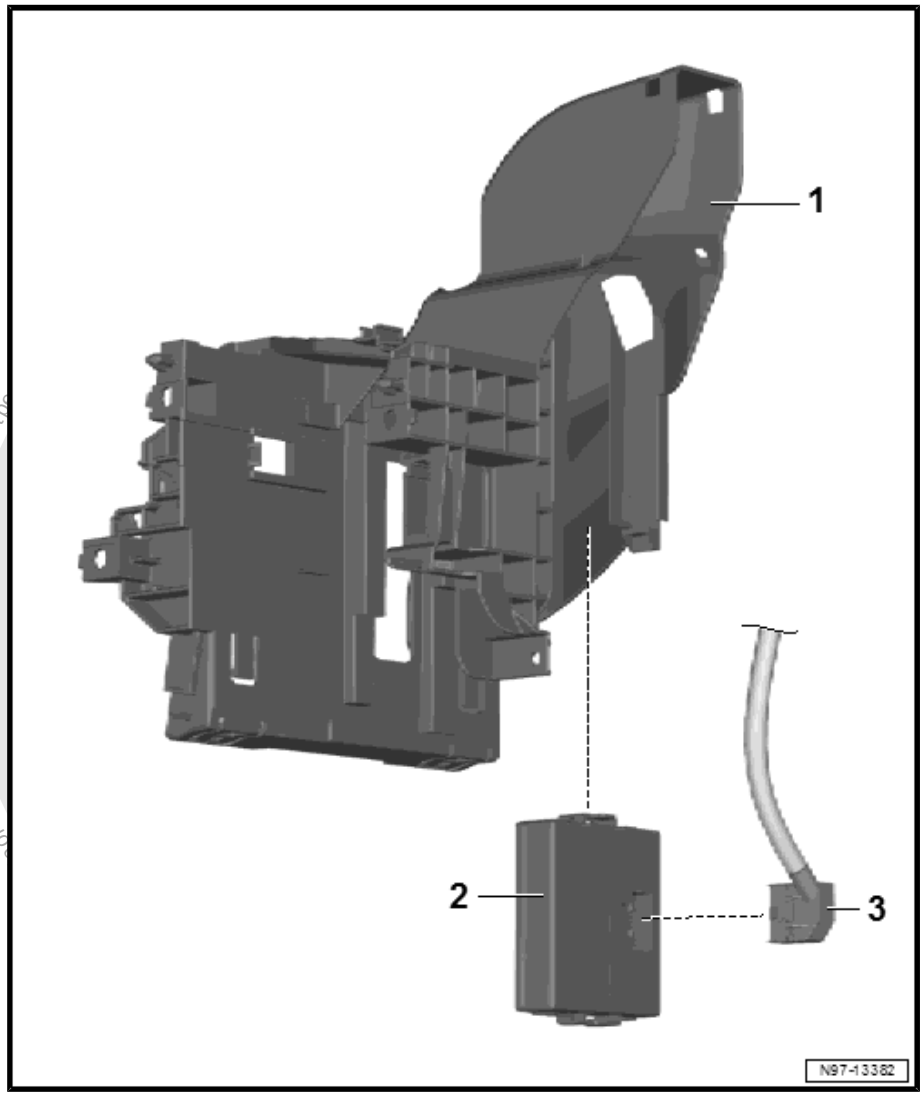
1 - Bracket

2 - Diagnostics interface for data bus - J533-

- ❑ Removing and installing ⇒ page 303

3 - Electrical connector

- ❑ For data bus diagnostic interface - J533- .



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2.3.2 Assembly overview - data bus diagnostic interface, right-hand drive vehicles

1 - Nuts

- ❑ Qty. 2
- ❑ 2.5 Nm

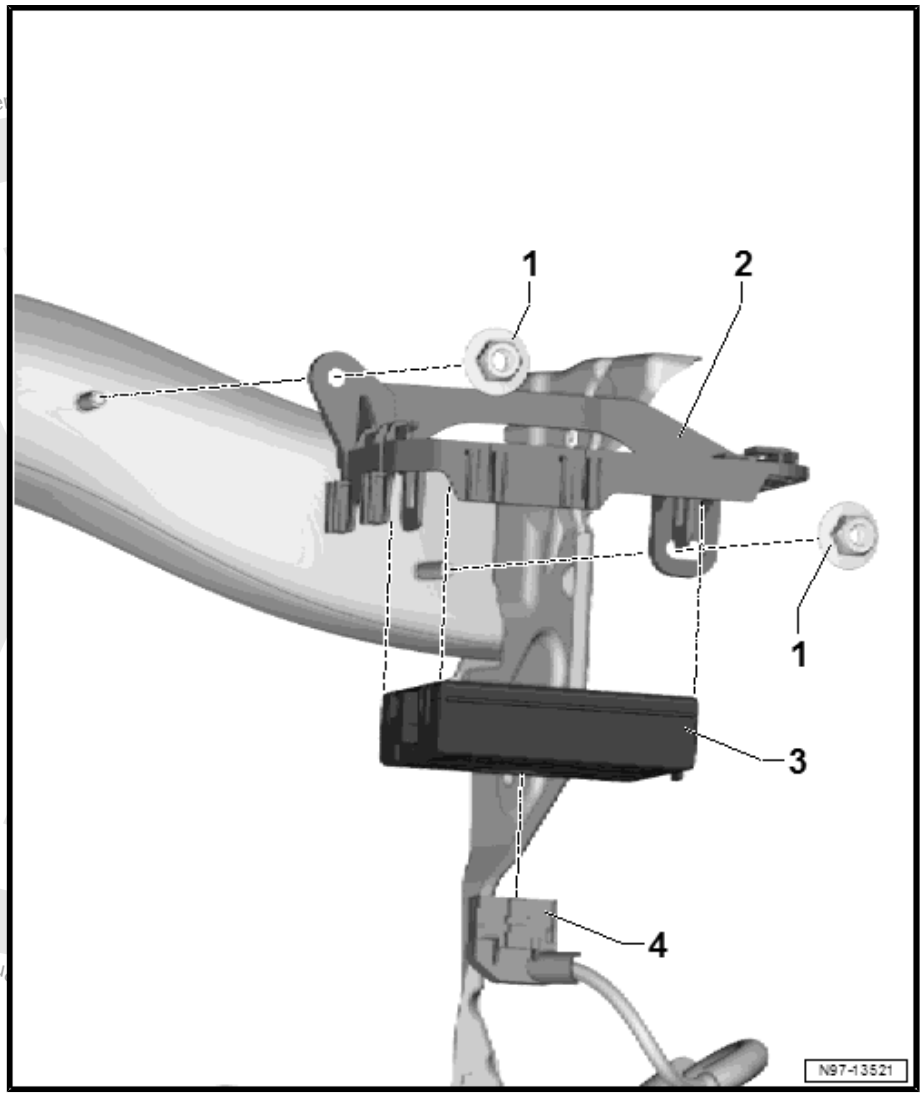
2 - Bracket

3 - Diagnostics interface for data bus - J533-

- ❑ Removing and installing ⇒ page 303

4 - Electrical connector

- ❑ For data bus diagnostic interface - J533- .



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2.4 Removing and installing onboard supply control unit - J519-

⇒ "2.4.1 Removing and installing onboard supply control unit J519 , LHD vehicles", page 299

⇒ "2.4.2 Removing and installing onboard supply control unit J519 , RHD vehicles", page 301

2.4.1 Removing and installing onboard supply control unit - J519- , LHD vehicles

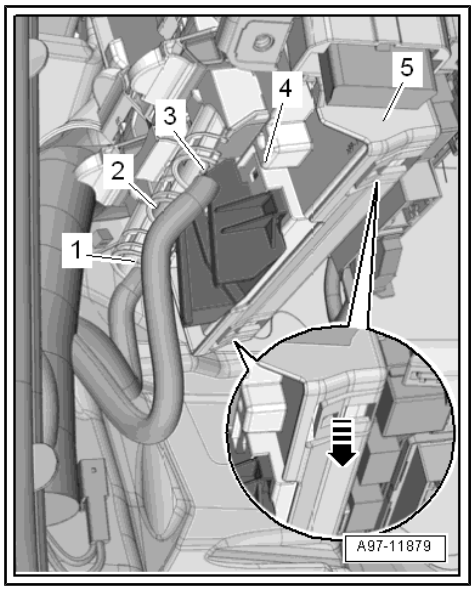
Note

If the control unit is renewed, perform the adaptation routines using ⇒ Vehicle diagnostic tester.

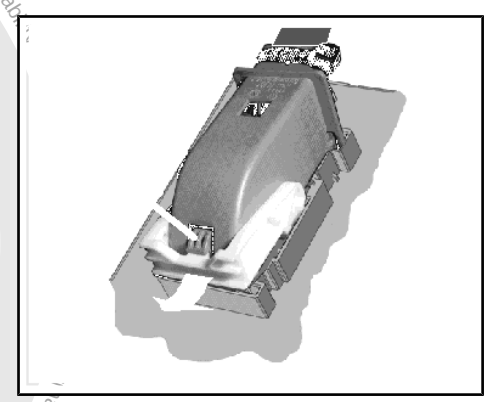
Removing

– Switch off ignition and all electrical consumers.

– Keep the ignition key outside the vehicle to prevent the ignition 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 .
– Remove lower A-pillar trim ⇒ General body repairs, interior; Rep. gr. 70 ; Trims, interior; Removing and installing A-pillar trim .
– Remove footrest ⇒ General body repairs, interior; Rep. gr. 70 ; Trims, interior; Removing and installing footrest .
– Unclip diagnostic connection from bracket.
– Unplug electrical connectors -1, 2, 3-.



– Press locking detent -1- to disconnect connectors.
– Swing retainer in -direction of arrow- and pull off connector.

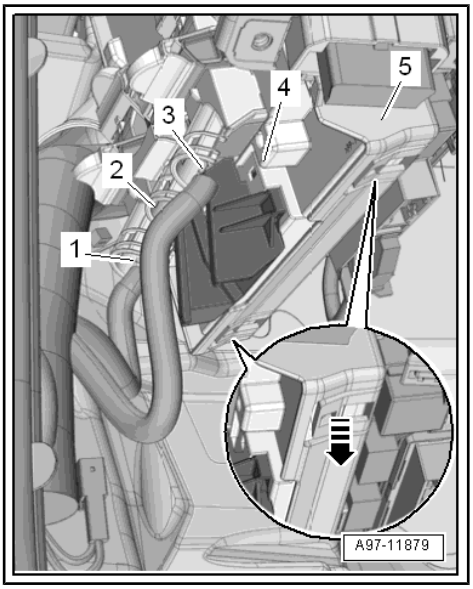


Note

The red locking element on the connector in the middle must be pulled out of the retaining clip to stop to allow for opening the retaining clip.

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– Pull connector -2- downwards out of guide.
– Release retaining springs -arrow-, swivel onboard supply control unit -4- out of bracket -5- and remove downwards.



Installing

Install in reverse order of removal.

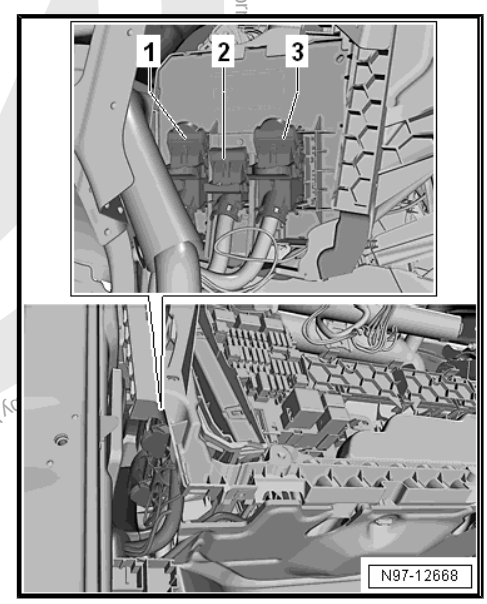
2.4.2 Removing and installing onboard supply control unit - J519- , RHD vehicles

Note

If the control unit is renewed, perform the adaptation routines using ⇒ Vehicle diagnostic tester.

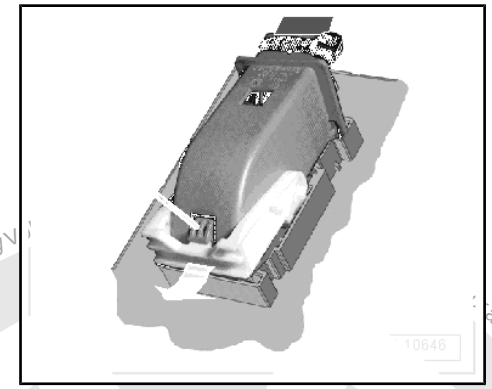
Removing

– Switch off ignition and all electrical consumers.
– Keep the ignition key outside the vehicle to prevent the ignition from being switched on unintentionally.
– Remove glove compartment ⇒ General body repairs, interior; Rep. gr. 68 ; Compartments/covers; Removing and installing glove compartment .
– Unplug electrical connectors -1, 2, 3-.



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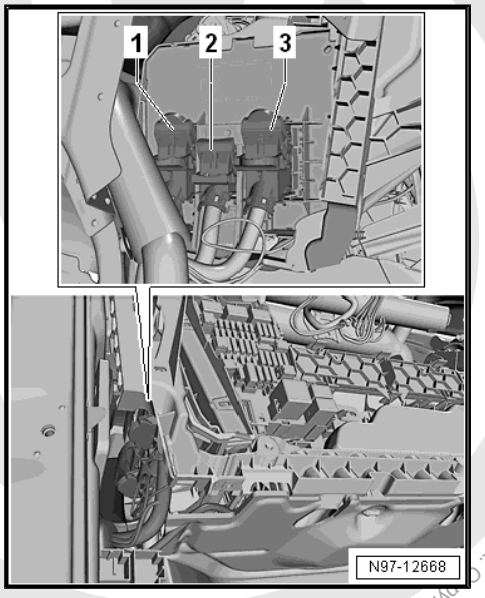
– Press locking detent -1- to disconnect connectors.
– Swing retainer in -direction of arrow- and pull off connector.



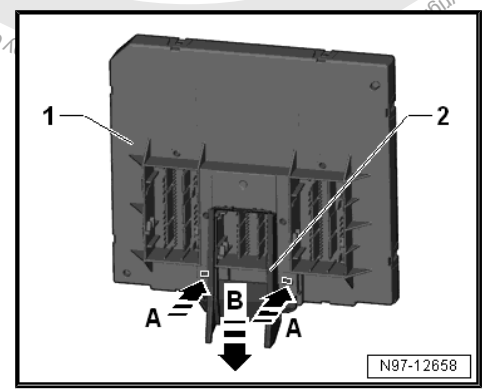
Note

The red locking element on the connector in the middle must be pulled out of the retaining clip to stop to allow for opening the retaining clip.

– Pull connector -2- downwards out of guide.



– Remove guide -2-. To do this, release fasteners on guide in -direction of arrow A-.
– Remove guide -2- in -direction of arrow B- from onboard supply control unit - J519- -1-.



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– Release upper retaining spring -2- in -direction of arrow A-.
– Pull onboard supply control unit - J519- -1- towards rear in -direction of arrow B- out of bracket.

Installing

Install in reverse order of removal.



2.5 Removing and installing data bus diagnostic interface - J533-

⇒ "2.5.1 Removing and installing (left-hand drive models) data bus diagnostic interface J533 ", page 303

⇒ "2.5.2 Removing and installing data bus diagnostic interface J533 , right-hand drive", page 304

2.5.1 Removing and installing (left-hand drive models) data bus diagnostic interface - J533-

Note

If the control unit is renewed, perform the adaptation routines using ⇒ Vehicle diagnostic tester.

Removing

– Remove footwell cover on driver side ⇒ General body repairs, interior; Rep. gr. 68 ; Compartments/covers .

Vehicles with manual gearbox

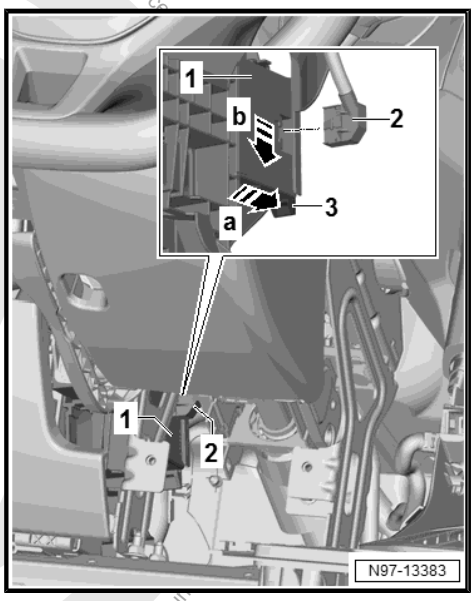
– Remove mounting bracket with clutch pedal ⇒ Rep. gr. 30 ; Clutch mechanism; Removing and installing mounting bracket .

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Continued for all vehicles

– Unplug electrical connector -2- by reaching upwards behind pedal bracket.
– Release fasteners -3- in -direction of arrow a-.
– Pull data bus diagnostic interface - J533- -1- downwards in -direction of arrow b- out of bracket.



Installing

Install in reverse order of removal.

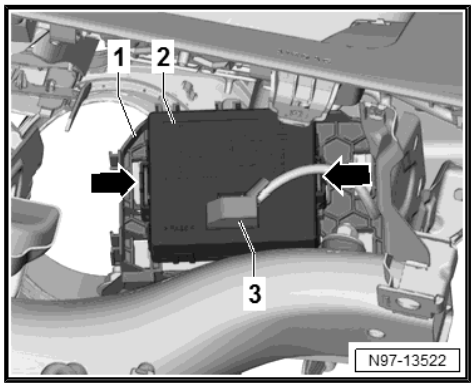
2.5.2 Removing and installing data bus diagnostic interface - J533- , right-hand drive

Note

If the control unit is renewed, perform the adaptation routines using ⇒ Vehicle diagnostic tester.

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 .
– Release and disconnect connector -3-.
– Press together catches -arrows-.
– Pull off data bus diagnostic interface - J533- -2- downwards from bracket -1-.



Installing

Install in reverse order of removal.

2.6 Removing and installing bracket for onboard supply control unit - J519-

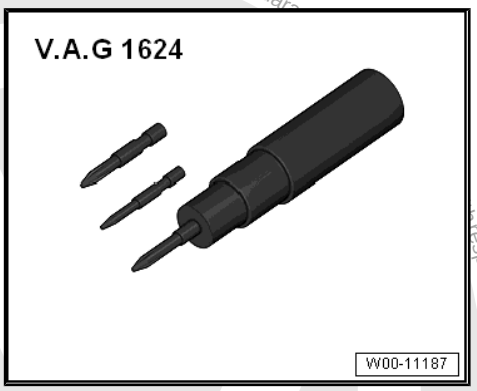
⇒ "2.6.1 Removing and installing bracket for onboard supply control unit J519 , LHD vehicles", page 305

⇒ "2.6.2 Removing and installing bracket for onboard supply control unit J519 , RHD vehicles", page 306

2.6.1 Removing and installing bracket for onboard supply control unit - J519- , LHD vehicles

Special tools and workshop equipment required

- Torque screwdriver - V.A.G 1624-



Removing

– With ignition switched off, disconnect earth cable from battery ⇒ page 14 .

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

– Cut through cable tie -arrow-.

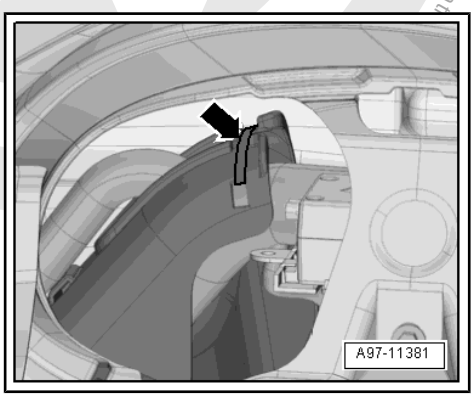
– Disengage fuse holder C and push to side ⇒ page 289 .

– Separate electrical connector from front parking aid warning buzzer - H22- .

– Disconnect connector for onboard supply control unit - J519- ⇒ page 299 .

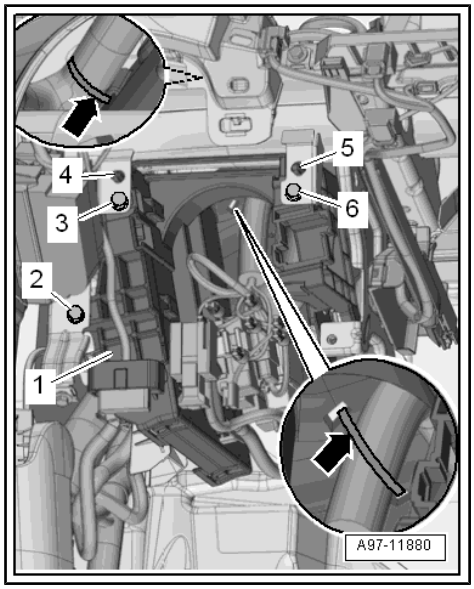
– Remove bracket for parking aid control unit - J446- / park assist steering control unit - J791- ⇒ page 307 .

– Release locking element on bracket, and press out bracket to remove diagnostic connector.



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– Unscrew bolts -2, 3 and 6-.
– Push bracket -1- forwards out of central tube for dash panel until centring pins -4, 5- are disengaged.
– Cut through cable ties -arrows-.
– Move electrical wiring harness clear at mounting.
– Take out bracket towards passenger compartment.



Installing

Install in reverse order of removal.

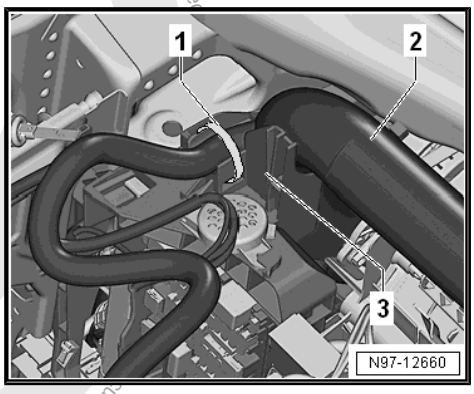
Specified torques

◆ ⇒ "1.1.2 Relay carrier, fuse carrier in dash panel/A-pillar, LHD vehicles", page 283

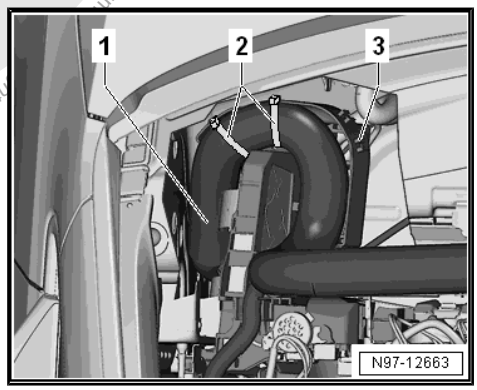
2.6.2 Removing and installing bracket for onboard supply control unit - J519- , RHD vehicles

Removing

– With ignition switched off, disconnect earth cable from battery ⇒ page 14 .
– Remove dash panel ⇒ General body repairs, interior; Rep. gr. 70 ; Dash panel; Removing and installing dash panel .
– Remove central tube for dash panel ⇒ General body repairs, interior; Rep. gr. 70 ; Central tube for dash panel; Removing and installing central tube for dash panel .
– Cut through cable tie -1-.
– Remove wiring harness -2- from bracket for onboard supply control unit -3-.
– Remove fuse holder C ⇒ page 289 .
– Separate electrical connector from front parking aid warning buzzer - H22- .
– Disconnect connector for onboard supply control unit - J519- ⇒ page 299 .



– Cut through cable tie -2-.
– Remove wiring harness -1- from bracket for onboard supply control unit -3-.
– Move electrical wiring harness clear at mounting.
– Take out bracket towards passenger compartment.



Installing

Install in reverse order of removal.

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2.7 Renewing bracket for onboard supply control unit - J519-

⇒ “2.7.1 Renewing bracket for onboard supply control unit J519 , LHD vehicles”, page 307

⇒ “2.7.2 Renewing bracket for onboard supply control unit J519 , RHD vehicles”, page 307

2.7.1 Renewing bracket for onboard supply control unit - J519- , LHD vehicles

Removing

– Remove bracket for onboard supply control unit - J519- ⇒ page 305 .

– Remove onboard supply control unit - J519- ⇒ page 299 .

– Remove front parking aid warning buzzer - H22- ⇒ page 195 .

Installing

Install in reverse order of removal.

2.7.2 Renewing bracket for onboard supply control unit - J519- , RHD vehicles

Removing

– Remove bracket for onboard supply control unit - J519- ⇒ page 305 .

– Remove onboard supply control unit - J519- ⇒ page 299 .

– Remove front parking aid warning buzzer - H22- ⇒ page 195 .

Installing

Install in reverse order of removal.

2.8 Removing and installing parking aid control unit - J446- / park assist steering control unit - J791-

Special tools and workshop equipment required

♦ Feeler gauge

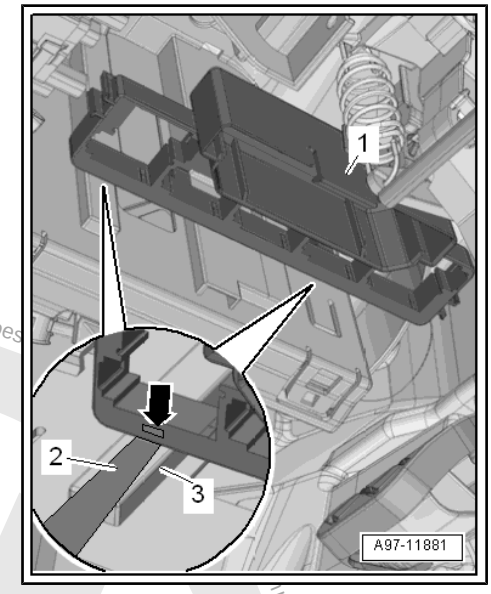
Removing

– If installed: remove parking aid control unit - J446- / park assist steering control unit - J791- ⇒ page 193 .

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– To release the fasteners, insert a feeler gauge (0.9 mm) -2- behind the opening -arrow-, as shown in illustration.

– Remove bracket -1- downwards from bracket for onboard supply control unit -3-.



Installing

Install in reverse order of removal.

2.9 Removing and installing rear lid control unit - J605-

The rear lid control unit - J605- is located below the moulded headliner on the rear left roof cross member.

Note

If the control unit is renewed, perform the adaptation routines using ⇒ Vehicle diagnostic tester.

Removing

– Switch off ignition and all electrical consumers.

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

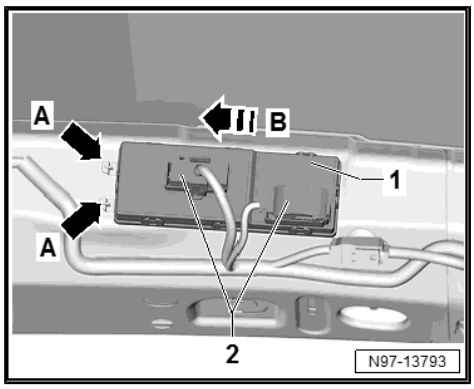
– Lower moulded headliner at rear ⇒ General body repairs, interior; Rep. gr. 70 ; Roof trim panels; Removing and installing moulded headliner .

– Release and disconnect electrical connectors -2-.

– Release fasteners -arrows A- on rear lid control unit - J605- -1-.

– At the same time, move rear lid control unit - J605- -1- to stop in -direction of arrow B-.

– Remove rear lid control unit - J605- -1- towards front from body.



Installing

Install in reverse order of removal.

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3 Connectors

⇒ “3.1 Repairing electrical wiring harnesses and plug-in connections”, page 309

3.1 Repairing electrical wiring harnesses and plug-in connections

⇒ “3.1.1 Repairs to wiring harnesses and connectors”, page 309

⇒ “3.1.2 Repairing connector housings and electrical connectors”, page 309

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

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4 Releasing and dismantling connector housings

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5 Repairing aerial cables

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6 Fibre optic cables

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7 Vehicle diagnosis, testing and information systems

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